FCC RADIO TEST REPORT

Applicant……	:	Hui Zhou Gaoshengda Technology Co., LTD
Address……....	:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Manufacturer……..	:	Hui Zhou Gaoshengda Technology Co., LTD
Address……....	:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Factory……...	:	Hui Zhou Gaoshengda Technology Co., LTD
Address……..	:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Product Name…….	:	WIFI+BT Module
Brand Name……...	:	GSD
Model No. ……..	:	WCT28M2701
FCC ID……....	:	2AC23-WCT28
Measurement Standard….	:	47 CFR FCC PART 15 Subpart E (section 407)
Receipt Date of Samples….	:	February 23, 2023
Date of Tested……	:	February 23, 2023 to February 28, 2023
Date of Report……	:	March 16, 2023

This report shows that above equipment is technically compliant with the requirements of the standards above. All test results in this report apply only to the tested sample(s). Without prior written approval of Dongguan Nore Testing Center Co., Ltd, this report shall not be reproduced except in full.

Prepared by	Approved by
Rose Hu / Project Engineer	Iori Fan / Authorized Signatory

Table of Contents

Revision History

Report Number	Description	Issued Date
NTC2302266FV00	Initial Issue	2023-03-16

1. Summary of Test Result

FCC Rules	Description of Test	Result	Remarks
§15.207 (a)	AC Power Conducted Emission	N/A[1]	---
§15.407(a)	Max. Conducted Output Power	PASS	---
§15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	N/A[1]	---
§15.407(e)	6dB Bandwidth	N/A[1]	---
§15.407(a)	Power Spectral Density	PASS	---
§15.407(b) §15.205	Radiated Emissions	PASS	---
§15.407(b)	Band Edge Emissions	N/A[1]	---
§15.407(g)	Frequency Stability	N/A[1]	---
§15.203	Antenna Requirement	N/A[1]	---
§15.407(h)	Dynamic Frequency Selection	N/A[1]	---

Note 1: The manufacturer added an optional antenna. We have retested the Radiated Spurious Emissions item. For Max. Conducted Output Power & Power Spectral Density items, we have recalculated the test limit based on the new antenna gain. The other test items were not affected, thus, the other test data were continued to be referenced, details refer to the report 21EFSS06094 06131 published by Dongguan Shuoxin Electronic Technology Co., LTD on August 12, 2021.

2. General Description of EUT

Product Information	
Product name:	WIFI+BT Module
Main Model Name:	WCT28M2701
Additional Model Name:	N/A
Model Difference:	N/A
S/N:	2302010010000
Brand Name	GSD
Hardware version:	V1.0
Software version:	V1.0
Rating:	DC 3.3V
Classification:	Class B
Typical arrangement:	Table-top
I/O Port:	N/A
Accessories Information	
Adapter:	N/A
Cable:	N/A
Other:	N/A
Additional Information	
Note:	N/A
Remark:	All the information above are provided by the manufacturer. More detailed feature of the EUT please refers to the user manual.

Technical Specification	
Frequency Range:	5150-5250MHz 5250-5350MHz, 5470-5720MHz 5725-5850MHz
Modulation Technology:	DSSS, OFDM
Modulation Type:	BPSK, QPSK for 802.11a 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for 802.11n/ac/ax
Number of Channel:	U-NII-1, U-NII-2A: 4 Channel for 802.11a/n(HT20)/ac(VHT20) 2 Channel for 802.11n(HT40)/ac(VHT40) 1 Channel for 802.11ac(VHT80) U-NII-2C: 11 Channel for 802.11a/n(HT20)/ax(HE20)/ac(VHT20) 5 Channel for 802.11n(HT40)/ac(VHT40) 2 Channel for 802.11ac(VHT80) U-NII-3: 5 Channel for 802.11a/n(HT20)/ac(VHT20) 2 Channel for 802.11n(HT40)/ac(VHT40) 1 Channel for 802.11ac(VHT80)
Antenna Type:	PIFA antenna*2
Antenna Gain:	Ant.1: 4.74dBi Ant.2: 4.74dBi
Type:	Client without Radar detection.

Channel List					
U-NII-1 Band 5180~5240MHz					
IEEE 802.11a/n(HT20)/ac(VHT20)		IEEE 802.11n(HT40)/ac(VHT40)		IEEE 802.11 ac (VHT80)	
Channel	Frequency MHz	Channel	Frequency MHz	Channel	Frequency MHz
36	5180	38	5190	42	5210
40	5200	46	5230	-	-
44	5220	-	-	-	-
48	5240	-	-	-	-
U-NII-2A Band 5260-5320MHz					
52	5260	54	5270	58	5290
56	5280	62	5310	-	-
60	5300	-	-	-	-
64	5320	-	-	-	-
U-NII-2C Band 5500-5700MHz					
100	5500	102	5510	106	5530
104	5520	110	5550	122	5610
108	5540	118	5590	-	-
112	5560	126	5630	-	-
116	5580	134	5670	-	-
132	5660	-	-	-	-
136	5680	-	-	-	-
140	5700	-	-	-	-

U-NII-3 Band 5745~5825MHz					
IEEE 802.11a/n(HT20)/ac(VHT20)		IEEE 802.11n(HT40)/ac(VHT40)		IEEE 802.11 ac (VHT80)	
Channel	Frequency MHz	Channel	Frequency MHz	Channel	Frequency MHz
149	5745	151	5755	155	5775
153	5765	159	5795	-	-
157	5785	-	-		
161	5805	-	-		
165	5825	-	-		

Antenna Information

Ant. (Chain)	Brand	Model name	Antenna Type	Connector	Gain (dBi)	Application range
1 (BT)	HKC	WWXL6009189	Copper tube	IPEX	2.71	2.4 to 2.5 GHz
2 (WLAN)	HKC	WWXL6009190	PIFA	IPEX	3.86	2.4 to 2.5 GHz
					4.74	5.150 to 5.850 GHz
3 (WLAN)	HKC	WWXL6009190	PIFA	IPEX	3.86	2.4 to 2.5 GHz
					4.74	5.150 to 5.850 GHz

Note: 5G Antenna Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2 / 2] = 7.75$dBi

3. Test Channels and Modes Detail

No.	Mode	Channel	Frequency (MHz)	Remark
1	TX	36	5180	IEEE 802.11a/n(HT20)/ac(HT20)
		40	5200	IEEE 802.11a/n(HT20)/ac(HT20)
		48	5240	IEEE 802.11a/n(HT20) /ac(HT20)
		52	5260	IEEE 802.11a/n(HT20) /ac(HT20)
		60	5300	IEEE 802.11a/n(HT20) /ac(HT20)
		64	5320	IEEE 802.11a/n(HT20) /ac(HT20)
		100	5500	IEEE 802.11a/n(HT20) /ac(HT20)
		116	5580	IEEE 802.11a/n(HT20) /ac(HT20)
		140	5700	IEEE 802.11a/n(HT20) /ac(HT20)
		149	5745	IEEE 802.11a/n(HT20) /ac(HT20)
		157	5785	IEEE 802.11a/n(HT20) /ac(HT20)
		165	5825	IEEE 802.11a/n(HT20) /ac(HT20)
		38	5190	IEEE 802.11n(HT40) /ac(VHT40)
		46	5230	IEEE 802.11n(HT40) /ac(VHT40)
		54	5270	IEEE 802.11n(HT40) /ac(VHT40)
		62	5310	IEEE 802.11n(HT40) /ac(VHT40)
		102	5510	IEEE 802.11n(HT40) /ac(VHT40)
		134	5670	IEEE 802.11n(HT40) /ac(VHT40)
		151	5755	IEEE 802.11n(HT40) /ac(VHT40)
		159	5795	IEEE 802.11n(HT40) /ac(VHT40)
		42	5210	IEEE 802.11ac(VHT80)
		58	5290	IEEE 802.11ac(VHT80)
		122	5610	IEEE 802.11ac(VHT80)
		155	5775	IEEE 802.11ac(VHT80)
2.	Normal Mode	---	---	---
Note: TX mode means that the EUT was programmed to be in continuously transmitting mode.				

4. Configuration of EUT

TX Mode

5. Modification of EUT

No modifications are made to the EUT during all test items.

6. Description of Support Device

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.

No.	Equipment	Brand	M/N	S/N	Cable Specification	Remarks
1.	Laptop	Lenovo	02213DC	0A33012	Power cord, 1.8m, unshielded	---
2.	Power supply (Notebook)	Taida	92P1154	N/A	----	---
3.	Test fixture	---	---	---	----	Provide by the Manufacturer

7. Test Facility and Location

Test Site	:	Dongguan Nore Testing Center Co., Ltd. (Dongguan NTC Co., Ltd.)
Accreditations and Authorizations	:	The Laboratory has been assessed and proved to be in compliance with CNAS/CL01 Listed by CNAS, August 13, 2018 The Certificate Registration Number is L5795. The Certificate is valid until August 13, 2024 The Laboratory has been assessed and proved to be in compliance with ISO17025 Listed by A2LA, November 01, 2017 The Certificate Registration Number is 4429.01 Listed by FCC, November 06, 2017 Test Firm Registration Number is 907417 Listed by Industry Canada, June 08, 2017 The Certificate Registration Number is 46405-9743A
Test Site Location	:	Building D, Gaosheng Science and Technology Park, Hongtu Road, Nancheng District, Dongguan City, Guangdong Province, China

8. Applicable Standards and References

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

Test Standards:

47 CFR Part 15, Subpart E, 15.407

ANSI C63.10-2013

References Test Guidance:

KDB 789033 D02 v02r01

KDB 905462 D03 v01r02

9. Deviations and Abnormalities from Standard Conditions

The manufacturer added an optional antenna. We have retested the Radiated Spurious Emissions item. For Max. Conducted Output Power & Power Spectral Density items, we have recalculated the test limit based on the new antenna gain. The other test items were not affected, thus, the other test data were continued to be referenced, details refer to the report 21EFSS06094 06131 published by Dongguan Shuoxin Electronic Technology Co., LTD on August 12, 2021.

10. Test Conditions

No.	Test Item	Test Mode	Test Voltage	Tested by	Remarks
1.	Radiated Emissions	1	DC 3.3V	Sean	See note 1

Note:

1. The testing climatic conditions for temperature, humidity, and atmospheric pressure are within: 15~35℃, 30~70%, 86~106kPa.

11. Measurement Uncertainty

No.	Test Item	Frequency	Uncertainty	Remarks
1.	Conducted Emission	150KHz ~ 30MHz	±2.52 dB	---
2.	Radiated Emission Test	9KHz ~ 30MHz	±2.60 dB	---
		30MHz ~ 1GHz	±4.68 dB	---
		1GHz ~ 18GHz	±5.14 dB	---
		18GHz ~ 40GHz	±5.14 dB	---
3.	RF Conducted Test	10Hz ~ 40GHz	±1.06 dB	---

Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The measurement uncertainly levels above are estimated and calculated according to CISPR 16-4-2.
3. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

12. Sample Calculations

Conducted Emission						
Freq. (MHz)	**Reading Level (dBuV)**	**Correct Factor (dB)**	**Measurement (dBuV)**	**Limit (dBuV)**	**Over (dB)**	**Detector**
0.1900	30.10	10.60	40.70	79.00	-38.30	QP

Where,

Freq.	= Emission frequency in MHz
Reading Level	= Spectrum Analyzer/Receiver Reading
Corrector Factor	= Insertion loss of LISN + Cable Loss + RF Switching Unit attenuation
Measurement	= Reading + Corrector Factor
Limit	= Limit stated in standard
Margin	= Measurement - Limit
Detector	= Reading for Quasi-Peak / Average / Peak

Radiated Spurious Emissions and Restricted Bands						
Freq. (MHz)	**Reading Level (dBuV)**	**Correct Factor (dB/m)**	**Measurement (dBuV/m)**	**Limit (dBuV/m)**	**Over (dB)**	**Detector**
60.0700	45.88	-18.38	27.50	49.00	-21.50	QP

Where,

Freq.	= Emission frequency in MHz
Reading Level	= Spectrum Analyzer/Receiver Reading
Corrector Factor	= Antenna Factor + Cable Loss - Pre-amplifier
Measurement	= Reading + Corrector Factor
Limit	= Limit stated in standard
Over	= Margin, which calculated by Measurement - Limit
Detector	= Reading for Quasi-Peak / Average / Peak

Note: For all conducted test items, the spectrum analyzer offset or transducer is derived from RF cable loss and attenuator factor. The offset or transducer is equal to the RF cable loss plus attenuator factor.

13. Test Items and Results

13.1 Radiated Spurious Emissions and Restricted Bands Measurement and Band Edge

LIMITS

Frequency range MHz	Distance Meters	Field Strengths Limit (15.209)
		μV/m
0.009 ~ 0.490	300	2400/F(kHz)
0.490 ~ 1.705	30	24000/F(kHz)
1.705 ~ 30	30	30
30 ~ 88	3	100
88 ~ 216	3	150
216 ~ 960	3	200
Above 960	3	500

Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

(4) The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

(5) §15.407 specifies that emissions which fall in the restricted bands, as defined in §15.205 comply with radiated emission limits specified in §15.209.

For transmitters operating in the 5.15-5.25 GHz band:
All emissions outside of the 5.15-5.35GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

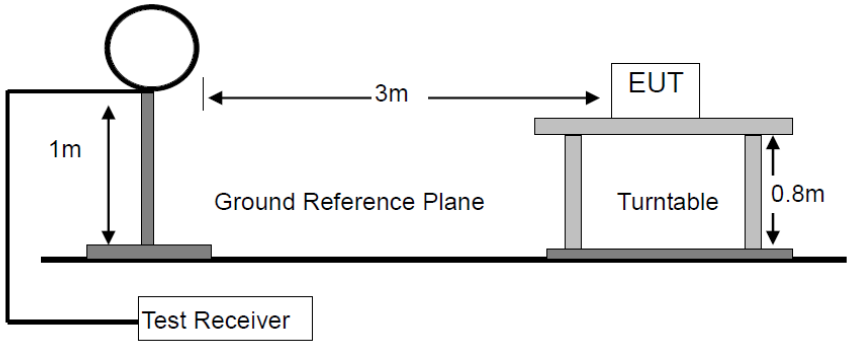
For transmitters operating in the 5.25-5.35 GHz band:
All emissions outside of the 5.15-5.35GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

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

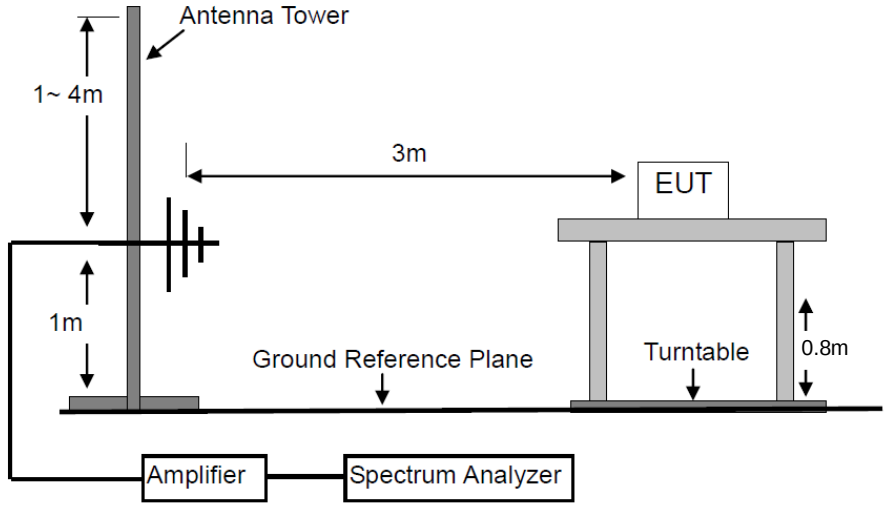
For transmitters operating in the 5.725-5.85 GHz band:
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

BLOCK DIAGRAM OF TEST SETUP

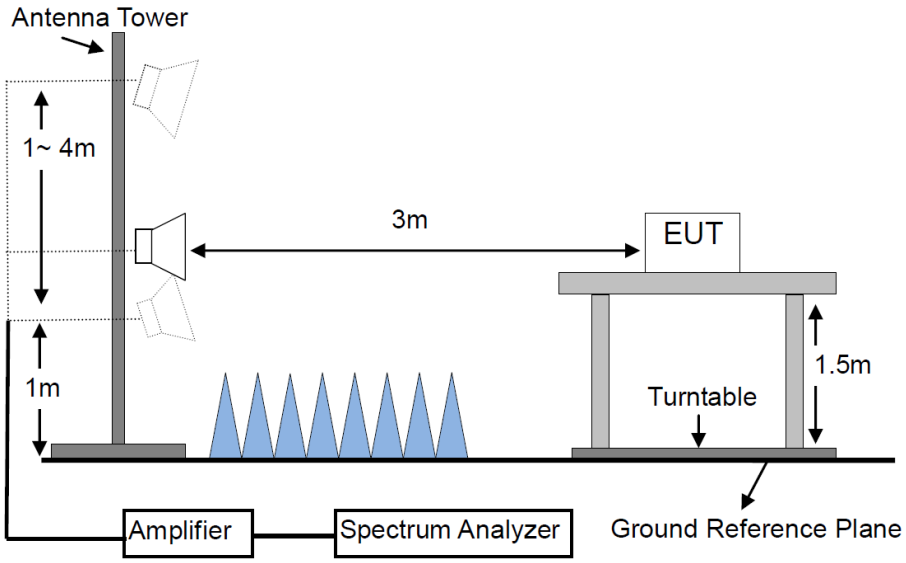
For Radiated Emission below 30MHz



For Radiated Emission 30-1000MHz



For Radiated Emission Above 1000MHz.



