FCC TEST REPORT
FCC ID: 2A9PK-P2000

Report Number	ZKT-221114L8448-02
Date of Test	Oct. 17, 2022 -- Nov. 25, 2022
Date of issue	Nov. 25, 2022
Total number of pages	55
Test Result	PASS
Testing Laboratory	**Shenzhen ZKT Technology Co., Ltd.**
Address	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name	MR12VOLT DIGITAL LIMITED
Address	RM D FLAT 101,1/F INT'L PLAZA 20 SHEUNG YUET RD KOWLOON BAY KLN HONGKONG
Manufacturer's name	MR12VOLT DIGITAL LIMITED
Address	RM D FLAT 101,1/F INT'L PLAZA 20 SHEUNG YUET RD KOWLOON BAY KLN HONGKONG
Test specification:	
Standard	FCC CFR Title 47 Part 15 Subpart E Section 15.407 ANSI C63.10:2013
Test procedure	KDB 789033 D02 V01r02
Non-standard test method	N/A
Test Report Form No.	TRF-EL-110_V0
Test Report Form(s) Originator	ZKT Testing
Master TRF	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name	Auto Video adapter kit
Trademark	N/A
Model/Type reference	2G26M0, P2000
Ratings	DC12V 500mA from car-battery

Testing procedure and testing location:

Testing Laboratory..... :	**Shenzhen ZKT Technology Co., Ltd.**
Address..... :	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature)..... :	Alen He
Reviewer (name + signature)..... :	Joe Liu
Approved (name + signature)..... :	Lake Xie

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1. VERSION

Report No.	Version	Description	Approved
ZKT-221114L8448-02	Rev.01	Initial issue of report	Nov. 25, 2022

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Result	Remark
15.203/15.247 (c)	Antenna requirement	PASS	
15.207	AC Power Line Conducted Emission	N/A	
15.407 (a) (b)	Spurious Radiated Emissions and Band Edge	PASS	
15.407 (e) /15.403(i)	6 dB bandwidth, 26dB Emission Bandwidth& 99% Occupied Bandwidth	PASS	
15.407 (a)	Power Spectral Density	PASS	
15.407 (a)(1)(2)(3)	Maximum conducted output power	PASS	
15.407 (g)	Frequency Stability	PASS	

NOTE:(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY
Shenzhen ZKT Technology Co., Ltd.
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.2 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.	tem	ncertainty
1	3m camber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
3	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
4	Conducted Adjacent channel power	U=1.38dB
5	Conducted output power uncertainty Above 1G	U=1.576dB
6	Conducted output power uncertainty below 1G	U=1.28dB
7	humidity uncertainty	U=5.3%
8	Temperature uncertainty	U=0.59℃
9	Radiated disturbance(30MHz-1000MHz)	U=4.8dB
10	Radiated disturbance(1GHz-6GHz)	U=4.9dB
11	Radiated disturbance(1GHz-18GHz)	U=5.0dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Auto Video adapter kit		
Model No.:	P2000		
Serial No.:	2G26M0		
Model difference:	Their electrical circuit design, layout, components used and internal wiring are identical, Only the name will be different .		
Hardware Version:	V1.6		
Software Version:	N/A		
Sample(s) Status:	Engineer sample		
	IEEE802.11 WLAN mode supported	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac(40MHz channel bandwidth) 802.11 ac (80MHz channel bandwidth)	
	Date rate	802.11ac:MCS0-MCS9 802.11n: MCS0-MCS7 802.11a: 6.5-54Mbps	
	Modulation	OFDM/OFDMA	
	U-NII-3	Frequency Range	802.11 a/n/ac(20MHz) : 5745-5825 MHz 802.11 n/ac (40MHz): 5755-5795 MHz 802.11 ac (80MHz): 5775 MHz
		Channels	802.11 a/n/ac(20MHz) : 5 802.11 n/ac (40MHz): 2 802.11 ac (80MHz): 1
Antenna Type:	PCB antenna		
Antenna gain:	3.67dBi		
Power supply:	DC12V 500mA from car-battery		

U-NII-3	
CH.	Frequency (MHz)
149	5745
…	…
157	5785
…	…
165	5825

802.11a/n/ac(20MHz) Frequency / Channel Operations

U-NII-3	
CH.	Frequency (MHz)
151	5755
159	5795

802.11n /ac(40MHz BW) Frequency / Channel Operations

U-NII-3	
CH.	Frequency (MHz)
155	5775

802.11ac (80MHz BW) Frequency / Channel Operations

3.2 DESCRIPTION OF TEST MODES

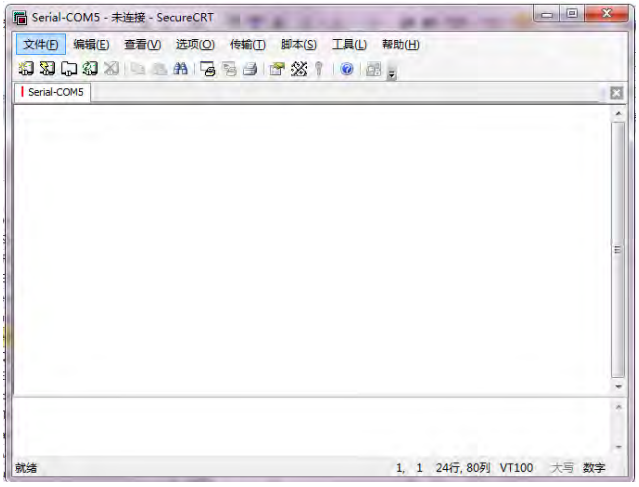
Transmitting mode	Keep the EUT in continuously transmitting mode

Remark: During the test, the duty cycle is 98.62%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

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:

Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	802.11a	802.11n (HT20&HT40)	802.11ac (VHT20&VHT40&VHT80)
Data rate	54Mbps	MCS7	MCS7

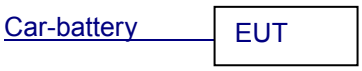
Test Software	Test Tool
	
Power level setup	<10dBm

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

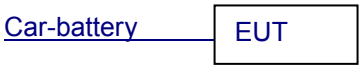
Conducted Emission

N/A

Radiated Emission



Conducted Spurious



3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1					
2					

Item	Shielded Type	Ferrite Core	Length	Note

Note:
(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	Oct. 18, 2022	Oct. 17, 2023
2	Spectrum Analyzer (1GHz-40GHz)	R&S	FSQ	100363	Oct. 17, 2022	Oct. 16, 2023
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Oct. 18, 2022	Oct. 17, 2023
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	N/A	Oct. 17, 2022	Oct. 16, 2023
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	Oct. 17, 2022	Oct. 16, 2023
6	Loop Antenna	TESEQ	HLA6121	58357	Oct. 17, 2022	Oct. 16, 2023

7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	060747	Oct. 17, 2022	Oct. 16, 2023
8	Amplifier (1GHz-26.5GHz)	Agilent	8449B	3008A00315	Oct. 18, 2022	Oct. 17, 2023
9	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Oct. 18, 2022	Oct. 17, 2023
10	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Oct. 18, 2022	Oct. 17, 2023
11	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Oct. 18, 2022	Oct. 17, 2023
12	ESG Signal Generator	Agilent	E4421B	N/A	Oct. 18, 2022	Oct. 17, 2023
13	Signal Generator	Agilent	N5182A	N/A	Oct. 22, 2022	Oct. 21, 2023
14	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	Oct. 17, 2022	Oct. 16, 2023
15	MWRF Power Meter Test system	MW	MW100-RPCB	N/A	Oct. 22, 2022	Oct. 21, 2023
16	Power sensor	KEYSIGHT	U200H	MY51190005	Oct. 22, 2022	Oct. 21, 2023
17	D.C. Power Supply	LongWei	TPR-6405D	N/A	\	\
18	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	\	\
19	RF Software	MW	MTS8310	V2.0.0.0	\	\
20	Turntable	MF	MF-7802BS	N/A	\	\
21	Antenna tower	MF	MF-7802BS	N/A	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Oct. 22, 2022	Oct. 21, 2023
2	LISN	CYBERTEK	EM5040A	E1850400149	Oct. 22, 2022	Oct. 21, 2023
3	Test Cable	N/A	C01	N/A	Oct. 18, 2022	Oct. 17, 2023
4	Test Cable	N/A	C02	N/A	Oct. 18, 2022	Oct. 17, 2023
5	EMI Test Receiver	R&S	ESCI3	101393	Oct. 17, 2022	Oct. 16, 2023
6	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	\	\

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:
(1) *Decreases with the logarithm of the frequency.

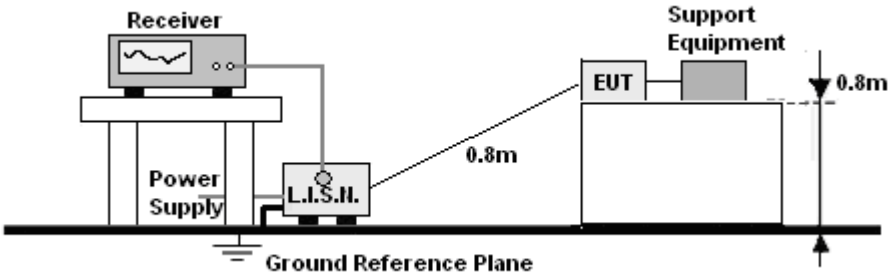
4.1.2 TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.e.
8 For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V , the worst voltage was AC 120V and the data recording in the report.

4.1.6 TEST RESULT

N/A
(Not applicable to this device, which is powered by car -battery)

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

1. Radiated emissions from9 kHz to25 GHz were measured according to the methods defines in ANSI C63.10-2013.The EUT was placed above the ground plane, 0.8 meter for frequency below 1GHzand1.5meterforfrequencyabove1GHz. The interface cable sand equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

2. For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of –27dBm/MHz.

3. For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

4. For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRPof -27 dBm/MHz.

5. KDB789033v02r01G)2)c)Asspecifiedin15.407(b),emissionsabove1000MHzthatareout sideofthe restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

According to§15.209(a),exceptasprovidedelsewhereinthisSubpart,theemissionsfroman intentionalradiatorshallnotexceedthefieldstrengthlevelsspecifiedinthefollowingtable:

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.1 meters above the ground at a 3 meter semi-anechoiccamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of avariable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum valueof the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned toheights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could bestopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dBmargin would be re-tested one by one using peak, quasi-peak or average method as specified and then reportedin a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber andchange form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

Note:

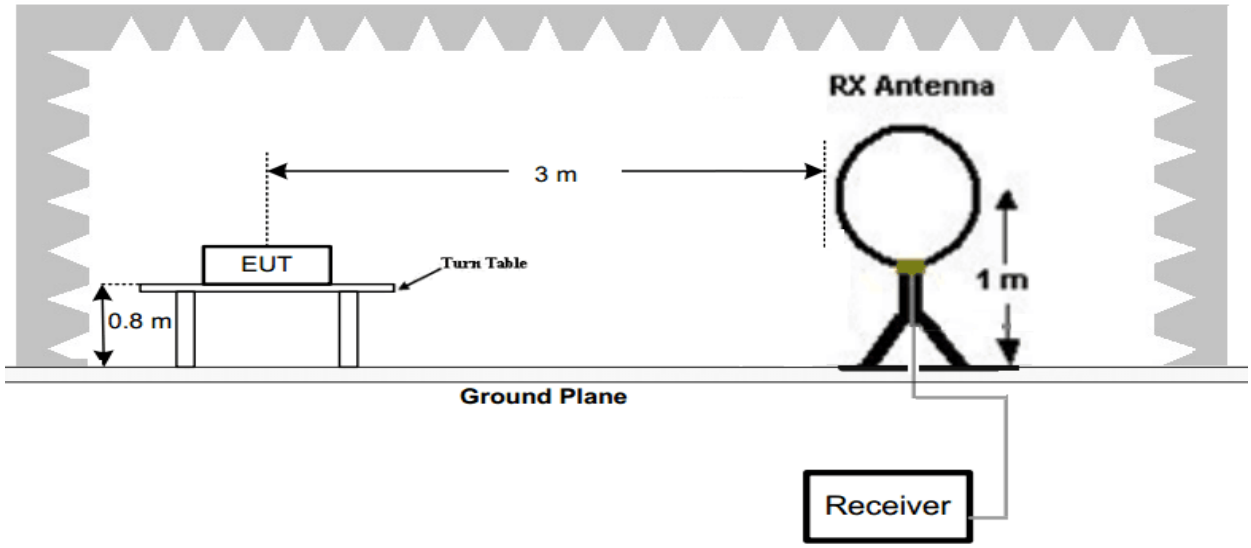
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

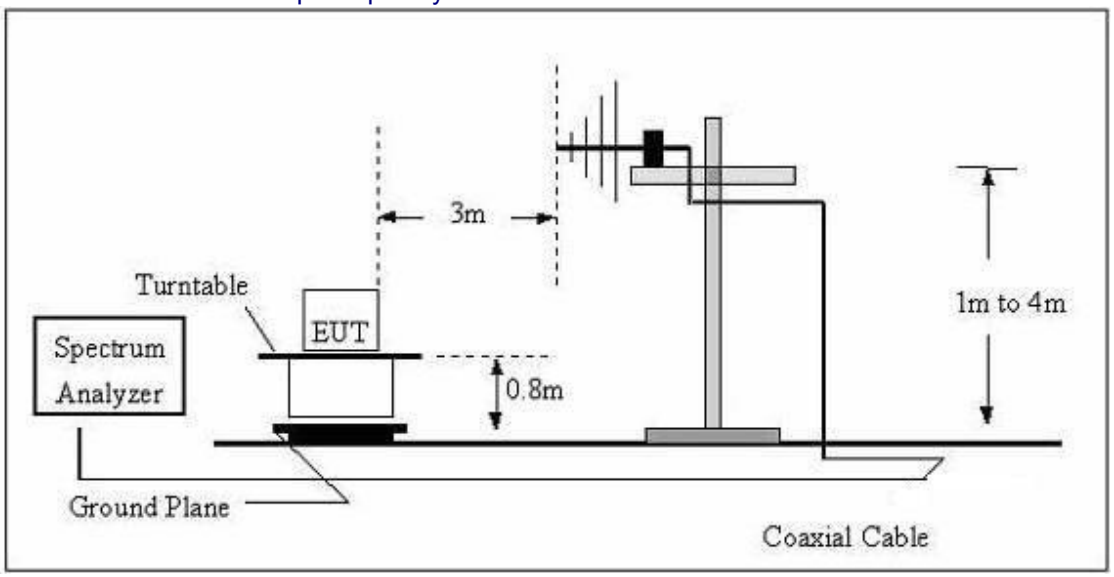
No deviation

4.2.4 TEST SETUP

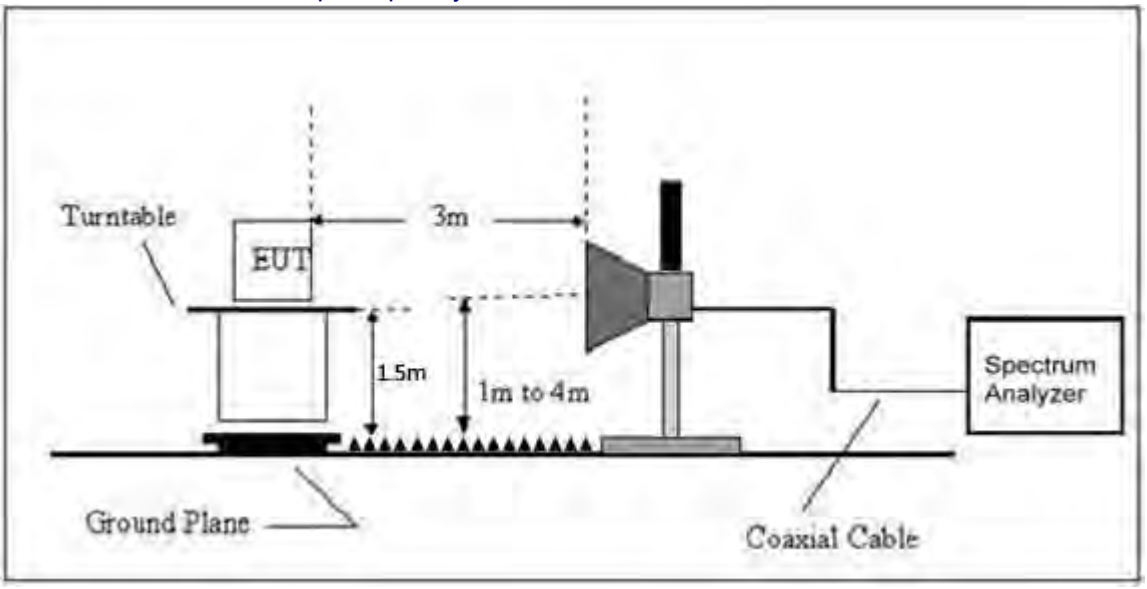
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

