TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID: 2AM6L-ADP

Product: Camera

Model No.: AD Plus

Additional Model No.: N/A

Trade Mark: N/A

Report No.: TCT210423E040

Issued Date: May 25, 2021

Issued for:

Streamax Technology Co., Ltd.
21-23/F, Building B1, Zhiyuan, No. 1001, Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong, 518055 China

Issued By:

Shenzhen Tongce Testing Lab
TCT Testing Industrial Park, Fuqiao 5th Industrial Zone, Fuhai Street, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China
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Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

1. Test Certification

Product:	Camera
Model No.:	AD Plus
Additional Model No.:	N/A
Trade Mark:	**N/A**
Applicant:	Streamax Technology Co., Ltd.
Address:	21-23/F, Building B1, Zhiyuan, No. 1001, Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong, 518055 China
Manufacturer:	Streamax Technology Co., Ltd.
Address:	21-23/F, Building B1, Zhiyuan, No. 1001, Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong, 518055 China
Date of Test:	Apr. 26, 2021 – May 24, 2021
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:*** ***May 24, 2021***

Rleo

Reviewed By:  ***Date:*** ***May 25, 2021***

Beryl Zhao

Approved By:  ***Date:*** ***May 25, 2021***

Tomsin

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2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	N/A
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.

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3. EUT Description

Product:	Camera
Model No.:	AD Plus
Additional Model No.:	N/A
Trade Mark:	**N/A**
Operation Frequency:	Band 3: 5725 MHz -5850 MHz
Channel Bandwidth:	802.11a: 20MHz 802.11n: 20MHz, 40MHz 802.11ac: 20MHz, 40MHz, 80MHz
Modulation Technology:	Orthogonal Frequency Division Multiplexing(OFDM)
Modulation Type	256QAM, 64QAM, 16QAM, BPSK, QPSK
Antenna Type:	Internal Antenna
Antenna Gain:	4.87dBi
Power Supply:	DC 12V

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

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Test Frequency each of channel

Band 3

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745	151	5755	155	5775
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%)
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.	

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:

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	6 Mbps
802.11n(HT20)	6.5 Mbps
802.11n(HT40)	13.5 Mbps
802.11ac(VHT20)	6.5 Mbps
802.11ac(VHT40)	13.5 Mbps
802.11ac(VHT80)	29.3 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
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. For conducted measurements (Output Power, Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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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

  Designation Number: CN1205

  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

  CAB identifier: CN0031

  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: TCT Testing Industrial Park, Fuqiao 5th Industrial Zone, Fuhai Street, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

5.3. Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended 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	±2.56dB
2	RF power, conducted	±0.12dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.92dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%

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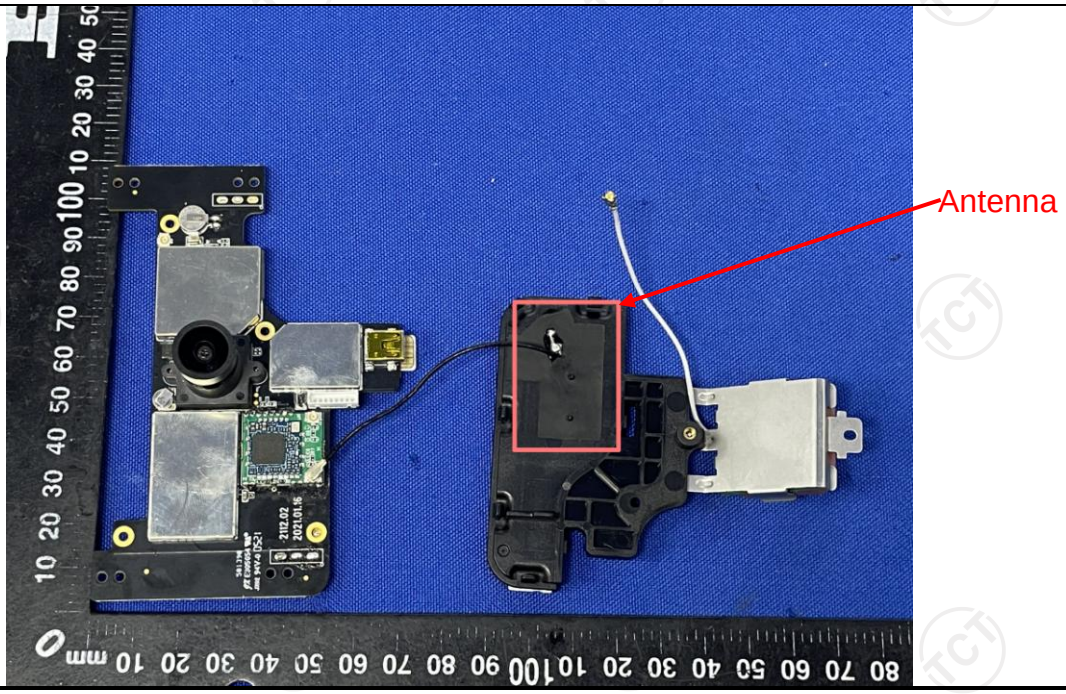
6. Test Results and Measurement Data

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 WIFI antenna is internal antenna which permanently attached, and the best case gain of the antenna is 4.87dBi.	



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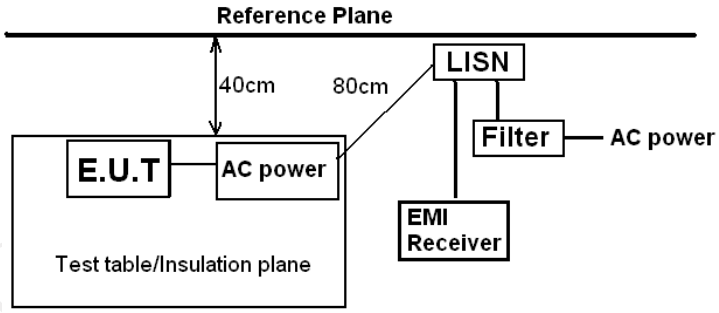
6.2. Conducted Emission

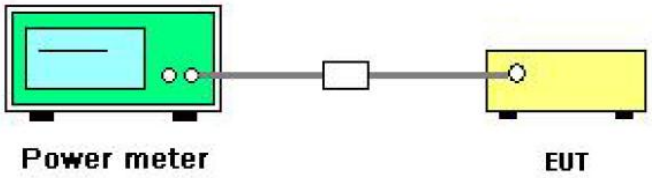
6.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Frequency Range:</td><td>150 kHz to 30 MHz</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9 kHz, VBW=30 kHz, Sweep time=auto</td></tr>
<tr><td>Limits:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<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>
</table>
</td></tr>
<tr><td>Test Setup:</td><td> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Mode:</td><td>Tx Mode</td></tr>
<tr><td>Test Procedure:</td><td>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.</td></tr>
<tr><td>Test Result:</td><td>N/A</td></tr>
</table>

6.3. Maximum Conducted Output Power

6.3.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407(a)</td></tr>
<tr><td>Test Method:</td><td>KDB662911 D01 Multiple Transmitter Output v02r01
KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E</td></tr>
<tr><td>Limit:</td><td><table><tr><td>Frequency Band (MHz)</td><td>Limit</td></tr><tr><td>5745 - 5825</td><td>30dBm(1W)</td></tr></table></td></tr>
<tr><td>Test Setup:</td><td> 
</td></tr>
<tr><td>Test Mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Test Procedure:</td><td>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.</td></tr>
<tr><td>Test Result:</td><td>PASS</td></tr>
<tr><td>Remark:</td><td>Conducted output power= measurement power +10log(1/x) X is duty cycle=1, so 10log(1/1)=0
Conducted output power= measurement power</td></tr>
</table>

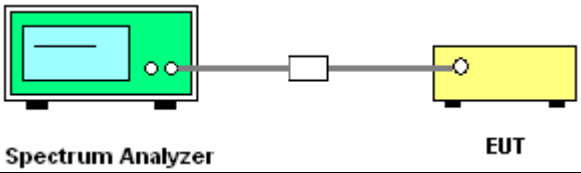
6.3.2. Test Instruments

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
RF Cable (9KHz-40GHz)	TCT	RE-high-02	N/A	Sep. 02, 2021
Antenna Connector	TCT	RFC-03	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).*

6.4. 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:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	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).*

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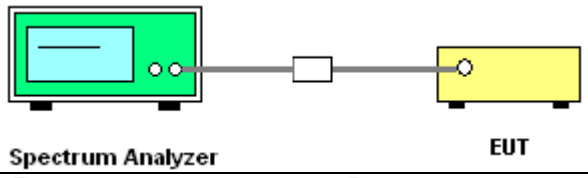
6.5. 26dB Bandwidth and 99% Occupied Bandwidth

6.5.1. Test Specification

Test Requirement:	47 CFR Part 15C Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section D
Limit:	No restriction limits
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section D 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. 4. Measure and record the results in the test report.
Test Result:	PASS

6.5.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2021
RF Cable (9KHz-26.5GHz)	TCT	RE-high-02	N/A	Sep. 02, 2021
Antenna Connector	TCT	RFC-03	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:	≤30.00dBm/500KHz for Band 3 5725MHz-5850MHz The e.i,r,p spectral density for Band 1 5150MHz – 5250 MHz should not exceed 10dBm/MHz
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	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

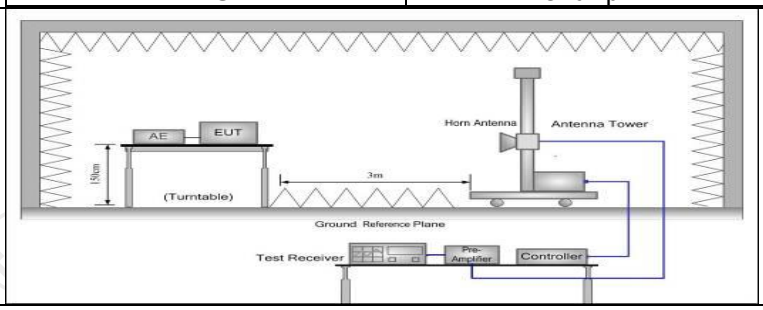
6.6.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2021
RF Cable (9KHz-40GHz)	TCT	RE-high-02	N/A	Sep. 02, 2021
Antenna Connector	TCT	RFC-03	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).*

6.7. Band edge

6.7.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC CFR47 Part 15E Section 15.407</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10 2013</td></tr>
<tr><td>Limit:</td><td>In un-restricted band:
For Band 3:
<table>
<tr><td>Frequency (MHz)</td><td>Limit (dBm/MHz)</td><td>Frequency (MHz)</td><td>Limit (dBm/MHz)</td></tr>
<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>
</table>
E[dBμV/m] = EIRP[dBm] + 95.2 @3m
In restricted band:
<table>
<tr><td>Detector</td><td>Limit@3m</td></tr>
<tr><td>Peak</td><td>74dBμV/m</td></tr>
<tr><td>AVG</td><td>54dBμV/m</td></tr>
</table></td></tr>
<tr><td>Test Setup:</td><td> 
</td></tr>
<tr><td>Test Mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Test Procedure:</td><td>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</td></tr>
</table>

	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

802.11 a	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 3	Lowest	5725	72.49	5.82	78.31	122.2	/	-43.89	H
		5725	74.53	5.82	80.35	122.2	/	-41.85	V
	Highest	5850	64.75	6.52	71.27	122.2	/	-50.93	H
		5850	68.35	6.52	74.87	122.2	/	-47.33	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

802.11 nHT20	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 3	Lowest	5725	69.58	8.21	77.79	122.2	/	-44.41	H
		5725	72.52	8.21	80.73	122.2	/	-41.47	V
	Highest	5850	65.16	8.87	74.03	122.2	/	-48.17	H
		5850	67.31	8.87	76.18	122.2	/	-46.02	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

802.11 nHT40	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 3	Lowest	5725	70.85	5.82	76.67	122.2	/	-45.53	H
		5725	76.73	5.82	82.55	122.2	/	-39.65	V
	Highest	5850	64.79	6.52	71.31	122.2	/	-50.89	H
		5850	65.81	6.52	72.33	122.2	/	-49.87	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

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802.11 ac HT20	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 3	Lowest	5725	73.13	8.21	81.34	122.2	/	-40.86	H
		5725	73.69	8.21	81.90	122.2	/	-40.30	V
	Highest	5850	65.23	8.87	74.10	122.2	/	-48.10	H
		5850	67.73	8.87	76.60	122.2	/	-45.60	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

802.11 ac HT40	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 3	Lowest	5725	73.82	5.82	79.64	122.2	/	-42.56	H
		5725	76.90	5.82	82.72	122.2	/	-39.48	V
	Highest	5850	64.47	6.52	70.99	122.2	/	-51.21	H
		5850	66.12	6.52	72.64	122.2	/	-49.56	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

802.11 ac HT80	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 3	Lowest	5725	70.89	8.21	79.10	122.2	/	-43.10	H
		5725	74.04	8.21	82.25	122.2	/	-39.95	V
	Highest	5850	61.54	8.87	70.41	122.2	/	-51.79	H
		5850	63.32	8.87	72.19	122.2	/	-50.01	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

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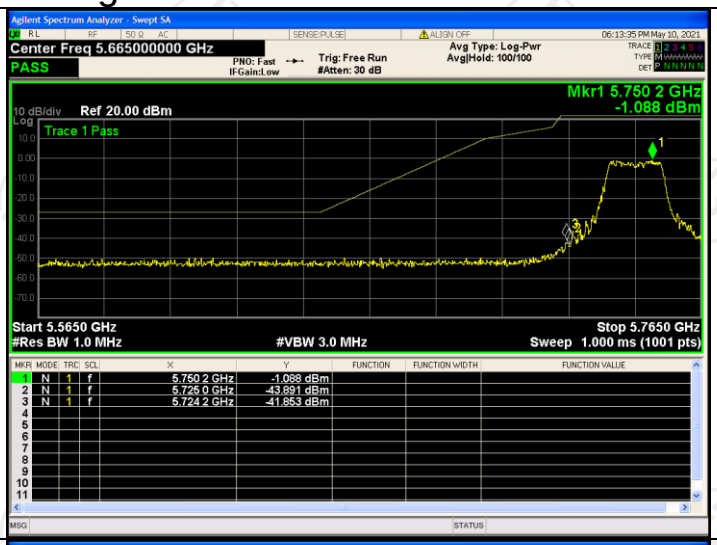
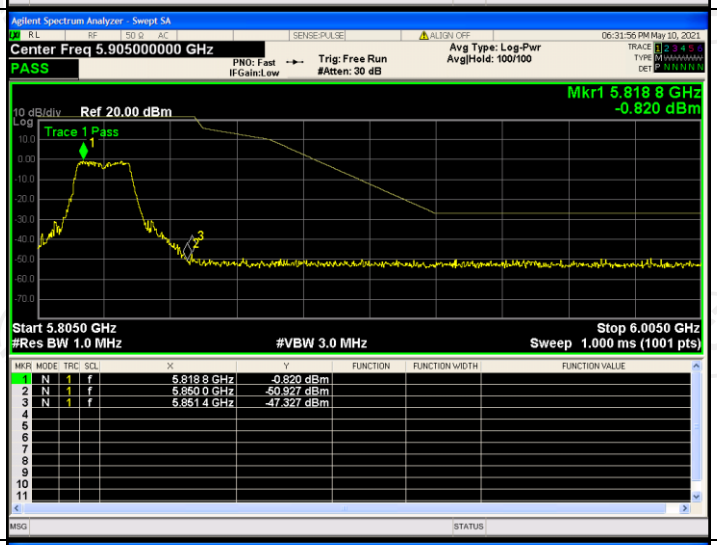
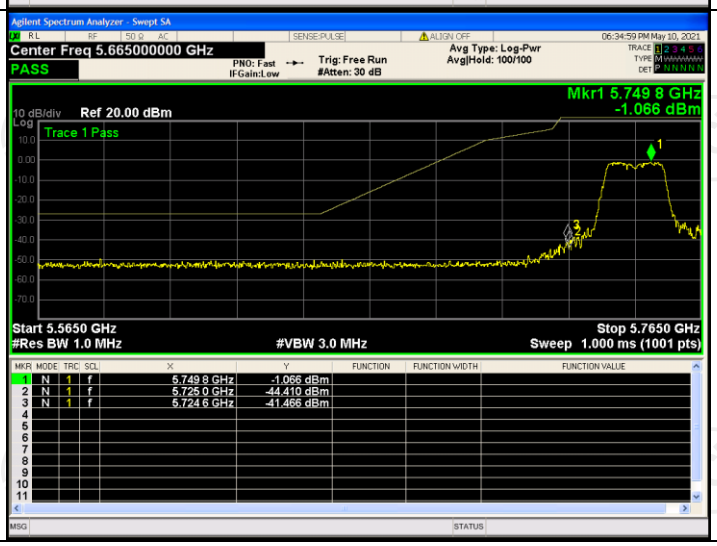
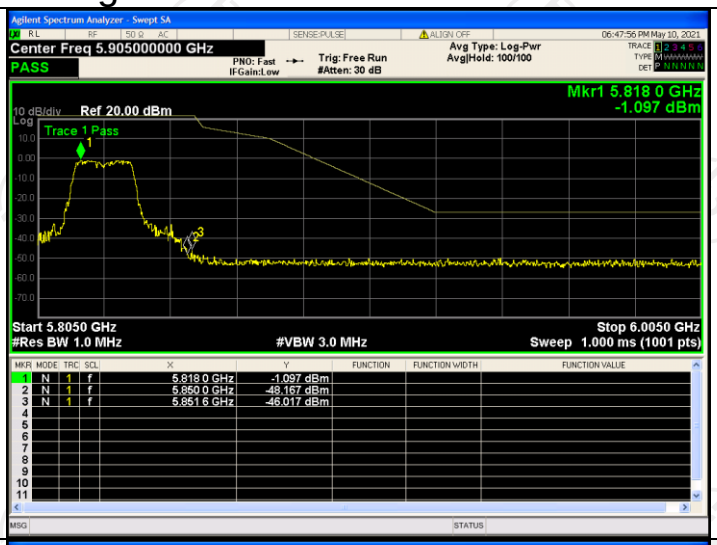
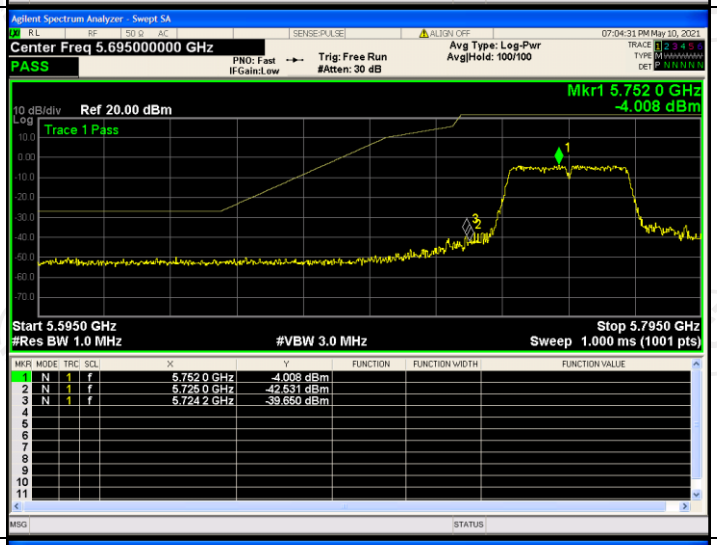
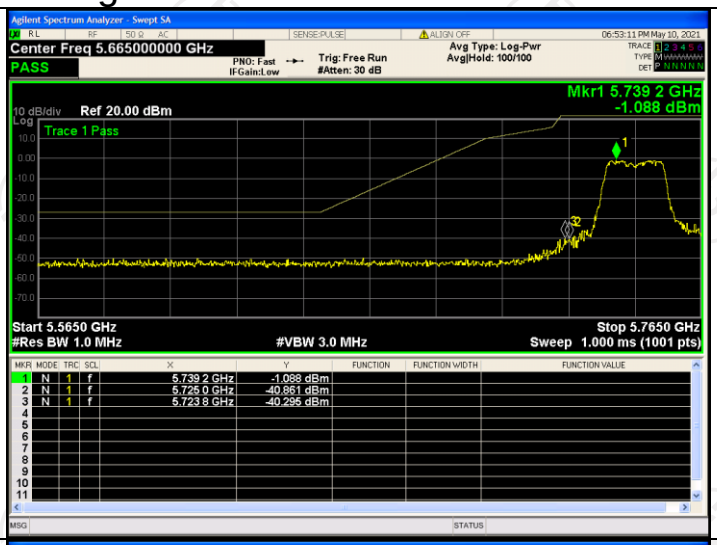
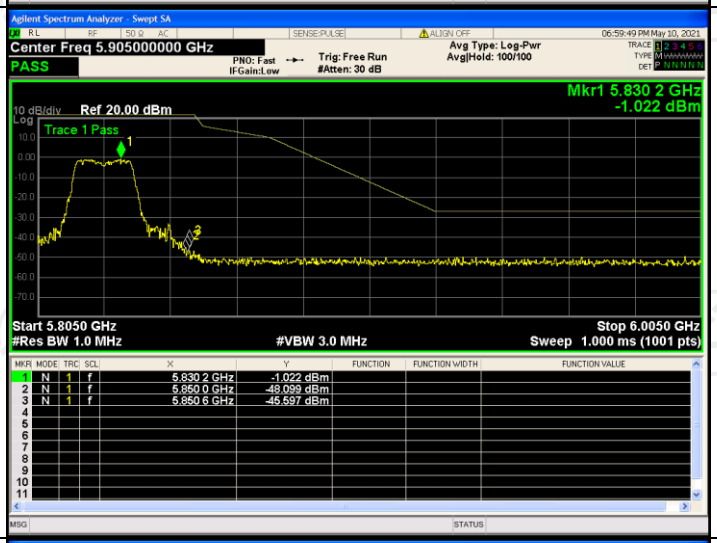
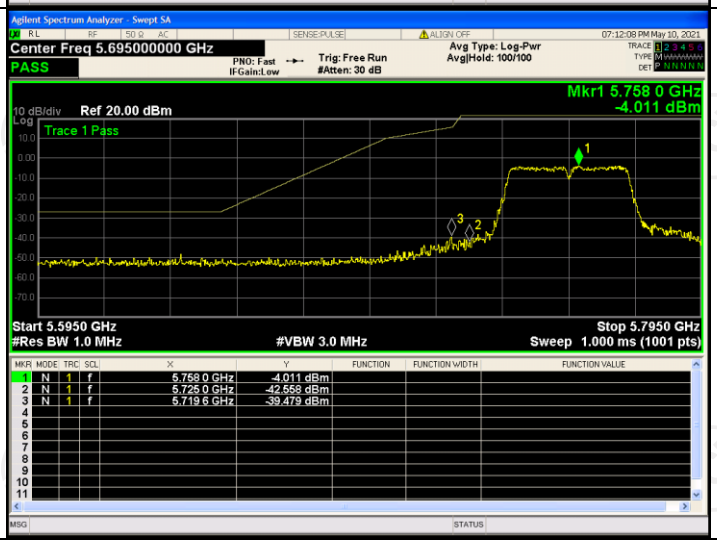
Band 3 Band-edge for RF Conducted Emissions

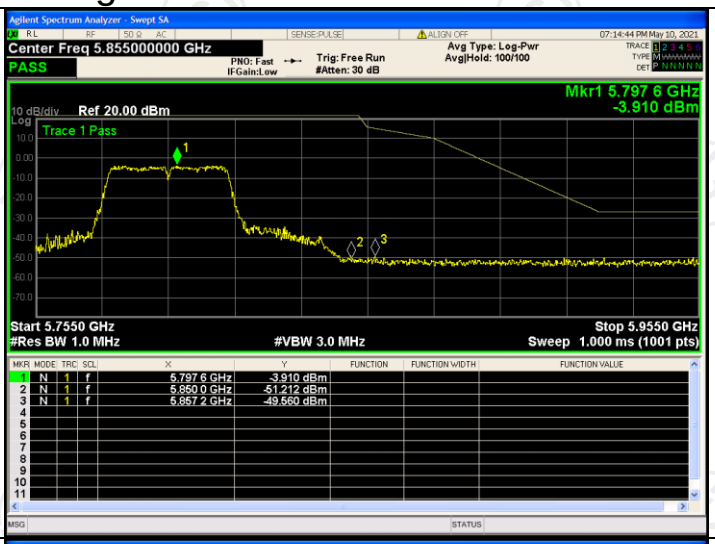
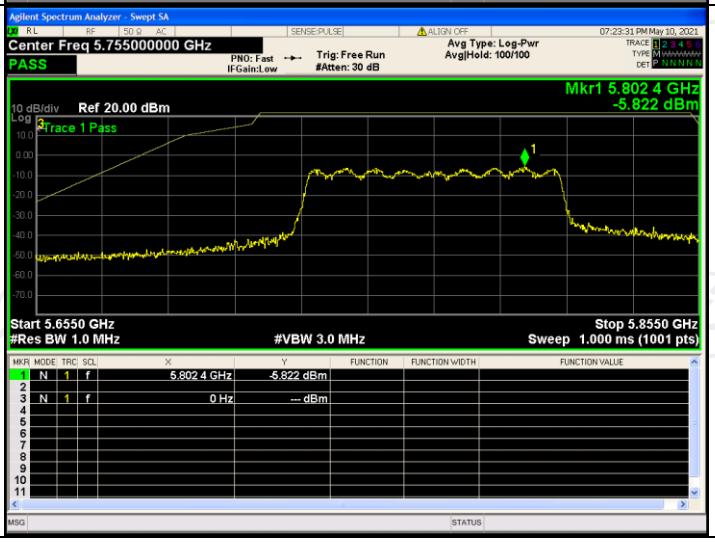
802.11a /LCH		
802.11a /HCH		
802.11n HT20 / LCH		

Band 3 Band-edge for RF Conducted Emissions

802.11n HT20 / HCH		
802.11n HT40 /LCH		
802.11n HT40 /HCH		

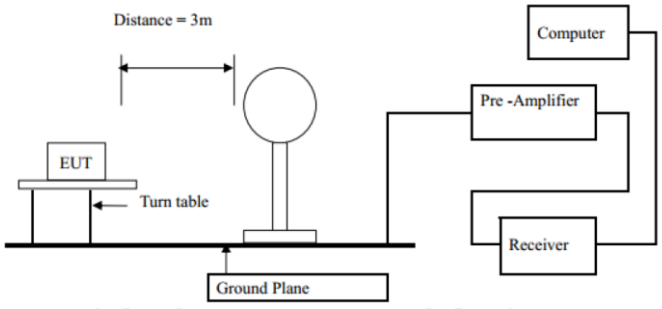
Band 3 Band-edge for RF Conducted Emissions

802.11ac HT20 / LCH		
802.11ac HT20 / HCH		
802.11ac HT40 / LCH		

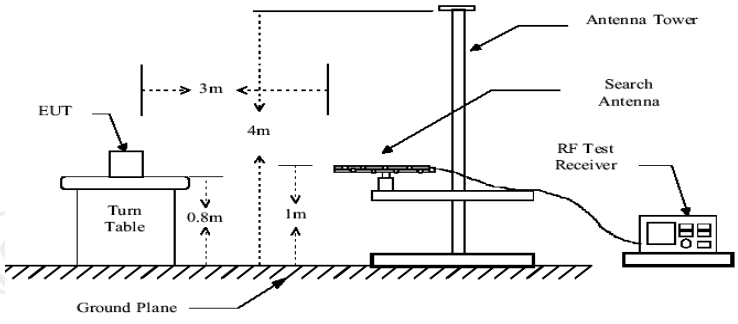
Band 3 Band-edge for RF Conducted Emissions			
802.11ac HT40 / HCH			
802.11ac HT80 / MCH			

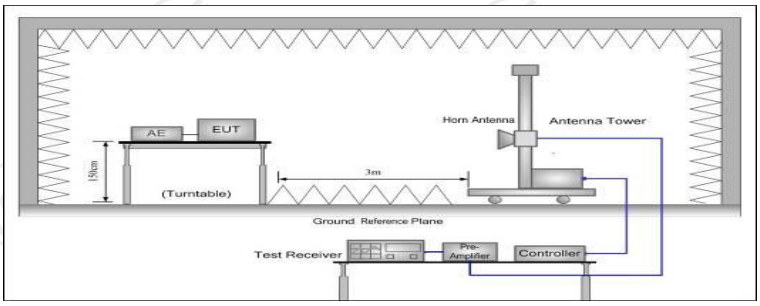
6.8. Unwanted Emission

6.8.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC CFR47 Part 15 Section 15.407 & 15.209 & 15.205</td></tr>
<tr><td>Test Method:</td><td>KDB 789033 D02 v02r01</td></tr>
<tr><td>Frequency Range:</td><td>9kHz to 40GHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Horizontal & Vertical</td></tr>
<tr><td>Operation mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>9kHz- 150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>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,
<table>
<tr><td>Frequency</td><td>Field Strength (microvolts/meter)</td><td>Measurement Distance (meters)</td></tr>
<tr><td>0.009-0.490</td><td>2400/F(KHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(KHz)</td><td>30</td></tr>
<tr><td>1.705-30</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Detector</td></tr>
<tr><td rowspan="2">Above 1G</td><td>74.0</td><td>Peak</td></tr>
<tr><td>54.0</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions below 30MHz


30MHz to 1GHz</td></tr>
</table>

<table>
<tr><td></td><td> 

Above 1GHz

</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas 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 thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
<tr><td>Test results:</td><td>PASS</td></tr>
</table>

6.8.2. 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
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. 04, 2022
Antenna Mast	Keleto	RE-AM	N/A	N/A
Line-4	TCT	RE-high-04	N/A	Sep. 02, 2021
Line-8	TCT	RE-01	N/A	Jul. 27, 2021
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

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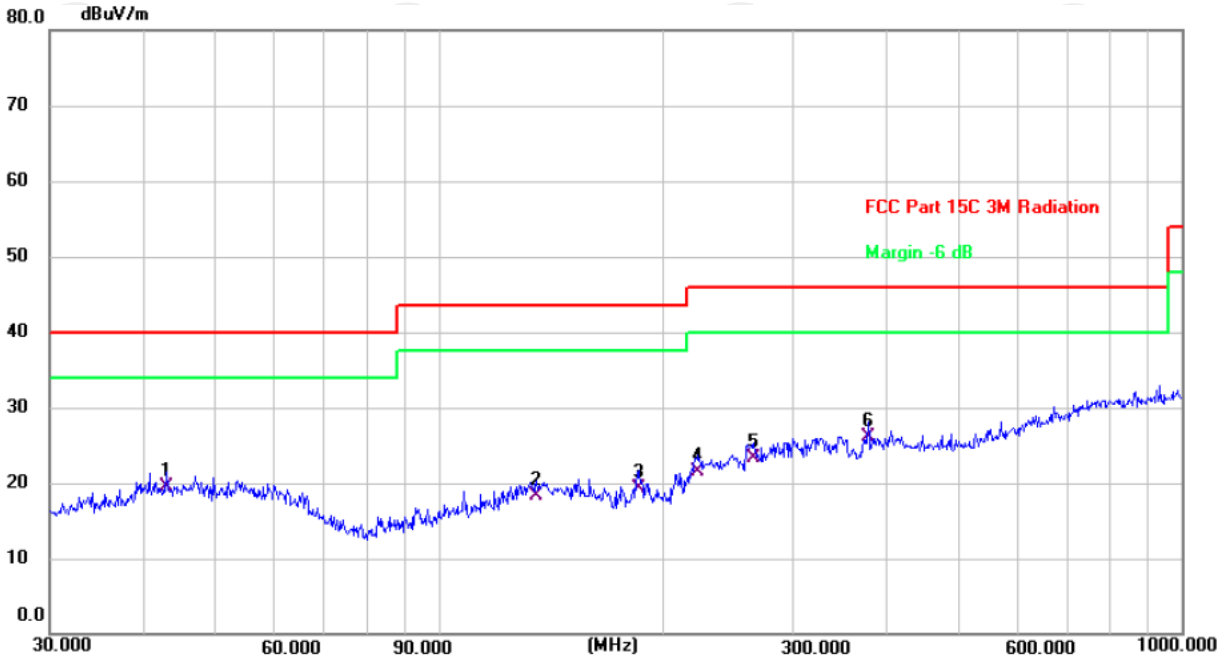
6.8.3. Test Data

Please refer to following diagram for individual

Below 1GHz

Horizontal:



Site

Limit: FCC Part 15C 3M Radiation

Polarization: *Horizontal*

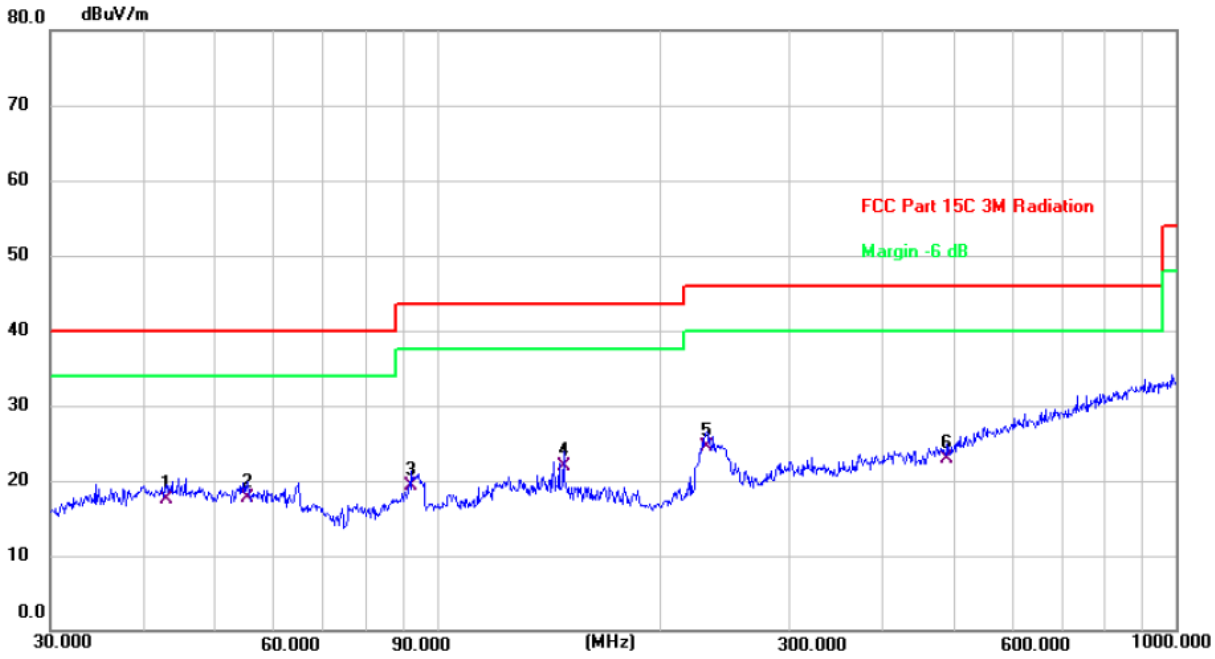
Power: DC 12V

Temperature: 25(C)

Humidity: 55 %

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	43.0504	5.61	13.94	19.55	40.00	-20.45	QP	P
2	135.5061	5.37	12.95	18.32	43.50	-25.18	QP	P
3	185.7880	8.32	11.00	19.32	43.50	-24.18	QP	P
4	223.7333	9.92	11.68	21.60	46.00	-24.40	QP	P
5	265.6757	10.30	13.00	23.30	46.00	-22.70	QP	P
6 *	378.5842	9.52	16.50	26.02	46.00	-19.98	QP	P

Vertical:



Site

Limit: FCC Part 15C 3M Radiation

Polarization: *Vertical*

Power: DC 12V

Temperature: 25(C)

Humidity: 55 %

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	43.0504	3.54	13.94	17.48	40.00	-22.52	QP	P
2	55.4147	4.38	13.42	17.80	40.00	-22.20	QP	P
3	92.4624	9.69	9.52	19.21	43.50	-24.29	QP	P
4	148.4410	8.68	13.31	21.99	43.50	-21.51	QP	P
5 *	231.7178	12.29	12.22	24.51	46.00	-21.49	QP	P
6	490.7445	3.66	19.19	22.85	46.00	-23.15	QP	P

Note: *1.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*

2. 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), 802.11nac(VHT80), and the worst case Mode (Highest channel and 802.11ac(VHT40)) was submitted only.

