TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID: 2AG87ACM-DB-2M-R2

Product: Wi-Fi® Radio Transceiver

Model No.: ACM-DB-2M-R2

Additional Model No.: N/A

Trade Mark: N/A

Report No.: TCT201111E025

Issued Date: Dec. 21, 2020

Issued for:

Doodle Labs (SG) Pte Ltd

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

Issued By:

Shenzhen Tongce Testing Lab.

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

TEL: +86-755-27673339

FAX: +86-755-27673332

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1. Test Certification

Product:	Wi-Fi® Radio Transceiver
Model No.:	ACM-DB-2M-R2
Additional Model No.:	N/A
Trade Mark:	**N/A**
Applicant:	Doodle Labs (SG) Pte Ltd
Address:	150 Kampong Ampat, KA Center, Suite 05-03, Singapore 368324
Manufacturer:	Doodle Labs (SG) Pte Ltd
Address:	150 Kampong Ampat, KA Center, Suite 05-03, Singapore 368324
Date of Test:	Nov. 12, 2020 – Dec. 18, 2020
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2016 KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General U-NII Test Procedures New Rules v02r01

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

Tested By:  ***Date:*** ***Dec. 18, 2020***

Rleo

Reviewed By:  ***Date:*** ***Dec. 21, 2020***

Beryl Zhao

Approved By:  ***Date:*** ***Dec. 21, 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(b)	PASS
Radiated Emission	§15.407(b)	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.

5.For the band 5.15-5.25GHz,EUT meet the requirements of 15.407(a)(ii).

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3. EUT Description

Product:	Wi-Fi® Radio Transceiver
Model No.:	ACM-DB-2M-R2
Additional Model No.:	N/A
Trade Mark:	**N/A**
Operation Frequency:	Band 1: 5180 MHz -5240 MHz Band 2A: 5260 MHz -5320 MHz Band 2C: 5500 MHz -5700 MHz Band 3: 5745 MHz -5825 MHz
Channel Bandwidth:	802.11a: 20MHz 802.11n: 20MHz, 40MHz 802.11ac: 20MHz, 40MHz
Modulation Technology:	Orthogonal Frequency Division Multiplexing(OFDM)
Modulation Type	256QAM, 64QAM, 16QAM, BPSK, QPSK
Antenna Type:	External Antenna
Antenna Gain:	5dBi
Power Supply:	DC 3.3V

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 1

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

Band 2A

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

Band 2C

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

Band 3

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

Note:

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

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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 above 98%)
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(SISO)	6 Mbps
802.11n(HT20) (MIMO)	6.5 Mbps
802.11n(HT40) (MIMO)	13.5 Mbps
802.11ac(VHT20) (MIMO)	6.5 Mbps
802.11ac(VHT40) (MIMO)	13.5 Mbps
Final Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation

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4.2. Description of Support Units

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

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

Setting level of test tool

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

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

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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

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

- IC - Registration No.: 10668A-1

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

5.2. Location

Shenzhen Tongce Testing Lab.

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

TEL: +86-755-27673339

5.3. Measurement Uncertainty

The reported uncertainty of measurement y ± 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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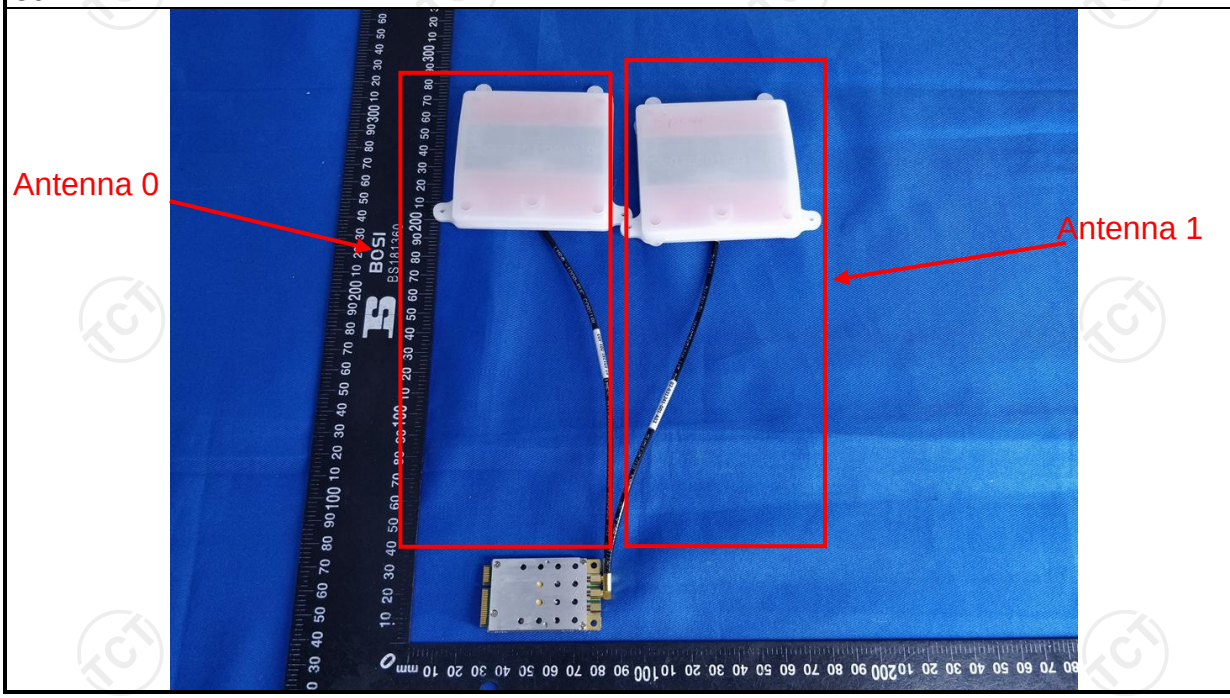
6. Test Results and Measurement Data

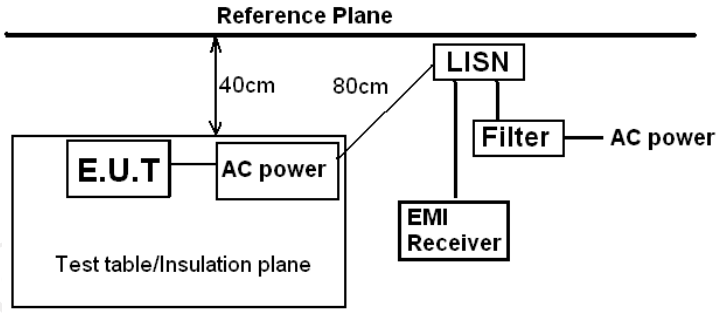
6.1. Antenna requirement

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 EUT has two external antennas, and the best case gains of the both antennas are 5dBi.	



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

6.2.2. Test Instruments

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

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

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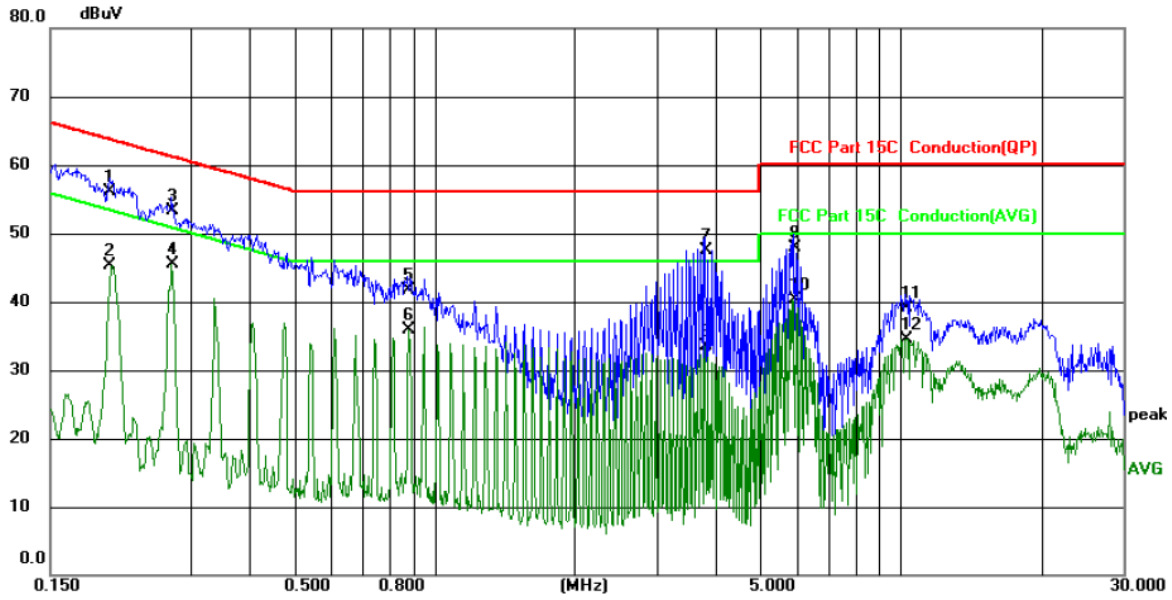
6.2.3. Test data

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)

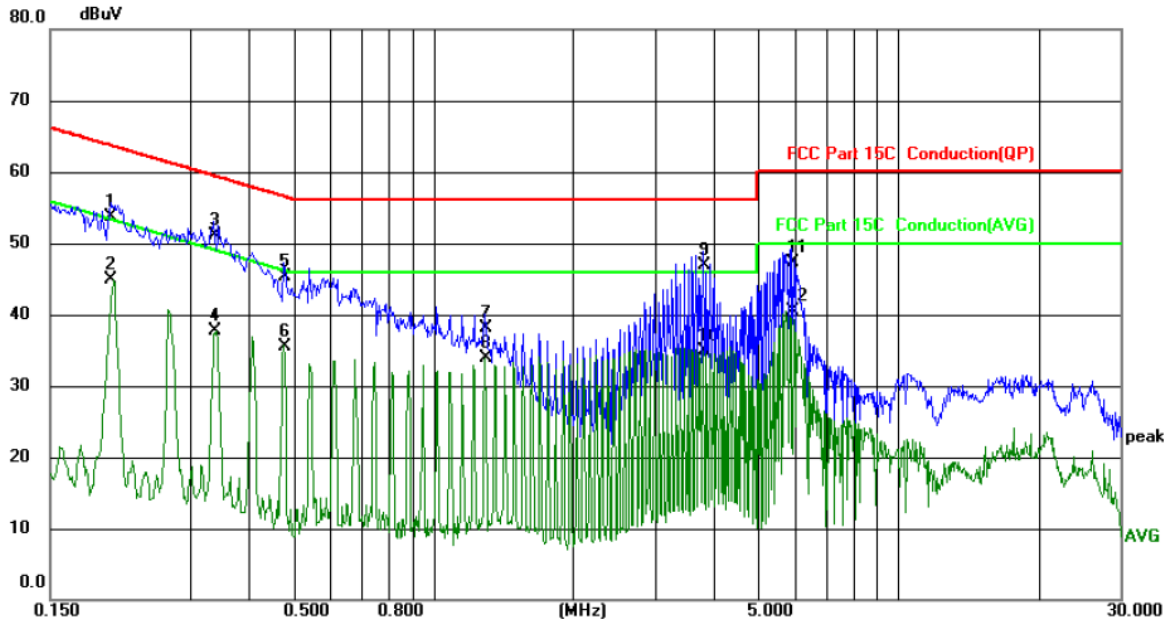
Limit: FCC Part 15C Conduction(QP) | Power: | Humidity: 55 %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2006	45.89	10.12	56.01	63.59	-7.58	QP	
2		0.2006	35.15	10.12	45.27	53.59	-8.32	AVG	
3		0.2740	43.15	10.13	53.28	61.00	-7.72	QP	
4	*	0.2740	35.43	10.13	45.56	51.00	-5.44	AVG	
5		0.8780	31.64	10.12	41.76	56.00	-14.24	QP	
6		0.8780	25.69	10.12	35.81	46.00	-10.19	AVG	
7		3.8020	37.28	10.13	47.41	56.00	-8.59	QP	
8		3.8020	23.30	10.13	33.43	46.00	-12.57	AVG	
9		5.9058	37.73	10.13	47.86	60.00	-12.14	QP	
10		5.9058	30.26	10.13	40.39	50.00	-9.61	AVG	
11		10.2500	28.94	10.15	39.09	60.00	-20.91	QP	
12		10.2500	24.41	10.15	34.56	50.00	-15.44	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.*
The test mode is MIMO.

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: | Humidity: 55 %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2020	43.54	10.13	53.67	63.53	-9.86	QP	
2		0.2020	34.69	10.13	44.82	53.53	-8.71	AVG	
3	*	0.3379	41.06	10.13	51.19	59.25	-8.06	QP	
4		0.3379	27.53	10.13	37.66	49.25	-11.59	AVG	
5		0.4778	35.11	10.13	45.24	56.38	-11.14	QP	
6		0.4778	25.47	10.13	35.60	46.38	-10.78	AVG	
7		1.2940	28.01	10.12	38.13	56.00	-17.87	QP	
8		1.2940	23.83	10.12	33.95	46.00	-12.05	AVG	
9		3.8100	36.71	10.13	46.84	56.00	-9.16	QP	
10		3.8100	24.78	10.13	34.91	46.00	-11.09	AVG	
11		5.9138	37.14	10.13	47.27	60.00	-12.73	QP	
12		5.9138	30.41	10.13	40.54	50.00	-9.46	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

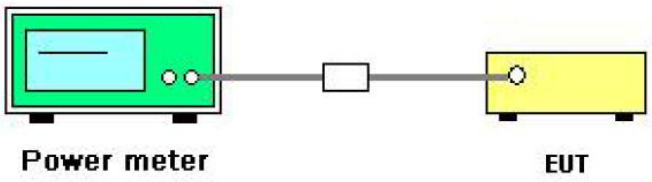
AVG =average

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

Measurements were conducted in all three channels (high, middle, low) and all modulation (802.11a, 802.11n(HT20), 802.11n(HT40), 802.11ac(VHT20), 802.11ac(VHT40), and the worst case Mode (Lowest channel and 802.11n(HT20)) was submitted only. The test mode is MIMO.

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)& Part 2 J Section 2.1046</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>5180 - 5240</td><td>30dBm(1W)</td></tr>
<tr><td>5260 - 5320</td><td>24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz</td></tr>
<tr><td>5470 - 5725</td><td>24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz</td></tr>
<tr><td>5745 - 5825</td><td>30dBm(1W)</td></tr>
</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
4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	N/A	Sep. 02, 2021
Combiner Box	Ascentest	AT890-RFB	N/A	Sep. 02, 2021

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

6.3.3. Test Data

Configuration Band 1 (5180 - 5240 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			Limit (dBm)	Result
		Ant0	Ant1	Total		
11a	CH36	18.63	18.91	/	30	PASS
11a	CH40	18.89	18.39	/	30	PASS
11a	CH48	18.71	18.17	/	30	PASS
11n(HT20)	CH36	18.74	18.93	21.85	30	PASS
11n(HT20)	CH40	18.94	18.45	21.71	30	PASS
11n(HT20)	CH48	18.80	18.15	21.50	30	PASS
11n(HT40)	CH38	18.27	18.74	21.52	30	PASS
11n(HT40)	CH46	18.58	18.70	21.65	30	PASS
11ac(VHT20)	CH36	18.46	18.95	21.72	30	PASS
11ac(VHT20)	CH40	18.73	18.83	21.79	30	PASS
11ac(VHT20)	CH48	18.85	18.61	21.74	30	PASS
11ac(VHT40)	CH38	18.27	18.36	21.33	30	PASS
11ac(VHT40)	CH46	18.55	18.69	21.63	30	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.
Directional gain = G_{ant} + *Array Gain = 5dBi, so limit of conducted output power is 1W(30dBm).*

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Configuration Band 2A (5260 - 5320 MHz) / Antenna 0+Antenna 1								
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			26 dB Bandwidth (MHz)	11dBm+ 10logB (dBm)	Limit (dBm)	Result
		Ant0	Ant1	Total				
11a	CH52	18.66	18.22	/	22.40	24.50	24	PASS
11a	CH60	18.86	18.91	/	22.00	24.42	24	PASS
11a	CH64	18.85	18.89	/	22.82	24.58	24	PASS
11n(HT20)	CH52	18.49	18.23	21.37	23.36	24.68	24	PASS
11n(HT20)	CH60	18.88	18.91	21.91	24.01	24.80	24	PASS
11n(HT20)	CH64	18.81	18.74	21.79	23.08	24.63	24	PASS
11n(HT40)	CH54	18.82	18.58	21.71	45.60	27.59	24	PASS
11n(HT40)	CH62	18.39	18.38	21.40	44.83	27.52	24	PASS
11ac(VHT20)	CH52	18.50	18.23	21.38	23.41	24.69	24	PASS
11ac(VHT20)	CH60	18.95	18.98	21.98	23.31	24.68	24	PASS
11ac(VHT20)	CH64	18.74	18.85	21.81	23.10	24.64	24	PASS
11ac(VHT40)	CH54	18.93	18.95	21.95	44.54	27.49	24	PASS
11ac(VHT40)	CH62	18.36	18.25	21.32	44.80	27.51	24	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.
Directional gain = G_{ant} + *Array Gain = 5dBi, so limit of conducted output power is 250mW(24dBm).*

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

Configuration Band 2C (5500 - 5720 MHz) / Antenna 0+Antenna 1								
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			26 dB Bandwidth (MHz)	11dBm+ 10logB (dBm)	Limit (dBm)	Result
		Ant0	Ant1	Total				
11a	CH100	18.92	18.64	/	22.07	24.44	24	PASS
11a	CH120	18.79	18.67	/	22.38	24.50	24	PASS
11a	CH144	18.81	18.72	/	22.63	24.55	24	PASS
11n(HT20)	CH100	18.98	18.52	21.77	23.32	24.68	24	PASS
11n(HT20)	CH120	18.73	18.90	21.83	22.11	24.45	24	PASS
11n(HT20)	CH144	18.52	18.60	21.57	23.04	24.62	24	PASS
11n(HT40)	CH102	18.16	18.20	21.19	45.80	27.61	24	PASS
11n(HT40)	CH118	18.90	18.70	21.81	44.67	27.50	24	PASS
11n(HT40)	CH134	18.57	18.23	21.41	43.85	27.42	24	PASS
11ac(VHT20)	CH100	18.64	18.64	21.65	23.62	24.73	24	PASS
11ac(VHT20)	CH120	18.64	18.71	21.69	23.17	24.65	24	PASS
11ac(VHT20)	CH144	18.69	18.80	21.76	22.73	24.57	24	PASS
11ac(VHT40)	CH102	18.32	18.32	21.33	44.13	27.45	24	PASS
11ac(VHT40)	CH118	18.89	18.69	21.80	45.31	27.56	24	PASS
11ac(VHT40)	CH134	18.24	18.57	21.42	45.28	27.56	24	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.
Directional gain = G_{ant} + *Array Gain = 5dBi, so limit of conducted output power is 250mW(24dBm).*

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

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Configuration Band 3 (5745 - 5825 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			Limit (dBm)	Result
		Ant0	Ant1	Total		
11a	CH149	18.48	18.50	/	30	PASS
11a	CH157	18.46	18.14	/	30	PASS
11a	CH165	18.46	18.47	/	30	PASS
11n(HT20)	CH149	18.95	18.64	21.81	30	PASS
11n(HT20)	CH157	18.24	18.85	21.57	30	PASS
11n(HT20)	CH165	18.29	18.30	21.31	30	PASS
11n(HT40)	CH151	18.60	18.13	21.38	30	PASS
11n(HT40)	CH159	18.62	18.20	21.43	30	PASS
11ac(VHT20)	CH149	18.64	18.64	21.65	30	PASS
11ac(VHT20)	CH157	18.52	18.47	21.51	30	PASS
11ac(VHT20)	CH165	18.37	18.40	21.40	30	PASS
11ac(VHT40)	CH151	18.42	18.16	21.30	30	PASS
11ac(VHT40)	CH159	18.62	18.22	21.43	30	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.
Directional gain = G_{ant} + *Array Gain = 5dBi, so limit of conducted output power is 1W(30dBm).*

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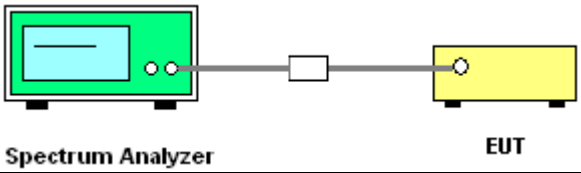
6.4. 6dB Emission Bandwidth

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 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).*

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 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) = 1% to 5% of the OBW. Set the Video bandwidth (VBW) = 3 *RBW. 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
4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	N/A	Sep. 02, 2021
Combiner Box	Ascentest	AT890-RFB	N/A	Sep. 02, 2021