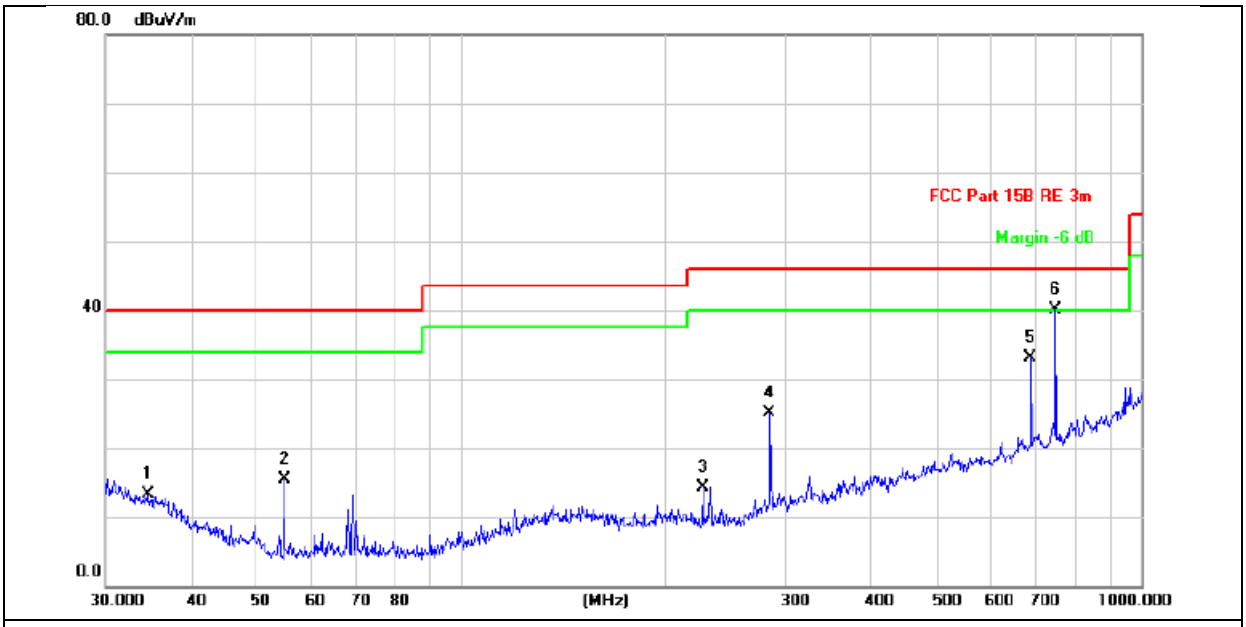
4.2.6 TEST RESULTS

Between 9KHz – 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

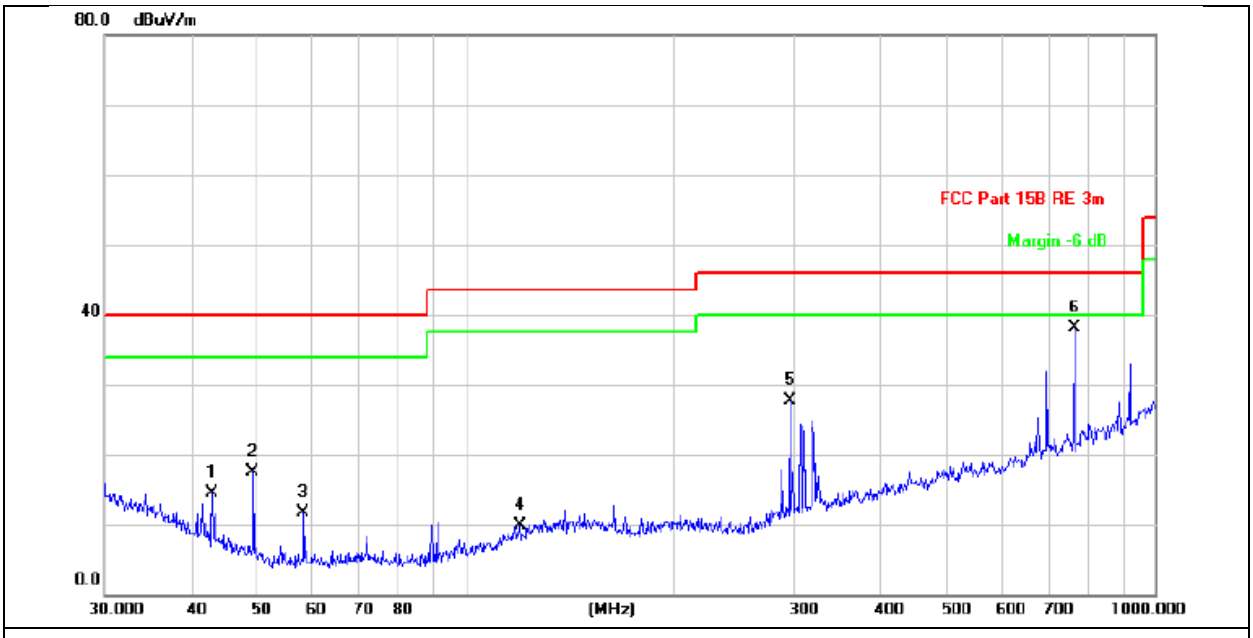
Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC12V	Mode:	802.11a 5825.00



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		34.6385	20.52	-7.17	13.35	40.00	-26.65	QP	100	0	
2		54.8348	30.99	-15.58	15.41	40.00	-24.59	QP	100	37	
3		226.0994	24.66	-10.38	14.28	46.00	-31.72	QP	100	126	
4		283.9791	33.99	-8.92	25.07	46.00	-20.93	QP	100	212	
5		687.1507	33.12	0.01	33.13	46.00	-12.87	QP	100	294	
6	*	747.4825	39.14	1.02	40.16	46.00	-5.84	QP	100	300	

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC12V	Mode:	802.11a 5825.00



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		42.8997	26.15	-11.72	14.43	40.00	-25.57	QP	100	24	
2		49.1865	32.54	-15.09	17.45	40.00	-22.55	QP	100	55	
3		58.2030	27.23	-15.60	11.63	40.00	-28.37	QP	100	308	
4		119.8555	20.65	-10.65	10.00	43.50	-33.50	QP	100	160	
5		295.1469	36.07	-8.32	27.75	46.00	-18.25	QP	100	700	
6	*	763.3757	36.89	1.25	38.14	46.00	-7.86	QP	100	344	

Remark:
1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5745MHz									
V	11490	48.20	30.55	5.77	24.66	48.08	74.00	-25.92	PK
V	11490	34.33	30.55	5.77	24.66	34.21	54.00	-19.79	AV
V	17235	48.47	30.33	6.32	24.55	49.01	74.00	-24.99	PK
V	17235	40.04	30.33	6.32	24.55	40.58	54.00	-13.42	AV
V	22980	50.46	30.85	7.45	24.69	51.75	74.00	-22.25	PK
V	22980	40.02	30.85	7.45	24.69	41.31	54.00	-12.69	AV
H	11490	48.56	30.55	5.77	24.66	48.44	74.00	-25.56	PK
H	11490	39.39	30.55	5.77	24.66	39.27	54.00	-14.73	AV
H	17235	48.06	30.33	6.32	24.55	48.60	74.00	-25.40	PK
H	17235	40.69	30.33	6.32	24.55	41.23	54.00	-12.77	AV
H	22980	49.22	30.85	7.45	24.69	50.51	74.00	-23.49	PK
H	22980	41.21	30.85	7.45	24.69	42.50	54.00	-11.50	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5785MHz									
V	11570	48.63	30.55	5.77	24.66	48.51	74.00	-25.49	PK
V	11570	35.52	30.55	5.77	24.66	35.40	54.00	-18.60	AV
V	17355	49.09	30.33	6.32	24.55	49.63	74.00	-24.37	PK
V	17355	40.24	30.33	6.32	24.55	40.78	54.00	-13.22	AV
V	23140	51.72	30.85	7.45	24.69	53.01	74.00	-20.99	PK
V	23140	39.30	30.85	7.45	24.69	40.59	54.00	-13.41	AV
H	11570	47.25	30.55	5.77	24.66	47.13	74.00	-26.87	PK
H	11570	37.77	30.55	5.77	24.66	37.65	54.00	-16.35	AV
H	17355	48.59	30.33	6.32	24.55	49.13	74.00	-24.87	PK
H	17355	40.81	30.33	6.32	24.55	41.35	54.00	-12.65	AV
H	23140	50.57	30.85	7.45	24.69	51.86	74.00	-22.14	PK
H	23140	38.89	30.85	7.45	24.69	40.18	54.00	-13.82	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	11650	47.34	30.55	5.77	24.66	47.22	74.00	-26.78	PK
V	11650	34.21	30.55	5.77	24.66	34.09	54.00	-19.91	AV
V	17475	49.33	30.33	6.32	24.55	49.87	74.00	-24.13	PK
V	17475	40.38	30.33	6.32	24.55	40.92	54.00	-13.08	AV
V	23300	49.11	30.85	7.45	24.69	50.40	74.00	-23.60	PK
V	23300	39.64	30.85	7.45	24.69	40.93	54.00	-13.07	AV
H	11650	47.70	30.55	5.77	24.66	47.58	74.00	-26.42	PK
H	11650	38.35	30.55	5.77	24.66	38.23	54.00	-15.77	AV
H	17475	48.61	30.33	6.32	24.55	49.15	74.00	-24.85	PK
H	17475	40.37	30.33	6.32	24.55	40.91	54.00	-13.09	AV
H	23300	50.24	30.85	7.45	24.69	51.53	74.00	-22.47	PK
H	23300	39.28	30.85	7.45	24.69	40.57	54.00	-13.43	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:5745MHz									
V	11490	47.37	30.55	5.77	24.66	47.25	74.00	-26.75	PK
V	11490	35.17	30.55	5.77	24.66	35.05	54.00	-18.95	AV
V	17235	48.21	30.33	6.32	24.55	48.75	74.00	-25.25	PK
V	17235	40.65	30.33	6.32	24.55	41.19	54.00	-12.81	AV
V	22980	51.55	30.85	7.45	24.69	52.84	74.00	-21.16	PK
V	22980	41.19	30.85	7.45	24.69	42.48	54.00	-11.52	AV
H	11490	47.94	30.55	5.77	24.66	47.82	74.00	-26.18	PK
H	11490	40.10	30.55	5.77	24.66	39.98	54.00	-14.02	AV
H	17235	47.14	30.33	6.32	24.55	47.68	74.00	-26.32	PK
H	17235	38.84	30.33	6.32	24.55	39.38	54.00	-14.62	AV
H	22980	49.10	30.85	7.45	24.69	50.39	74.00	-23.61	PK
H	22980	40.48	30.85	7.45	24.69	41.77	54.00	-12.23	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:5785MHz									
V	11570	48.98	30.55	5.77	24.66	48.86	74.00	-25.14	PK
V	11570	36.05	30.55	5.77	24.66	35.93	54.00	-18.07	AV
V	17355	49.73	30.33	6.32	24.55	50.27	74.00	-23.73	PK
V	17355	41.02	30.33	6.32	24.55	41.56	54.00	-12.44	AV
V	23140	49.16	30.85	7.45	24.69	50.45	74.00	-23.55	PK
V	23140	40.96	30.85	7.45	24.69	42.25	54.00	-11.75	AV
H	11570	47.24	30.55	5.77	24.66	47.12	74.00	-26.88	PK
H	11570	40.27	30.55	5.77	24.66	40.15	54.00	-13.85	AV
H	17355	47.38	30.33	6.32	24.55	47.92	74.00	-26.08	PK
H	17355	40.46	30.33	6.32	24.55	41.00	54.00	-13.00	AV
H	23140	49.42	30.85	7.45	24.69	50.71	74.00	-23.29	PK
H	23140	41.31	30.85	7.45	24.69	42.60	54.00	-11.40	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:5825MHz									
V	11650	47.47	30.55	5.77	24.66	47.35	74.00	-26.65	PK
V	11650	34.42	30.55	5.77	24.66	34.30	54.00	-19.70	AV
V	17475	48.98	30.33	6.32	24.55	49.52	74.00	-24.48	PK
V	17475	40.97	30.33	6.32	24.55	41.51	54.00	-12.49	AV
V	23300	51.54	30.85	7.45	24.69	52.83	74.00	-21.17	PK
V	23300	40.78	30.85	7.45	24.69	42.07	54.00	-11.93	AV
H	11650	46.58	30.55	5.77	24.66	46.46	74.00	-27.54	PK
H	11650	40.51	30.55	5.77	24.66	40.39	54.00	-13.61	AV
H	17475	47.78	30.33	6.32	24.55	48.32	74.00	-25.68	PK
H	17475	38.80	30.33	6.32	24.55	39.34	54.00	-14.66	AV
H	23300	49.63	30.85	7.45	24.69	50.92	74.00	-23.08	PK
H	23300	41.10	30.85	7.45	24.69	42.39	54.00	-11.61	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5755MHz									
V	11510	48.64	30.55	5.77	24.66	48.52	74.00	-25.48	PK
V	11510	35.16	30.55	5.77	24.66	35.04	54.00	-18.96	AV
V	17265	48.23	30.33	6.32	24.55	48.77	74.00	-25.23	PK
V	17265	39.06	30.33	6.32	24.55	39.60	54.00	-14.40	AV
V	23020	51.15	30.85	7.45	24.69	52.44	74.00	-21.56	PK
V	23020	40.86	30.85	7.45	24.69	42.15	54.00	-11.85	AV
H	11510	46.58	30.55	5.77	24.66	46.46	74.00	-27.54	PK
H	11510	40.71	30.55	5.77	24.66	40.59	54.00	-13.41	AV
H	17265	48.37	30.33	6.32	24.55	48.91	74.00	-25.09	PK
H	17265	41.49	30.33	6.32	24.55	42.03	54.00	-11.97	AV
H	23020	50.85	30.85	7.45	24.69	52.14	74.00	-21.86	PK
H	23020	41.72	30.85	7.45	24.69	43.01	54.00	-10.99	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5795MHz									
V	11590	46.95	30.55	5.77	24.66	46.83	74.00	-27.17	PK
V	11590	35.22	30.55	5.77	24.66	35.10	54.00	-18.90	AV
V	17385	48.49	30.33	6.32	24.55	49.03	74.00	-24.97	PK
V	17385	41.02	30.33	6.32	24.55	41.56	54.00	-12.44	AV
V	23180	51.60	30.85	7.45	24.69	52.89	74.00	-21.11	PK
V	23180	39.47	30.85	7.45	24.69	40.76	54.00	-13.24	AV
H	11590	45.81	30.55	5.77	24.66	45.69	74.00	-28.31	PK
H	11590	39.78	30.55	5.77	24.66	39.66	54.00	-14.34	AV
H	17385	48.67	30.33	6.32	24.55	49.21	74.00	-24.79	PK
H	17385	40.85	30.33	6.32	24.55	41.39	54.00	-12.61	AV
H	23180	51.71	30.85	7.45	24.69	53.00	74.00	-21.00	PK
H	23180	40.93	30.85	7.45	24.69	42.22	54.00	-11.78	AV

