

TEST REPORT

FCC ID: 2AQ4G-LY-S-10

Product: Tablet PC

Model No.: LY-S-10

**Additional Model No.: LY-SD-10, LY-SD-11, LY-SD-12, LY-SD-13, LY-S-11,
LY-S-12, LY-S-13**

Trade Mark: Seago

Report No.: TCT200831E046

Issued Date: Sep. 24, 2020

Issued for:

**Shenzhen Link Win Technology Co., Ltd
9F, Zhengqilong Industrial Building 1st, Rd Gushu, Xixiang, Bao'an,
Shenzhen, China**

Issued By:

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1. Test Certification

Product:	Tablet PC
Model No.:	LY-S-10
Additional Model No.:	LY-SD-10, LY-SD-11, LY-SD-12, LY-SD-13, LY-S-11, LY-S-12, LY-S-13
Trade Mark:	Seago
Applicant:	Shenzhen Link Win Technology Co., Ltd
Address:	9F, Zhengqilong Industrial Building 1st, Rd Gushu, Xixiang, Bao'an, Shenzhen, China
Manufacturer:	Shenzhen Link Win Technology Co., Ltd
Address:	9F, Zhengqilong Industrial Building 1st, Rd Gushu, Xixiang, Bao'an, Shenzhen, China
Date of Test:	Sep. 01, 2020 – Sep. 23, 2020
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2016 KDB662911 D01 Multiple Transmitter Output v02r01r01 KDB789033 D02 General U-NII Test Procedures New Rules v02r01r01

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:

Brave. Zeng

Date:

Sep. 23, 2020

Brave Zeng

Reviewed By:

Beryl Zhao

Date:

Sep. 24, 2020

Beryl Zhao

Approved By:

Tomsin

Date:

Sep. 24, 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:	Tablet PC
Model No.:	LY-S-10
Additional Model No.:	LY-SD-10, LY-SD-11, LY-SD-12, LY-SD-13, LY-S-11, LY-S-12, LY-S-13
Trade Mark:	Seago
Operation Frequency:	Band 3: 5745 MHz -5825 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:	FPC Antenna
Antenna Gain:	1.2dBi
Power Supply:	Rechargeable Li-ion Battery DC 3.7V
AC adapter:	Adapter Information: MODEL: PMC45 INPUT: AC 100-240V, 50/60Hz, 0.2A OUTPUT: DC 5V, 2A
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 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 below/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.

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 TCT Testing Technology Co., Ltd. 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

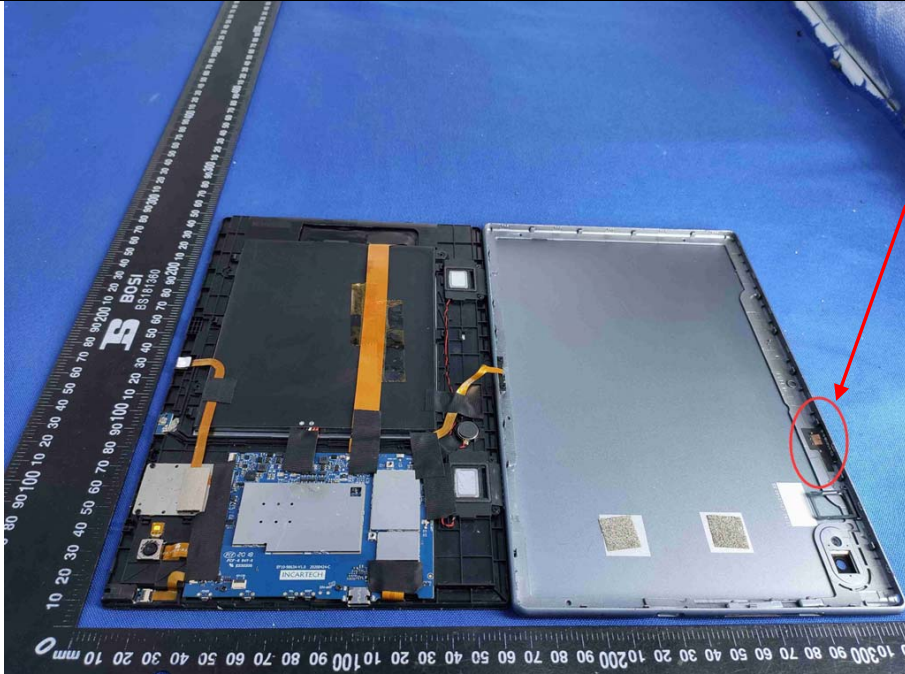
5.3. Measurement Uncertainty

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	$\pm 1.0\%$

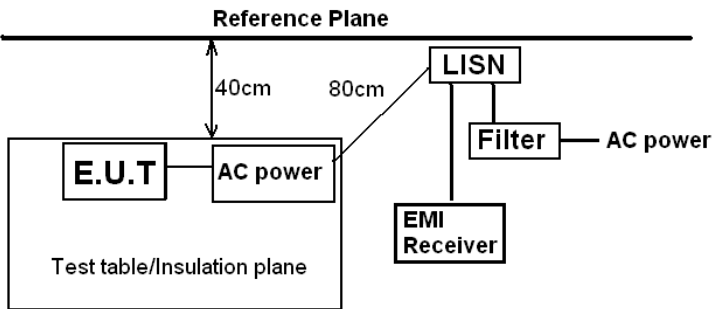
6. Test Results and Measurement Data

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 WIFI antenna is FPC antenna which permanently attached, and the best case gain of the antenna is 1.2dBi.	
	

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><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></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>	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:	Reference Plane  Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m														
Test Mode:	Tx Mode														
Test Procedure:	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														

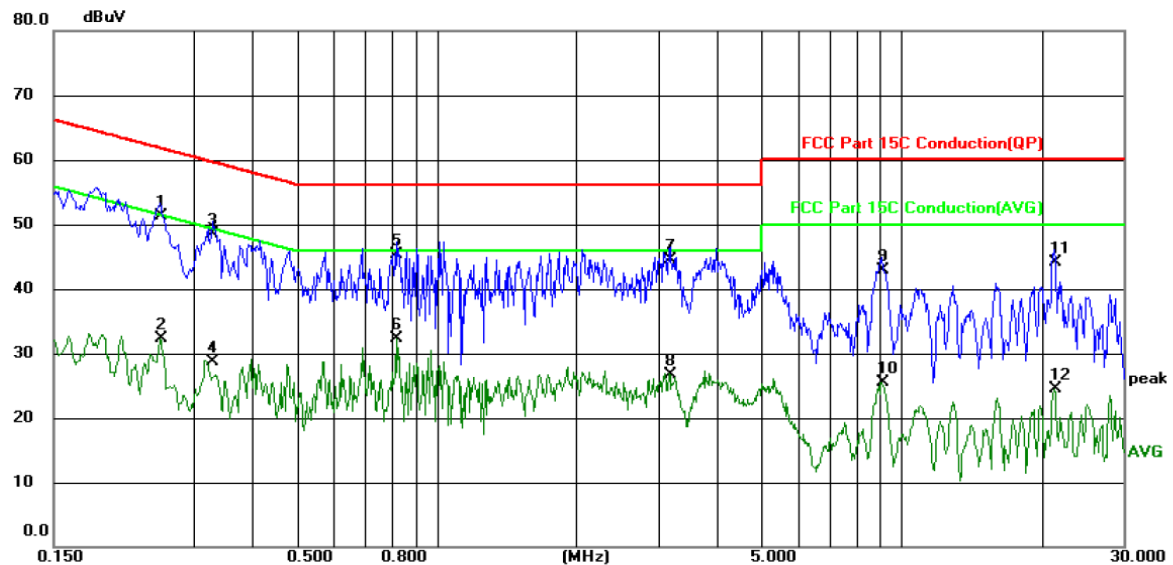
6.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Test Receiver	R&S	ESPI	101402	Jul. 27, 2021
LISN	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 dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Over dB	Detector	Comment
1	*	0.2540	41.15	10.23	51.38	61.63	-10.25	QP	
2		0.2540	22.09	10.23	32.32	51.63	-19.31	AVG	
3		0.3300	38.29	10.23	48.52	59.45	-10.93	QP	
4		0.3300	18.45	10.23	28.68	49.45	-20.77	AVG	
5		0.8175	35.08	10.28	45.36	56.00	-10.64	QP	
6		0.8175	21.94	10.28	32.22	46.00	-13.78	AVG	
7		3.1819	34.00	10.47	44.47	56.00	-11.53	QP	
8		3.1819	16.33	10.47	26.80	46.00	-19.20	AVG	
9		9.0815	32.28	10.55	42.83	60.00	-17.17	QP	
10		9.0815	14.92	10.55	25.47	50.00	-24.53	AVG	
11		21.2900	32.94	11.09	44.03	60.00	-15.97	QP	
12		21.2900	13.49	11.09	24.58	50.00	-25.42	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

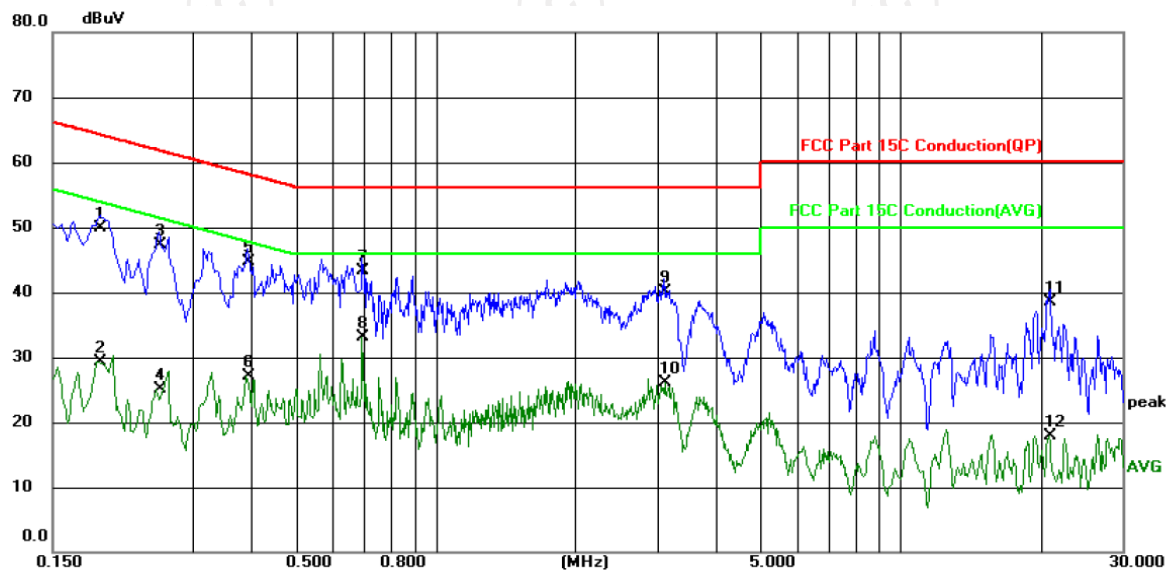
Margin (dB) = Measurement (dBμV) – Limits (dBμV)

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		
		MHz	dBμV	dB	dBμV	dBμV	dB	Detector	Comment
1		0.1900	39.70	10.22	49.92	64.04	-14.12	QP	
2		0.1900	19.11	10.22	29.33	54.04	-24.71	AVG	
3		0.2540	37.11	10.23	47.34	61.63	-14.29	QP	
4		0.2540	14.82	10.23	25.05	51.63	-26.58	AVG	
5		0.3940	34.41	10.22	44.63	57.98	-13.35	QP	
6		0.3940	16.80	10.22	27.02	47.98	-20.96	AVG	
7	*	0.6936	33.08	10.23	43.31	56.00	-12.69	QP	
8		0.6936	22.80	10.23	33.03	46.00	-12.97	AVG	
9		3.0979	29.71	10.47	40.18	56.00	-15.82	QP	
10		3.0979	15.54	10.47	26.01	46.00	-19.99	AVG	
11		20.9540	27.34	11.08	38.42	60.00	-21.58	QP	
12		20.9540	6.74	11.08	17.82	50.00	-32.18	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

Q.P. =Quasi-Peak

AVG =average

* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

6.3. Maximum Conducted Output Power

6.3.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407(a)& Part 2 J Section 2.1046										
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01r01 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>24dBm(250mW) for client device</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	24dBm(250mW) for client device	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	24dBm(250mW) for client device										
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:	 Power meter EUT										
Test Mode:	Transmitting mode with modulation										
Test Procedure:	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:	Conducted output power= measurement power +10log(1/x) X is duty cycle=1, so 10log(1/1)=0 Conducted output power= measurement power										

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. 02, 2021
Power Sensor	Agilent	E9301A	MY41497725	Sep. 02, 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).

6.4. 6dB Emission Bandwidth

6.4.1. Test Specification

Test Requirement:	FCC CFR47 Part 15 Section 15.407(e)& Part 2 J Section 2.1049
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C
Limit:	>500kHz
Test Setup:	 Spectrum Analyzer EUT
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).

6.5. 26dB Bandwidth and 99% Occupied Bandwidth

6.5.1. Test Specification

Test Requirement:	47 CFR Part 15C Section 15.407 (a)& Part 2 J Section 2.1049
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section D
Limit:	No restriction limits
Test Setup:	 Spectrum Analyzer EUT
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, 2020
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 v02r01r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section F
Limit:	$\leq 11.00\text{dBm/MHz}$ for Band 1 5150MHz-5250MHz(client device) $\leq 11.00\text{dBm/MHz}$ for Band 2A&2C 5250-5350&5470-5725 $\leq 30.00\text{dBm/500KHz}$ 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:	 Spectrum Analyzer EUT
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 $\geq 3 \times$ 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

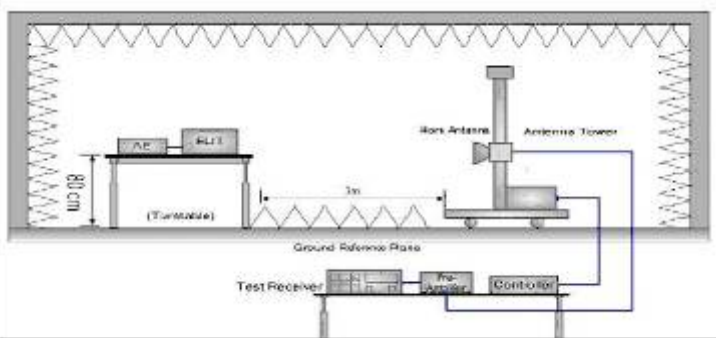
6.6.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Sep. 11, 2020
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).

6.7. Band edge

6.7.1. Test Specification

Test Requirement:	FCC CFR47 Part 15E Section 15.407
Test Method:	ANSI C63.10 2013
Limit:	For Band 1&2A&2C: $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2 = 68.2 \text{ dB}\mu\text{V}/\text{m}$, for $\text{EIRP}(\text{dBm}) = -27\text{dBm}$ For Band 3(5715-5725MHz&5850-5860MHz): $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2 = 78.2 \text{ dB}\mu\text{V}/\text{m}$, for $\text{EIRP}(\text{dBm}) = -17\text{dBm}$; For Band 3(other un-restricted band): $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2 = 68.2 \text{ dB}\mu\text{V}/\text{m}$, for $\text{EIRP}(\text{dBm}) = -27\text{dBm}$
Test Setup:	 The diagram illustrates the test setup. A transmitting device (EUT) is placed on a rotating table (Turntable) at a height of 0.8m. The table is rotated 360 degrees. An antenna is mounted on a variable-height antenna tower at a distance of 3m from the EUT. The antenna is connected to a test receiver system, which includes a Test Receiver, Pre-Amplifier, and Controller. The setup is on a Ground Reference Plane.
Test Mode:	Transmitting mode with modulation
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 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&SCHW ARZ	ESIB7	100197	Jul. 27, 2021
Spectrum Analyzer	ROHDE&SCHW ARZ	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	Oct. 27, 2020
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	5470	42.58	5.82	48.40	68.2	/	-19.80	H
		5470	40.71	5.82	46.53	68.2	/	-21.67	V
	Highest	5850	38.66	6.52	45.18	68.2	/	-23.02	H
		5850	41.37	6.52	47.89	68.2	/	-20.31	V
Remark: Factor(dB)=Ant. Factor + Cable Loss-Amp. Factor									

802.11 n 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	5470	43.84	8.21	52.05	68.2	/	-16.15	H
		5470	43.27	8.21	51.48	68.2	/	-16.72	V
	Highest	5850	42.56	8.87	51.43	68.2	/	-16.77	H
		5850	40.68	8.87	49.55	68.2	/	-18.65	V
Remark: Factor(dB)=Ant. Factor + Cable Loss-Amp. Factor									

802.11 n 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	5470	42.78	5.82	48.60	68.2	/	-19.60	H
		5470	39.94	5.82	45.76	68.2	/	-22.44	V
	Highest	5850	41.35	6.52	47.87	68.2	/	-20.33	H
		5850	41.86	6.52	48.38	68.2	/	-19.82	V
Remark: Factor(dB)=Ant. Factor + Cable Loss-Amp. Factor									

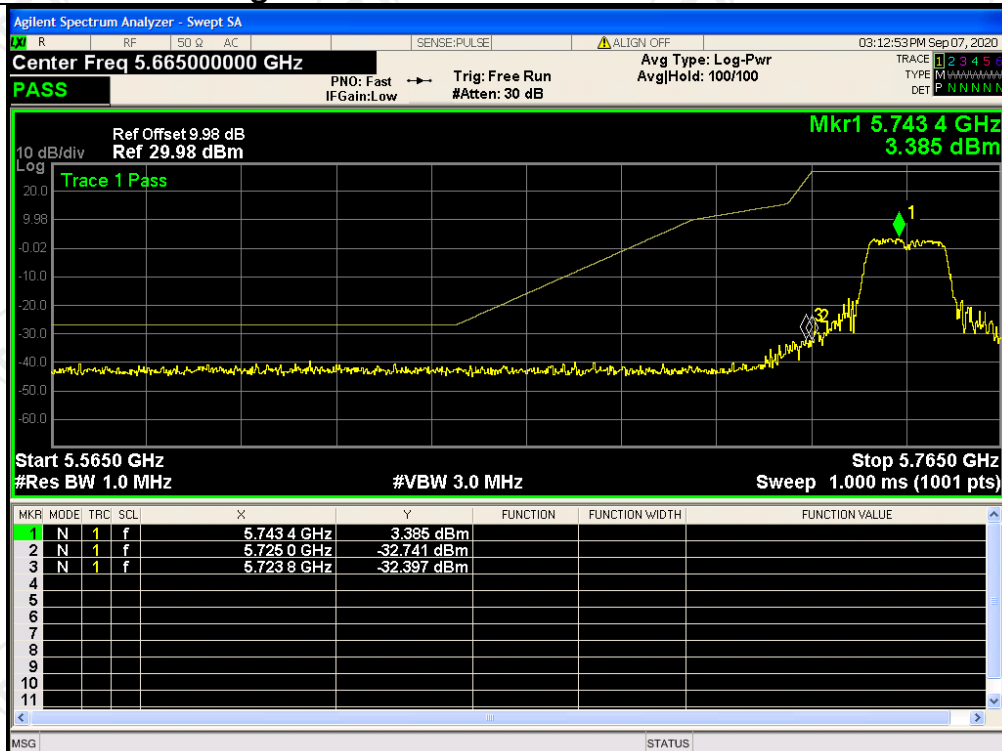
802.11 ac HT20	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 3	Lowest	5470	43.54	8.21	51.75	68.2	/	-16.45	H
		5470	43.69	8.21	51.90	68.2	/	-16.30	V
	Highest	5850	42.55	8.87	51.42	68.2	/	-16.78	H
		5850	40.98	8.87	49.85	68.2	/	-18.35	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	5470	44.71	5.82	50.53	68.2	/	-17.67	H
		5470	38.94	5.82	44.76	68.2	/	-23.44	V
	Highest	5850	45.37	6.52	51.89	68.2	/	-16.31	H
		5850	43.21	6.52	49.73	68.2	/	-18.47	V
Remark: Factor(dB)=Ant. Factor + Cable Loss-Amp. Factor									

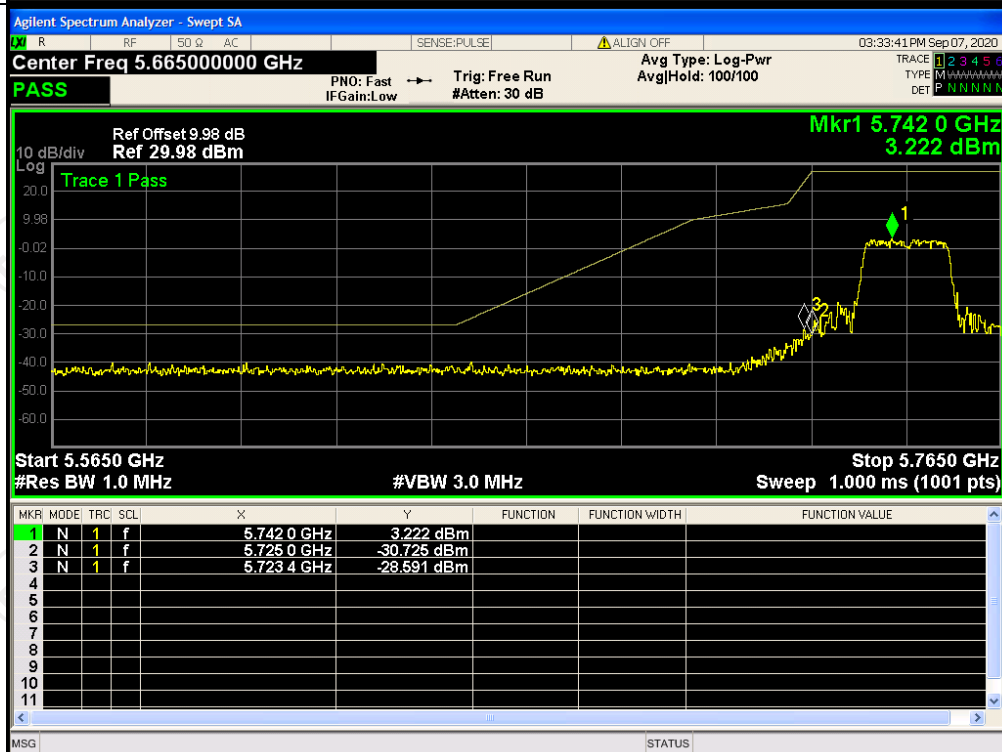
802.11 ac HT80	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 3	Lowest	5470	42.51	5.82	48.33	68.2	/	-19.87	H
		5470	40.79	5.82	46.61	68.2	/	-21.59	V
	Highest	5850	41.97	6.52	48.49	68.2	/	-19.71	H
		5850	40.88	6.52	47.40	68.2	/	-20.80	V
Remark: Factor(dB)=Ant. Factor + Cable Loss-Amp. Factor									

Band 3 Band-edge for RF Conducted Emissions

802.11a
/LCH

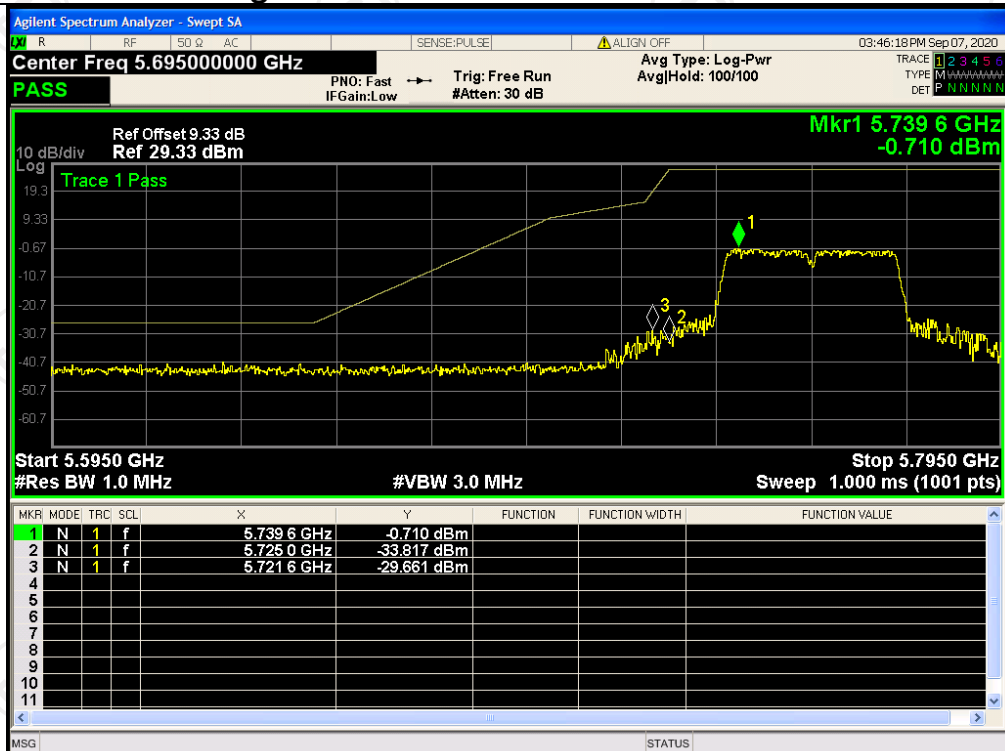


802.11n
HT20/LCH

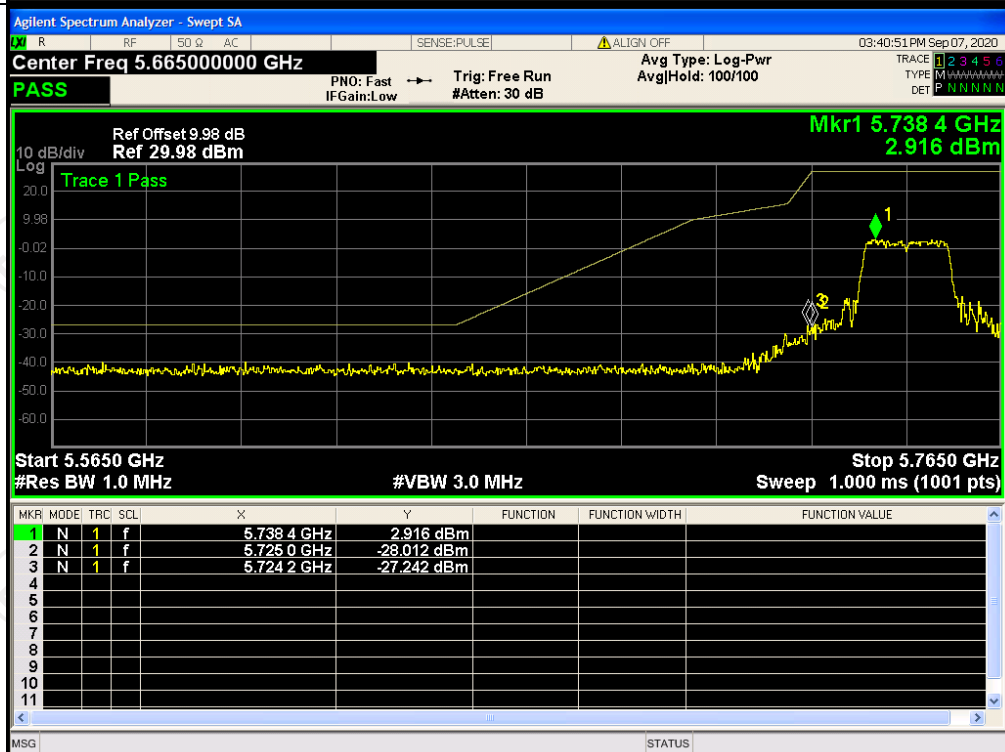


Band 3 Band-edge for RF Conducted Emissions

802.11n
HT40/LCH



802.11ac
HT20/LCH



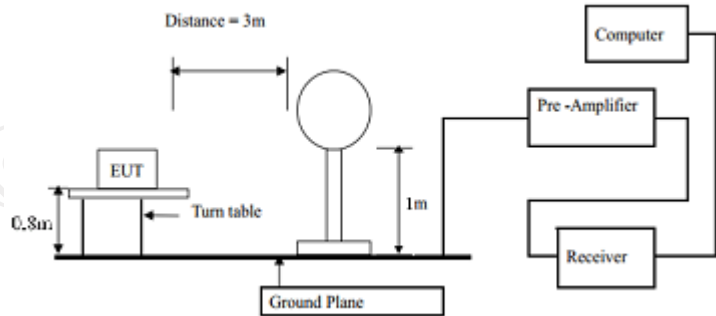
Band 3 Band-edge for RF Conducted Emissions

