

TEST REPORT

FCC ID: 2AG87ACM-DB-3-R2

Product: Industrial WiFi Transceiver

Model No.: ACM-DB-3-R2

Additional Model No.: ACM-DB-2-R2, ACO-DB-3-R2, ACO-DB-2-R2

Trade Mark: N/A

Report No.: TCT200804E041

Issued Date: Dec. 01, 2020

Issued for:

Doodle Labs (SG) Pte Ltd

150 Kampong Ampat, KA Center, Suite 05-03, Singapore 368324

Issued By:

Shenzhen Tongce Testing Lab.

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1. Test Certification

Product:	Industrial WiFi Transceiver
Model No.:	ACM-DB-3-R2
Additional Model No.:	ACM-DB-2-R2, ACO-DB-3-R2, ACO-DB-2-R2
Trade Mark:	N/A
Applicant:	Doodle Labs (SG) Pte Ltd
Address:	150 Kampong Ampat, KA Center, Suite 05-03, Singapore 368324
Manufacturer:	Doodle Labs (SG) Pte Ltd
Address:	150 Kampong Ampat, KA Center, Suite 05-03, Singapore 368324
Date of Test:	Aug. 05, 2020 – Nov. 30, 2020
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2016 KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General U-NII Test Procedures New Rules v02r01

The above equipment has been tested by Shenzhen Tongce Testing Lab. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:



Date:

Nov. 30, 2020

Brews Xu

Reviewed By:



Date:

Dec. 01, 2020

Beryl Zhao

Approved By:



Date:

Dec. 01, 2020

Tomsin

2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Maximum Conducted Output Power	§15.407(a)	PASS
6dB Emission Bandwidth	§15.407(a)	PASS
26dB Emission Bandwidth & 99% Occupied Bandwidth	§15.407(a)	PASS
Power Spectral Density	§15.407(a)	PASS
Restricted Bands around fundamental frequency	§15.407(a)	PASS
Radiated Emission	§15.407(a)	PASS
Frequency Stability	§15.407(g)	PASS

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.

3. EUT Description

Product:	Industrial WiFi Transceiver
Model No.:	ACM-DB-3-R2
Additional Model No.:	ACM-DB-2-R2, ACO-DB-3-R2, ACO-DB-2-R2
Trade Mark:	N/A
Operation Frequency:	Band 1: 5180 MHz -5240 MHz Band 2A: 5260 MHz -5320 MHz Band 2C: 5500 MHz -5700 MHz Band 3: 5745 MHz -5825 MHz
Channel Bandwidth:	802.11a: 20MHz 802.11n: 20MHz, 40MHz 802.11ac: 20MHz, 40MHz
Modulation Technology:	Orthogonal Frequency Division Multiplexing(OFDM)
Modulation Type	256QAM, 64QAM, 16QAM, BPSK, QPSK
Antenna Type:	External Antenna
Antenna Gain:	ANT0: 3dBi, ANT1: 3dBi, ANT2: 3dBi
Power Supply:	DC 3.3V
Remark:	All models above are identical in interior structure, electrical circuits and components, and just model names are different for the marketing requirement.

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

Test Frequency each of channel

Band 1

20MHz		40MHz	
Channel	Frequency	Channel	Frequency
36	5180	38	5190
40	5200	46	5230
48	5240		

Band 2A

20MHz		40MHz	
Channel	Frequency	Channel	Frequency
52	5260	54	5270
60	5300	62	5310
64	5320		

Band 2C

20MHz		40MHz	
Channel	Frequency	Channel	Frequency
100	5500	102	5510
120	5600	118	5590
140	5700	134	5670

Band 3

20MHz		40MHz	
Channel	Frequency	Channel	Frequency
149	5745	151	5755
157	5785	159	5795
165	5825		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

4. General Information

4.1. Test environment and mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 100%)
<p>The sample was placed 0.8m/1.5m for blow/above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.</p>	

<p>We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:</p>	
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11a(SISO)	6 Mbps
802.11n(HT20) (MIMO)	6.5 Mbps
802.11n(HT40) (MIMO)	13.5 Mbps
802.11ac(VHT20) (MIMO)	6.5 Mbps
802.11ac(VHT40) (MIMO)	13.5 Mbps
Final Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation

4.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
Laptop	ThinkPad T430	PO1908049	/	Lenovo
AC Adapter	92P1154	11S92P1154Z1ZD XP7CL957	/	Lenovo

Setting level of test tool

802.11a		802.11n(HT20)		802.11n(HT40)	
Frequency (MHz)	Setting level	Frequency (MHz)	Setting level	Frequency (MHz)	Setting level
5180	18	5180	18	5190	18
5200	18	5200	18	5230	18
5240	18	5240	18	5270	18
5260	20	5260	17	5310	18
5300	20	5300	17	5510	18
5320	20	5320	17	5590	14
5500	19	5500	15	5670	13
5600	15	5600	11	5755	18
5700	15	5700	11	5795	19
5745	18	5745	18		
5785	18	5785	18		
5825	18	5825	18		

802.11ac(HT20)		802.11ac(HT40)	
Frequency (MHz)	Setting level	Frequency (MHz)	Setting level
5180	18	5190	18
5200	18	5230	18
5240	18	5270	18
5260	17	5310	18
5300	17	5510	18
5320	17	5590	14
5500	15	5670	13
5600	11	5755	18
5700	11	5795	19
5745	18		
5785	18		
5825	18		

5. Facilities and Accreditations

5.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

Shenzhen Tongce Testing Lab

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

The 3m Semi-anechoic chamber of SHENZHEN TONGCE TESTING LAB has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

5.2. Location

Shenzhen Tongce Testing Lab.

Address: 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China

TEL: +86-755-27673339

5.3. Measurement Uncertainty

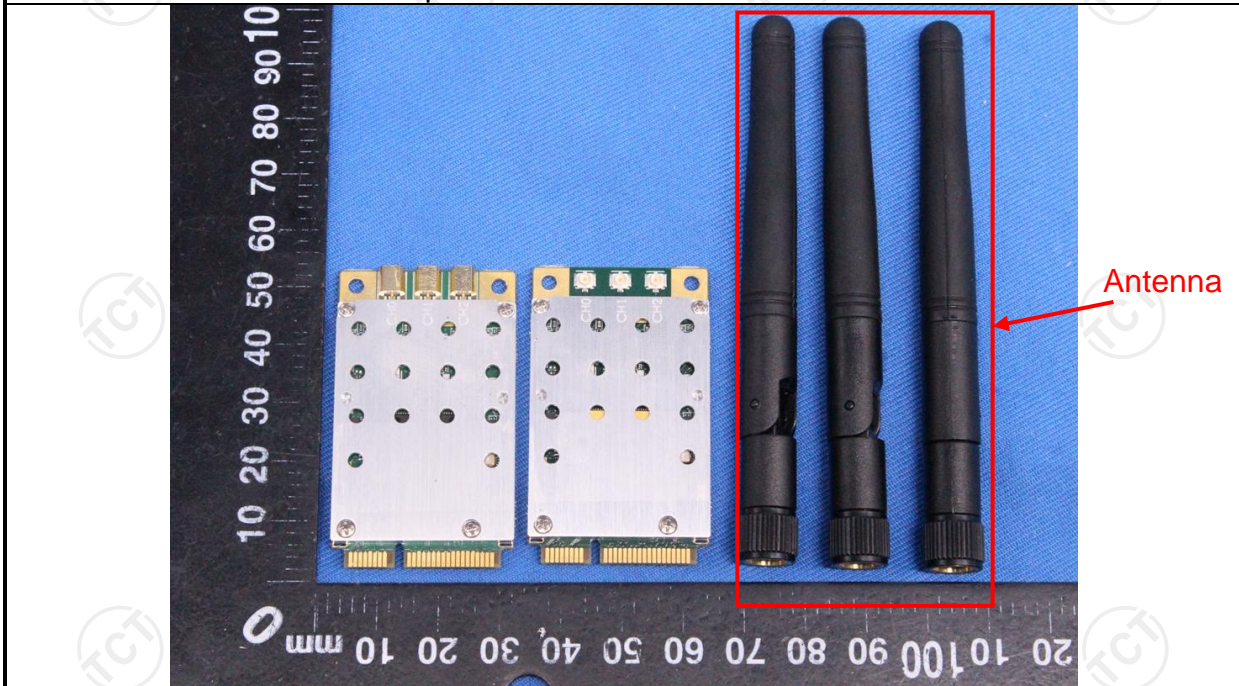
The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	$\pm 2.56\text{dB}$
2	RF power, conducted	$\pm 0.12\text{dB}$
3	Spurious emissions, conducted	$\pm 0.11\text{dB}$
4	All emissions, radiated(<1G)	$\pm 3.92\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.28\text{dB}$
6	Temperature	$\pm 0.1^\circ\text{C}$
7	Humidity	$\pm 1.0\%$

6. Test Results and Measurement Data

6.1. Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
E.U.T Antenna:	
The EUT has three external antennas, and the best case gains of each antenna is 3dBi. The antenna use a unique connector to the intentional radiator.	



6.2. Conducted Emission

6.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2013														
Frequency Range:	150 kHz to 30 MHz														
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
Limits:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test Setup:	<p><i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
Test Mode:	Tx Mode														
Test Procedure:	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. 														
Test Result:	PASS														

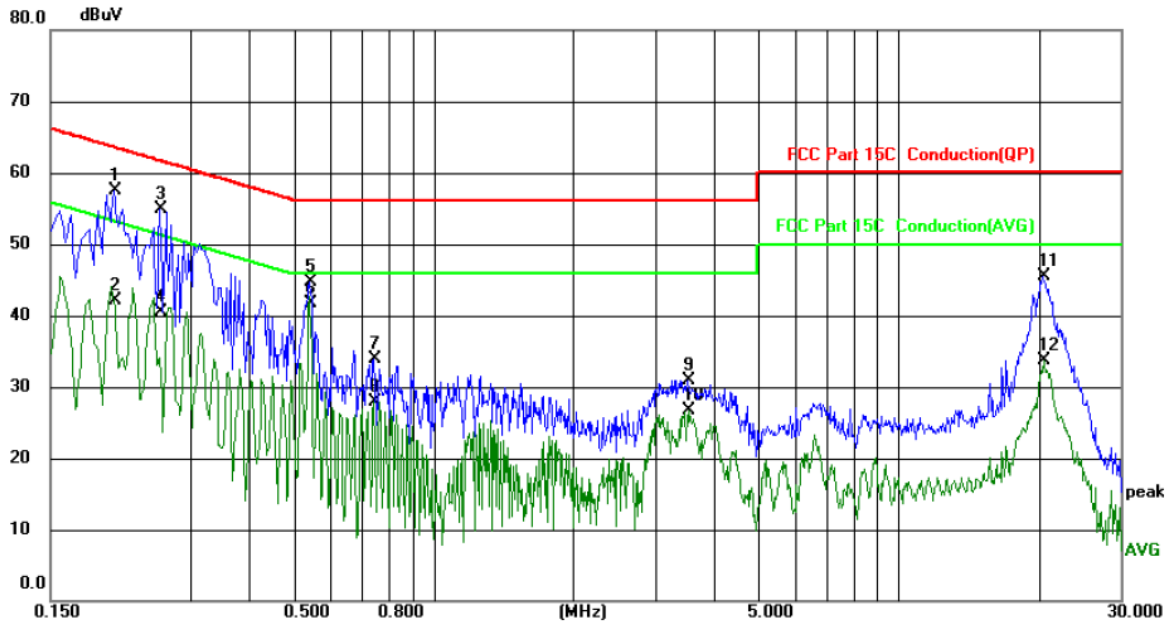
6.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Test Receiver	R&S	ESCI3	100898	Jul. 27, 2021
LISN-2	Schwarzbeck	NSLK 8126	8126453	Sep. 11, 2021
Line-5	TCT	CE-05	N/A	Sep. 02, 2021
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.2.3. Test data

Please refer to following diagram for individual
Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



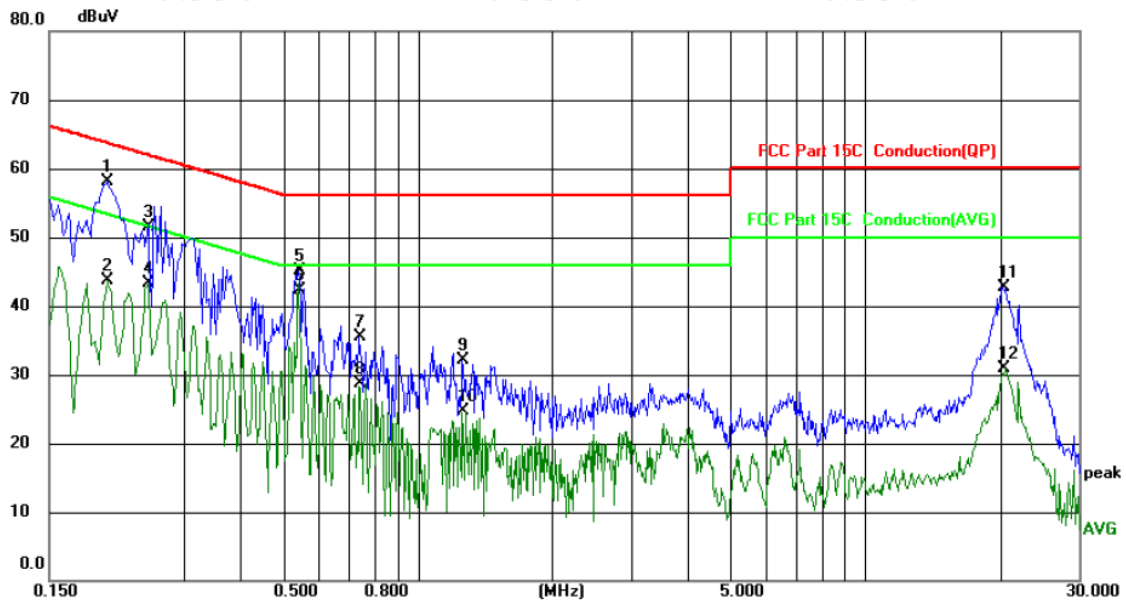
Site	Phase: L1	Temperature: 25 (C)
Limit: FCC Part 15C Conduction(QP)	Power: AC 120V/60Hz	Humidity: 55 %RH

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2060	47.34	10.08	57.42	63.37	-5.95	QP	
2		0.2060	32.02	10.08	42.10	53.37	-11.27	AVG	
3		0.2580	44.73	10.08	54.81	61.50	-6.69	QP	
4		0.2580	30.50	10.08	40.58	51.50	-10.92	AVG	
5		0.5420	34.63	10.10	44.73	56.00	-11.27	QP	
6	*	0.5420	31.54	10.10	41.64	46.00	-4.36	AVG	
7		0.7460	23.70	10.11	33.81	56.00	-22.19	QP	
8		0.7460	17.82	10.11	27.93	46.00	-18.07	AVG	
9		3.5100	20.67	10.24	30.91	56.00	-25.09	QP	
10		3.5100	16.45	10.24	26.69	46.00	-19.31	AVG	
11		20.4460	34.18	11.23	45.41	60.00	-14.59	QP	
12		20.4460	22.49	11.23	33.72	50.00	-16.28	AVG	

Note:

- Freq. = Emission frequency in MHz
- Reading level (dBuV) = Receiver reading
- Corr. Factor (dB) = LISN factor + Cable loss
- Measurement (dBuV) = Reading level (dBuV) + Corr. Factor (dB)
- Limit (dBuV) = Limit stated in standard
- Margin (dB) = Measurement (dBuV) – Limits (dBuV)
- Q.P. =Quasi-Peak
- AVG =average
- * is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site: _____ Phase: **N** Temperature: 25 (C)
 Limit: FCC Part 15C Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %RH

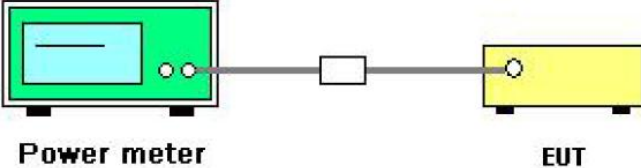
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.2020	47.93	10.08	58.01	63.53	-5.52	QP	
2		0.2020	33.59	10.08	43.67	53.53	-9.86	AVG	
3		0.2500	41.51	10.08	51.59	61.76	-10.17	QP	
4		0.2500	33.16	10.08	43.24	51.76	-8.52	AVG	
5		0.5420	35.03	10.10	45.13	56.00	-10.87	QP	
6	*	0.5420	32.28	10.10	42.38	46.00	-3.62	AVG	
7		0.7420	25.42	10.11	35.53	56.00	-20.47	QP	
8		0.7420	18.50	10.11	28.61	46.00	-17.39	AVG	
9		1.2620	21.89	10.15	32.04	56.00	-23.96	QP	
10		1.2620	14.46	10.15	24.61	46.00	-21.39	AVG	
11		20.2939	31.44	11.23	42.67	60.00	-17.33	QP	
12		20.2939	19.71	11.23	30.94	50.00	-19.06	AVG	

Note:

Freq. = Emission frequency in MHz
 Reading level (dBuV) = Receiver reading
 Corr. Factor (dB) = LISN factor + Cable loss
 Measurement (dBuV) = Reading level (dBuV) + Corr. Factor (dB)
 Limit (dBuV) = Limit stated in standard
 Margin (dB) = Measurement (dBuV) – Limits (dBuV)
 Q.P. =Quasi-Peak
 AVG =average
 * is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.
 Measurements were conducted in all three channels (high, middle, low) and all modulation (802.11a, 802.11n(HT20), 802.11n(HT40) 802.11ac(VHT20), 802.11ac(VHT40), and the worst case Mode (Lowest channel and 11a) was submitted only.

6.3. Maximum Conducted Output Power

6.3.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407(a)										
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E										
Limit:	<table border="1"> <thead> <tr> <th>Frequency Band (MHz)</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>5180 - 5240</td> <td>30dBm(1W)</td> </tr> <tr> <td>5260 - 5320</td> <td>24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz</td> </tr> <tr> <td>5470 - 5725</td> <td>24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz</td> </tr> <tr> <td>5745 - 5825</td> <td>30dBm(1W)</td> </tr> </tbody> </table>	Frequency Band (MHz)	Limit	5180 - 5240	30dBm(1W)	5260 - 5320	24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz	5470 - 5725	24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz	5745 - 5825	30dBm(1W)
	Frequency Band (MHz)	Limit									
	5180 - 5240	30dBm(1W)									
	5260 - 5320	24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz									
	5470 - 5725	24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz									
5745 - 5825	30dBm(1W)										
Test Setup:	 <p>The diagram shows a green Power meter connected to a yellow EUT (Equipment Under Test) via a white attenuator. The Power meter is on the left and the EUT is on the right, connected by a cable.</p>										
Test Mode:	Transmitting mode with modulation										
Test Procedure:	<ol style="list-style-type: none"> 1. The testing follows the Measurement Procedure of KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E, 3, a 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 5. Measure the conducted output power and record the results in the test report. 										
Test Result:	PASS										
Remark:	<p>Conducted output power= measurement power +10log(1/x) X is duty cycle=1, so 10log(1/1)=0</p> <p>Conducted output power= measurement power</p>										

6.3.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2021
Power Meter	Agilent	E4418B	GB43312526	Sep. 21, 2021
Power Sensor	Agilent	E9301A	MY41497725	Sep. 21, 2021
4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	N/A	Sep. 02, 2021
Combiner Box	Ascentest	AT890-RFB	N/A	Sep. 02, 2021

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.3.3. Test Data

Configuration Band 1 (5180 - 5240 MHz) / Antenna 0+Antenna 1+Antenna 2							
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)				Limit (dBm)	Result
		Ant0	Ant1	Ant2	Total		
11a	CH36	19.35	19.29	18.81	/	30	PASS
11a	CH40	19.29	19.52	18.84	/	30	PASS
11a	CH48	18.81	18.84	18.88	/	30	PASS
11n(HT20)	CH36	19.29	19.27	18.77	23.89	30	PASS
11n(HT20)	CH40	19.21	19.47	18.81	23.94	30	PASS
11n(HT20)	CH48	18.76	18.78	18.78	23.54	30	PASS
11n(HT40)	CH38	19.54	18.61	17.83	23.49	30	PASS
11n(HT40)	CH46	19.03	19.03	17.92	23.46	30	PASS
11ac(VHT20)	CH36	19.29	19.24	18.74	23.87	30	PASS
11ac(VHT20)	CH40	19.25	19.48	18.77	23.95	30	PASS
11ac(VHT20)	CH48	18.78	18.79	18.78	23.55	30	PASS
11ac(VHT40)	CH38	19.55	18.59	17.84	23.49	30	PASS
11ac(VHT40)	CH46	19.06	19.05	17.94	23.49	30	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Directional gain = $G_{ant} + \text{Array Gain} = 3\text{dBi}$, so limit of conducted output power is 1W(30dBm)

Configuration Band 2A (5260 - 5320 MHz) / Antenna 0+Antenna 1+Antenna 2

Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)				26 dB Bandwidth (MHz)	11dBm+ 10logB (dBm)	Limit (dBm)	Result
		Ant0	Ant1	Ant2	Total				
11a	CH52	18.95	18.88	19.23	/	23.54	24.72	24.00	PASS
11a	CH60	18.38	18.46	18.95	/	23.44	24.70	24.00	PASS
11a	CH64	18.04	18.21	18.73	/	23.47	24.71	24.00	PASS
11n(HT20)	CH52	16.02	15.63	15.31	20.43	23.06	24.63	24.00	PASS
11n(HT20)	CH60	15.81	15.58	16.04	20.59	22.97	24.61	24.00	PASS
11n(HT20)	CH64	15.31	15.72	15.89	20.42	22.65	24.55	24.00	PASS
11n(HT40)	CH54	17.01	18.58	18.01	22.69	45.31	27.56	24.00	PASS
11n(HT40)	CH62	15.91	17.83	17.52	21.94	44.77	27.51	24.00	PASS
11ac(VHT20)	CH52	16.04	16.07	15.85	20.76	22.95	24.61	24.00	PASS
11ac(VHT20)	CH60	15.79	16.11	16.04	20.75	22.92	24.60	24.00	PASS
11ac(VHT20)	CH64	15.43	15.87	15.89	20.51	22.89	24.60	24.00	PASS
11ac(VHT40)	CH54	17.01	18.59	18.01	22.69	46.34	27.66	24.00	PASS
11ac(VHT40)	CH62	15.94	17.86	17.53	21.96	44.43	27.48	24.00	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Directional gain = $G_{ant} + \text{Array Gain} = 3\text{dBi}$, so limit of conducted output power is 250mW(24dBm)

Note : The maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz

Configuration Band 2C (5500 - 5700 MHz) / Antenna 0+Antenna 1+Antenna 2

Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)				26 dB Bandwidth (MHz)	11dBm+ 10logB (dBm)	Limit (dBm)	Result
		Ant0	Ant1	Ant2	Total				
11a	CH100	19.17	19.24	19.23	/	22.92	24.60	24.00	PASS
11a	CH120	19.61	19.74	19.02	/	22.78	24.58	24.00	PASS
11a	CH140	19.84	19.60	20.12	/	24.78	24.94	24.00	PASS
11n(HT20)	CH100	15.85	15.58	15.87	20.54	22.63	24.55	24.00	PASS
11n(HT20)	CH120	16.05	16.03	14.97	20.48	22.82	24.58	24.00	PASS
11n(HT20)	CH140	15.69	15.50	15.59	20.37	22.46	24.51	24.00	PASS
11n(HT40)	CH102	18.87	18.27	19.23	23.58	44.80	27.51	24.00	PASS
11n(HT40)	CH118	18.51	18.64	18.47	23.31	45.32	27.56	24.00	PASS
11n(HT40)	CH134	18.51	18.00	19.10	23.33	44.46	27.48	24.00	PASS
11ac(VHT20)	CH100	15.91	15.60	15.90	20.58	22.52	24.53	24.00	PASS
11ac(VHT20)	CH120	16.04	15.54	14.91	20.29	22.71	24.56	24.00	PASS
11ac(VHT20)	CH140	15.69	15.53	15.53	20.36	22.75	24.57	24.00	PASS
11ac(VHT40)	CH102	18.82	18.31	19.25	23.58	44.57	27.49	24.00	PASS
11ac(VHT40)	CH118	18.51	18.93	18.49	23.42	44.76	27.51	24.00	PASS
11ac(VHT40)	CH134	18.48	17.92	19.12	23.31	45.32	27.56	24.00	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Directional gain = $G_{ant} + \text{Array Gain} = 3\text{dBi}$, so limit of conducted output power is 250mW(24dBm)

Note : The maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz

Configuration Band 3 (5745 - 5825 MHz) / Antenna 0+Antenna 1+Antenna 2

Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)				Limit (dBm)	Result
		Ant0	Ant1	Ant2	Total		
11a	CH149	20.77	20.08	20.13	/	30	PASS
11a	CH157	20.65	20.57	20.01	/	30	PASS
11a	CH165	20.07	19.90	19.41	/	30	PASS
11n(HT20)	CH149	20.53	20.25	19.90	25.01	30	PASS
11n(HT20)	CH157	20.36	20.52	20.00	25.07	30	PASS
11n(HT20)	CH165	19.92	19.72	19.44	24.47	30	PASS
11n(HT40)	CH151	20.19	19.80	20.04	24.78	30	PASS
11n(HT40)	CH159	20.08	20.10	20.16	24.88	30	PASS
11ac(VHT20)	CH149	20.63	20.21	19.90	25.03	30	PASS
11ac(VHT20)	CH157	20.63	20.47	19.97	25.14	30	PASS
11ac(VHT20)	CH165	20.03	19.79	19.43	24.53	30	PASS
11ac(VHT40)	CH151	20.16	19.77	20.06	24.77	30	PASS
11ac(VHT40)	CH159	19.99	20.10	20.12	24.84	30	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;


Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Directional gain = $G_{ant} + \text{Array Gain} = 3\text{dBi}$, so limit of conducted output power is 1W(30dBm)

6.4. 6dB Emission Bandwidth

6.4.1. Test Specification

Test Requirement:	FCC CFR47 Part 15 Section 15.407(e)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C
Limit:	>500kHz
Test Setup:	 <p style="text-align: center;">Spectrum Analyzer EUT</p>
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol style="list-style-type: none"> 1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. 4. Measure and record the results in the test report.
Test Result:	PASS


6.4.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2021
4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	N/A	Sep. 02, 2021
Combiner Box	Ascentest	AT890-RFB	N/A	Sep. 02, 2021

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.6. Power Spectral Density

6.6.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section F
Limit:	≤17.00dBm/MHz for Band 5150MHz - 5250MHz ≤11.00dBm/MHz for Band 5250-5350&5470 - 5725 ≤30.00dBm/500KHz for Band 5725MHz - 5850MHz
Test Setup:	 <p style="text-align: center;">Spectrum Analyzer EUT</p>
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol style="list-style-type: none"> 1. Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth. 1. Set RBW = 510 kHz/1 MHz, VBW ≥ 3*RBW, Sweep time = Auto, Detector = RMS. 2. Allow the sweeps to continue until the trace stabilizes. 3. Use the peak marker function to determine the maximum amplitude level. 4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.
Test Result:	PASS

6.6.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2021
4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	N/A	Sep. 02, 2021
Combiner Box	Ascentest	AT890-RFB	N/A	Sep. 02, 2021

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.6.3. Test data

Configuration Band 1 (5180 - 5240 MHz) / Antenna 0+Antenna 1+Antenna 2							
Mode	Test channel	Power Spectral Density				Limit (dBm/MHz)	Result
		Ant0	Ant1	Ant2	Total		
11a	CH36	7.97	7.99	7.41	/	17.00	PASS
11a	CH40	7.89	8.15	7.52	/	17.00	PASS
11a	CH48	7.45	7.40	7.46	/	17.00	PASS
11n(HT20)	CH36	7.61	7.63	7.15	12.24	15.23	PASS
11n(HT20)	CH40	7.49	7.88	7.12	12.28	15.23	PASS
11n(HT20)	CH48	7.11	7.10	7.16	11.89	15.23	PASS
11n(HT40)	CH38	4.87	3.94	3.14	8.81	15.23	PASS
11n(HT40)	CH46	4.37	4.29	3.13	8.74	15.23	PASS
11ac(VHT20)	CH36	7.61	7.65	7.09	12.23	15.23	PASS
11ac(VHT20)	CH40	7.61	7.89	7.15	12.33	15.23	PASS
11ac(VHT20)	CH48	7.12	7.08	7.14	11.88	15.23	PASS
11ac(VHT40)	CH38	4.84	3.98	3.15	8.82	15.23	PASS
11ac(VHT40)	CH46	4.44	4.29	3.22	8.79	15.23	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power spectral density (PSD) measurements on all devices,

$Array\ Gain = 10 \log(N_{ANT}/N_{SS})\ dB$.

Directional gain = $G_{ant} + Array\ Gain = 7.77\ dB$, so limit of power spectral density is $17 - (7.77-6) = 15.23$

Configuration Band 2A (5260-5320MHz) /Antenna 0+Antenna 1+Antenna 2

Mode	Test channel	Power Spectral Density				Limit (dBm/MHz)	Result
		Ant0	Ant1	Ant2	Total		
11a	CH52	7.50	7.35	7.76	/	11.00	PASS
11a	CH60	6.84	6.94	7.40	/	11.00	PASS
11a	CH64	6.51	6.64	7.19	/	11.00	PASS
11n(HT20)	CH52	4.30	3.93	3.69	8.75	9.23	PASS
11n(HT20)	CH60	4.01	3.77	4.24	8.78	9.23	PASS
11n(HT20)	CH64	3.55	3.94	4.10	8.64	9.23	PASS
11n(HT40)	CH54	2.35	3.91	3.15	7.95	9.23	PASS
11n(HT40)	CH62	1.13	3.01	2.66	7.11	9.23	PASS
11ac(VHT20)	CH52	4.36	4.36	4.08	9.04	9.23	PASS
11ac(VHT20)	CH60	4.01	4.28	4.24	8.95	9.23	PASS
11ac(VHT20)	CH64	3.64	4.00	4.08	8.68	9.23	PASS
11ac(VHT40)	CH54	2.36	3.89	3.16	7.95	9.23	PASS
11ac(VHT40)	CH62	1.20	2.99	2.72	7.14	9.23	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

Directional gain = G_{ant} + Array Gain = 7.77dBi, so limit of power spectral density is 11-(7.77-6) = 9.23

Configuration Band 2C (5500-5700 MHz) /Antenna 0+Antenna 1+Antenna 2

Mode	Test channel	Power Spectral Density				Limit (dBm/MHz)	Result
		Ant0	Ant1	Ant2	Total		
11a	CH100	7.84	8.04	7.78	/	11.00	PASS
11a	CH120	8.23	8.15	7.59	/	11.00	PASS
11a	CH140	8.61	8.35	8.65	/	11.00	PASS
11n(HT20)	CH100	4.26	4.16	4.13	8.95	9.23	PASS
11n(HT20)	CH120	4.38	4.20	3.25	8.74	9.23	PASS
11n(HT20)	CH140	4.19	4.00	3.87	8.79	9.23	PASS
11n(HT40)	CH102	4.26	4.10	4.39	9.02	9.23	PASS
11n(HT40)	CH118	3.78	3.74	3.72	8.52	9.23	PASS
11n(HT40)	CH134	3.99	3.78	4.20	8.76	9.23	PASS
11ac(VHT20)	CH100	4.36	4.15	4.14	8.99	9.23	PASS
11ac(VHT20)	CH120	4.33	3.77	3.27	8.58	9.23	PASS
11ac(VHT20)	CH140	4.24	4.06	3.81	8.81	9.23	PASS
11ac(VHT40)	CH102	4.24	4.07	4.41	9.01	9.23	PASS
11ac(VHT40)	CH118	3.78	4.01	3.78	8.63	9.23	PASS
11ac(VHT40)	CH134	4.07	3.64	4.25	8.77	9.23	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power spectral density (PSD) measurements on all devices,

$Array\ Gain = 10 \log(N_{ANT}/N_{SS})\ dB$.

Directional gain = $G_{ant} + Array\ Gain = 7.77\ dBi$, so limit of power spectral density is $11 - (7.77 - 6) = 9.23$

Configuration Band 3(5745-5825MHz) / Antenna 0+Antenna 1+Antenna 2

Mode	Test channel	Power Spectral Density				Limit (dBm/500kHz)	Result
		Ant0	Ant1	Ant2	Total		
11a	CH52	6.44	5.73	5.97	/	30.00	PASS
11a	CH60	6.42	6.19	6.00	/	30.00	PASS
11a	CH64	5.85	5.56	5.36	/	30.00	PASS
11n(HT20)	CH52	6.08	5.65	5.47	10.51	28.23	PASS
11n(HT20)	CH60	6.08	5.78	5.78	10.65	28.23	PASS
11n(HT20)	CH64	5.52	5.17	5.05	10.02	28.23	PASS
11n(HT40)	CH54	2.69	2.23	2.95	7.40	28.23	PASS
11n(HT40)	CH62	2.58	2.48	3.00	7.46	28.23	PASS
11ac(VHT20)	CH52	6.04	5.65	5.45	10.49	28.23	PASS
11ac(VHT20)	CH60	5.88	5.85	5.74	10.59	28.23	PASS
11ac(VHT20)	CH64	5.45	5.12	5.11	10.00	28.23	PASS
11ac(VHT40)	CH54	2.78	2.20	2.94	7.42	28.23	PASS
11ac(VHT40)	CH62	2.68	2.49	3.05	7.52	28.23	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

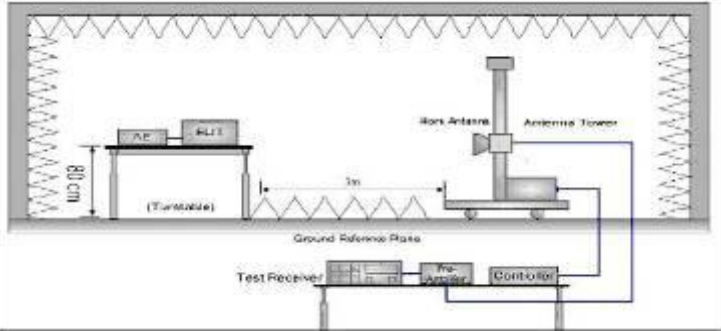
For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

Directional gain = G_{ant} + Array Gain = 7.77dBi, so limit of power spectral density is 30 - (7.77-6) = 28.23.