Remark:
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5745MHz									
V	11490	46.87	30.55	5.77	24.66	46.75	74.00	-27.25	PK
V	11490	34.18	30.55	5.77	24.66	34.06	54.00	-19.94	AV
V	17235	48.14	30.33	6.32	24.55	48.68	74.00	-25.32	PK
V	17235	39.49	30.33	6.32	24.55	40.03	54.00	-13.97	AV
V	22980	48.94	30.85	7.45	24.69	50.23	74.00	-23.77	PK
V	22980	39.25	30.85	7.45	24.69	40.54	54.00	-13.46	AV
H	11490	47.63	30.55	5.77	24.66	47.51	74.00	-26.49	PK
H	11490	40.56	30.55	5.77	24.66	40.44	54.00	-13.56	AV
H	17235	48.74	30.33	6.32	24.55	49.28	74.00	-24.72	PK
H	17235	41.00	30.33	6.32	24.55	41.54	54.00	-12.46	AV
H	22980	50.36	30.85	7.45	24.69	51.65	74.00	-22.35	PK
H	22980	41.68	30.85	7.45	24.69	42.97	54.00	-11.03	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5785MHz									
V	11570	48.92	30.55	5.77	24.66	48.80	74.00	-25.20	PK
V	11570	36.46	30.55	5.77	24.66	36.34	54.00	-17.66	AV
V	17355	47.98	30.33	6.32	24.55	48.52	74.00	-25.48	PK
V	17355	40.71	30.33	6.32	24.55	41.25	54.00	-12.75	AV
V	23140	51.20	30.85	7.45	24.69	52.49	74.00	-21.51	PK
V	23140	38.83	30.85	7.45	24.69	40.12	54.00	-13.88	AV
H	11570	48.29	30.55	5.77	24.66	48.17	74.00	-25.83	PK
H	11570	38.25	30.55	5.77	24.66	38.13	54.00	-15.87	AV
H	17355	48.56	30.33	6.32	24.55	49.10	74.00	-24.90	PK
H	17355	39.59	30.33	6.32	24.55	40.13	54.00	-13.87	AV
H	23140	51.42	30.85	7.45	24.69	52.71	74.00	-21.29	PK
H	23140	39.11	30.85	7.45	24.69	40.40	54.00	-13.60	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	11650	49.40	30.55	5.77	24.66	49.28	74.00	-24.72	PK
V	11650	36.06	30.55	5.77	24.66	35.94	54.00	-18.06	AV
V	17475	48.97	30.33	6.32	24.55	49.51	74.00	-24.49	PK
V	17475	41.22	30.33	6.32	24.55	41.76	54.00	-12.24	AV
V	23300	49.53	30.85	7.45	24.69	50.82	74.00	-23.18	PK
V	23300	40.16	30.85	7.45	24.69	41.45	54.00	-12.55	AV
H	11650	48.44	30.55	5.77	24.66	48.32	74.00	-25.68	PK
H	11650	39.76	30.55	5.77	24.66	39.64	54.00	-14.36	AV
H	17475	47.68	30.33	6.32	24.55	48.22	74.00	-25.78	PK
H	17475	41.63	30.33	6.32	24.55	42.17	54.00	-11.83	AV
H	23300	51.50	30.85	7.45	24.69	52.79	74.00	-21.21	PK
H	23300	40.93	30.85	7.45	24.69	42.22	54.00	-11.78	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5755MHz									
V	11510	48.32	30.55	5.77	24.66	48.20	74.00	-25.80	PK
V	11510	35.23	30.55	5.77	24.66	35.11	54.00	-18.89	AV
V	17265	48.42	30.33	6.32	24.55	48.96	74.00	-25.04	PK
V	17265	39.84	30.33	6.32	24.55	40.38	54.00	-13.62	AV
V	23020	49.44	30.85	7.45	24.69	50.73	74.00	-23.27	PK
V	23020	40.03	30.85	7.45	24.69	41.32	54.00	-12.68	AV
H	11510	47.24	30.55	5.77	24.66	47.12	74.00	-26.88	PK
H	11510	38.38	30.55	5.77	24.66	38.26	54.00	-15.74	AV
H	17265	48.32	30.33	6.32	24.55	48.86	74.00	-25.14	PK
H	17265	40.47	30.33	6.32	24.55	41.01	54.00	-12.99	AV
H	23020	50.62	30.85	7.45	24.69	51.91	74.00	-22.09	PK
H	23020	39.63	30.85	7.45	24.69	40.92	54.00	-13.08	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5795MHz									
V	11510	49.74	30.55	5.77	24.66	49.62	74.00	-24.38	PK
V	11510	33.91	30.55	5.77	24.66	33.79	54.00	-20.21	AV
V	17265	49.16	30.33	6.32	24.55	49.70	74.00	-24.30	PK
V	17265	40.84	30.33	6.32	24.55	41.38	54.00	-12.62	AV
V	23020	50.85	30.85	7.45	24.69	52.14	74.00	-21.86	PK
V	23020	40.89	30.85	7.45	24.69	42.18	54.00	-11.82	AV
H	11510	45.83	30.55	5.77	24.66	45.71	74.00	-28.29	PK
H	11510	38.67	30.55	5.77	24.66	38.55	54.00	-15.45	AV
H	17265	47.26	30.33	6.32	24.55	47.80	74.00	-26.20	PK
H	17265	40.21	30.33	6.32	24.55	40.75	54.00	-13.25	AV
H	23020	51.73	30.85	7.45	24.69	53.02	74.00	-20.98	PK
H	23020	38.92	30.85	7.45	24.69	40.21	54.00	-13.79	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5775MHz									
V	11550	46.85	30.55	5.77	24.66	46.73	74.00	-27.27	PK
V	11550	36.23	30.55	5.77	24.66	36.11	54.00	-17.89	AV
V	17325	48.55	30.33	6.32	24.55	49.09	74.00	-24.91	PK
V	17325	41.58	30.33	6.32	24.55	42.12	54.00	-11.88	AV
V	23100	50.00	30.85	7.45	24.69	51.29	74.00	-22.71	PK
V	23100	38.78	30.85	7.45	24.69	40.07	54.00	-13.93	AV
H	11550	47.81	30.55	5.77	24.66	47.69	74.00	-26.31	PK
H	11550	40.55	30.55	5.77	24.66	40.43	54.00	-13.57	AV
H	17325	47.65	30.33	6.32	24.55	48.19	74.00	-25.81	PK
H	17325	40.20	30.33	6.32	24.55	40.74	54.00	-13.26	AV
H	23100	50.98	30.85	7.45	24.69	52.27	74.00	-21.73	PK
H	23100	40.18	30.85	7.45	24.69	41.47	54.00	-12.53	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

5.POWER SPECTRAL DENSITY TEST

Test Requirement:	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)
Test Method:	KDB 789033 D02 v02r01

5.1 APPLIED PROCEDURES / LIMIT

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

LIMIT:	U-NII-1	11dBm/MHz
	U-NII-3	30dBm/500KHz

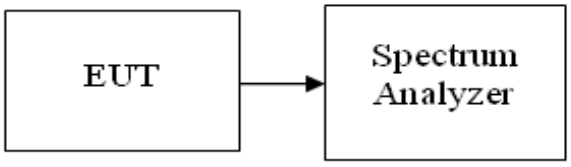
5.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULT

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

6. -26 DB & 6DBM EMISSION BANDWIDTH

Test Requirement:	Part 15 Subpart C Section 15.407 (e)
Test Method:	KDB 789033 D02 v02r01

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15.407 (e)		
Bandwidth		
Limit	U-NII-1	N/A
	U-NII-3	⩾ 500 kHz

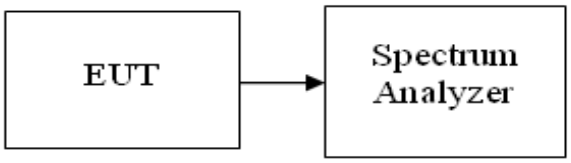
6.2 TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.
Remove the antenna from the EUT and then connect a low-loss RF cable from the antenna port to the spectrum analyzer.
Set the spectrum analyzers RBW = approximately 1% of the emission bandwidth, VBW >RBW, Detector = Peak, Span>26dB bandwidth, and Sweep = auto ,Trace mode = max hold.
Measure the maximum width of the emission that is 26dB down from the maximum of the emission.
Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
Repeat until all the rest channels were investigated.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULT

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

7. OUTPUT POWER TEST

Test Requirement:	15.407 (a)(1)(2)(3)
Test Method:	KDB 789033 D02 v02r01

7.1 APPLIED PROCEDURES/LIMIT

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

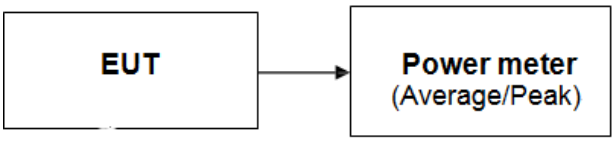
For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Item	Band	Limit	Result
Max conducted output power	U-NII-1	0.25W / 23.98dbm	Pass
Max conducted output power	U-NII-3	1 W / 30dbm	Pass

7.2 DEVIATION FROM STANDARD

No deviation.

7.3 TEST SETUP



7.4 EUT OPERATION CONDITIONS

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

8. OUT OF BAND EDGE EMISSION

Test Requirement:	15.407 (b)
Test Method:	KDB 789033 D02 v02r01

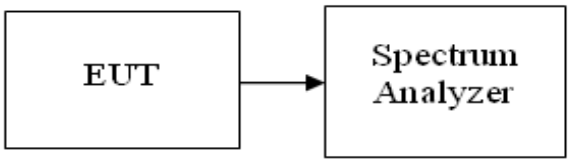
8.1 TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

8.2 DEVIATION FROM STANDARD

No deviation.

8.3 TEST SETUP



8.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

8.5 TEST RESULTS

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

9. FREQUENCY STABILITY MEASUREMENT

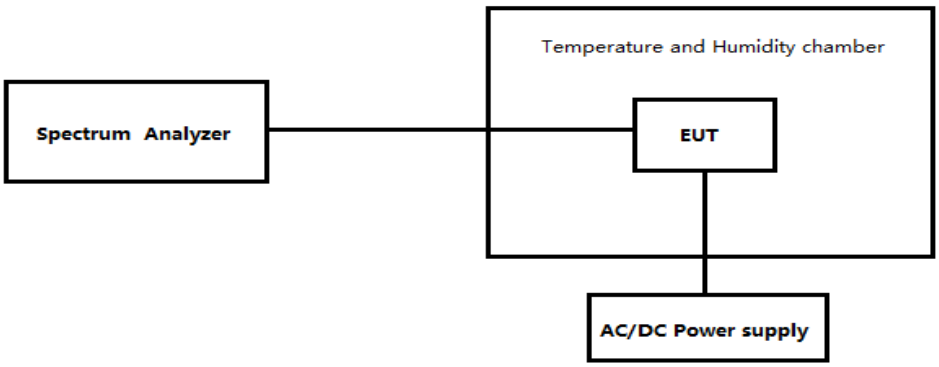
9.1 LIMIT

According to§15.407(g),Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

9.2 TESTPROCEDURE

1. To ensure emission at the band edge is main tainted within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, whichissettomaximumholdfunctionandpeakdetector.Thepeakvalueofthepowerenvelopewas measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

9.3 TESTCONFIGURATION



9.4 TEST RESULT

Note: Only the test results of the worst channel are displayed

802.11a-CH165

Temperature (°C)	Voltage (DC:V)	Frequency Measure with time Elapsed	
		Freq.Dev(Hz)	(ppm)
50	12.0	100	0.0171
40	12.0	91	0.0157
30	12.0	85	0.0145
20	12.0	86	0.0147
10	12.0	83	0.0143
0	12.0	99	0.0170
-10	12.0	91	0.0156
-20	12.0	90	0.0154
-30	12.0	76	0.0131

802.11n20-CH149

Temperature (°C)	Voltage (DC:V)	Frequency Measure with time Elapsed	
		Freq.Dev(Hz)	(ppm)
50	12.0	92	0.0160
40	12.0	75	0.0130
30	12.0	83	0.0144
20	12.0	82	0.0142
10	12.0	97	0.0169
0	12.0	76	0.0133
-10	12.0	80	0.0139
-20	12.0	78	0.0135
-30	12.0	84	0.0145

802.11n20-CH165

Temperature (°C)	Voltage (DC:V)	Frequency Measure with time Elapsed	
		Freq.Dev(Hz)	(ppm)
50	12.0	94	0.0162
40	12.0	91	0.0155
30	12.0	86	0.0147
20	12.0	95	0.0164
10	12.0	76	0.0131
0	12.0	82	0.0140
-10	12.0	79	0.0135
-20	12.0	74	0.0127
-30	12.0	97	0.0167