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

6.6. Power Spectral Density

6.6.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section F
Limit:	≤17.00dBm/MHz for Band 5150MHz - 5250MHz ≤11.00dBm/MHz for Band 5250-5350&5470 - 5725 ≤30.00dBm/500KHz for Band 5725MHz - 5850MHz
Test Setup:	
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
4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	N/A	Sep. 02, 2021
Combiner Box	Ascentest	AT890-RFB	N/A	Sep. 02, 2021

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

6.6.3. Test data

Configuration Band 1 (5180 - 5240 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH36	1.62	3.57	/	14.99	PASS
11a	CH40	1.48	3.64	/	14.99	PASS
11a	CH48	0.32	3.00	/	14.99	PASS
11n(HT20)	CH36	1.40	3.32	5.48	14.99	PASS
11n(HT20)	CH40	1.13	3.50	5.49	14.99	PASS
11n(HT20)	CH48	0.14	2.60	4.55	14.99	PASS
11n(HT40)	CH38	-1.44	-0.37	2.14	14.99	PASS
11n(HT40)	CH46	1.10	-0.80	3.26	14.99	PASS
11ac(VHT20)	CH36	1.35	3.20	5.38	14.99	PASS
11ac(VHT20)	CH40	1.18	3.46	5.48	14.99	PASS
11ac(VHT20)	CH48	0.09	2.64	4.56	14.99	PASS
11ac(VHT40)	CH38	2.02	-0.46	3.96	14.99	PASS
11ac(VHT40)	CH46	1.10	-1.15	3.13	14.99	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power spectral density (PSD) measurements on all devices,
Array Gain = 10 log(N_{ANT}/N_{SS}) dB.
Directional gain = G_{ant} + *Array Gain = 8.01dBi, 8.01dBi > 6dBi, so limit of power spectral density is 17 - (8.01-6) = 14.99.*

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Configuration Band 2A (5260-5320MHz) /Antenna 0+Antenna 1						
Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH52	3.98	2.41	/	8.99	PASS
11a	CH60	2.99	0.75	/	8.99	PASS
11a	CH64	2.48	0.64	/	8.99	PASS
11n(HT20)	CH52	3.21	2.13	5.71	8.99	PASS
11n(HT20)	CH60	2.40	0.26	4.47	8.99	PASS
11n(HT20)	CH64	2.20	0.16	4.31	8.99	PASS
11n(HT40)	CH54	0.68	-2.43	2.41	8.99	PASS
11n(HT40)	CH62	-1.20	-3.18	0.93	8.99	PASS
11ac(VHT20)	CH52	3.55	1.82	5.78	8.99	PASS
11ac(VHT20)	CH60	2.51	0.21	4.52	8.99	PASS
11ac(VHT20)	CH64	2.25	0.23	4.37	8.99	PASS
11ac(VHT40)	CH54	0.71	-1.94	2.59	8.99	PASS
11ac(VHT40)	CH62	-1.19	-3.55	0.80	8.99	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power spectral density (PSD) measurements on all devices,
Array Gain = 10 log(N_{ANT}/N_{SS}) dB.
Directional gain = G_{ant} + *Array Gain = 8.01dBi, 8.01dBi > 6dBi, so limit of power spectral density is 11 - (8.01-6) = 8.99.*

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Configuration Band 2C (5500-5720 MHz) /Antenna 0+Antenna 1						
Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH100	1.89	4.72	/	8.99	PASS
11a	CH120	2.15	4.36	/	8.99	PASS
11a	CH144	0.93	2.71	/	8.99	PASS
11n(HT20)	CH100	-3.67	2.84	3.72	8.99	PASS
11n(HT20)	CH120	1.83	4.10	6.12	8.99	PASS
11n(HT20)	CH144	0.70	3.16	5.11	8.99	PASS
11n(HT40)	CH102	-6.83	-1.28	-0.21	8.99	PASS
11n(HT40)	CH118	-2.15	2.28	3.62	8.99	PASS
11n(HT40)	CH134	-2.04	1.77	3.28	8.99	PASS
11ac(VHT20)	CH100	-3.63	0.87	2.19	8.99	PASS
11ac(VHT20)	CH120	1.79	2.06	4.94	8.99	PASS
11ac(VHT20)	CH144	0.69	2.11	4.47	8.99	PASS
11ac(VHT40)	CH102	-6.26	-1.36	-0.14	8.99	PASS
11ac(VHT40)	CH118	-2.01	1.88	3.37	8.99	PASS
11ac(VHT40)	CH134	-2.00	1.77	3.29	8.99	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power spectral density (PSD) measurements on all devices,
Array Gain = 10 log(N_{ANT}/N_{SS}) dB.
Directional gain = G_{ant} + *Array Gain = 8.01dBi, 8.01dBi > 6dBi, so limit of power spectral density is 11 - (8.01-6) = 8.99.*

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Configuration Band 3(5745-5825MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH52	6.64	6.05	/	27.99	PASS
11a	CH60	6.11	5.37	/	27.99	PASS
11a	CH64	6.21	5.17	/	27.99	PASS
11n(HT20)	CH52	6.02	5.63	8.84	27.99	PASS
11n(HT20)	CH60	6.14	5.16	8.69	27.99	PASS
11n(HT20)	CH64	5.26	4.76	8.03	27.99	PASS
11n(HT40)	CH54	3.54	2.92	6.25	27.99	PASS
11n(HT40)	CH62	2.94	2.86	5.91	27.99	PASS
11ac(VHT20)	CH52	6.40	6.37	9.40	27.99	PASS
11ac(VHT20)	CH60	5.89	5.82	8.87	27.99	PASS
11ac(VHT20)	CH64	5.11	5.11	8.12	27.99	PASS
11ac(VHT40)	CH54	3.68	3.30	6.50	27.99	PASS
11ac(VHT40)	CH62	3.29	2.91	6.11	27.99	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power spectral density (PSD) measurements on all devices,
Array Gain = 10 log(N_{ANT}/N_{SS}) dB.
Directional gain = G_{ant} + *Array Gain = 8.01dBi, 8.01dBi > 6dBi, so limit of power spectral density is 30 - (8.01-6) = 27.99.*

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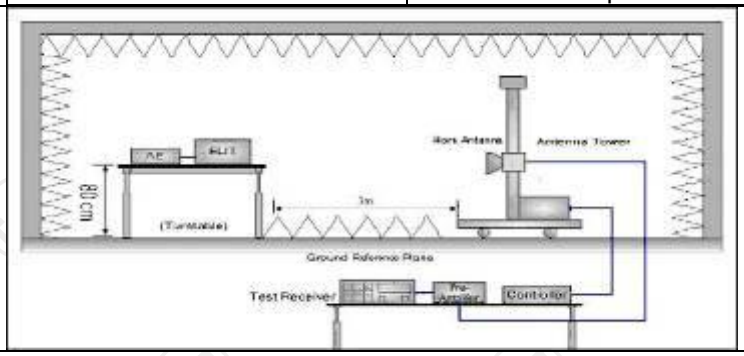
6.7. Band edge

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 1&2A&2C: -27dBm/MHz
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</td></tr>
</table>

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

6.7.2. Test Instruments

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

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

6.7.3. Test Data

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 1 & Band 2A	Lowest	5150	42.48	5.82	48.30	74	54	-5.70	H
		5150	38.24	5.82	44.06	74	54	-9.94	V
	Highest	5350	41.70	6.52	48.22	74	54	-5.78	H
		5350	39.39	6.52	45.91	74	54	-8.09	V
Band 2C & Band 3	Lowest	5470	53.51	5.82	59.33	68.2	/	-8.87	H
		5470	47.92	5.82	53.74	68.2	/	-14.46	V
	Highest	5850	65.69	6.52	72.21	112.2	/	-39.99	H
		5850	62.18	6.52	68.70	112.2	/	-43.50	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 1 &Band 2A	Lowest	5150	41.83	6.96	48.79	74	54	-5.21	H
		5150	40.94	6.96	47.90	74	54	-6.10	V
	Highest	5350	36.55	8.21	44.76	74	54	-9.24	H
		5350	38.69	8.21	46.90	74	54	-7.10	V
Band 2C & Band 3	Lowest	5470	52.56	8.21	60.77	68.2	/	-7.43	H
		5470	48.94	8.21	57.15	68.2	/	-11.05	V
	Highest	5850	62.05	8.87	70.92	112.2	/	-41.28	H
		5850	59.98	8.87	68.85	112.2	/	-43.35	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

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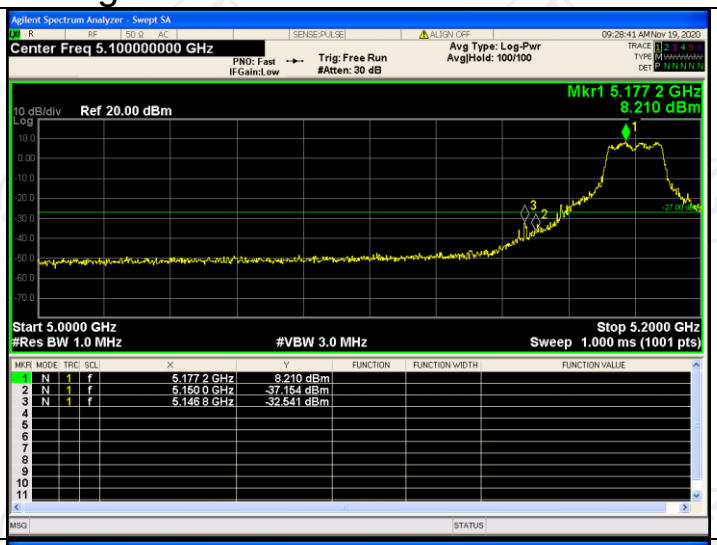
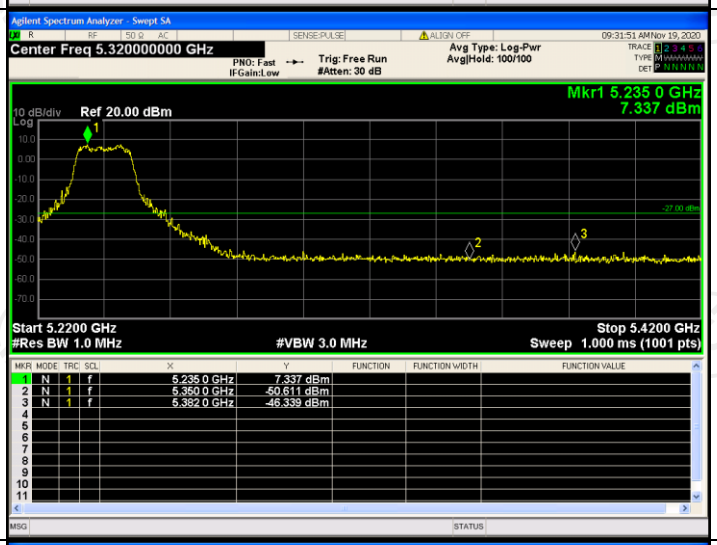
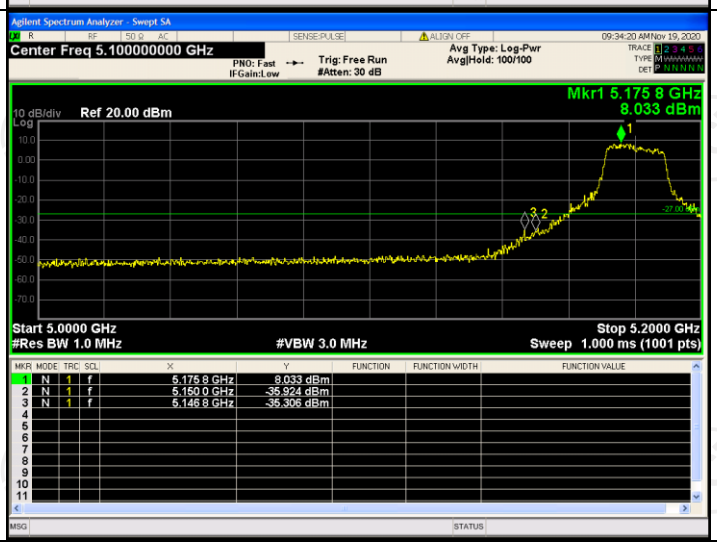
802.11 n HT40	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 1 &Band 2A	Lowest	5150	42.91	5.82	48.73	74	54	-5.27	H
		5150	38.59	5.82	44.41	74	54	-9.59	V
	Highest	5350	42.05	6.52	48.57	74	54	-5.43	H
		5350	39.13	6.52	45.65	74	54	-8.35	V
Band 2C & Band 3	Lowest	5470	53.64	5.82	59.46	68.2	/	-8.74	H
		5470	48.02	5.82	53.84	68.2	/	-14.36	V
	Highest	5850	64.71	6.52	71.23	112.2	/	-40.97	H
		5850	62.06	6.52	68.58	112.2	/	-43.62	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

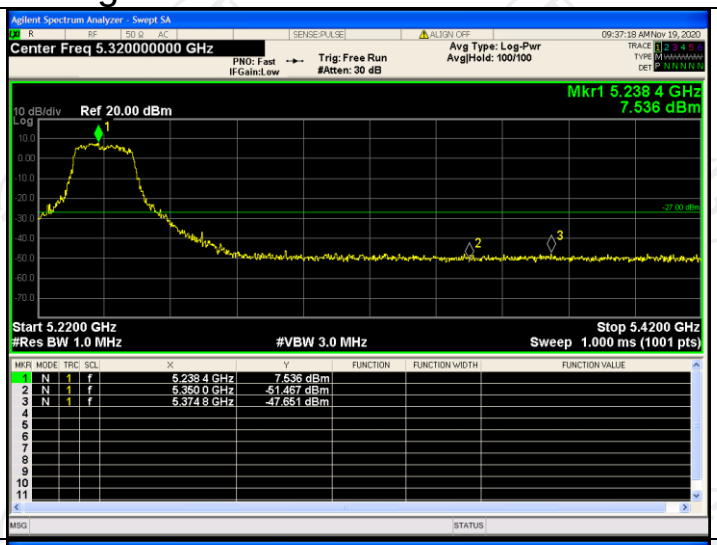
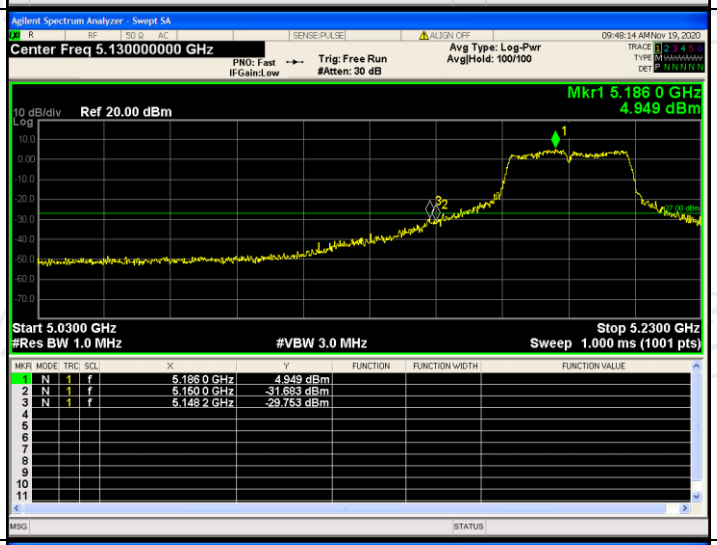
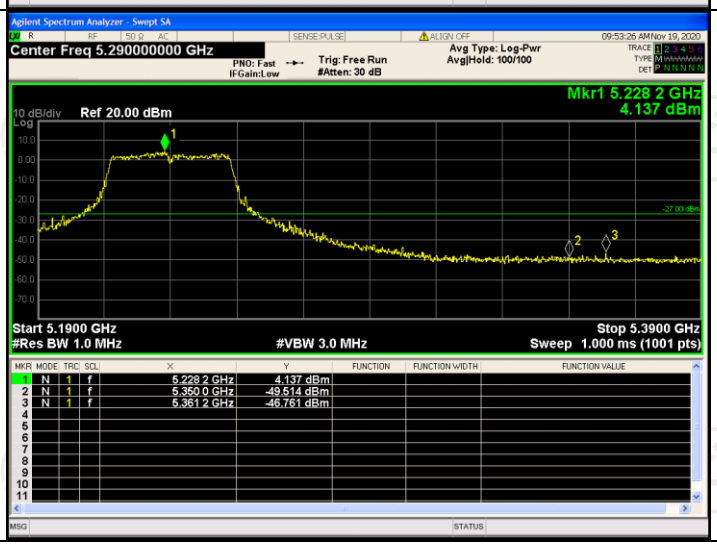
802.11 ac HT20	CH	Freq. (MHz)	Read_level (dBuV/m)	Factor (dB)	Peak (dBuV/m)	Limit (dBuV/m) (Peak)	Limit (dBuV/m) (Avg)	Over	Ant. Pol. H/V
Band 1 &Band 2A	Lowest	5150	42.77	6.96	49.73	74	54	-4.27	H
		5150	40.85	6.96	47.81	74	54	-6.19	V
	Highest	5350	36.14	8.21	44.35	74	54	-9.65	H
		5350	38.83	8.21	47.04	74	54	-6.96	V
Band 2C & Band 3	Lowest	5470	51.59	8.21	59.80	68.2	/	-8.40	H
		5470	46.85	8.21	55.06	68.2	/	-13.14	V
	Highest	5850	61.73	8.87	70.60	112.2	/	-41.60	H
		5850	59.52	8.87	68.39	112.2	/	-43.81	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 1 &Band 2A	Lowest	5150	43.10	5.82	48.92	74	54	-5.08	H
		5150	38.58	5.82	44.40	74	54	-9.60	V
	Highest	5350	42.49	6.52	49.01	74	54	-4.99	H
		5350	39.65	6.52	46.17	74	54	-7.83	V
Band 2C & Band 3	Lowest	5470	53.52	5.82	59.34	68.2	/	-8.86	H
		5470	47.70	5.82	53.52	68.2	/	-14.68	V
	Highest	5850	65.41	6.52	71.93	112.2	/	-40.27	H
		5850	62.29	6.52	68.81	112.2	/	-43.39	V
Remark: Factor(dB)=Ant. Factor+Cable Loss-Amp. Factor									

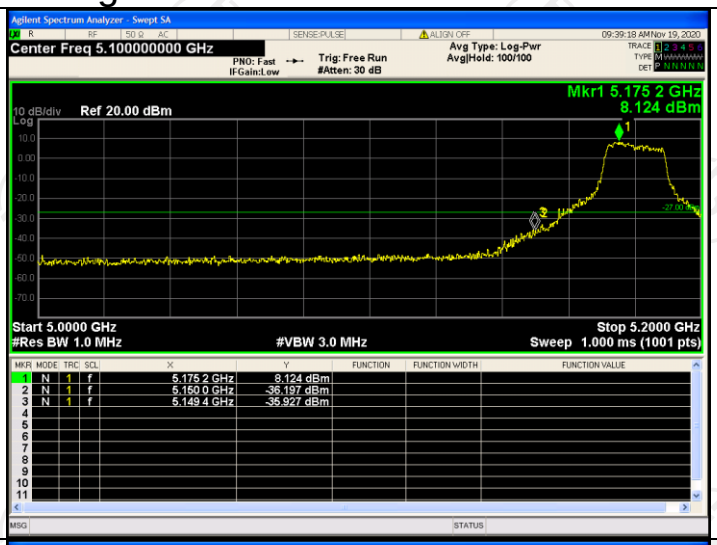
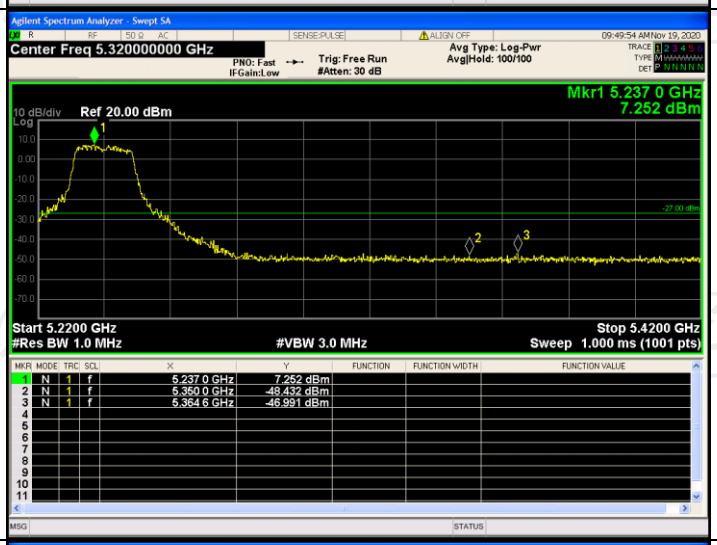
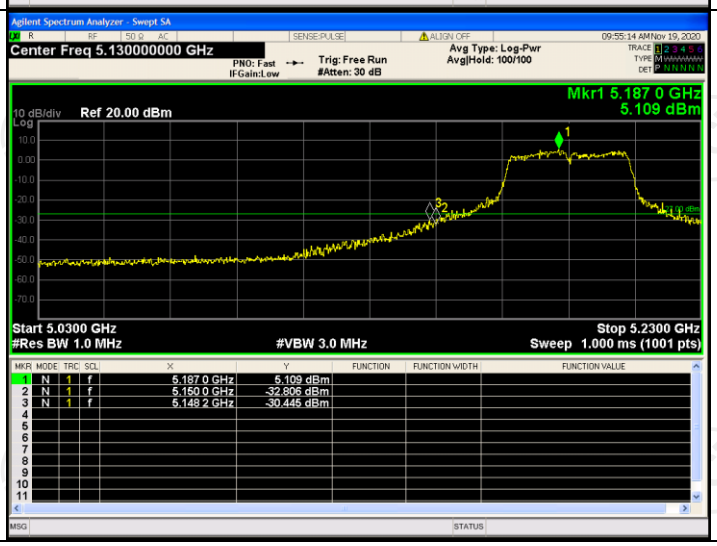
Band 1 Band-edge for RF Conducted Emissions