6.7. Band edge

6.7.1. Test Specification

Test Requirement:	FCC CFR47 Part 15E Section 15.407																				
Test Method:	ANSI C63.10 2013																				
Limit:	In un-restricted band: For Band 1&2A&2C: -27dBm/MHz For Band 3:																				
	<table border="1"> <thead> <tr> <th>Frequency (MHz)</th> <th>Limit (dBm/MHz)</th> <th>Frequency (MHz)</th> <th>Limit (dBm/MHz)</th> </tr> </thead> <tbody> <tr> <td>< 5650</td> <td>-27</td> <td>5850~5855</td> <td>27~15.6</td> </tr> <tr> <td>5650~5700</td> <td>-27~10</td> <td>5855~5875</td> <td>15.6~10</td> </tr> <tr> <td>5700~5720</td> <td>10~15.6</td> <td>5875~5925</td> <td>10~-27</td> </tr> <tr> <td>5720~5725</td> <td>15.6~27</td> <td>> 5925</td> <td>-27</td> </tr> </tbody> </table>	Frequency (MHz)	Limit (dBm/MHz)	Frequency (MHz)	Limit (dBm/MHz)	< 5650	-27	5850~5855	27~15.6	5650~5700	-27~10	5855~5875	15.6~10	5700~5720	10~15.6	5875~5925	10~-27	5720~5725	15.6~27	> 5925	-27
	Frequency (MHz)	Limit (dBm/MHz)	Frequency (MHz)	Limit (dBm/MHz)																	
	< 5650	-27	5850~5855	27~15.6																	
	5650~5700	-27~10	5855~5875	15.6~10																	
5700~5720	10~15.6	5875~5925	10~-27																		
5720~5725	15.6~27	> 5925	-27																		
$E[dB\mu V/m] = EIRP[dBm] + 95.2 @3m$																					
In restricted band:																					
	<table border="1"> <thead> <tr> <th>Detector</th> <th>Limit@3m</th> </tr> </thead> <tbody> <tr> <td>Peak</td> <td>74dBμV/m</td> </tr> <tr> <td>AVG</td> <td>54dBμV/m</td> </tr> </tbody> </table>	Detector	Limit@3m	Peak	74dB μ V/m	AVG	54dB μ V/m														
Detector	Limit@3m																				
Peak	74dB μ V/m																				
AVG	54dB μ V/m																				
Test Setup:																					
Test Mode:	Transmitting mode with modulation																				
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold 																				

	Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet.
Test Result:	PASS

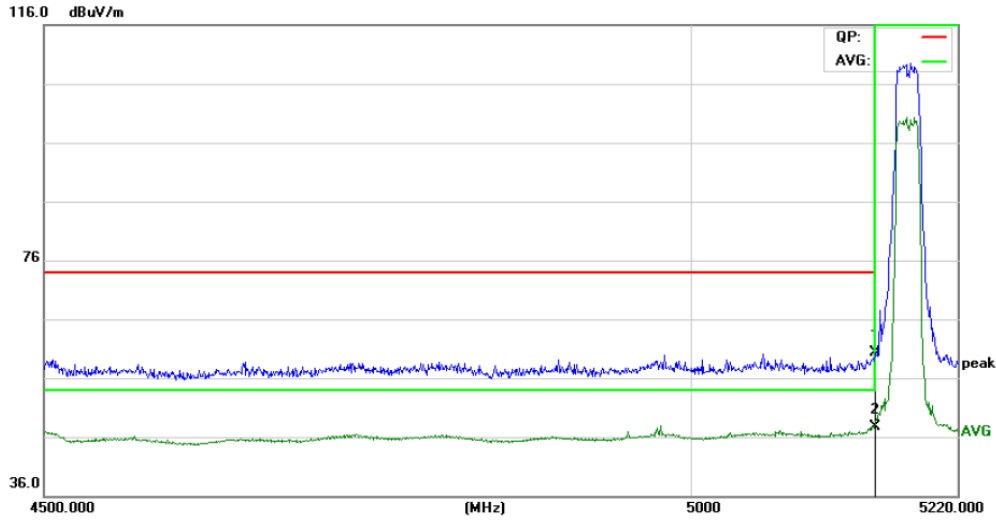
6.7.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Test Receiver	ROHDE&SCHWARZ	ESIB7	100197	Jul. 27, 2021
Spectrum Analyzer	ROHDE&SCHWARZ	FSQ40	200061	Sep. 11, 2021
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2021
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep. 02, 2021
Pre-amplifier	HP	8447D	2727A05017	Sep. 02, 2021
Loop antenna	ZHINAN	ZN30900A	12024	Sep. 05, 2022
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 04, 2022
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 04, 2022
Horn Antenna	A-INFO	LB-180400-KF	J211020657	Sep. 02, 2021
Line-4	TCT	RE-high-04	N/A	Sep. 02, 2021
Line-8	TCT	RE-01	N/A	Jul. 27, 2021
Antenna Mast	Keleto	CC-A-4M	N/A	N/A
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

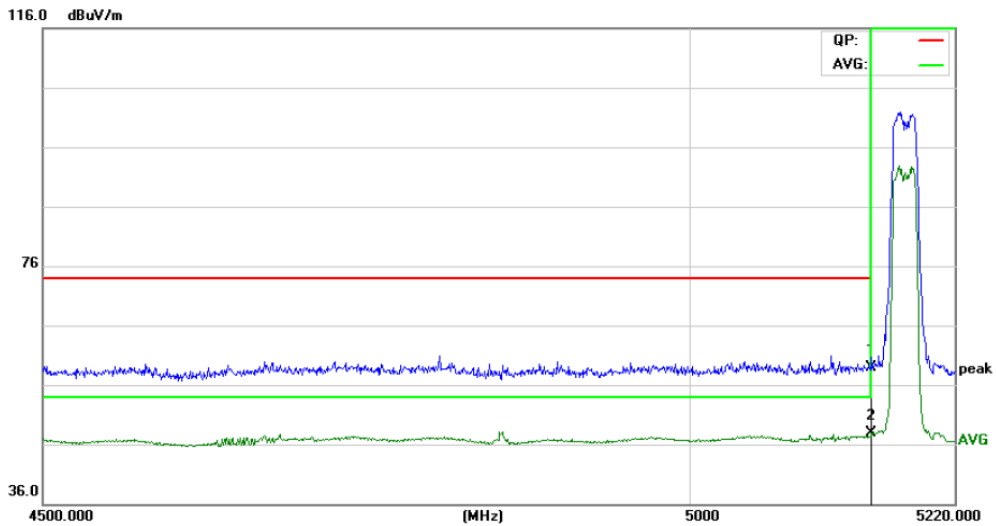
6.7.3. Test Data

AC-5180



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

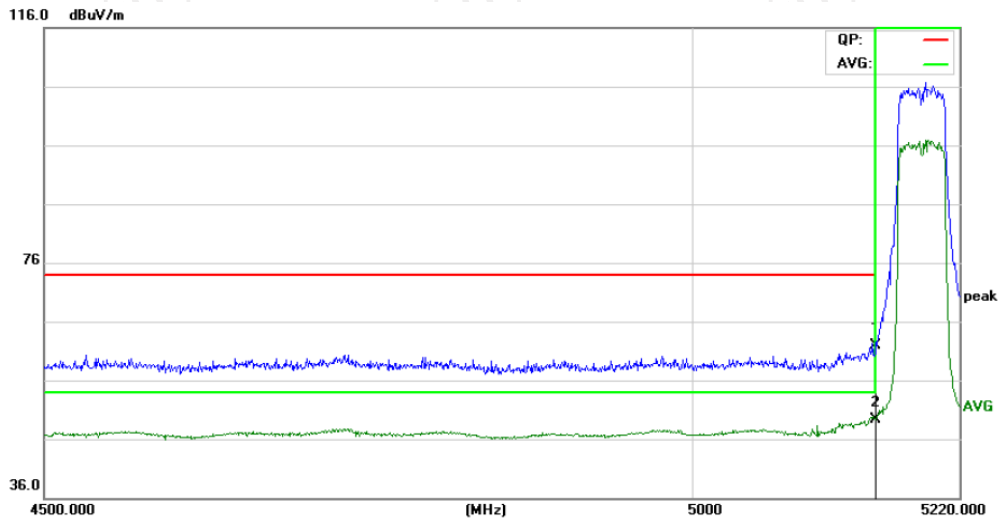
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1		5150.000	65.32	-5.02	60.30	74.00	-13.70	peak
2	*	5150.000	52.73	-5.02	47.71	54.00	-6.29	AVG



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

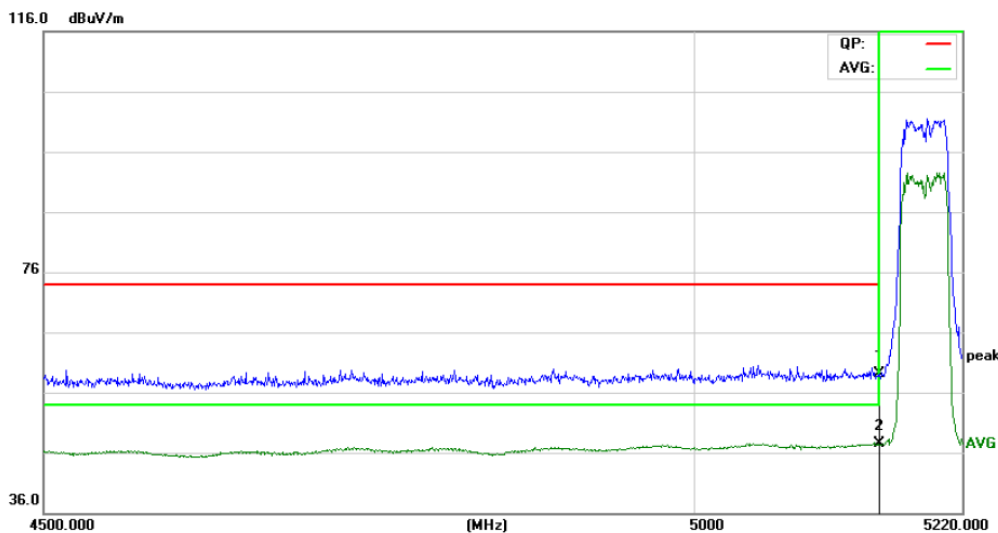
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1		5150.000	63.99	-5.02	58.97	74.00	-15.03	peak
2	*	5150.000	52.91	-5.02	47.89	54.00	-6.11	AVG

AC40-5190



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

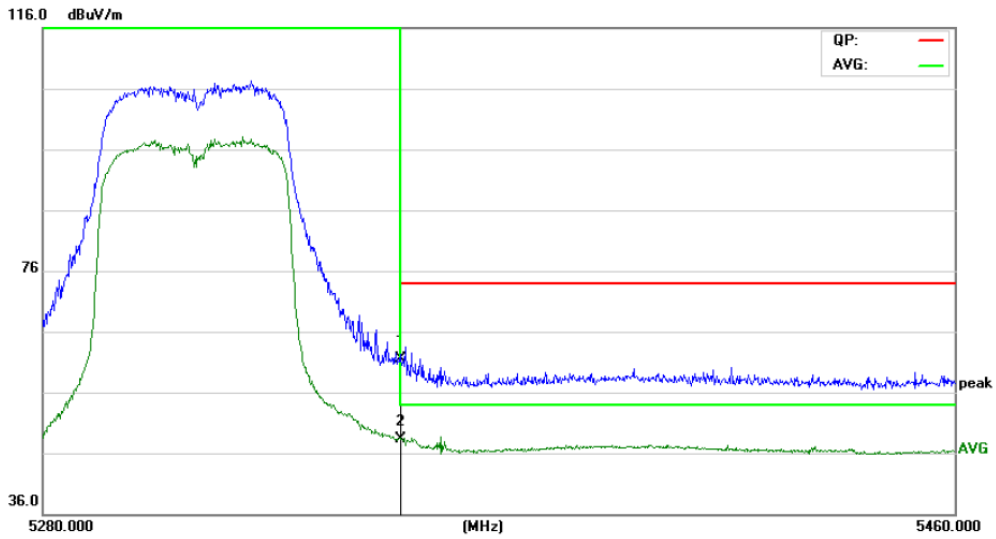
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1		5150.000	67.00	-5.02	61.98	74.00	-12.02	peak
2	*	5150.000	54.30	-5.02	49.28	54.00	-4.72	AVG



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

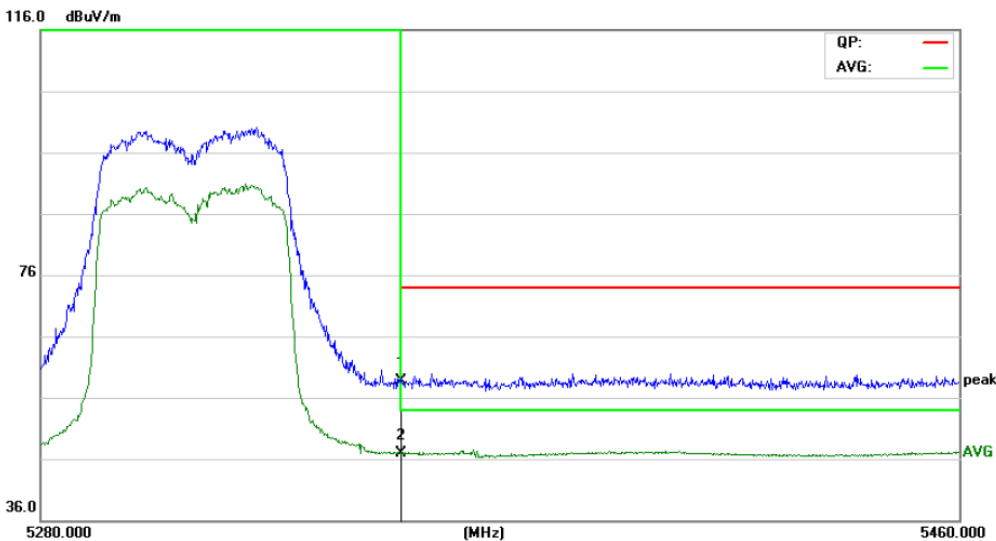
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1		5150.000	64.21	-5.02	59.19	74.00	-14.81	peak
2	*	5150.000	52.54	-5.02	47.52	54.00	-6.48	AVG

AC40-5310



Site: Polarization: *Horizontal* Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

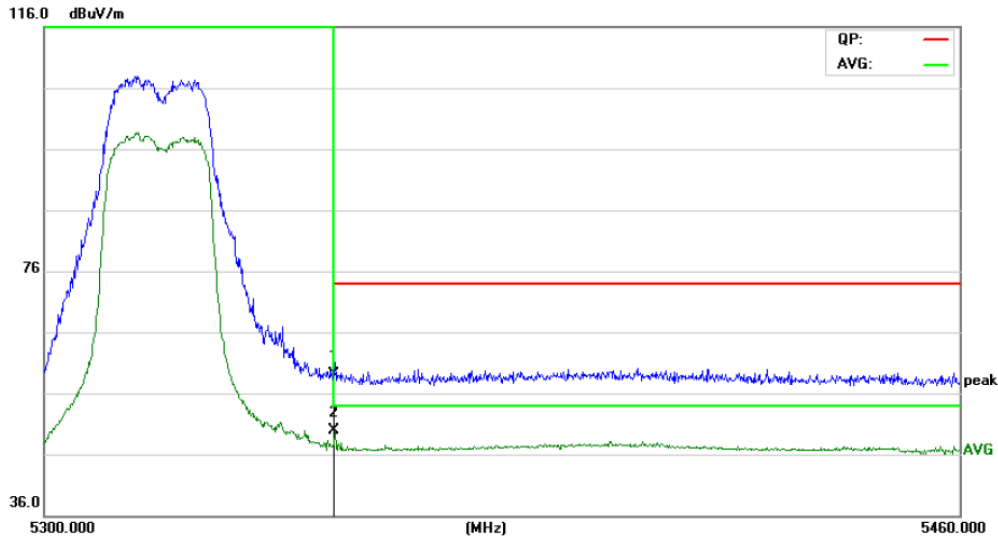
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5350.000	65.77	-4.27	61.50	74.00	-12.50	peak
2	*	5350.000	52.54	-4.27	48.27	54.00	-5.73	AVG



Site: Polarization: *Vertical* Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

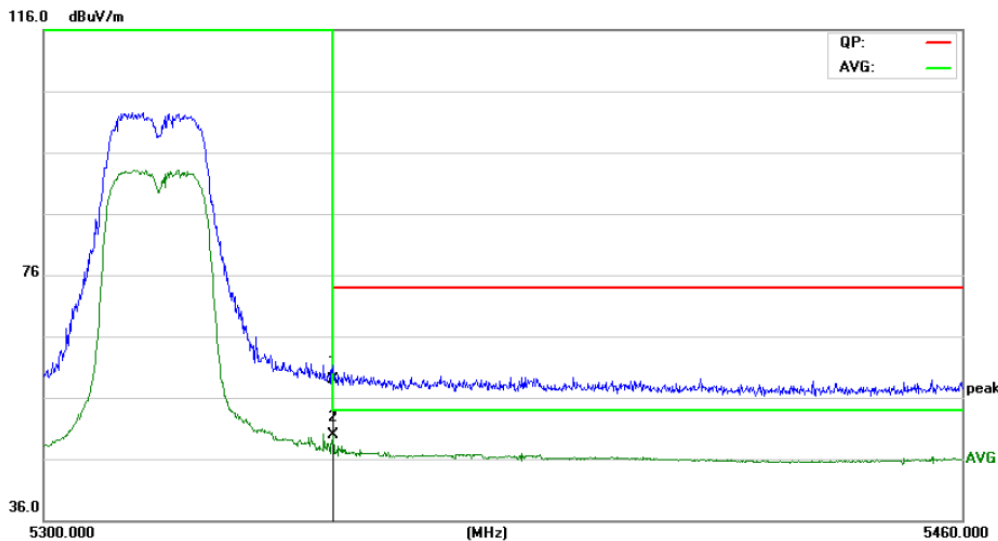
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5350.000	62.93	-4.27	58.66	74.00	-15.34	peak
2	*	5350.000	51.27	-4.27	47.00	54.00	-7.00	AVG

AC-5320



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

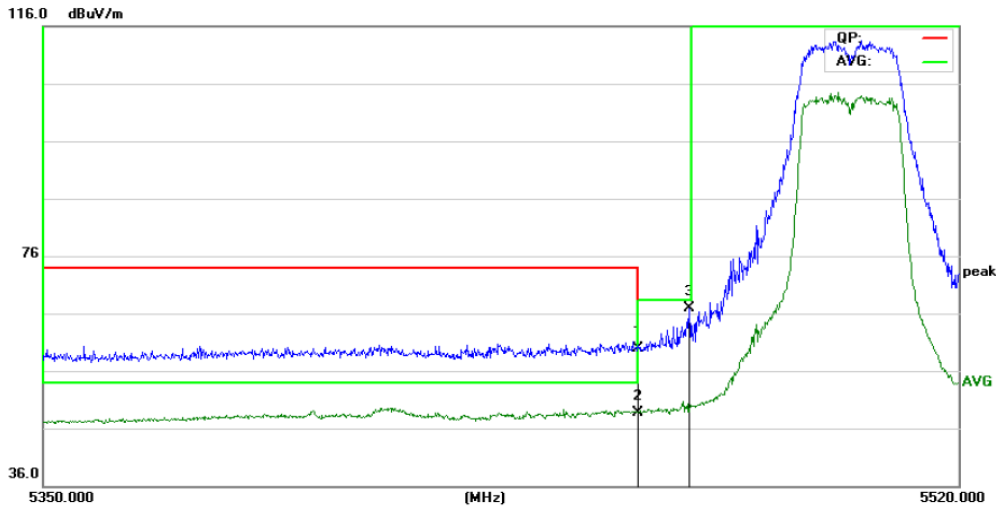
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5350.000	63.77	-4.66	59.11	74.00	-14.89	peak
2	*	5350.000	54.54	-4.66	49.88	54.00	-4.12	AVG



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

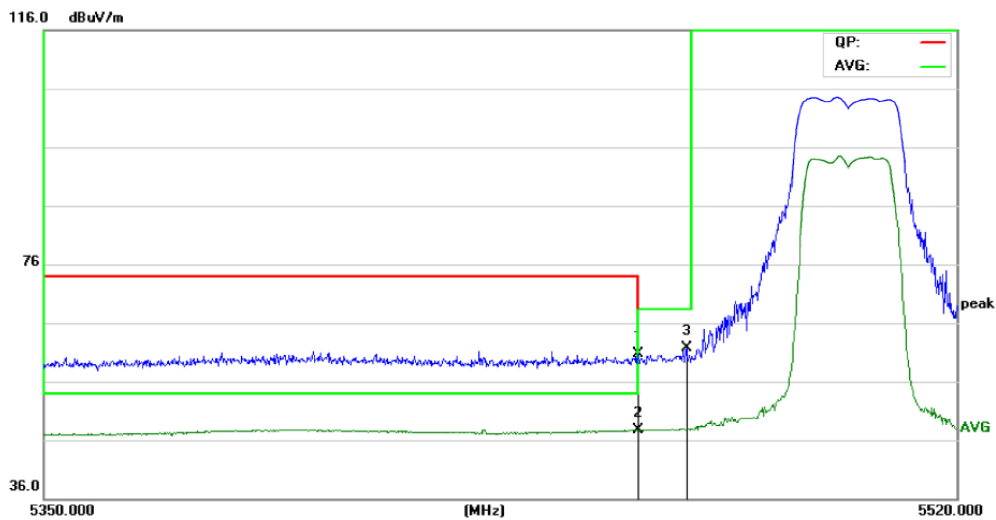
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5350.000	63.52	-4.66	58.86	74.00	-15.14	peak
2	*	5350.000	54.62	-4.66	49.96	54.00	-4.04	AVG

AC-5500



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

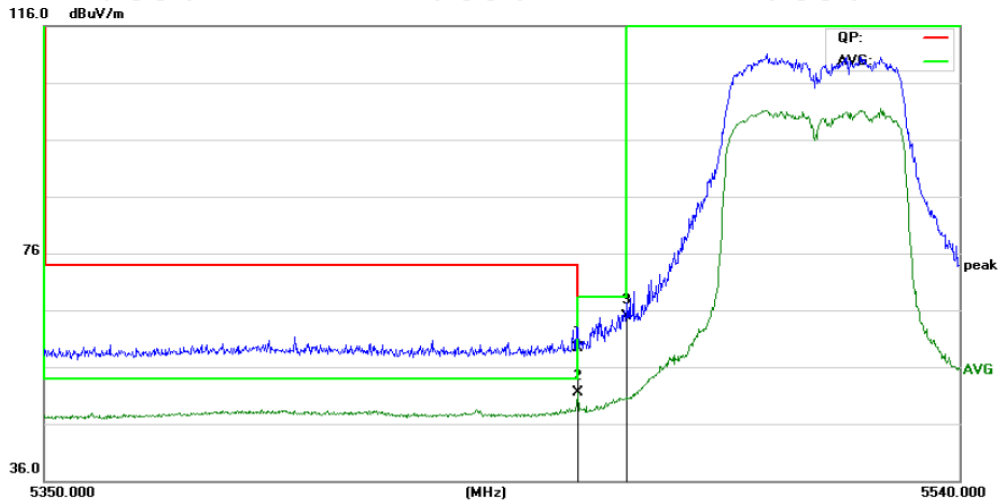
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5460.000	63.85	-3.93	59.92	68.20	-8.28	peak
2		5460.000	52.60	-3.93	48.67	54.00	-5.33	AVG
3	*	5469.467	70.78	-3.89	66.89	68.20	-1.31	peak



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

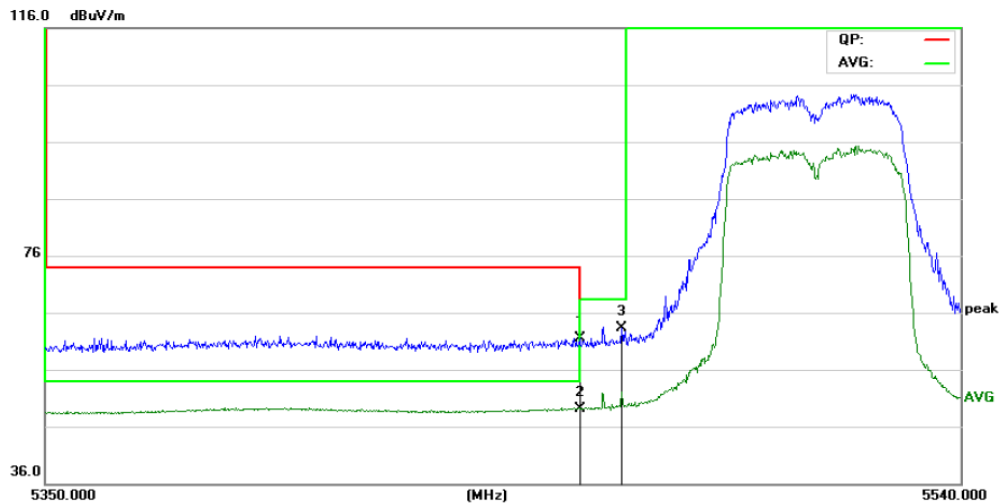
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5460.000	64.71	-3.93	60.78	68.20	-7.42	peak
2	*	5460.000	51.57	-3.93	47.64	54.00	-6.36	AVG
3		5469.125	65.56	-3.90	61.66	68.20	-6.54	peak

AC40-5510



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

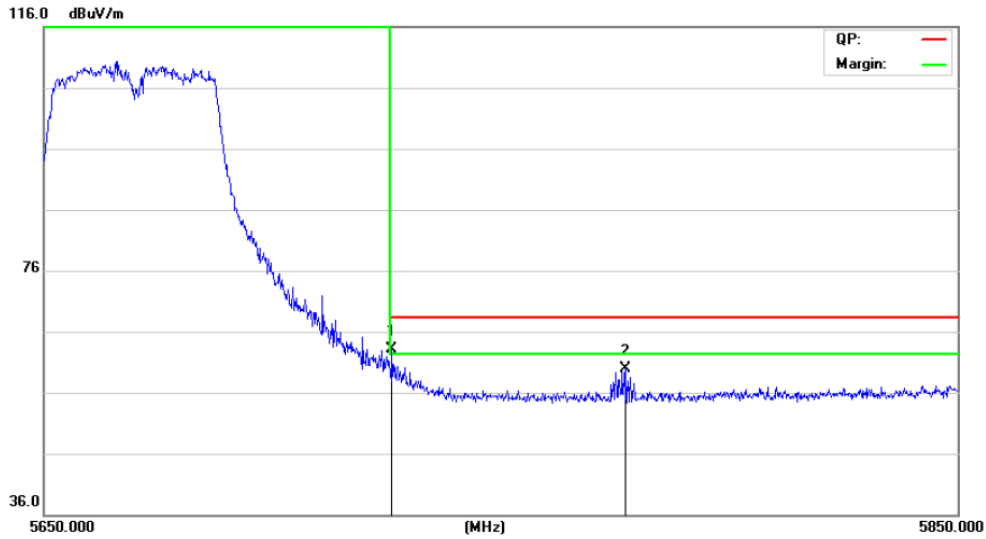
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1		5460.000	63.22	-3.93	59.29	68.20	-8.91	peak
2	*	5460.000	55.47	-3.93	51.54	54.00	-2.46	AVG
3		5470.000	68.79	-3.89	64.90	68.20	-3.30	peak



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

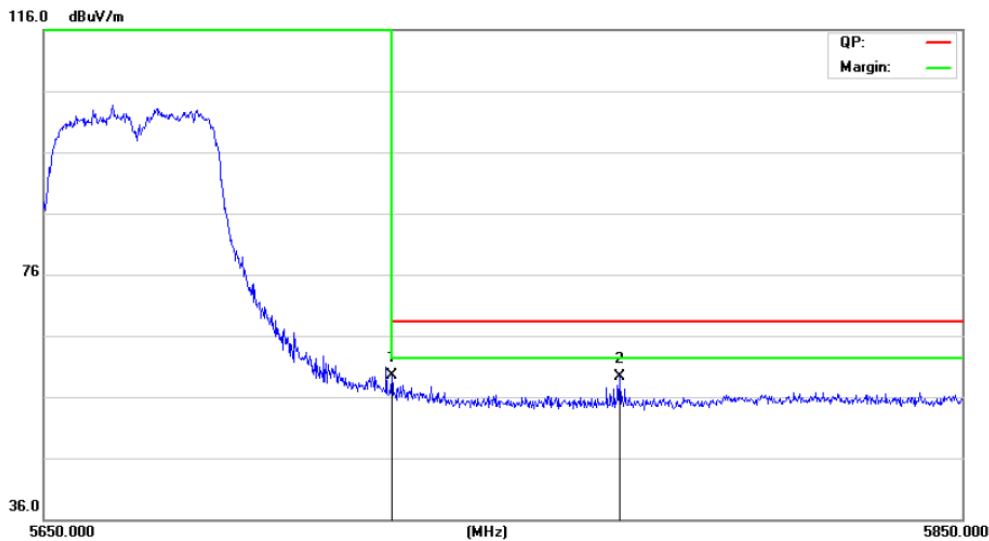
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1		5460.000	65.36	-3.93	61.43	68.20	-6.77	peak
2		5460.000	52.96	-3.93	49.03	54.00	-4.97	AVG
3	*	5468.926	67.14	-3.90	63.24	68.20	-4.96	peak

AC40-5670



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

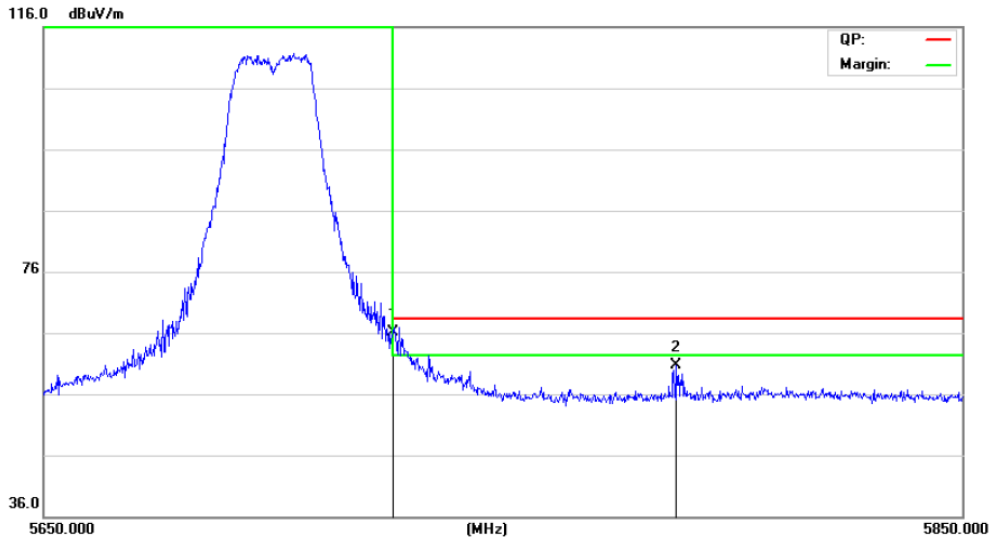
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	5725.381	67.02	-3.90	63.12	68.20	-5.08	peak
2		5776.594	63.66	-3.80	59.86	68.20	-8.34	peak



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

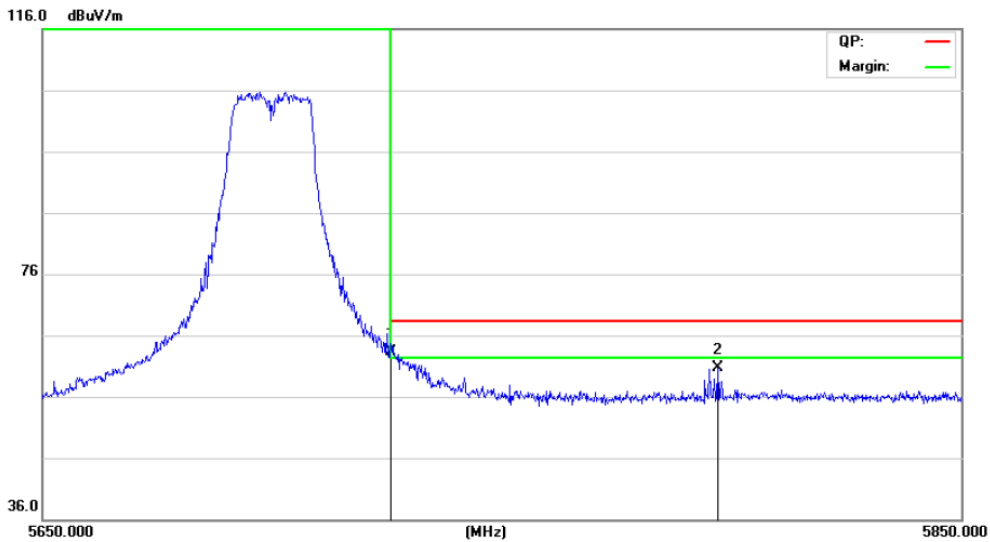
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5724.982	63.32	-3.91	59.41	134.0	-74.59	peak
2	*	5774.585	63.08	-3.81	59.27	68.20	-8.93	peak

AC40-5700



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

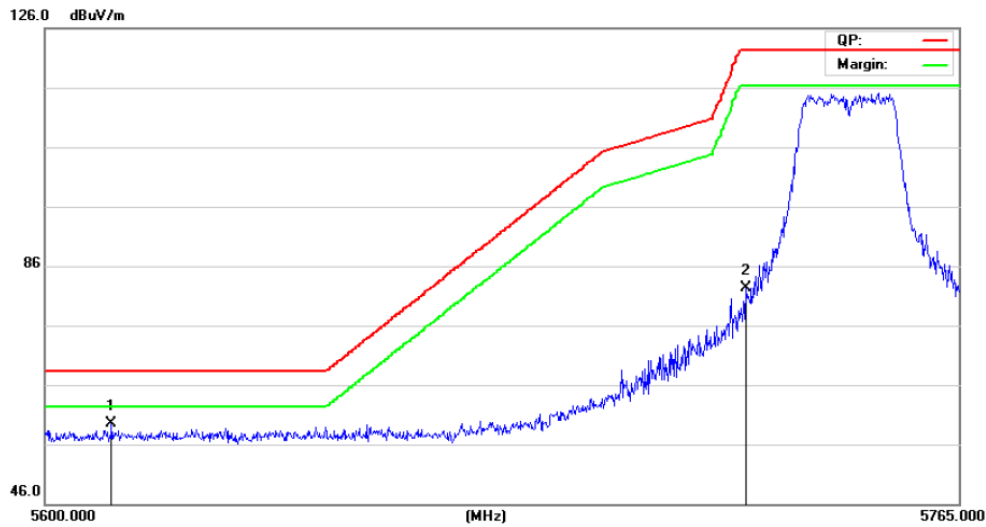
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	*	5725.000	70.04	-3.91	66.13	68.20	-2.07	peak
2		5787.053	64.53	-3.78	60.75	68.20	-7.45	peak



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious (PK) Power: DC 3.3V Humidity: 55 %

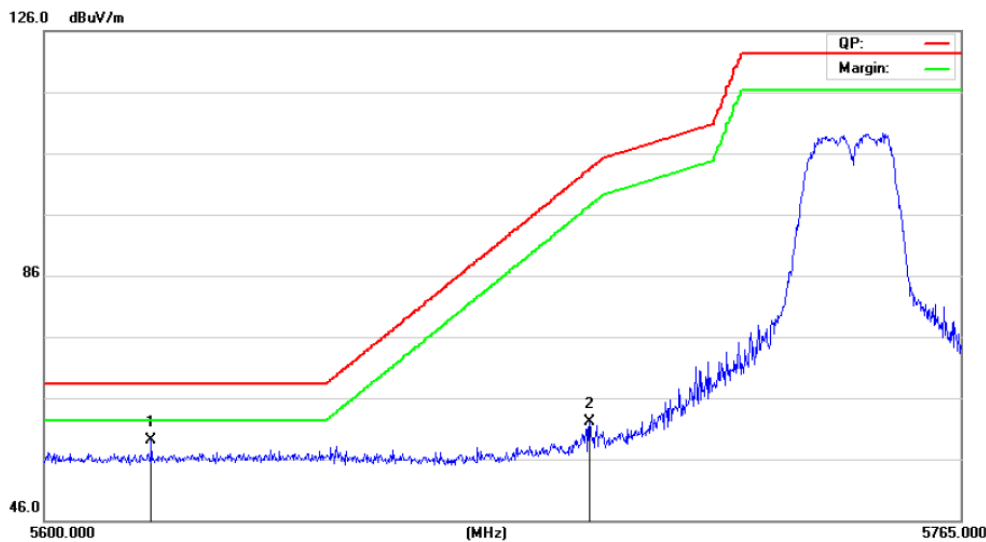
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	*	5725.000	67.15	-3.91	63.24	68.20	-4.96	peak
2		5796.321	64.49	-3.75	60.74	68.20	-7.46	peak

AC-5745



Site: Polarization: *Horizontal* Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious B3 (PK) Power: DC 3.3V Humidity: 55 %

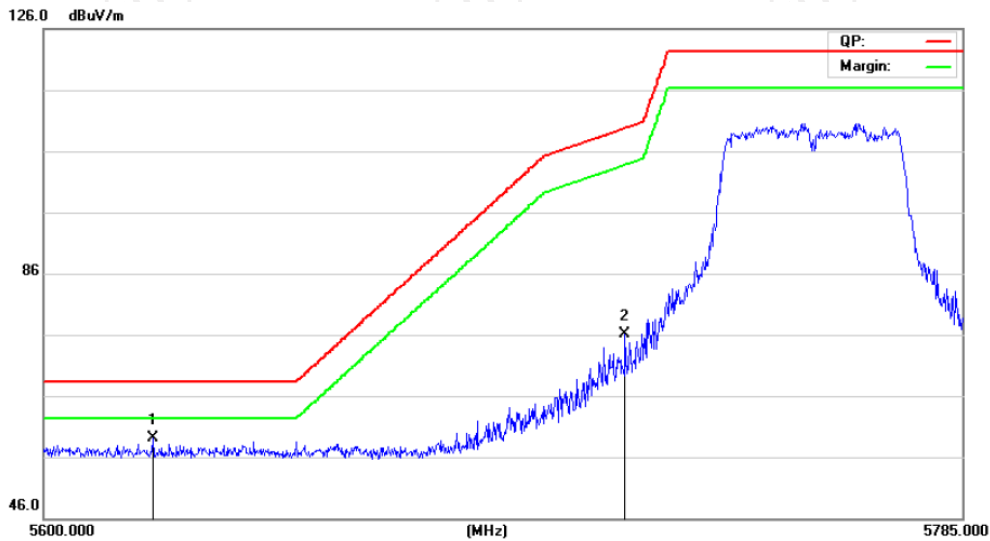
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	5611.884	63.28	-3.69	59.59	68.20	-8.61	peak
2		5726.126	85.84	-3.57	82.27	122.2	-39.93	peak



Site: Polarization: *Vertical* Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious B3 (PK) Power: DC 3.3V Humidity: 55 %

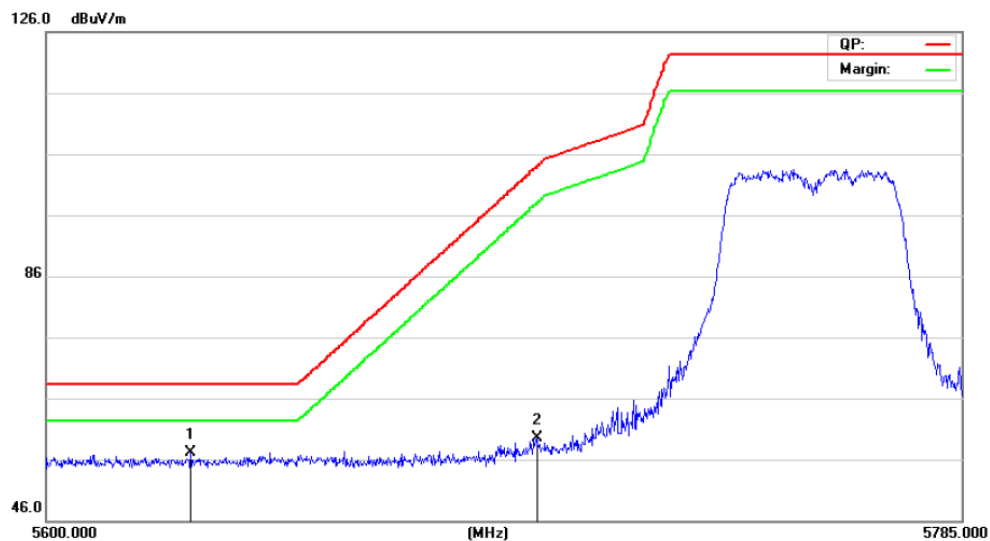
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	5619.058	62.75	-3.69	59.06	68.20	-9.14	peak
2		5697.597	65.70	-3.61	62.09	103.4	-41.33	peak

AC40-5755



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious B3 (PK) Power: DC 3.3V Humidity: 55 %

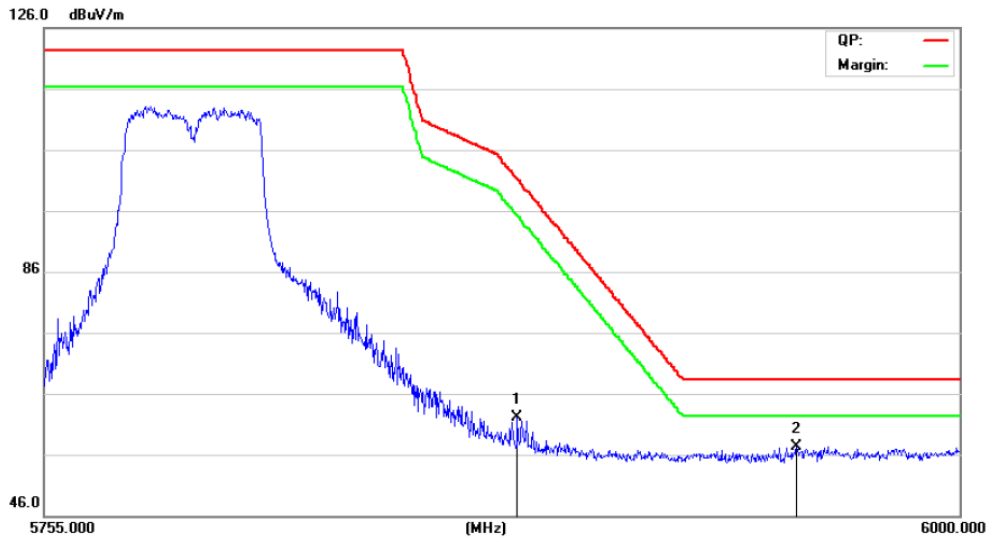
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	5621.701	63.23	-4.14	59.09	68.20	-9.11	peak
2		5716.406	79.95	-3.92	76.03	109.7	-33.76	peak



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious B3 (PK) Power: DC 3.3V Humidity: 55 %