3.Measurement (dBμV) = Reading level + Correction Factor , correction Factor= Antenna Factor + Cable loss – Pre-amplifier.

Modulation Type: Band 3									
11a(HT20) CH149: 5745MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)
					Peak (dBµV/m)	AV (dBµV/m)			
11490	H	40.25	---	8.09	48.34	---	74	54	-5.66
17235	H	38.14	---	9.67	47.81	---	74	54	-6.19
---	H	---	---	---	---	---	---	---	---
11490	V	41.68	---	8.09	49.77	---	74	54	-4.23
17235	V	38.32	---	9.67	47.99	---	74	54	-6.01
---	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	40.67	---	8.10	48.77	---	74	54	-5.23
17355	H	38.54	---	9.65	48.19	---	74	54	-5.81
---	H	---	---	---	---	---	---	---	---
11570	V	40.82	---	8.10	48.92	---	74	54	-5.08
17355	V	37.96	---	9.65	47.61	---	74	54	-6.39
---	V	---	---	---	---	---	---	---	---

11a(HT20) 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	40.96	---	8.12	49.08	---	74	54	-4.92
17475	H	39.12	---	9.62	48.74	---	74	54	-5.26
---	H	---	---	---	---	---	---	---	---
11650	V	41.05	---	8.12	49.17	---	74	54	-4.83
17475	V	38.38	---	9.62	48.00	---	74	54	-6.00
---	V	---	---	---	---	---	---	---	---

11n(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	41.38	---	8.09	49.47	---	74	54	-4.53
17235	H	37.92	---	9.67	47.59	---	74	54	-6.41
---	H	---	---	---	---	---	---	---	---
11490	V	41.43	---	8.09	49.52	---	74	54	-4.48
17235	V	38.57	---	9.67	48.24	---	74	54	-5.76
---	V	---	---	---	---	---	---	---	---

11n(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	41.98	---	8.10	50.08	---	74	54	-3.92
17355	H	38.33	---	9.65	47.98	---	74	54	-6.02
---	H	---	---	---	---	---	---	---	---
11570	V	40.52	---	8.10	48.62	---	74	54	-5.38
17355	V	36.89	---	9.65	46.54	---	74	54	-7.46
---	V	---	---	---	---	---	---	---	---

11n(HT20) 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	40.73	---	8.12	48.85	---	74	54	-5.15
17475	H	38.45	---	9.62	48.07	---	74	54	-5.93
---	H	---	---	---	---	---	---	---	---
11650	V	41.96	---	8.12	50.08	---	74	54	-3.92
17475	V	38.54	---	9.62	48.16	---	74	54	-5.84
---	V	---	---	---	---	---	---	---	---

11n(HT40) 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	42.87	---	8.09	50.96	---	74	54	-3.04
17265	H	39.46	---	9.67	49.13	---	74	54	-4.87
---	H	---	---	---	---	---	---	---	---
11510	V	42.25	---	8.09	50.34	---	74	54	-3.66
17265	V	38.99	---	9.67	48.66	---	74	54	-5.34
---	V	---	---	---	---	---	---	---	---

11n(HT40) 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	41.58	---	8.10	49.68	---	74	54	-4.32
17385	H	39.37	---	9.65	49.02	---	74	54	-4.98
---	H	---	---	---	---	---	---	---	---
11590	V	41.59	---	8.10	49.69	---	74	54	-4.31
17385	V	38.28	---	9.65	47.93	---	74	54	-6.07
---	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	41.97	---	8.09	50.06	---	74	54	-3.94
17235	H	39.63	---	9.67	49.30	---	74	54	-4.70
---	H	---	---	---	---	---	---	---	---
11490	V	41.17	---	8.09	49.26	---	74	54	-4.74
17235	V	38.78	---	9.67	48.45	---	74	54	-5.55
---	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	40.36	---	8.10	48.46	---	74	54	-5.54
17355	H	38.48	---	9.65	48.13	---	74	54	-5.87
---	H	---	---	---	---	---	---	---	---
11570	V	39.16	---	8.10	47.26	---	74	54	-6.74
17355	V	36.92	---	9.65	46.57	---	74	54	-7.43
---	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	41.53	---	8.12	49.65	---	74	54	-4.35
17475	H	39.02	---	9.62	48.64	---	74	54	-5.36
---	H	---	---	---	---	---	---	---	---
11650	V	41.38	---	8.12	49.50	---	74	54	-4.50
17475	V	36.97	---	9.62	46.59	---	74	54	-7.41
---	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	41.15	---	8.09	49.24	---	74	54	-4.76
17265	H	38.49	---	9.67	48.16	---	74	54	-5.84
---	H	---	---	---	---	---	---	---	---
11510	V	42.37	---	8.09	50.46	---	74	54	-3.54
17265	V	39.49	---	9.67	49.16	---	74	54	-4.84
---	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	41.37	---	8.10	49.47	---	74	54	-4.53
17385	H	37.42	---	9.65	47.07	---	74	54	-6.93
---	H	---	---	---	---	---	---	---	---
11590	V	41.98	---	8.10	50.08	---	74	54	-3.92
17385	V	39.54	---	9.65	49.19	---	74	54	-4.81
---	V	---	---	---	---	---	---	---	---

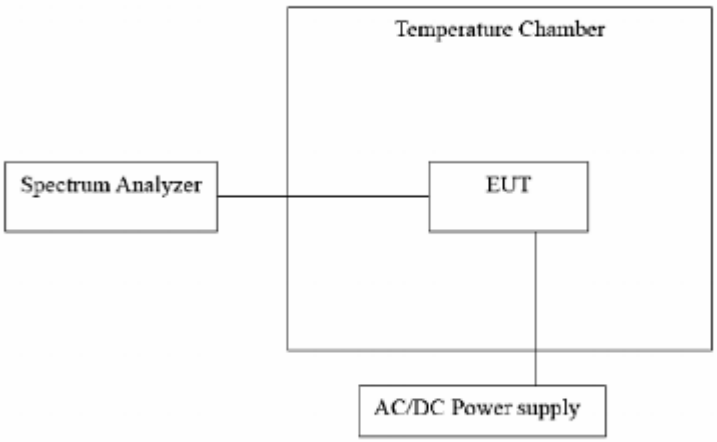
11ac(VHT80) CH155: 5775MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11550	H	41.74	---	8.09	49.83	---	74	54	-4.17
17325	H	36.91	---	9.66	46.57	---	74	54	-7.43
---	H	---	---	---	---	---	---	---	---
11550	V	42.18	---	8.09	50.27	---	74	54	-3.73
17325	V	38.72	---	9.66	48.38	---	74	54	-5.62
---	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:	
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 all models(11a,11n,11ac), the worst case (11ac) was found and test data was shown in this report.

Test plots as follows:

Test mode:	802.11ac(VHT20)	Frequency(MHz):	5745

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	12V	5744.9492	-50800	PASS
35		5744.9495	-50500	PASS
25		5744.9494	-50600	PASS
15		5744.9493	-50700	PASS
5		5744.9488	-51200	PASS
0		5744.9486	-51400	PASS
20	10.8	5744.9497	-50300	PASS
	12	5744.9500	-50000	PASS
	13.2	5744.9497	-50300	PASS

Test mode:	802.11ac(VHT20)	Frequency(MHz):	5785

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	12V	5784.9490	-51000	PASS
35		5784.9498	-50200	PASS
25		5784.9495	-50500	PASS
15		5784.9489	-51100	PASS
5		5784.9486	-51400	PASS
0		5784.9492	-50800	PASS
20	10.8	5784.9494	-50600	PASS
	12	5784.9500	-50000	PASS
	13.2	5784.9496	-50400	PASS

Test mode:	802.11ac(VHT20)	Frequency(MHz):	5825

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	12V	5824.9499	-50100	PASS
35		5824.9495	-50500	PASS
25		5824.9497	-50300	PASS
15		5824.9488	-51200	PASS
5		5824.9490	-51000	PASS
0		5824.9492	-50800	PASS
20	10.8	5824.9494	-50600	PASS
	12	5824.9500	-50000	PASS
	13.2	5824.9498	-50200	PASS

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Test mode:	802.11ac(VHT40)	Frequency(MHz):	5755

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	12V	5754.9483	-51700	PASS
35		5754.9486	-51400	PASS
25		5754.9491	-50900	PASS
15		5754.9492	-50800	PASS
5		5754.9498	-50200	PASS
0		5754.9495	-50500	PASS
20	10.8	5754.9494	-50600	PASS
	12	5754.9500	-50000	PASS
	13.2	5754.9497	-50300	PASS

Test mode:	802.11ac(VHT40)	Frequency(MHz):	5795

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	12V	5794.9492	-50800	PASS
35		5794.9490	-51000	PASS
25		5794.9488	-51200	PASS
15		5794.9485	-51500	PASS
5		5794.9482	-51800	PASS
0		5794.9494	-50600	PASS
20	10.8	5794.9497	-50300	PASS
	12	5794.9500	-50000	PASS
	13.2	5794.9496	-50400	PASS

Test mode:	802.11ac(VHT80)	Frequency(MHz):	5775

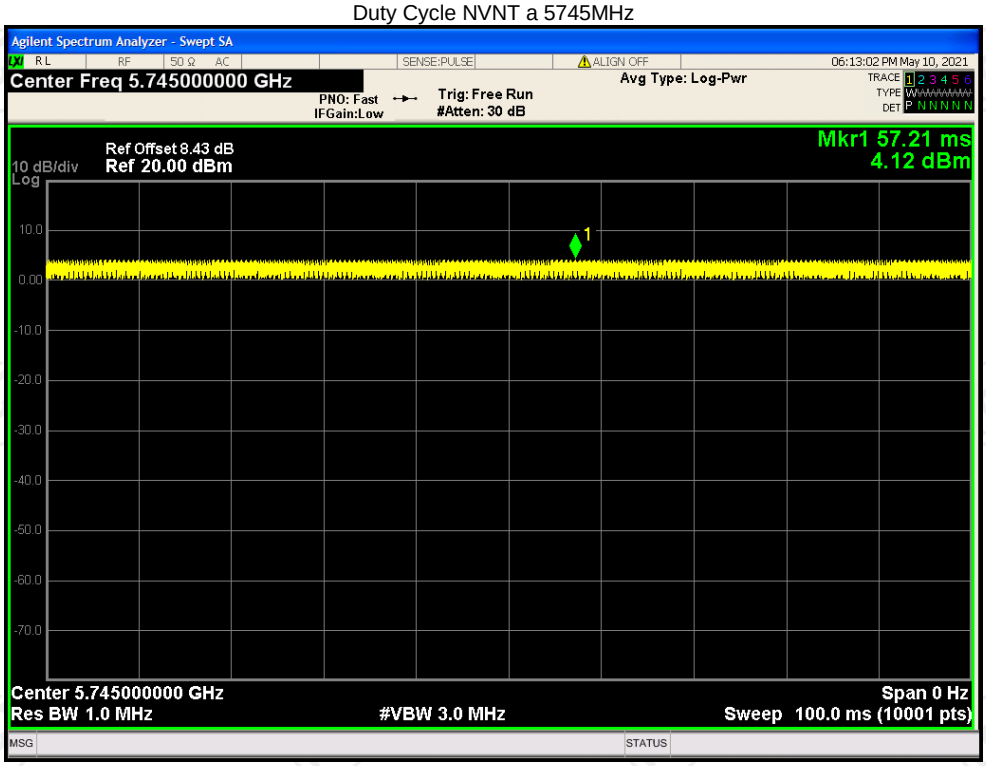
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	12V	5774.9487	-51300	PASS
35		5774.9490	-51000	PASS
25		5774.9498	-50200	PASS
15		5774.9497	-50300	PASS
5		5774.9493	-50700	PASS
0		5774.9492	-50800	PASS
20	10.8	5774.9497	-50300	PASS
	12	5774.9500	-50000	PASS
	13.2	5774.9495	-50500	PASS

Appendix A: Test Result of Conducted Test

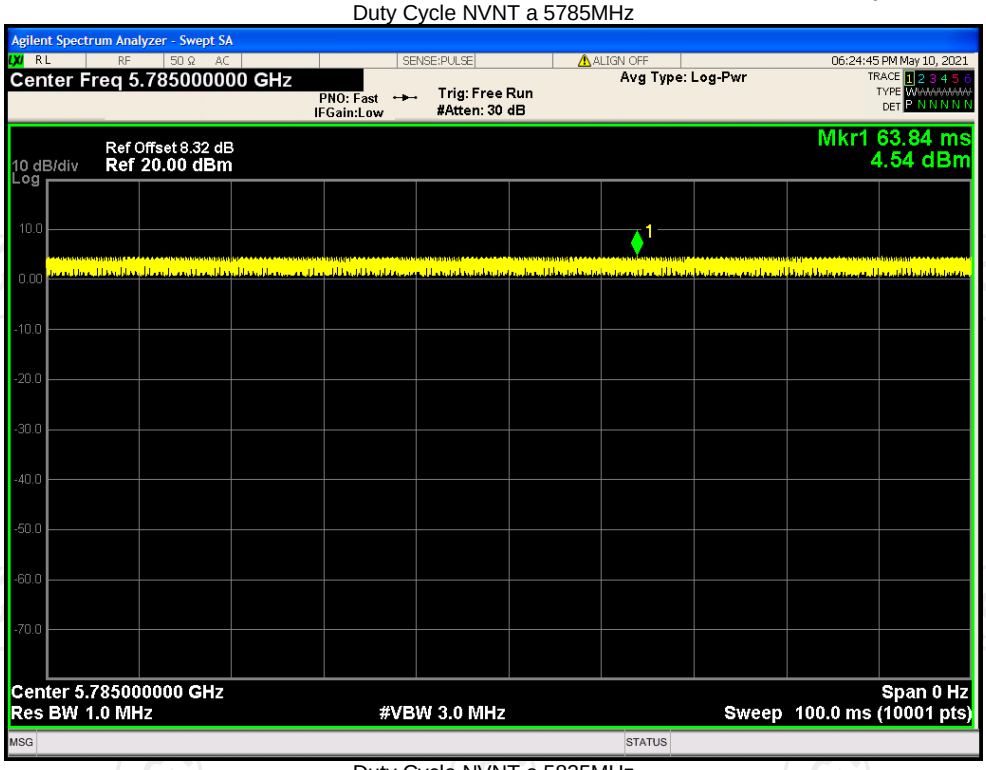
Duty Cycle

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)
NVNT	a	5745	100	0
NVNT	a	5785	100	0
NVNT	a	5825	100	0
NVNT	ac20	5745	100	0
NVNT	ac20	5785	100	0
NVNT	ac20	5825	100	0
NVNT	ac40	5755	100	0
NVNT	ac40	5795	100	0
NVNT	ac80	5775	100	0
NVNT	n20	5745	100	0
NVNT	n20	5785	100	0
NVNT	n20	5825	100	0
NVNT	n40	5755	100	0
NVNT	n40	5795	100	0