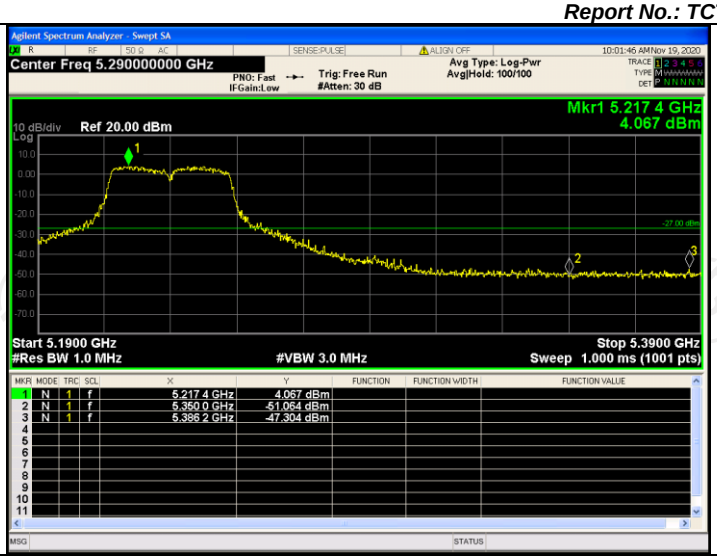
802.11a /LCH		
802.11a /HCH		
802.11n HT20 / LCH		

Band 1 Band-edge for RF Conducted Emissions

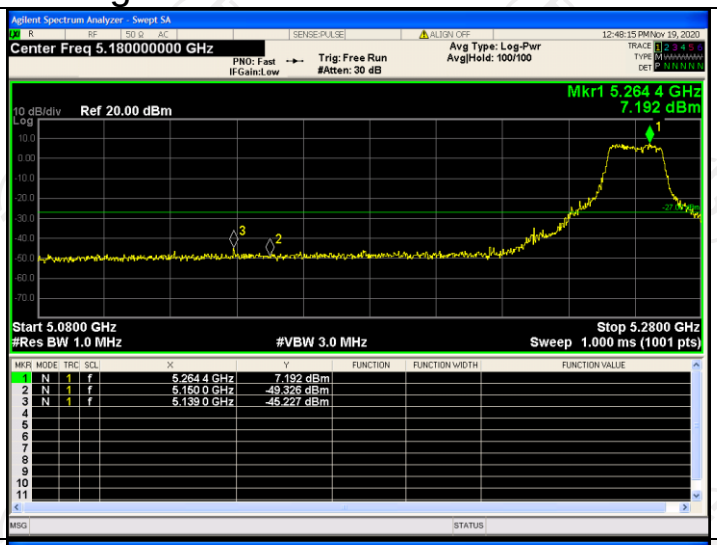
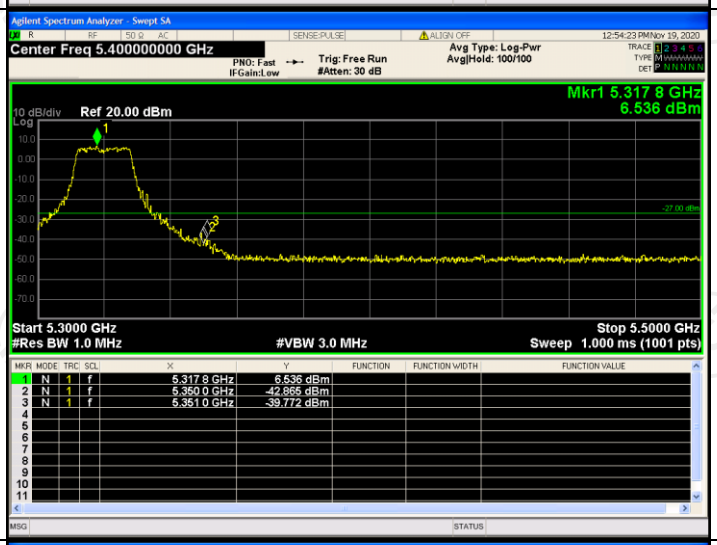
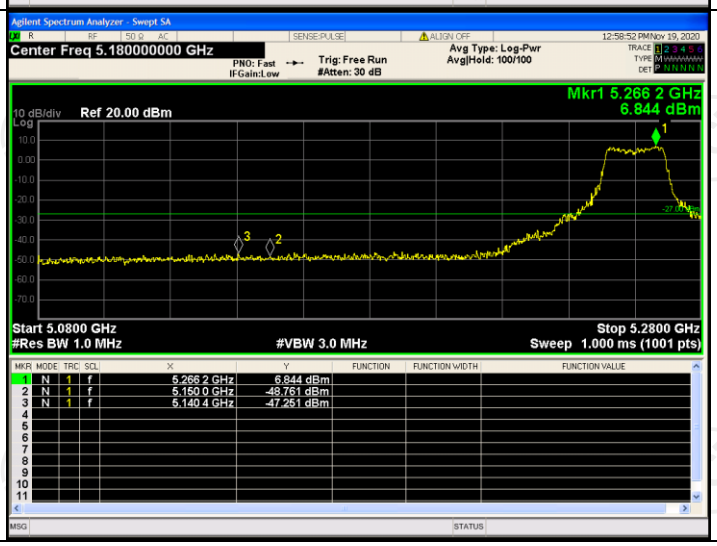
802.11n HT20 / HCH		
802.11n HT40 /LCH		
802.11n HT40 /HCH		

Band 1 Band-edge for RF Conducted Emissions

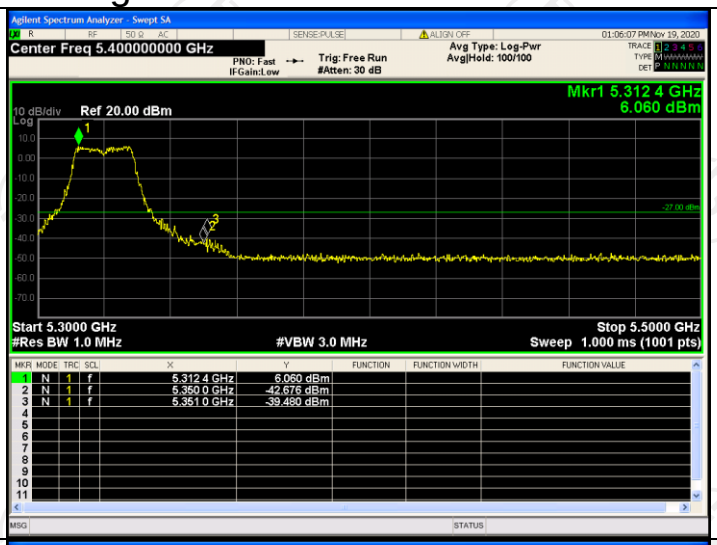
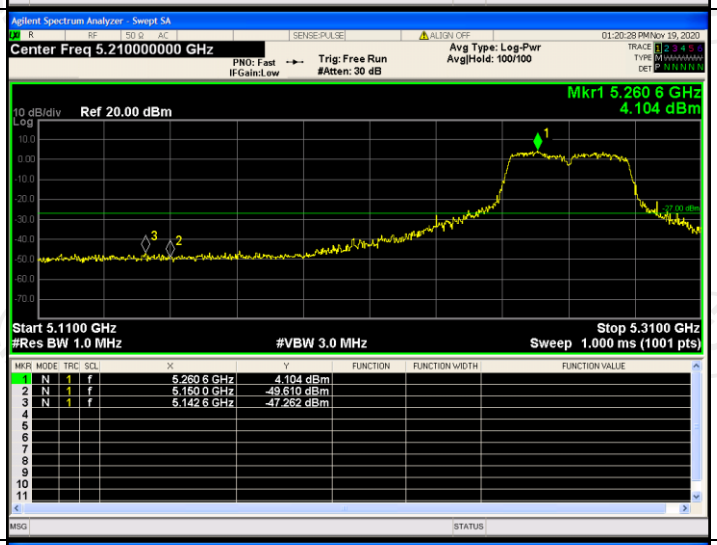
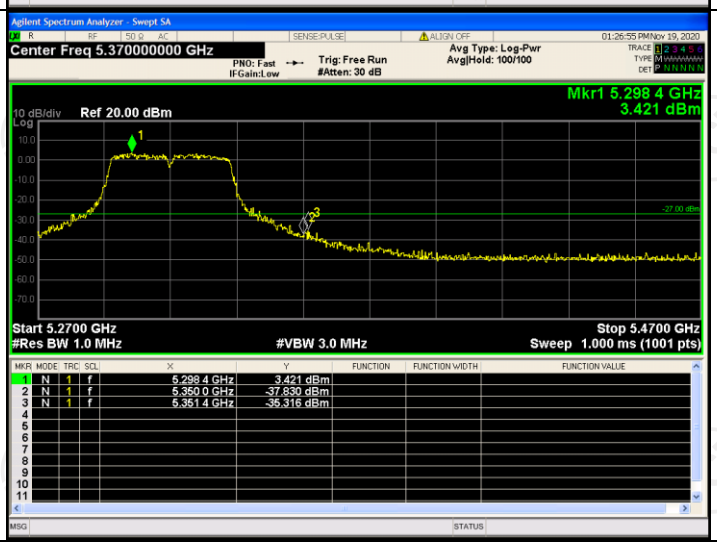
802.11ac HT20 / LCH		
802.11ac HT20 / HCH		
802.11ac HT40 / LCH		

802.11ac HT40 / HCH		

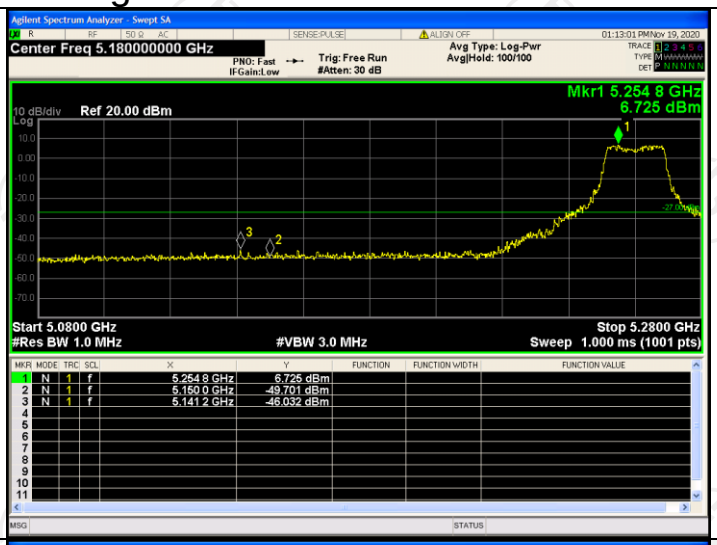
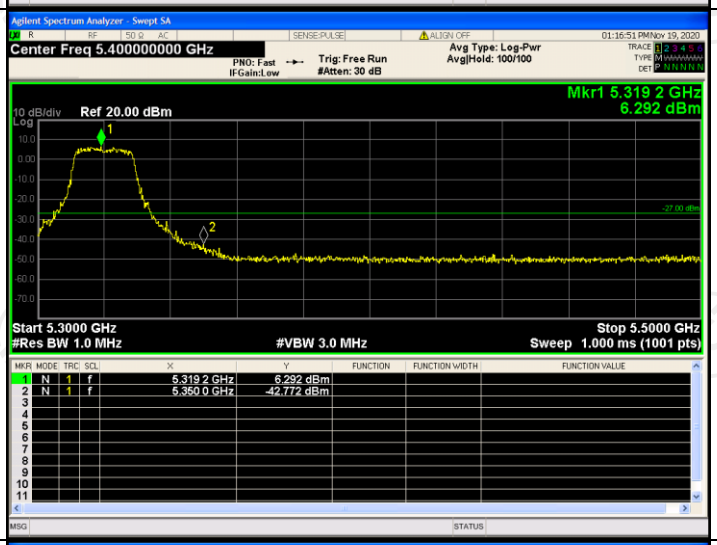
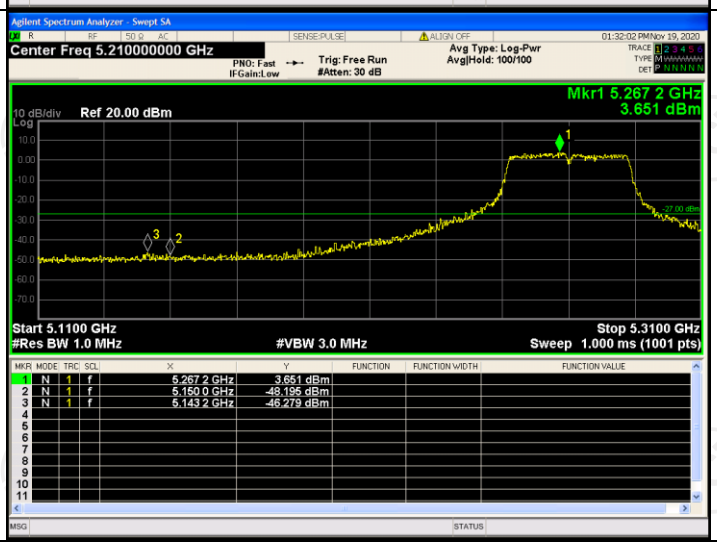
Band 2A Band-edge for RF Conducted Emissions

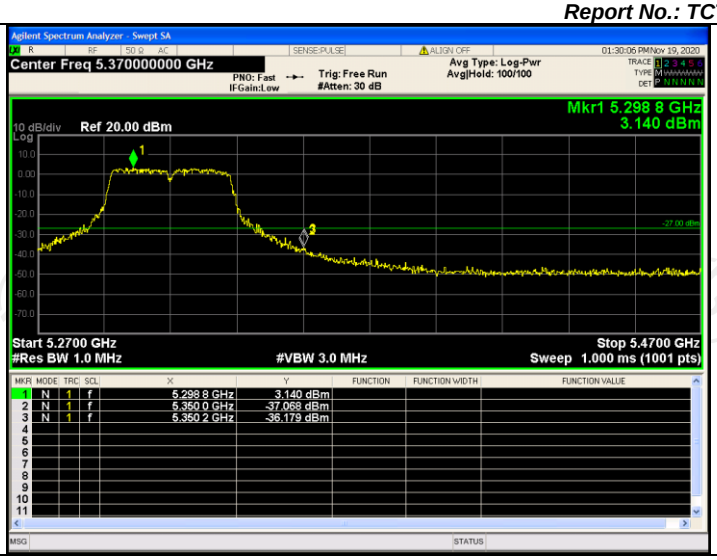
802.11a /LCH		
802.11a /HCH		
802.11n HT20 / LCH		

Band 2A Band-edge for RF Conducted Emissions

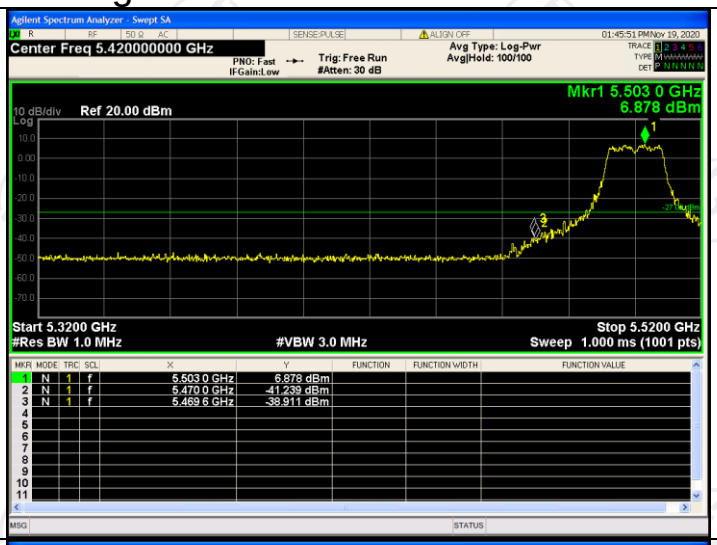
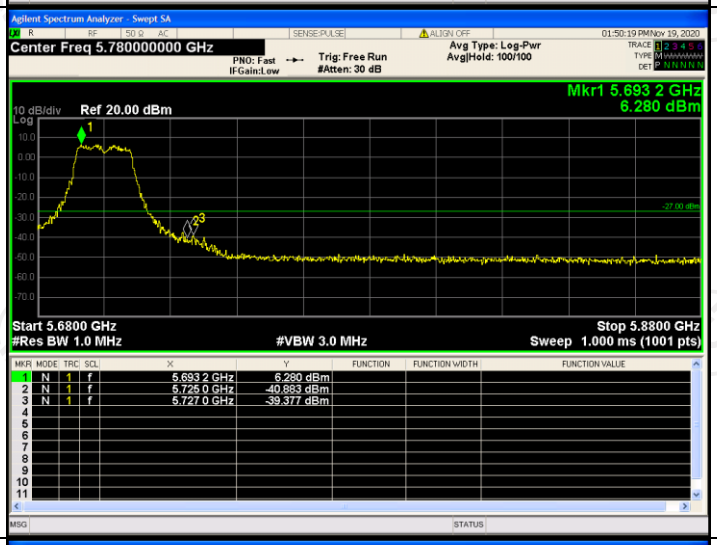
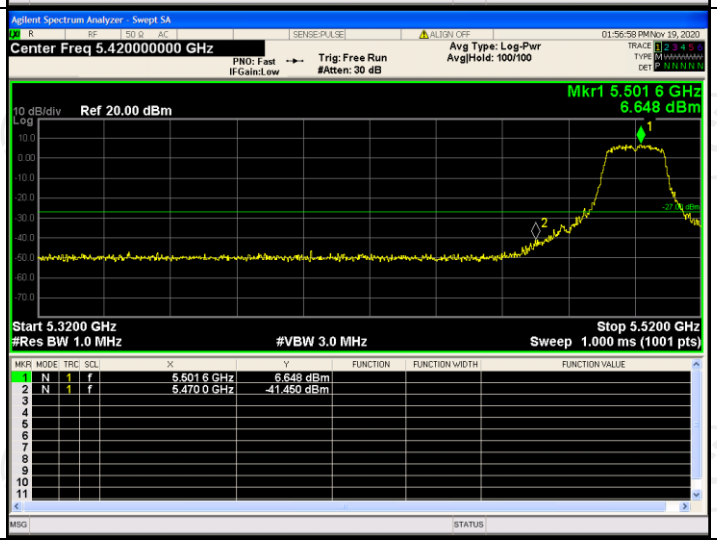
802.11n HT20 / HCH		
802.11n HT40 /LCH		
802.11n HT40 /HCH		

