

FCC TEST REPORT

FCC ID: 2A3V9-PICOPC

Report Number..... : ZKT-211025L5658-02

Date of Test..... Oct. 08, 2021 -- Oct. 25, 2021

Date of issue : Oct. 25, 2021

Total number of pages : 68

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 : XDO Trade Co., Limited

Address : Room 1519, 15/F, Nan Fung Centre, 264-298 Castle Peak Road, Tsuen Wan, NT, Hong Kong

Manufacturer's name : XDO Trade Co., Limited

Address : Room 1519, 15/F, Nan Fung Centre, 264-298 Castle Peak Road, Tsuen Wan, NT, Hong Kong

Test specification:

Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247
ANSI C63.10:2013
KDB 789033 D02 V01r02

Test procedure..... : /

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..... : PicoPC

Trademark : XDO.AI

Model/Type reference : Pantera, PicoPC Pro, Pantera Pro, Pantera Plus

Ratings..... : DC 5V 2A from adapter or others

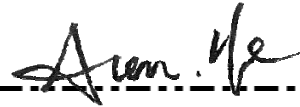
Testing procedure and testing location:**Testing Laboratory..... : Shenzhen ZKT Technology Co., Ltd.****Address..... : 1/F, No. 101, Building B, No. 6, Tangwei Community
Industrial Avenue, Fuhai Street, Bao'an District,
Shenzhen, China****Tested by (name + signature) : Alen He****Reviewer (name + signature).....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

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1. VERSION

Report No.	Version	Description	Approved
ZKT-211025L5658-02	Rev.01	Initial issue of report	Oct. 25, 2021

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	PASS	
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 $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	tem	ncertainty
1	3m chamber 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:	PicoPC	
Trade Name:	XDO.AI	
Model/Type reference:	PicoPC	
Listed Models	PicoPC Pro, Pantera Pro, Pantera Plus	
Hardware Version:	V1.0	
Software Version:	V1.0	
Sample(s) Status:	Engineer sample	
	IEEE802.11 WLAN mode supported	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac (40MHz channel bandwidth)
	Date rate	802.11a :54Mbps; 802.11ac: MCS9 802.11n:MCS7
	Modulation	OFDM
	Band 1 Frequency Range :	IEEE802.11 a HT20 : 5180-5240MHz IEEE802.11 n HT20 : 5180-5240MHz IEEE802.11 n HT40 : 5190-5230MHz IEEE802.11 ac HT20: 5180-5240MHz IEEE802.11 ac HT40: 5190-5230MHz
	Band 1 Channels	IEEE802.11 a/ac /n (HT20): 4 IEEE802.11 ac /n (HT40): 2
	Band 4 Frequency Range :	IEEE802.11 a HT20 : 5745-5825 MHz IEEE802.11 n HT20 : 5745-5825 MHz IEEE802.11 n HT40 : 5755-5795 MHz IEEE802.11 ac HT20: 5745-5825 MHz IEEE802.11 ac HT40: 5755-5795 MHz
	Band 4 Channels	IEEE802.11 ac /n (HT20): 5 IEEE802.11 ac /n (HT40): 2
Antenna Type:	FPCantenna	
Antenna gain:	2.3dBi	
Power supply:	DC 5V 2A from adapter or others	
POWER ADAPTER:	MODEL:R241-1202000U INPUT:100-240V ~50/60Hz 1.5A OUTPUT:12V 2A	

3.2 DESCRIPTION OF TEST MODES

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

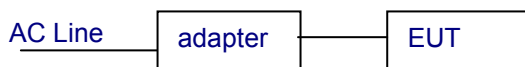
Band 1		Band 4	
CH.	Frequency (MHz)	CH.	Frequency (MHz)
36	5180	149	5745
40	5200	...	...
44	5220	157	5785
48	5240	...	...
		165	5825

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

Band 1		Band 4	
CH.	Frequency (MHz)	CH.	Frequency (MHz)
38	5190	151	5755
46	5230	159	5795

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

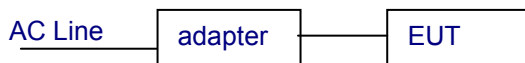
3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



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	ADAPTER	ShenZhen Rongweixin Technology Co.,Ltd	MODEL:R241-1202000U INPUT:100-240V ~50/60Hz 1.5A OUTPUT:12V 2A	/	SDOC

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.

3.5EQUIPMENTS 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	MY45109572	Sep. 21, 2021	Sep. 20, 2022
2	Spectrum Analyzer (1GHz-40GHz)	Agilent	E4446A	100363	Sep. 21, 2021	Sep. 20, 2022
3	Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Sep. 21, 2021	Sep. 20, 2022
4	Bilog Antenna (30MHz-1400MHz)	Schwarzbeck	VULB9168	00877	Sep. 21, 2021	Sep. 20, 2022
5	Horn Antenna (1GHz-18GHz)	SCHWARZBEC K	BBHA9120D	1541	Sep. 21, 2021	Sep. 20, 2022
6	Horn Antenna (18GHz-40GHz)	A.H. System	SAS-574	588	Sep. 21, 2021	Sep. 20, 2022
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	N/A	Sep. 21, 2021	Sep. 20, 2022
8	Amplifier (1GHz-40GHz)	QUANJUDA	DLE-161	097	Sep. 21, 2021	Sep. 20, 2022
9	Loop Antenna (9KHz-30MHz)	SCHWARZBEC K	FMZB1519B	014	Sep. 21, 2021	Sep. 20, 2022
10	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Sep. 21, 2021	Sep. 20, 2022
11	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Sep. 21, 2021	Sep. 20, 2022
12	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Sep. 21, 2021	Sep. 20, 2022
13	CMW500 Test	R&S	CMW500	106504	Sep. 21, 2021	Sep. 20, 2022
14	ESG Signal Generator	Agilent	E4421B	GB40051203	Sep. 21, 2021	Sep. 20, 2022
15	Signal Generator	Agilent	N5182A	MY47420215	Sep. 21, 2021	Sep. 20, 2022
16	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 21, 2021	Sep. 20, 2022
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 21, 2021	Sep. 20, 2022
3	Test Cable	N/A	C01	N/A	Sep. 21, 2021	Sep. 20, 2022
4	Test Cable	N/A	C02	N/A	Sep. 21, 2021	Sep. 20, 2022
5	EMI Test Receiver	R&S	ESRP3	101946	Sep. 21, 2021	Sep. 20, 2022
6	Absorbing Clamp	DZ	ZN23201	N/A	Sep. 21, 2021	Sep. 20, 2022

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.

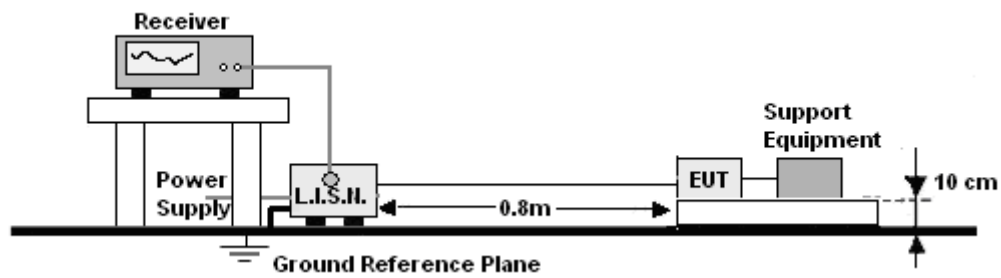
4.1.2 TEST PROCEDURE

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



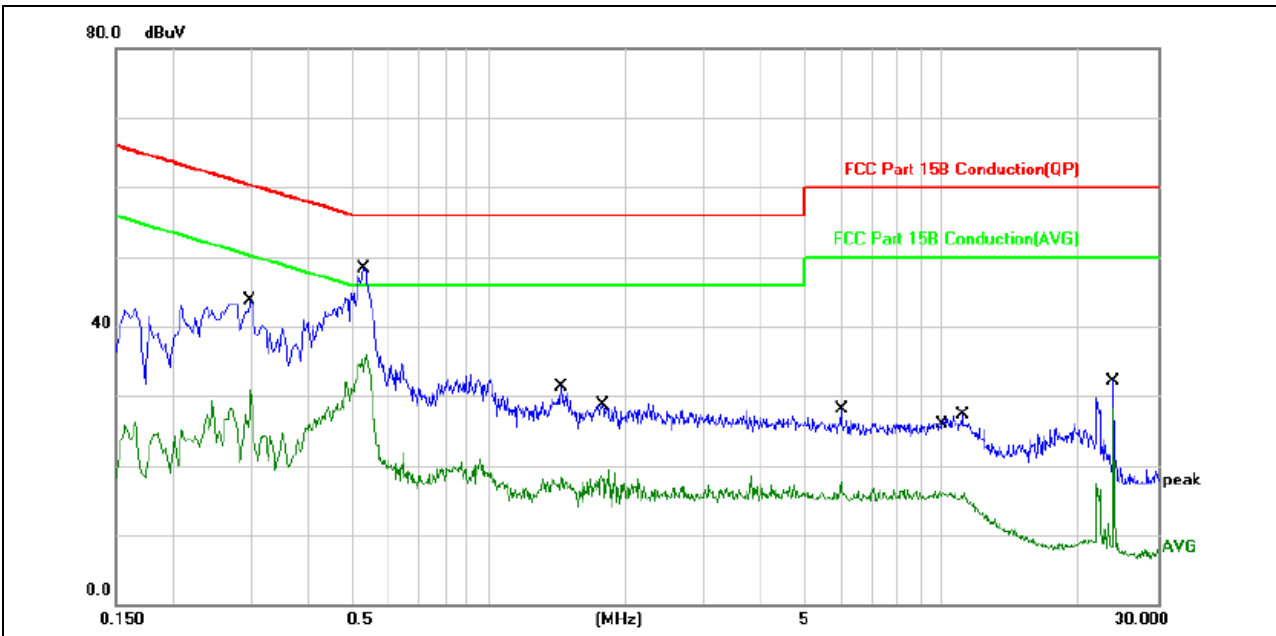
4.1.5 EUT OPERATING CONDITIONS

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

Temperature :	26°C	Relative Humidity:	54%
Pressure :	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz		

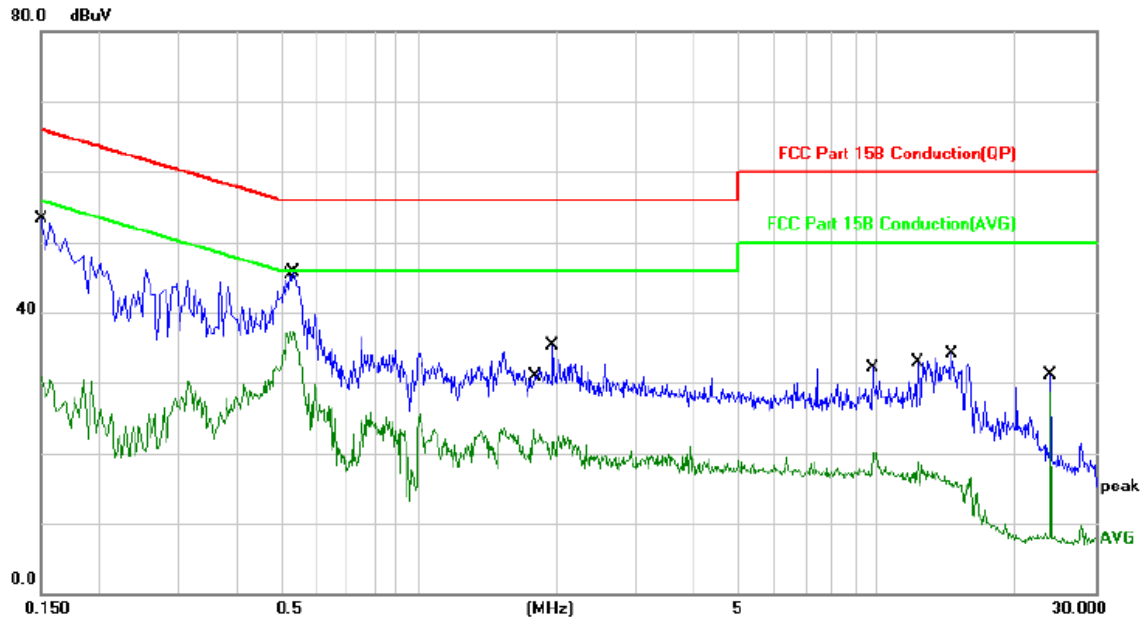


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.2980	43.62	-0.01	43.61	60.30	-16.69	QP	
2	0.2980	30.83	-0.01	30.82	50.30	-19.48	AVG	
3 *	0.5299	48.35	-0.03	48.32	56.00	-7.68	QP	
4	0.5380	35.86	-0.03	35.83	46.00	-10.17	AVG	
5	1.4420	31.41	-0.18	31.23	56.00	-24.77	QP	
6	1.7740	18.72	-0.21	18.51	46.00	-27.49	AVG	
7	6.0060	28.37	-0.25	28.12	60.00	-31.88	QP	
8	6.0060	18.02	-0.25	17.77	50.00	-32.23	AVG	
9	9.9500	16.55	-0.16	16.39	50.00	-33.61	AVG	
10	11.1380	27.35	-0.12	27.23	60.00	-32.77	QP	
11	23.9980	32.60	-0.43	32.17	60.00	-27.83	QP	
12	23.9980	28.64	-0.43	28.21	50.00	-21.79	AVG	

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

Temperature :	26°C	Relative Humidity:	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz		



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1500	53.37	-0.13	53.24	65.99	-12.75	QP	
2	0.1500	30.99	-0.13	30.86	55.99	-25.13	AVG	
3 *	0.5260	37.32	-0.03	37.29	46.00	-8.71	AVG	
4	0.5340	45.67	-0.03	45.64	56.00	-10.36	QP	
5	1.7900	23.60	-0.21	23.39	46.00	-22.61	AVG	
6	1.9660	35.45	-0.23	35.22	56.00	-20.78	QP	
7	9.8060	32.32	-0.19	32.13	60.00	-27.87	QP	
8	9.8380	20.36	-0.19	20.17	50.00	-29.83	AVG	
9	12.2900	18.75	-0.13	18.62	50.00	-31.38	AVG	
10	14.5300	34.29	-0.22	34.07	60.00	-25.93	QP	
11	23.9980	31.62	-0.43	31.19	60.00	-28.81	QP	
12	23.9980	29.22	-0.43	28.79	50.00	-21.21	AVG	