TEST PROCEDURES

a. Below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room.

b. For the radiated emission test above 1GHz:

The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The height of antenna 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.

e. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to peak detect function and specified bandwidth with maximum hold mode.

f. A Quasi-peak measurement was then made for that frequency point for below 1GHz test. PK and AV for above 1GHz emission test.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

Frequency Band (MHz)	Detector	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	10 Hz

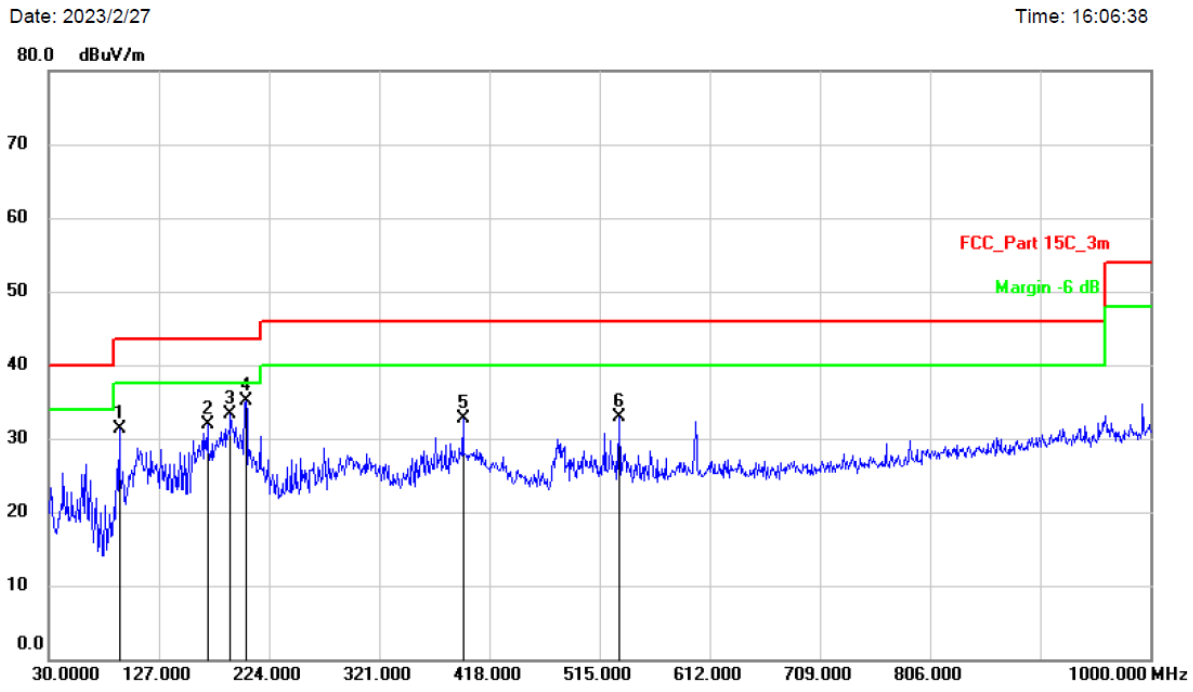
TEST RESULTS

PASS

Please refer to the following pages of the worst case.

M/N: WCT28M2701	Testing Voltage: DC 3.3V
Polarization: Horizontal	Detector: QP
Test Mode: 1	Distance: 3m

Radiated Emission Measurement

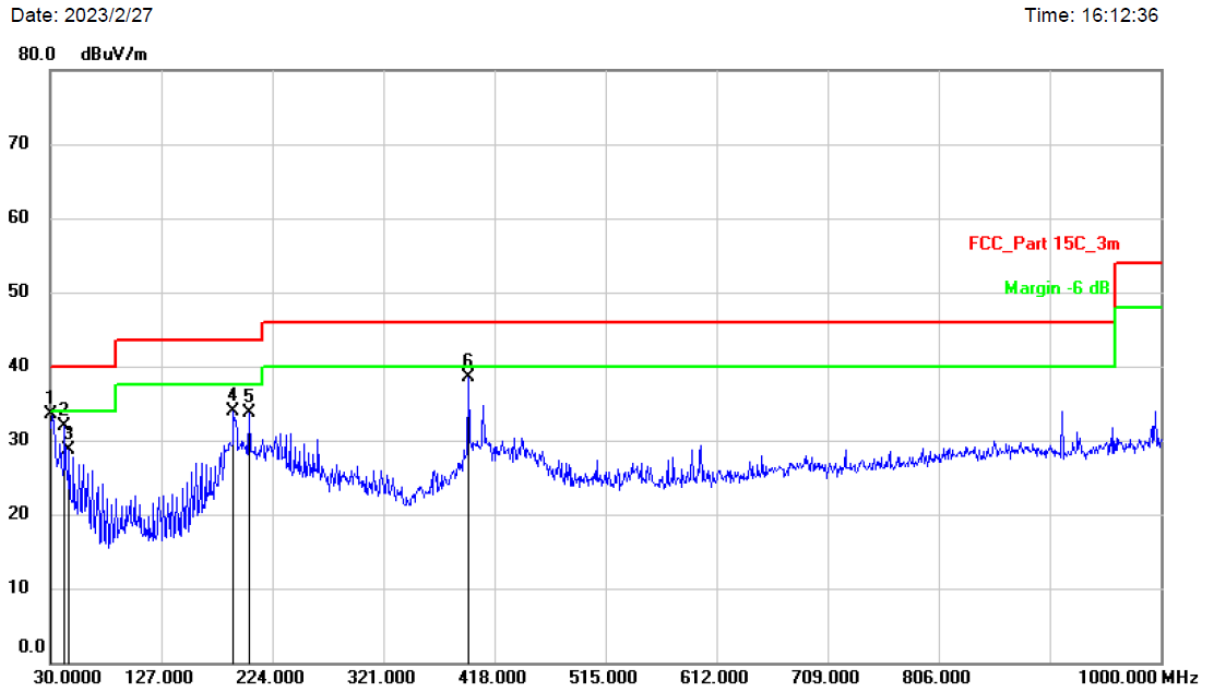


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		92.0800	40.20	-8.91	31.29	43.50	-12.21	QP	
2		169.6799	42.02	-10.02	32.00	43.50	-11.50	QP	
3		190.0500	41.60	-8.27	33.33	43.50	-10.17	QP	
4	*	203.6300	42.84	-7.67	35.17	43.50	-8.33	QP	
5		394.7200	36.08	-3.45	32.63	46.00	-13.37	QP	
6		532.4600	34.06	-1.21	32.85	46.00	-13.15	QP	

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

M/N: WCT28M2701	Testing Voltage: DC 3.3V
Polarization: Vertical	Detector: QP
Test Mode: 1	Distance: 3m

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	30.0000	44.18	-10.69	33.49	40.00	-6.51	QP	
2		42.6100	39.62	-7.72	31.90	40.00	-8.10	QP	
3		46.4900	36.19	-7.46	28.73	40.00	-11.27	QP	
4		190.0500	43.04	-9.09	33.95	43.50	-9.55	QP	
5		203.6300	42.47	-8.69	33.78	43.50	-9.72	QP	
6		395.6900	42.88	-4.43	38.45	46.00	-7.55	QP	

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

Modulation: N-UII-1(5180-5240 MHz) TX (IEEE 802.11a the worst case)				Test Result: PASS			Test frequency range: 1-40GHz			
Freq. (MHz)	Ant. Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV/m)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
Operation Mode: TX Mode (Low)										
5150	V	49.44	29.06	4.64	54.08	33.70	68.20	54.00	-14.12	-20.30
10360	V	39.75	---	11.13	50.88	---	68.20	---	-17.32	---
15540	V	49.72	33.12	16.03	65.75	49.15	74.00	54.00	-8.25	-4.85

5150	H	50.55	29.43	4.64	55.19	34.07	68.20	54.00	-13.01	-19.93
10360	H	49.72	---	11.13	60.85	---	68.20	---	-7.35	---
15540	H	49.09	32.32	16.03	65.12	48.35	74.00	54.00	-8.88	-5.65

Operation Mode: TX Mode (Mid)										
10400	V	48.99	---	11.27	60.26	---	68.20	---	-7.94	---
15600	V	49.12	33.52	15.45	64.57	48.97	74.00	54.00	-9.43	-5.03

10400	H	50.37	---	11.27	61.64	---	68.20	---	-6.56	---
15600	H	49.25	33.42	15.45	64.70	48.87	74.00	54.00	-9.30	-5.13

Operation Mode: TX Mode (High)										
10480	V	48.83	---	11.31	60.14	---	68.20	---	-8.06	---
15720	V	49.01	34.38	15.50	64.51	49.88	74.00	54.00	-9.49	-4.12

10480	H	49.03	---	11.31	60.34	---	68.20	---	-7.86	---
15720	H	49.42	33.08	15.50	64.92	48.58	74.00	54.00	-9.08	-5.42

Remark: 1. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits.

2. Others emissions are attenuated 20dB below the limits, so it does not record in report.

Modulation: N-UII-1(5260-5320 MHz) TX (IEEE 802.11a the worst case)				Test Result: PASS			Test frequency range: 1-40GHz			
Freq. (MHz)	Ant. Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV/m)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
Operation Mode: TX Mode (Low)										
10520	V	48.43	---	11.29	59.72	---	68.20	---	-8.48	---
15780	V	48.51	34.24	15.53	64.04	49.77	74.00	54.00	-9.96	-4.23

10520	H	51.06	---	11.29	62.35	---	68.20	---	-5.85	---
15780	H	49.10	33.12	15.53	64.63	48.65	74.00	54.00	-9.37	-5.35

Operation Mode: TX Mode (Mid)										
10600	V	49.15	---	11.14	60.29	---	68.20	---	-7.91	---
15900	V	48.06	31.95	14.16	62.22	46.11	74.00	54.00	-11.78	-7.89

10600	H	49.29	---	11.14	60.43	---	68.20	---	-7.77	---
15900	H	48.34	32.38	14.16	62.50	46.54	74.00	54.00	-11.50	-7.46

Operation Mode: TX Mode (High)										
5350	V	51.79	32.42	4.64	56.43	37.06	68.20	54.00	-11.77	-16.94
10640	V	48.00	---	11.27	59.27	---	68.20	---	-8.93	---
15960	V	48.13	35.64	13.46	61.59	49.10	74.00	54.00	-12.41	-4.90

5350	H	52.77	34.31	4.64	57.41	38.95	68.20	54.00	-10.79	-15.05
10640	H	48.43	---	11.27	59.70	---	68.20	---	-8.50	---
15960	H	49.31	33.80	13.46	62.77	47.26	74.00	54.00	-11.23	-6.74

Remark: 1. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits.

2. Others emissions are attenuated 20dB below the limits, so it does not record in report.

Modulation: N-UII-1(5500-5700 MHz) TX (IEEE 802.11a the worst case)				Test Result: PASS			Test frequency range: 1-40GHz			
Freq. (MHz)	Ant. Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV/m)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
Operation Mode: TX Mode (Low)										
5460	V	51.49	30.36	4.92	56.41	35.28	68.20	54.00	-11.79	-18.72
11000	V	49.59	38.26	10.69	60.28	48.95	74.00	54.00	-13.72	-5.05
16500	V	48.65	---	14.43	63.08	---	68.20	---	-5.12	---

5460	H	52.33	31.80	4.92	57.25	36.72	68.20	54.00	-10.95	-17.28
11000	H	50.05	38.30	10.69	60.74	48.99	74.00	54.00	-13.26	-5.01
16500	H	48.12	---	14.43	62.55	---	68.20	---	-5.65	---

Operation Mode: TX Mode (Mid)										
11200	V	49.23	37.04	13.24	62.47	50.28	74.00	54.00	-11.53	-3.72
16800	V	45.84	---	16.26	62.10	---	68.20	---	-6.10	---

11200	H	50.78	36.64	13.24	64.02	49.88	74.00	54.00	-9.98	-4.12
16800	H	46.07	---	16.26	62.33	---	68.20	---	-5.87	---

Operation Mode: TX Mode (High)										
11400	V	48.25	37.45	12.42	60.67	49.87	74.00	54.00	-13.33	-4.13
17100	V	44.26	---	18.72	62.98	---	68.20	---	-5.22	---

11400	H	48.83	37.42	12.42	61.25	49.84	74.00	54.00	-12.75	-4.16
17100	H	43.74	---	18.72	62.46	---	68.20	---	-5.74	---

Remark: 1. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits.

2. Others emissions are attenuated 20dB below the limits, so it does not record in report.

Modulation: N-UII-3 (5745-5825 MHz) TX (IEEE 802.11a the worst case)				Test Result: PASS			Test frequency range: 1-40GHz			
Freq. (MHz)	Ant. Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV/m)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
Operation Mode: TX Mode (Low)										
11490	V	48.66	35.37	13.55	62.21	48.92	74.00	54.00	-11.79	-5.08
17235	V	44.58	---	18.26	62.84	---	68.20	---	-5.36	---

11490	H	48.76	36.26	13.55	62.31	49.81	74.00	54.00	-11.69	-4.19
17235	H	44.51	---	18.26	62.77	---	68.20	---	-5.43	---

Operation Mode: TX Mode (Mid)										
11570	V	46.65	32.89	14.43	61.08	47.32	74.00	54.00	-12.92	-6.68
17355	V	43.25	---	19.27	62.52	---	68.20	---	-5.68	---

11570	H	47.65	33.49	14.43	62.08	47.92	74.00	54.00	-11.92	-6.08
17355	H	43.82	---	19.09	62.91	---	68.20	---	-5.29	---

Operation Mode: TX Mode (High)										
11650	V	48.06	32.97	14.25	62.31	47.22	74.00	54.00	-11.69	-6.78
17475	V	43.55	---	19.40	62.95	---	68.20	---	-5.25	---

11650	H	48.58	33.07	14.25	62.83	47.32	74.00	54.00	-11.17	-6.68
17475	H	43.63	---	19.40	63.03	---	68.20	---	-5.17	---

Remark: 1. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits.