Band 2A Band-edge for RF Conducted Emissions

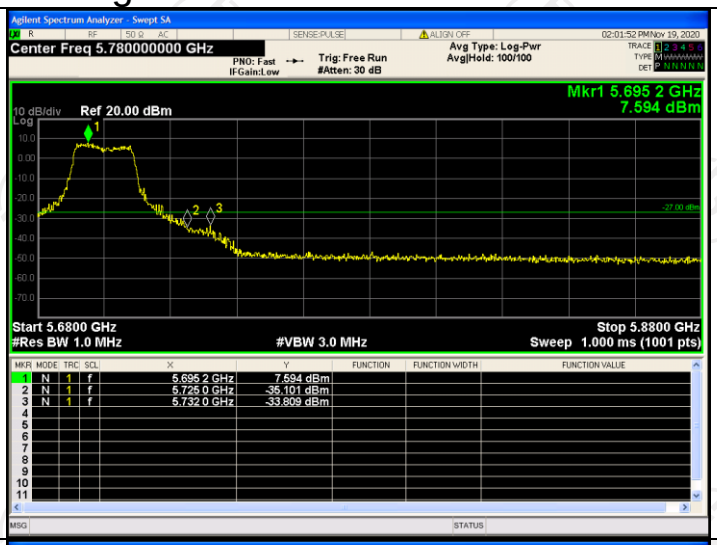
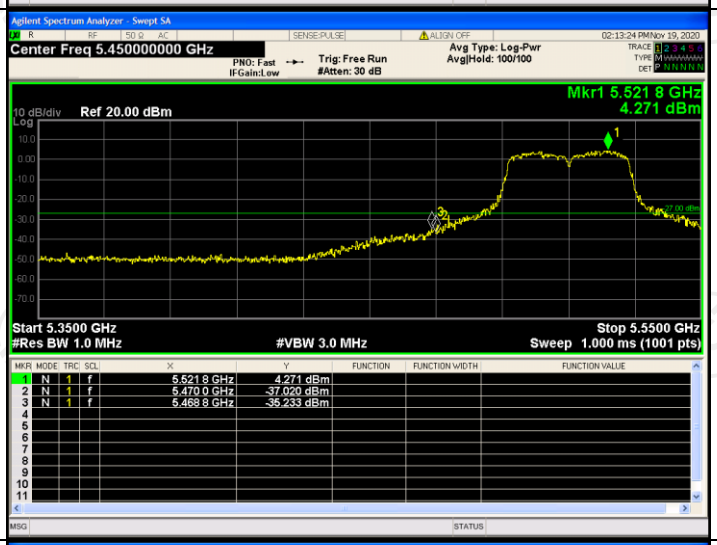
802.11ac HT20 / LCH		
802.11ac HT20 / HCH		
802.11ac HT40 / LCH		

802.11ac HT40 / HCH		

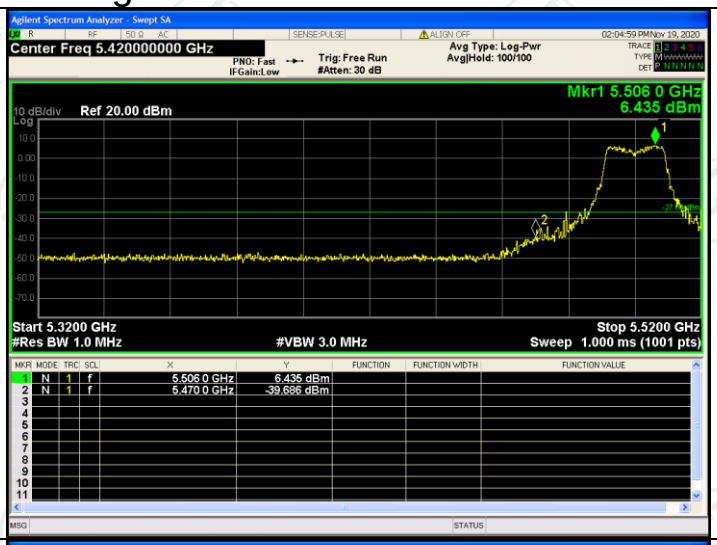
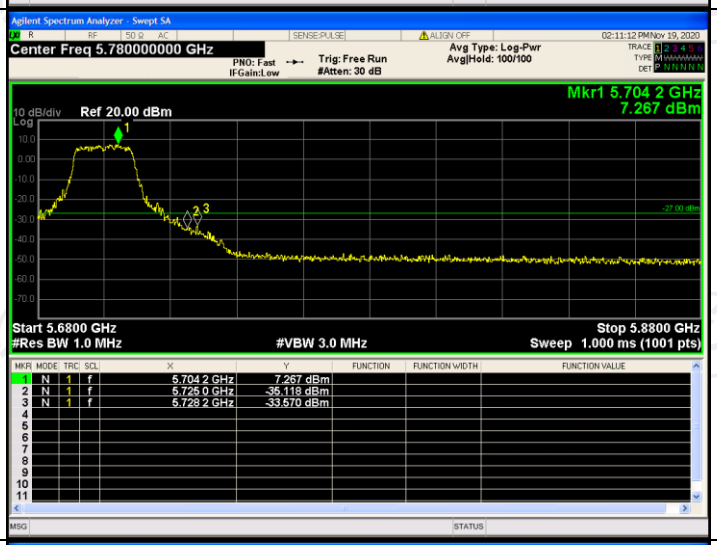
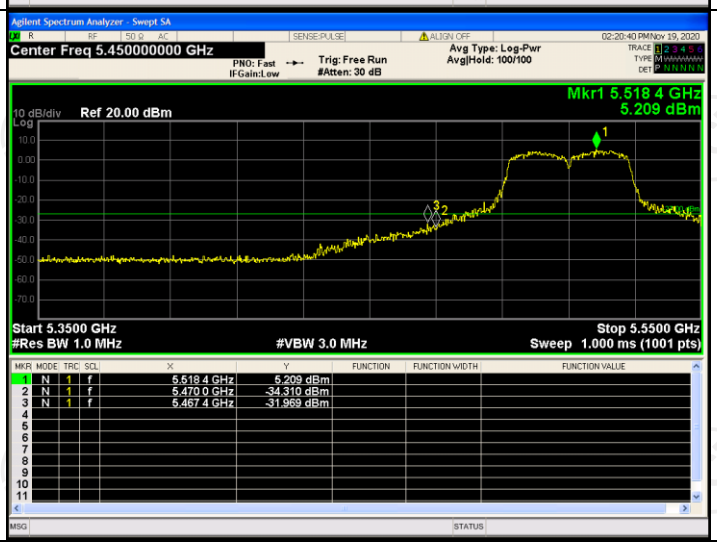
Band 2C Band-edge for RF Conducted Emissions

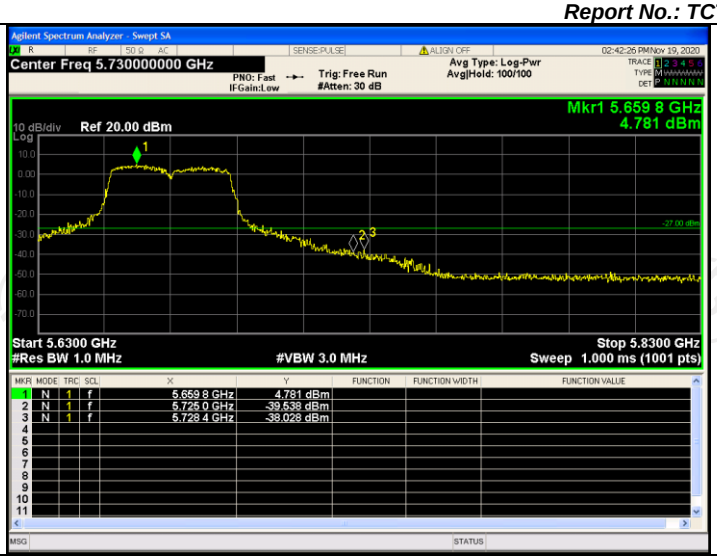
802.11a /LCH		
802.11a /HCH		
802.11n HT20 / LCH		

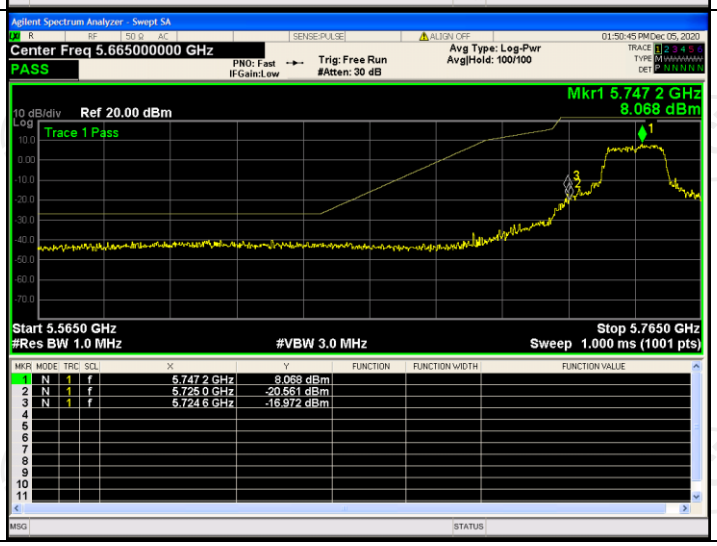
Band 2C Band-edge for RF Conducted Emissions

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

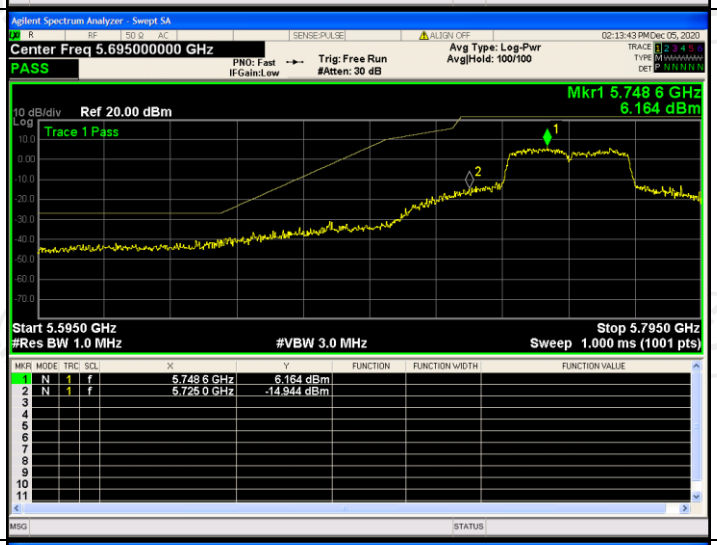
Band 2C Band-edge for RF Conducted Emissions

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

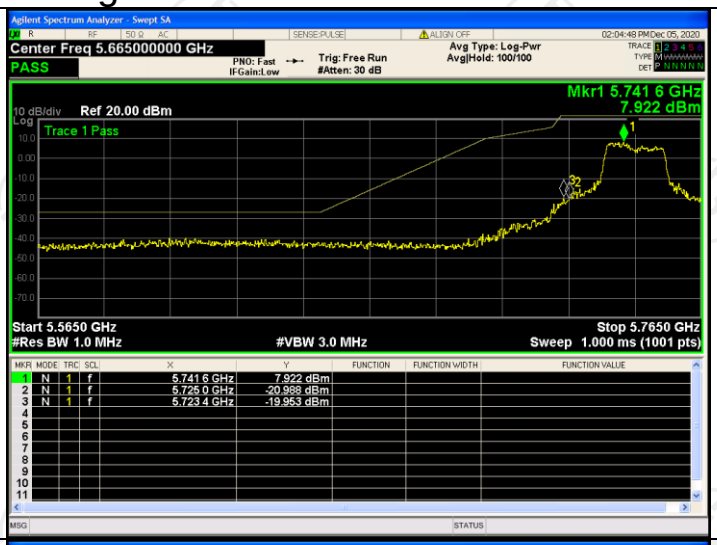
802.11ac HT40 / HCH		

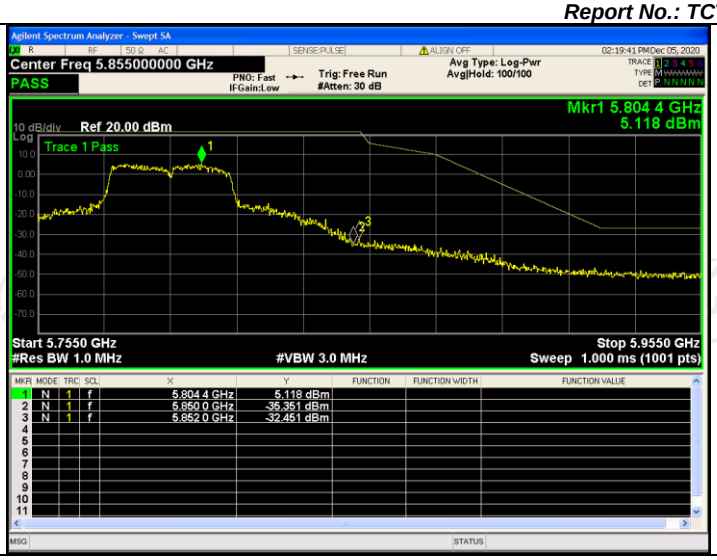
Band 3 Band-edge for RF Conducted Emissions		
802.11a /LCH		
802.11a /HCH		
802.11n HT20 / LCH		

Band 3 Band-edge for RF Conducted Emissions

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

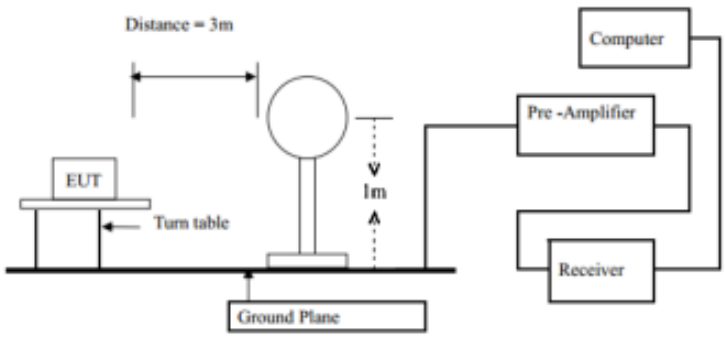
Band 3 Band-edge for RF Conducted Emissions

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

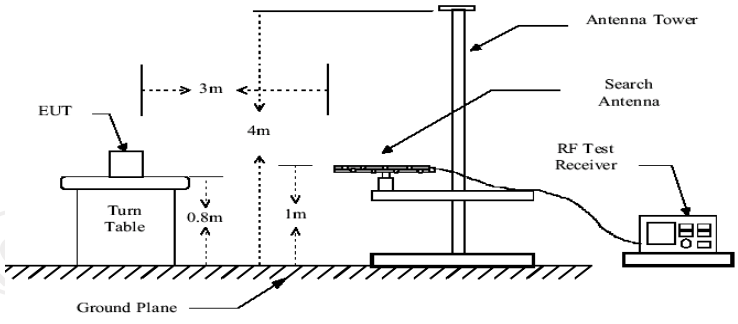
802.11ac HT40 / HCH		

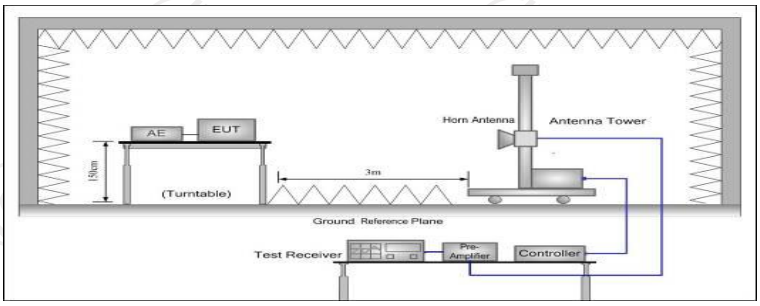
6.8. Unwanted Emissions

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,
In restricted bands:
<table>
<tr><td>Frequency</td><td>Detector</td><td>Limit@3m</td></tr>
<tr><td rowspan="2">Above 1G</td><td>Peak</td><td>74dBμV/m</td></tr>
<tr><td>AVG</td><td>54dBμV/m</td></tr>
</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>3</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>
In un-restricted bands: 68.2dBuV/m</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions below 30MHz
 

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

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

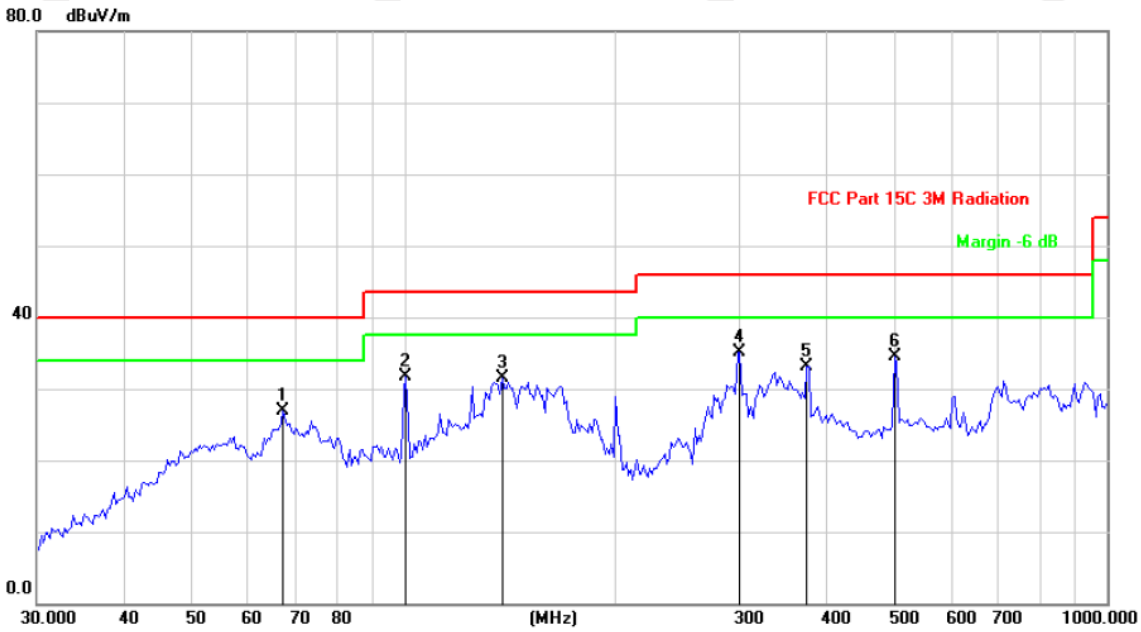
Above 1GHz

</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 Data

Please refer to following diagram for individual

Below 1GHz

Horizontal:



Site

Limit: FCC Part 15C 3M Radiation

Polarization: *Horizontal*

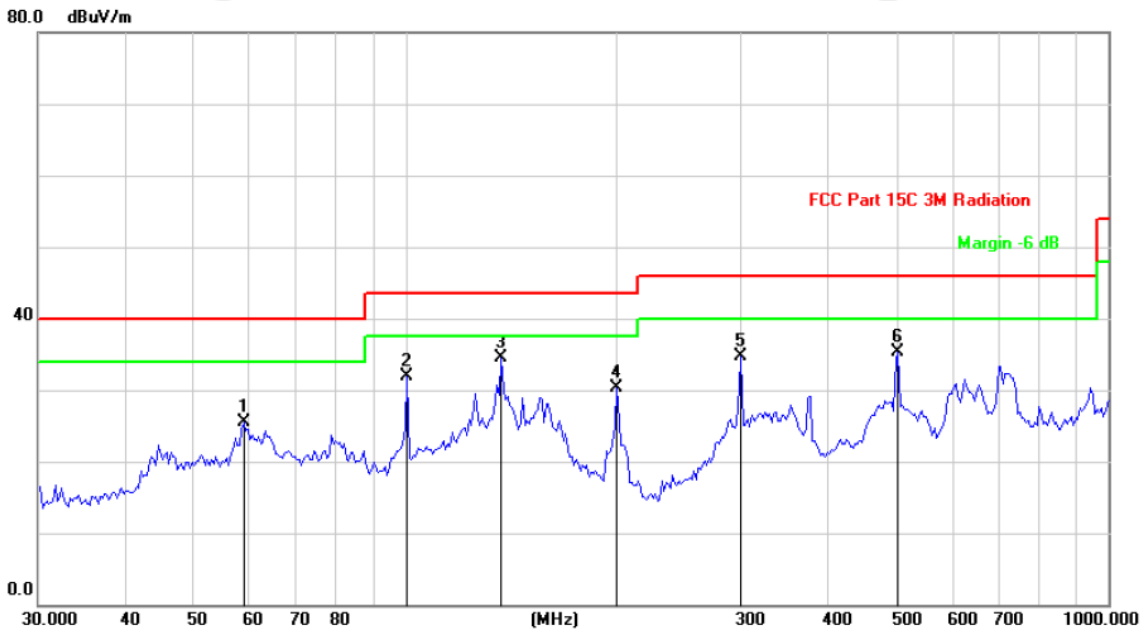
Power: DC 3.3V

Temperature: 25

Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		67.3109	41.64	-14.76	26.88	40.00	-13.12	peak
2		100.4711	39.67	-8.04	31.63	43.50	-11.87	peak
3		137.8400	47.43	-15.94	31.49	43.50	-12.01	peak
4	*	300.6988	46.09	-10.90	35.19	46.00	-10.81	peak
5		373.8860	42.51	-9.34	33.17	46.00	-12.83	peak
6		498.7302	41.96	-7.42	34.54	46.00	-11.46	peak

Vertical:



Site | Polarization: *Vertical* | Temperature: 25

Limit: FCC Part 15C 3M Radiation | Power: DC 3.3V | Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		58.8977	37.72	-12.12	25.60	40.00	-14.40	peak
2		100.4711	39.95	-8.04	31.91	43.50	-11.59	peak
3	*	136.8745	50.43	-15.88	34.55	43.50	-8.95	peak
4		200.0432	44.23	-14.01	30.22	43.50	-13.28	peak
5		300.6988	45.68	-10.90	34.78	46.00	-11.22	peak
6		502.2472	42.65	-7.38	35.27	46.00	-10.73	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), and the worst case Mode (Lowest channel and 802.11n(HT20)) was submitted only.