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

1. Radiated emissions from 9 kHz to 25 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 1 GHz and 1.5 meter for frequency above 1 GHz. The interface cable and 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 -27 dBm/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 5650-5725 MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725 MHz band shall not exceed an EIRP of -27 dBm/MHz .
5. KDB789033v02r01G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are out side of the 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), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	$2400/F(\text{KHz})$	300
0.490~1.705	$24000/F(\text{KHz})$	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-anechoic chamber. 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 variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) 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 be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

- g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change from 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:

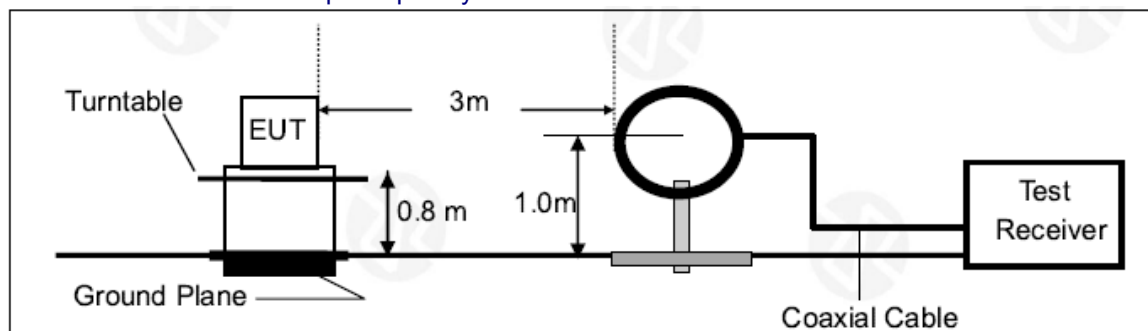
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

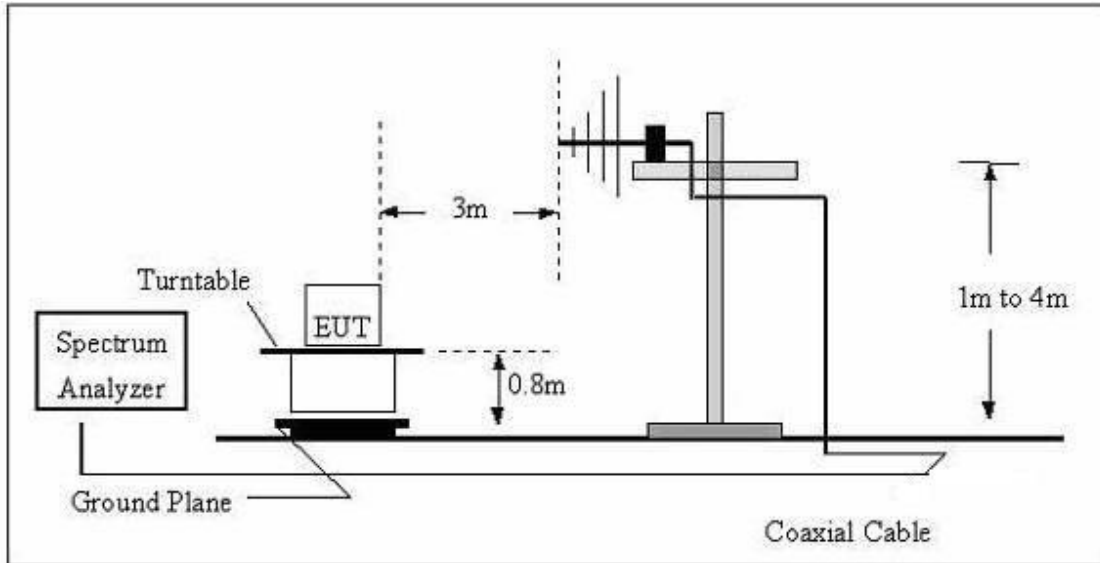
No deviation

4.2.4 TEST SETUP

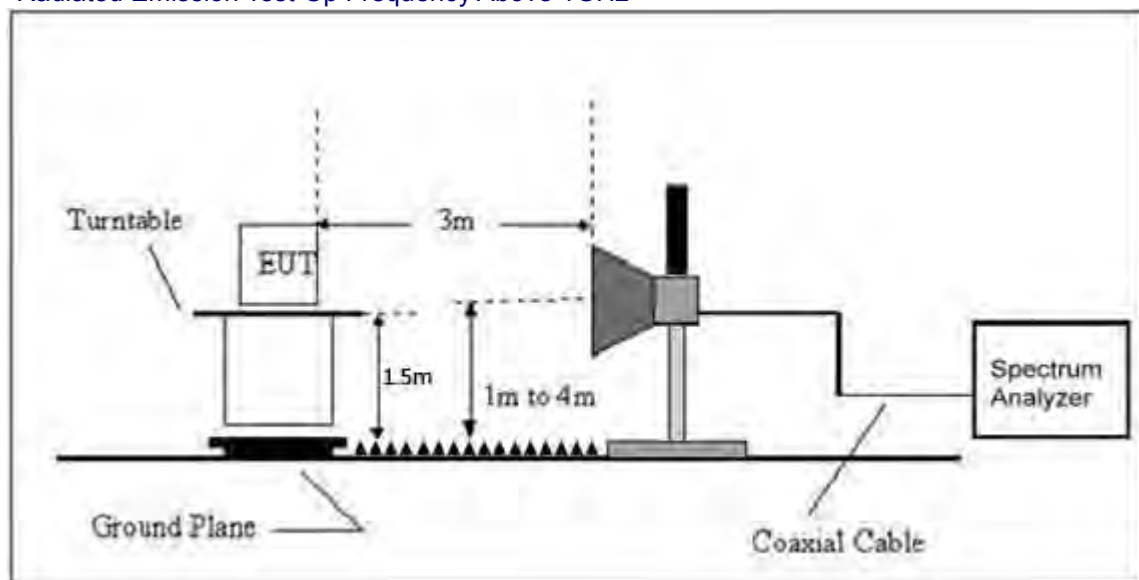
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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.

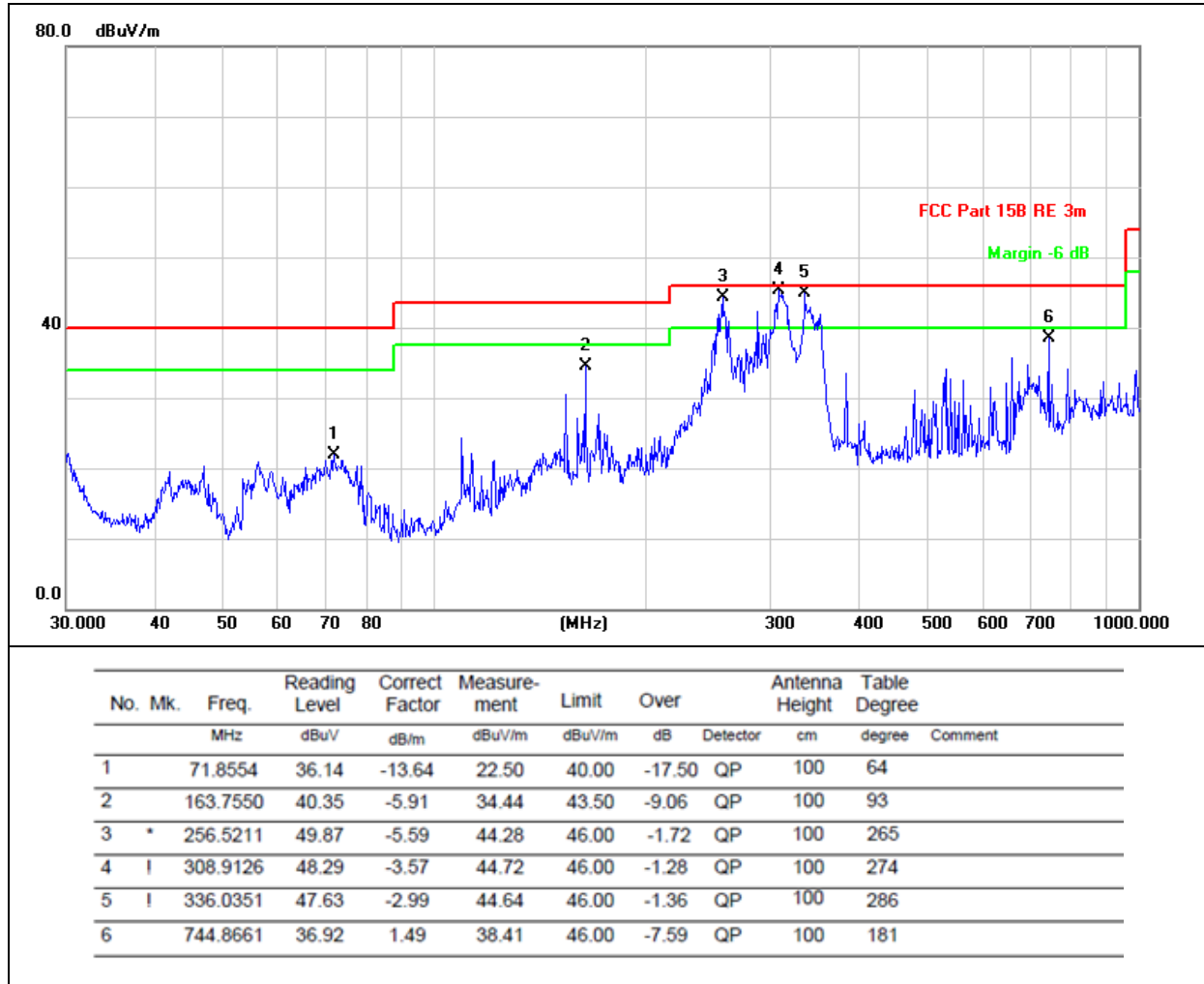
4.2.6 TEST RESULTS

Between 9KHz – 30MHz

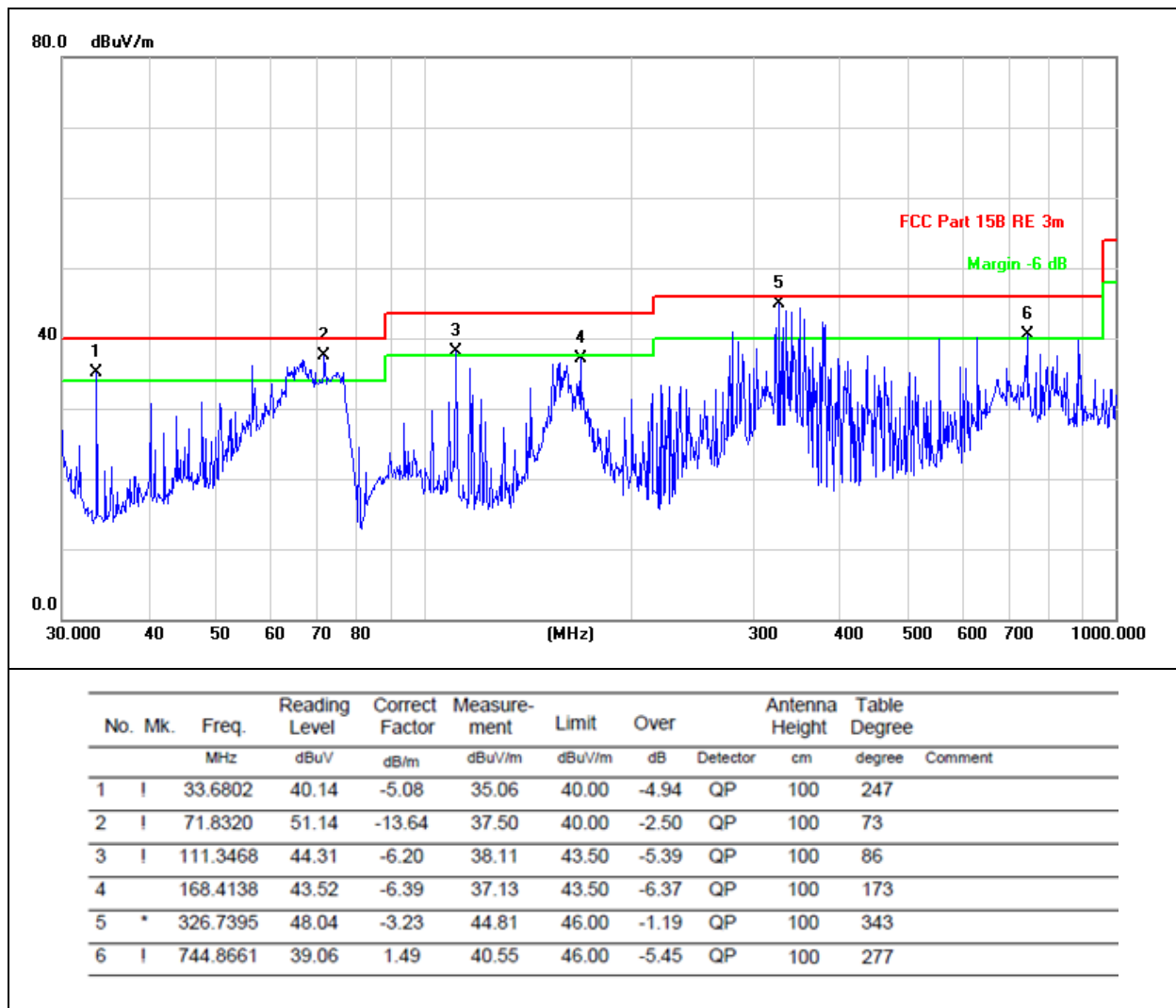
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Between 30MHz – 1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



Remarks:

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.
3. The test data shows only the worst case 802.11a mode