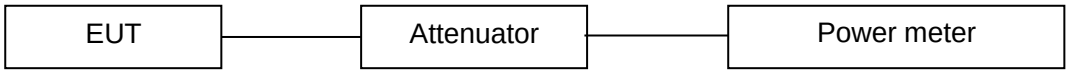
2. Others emissions are attenuated 20dB below the limits, so it does not record in report.

13.2 Maximum Conducted Output Power Measurement

LIMITS

Operation Band	EUT category	Limit
☒5180~5240MHz	☐Outdoor Access Point	1 Watt (30dBm) (Max. e.i.r.p ≤ 125mW(21dBm) at any elevation angle above 30 degrees as measured from the horizon)
	☐Fixed point-to-point Access Point	1 Watt (30dBm)
	☐Indoor Access Point	1 Watt (30dBm)
	☒Mobile and Portable client device	250mW (24dBm)
☒5260~5320MHz	-	250mW (24dBm)
☒5500~5700MHz	-	250mW (24dBm)
☒5745~5825MHz	-	1 Watt (30dBm)

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 v02r01 for compliance testing of Unlicensed National Information Infrastructure (U-NII) Device -section (E) Maximum conducted output power.
3. Measurement using a power meter (PM) =b Method PM-G (Measurement using a gated RF average power meter).

TEST RESULTS

PASS

Please refer to the following table.

U-NII-1					
Frequency MHz	Data Rate Mbps	Average Output Power dBm			Limit dBm
IEEE 802.11a Mode (OFDM, Antenna Gain=4.74dBi), ANT1					
Channel: 5180	6	14.85			24.00
Channel: 5200	6	14.44			24.00
Channel: 5240	6	14.82			24.00
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5180	MCS 8	ANT_1	ANT_2	Total	22.25
		13.03	13.10	16.08	
Channel: 5200	MCS 8	12.58	12.51	15.56	22.25
Channel: 5240	MCS 8	12.18	12.69	15.45	22.25
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5190	MCS 8	13.40	13.76	16.59	22.25
Channel: 5230	MCS 8	13.56	13.58	16.58	22.25
IEEE 802.11ac (VHT20) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5180	MCS 8	12.65	12.83	15.75	22.25
Channel: 5200	MCS 8	12.27	12.39	15.34	22.25
Channel: 5240	MCS 8	12.65	12.71	15.69	22.25
IEEE 802.11ac (VHT40) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5190	MCS 8	13.82	13.67	16.76	22.25
Channel: 5230	MCS 8	13.93	13.53	16.74	22.25
IEEE 802.11ac (VHT80) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5210	MCS 8	12.72	12.77	15.76	22.25

Note: 1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded.

2. As for IEEE 802.11n/ac mode, EUT working in MIMO mode. Directional Gain for MIMO.
3. Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2/ 2]$= 7.75dBi> 6 dBi
4. Duty Cycle Factor was considered during the test.

U-NII-2A					
Frequency MHz	Data Rate Mbps	Average Output Power dBm			Limit dBm
IEEE 802.11a Mode (OFDM, Antenna Gain=4.74dBi) ANT2					
Channel: 5260	6	14.72			24
Channel: 5300	6	14.96			24
Channel: 5320	6	14.79			24
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5260	MIMO	ANT_1	ANT_2	Total	22.25
	MCS 8	13.99	13.53	16.78	
Channel: 5300	MCS 8	13.80	13.80	16.81	22.25
Channel: 5320	MCS 8	13.83	13.90	16.88	22.25
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5270	MCS 8	13.95	13.63	16.80	22.25
Channel: 5310	MCS 8	13.82	13.80	16.82	22.25
IEEE 802.11ac (VHT20) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5260	MCS 8	13.97	13.55	16.78	22.25
Channel: 5300	MCS 8	13.83	13.79	16.82	22.25
Channel: 5320	MCS 8	13.72	13.99	16.87	22.25
IEEE 802.11ac (VHT40) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5270	MCS 8	13.76	13.55	16.67	22.25
Channel: 5310	MCS 8	13.68	13.72	16.71	22.25
IEEE 802.11ac (VHT80) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5290	MCS 8	12.78	12.56	15.68	22.25

Note: 1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded.

2. As for IEEE 802.11n/ac mode, EUT working in MIMO mode. Directional Gain for MIMO.

3. Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2 / 2]$= 7.75dBi> 6 dBi

4. Duty Cycle Factor was considered during the test.

U-NII-2C					
Frequency MHz	Data Rate Mbps	Average Output Power dBm			Limit dBm
IEEE 802.11a Mode (OFDM, Antenna Gain=4.74dBi) ANT2					
Channel: 5500	6	13.82			24.00
Channel: 5580	6	13.45			24.00
Channel: 5700	6	13.98			24.00
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5500	MIMO	ANT_1	ANT_2	Total	22.25
	MCS 8	13.60	13.94	16.78	
Channel: 5580	MCS 8	13.47	13.68	16.59	22.25
Channel: 5700	MCS 8	13.73	13.64	16.70	22.25
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5510	MCS 8	13.60	13.94	16.78	22.25
Channel: 5670	MCS 8	13.73	13.64	16.70	22.25
IEEE 802.11ac (VHT20) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5500	MCS 8	13.97	13.92	16.96	22.25
Channel: 5580	MCS 8	13.74	13.44	16.60	22.25
Channel: 5700	MCS 8	13.80	14.00	16.91	22.25
IEEE 802.11ac (VHT40) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5510	MCS 8	13.64	13.99	16.83	22.25
Channel: 5670	MCS 8	13.69	13.62	16.67	22.25
IEEE 802.11ac (VHT80) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5610	MCS 8	12.31	12.46	15.40	22.25

Note: 1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded.

2. As for IEEE 802.11n/ac mode, EUT working in MIMO mode. Directional Gain for MIMO.

3. Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2 / 2]$= 7.75dBi> 6 dBi

4. Duty Cycle Factor was considered during the test.

U-NII-3					
Frequency MHz	Data Rate Mbps	Average Output Power dBm			Limit dBm
IEEE 802.11a Mode (OFDM, Antenna Gain=4.74dBi) ANT2					
Channel: 5745	6	14.86			30.00
Channel: 5785	6	14.35			30.00
Channel: 5825	6	14.78			30.00
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5745	MIMO	ANT_1	ANT_2	Total	28.25
	MCS 8	13.93	13.67	16.81	
Channel: 5785	MCS 8	13.73	13.61	16.68	28.25
Channel: 5825	MCS 8	13.43	13.57	16.51	28.25
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5755	MCS 8	13.50	13.65	16.59	28.25
Channel: 5795	MCS 8	13.67	13.26	16.48	28.25
IEEE 802.11ac (VHT20) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5745	MCS 8	13.85	13.66	16.77	28.25
Channel: 5785	MCS 8	13.60	13.69	16.66	28.25
Channel: 5825	MCS 8	13.54	13.55	16.56	28.25
IEEE 802.11ac (VHT40) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5755	MCS 8	13.49	13.98	16.75	28.25
Channel: 5795	MCS 8	13.65	13.64	16.66	28.25
IEEE 802.11ac (VHT80) Mode (OFDM, Antenna Gain=4.74dBi)					
Channel: 5775	MCS 8	12.67	12.94	15.82	28.25

Note: 1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded.

2. As for IEEE 802.11n/ac mode, EUT working in MIMO mode. Directional Gain for MIMO.

3. Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2 / 2]$= 7.75dBi> 6 dBi

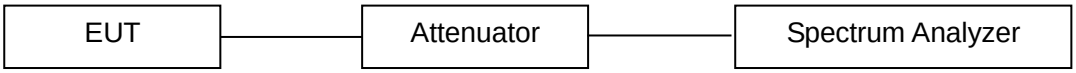
4. Duty Cycle Factor was considered during the test.

13.3 Power Spectral Density

LIMITS

Operation Band		Limit
☒5180~5240MHz	☐Outdoor access point	17 dBm/MHz
	☐Indoor access point	17 dBm/MHz
	☐Fixed point-to-point access points	17 dBm/MHz
	☒Client devices	11 dBm/MHz
☒5260~5320MHz	-	11 dBm/MHz
☒5500~5700MHz	-	11 dBm/MHz
☒5745~5825MHz	-	30 dBm/500kHz

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

The antenna port of the EUT was connected to the input of a spectrum analyzer.

Analyzer was set as below according to FCC KDB789033 (v02r01):

a. Set analyzer center frequency to center frequency

b. Set the RBW to: 1MHz

c. Set the VBW to: 3MHz

d. Detector = RMS

e. Sweep time = auto couple

f. Trace Average = 100 times

g. If measured bandwidth of Maximum PSD is specified in 500kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (<500kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement. Allow trace to fully stabilize.

TEST RESULTS

PASS

Please refer to the following test plots.

U-NII-1						
Frequency MHz	Data Rate Mbps	Duty Cycle Factor (dB)	PSD dBm/MHz		Total PSD with duty cycle factor	Limit dBm/ MHz
IEEE 802.11a Mode (OFDM, Antenna Gain=4.74dBi) ANT 2						
Channel: 5180	6	0	4.272		4.272	11
Channel: 5200	6		3.888		3.888	11
Channel: 5240	6		4.365		4.365	11
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5180	MCS 8	0	ANT_1	ANT_2	Total	---
			0.562	0.403	3.494	9.25
Channel: 5200	MCS 8		0.448	0.345	3.407	9.25
Channel: 5240	MCS 8		0.734	0.255	3.511	9.25
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5190	MCS 8	0	-0.173	0.596	3.239	9.25
Channel: 5230	MCS 8		1.105	0.680	3.908	9.25
IEEE 802.11ac(VHT20) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5180	MCS 8	0	0.265	0.930	3.621	9.25
Channel: 5200	MCS 8		0.997	0.324	3.684	9.25
Channel: 5240	MCS 8		0.747	0.402	3.588	9.25
IEEE 802.11ac(VHT40) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5190	MCS 8	0	-2.422	-2.152	0.716	9.25
Channel: 5230	MCS 8		-1.431	-1.202	1.685	9.25
IEEE 802.11ac(VHT80) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5210	MCS 8	0	-4.298	-4.069	-1.172	9.25

Note:
1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded.
2. As for IEEE 802.11n/ac mode, EUT working in MIMO mode.
3. Please refer to section 13 for duty cycle factor
4. Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2 / 2] = 7.75\text{dBi} > 6$ dBi

U-NII-2A						
Frequency MHz	Data Rate Mbps	Duty Cycle Factor (dB)	PSD dBm/MHz		Total PSD with duty cycle factor	Limit dBm/ MHz
IEEE 802.11a Mode (OFDM, Antenna Gain=4.74dBi) ANT 2						
Channel: 5260	6	0	4.248		4.248	11
Channel: 5300	6		4.117		4.117	11
Channel: 5320	6		4.656		4.656	11
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5260	MCS 8	0	ANT_1	ANT_2	Total	---
			3.987	3.757	6.884	9.25
Channel: 5300	MCS 8		2.601	3.964	6.346	9.25
Channel: 5320	MCS 8		2.744	4.430	6.679	9.25
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=4.74Bi)						
Channel: 5270	MCS 8	0	-0.132	1.110	3.544	9.25
Channel: 5310	MCS 8		-0.575	0.855	3.209	9.25
IEEE 802.11ac(VHT20) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5260	MCS 8	0	2.135	1.640	4.905	9.25
Channel: 5300	MCS 8		1.563	1.840	4.714	9.25
Channel: 5320	MCS 8		1.457	2.141	4.823	9.25
IEEE 802.11ac(VHT40) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5297	MCS 8	0	-1.260	-0.813	1.980	9.25
Channel: 5310	MCS 8		-1.875	-1.179	1.497	9.25
IEEE 802.11ac(VHT80) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5290	MCS 8	0	-4.042	-3.294	-0.642	9.25

Note:
1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded.
2. As for IEEE 802.11n/ac mode, EUT working in MIMO mode.
3. Please refer to section 13 for duty cycle factor
4. Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2/ 2]$= 7.75dBi> 6 dBi

U-NII-2C						
Frequency MHz	Data Rate Mbps	Duty Cycle Factor (dB)	PSD dBm/MHz		Total PSD with duty cycle factor	Limit dBm/ MHz
IEEE 802.11a Mode (OFDM, Antenna Gain=4.74dBi) ANT2						
Channel: 5500	6	0	4.827		4.827	11
Channel: 5580	6		4.015		4.015	11
Channel: 5700	6		5.217		5.217	11
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5500	MCS 8	0	ANT_1	ANT_2	Total	---
			3.933	3.989	6.971	9.25
Channel: 5580	MCS 8		2.240	3.971	6.201	9.25
Channel: 5700	MCS 8		3.514	4.438	7.011	9.25
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=4.74Bi)						
Channel: 5510	MCS 8	0	-0.669	0.948	3.225	9.25
Channel: 5670	MCS 8		-0.269	0.774	3.294	9.25
IEEE 802.11ac(VHT20) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5500	MCS 8	0	1.120	1.725	4.443	9.25
Channel: 5580	MCS 8		1.451	1.424	4.448	9.25
Channel: 5700	MCS 8		2.254	2.525	5.402	9.25
IEEE 802.11ac(VHT40) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5510	MCS 8	0	-1.772	-1.332	1.464	9.25
Channel: 5670	MCS 8		-0.637	-1.058	2.168	9.25
IEEE 802.11ac(VHT80) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5610	MCS 8	0	-3.068	-3.483	-0.260	9.25

Note:
1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded.
2. As for IEEE 802.11n/ac mode, EUT working in MIMO mode.
3. Please refer to section 13 for duty cycle factor
4. Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2/ 2]$= 7.75dBi> 6 dBi

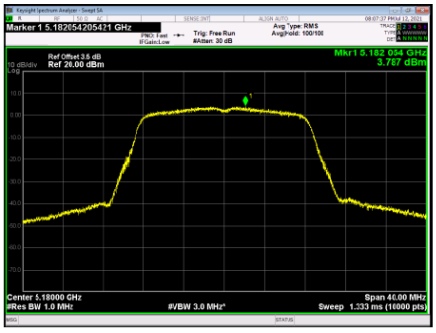
U-NII-3						
Frequency MHz	Data Rate Mbps	Duty Cycle Factor (dB)	PSD dBm/MHz		Total PSD with duty cycle factor	Limit dBm/ 500KHz
IEEE 802.11a Mode (OFDM, Antenna Gain=4.74dBi) ANT2						
Channel: 5745	6	0	1.475		1.475	30
Channel: 5785	6		1.043		1.043	30
Channel: 5825	6		0.876		0.876	30
IEEE 802.11n(HT20)Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5745	MCS 8	0	ANT_1	ANT_2	Total	---
			0.378	1.701	3.749	28.25
Channel: 5785	MCS 8		-0.835	0.554	2.925	28.25
Channel: 5825	MCS 8		-1.183	0.559	2.785	28.25
IEEE 802.11n(HT40) Mode (OFDM, Antenna Gain=4.74Bi)						
Channel: 5755	MCS 8	0	-3.192	-2.106	0.395	28.25
Channel: 5795	MCS 8		-4.271	-2.582	-0.335	28.25
IEEE 802.11ac(VHT20) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5745	MCS 8	0	-1.807	-1.382	1.421	28.25
Channel: 5785	MCS 8		-3.201	-1.421	0.790	28.25
Channel: 5825	MCS 8		-2.663	-1.251	1.110	28.25
IEEE 802.11ac(VHT40) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5755	MCS 8	0	-3.329	-1.790	0.519	28.25
Channel: 5795	MCS 8		-4.476	-2.769	-0.529	28.25
IEEE 802.11ac(VHT80) Mode (OFDM, Antenna Gain=4.74dBi)						
Channel: 5775	MCS 8	0	-8.567	-6.175	-4.198	28.25

Note:
1. As for IEEE 802.11a mode, both of antennas have considered during pre-test, but only the worst case (ANT_1) was recorded.
2. As for IEEE 802.11n/ac mode, EUT working in MIMO mode.
3. Please refer to section 13 for duty cycle factor
4. Directional gain = 10 log $[(10^{4.74/20} + 10^{4.74/20})^2/ 2]$= 7.75dBi> 6 dBi