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

4.The test mode is MIMO

Modulation Type: Band 1									
11a CH36: 5180MHz									
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)			
10360	H	39.35	---	8.02	47.37	---	68.2	---	-20.83
15540	H	40.04	---	9.87	49.91	---	74	54	-4.09
---	H	---	---	---	---	---	---	---	---
10360	V	38.82	---	8.02	46.84	---	68.2	---	-21.36
15540	V	40.34	---	9.87	50.21	---	74	54	-3.79
---	V	---	---	---	---	---	---	---	---
11a CH40: 5200MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10400	H	41.47	---	7.97	49.44	---	68.2	---	-18.76
15600	H	39.68	---	9.83	49.51	---	74	54	-4.49
---	H	---	---	---	---	---	---	---	---
10400	V	41.69	---	7.97	49.66	---	68.2	---	-18.54
15600	V	39.21	---	9.83	49.04	---	74	54	-4.96
---	V	---	---	---	---	---	---	---	---
11a CH48: 5240MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	39.92	---	7.97	47.89	---	68.2	---	-20.31
15720	H	39.54	---	9.83	49.37	---	74	54	-4.63
---	H	---	---	---	---	---	---	---	---
10480	V	40.58	---	7.97	48.55	---	68.2	---	-19.65
15720	V	37.91	---	9.83	47.74	---	74	54	-6.26
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH36: 5180MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10360	H	43.12	---	8.02	51.14	---	68.2	---	-17.06
15540	H	39.75	---	9.87	49.62	---	74	54	-4.38
---	H	---	---	---	---	---	---	---	---
10360	V	42.89	---	8.02	50.91	---	68.2	---	-17.29
15540	V	39.76	---	9.87	49.63	---	74	54	-4.37
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH40: 5200MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10400	H	42.19	---	7.97	50.16	---	68.2	---	-18.04
15600	H	39.65	---	9.83	49.48	---	74	54	-4.52
---	H	---	---	---	---	---	---	---	---
10400	V	42.32	---	7.97	50.29	---	68.2	---	-17.91
15600	V	39.78	---	9.83	49.61	---	74	54	-4.39
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH48: 5240MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	42.64	---	7.97	50.61	---	68.2	---	-17.59
15720	H	40.21	---	9.83	50.04	---	74	54	-3.96
---	H	---	---	---	---	---	---	---	---
10480	V	42.14	---	7.97	50.11	---	68.2	---	-18.09
15720	V	40.95	---	9.83	50.78	---	74	54	-3.22
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH38: 5190MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10380	H	42.00	---	7.75	49.75	---	68.2	---	-18.45
15570	H	39.16	---	9.87	49.03	---	74	54	-4.97
---	H	---	---	---	---	---	---	---	---
10380	V	42.08	---	7.75	49.83	---	68.2	---	-18.37
15570	V	39.72	---	9.87	49.59	---	74	54	-4.41
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH46: 5230MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10460	H	42.54	---	7.97	50.51	---	68.2	---	-17.69
15690	H	39.31	---	9.83	49.14	---	74	54	-4.86
---	H	---	---	---	---	---	---	---	---
10460	V	42.87	---	7.97	50.84	---	68.2	---	-17.36
15690	V	39.30	---	9.83	49.13	---	74	54	-4.87
---	V	---	---	---	---	----	---	---	---

11ac(VHT20) CH36: 5180MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10360	H	42.04	---	8.02	50.06	---	68.2	---	-18.14
15540	H	39.17	---	9.87	49.04	---	74	54	-4.96
---	H	---	---	---	---	---	---	---	---
10360	V	40.41	---	8.02	48.43	---	68.2	---	-19.77
15540	V	40.62	---	9.87	50.49	---	74	54	-3.51
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH40: 5200MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10400	H	41.62	---	7.97	49.59	---	68.2	---	-18.61
15600	H	40.39	---	9.83	50.22	---	74	54	-3.78
---	H	---	---	---	---	---	---	---	---
10400	V	40.50	---	7.97	48.47	---	68.2	---	-19.73
15600	V	39.44	---	9.83	49.27	---	74	54	-4.73
---	V	---	---	---	---	---	---	---	---

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11ac(VHT20) CH48: 5240MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	38.56	---	7.97	46.53	---	68.2	---	-21.67
15720	H	39.40	---	9.83	49.23	---	74	54	-4.77
---	H	---	---	---	---	---	---	---	---
10480	V	40.34	---	7.97	48.31	---	68.2	---	-19.89
15720	V	39.62	---	9.83	49.45	---	74	54	-4.55
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH38: 5190MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10380	H	42.16	---	7.75	49.91	---	68.2	---	-18.29
15570	H	40.52	---	9.87	50.39	---	74	54	-3.61
---	H	---	---	---	---	---	---	---	---
10380	V	39.89	---	7.75	47.64	---	68.2	---	-20.56
15570	V	40.40	---	9.87	50.27	---	74	54	-3.73
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH46: 5230MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10460	H	40.46	---	7.97	48.43	---	68.2	---	-19.77
15690	H	39.88	---	9.83	49.71	---	74	54	-4.29
---	H	---	---	---	---	---	---	---	---
10460	V	41.02	---	7.97	48.99	---	68.2	---	-19.21
15690	V	39.53	---	9.83	49.36	---	74	54	-4.64
---	V	---	---	---	---	----	---	---	---

Note:

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

Modulation Type: Band 2A									
11a CH52: 5260MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10520	H	39.41	---	7.97	47.38	---	68.2	---	-20.82
15780	H	37.73	---	9.83	47.56	---	74	54	-6.44
---	H	---	---	---	---	---	---	---	---
10520	V	43.32	---	7.97	51.29	---	68.2	---	-16.91
15780	V	39.48	---	9.83	49.31	---	74	54	-4.69
---	V	---	---	---	---	---	---	---	---
11a CH60: 5300MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10600	H	40.20	---	7.98	48.18	---	74	54	-5.82
15900	H	39.67	---	9.85	49.52	---	74	54	-4.48
---	H	---	---	---	---	---	---	---	---
10600	V	40.70	---	7.98	48.68	---	74	54	-5.32
15900	V	39.62	---	9.85	49.47	---	74	54	-4.53
---	V	---	---	---	---	---	---	---	---
11a CH64: 5320MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10640	H	41.44	---	7.98	49.42	---	74	54	-4.58
15960	H	38.18	---	9.85	48.03	---	74	54	-5.97
---	H	---	---	---	---	---	---	---	---
10640	V	41.01	---	7.98	48.99	---	74	54	-5.01
15960	V	37.09	---	9.85	46.94	---	74	54	-7.06
---	V	---	---	---	---	---	---	---	---
11n(HT20) C52: 5260MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10520	H	42.27	---	7.97	50.24	---	68.2	---	-17.96
15780	H	39.50	---	9.83	49.33	---	74	54	-4.67
---	H	---	---	---	---	---	---	---	---
10520	V	39.32	---	7.97	47.29	---	68.2	---	-20.91
15780	V	36.78	---	9.83	46.61	---	74	54	-7.39
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH60: 5300MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10600	H	40.53	---	7.98	48.51	---	74	54	-5.49
15900	H	39.07	---	9.85	48.92	---	74	54	-5.08
---	H	---	---	---	---	---	---	---	---
10600	V	41.01	---	7.98	48.99	---	74	54	-5.01
15900	V	40.52	---	9.85	50.37	---	74	54	-3.63
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH64: 5320MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level Peak (dBμV/m)	Emission Level AV (dBμV/m)	Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
10640	H	39.51	---	7.98	47.49	---	74	54	-6.51
15960	H	36.27	---	9.85	46.12	---	74	54	-7.88
---	H	---	---	---	---	---	---	---	---
10640	V	41.04	---	7.98	49.02	---	74	54	-4.98
15960	V	40.22	---	9.85	50.07	---	74	54	-3.93
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH54: 5270MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level Peak (dBμV/m)	Emission Level AV (dBμV/m)	Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
10540	H	42.11	---	7.97	50.08	---	68.2	---	-18.12
15810	H	38.82	---	9.83	48.65	---	74	54	-5.35
---	H	---	---	---	---	---	---	---	---
10540	V	39.26	---	7.97	47.23	---	68.2	---	-20.97
15810	V	37.79	---	9.83	47.62	---	74	54	-6.38
---	V	---	---	---	---	---	---	---	---
11n(HT40) CH62: 5310MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level Peak (dBμV/m)	Emission Level AV (dBμV/m)	Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
10620	H	41.84	---	7.98	49.82	---	74	54	-4.18
15930	H	39.76	---	9.85	49.61	---	74	54	-4.39
---	H	---	---	---	---	---	---	---	---
10620	V	39.48	---	7.98	47.46	---	74	54	-6.54
15930	V	38.37	---	9.85	48.22	---	74	54	-5.78
---	V	---	---	---	---	----	---	---	---
11ac(VHT20) C52: 5260MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level Peak (dBμV/m)	Emission Level AV (dBμV/m)	Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
10520	H	40.89	---	7.97	48.86	---	68.2	---	-19.34
15780	H	40.36	---	9.83	50.19	---	74	54	-3.81
---	H	---	---	---	---	---	---	---	---
10520	V	41.45	---	7.97	49.42	---	68.2	---	-18.78
15780	V	38.12	---	9.83	47.95	---	74	54	-6.05
---	V	---	---	---	---	---	---	---	---
11ac(VHT20) CH60: 5300MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level Peak (dBμV/m)	Emission Level AV (dBμV/m)	Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
10600	H	40.11	---	7.98	48.09	---	74	54	-5.91
15900	H	37.97	---	9.85	47.82	---	74	54	-6.18
---	H	---	---	---	---	---	---	---	---
10600	V	38.78	---	7.98	46.76	---	74	54	-7.24
15900	V	37.46	---	9.85	47.31	---	74	54	-6.69
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH64: 5320MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10640	H	41.93	---	7.98	49.91	---	74	54	-4.09
15960	H	40.07	---	9.85	49.92	---	74	54	-4.08
---	H	---	---	---	---	---	---	---	---
10640	V	41.11	---	7.98	49.09	---	74	54	-4.91
15960	V	37.94	---	9.85	47.79	---	74	54	-6.21
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH54: 5270MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10540	H	41.40	---	7.97	49.37	---	68.2	---	-18.83
15810	H	38.86	---	9.83	48.69	---	74	54	-5.31
---	H	---	---	---	---	---	---	---	---
10540	V	41.02	---	7.97	48.99	---	68.2	---	-19.21
15810	V	38.85	---	9.83	48.68	---	74	54	-5.32
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH60: 5310MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10620	H	39.59	---	7.98	47.57	---	74	54	-6.43
15930	H	38.36	---	9.85	48.21	---	74	54	-5.79
---	H	---	---	---	---	---	---	---	---
10620	V	40.14	---	7.98	48.12	---	74	54	-5.88
15930	V	38.83	---	9.85	48.68	---	74	54	-5.32
---	V	---	---	---	---	----	---	---	---

Note:

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

Modulation Type: Band 2C									
11a CH100: 5500MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (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)			
11000	H	40.48	---	8.03	48.51	---	74	54	-5.49
16500	H	41.17	---	9.76	50.93	---	68.2	---	-17.27
---	H	---	---	---	---	---	---	---	---
11000	V	42.21	---	8.03	50.24	---	74	54	-3.76
16500	V	41.36	---	9.76	51.12	---	68.2	---	-17.08
---	V	---	---	---	---	---	---	---	---
11a CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11200	H	41.12	---	8.04	49.16	---	74	54	-4.84
16800	H	41.58	---	9.74	51.32	---	68.2	---	-16.88
---	H	---	---	---	---	---	---	---	---
11200	V	39.55	---	8.04	47.59	---	74	54	-6.41
16800	V	40.73	---	9.74	50.47	---	68.2	---	-17.73
---	V	---	---	---	---	---	---	---	---
11a CH144: 5700MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11400	H	39.74	---	8.05	47.79	---	74	54	-6.21
17100	H	41.30	---	9.72	51.02	---	68.2	---	-17.18
---	H	---	---	---	---	---	---	---	---
11400	V	40.11	---	8.05	48.16	---	74	54	-5.84
17100	V	41.85	---	9.72	51.57	---	68.2	---	-16.63
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH100: 5500MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11000	H	41.34	---	8.03	49.37	---	74	54	-4.63
16500	H	39.69	---	9.76	49.45	---	68.2	---	-18.75
---	H	---	---	---	---	---	---	---	---
11000	V	39.59	---	8.03	47.62	---	74	54	-6.38
16500	V	42.20	---	9.76	51.96	---	68.2	---	-16.24
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11200	H	40.46	---	8.04	48.50	---	74	54	-5.50
16800	H	41.73	---	9.74	51.47	---	68.2	---	-16.73
---	H	---	---	---	---	---	---	---	---
11200	V	39.75	---	8.04	47.79	---	74	54	-6.21
16800	V	40.38	---	9.74	50.12	---	68.2	---	-18.08
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH144: 5720MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11400	H	40.62	---	8.05	48.67	---	74	54	-5.33
17100	H	42.17	---	9.72	51.89	---	68.2	---	-16.31
---	H	---	---	---	---	---	---	---	---
11400	V	39.41	---	8.05	47.46	---	74	54	-6.54
17100	V	41.30	---	9.72	51.02	---	68.2	---	-17.18
---	V	---	---	---	---	---	---	---	---

11n(HT40)CH102: 5510MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11020	H	40.01	---	8.03	48.04	---	74	54	-5.96
16530	H	40.75	---	9.76	50.51	---	68.2	---	-17.69
---	H	---	---	---	---	---	---	---	---
11020	V	39.90	---	8.03	47.93	---	74	54	-6.07
16530	V	39.23	---	9.76	48.99	---	68.2	---	-19.21
---	V	---	---	---	---	---	---	---	---
11n(HT40) CH118: 5590MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11180	H	40.50	---	8.04	48.54	---	74	54	-5.46
16770	H	40.22	---	9.74	49.96	---	68.2	---	-18.24
---	H	---	---	---	---	---	---	---	---
11180	V	38.52	---	8.04	46.56	---	74	54	-7.44
16770	V	42.30	---	9.74	52.04	---	68.2	---	-16.16
---	V	---	---	---	---	----	---	---	---
11n(HT40) CH134: 5670MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11340	H	41.44	---	8.05	49.49	---	74	54	-4.51
17010	H	42.95	---	9.72	52.67	---	68.2	---	-15.53
---	H	---	---	---	---	---	---	---	---
11340	V	40.57	---	8.05	48.62	---	74	54	-5.38
17010	V	38.99	---	9.72	48.71	---	68.2	---	-19.49
---	V	---	---	---	---	---	---	---	---
11ac(VHT20) CH100: 5500MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11000	H	38.81	---	8.03	46.84	---	74	54	-7.16
16500	H	40.65	---	9.76	50.41	---	68.2	---	-17.79
---	H	---	---	---	---	---	---	---	---
11000	V	39.81	---	8.03	47.84	---	74	54	-6.16
16500	V	41.09	---	9.76	50.85	---	68.2	---	-17.35
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11200	H	41.48	---	8.04	49.52	---	74	54	-4.48
16800	H	40.63	---	9.74	50.37	---	68.2	---	-17.83
---	H	---	---	---	---	---	---	---	---
11200	V	40.22	---	8.04	48.26	---	74	54	-5.74
16800	V	40.57	---	9.74	50.31	---	68.2	---	-17.89
---	V	---	---	---	---	---	---	---	---
11ac(VHT20) CH144: 5720MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11440	H	40.22	---	8.05	48.27	---	74	54	-5.73
17160	H	40.01	---	9.72	49.73	---	68.2	---	-18.47
---	H	---	---	---	---	---	---	---	---
11440	V	41.88	---	8.05	49.93	---	74	54	-4.07
17160	V	40.53	---	9.72	50.25	---	68.2	---	-17.95
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH102: 5510MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11020	H	39.40	---	8.03	47.43	---	74	54	-6.57
16530	H	40.58	---	9.76	50.34	---	68.2	---	-17.86
---	H	---	---	---	---	---	---	---	---
11020	V	41.76	---	8.03	49.79	---	74	54	-4.21
16530	V	39.81	---	9.76	49.57	---	68.2	---	-18.63
---	V	---	---	---	---	----	---	---	---
11ac(VHT40) CH118:5590									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11180	H	39.65	---	8.04	47.69	---	74	54	-6.31
16770	H	38.34	---	9.74	48.08	---	68.2	---	-20.12
	H	---	---	---	---	---	---	---	---
11180	V	39.32	---	8.04	47.36	---	74	54	-6.64
16770	V	38.88	---	9.74	48.62	---	68.2	---	-19.58
	V	---	---	---	---	----	---	---	---

11ac(VHT40) CH134: 5670MHz									
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)			
11340	H	38.64	---	8.05	46.69	---	74	54	-7.31
17010	H	37.22	---	9.72	46.94	---	68.2	---	-21.26
---	H	---	---	---	---	---	---	---	---
11340	V	39.17	---	8.05	47.22	---	74	54	-6.78
17010	V	40.80	---	9.72	50.52	---	68.2	---	-17.68
---	V	---	---	---	---	---	---	---	---

Note:

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

Modulation Type: Band 3									
11a(HT20) CH149: 5745MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (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	39.23	---	8.09	47.32	---	74	54	-6.68
17235	H	38.64	---	9.67	48.31	---	68.2	---	-19.89
---	H	---	---	---	---	---	---	---	---
11490	V	41.61	---	8.09	49.70	---	74	54	-4.30
17235	V	42.08	---	9.67	51.75	---	68.2	---	-16.45
---	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	40.51	---	8.10	48.61	---	74	54	-5.39
17355	H	40.26	---	9.65	49.91	---	68.2	---	-18.29
---	H	---	---	---	---	---	---	---	---
11570	V	39.38	---	8.10	47.48	---	74	54	-6.52
17355	V	40.54	---	9.65	50.19	---	68.2	---	-18.01
---	V	---	---	---	---	---	---	---	---

11a(HT20) CH161: 5825MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11650	H	39.47	---	8.12	47.59	---	74	54	-6.41
17475	H	38.18	---	9.62	47.80	---	68.2	---	-20.40
---	H	---	---	---	---	---	---	---	---
11650	V	40.32	---	8.12	48.44	---	74	54	-5.56
17475	V	39.76	---	9.62	49.38	---	68.2	---	-18.82
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH151: 5745MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11510	H	40.29	---	8.09	48.38	---	74	54	-5.62
17265	H	39.50	---	9.67	49.17	---	68.2	---	-19.03
---	H	---	---	---	---	---	---	---	---
11510	V	40.97	---	8.09	49.06	---	74	54	-4.94
17265	V	39.31	---	9.67	48.98	---	68.2	---	-19.22
---	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	40.15	---	8.10	48.25	---	74	54	-5.75
17355	H	41.38	---	9.65	51.03	---	68.2	---	-17.17
---	H	---	---	---	---	---	---	---	---
11570	V	39.77	---	8.10	47.87	---	74	54	-6.13
17355	V	40.29	---	9.65	49.94	---	68.2	---	-18.26
---	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	40.30	---	8.12	48.42	---	74	54	-5.58
17475	H	38.75	---	9.62	48.37	---	68.2	---	-19.83
---	H	---	---	---	---	---	---	---	---
11650	V	37.28	---	8.12	45.40	---	74	54	-8.60
17475	V	40.56	---	9.62	50.18	---	68.2	---	-18.02
---	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	41.85	---	8.09	49.94	---	74	54	-4.06
17265	H	42.22	---	9.67	51.89	---	68.2	---	-16.31
---	H	---	---	---	---	---	---	---	---
11510	V	41.72	---	8.09	49.81	---	74	54	-4.19
17265	V	40.39	---	9.67	50.06	---	68.2	---	-18.14
---	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	40.16	---	8.10	48.26	---	74	54	-5.74
17385	H	39.77	---	9.65	49.42	---	68.2	---	-18.78
---	H	---	---	---	---	---	---	---	---
11590	V	39.68	---	8.10	47.78	---	74	54	-6.22
17385	V	38.91	---	9.65	48.56	---	68.2	---	-19.64
---	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	41.51	---	8.09	49.60	---	74	54	-4.40
17235	H	42.34	---	9.67	52.01	---	68.2	---	-16.19
---	H	---	---	---	---	---	---	---	---
11490	V	40.76	---	8.09	48.85	---	74	54	-5.15
17235	V	43.03	---	9.67	52.70	---	68.2	---	-15.50
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH157: 5785MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11570	H	39.45	---	8.10	47.55	---	74	54	-6.45
17355	H	37.86	---	9.65	47.51	---	68.2	---	-20.69
---	H	---	---	---	---	---	---	---	---
11570	V	38.82	---	8.10	46.92	---	74	54	-7.08
17355	V	40.07	---	9.65	49.72	---	68.2	---	-18.48
---	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	40.67	---	8.12	48.79	---	74	54	-5.21
17475	H	39.53	---	9.62	49.15	---	68.2	---	-19.05
---	H	---	---	---	---	---	---	---	---
11650	V	40.29	---	8.12	48.41	---	74	54	-5.59
17475	V	42.01	---	9.62	51.63	---	68.2	---	-16.57
---	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	40.58	---	8.09	48.67	---	74	54	-5.33
17265	H	38.93	---	9.67	48.60	---	68.2	---	-19.60
---	H	---	---	---	---	---	---	---	---
11510	V	41.75	---	8.09	49.84	---	74	54	-4.16
17265	V	38.16	---	9.67	47.83	---	68.2	---	-20.37
---	V	---	---	---	---	---	---	---	---

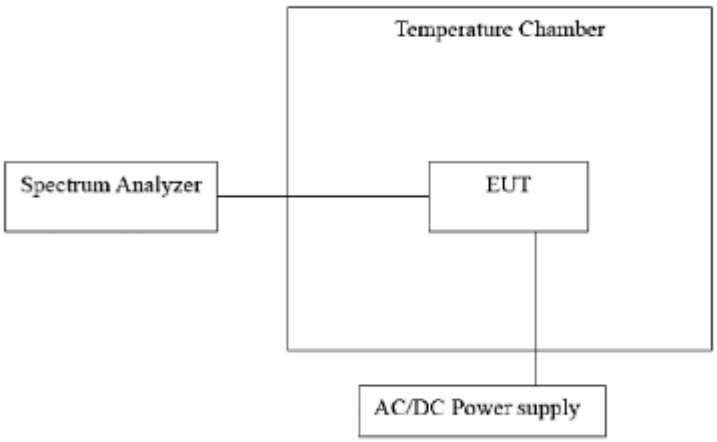
11ac(VHT40) CH159: 5795MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11590	H	41.28	---	8.10	49.38	---	74	54	-4.62
17385	H	38.79	---	9.65	48.44	---	68.2	---	-19.76
---	H	---	---	---	---	---	---	---	---
11590	V	41.46	---	8.10	49.56	---	74	54	-4.44
17385	V	40.52	---	9.65	50.17	---	68.2	---	-18.03
---	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:	
Test Procedure:	The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test Result:	PASS
Remark:	Pre-scan was performed at Antenna 0 and Antenna 1, the worst case was found. Only the test data of Antenna 0 was shown in this report.