802.11n40-CH151

Temperature (°C)	Voltage (DC:V)	Frequency Measure with time Elapsed	
		Freq.Dev(Hz)	(ppm)
50	12.0	76	0.0133
40	12.0	85	0.0149
30	12.0	98	0.0170
20	12.0	89	0.0156
10	12.0	92	0.0160
0	12.0	86	0.0149
-10	12.0	96	0.0166
-20	12.0	83	0.0144
-30	12.0	86	0.0150

802.11n40-CH159

Temperature (°C)	Voltage (DC:V)	Frequency Measure with time Elapsed	
		Freq.Dev(Hz)	(ppm)
50	12.0	90	0.0155
40	12.0	96	0.0165
30	12.0	74	0.0127
20	12.0	95	0.0164
10	12.0	76	0.0130
0	12.0	84	0.0144
-10	12.0	80	0.0138
-20	12.0	93	0.0160
-30	12.0	90	0.0156

802.11ac20-CH149

Temperature (°C)	Voltage (DC:V)	Frequency Measure with time Elapsed	
		Freq.Dev(Hz)	(ppm)
50	12.0	74	0.0129
40	12.0	81	0.0141
30	12.0	86	0.0150
20	12.0	80	0.0139
10	12.0	90	0.0157
0	12.0	76	0.0133
-10	12.0	87	0.0152
-20	12.0	87	0.0152
-30	12.0	73	0.0127

802.11ac20-CH165

Temperature (°C)	Voltage (DC:V)	Frequency Measure with time Elapsed	
		Freq.Dev(Hz)	(ppm)
50	12.0	85	0.0146
40	12.0	83	0.0143
30	12.0	78	0.0134
20	12.0	82	0.0141
10	12.0	92	0.0158
0	12.0	85	0.0145
-10	12.0	81	0.0139
-20	12.0	76	0.0131
-30	12.0	84	0.0145

802.11ac80-CH155

Temperature (°C)	Voltage (DC:V)	Frequency Measure with time Elapsed	
		Freq.Dev(Hz)	(ppm)
50	12.0	100	0.0173
40	12.0	81	0.0139
30	12.0	90	0.0156
20	12.0	88	0.0153
10	12.0	75	0.0130
0	12.0	77	0.0133
-10	12.0	84	0.0145
-20	12.0	76	0.0132
-30	12.0	74	0.0128

10.ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203 /247(c)

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

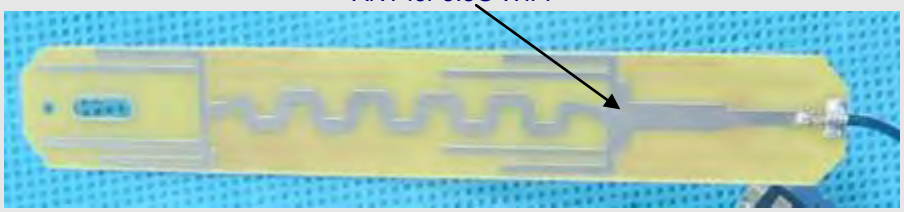
Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

EUT Antenna:

The antenna is PCB antenna, the best case gain of the antennas are 3.67dBi, reference to the below photo for details

ANT for 5.8G WIFI

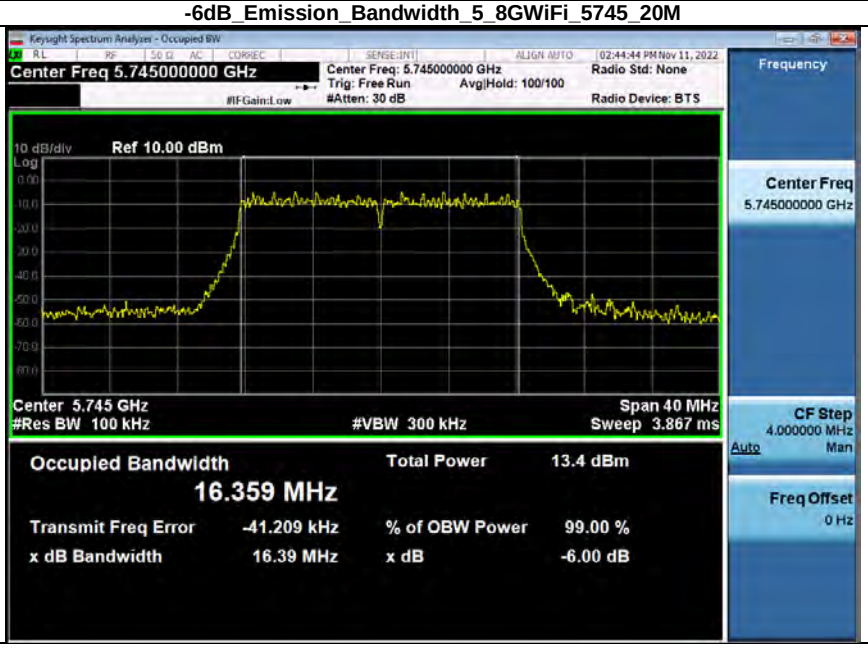


11. APPENDIX1---5.8GWIFI

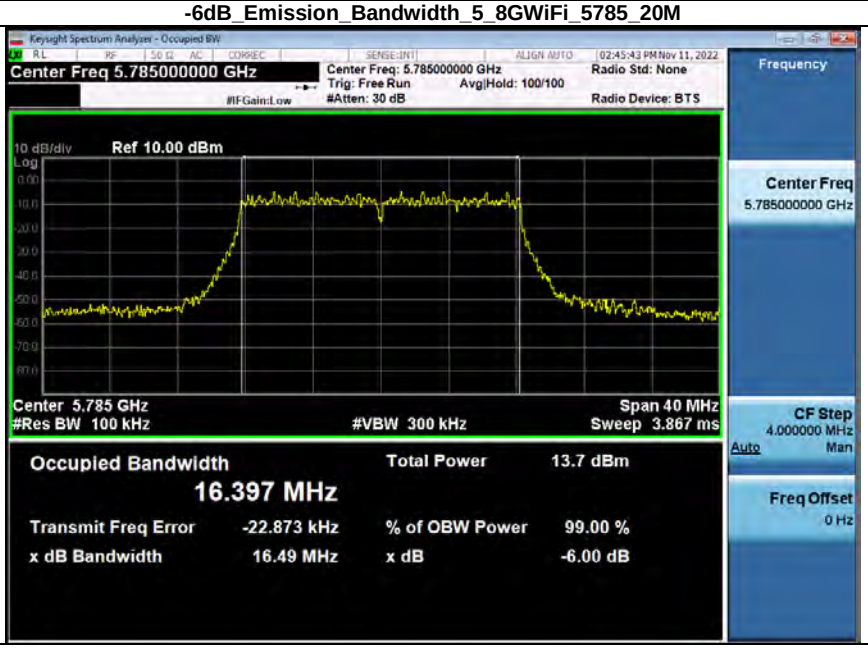
1. -6dB Emission Bandwidth

Condition	Antenna	Mode	Frequency(MHz)	-6dB_Emission_Bandwidth(MHz)	Limit(MHz)	Result
NVNT	ANT1	LCH	5745.00	16.39	0.500	Pass
NVNT	ANT1	MCH	5785.00	16.49	0.500	Pass
NVNT	ANT1	HCH	5825.00	16.42	0.500	Pass
NVNT	ANT1	LCH	5745.00	17.64	0.500	Pass
NVNT	ANT1	MCH	5785.00	17.69	0.500	Pass
NVNT	ANT1	HCH	5825.00	17.67	0.500	Pass
NVNT	ANT1	LCH	5745.00	17.61	0.500	Pass
NVNT	ANT1	MCH	5785.00	17.42	0.500	Pass
NVNT	ANT1	HCH	5825.00	17.47	0.500	Pass
NVNT	ANT1	LCH	5755.00	35.68	0.500	Pass
NVNT	ANT1	HCH	5795.00	36.02	0.500	Pass
NVNT	ANT1	LCH	5755.00	35.24	0.500	Pass
NVNT	ANT1	HCH	5795.00	35.21	0.500	Pass
NVNT	ANT1	MCH	5775.00	75.40	0.500	Pass

-6dB_Emission_Bandwidth_5_8GWiFi_5745_20M



-6dB_Emission_Bandwidth_5_8GWiFi_5785_20M



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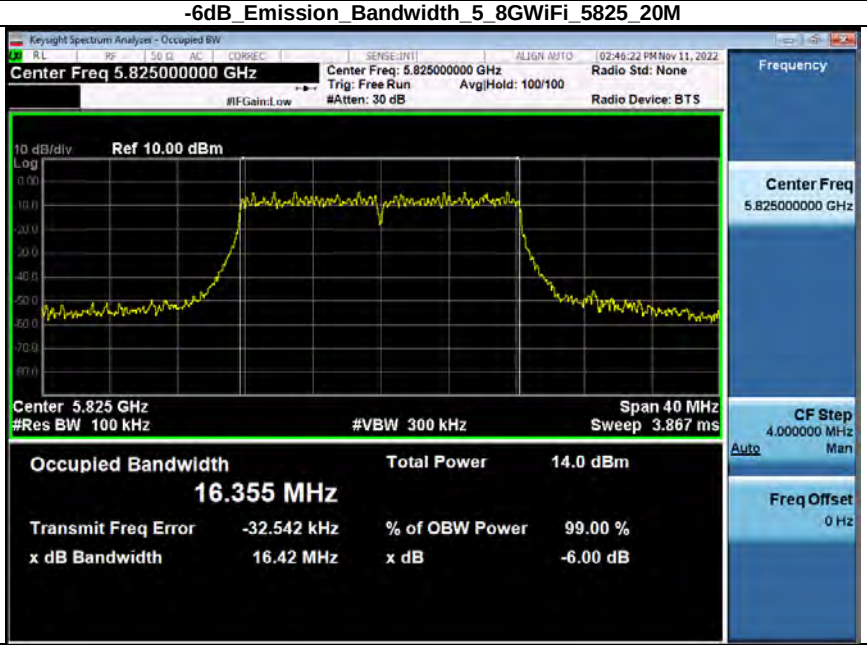
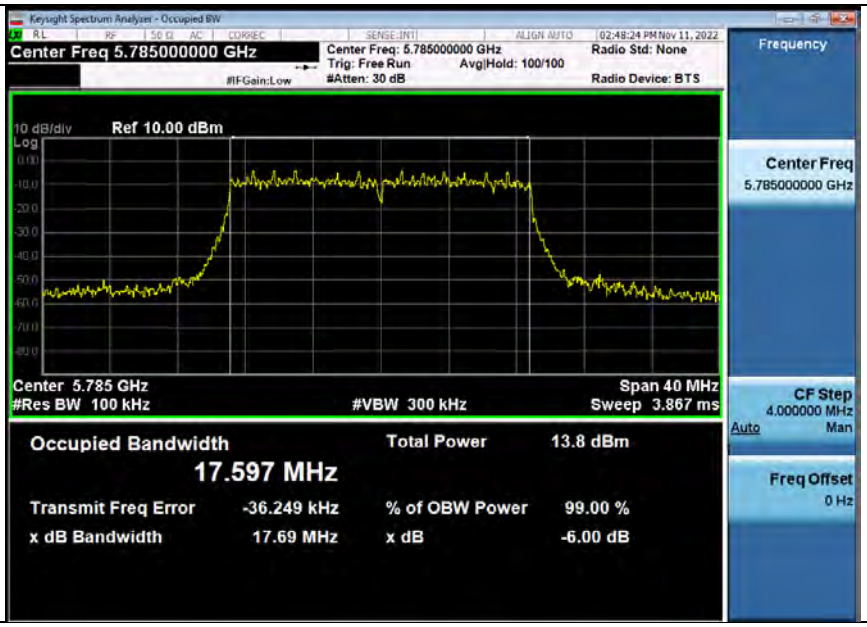


-6dB_Emission_Bandwidth_5_8GWiFi_5745_20M


-6dB_Emission_Bandwidth_5_8GWiFi_5785_20M



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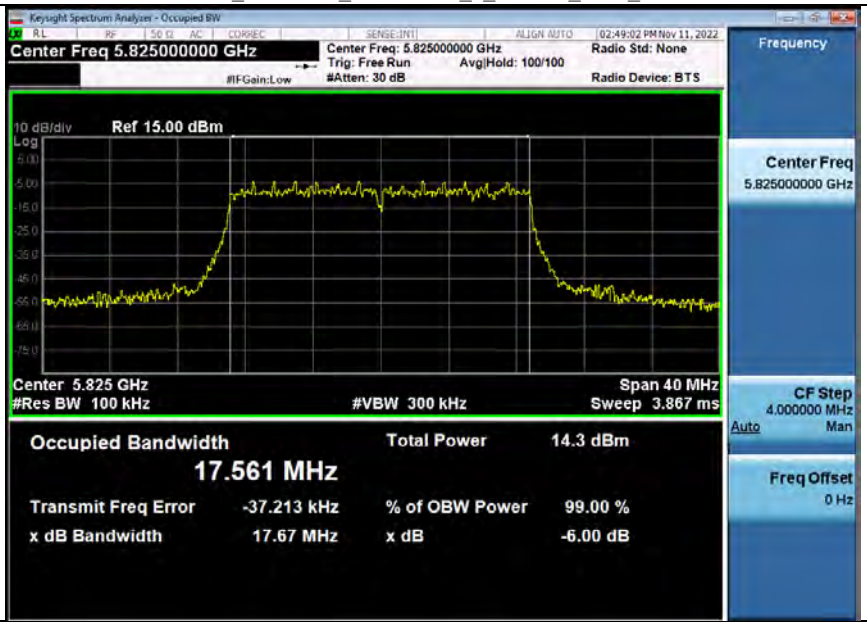

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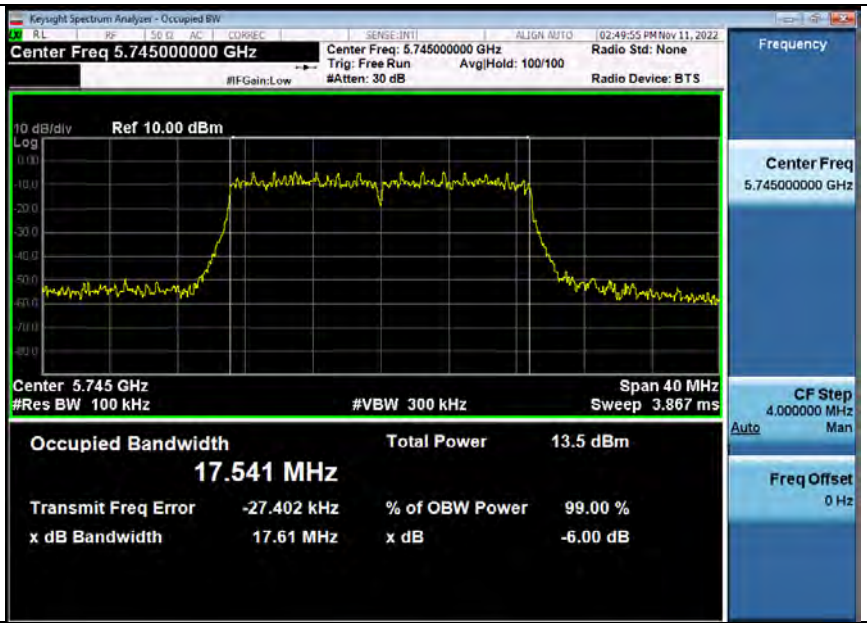