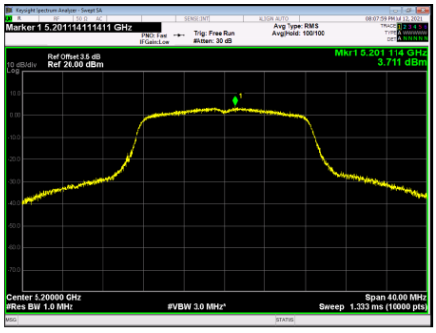
UNII-1

IEEE 802.11a Mode ANT1

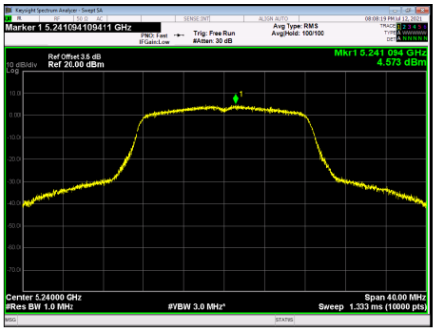
CH36



CH40

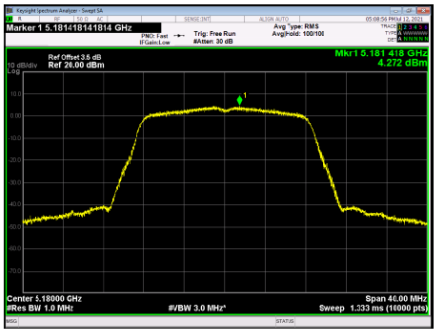


CH48



IEEE 802.11a Mode ANT2

CH36



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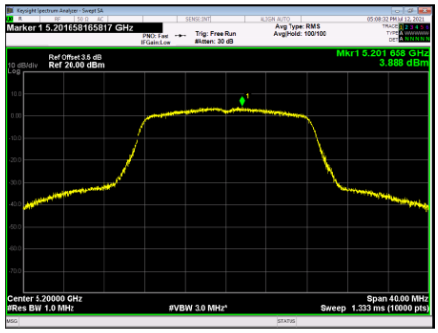

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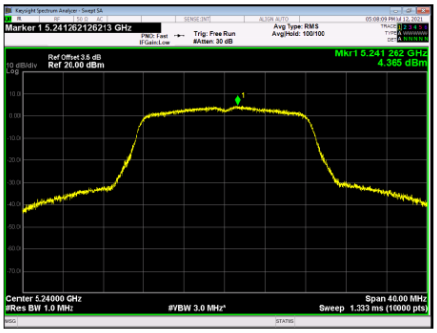
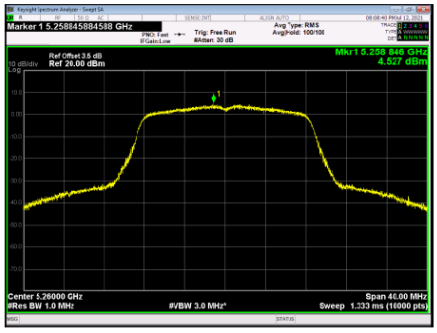


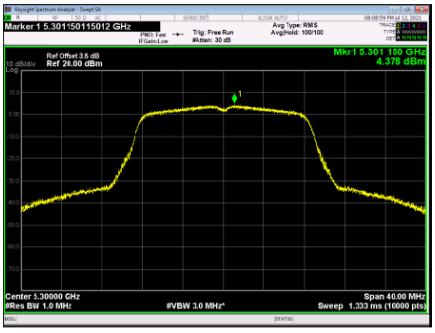
UNII-2A

IEEE 802.11a Mode ANT1

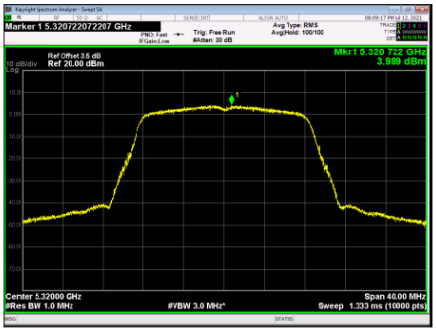
CH52



CH60

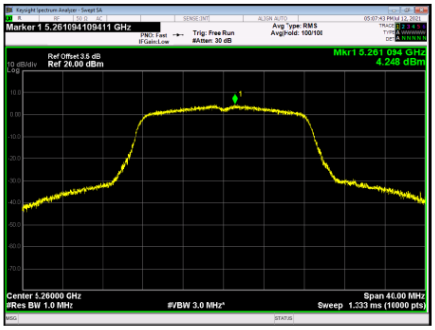


CH64



IEEE 802.11a Mode ANT2

CH52



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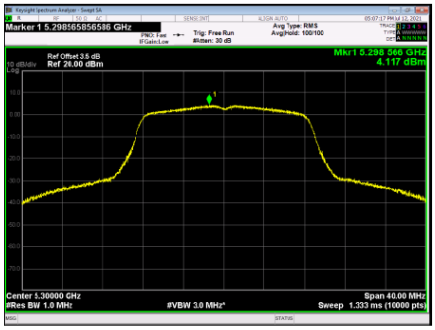

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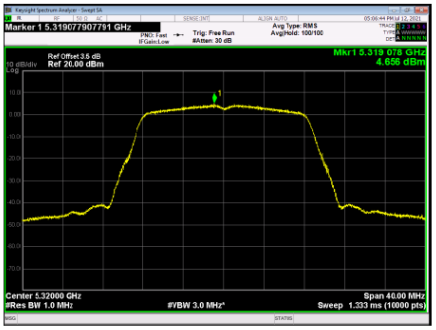
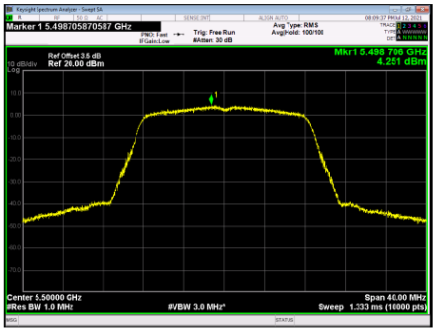


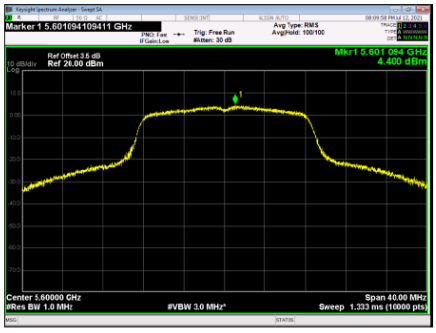
UNII-2C

IEEE 802.11a Mode ANT1

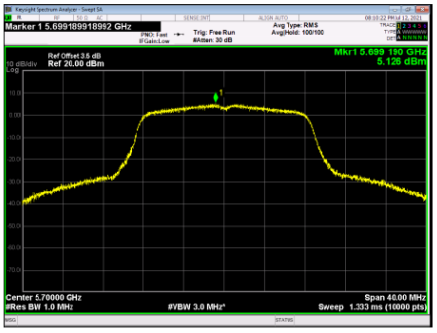
CH100



CH120



CH140



IEEE 802.11a Mode ANT2

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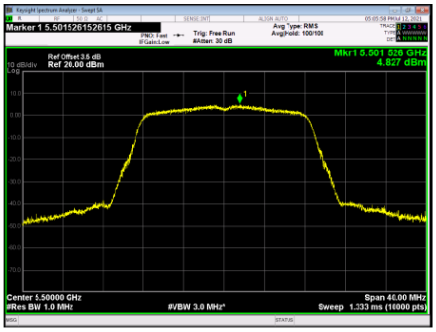

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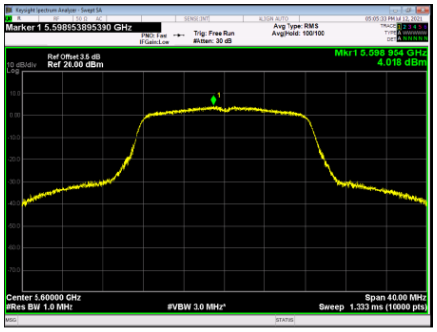
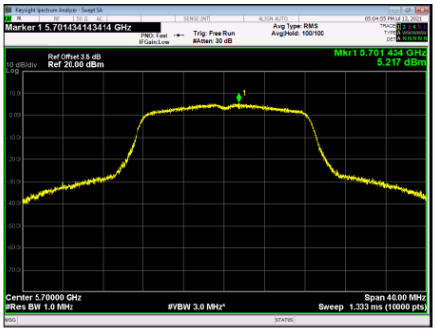


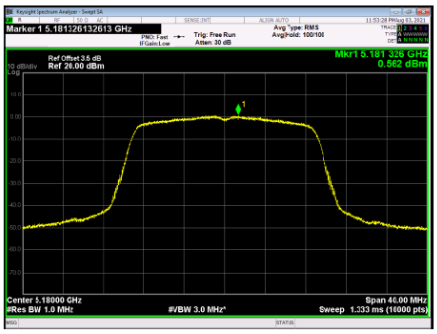
CH140



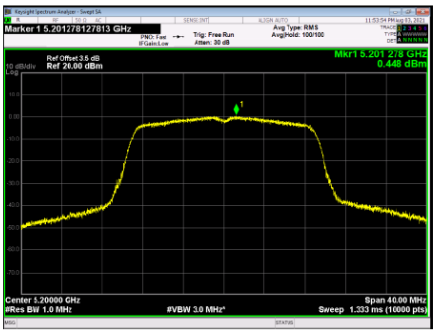
UNII-1

IEEE 802.11n HT20 Mode ANT1

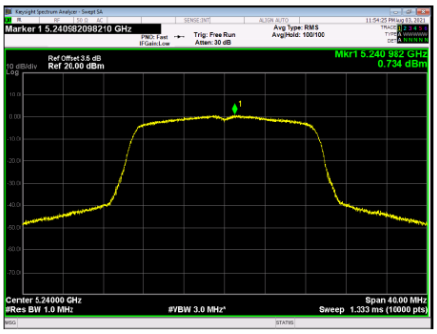
CH36



CH40

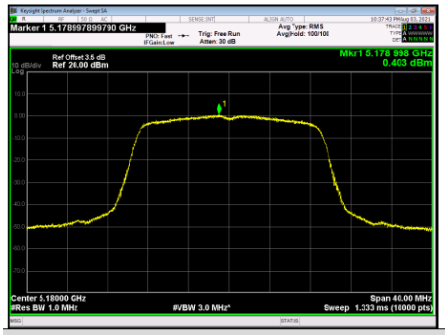


CH48



IEEE 802.11n HT20 Mode ANT2

CH36



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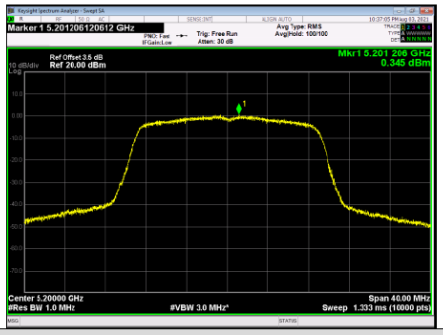

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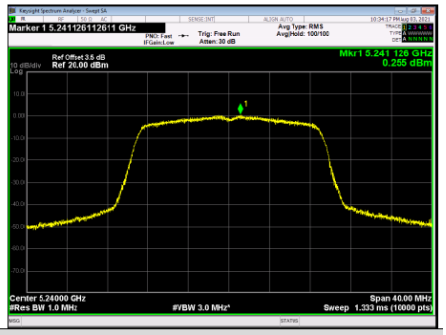
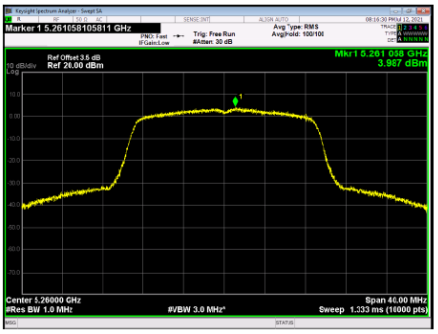


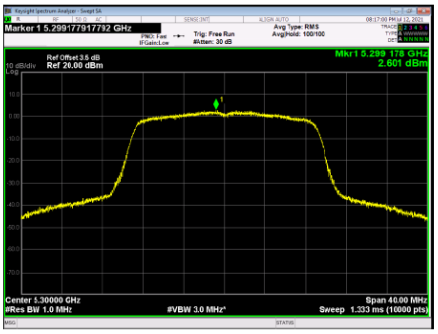
UNII-2A

IEEE 802.11n HT20 Mode ANT1

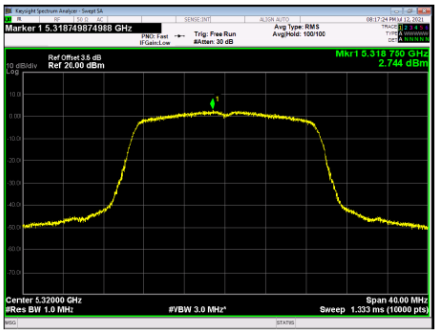
CH52



CH60



CH64



IEEE 802.11n HT20 Mode ANT2

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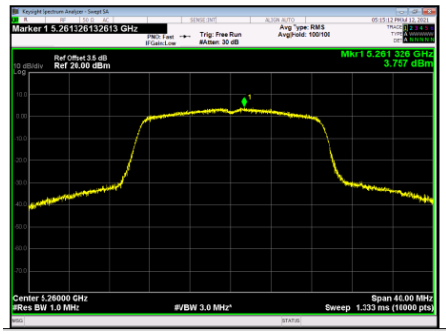

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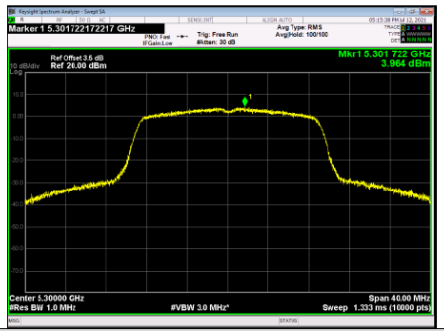

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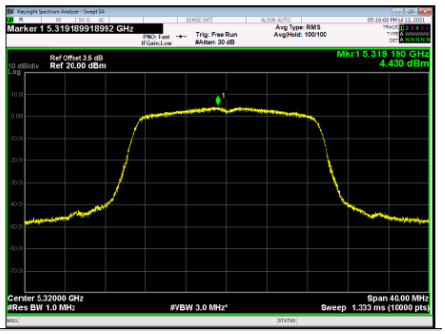
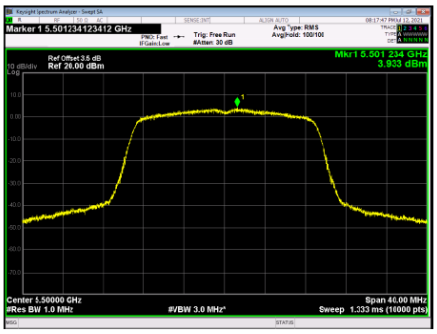