Test plots as follows:

Test mode:	802.11n(HT20)	Frequency(MHz):	5180

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5180.0095	9500	PASS
35		5180.0061	6100	PASS
25		5179.9874	-12600	PASS
15		5179.9986	-1400	PASS
5		5180.0032	3200	PASS
0		5180.0047	4700	PASS
20	3.0	5179.9833	-16700	PASS
	3.3	5180.0039	3900	PASS
	3.6	5179.9820	-18000	PASS

Test mode:	802.11n(HT20)	Frequency(MHz):	5200

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5200.0091	9100	PASS
35		5200.0084	8400	PASS
25		5200.0075	7500	PASS
15		5200.0040	4000	PASS
5		5199.9988	-1200	PASS
0		5199.9879	-12100	PASS
20	3.0	5199.9952	-4800	PASS
	3.3	5200.0033	3300	PASS
	3.6	5200.0056	5600	PASS

Test mode:	802.11n(HT20)	Frequency(MHz):	5240

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5240.0041	4100	PASS
35		5240.0024	2400	PASS
25		5240.0027	2700	PASS
15		5239.9993	-700	PASS
5		5239.9986	-1400	PASS
0		5239.9972	-2800	PASS
20	3.0	5240.0038	3800	PASS
	3.3	5240.0015	1500	PASS
	3.6	5239.9983	-1700	PASS

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Test mode:	802.11n(HT20)	Frequency(MHz):	5745

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5745.0011	1100	PASS
35		5745.0019	1900	PASS
25		5744.9965	-3500	PASS
15		5744.9953	-4700	PASS
5		5745.0038	3800	PASS
0		5745.0040	4000	PASS
20	3.0	5745.0074	7400	PASS
	3.3	5745.0076	7600	PASS
	3.6	5745.0022	2200	PASS

Test mode:	802.11n(HT20)	Frequency(MHz):	5785

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5785.0088	8800	PASS
35		5785.0032	3200	PASS
25		5785.0027	2700	PASS
15		5784.9981	-1900	PASS
5		5785.0029	2900	PASS
0		5784.9978	-2200	PASS
20	3.0	5785.0054	5400	PASS
	3.3	5785.0025	2500	PASS
	3.6	5784.9970	-3000	PASS

Test mode:	802.11n(HT20)	Frequency(MHz):	5825

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5824.9811	-18900	PASS
35		5825.0085	8500	PASS
25		5824.9956	-4400	PASS
15		5824.9984	-1600	PASS
5		5825.0012	1200	PASS
0		5825.0049	4900	PASS
20	3.0	5825.0043	4300	PASS
	3.3	5824.9987	-1300	PASS
	3.6	5825.0022	2200	PASS

Test mode:	802.11n(HT40)	Frequency(MHz):	5190

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5190.0122	12200	PASS
35		5190.0118	11800	PASS
25		5190.0105	10500	PASS
15		5190.0031	3100	PASS
5		5190.0060	6000	PASS
0		5190.0074	7400	PASS
20	3.0	5189.9916	-8400	PASS
	3.3	5189.9979	-2100	PASS
	3.6	5190.0043	4300	PASS

Test mode:	802.11n(HT40)	Frequency(MHz):	5230

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5230.0114	11400	PASS
35		5230.0125	12500	PASS
25		5230.0092	9200	PASS
15		5229.9988	-1200	PASS
5		5229.9981	-1900	PASS
0		5230.0056	5600	PASS
20	3.0	5230.0047	4700	PASS
	3.3	5230.0029	2900	PASS
	3.6	5229.9973	-2700	PASS

Test mode:	802.11n(HT40)	Frequency(MHz):	5755

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5755.0107	10700	PASS
35		5755.0025	2500	PASS
25		5755.0113	11300	PASS
15		5755.0094	9400	PASS
5		5755.0036	3600	PASS
0		5755.0070	7000	PASS
20	3.0	5755.0044	4400	PASS
	3.3	5755.0038	3800	PASS
	3.6	5755.0066	6600	PASS

Test mode:	802.11n(HT40)	Frequency(MHz):	5795

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5794.9805	-19500	PASS
35		5794.9847	-15300	PASS
25		5795.0041	4100	PASS
15		5795.0033	3300	PASS
5		5795.0028	2800	PASS
0		5795.0066	6600	PASS
20	3.0	5795.0054	5400	PASS
	3.3	5794.9982	-1800	PASS
	3.6	5795.0089	8900	PASS

Appendix A: Test Result of Conducted Test

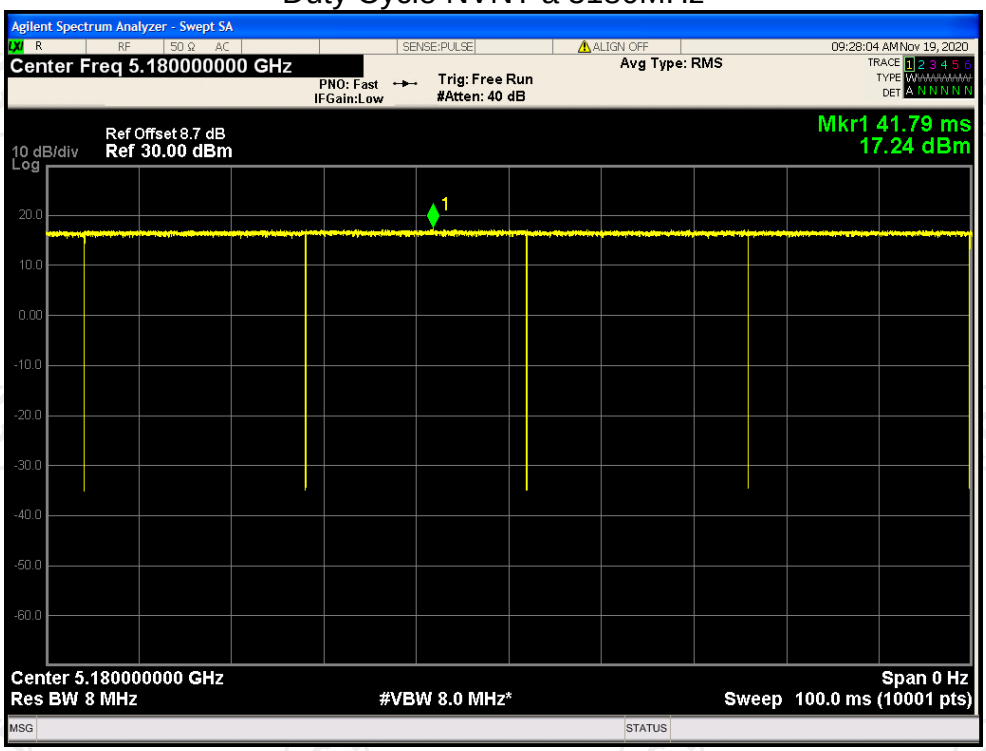
Antenna 0

Duty Cycle

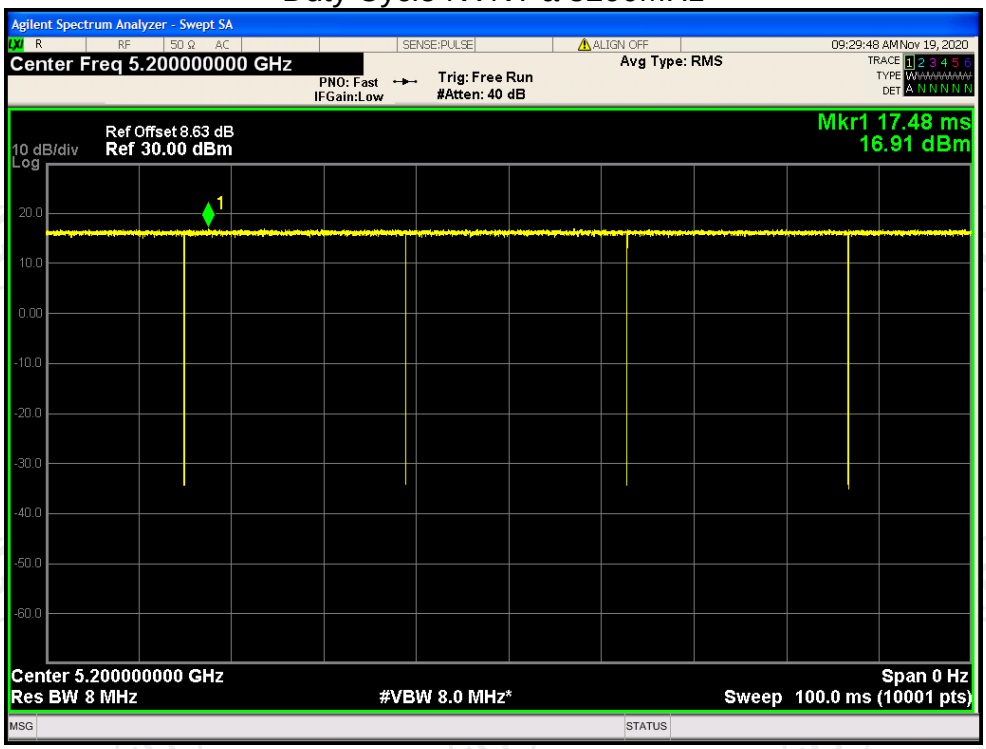
Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)
a	5180	99.75	0.01
a	5200	99.80	0.01
a	5240	99.84	0.01
ac20	5180	100	0
ac20	5200	100	0
ac20	5240	100	0
ac40	5190	99.80	0.01
ac40	5230	99.80	0.01
n20	5180	100	0
n20	5200	100	0
n20	5240	100	0
n40	5190	99.75	0.01
n40	5230	99.82	0.01
a	5260	99.84	0.01
a	5300	99.84	0.01
a	5320	99.84	0.01
ac20	5260	99.80	0.01
ac20	5300	99.80	0.01
ac20	5320	99.80	0.01
ac40	5270	99.80	0.01
ac40	5310	99.80	0.01
n20	5260	99.76	0.01
n20	5300	99.82	0.01
n20	5320	99.75	0.01
n40	5270	99.77	0.01
n40	5310	99.80	0.01
a	5500	99.83	0.01
a	5600	99.84	0.01
a	5700	99.80	0.01
ac20	5500	99.80	0.01
ac20	5600	99.81	0.01
ac20	5700	99.81	0.01
ac40	5510	99.80	0.01
ac40	5590	99.81	0.01
ac40	5670	99.80	0.01
n20	5500	99.82	0.01
n20	5600	99.80	0.01
n20	5700	99.80	0.01
n40	5510	99.80	0.01
n40	5590	99.80	0.01
n40	5670	99.81	0.01
a	5745	98.67	0.06

a	5785	98.13	0.08
a	5825	99.80	0.01
ac20	5745	99.17	0.04
ac20	5785	98.99	0.04
ac20	5825	99.82	0.01
ac40	5755	98.40	0.07
ac40	5795	98.94	0.05
n20	5745	98.93	0.05
n20	5785	99.25	0.03
n20	5825	99.80	0.01
n40	5755	98.02	0.09
n40	5795	98.30	0.07