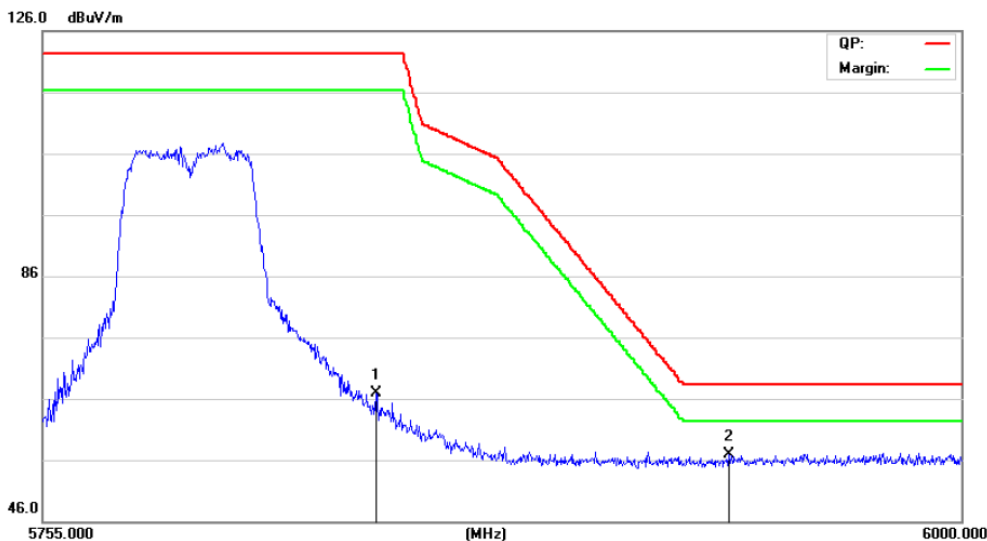
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	5628.832	61.25	-4.12	57.13	68.20	-11.07	peak
2		5698.412	63.50	-3.97	59.53	104.0	-44.49	peak

AC40-5795



Site: Polarization: *Horizontal* Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious B3 (PK) Power: DC 3.3V Humidity: 55 %

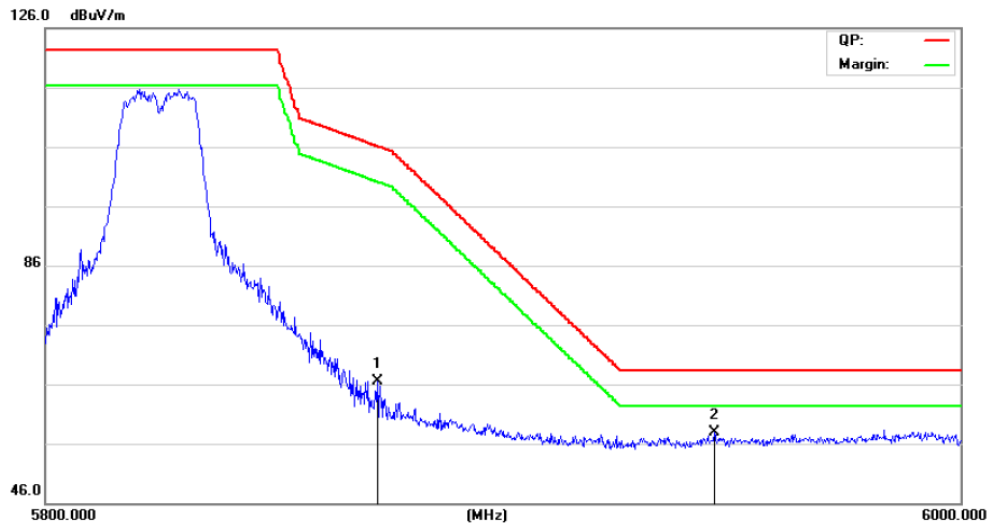
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5880.390	65.50	-3.42	62.08	101.2	-39.13	peak
2	*	5955.639	60.74	-3.35	57.39	68.20	-10.81	peak



Site: Polarization: *Vertical* Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious B3 (PK) Power: DC 3.3V Humidity: 55 %

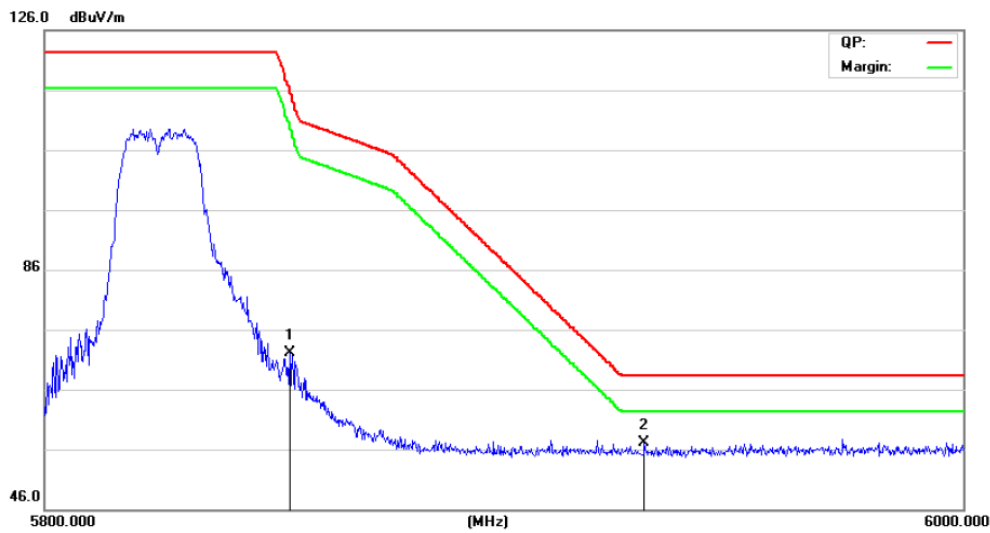
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5842.756	70.33	-3.46	66.87	122.2	-55.33	peak
2	*	5937.047	60.19	-3.37	56.82	68.20	-11.38	peak

N-5825



Site: Polarization: **Horizontal** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious B3 (PK) Power: DC 3.3V Humidity: 55 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5871.817	70.12	-3.58	66.54	106.0	-39.55	peak
2	*	5945.532	61.26	-3.43	57.83	68.20	-10.37	peak



Site: Polarization: **Vertical** Temperature: 25 (C)
 Limit: FCC part 15.407 Spurious B3 (PK) Power: DC 3.3V Humidity: 55 %

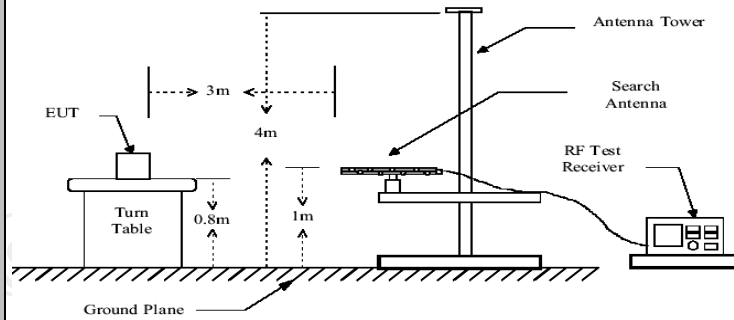
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5852.738	75.83	-3.64	72.19	115.9	-43.77	peak
2	*	5929.831	60.62	-3.47	57.15	68.20	-11.05	peak

Note: All modulation (802.11a, 802.11n, 802.11ac) have been tested, only the worst case in 802.11ac be reported.

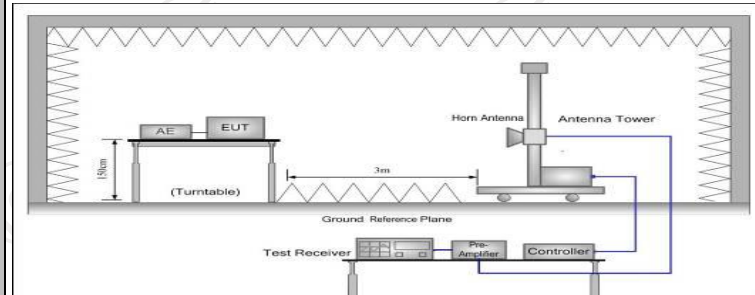
6.8. Unwanted Emissions

6.8.1. Test Specification

Test Requirement:	FCC CFR47 Part 15 Section 15.407 & 15.209 & 15.205				
Test Method:	KDB 789033 D02 v02r01				
Frequency Range:	9kHz to 40GHz				
Measurement Distance:	3 m				
Antenna Polarization:	Horizontal & Vertical				
Operation mode:	Transmitting mode with modulation				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Peak		1MHz	10Hz	Average Value	
Limit:	Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table, In restricted bands:				
	Frequency	Detector	Limit@3m		
	Above 1G	Peak	74dB μ V/m		
		AVG	54dB μ V/m		
	Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)		
	0.009-0.490	2400/F(KHz)	300		
	0.490-1.705	24000/F(KHz)	30		
	1.705-30	30	30		
	30-88	100	3		
	88-216	150	3		
216-960	200	3			
Above 960	500	3			
In un-restricted bands: 68.2dB μ V/m					
Test setup:	For radiated emissions below 30MHz				
	<p>Distance = 3m</p> <p>EUT</p> <p>Turn table</p> <p>Ground Plane</p> <p>Computer</p> <p>Pre-Amplifier</p> <p>Receiver</p>				
30MHz to 1GHz					



Above 1GHz



Test Procedure:

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotating table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

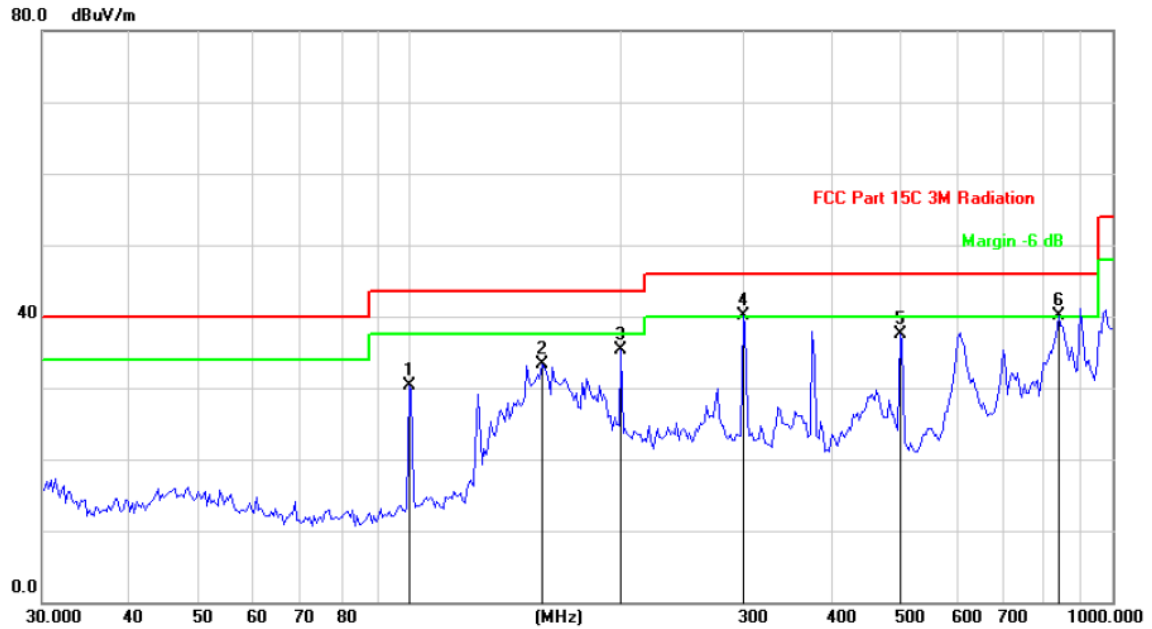
Test results:

PASS

6.8.2. Test Data

Please refer to following diagram for individual
Below 1GHz

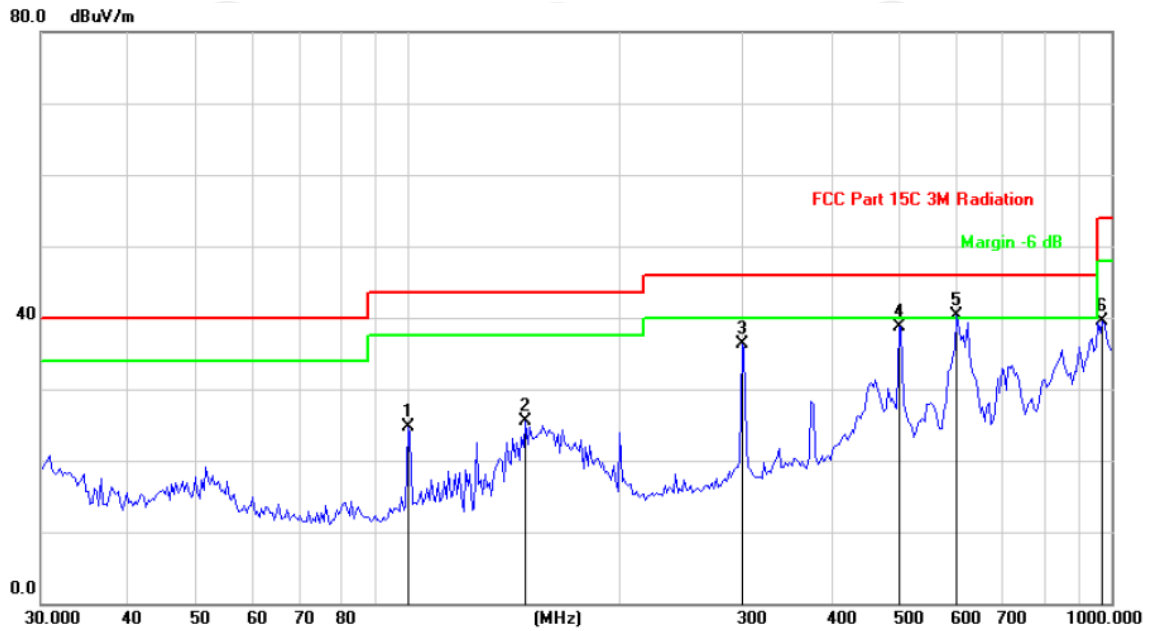
Horizontal:



Site: Limit: FCC Part 15C 3M Radiation Polarization: *Horizontal* Temperature: 25
Power: DC 3.3V Humidity: 55 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		99.7676	43.77	-13.47	30.30	43.50	-13.20	QP
2		154.2428	48.74	-15.47	33.27	43.50	-10.23	QP
3		200.0432	48.67	-13.40	35.27	43.50	-8.23	QP
4	*	298.5932	50.35	-10.23	40.12	46.00	-5.88	QP
5		498.7303	45.01	-7.56	37.45	46.00	-8.55	QP
6	!	838.8870	43.21	-3.16	40.05	46.00	-5.95	QP

Vertical:



Site: Polarization: **Vertical** Temperature: 25
 Limit: FCC Part 15C 3M Radiation Power: DC 3.3V Humidity: 55 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		99.7676	38.25	-13.47	24.78	43.50	-18.72	QP
2		146.8392	41.22	-15.71	25.51	43.50	-17.99	QP
3		298.5932	46.53	-10.23	36.30	46.00	-9.70	QP
4		498.7303	46.27	-7.56	38.71	46.00	-7.29	QP
5	*	602.9287	45.60	-5.32	40.28	46.00	-5.72	QP
6		972.2827	40.35	-0.92	39.43	54.00	-14.57	QP

- Note:**
- The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported
 - Measurements were conducted in all three channels (high, middle, low) and all modulation (802.11a, 802.11n(HT20), 802.11n(HT40), 802.11ac(VHT20), 802.11ac(VHT40), and the worst case Mode (Lowest channel and 11a) was submitted only.
 - Measurement (dBμV) = Reading level + Correction Factor, correction Factor= Antenna Factor + Cable loss - Pre-amplifier.

Modulation Type: Band 1									
11a CH36: 5180MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
10360	H	40.11	---	8.02	48.13	---	68.2	---	-20.07
15540	H	40.54	---	9.87	50.41	---	74	54	-3.59
---	H	---	---	---	---	---	---	---	---
10360	V	39.22	---	8.02	47.24	---	68.2	---	-20.96
15540	V	40.66	---	9.87	50.53	---	74	54	-3.47
---	V	---	---	---	---	---	---	---	---
11a CH40: 5200MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
10400	H	41.62	---	7.97	49.59	---	68.2	---	-18.61
15600	H	40.14	---	9.83	49.97	---	74	54	-4.03
---	H	---	---	---	---	---	---	---	---
10400	V	41.86	---	7.97	49.83	---	68.2	---	-18.37
15600	V	39.90	---	9.83	49.73	---	74	54	-4.27
---	V	---	---	---	---	---	---	---	---
11a CH48: 5240MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
10480	H	40.51	---	7.97	48.48	---	68.2	---	-19.72
15720	H	40.38	---	9.83	50.21	---	74	54	-3.79
---	H	---	---	---	---	---	---	---	---
10480	V	41.26	---	7.97	49.23	---	68.2	---	-18.97
15720	V	38.49	---	9.83	48.32	---	74	54	-5.68
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH36: 5180MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
10360	H	43.35	---	8.02	51.37	---	68.2	---	-16.83
15540	H	40.02	---	9.87	49.89	---	74	54	-4.11
---	H	---	---	---	---	---	---	---	---
10360	V	43.10	---	8.02	51.12	---	68.2	---	-17.08
15540	V	40.47	---	9.87	50.34	---	74	54	-3.66
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH40: 5200MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
10400	H	42.46	---	7.97	50.43	---	68.2	---	-17.77
15600	H	39.95	---	9.83	49.78	---	74	54	-4.22
---	H	---	---	---	---	---	---	---	---
10400	V	42.67	---	7.97	50.64	---	68.2	---	-17.56
15600	V	40.41	---	9.83	50.24	---	74	54	-3.76
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH48: 5240MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	42.86	---	7.97	50.83	---	68.2	---	-17.37
15720	H	40.59	---	9.83	50.42	---	74	54	-3.58
---	H	---	---	---	---	---	---	---	---
10480	V	42.77	---	7.97	50.74	---	68.2	---	-17.46
15720	V	41.06	---	9.83	50.89	---	74	54	-3.11
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH38: 5190MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10380	H	42.89	---	7.75	50.64	---	68.2	---	-17.56
15570	H	39.73	---	9.87	49.60	---	74	54	-4.40
---	H	---	---	---	---	---	---	---	---
10380	V	42.37	---	7.75	50.12	---	68.2	---	-18.08
15570	V	40.61	---	9.87	50.48	---	74	54	-3.52
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH46: 5230MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10460	H	43.38	---	7.97	51.35	---	68.2	---	-16.85
15690	H	39.66	---	9.83	49.49	---	74	54	-4.51
---	H	---	---	---	---	---	---	---	---
10460	V	42.85	---	7.97	50.82	---	68.2	---	-17.38
15690	V	40.46	---	9.83	50.29	---	74	54	-3.71
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH36: 5180MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10360	H	42.27	---	8.02	50.29	---	68.2	---	-17.91
15540	H	39.80	---	9.87	49.67	---	74	54	-4.33
---	H	---	---	---	---	---	---	---	---
10360	V	40.59	---	8.02	48.61	---	68.2	---	-19.59
15540	V	40.74	---	9.87	50.61	---	74	54	-3.39
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH40: 5200MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10400	H	41.96	---	7.97	49.93	---	68.2	---	-18.27
15600	H	40.52	---	9.83	50.35	---	74	54	-3.65
---	H	---	---	---	---	---	---	---	---
10400	V	40.79	---	7.97	48.76	---	68.2	---	-19.44
15600	V	40.20	---	9.83	50.03	---	74	54	-3.97
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH48: 5240MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	38.72	---	7.97	46.69	---	68.2	---	-21.51
15720	H	39.88	---	9.83	49.71	---	74	54	-4.29
---	H	---	---	---	---	---	---	---	---
10480	V	41.08	---	7.97	49.05	---	68.2	---	-19.15
15720	V	40.49	---	9.83	50.32	---	74	54	-3.68
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH38: 5190MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10380	H	42.61	---	7.75	50.36	---	68.2	---	-17.84
15570	H	40.73	---	9.87	50.60	---	74	54	-3.40
---	H	---	---	---	---	---	---	---	---
10380	V	40.40	---	7.75	48.15	---	68.2	---	-20.05
15570	V	40.76	---	9.87	50.63	---	74	54	-3.37
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH46: 5230MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10460	H	40.96	---	7.97	48.93	---	68.2	---	-19.27
15690	H	40.24	---	9.83	50.07	---	74	54	-3.93
---	H	---	---	---	---	---	---	---	---
10460	V	41.90	---	7.97	49.87	---	68.2	---	-18.33
15690	V	39.88	---	9.83	49.71	---	74	54	-4.29
---	V	---	---	---	---	---	---	---	---

Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.
5. Data of measurement shown "----" in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

Modulation Type: Band 2A									
11a CH52: 5260MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10520	H	40.08	---	7.97	48.05	---	68.2	---	-20.15
15780	H	38.39	---	9.83	48.22	---	74	54	-5.78
---	H	---	---	---	---	---	---	---	---
10520	V	43.49	---	7.97	51.46	---	68.2	---	-16.74
15780	V	40.02	---	9.83	49.85	---	74	54	-4.15
---	V	---	---	---	---	---	---	---	---
11a CH60: 5300MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10600	H	40.79	---	7.98	48.77	---	74	54	-5.23
15900	H	40.53	---	9.85	50.38	---	74	54	-3.62
---	H	---	---	---	---	---	---	---	---
10600	V	41.35	---	7.98	49.33	---	74	54	-4.67
15900	V	39.78	---	9.85	49.63	---	74	54	-4.37
---	V	---	---	---	---	---	---	---	---
11a CH64: 5320MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10640	H	42.08	---	7.98	50.06	---	74	54	-3.94
15960	H	38.31	---	9.85	48.16	---	74	54	-5.84
---	H	---	---	---	---	---	---	---	---
10640	V	41.47	---	7.98	49.45	---	74	54	-4.55
15960	V	37.89	---	9.85	47.74	---	74	54	-6.26
---	V	---	---	---	---	---	---	---	---
11n(HT20) C52: 5260MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10520	H	42.65	---	7.97	50.62	---	68.2	---	-17.58
15780	H	40.14	---	9.83	49.97	---	74	54	-4.03
---	H	---	---	---	---	---	---	---	---
10520	V	39.96	---	7.97	47.93	---	68.2	---	-20.27
15780	V	37.53	---	9.83	47.36	---	74	54	-6.64
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH60: 5300MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10600	H	41.09	---	7.98	49.07	---	74	54	-4.93
15900	H	39.41	---	9.85	49.26	---	74	54	-4.74
---	H	---	---	---	---	---	---	---	---
10600	V	41.55	---	7.98	49.53	---	74	54	-4.47
15900	V	40.86	---	9.85	50.71	---	74	54	-3.29
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH64: 5320MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
10640	H	39.77	---	7.98	47.75	---	74	54	-6.25
15960	H	36.83	---	9.85	46.68	---	74	54	-7.32
---	H	---	---	---	---	---	---	---	---
10640	V	41.26	---	7.98	49.24	---	74	54	-4.76
15960	V	40.58	---	9.85	50.43	---	74	54	-3.57
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH54: 5270MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
10540	H	42.61	---	7.97	50.58	---	68.2	---	-17.62
15810	H	39.24	---	9.83	49.07	---	74	54	-4.93
---	H	---	---	---	---	---	---	---	---
10540	V	40.13	---	7.97	48.10	---	68.2	---	-20.10
15810	V	38.52	---	9.83	48.35	---	74	54	-5.65
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH62: 5310MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
10620	H	42.35	---	7.98	50.33	---	74	54	-3.67
15930	H	40.09	---	9.85	49.94	---	74	54	-4.06
---	H	---	---	---	---	---	---	---	---
10620	V	39.96	---	7.98	47.94	---	74	54	-6.06
15930	V	38.82	---	9.85	48.67	---	74	54	-5.33
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) C52: 5260MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
10520	H	41.07	---	7.97	49.04	---	68.2	---	-19.16
15780	H	40.52	---	9.83	50.35	---	74	54	-3.65
---	H	---	---	---	---	---	---	---	---
10520	V	41.58	---	7.97	49.55	---	68.2	---	-18.65
15780	V	38.49	---	9.83	48.32	---	74	54	-5.68
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH60: 5300MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
10600	H	40.73	---	7.98	48.71	---	74	54	-5.29
15900	H	38.18	---	9.85	48.03	---	74	54	-5.97
---	H	---	---	---	---	---	---	---	---
10600	V	39.57	---	7.98	47.55	---	74	54	-6.45
15900	V	37.90	---	9.85	47.75	---	74	54	-6.25
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH64: 5320MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10640	H	42.61	---	7.98	50.59	---	74	54	-3.41
15960	H	40.42	---	9.85	50.27	---	74	54	-3.73
---	H	---	---	---	---	---	---	---	---
10640	V	41.78	---	7.98	49.76	---	74	54	-4.24
15960	V	38.22	---	9.85	48.07	---	74	54	-5.93
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH54: 5270MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10540	H	41.97	---	7.97	49.94	---	68.2	---	-18.26
15810	H	39.32	---	9.83	49.15	---	74	54	-4.85
---	H	---	---	---	---	---	---	---	---
10540	V	41.31	---	7.97	49.28	---	68.2	---	-18.92
15810	V	39.66	---	9.83	49.49	---	74	54	-4.51
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH60: 5310MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10620	H	40.43	---	7.98	48.41	---	74	54	-5.59
15930	H	38.89	---	9.85	48.74	---	74	54	-5.26
---	H	---	---	---	---	---	---	---	---
10620	V	40.51	---	7.98	48.49	---	74	54	-5.51
15930	V	39.36	---	9.85	49.21	---	74	54	-4.79
---	V	---	---	---	---	---	---	---	---

Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

Modulation Type: Band 2C									
11a CH100: 5500MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11000	H	40.48	---	8.03	48.51	---	74	54	-5.49
16500	H	41.17	---	9.76	50.93	---	68.2	---	-17.27
---	H	---	---	---	---	---	---	---	---
11000	V	42.21	---	8.03	50.24	---	74	54	-3.76
16500	V	41.36	---	9.76	51.12	---	68.2	---	-17.08
---	V	---	---	---	---	---	---	---	---
11a CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11200	H	41.52	---	8.04	49.56	---	74	54	-4.44
16800	H	42.06	---	9.74	51.80	---	68.2	---	-16.40
---	H	---	---	---	---	---	---	---	---
11200	V	40.38	---	8.04	48.42	---	74	54	-5.58
16800	V	41.20	---	9.74	50.94	---	68.2	---	-17.26
---	V	---	---	---	---	---	---	---	---
11a CH140: 5700MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11400	H	40.36	---	8.05	48.41	---	74	54	-5.59
17100	H	42.11	---	9.72	51.83	---	68.2	---	-16.37
---	H	---	---	---	---	---	---	---	---
11400	V	40.76	---	8.05	48.81	---	74	54	-5.19
17100	V	42.04	---	9.72	51.76	---	68.2	---	-16.44
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH100: 5500MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11000	H	41.56	---	8.03	49.59	---	74	54	-4.41
16500	H	39.88	---	9.76	49.64	---	68.2	---	-18.56
---	H	---	---	---	---	---	---	---	---
11000	V	40.09	---	8.03	48.12	---	74	54	-5.88
16500	V	42.45	---	9.76	52.21	---	68.2	---	-15.99
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11200	H	40.98	---	8.04	49.02	---	74	54	-4.98
16800	H	42.53	---	9.74	52.27	---	68.2	---	-15.93
---	H	---	---	---	---	---	---	---	---
11200	V	40.53	---	8.04	48.57	---	74	54	-5.43
16800	V	41.16	---	9.74	50.90	---	68.2	---	-17.30
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH140: 5700MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11400	H	41.14	---	8.05	49.19	---	74	54	-4.81
17100	H	42.53	---	9.72	52.25	---	68.2	---	-15.95
---	H	---	---	---	---	---	---	---	---
11400	V	40.13	---	8.05	48.18	---	74	54	-5.82
17100	V	42.06	---	9.72	51.78	---	68.2	---	-16.42
---	V	---	---	---	---	---	---	---	---

11n(HT40)CH102: 5510MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11020	H	40.22	---	8.03	48.25	---	74	54	-5.75
16530	H	41.37	---	9.76	51.13	---	68.2	---	-17.07
---	H	---	---	---	---	---	---	---	---
11020	V	40.48	---	8.03	48.51	---	74	54	-5.49
16530	V	39.63	---	9.76	49.39	---	68.2	---	-18.81
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH118: 5590MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11180	H	41.29	---	8.04	49.33	---	74	54	-4.67
16770	H	40.38	---	9.74	50.12	---	68.2	---	-18.08
---	H	---	---	---	---	---	---	---	---
11180	V	39.26	---	8.04	47.30	---	74	54	-6.70
16770	V	42.45	---	9.74	52.19	---	68.2	---	-16.01
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH134: 5670MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11340	H	41.56	---	8.05	49.61	---	74	54	-4.39
17010	H	43.13	---	9.72	52.85	---	68.2	---	-15.35
---	H	---	---	---	---	---	---	---	---
11340	V	40.99	---	8.05	49.04	---	74	54	-4.96
17010	V	39.35	---	9.72	49.07	---	68.2	---	-19.13
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH100: 5500MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11000	H	39.63	---	8.03	47.66	---	74	54	-6.34
16500	H	41.12	---	9.76	50.88	---	68.2	---	-17.32
---	H	---	---	---	---	---	---	---	---
11000	V	39.92	---	8.03	47.95	---	74	54	-6.05
16500	V	41.41	---	9.76	51.17	---	68.2	---	-17.03
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11200	H	41.73	---	8.04	49.77	---	74	54	-4.23
16800	H	41.06	---	9.74	50.80	---	68.2	---	-17.40
---	H	---	---	---	---	---	---	---	---
11200	V	40.60	---	8.04	48.64	---	74	54	-5.36
16800	V	41.17	---	9.74	50.91	---	68.2	---	-17.29
---	V	---	---	---	---	---	---	---	---
11ac(VHT20) CH140: 5700MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11440	H	41.10	---	8.05	49.15	---	74	54	-4.85
17160	H	40.53	---	9.72	50.25	---	68.2	---	-17.95
---	H	---	---	---	---	---	---	---	---
11440	V	42.35	---	8.05	50.40	---	74	54	-3.60
17160	V	40.92	---	9.72	50.64	---	68.2	---	-17.56
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH102: 5510MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11020	H	39.94	---	8.03	47.97	---	74	54	-6.03
16530	H	40.73	---	9.76	50.49	---	68.2	---	-17.71
---	H	---	---	---	---	---	---	---	---
11020	V	42.41	---	8.03	50.44	---	74	54	-3.56
16530	V	40.28	---	9.76	50.04	---	68.2	---	-18.16
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH118:5590									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11180	H	40.14	---	8.04	48.18	---	74	54	-5.82
16770	H	38.55	---	9.74	48.29	---	68.2	---	-19.91
---	H	---	---	---	---	---	---	---	---
11180	V	40.07	---	8.04	48.11	---	74	54	-5.89
16770	V	38.99	---	9.74	48.73	---	68.2	---	-19.47
---	V	---	---	---	---	---	---	---	---

11ac(VHT40) CH134: 5670MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11340	H	39.10	---	8.05	47.15	---	74	54	-6.85
17010	H	37.45	---	9.72	47.17	---	68.2	---	-21.03
---	H	---	---	---	---	---	---	---	---
11340	V	39.40	---	8.05	47.45	---	74	54	-6.55
17010	V	41.31	---	9.72	51.03	---	68.2	---	-17.17
---	V	---	---	---	---	---	---	---	---

Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.
5. Data of measurement shown "----" in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

Modulation Type: Band 3

11a(HT20) CH149: 5745MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11490	H	39.58	---	8.09	47.67	---	74	54	-6.33
17235	H	39.32	---	9.67	48.99	---	68.2	---	-19.21
---	H	---	---	---	---	---	---	---	---
11490	V	41.90	---	8.09	49.99	---	74	54	-4.01
17235	V	42.64	---	9.67	52.31	---	68.2	---	-15.89
---	V	---	---	---	---	---	---	---	---

11a(HT20) CH157: 5785MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11570	H	41.26	---	8.10	49.36	---	74	54	-4.64
17355	H	41.05	---	9.65	50.70	---	68.2	---	-17.50
---	H	---	---	---	---	---	---	---	---
11570	V	40.09	---	8.10	48.19	---	74	54	-5.81
17355	V	41.27	---	9.65	50.92	---	68.2	---	-17.28
---	V	---	---	---	---	---	---	---	---

11a(HT20) CH161: 5825MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11650	H	39.82	---	8.12	47.94	---	74	54	-6.06
17475	H	38.63	---	9.62	48.25	---	68.2	---	-19.95
---	H	---	---	---	---	---	---	---	---
11650	V	40.65	---	8.12	48.77	---	74	54	-5.23
17475	V	40.31	---	9.62	49.93	---	68.2	---	-18.27
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH151: 5745MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11510	H	40.83	---	8.09	48.92	---	74	54	-5.08
17265	H	40.04	---	9.67	49.71	---	68.2	---	-18.49
---	H	---	---	---	---	---	---	---	---
11510	V	41.43	---	8.09	49.52	---	74	54	-4.48
17265	V	40.05	---	9.67	49.72	---	68.2	---	-18.48
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH157: 5785MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11570	H	40.57	---	8.10	48.67	---	74	54	-5.33
17355	H	42.11	---	9.65	51.76	---	68.2	---	-16.44
---	H	---	---	---	---	---	---	---	---
11570	V	40.65	---	8.10	48.75	---	74	54	-5.25
17355	V	40.42	---	9.65	50.07	---	68.2	---	-18.13
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH165: 5825MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11650	H	40.56	---	8.12	48.68	---	74	54	-5.32
17475	H	39.01	---	9.62	48.63	---	68.2	---	-19.57
---	H	---	---	---	---	---	---	---	---
11650	V	38.16	---	8.12	46.28	---	74	54	-7.72
17475	V	41.09	---	9.62	50.71	---	68.2	---	-17.49
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH151: 5755MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11510	H	42.30	---	8.09	50.39	---	74	54	-3.61
17265	H	42.77	---	9.67	52.44	---	68.2	---	-15.76
---	H	---	---	---	---	---	---	---	---
11510	V	42.60	---	8.09	50.69	---	74	54	-3.31
17265	V	40.87	---	9.67	50.54	---	68.2	---	-17.66
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH159: 5795MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dB μ V)	AV reading (dB μ V)	Correction Factor (dB/m)	Emission Level		Peak limit (dB μ V/m)	AV limit (dB μ V/m)	Margin (dB)
					Peak (dB μ V/m)	AV (dB μ V/m)			
11590	H	40.88	---	8.10	48.98	---	74	54	-5.02
17385	H	40.50	---	9.65	50.15	---	68.2	---	-18.05
---	H	---	---	---	---	---	---	---	---
11590	V	40.35	---	8.10	48.45	---	74	54	-5.55
17385	V	39.46	---	9.65	49.11	---	68.2	---	-19.09
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH149: 5745MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11490	H	41.94	---	8.09	50.03	---	74	54	-3.97
17235	H	42.76	---	9.67	52.43	---	68.2	---	-15.77
---	H	---	---	---	---	---	---	---	---
11490	V	41.58	---	8.09	49.67	---	74	54	-4.33
17235	V	43.26	---	9.67	52.93	---	68.2	---	-15.27
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH157: 5785MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11570	H	39.98	---	8.10	48.08	---	74	54	-5.92
17355	H	38.27	---	9.65	47.92	---	68.2	---	-20.28
---	H	---	---	---	---	---	---	---	---
11570	V	39.25	---	8.10	47.35	---	74	54	-6.65
17355	V	40.39	---	9.65	50.04	---	68.2	---	-18.16
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH165: 5825MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11650	H	41.40	---	8.12	49.52	---	74	54	-4.48
17475	H	40.11	---	9.62	49.73	---	68.2	---	-18.47
---	H	---	---	---	---	---	---	---	---
11650	V	40.53	---	8.12	48.65	---	74	54	-5.35
17475	V	42.48	---	9.62	52.10	---	68.2	---	-16.10
---	V	---	---	---	---	---	---	---	---

11ac(VHT40) CH151: 5755MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11510	H	41.09	---	8.09	49.18	---	74	54	-4.82
17265	H	39.74	---	9.67	49.41	---	68.2	---	-18.79
---	H	---	---	---	---	---	---	---	---
11510	V	42.39	---	8.09	50.48	---	74	54	-3.52
17265	V	39.04	---	9.67	48.71	---	68.2	---	-19.49
---	V	---	---	---	---	---	---	---	---

11ac(VHT40) CH159: 5795MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11590	H	41.52	---	8.10	49.62	---	74	54	-4.38
17385	H	39.13	---	9.65	48.78	---	68.2	---	-19.42
---	H	---	---	---	---	---	---	---	---
11590	V	42.21	---	8.10	50.31	---	74	54	-3.69
17385	V	41.40	---	9.65	51.05	---	68.2	---	-17.15
---	V	---	---	---	---	---	---	---	---

Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

6.9. Frequency Stability Measurement

6.9.1. Test Specification

Test Requirement:	FCC Part15 Section 15.407(g)
Test Method:	ANSI C63.10: 2013
Limit:	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 45 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.
Test Setup:	<pre> graph LR SA[Spectrum Analyzer] --- EUT[EUT] subgraph TC [Temperature Chamber] EUT end P[AC/DC Power supply] --- EUT </pre>
Test Procedure:	The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test Result:	PASS
Remark:	Pre-scan was performed at Antenna 0, Antenna 1 and Antenna 2, the worst case was found. Only the test data of Antenna 0 was shown in this report.