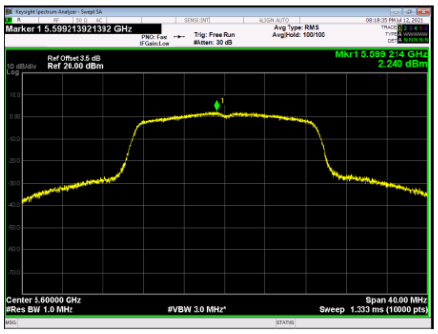
UNII-2C

IEEE 802.11n HT20 Mode ANT1

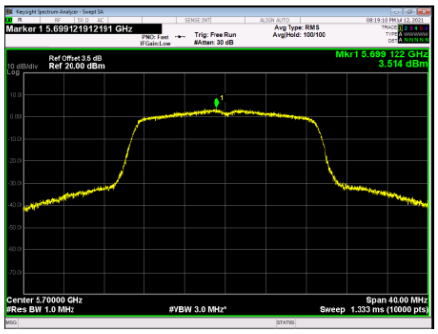
CH100



CH120

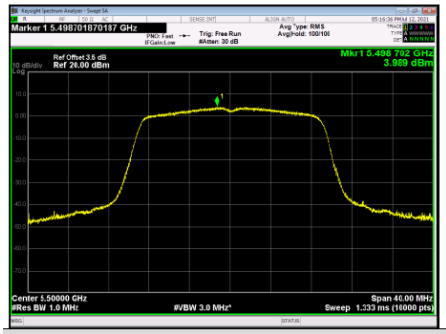


CH140



IEEE 802.11n HT20 Mode ANT2

CH100



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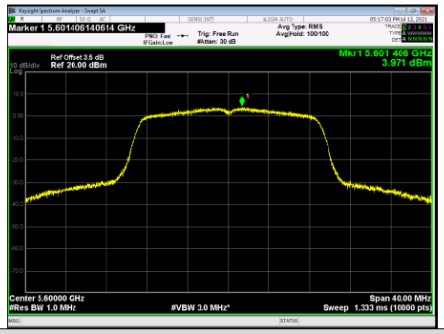
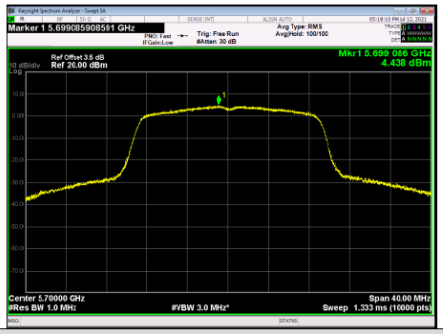
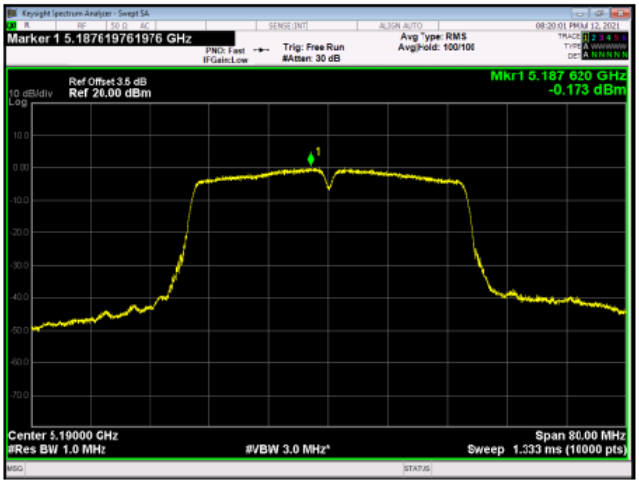