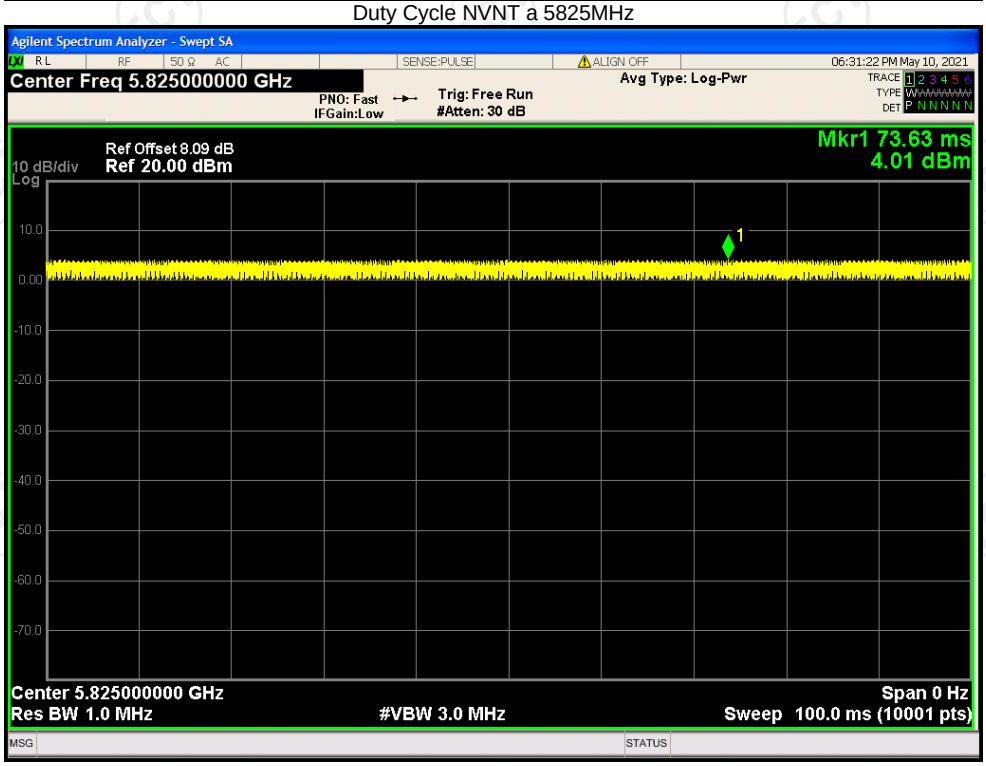
Duty Cycle NVNT a 5745MHz



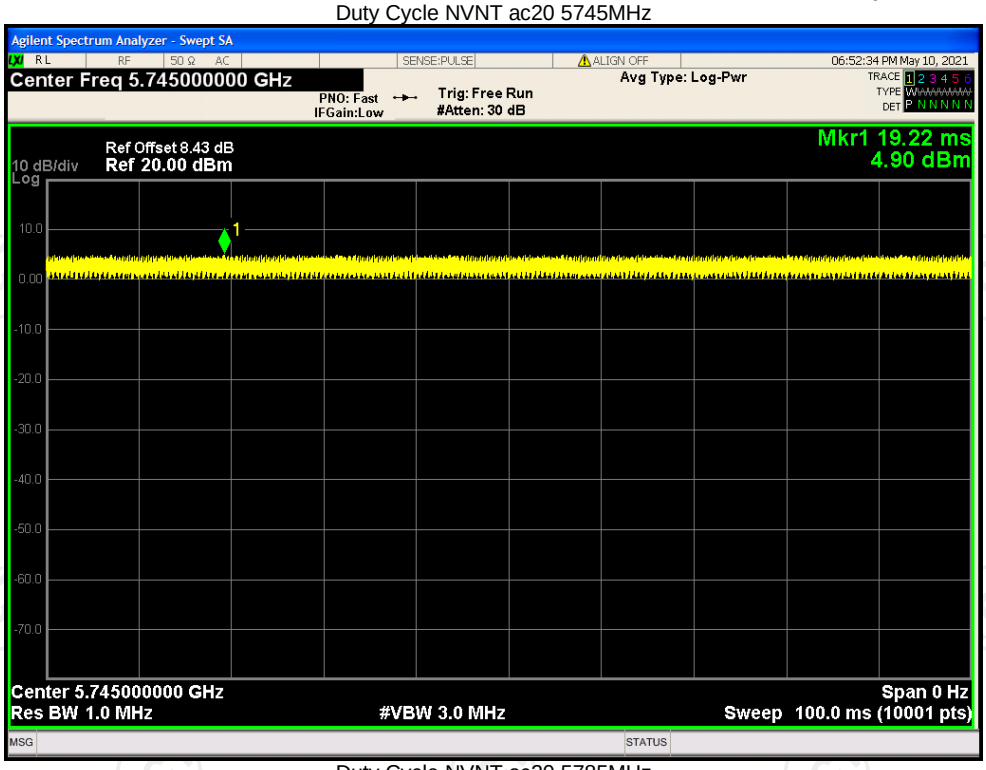
Duty Cycle NVNT a 5785MHz



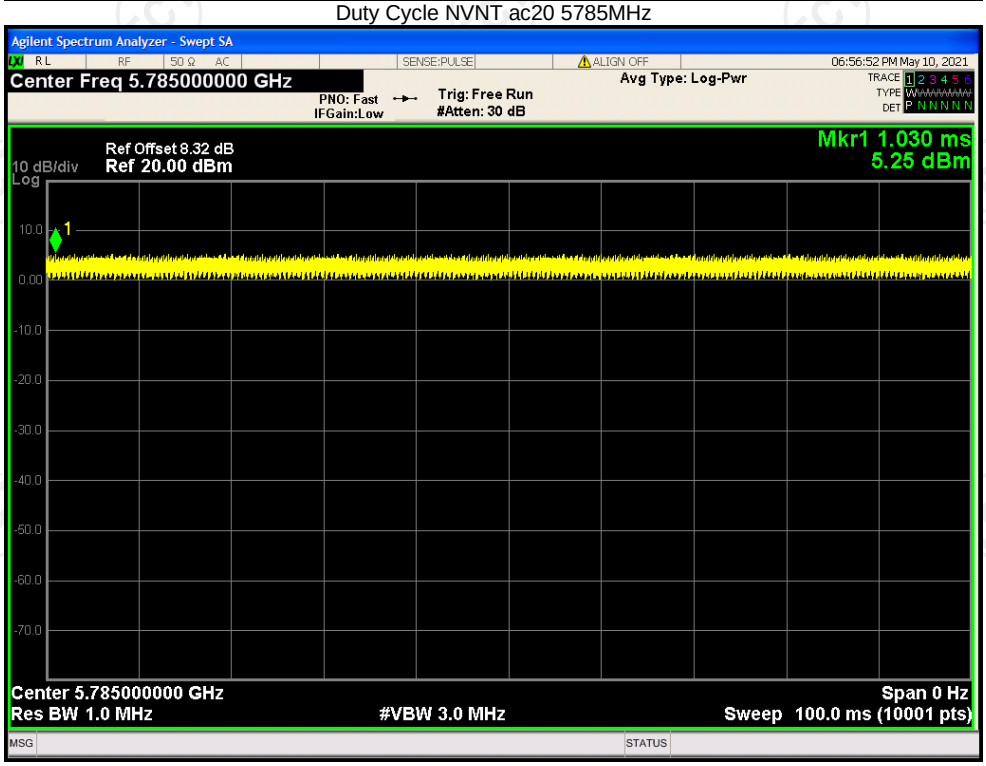
Duty Cycle NVNT a 5825MHz



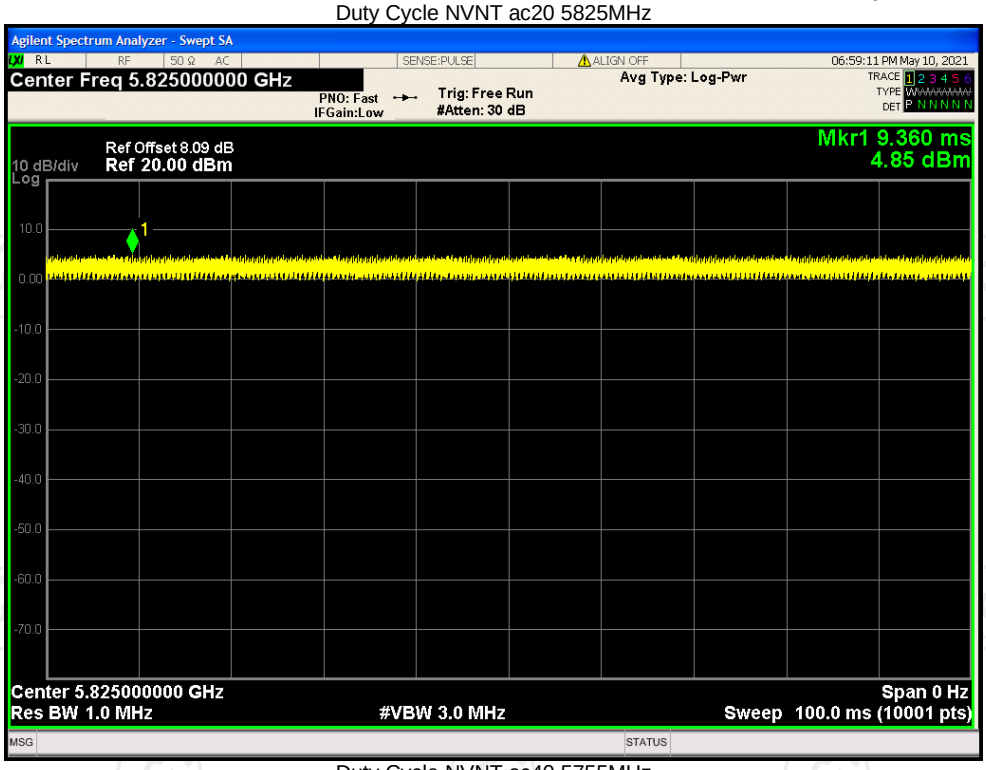
Duty Cycle NVNT ac20 5745MHz



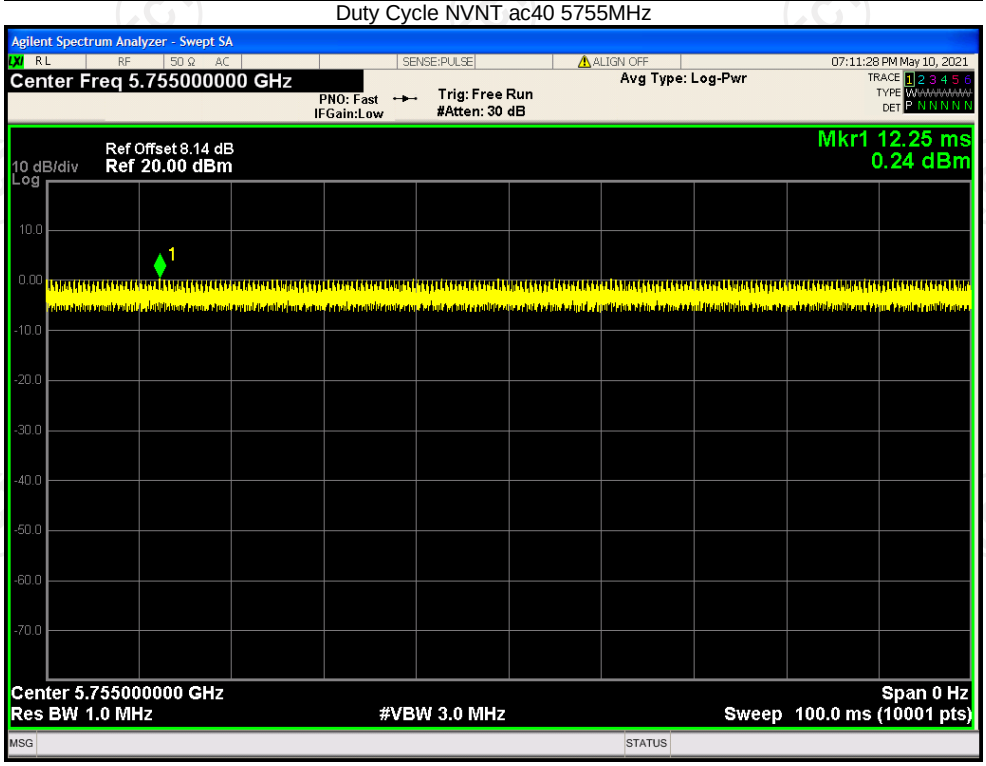
Duty Cycle NVNT ac20 5785MHz



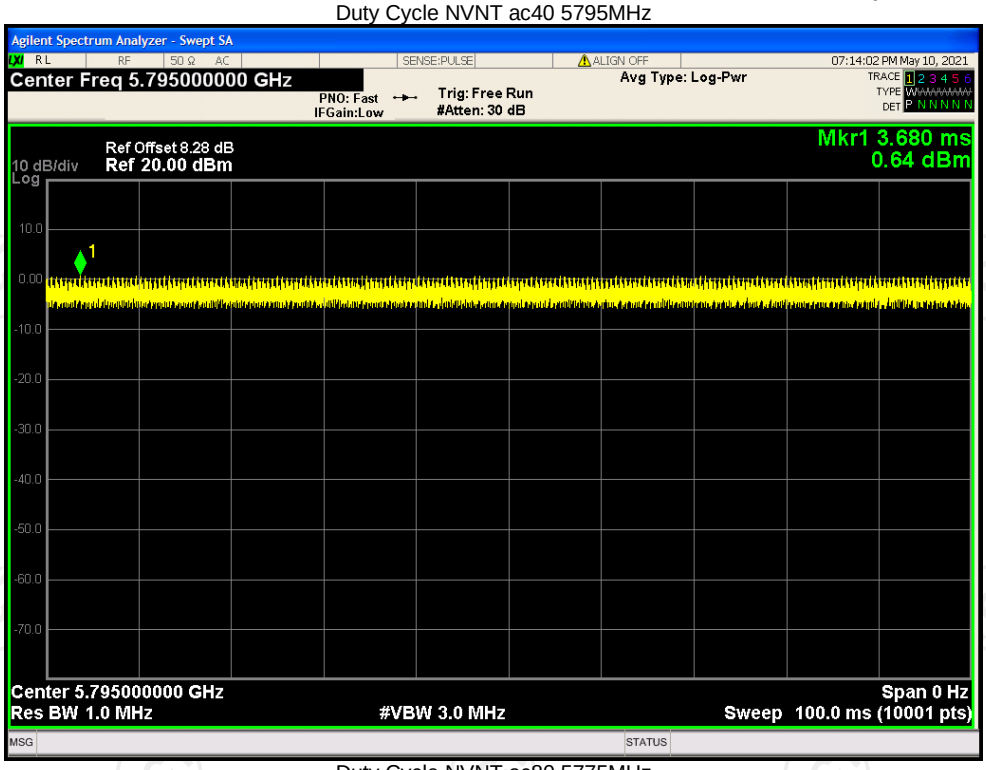
Duty Cycle NVNT ac20 5825MHz



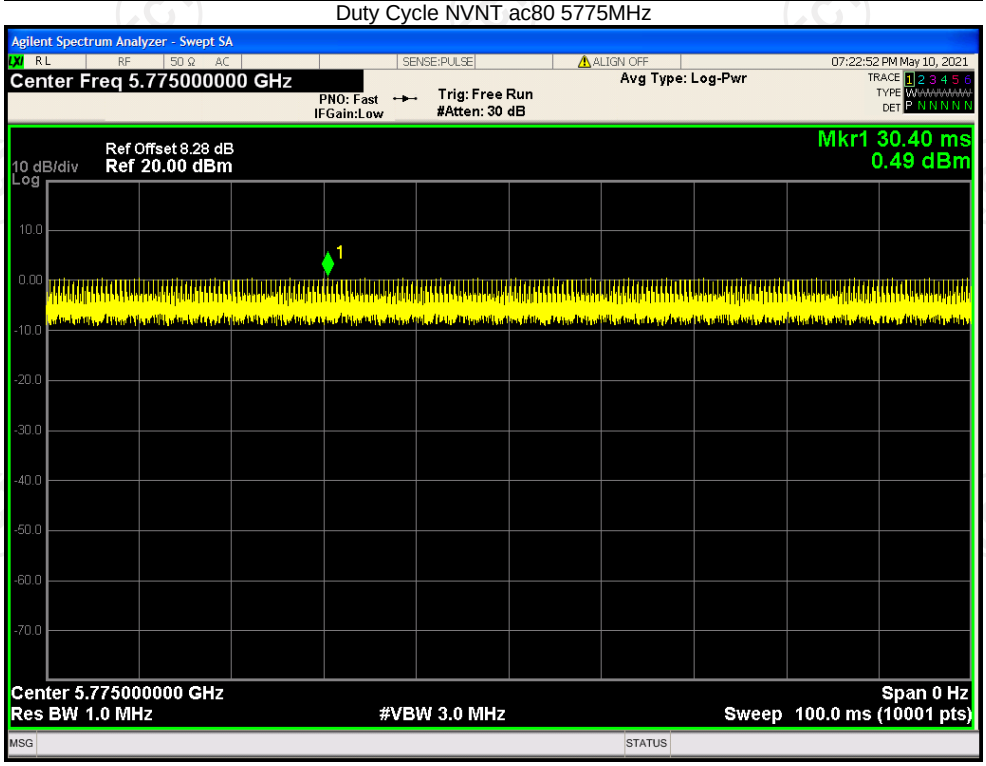
Duty Cycle NVNT ac40 5755MHz



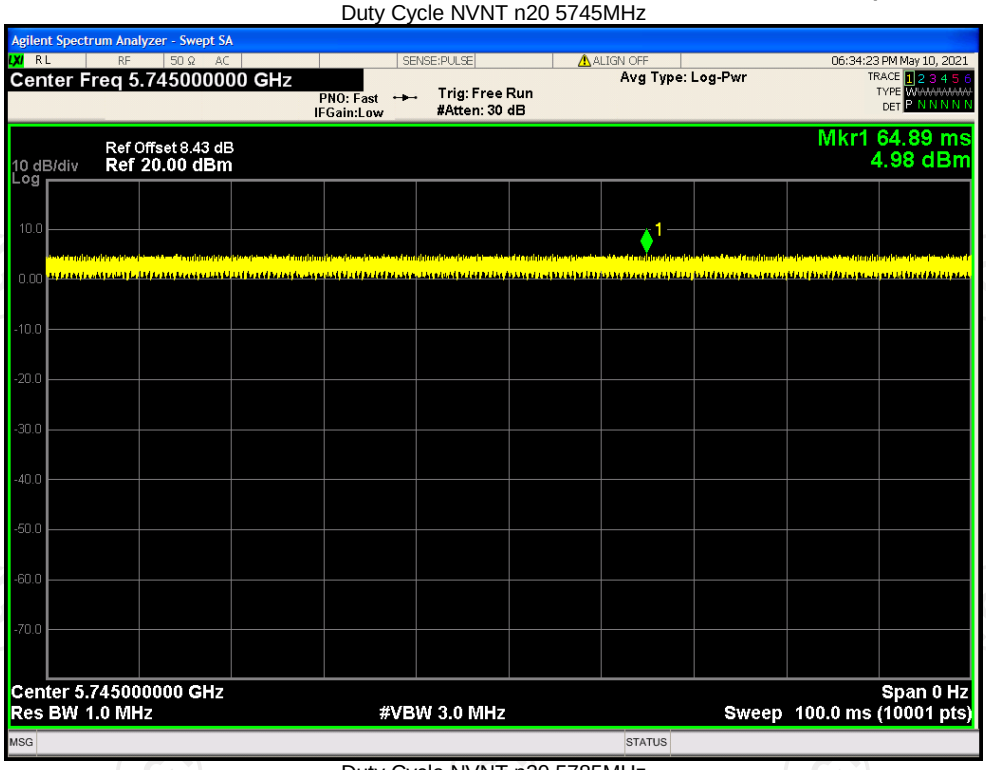
Duty Cycle NVNT ac40 5795MHz



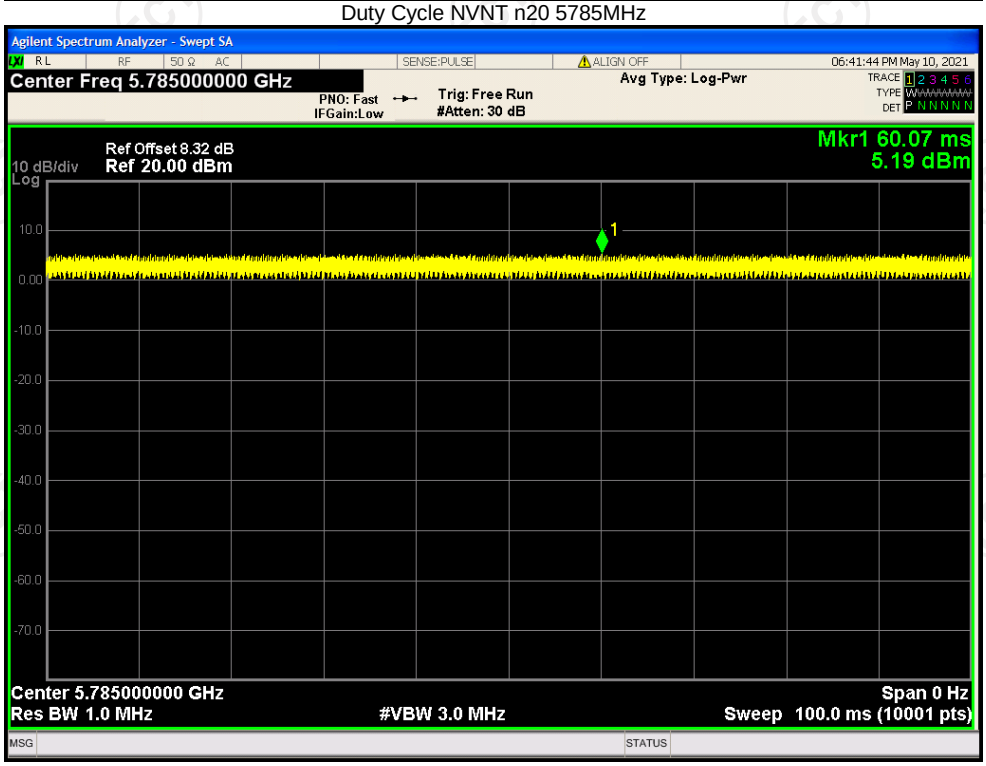
Duty Cycle NVNT ac80 5775MHz



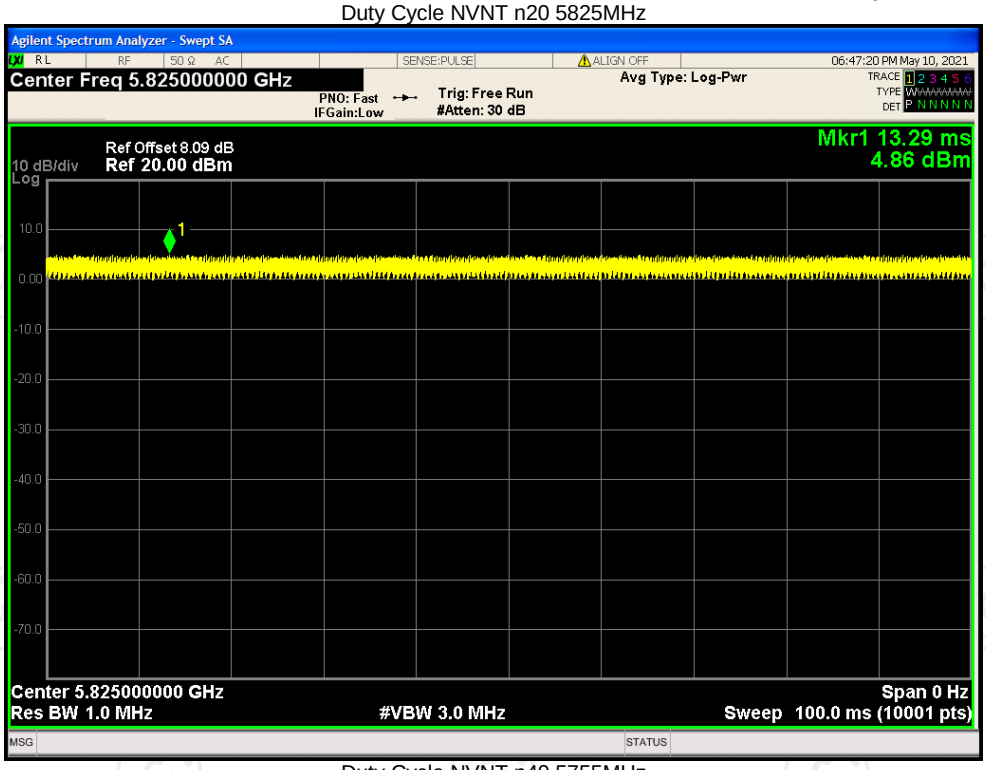
Duty Cycle NVNT n20 5745MHz



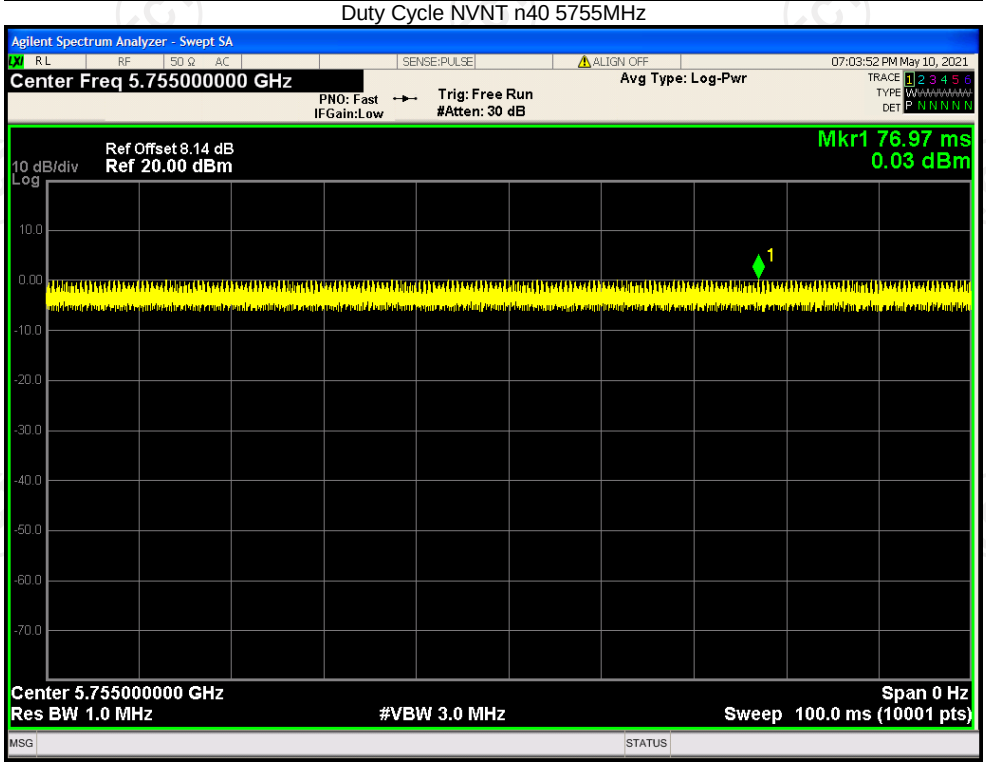
Duty Cycle NVNT n20 5785MHz



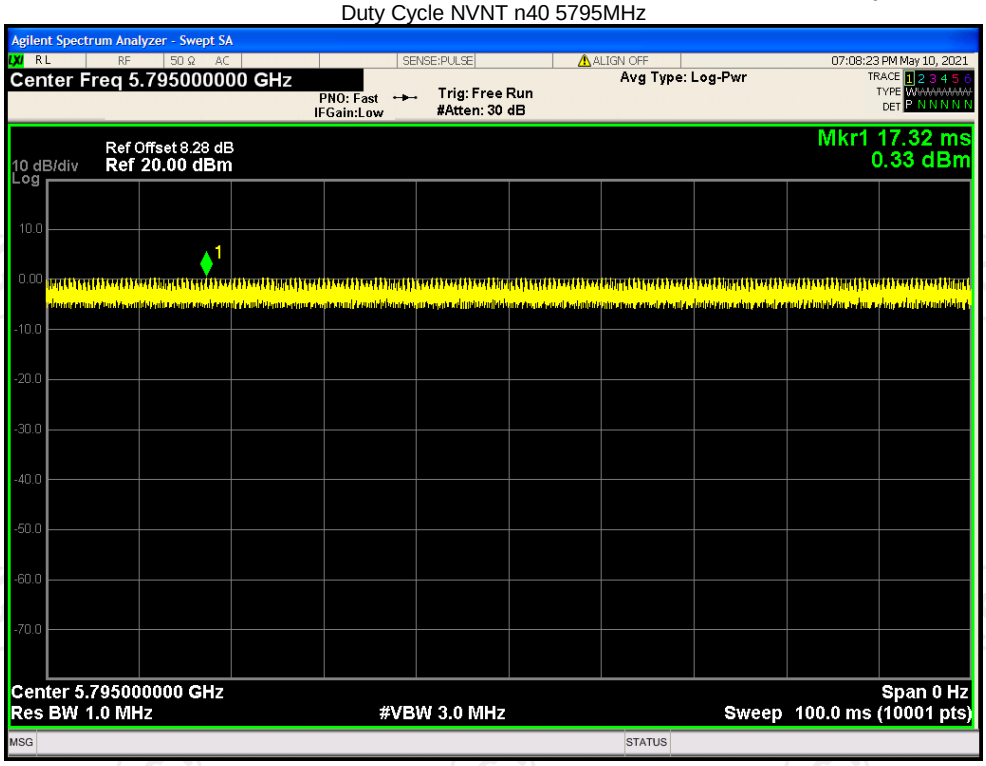
Duty Cycle NVNT n20 5825MHz



Duty Cycle NVNT n40 5755MHz



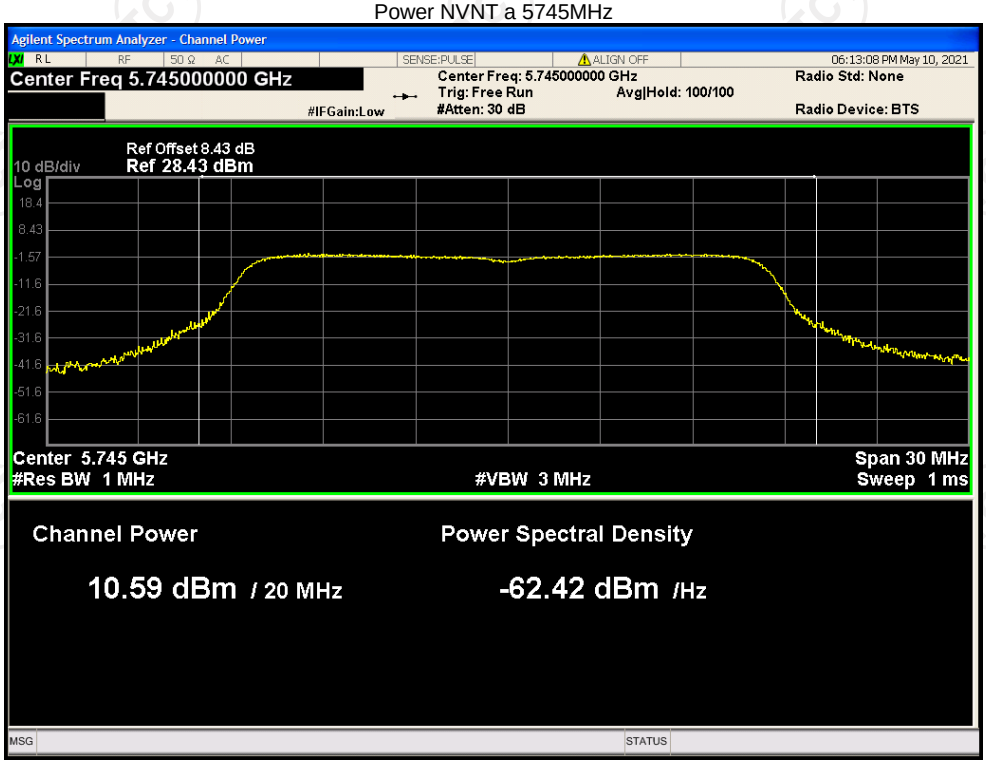
Duty Cycle NVNT n40 5795MHz



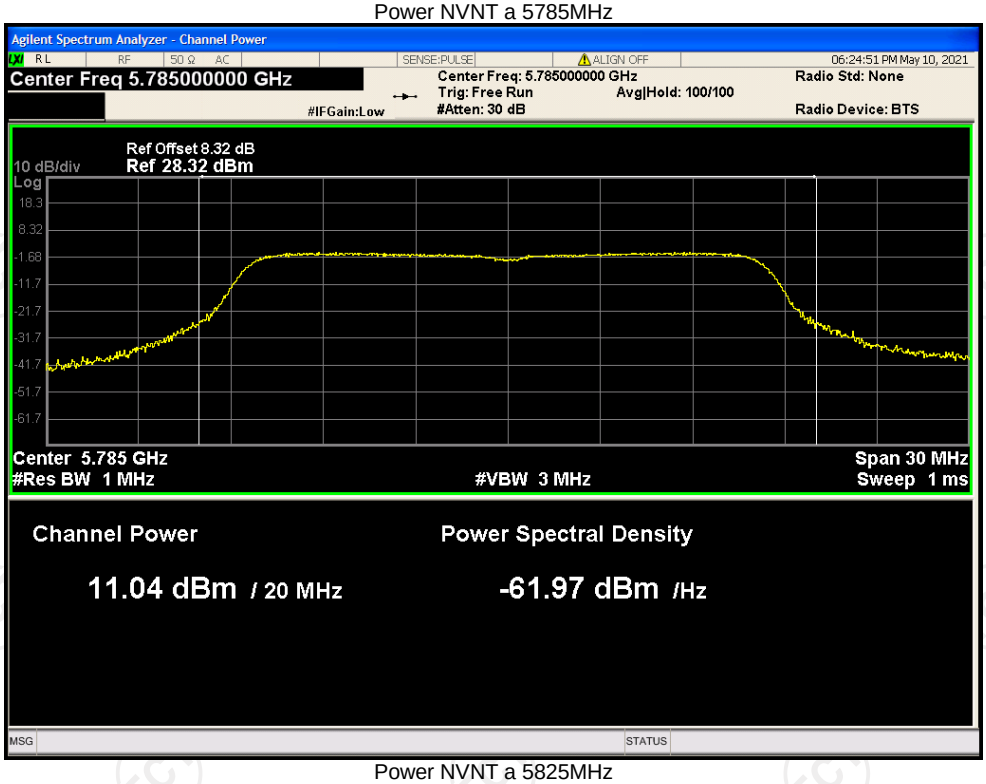
Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	10.589	0	10.589	30	Pass
NVNT	a	5785	11.039	0	11.039	30	Pass
NVNT	a	5825	10.578	0	10.578	30	Pass
NVNT	ac20	5745	10.821	0	10.821	30	Pass
NVNT	ac20	5785	10.981	0	10.981	30	Pass
NVNT	ac20	5825	10.641	0	10.641	30	Pass
NVNT	ac40	5755	10.931	0	10.931	30	Pass
NVNT	ac40	5795	11.342	0	11.342	30	Pass
NVNT	ac80	5775	10.941	0	10.941	30	Pass
NVNT	n20	5745	10.815	0	10.815	30	Pass
NVNT	n20	5785	11.023	0	11.023	30	Pass
NVNT	n20	5825	10.806	0	10.806	30	Pass
NVNT	n40	5755	10.780	0	10.780	30	Pass
NVNT	n40	5795	11.184	0	11.184	30	Pass