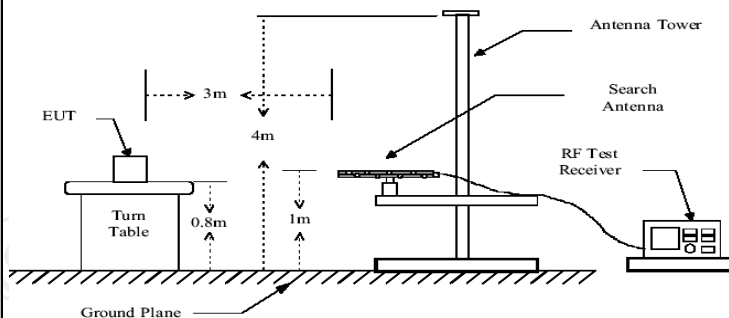
802.11ac
HT40/LCH



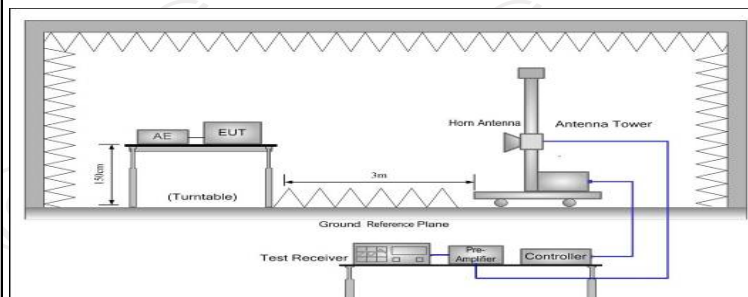
6.8. Unwanted Emission

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,				
	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	
		Frequency	Limit (dBuV/m @3m)	Detector	
	Above 1G	74.0	Peak		
		54.0	Average		
Test setup:	For radiated emissions below 30MHz				
					
	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 center. 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

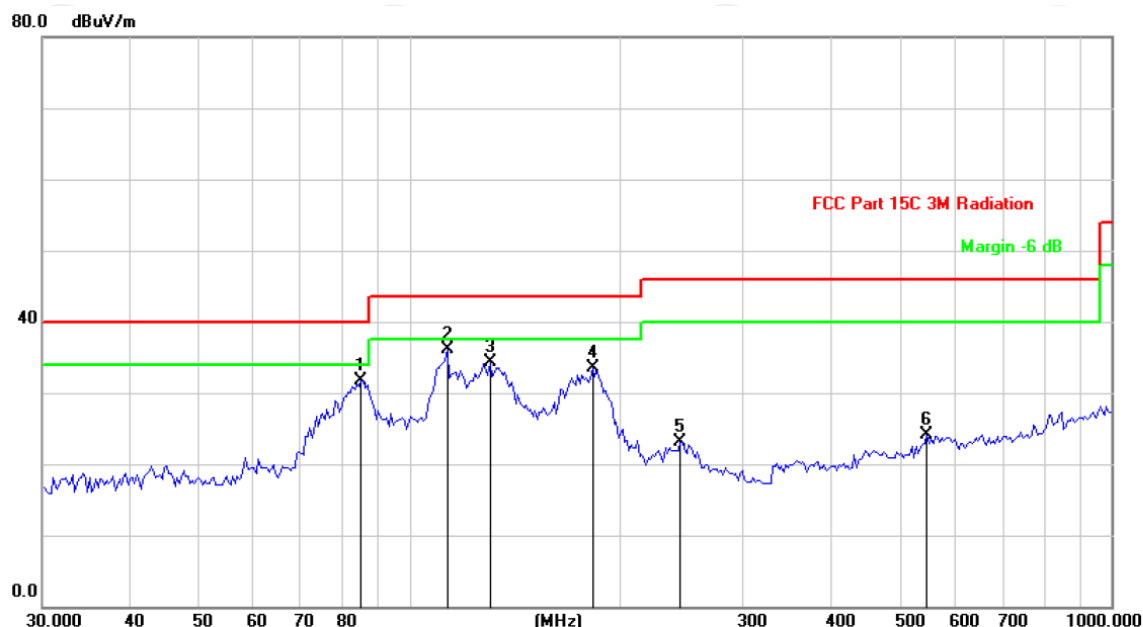
6.8.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Test Receiver	ROHDE&SCHW ARZ	ESIB7	100197	Jul. 27, 2021
Spectrum Analyzer	ROHDE&SCHW ARZ	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	Oct. 27, 2020
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

6.8.3. Test Data

Please refer to following diagram for individual
Below 1GHz

Horizontal:



Site

Polarization: **Horizontal**

Temperature: 25

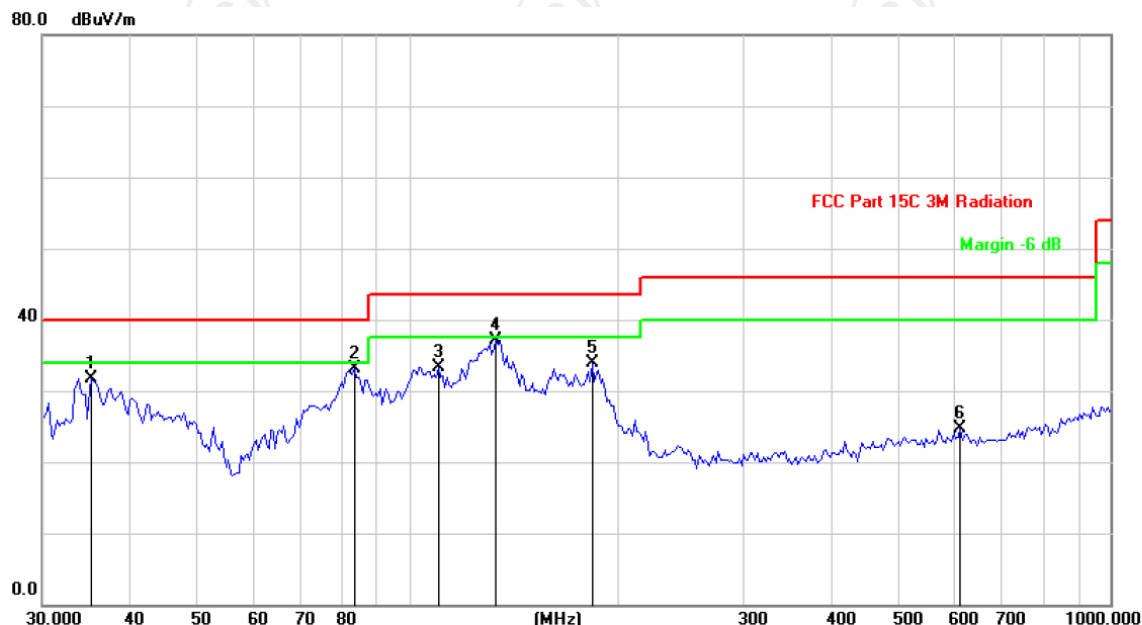
Limit: FCC Part 15C 3M Radiation

Power: AC 120V/60Hz

Humidity: 55 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		85.4769	45.38	-13.62	31.76	40.00	-8.24	peak
2	*	113.2200	46.31	-10.16	36.15	43.50	-7.35	peak
3		130.3048	50.13	-15.83	34.30	43.50	-9.20	peak
4		182.5783	48.61	-15.09	33.52	43.50	-9.98	peak
5		243.5431	36.11	-12.95	23.16	46.00	-22.84	peak
6		546.4365	30.85	-6.75	24.10	46.00	-21.90	peak

Vertical:



Site

Polarization: **Vertical**

Temperature: 25

Limit: FCC Part 15C 3M Radiation

Power: AC 120V/60Hz

Humidity: 55 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		35.2625	42.93	-11.16	31.77	40.00	-8.23	peak
2		83.6937	47.92	-14.73	33.19	40.00	-6.81	peak
3		110.0818	42.72	-9.33	33.39	43.50	-10.11	peak
4	*	133.0809	53.13	-16.01	37.12	43.50	-6.38	peak
5		182.5783	48.93	-15.09	33.84	43.50	-9.66	peak
6		611.4623	30.09	-5.36	24.73	46.00	-21.27	peak

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) 802.11ac(VHT80), and the worst case Mode (Highest channel and 802.11n(HT20)) was submitted only.

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	40.78	---	8.09	48.87	---	74	54	-5.13
17235	H	38.32	---	9.67	47.99	---	68.2	54	-6.01
---	H	---	---	---	---	---	---	---	---
11490	V	42.47	---	8.09	50.56	---	74	54	-3.44
17235	V	39.83	---	9.67	49.50	---	68.2	54	-4.50
---	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	42.38	---	8.10	50.48	---	74	54	-3.52
17355	H	41.17	---	9.65	50.82	---	68.2	54	-3.18
---	H	---	---	---	---	---	---	---	---
11570	V	40.80	---	8.10	48.90	---	74	54	-5.10
17355	V	37.42	---	9.65	47.07	---	68.2	54	-6.93
---	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	41.23	---	8.12	49.35	---	74	54	-4.65
17475	H	39.04	---	9.62	48.66	---	68.2	54	-5.34
---	H	---	---	---	---	---	---	---	---
11650	V	41.74	---	8.12	49.86	---	74	54	-4.14
17475	V	39.25	---	9.62	48.87	---	68.2	54	-5.13
---	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	41.69	---	8.09	49.78	---	74	54	-4.22
17265	H	38.51	---	9.67	48.18	---	68.2	54	-5.82
---	H	---	---	---	---	---	---	---	---
11510	V	42.12	---	8.09	50.21	---	74	54	-3.79
17265	V	40.88	---	9.67	50.55	---	68.2	54	-3.45
---	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	41.91	---	8.10	50.01	---	74	54	-3.99
17355	H	38.77	---	9.65	48.42	---	68.2	54	-5.58
---	H	---	---	---	---	---	---	---	---
11570	V	40.36	---	8.10	48.46	---	74	54	-5.54
17355	V	40.95	---	9.65	50.60	---	68.2	54	-3.40
---	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	40.37	---	8.12	48.49	---	74	54	-5.51
17475	H	39.64	---	9.62	49.26	---	68.2	54	-4.74
---	H	---	---	---	---	---	---	---	---
11650	V	40.89	---	8.12	49.01	---	74	54	-4.99
17475	V	39.14	---	9.62	48.76	---	68.2	54	-5.24
---	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	42.92	---	8.09	51.01	---	74	54	-2.99
17265	H	40.86	---	9.67	50.53	---	68.2	54	-3.47
---	H	---	---	---	---	---	---	---	---
11510	V	42.47	---	8.09	50.56	---	74	54	-3.44
17265	V	39.51	---	9.67	49.18	---	68.2	54	-4.82
---	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	41.66	---	8.10	49.76	---	74	54	-4.24
17385	H	39.72	---	9.65	49.37	---	68.2	54	-4.63
---	H	---	---	---	---	---	---	---	---
11590	V	41.53	---	8.10	49.63	---	74	54	-4.37
17385	V	39.68	---	9.65	49.33	---	68.2	54	-4.67
---	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	42.14	---	8.09	50.23	---	74	54	-3.77
17235	H	39.58	---	9.67	49.25	---	68.2	54	-4.75
---	H	---	---	---	---	---	---	---	---
11490	V	41.69	---	8.09	49.78	---	74	54	-4.22
17235	V	38.74	---	9.67	48.41	---	68.2	54	-5.59
---	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	40.56	---	8.10	48.66	---	74	54	-5.34
17355	H	38.97	---	9.65	48.62	---	68.2	54	-5.38
---	H	---	---	---	---	---	---	---	---
11570	V	39.95	---	8.10	48.05	---	74	54	-5.95
17355	V	38.37	---	9.65	48.02	---	68.2	54	-5.98
---	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	41.88	---	8.12	50.00	---	74	54	-4.00
17475	H	40.57	---	9.62	50.19	---	68.2	54	-3.81
---	H	---	---	---	---	---	---	---	---
11650	V	41.53	---	8.12	49.65	---	74	54	-4.35
17475	V	37.61	---	9.62	47.23	---	68.2	54	-6.77
---	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	41.78	---	8.09	49.87	---	74	54	-4.13
17265	H	39.32	---	9.67	48.99	---	68.2	54	-5.01
---	H	---	---	---	---	---	---	---	---
11510	V	42.29	---	8.09	50.38	---	74	54	-3.62
17265	V	39.35	---	9.67	49.02	---	68.2	54	-4.98
---	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	41.61	---	8.10	49.71	---	74	54	-4.29
17385	H	39.44	---	9.65	49.09	---	68.2	54	-4.91
---	H	---	---	---	---	---	---	---	---
11590	V	42.05	---	8.10	50.15	---	74	54	-3.85
17385	V	40.13	---	9.65	49.78	---	68.2	54	-4.22
---	V	---	---	---	---	---	---	---	---

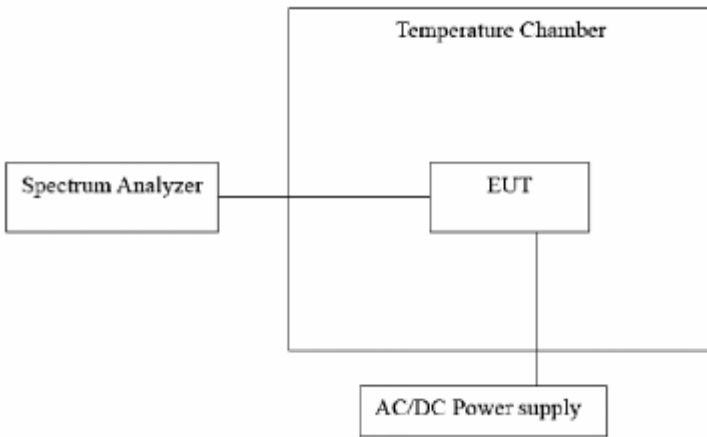
11ac(VHT80) CH155: 5775MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11550	H	41.82	---	8.09	49.91	---	74	54	-4.09
17325	H	37.56	---	9.67	47.23	---	68.2	54	-6.77
---	H	---	---	---	---	---	---	---	---
11550	V	42.65	---	8.09	50.74	---	74	54	-3.26
17325	V	39.49	---	9.67	49.16	---	68.2	54	-4.84
---	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) &Part2 J Section 2.1055
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 EUT --- P[AC/DC Power supply] </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 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	3.7V	5745.0010	1000	PASS
35		5745.0015	1500	PASS
25		5744.9970	-3000	PASS
15		5744.9975	-2500	PASS
5		5745.0022	2200	PASS
0		5745.0017	1700	PASS
20	4.3	5745.0021	2100	PASS
	3.8	5745.0019	1900	PASS
	3.6	5745.0024	2400	PASS

Test mode:		802.11ac(VHT20)	Frequency(MHz):	5785
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.7V	5785.0067	6700	PASS
35		5785.0056	5600	PASS
25		5785.0045	4500	PASS
15		5785.0050	5000	PASS
5		5785.0040	4000	PASS
0		5785.0042	4200	PASS
20	4.3	5785.0039	3900	PASS
	3.8	5785.0031	3100	PASS
	3.6	5784.9978	-2200	PASS

Test mode:		802.11ac(VHT20)	Frequency(MHz):	5825
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.7V	5824.9986	-1400	PASS
35		5825.0036	3600	PASS
25		5824.9973	-2700	PASS
15		5824.9995	-500	PASS
5		5825.0019	1900	PASS
0		5825.0022	2200	PASS
20	4.3	5825.0028	2800	PASS
	3.8	5824.9997	-300	PASS
	3.6	5825.0018	1800	PASS

Test mode:		802.11ac(VHT40)	Frequency(MHz):	5755
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.7V	5754.9970	-3000	PASS
35		5755.0028	2800	PASS
25		5755.0013	1300	PASS
15		5755.0031	3100	PASS
5		5755.0027	2700	PASS
0		5755.0040	4000	PASS
20	4.3	5755.0034	3400	PASS
	3.8	5755.0016	1600	PASS
	3.6	5755.0024	2400	PASS

Test mode:		802.11ac(VHT40)	Frequency(MHz):	5795
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.7V	5794.9980	-8000	PASS
35		5794.9943	-5700	PASS
25		5795.0025	2500	PASS
15		5795.0027	2700	PASS
5		5795.0011	1100	PASS
0		5795.0039	3900	PASS
20	4.3	5795.0018	1800	PASS
	3.8	5794.9983	-1700	PASS
	3.6	5795.0042	4200	PASS

Test mode:		802.11ac(VHT80)	Frequency(MHz):	5775
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.7V	5774.9860	-14000	PASS
35		5775.0028	2800	PASS
25		5775.0051	5100	PASS
15		5774.9938	-6200	PASS
5		5774.9921	-7900	PASS
0		5774.9906	-9400	PASS
20	4.3	5775.0081	8100	PASS
	3.8	5775.0046	4600	PASS
	3.6	5775.0010	1000	PASS

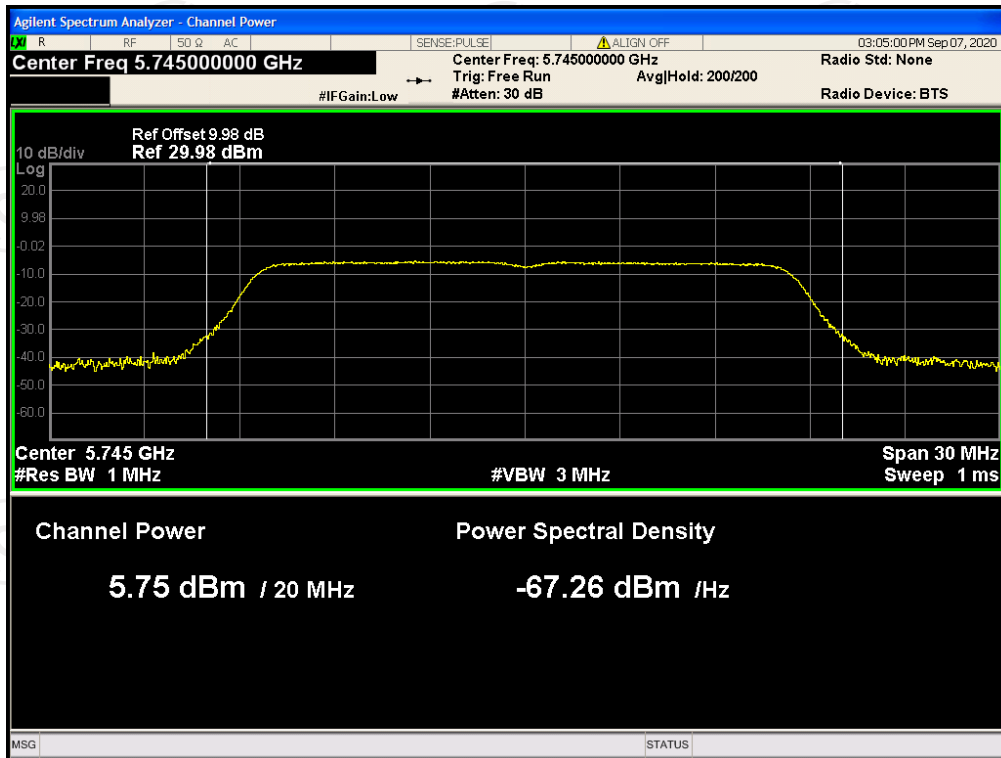
Appendix A: Test Result of Conducted Test

Band 3

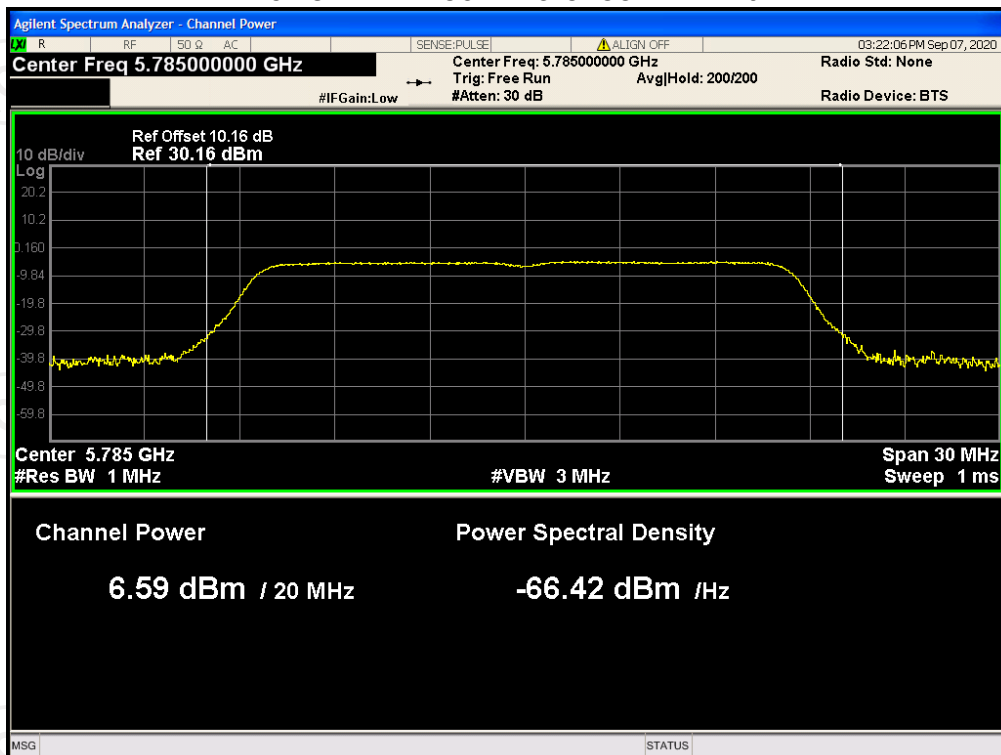
Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	802.11a	5745	Ant 1	5.75	0	5.75	30	Pass
NVNT	802.11a	5785	Ant 1	6.59	0	6.59	30	Pass
NVNT	802.11a	5825	Ant 1	6.875	0	6.875	30	Pass
NVNT	802.11ac20	5745	Ant 1	6.249	0	6.249	30	Pass
NVNT	802.11ac20	5785	Ant 1	6.481	0	6.481	30	Pass
NVNT	802.11ac20	5825	Ant 1	6.933	0	6.933	30	Pass
NVNT	802.11ac40	5755	Ant 1	4.811	0	4.811	30	Pass
NVNT	802.11ac40	5795	Ant 1	5.501	0	5.501	30	Pass
NVNT	802.11ac80	5775	Ant 1	6.008	0	6.008	30	Pass
NVNT	802.11n(HT20)	5745	Ant 1	6.35	0	6.35	30	Pass
NVNT	802.11n(HT20)	5785	Ant 1	6.543	0	6.543	30	Pass
NVNT	802.11n(HT20)	5825	Ant 1	7.089	0	7.089	30	Pass
NVNT	802.11n(HT40)	5755	Ant 1	4.862	0	4.862	30	Pass
NVNT	802.11n(HT40)	5795	Ant 1	5.733	0	5.733	30	Pass