1GHz~40GHz

802.11a20

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:5180MHz									
V	10360	52.02	30.55	5.77	24.66	51.90	74	-22.10	PK
V	10360	40.39	30.55	5.77	24.66	40.27	54	-13.73	AV
V	15540	52.47	30.33	6.32	24.55	53.01	74	-20.99	PK
V	15540	39.72	30.33	6.32	24.55	40.26	54	-13.74	AV
V	20720	50.92	30.85	7.45	24.69	52.21	74	-21.79	PK
V	20720	39.02	30.85	7.45	24.69	40.31	54	-13.69	AV
H	10360	51.77	30.55	5.77	24.66	51.65	74	-22.35	PK
H	10360	41.62	30.55	5.77	24.66	41.50	54	-12.50	AV
H	15540	53.02	30.33	6.32	24.55	53.56	74	-20.44	PK
H	15540	39.86	30.33	6.32	24.55	40.40	54	-13.60	AV
H	20720	51.52	30.85	7.45	24.69	52.81	74	-21.19	PK
H	20720	38.98	30.85	7.45	24.69	40.27	54	-13.73	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:5200MHz									
V	10400	51.65	30.55	5.77	24.66	51.53	74	-22.47	PK
V	10400	39.48	30.55	5.77	24.66	39.36	54	-14.64	AV
V	15600	51.84	30.33	6.32	24.55	52.38	74	-21.62	PK
V	15600	41.24	30.33	6.32	24.55	41.78	54	-12.22	AV
V	20800	53.16	30.85	7.45	24.69	54.45	74	-19.55	PK
V	20800	40.74	30.85	7.45	24.69	42.03	54	-11.97	AV
H	10400	53.25	30.55	5.77	24.66	53.13	74	-20.87	PK
H	10400	42.11	30.55	5.77	24.66	41.99	54	-12.01	AV
H	15600	53.68	30.33	6.32	24.55	54.22	74	-19.78	PK
H	15600	41.64	30.33	6.32	24.55	42.18	54	-11.82	AV
H	20800	52.42	30.85	7.45	24.69	53.71	74	-20.29	PK
H	20800	40.40	30.85	7.45	24.69	41.69	54	-12.31	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5240MHz									
V	10480	50.89	30.55	5.77	24.66	50.77	74	-23.23	PK
V	10480	41.95	30.55	5.77	24.66	41.83	54	-12.17	AV
V	15720	51.76	30.33	6.32	24.55	52.30	74	-21.70	PK
V	15720	39.17	30.33	6.32	24.55	39.71	54	-14.29	AV
V	20960	52.32	30.85	7.45	24.69	53.61	74	-20.39	PK
V	20960	40.15	30.85	7.45	24.69	41.44	54	-12.56	AV
H	10480	52.92	30.55	5.77	24.66	52.80	74	-21.20	PK
H	10480	41.60	30.55	5.77	24.66	41.48	54	-12.52	AV
H	15720	52.89	30.33	6.32	24.55	53.43	74	-20.57	PK
H	15720	42.38	30.33	6.32	24.55	42.92	54	-11.08	AV
H	20960	53.05	30.85	7.45	24.69	54.34	74	-19.66	PK
H	20960	40.39	30.85	7.45	24.69	41.68	54	-12.32	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5745MHz									
V	11490	54.70	30.85	7.45	24.69	55.99	74	-18.01	PK
V	11490	40.00	30.85	7.45	24.69	41.29	54	-12.71	AV
V	17235	54.96	31.38	7.45	24.75	55.78	74	-18.22	PK
V	17235	43.22	31.38	7.45	24.75	44.04	54	-9.96	AV
V	22980	56.59	31.76	7.45	24.86	57.14	74	-16.86	PK
V	22980	42.12	31.76	7.45	24.86	42.67	54	-11.33	AV
H	11490	53.91	30.85	7.45	24.69	55.20	74	-18.80	PK
H	11490	39.95	30.85	7.45	24.69	41.24	54	-12.76	AV
H	17235	54.46	31.38	7.45	24.75	55.28	74	-18.72	PK
H	17235	40.96	31.38	7.45	24.75	41.78	54	-12.22	AV
H	22980	55.43	31.76	7.45	24.86	55.98	74	-18.02	PK
H	22980	41.53	31.76	7.45	24.86	42.08	54	-11.92	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5785MHz									
V	11570	52.16	30.85	7.45	24.69	53.45	74	-20.55	PK
V	11570	41.63	30.85	7.45	24.69	42.92	54	-11.08	AV
V	17355	54.70	31.38	7.45	24.75	55.52	74	-18.48	PK
V	17355	41.04	31.38	7.45	24.75	41.86	54	-12.14	AV
V	23140	55.97	31.76	7.45	24.86	56.52	74	-17.48	PK
V	23140	41.08	31.76	7.45	24.86	41.63	54	-12.37	AV
H	11570	53.88	30.85	7.45	24.69	55.17	74	-18.83	PK
H	11570	40.90	30.85	7.45	24.69	42.19	54	-11.81	AV
H	17355	53.94	31.38	7.45	24.75	54.76	74	-19.24	PK
H	17355	42.38	31.38	7.45	24.75	43.20	54	-10.80	AV
H	23140	55.92	31.76	7.45	24.86	56.47	74	-17.53	PK
H	23140	41.83	31.76	7.45	24.86	42.38	54	-11.62	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5825MHz									
V	11650	54.58	30.85	7.45	24.69	55.87	74	-18.13	PK
V	11650	39.86	30.85	7.45	24.69	41.15	54	-12.85	AV
V	17475	55.25	31.38	7.45	24.75	56.07	74	-17.93	PK
V	17475	42.64	31.38	7.45	24.75	43.46	54	-10.54	AV
V	23300	57.04	31.76	7.45	24.86	57.59	74	-16.41	PK
V	23300	41.09	31.76	7.45	24.86	41.64	54	-12.36	AV
H	11650	53.13	30.85	7.45	24.69	54.42	74	-19.58	PK
H	11650	40.54	30.85	7.45	24.69	41.83	54	-12.17	AV
H	17475	54.55	31.38	7.45	24.75	55.37	74	-18.63	PK
H	17475	41.02	31.38	7.45	24.75	41.84	54	-12.16	AV
H	23300	55.93	31.76	7.45	24.86	56.48	74	-17.52	PK
H	23300	40.55	31.76	7.45	24.86	41.10	54	-12.90	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.

802.11n20

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:5180MHz									
V	10360	53.62	30.55	5.77	24.66	53.50	74	-20.50	PK
V	10360	40.04	30.55	5.77	24.66	39.92	54	-14.08	AV
V	15540	53.31	30.33	6.32	24.55	53.85	74	-20.15	PK
V	15540	41.04	30.33	6.32	24.55	41.58	54	-12.42	AV
V	20720	52.09	30.85	7.45	24.69	53.38	74	-20.62	PK
V	20720	40.96	30.85	7.45	24.69	42.25	54	-11.75	AV
H	10360	54.58	30.55	5.77	24.66	54.46	74	-19.54	PK
H	10360	40.12	30.55	5.77	24.66	40.00	54	-14.00	AV
H	15540	52.56	30.33	6.32	24.55	53.10	74	-20.90	PK
H	15540	40.94	30.33	6.32	24.55	41.48	54	-12.52	AV
H	20720	53.07	30.85	7.45	24.69	54.36	74	-19.64	PK
H	20720	40.98	30.85	7.45	24.69	42.27	54	-11.73	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amp lifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:5200MHz									
V	10400	52.93	30.55	5.77	24.66	52.81	74	-21.19	PK
V	10400	40.64	30.55	5.77	24.66	40.52	54	-13.48	AV
V	15600	52.74	30.33	6.32	24.55	53.28	74	-20.72	PK
V	15600	40.60	30.33	6.32	24.55	41.14	54	-12.86	AV
V	20800	52.24	30.85	7.45	24.69	53.53	74	-20.47	PK
V	20800	40.76	30.85	7.45	24.69	42.05	54	-11.95	AV
H	10400	52.12	30.55	5.77	24.66	52.00	74	-22.00	PK
H	10400	41.33	30.55	5.77	24.66	41.21	54	-12.79	AV
H	15600	53.54	30.33	6.32	24.55	54.08	74	-19.92	PK
H	15600	42.43	30.33	6.32	24.55	42.97	54	-11.03	AV
H	20800	52.65	30.85	7.45	24.69	53.94	74	-20.06	PK
H	20800	39.32	30.85	7.45	24.69	40.61	54	-13.39	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5240MHz									
V	10480	54.26	30.55	5.77	24.66	54.14	74	-19.86	PK
V	10480	40.82	30.55	5.77	24.66	40.70	54	-13.30	AV
V	15720	51.81	30.33	6.32	24.55	52.35	74	-21.65	PK
V	15720	41.57	30.33	6.32	24.55	42.11	54	-11.89	AV
V	20960	52.29	30.85	7.45	24.69	53.58	74	-20.42	PK
V	20960	38.97	30.85	7.45	24.69	40.26	54	-13.74	AV
H	10480	51.95	30.55	5.77	24.66	51.83	74	-22.17	PK
H	10480	40.47	30.55	5.77	24.66	40.35	54	-13.65	AV

H	15720	53.41	30.33	6.32	24.55	53.95	74	-20.05	PK
H	15720	39.88	30.33	6.32	24.55	40.42	54	-13.58	AV
H	20960	53.74	30.85	7.45	24.69	55.03	74	-18.97	PK
H	20960	40.37	30.85	7.45	24.69	41.66	54	-12.34	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5745MHz									
V	11490	51.87	30.85	7.45	24.69	53.16	74	-20.84	PK
V	11490	40.03	30.85	7.45	24.69	41.32	54	-12.68	AV
V	17235	55.14	31.38	7.45	24.75	55.96	74	-18.04	PK
V	17235	42.99	31.38	7.45	24.75	43.81	54	-10.19	AV
V	22980	55.53	31.76	7.45	24.86	56.08	74	-17.92	PK
V	22980	42.06	31.76	7.45	24.86	42.61	54	-11.39	AV
H	11490	54.56	30.85	7.45	24.69	55.85	74	-18.15	PK
H	11490	41.16	30.85	7.45	24.69	42.45	54	-11.55	AV
H	17235	55.29	31.38	7.45	24.75	56.11	74	-17.89	PK
H	17235	41.84	31.38	7.45	24.75	42.66	54	-11.34	AV
H	22980	55.96	31.76	7.45	24.86	56.51	74	-17.49	PK
H	22980	41.28	31.76	7.45	24.86	41.83	54	-12.17	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5785MHz									
V	11570	53.50	30.85	7.45	24.69	54.79	74	-19.21	PK
V	11570	40.71	30.85	7.45	24.69	42.00	54	-12.00	AV
V	17355	55.52	31.38	7.45	24.75	56.34	74	-17.66	PK
V	17355	43.35	31.38	7.45	24.75	44.17	54	-9.83	AV
V	23140	56.12	31.76	7.45	24.86	56.67	74	-17.33	PK
V	23140	41.67	31.76	7.45	24.86	42.22	54	-11.78	AV
H	11570	53.08	30.85	7.45	24.69	54.37	74	-19.63	PK
H	11570	42.51	30.85	7.45	24.69	43.80	54	-10.20	AV
H	17355	55.74	31.38	7.45	24.75	56.56	74	-17.44	PK
H	17355	42.21	31.38	7.45	24.75	43.03	54	-10.97	AV
H	23140	57.31	31.76	7.45	24.86	57.86	74	-16.14	PK
H	23140	40.39	31.76	7.45	24.86	40.94	54	-13.06	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5825MHz									
V	11650	52.26	30.85	7.45	24.69	53.55	74	-20.45	PK
V	11650	41.33	30.85	7.45	24.69	42.62	54	-11.38	AV
V	17475	54.41	31.38	7.45	24.75	55.23	74	-18.77	PK
V	17475	42.44	31.38	7.45	24.75	43.26	54	-10.74	AV
V	23300	55.20	31.76	7.45	24.86	55.75	74	-18.25	PK
V	23300	40.18	31.76	7.45	24.86	40.73	54	-13.27	AV
H	11650	53.81	30.85	7.45	24.69	55.10	74	-18.90	PK
H	11650	41.18	30.85	7.45	24.69	42.47	54	-11.53	AV
H	17475	54.32	31.38	7.45	24.75	55.14	74	-18.86	PK

H	17475	43.74	31.38	7.45	24.75	44.56	54	-9.44	AV
H	23300	57.74	31.76	7.45	24.86	58.29	74	-15.71	PK
H	23300	42.51	31.76	7.45	24.86	43.06	54	-10.94	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.

802.11n40

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)	Detect or Type
Low Channel:5190MHz									
V	10380	51.99	30.55	5.77	24.66	51.87	74	-22.13	PK
V	10380	40.85	30.55	5.77	24.66	40.73	54	-13.27	AV
V	15570	53.08	30.33	6.32	24.55	53.62	74	-20.38	PK
V	15570	39.23	30.33	6.32	24.55	39.77	54	-14.23	AV
V	20760	51.67	30.85	7.45	24.69	52.96	74	-21.04	PK
V	20760	40.94	30.85	7.45	24.69	42.23	54	-11.77	AV
H	10380	53.10	30.55	5.77	24.66	52.98	74	-21.02	PK
H	10380	39.83	30.55	5.77	24.66	39.71	54	-14.29	AV
H	15570	53.08	30.33	6.32	24.55	53.62	74	-20.38	PK
H	15570	42.32	30.33	6.32	24.55	42.86	54	-11.14	AV
H	20760	51.26	30.85	7.45	24.69	52.55	74	-21.45	PK
H	20760	38.43	30.85	7.45	24.69	39.72	54	-14.28	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)	Detect or Type
Middle Channel:5230MHz									
V	10460	53.97	30.55	5.77	24.66	53.85	74	-20.15	PK
V	10460	40.32	30.55	5.77	24.66	40.20	54	-13.80	AV
V	15690	53.29	30.33	6.32	24.55	53.83	74	-20.17	PK
V	15690	40.11	30.33	6.32	24.55	40.65	54	-13.35	AV
V	20920	53.53	30.85	7.45	24.69	54.82	74	-19.18	PK
V	20920	39.21	30.85	7.45	24.69	40.50	54	-13.50	AV
H	10460	51.41	30.55	5.77	24.66	51.29	74	-22.71	PK
H	10460	42.07	30.55	5.77	24.66	41.95	54	-12.05	AV
H	15690	53.36	30.33	6.32	24.55	53.90	74	-20.10	PK
H	15690	41.82	30.33	6.32	24.55	42.36	54	-11.64	AV
H	20920	53.64	30.85	7.45	24.69	54.93	74	-19.07	PK
H	20920	39.66	30.85	7.45	24.69	40.95	54	-13.05	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)	Detect or Type
High Channel:5755MHz									
V	11510	54.52	30.85	7.45	24.69	55.81	74	-18.19	PK
V	11510	39.89	30.85	7.45	24.69	41.18	54	-12.82	AV
V	17265	55.71	31.38	7.45	24.75	56.53	74	-17.47	PK

V	17265	42.80	31.38	7.45	24.75	43.62	54	-10.38	AV
V	23020	56.03	31.76	7.45	24.86	56.58	74	-17.42	PK
V	23020	40.88	31.76	7.45	24.86	41.43	54	-12.57	AV
H	11510	53.29	30.85	7.45	24.69	54.58	74	-19.42	PK
H	11510	41.18	30.85	7.45	24.69	42.47	54	-11.53	AV
H	17265	54.40	31.38	7.45	24.75	55.22	74	-18.78	PK
H	17265	42.48	31.38	7.45	24.75	43.30	54	-10.70	AV
H	23020	56.18	31.76	7.45	24.86	56.73	74	-17.27	PK
H	23020	40.52	31.76	7.45	24.86	41.07	54	-12.93	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5795MHz									
V	11590	53.97	30.85	7.45	24.69	55.26	74	-18.74	PK
V	11590	40.83	30.85	7.45	24.69	42.12	54	-11.88	AV
V	17385	54.85	31.38	7.45	24.75	55.67	74	-18.33	PK
V	17385	41.47	31.38	7.45	24.75	42.29	54	-11.71	AV
V	23180	56.73	31.76	7.45	24.86	57.28	74	-16.72	PK
V	23180	40.68	31.76	7.45	24.86	41.23	54	-12.77	AV
H	11590	54.01	30.85	7.45	24.69	55.30	74	-18.70	PK
H	11590	42.17	30.85	7.45	24.69	43.46	54	-10.54	AV
H	17385	54.21	31.38	7.45	24.75	55.03	74	-18.97	PK
H	17385	42.18	31.38	7.45	24.75	43.00	54	-11.00	AV
H	23180	54.98	31.76	7.45	24.86	55.53	74	-18.47	PK
H	23180	40.75	31.76	7.45	24.86	41.30	54	-12.70	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.