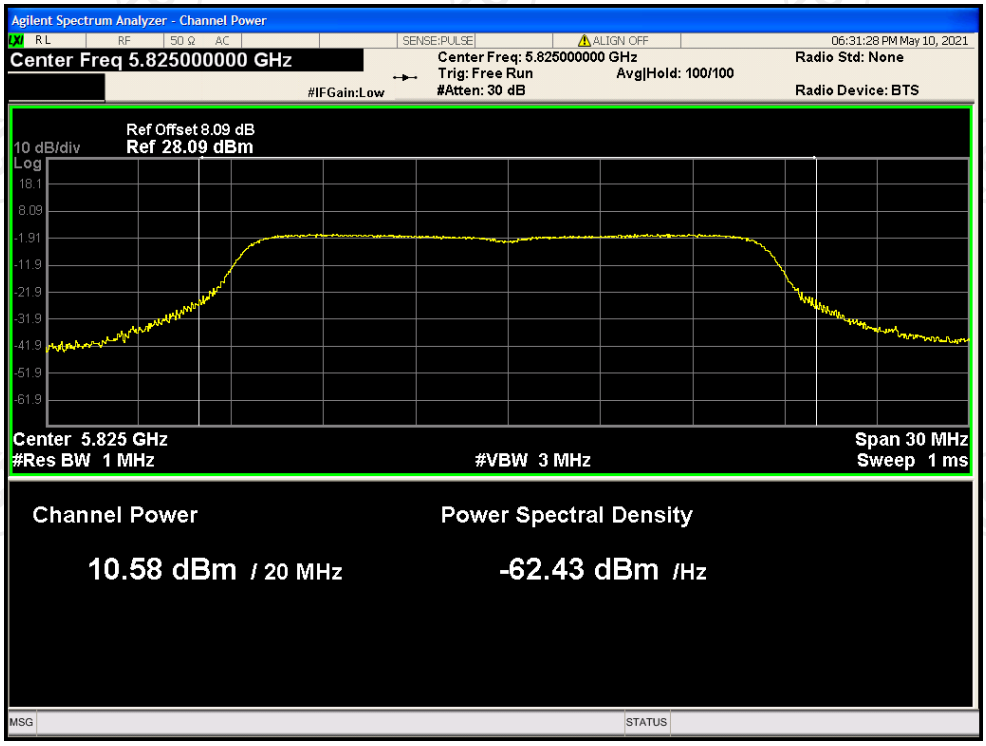
Power NVNT a 5745MHz



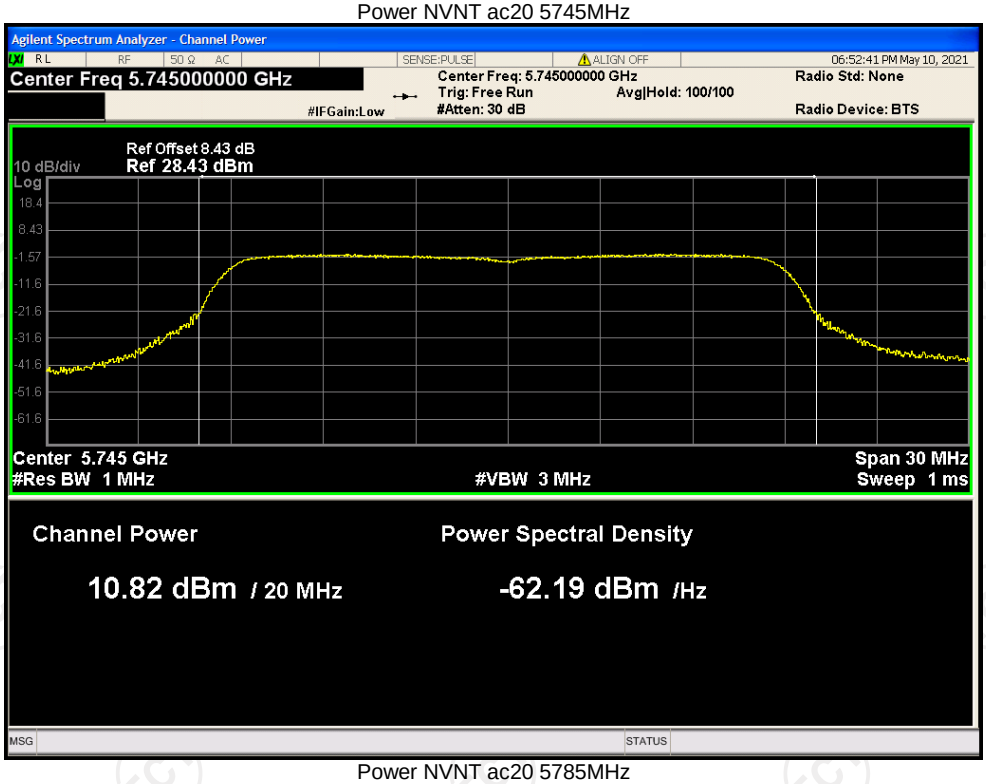
Power NVNT a 5785MHz



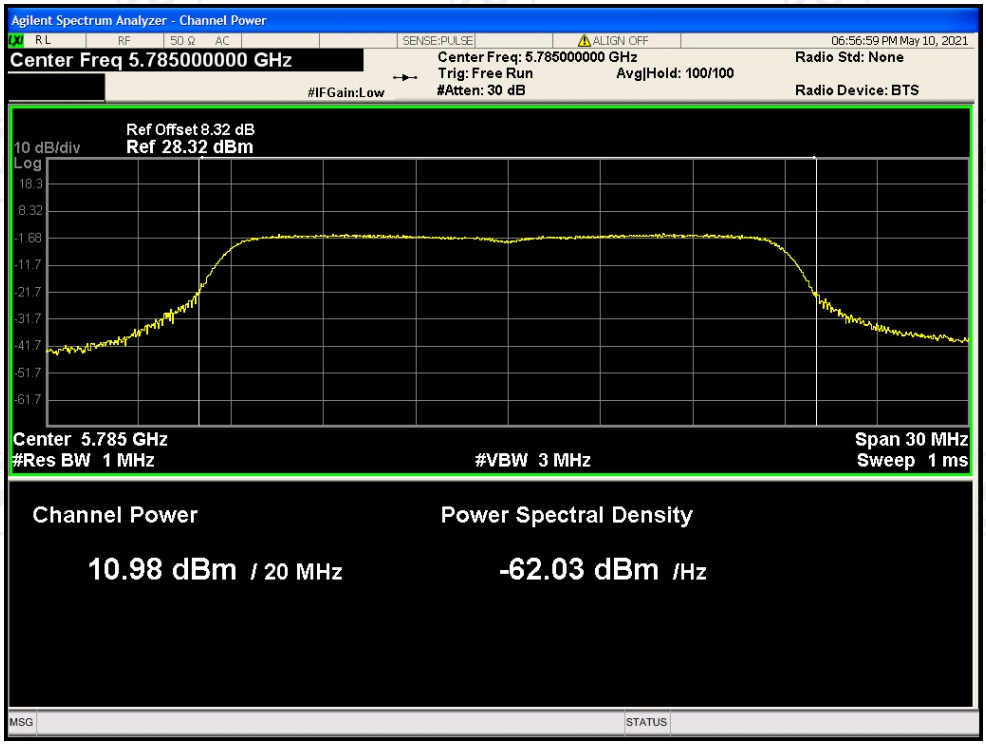
Power NVNT a 5825MHz



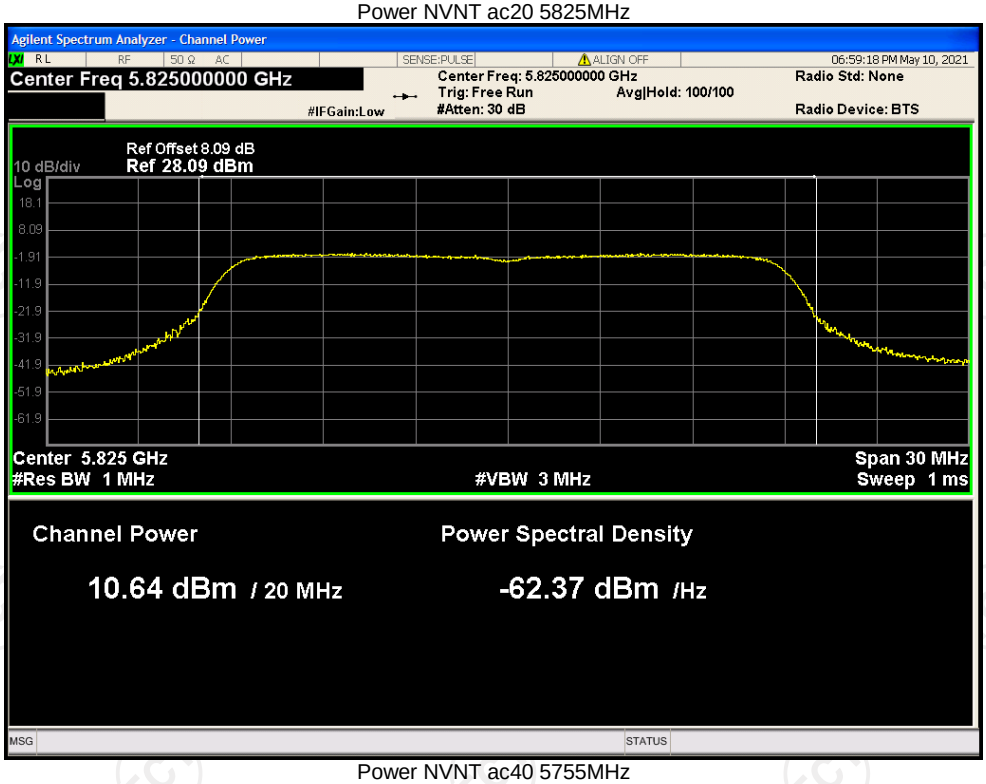
Power NVNT ac20 5745MHz



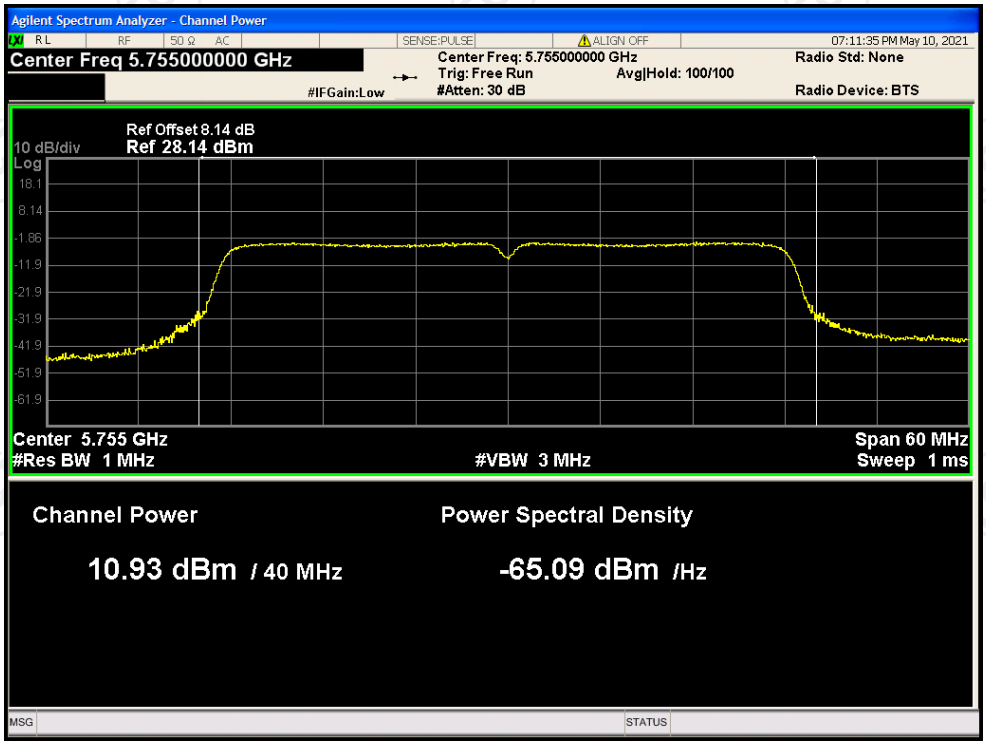
Power NVNT ac20 5785MHz



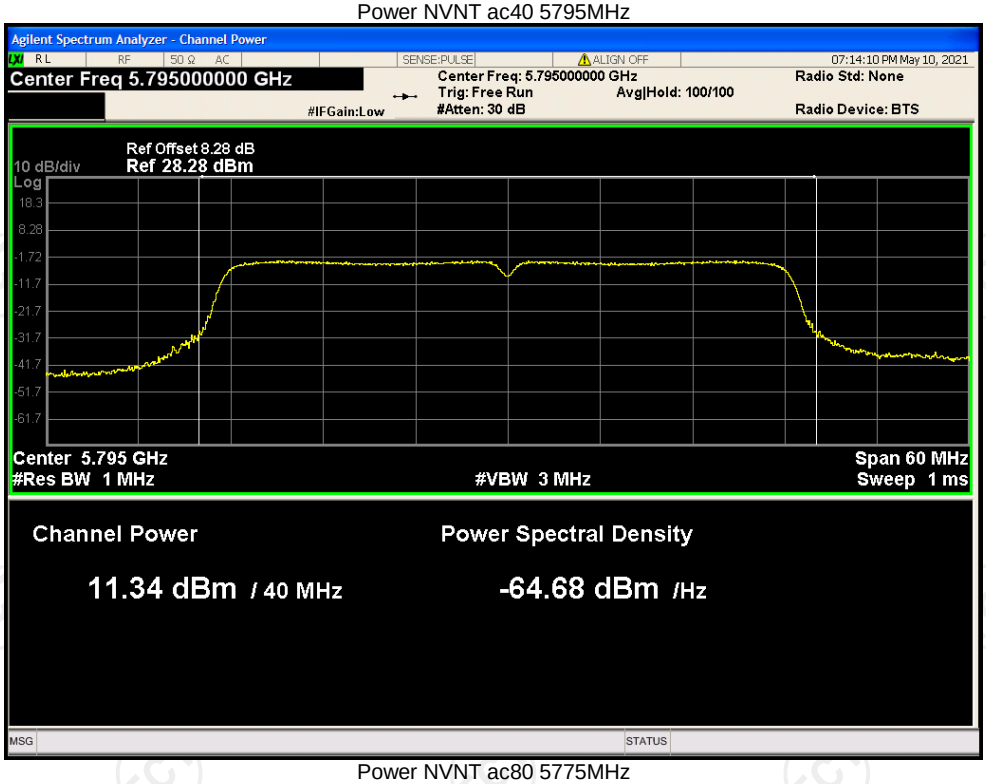
Power NVNT ac20 5825MHz



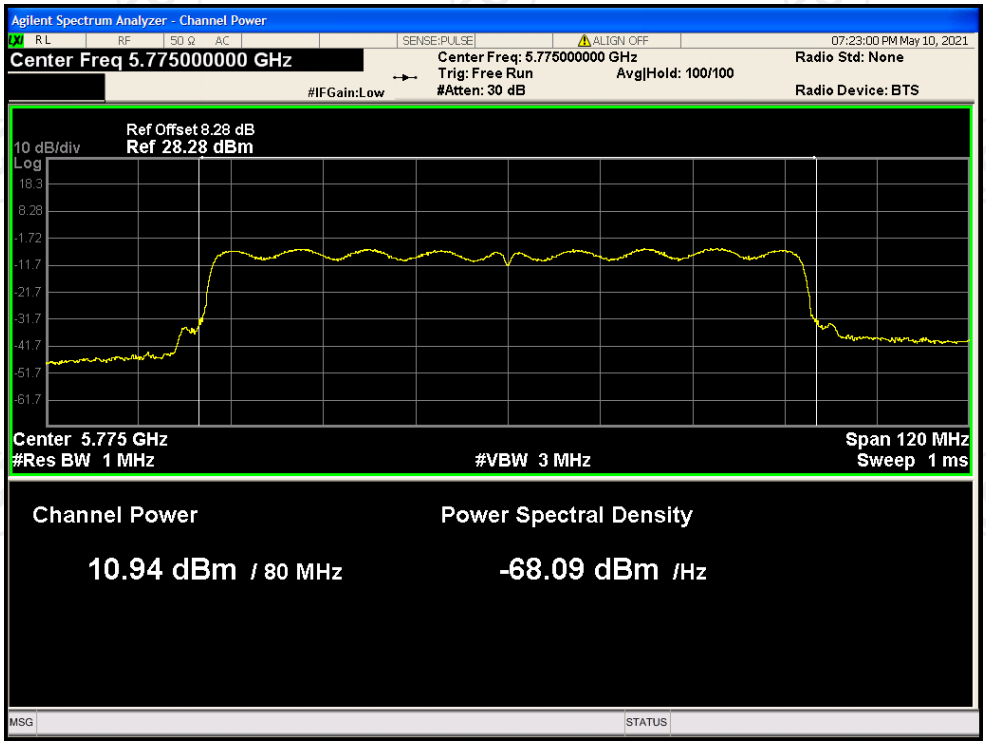
Power NVNT ac40 5755MHz



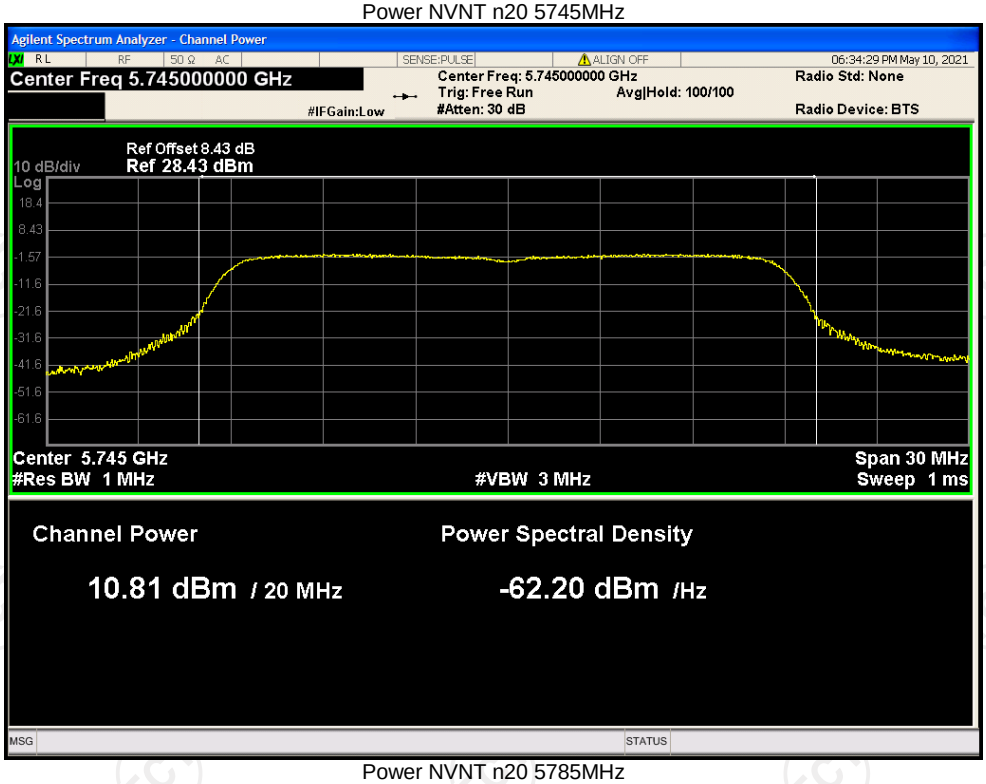
Power NVNT ac40 5795MHz



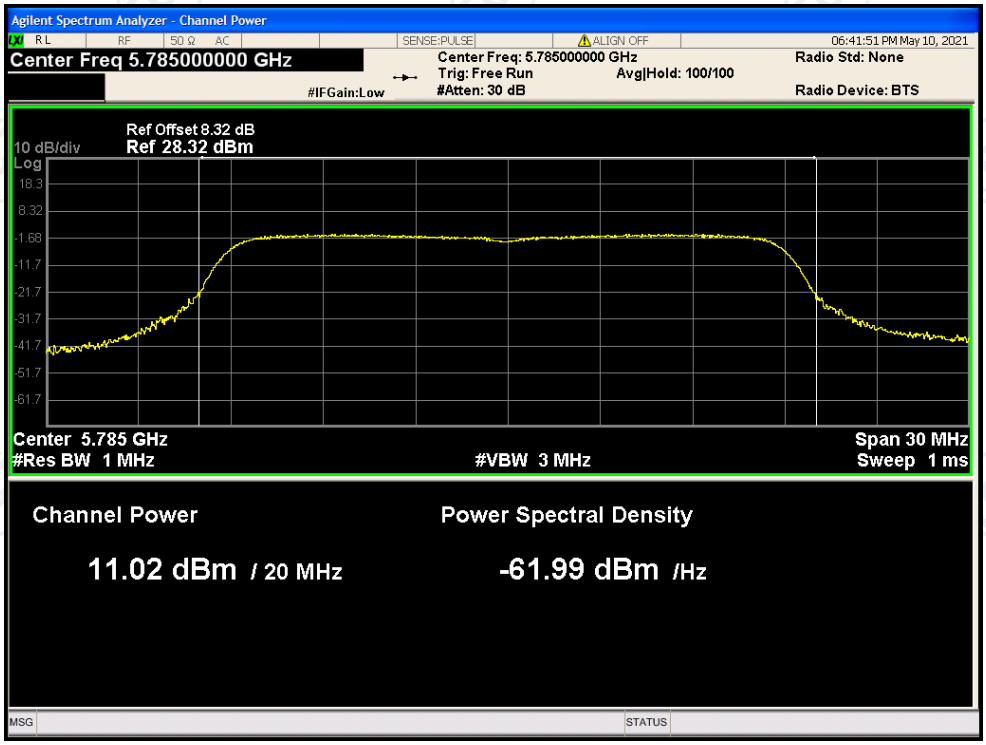
Power NVNT ac80 5775MHz



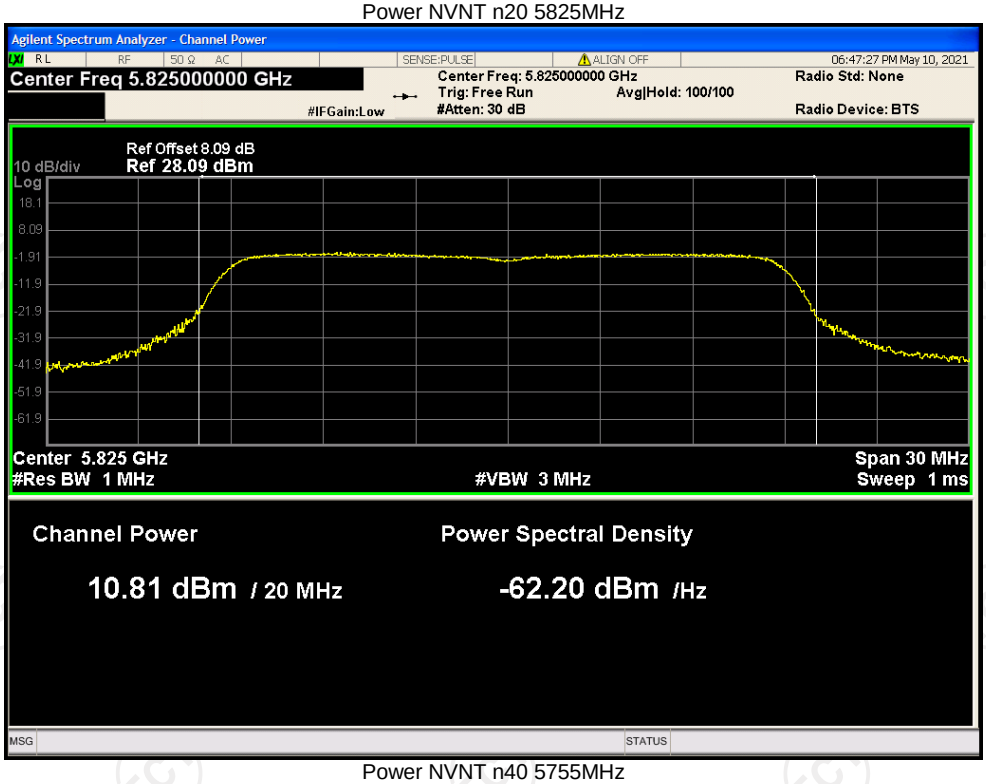
Power NVNT n20 5745MHz



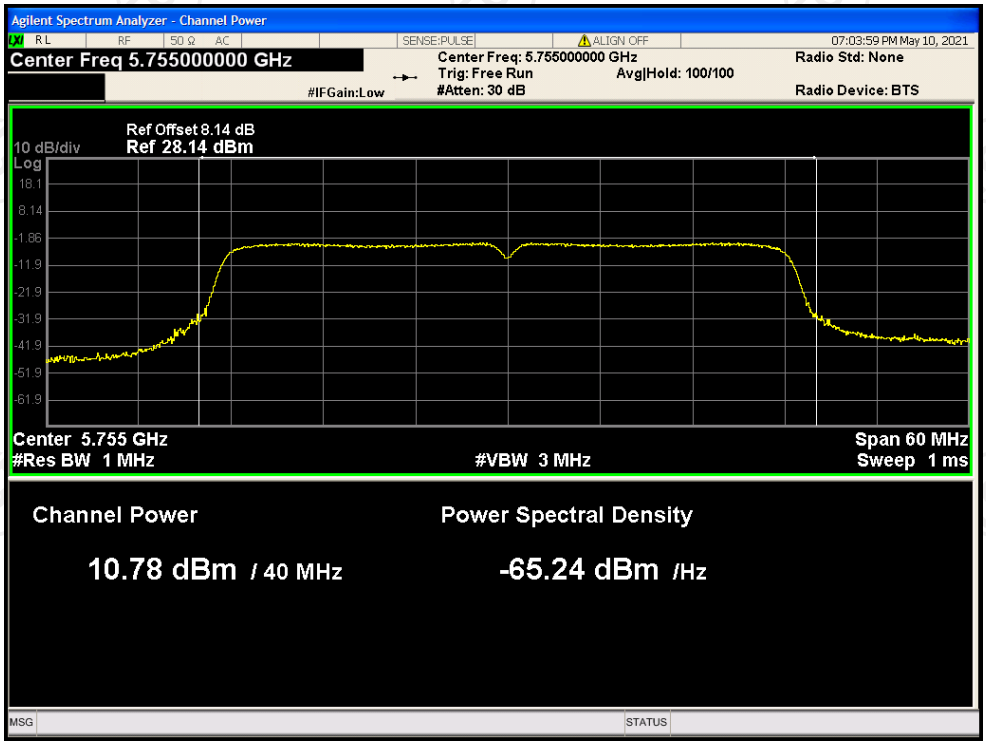
Power NVNT n20 5785MHz



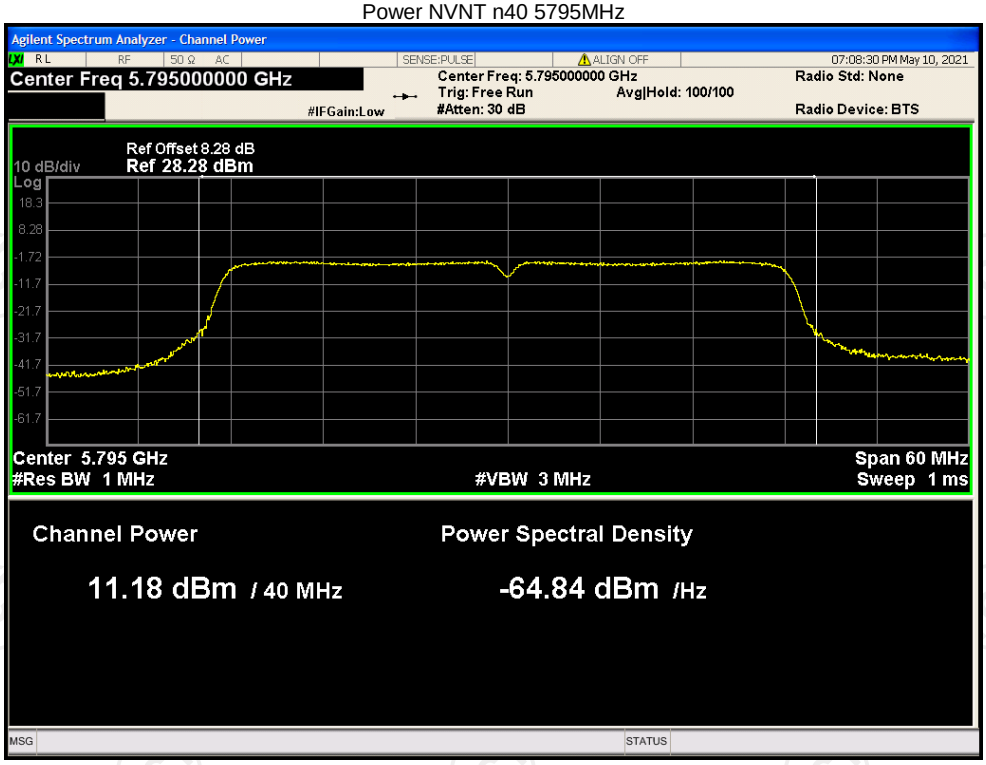
Power NVNT n20 5825MHz



Power NVNT n40 5755MHz



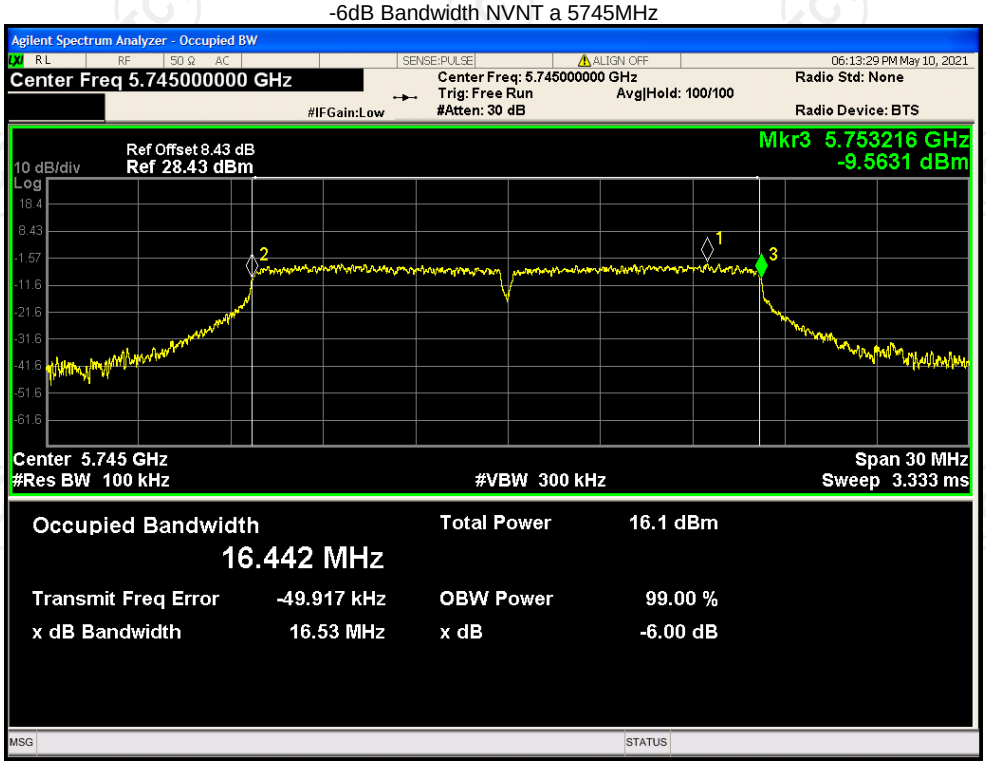
Power NVNT n40 5795MHz



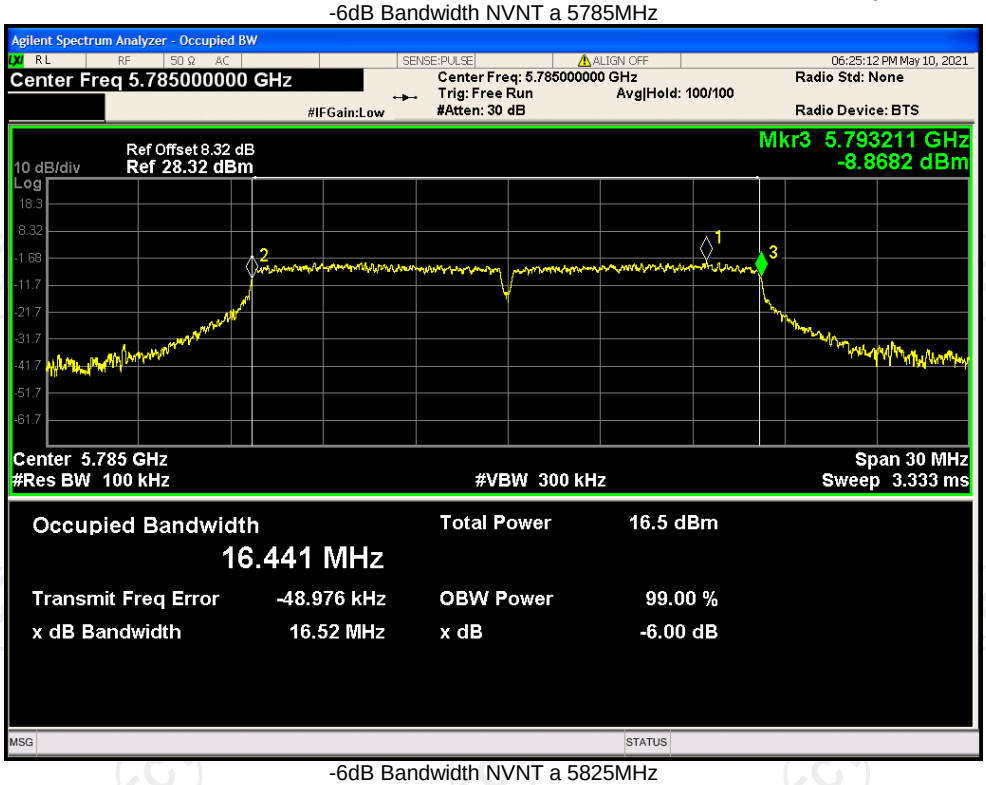
-6dB Bandwidth

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	16.532	0.5	Pass
NVNT	a	5785	16.519	0.5	Pass
NVNT	a	5825	16.537	0.5	Pass
NVNT	ac20	5745	17.666	0.5	Pass
NVNT	ac20	5785	17.656	0.5	Pass
NVNT	ac20	5825	17.647	0.5	Pass
NVNT	ac40	5755	36.401	0.5	Pass
NVNT	ac40	5795	36.419	0.5	Pass
NVNT	ac80	5775	76.337	0.5	Pass
NVNT	n20	5745	17.627	0.5	Pass
NVNT	n20	5785	17.632	0.5	Pass
NVNT	n20	5825	17.657	0.5	Pass
NVNT	n40	5755	36.386	0.5	Pass
NVNT	n40	5795	36.404	0.5	Pass