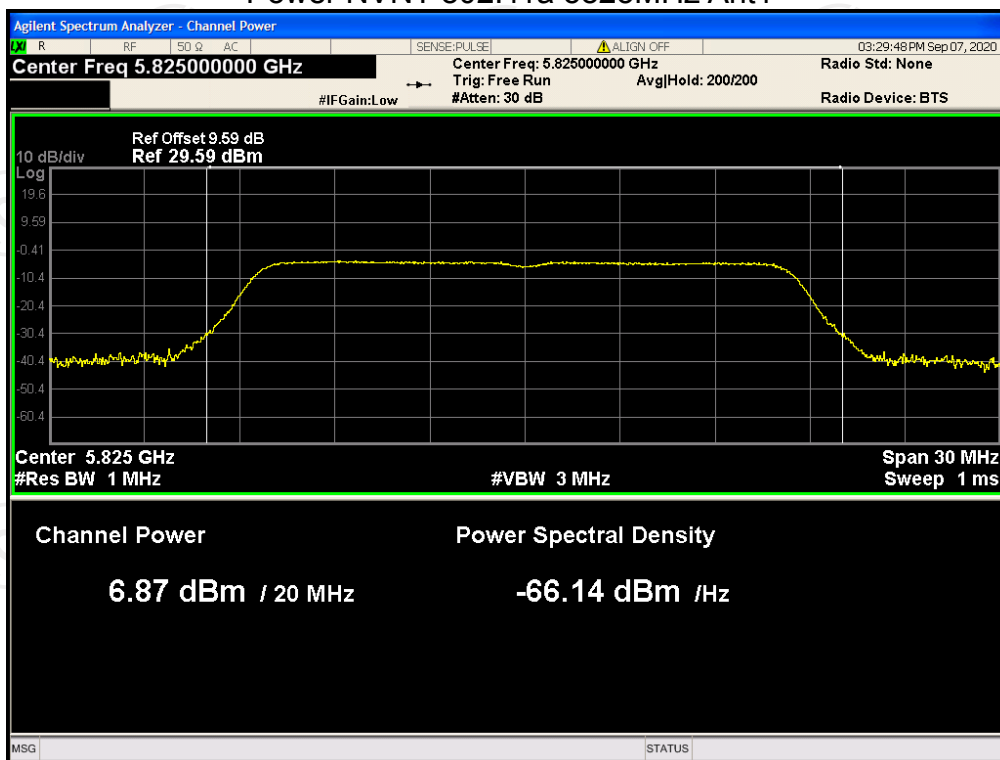
Power NVNT 802.11a 5745MHz Ant1



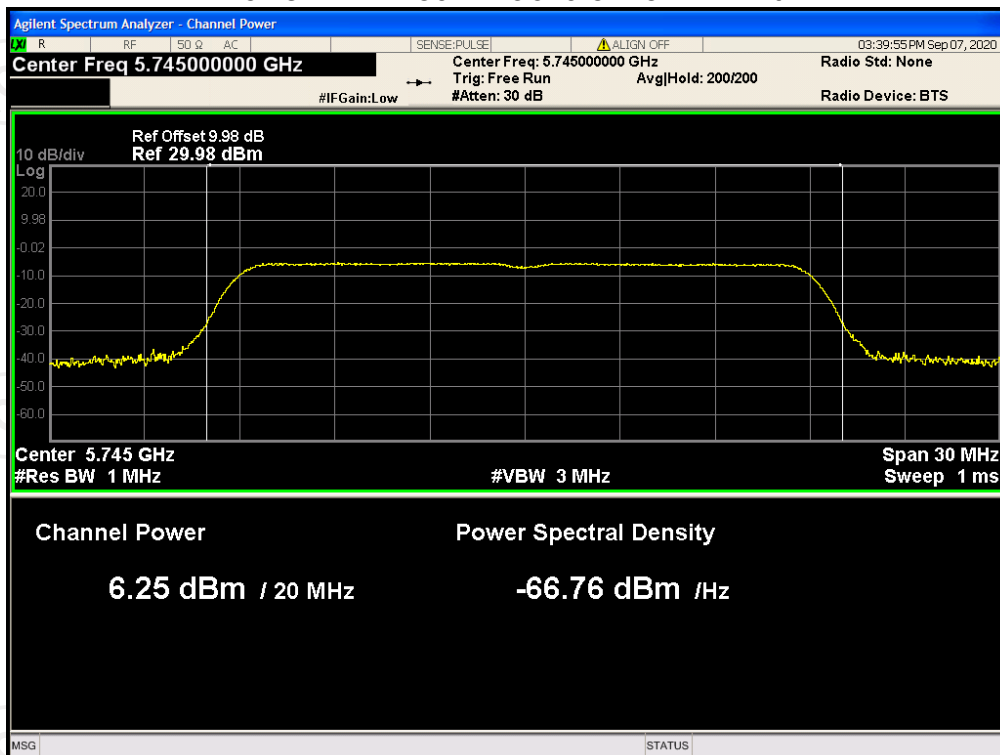
Power NVNT 802.11a 5785MHz Ant1



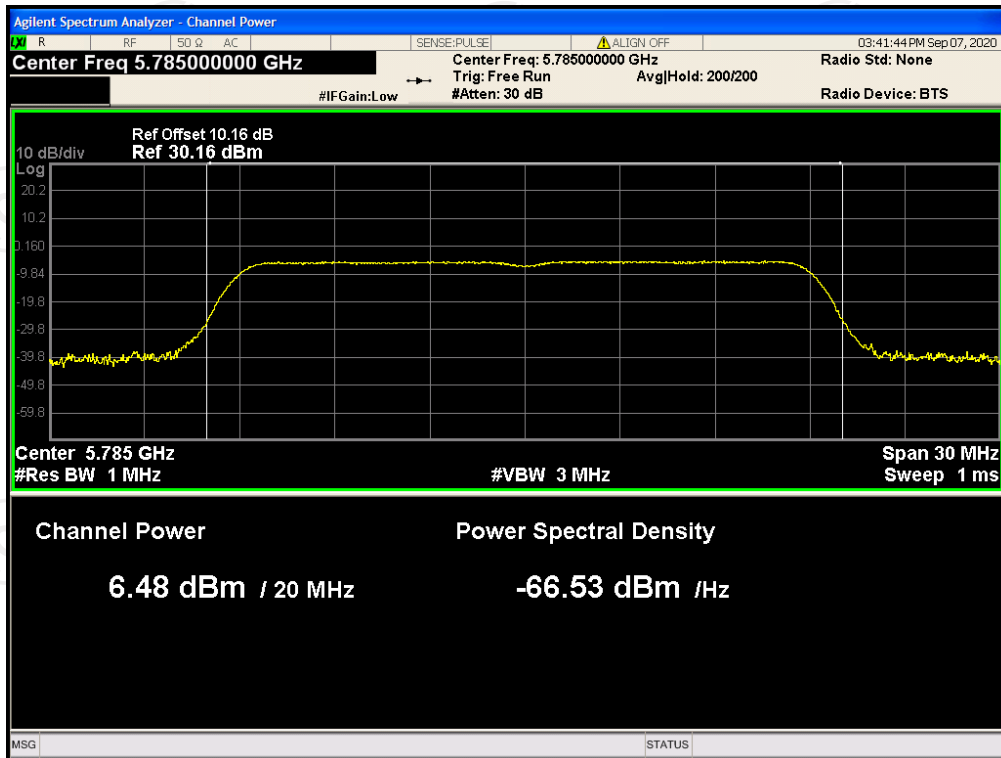
Power NVNT 802.11a 5825MHz Ant1



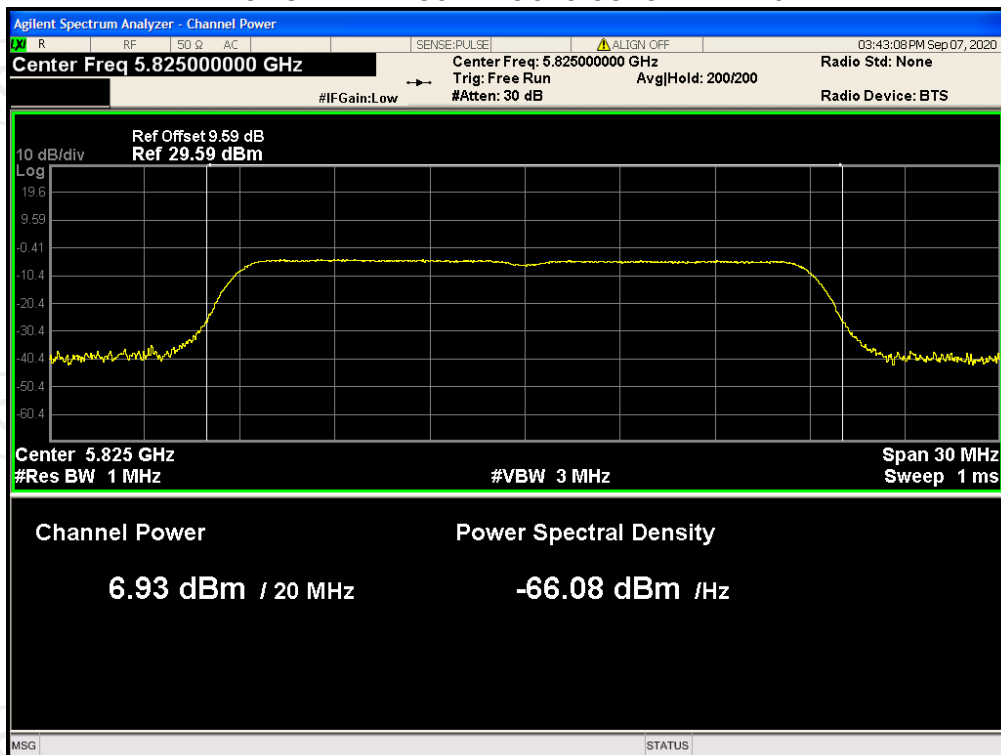
Power NVNT 802.11ac20 5745MHz Ant1



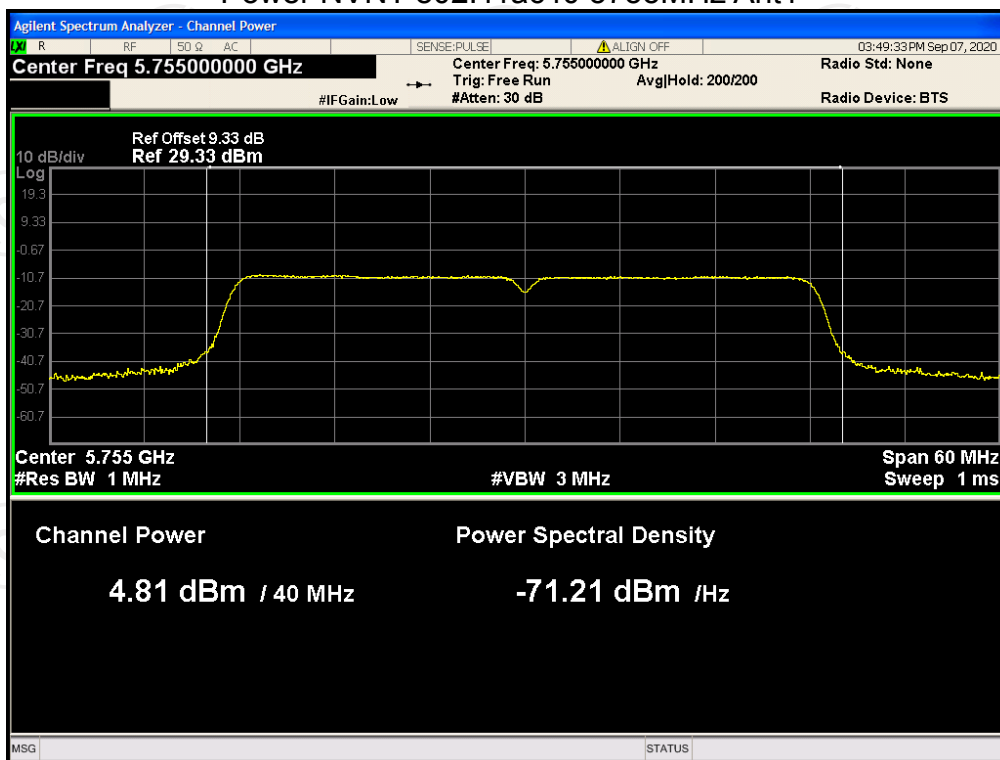
Power NVNT 802.11ac20 5785MHz Ant1



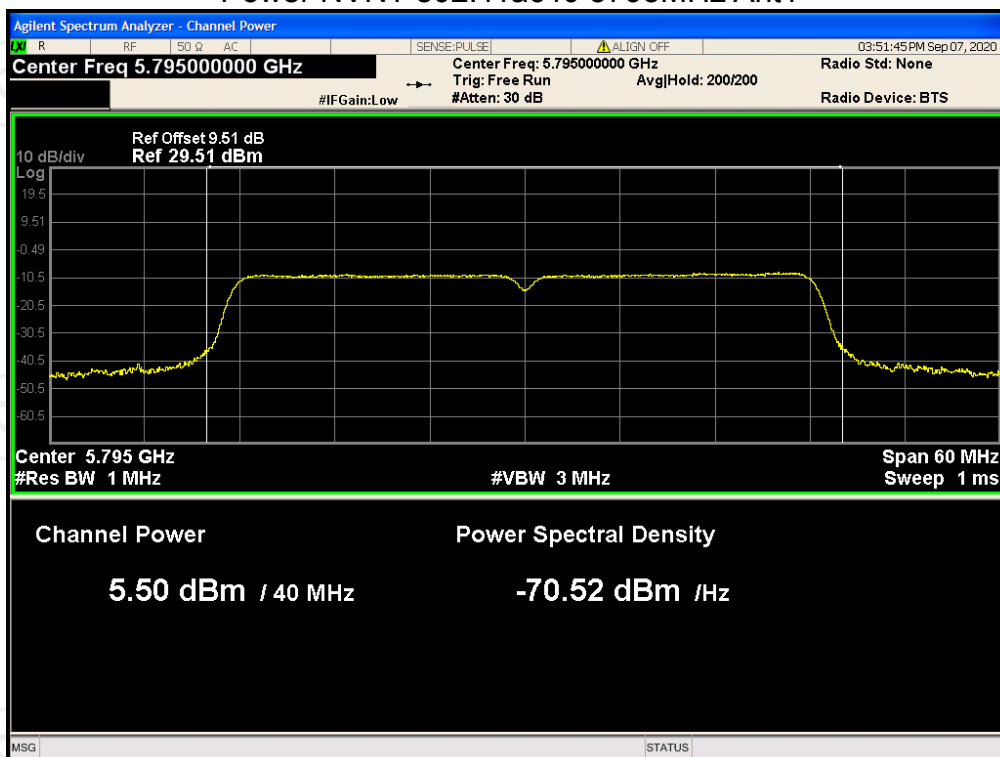
Power NVNT 802.11ac20 5825MHz Ant1



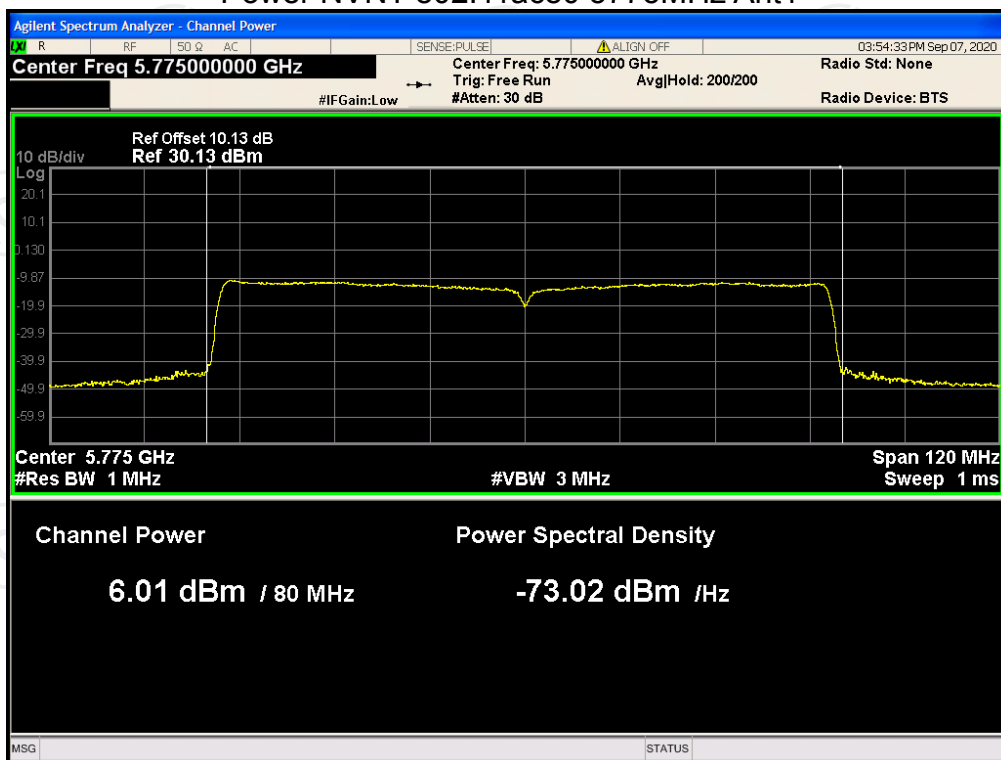
Power NVNT 802.11ac40 5755MHz Ant1



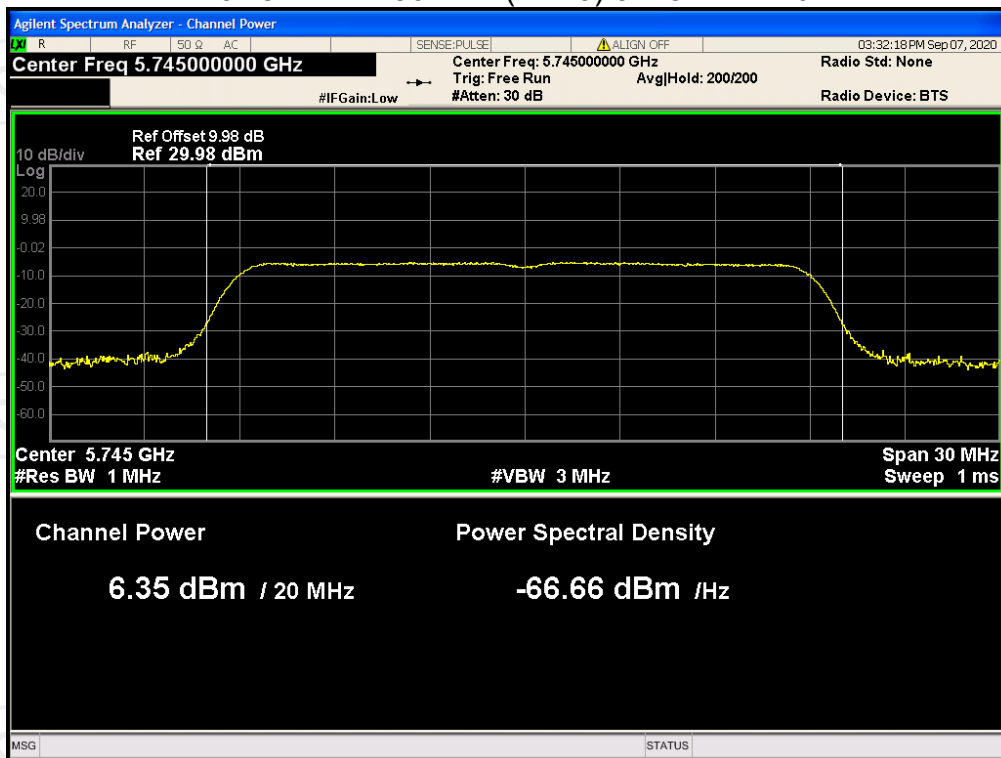
Power NVNT 802.11ac40 5795MHz Ant1



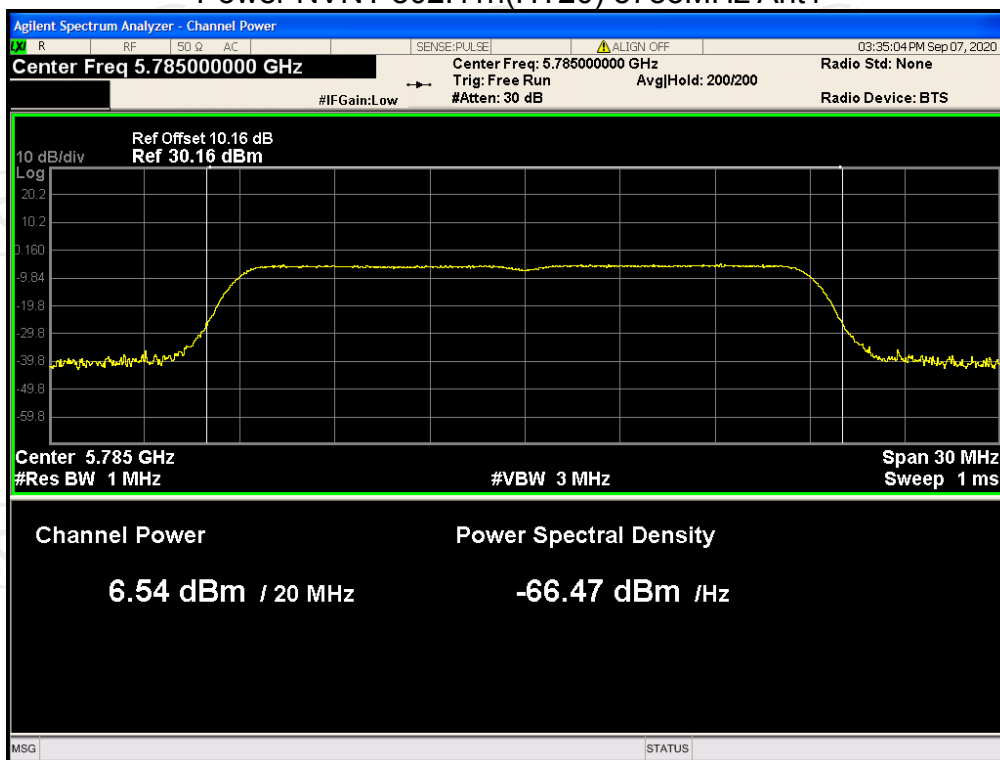
Power NVNT 802.11ac80 5775MHz Ant1



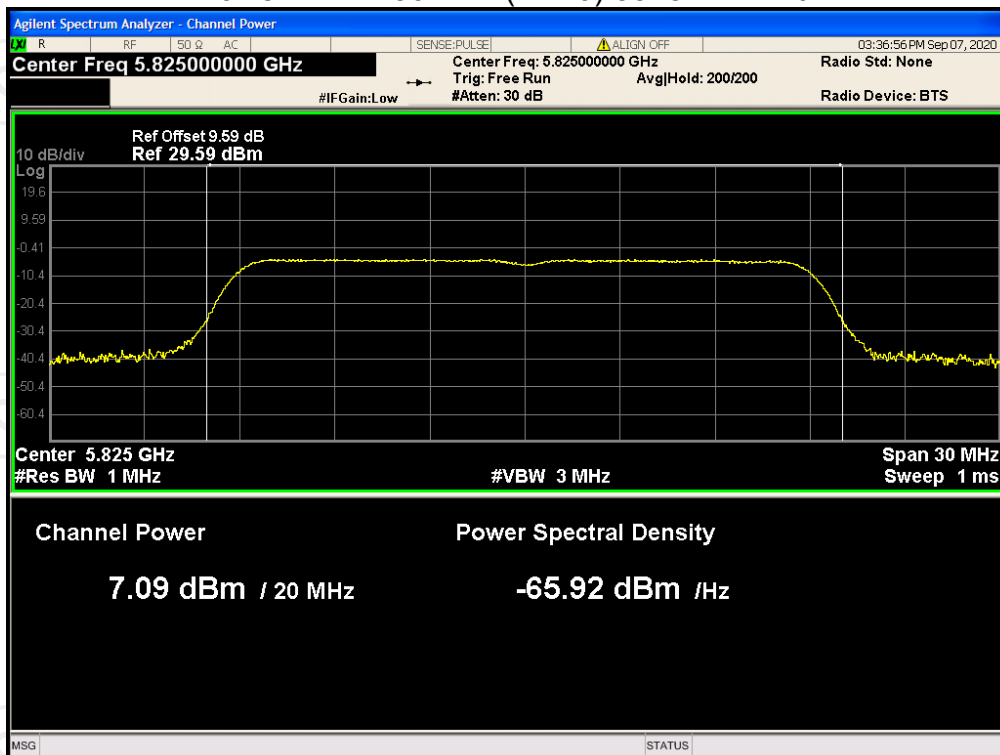
Power NVNT 802.11n(HT20) 5745MHz Ant1



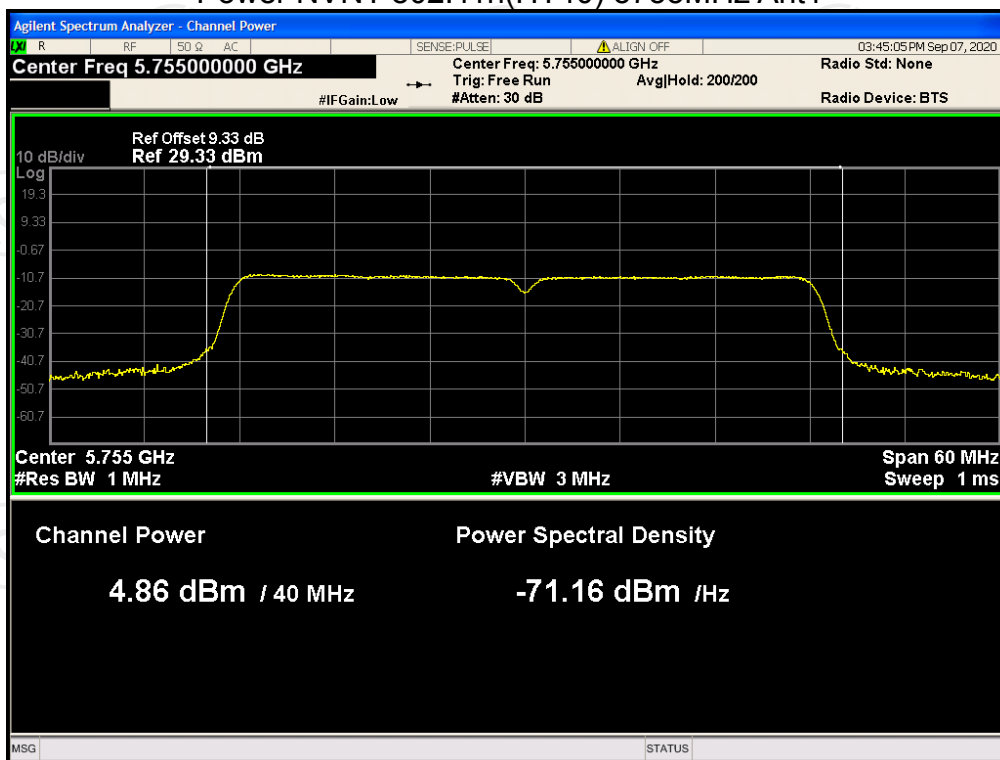
Power NVNT 802.11n(HT20) 5785MHz Ant1



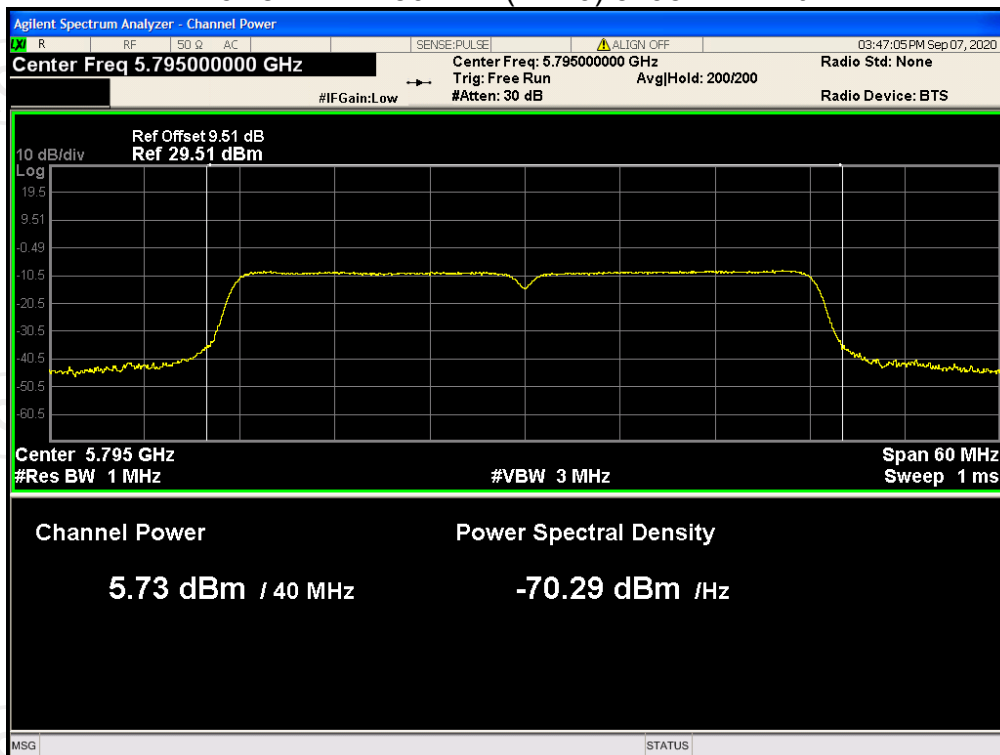
Power NVNT 802.11n(HT20) 5825MHz Ant1



Power NVNT 802.11n(HT40) 5755MHz Ant1



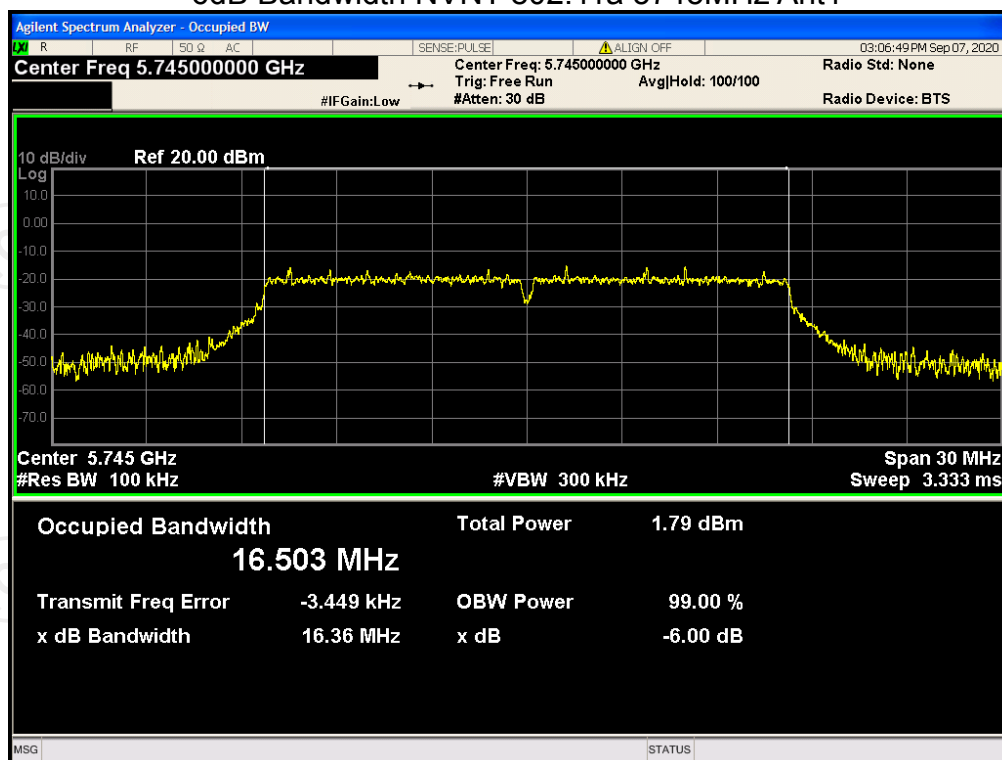
Power NVNT 802.11n(HT40) 5795MHz Ant1



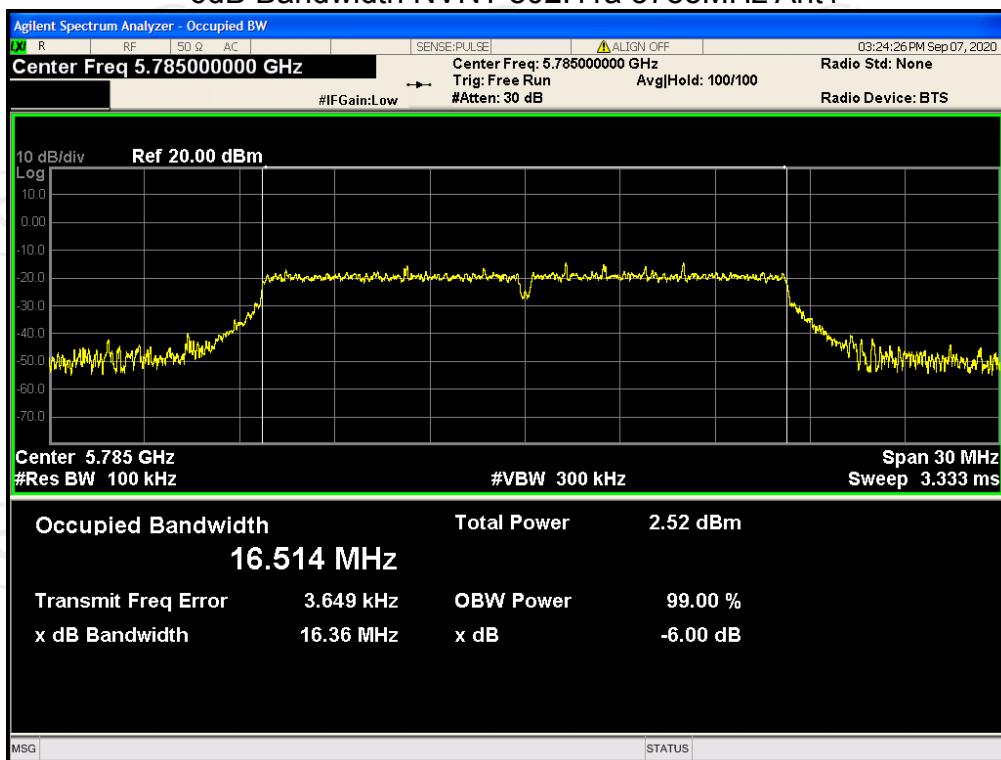
-6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	802.11a	5745	Ant 1	16.3597	0.5	Pass
NVNT	802.11a	5785	Ant 1	16.3633	0.5	Pass
NVNT	802.11a	5825	Ant 1	16.425	0.5	Pass
NVNT	802.11ac20	5745	Ant 1	17.5796	0.5	Pass
NVNT	802.11ac20	5785	Ant 1	17.6012	0.5	Pass
NVNT	802.11ac20	5825	Ant 1	17.5809	0.5	Pass
NVNT	802.11ac40	5755	Ant 1	35.8957	0.5	Pass
NVNT	802.11ac40	5795	Ant 1	35.7407	0.5	Pass
NVNT	802.11ac80	5775	Ant 1	75.6783	0.5	Pass
NVNT	802.11n(HT20)	5745	Ant 1	17.5695	0.5	Pass
NVNT	802.11n(HT20)	5785	Ant 1	17.5768	0.5	Pass
NVNT	802.11n(HT20)	5825	Ant 1	17.5636	0.5	Pass
NVNT	802.11n(HT40)	5755	Ant 1	35.7369	0.5	Pass
NVNT	802.11n(HT40)	5795	Ant 1	36.0572	0.5	Pass