CH140

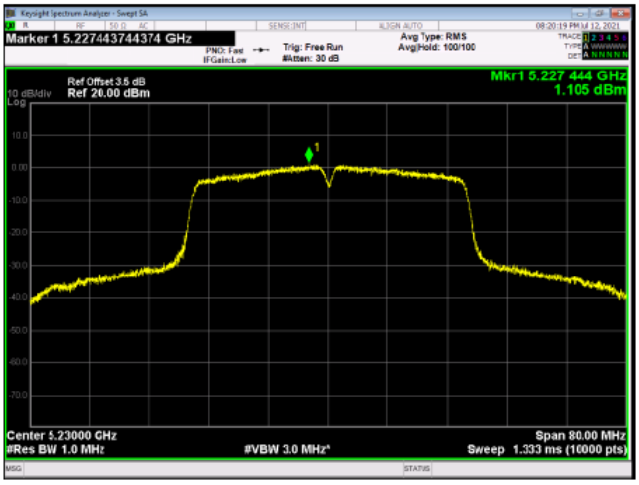


UNII-1
IEEE 802.11n HT40 Mode ANT1

CH38

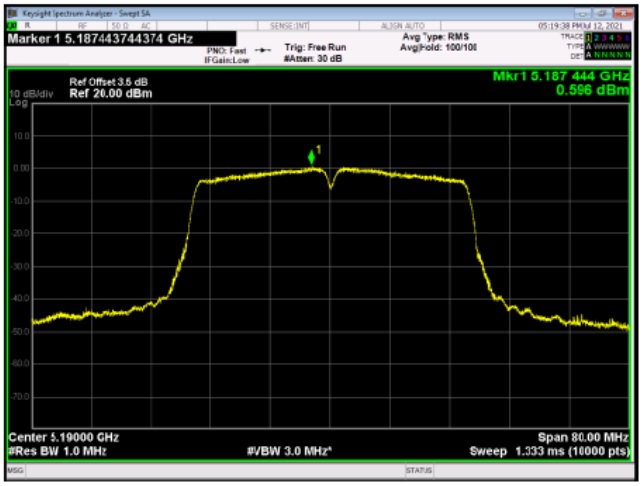


CH46

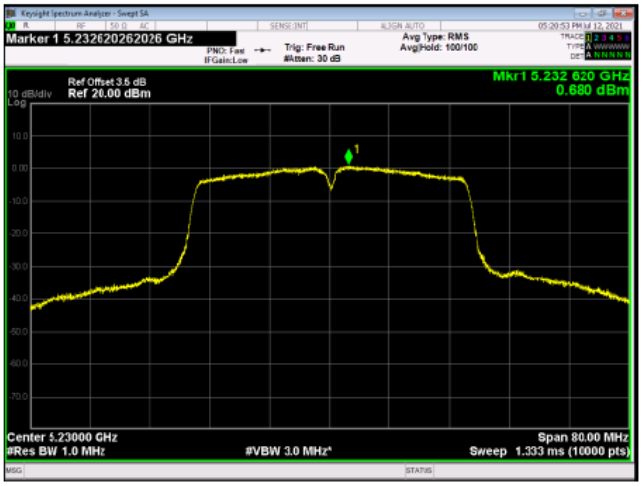


IEEE 802.11n HT40 Mode ANT2

CH38

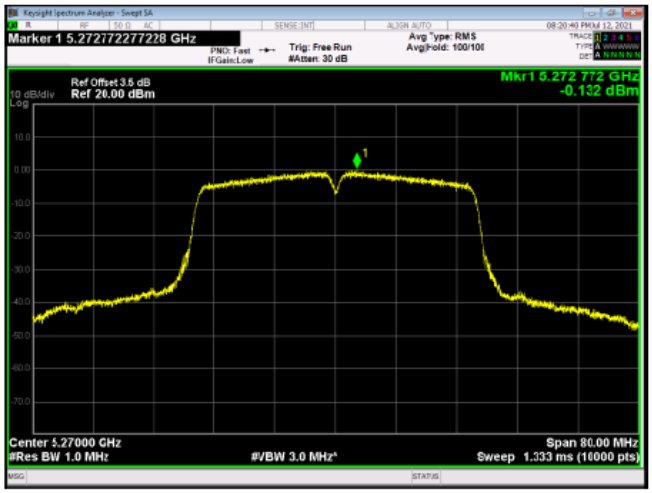


CH46

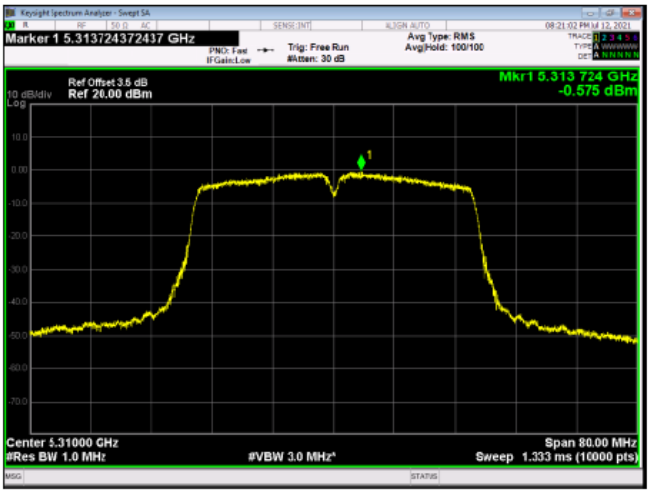


UNII-2A
IEEE 802.11n HT40 Mode ANT1

CH54

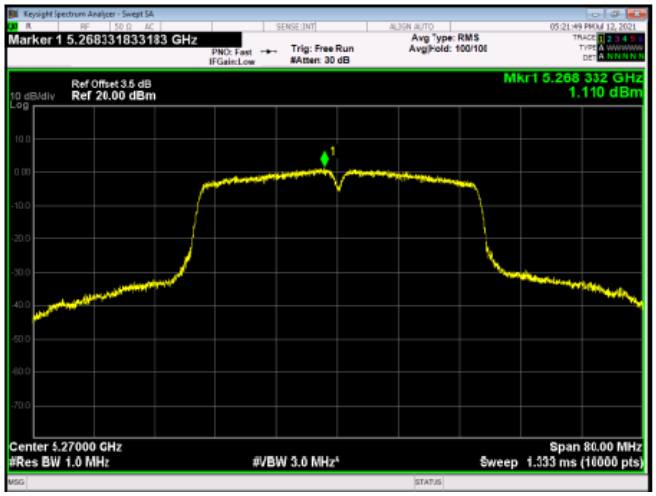


CH62

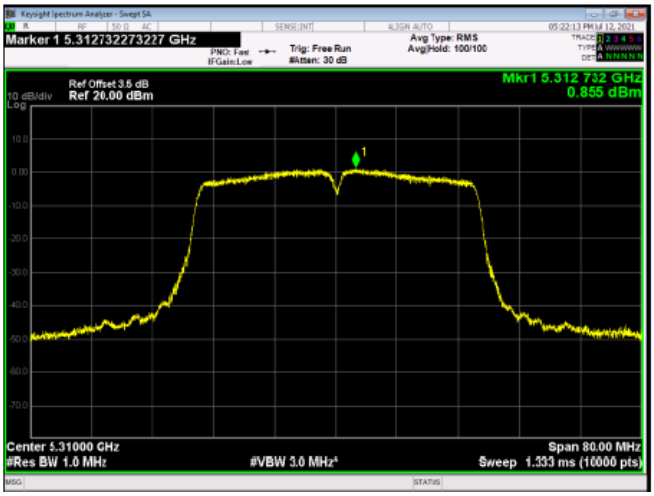


IEEE 802.11n HT40 Mode ANT2

CH54



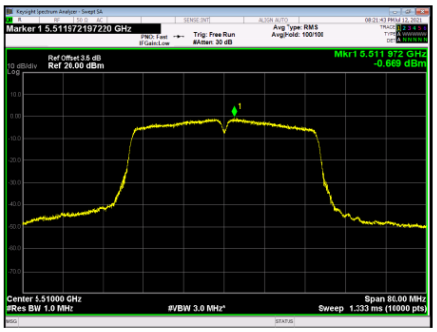
CH62



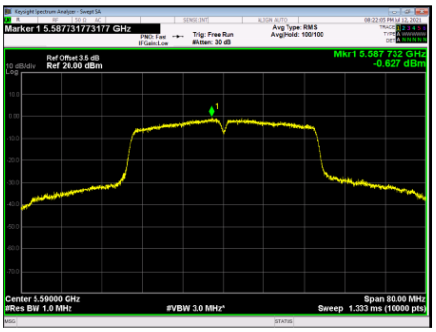
UNII-2C

IEEE 802.11n HT40 Mode ANT1

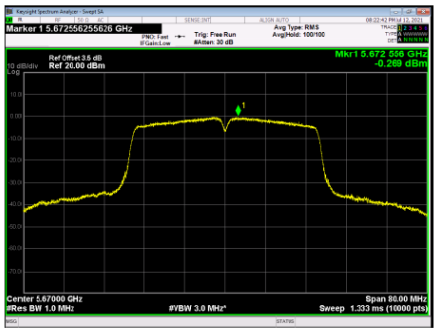
CH102



CH118

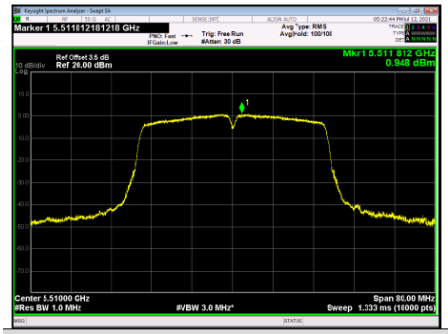


CH134

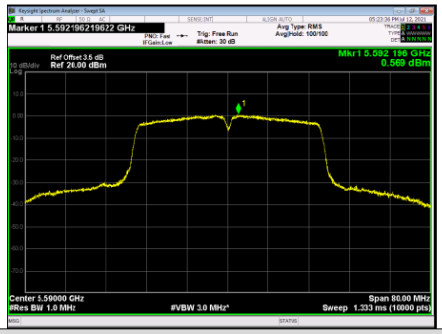


IEEE 802.11n HT40 Mode ANT2

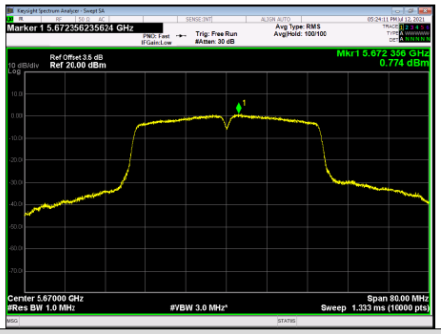
CH102



CH118



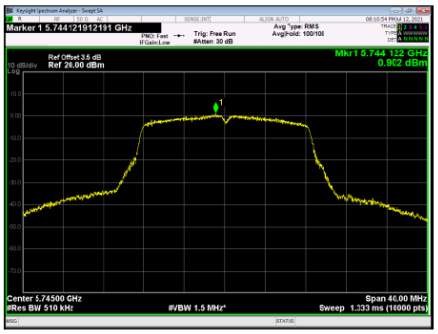
CH134



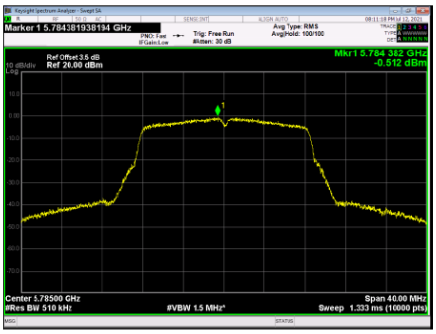
UNII-3

IEEE 802.11a Mode ANT1

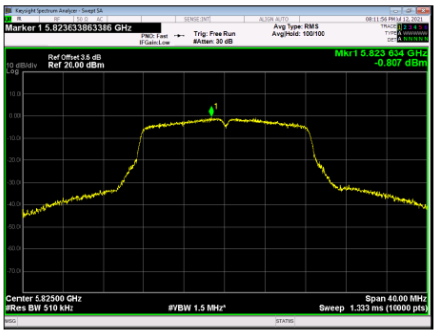
CH149



CH157

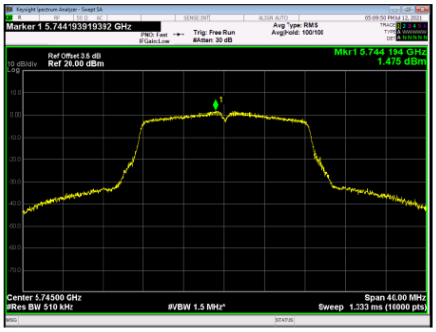


CH165

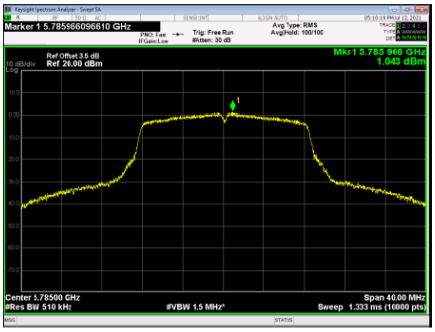


IEEE 802.11a Mode ANT2

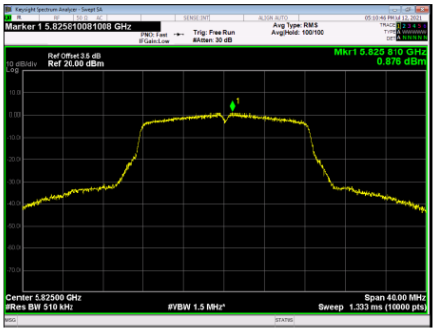
CH149



CH157



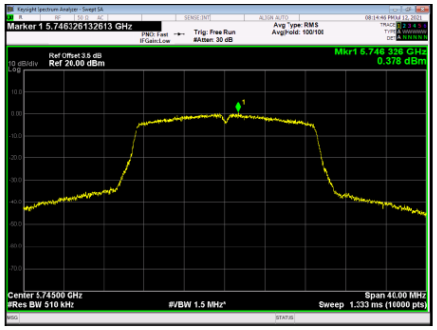
CH165



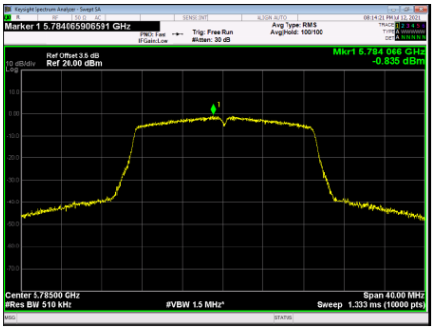
UNII-3

IEEE 802.11n HT20 Mode ANT1

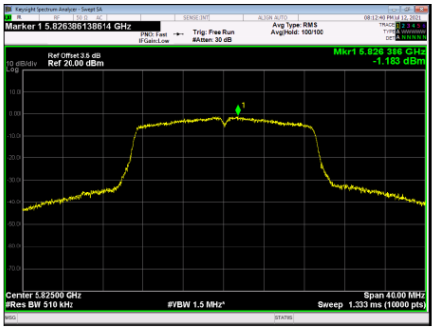
CH149



CH157

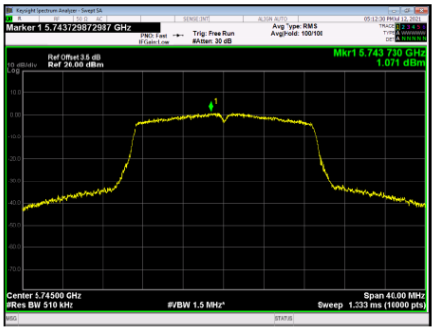


CH165

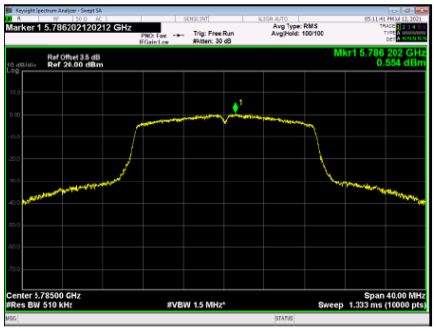


IEEE 802.11n HT20 Mode ANT2

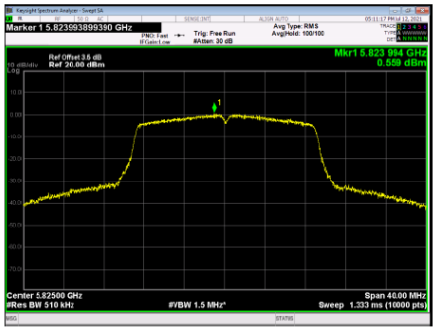
CH149



CH157

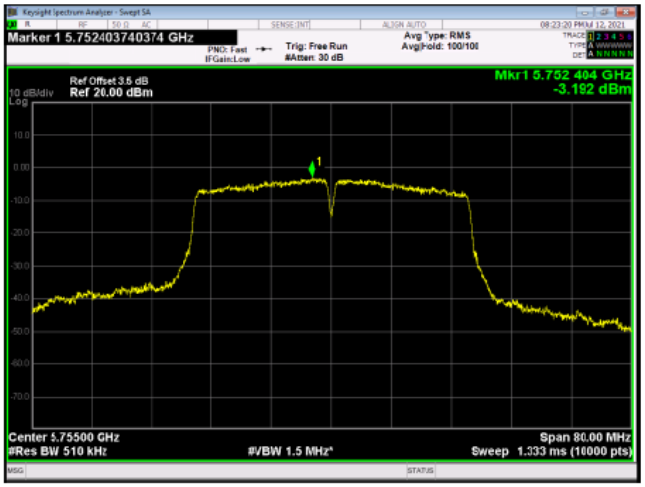


CH165

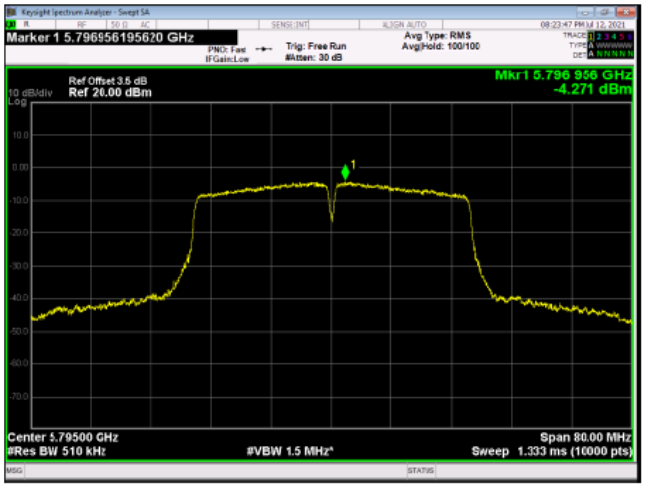


UNII-3
IEEE 802.11n HT40 Mode ANT1

CH151

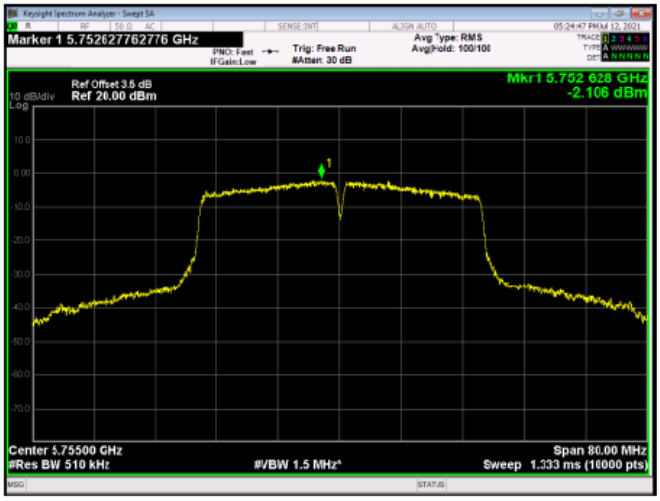


CH159

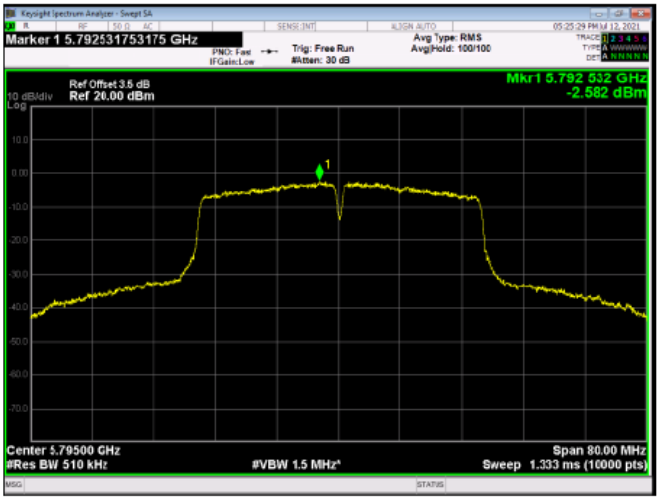


IEEE 802.11n HT40 Mode ANT 2

CH151



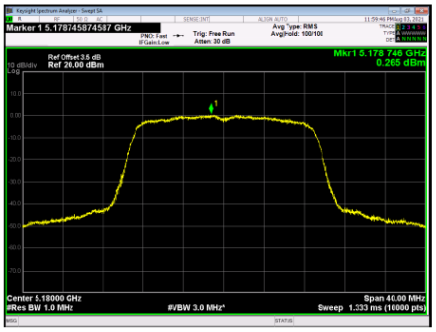
CH159



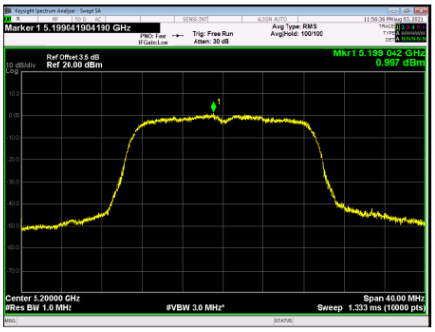
UNII-1

IEEE 802.11ac VHT20 Mode ANT1

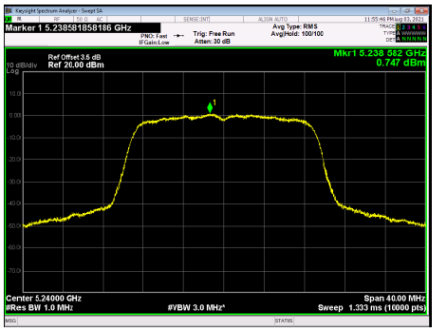
CH36



CH40

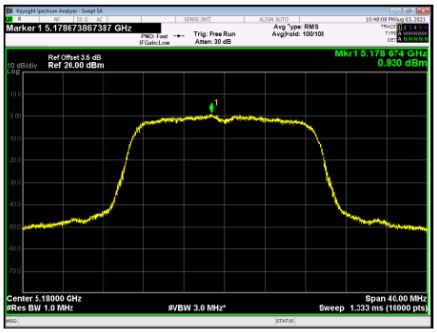


CH48

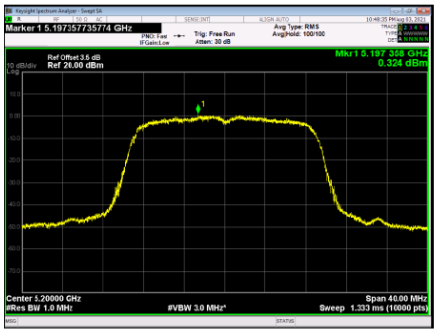


IEEE 802.11ac VHT20 Mode ANT 2