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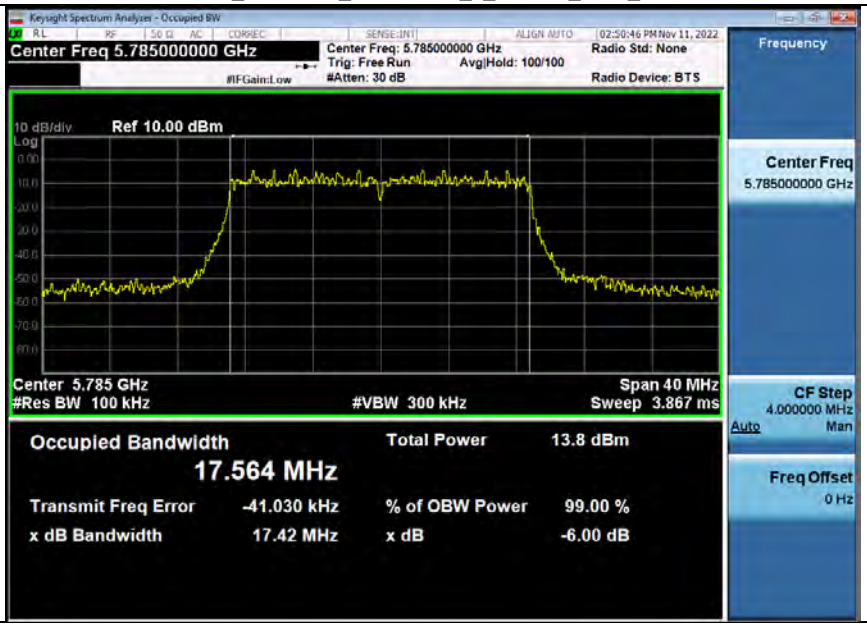

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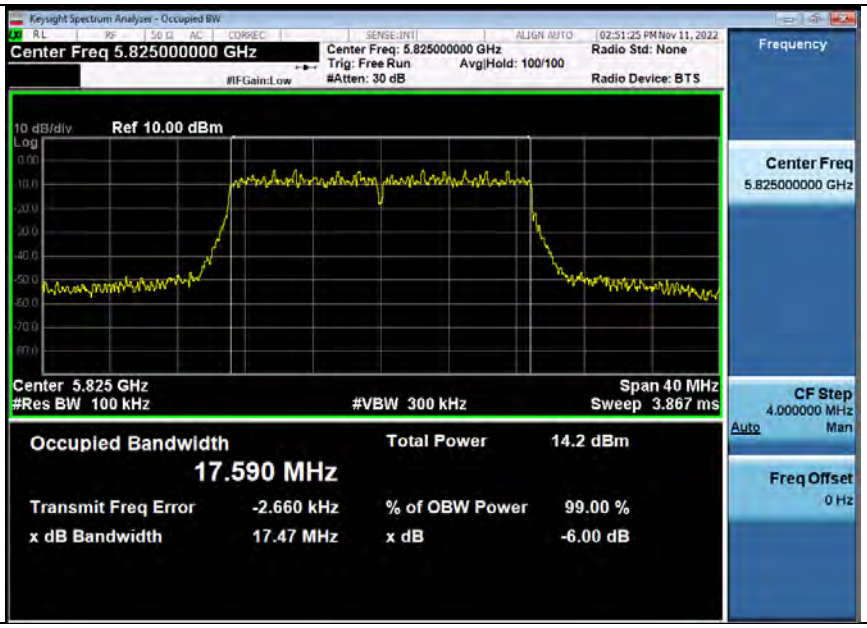
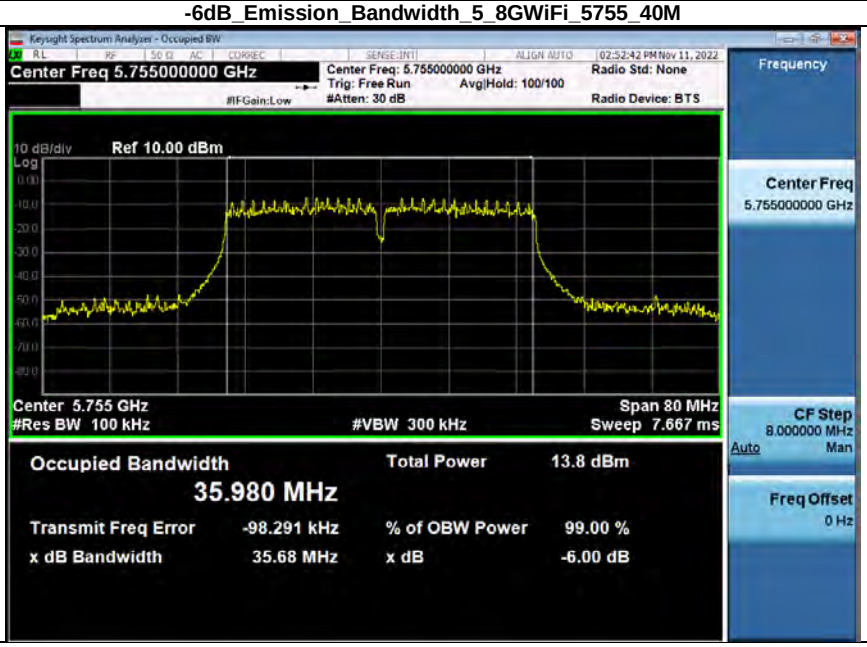
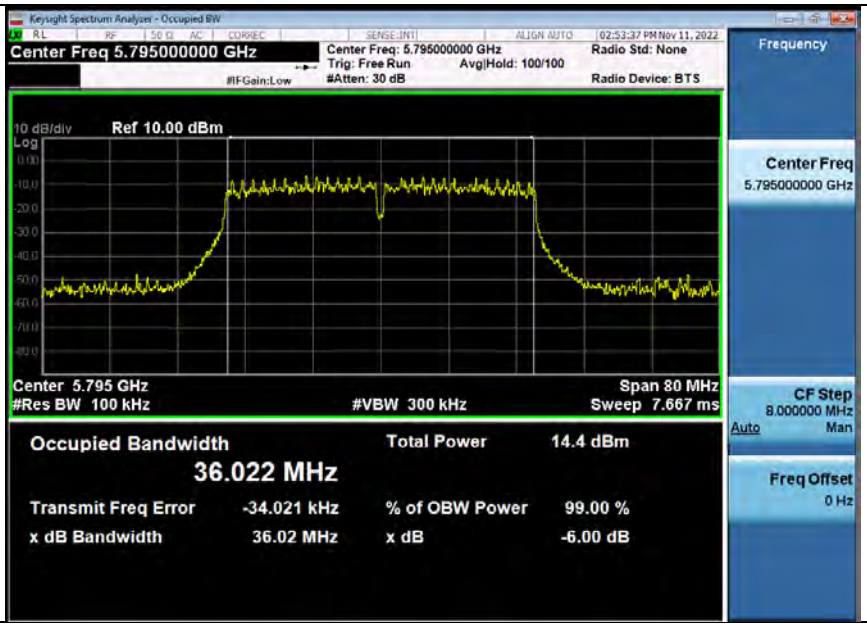


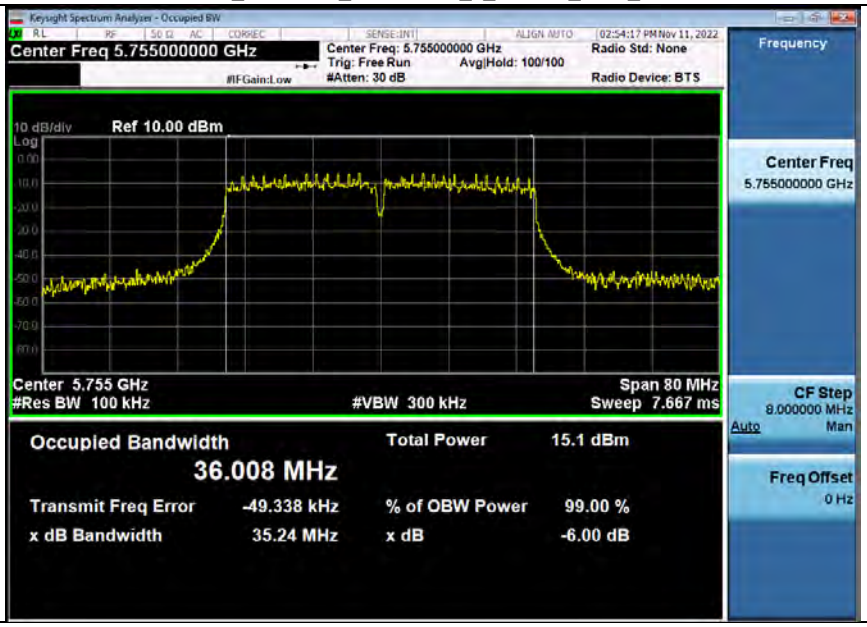
-6dB_Emission_Bandwidth_5_8GWiFi_5755_40M



-6dB_Emission_Bandwidth_5_8GWiFi_5795_40M



-6dB_Emission_Bandwidth_5_8GWiFi_5755_40M



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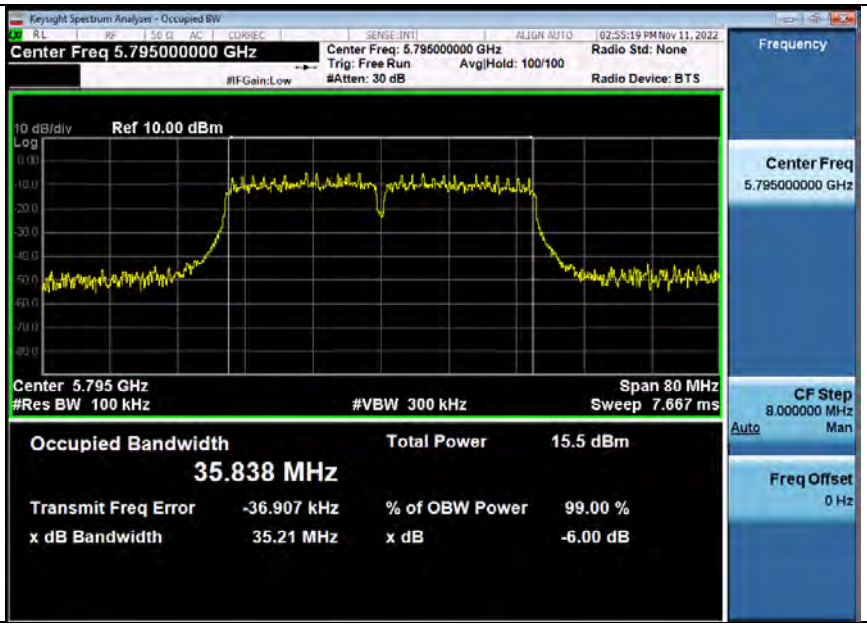
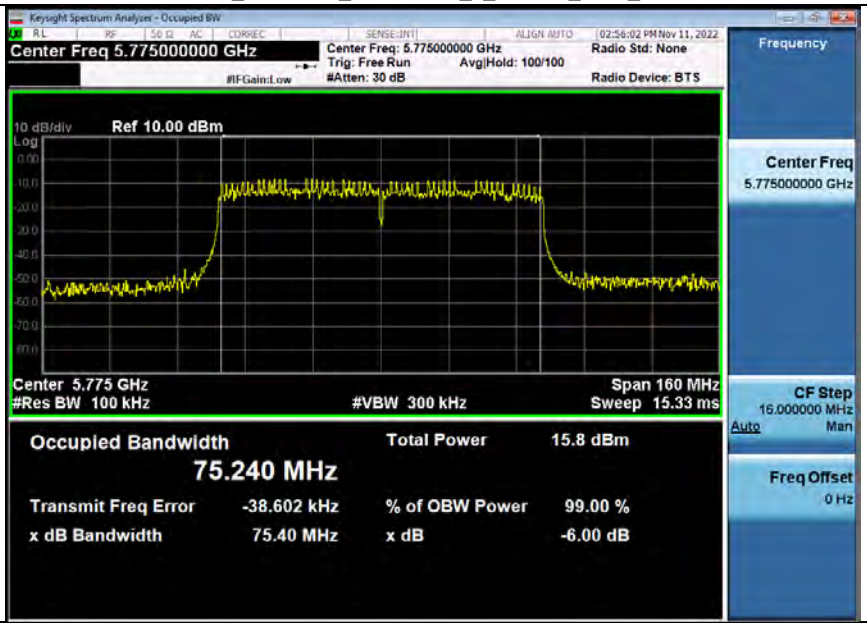


-6dB_Emission_Bandwidth_5_8GWiFi_5775_80M



3. Maximum Conducted Output Power

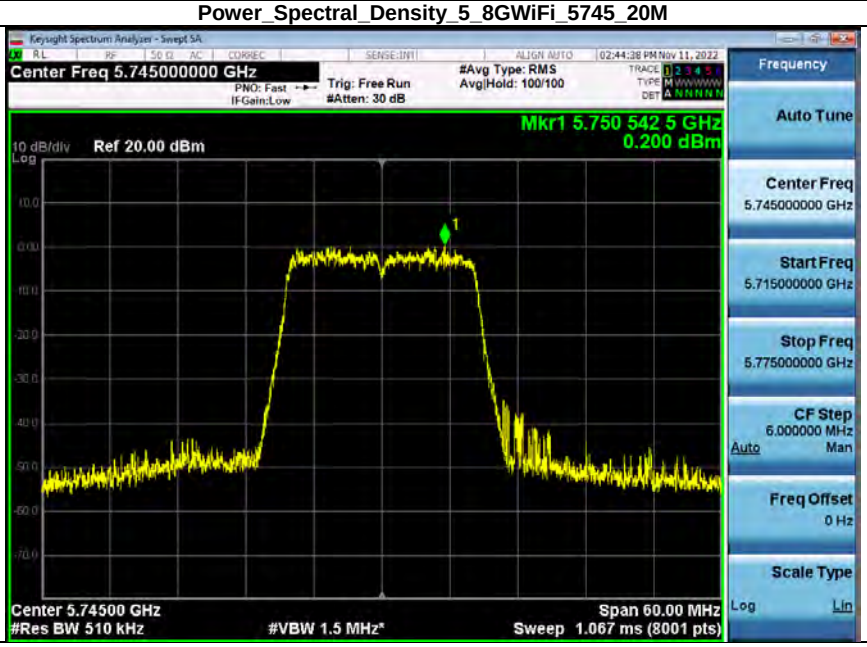
Condition	Modulation	Frequency (MHz)	Conducted Power(dBm)	limit(dBm)	Result
NVNT	802.11a	5745.00	7.33	30	Pass
NVNT	802.11a	5785.00	7.67	30	Pass
NVNT	802.11a	5825.00	8.16	30	Pass
NVNT	802.11n(HT20)	5745.00	7.30	30	Pass
NVNT	802.11n(HT20)	5785.00	7.67	30	Pass
NVNT	802.11n(HT20)	5825.00	8.03	30	Pass
NVNT	802.11ac(VHT20)	5745.00	7.93	30	Pass
NVNT	802.11ac(VHT20)	5785.00	7.41	30	Pass
NVNT	802.11ac(VHT20)	5825.00	7.60	30	Pass
NVNT	802.11n(HT40)	5755.00	6.14	30	Pass
NVNT	802.11n(HT40)	5795.00	6.68	30	Pass
NVNT	802.11ac(VHT40)	5755.00	6.88	30	Pass
NVNT	802.11ac(VHT40)	5795.00	5.22	30	Pass
NVNT	802.11ac(VHT80)	5775.00	4.43	30	Pass