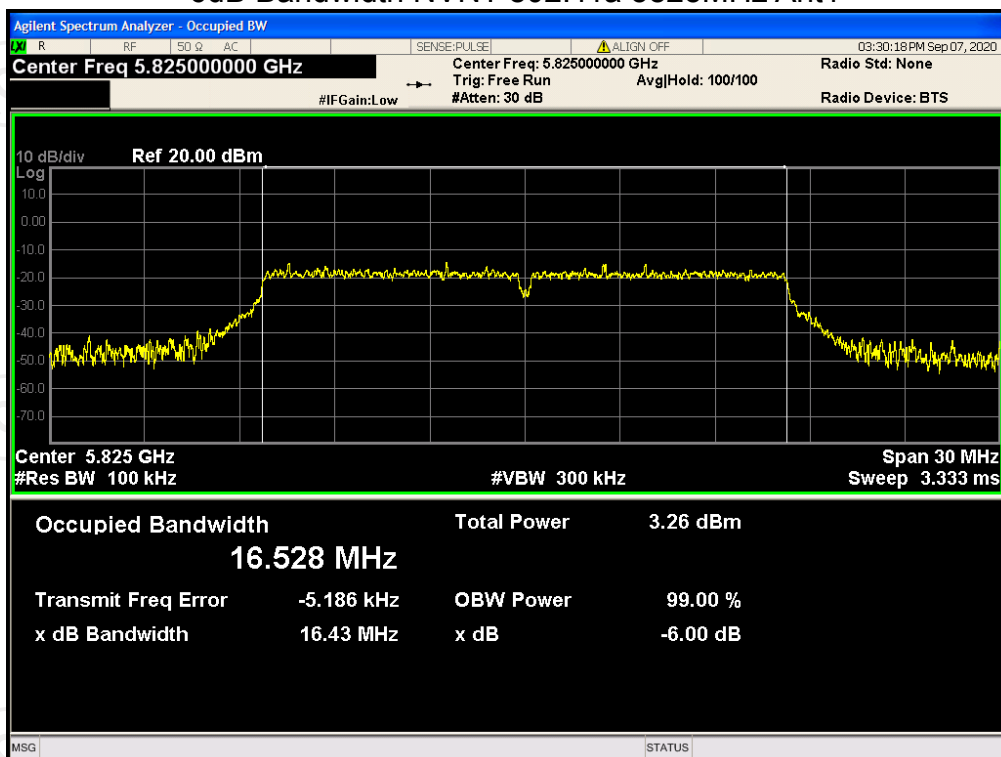
-6dB Bandwidth NVNT 802.11a 5745MHz Ant1



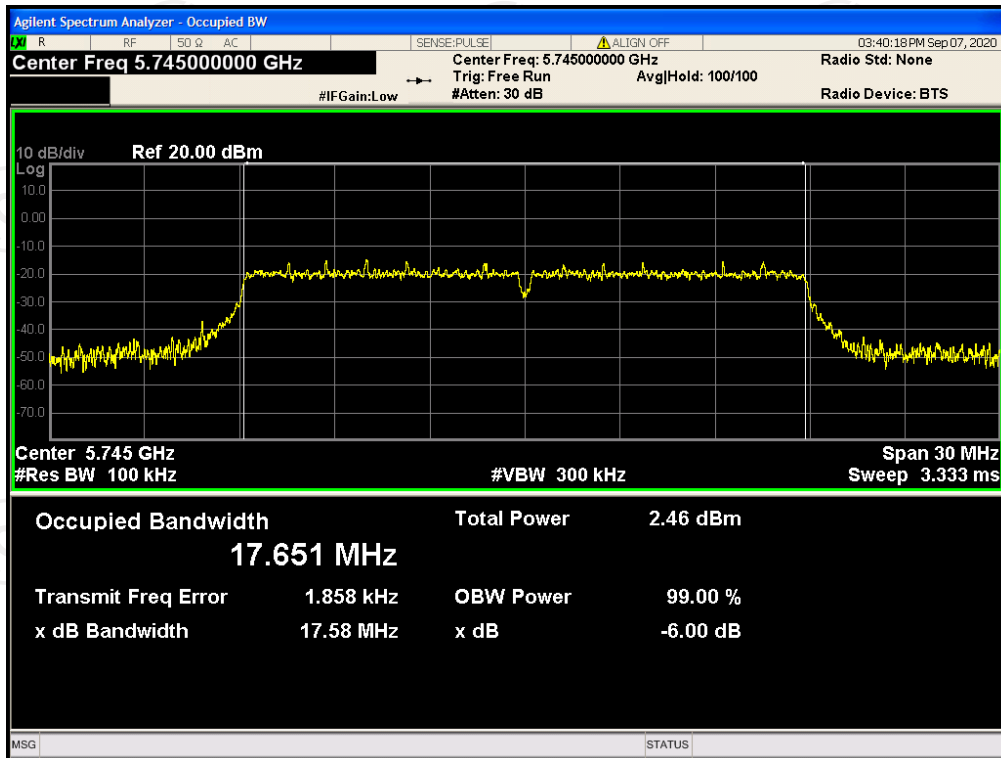
-6dB Bandwidth NVNT 802.11a 5785MHz Ant1



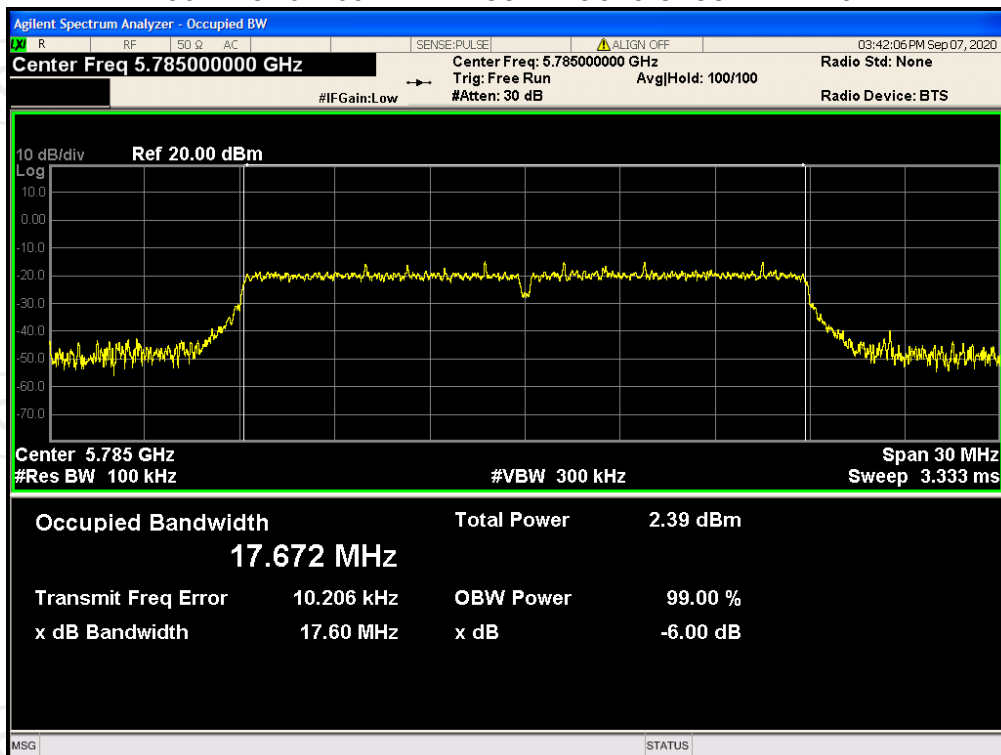
-6dB Bandwidth NVNT 802.11a 5825MHz Ant1



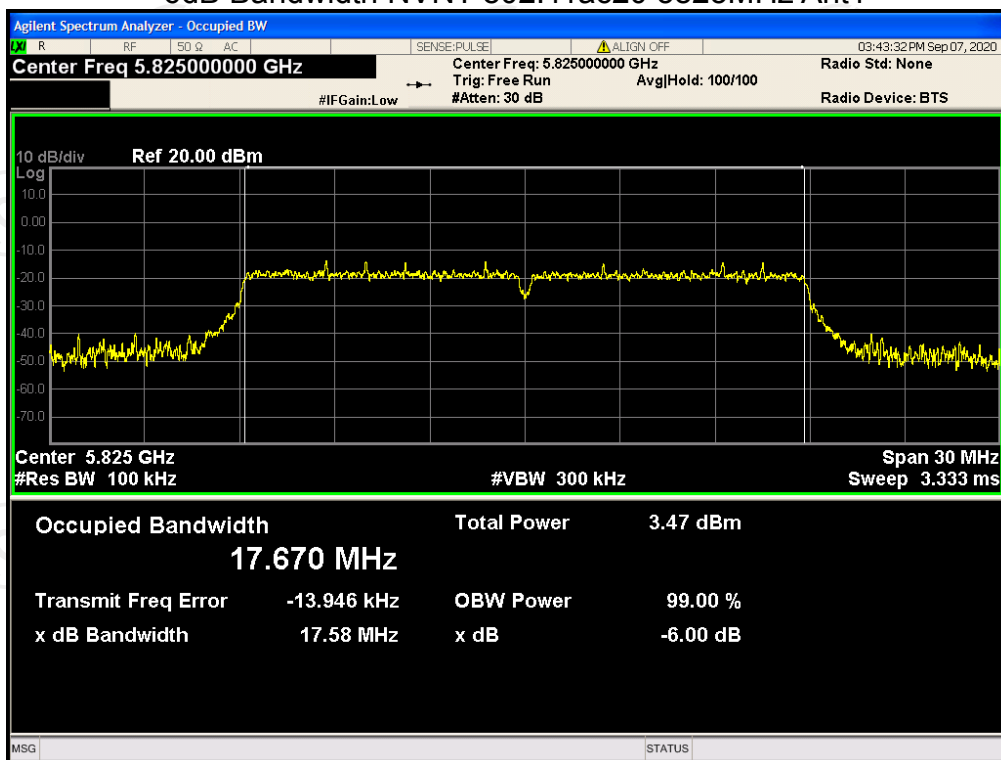
-6dB Bandwidth NVNT 802.11ac20 5745MHz Ant1



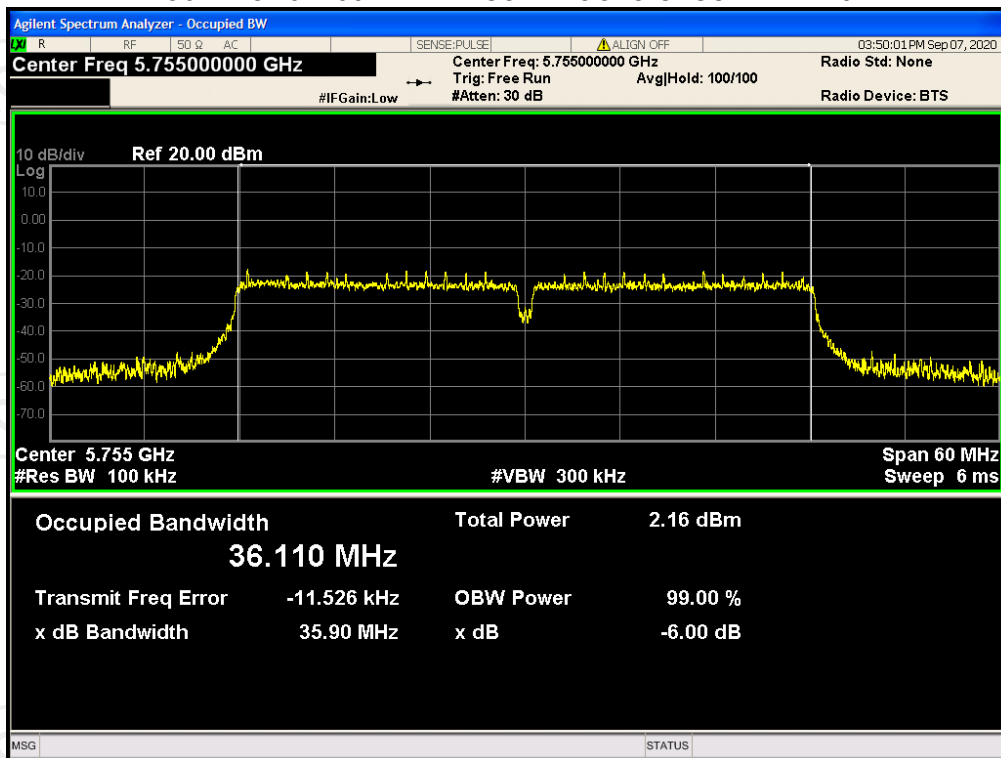
-6dB Bandwidth NVNT 802.11ac20 5785MHz Ant1



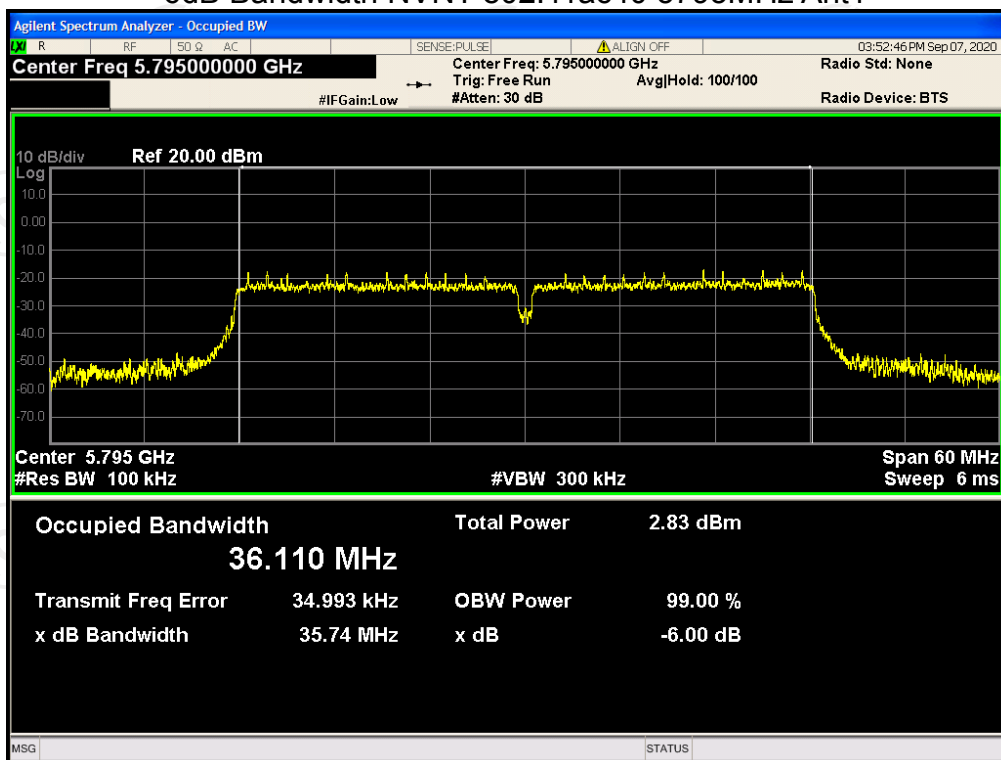
-6dB Bandwidth NVNT 802.11ac20 5825MHz Ant1



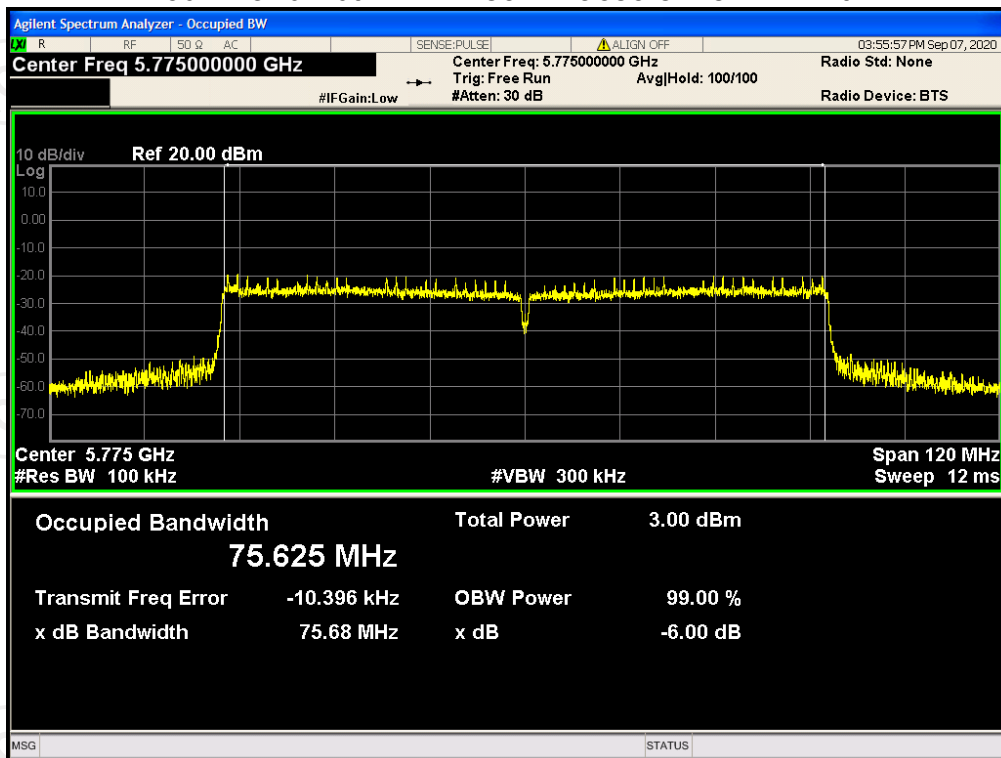
-6dB Bandwidth NVNT 802.11ac40 5755MHz Ant1



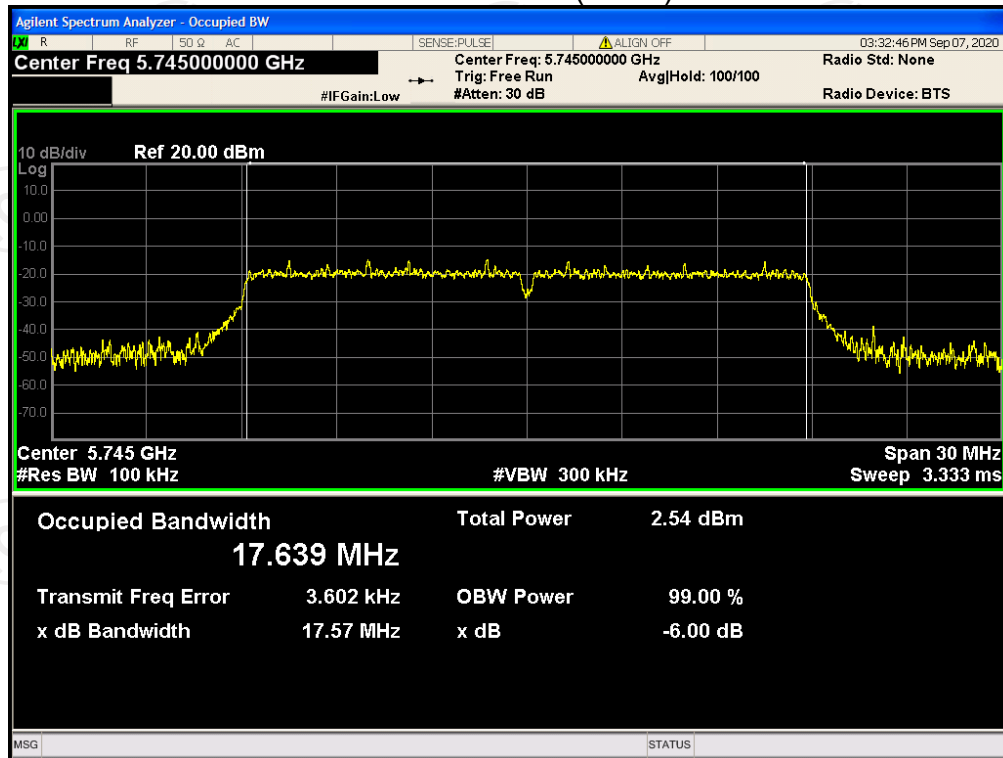
-6dB Bandwidth NVNT 802.11ac40 5795MHz Ant1



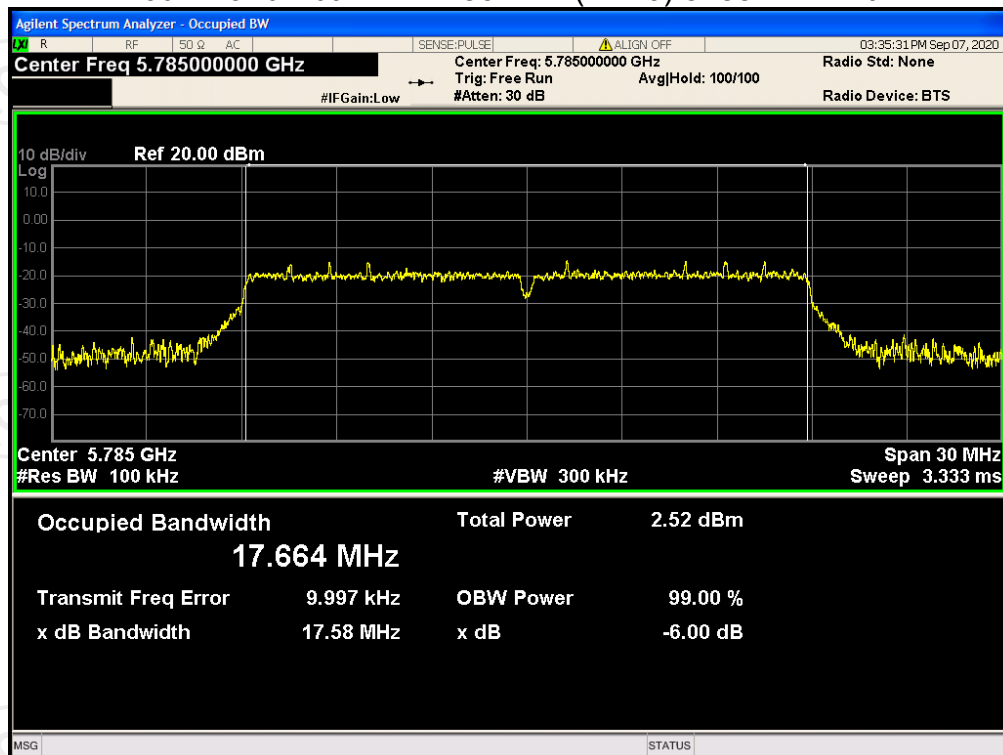
-6dB Bandwidth NVNT 802.11ac80 5775MHz Ant1



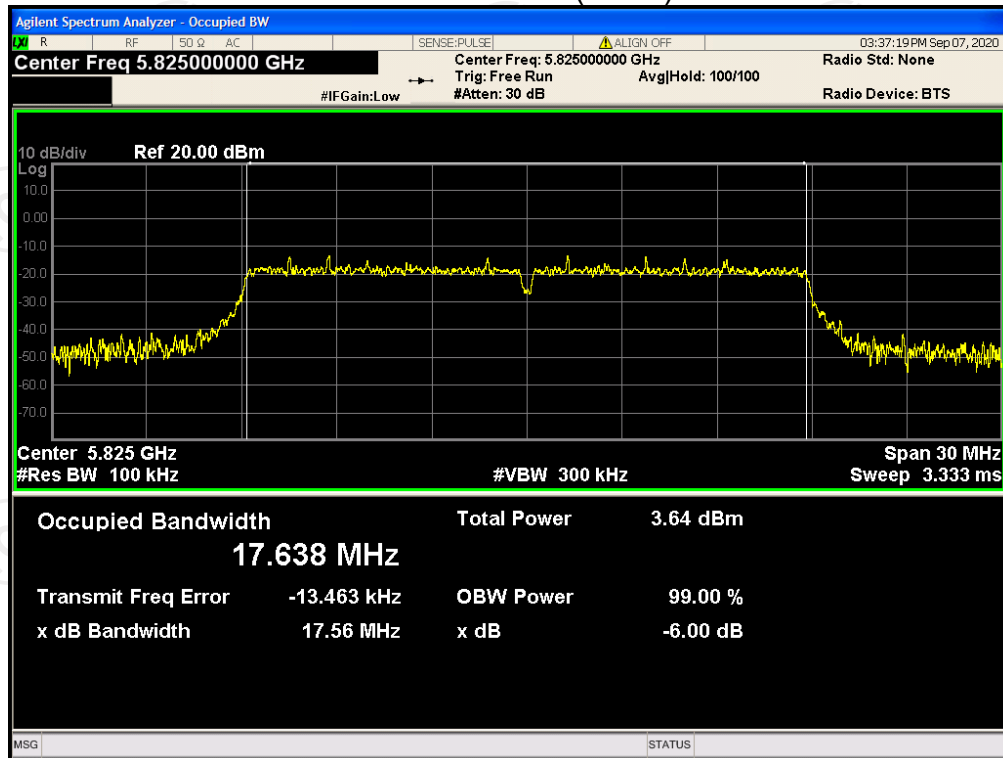
-6dB Bandwidth NVNT 802.11n(HT20) 5745MHz Ant1