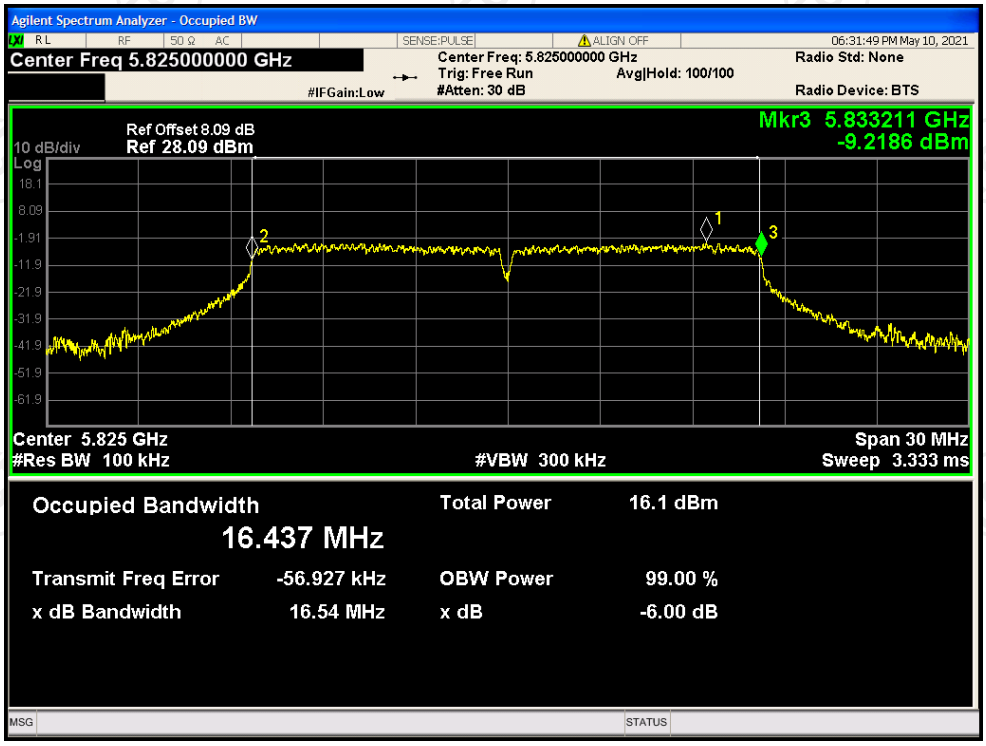
-6dB Bandwidth NVNT a 5745MHz



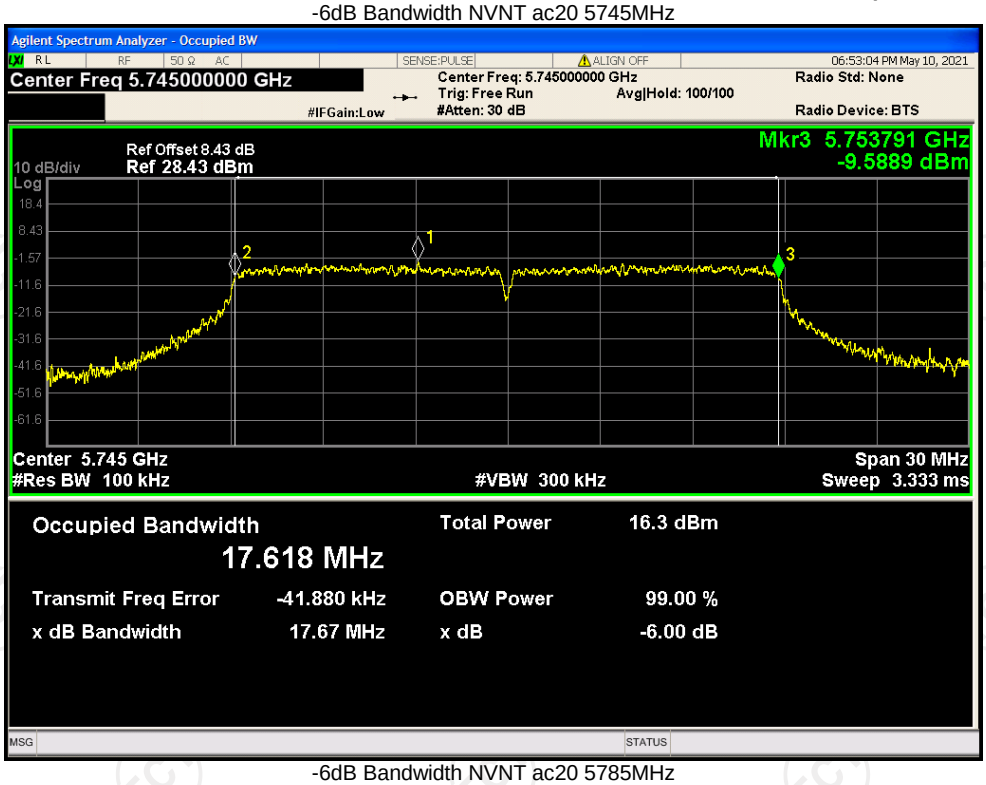
-6dB Bandwidth NVNT a 5785MHz



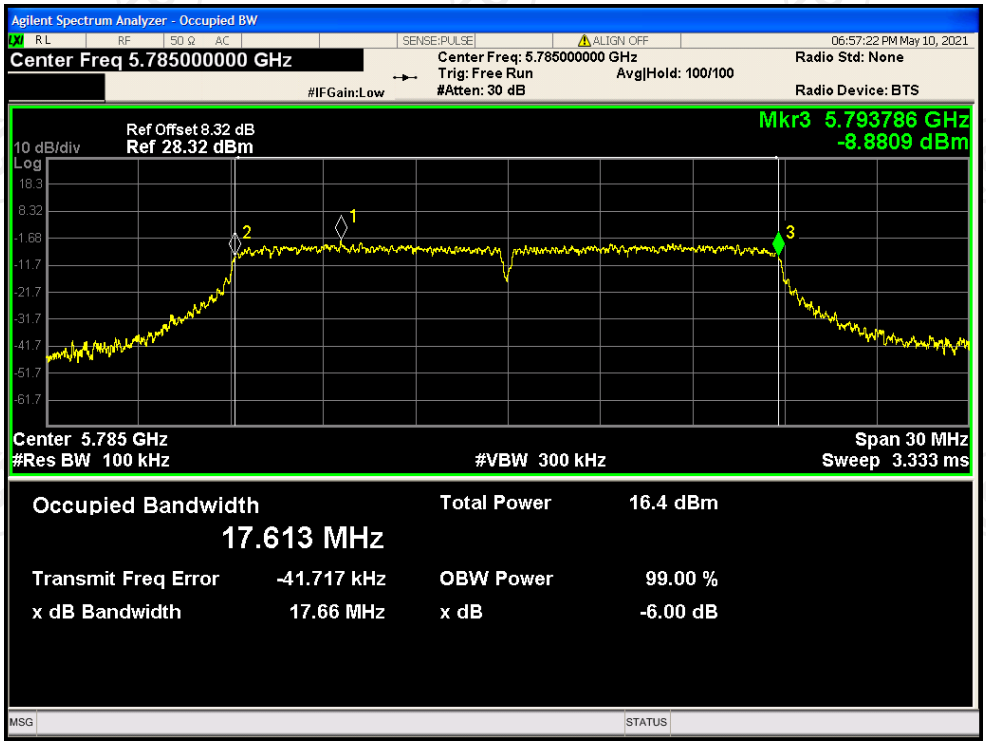
-6dB Bandwidth NVNT a 5825MHz



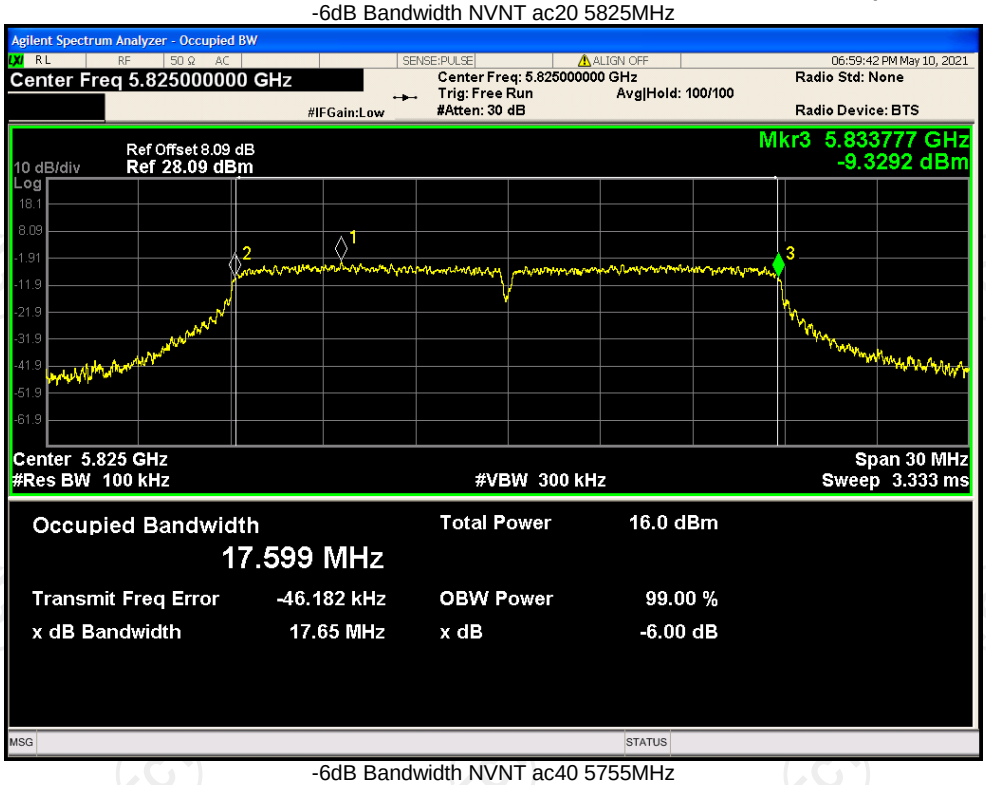
-6dB Bandwidth NVNT ac20 5745MHz



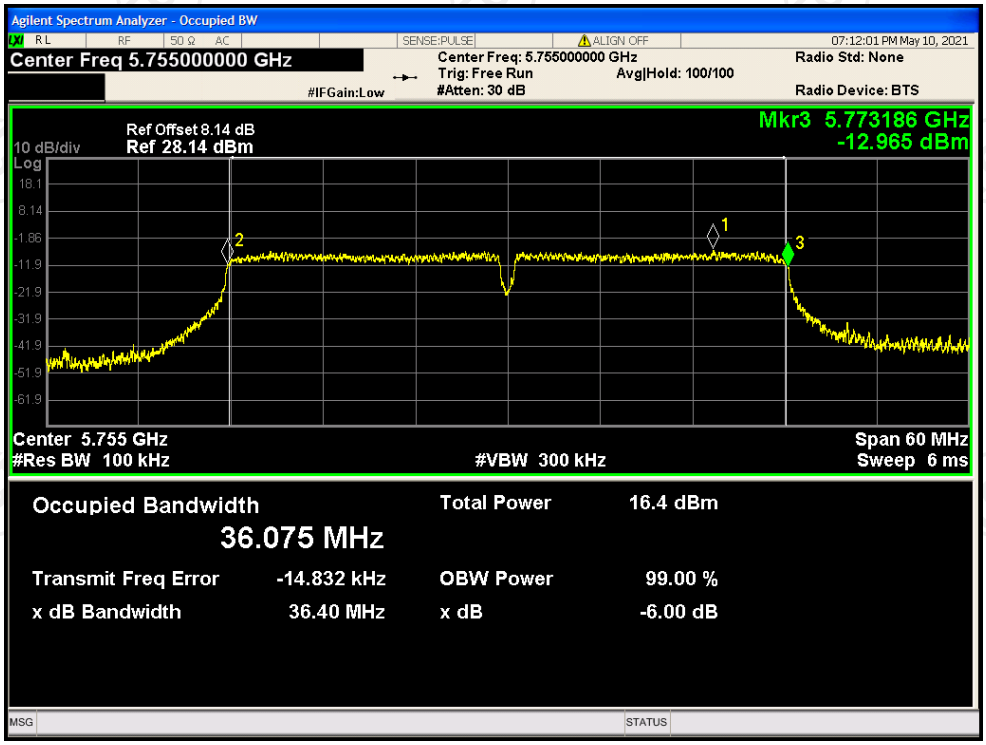
-6dB Bandwidth NVNT ac20 5785MHz



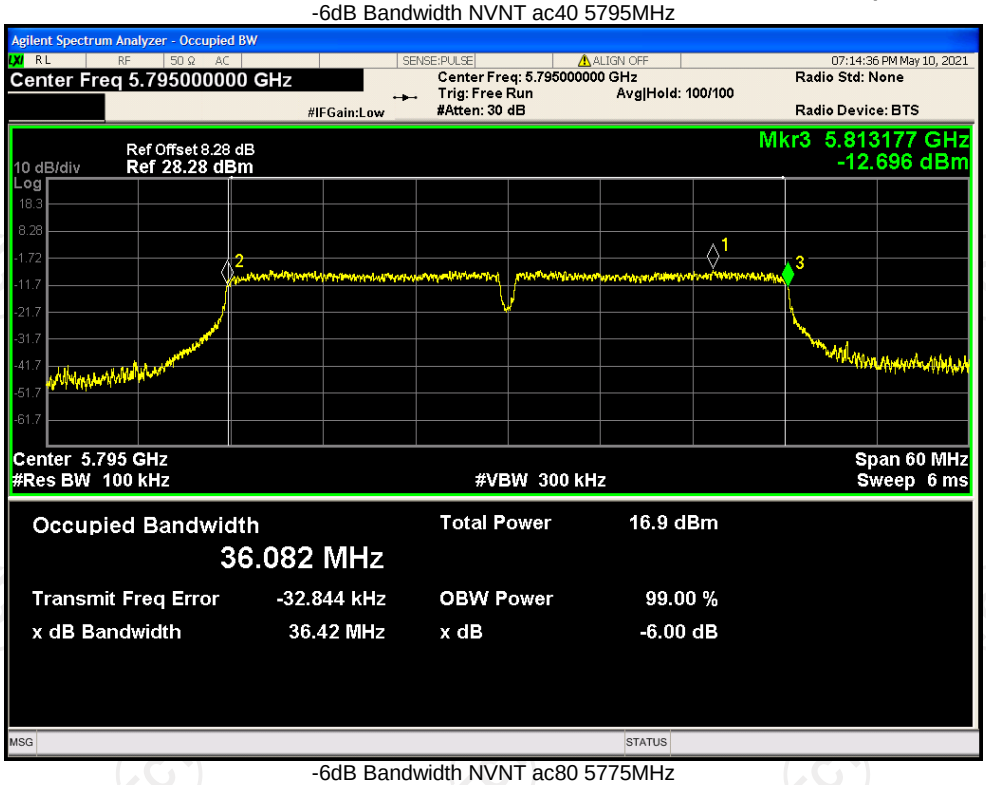
-6dB Bandwidth NVNT ac20 5825MHz



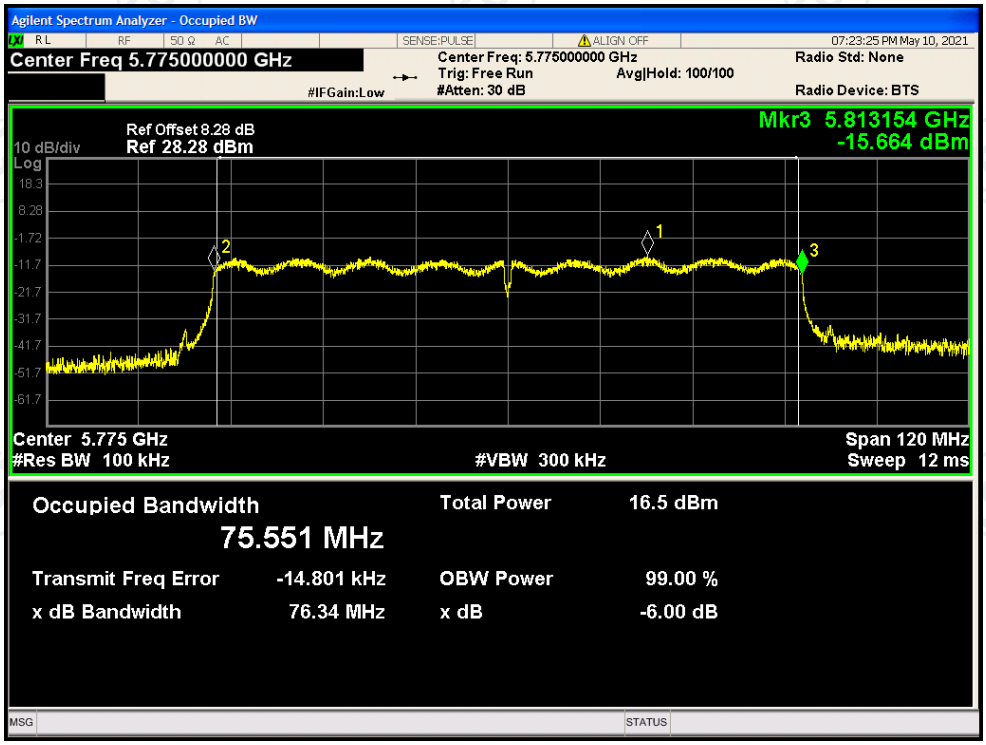
-6dB Bandwidth NVNT ac40 5755MHz



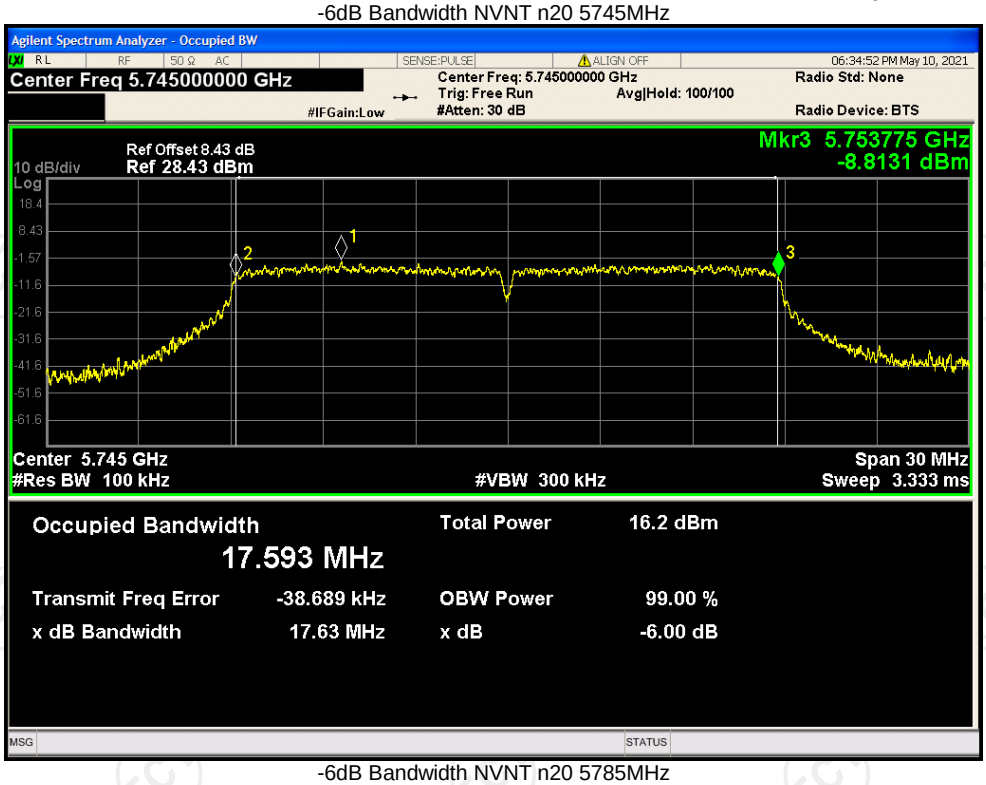
-6dB Bandwidth NVNT ac40 5795MHz



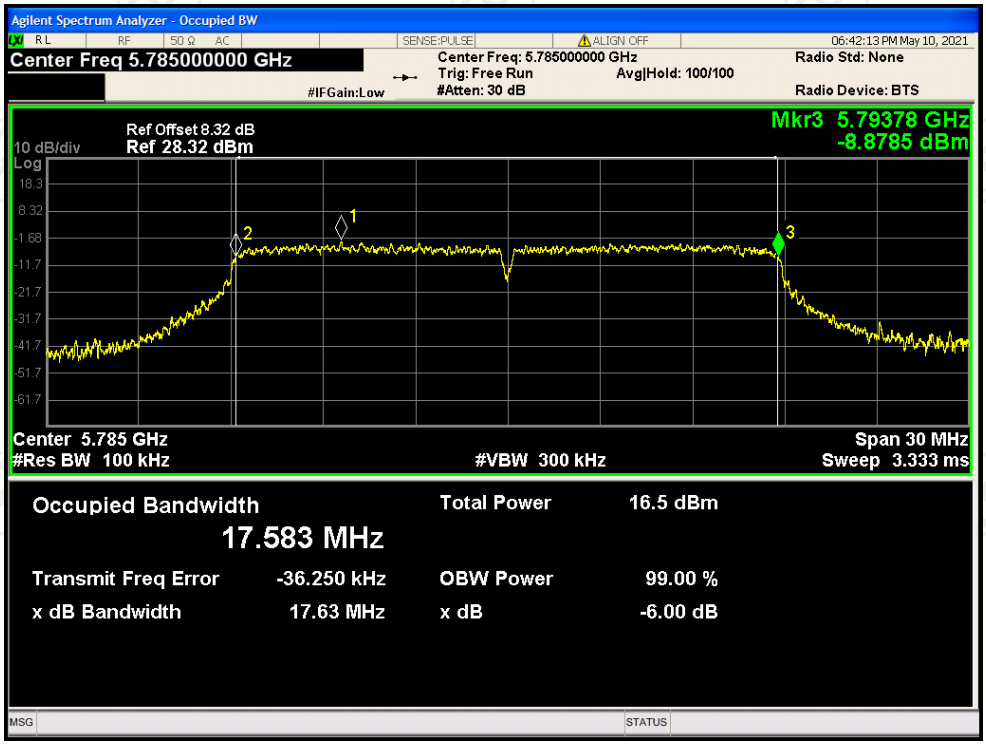
-6dB Bandwidth NVNT ac80 5775MHz



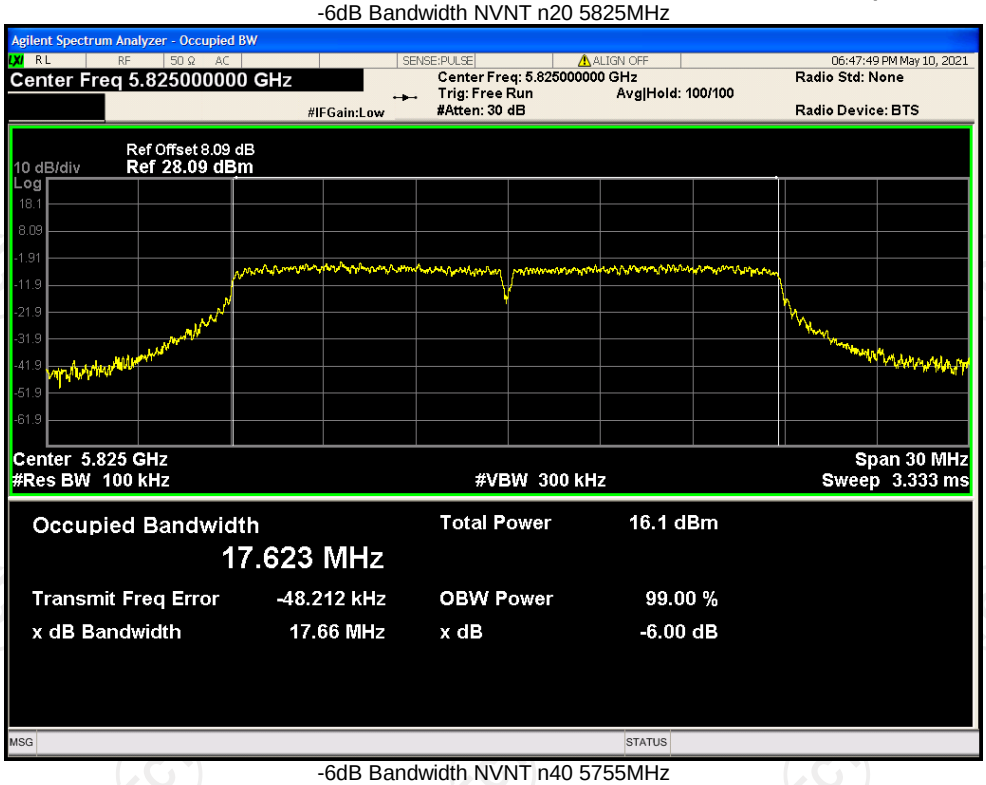
-6dB Bandwidth NVNT n20 5745MHz



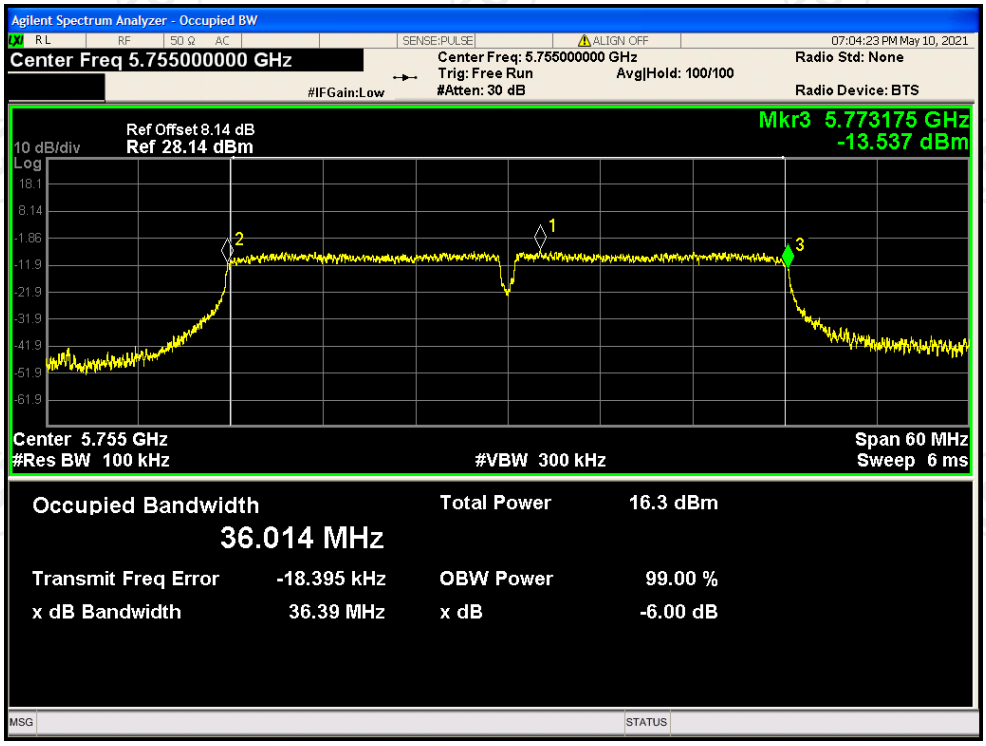
-6dB Bandwidth NVNT n20 5785MHz



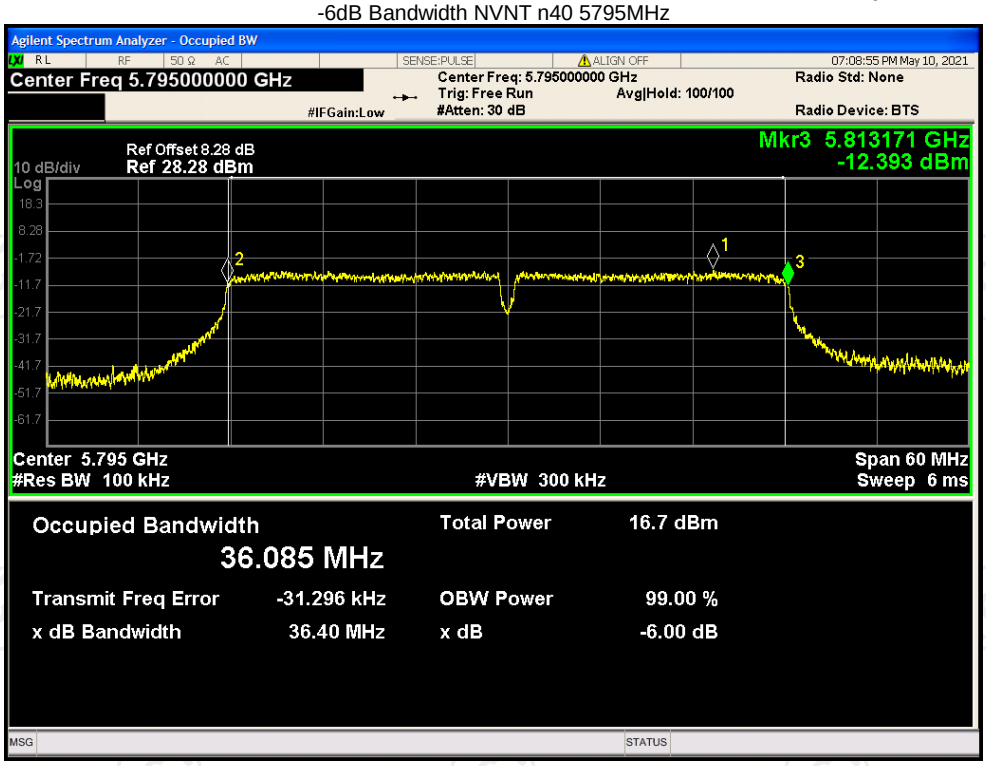
-6dB Bandwidth NVNT n20 5825MHz



-6dB Bandwidth NVNT n40 5755MHz



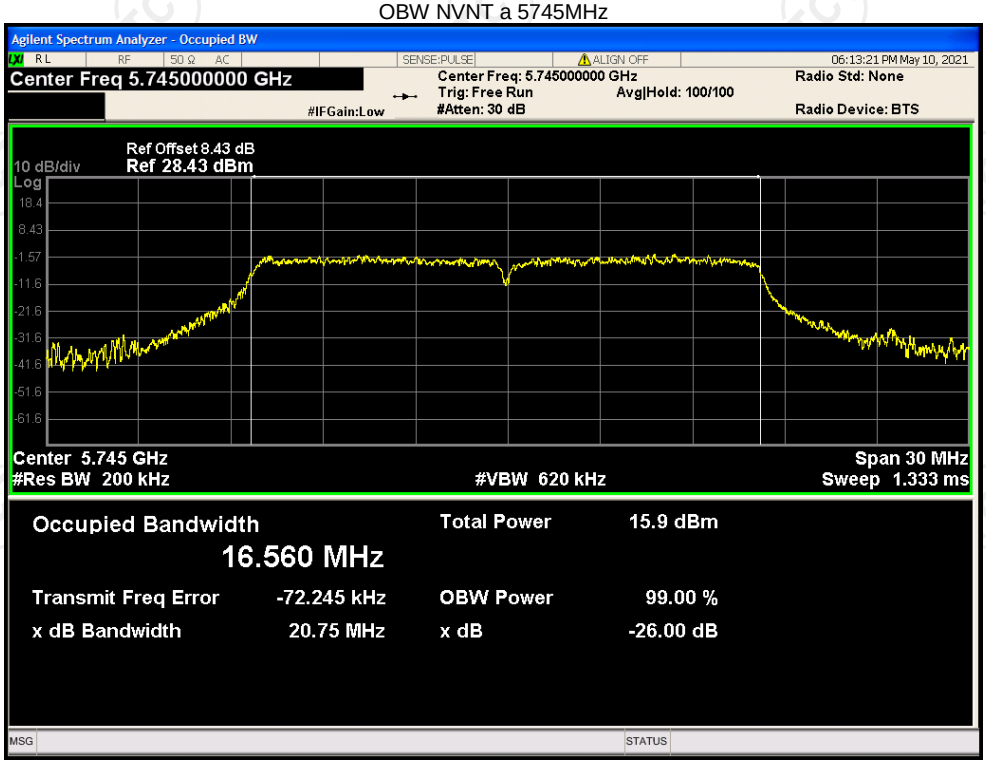
-6dB Bandwidth NVNT n40 5795MHz



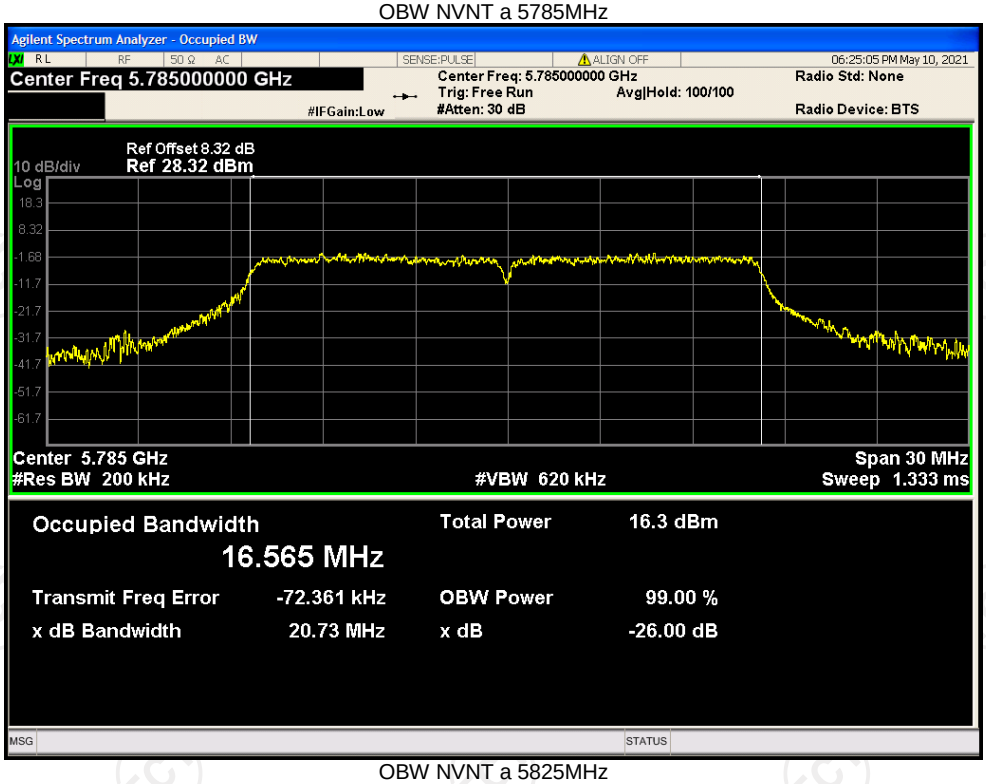
Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	99% OBW (MHz)
NVNT	a	5745	16.560
NVNT	a	5785	16.565
NVNT	a	5825	16.533
NVNT	ac20	5745	17.682
NVNT	ac20	5785	17.705
NVNT	ac20	5825	17.652
NVNT	ac40	5755	36.207
NVNT	ac40	5795	36.224
NVNT	ac80	5775	75.644
NVNT	n20	5745	17.644
NVNT	n20	5785	17.644
NVNT	n20	5825	17.704
NVNT	n40	5755	36.131
NVNT	n40	5795	36.242