4. Power Spectral Density

Condition	Modulation	Frequency (MHz)	PSD (dBm/510KHz)	PSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
NVNT	802.11a	5745.00	0.20	0.114	30	Pass
NVNT	802.11a	5785.00	0.478	0.392	30	Pass
NVNT	802.11a	5825.00	1.85	1.764	30	Pass
NVNT	802.11n(HT20)	5745.00	0.185	0.099	30	Pass
NVNT	802.11n(HT20)	5785.00	0.465	0.379	30	Pass
NVNT	802.11n(HT20)	5825.00	0.295	0.209	30	Pass
NVNT	802.11ac(VHT20)	5745.00	1.158	1.072	30	Pass
NVNT	802.11ac(VHT20)	5785.00	1.587	1.501	30	Pass
NVNT	802.11ac(VHT20)	5825.00	1.104	1.018	30	Pass
NVNT	802.11n(HT40)	5755.00	-2.889	-2.975	30	Pass
NVNT	802.11n(HT40)	5795.00	-2.436	-2.522	30	Pass
NVNT	802.11ac(VHT40)	5755.00	-1.327	-1.413	30	Pass
NVNT	802.11ac(VHT40)	5795.00	-1.432	-1.518	30	Pass
NVNT	802.11ac(VHT80)	5775.00	-3.195	-3.281	30	Pass

Note: dBm/500KHz = dBm/510KHz +10*LOG10(500/510)

Power_Spectral_Density_5_8GWiFi_5745_20M



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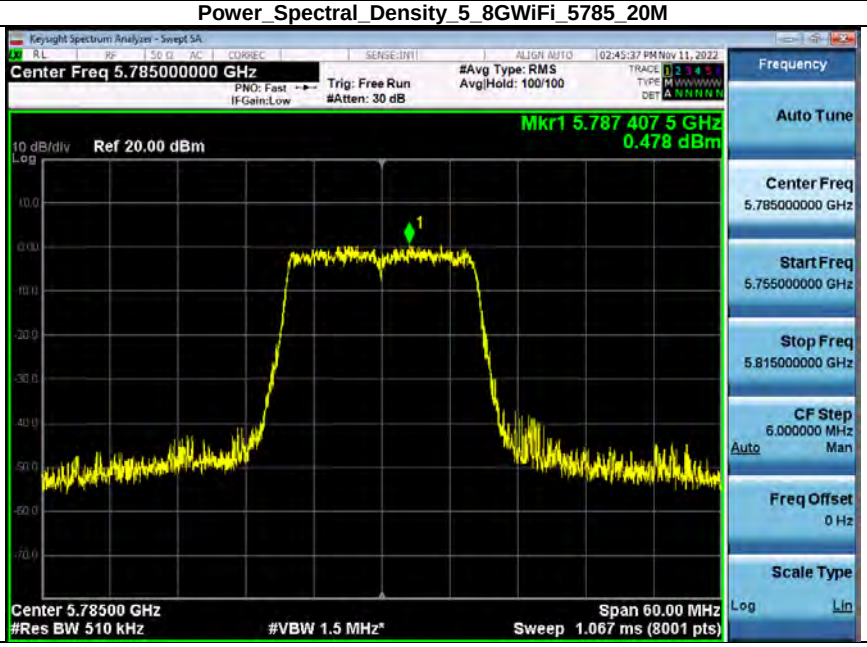

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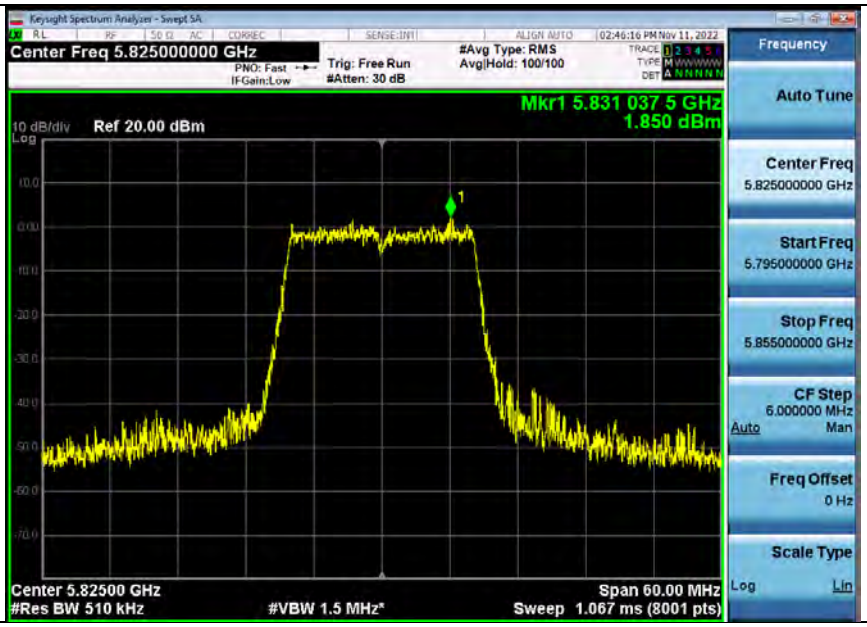

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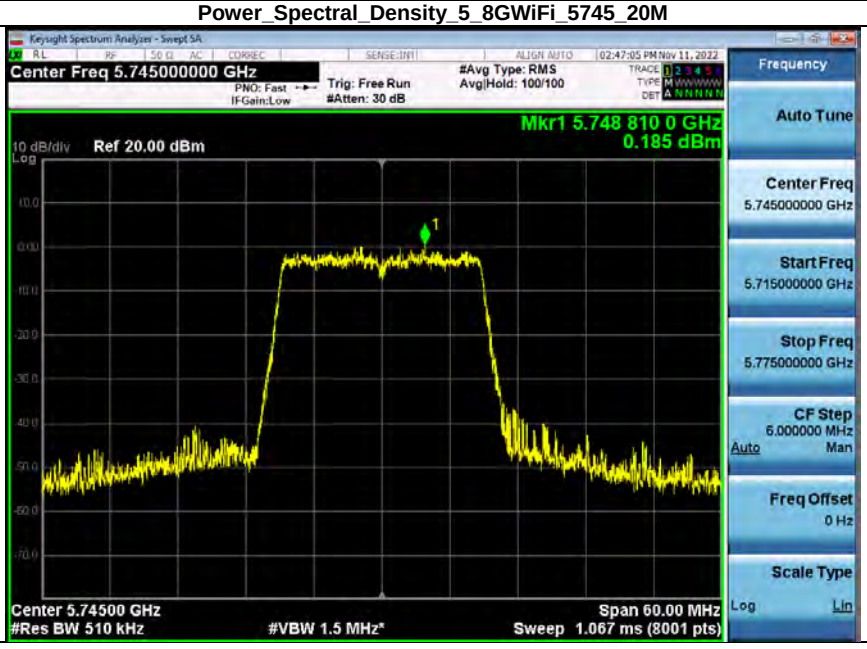

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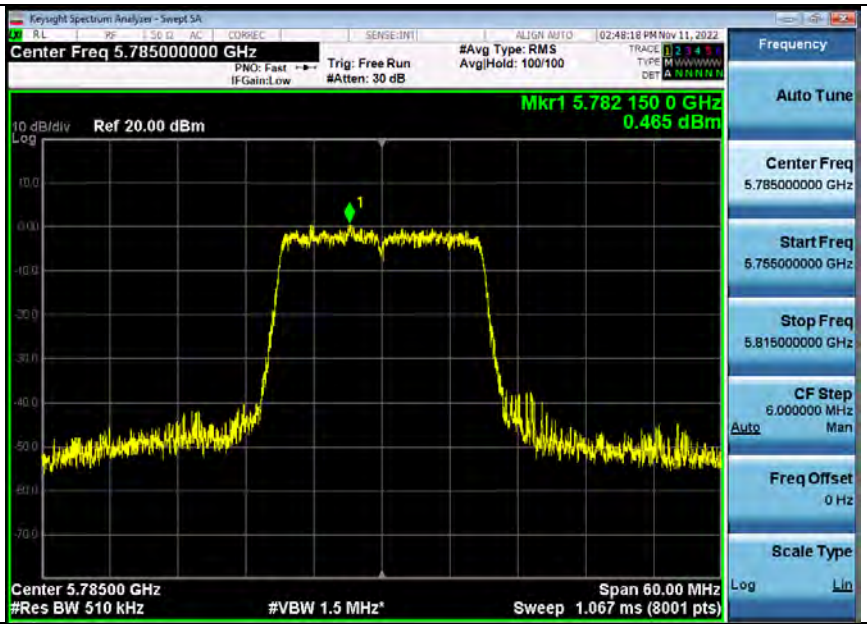

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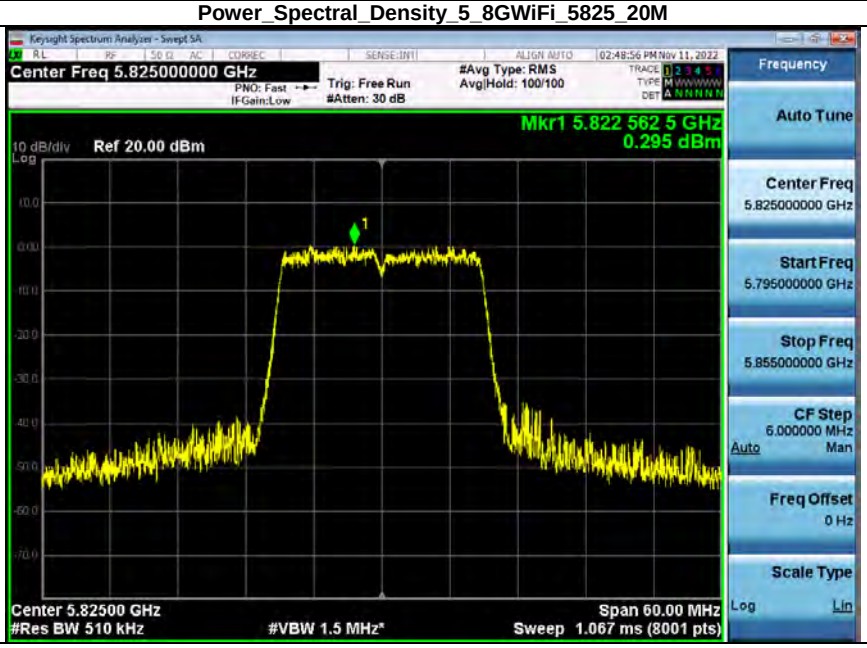

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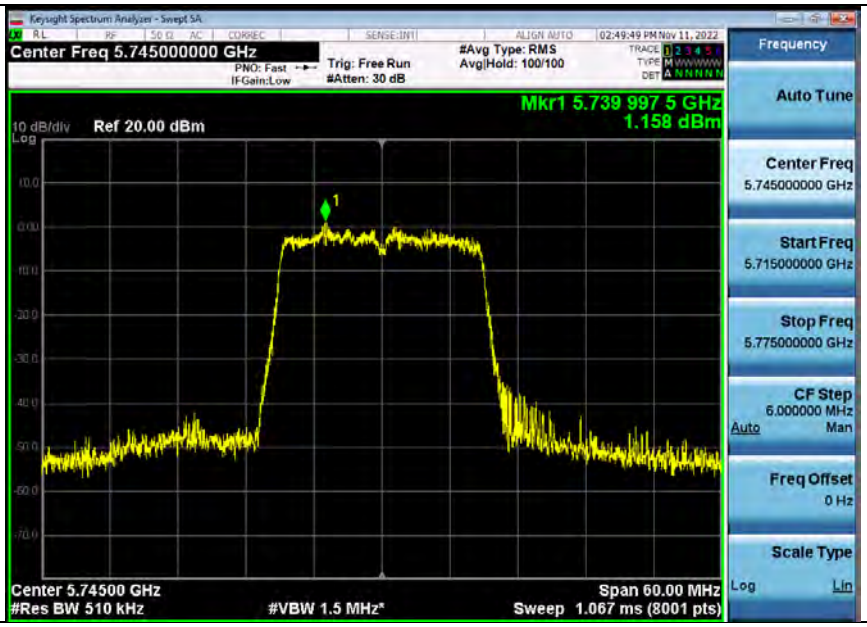