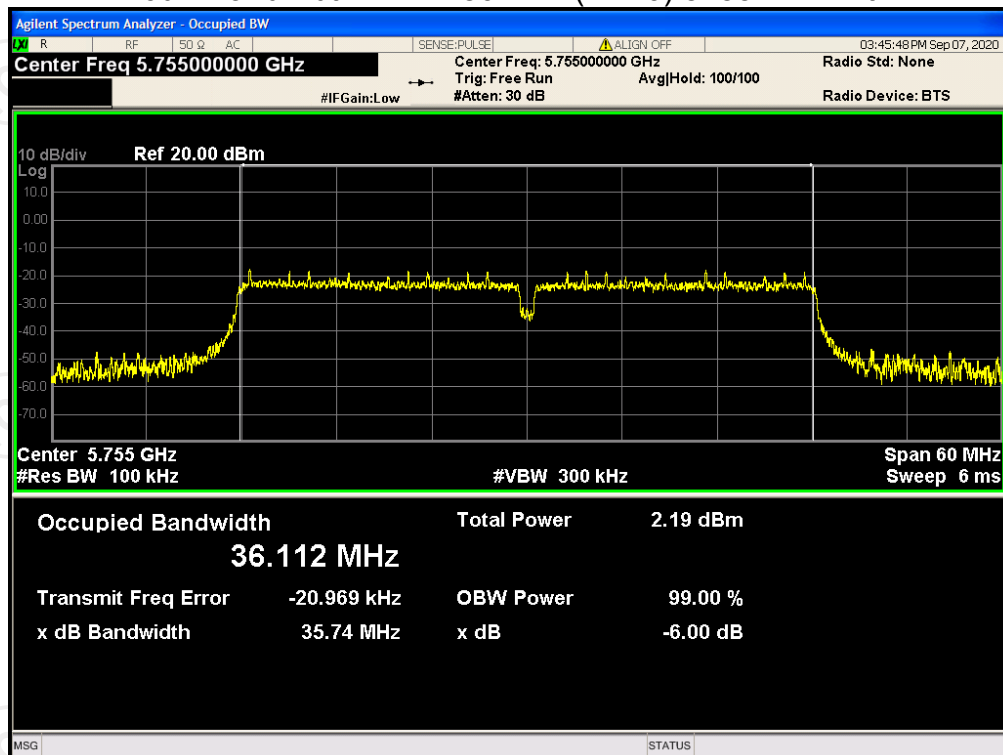
-6dB Bandwidth NVNT 802.11n(HT20) 5785MHz Ant1



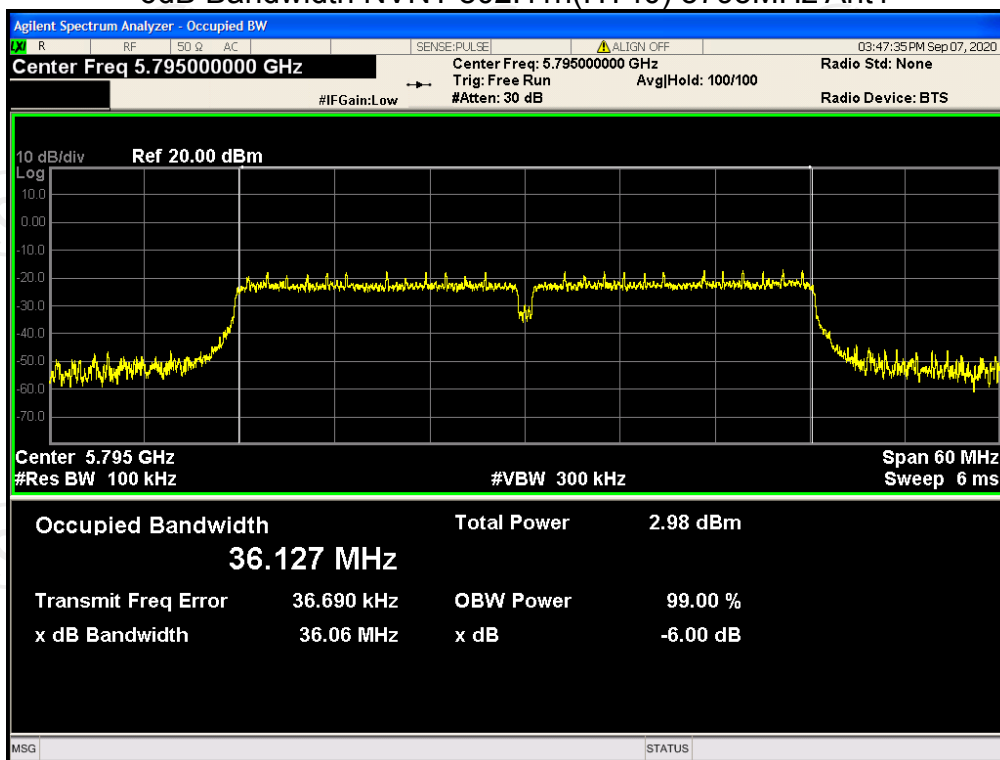
-6dB Bandwidth NVNT 802.11n(HT20) 5825MHz Ant1



-6dB Bandwidth NVNT 802.11n(HT40) 5755MHz Ant1



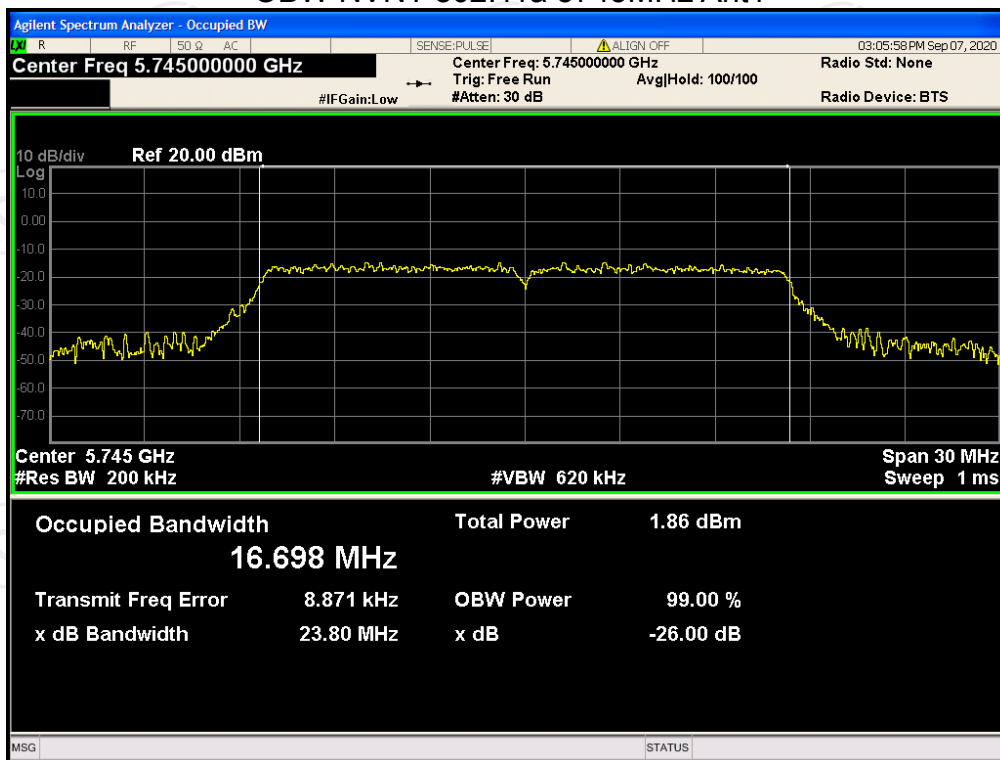
-6dB Bandwidth NVNT 802.11n(HT40) 5795MHz Ant1



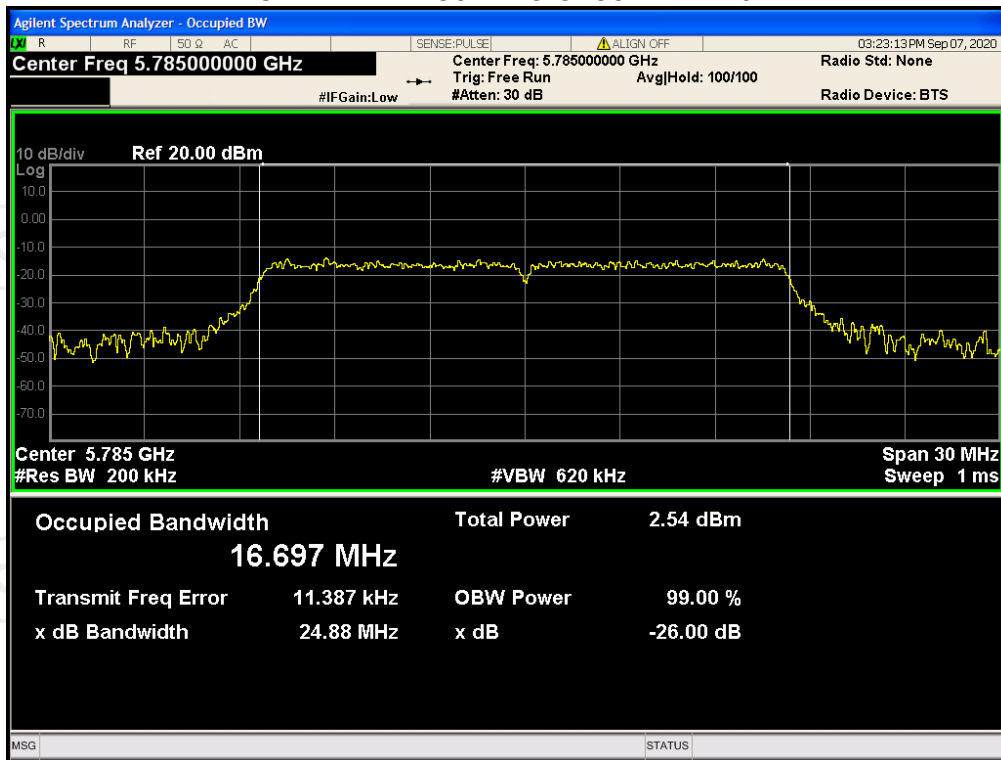
Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	802.11a	5745	Ant 1	16.6984	23.8047	0.5	Pass
NVNT	802.11a	5785	Ant 1	16.6971	24.8794	0.5	Pass
NVNT	802.11a	5825	Ant 1	16.7100	26.0505	0.5	Pass
NVNT	802.11ac20	5745	Ant 1	17.7377	23.4700	0.5	Pass
NVNT	802.11ac20	5785	Ant 1	17.7514	27.0097	0.5	Pass
NVNT	802.11ac20	5825	Ant 1	17.7525	22.5466	0.5	Pass
NVNT	802.11ac40	5755	Ant 1	36.2426	41.8097	0.5	Pass
NVNT	802.11ac40	5795	Ant 1	36.3441	47.3991	0.5	Pass
NVNT	802.11ac80	5775	Ant 1	75.7863	96.2164	0.5	Pass
NVNT	802.11n(HT20)	5745	Ant 1	17.6723	24.2073	0.5	Pass
NVNT	802.11n(HT20)	5785	Ant 1	17.7717	26.7238	0.5	Pass
NVNT	802.11n(HT20)	5825	Ant 1	17.7403	23.8502	0.5	Pass
NVNT	802.11n(HT40)	5755	Ant 1	36.3199	47.4452	0.5	Pass
NVNT	802.11n(HT40)	5795	Ant 1	36.2749	44.9502	0.5	Pass