802.11ac20

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:5180MHz									
V	10360	54.39	30.55	5.77	24.66	54.27	74	-19.73	PK
V	10360	41.84	30.55	5.77	24.66	41.72	54	-12.28	AV
V	15540	52.04	30.33	6.32	24.55	52.58	74	-21.42	PK
V	15540	40.72	30.33	6.32	24.55	41.26	54	-12.74	AV
V	20720	51.03	30.85	7.45	24.69	52.32	74	-21.68	PK
V	20720	38.63	30.85	7.45	24.69	39.92	54	-14.08	AV
H	10360	53.47	30.55	5.77	24.66	53.35	74	-20.65	PK
H	10360	40.76	30.55	5.77	24.66	40.64	54	-13.36	AV
H	15540	52.49	30.33	6.32	24.55	53.03	74	-20.97	PK
H	15540	41.54	30.33	6.32	24.55	42.08	54	-11.92	AV
H	20720	52.92	30.85	7.45	24.69	54.21	74	-19.79	PK
H	20720	39.19	30.85	7.45	24.69	40.48	54	-13.52	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amp lifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:5200MHz									
V	10400	54.08	30.55	5.77	24.66	53.96	74	-20.04	PK
V	10400	39.26	30.55	5.77	24.66	39.14	54	-14.86	AV
V	15600	52.49	30.33	6.32	24.55	53.03	74	-20.97	PK
V	15600	41.02	30.33	6.32	24.55	41.56	54	-12.44	AV
V	20800	53.50	30.85	7.45	24.69	54.79	74	-19.21	PK
V	20800	40.40	30.85	7.45	24.69	41.69	54	-12.31	AV
H	10400	54.06	30.55	5.77	24.66	53.94	74	-20.06	PK
H	10400	41.25	30.55	5.77	24.66	41.13	54	-12.87	AV
H	15600	52.90	30.33	6.32	24.55	53.44	74	-20.56	PK
H	15600	40.02	30.33	6.32	24.55	40.56	54	-13.44	AV
H	20800	51.67	30.85	7.45	24.69	52.96	74	-21.04	PK
H	20800	38.32	30.85	7.45	24.69	39.61	54	-14.39	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5240MHz									
V	10480	54.12	30.55	5.77	24.66	54.00	74	-20.00	PK
V	10480	40.11	30.55	5.77	24.66	39.99	54	-14.01	AV
V	15720	51.88	30.33	6.32	24.55	52.42	74	-21.58	PK
V	15720	40.90	30.33	6.32	24.55	41.44	54	-12.56	AV
V	20960	52.29	30.85	7.45	24.69	53.58	74	-20.42	PK
V	20960	39.85	30.85	7.45	24.69	41.14	54	-12.86	AV
H	10480	52.03	30.55	5.77	24.66	51.91	74	-22.09	PK
H	10480	41.28	30.55	5.77	24.66	41.16	54	-12.84	AV
H	15720	52.85	30.33	6.32	24.55	53.39	74	-20.61	PK
H	15720	42.67	30.33	6.32	24.55	43.21	54	-10.79	AV
H	20960	52.60	30.85	7.45	24.69	53.89	74	-20.11	PK
H	20960	38.89	30.85	7.45	24.69	40.18	54	-13.82	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5745MHz									
V	11490	53.04	30.85	7.45	24.69	54.33	74	-19.67	PK
V	11490	42.40	30.85	7.45	24.69	43.69	54	-10.31	AV
V	17235	55.36	31.38	7.45	24.75	56.18	74	-17.82	PK
V	17235	41.11	31.38	7.45	24.75	41.93	54	-12.07	AV
V	22980	55.80	31.76	7.45	24.86	56.35	74	-17.65	PK
V	22980	41.89	31.76	7.45	24.86	42.44	54	-11.56	AV
H	11490	52.26	30.85	7.45	24.69	53.55	74	-20.45	PK
H	11490	40.61	30.85	7.45	24.69	41.90	54	-12.10	AV
H	17235	53.81	31.38	7.45	24.75	54.63	74	-19.37	PK
H	17235	41.21	31.38	7.45	24.75	42.03	54	-11.97	AV
H	22980	56.55	31.76	7.45	24.86	57.10	74	-16.90	PK
H	22980	41.06	31.76	7.45	24.86	41.61	54	-12.39	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or
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	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Type
High Channel:5785MHz									
V	11570	51.93	30.85	7.45	24.69	53.22	74	-20.78	PK
V	11570	41.66	30.85	7.45	24.69	42.95	54	-11.05	AV
V	17355	54.91	31.38	7.45	24.75	55.73	74	-18.27	PK
V	17355	42.68	31.38	7.45	24.75	43.50	54	-10.50	AV
V	23140	57.04	31.76	7.45	24.86	57.59	74	-16.41	PK
V	23140	40.83	31.76	7.45	24.86	41.38	54	-12.62	AV
H	11570	53.58	30.85	7.45	24.69	54.87	74	-19.13	PK
H	11570	41.21	30.85	7.45	24.69	42.50	54	-11.50	AV
H	17355	54.26	31.38	7.45	24.75	55.08	74	-18.92	PK
H	17355	41.47	31.38	7.45	24.75	42.29	54	-11.71	AV
H	23140	57.62	31.76	7.45	24.86	58.17	74	-15.83	PK
H	23140	41.40	31.76	7.45	24.86	41.95	54	-12.05	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5795MHz									
V	11590	52.87	30.85	7.45	24.69	54.16	74	-19.84	PK
V	11590	42.62	30.85	7.45	24.69	43.91	54	-10.09	AV
V	17385	54.53	31.38	7.45	24.75	55.35	74	-18.65	PK
V	17385	41.94	31.38	7.45	24.75	42.76	54	-11.24	AV
V	23180	56.14	31.76	7.45	24.86	56.69	74	-17.31	PK
V	23180	42.25	31.76	7.45	24.86	42.80	54	-11.20	AV
H	11590	52.39	30.85	7.45	24.69	53.68	74	-20.32	PK
H	11590	42.43	30.85	7.45	24.69	43.72	54	-10.28	AV
H	17385	54.05	31.38	7.45	24.75	54.87	74	-19.13	PK
H	17385	41.14	31.38	7.45	24.75	41.96	54	-12.04	AV
H	23180	54.83	31.76	7.45	24.86	55.38	74	-18.62	PK
H	23180	42.27	31.76	7.45	24.86	42.82	54	-11.18	AV

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Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5190MHz									
V	10380	52.68	30.55	5.77	24.66	52.56	74	-21.44	PK
V	10380	39.43	30.55	5.77	24.66	39.31	54	-14.69	AV
V	15570	53.24	30.33	6.32	24.55	53.78	74	-20.22	PK
V	15570	40.88	30.33	6.32	24.55	41.42	54	-12.58	AV
V	20760	52.34	30.85	7.45	24.69	53.63	74	-20.37	PK
V	20760	40.89	30.85	7.45	24.69	42.18	54	-11.82	AV
H	10380	52.72	30.55	5.77	24.66	52.60	74	-21.40	PK
H	10380	40.65	30.55	5.77	24.66	40.53	54	-13.47	AV
H	15570	52.39	30.33	6.32	24.55	52.93	74	-21.07	PK
H	15570	40.39	30.33	6.32	24.55	40.93	54	-13.07	AV
H	20760	51.20	30.85	7.45	24.69	52.49	74	-21.51	PK
H	20760	39.57	30.85	7.45	24.69	40.86	54	-13.14	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or
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	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Type
Middle Channel:5230MHz									
V	10460	51.20	30.55	5.77	24.66	51.08	74	-22.92	PK
V	10460	41.91	30.55	5.77	24.66	41.79	54	-12.21	AV
V	15690	52.66	30.33	6.32	24.55	53.20	74	-20.80	PK
V	15690	39.58	30.33	6.32	24.55	40.12	54	-13.88	AV
V	20920	51.85	30.85	7.45	24.69	53.14	74	-20.86	PK
V	20920	39.83	30.85	7.45	24.69	41.12	54	-12.88	AV
H	10460	54.73	30.55	5.77	24.66	54.61	74	-19.39	PK
H	10460	41.83	30.55	5.77	24.66	41.71	54	-12.29	AV
H	15690	53.42	30.33	6.32	24.55	53.96	74	-20.04	PK
H	15690	42.63	30.33	6.32	24.55	43.17	54	-10.83	AV
H	20920	53.60	30.85	7.45	24.69	54.89	74	-19.11	PK
H	20920	39.56	30.85	7.45	24.69	40.85	54	-13.15	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5755MHz									
V	11510	52.66	30.85	7.45	24.69	53.95	74	-20.05	PK
V	11510	41.11	30.85	7.45	24.69	42.40	54	-11.60	AV
V	17265	55.42	31.38	7.45	24.75	56.24	74	-17.76	PK
V	17265	43.32	31.38	7.45	24.75	44.14	54	-9.86	AV
V	23020	56.11	31.76	7.45	24.86	56.66	74	-17.34	PK
V	23020	42.41	31.76	7.45	24.86	42.96	54	-11.04	AV
H	11510	54.27	30.85	7.45	24.69	55.56	74	-18.44	PK
H	11510	41.68	30.85	7.45	24.69	42.97	54	-11.03	AV
H	17265	55.64	31.38	7.45	24.75	56.46	74	-17.54	PK
H	17265	42.18	31.38	7.45	24.75	43.00	54	-11.00	AV
H	23020	55.52	31.76	7.45	24.86	56.07	74	-17.93	PK
H	23020	42.37	31.76	7.45	24.86	42.92	54	-11.08	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5795MHz									
V	11590	53.14	30.85	7.45	24.69	54.43	74	-19.57	PK
V	11590	40.63	30.85	7.45	24.69	41.92	54	-12.08	AV
V	17385	54.89	31.38	7.45	24.75	55.71	74	-18.29	PK
V	17385	42.44	31.38	7.45	24.75	43.26	54	-10.74	AV
V	23180	56.13	31.76	7.45	24.86	56.68	74	-17.32	PK
V	23180	41.85	31.76	7.45	24.86	42.40	54	-11.60	AV
H	11590	52.31	30.85	7.45	24.69	53.60	74	-20.40	PK
H	11590	41.37	30.85	7.45	24.69	42.66	54	-11.34	AV
H	17385	54.21	31.38	7.45	24.75	55.03	74	-18.97	PK
H	17385	43.39	31.38	7.45	24.75	44.21	54	-9.79	AV
H	23180	56.14	31.76	7.45	24.86	56.69	74	-17.31	PK
H	23180	40.56	31.76	7.45	24.86	41.11	54	-12.89	AV

Radiated Band Edge Test:

Worse case mode:		802.11a		Test channel:		36	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5150	58.58	-0.12	58.46	74.00	-15.54	peak	H
	43.52	-0.12	43.40	54.00	-10.60	AV	H
5150	57.53	-0.12	57.41	74.00	-16.59	peak	V
	43.86	-0.12	43.74	54.00	-10.26	AV	V

Worse case mode:		802.11a		Test channel:		48	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5250	59.14	-0.12	59.02	74.00	-14.98	peak	H
	40.89	-0.12	40.77	54.00	-13.23	AV	H
5250	58.77	-0.12	58.65	74.00	-15.35	peak	V
	42.23	-0.12	42.11	54.00	-11.89	AV	V

Worse case mode:		802.11a		Test channel:		149	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5650	52.57	-0.12	52.45	68.20	-15.75	peak	H
5700	85.06	-0.12	84.94	105.20	-20.26	peak	H
5720	88.01	-0.12	87.89	110.80	-22.91	peak	H
5725	96.61	-0.12	96.49	122.20	-25.71	peak	H
5650	50.86	-0.12	50.74	68.20	-17.46	peak	V
5700	87.76	-0.12	87.64	105.20	-17.56	peak	V
5720	87.44	-0.12	87.32	110.80	-23.48	peak	V
5725	96.16	-0.12	96.04	122.20	-26.16	peak	V

Worse case mode:		802.11a		Test channel:		165	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5850	105.89	-0.12	105.77	122.20	-16.43	peak	H
5855	85.36	-0.12	85.24	110.80	-25.56	peak	H
5875	82.09	-0.12	81.97	105.20	-23.23	peak	H
5925	53.24	-0.12	53.12	68.20	-15.08	peak	H
5850	100.01	-0.12	99.89	122.20	-22.31	peak	V
5855	85.73	-0.12	85.61	110.80	-25.19	peak	V
5875	87.86	-0.12	87.74	105.20	-17.46	peak	V
5925	51.12	-0.12	51.00	68.20	-17.20	peak	V

Factor =Antenna Factor + Cable Loss – Pre-amplifier,

Worse case mode:		802.11n20		Test channel:		36	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5150	57.80	-0.12	57.68	74.00	-16.32	peak	H
	41.76	-0.12	41.64	54.00	-12.36	AV	H
5150	58.91	-0.12	58.79	74.00	-15.21	peak	V
	42.92	-0.12	42.80	54.00	-11.20	AV	V

Worse case mode:		802.11n20		Test channel:		48	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5250	59.96	-0.12	59.84	74.00	-14.16	peak	H
	41.01	-0.12	40.89	54.00	-13.11	AV	H
5250	56.73	-0.12	56.61	74.00	-17.39	peak	V
	40.53	-0.12	40.41	54.00	-13.59	AV	V