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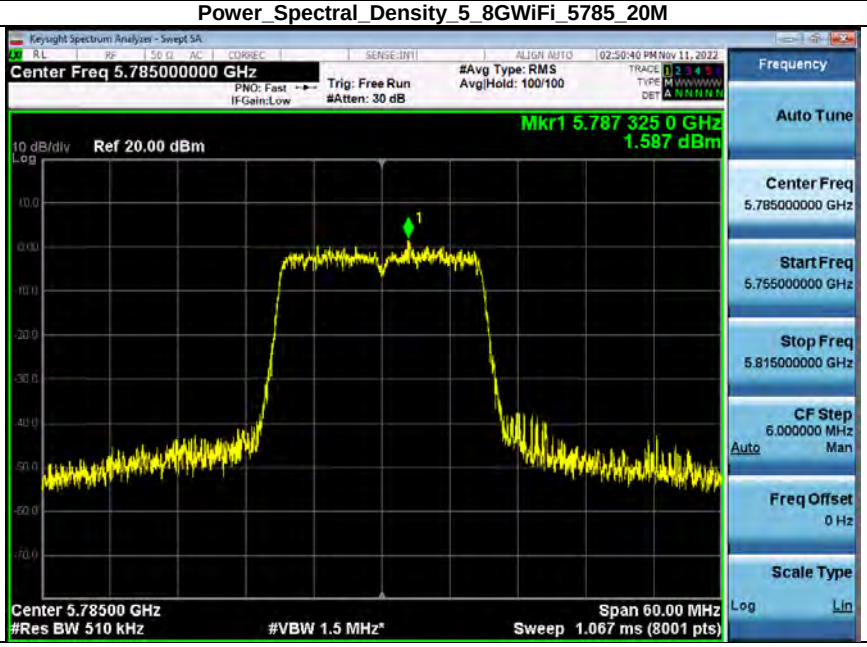
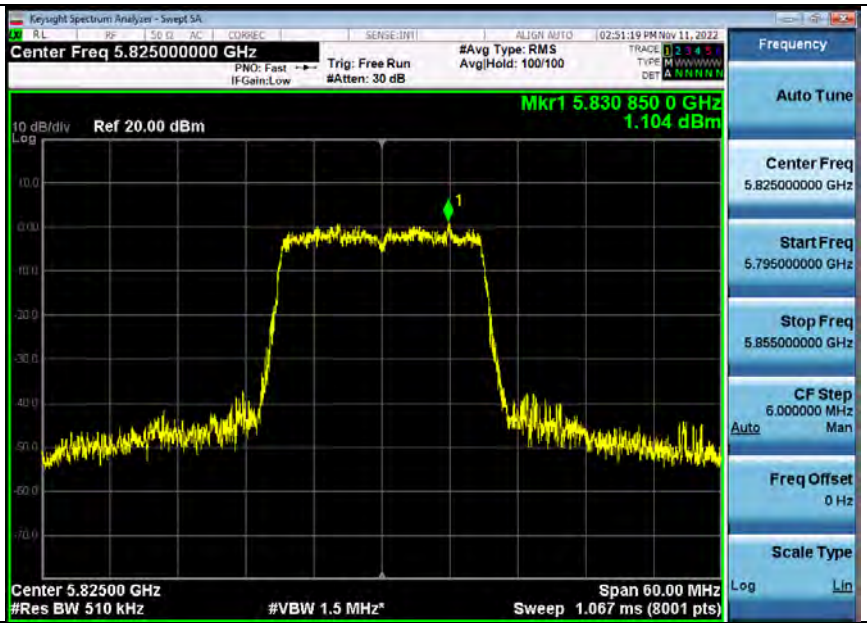
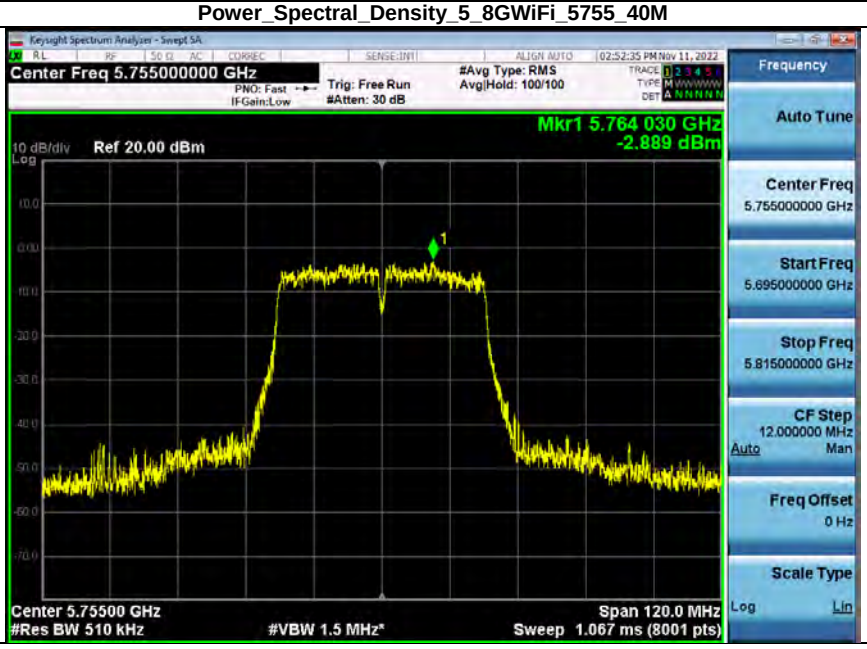


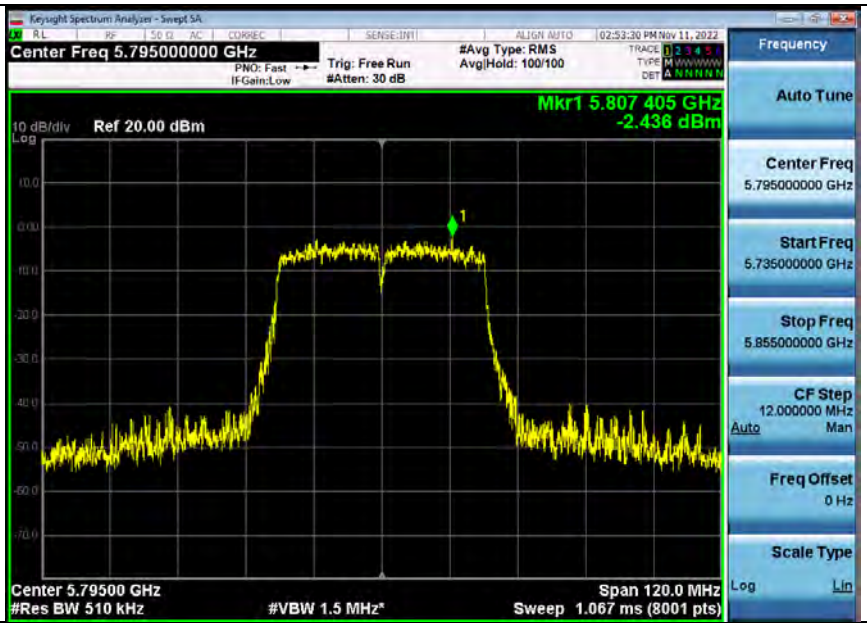
Power_Spectral_Density_5_8GWiFi_5825_20M



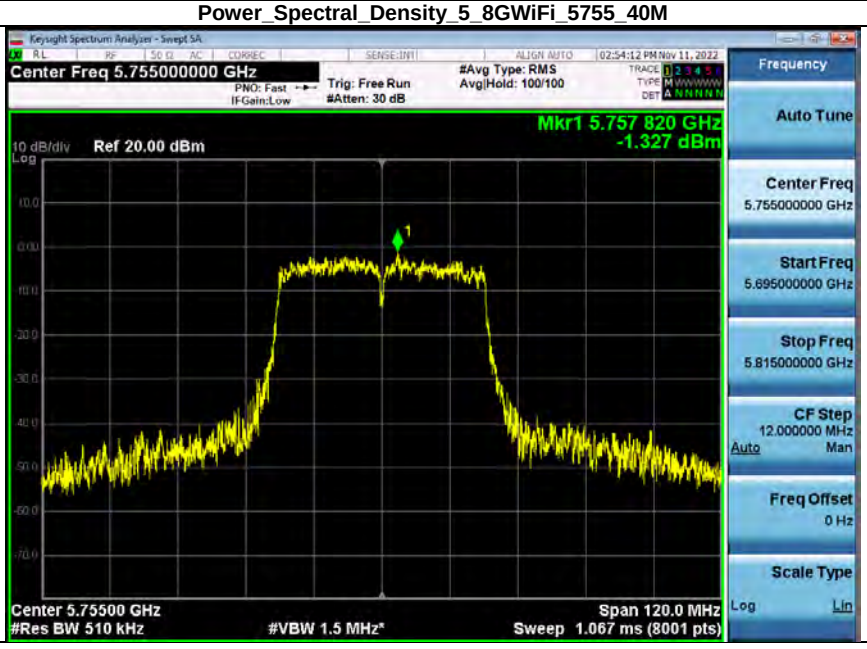
Power_Spectral_Density_5_8GWiFi_5755_40M



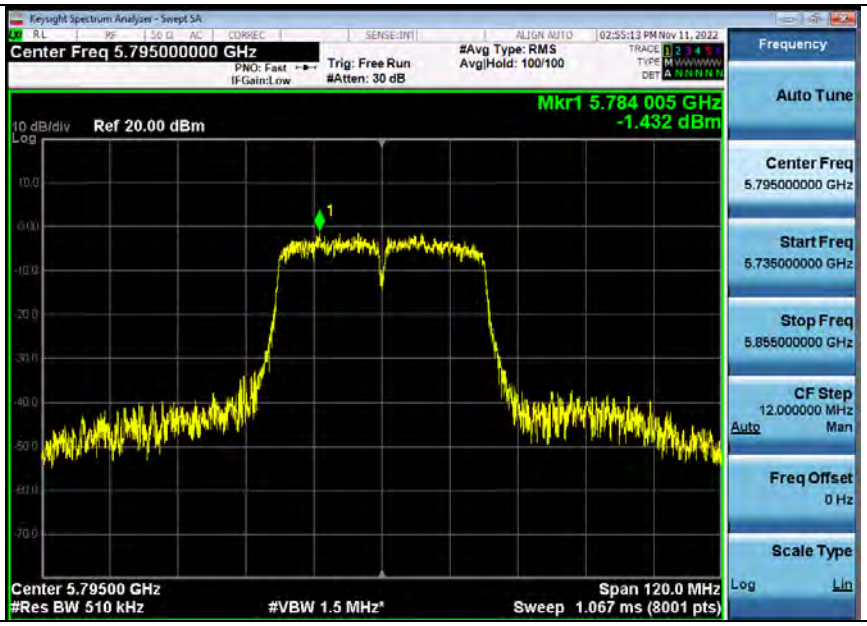
Power_Spectral_Density_5_8GWiFi_5795_40M



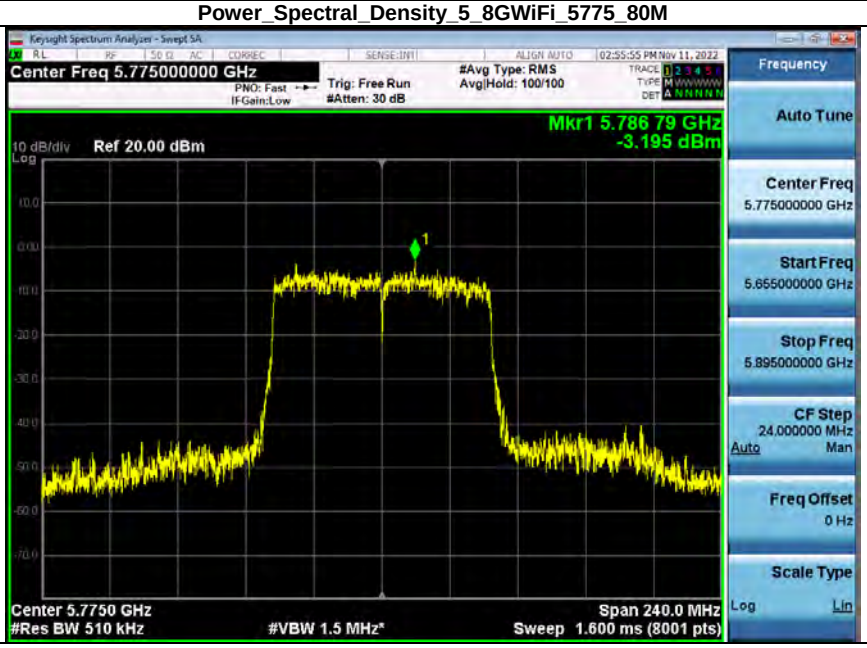
Power_Spectral_Density_5_8GWiFi_5755_40M



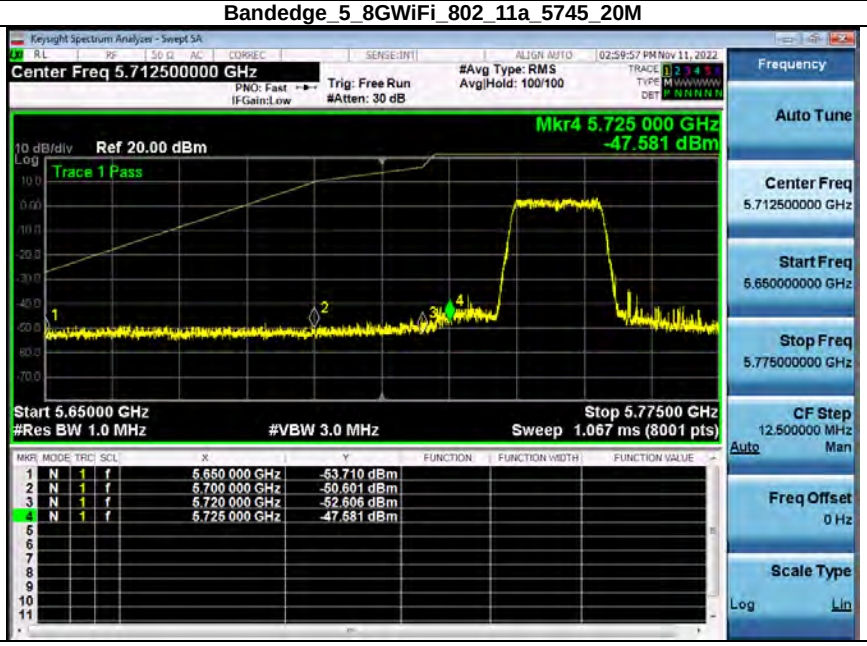
Power_Spectral_Density_5_8GWiFi_5795_40M