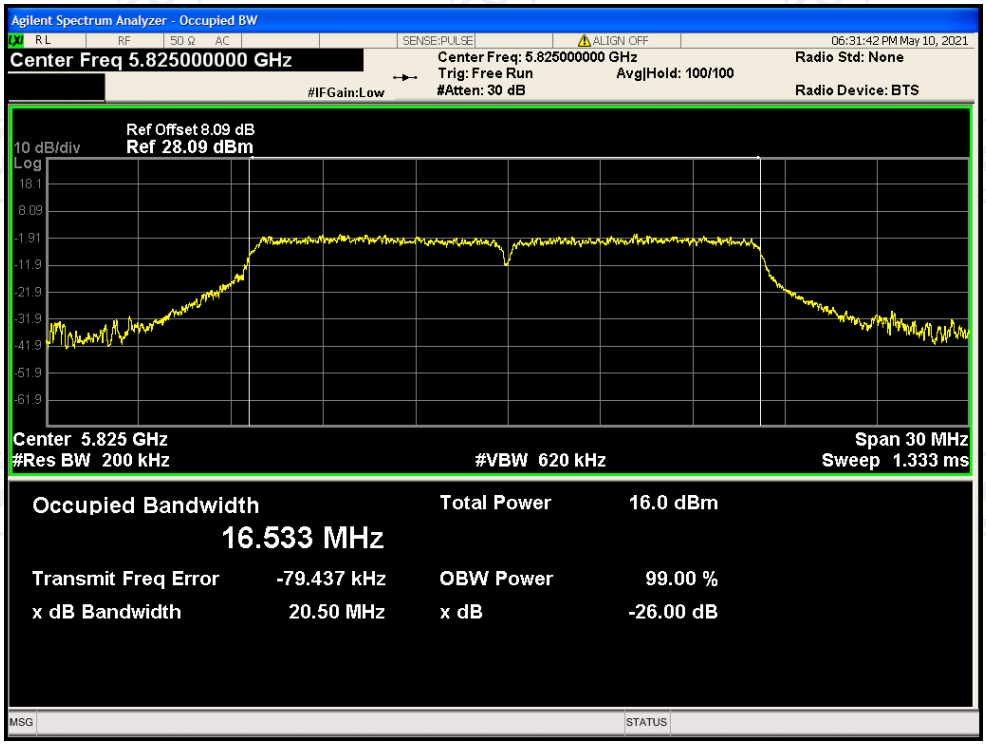
OBW NVNT a 5745MHz



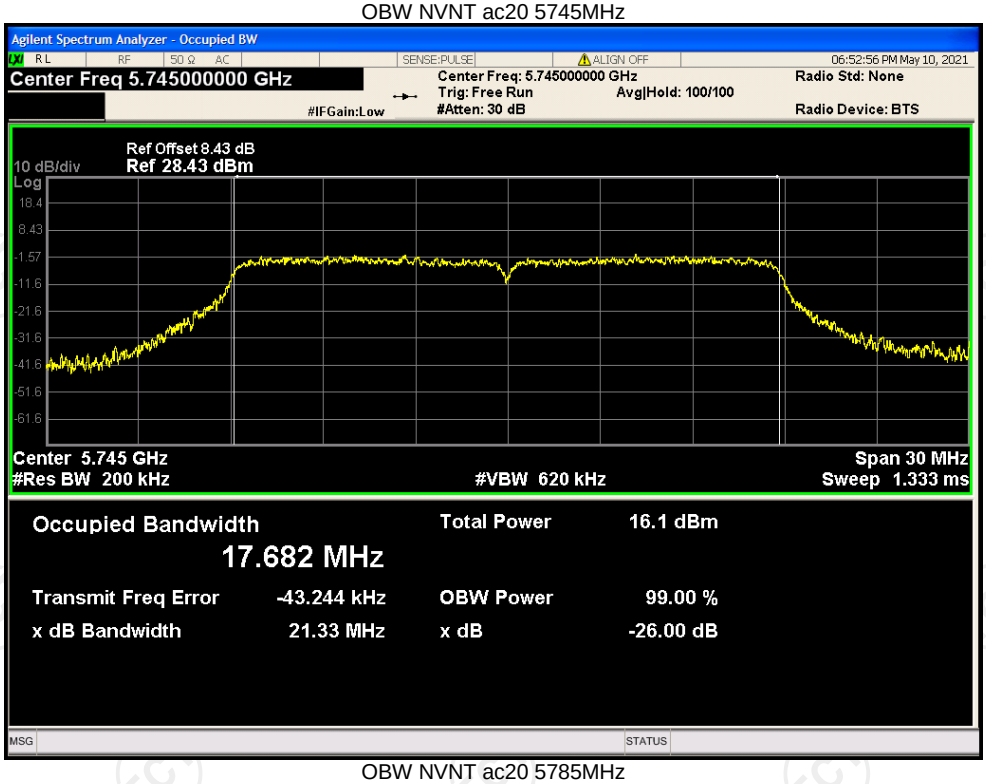
OBW NVNT a 5785MHz



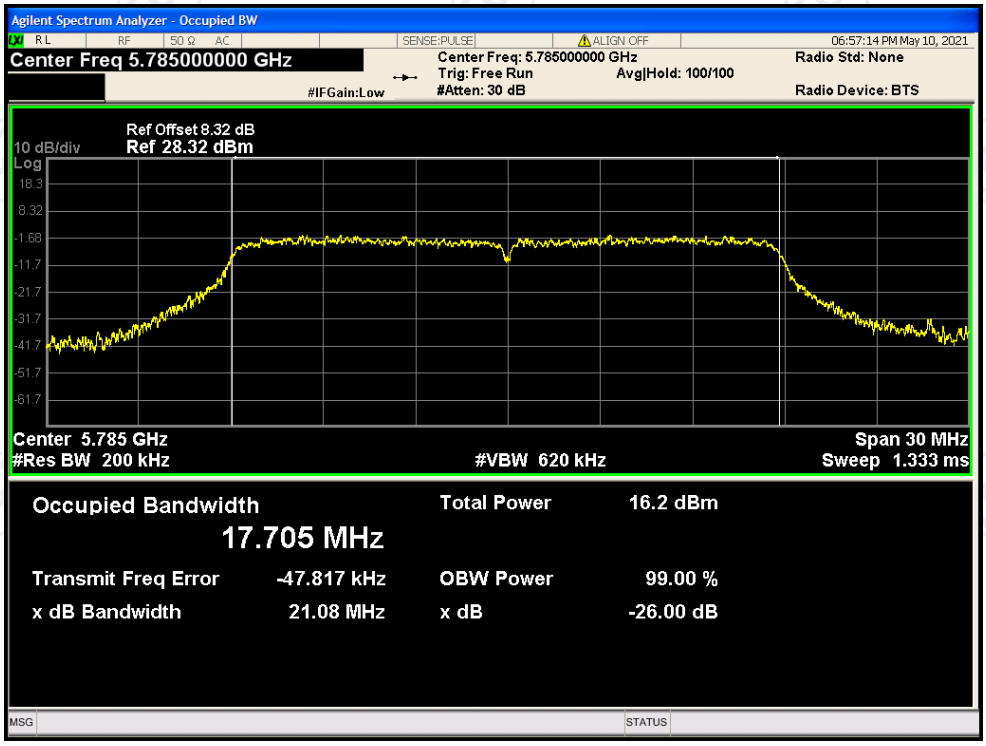
OBW NVNT a 5825MHz



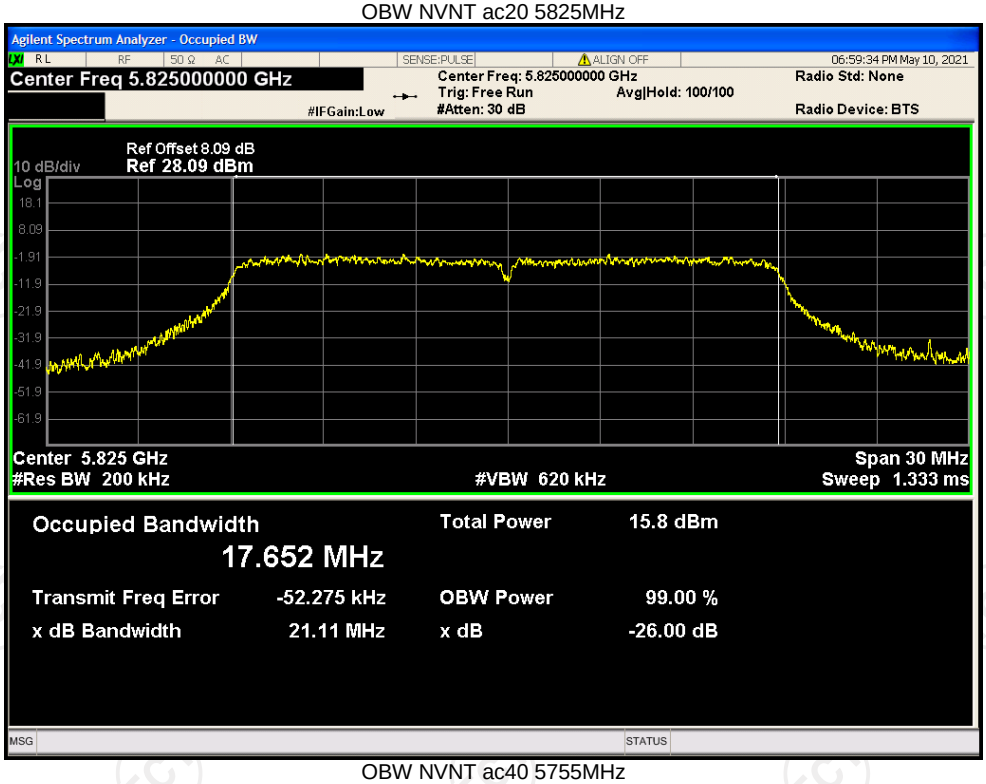
OBW NVNT ac20 5745MHz



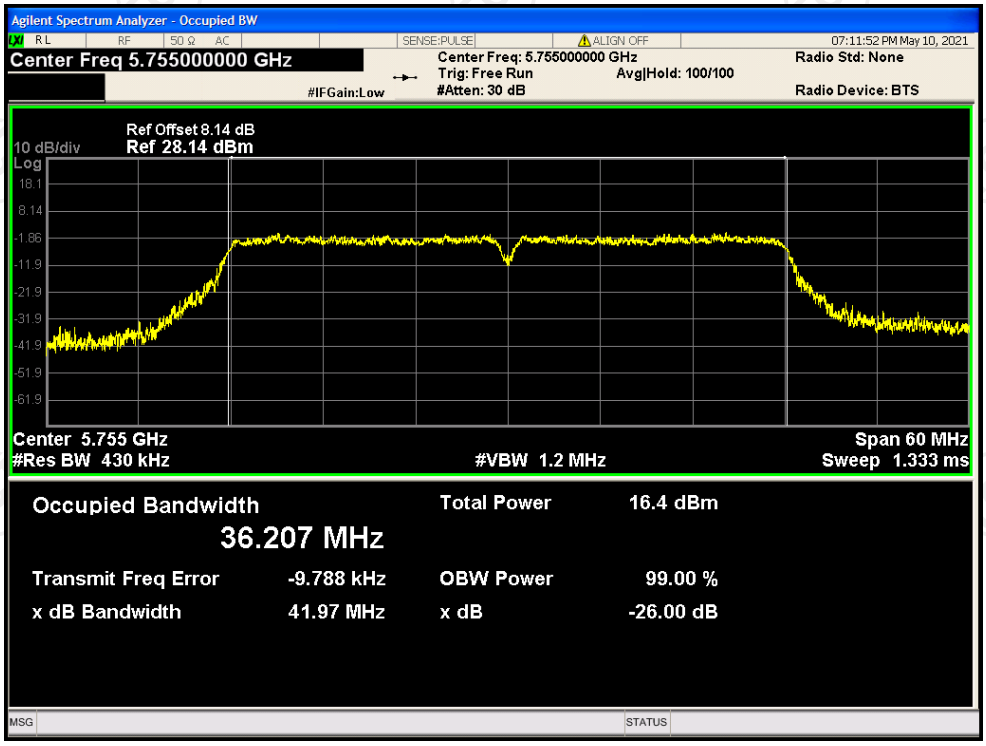
OBW NVNT ac20 5785MHz



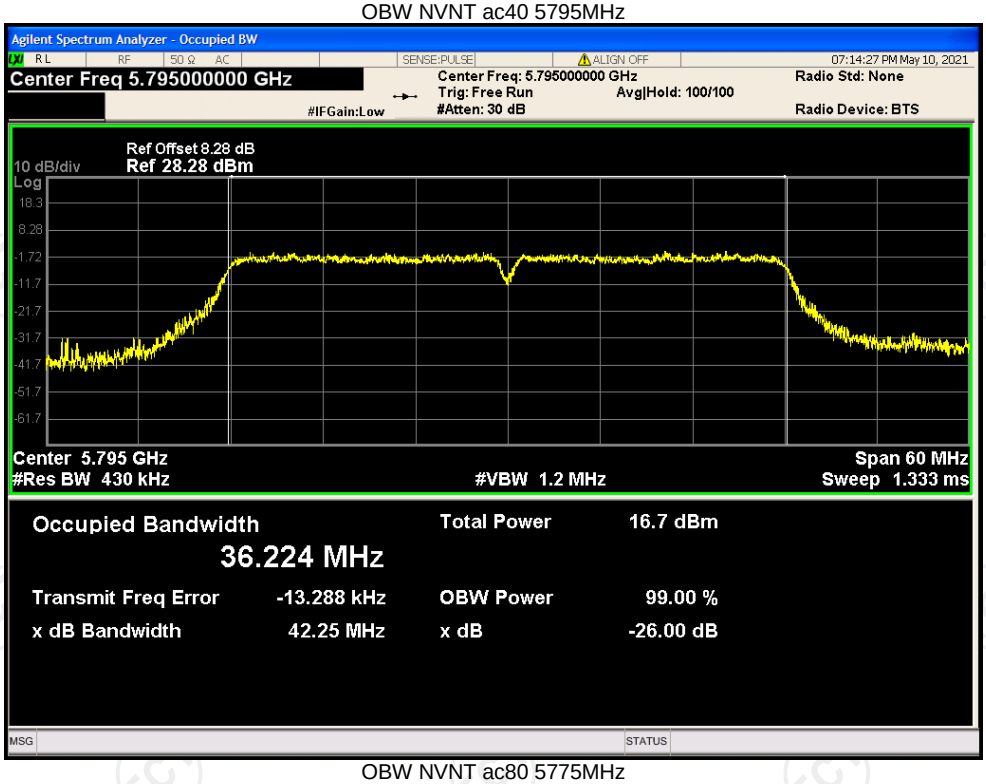
OBW NVNT ac20 5825MHz



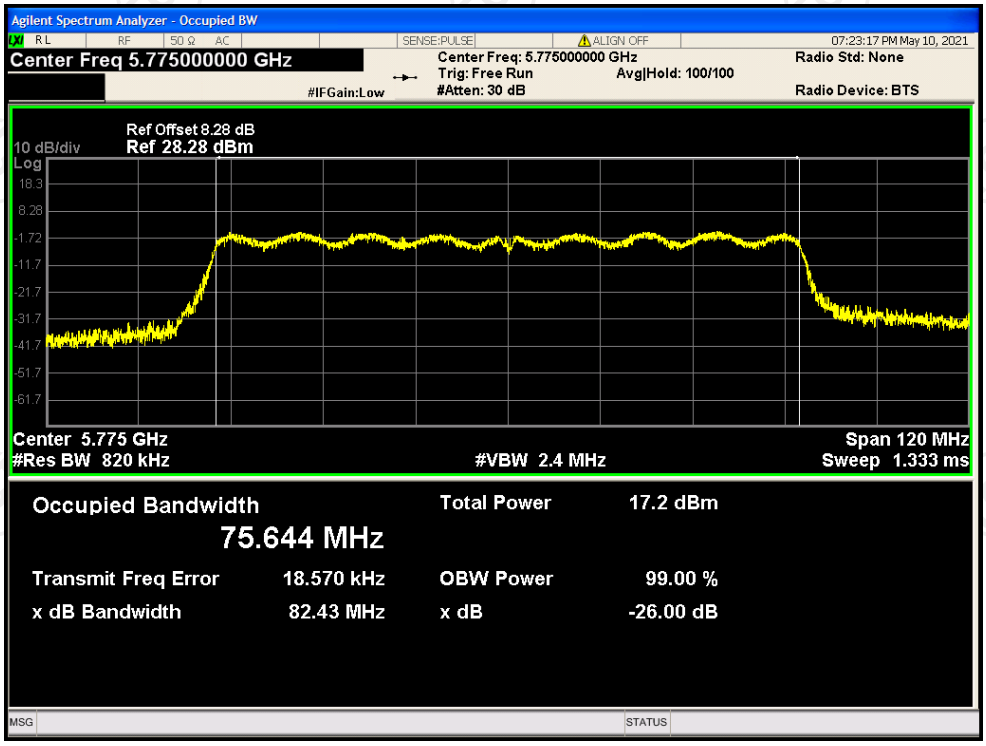
OBW NVNT ac40 5755MHz



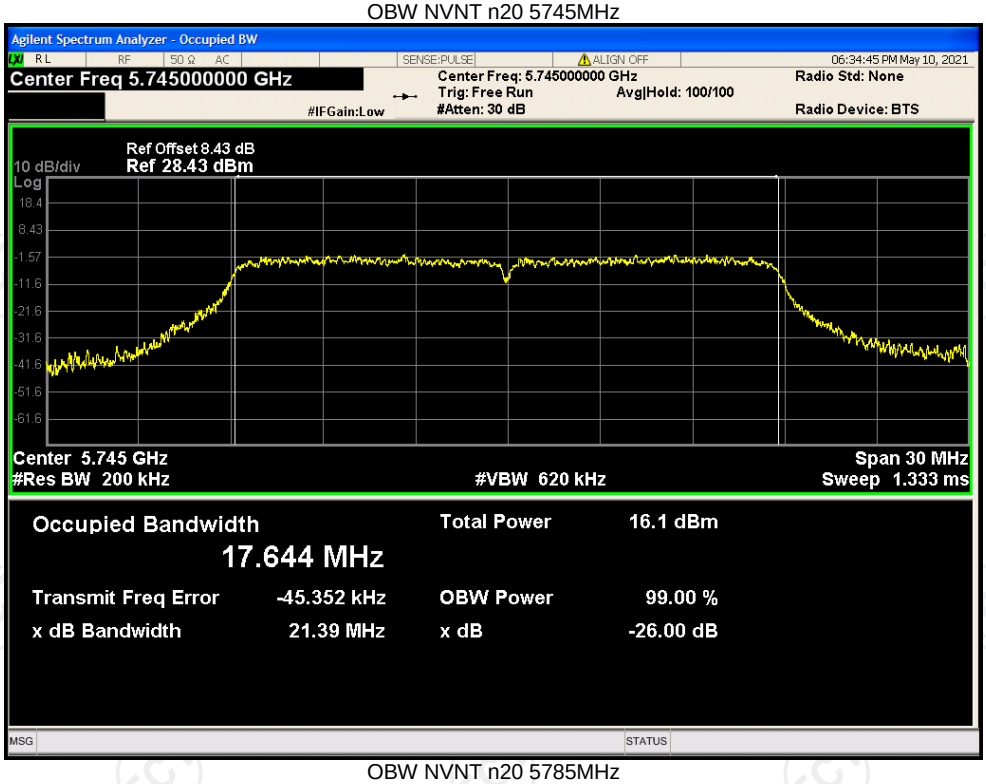
OBW NVNT ac40 5795MHz



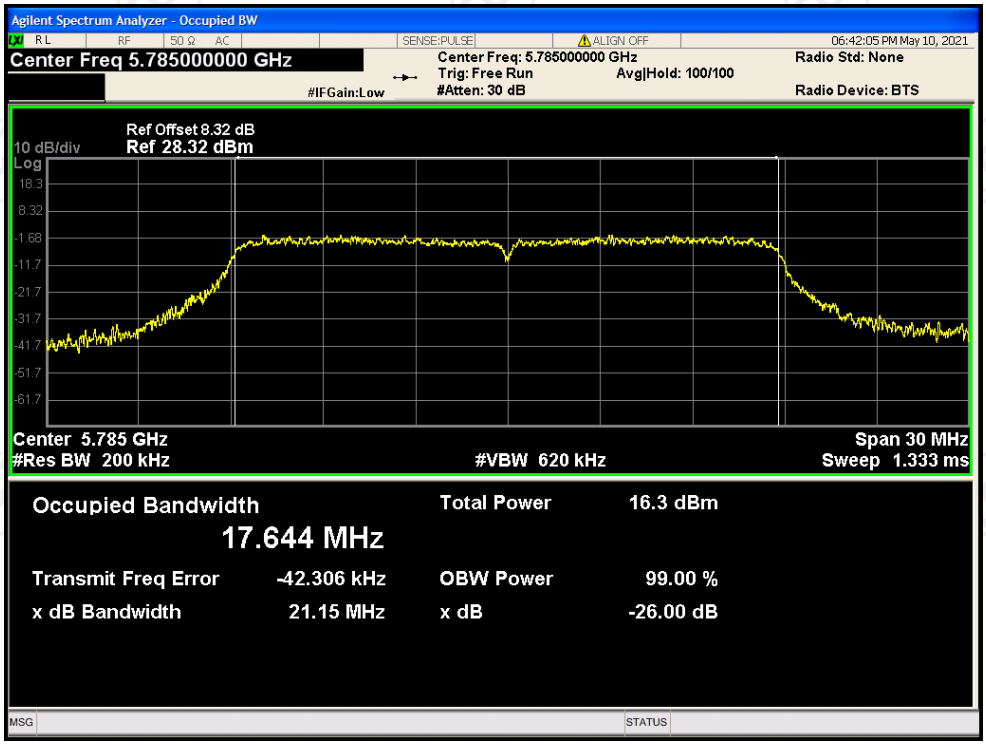
OBW NVNT ac80 5775MHz



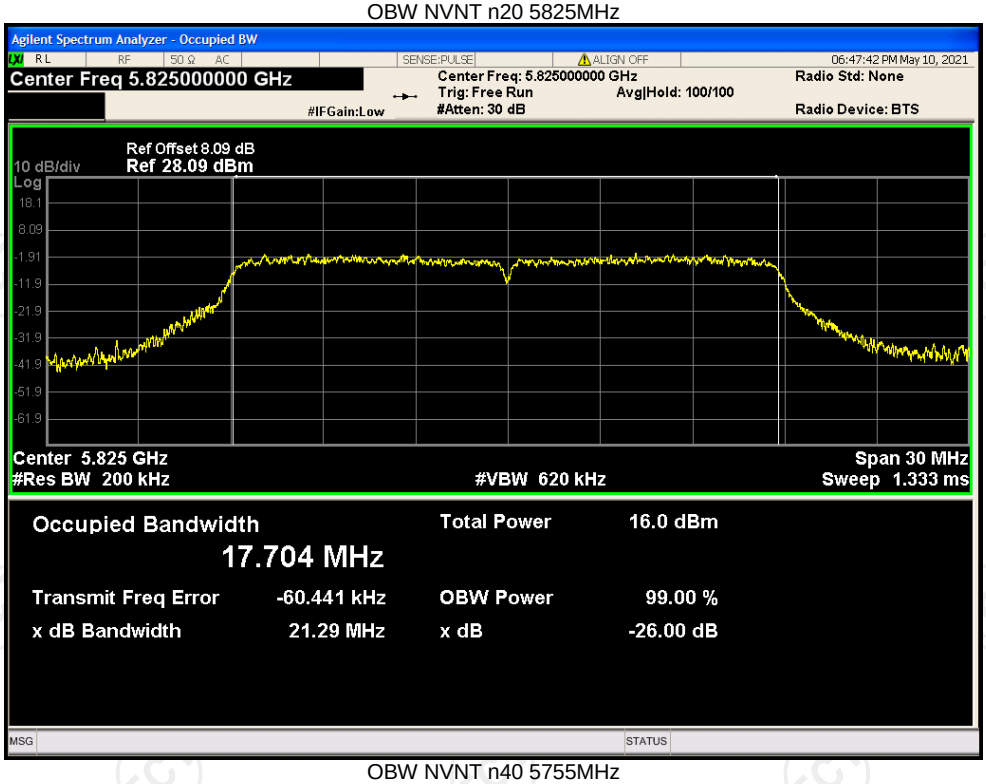
OBW NVNT n20 5745MHz



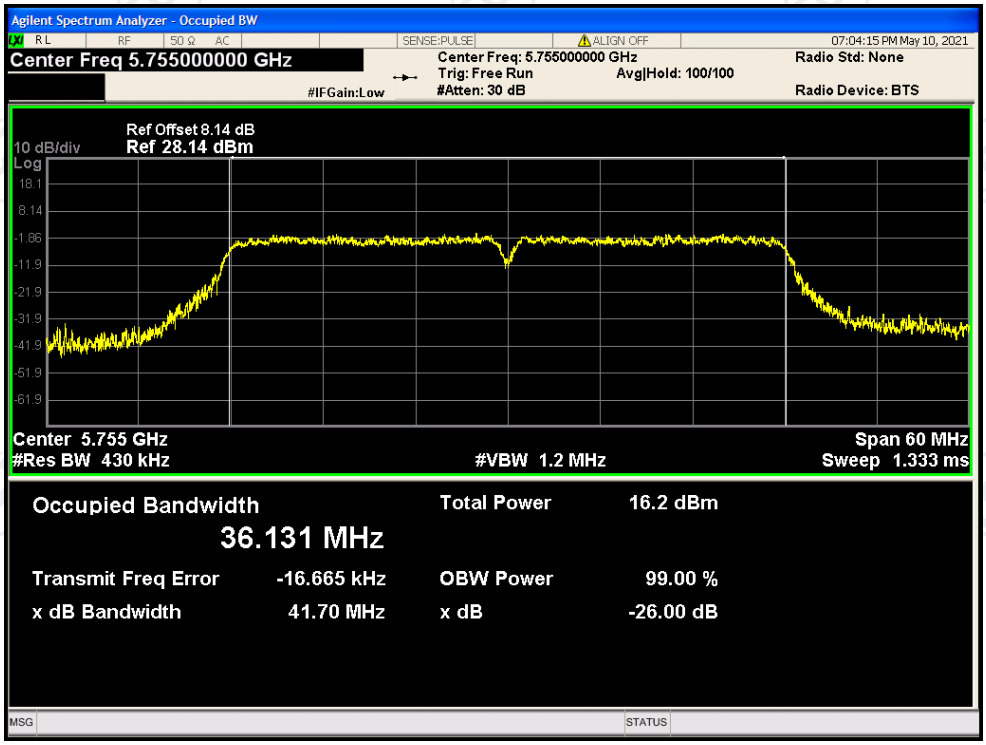
OBW NVNT n20 5785MHz



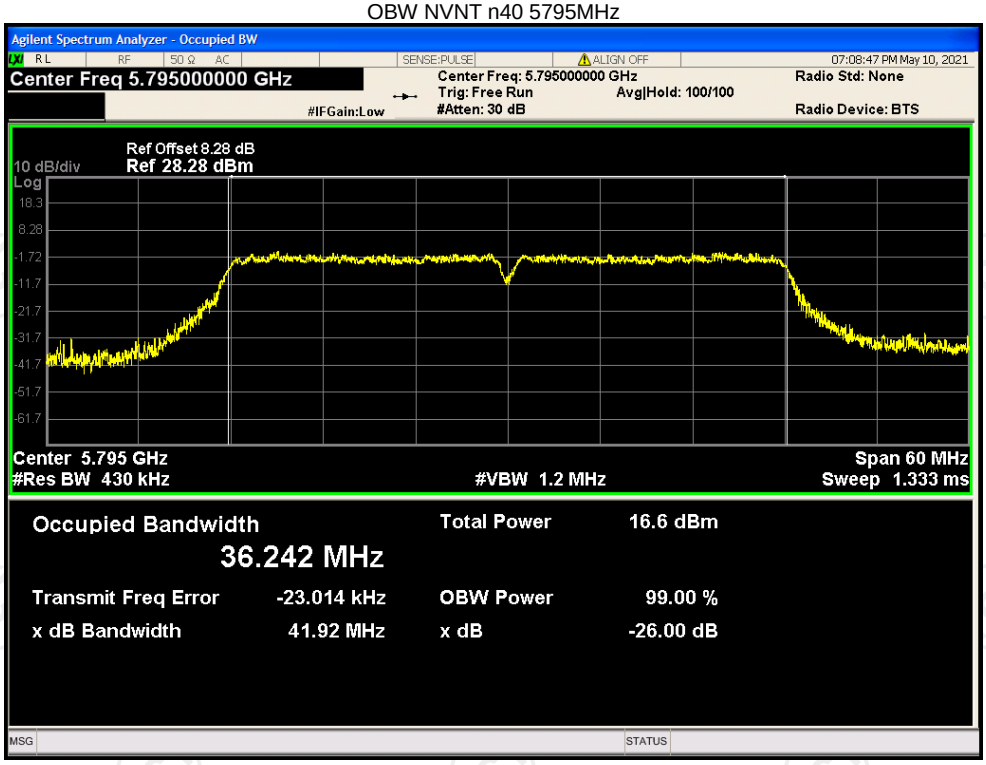
OBW NVNT n20 5825MHz



OBW NVNT n40 5755MHz



OBW NVNT n40 5795MHz

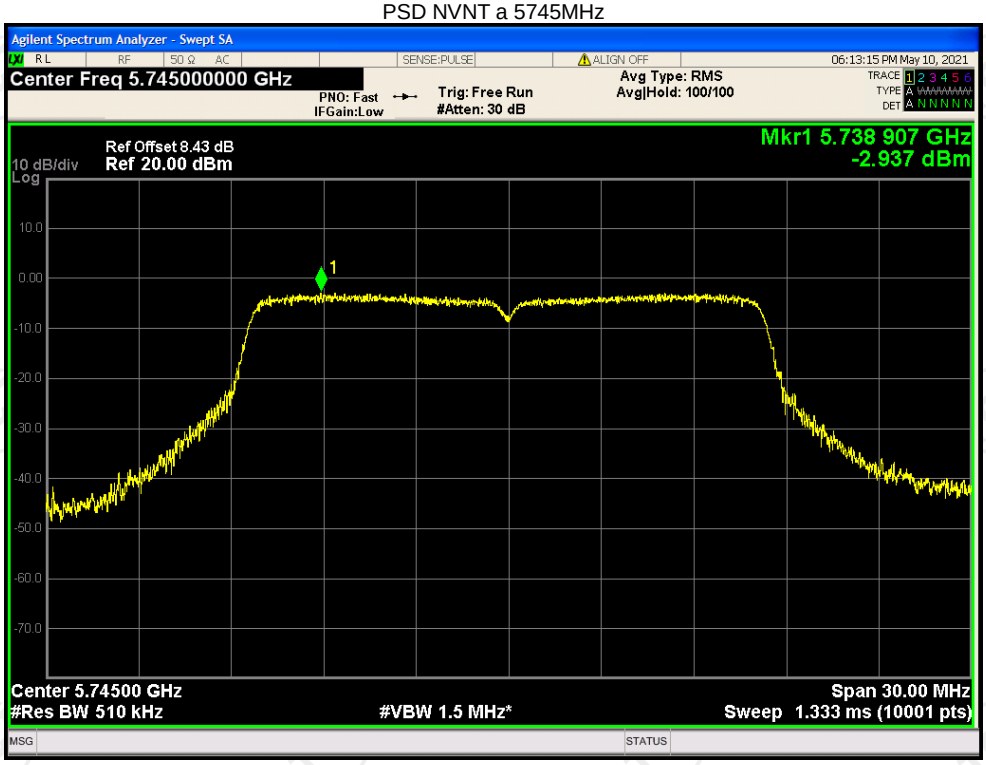


Maximum Power Spectral Density Level

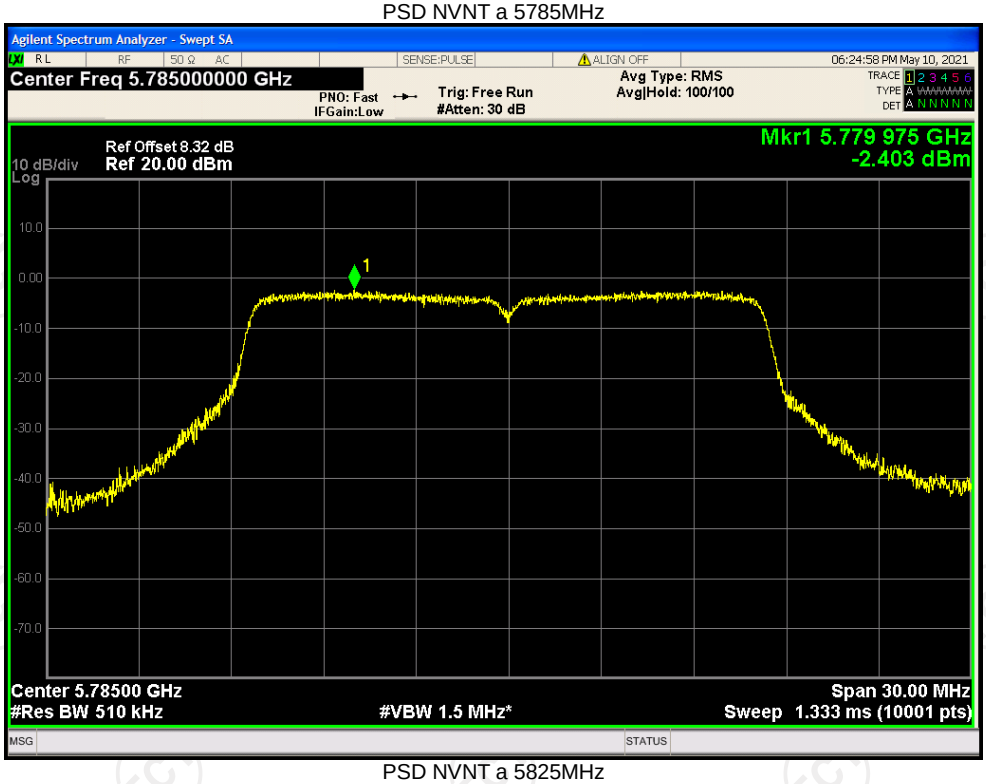
Condition	Mode	Frequency (MHz)	Max PSD (dBm)/510k	Max PSD (dBm)/500k	Limit (dBm)	Verdict
NVNT	a	5745	-2.937	-3.023	30	Pass
NVNT	a	5785	-2.403	-2.489	30	Pass
NVNT	a	5825	-2.961	-3.047	30	Pass
NVNT	ac20	5745	-2.670	-2.756	30	Pass
NVNT	ac20	5785	-2.837	-2.923	30	Pass
NVNT	ac20	5825	-3.184	-3.270	30	Pass
NVNT	ac40	5755	-5.898	-5.984	30	Pass
NVNT	ac40	5795	-5.594	-5.680	30	Pass
NVNT	ac80	5775	-7.710	-7.796	30	Pass
NVNT	n20	5745	-2.871	-2.957	30	Pass
NVNT	n20	5785	-2.265	-2.351	30	Pass
NVNT	n20	5825	-2.909	-2.995	30	Pass
NVNT	n40	5755	-5.996	-6.082	30	Pass
NVNT	n40	5795	-5.610	5.696	30	Pass

Note: *Compensate 10dB is for Exchange rate of RBW*
*Exchange rate of RBW = 10*log10(Reference bandwidth/RBW at measurement) = -10[dB]*
where Reference bandwidth = 500 KHz