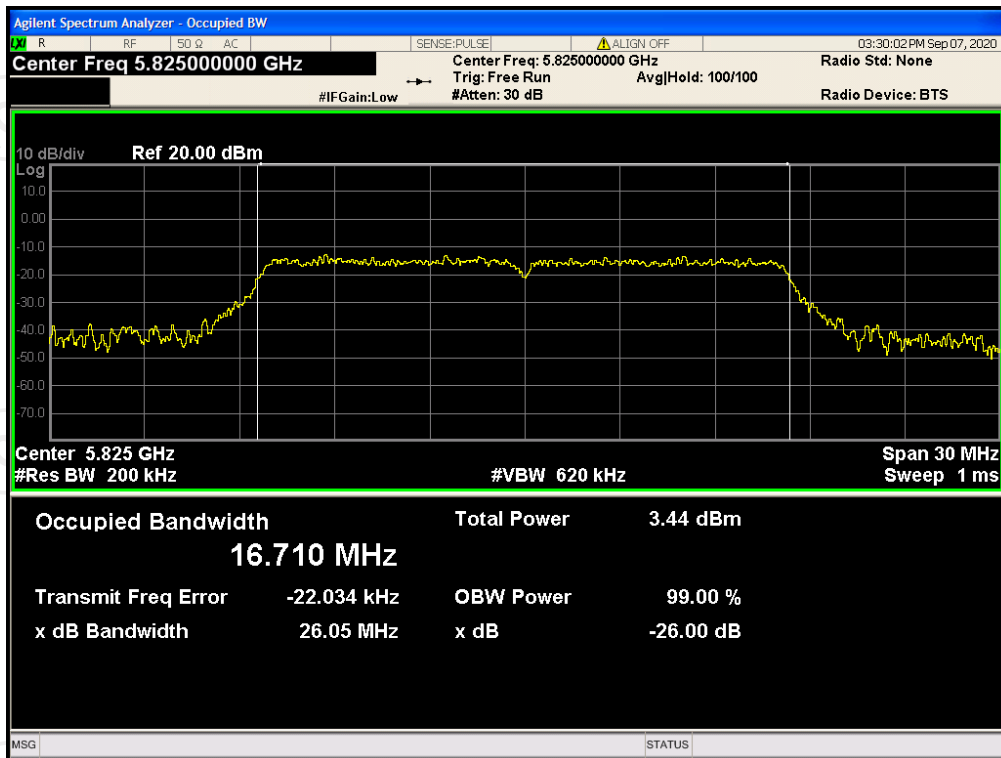
OBW NVNT 802.11a 5745MHz Ant1



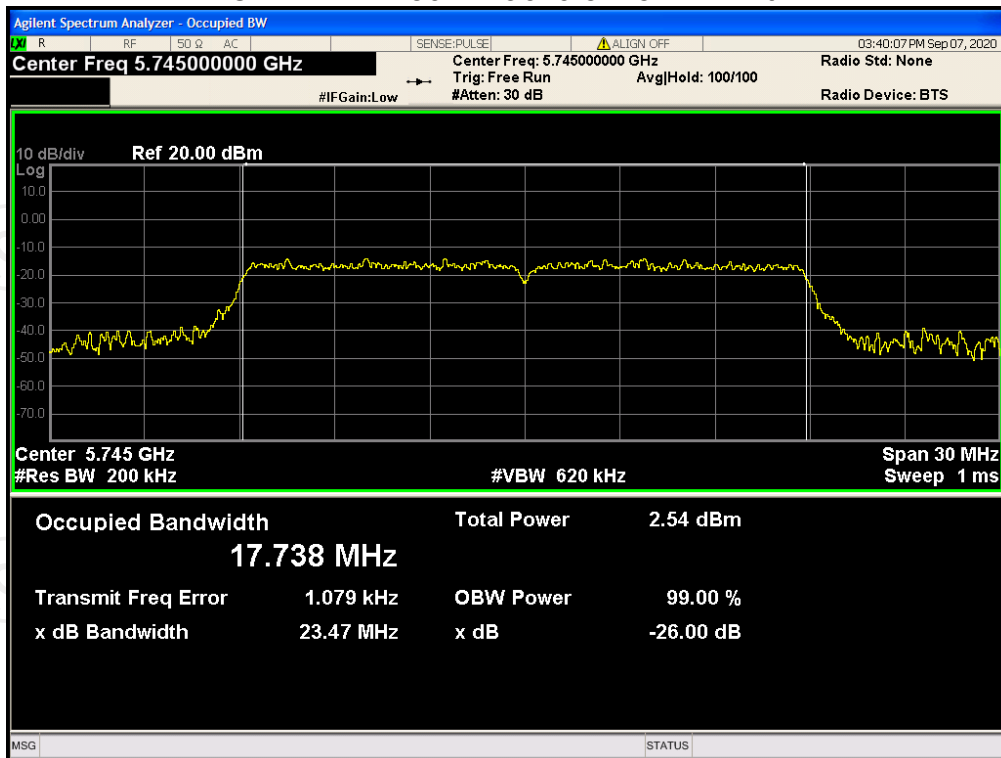
OBW NVNT 802.11a 5785MHz Ant1



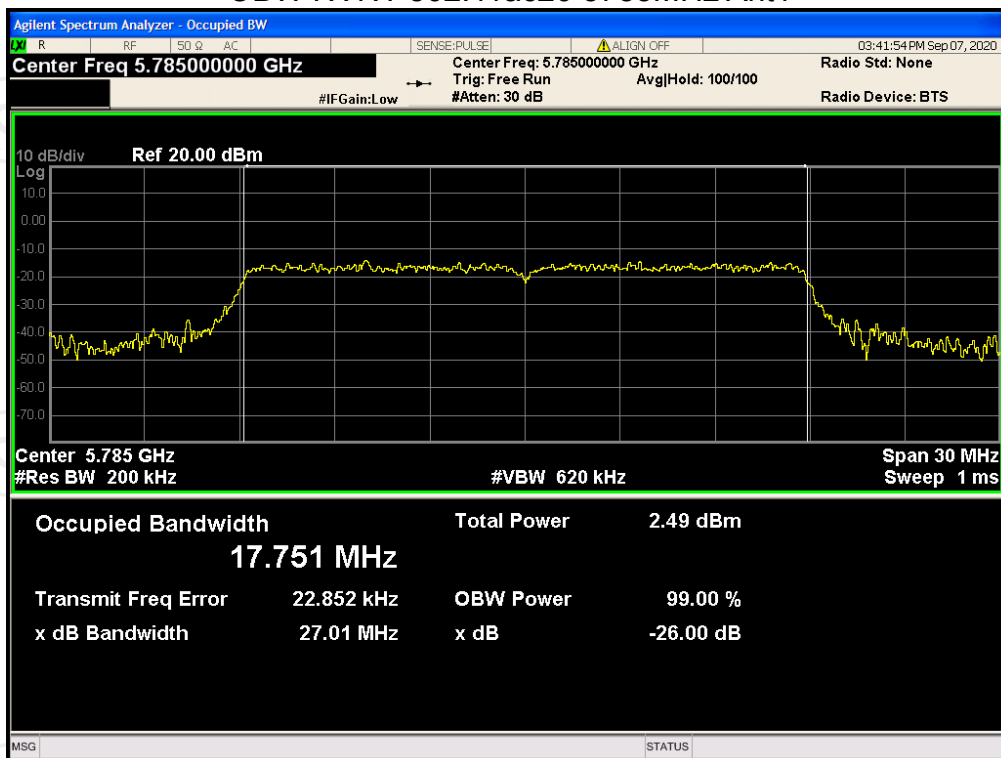
OBW NVNT 802.11a 5825MHz Ant1



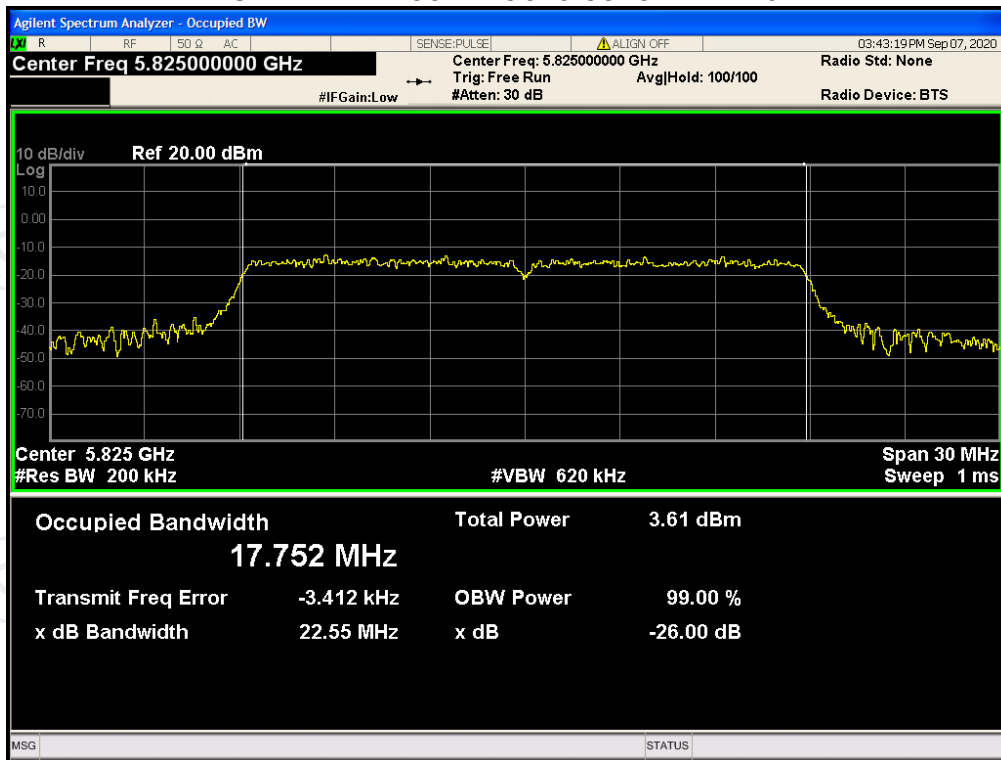
OBW NVNT 802.11ac20 5745MHz Ant1



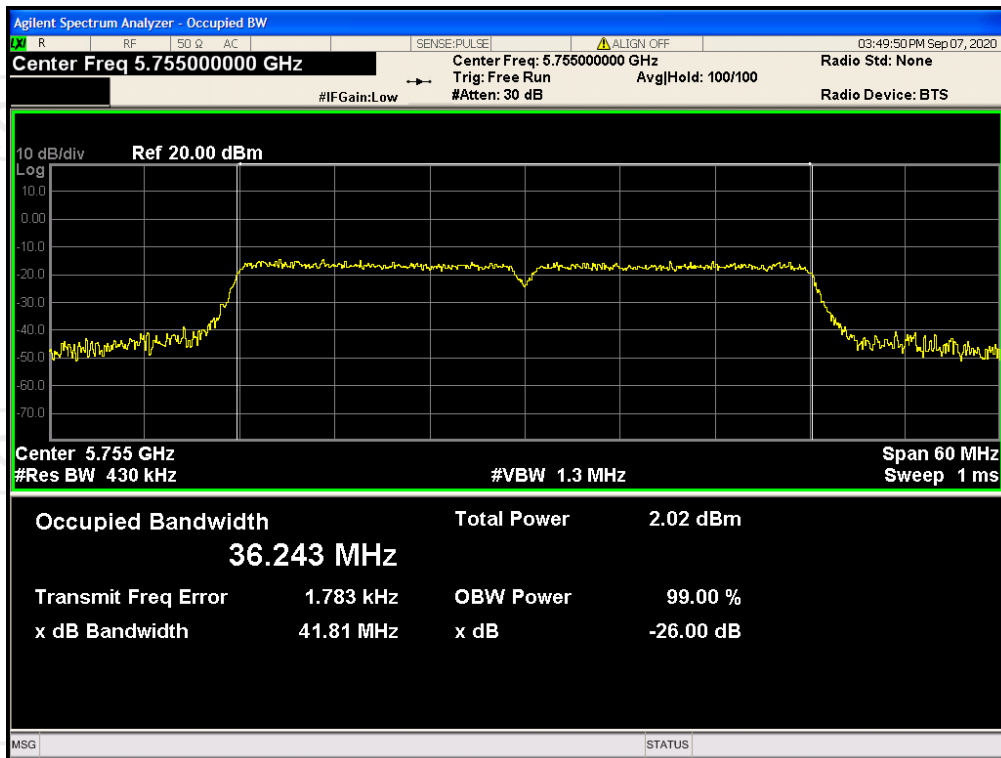
OBW NVNT 802.11ac20 5785MHz Ant1



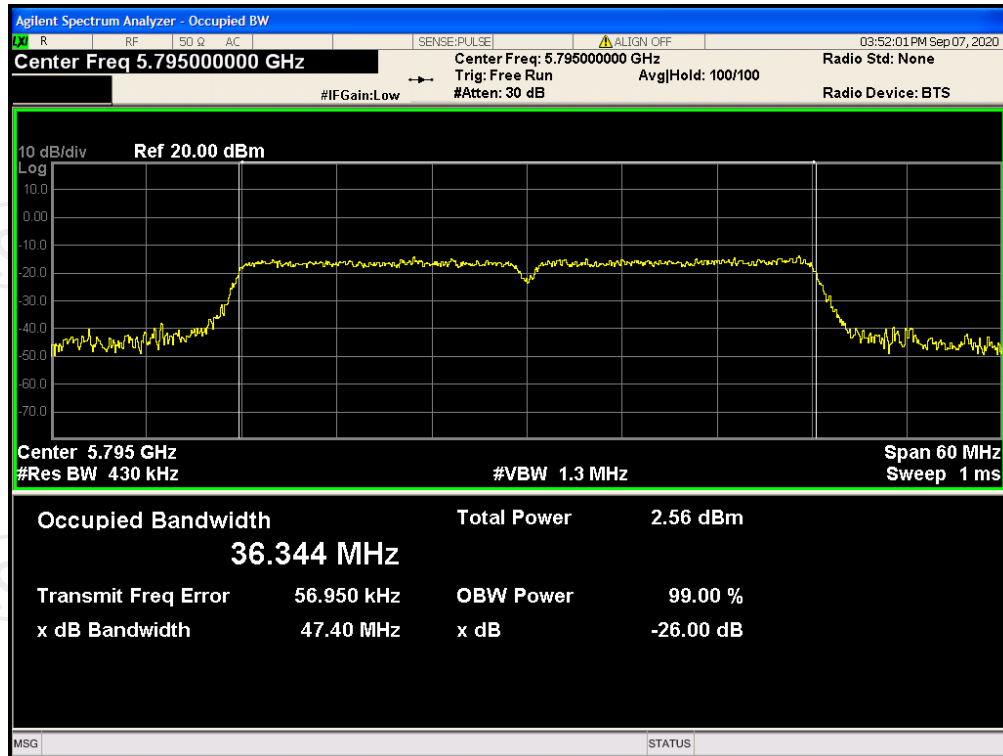
OBW NVNT 802.11ac20 5825MHz Ant1



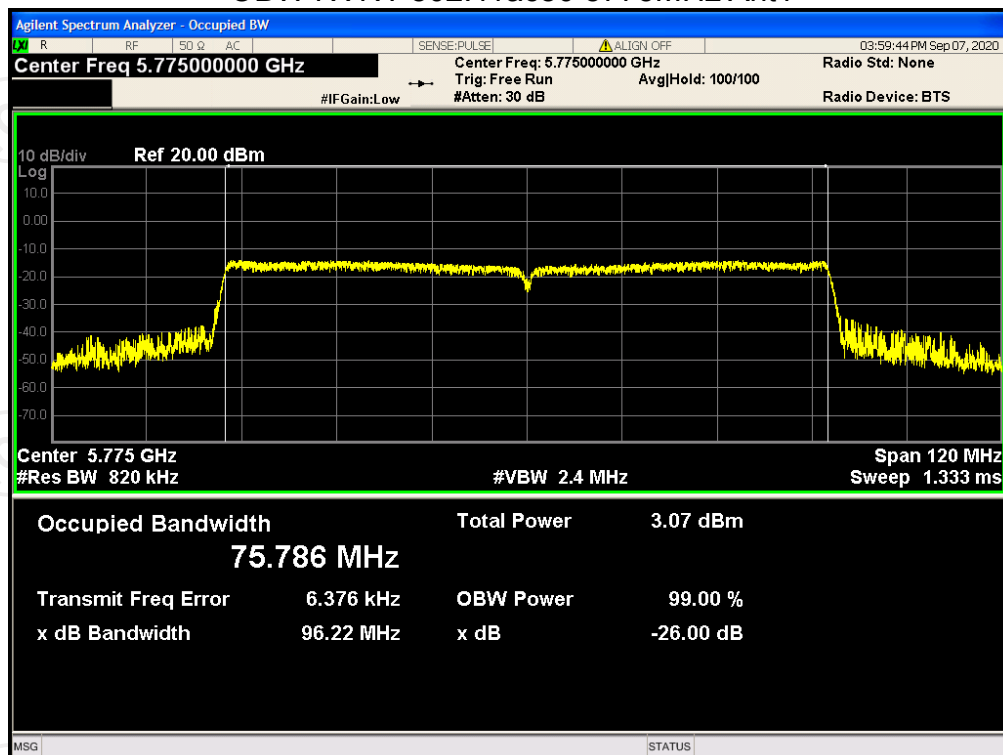
OBW NVNT 802.11ac40 5755MHz Ant1



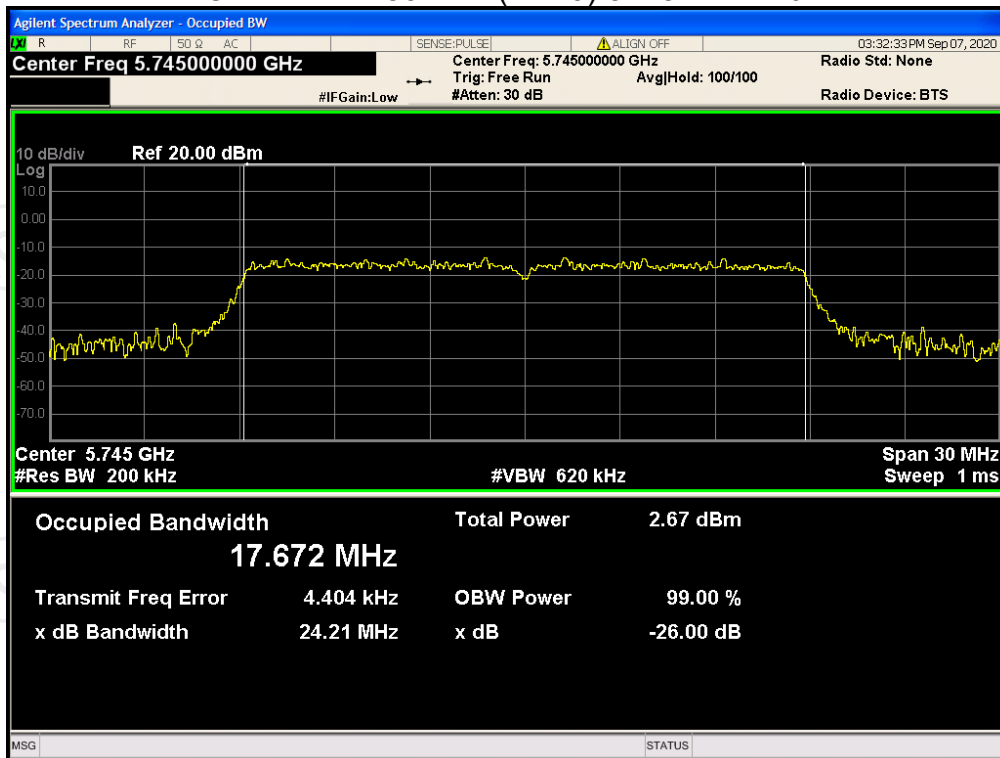
OBW NVNT 802.11ac40 5795MHz Ant1



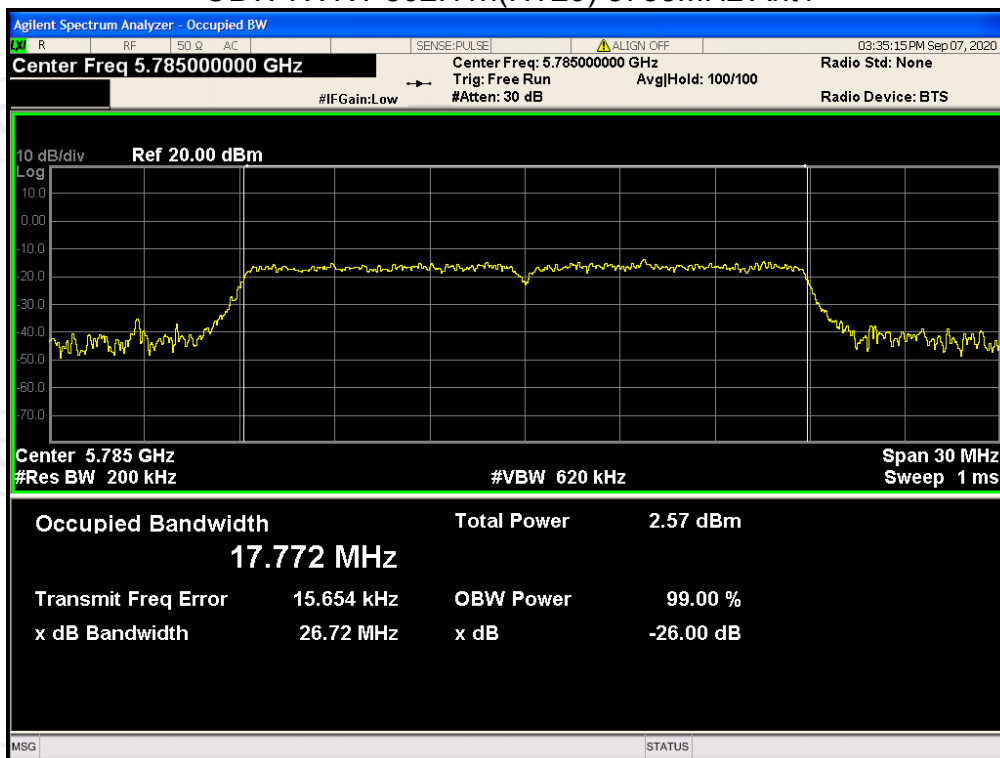
OBW NVNT 802.11ac80 5775MHz Ant1



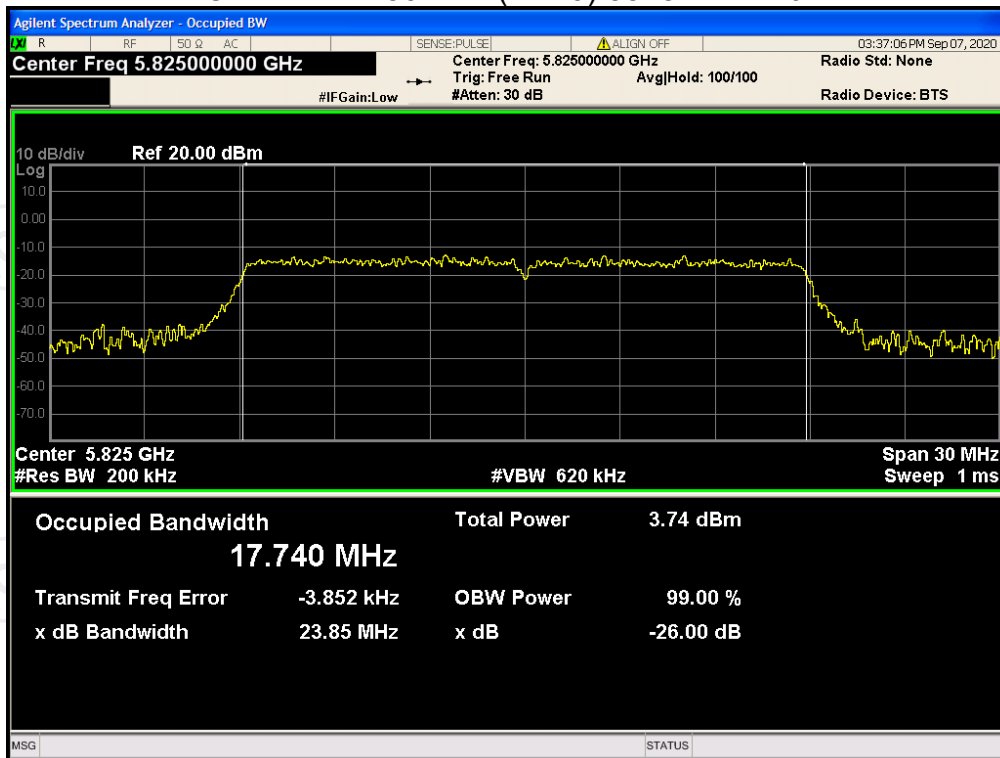
OBW NVNT 802.11n(HT20) 5745MHz Ant1



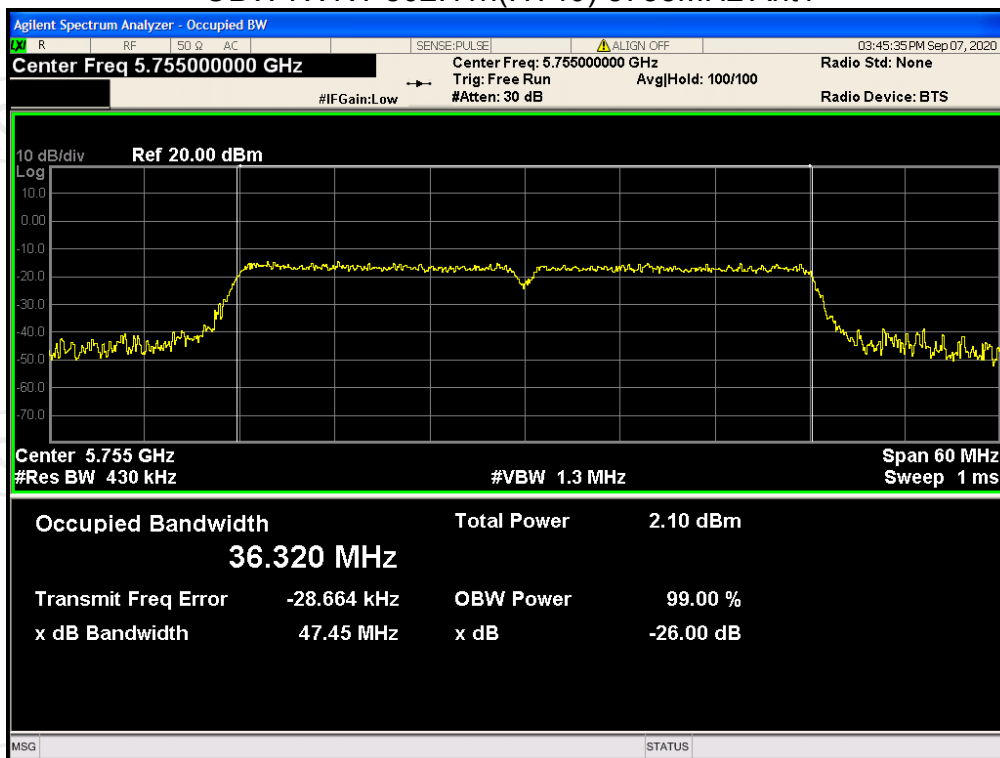
OBW NVNT 802.11n(HT20) 5785MHz Ant1



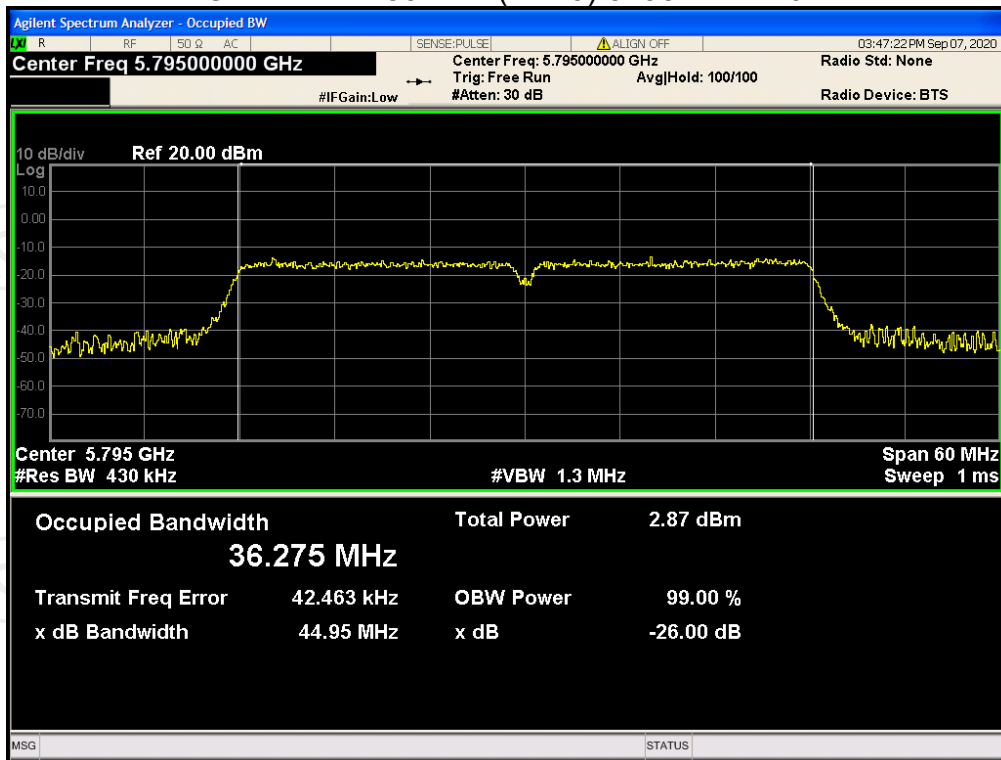
OBW NVNT 802.11n(HT20) 5825MHz Ant1



OBW NVNT 802.11n(HT40) 5755MHz Ant1



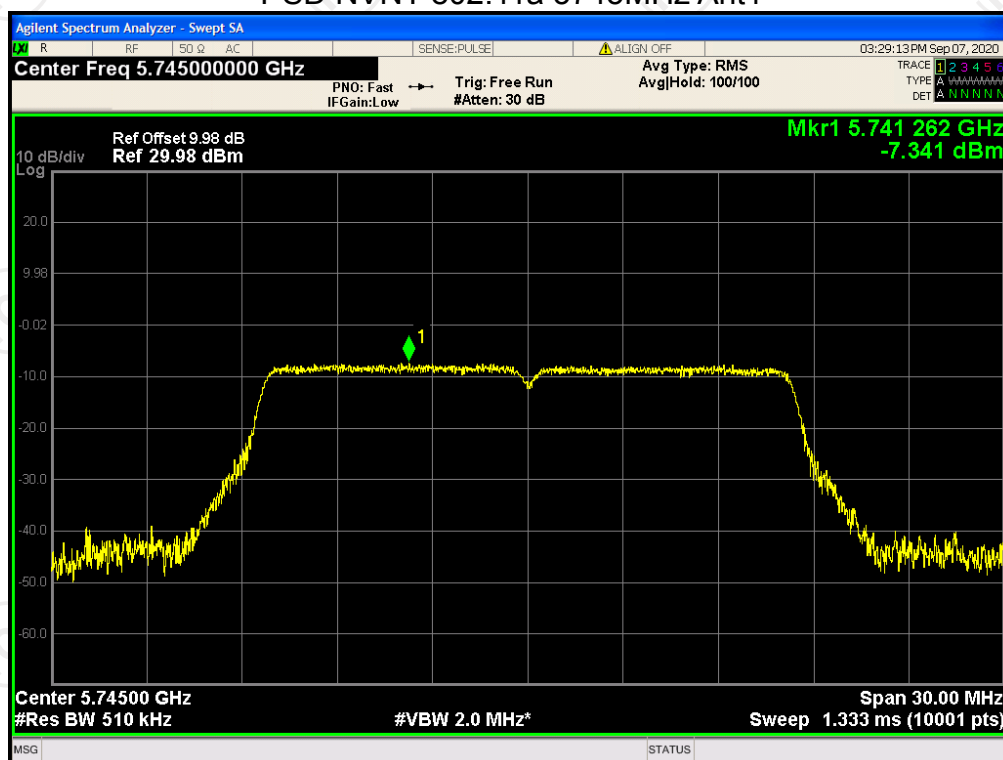
OBW NVNT 802.11n(HT40) 5795MHz Ant1



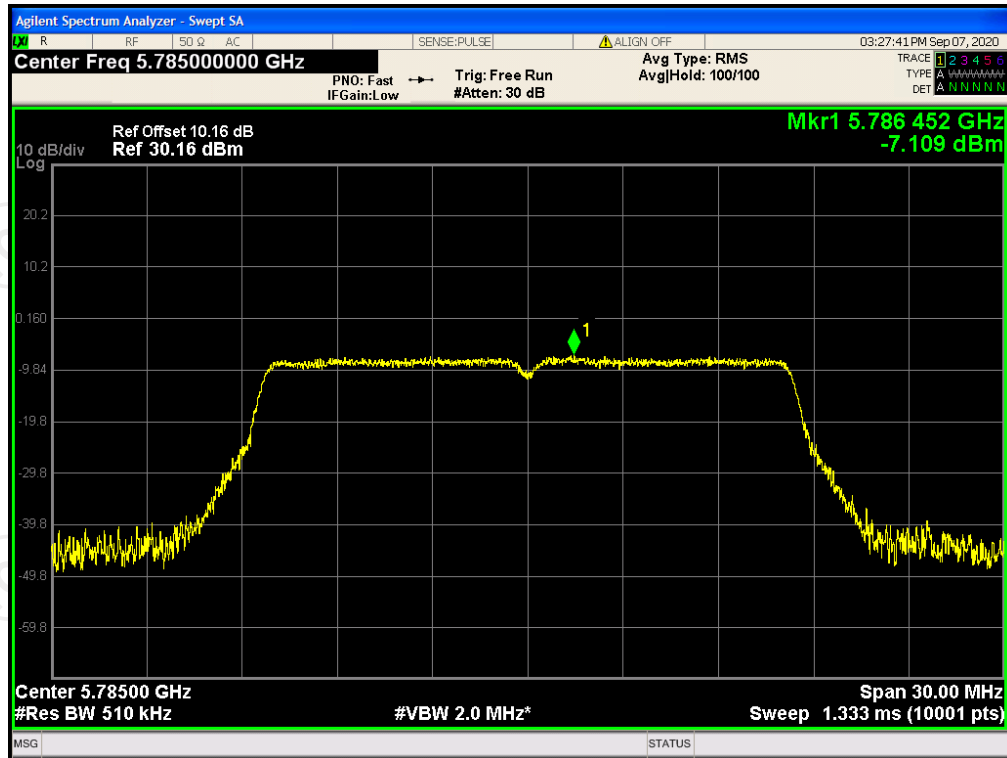
Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	802.11a	5745	Ant 1	-7.341	30	Pass
NVNT	802.11a	5785	Ant 1	-7.109	30	Pass
NVNT	802.11a	5825	Ant 1	-6.696	30	Pass
NVNT	802.11ac20	5745	Ant 1	-7.616	30	Pass
NVNT	802.11ac20	5785	Ant 1	-7.409	30	Pass
NVNT	802.11ac20	5825	Ant 1	-6.771	30	Pass
NVNT	802.11ac40	5755	Ant 1	-11.43	30	Pass
NVNT	802.11ac40	5795	Ant 1	-10.819	30	Pass
NVNT	802.11ac80	5775	Ant 1	-13.692	30	Pass
NVNT	802.11n(HT20)	5745	Ant 1	-7.565	30	Pass
NVNT	802.11n(HT20)	5785	Ant 1	-7.235	30	Pass
NVNT	802.11n(HT20)	5825	Ant 1	-6.948	30	Pass
NVNT	802.11n(HT40)	5755	Ant 1	-11.557	30	Pass
NVNT	802.11n(HT40)	5795	Ant 1	-11.016	30	Pass