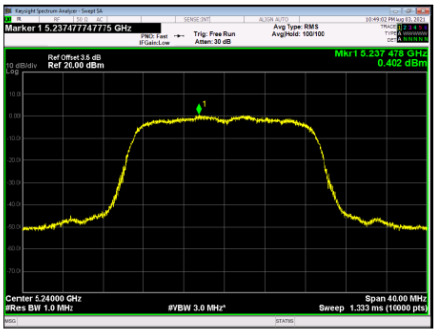
CH36



CH40



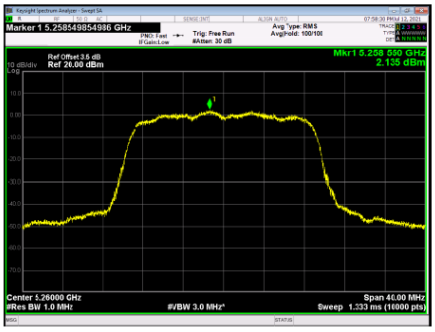
CH48



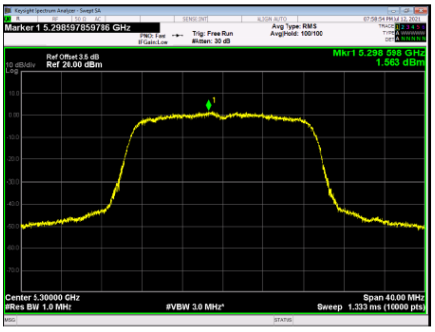
UNII-2A

IEEE 802.11ac VHT20 Mode ANT1

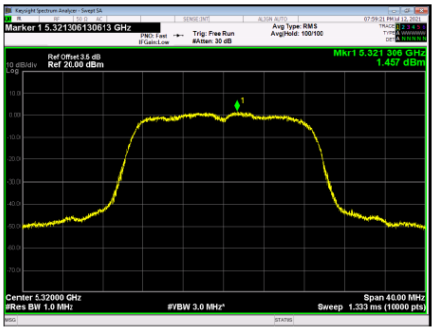
CH52



CH60

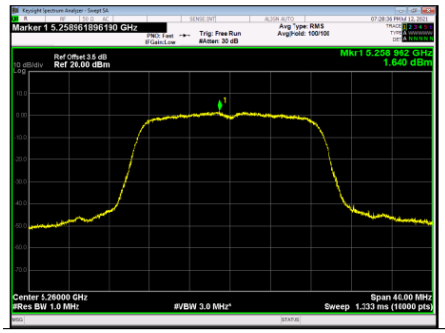


CH64

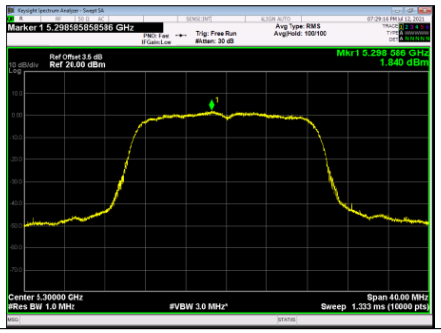


IEEE 802.11ac VHT20 Mode ANT 2

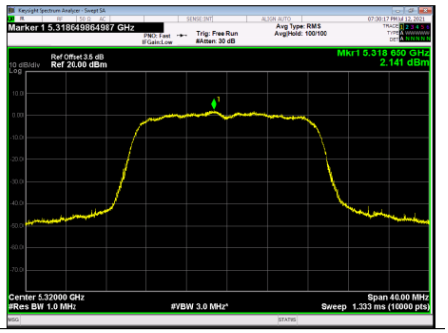
CH52



CH60



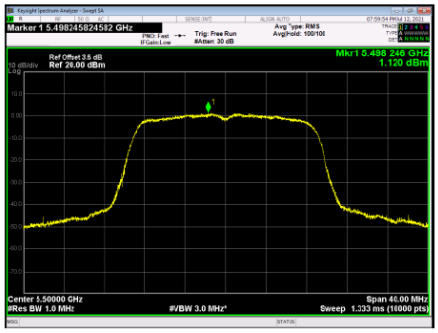
CH64



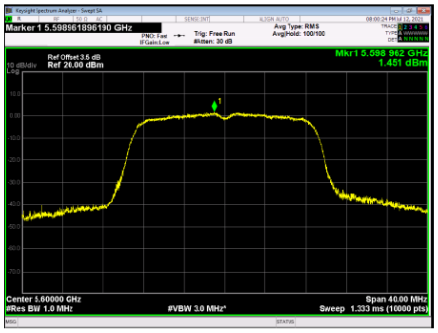
UNII-2C

IEEE 802.11ac VHT20 Mode ANT1

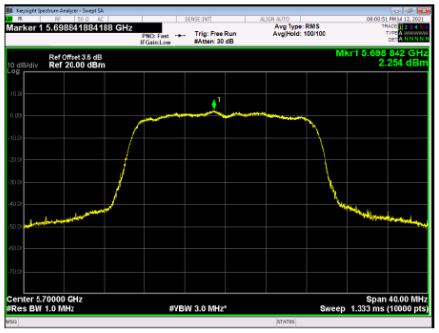
CH100



CH120

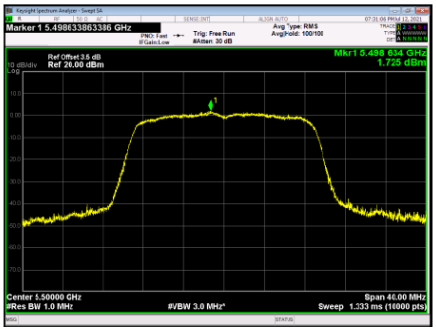


CH140

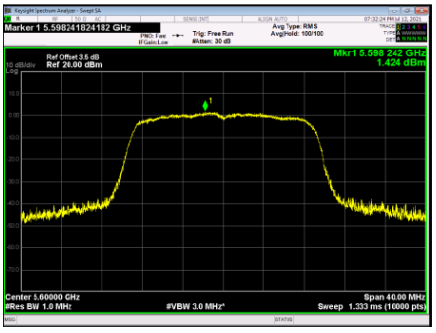


IEEE 802.11ac VHT20 Mode ANT 2

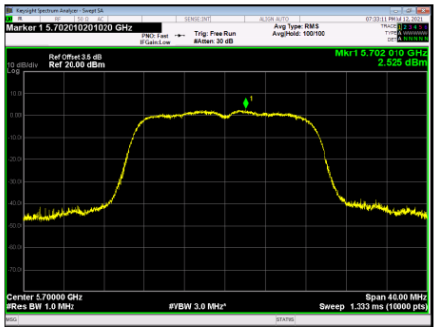
CH100



CH120

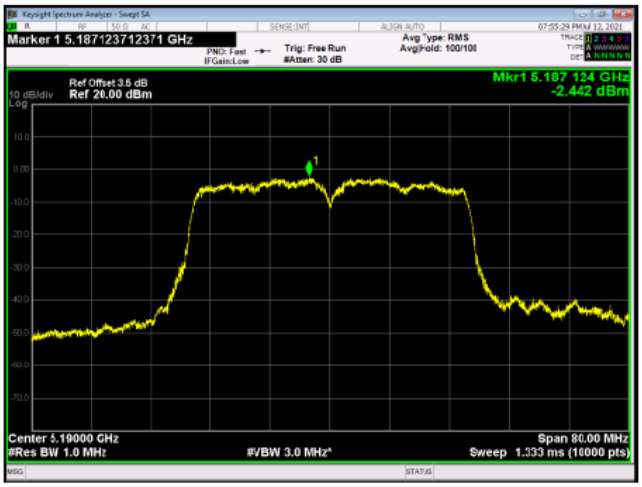


CH140

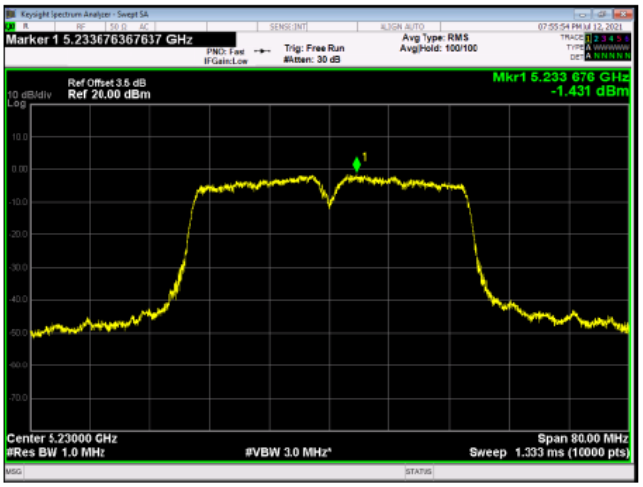


UNII-1
IEEE 802.11ac VHT40 Mode ANT1

CH38

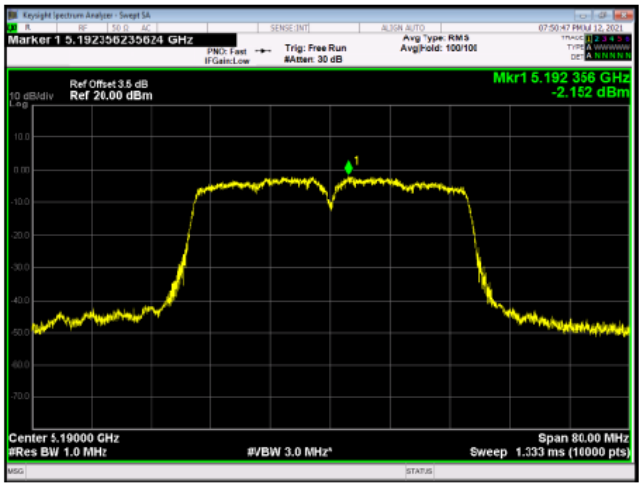


CH46

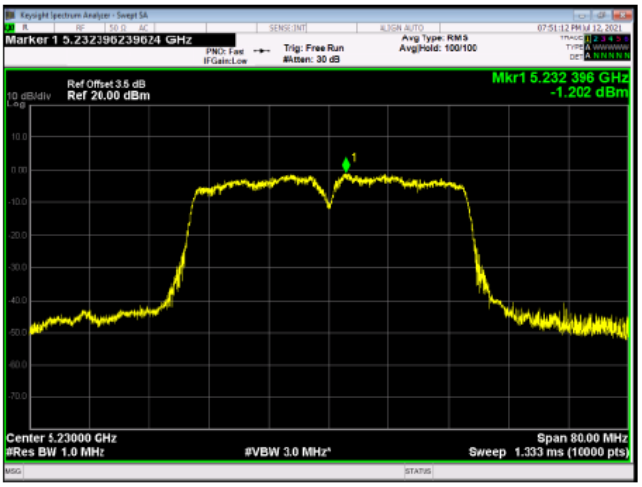


IEEE 802.11ac VHT40 Mode ANT 2

CH38



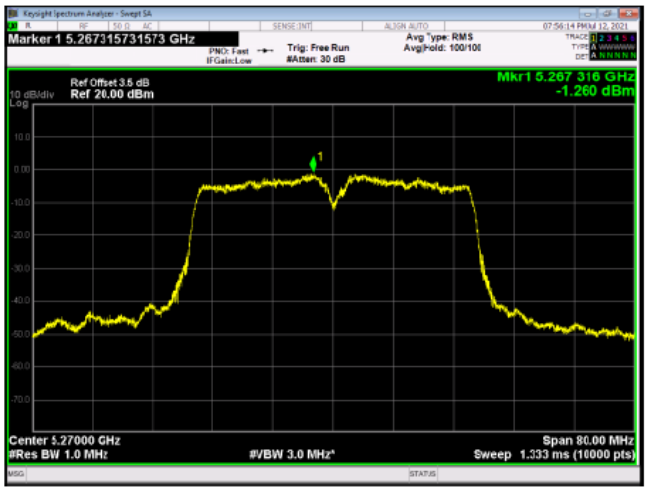
CH46



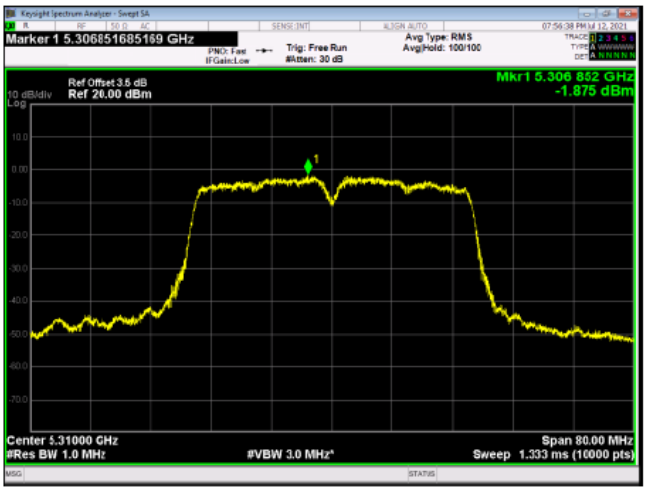
UNII-2A

IEEE 802.11ac VHT40 Mode ANT1

CH54

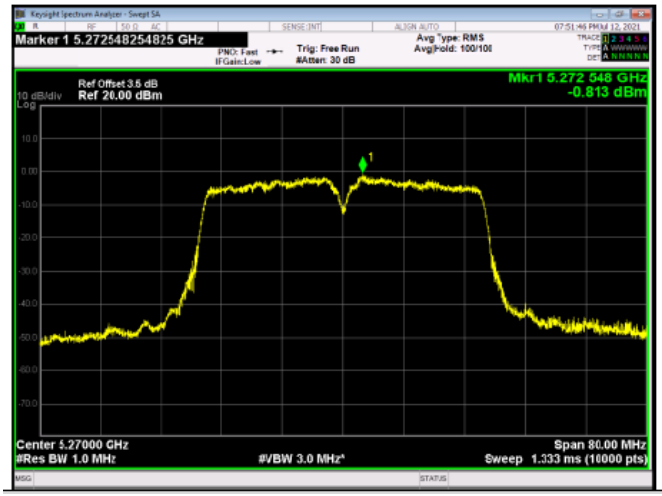


CH62

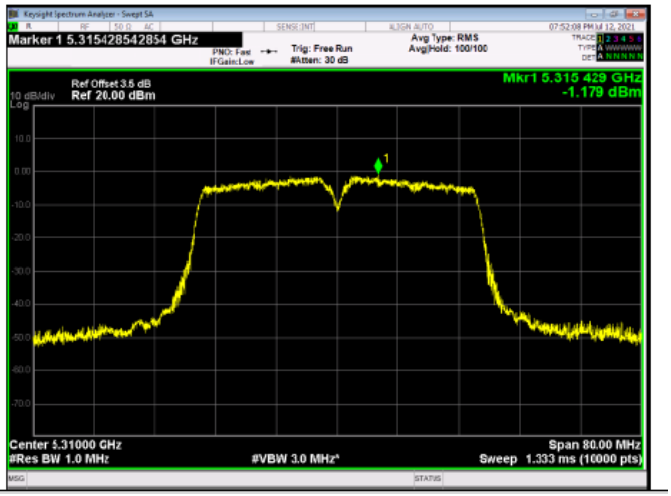


IEEE 802.11ac VHT40 Mode ANT 2

CH54



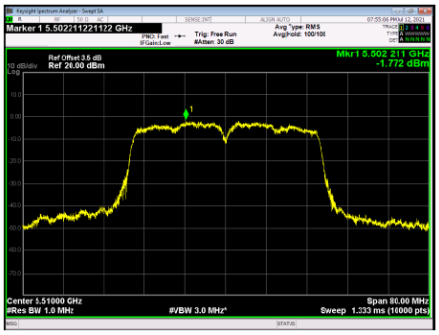
CH62



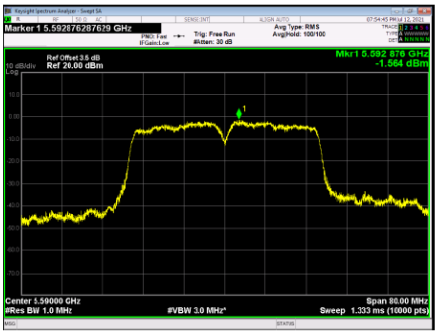
UNII-2C

IEEE 802.11ac VHT40 Mode ANT1

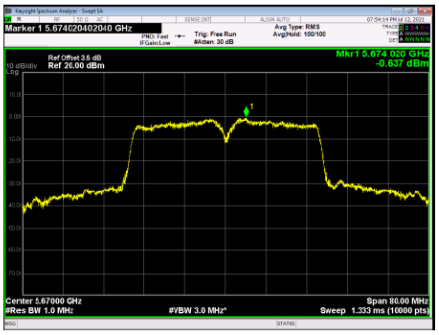
CH102



CH118

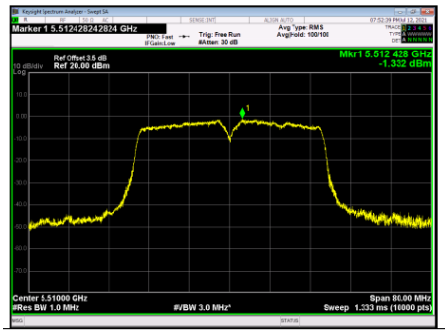


CH134

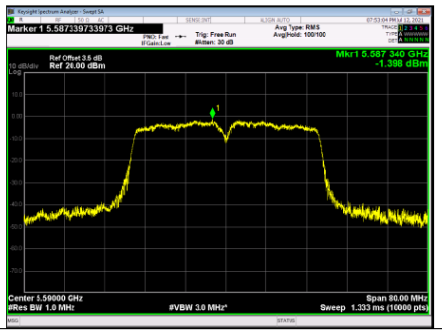


IEEE 802.11ac VHT40 Mode ANT 2

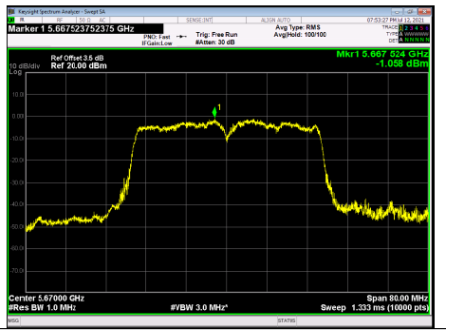
CH102



CH118



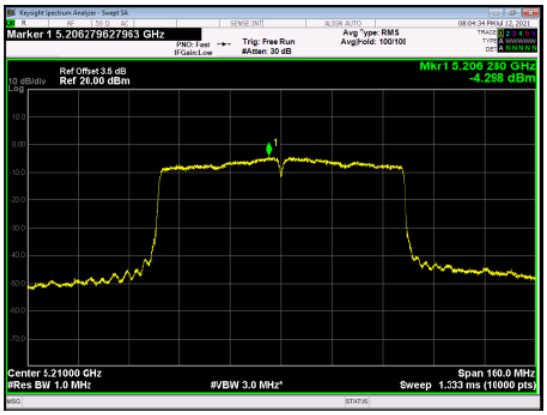
CH134



UNII-1

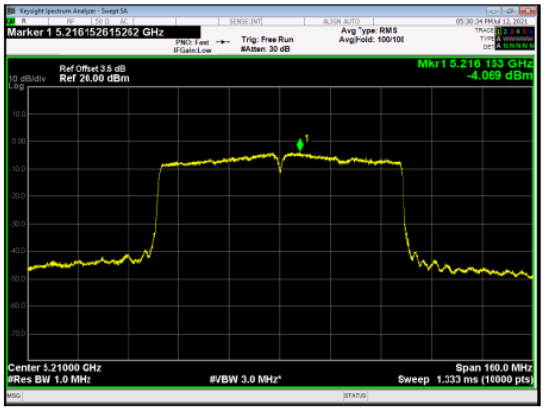
IEEE 802.11ac VHT80 Mode ANT1

CH42



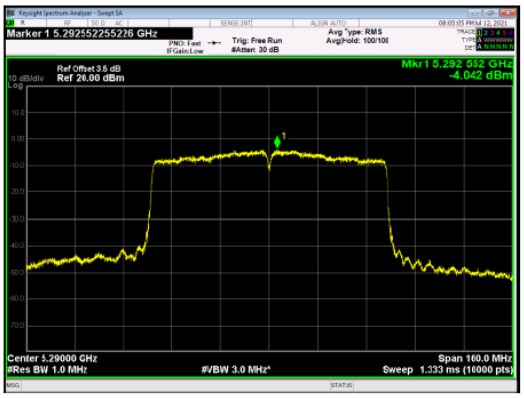
IEEE 802.11ac VHT80 Mode ANT 2

CH42



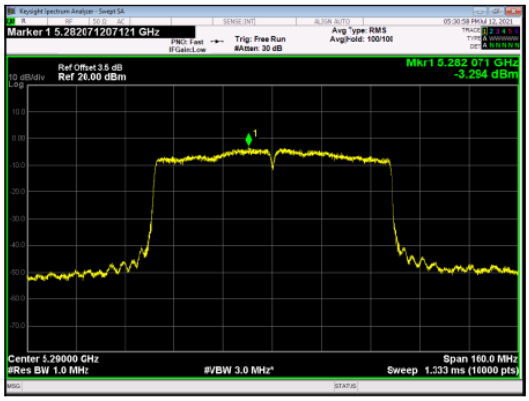
UNII-2A
IEEE 802.11ac VHT80 Mode ANT1

CH58



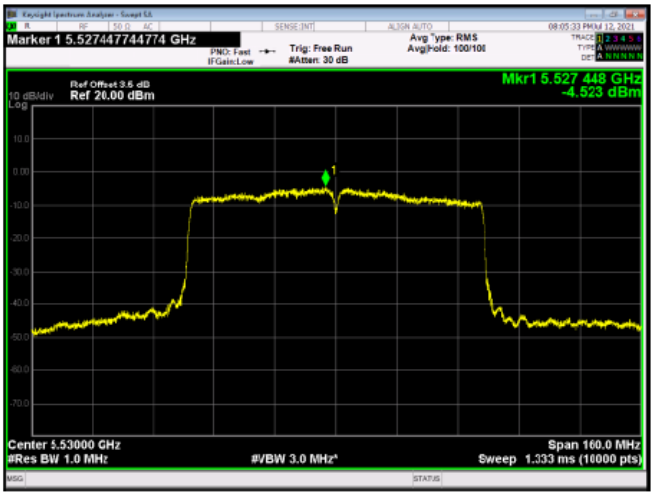
IEEE 802.11ac VHT80 Mode ANT 2

CH58

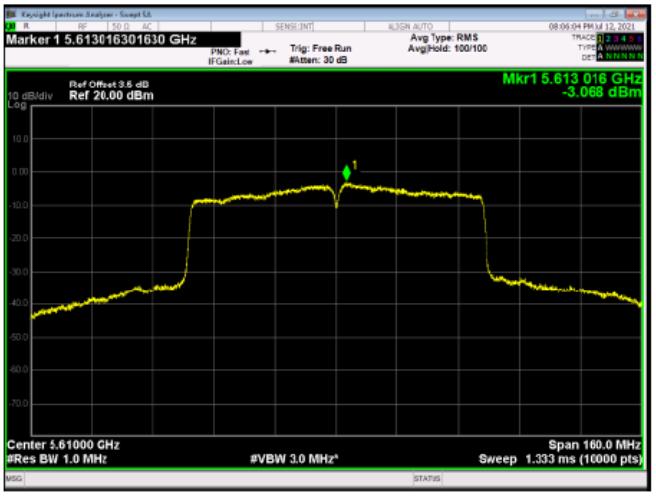


UNII-2C
IEEE 802.11ac VHT80 Mode ANT1

CH106