Worse case mode:		802.11n20		Test channel:		149	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5650	52.77	-0.12	52.65	68.20	-15.55	peak	H
5700	87.75	-0.12	87.63	105.20	-17.57	peak	H
5720	87.18	-0.12	87.06	110.80	-23.74	peak	H
5725	99.55	-0.12	99.43	122.20	-22.77	peak	H
5650	53.40	-0.12	53.28	68.20	-14.92	peak	V
5700	87.40	-0.12	87.28	105.20	-17.92	peak	V
5720	89.31	-0.12	89.19	110.80	-21.61	peak	V
5725	96.45	-0.12	96.33	122.20	-25.87	peak	V

Worse case mode:		802.11n20		Test channel:		165	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5850	104.68	-0.12	104.56	122.20	-17.64	peak	H
5855	86.00	-0.12	85.88	110.80	-24.92	peak	H
5875	83.84	-0.12	83.72	105.20	-21.48	peak	H
5925	51.54	-0.12	51.42	68.20	-16.78	peak	H
5850	102.09	-0.12	101.97	122.20	-20.23	peak	V
5855	89.66	-0.12	89.54	110.80	-21.26	peak	V
5875	82.89	-0.12	82.77	105.20	-22.43	peak	V
5925	52.14	-0.12	52.02	68.20	-16.18	peak	V

Worse case mode:		802.11n40		Test channel:		38	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5150	59.86	-0.12	59.74	74.00	-14.26	peak	H

	41.93	-0.12	41.81	54.00	-12.19	AV	H
5150	58.98	-0.12	58.86	74.00	-15.14	peak	V
	42.77	-0.12	42.65	54.00	-11.35	AV	V

Worse case mode:		802.11n40		Test channel:		46	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5250	58.10	-0.12	57.98	74.00	-16.02	peak	H
	42.02	-0.12	41.90	54.00	-12.10	AV	H
5250	58.43	-0.12	58.31	74.00	-15.69	peak	V
	41.01	-0.12	40.89	54.00	-13.11	AV	V

Worse case mode:		802.11n40		Test channel:		151	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5650	49.95	-0.12	49.83	68.20	-18.37	peak	H
5700	87.31	-0.12	87.19	105.20	-18.01	peak	H
5720	87.07	-0.12	86.95	110.80	-23.85	peak	H
5725	99.90	-0.12	99.78	122.20	-22.42	peak	H
5650	53.03	-0.12	52.91	68.20	-15.29	peak	V
5700	85.84	-0.12	85.72	105.20	-19.48	peak	V
5720	88.63	-0.12	88.51	110.80	-22.29	peak	V
5725	96.36	-0.12	96.24	122.20	-25.96	peak	V

Worse case mode:		802.11n40		Test channel:		159	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5850	100.91	-0.12	100.79	122.20	-21.41	peak	H
5855	90.97	-0.12	90.85	110.80	-19.95	peak	H
5875	87.23	-0.12	87.11	105.20	-18.09	peak	H
5925	53.35	-0.12	53.23	68.20	-14.97	peak	H
5850	102.65	-0.12	102.53	122.20	-19.67	peak	V
5855	88.81	-0.12	88.69	110.80	-22.11	peak	V
5875	84.06	-0.12	83.94	105.20	-21.26	peak	V
5925	50.65	-0.12	50.53	68.20	-17.67	peak	V

Worse case mode:		802.11ac20		Test channel:		36	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5150	59.00	-0.12	58.88	74.00	-15.12	peak	H
	43.78	-0.12	43.66	54.00	-10.34	AV	H
5150	59.03	-0.12	58.91	74.00	-15.09	peak	V
	43.83	-0.12	43.71	54.00	-10.29	AV	V

Worse case mode:		802.11ac20		Test channel:		48	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5250	58.22	-0.12	58.10	74.00	-15.90	peak	H
	42.47	-0.12	42.35	54.00	-11.65	AV	H
5250	55.75	-0.12	55.63	74.00	-18.37	peak	V
	41.89	-0.12	41.77	54.00	-12.23	AV	V

Worse case mode:		802.11ac20		Test channel:		149	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5650	49.86	-0.12	49.74	68.20	-18.46	peak	H
5700	87.88	-0.12	87.76	105.20	-17.44	peak	H
5720	87.21	-0.12	87.09	110.80	-23.71	peak	H
5725	97.36	-0.12	97.24	122.20	-24.96	peak	H
5650	53.90	-0.12	53.78	68.20	-14.42	peak	V
5700	86.08	-0.12	85.96	105.20	-19.24	peak	V
5720	88.32	-0.12	88.20	110.80	-22.60	peak	V
5725	96.89	-0.12	96.77	122.20	-25.43	peak	V

Worse case mode:		802.11n20		Test channel:		165	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5850	100.11	-0.12	99.99	122.20	-22.21	peak	H
5855	85.20	-0.12	85.08	110.80	-25.72	peak	H
5875	83.86	-0.12	83.74	105.20	-21.46	peak	H
5925	53.24	-0.12	53.12	68.20	-15.08	peak	H
5850	103.31	-0.12	103.19	122.20	-19.01	peak	V
5855	87.09	-0.12	86.97	110.80	-23.83	peak	V
5875	82.96	-0.12	82.84	105.20	-22.36	peak	V
5925	53.88	-0.12	53.76	68.20	-14.44	peak	V

Worse case mode:		802.11ac40		Test channel:		38	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5150	56.57	-0.12	56.45	74.00	-17.55	peak	H
	43.88	-0.12	43.76	54.00	-10.24	AV	H
5150	57.31	-0.12	57.19	74.00	-16.81	peak	V
	43.21	-0.12	43.09	54.00	-10.91	AV	V

Worse case mode:		802.11ac40		Test channel:		46	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5250	59.82	-0.12	59.70	74.00	-14.30	peak	H

	40.40	-0.12	40.28	54.00	-13.72	AV	H
5250	58.11	-0.12	57.99	74.00	-16.01	peak	V
	43.29	-0.12	43.17	54.00	-10.83	AV	V

Worse case mode:		802.11ac40		Test channel:		151	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5650	53.49	-0.12	53.37	68.20	-14.83	peak	H
5700	87.84	-0.12	87.72	105.20	-17.48	peak	H
5720	90.38	-0.12	90.26	110.80	-20.54	peak	H
5725	98.16	-0.12	98.04	122.20	-24.16	peak	H
5650	51.05	-0.12	50.93	68.20	-17.27	peak	V
5700	86.93	-0.12	86.81	105.20	-18.39	peak	V
5720	90.77	-0.12	90.65	110.80	-20.15	peak	V
5725	99.42	-0.12	99.30	122.20	-22.90	peak	V

Worse case mode:		802.11ac40		Test channel:		159	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
5850	104.07	-0.12	103.95	122.20	-18.25	peak	H
5855	90.33	-0.12	90.21	110.80	-20.59	peak	H
5875	83.21	-0.12	83.09	105.20	-22.11	peak	H
5925	53.19	-0.12	53.07	68.20	-15.13	peak	H
5850	101.84	-0.12	101.72	122.20	-20.48	peak	V
5855	86.16	-0.12	86.04	110.80	-24.76	peak	V
5875	86.91	-0.12	86.79	105.20	-18.41	peak	V
5925	52.69	-0.12	52.57	68.20	-15.63	peak	V

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

LIMIT:	U-NII-1	11DBM/MHZ
	U-NII-2A	11DBM/MHZ
	U-NII-2C	11DBM/MHZ
	U-NII-3	30DBM/500KHZ

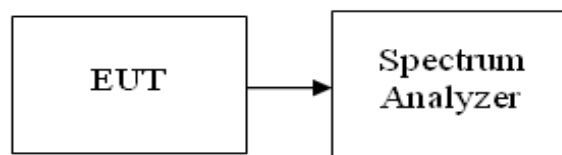
5.2 TEST PROCEDURE

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: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
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

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V
Test Mode :	TX frequency band 1& band 4		

802.11 Mode	Channel No.	Frequency [MHz]	Measured Power Spectral Density [dBm/MHz]	Power Spectral Density Limit [dBm/MHz]
a (20MHz)	36	5180	6.186	11.00
	40	5200	6.608	11.00
	48	5240	5.308	11.00
n (20MHz)	36	5180	5.162	11.00
	40	5200	4.673	11.00
	48	5240	4.005	11.00
n (40MHz)	38	5190	0.734	11.00
	46	5230	0.695	11.00
ac (20MHz)	36	5180	4.597	11.00
	40	5200	4.451	11.00
	48	5240	4.839	11.00
ac(40MHz)	38	5190	0.828	11.00
	46	5230	0.681	11.00

802.11 Mode	Channel No.	Frequency [MHz]	Meas PSD [dBm/510kHz]	PSD [dBm/500kHz]	Limit [dBm/500kHz]
a (20MHz)	149	5745	-4.142	-4.228	30.00
	157	5785	-5.725	-5.811	30.00
	165	5825	-4.854	-4.940	30.00
n (20MHz)	149	5745	-6.612	-6.698	30.00
	157	5785	-6.493	-6.579	30.00
	165	5825	-6.032	-6.118	30.00
n (40MHz)	151	5755	-9.556	-9.642	30.00
	159	5795	-9.126	-9.212	30.00
ac (20MHz)	149	5745	-6.354	-6.440	30.00
	157	5785	-6.731	-6.817	30.00
	165	5825	-6.064	-6.150	30.00
ac(40MHz)	151	5755	-10.03	-10.116	30.00
	159	5795	-9.929	-10.015	30.00

PSD[dBm/500kHz]= Meas PSD [dBm/510kHz] + 10*log (500/510)