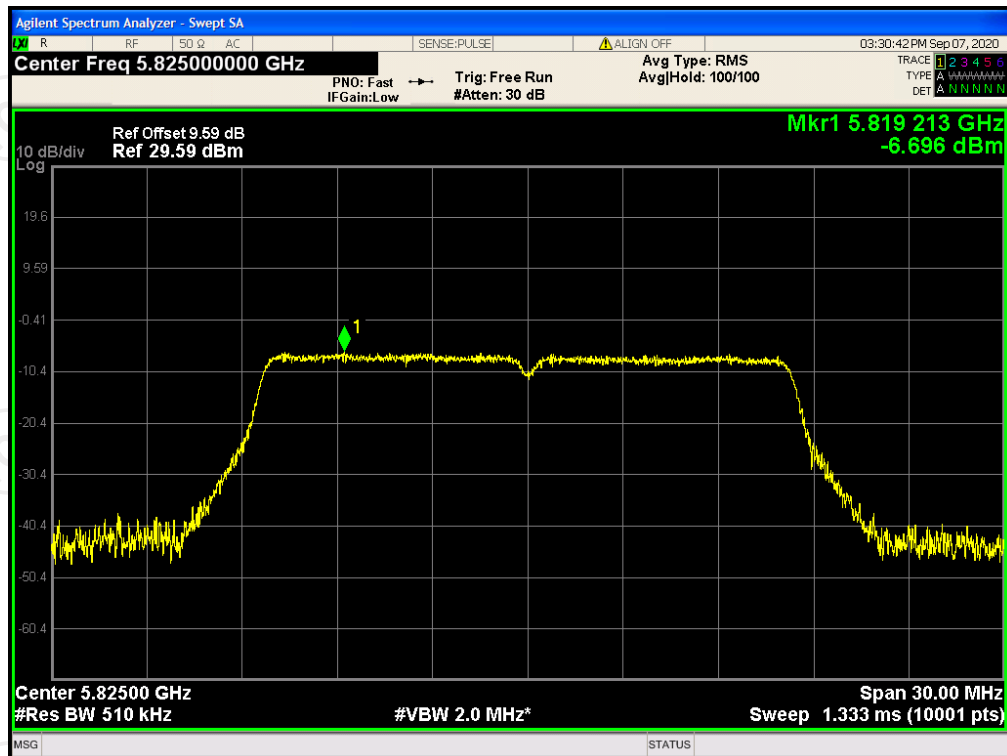
PSD NVNT 802.11a 5745MHz Ant1



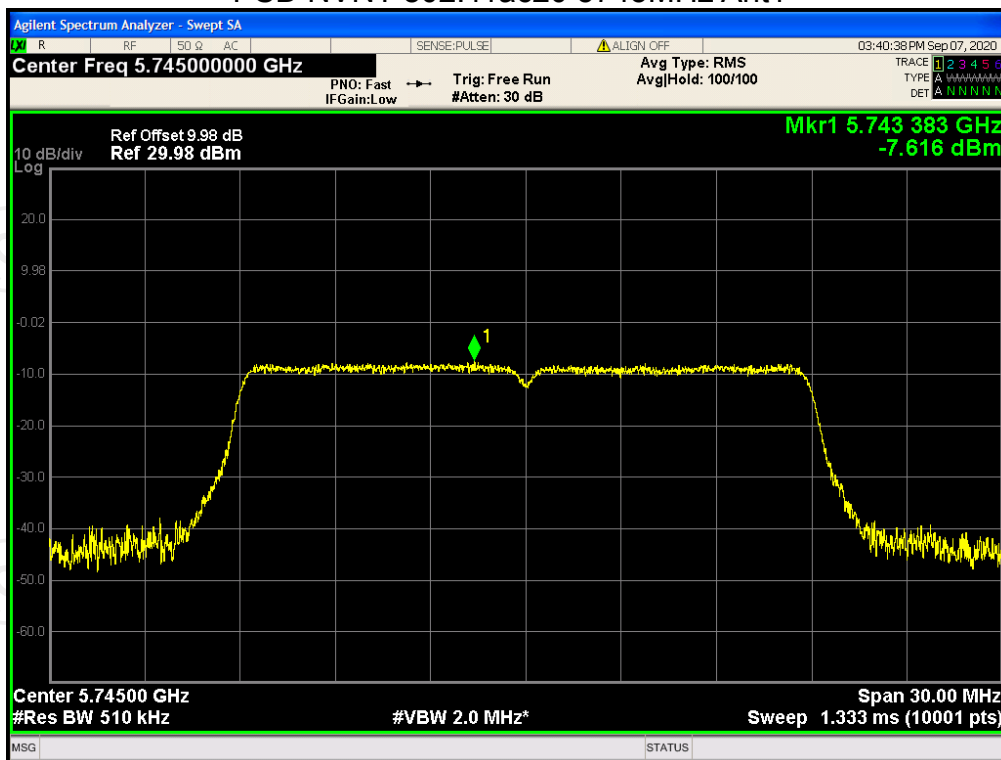
PSD NVNT 802.11a 5785MHz Ant1



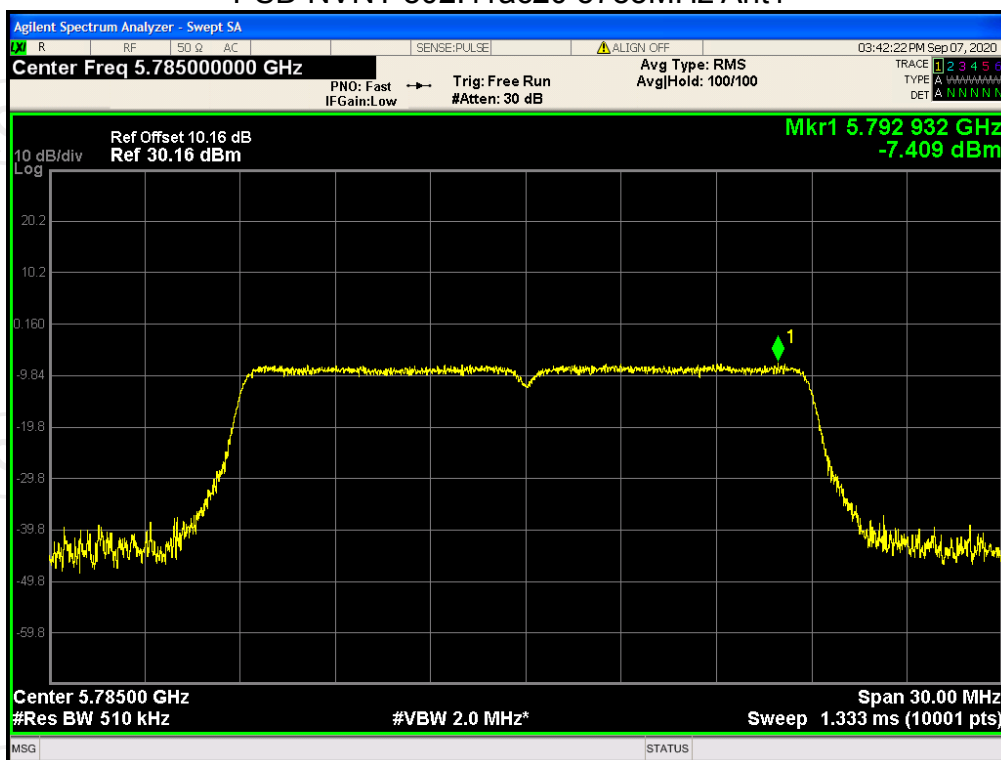
PSD NVNT 802.11a 5825MHz Ant1



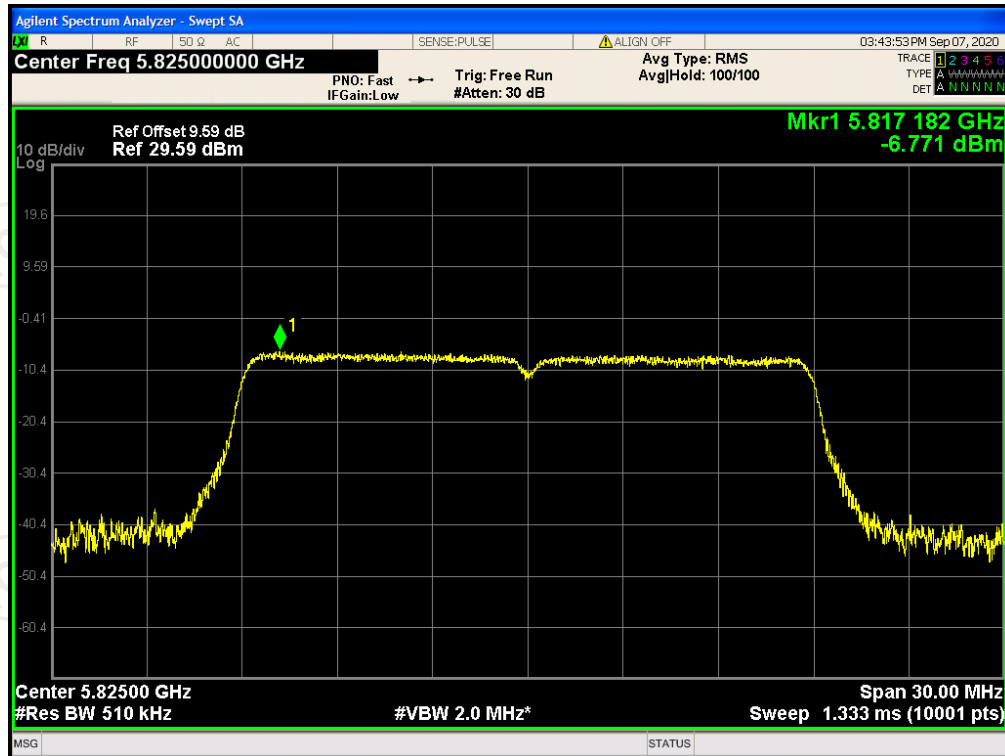
PSD NVNT 802.11ac20 5745MHz Ant1



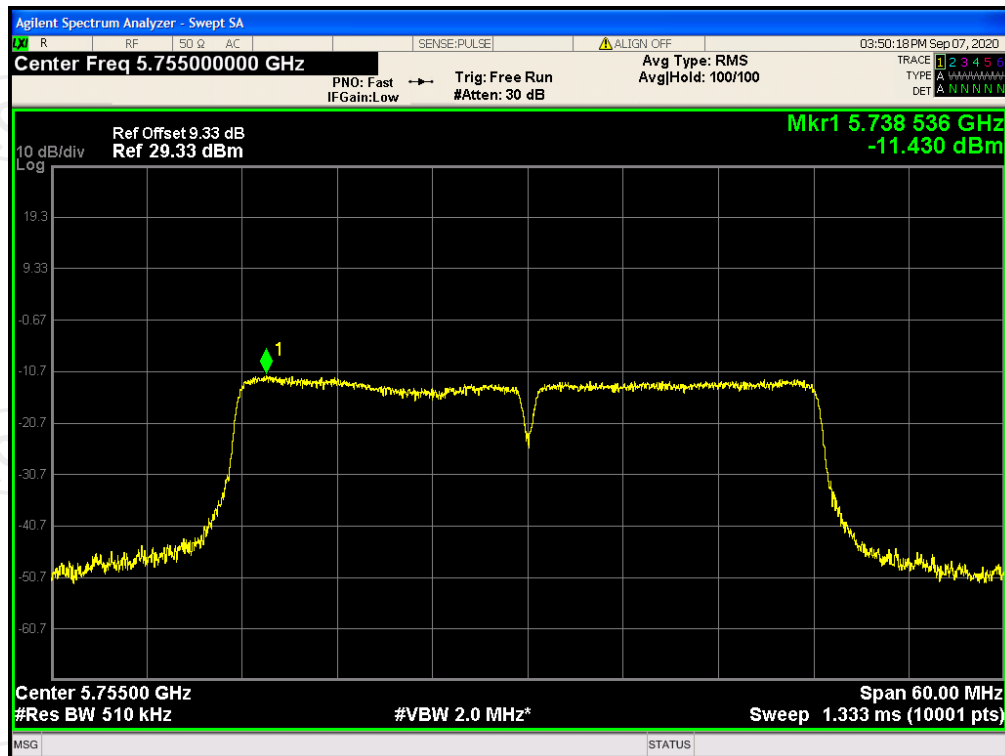
PSD NVNT 802.11ac20 5785MHz Ant1



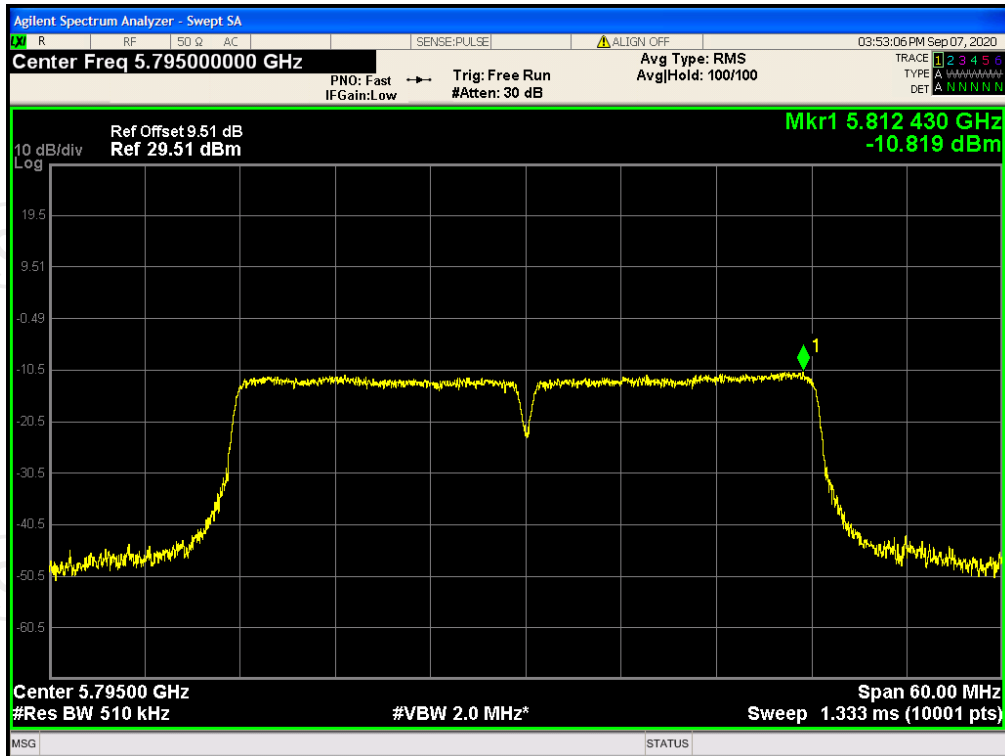
PSD NVNT 802.11ac20 5825MHz Ant1



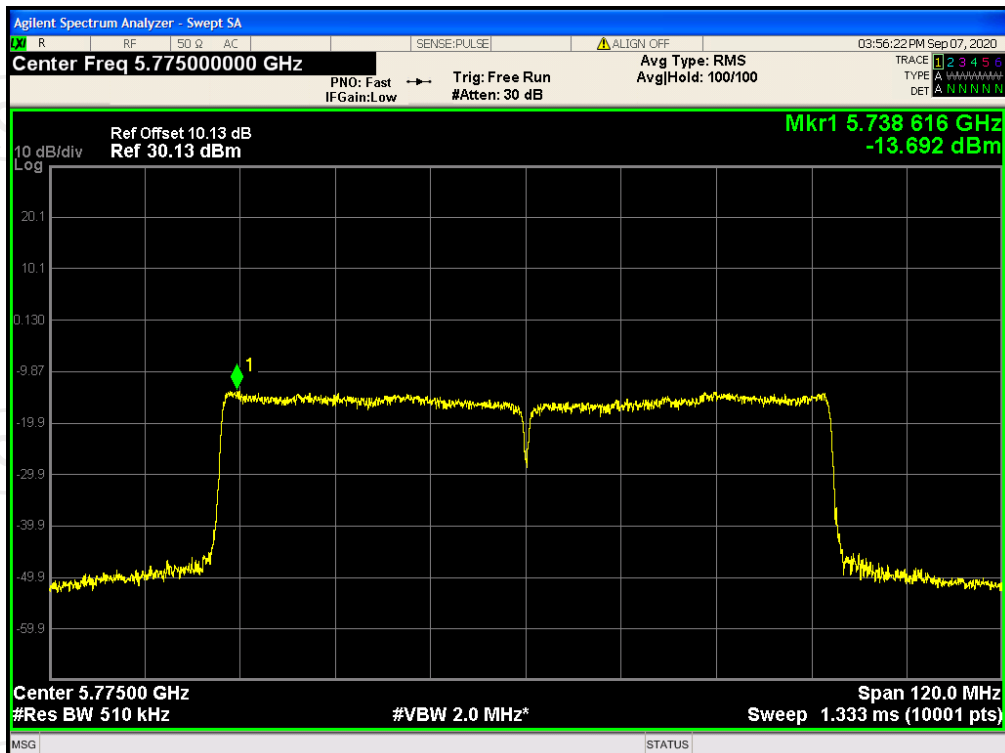
PSD NVNT 802.11ac40 5755MHz Ant1



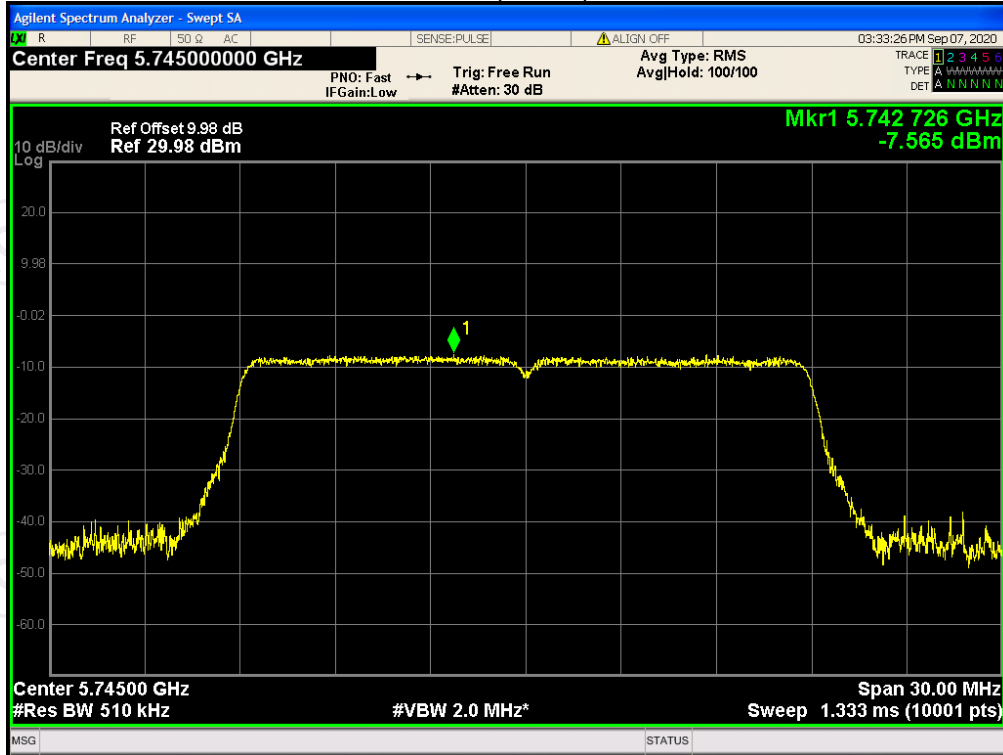
PSD NVNT 802.11ac40 5795MHz Ant1



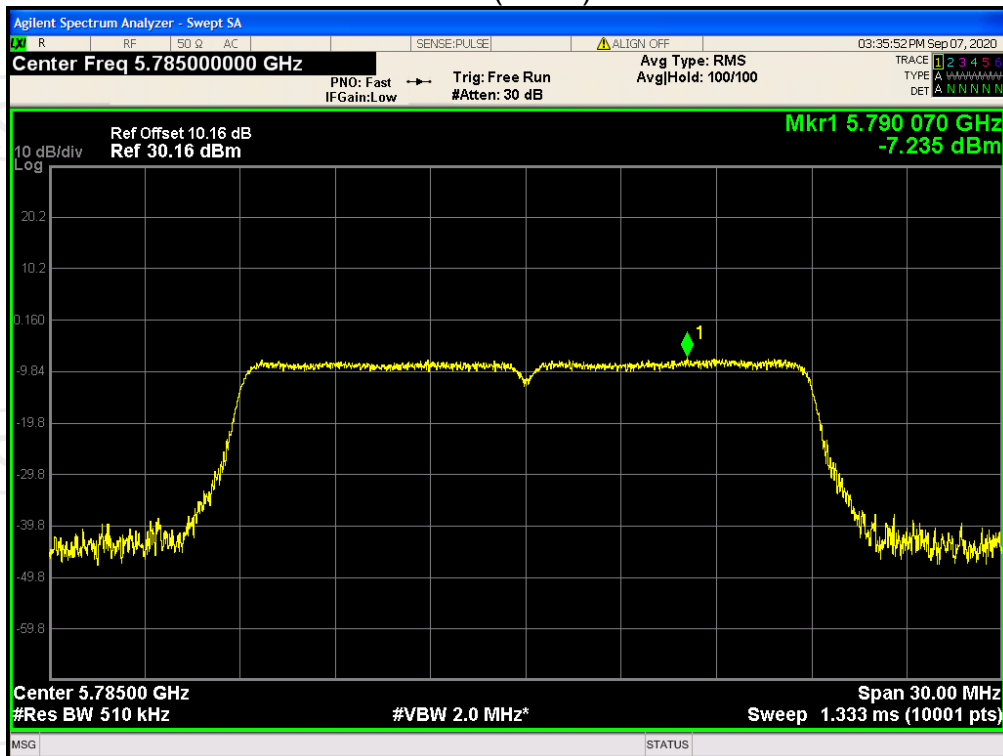
PSD NVNT 802.11ac80 5775MHz Ant1



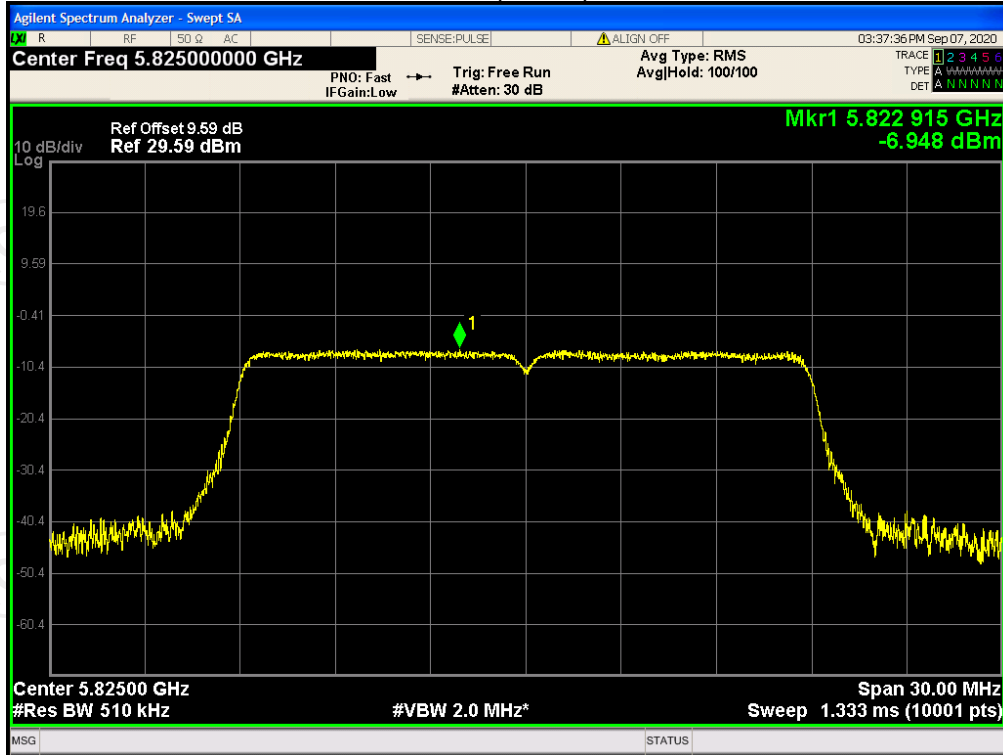
PSD NVNT 802.11n(HT20) 5745MHz Ant1



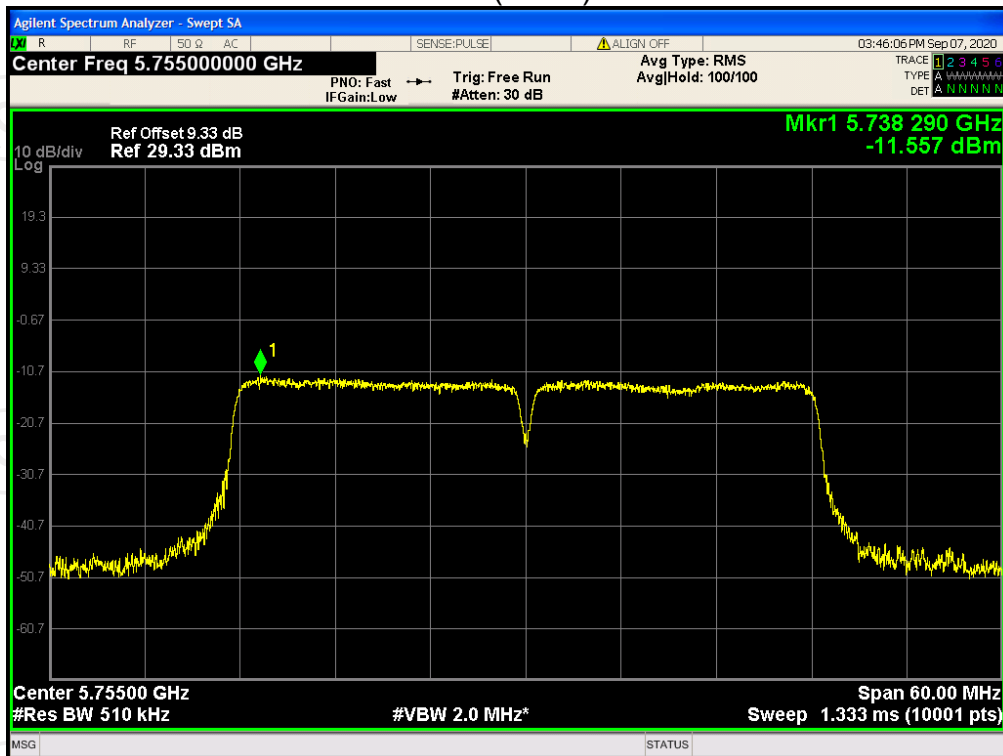
PSD NVNT 802.11n(HT20) 5785MHz Ant1



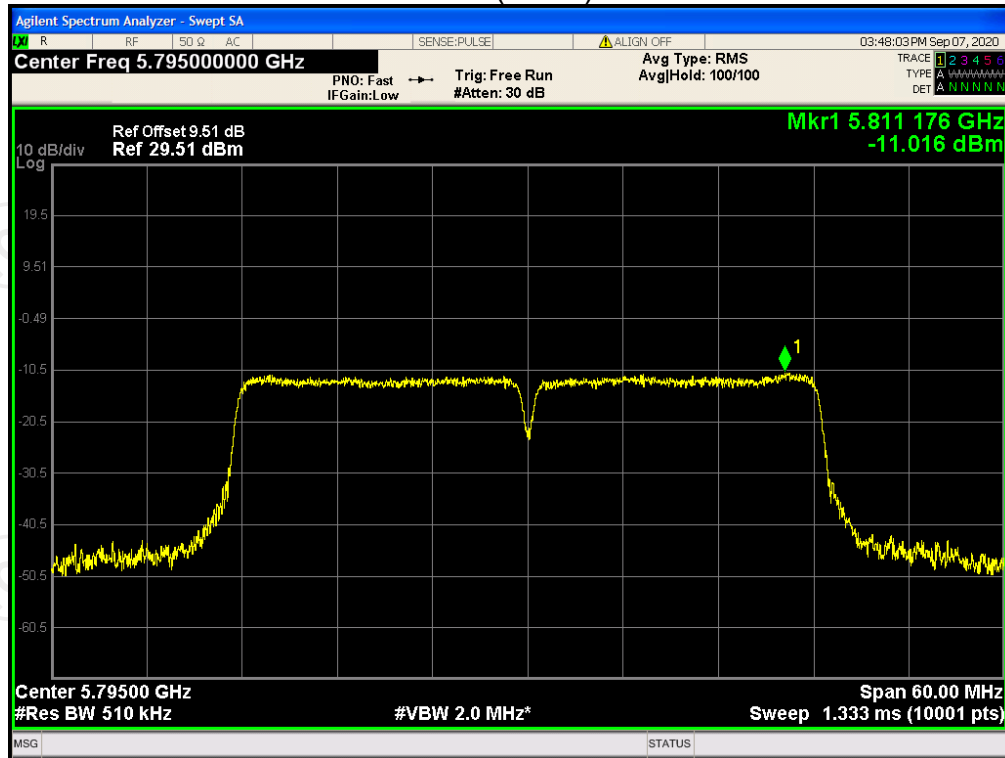
PSD NVNT 802.11n(HT20) 5825MHz Ant1



PSD NVNT 802.11n(HT40) 5755MHz Ant1



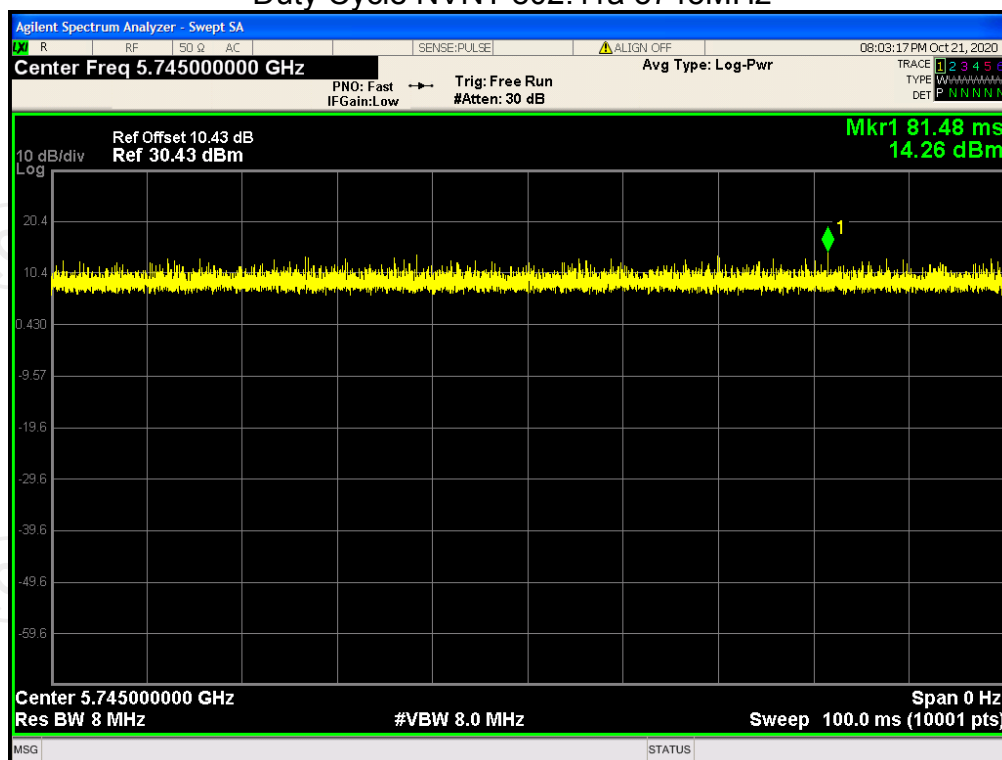
PSD NVNT 802.11n(HT40) 5795MHz Ant1



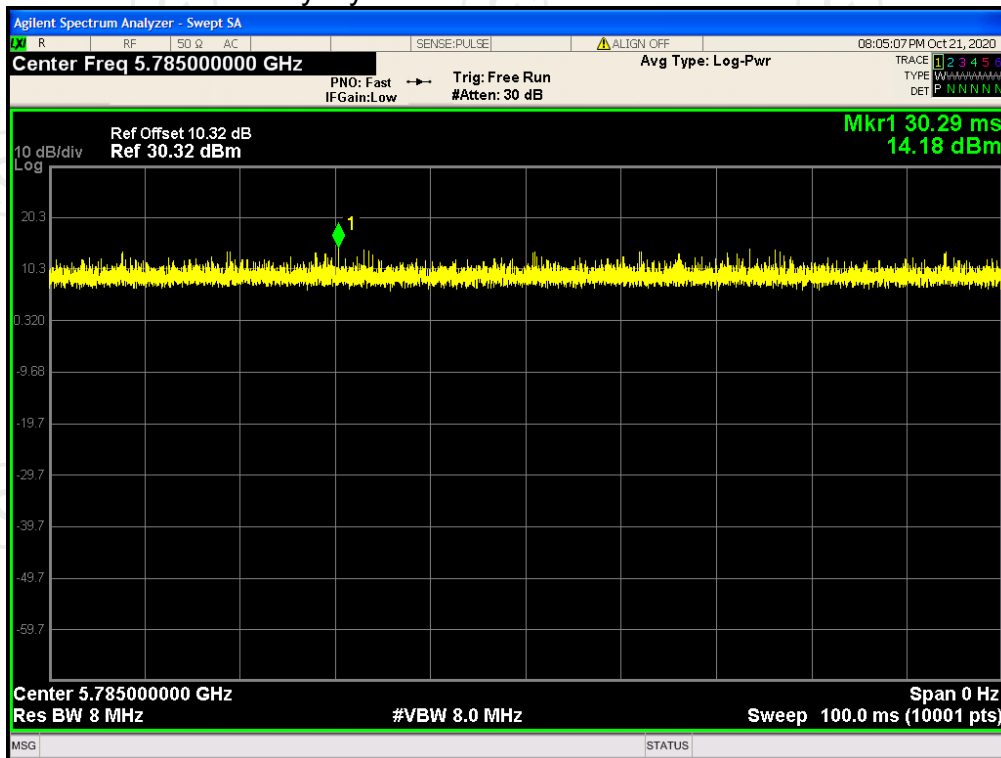
Duty Cycle

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)
NVNT	802.11a	5745	100	0
NVNT	802.11a	5785	100	0
NVNT	802.11a	5825	100	0
NVNT	802.11ac20	5745	100	0
NVNT	802.11ac20	5785	100	0
NVNT	802.11ac20	5825	100	0
NVNT	802.11ac40	5755	100	0
NVNT	802.11ac40	5795	100	0
NVNT	802.11ac80	5775	100	0
NVNT	802.11n(HT20)	5745	100	0
NVNT	802.11n(HT20)	5785	100	0
NVNT	802.11n(HT20)	5825	100	0
NVNT	802.11n(HT40)	5755	100	0
NVNT	802.11n(HT40)	5795	100	0