Test plots as follows:

Test mode:		802.11n(HT20)	Frequency(MHz):	5180
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5180.0092	9200	PASS
35		5180.0067	6700	PASS
25		5179.9873	-12700	PASS
15		5179.9985	-1500	PASS
5		5180.0038	3800	PASS
0		5180.0041	4100	PASS
20		3.0	5179.9836	-16400
	3.3	5180.0030	3000	PASS
	3.6	5179.9829	-17100	PASS

Test mode:		802.11n(HT20)	Frequency(MHz):	5200
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5200.0095	9500	PASS
35		5200.0083	8300	PASS
25		5200.0077	7700	PASS
15		5200.0046	4600	PASS
5		5199.9982	-1800	PASS
0		5199.9874	-12600	PASS
20		3.0	5199.9953	-4700
	3.3	5200.0039	3900	PASS
	3.6	5200.0055	5500	PASS

Test mode:		802.11n(HT20)	Frequency(MHz):	5240
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5240.0047	4700	PASS
35		5240.0025	2500	PASS
25		5240.0022	2200	PASS
15		5239.9991	-900	PASS
5		5239.9989	-1100	PASS
0		5239.9973	-2700	PASS
20		3.0	5240.0034	3400
	3.3	5240.0016	1600	PASS
	3.6	5239.9988	-1200	PASS

Test mode:		802.11n(HT20)	Frequency(MHz):	5745
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5745.0015	1500	PASS
35		5745.0010	1000	PASS
25		5744.9967	-3300	PASS
15		5744.9952	-4800	PASS
5		5745.0039	3900	PASS
0		5745.0045	4500	PASS
20	3.0	5745.0073	7300	PASS
	3.3	5745.0078	7800	PASS
	3.6	5745.0024	2400	PASS

Test mode:		802.11n(HT20)	Frequency(MHz):	5785
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5785.0081	8100	PASS
35		5785.0035	3500	PASS
25		5785.0026	2600	PASS
15		5785.0018	1800	PASS
5		5785.0022	2200	PASS
0		5785.0047	4700	PASS
20	3.0	5785.0059	5900	PASS
	3.3	5785.0023	2300	PASS
	3.6	5784.9971	-2900	PASS

Test mode:		802.11n(HT20)	Frequency(MHz):	5825
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5824.9815	-18500	PASS
35		5825.0084	8400	PASS
25		5824.9958	-4200	PASS
15		5824.9981	-1900	PASS
5		5825.0016	1600	PASS
0		5825.0047	4700	PASS
20	3.0	5825.0044	4400	PASS
	3.3	5824.9985	-1500	PASS
	3.6	5825.0023	2300	PASS

Test mode:		802.11n(HT40)	Frequency(MHz):	5190
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5190.0129	12900	PASS
35		5190.0114	11400	PASS
25		5190.0103	10300	PASS
15		5190.0037	3700	PASS
5		5190.0061	6100	PASS
0		5190.0070	7000	PASS
20	3.0	5189.9915	-8500	PASS
	3.3	5189.9972	-2800	PASS
	3.6	5190.0044	4400	PASS

Test mode:		802.11n(HT40)	Frequency(MHz):	5230
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5230.0123	12300	PASS
35		5230.0127	12700	PASS
25		5230.0091	9100	PASS
15		5229.9985	-1500	PASS
5		5229.9986	-1400	PASS
0		5230.0054	5400	PASS
20	3.0	5230.0043	4300	PASS
	3.3	5230.0028	2800	PASS
	3.6	5229.9977	-2300	PASS

Test mode:		802.11n(HT40)	Frequency(MHz):	5755
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5755.0275	27500	PASS
35		5755.0122	12200	PASS
25		5755.0118	11800	PASS
15		5755.0096	9600	PASS
5		5755.0035	3500	PASS
0		5755.0071	7100	PASS
20	3.0	5755.0040	4000	PASS
	3.3	5755.0033	3300	PASS
	3.6	5755.0069	6900	PASS

Test mode:		802.11n(HT40)	Frequency(MHz):	5795
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5794.9807	-19300	PASS
35		5794.9841	-15900	PASS
25		5795.0049	4900	PASS
15		5795.0032	3200	PASS
5		5795.0026	2600	PASS
0		5795.0064	6400	PASS
20	3.0	5795.0055	5500	PASS
	3.3	5794.9987	-1300	PASS
	3.6	5795.0081	8100	PASS

Appendix A: Test Result of Conducted Test

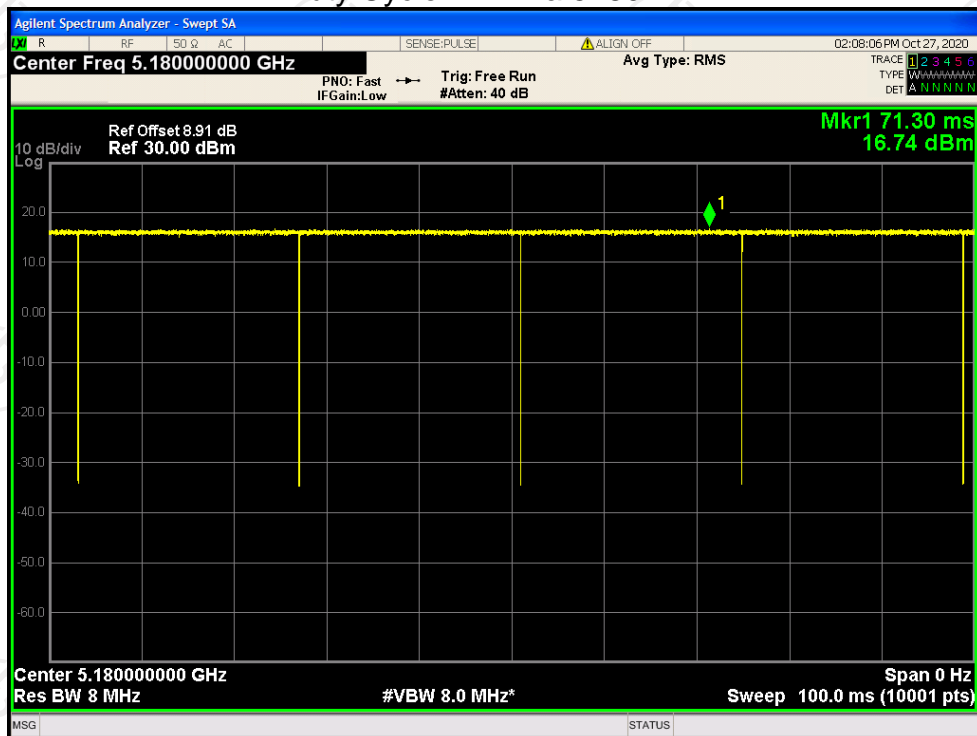
Antenna 0

Band 1:

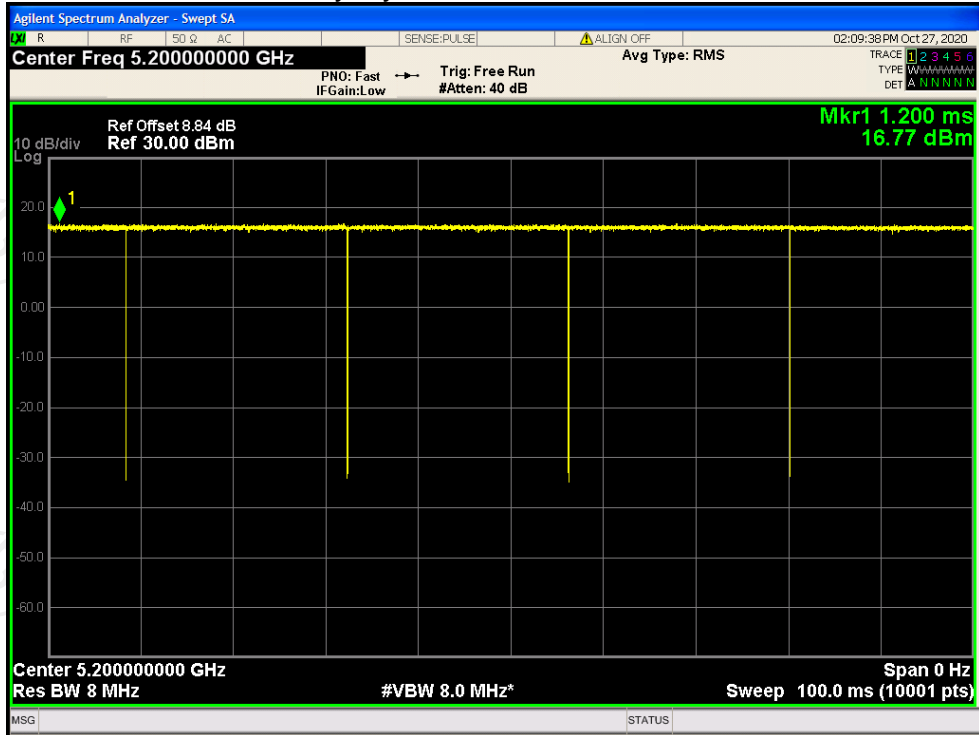
Duty Cycle

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)
a	5180	99.75	0
a	5200	99.84	0
a	5240	99.80	0
ac20	5180	100	0
ac20	5200	100	0
ac20	5240	100	0
ac40	5190	99.77	0
ac40	5230	99.80	0
n20	5180	99.80	0
n20	5200	100	0
n20	5240	100	0
n40	5190	99.82	0
n40	5230	99.82	0

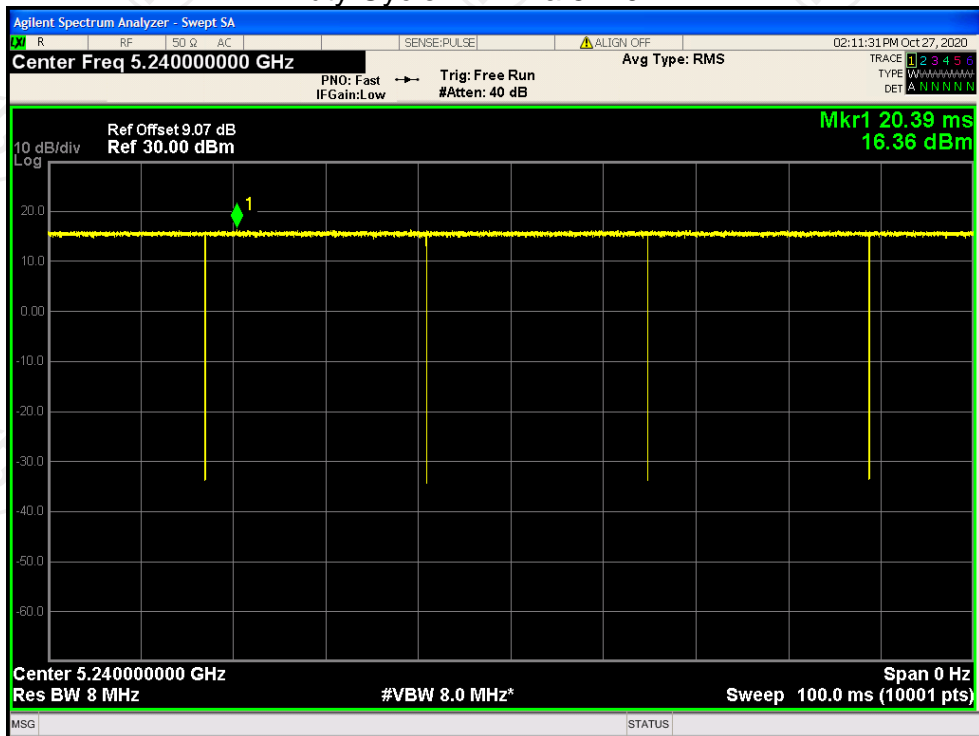
Duty Cycle NVNT a 5180MHz



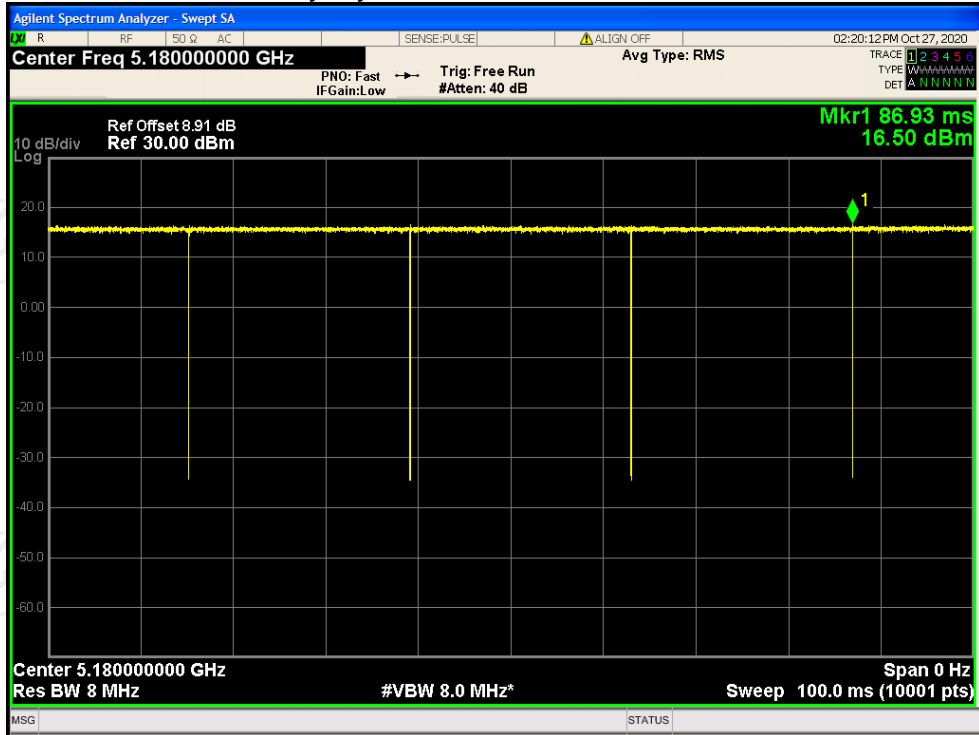
Duty Cycle NVNT a 5200MHz



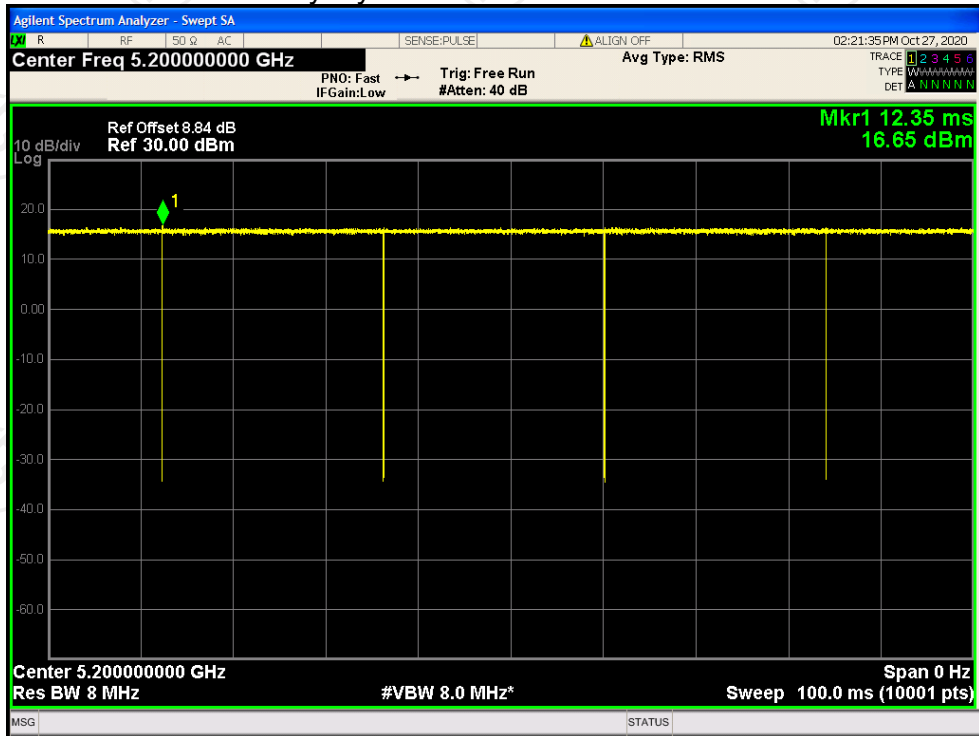
Duty Cycle NVNT a 5240MHz



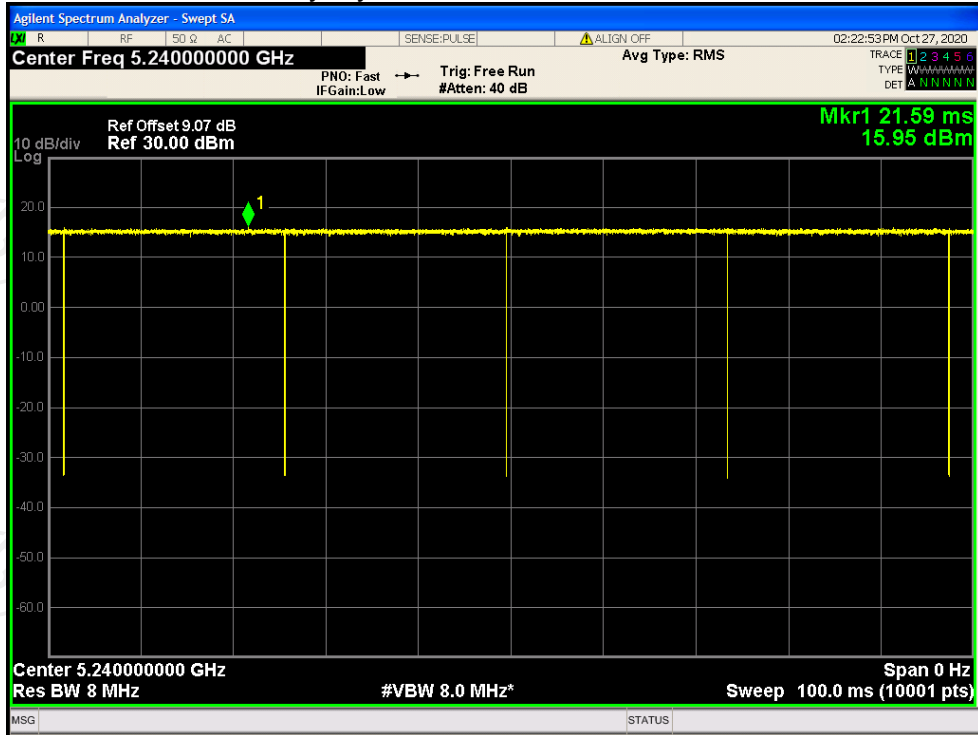
Duty Cycle NVNT ac20 5180MHz



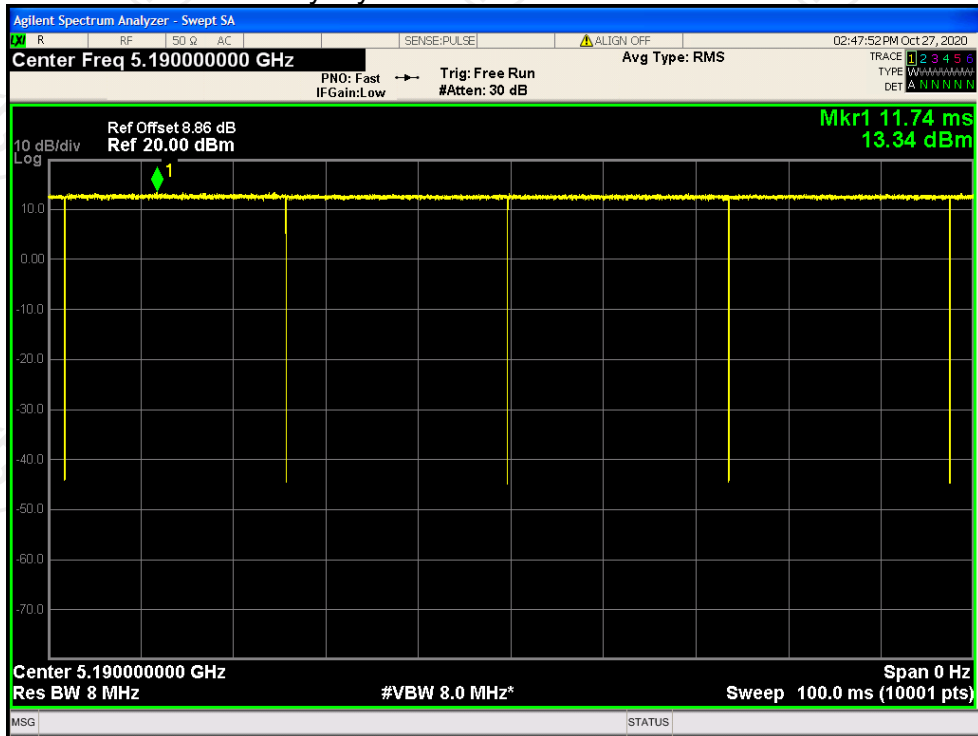
Duty Cycle NVNT ac20 5200MHz



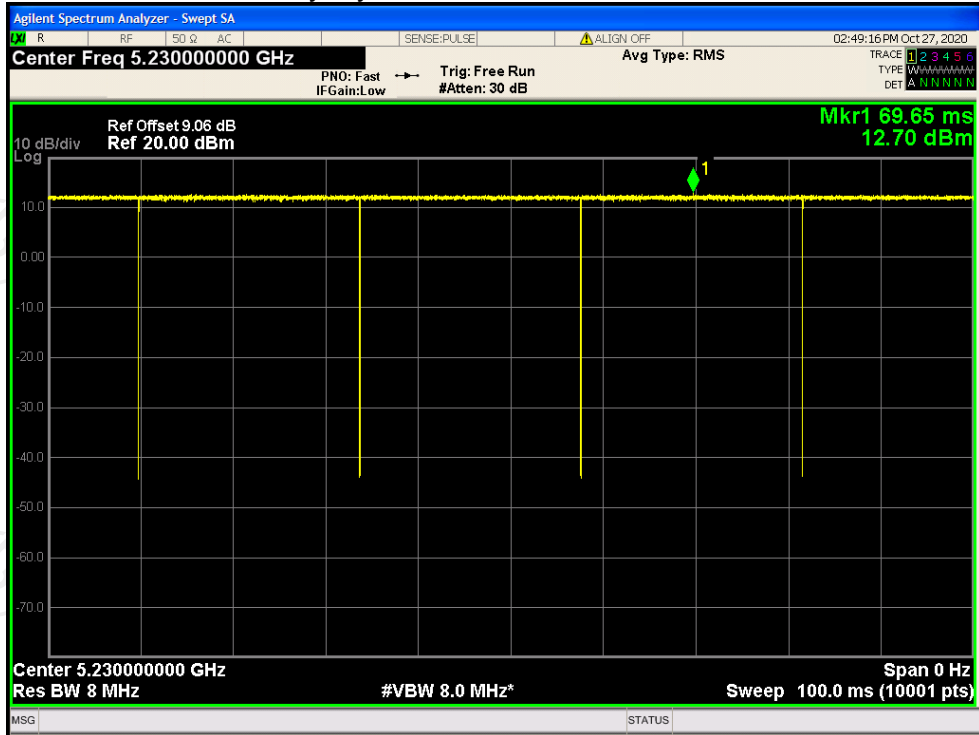
Duty Cycle NVNT ac20 5240MHz



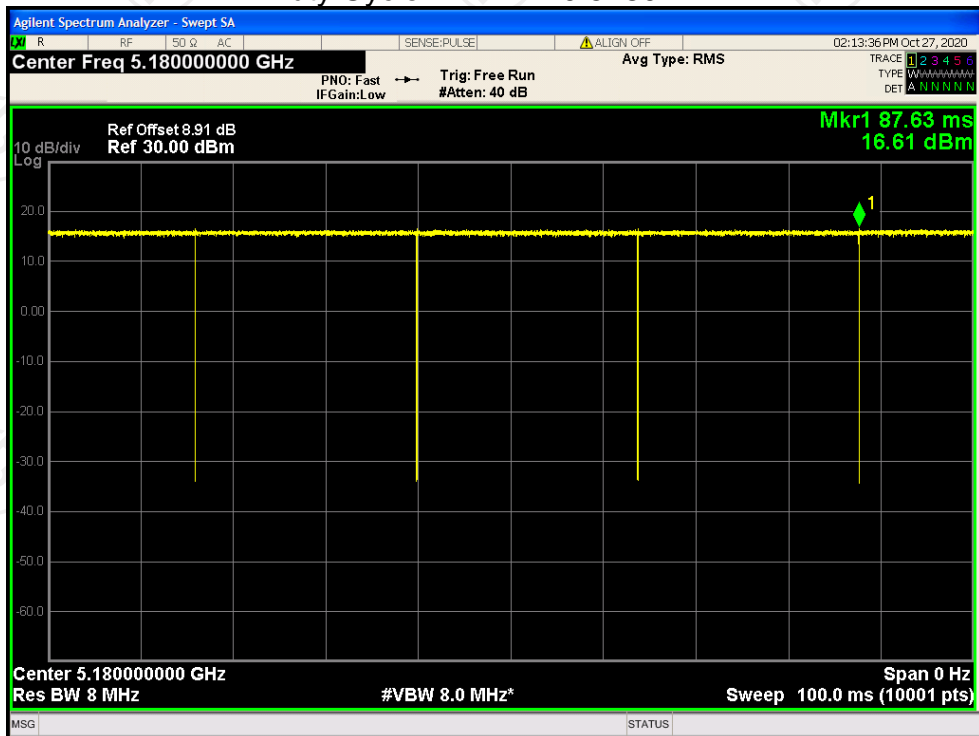
Duty Cycle NVNT ac40 5190MHz



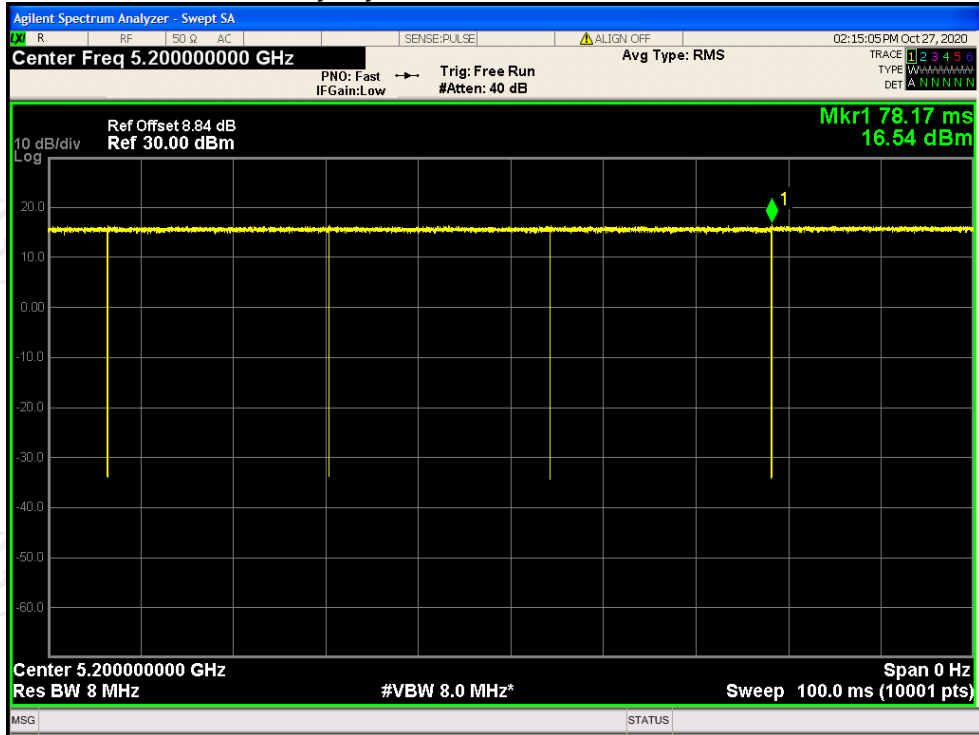
Duty Cycle NVNT ac40 5230MHz



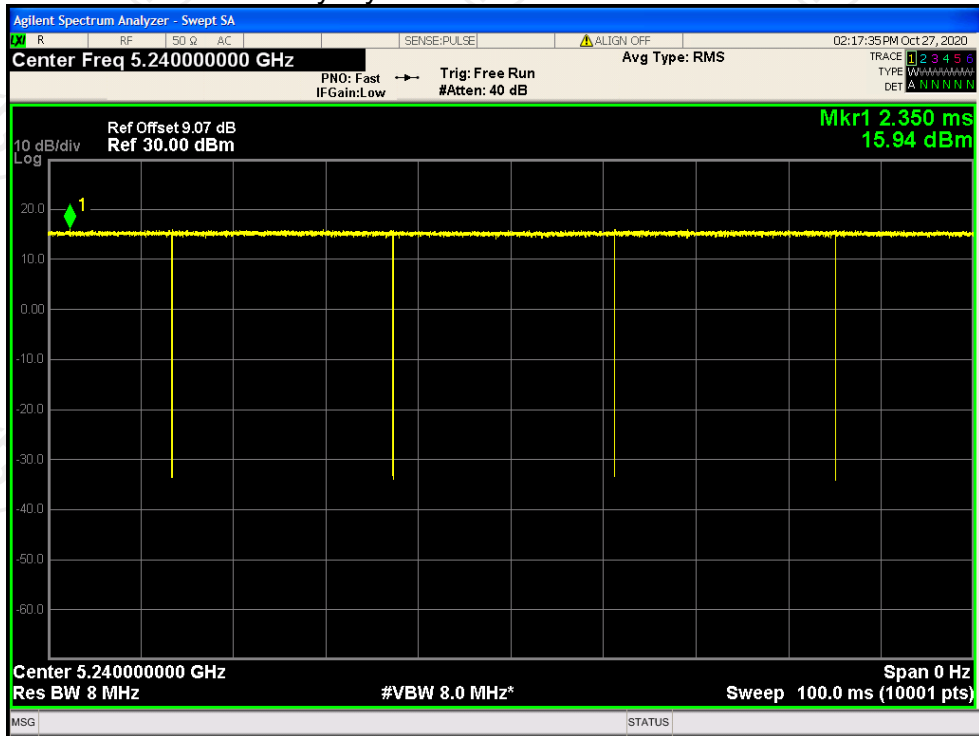
Duty Cycle NVNT n20 5180MHz



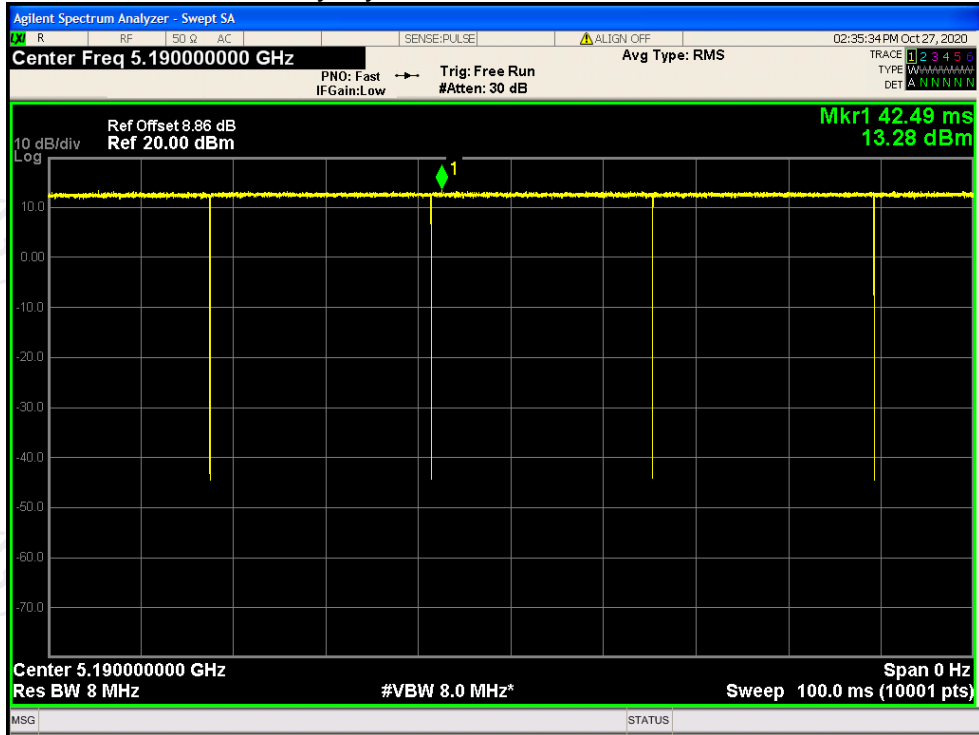
Duty Cycle NVNT n20 5200MHz



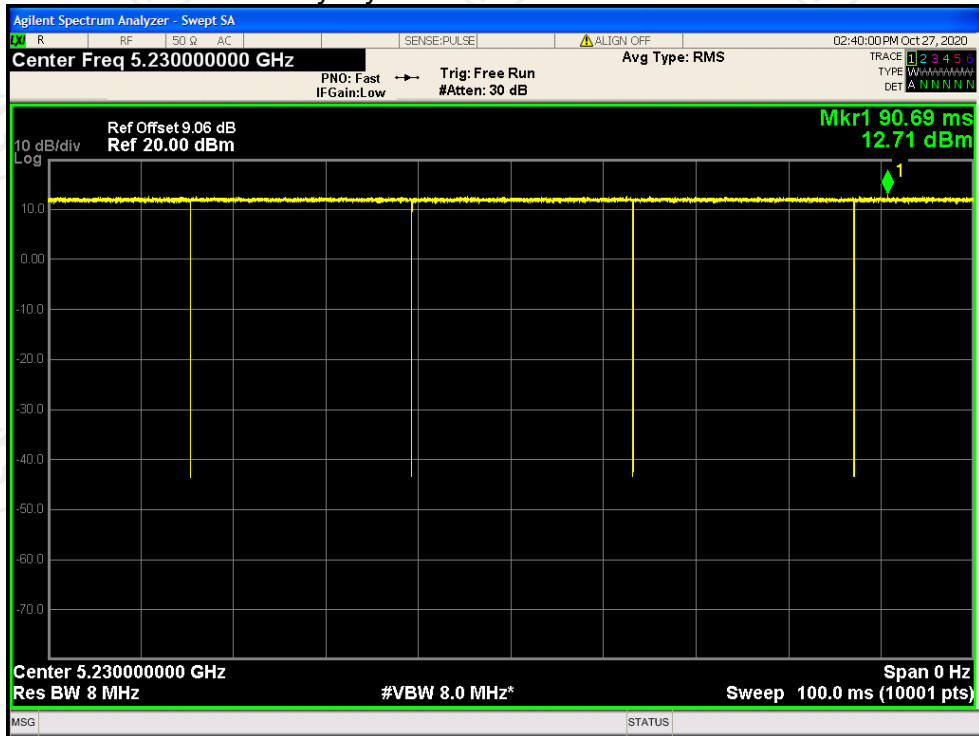
Duty Cycle NVNT n20 5240MHz



Duty Cycle NVNT n40 5190MHz



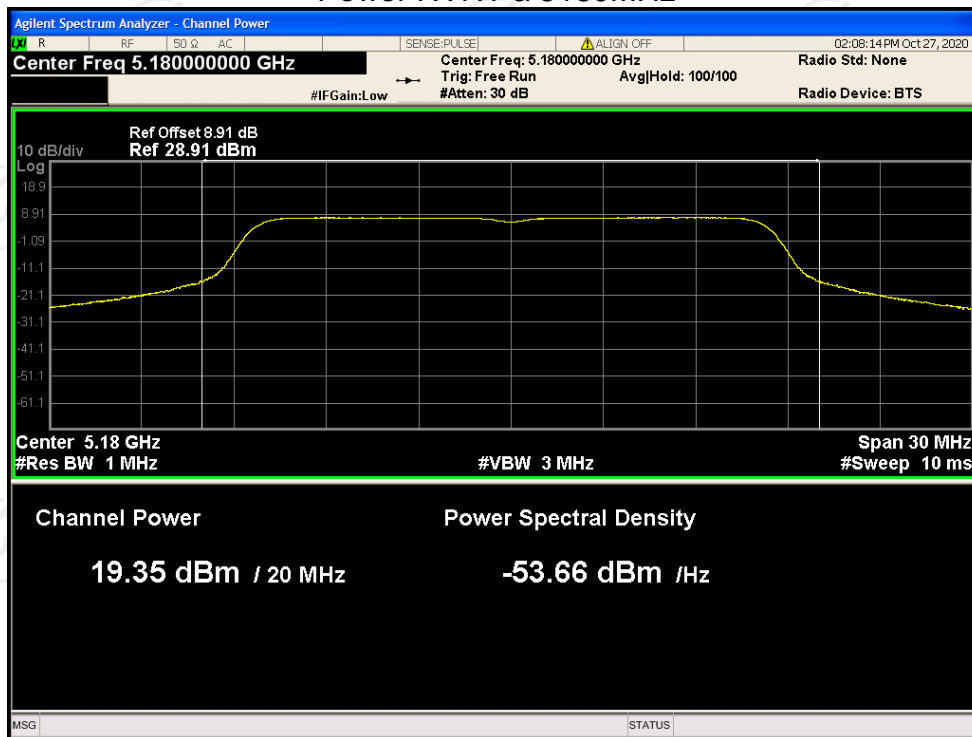
Duty Cycle NVNT n40 5230MHz



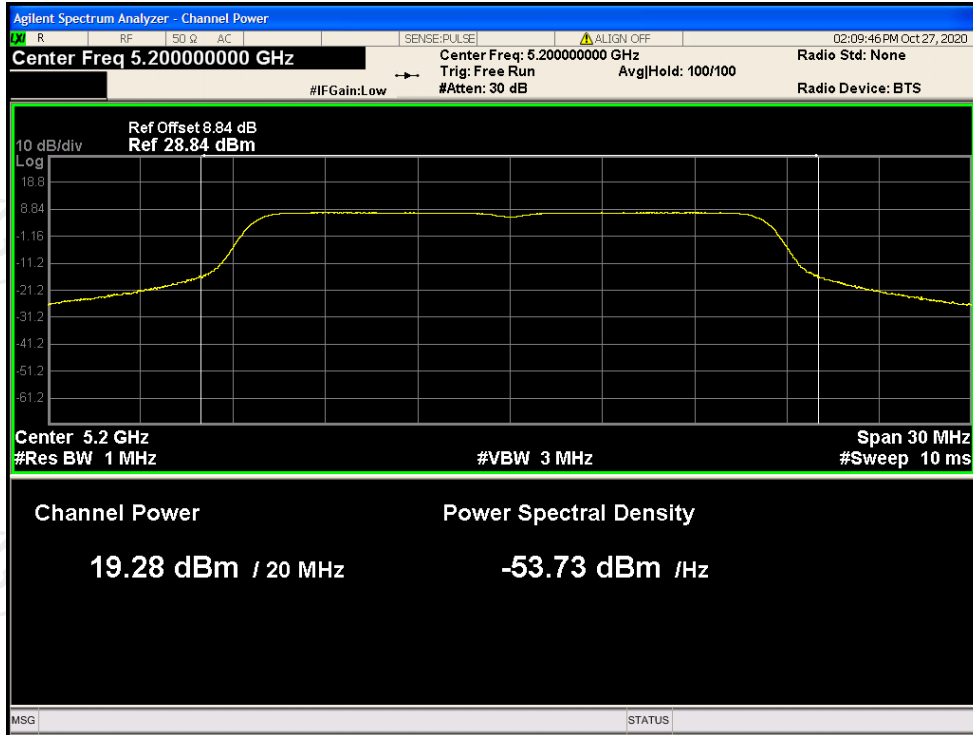
Maximum Conducted Output Power

Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
a	5180	19.345	30	Pass
a	5200	19.285	30	Pass
a	5240	18.811	30	Pass
ac20	5180	19.293	30	Pass
ac20	5200	19.252	30	Pass
ac20	5240	18.778	30	Pass
ac40	5190	19.554	30	Pass
ac40	5230	19.063	30	Pass
n20	5180	19.290	30	Pass
n20	5200	19.210	30	Pass
n20	5240	18.758	30	Pass
n40	5190	19.543	30	Pass
n40	5230	19.025	30	Pass