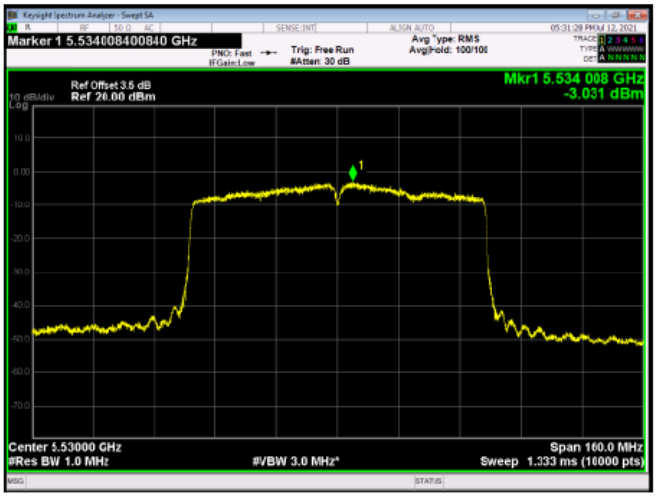


CH122

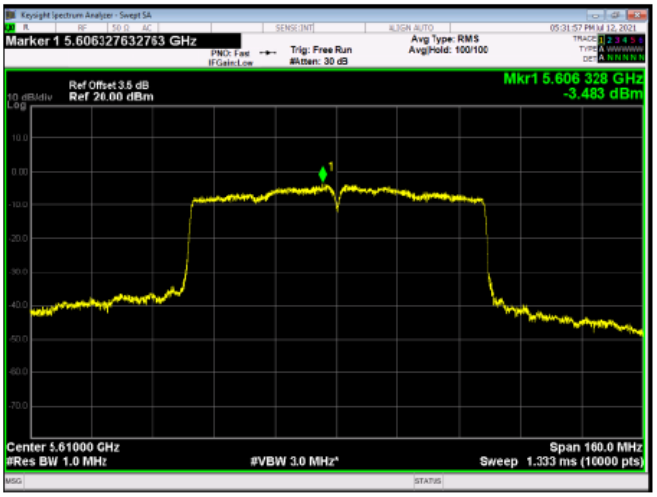


IEEE 802.11ac VHT80 Mode ANT 2

CH106



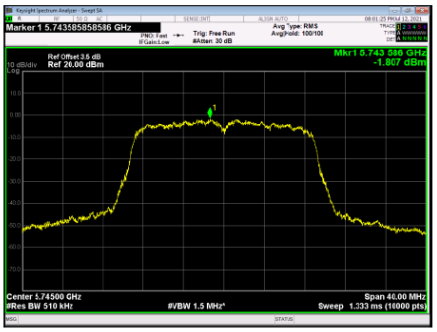
CH122



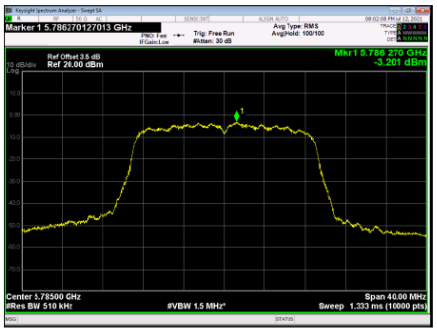
UNII-3

IEEE 802.11ac VHT20 Mode ANT1

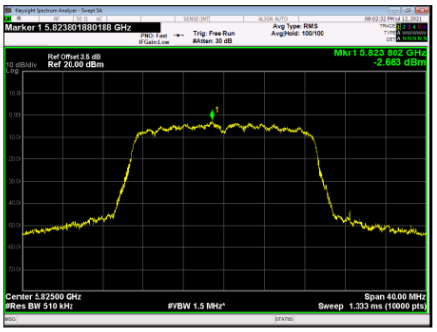
CH149



CH157

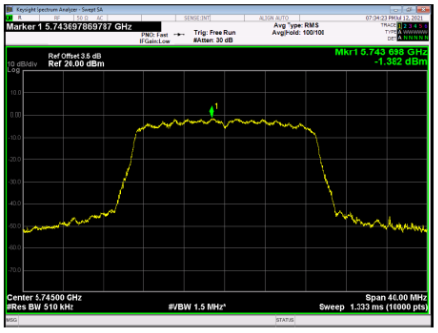


CH165

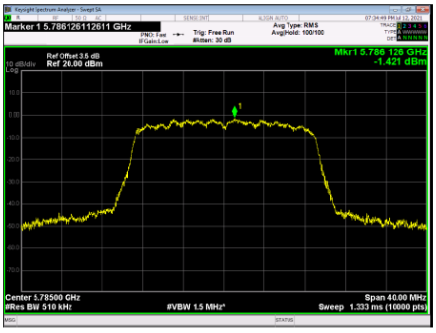


IEEE 802.11ac VHT20 Mode ANT2

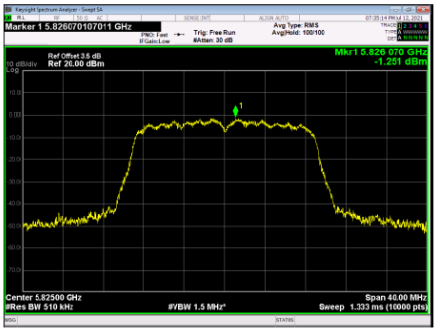
CH149



CH157

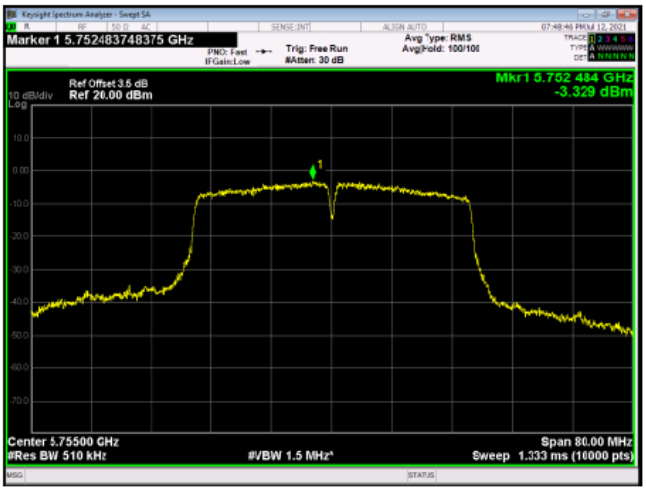


CH165

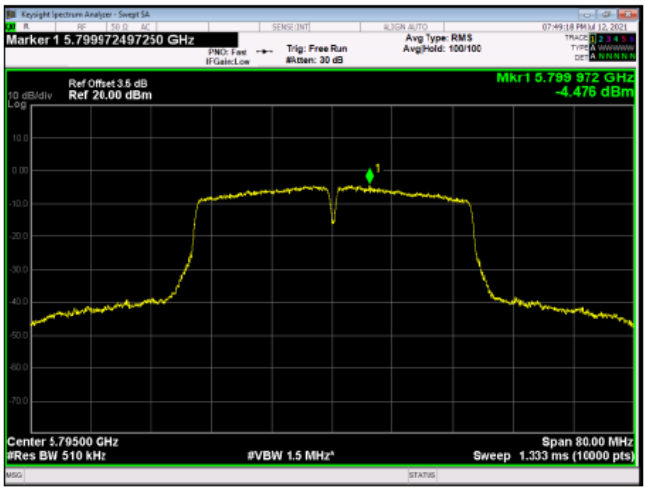


UNII-3
IEEE 802.11ac VHT40 Mode ANT1

CH151

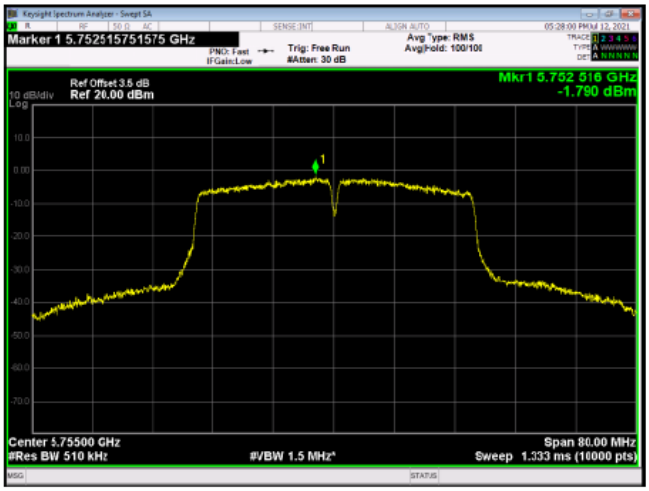


CH159

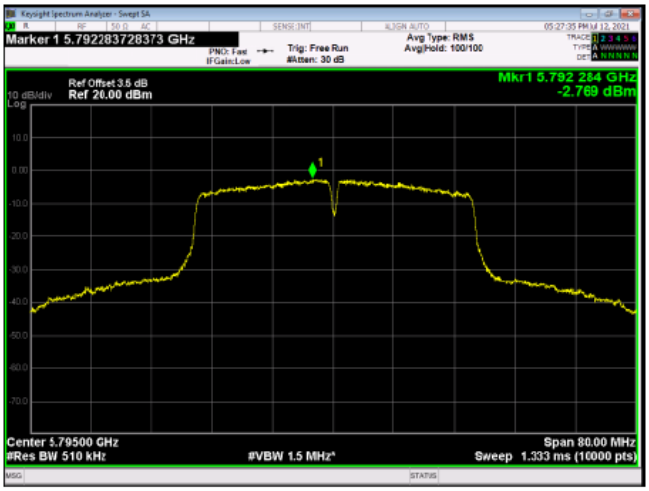


IEEE 802.11ac VHT40 Mode ANT2

CH151

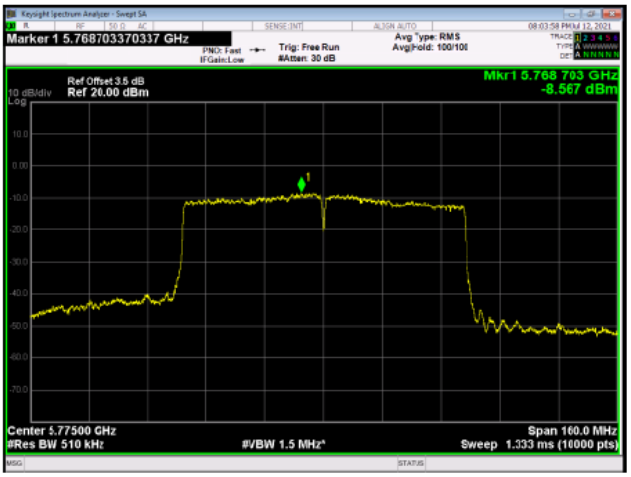


CH159



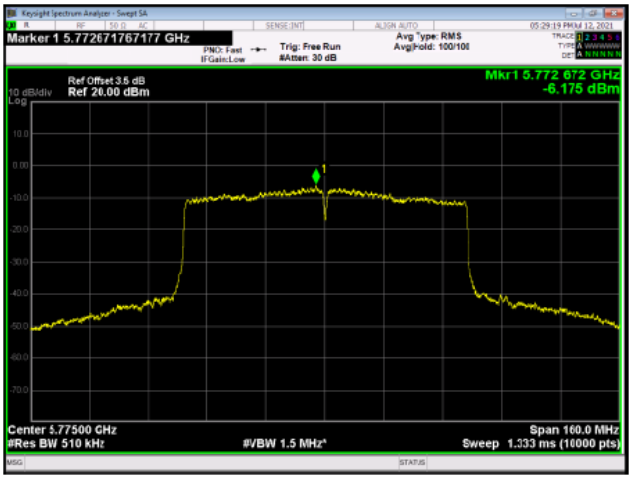
UNII-3
IEEE 802.11ac VHT80 Mode ANT1

CH155



IEEE 802.11ac VHT80 Mode ANT2

CH155



14. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI7	100837	Mar. 13, 2023	1 Year
2.	Antenna	Schwarzbeck	VULB9162	9162-010	Mar. 23, 2022	2 Year
3.	Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	Mar. 13, 2023	1 Year
4.	Spectrum Analyzer	Keysight	N9020A	MY54200831	Mar. 13, 2023	1 Year
5.	Spectrum Analyzer	Rohde & Schwarz	FSV40	101094	Mar. 13, 2023	1 Year
6.	Horn Antenna	Schwarzbeck	BBHA9170	9170-172	Mar. 23, 2022	2 Year
7.	Power Sensor	DARE	RPR3006W	15I00041SNO 64	Mar. 13, 2023	1 Year
8.	Horn Antenna	COM-Power	AH-118	071078	Mar. 23, 2022	2 Year
9.	Pre-Amplifier	HP	HP 8449B	3008A00964	Mar. 13, 2023	1 Year
10.	Pre-Amplifier	HP	HP 8447D	1145A00203	Mar. 13, 2023	1 Year
11.	Loop Antenna	Schwarzbeck	FMZB 1513	1513-272	Mar. 23, 2022	2 Year
12.	Test Receiver	Rohde & Schwarz	ESCI	101152	Mar. 13, 2023	1 Year
13.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	Mar. 13, 2023	1 Year
14.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	Mar.13, 2023	1 Year
15.	Temporary antenna connector	TESCOM	SS402	N/A	N/A	N/A
16.	Test Software	EZ	EZ_EMC	N/A	N/A	N/A

Note: For photographs of EUT and measurement, please refer to appendix in separate documents.

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