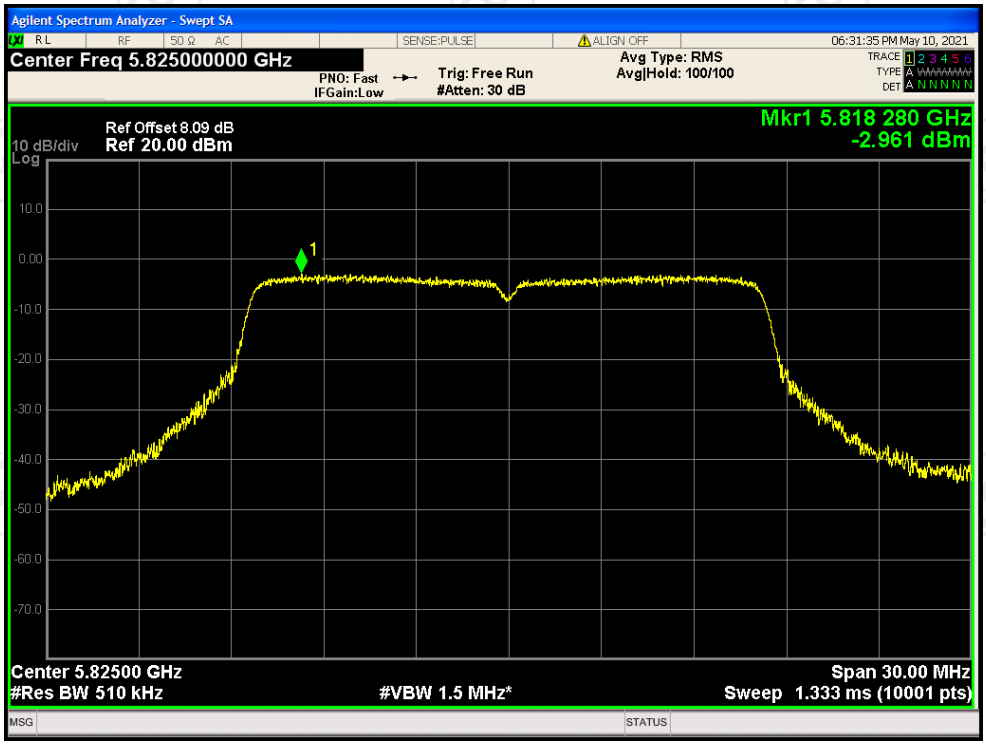
PSD NVNT a 5745MHz



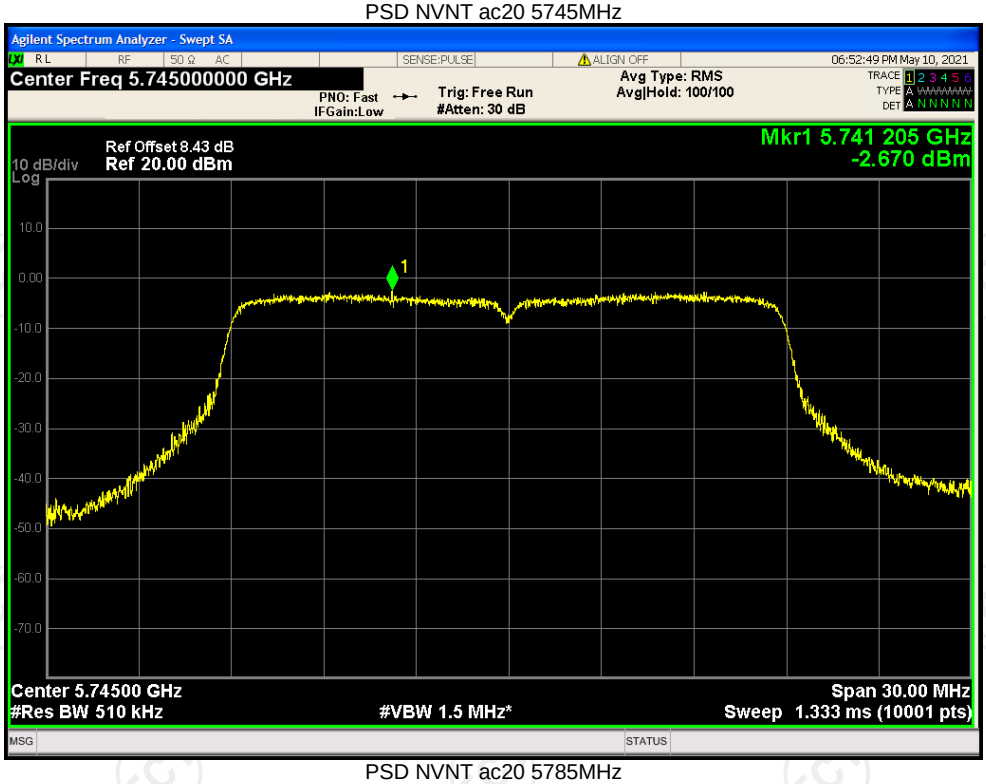
PSD NVNT a 5785MHz



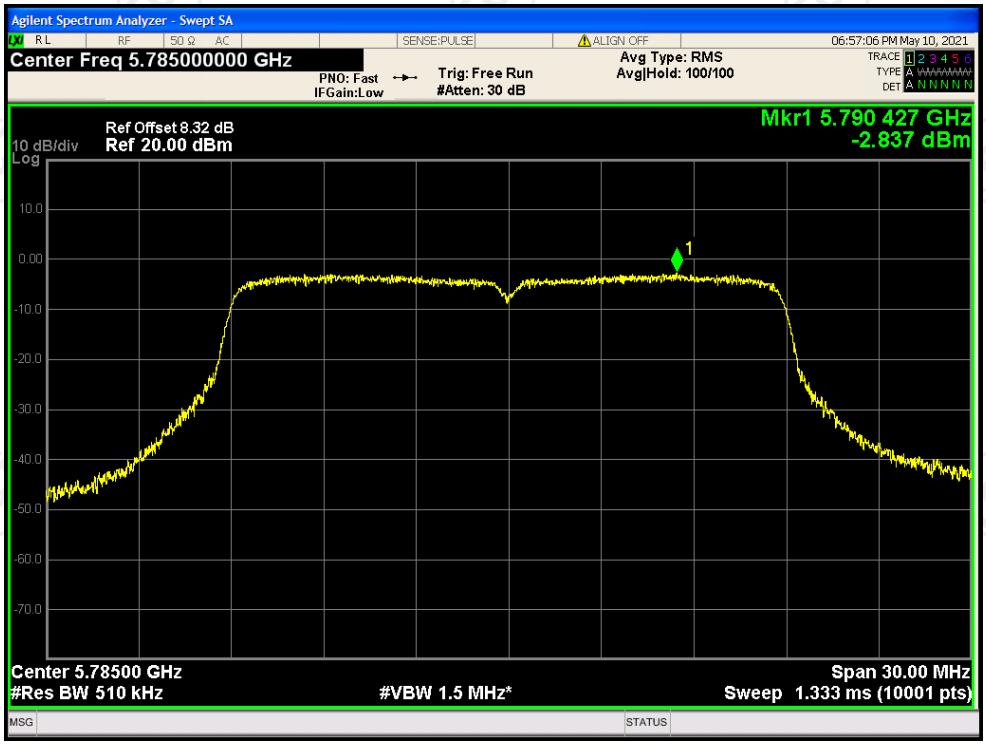
PSD NVNT a 5825MHz



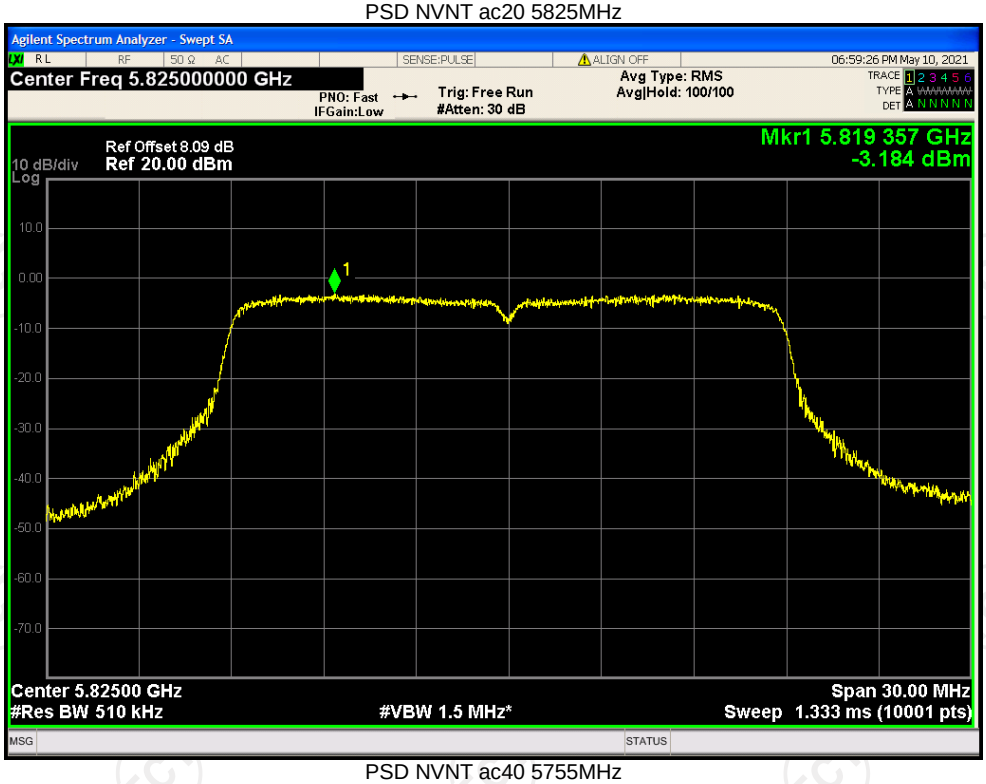
PSD NVNT ac20 5745MHz



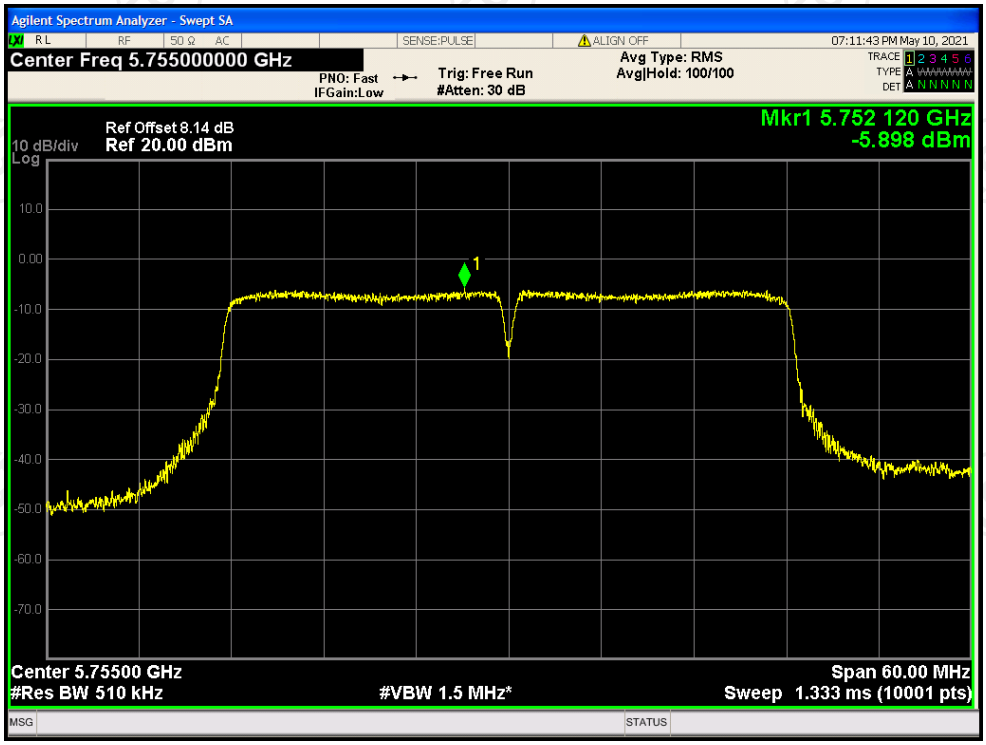
PSD NVNT ac20 5785MHz



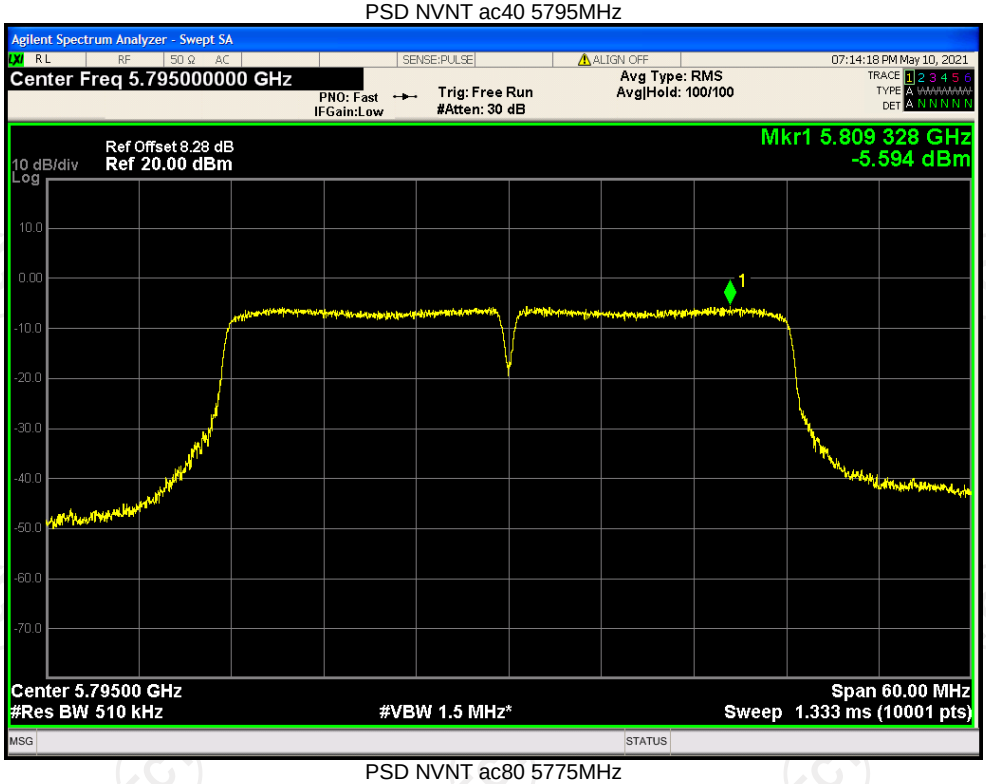
PSD NVNT ac20 5825MHz



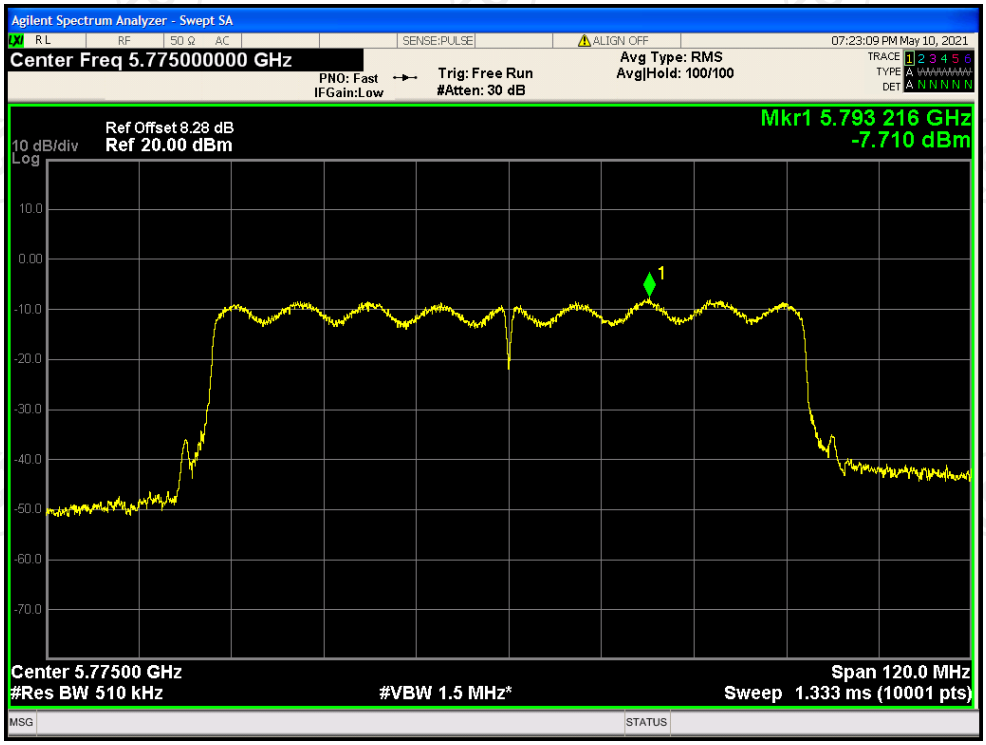
PSD NVNT ac40 5755MHz



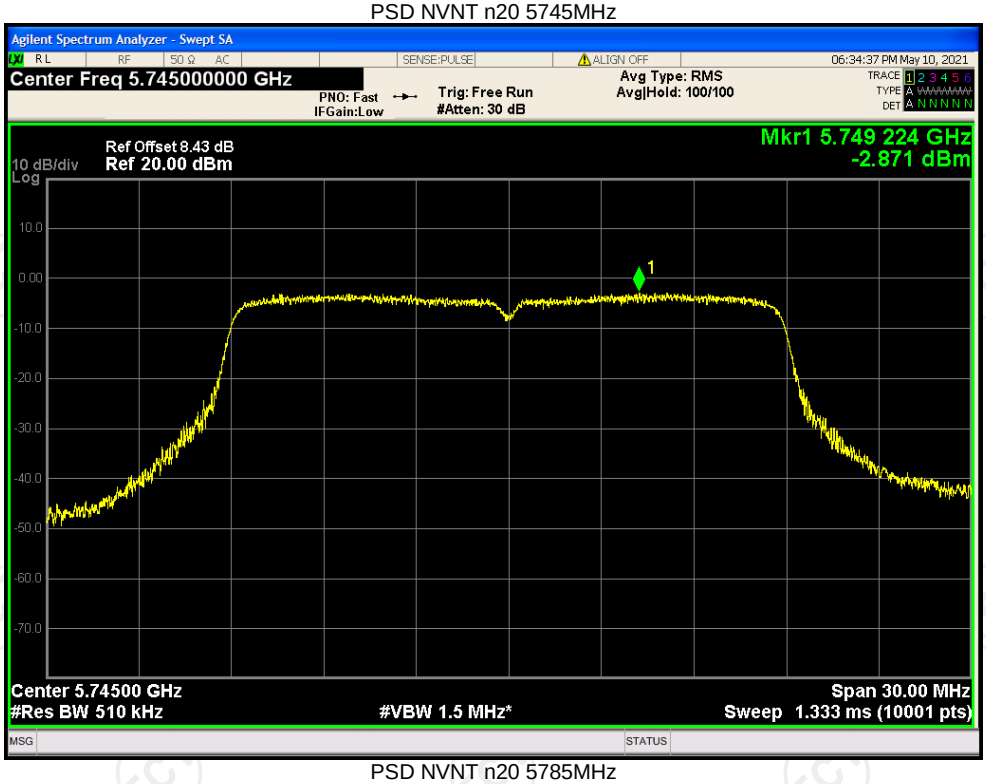
PSD NVNT ac40 5795MHz



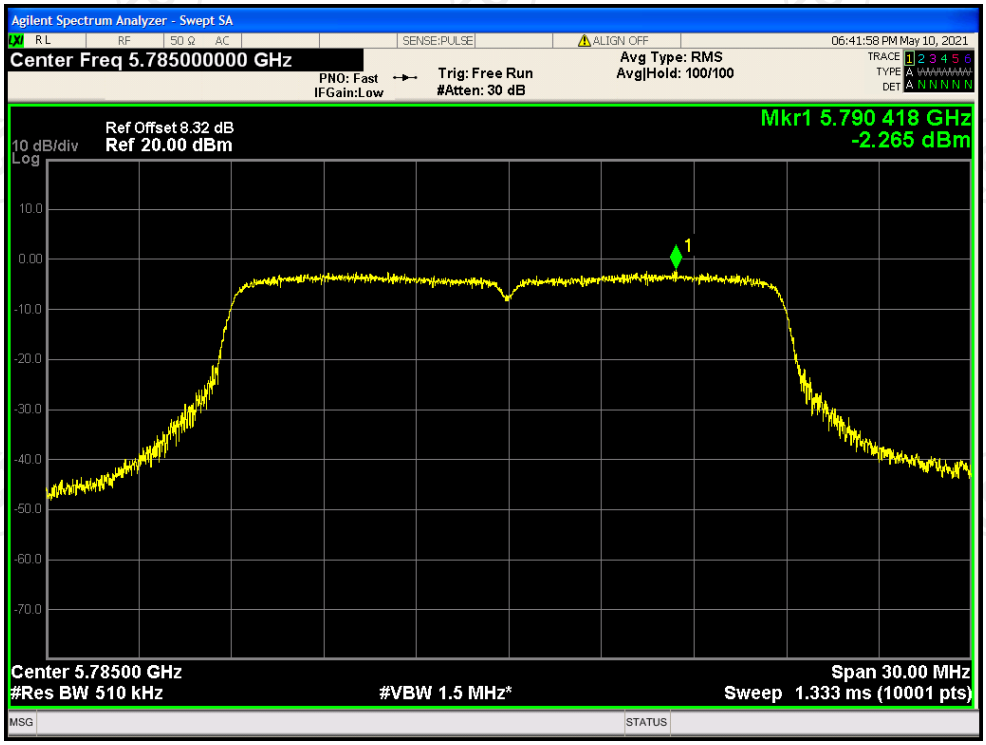
PSD NVNT ac80 5775MHz



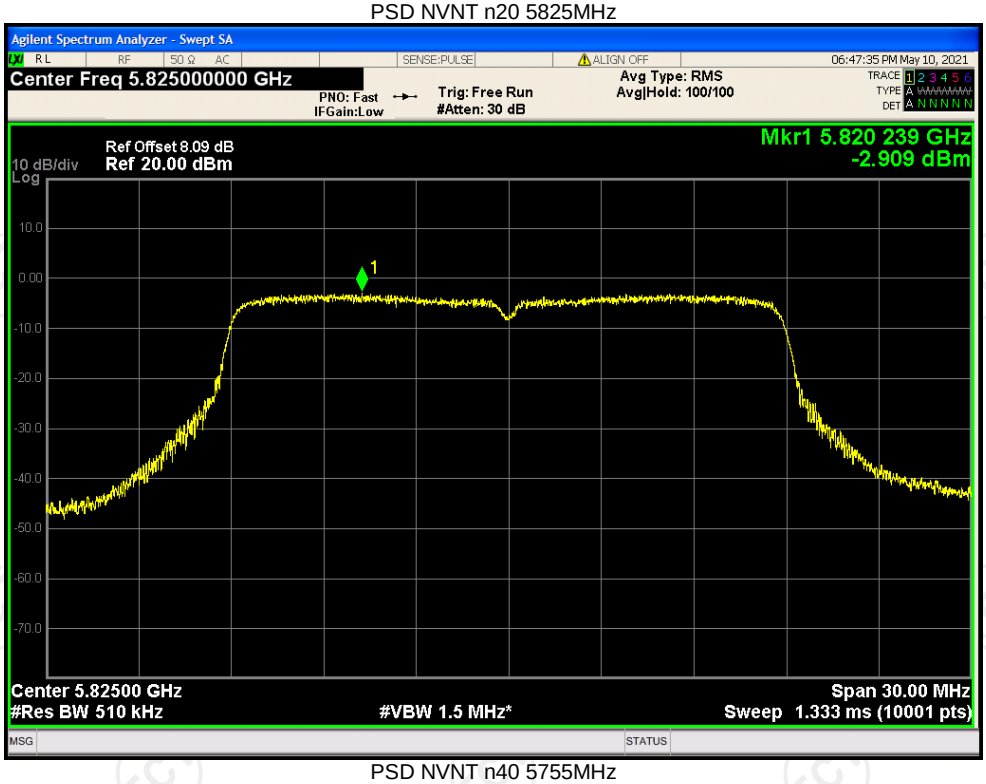
PSD NVNT n20 5745MHz



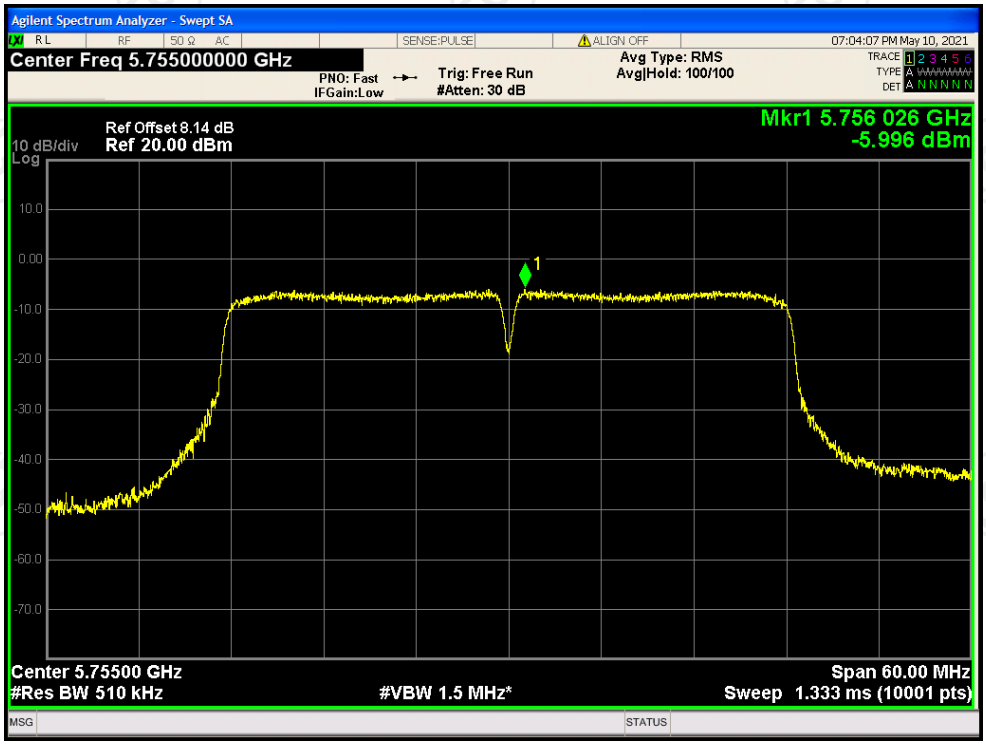
PSD NVNT n20 5785MHz



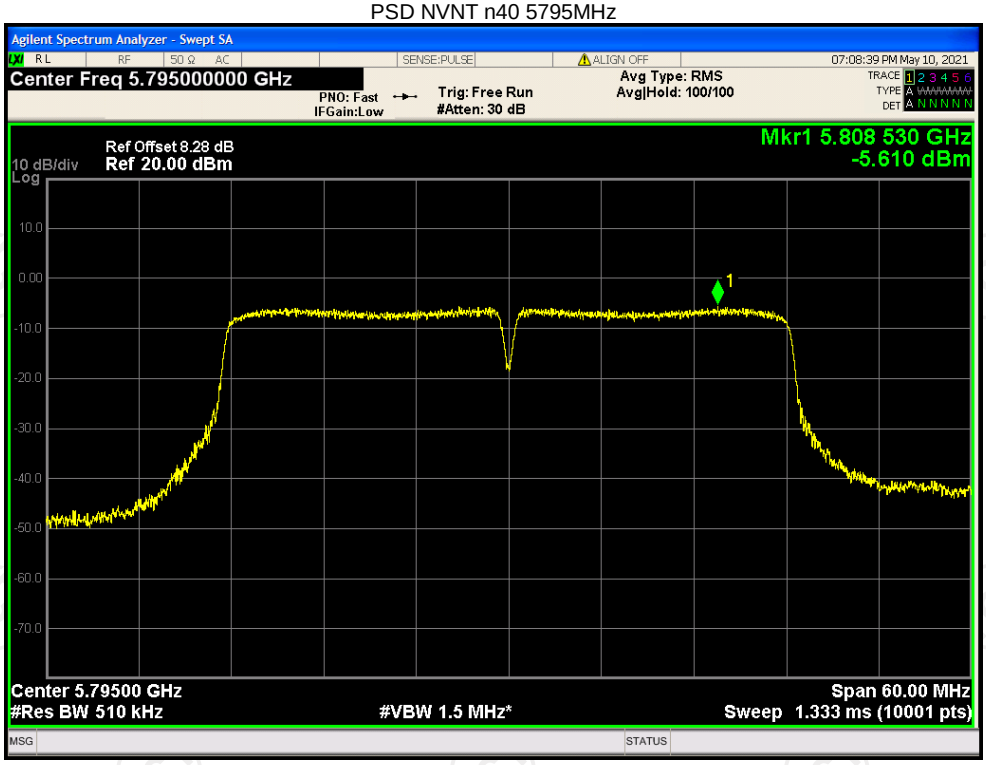
PSD NVNT n20 5825MHz



PSD NVNT n40 5755MHz



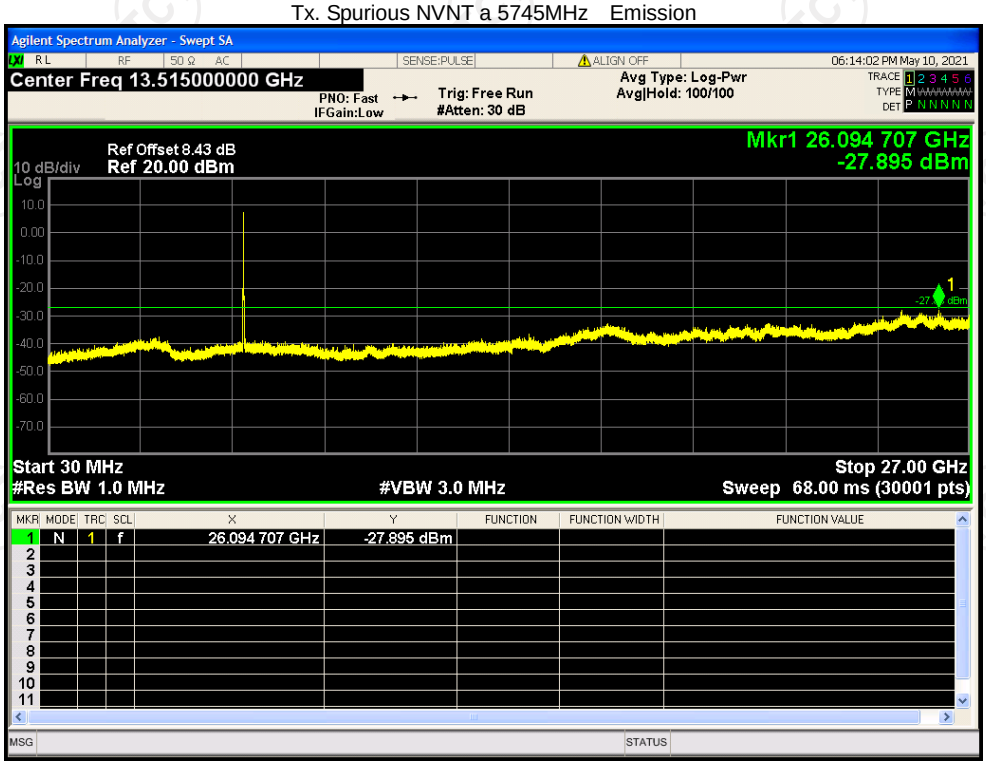
PSD NVNT n40 5795MHz



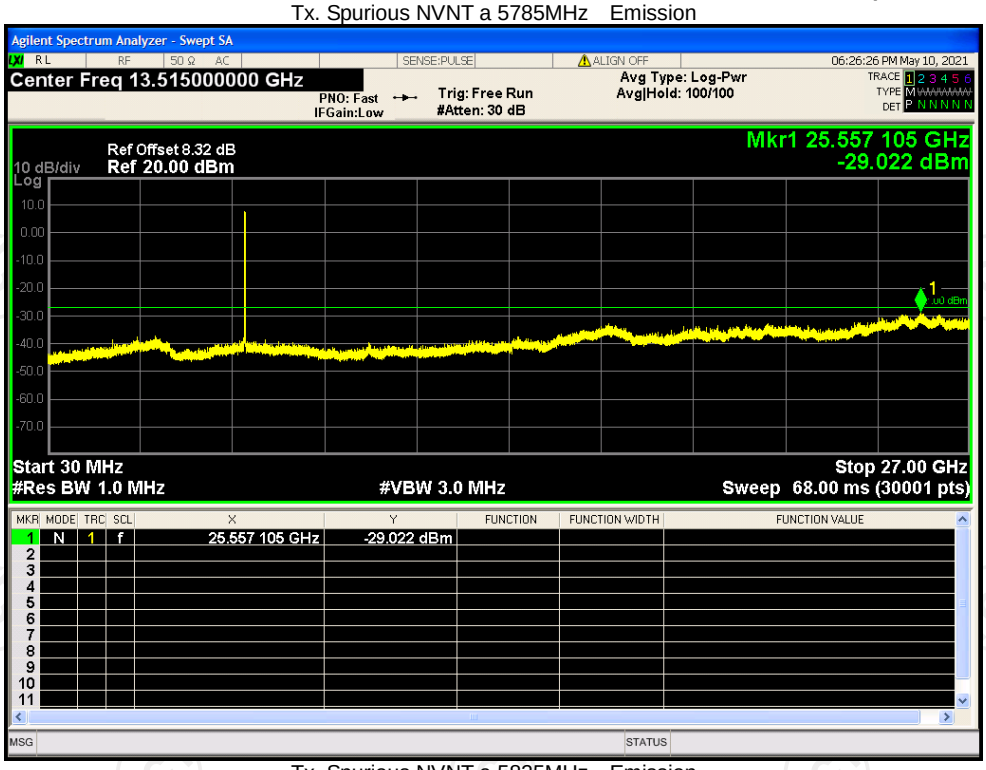
Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5745	-27.89	-27	Pass
NVNT	a	5785	-29.02	-27	Pass
NVNT	a	5825	-29.52	-27	Pass
NVNT	ac20	5745	-28.27	-27	Pass
NVNT	ac20	5785	-28.22	-27	Pass
NVNT	ac20	5825	-28.78	-27	Pass
NVNT	ac40	5755	-29.10	-27	Pass
NVNT	ac40	5795	-28.45	-27	Pass
NVNT	ac80	5775	-29.05	-27	Pass
NVNT	n20	5745	-27.80	-27	Pass
NVNT	n20	5785	-28.03	-27	Pass
NVNT	n20	5825	-28.70	-27	Pass
NVNT	n40	5755	-29.04	-27	Pass
NVNT	n40	5795	-28.48	-27	Pass