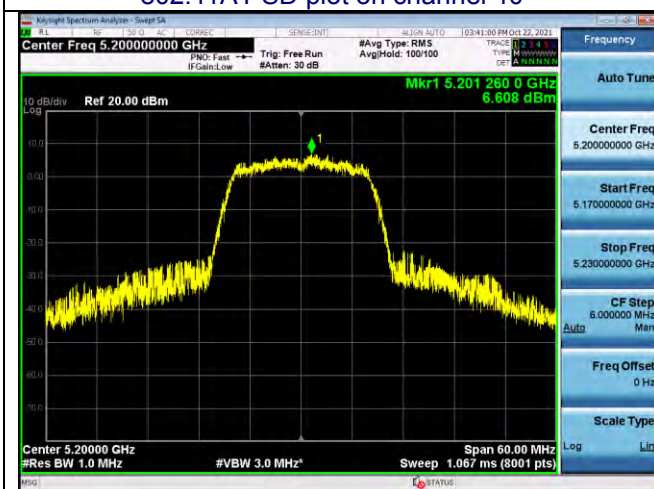
802.11A PSD plot on channel 36



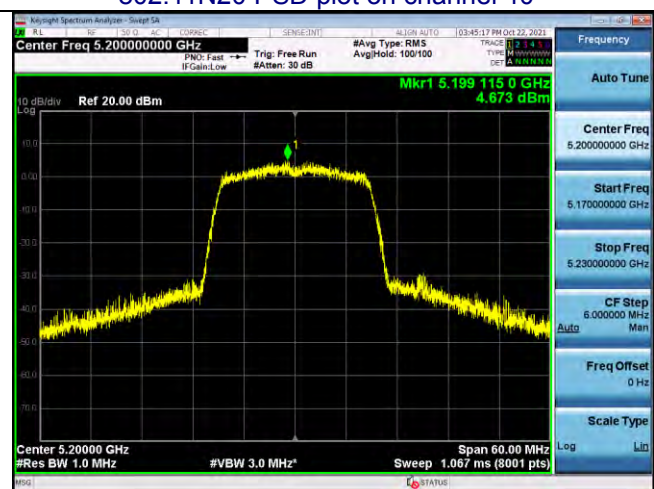
802.11N20 PSD plot on channel 36



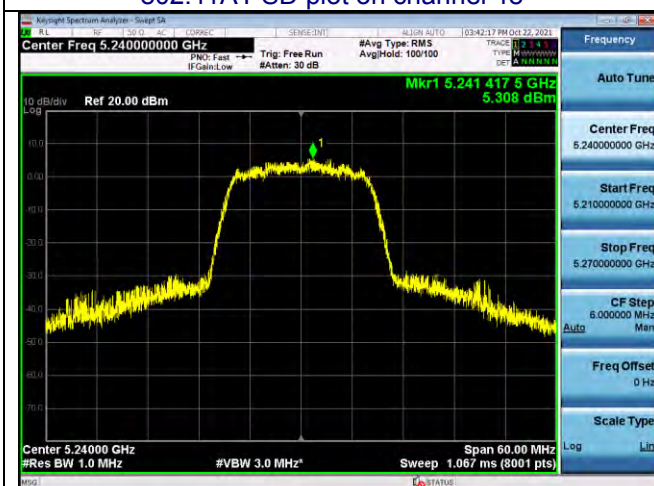
802.11A PSD plot on channel 40



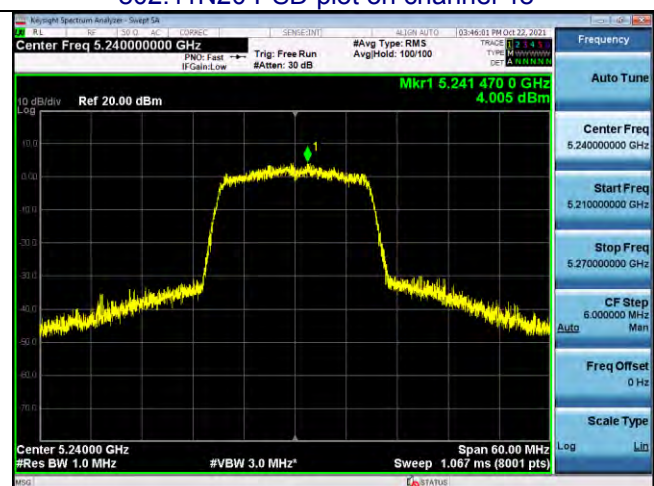
802.11N20 PSD plot on channel 40



802.11A PSD plot on channel 48



802.11N20 PSD plot on channel 48

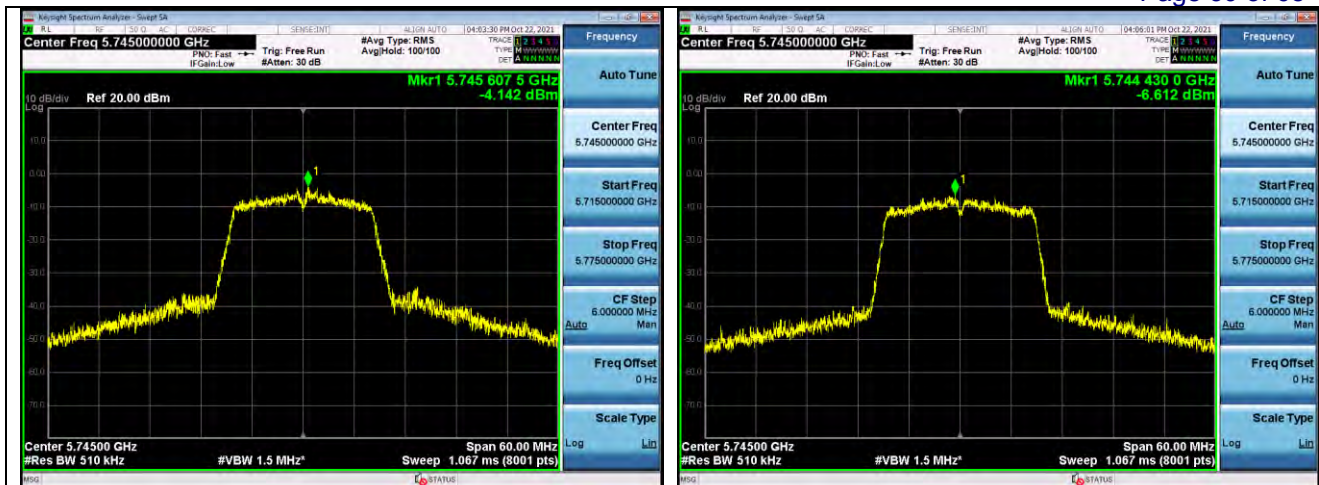


802.11A PSD plot on channel 149



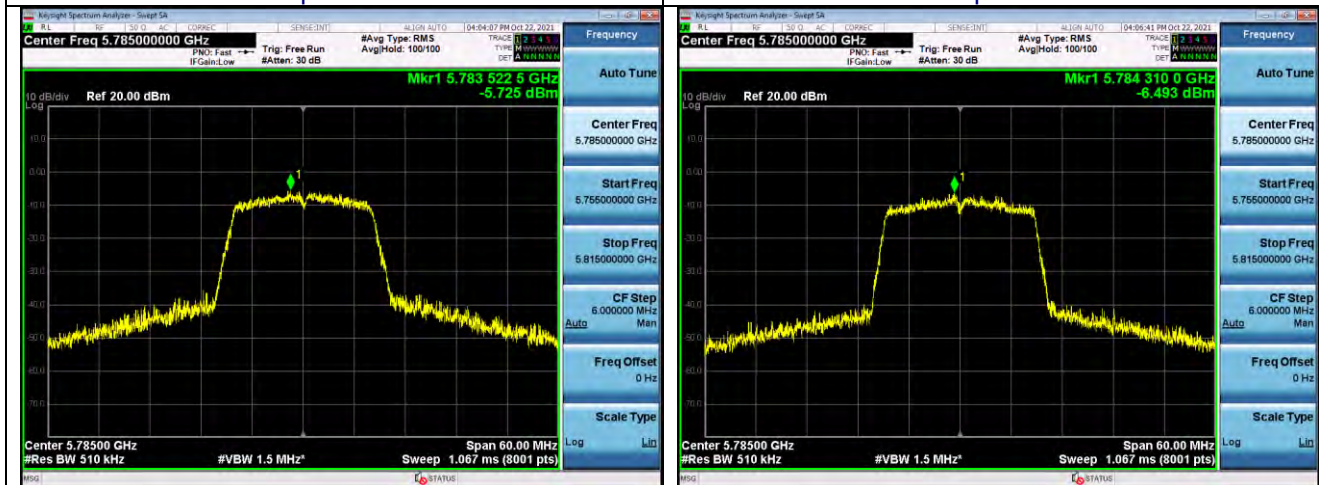
802.11N20 PSD plot on channel 149





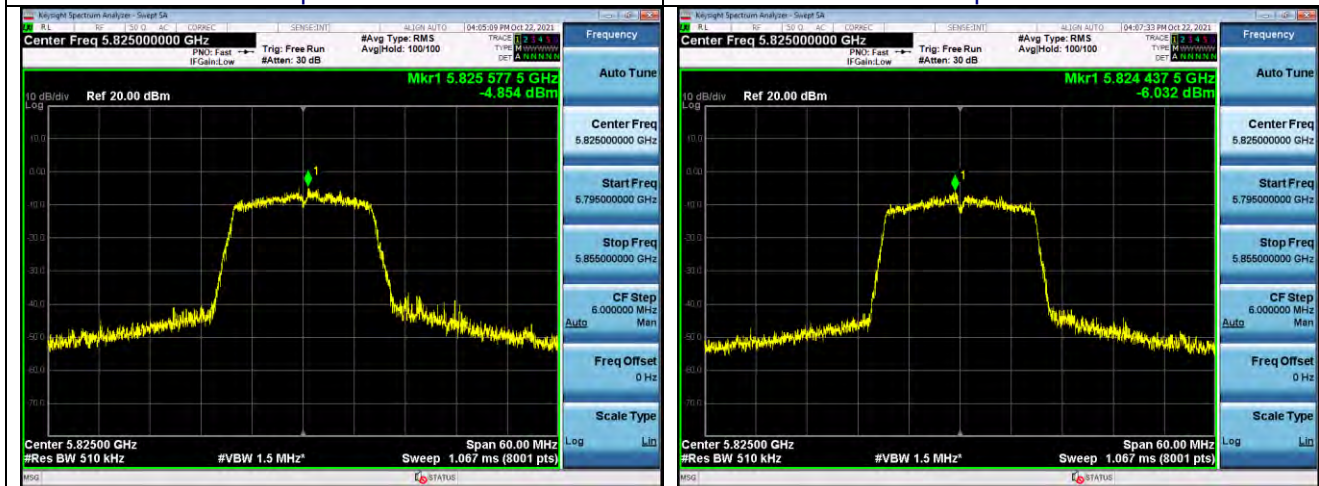
802.11A PSD plot on channel 157

802.11N20 PSD plot on channel 157



802.11A PSD plot on channel 165

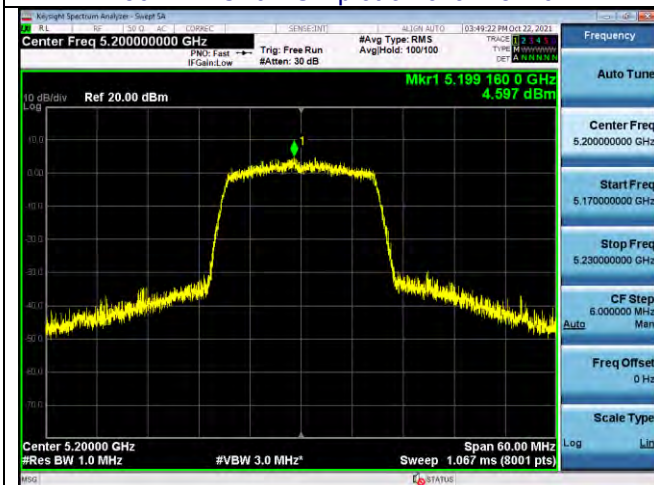
802.11N20 PSD plot on channel 165



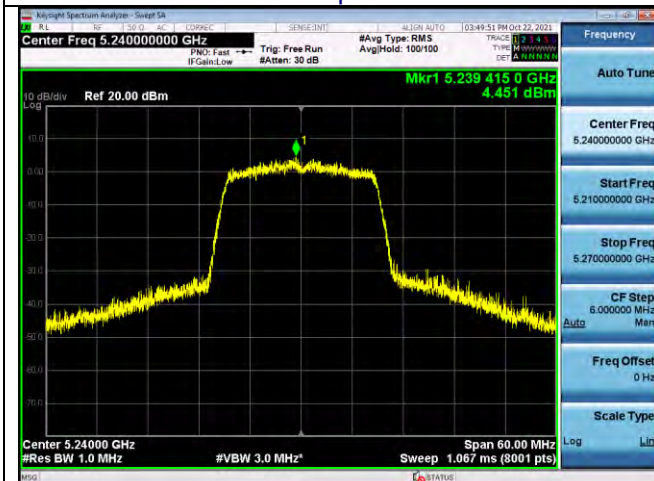
802.11AC20 PSD plot on channel 36



802.11AC20 PSD plot on channel 40



802.11AC20 PSD plot on channel 48



802.11AC20 PSD plot on channel 149



802.11AC20 PSD plot on channel 157



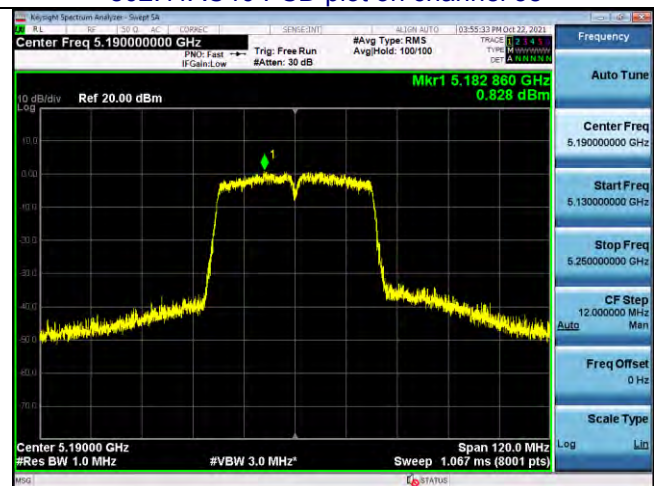
802.11AC20 PSD plot on channel 165



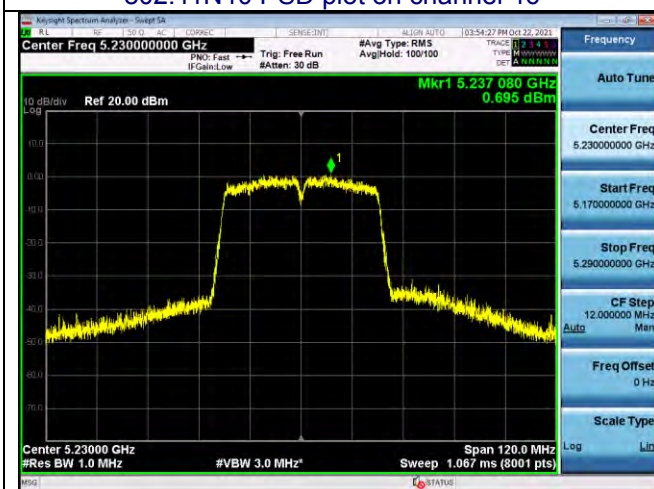
802.11N40 PSD plot on channel 38



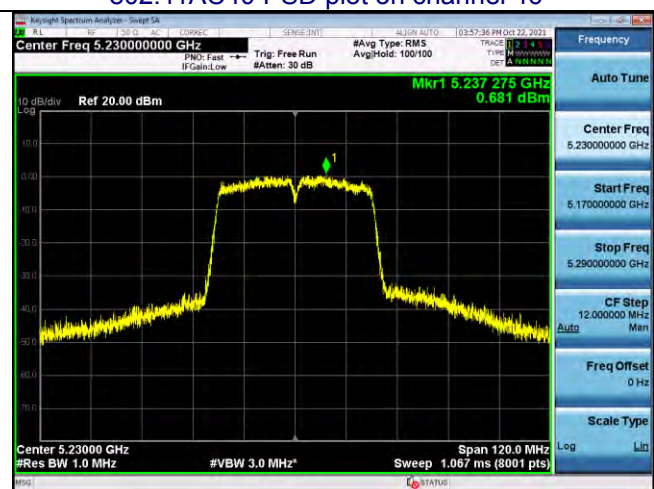
802.11AC40 PSD plot on channel 38



802.11N40 PSD plot on channel 46



802.11AC40 PSD plot on channel 46



802.11N40 PSD plot on channel 151



802.11AC40 PSD plot on channel 151

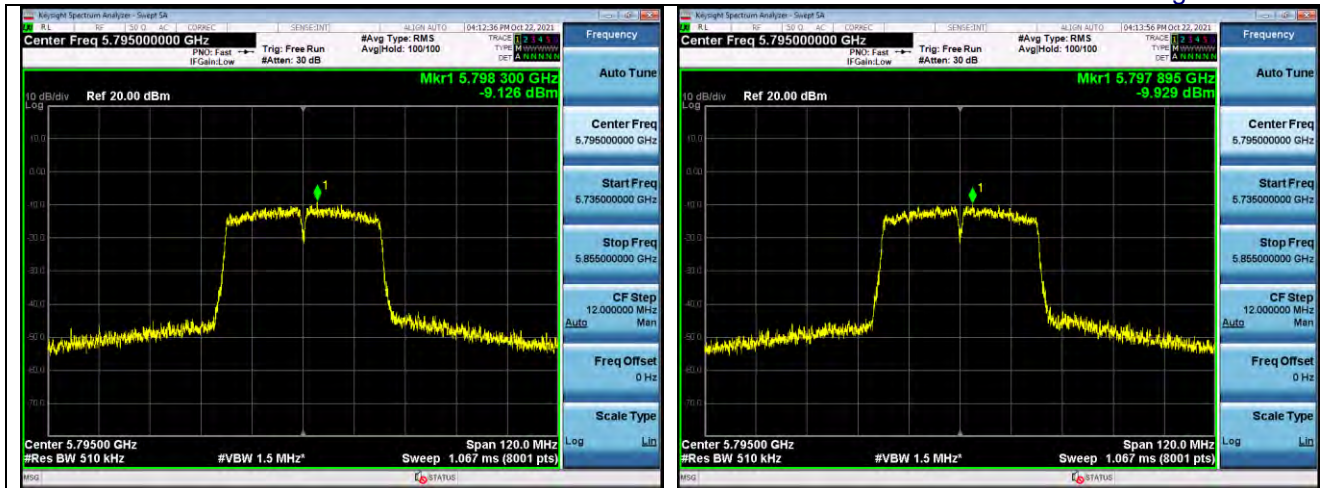


802.11N40 PSD plot on channel 159



802.11AC40 PSD plot on channel 159





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	Band1	N/A
	Band4	≥ 500 kHz

6.2 TEST PROCEDURE

- Set RBW = 100KHz.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

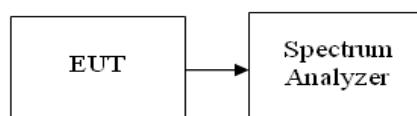
The following procedure shall be used for measuring (99 %) power bandwidth:

- Set center frequency to the nominal EUT channel center frequency.
- Set span = 1.5 times to 5.0 times the OBW.
- Set RBW = 1 % to 5 % of the OBW
- Set VBW $\geq 3 \cdot$ RBW
- Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- Use the 99 % power bandwidth function of the instrument (if available).
- If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