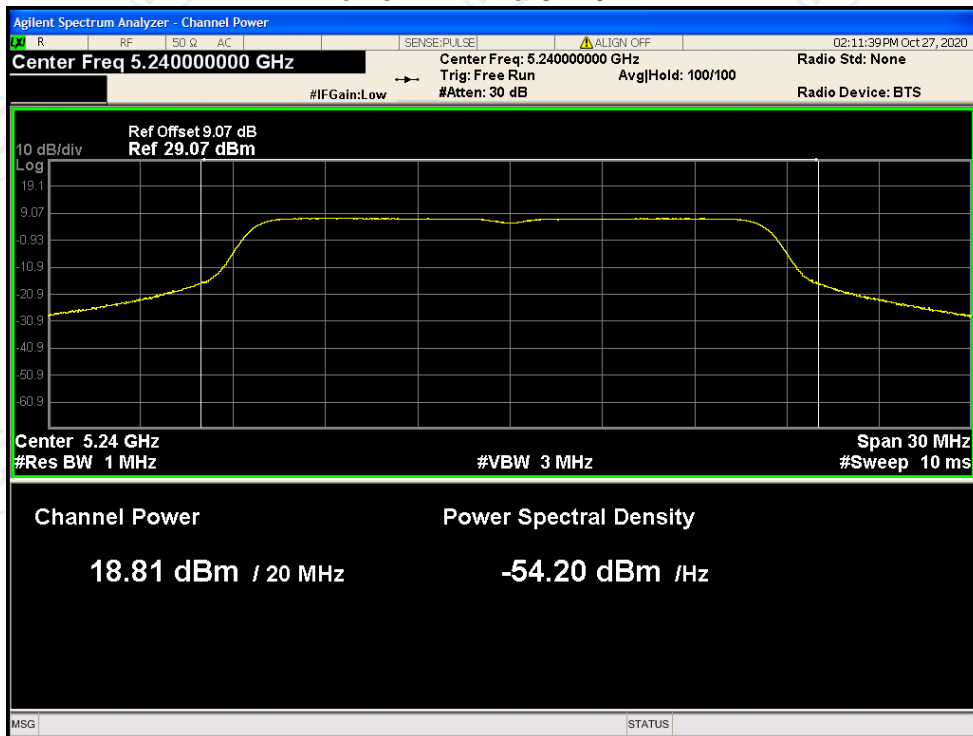
Power NVNT a 5180MHz



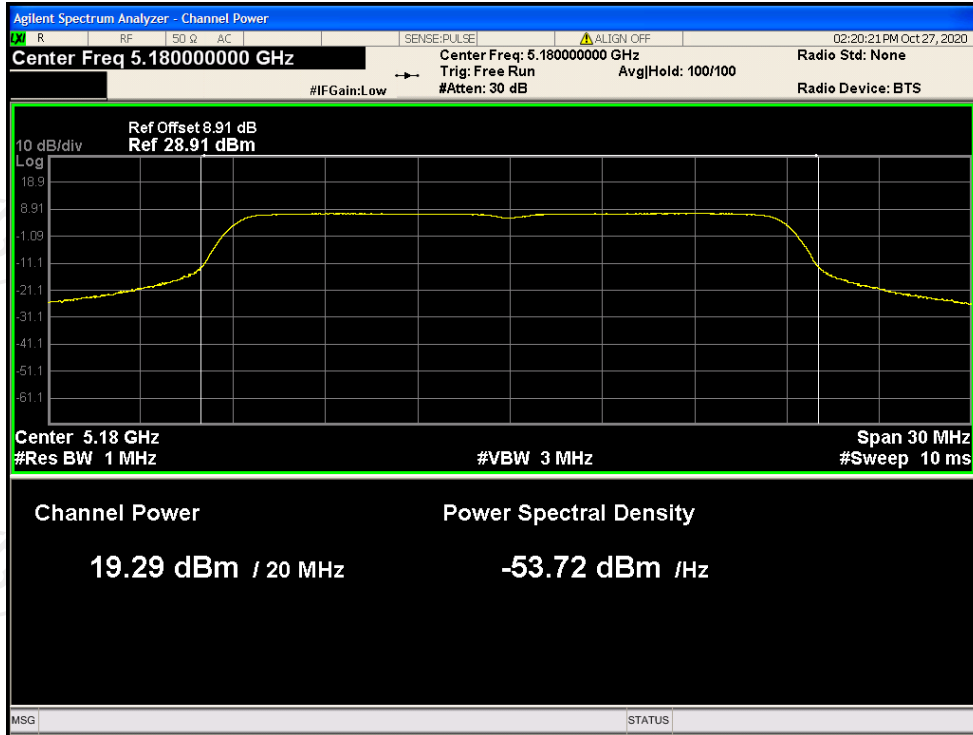
Power NVNT a 5200MHz



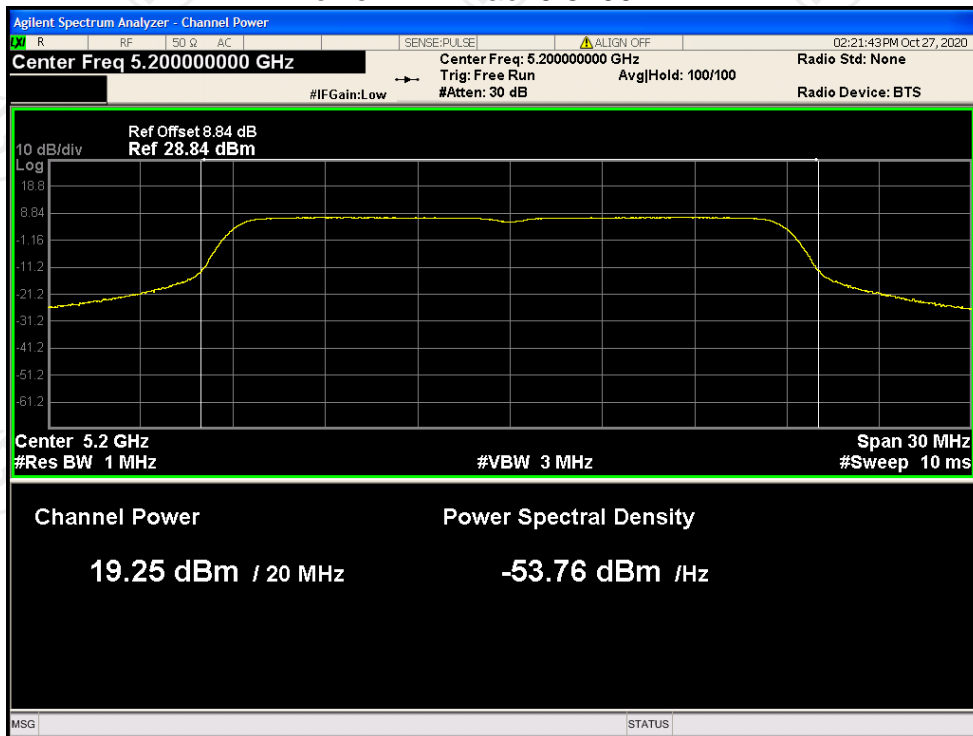
Power NVNT a 5240MHz



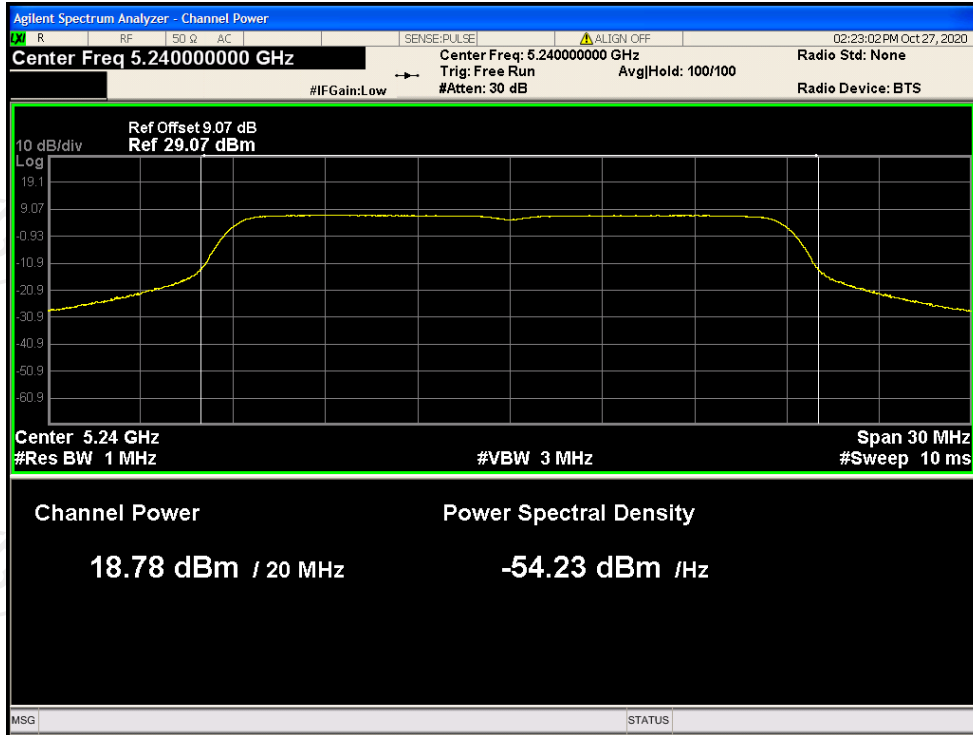
Power NVNT ac20 5180MHz



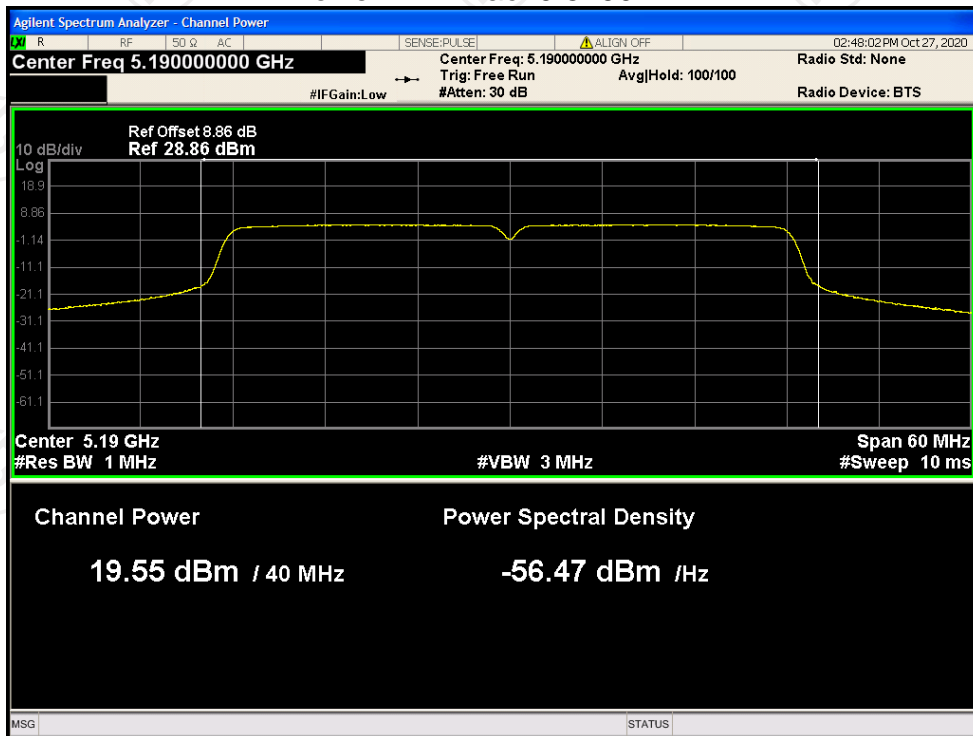
Power NVNT ac20 5200MHz



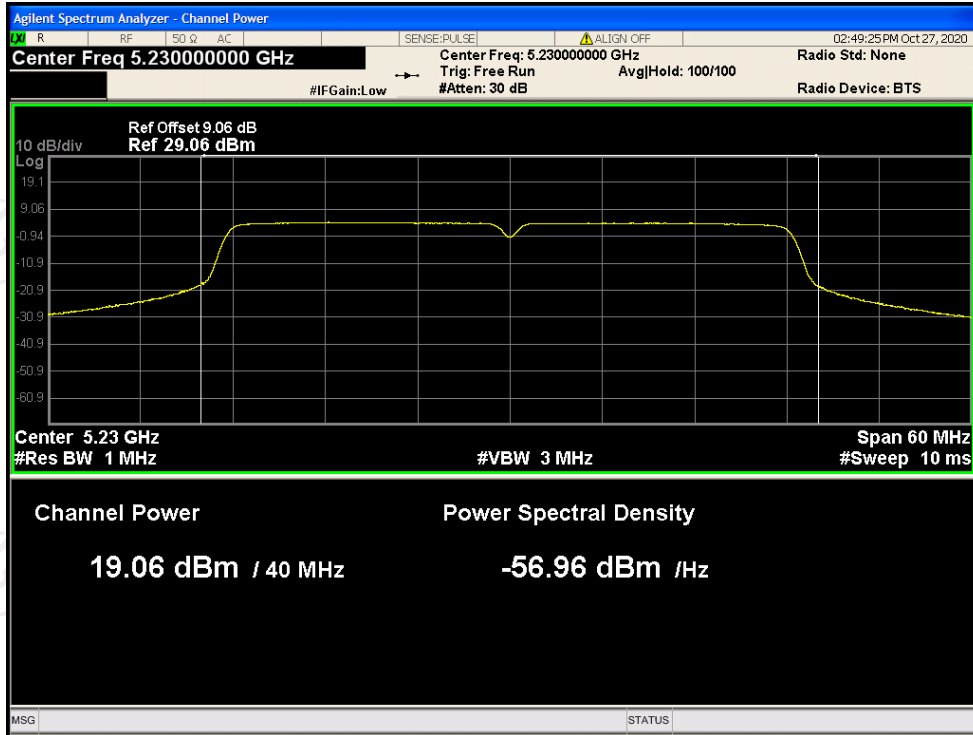
Power NVNT ac20 5240MHz



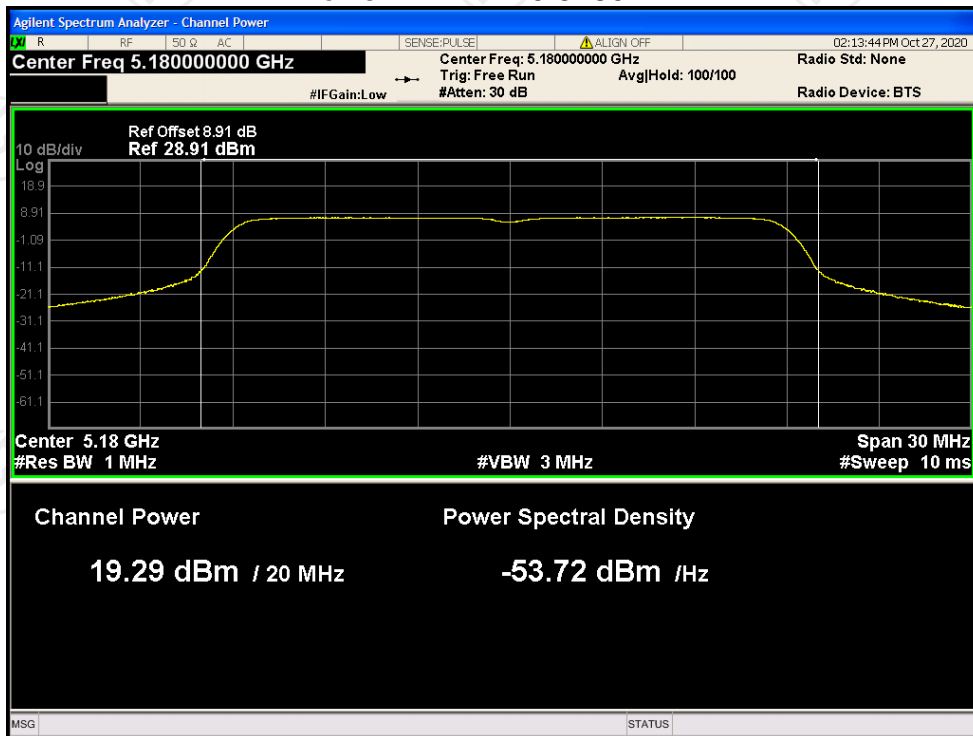
Power NVNT ac40 5190MHz



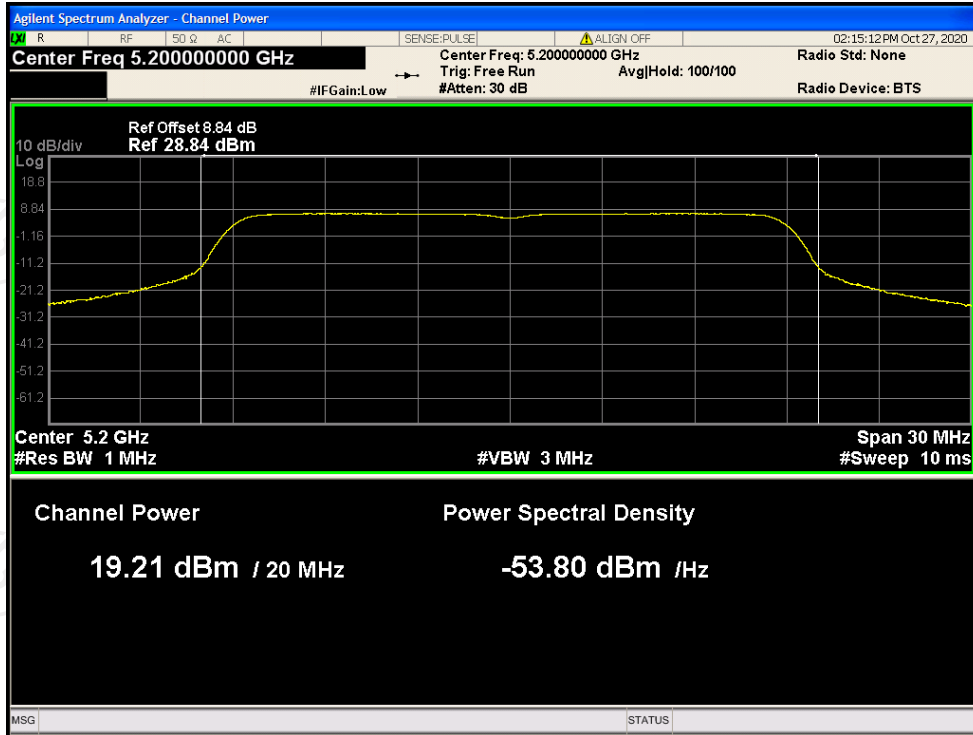
Power NVNT ac40 5230MHz



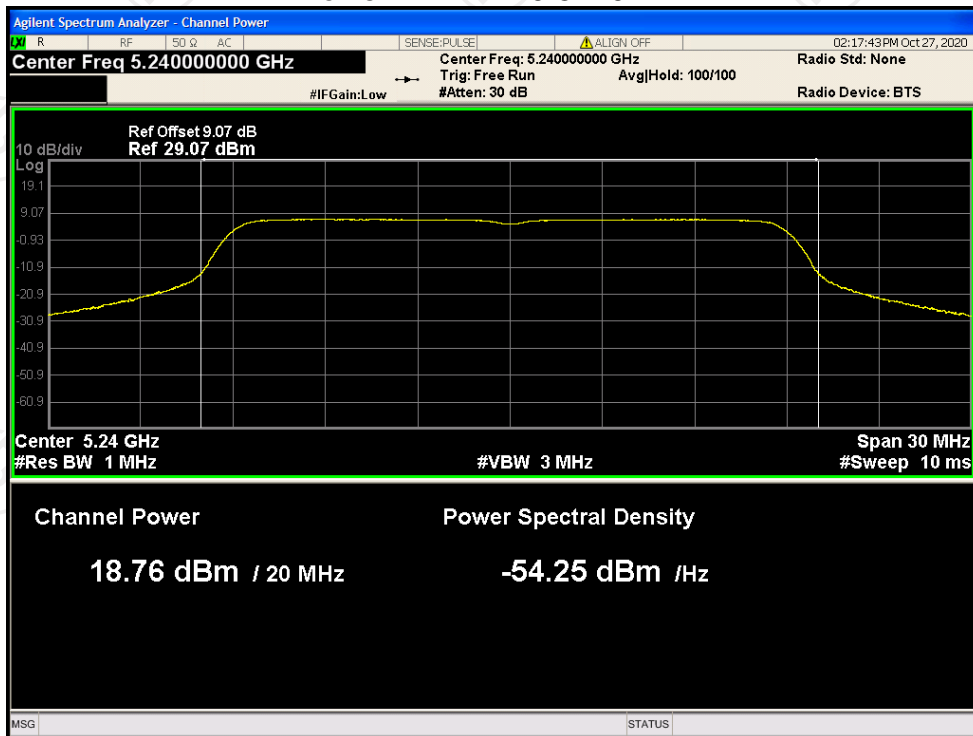
Power NVNT n20 5180MHz



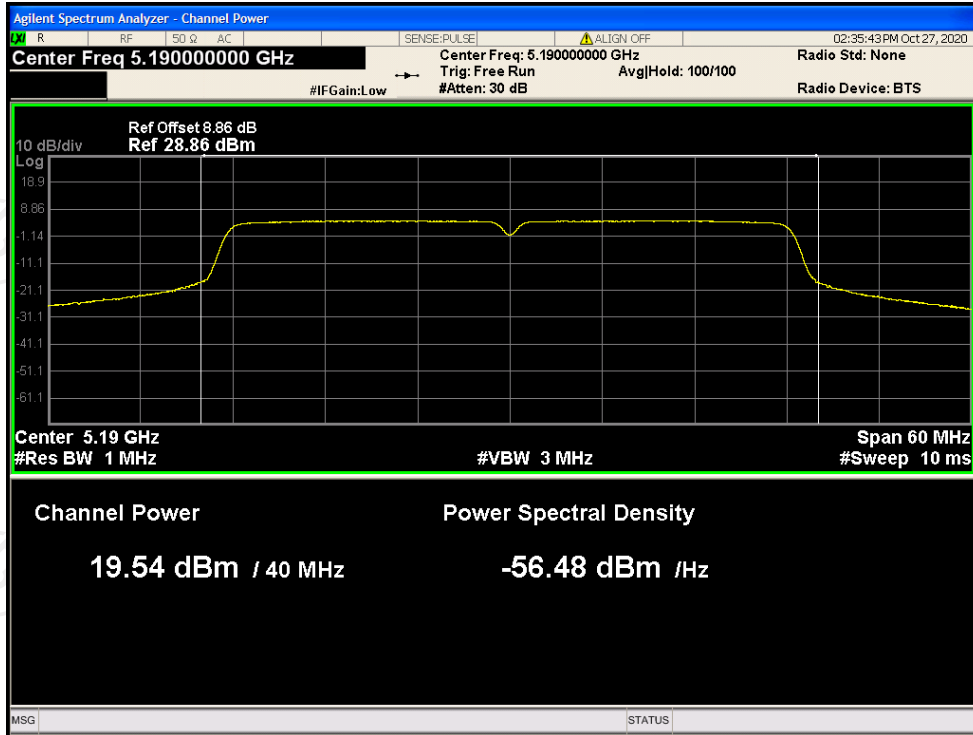
Power NVNT n20 5200MHz



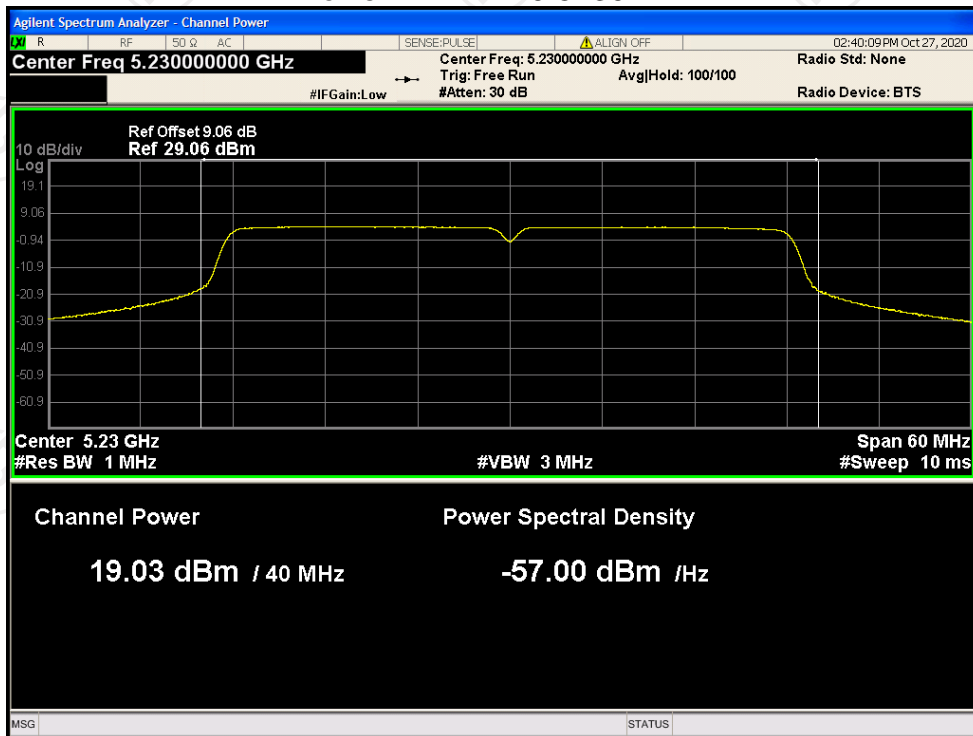
Power NVNT n20 5240MHz



Power NVNT n40 5190MHz



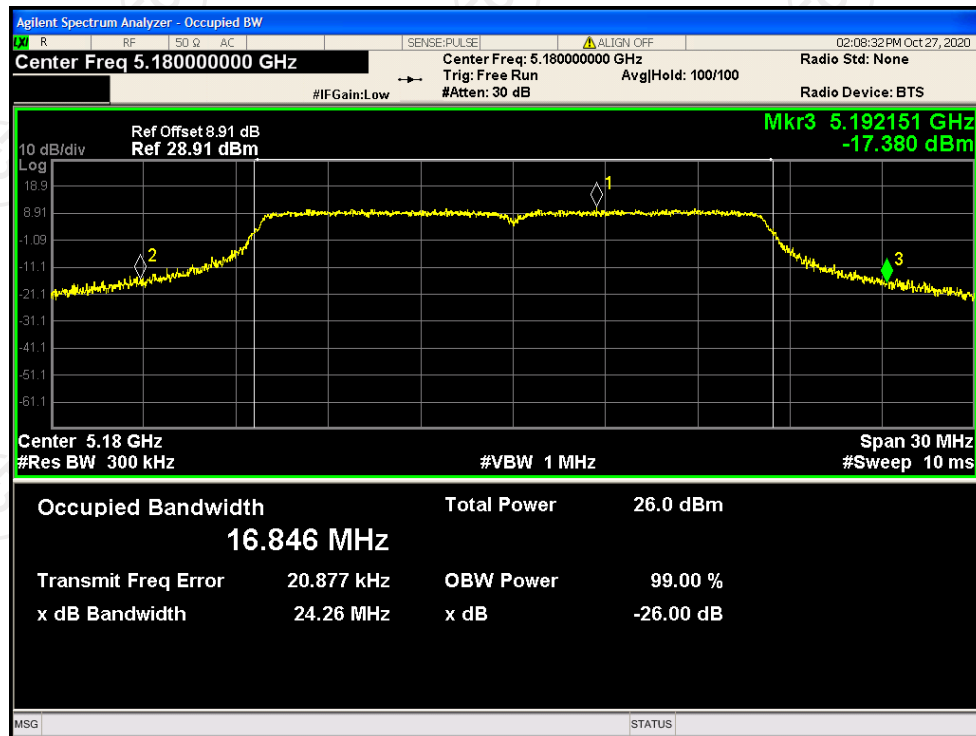
Power NVNT n40 5230MHz



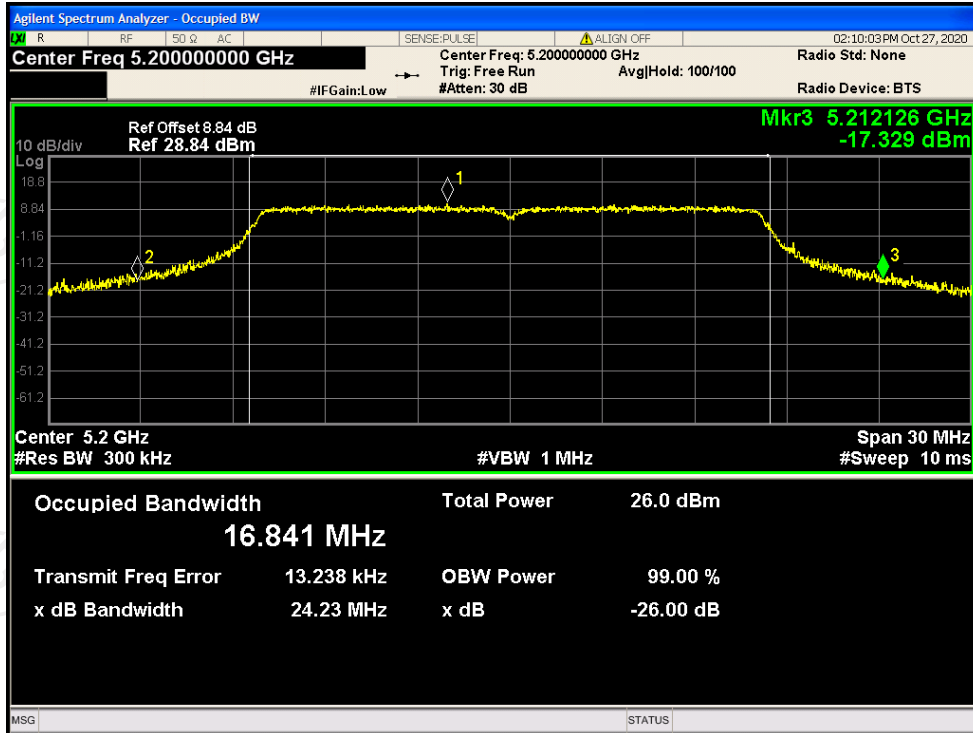
-26dB Bandwidth

Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
a	5180	24.26	Within the authorized frequency band	Pass
a	5200	24.226		Pass
a	5240	23.346		Pass
ac20	5180	25.999		Pass
ac20	5200	25.749		Pass
ac20	5240	24.23		Pass
ac40	5190	50.077		Pass
ac40	5230	46.936		Pass
n20	5180	25.402		Pass
n20	5200	24.356		Pass
n20	5240	23.656		Pass
n40	5190	49.535		Pass
n40	5230	46.453		Pass