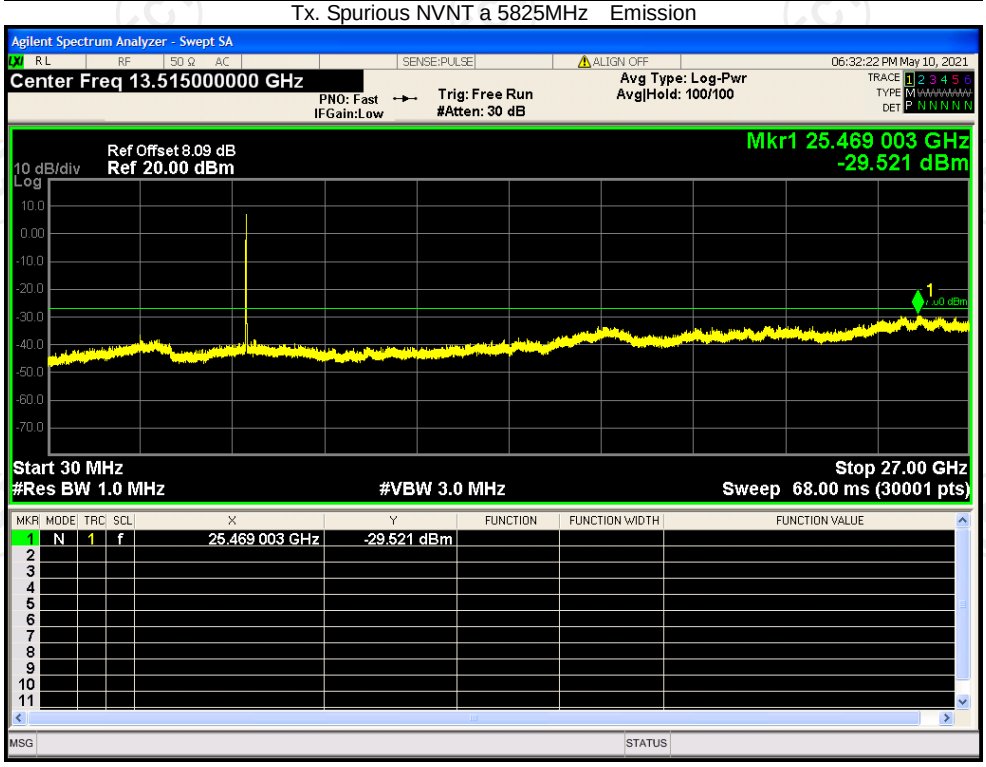
Tx. Spurious NVNT a 5745MHz Emission



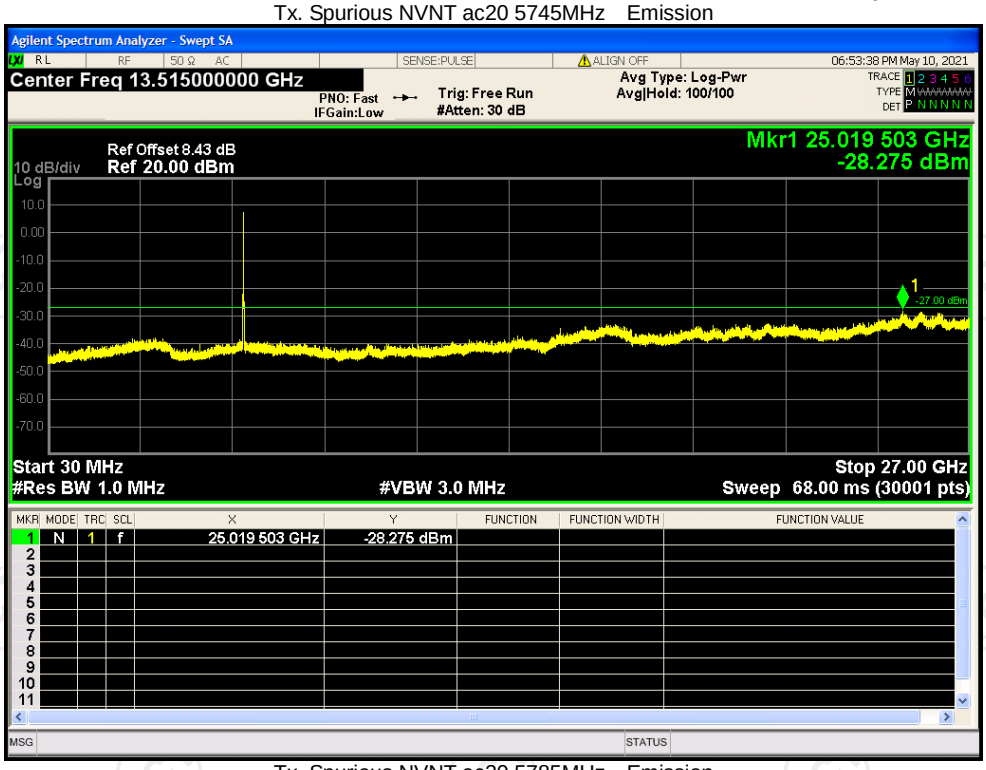
Tx. Spurious NVNT a 5785MHz Emission



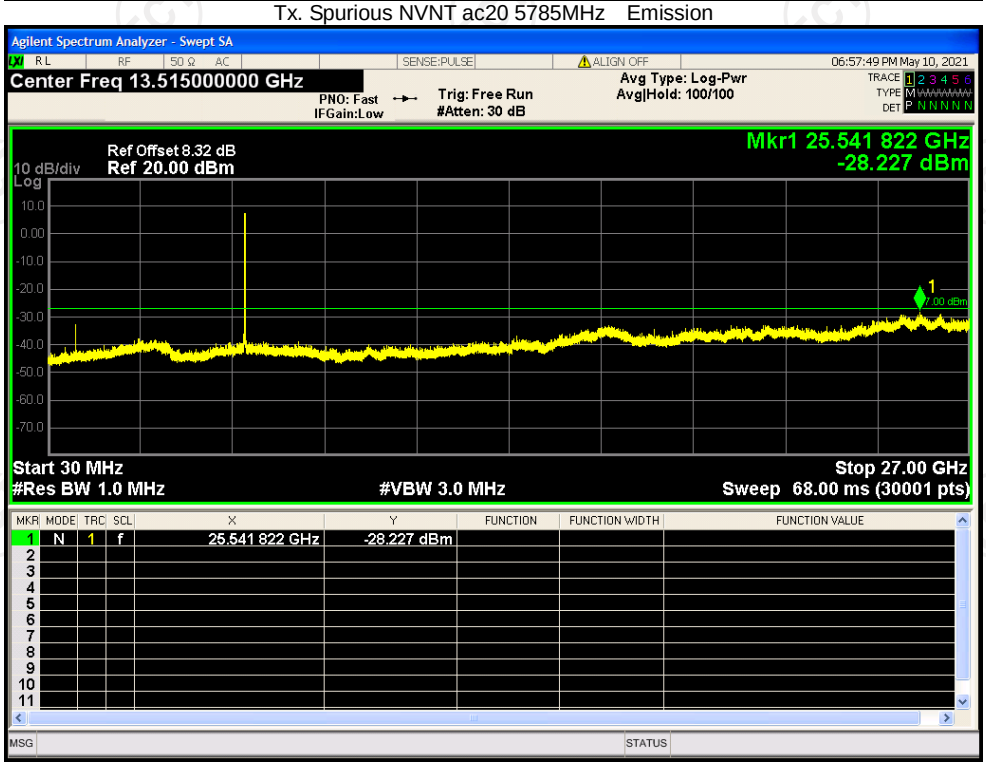
Tx. Spurious NVNT a 5825MHz Emission



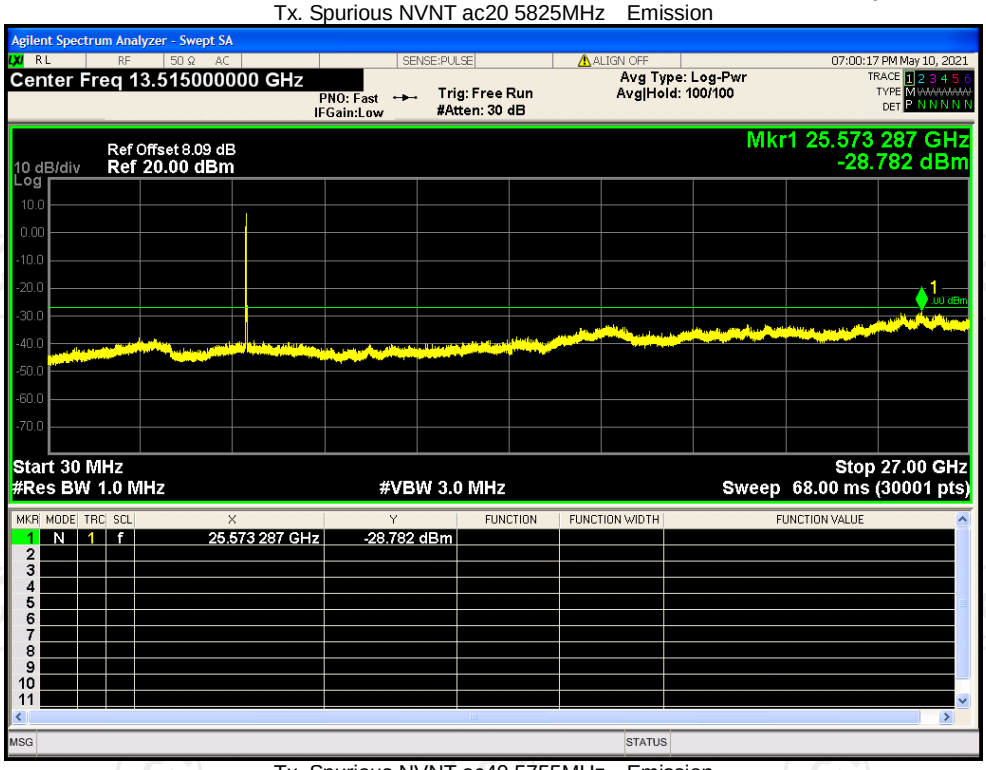
Tx. Spurious NVNT ac20 5745MHz Emission



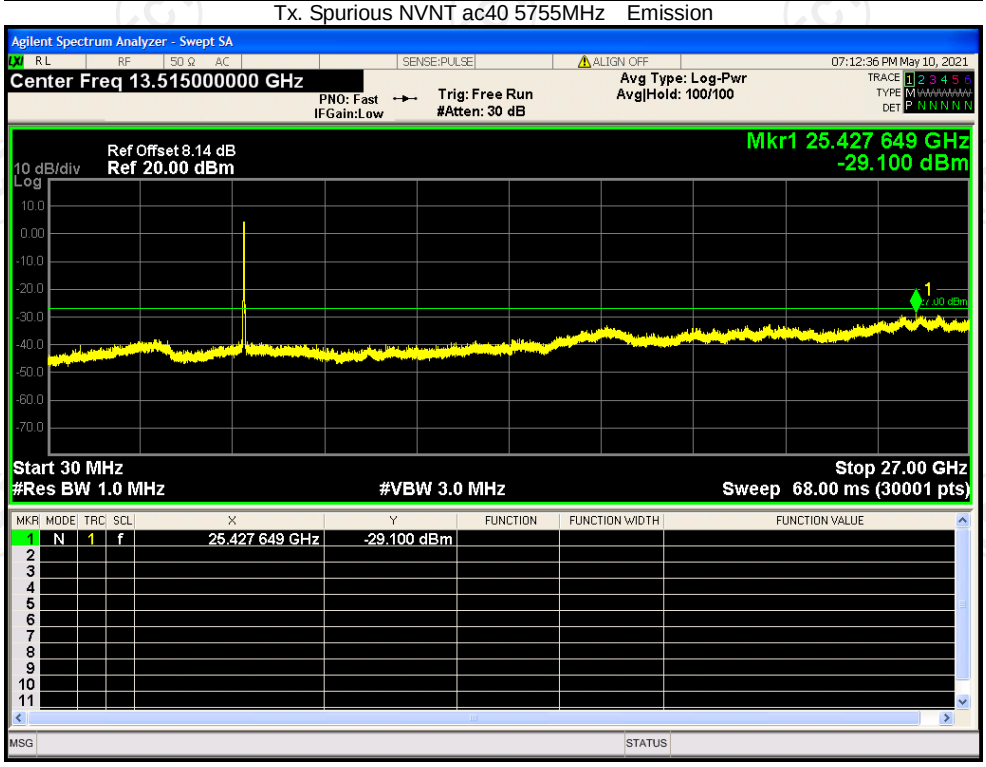
Tx. Spurious NVNT ac20 5785MHz Emission



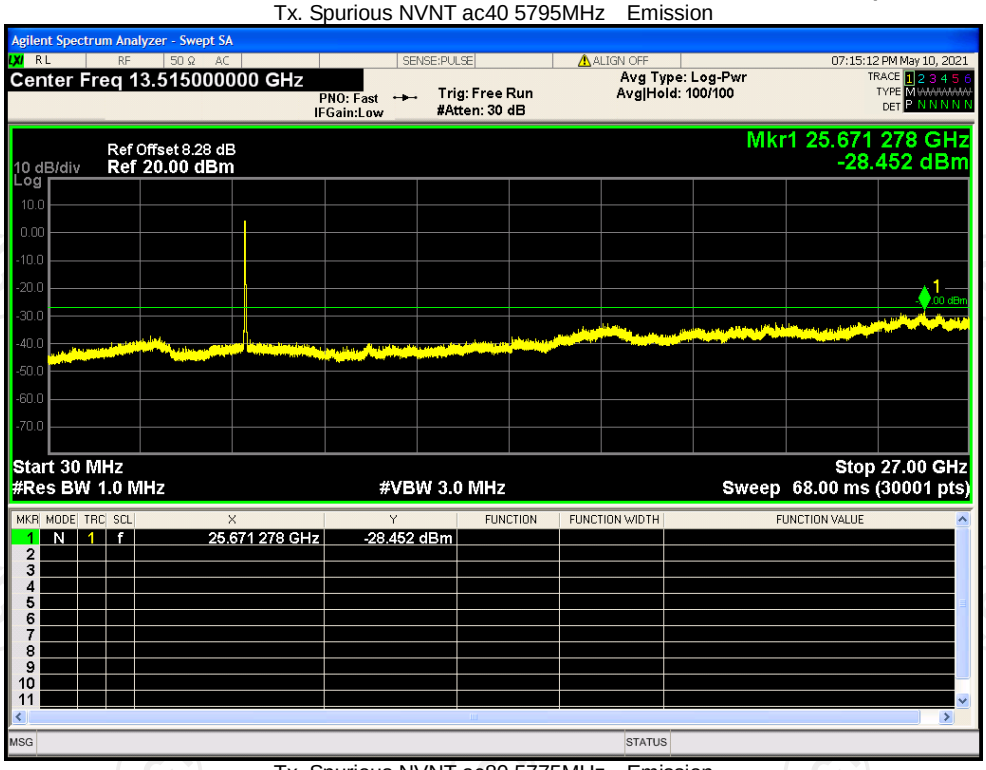
Tx. Spurious NVNT ac20 5825MHz Emission



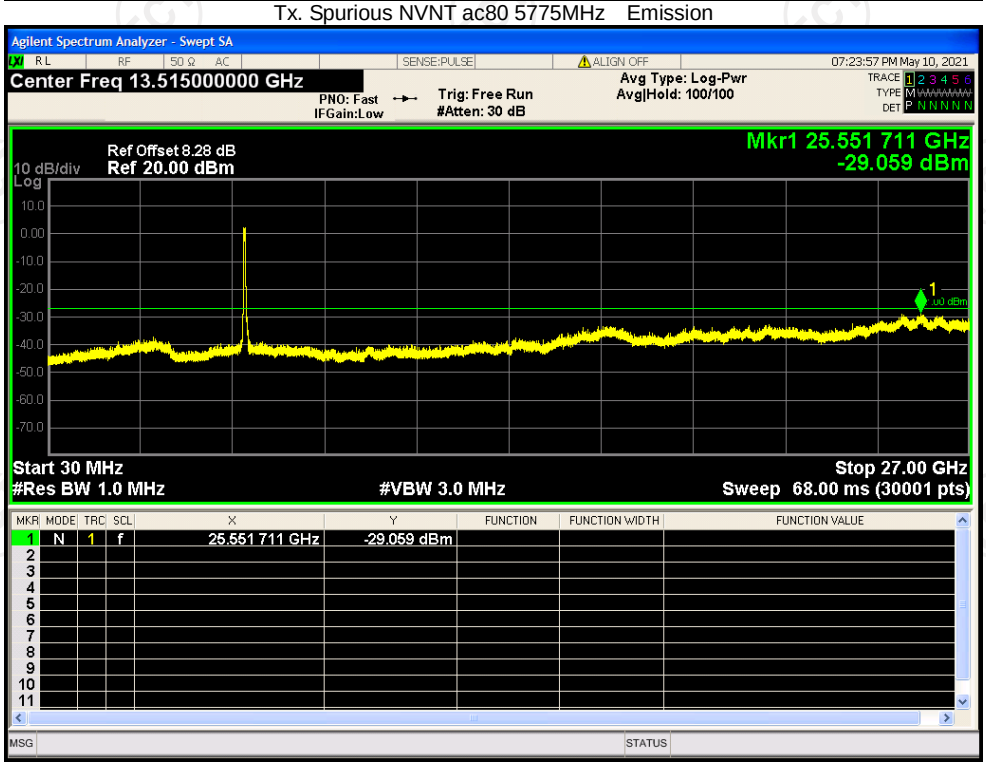
Tx. Spurious NVNT ac40 5755MHz Emission



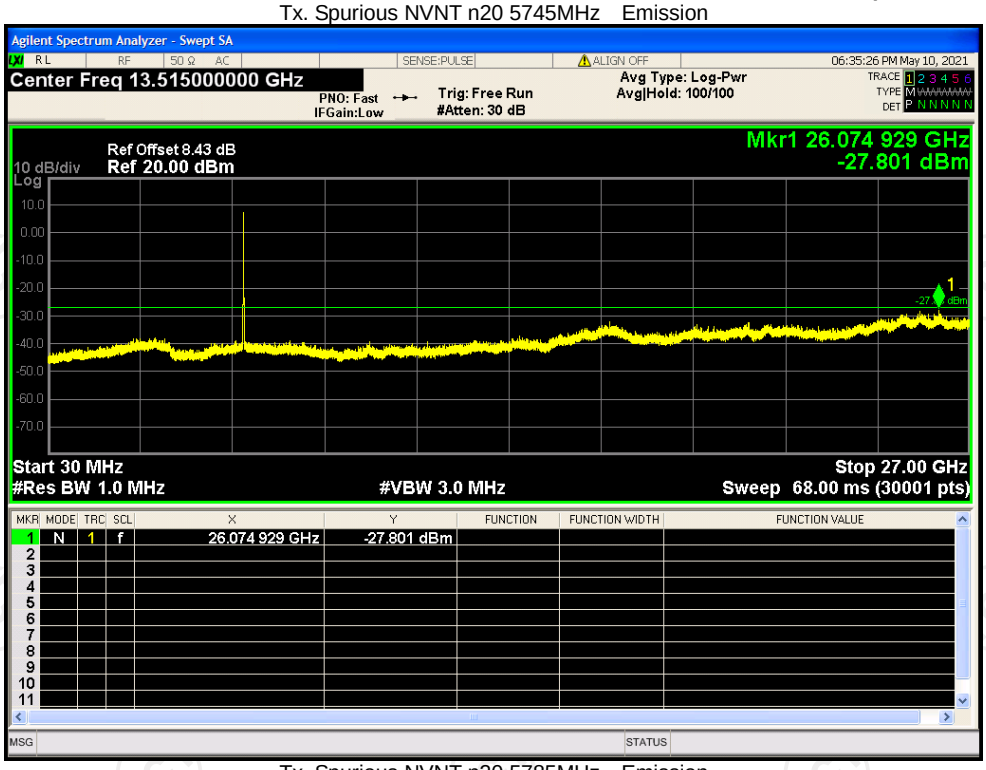
Tx. Spurious NVNT ac40 5795MHz Emission



Tx. Spurious NVNT ac80 5775MHz Emission



Tx. Spurious NVNT n20 5745MHz Emission



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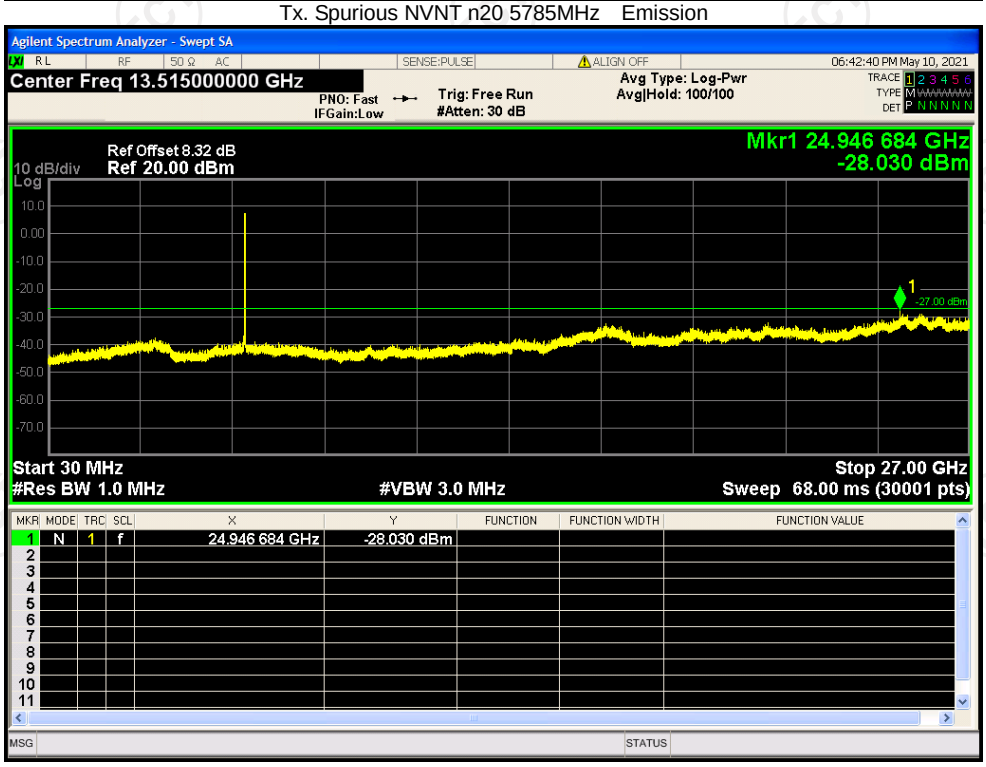

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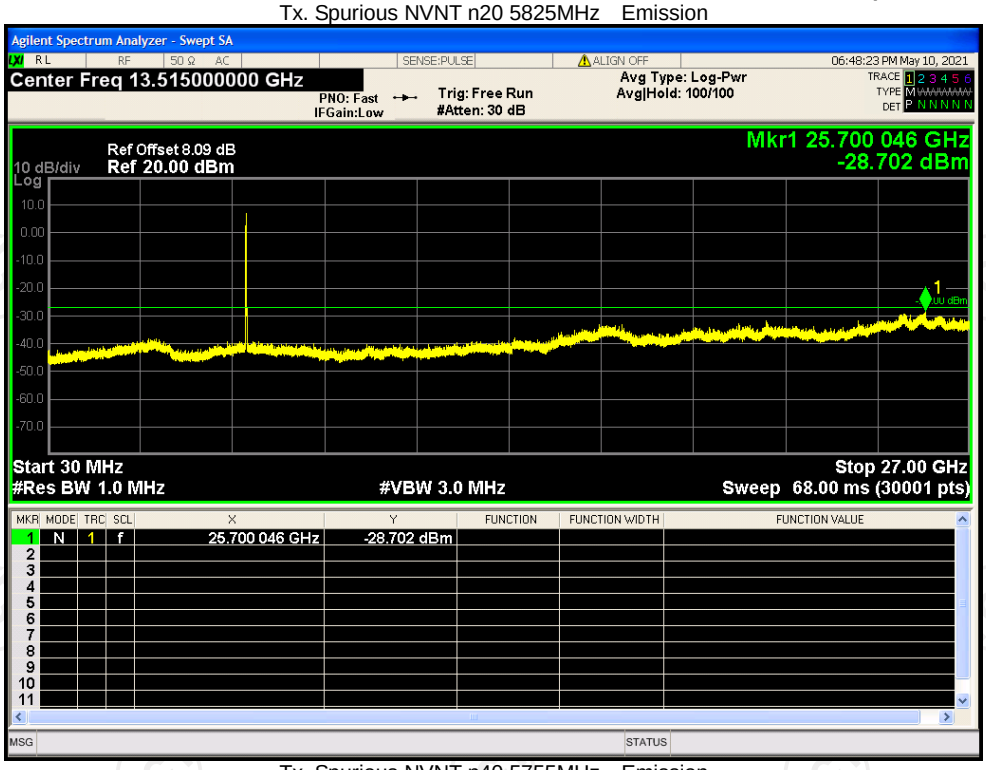
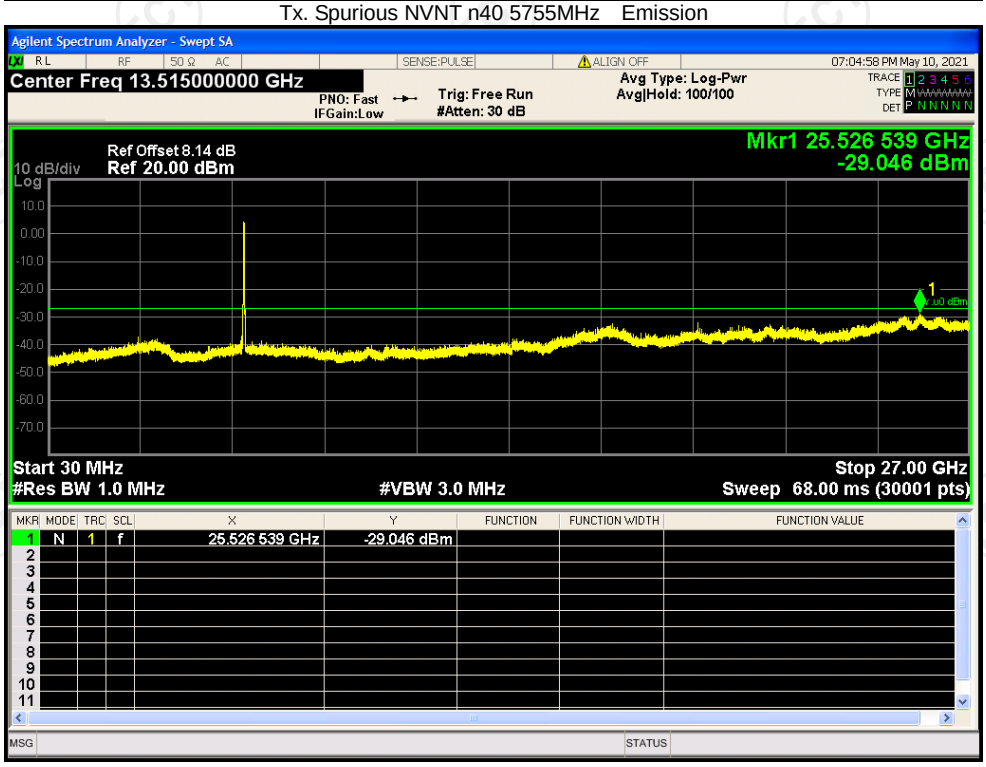
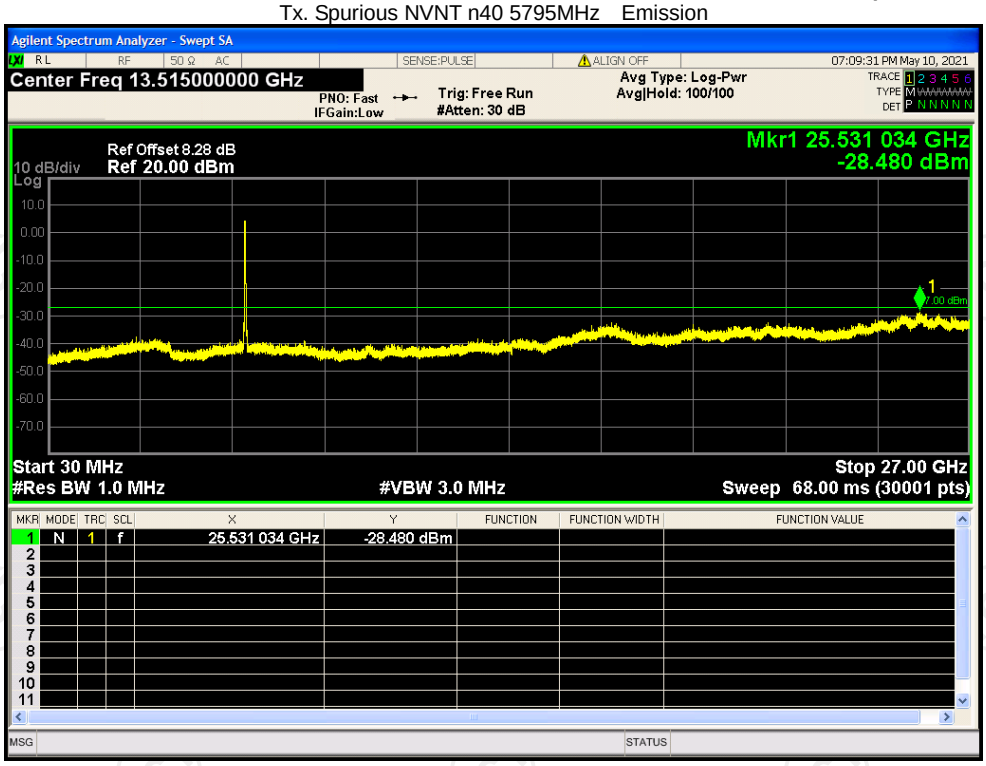


Tx. Spurious NVNT n40 5755MHz Emission



Tx. Spurious NVNT n40 5795MHz Emission



Appendix B: Photographs of Test Setup

Refer to the test report No. TCT210423E029

Appendix C: Photographs of EUT

Refer to the test report No. TCT210423E029

*******END OF REPORT*******

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