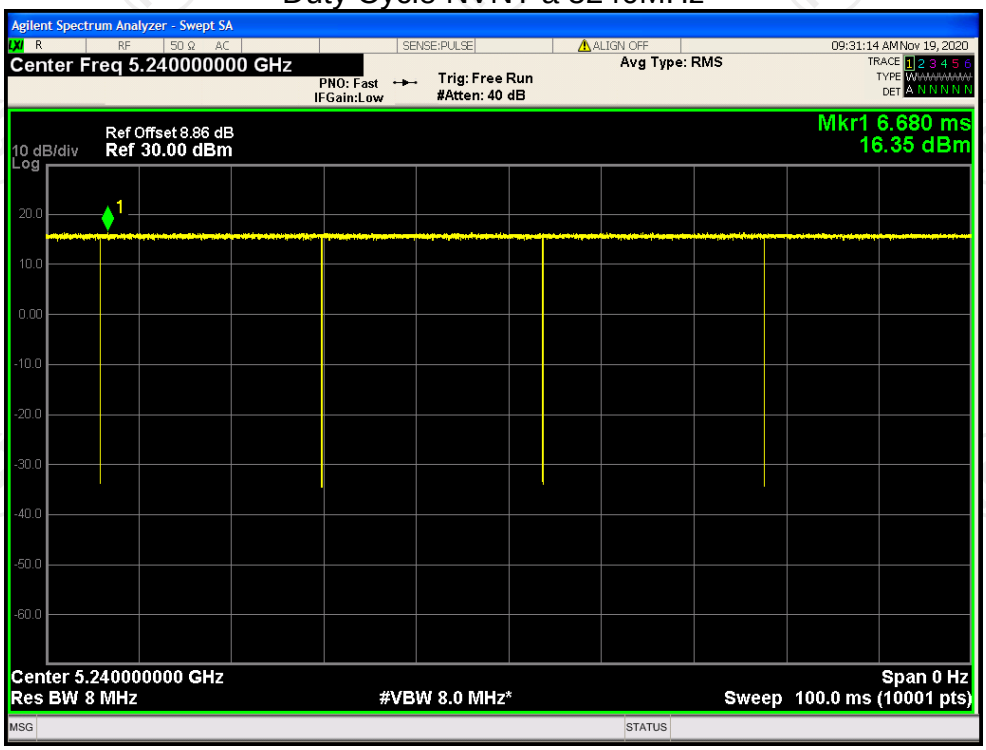
Duty Cycle NVNT a 5180MHz



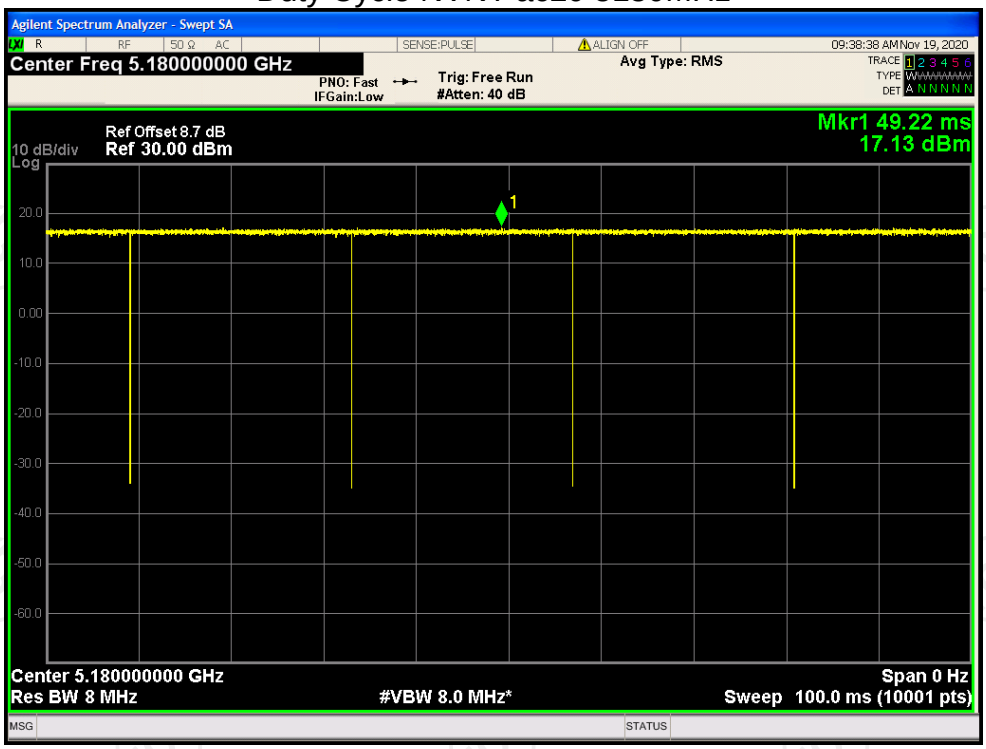
Duty Cycle NVNT a 5200MHz



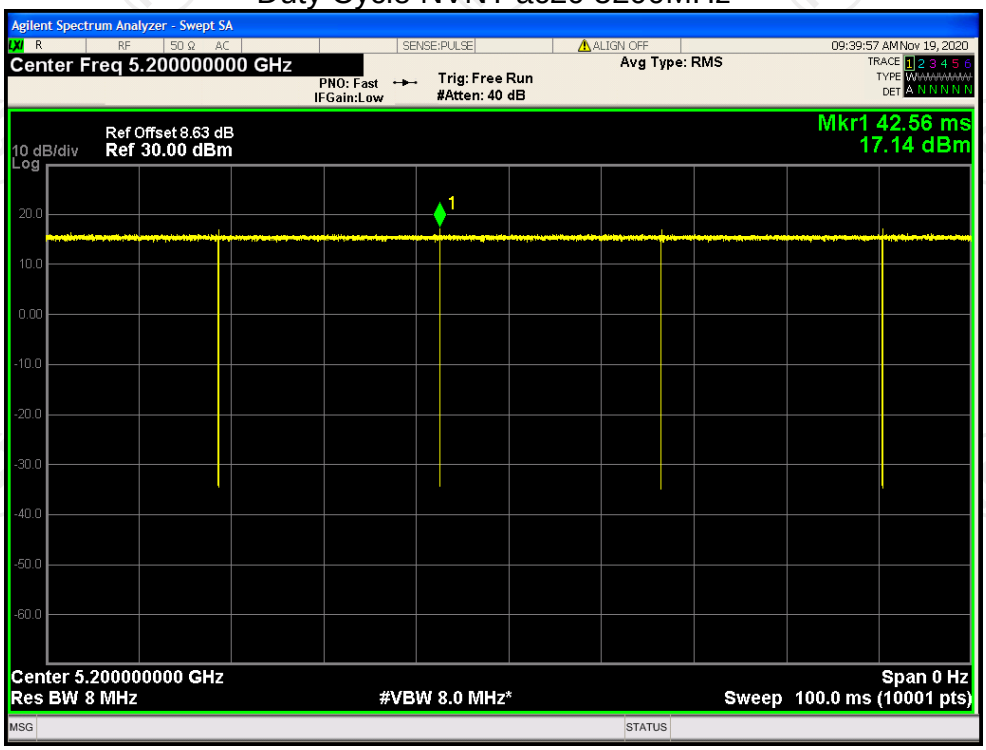
Duty Cycle NVNT a 5240MHz



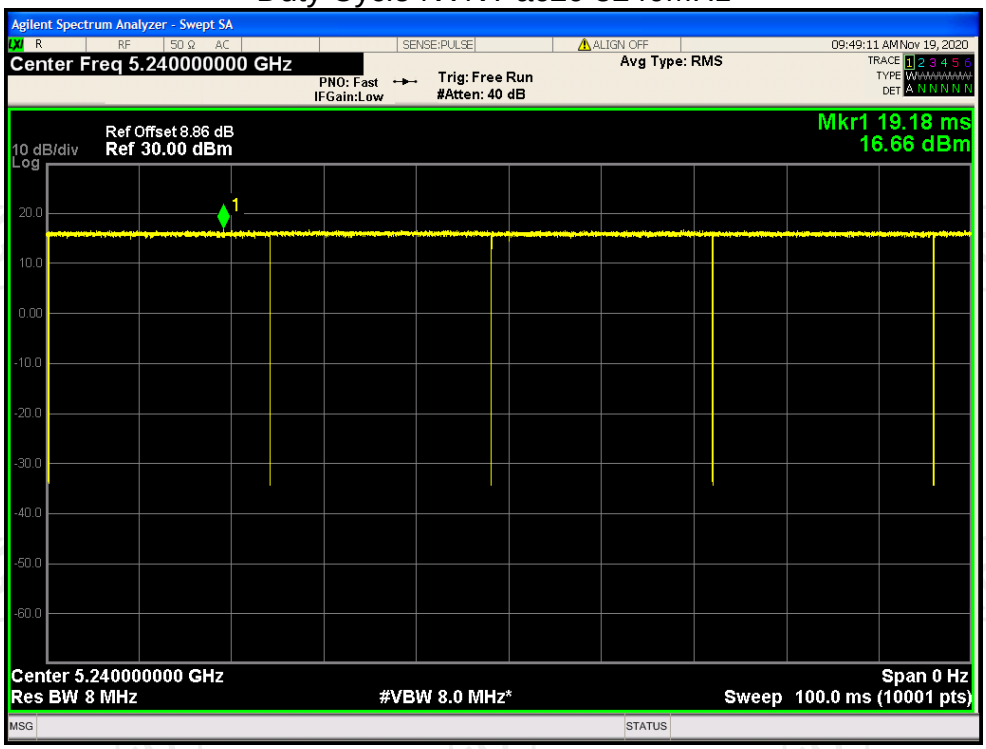
Duty Cycle NVNT ac20 5180MHz



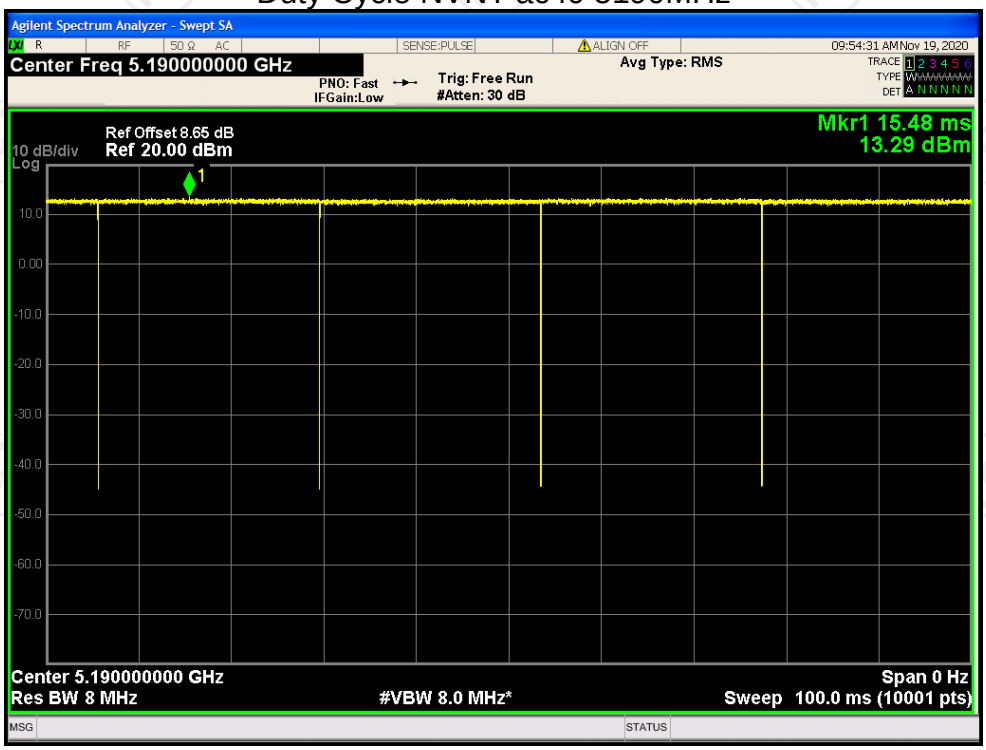
Duty Cycle NVNT ac20 5200MHz



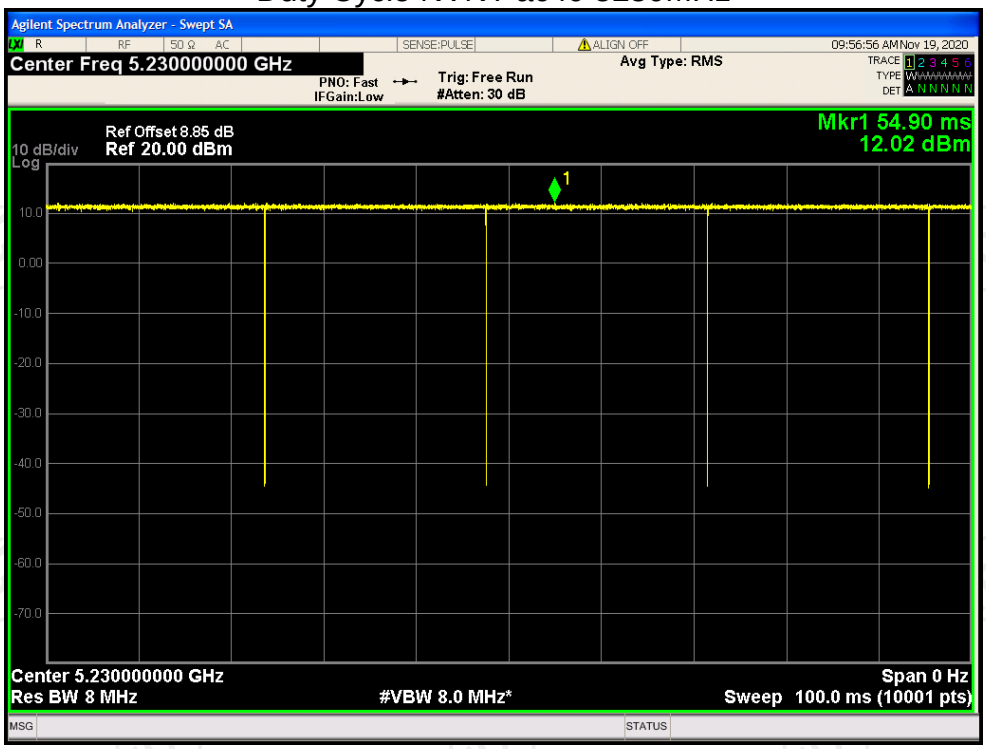
Duty Cycle NVNT ac20 5240MHz



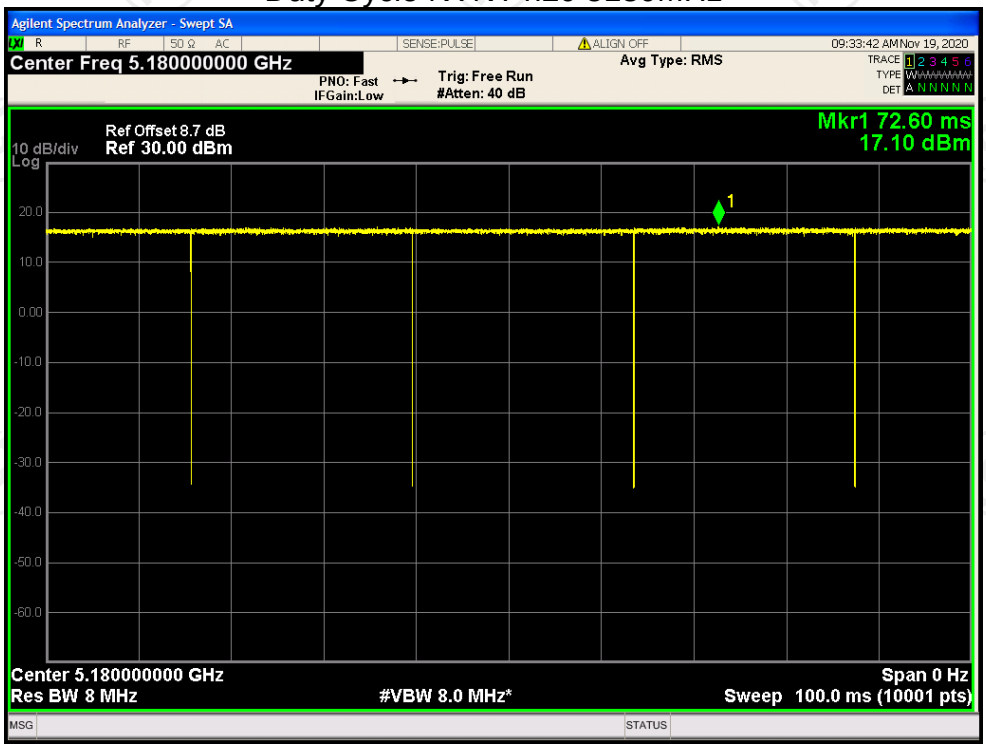
Duty Cycle NVNT ac40 5190MHz



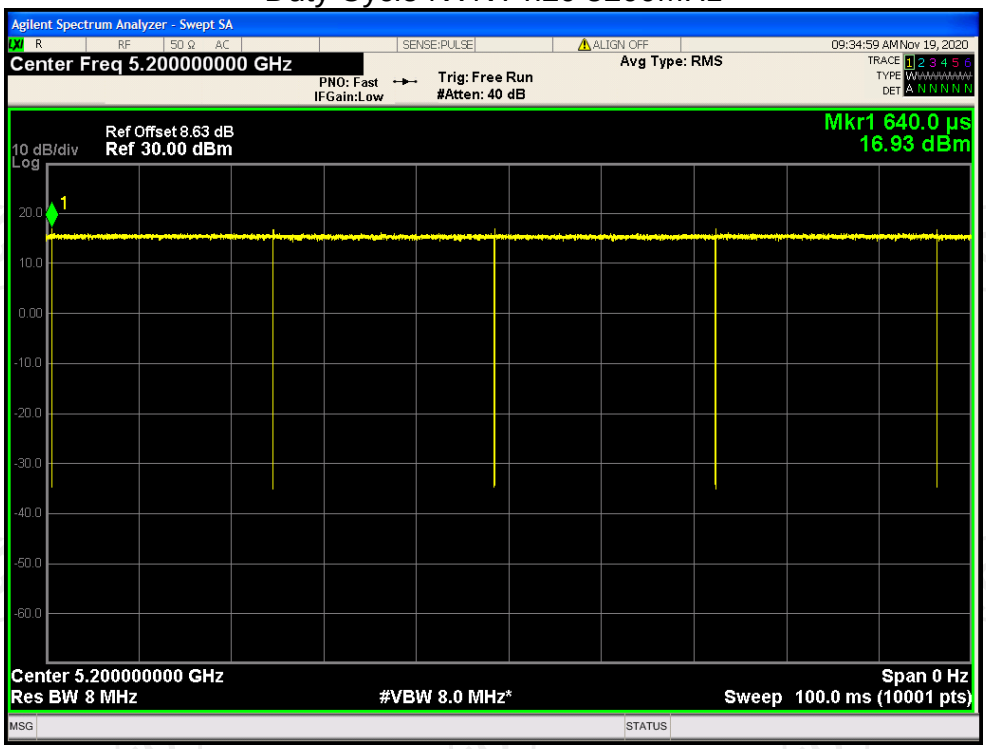
Duty Cycle NVNT ac40 5230MHz



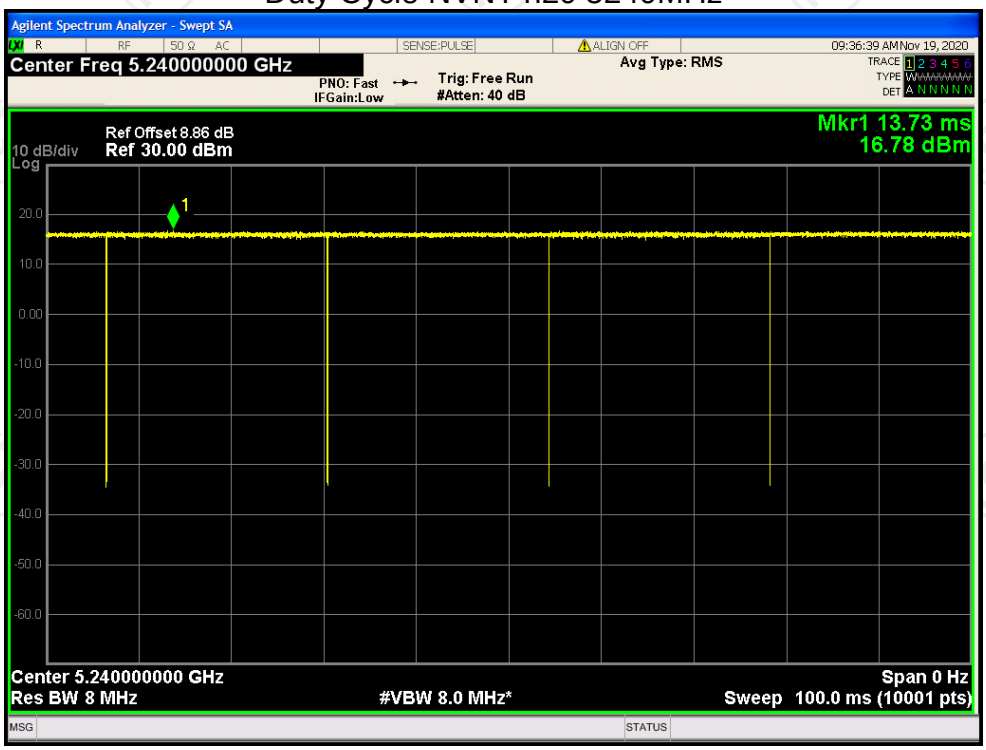
Duty Cycle NVNT n20 5180MHz



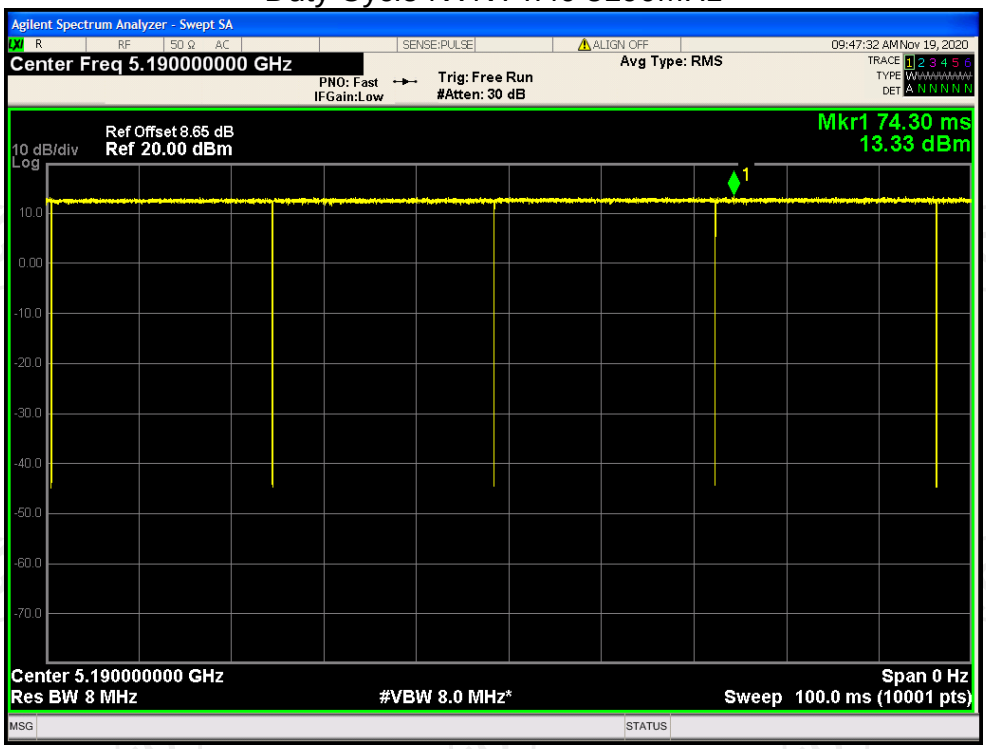
Duty Cycle NVNT n20 5200MHz



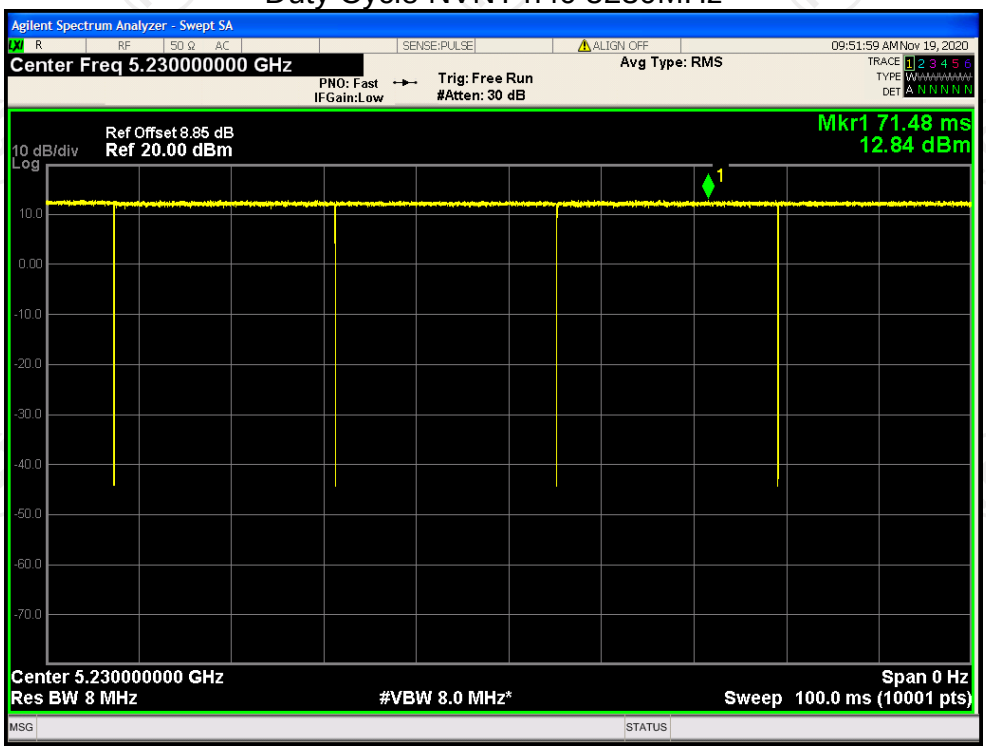