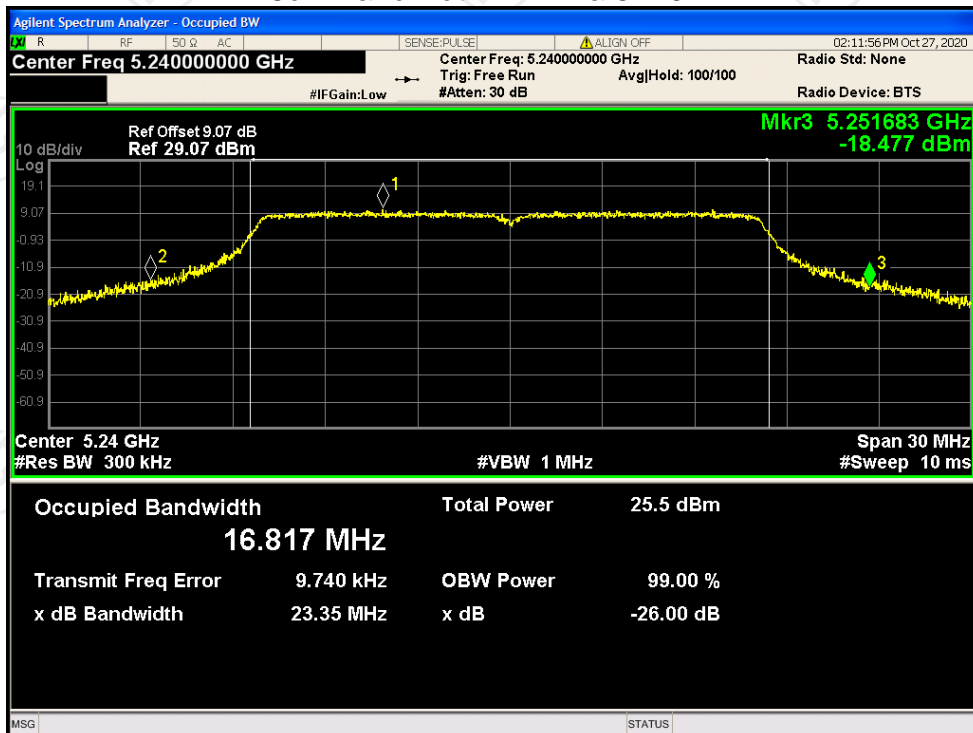
-26dB Bandwidth NVNT a 5180MHz



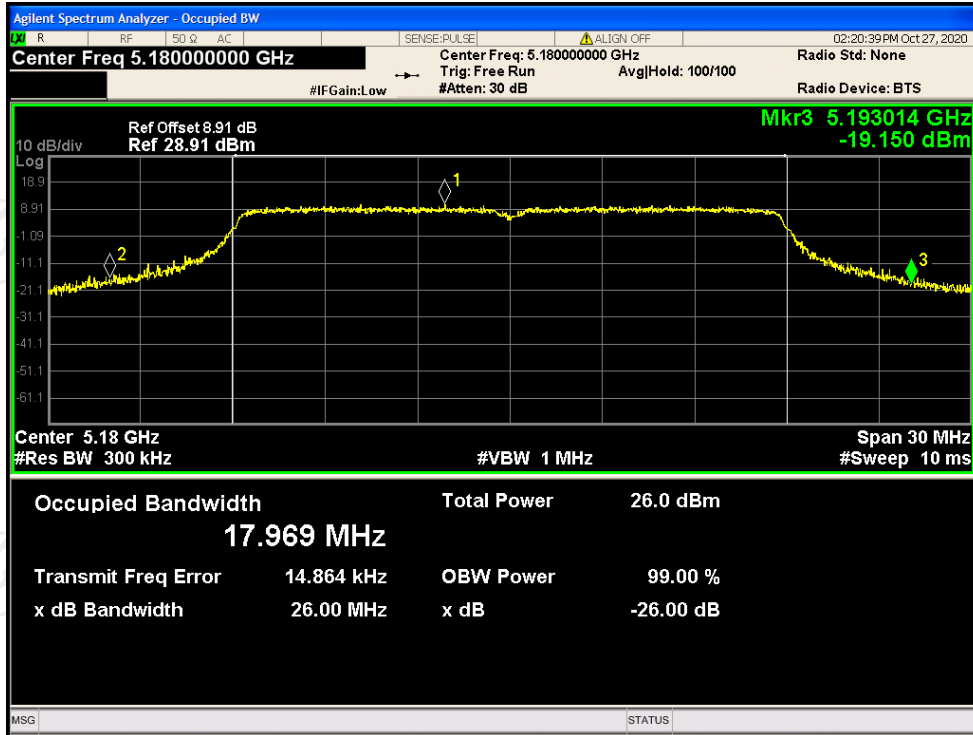
-26dB Bandwidth NVNT a 5200MHz



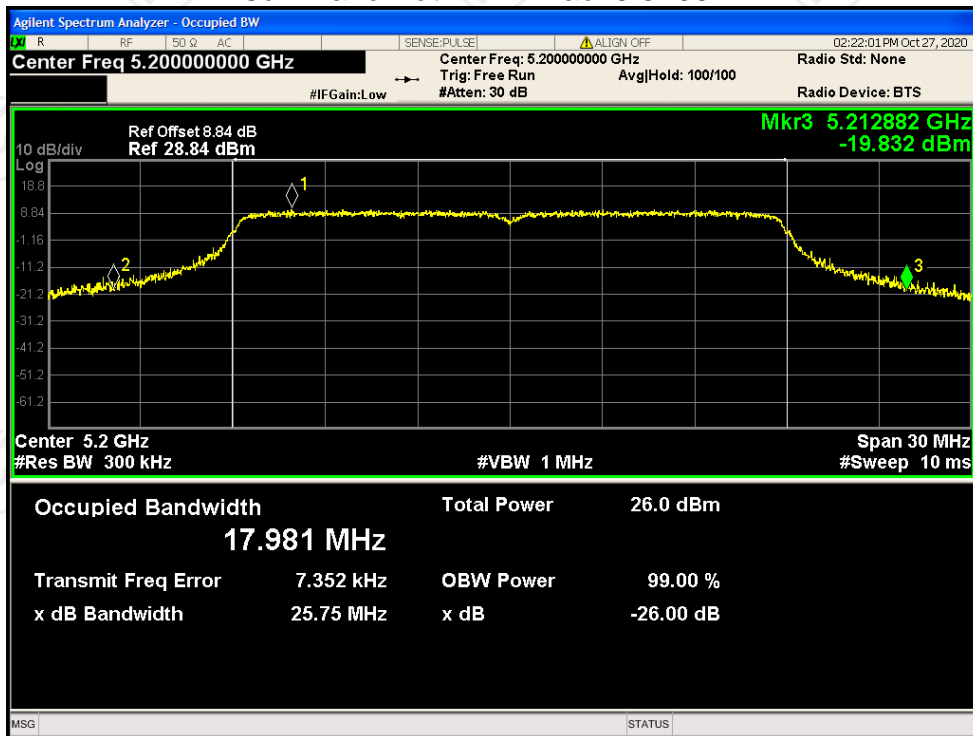
-26dB Bandwidth NVNT a 5240MHz



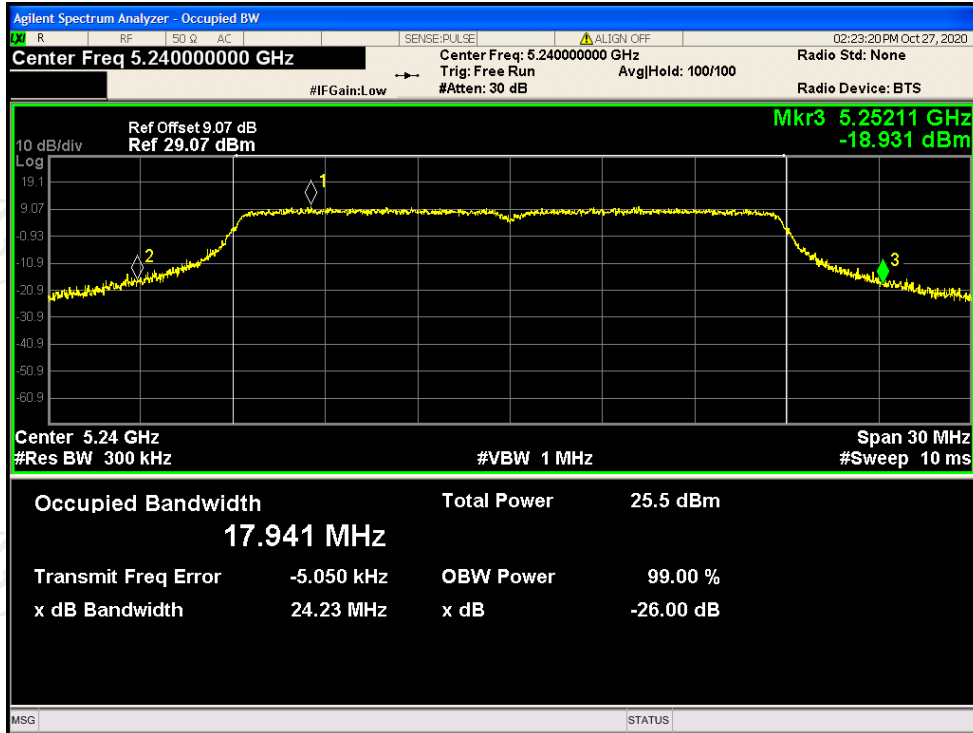
-26dB Bandwidth NVNT ac20 5180MHz



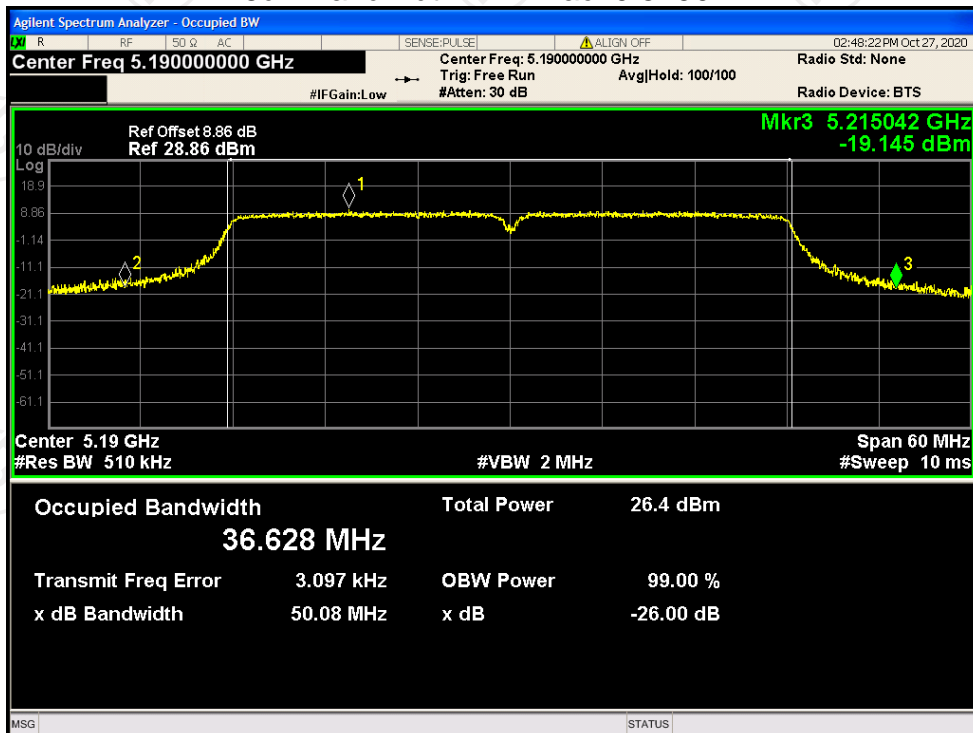
-26dB Bandwidth NVNT ac20 5200MHz



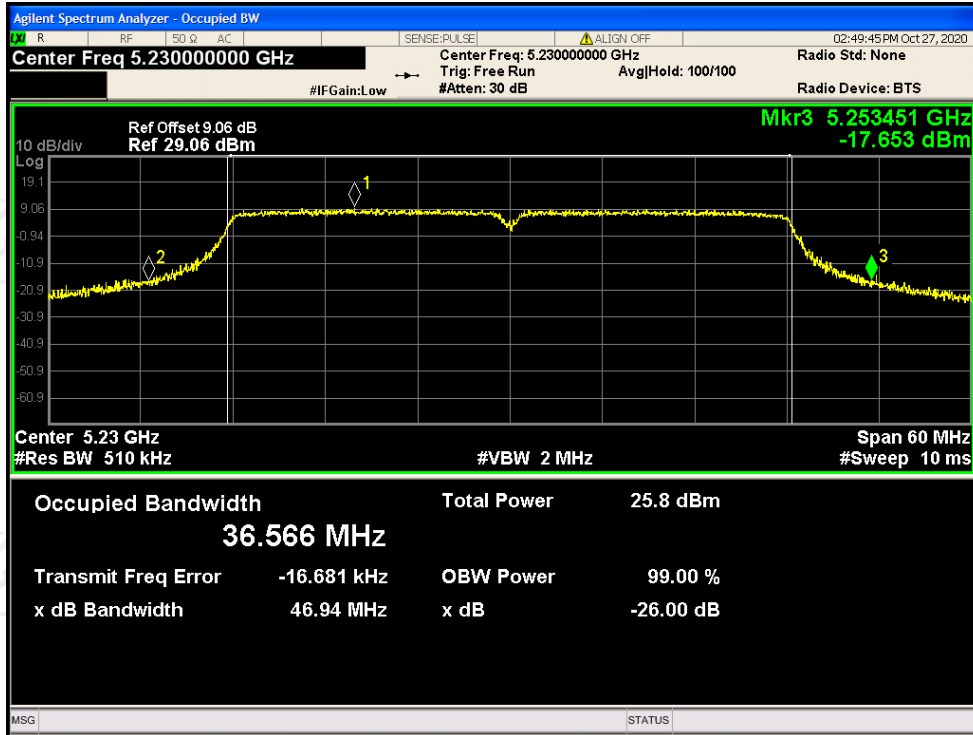
-26dB Bandwidth NVNT ac20 5240MHz



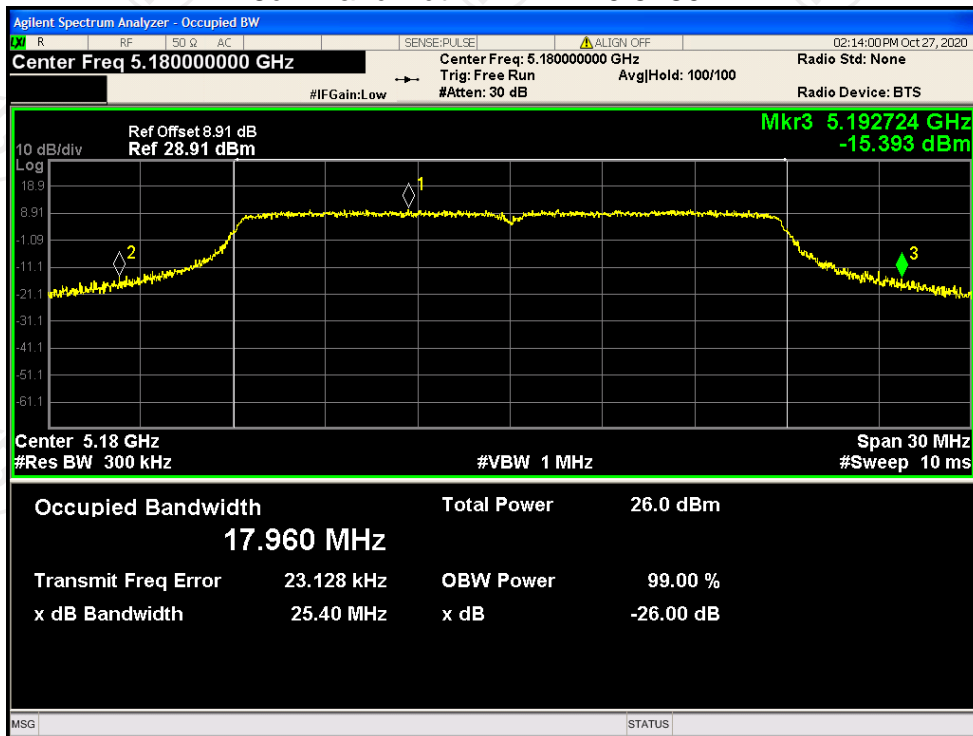
-26dB Bandwidth NVNT ac40 5190MHz



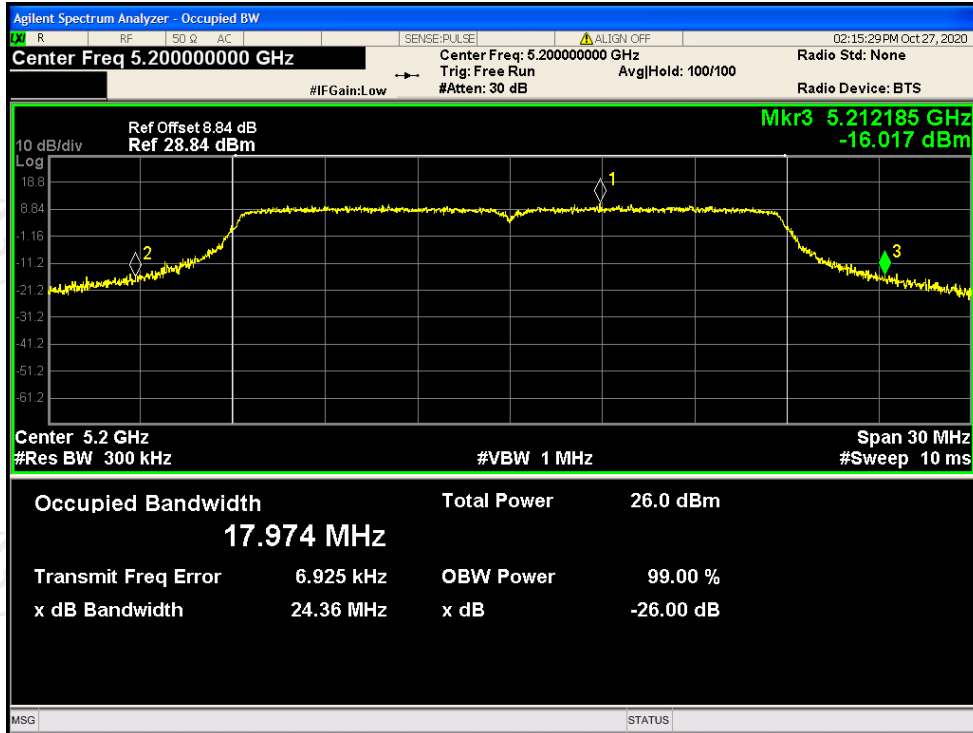
-26dB Bandwidth NVNT ac40 5230MHz



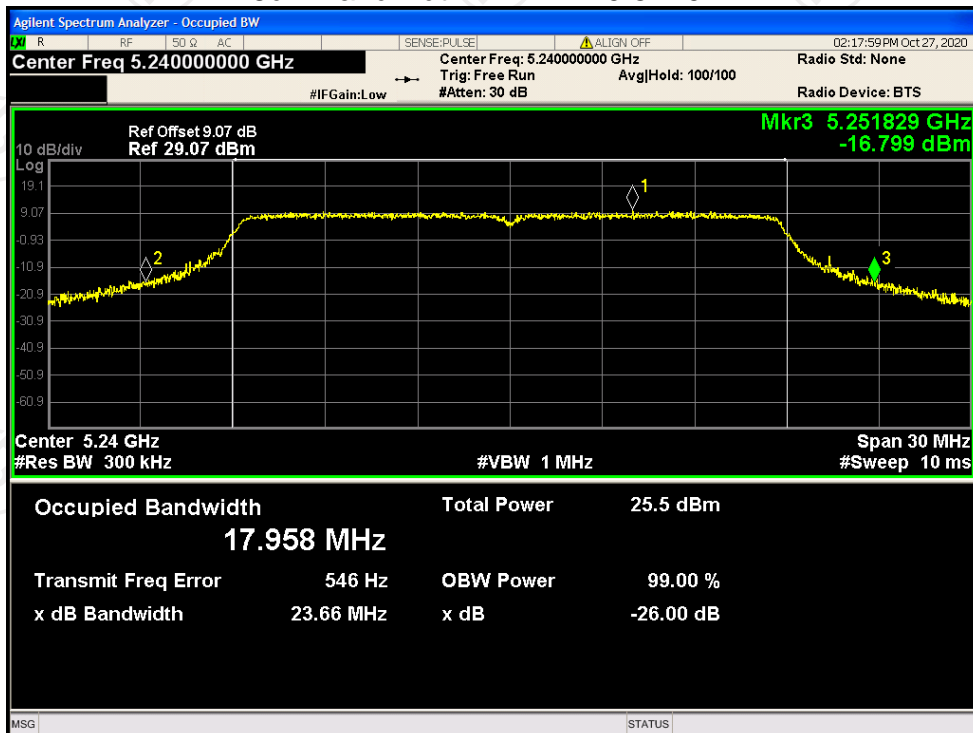
-26dB Bandwidth NVNT n20 5180MHz



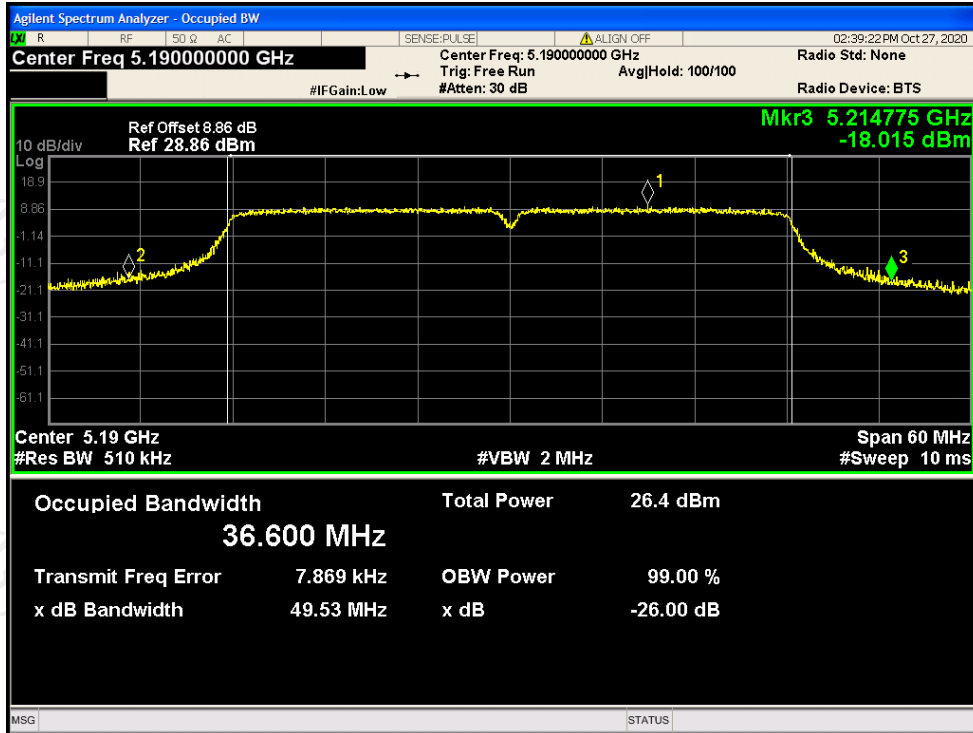
-26dB Bandwidth NVNT n20 5200MHz



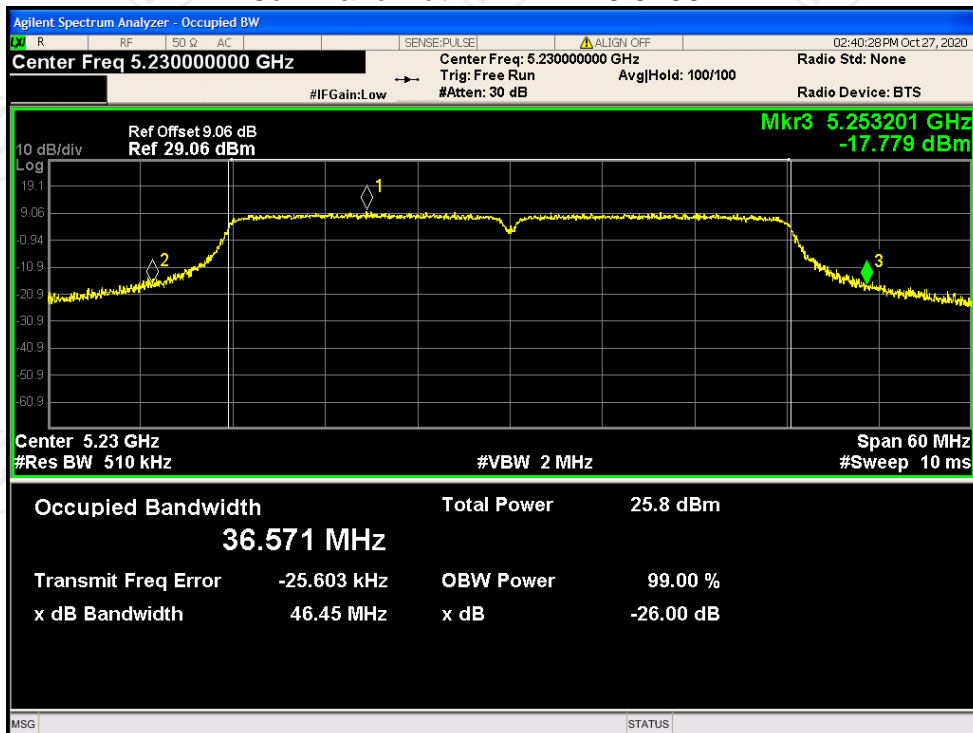
-26dB Bandwidth NVNT n20 5240MHz



-26dB Bandwidth NVNT n40 5190MHz



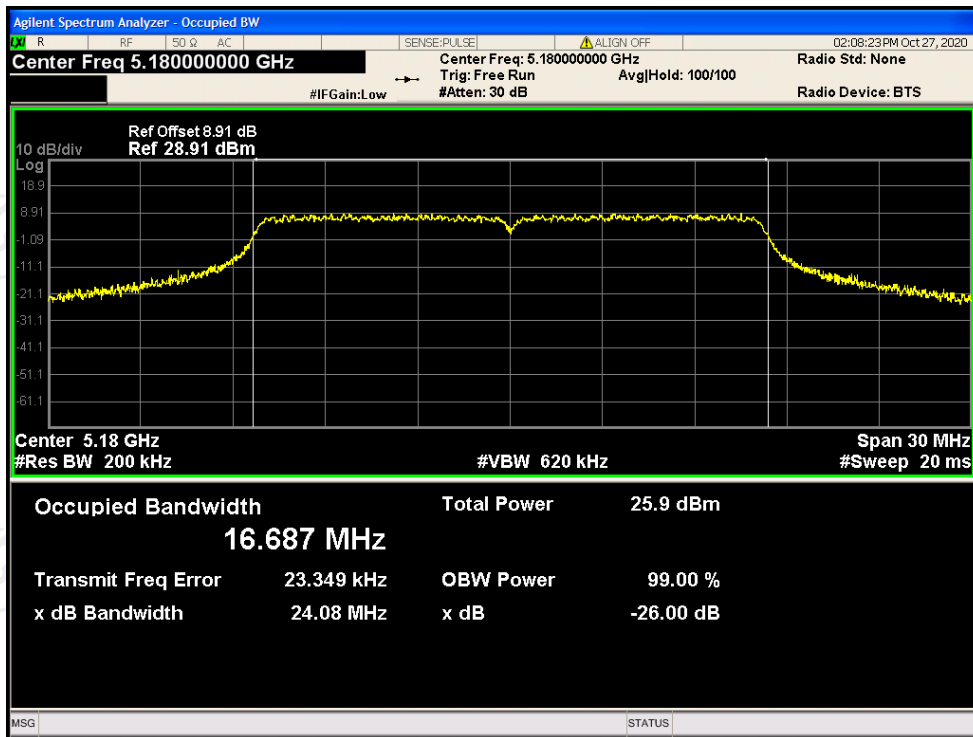
-26dB Bandwidth NVNT n40 5230MHz



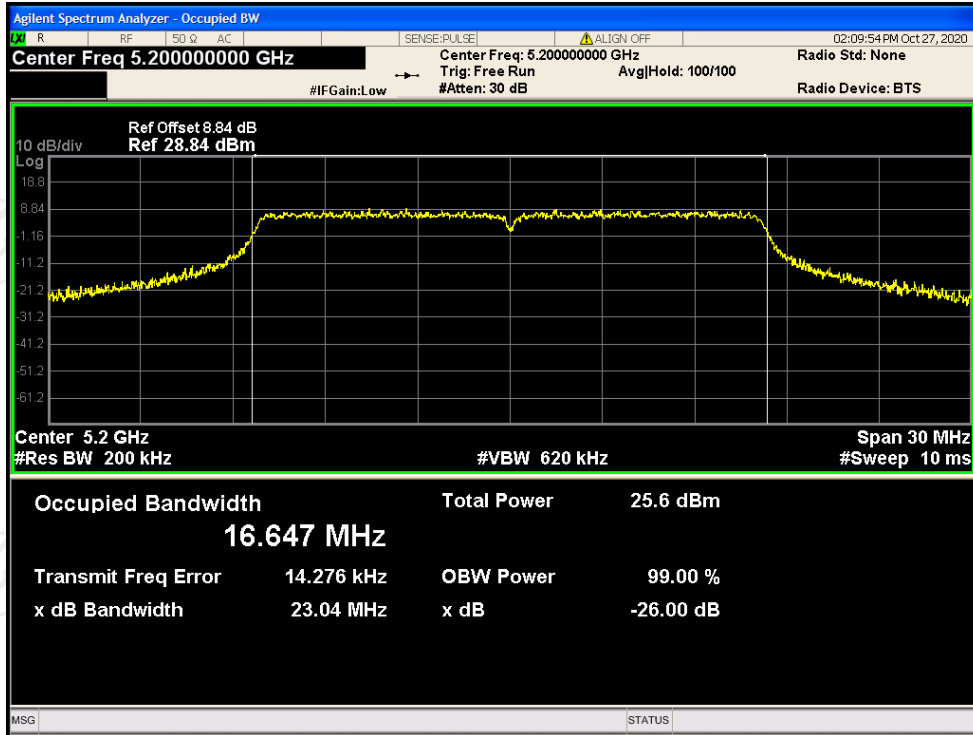
Occupied Channel Bandwidth

Mode	Frequency (MHz)	99% OBW (MHz)
a	5180	16.68749244
a	5200	16.646557
a	5240	16.63581677
ac20	5180	17.82092569
ac20	5200	17.81125165
ac20	5240	17.79692316
ac40	5190	36.46870888
ac40	5230	36.45701998
n20	5180	17.82313635
n20	5200	17.80971498
n20	5240	17.75623275
n40	5190	36.4703305
n40	5230	36.43130967