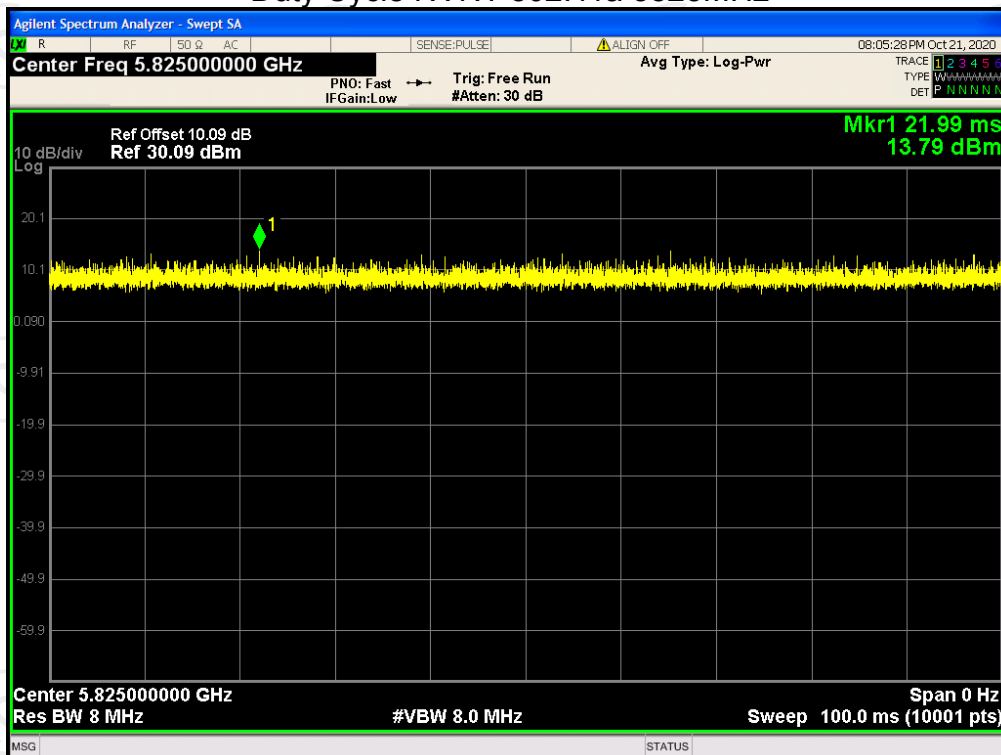
Duty Cycle NVNT 802.11a 5745MHz



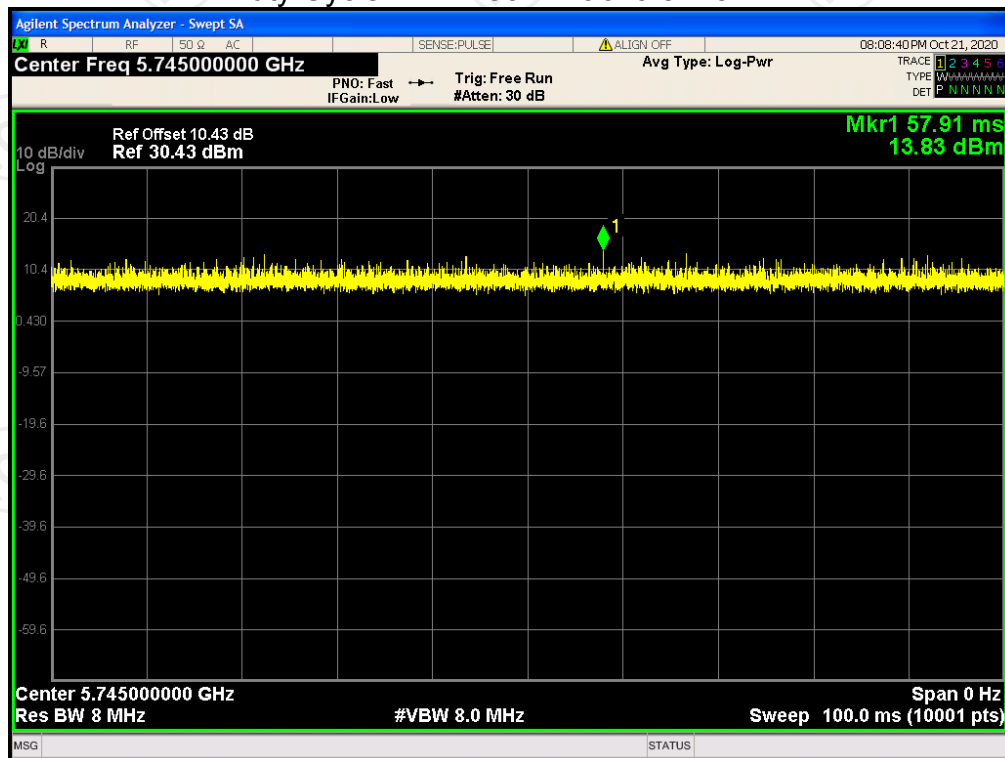
Duty Cycle NVNT 802.11a 5785MHz



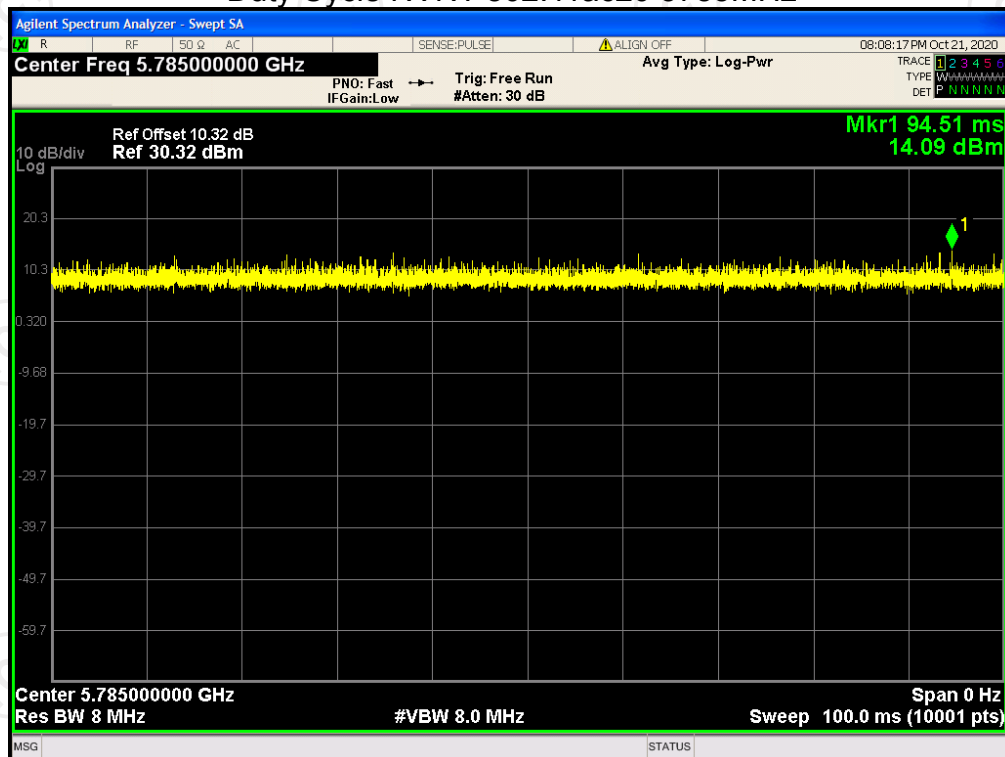
Duty Cycle NVNT 802.11a 5825MHz



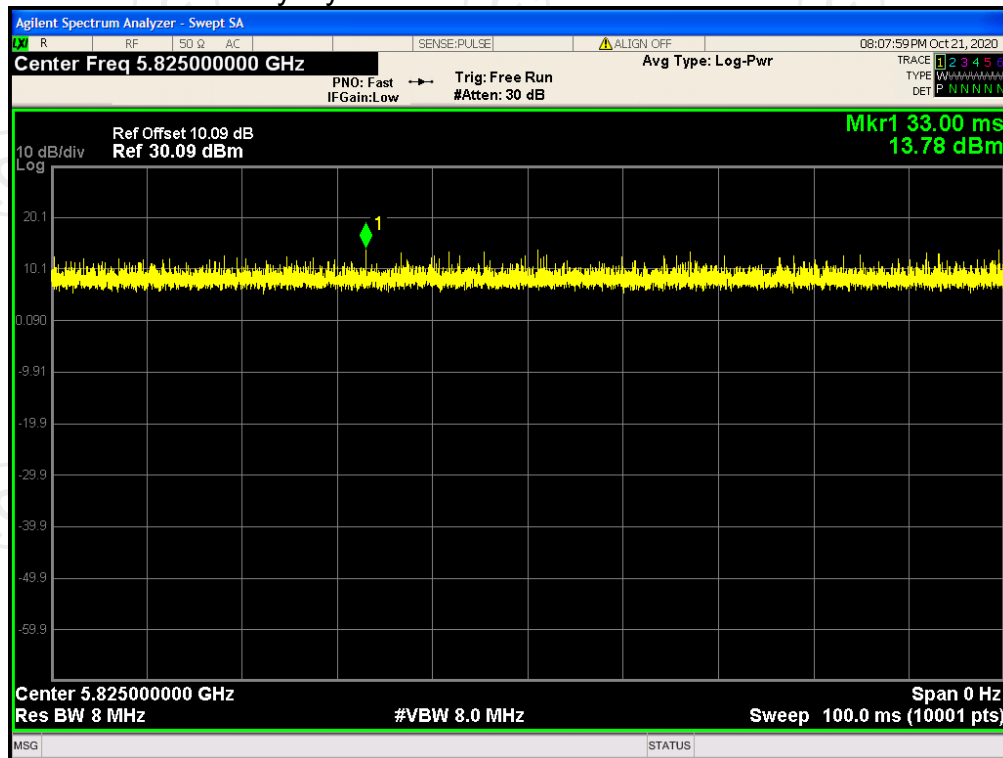
Duty Cycle NVNT 802.11ac20 5745MHz



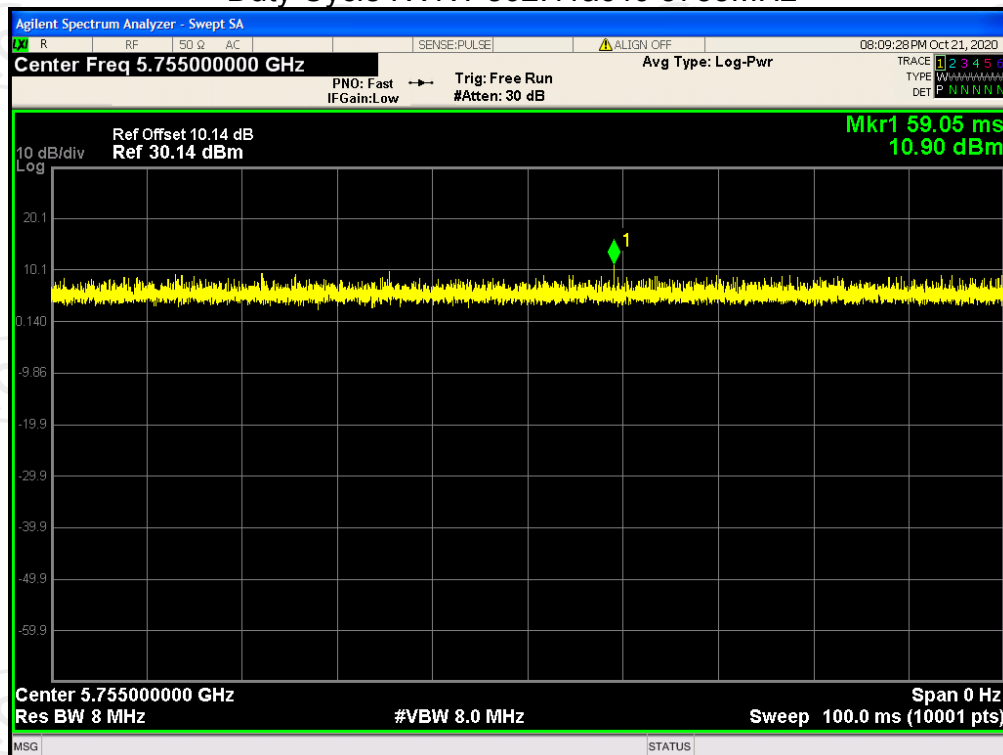
Duty Cycle NVNT 802.11ac20 5785MHz



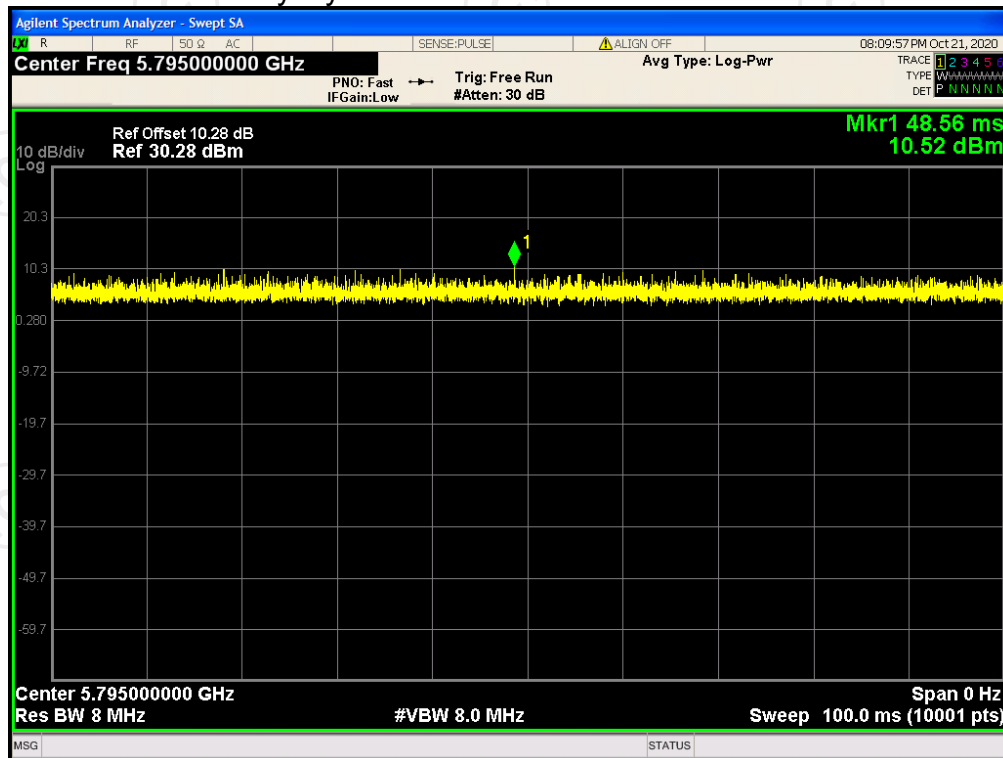
Duty Cycle NVNT 802.11ac20 5825MHz



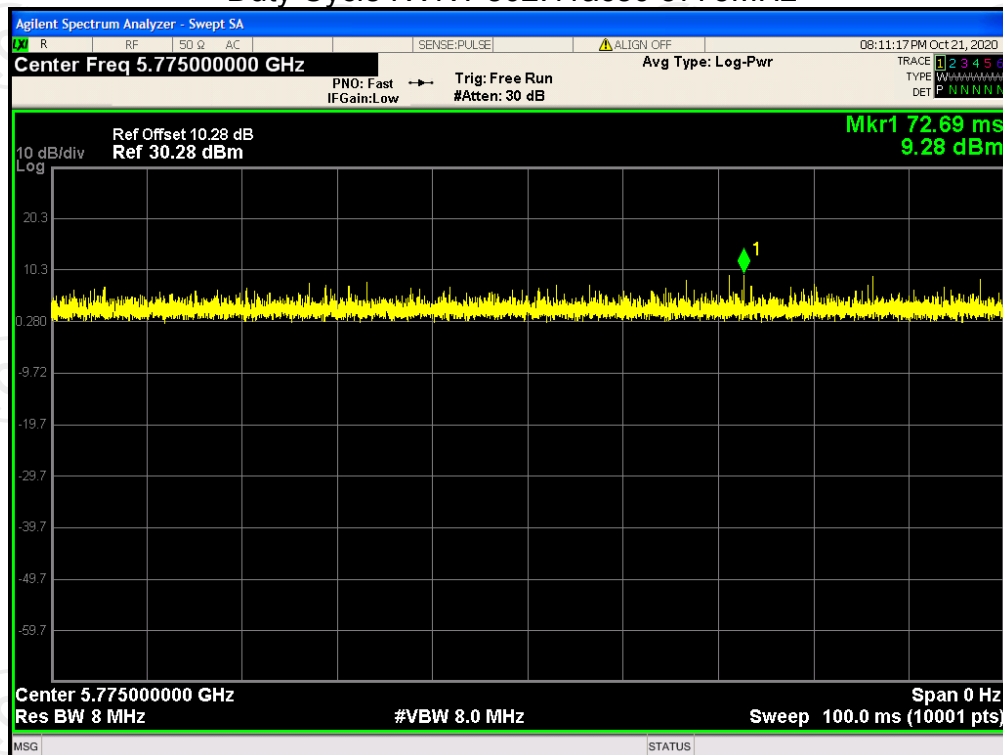
Duty Cycle NVNT 802.11ac40 5755MHz



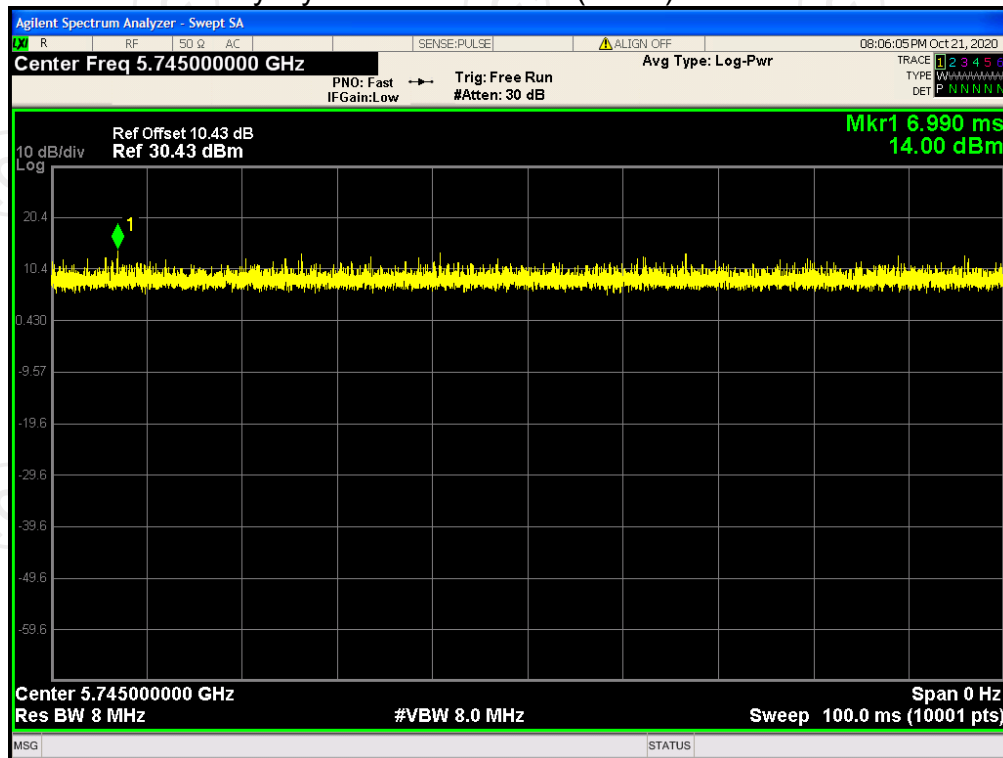
Duty Cycle NVNT 802.11ac40 5795MHz



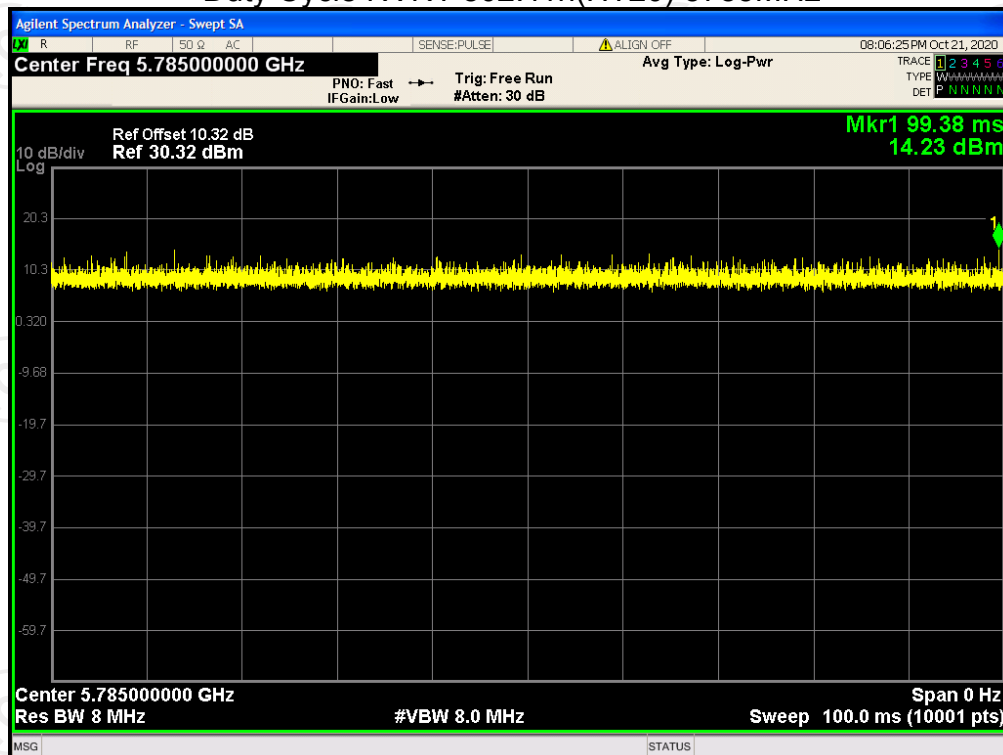
Duty Cycle NVNT 802.11ac80 5775MHz



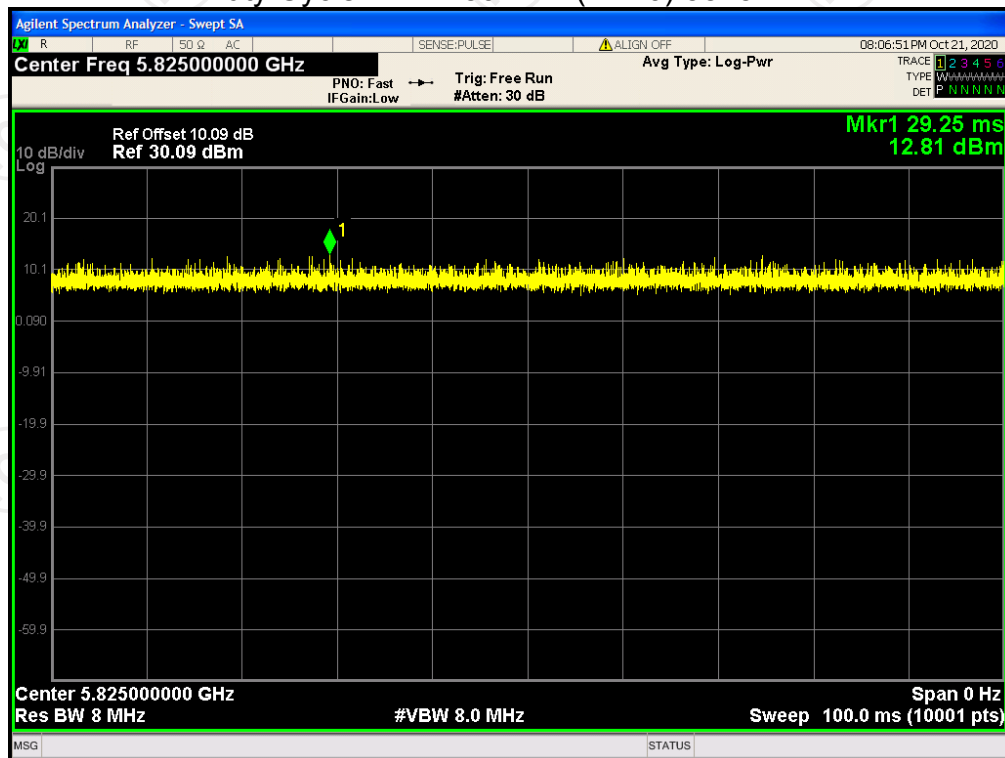
Duty Cycle NVNT 802.11n(HT20) 5745MHz



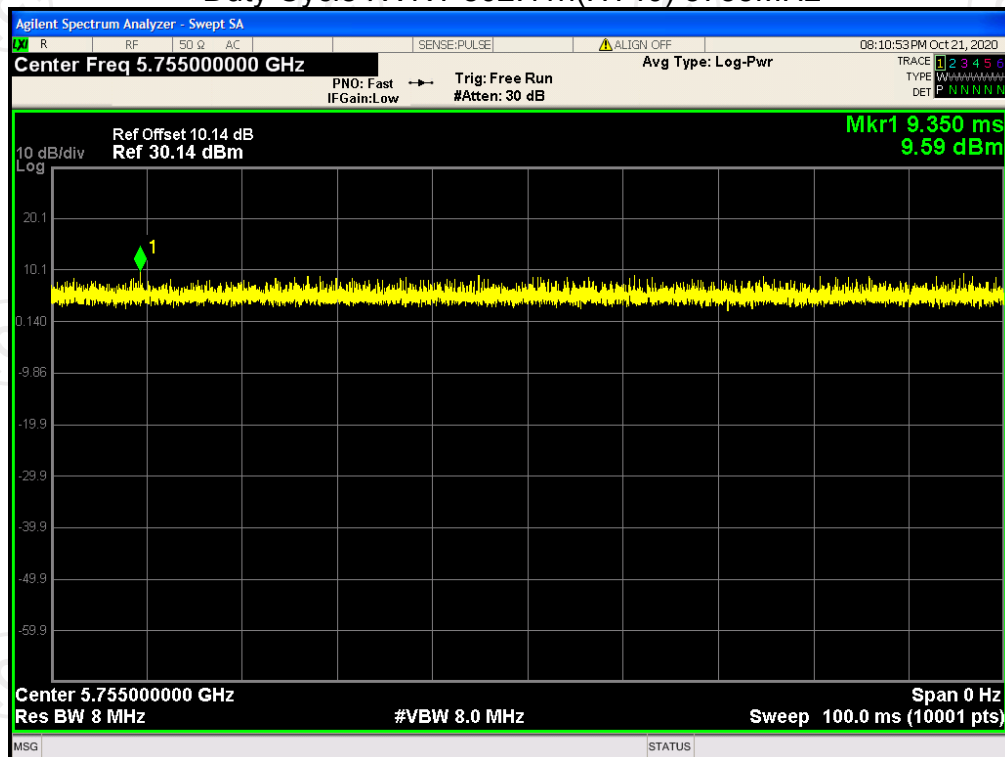
Duty Cycle NVNT 802.11n(HT20) 5785MHz



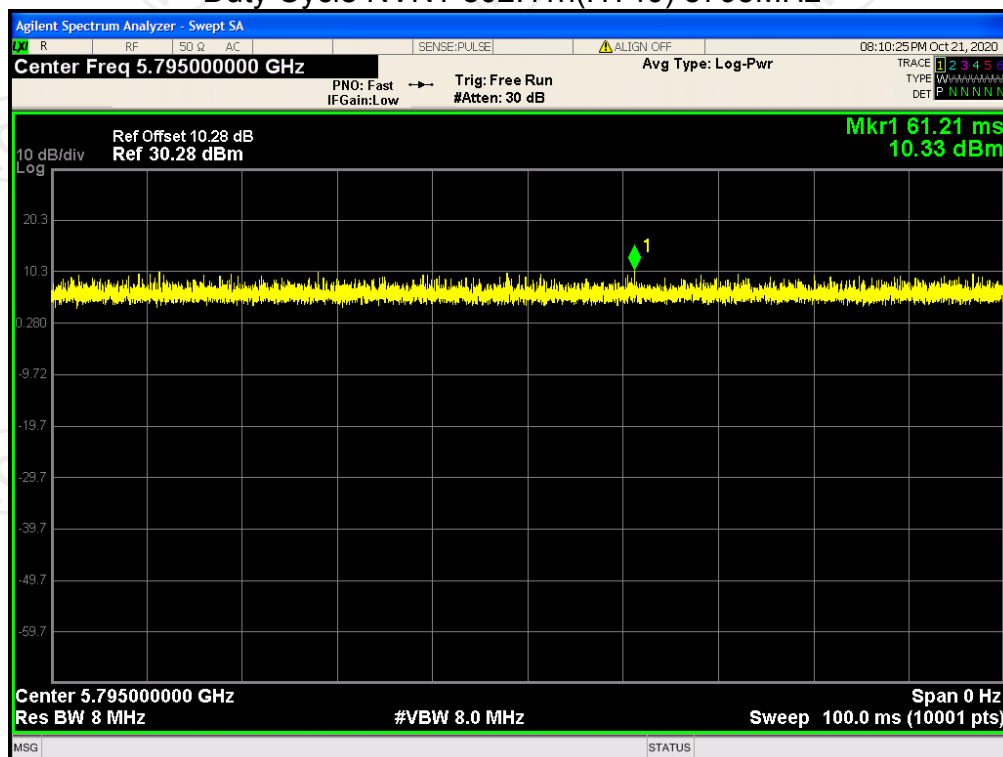
Duty Cycle NVNT 802.11n(HT20) 5825MHz



Duty Cycle NVNT 802.11n(HT40) 5755MHz



Duty Cycle NVNT 802.11n(HT40) 5795MHz



Appendix B: Photographs of Test Setup

Refer to the test report No. TCT200831E016

Appendix C: Photographs of EUT

Refer to the test report No. TCT200831E016

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