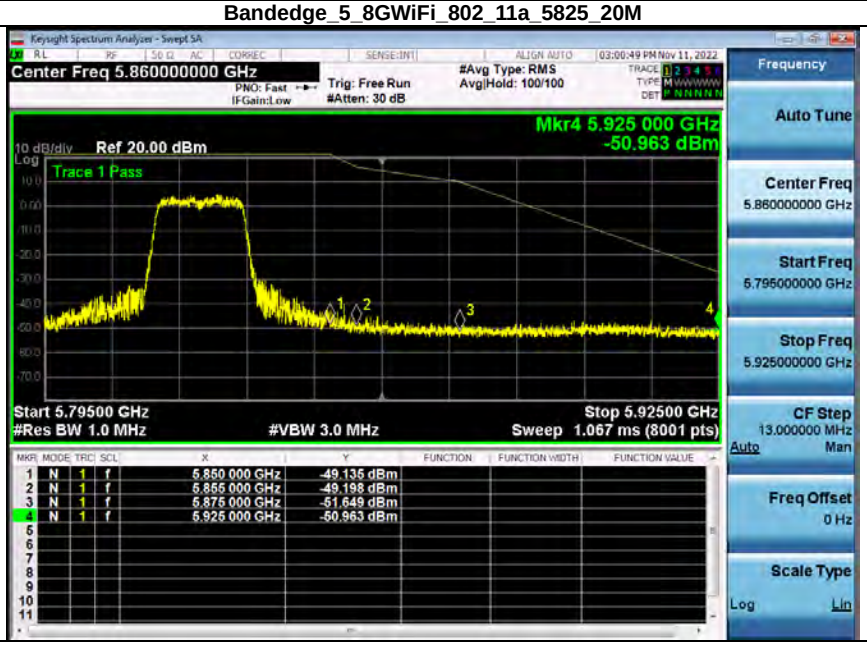


Power_Spectral_Density_5_8GWiFi_5775_80M

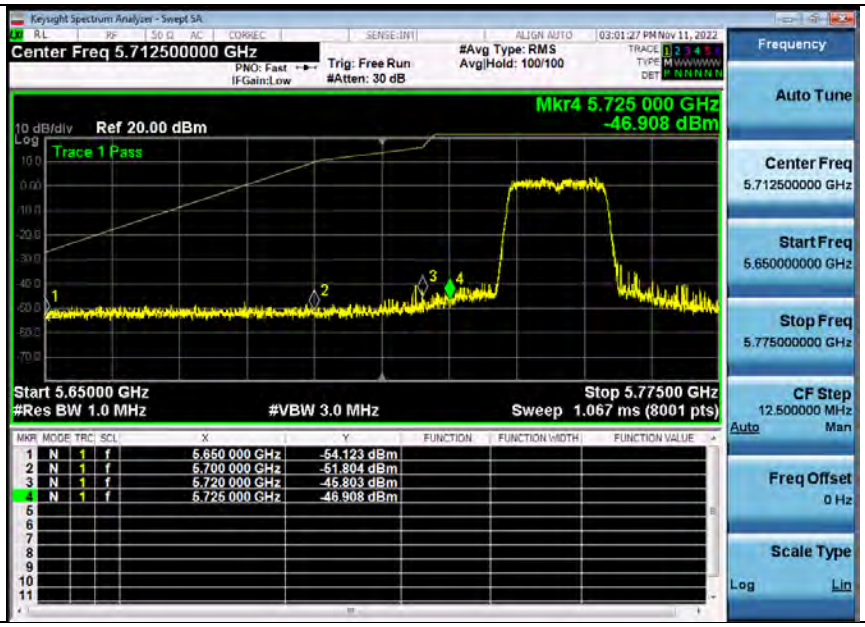


4. Bandedge

Bandedge_5_8GWiFi_802_11a_5745_20M


Bandedge_5_8GWiFi_802_11a_5825_20M


Bandedge_5_8GWiFi_802_11n(HT20)_5745_20M



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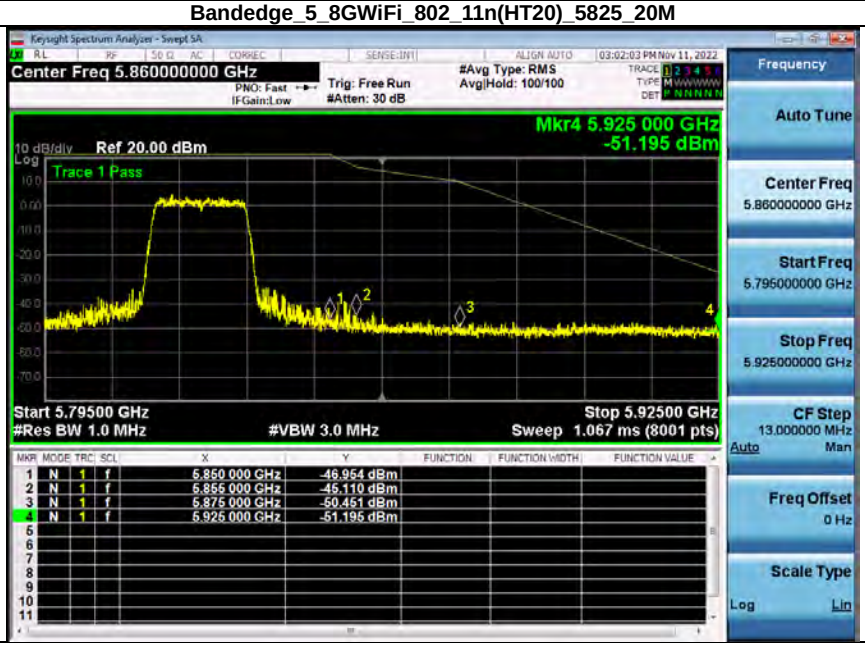

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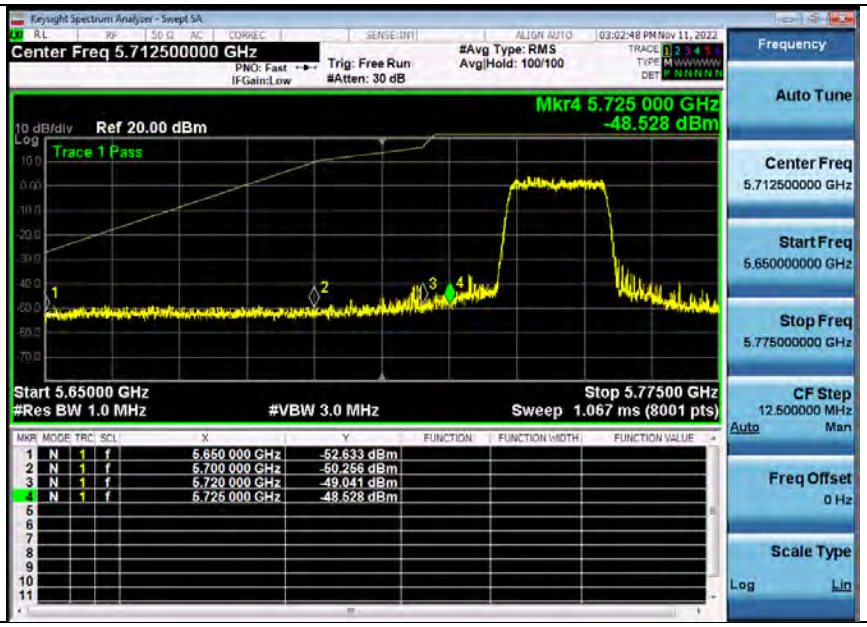

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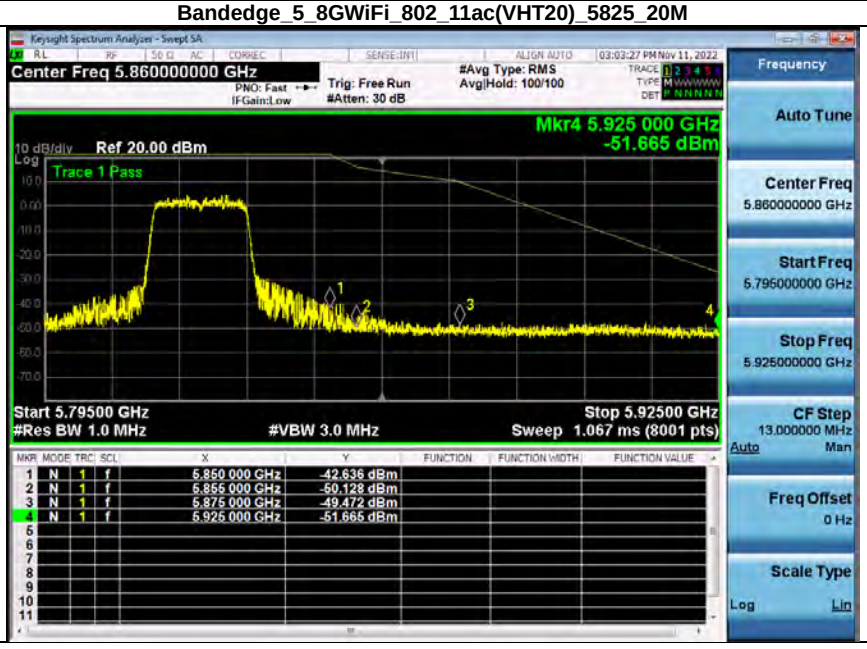
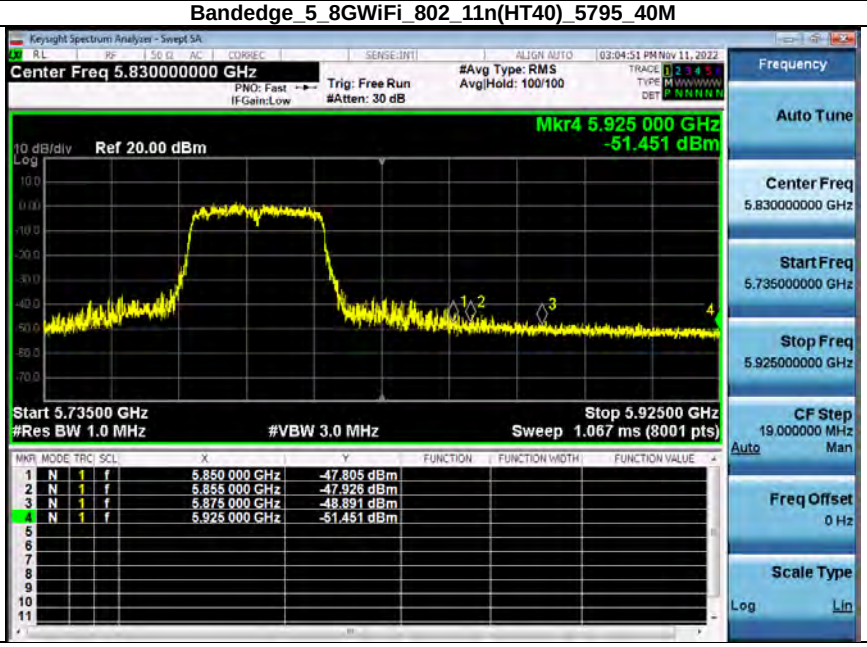


Bandedge_5_8GWiFi_802_11n(HT40)_5755_40M

Bandedge_5_8GWiFi_802_11n(HT40)_5795_40M



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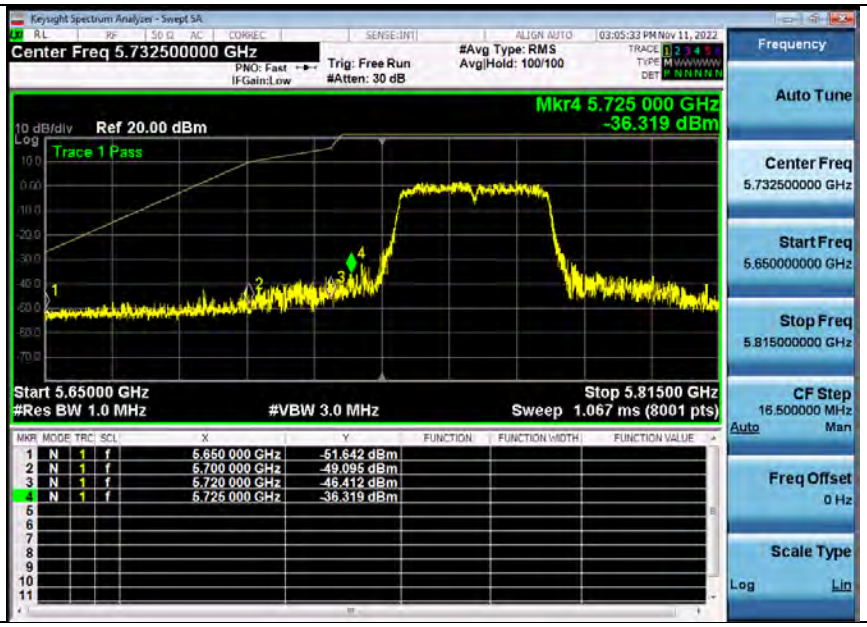

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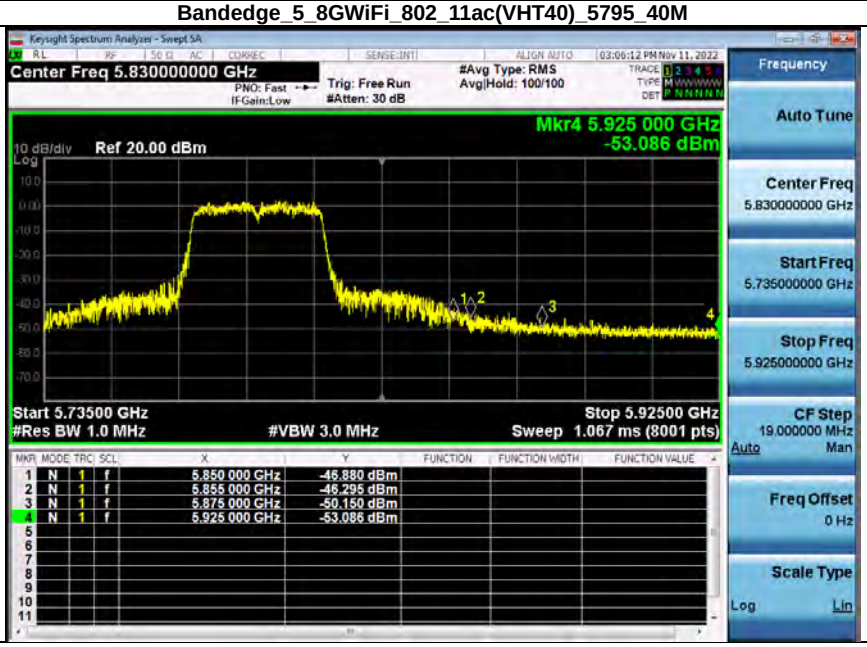
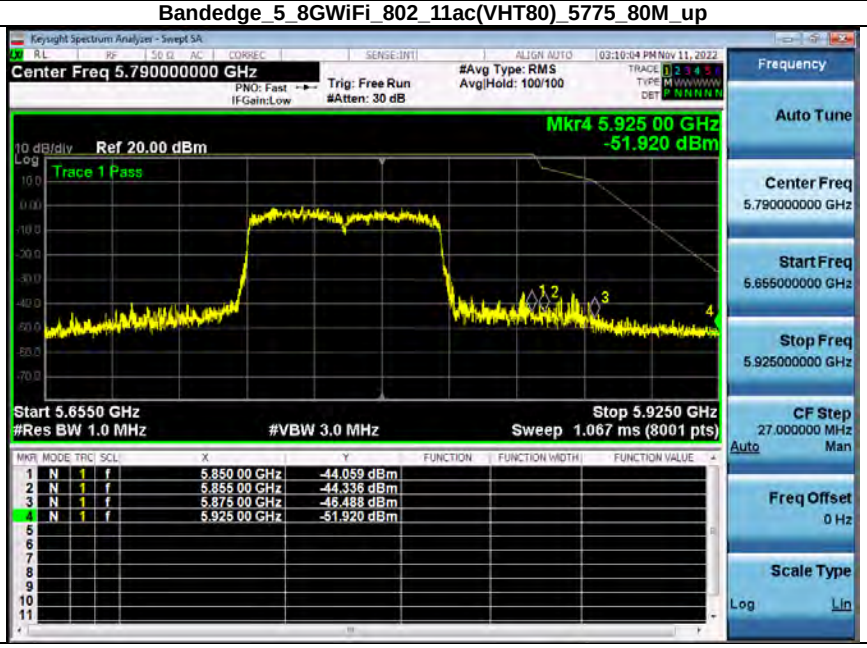


Bandedge_5_8GWiFi_802_11ac(VHT80)_5775_80M_low

Bandedge_5_8GWiFi_802_11ac(VHT80)_5775_80M_up



12. TEST SETUP PHOTO

Reference to the test setup file for details.

13. EUT CONSTRUCTIONAL DETAILS

Reference to the external photos file and internal photos file for details.

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