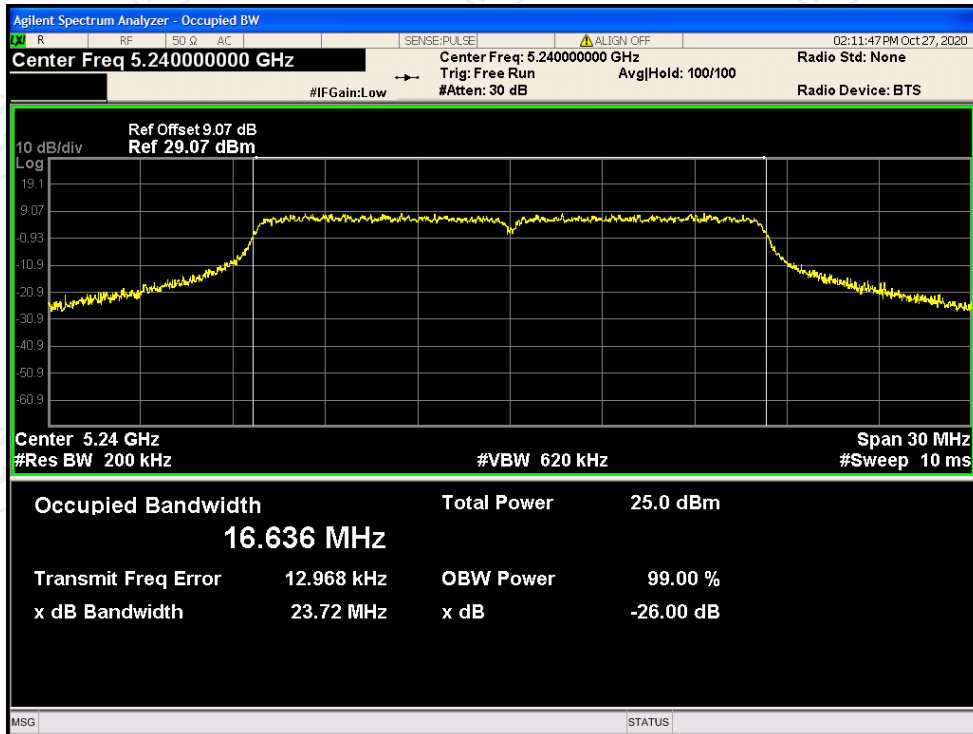
OBW NVNT a 5180MHz



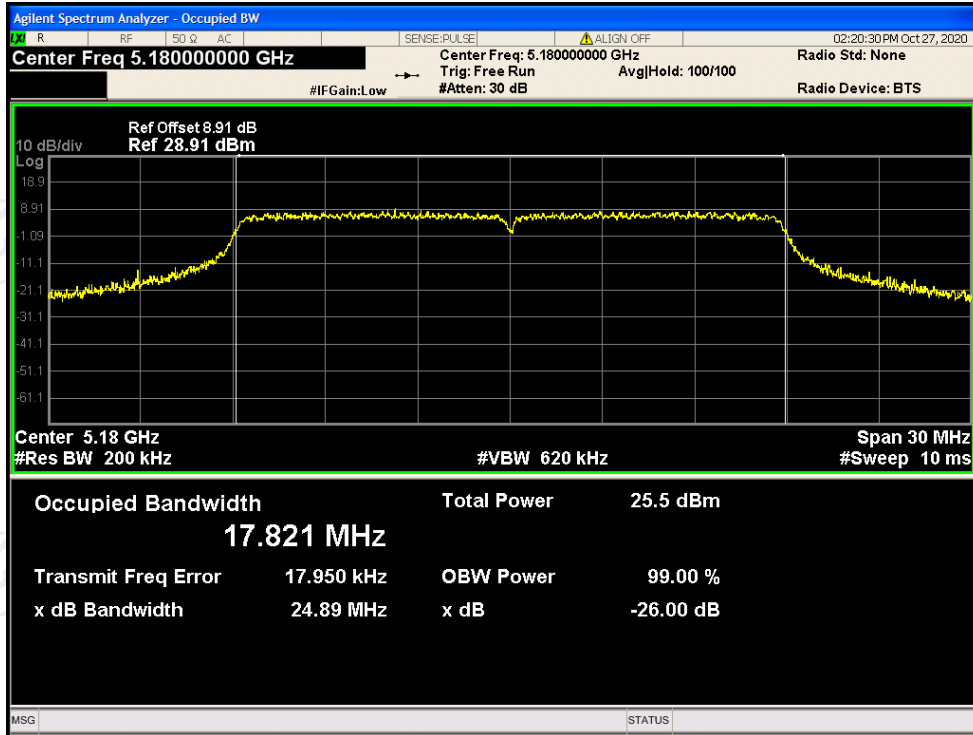
OBW NVNT a 5200MHz



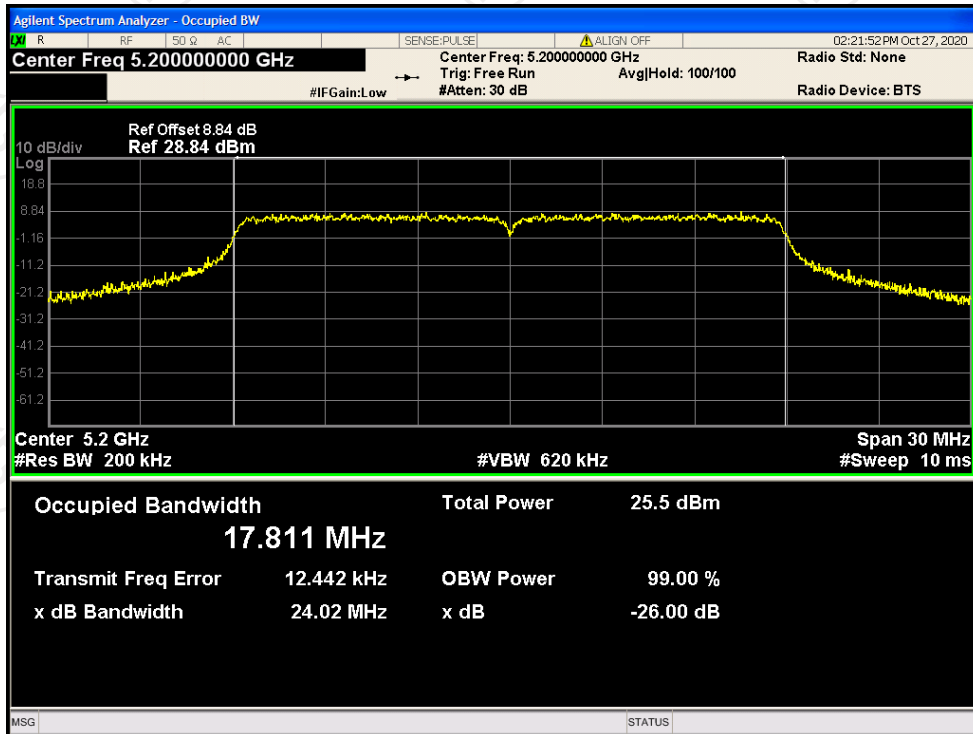
OBW NVNT a 5240MHz



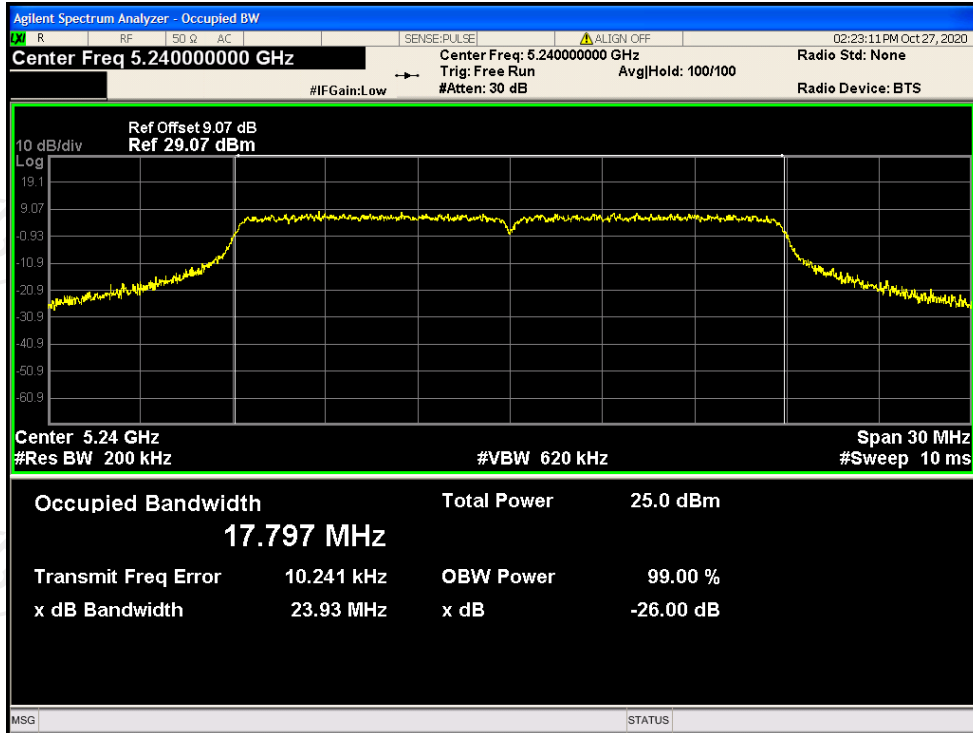
OBW NVNT ac20 5180MHz



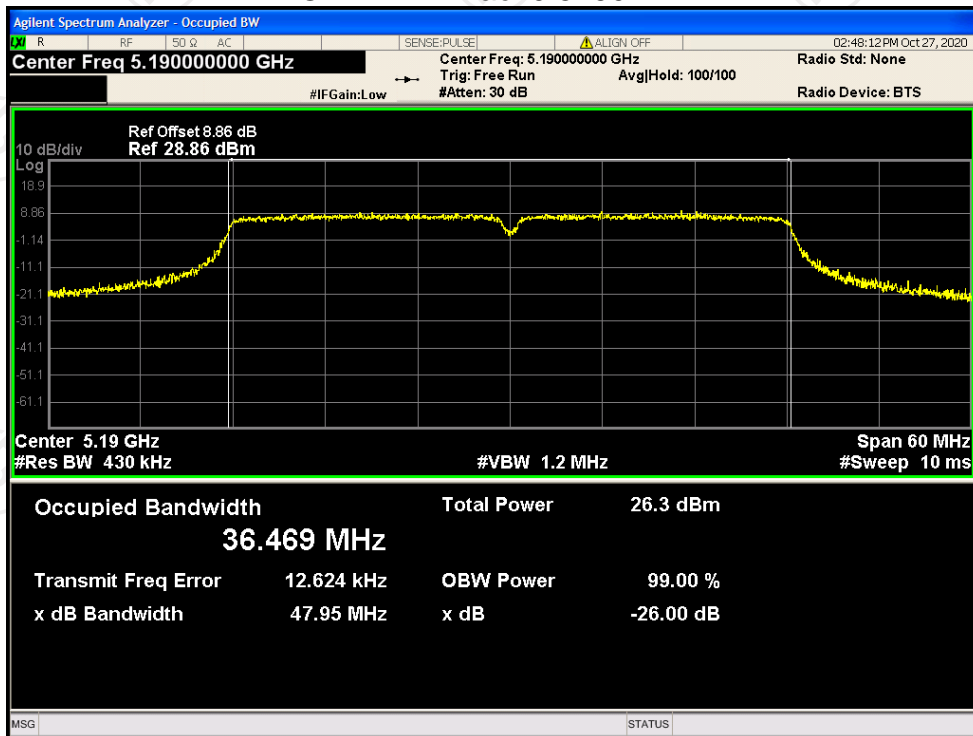
OBW NVNT ac20 5200MHz



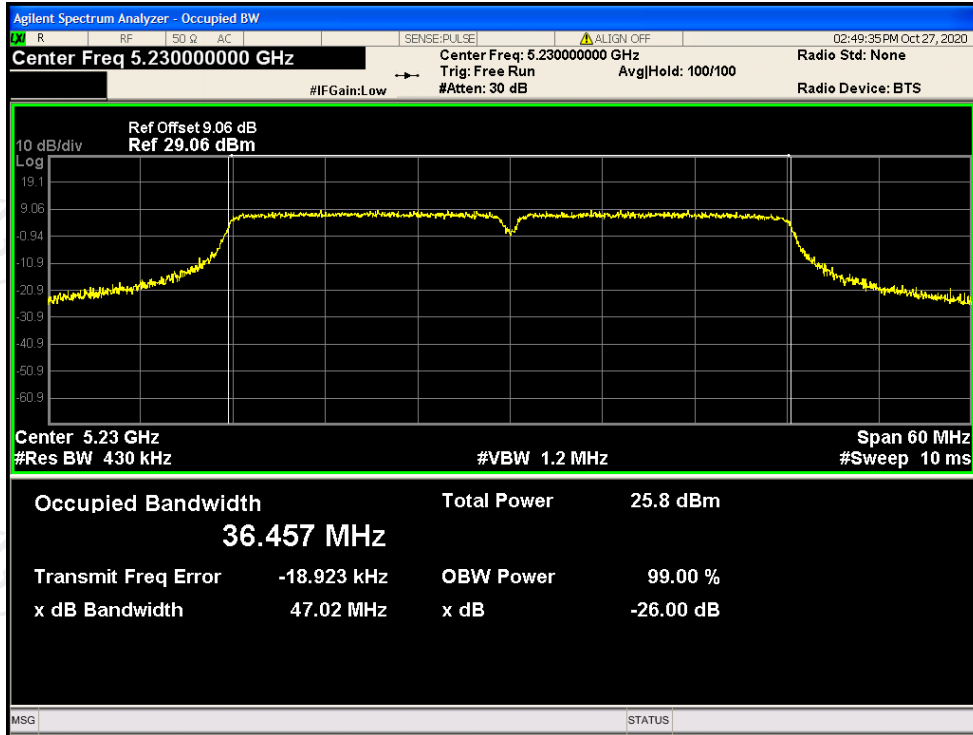
OBW NVNT ac20 5240MHz



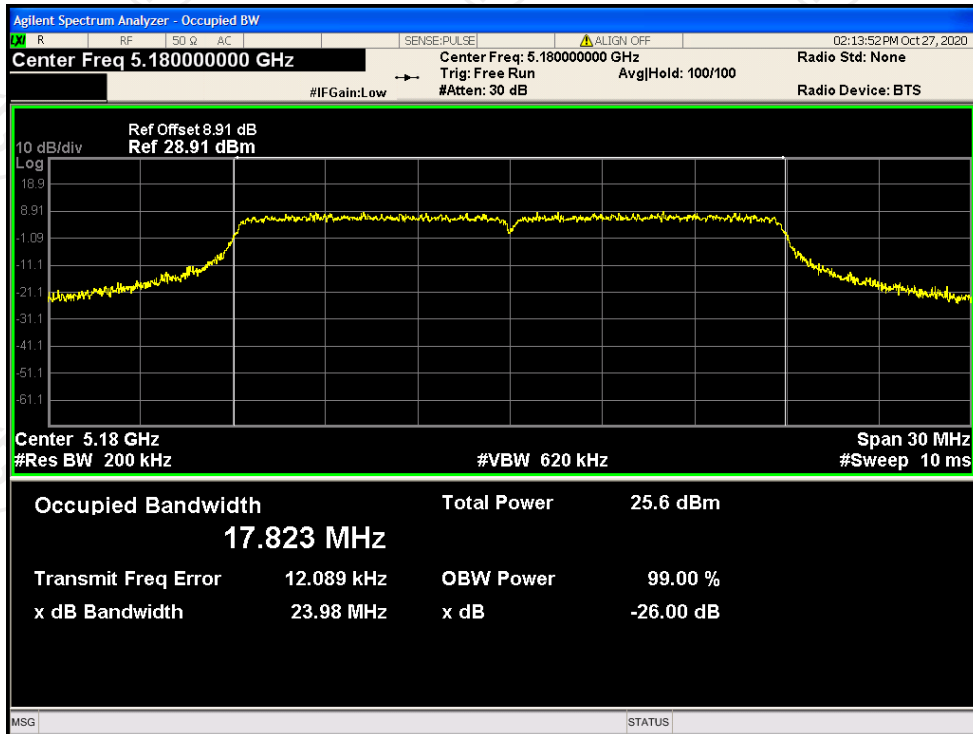
OBW NVNT ac40 5190MHz



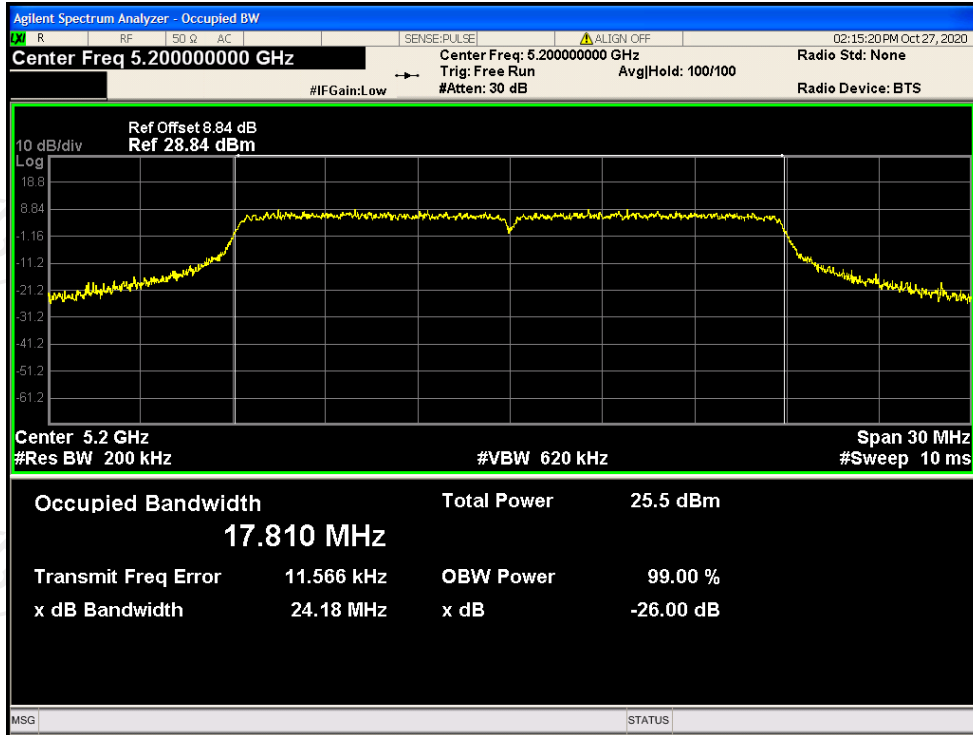
OBW NVNT ac40 5230MHz



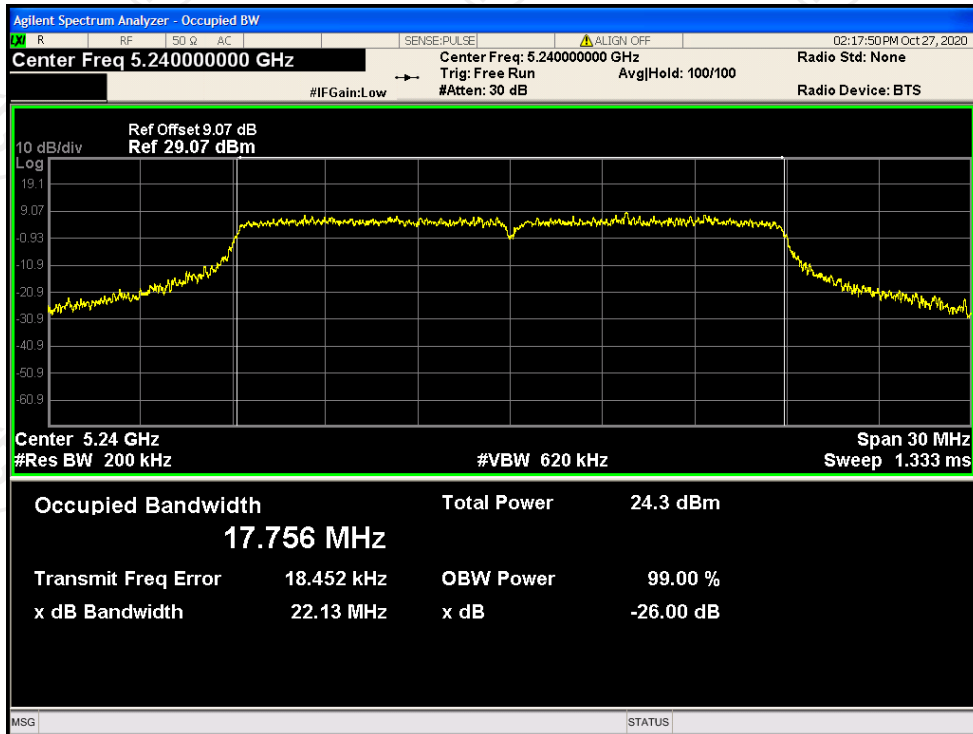
OBW NVNT n20 5180MHz



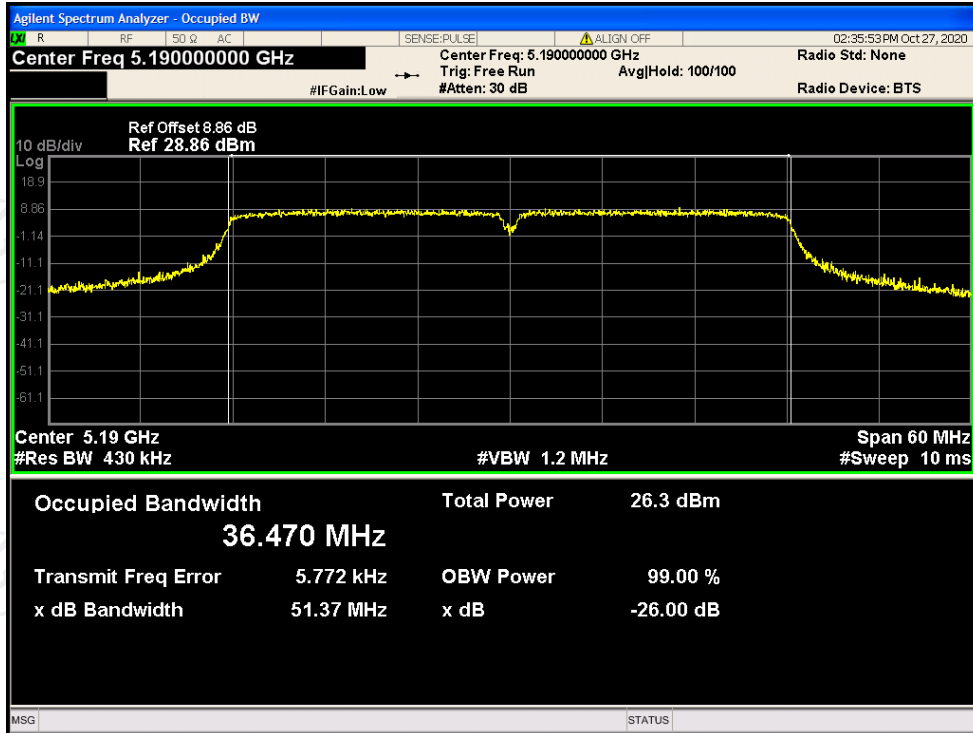
OBW NVNT n20 5200MHz



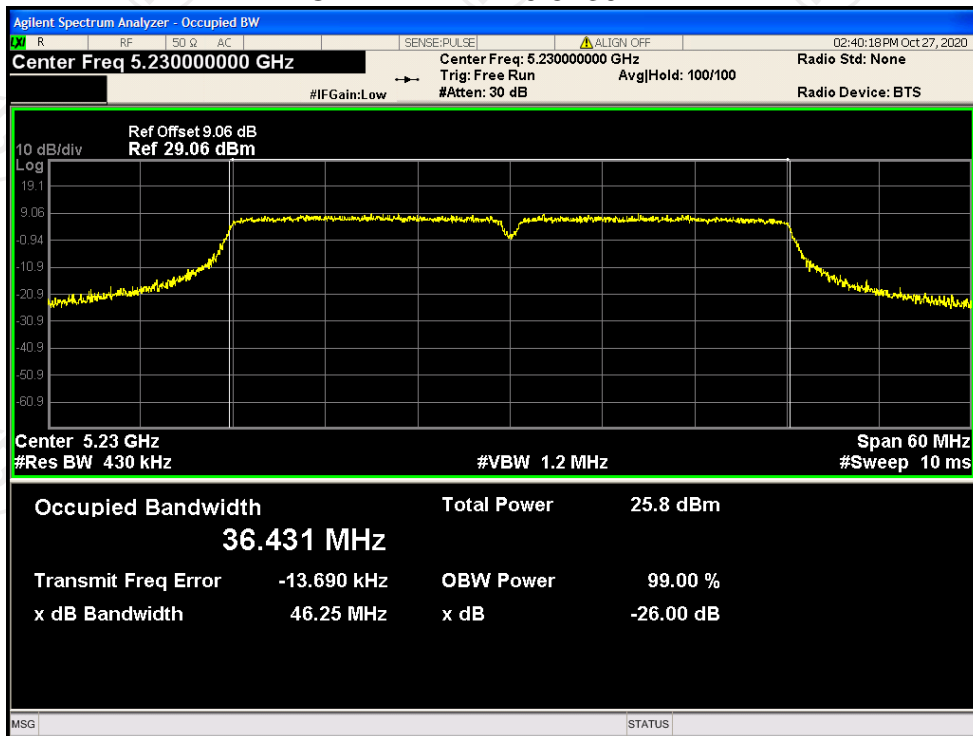
OBW NVNT n20 5240MHz



OBW NVNT n40 5190MHz



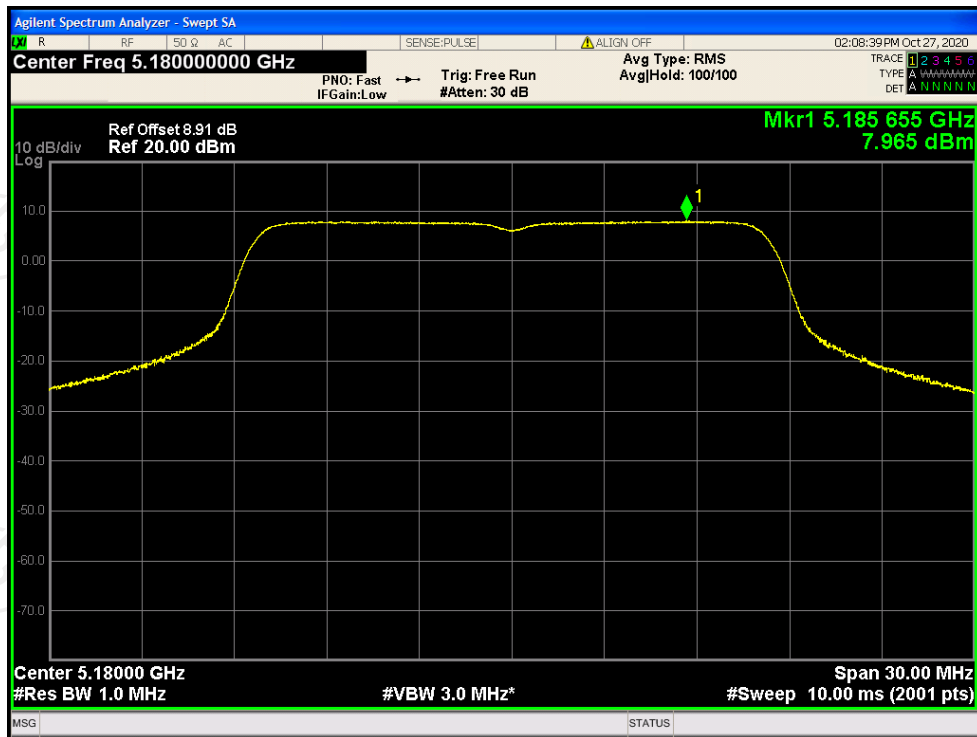
OBW NVNT n40 5230MHz



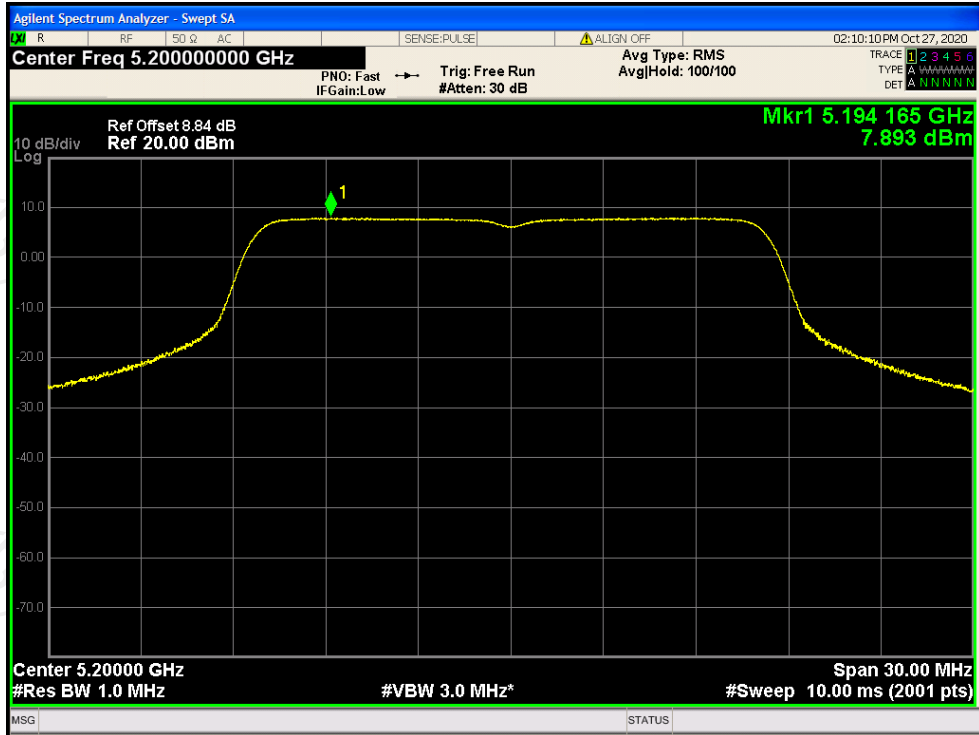
Maximum Power Spectral Density Level

Mode	Frequency (MHz)	Max PSD (dBm)	Limit (dBm)	Verdict
a	5180	7.965	17.00	Pass
a	5200	7.893	17.00	Pass
a	5240	7.446	17.00	Pass
ac20	5180	7.608	15.23	Pass
ac20	5200	7.606	15.23	Pass
ac20	5240	7.119	15.23	Pass
ac40	5190	4.839	15.23	Pass
ac40	5230	4.442	15.23	Pass
n20	5180	7.605	15.23	Pass
n20	5200	7.485	15.23	Pass
n20	5240	7.112	15.23	Pass
n40	5190	4.866	15.23	Pass
n40	5230	4.365	15.23	Pass

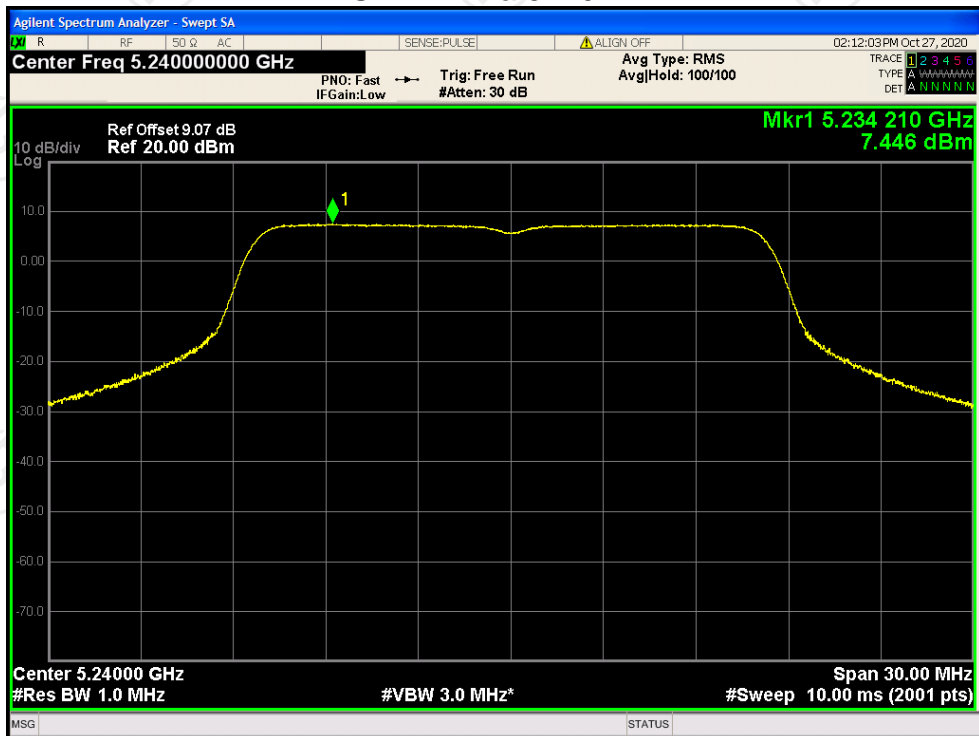
PSD NVNT a 5180MHz



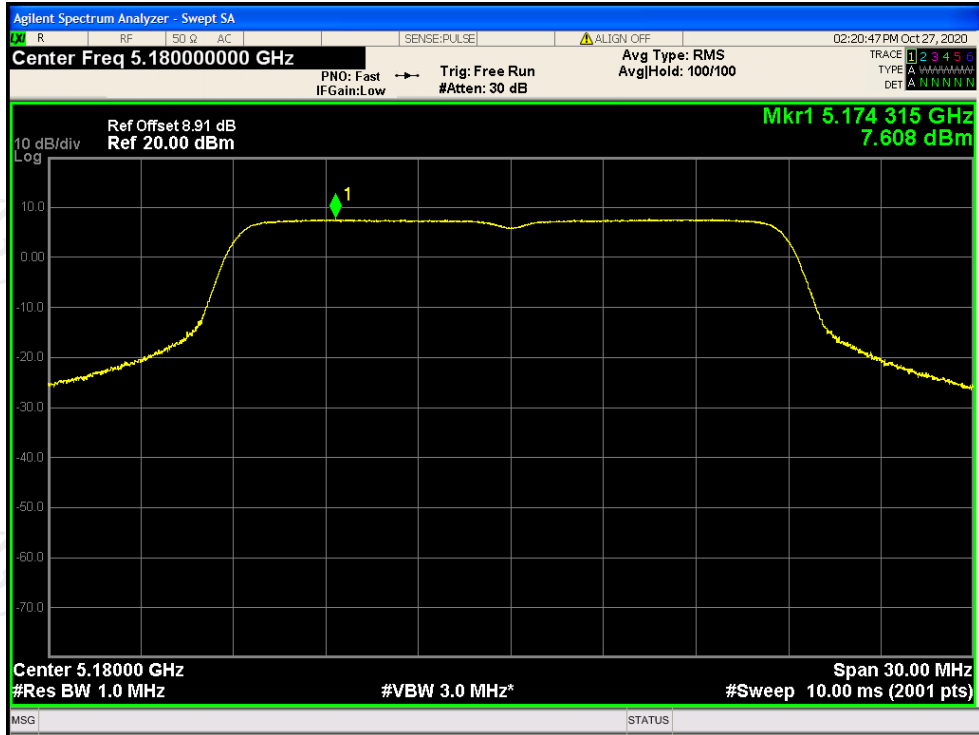
PSD NVNT a 5200MHz



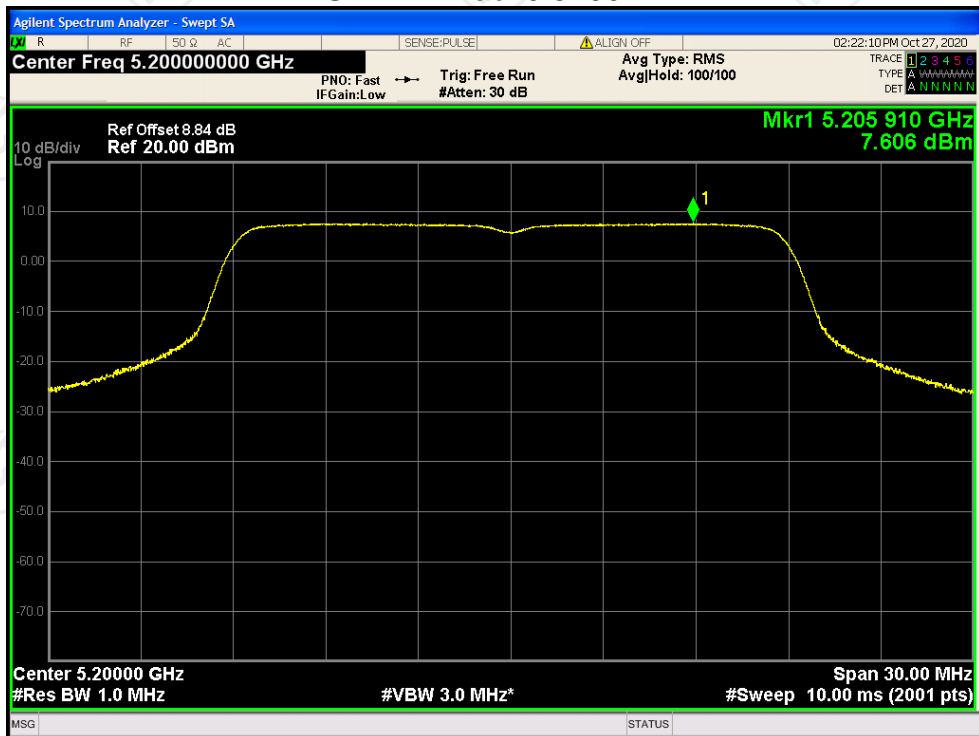
PSD NVNT a 5240MHz



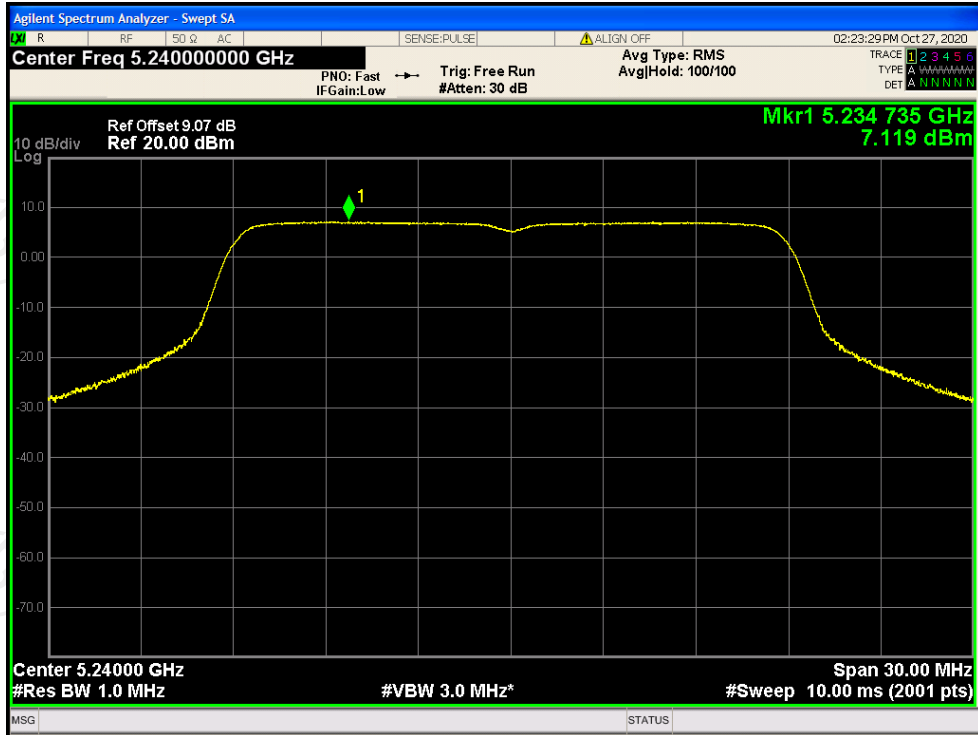
PSD NVNT ac20 5180MHz



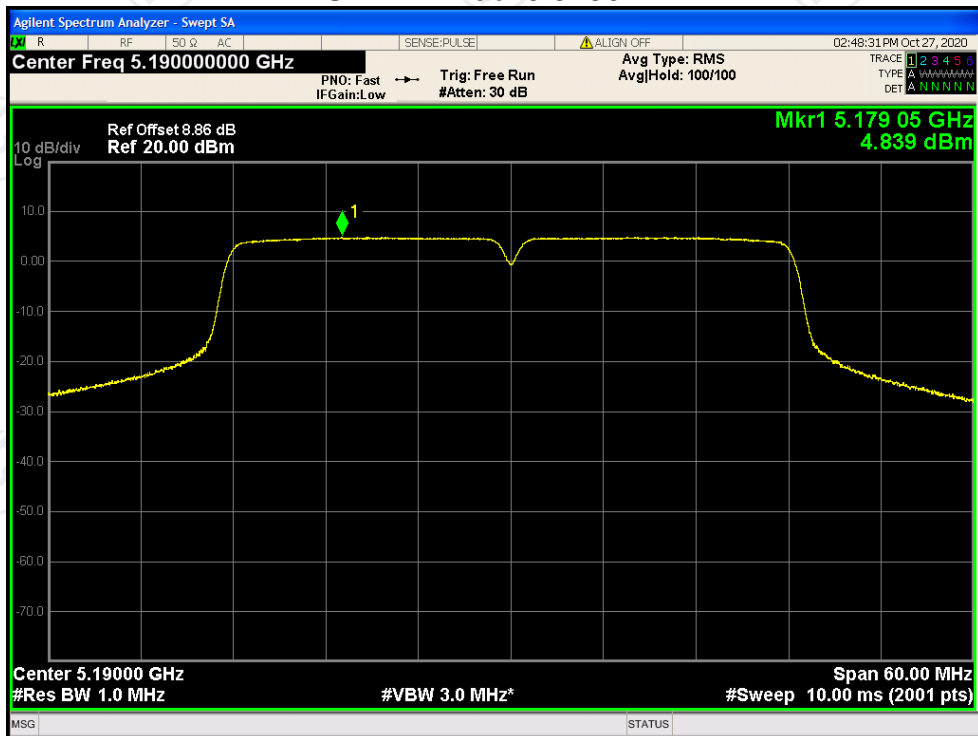
PSD NVNT ac20 5200MHz



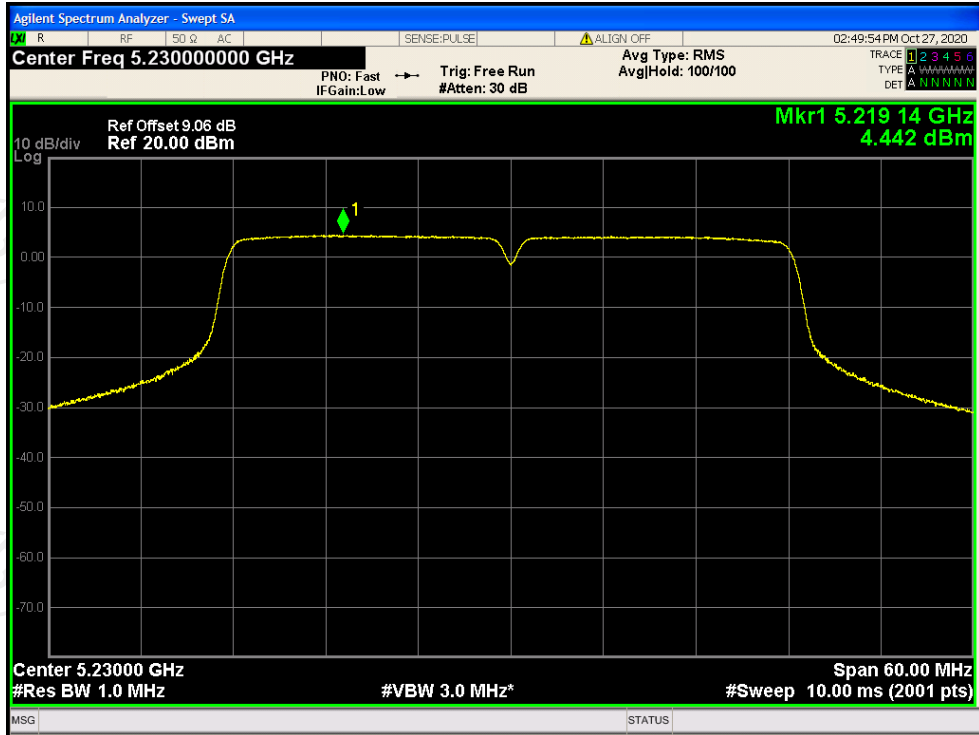
PSD NVNT ac20 5240MHz



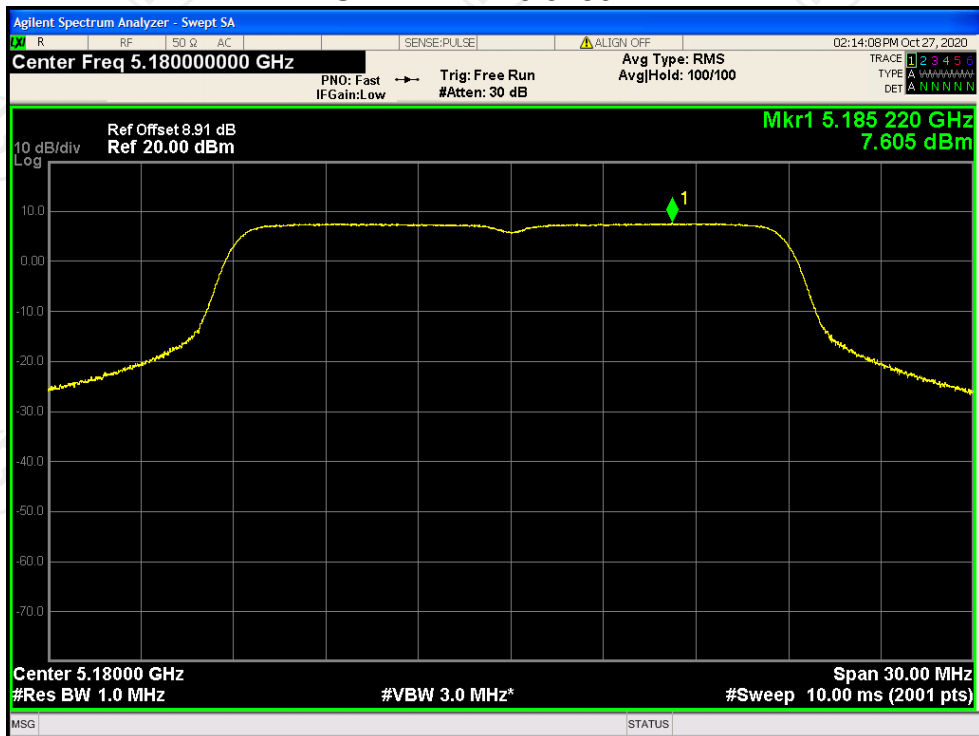
PSD NVNT ac40 5190MHz



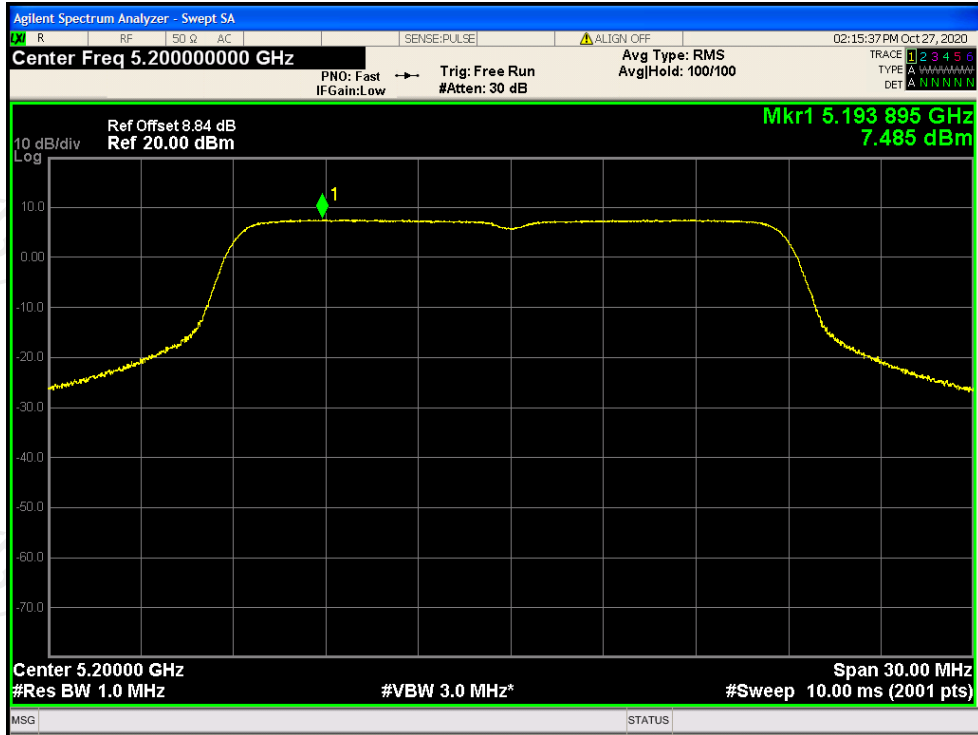
PSD NVNT ac40 5230MHz



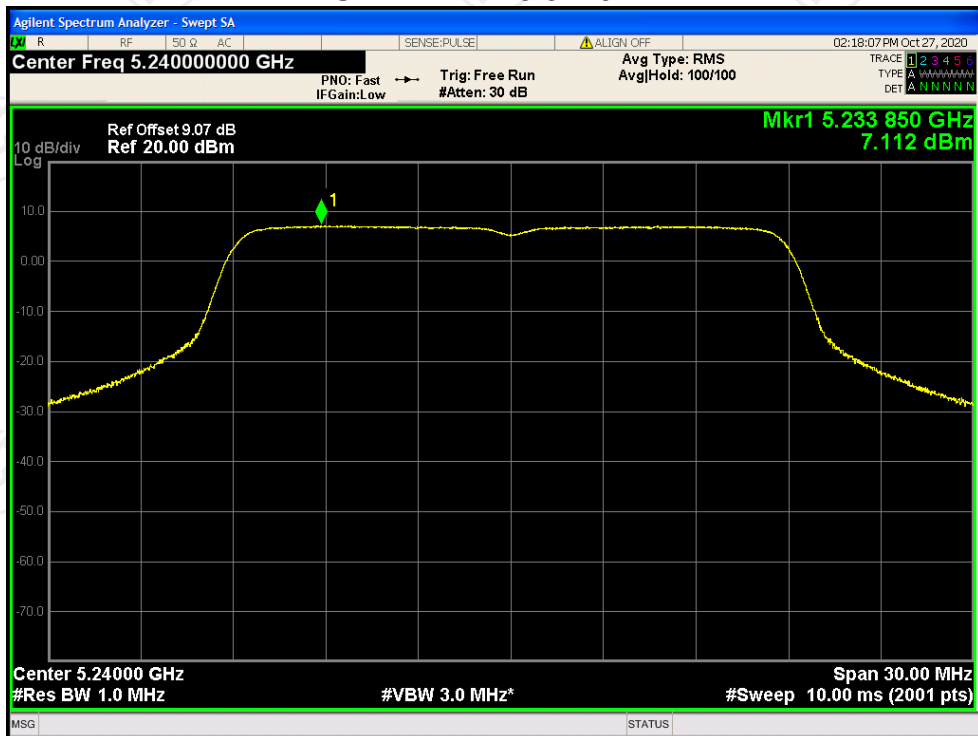
PSD NVNT n20 5180MHz



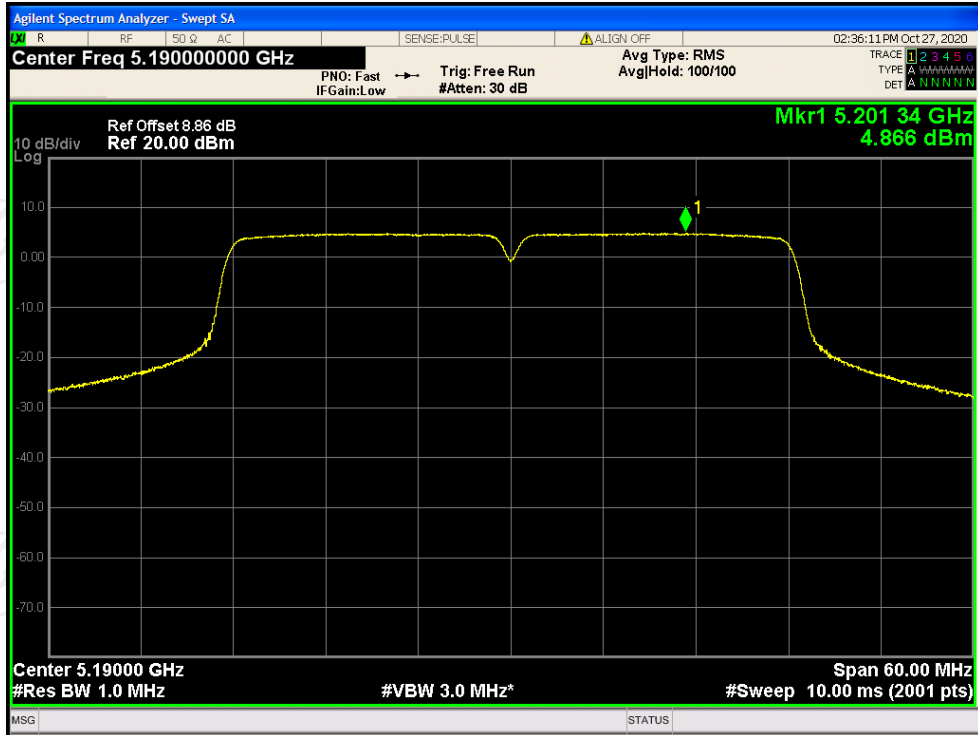
PSD NVNT n20 5200MHz



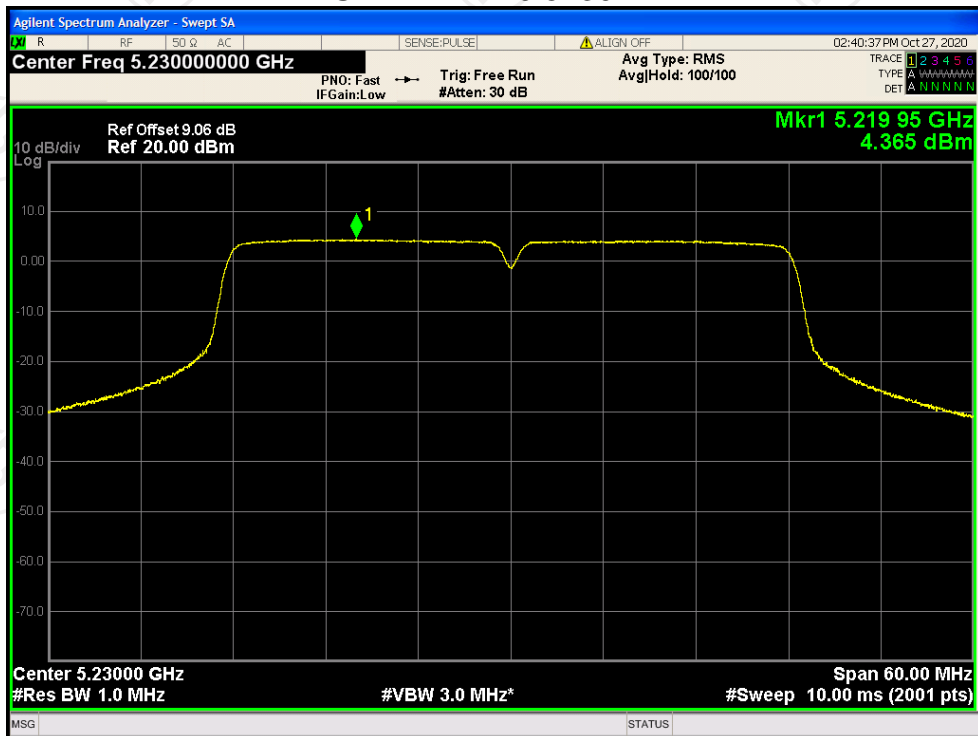
PSD NVNT n20 5240MHz



PSD NVNT n40 5190MHz



PSD NVNT n40 5230MHz

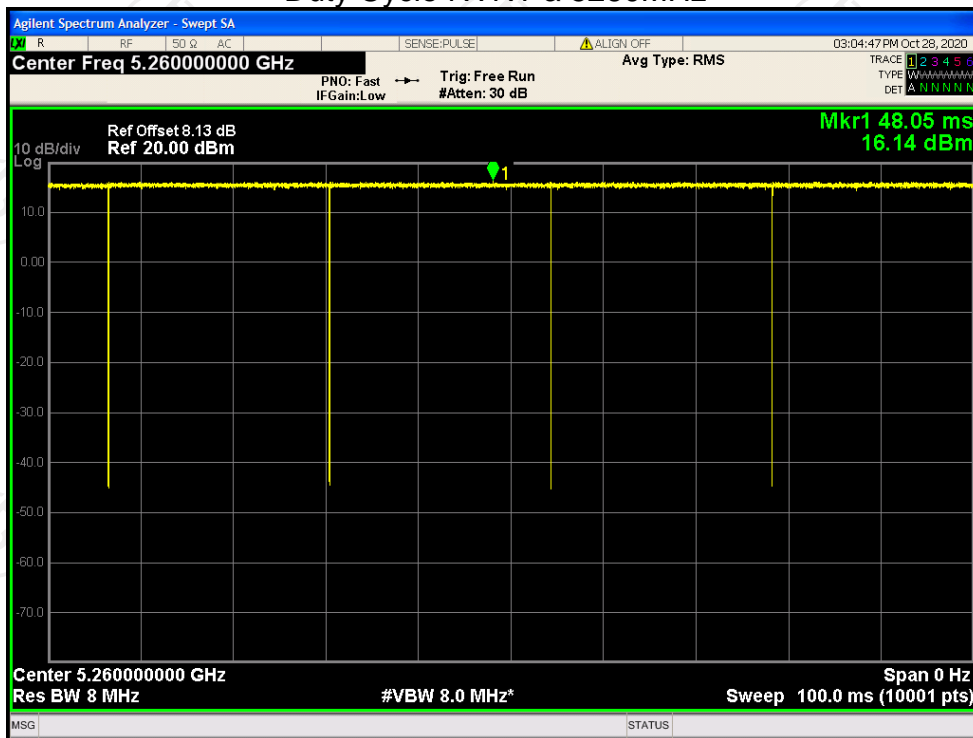


Band 2A:

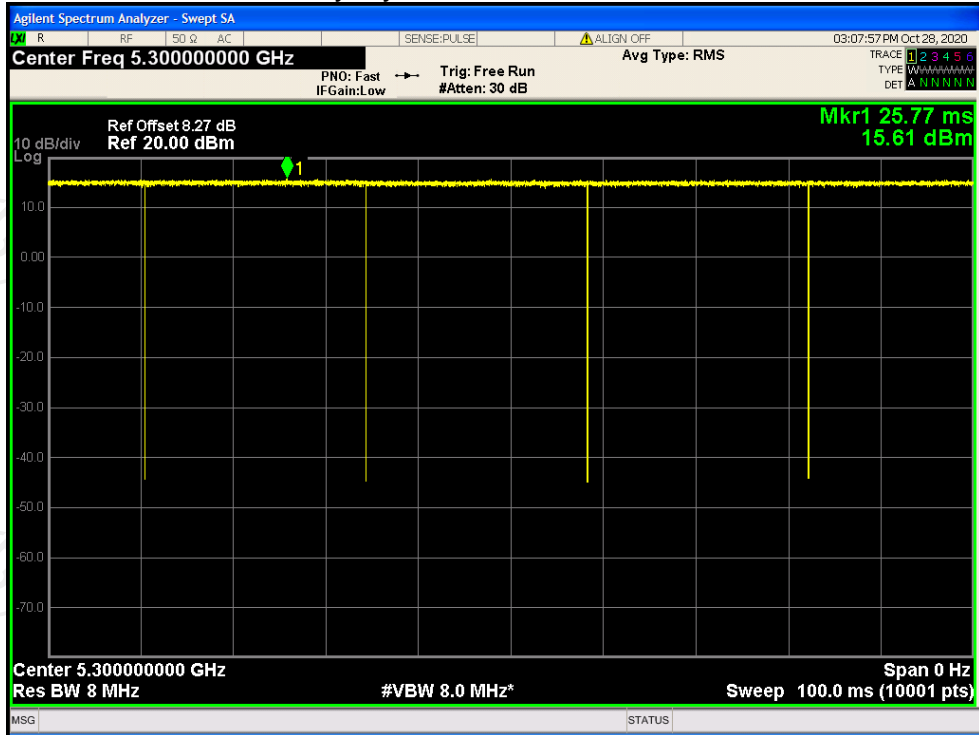
Duty Cycle

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)
a	5260	99.8	0
a	5300	99.8	0
a	5320	99.75	0
ac20	5260	99.77	0
ac20	5300	99.75	0
ac20	5320	99.82	0
ac40	5270	99.81	0
ac40	5310	99.8	0
n20	5260	99.82	0
n20	5300	99.8	0
n20	5320	99.8	0
n40	5270	99.8	0
n40	5310	99.81	0

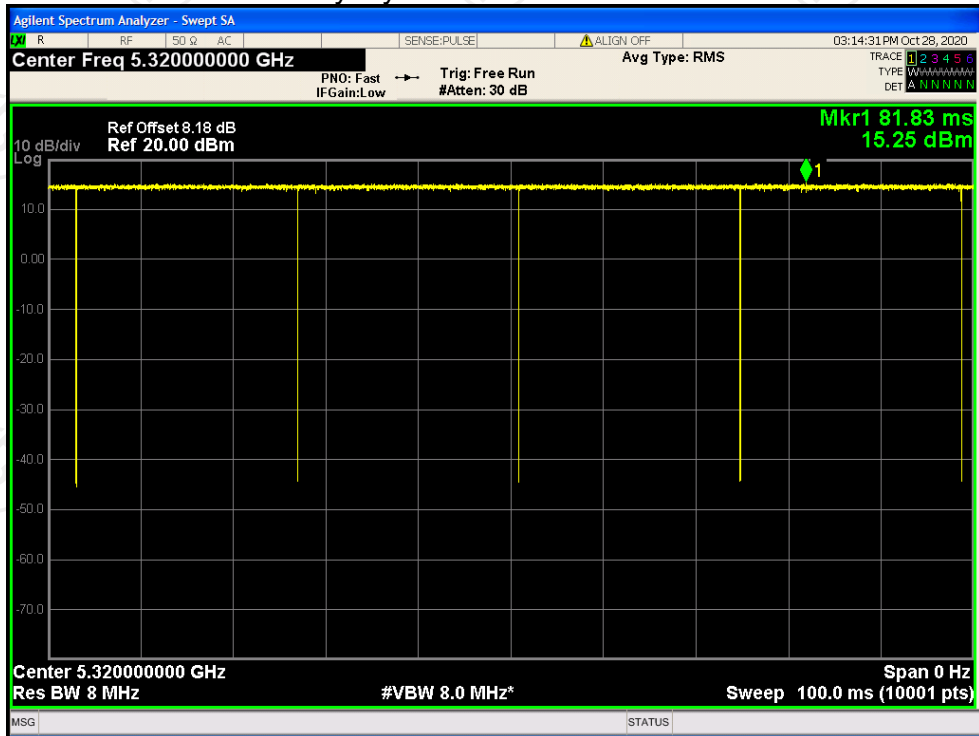
Duty Cycle NVNT a 5260MHz



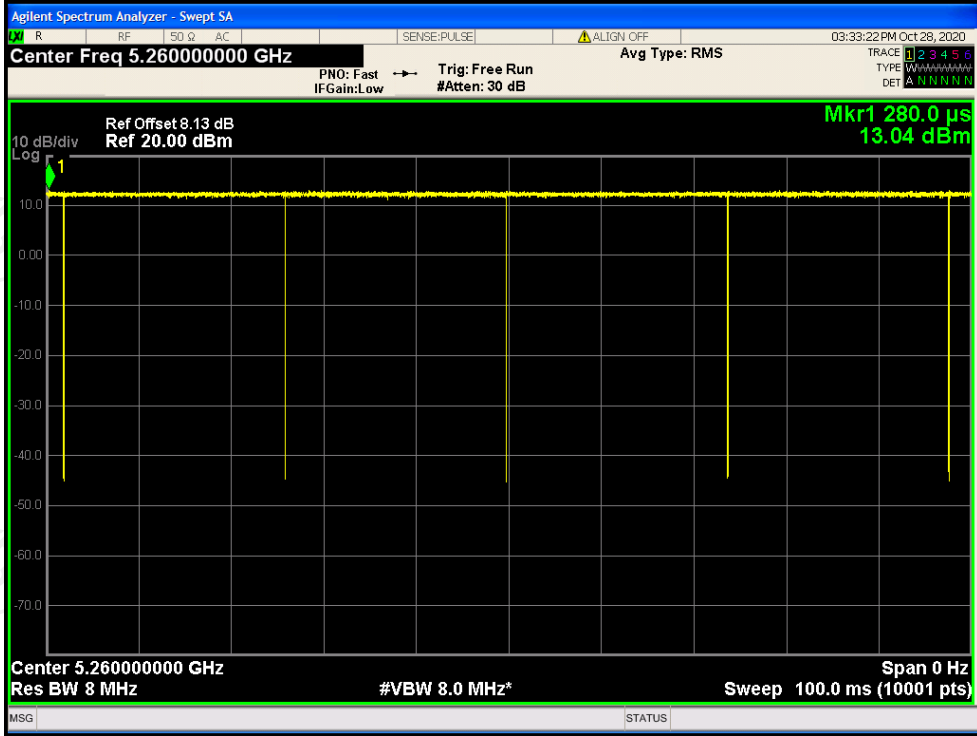
Duty Cycle NVNT a 5300MHz



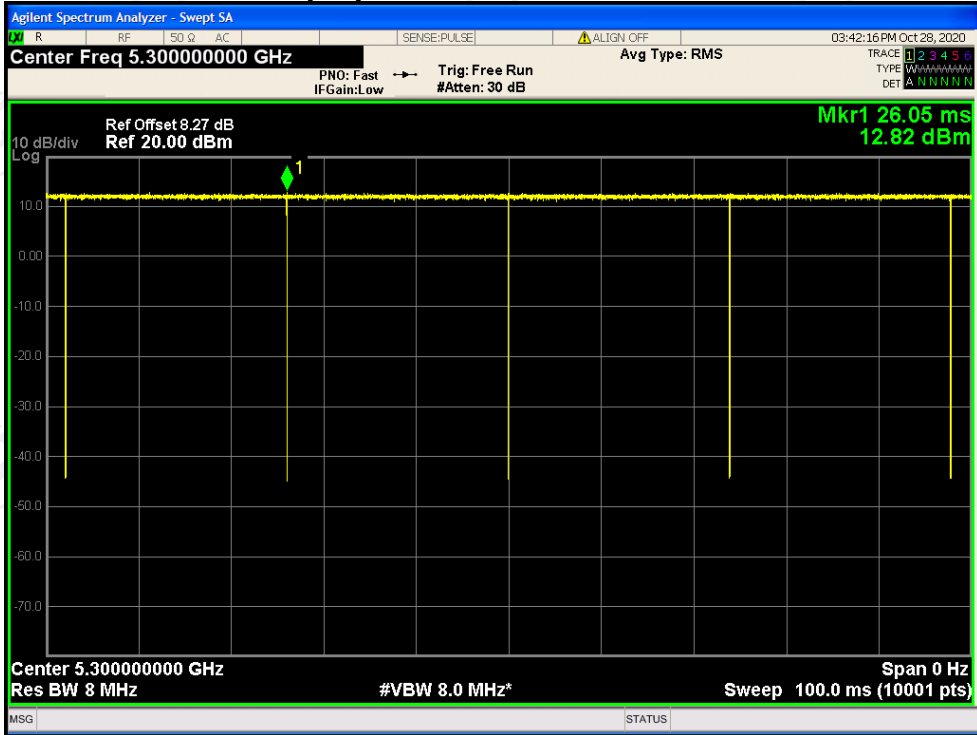
Duty Cycle NVNT a 5320MHz



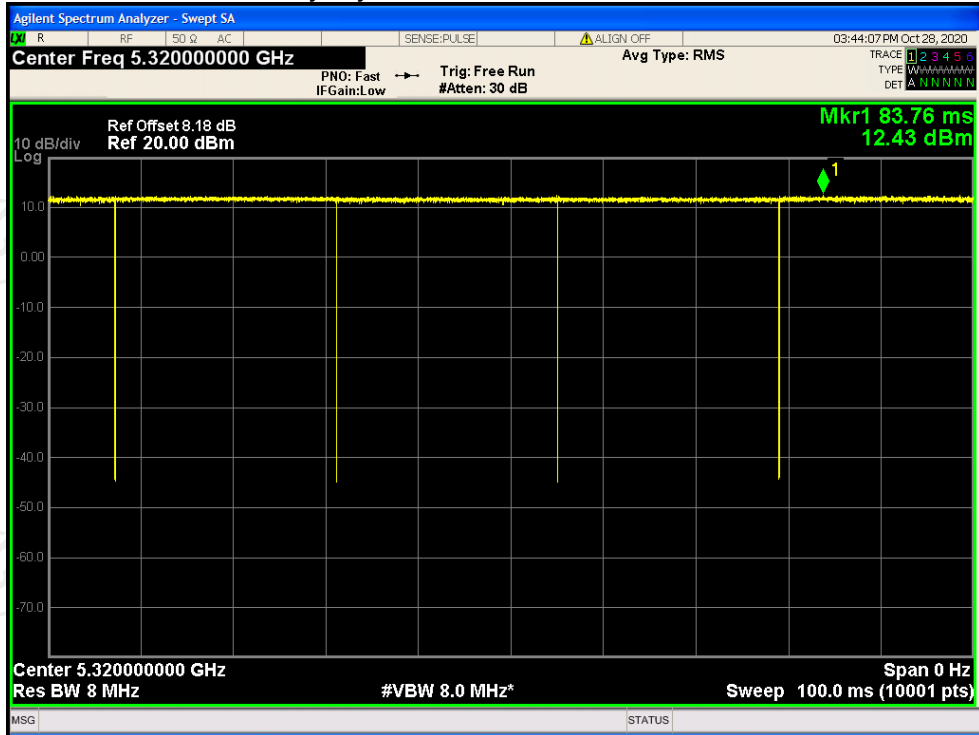
Duty Cycle NVNT ac20 5260MHz



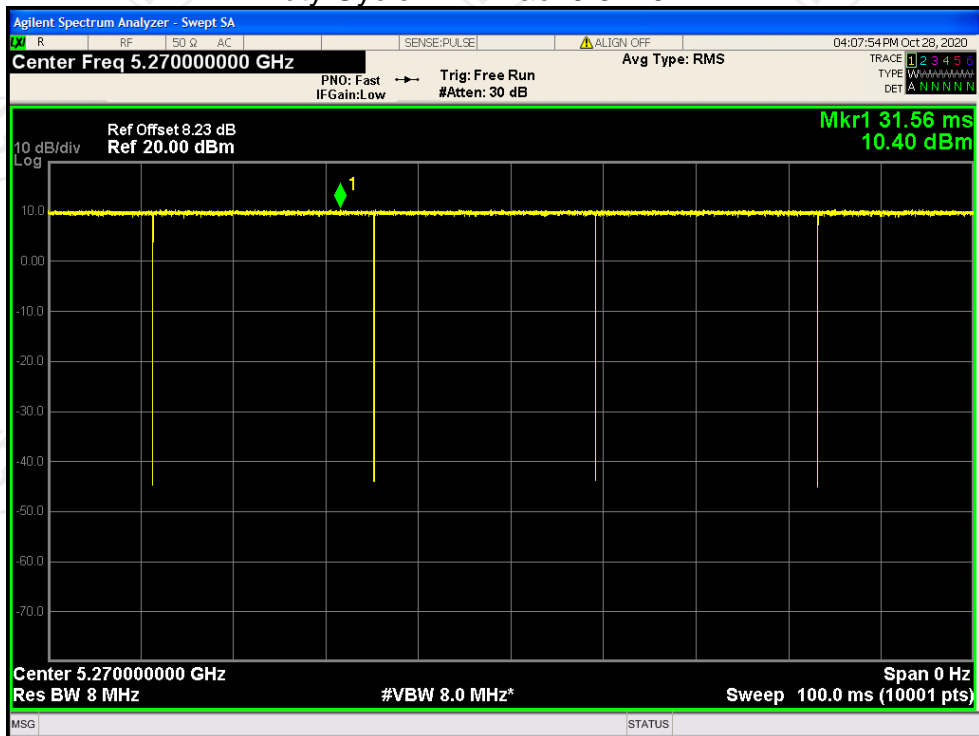
Duty Cycle NVNT ac20 5300MHz



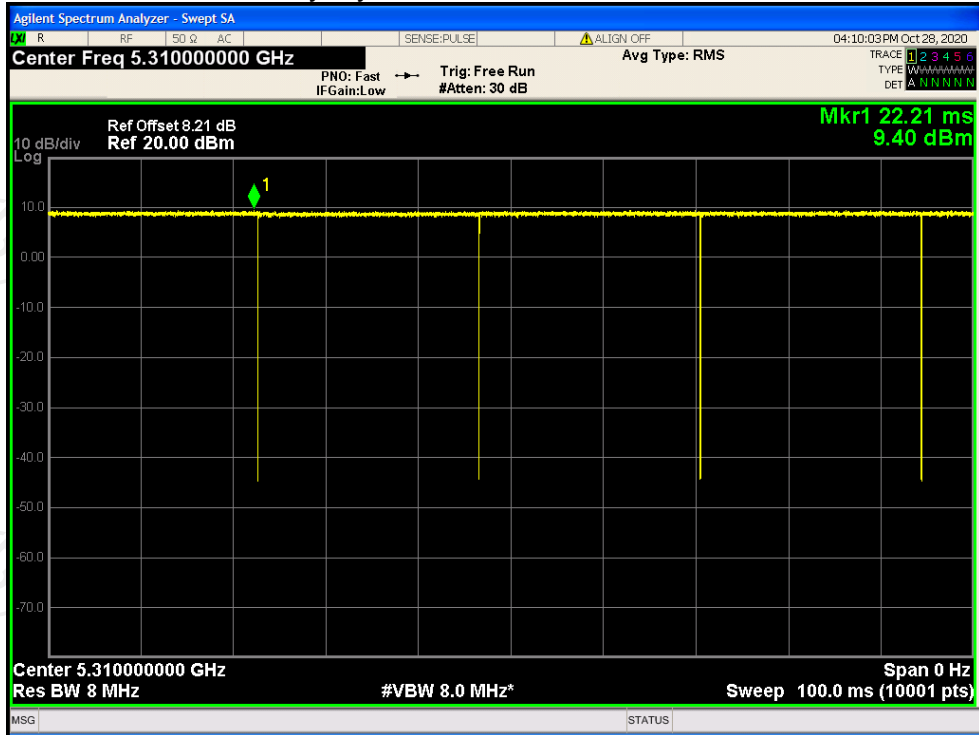
Duty Cycle NVNT ac20 5320MHz



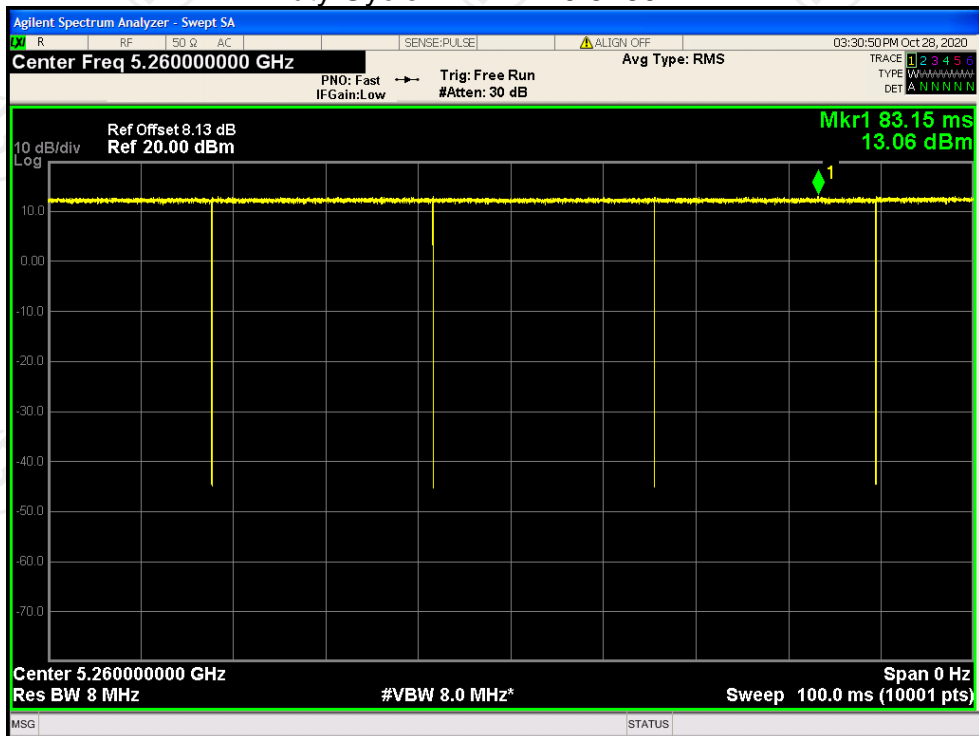
Duty Cycle NVNT ac40 5270MHz



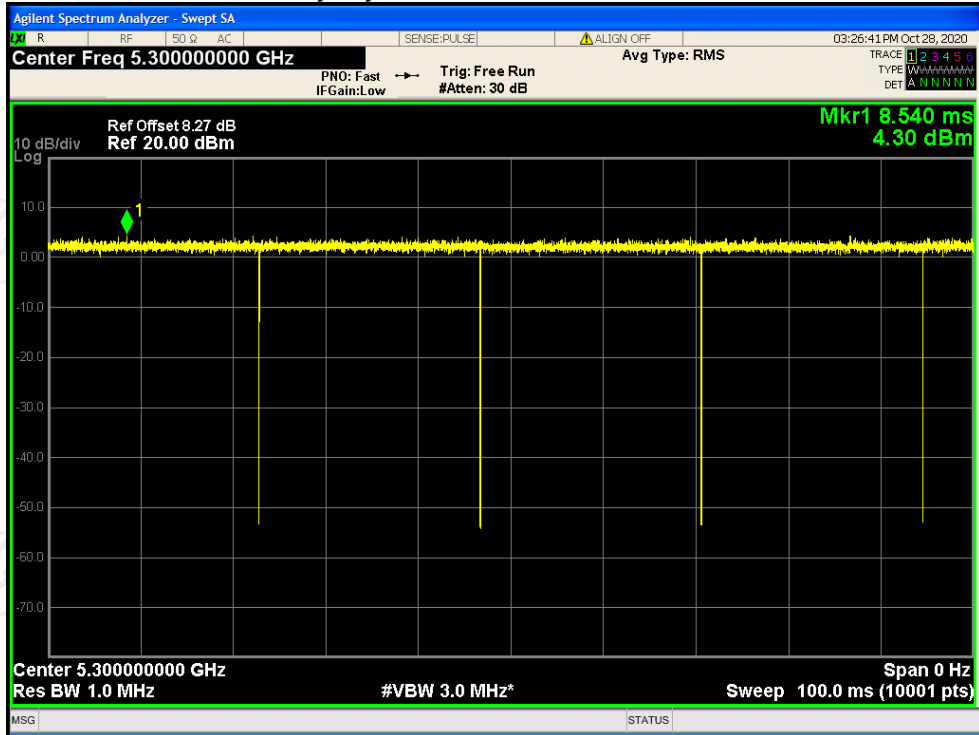
Duty Cycle NVNT ac40 5310MHz



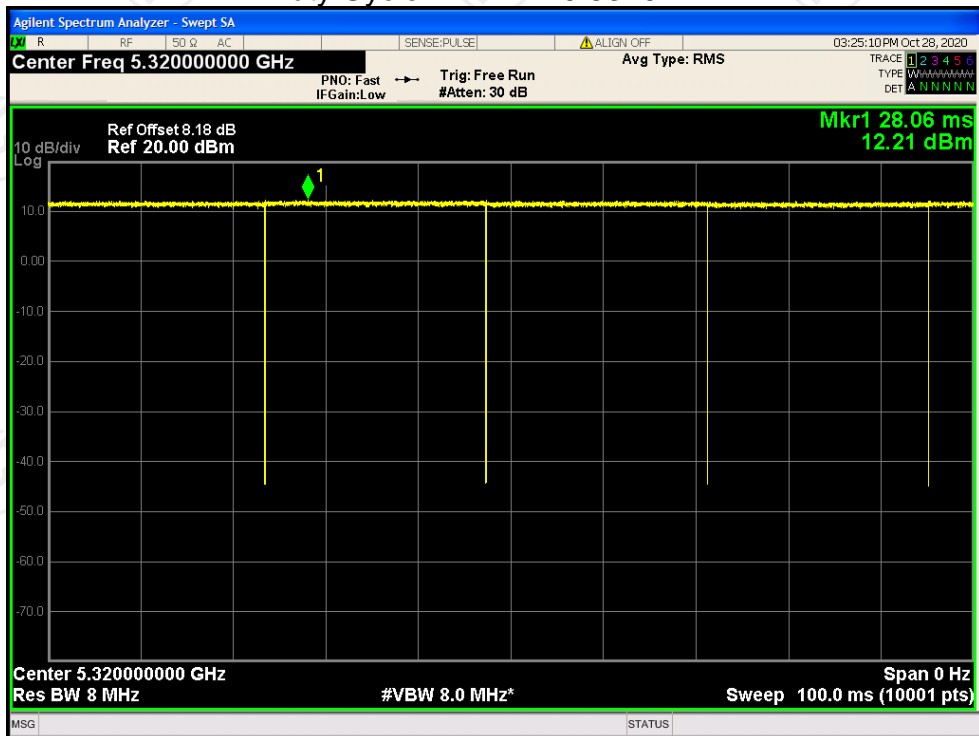
Duty Cycle NVNT n20 5260MHz



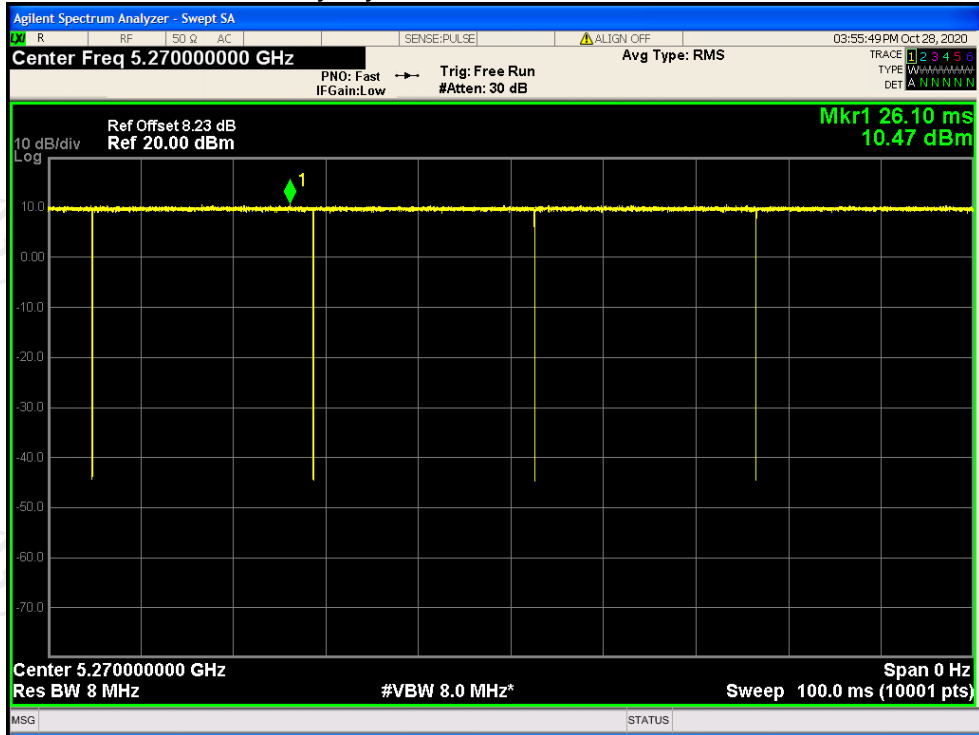
Duty Cycle NVNT n20 5300MHz



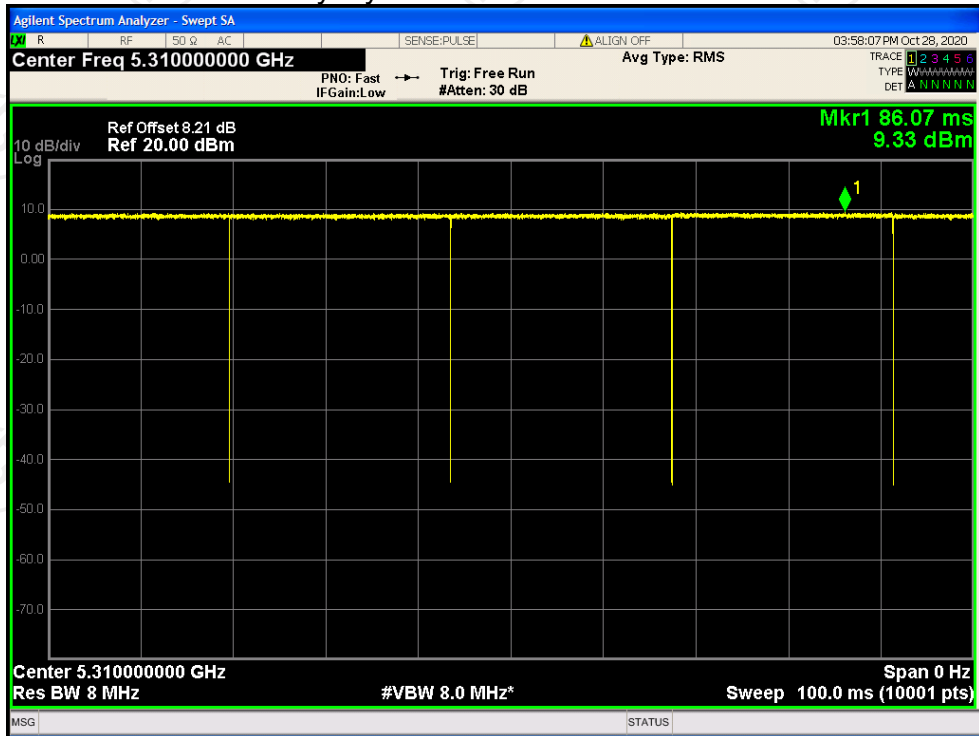
Duty Cycle NVNT n20 5320MHz



Duty Cycle NVNT n40 5270MHz



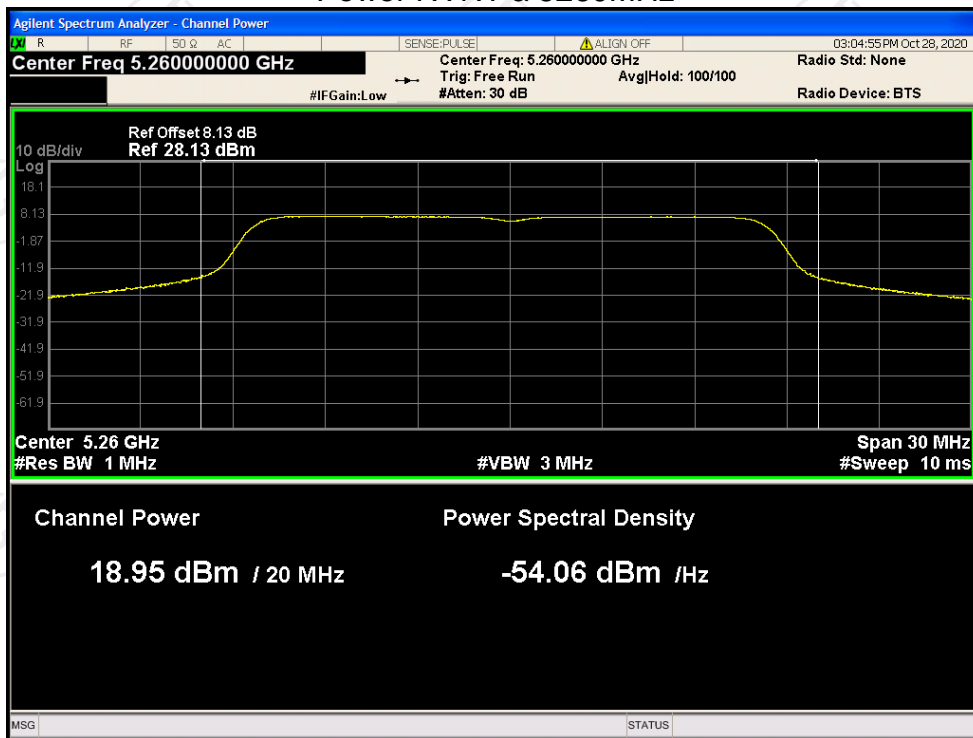
Duty Cycle NVNT n40 5310MHz



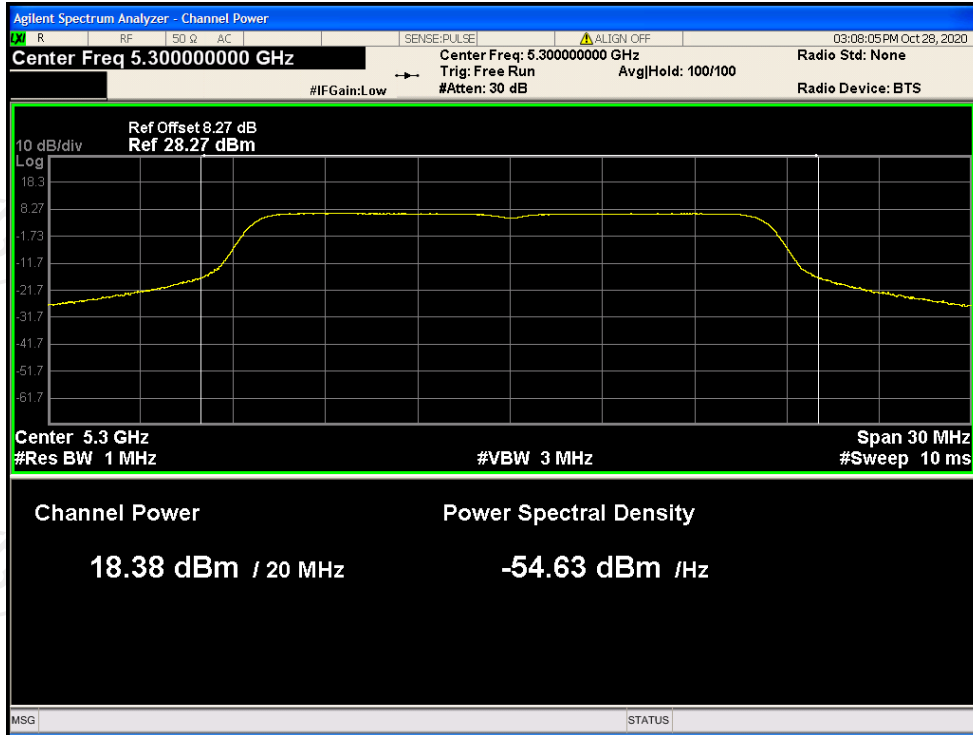
Maximum Conducted Output Power

Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
a	5260	18.954	24	Pass
a	5300	18.376	24	Pass
a	5320	18.038	24	Pass
ac20	5260	16.041	24	Pass
ac20	5300	15.788	24	Pass
ac20	5320	15.428	24	Pass
ac40	5270	17.007	24	Pass
ac40	5310	15.94	24	Pass
n20	5260	16.02	24	Pass
n20	5300	15.806	24	Pass
n20	5320	15.309	24	Pass
n40	5270	17.014	24	Pass
n40	5310	15.905	24	Pass

Power NVNT a 5260MHz



Power NVNT a 5300MHz



Power NVNT a 5320MHz