Duty Cycle NVNT n20 5240MHz



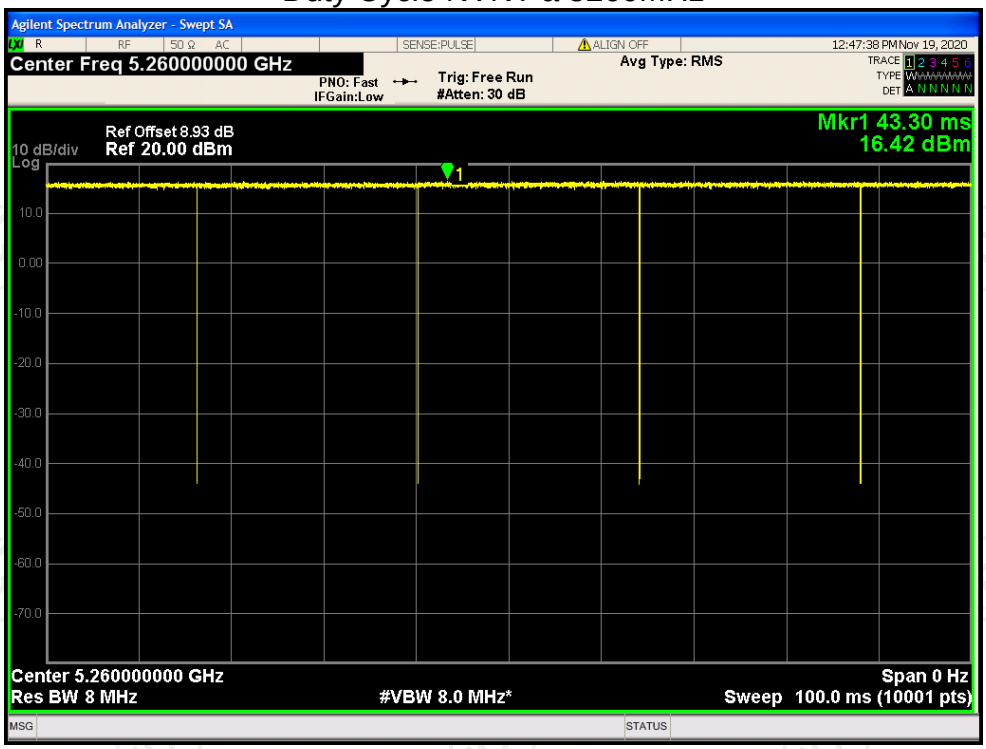
Duty Cycle NVNT n40 5190MHz



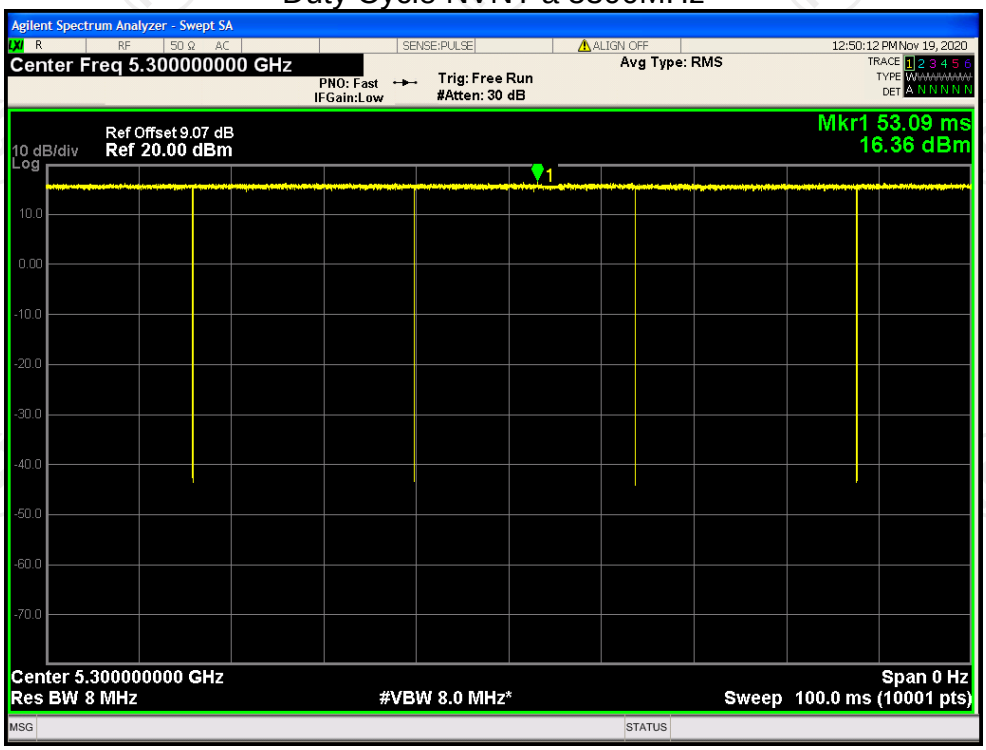
Duty Cycle NVNT n40 5230MHz



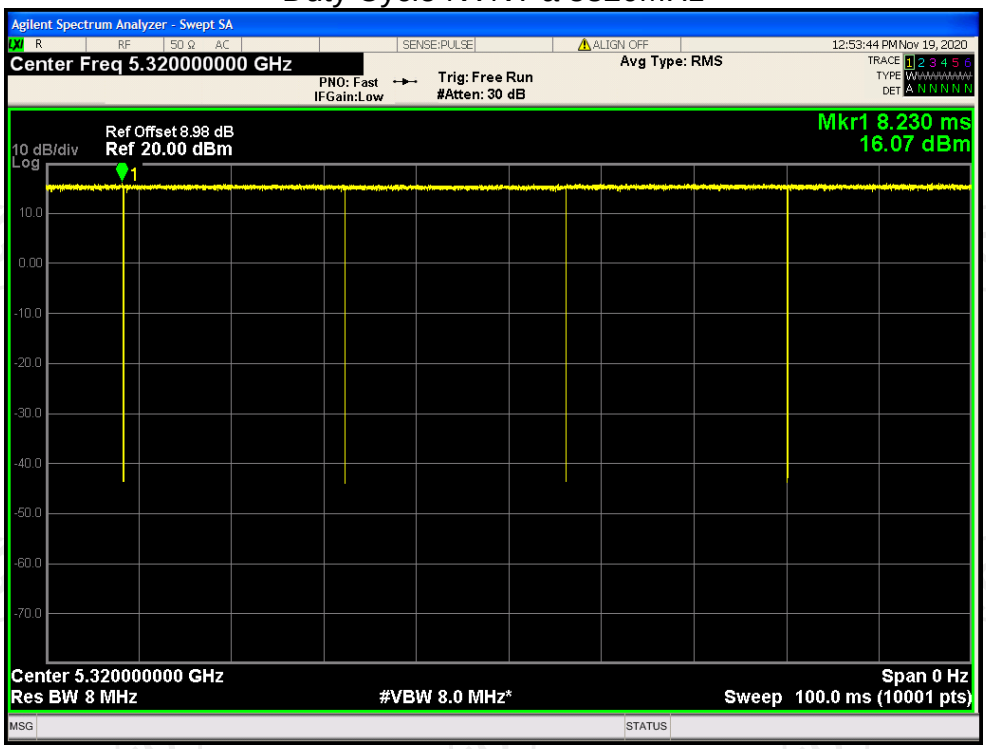
Duty Cycle NVNT a 5260MHz



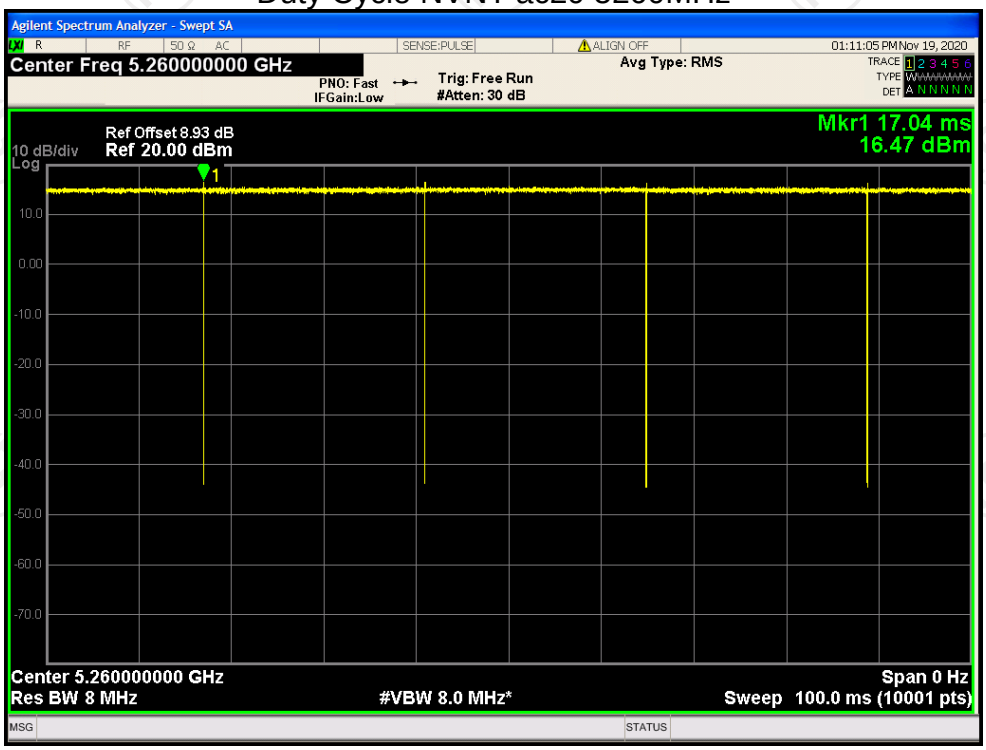
Duty Cycle NVNT a 5300MHz



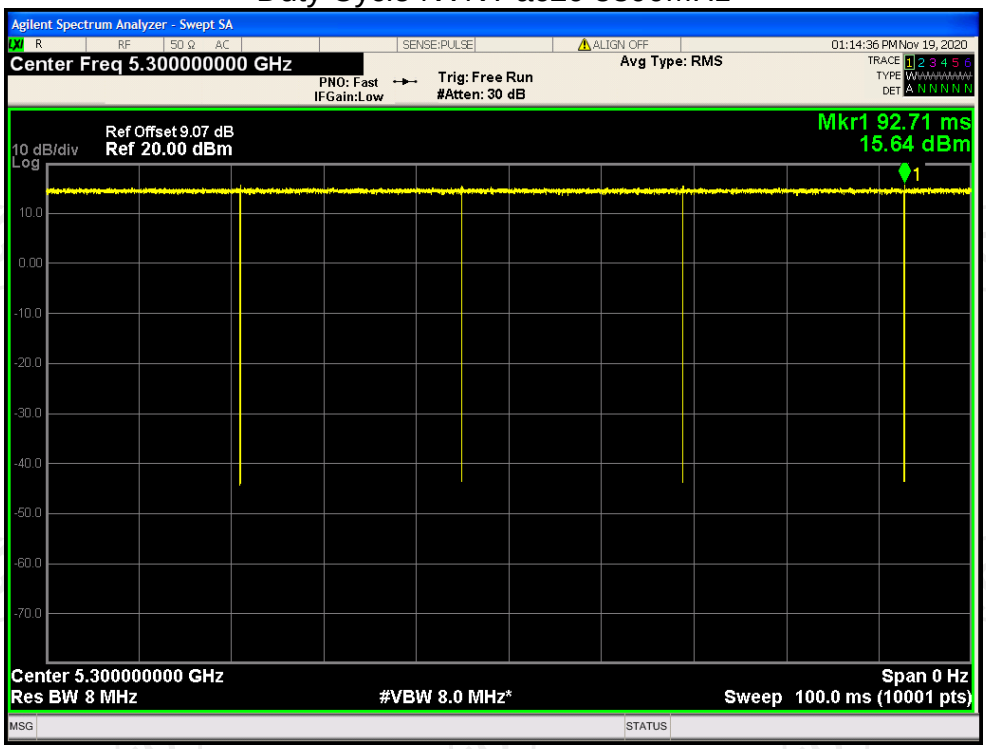
Duty Cycle NVNT a 5320MHz



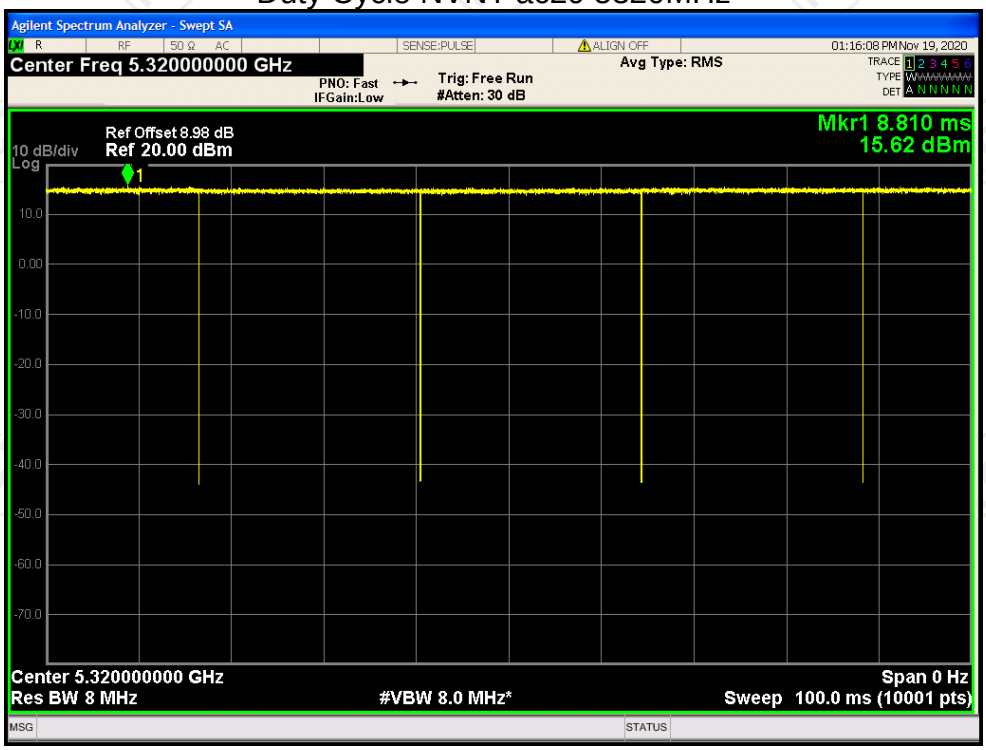
Duty Cycle NVNT ac20 5260MHz



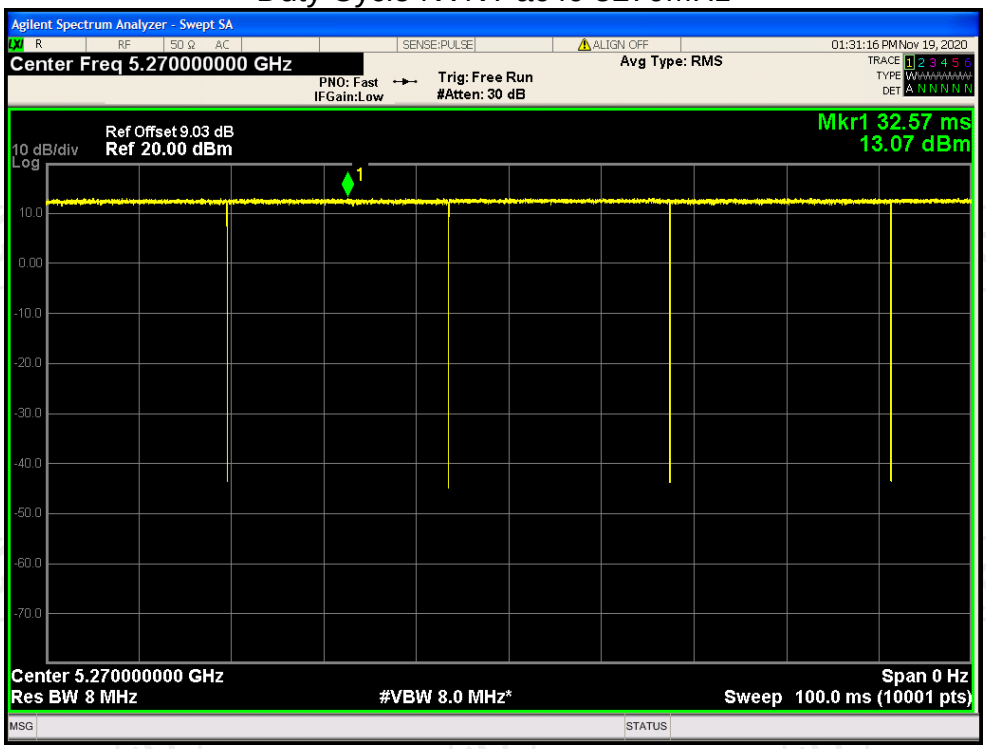
Duty Cycle NVNT ac20 5300MHz



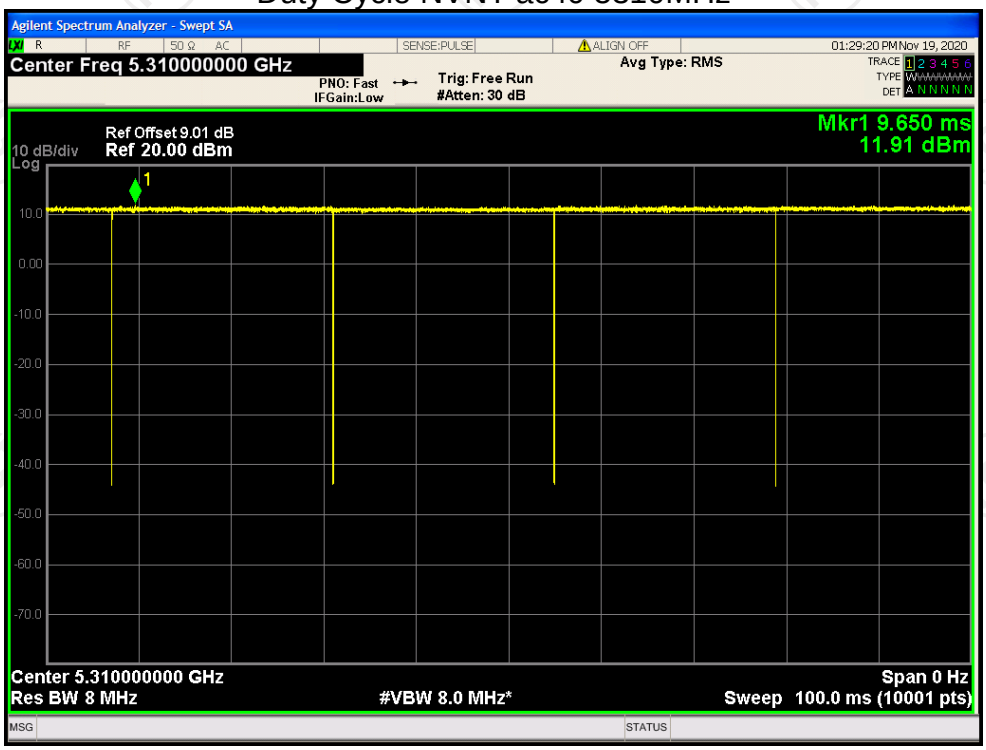
Duty Cycle NVNT ac20 5320MHz



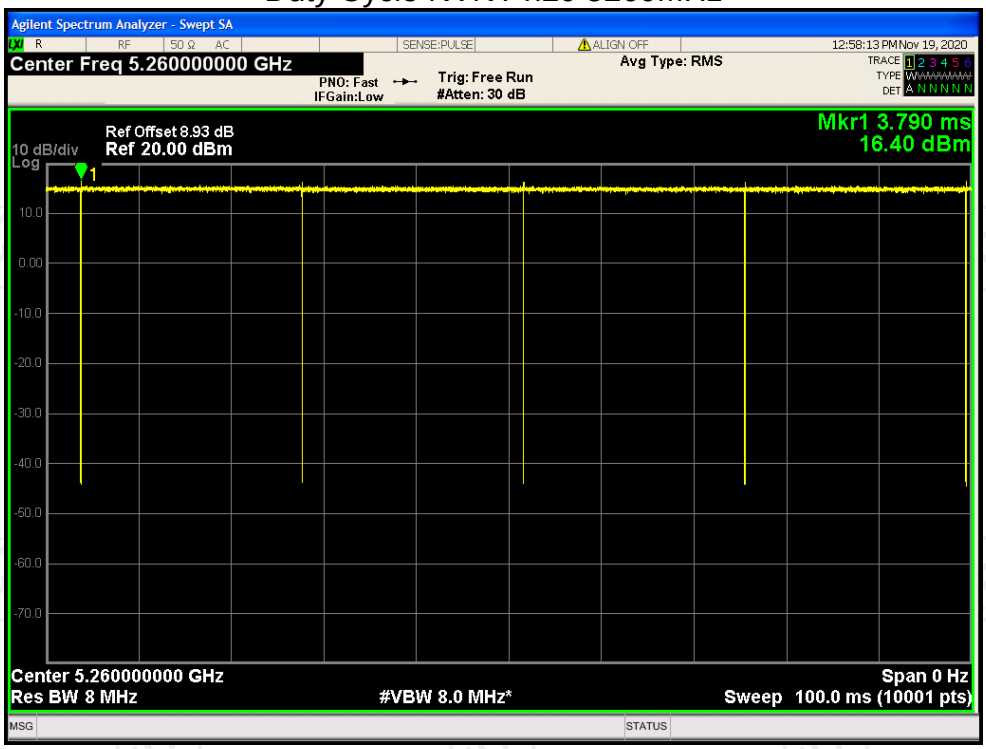
Duty Cycle NVNT ac40 5270MHz



Duty Cycle NVNT ac40 5310MHz



Duty Cycle NVNT n20 5260MHz



Duty Cycle NVNT n20 5300MHz