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

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V
Test Mode :	TX		

802.11 Mode	Channel No.	Frequency [MHz]	26dB Bandwidth [MHz]	99% Bandwidth [MHz]
a (20MHz)	36	5180	19.17	16.458
	40	5200	19.22	16.484
	48	5240	19.22	16.494
n (20MHz)	36	5180	19.68	17.578
	40	5200	19.51	17.588
	48	5240	19.70	17.595
n (40MHz)	38	5190	38.94	35.969
	46	5230	39.52	35.959
ac (20MHz)	36	5180	19.82	17.730
	40	5200	19.60	17.599
	48	5240	19.43	17.549
ac(40MHz)	38	5190	39.07	35.981
	46	5230	39.32	35.993

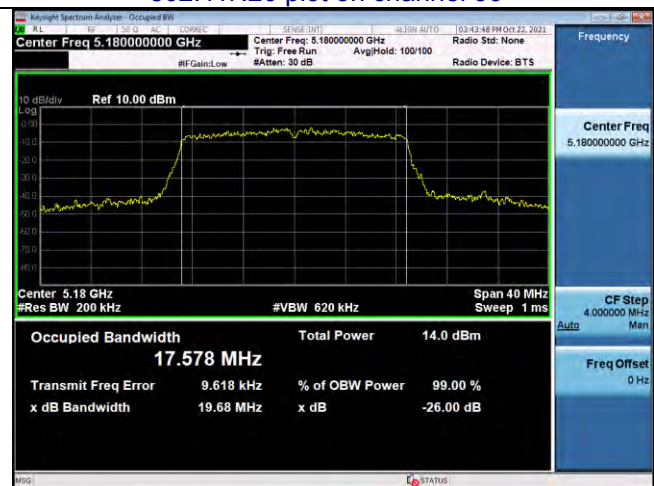
802.11 Mode	Channel No.	Frequency [MHz]	-6db Bandwidth [MHz]	Limit
a (20MHz)	149	5745	16.44	$\geq 500 \text{ kHz}$
	157	5785	16.49	
	165	5825	16.47	
n (20MHz)	149	5745	17.64	
	157	5785	17.61	
	165	5825	17.62	
n (40MHz)	151	5755	36.37	
	159	5795	36.34	
ac (20MHz)	149	5745	17.61	
	157	5785	17.59	
	165	5825	17.63	
ac(40MHz)	151	5755	36.38	
	159	5795	36.38	

Test plot as follows:

802.11A plot on channel 36



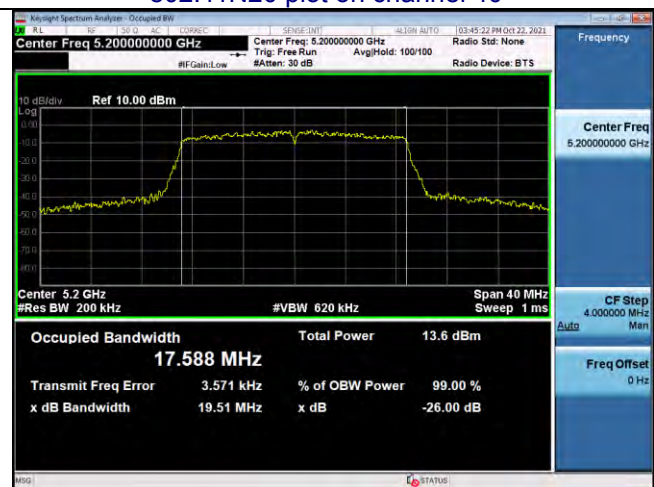
802.11N20 plot on channel 36



802.11A plot on channel 40



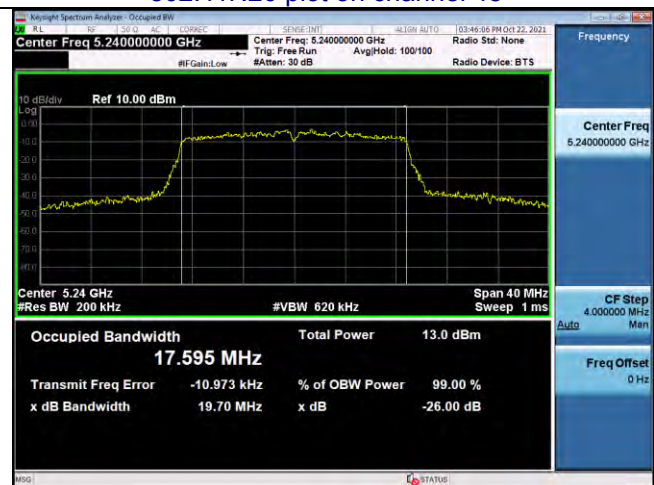
802.11N20 plot on channel 40



802.11A plot on channel 48



802.11N20 plot on channel 48

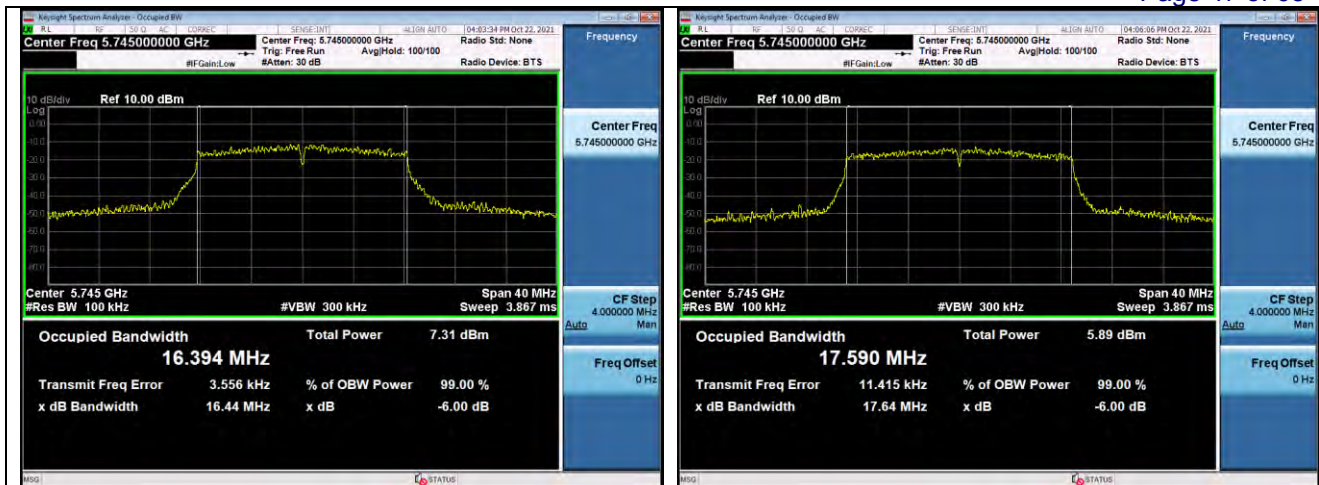


802.11A plot on channel 149



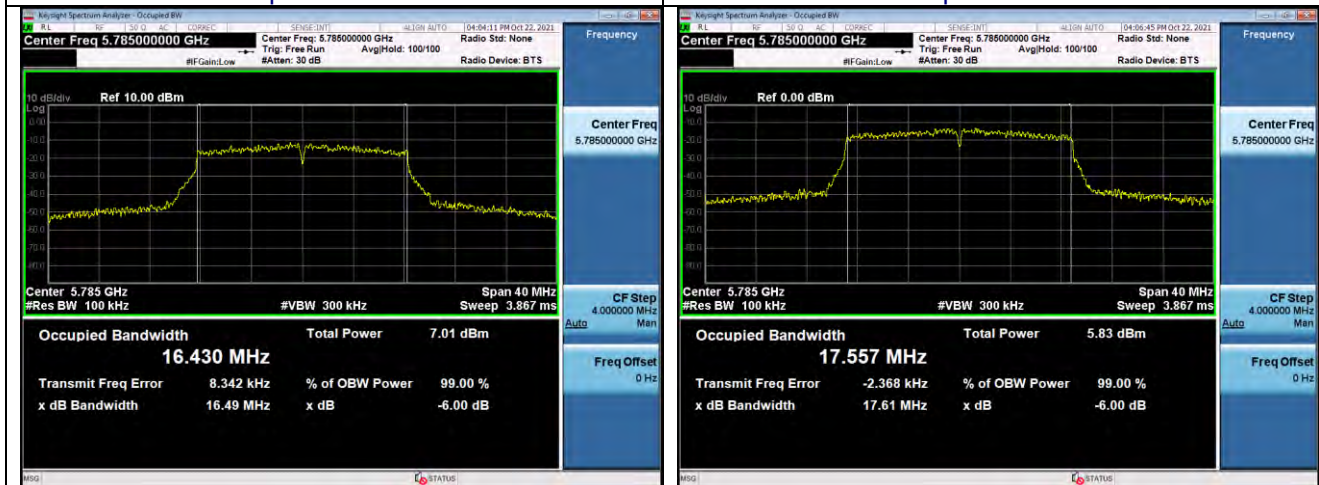
802.11N20 plot on channel 149





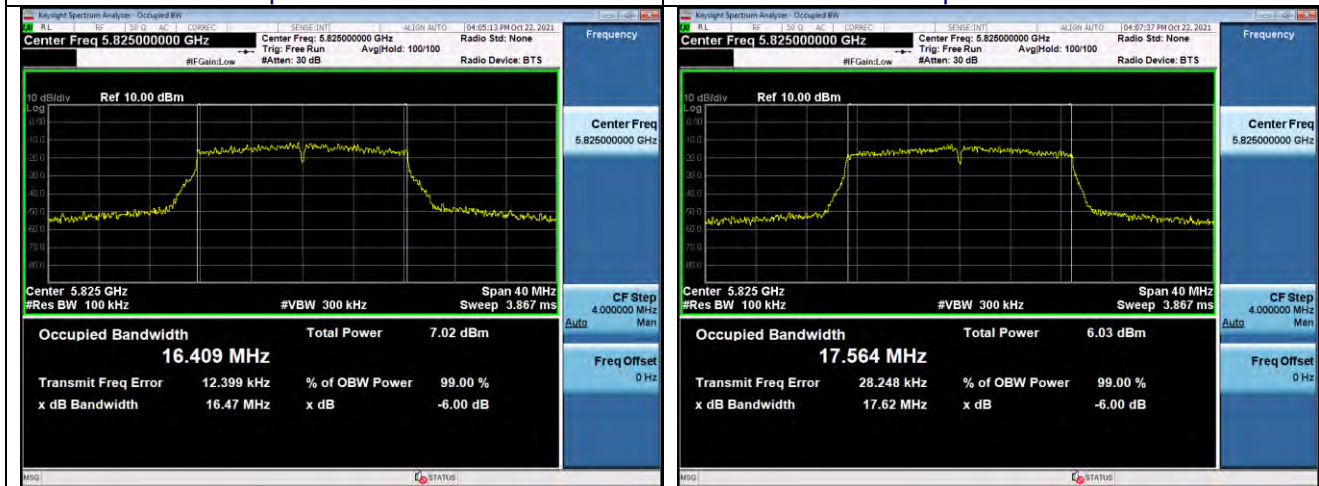
802.11A plot on channel 157

802.11N20 plot on channel 157

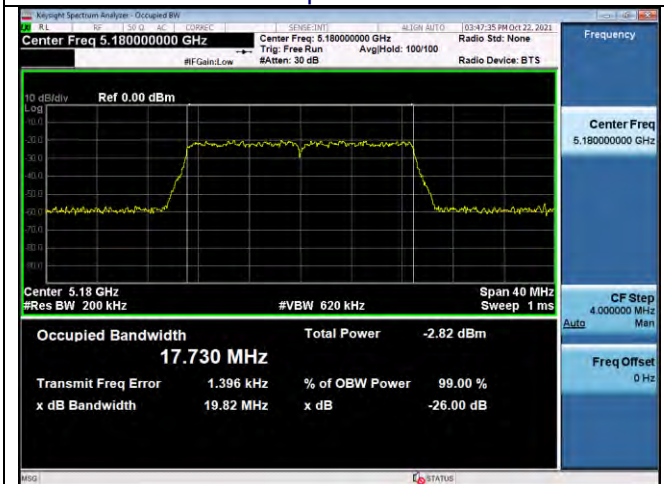


802.11A plot on channel 165

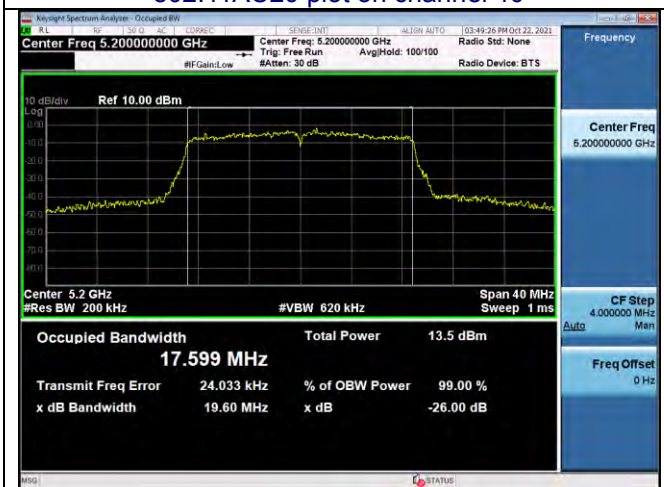
802.11N20 plot on channel 165



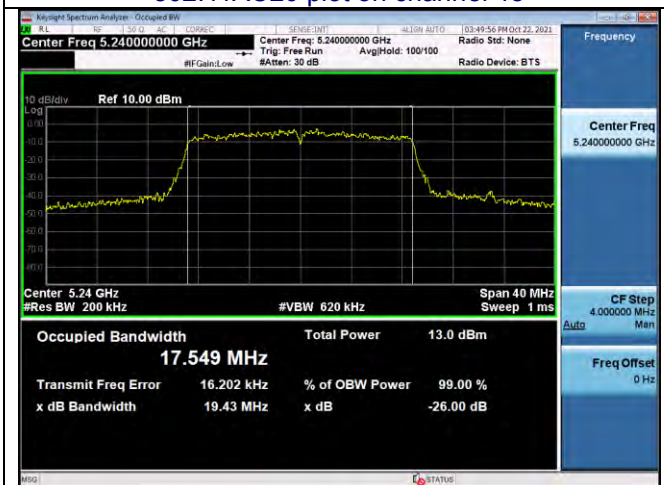
802.11AC20 plot on channel 36



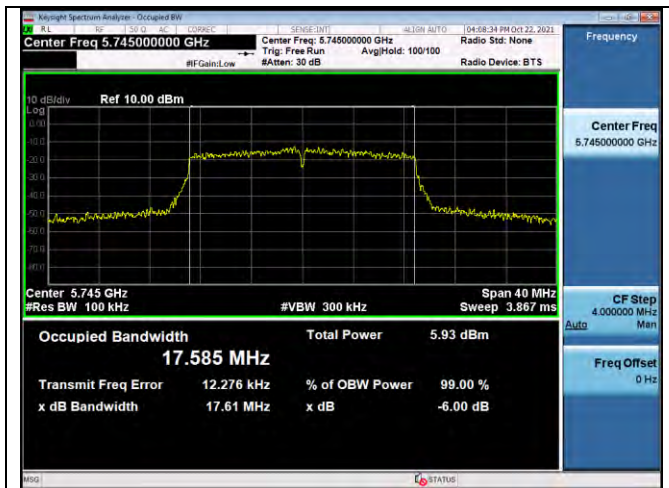
802.11AC20 plot on channel 40



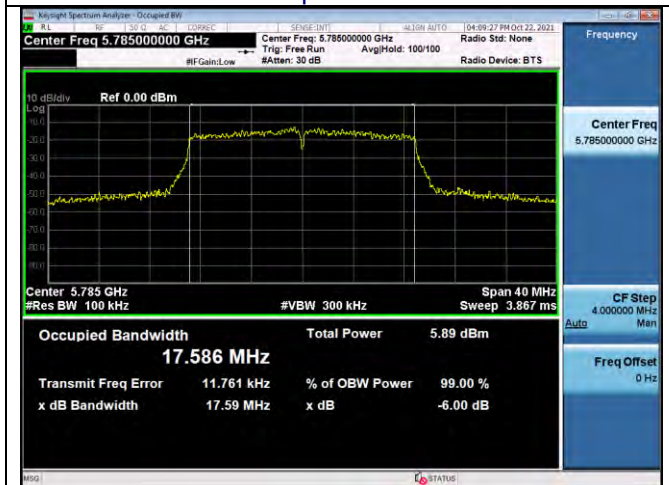
802.11AC20 plot on channel 48



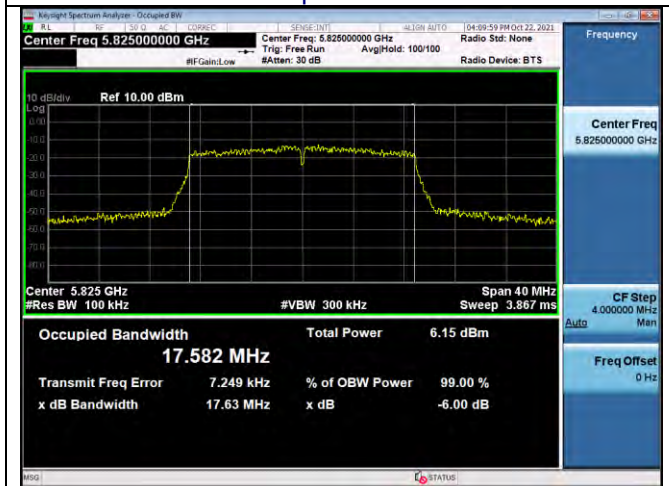
802.11AC20 plot on channel 149



802.11AC20 plot on channel 157



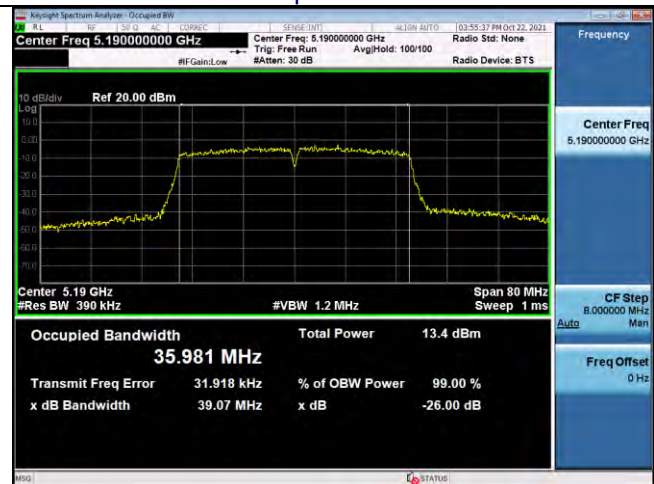
802.11AC20 plot on channel 165



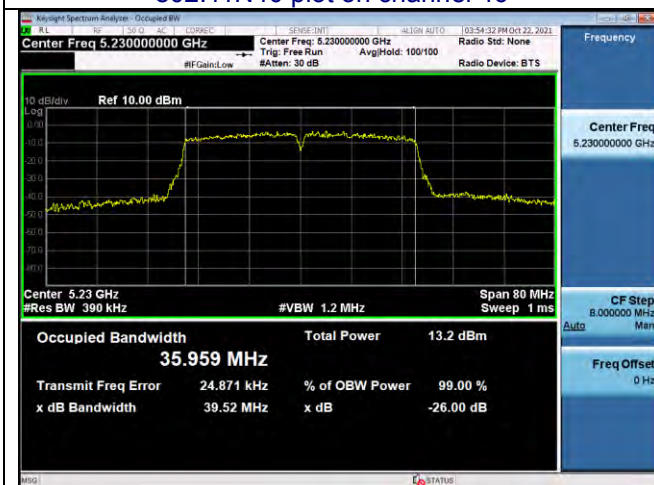
802.11N40 plot on channel 38



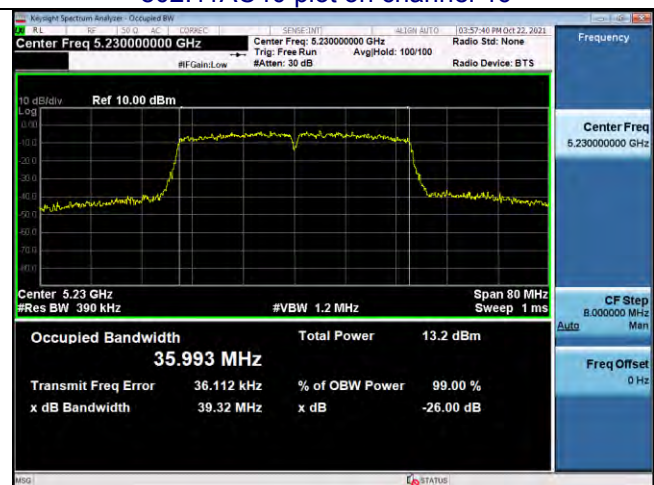
802.11AC40 plot on channel 38



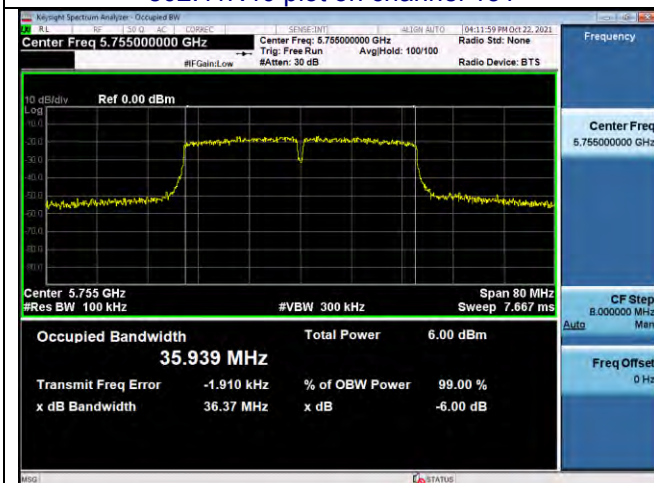
802.11N40 plot on channel 46



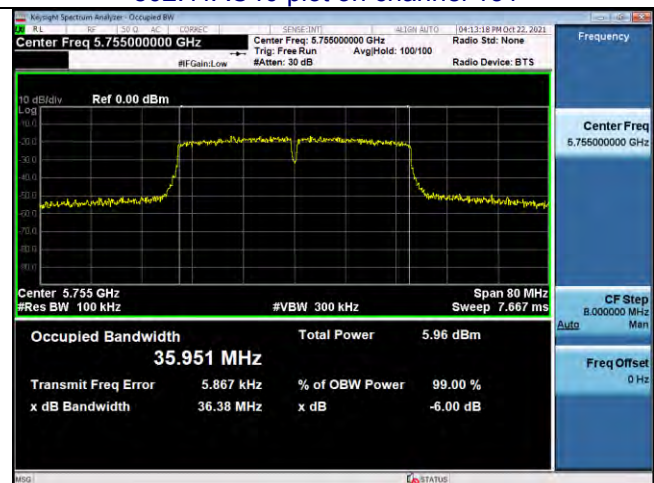
802.11AC40 plot on channel 46



802.11N40 plot on channel 151

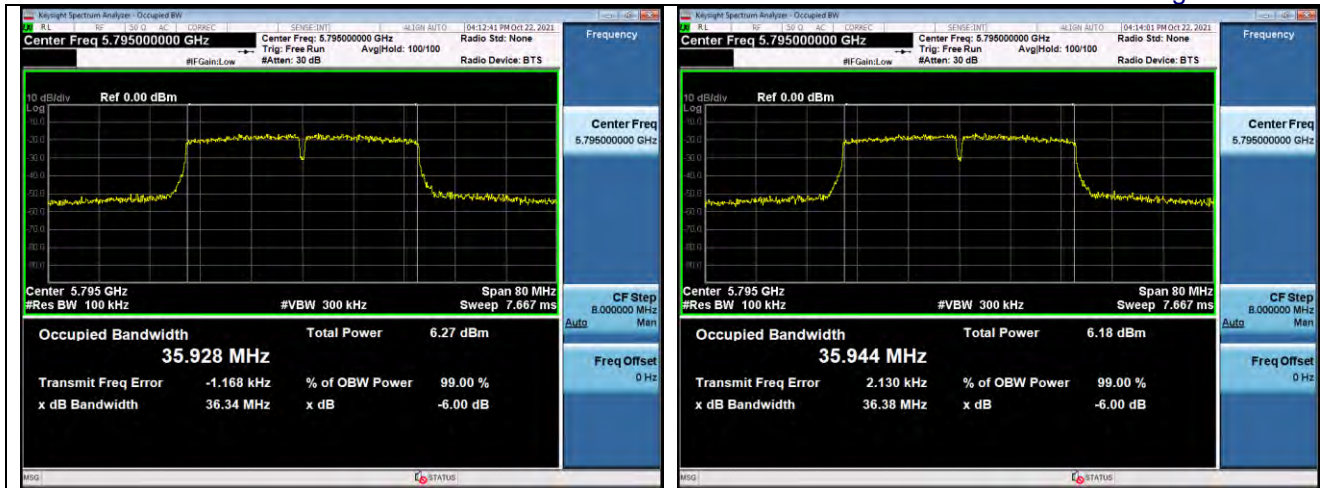


802.11AC40 plot on channel 151



802.11N40 plot on channel 159

802.11AC40 plot on channel 159



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

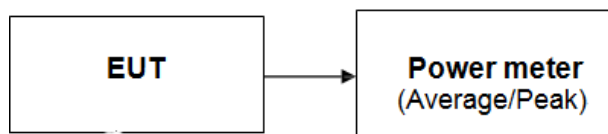
For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

Test Item	Limit	Result
Max conducted output power	250 mW / 23.98dbm	Pass
Max conducted output power	1 W / 30dbm	Pass

7.2 DEVIATION FROM STANDARD

No deviation.

7.3 TEST SETUP



7.4 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.

7.5 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V

802.11 Mode	Channel No.	Frequency [MHz]	Conducted Power [dBm]	Limit [dBm]
a(20MHz)	36	5180	7.90	23.98
	40	5200	8.53	23.98
	48	5240	7.27	23.98
n(20MHz)	36	5180	7.51	23.98
	40	5200	7.10	23.98
	48	5240	6.50	23.98
n(40MHz)	38	5190	6.75	23.98
	46	5230	6.41	23.98
ac(20MHz)	36	5180	7.06	23.98
	40	5200	6.48	23.98
	48	5240	7.12	23.98
ac(40MHz)	38	5190	6.81	23.98
	46	5230	6.54	23.98

802.11 Mode	Channel No.	Frequency [MHz]	Conducted Power [dBm]	Limit [dBm]
a (20MHz)	149	5745	0.43	30.00
	157	5785	0.14	30.00
	165	5825	0.18	30.00
n (20MHz)	149	5745	-0.86	30.00
	157	5785	-0.97	30.00
	165	5825	-0.73	30.00
n (40MHz)	151	5755	-1.01	30.00
	159	5795	-0.77	30.00
ac (20MHz)	149	5745	-0.85	30.00
	157	5785	-1.02	30.00
	165	5825	-0.61	30.00
ac(40MHz)	151	5755	-1.09	30.00
	159	5795	-0.78	30.00

8. OUT OF BAND EDGE EMISSION

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

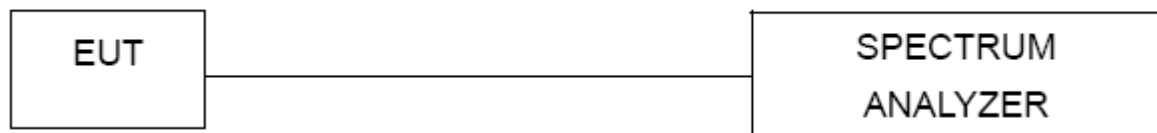
8.1 TEST PROCEDURE

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



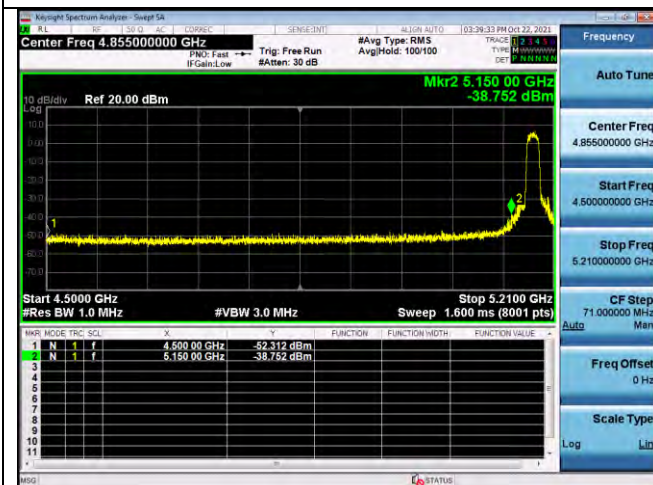
8.4 EUT OPERATION CONDITIONS

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

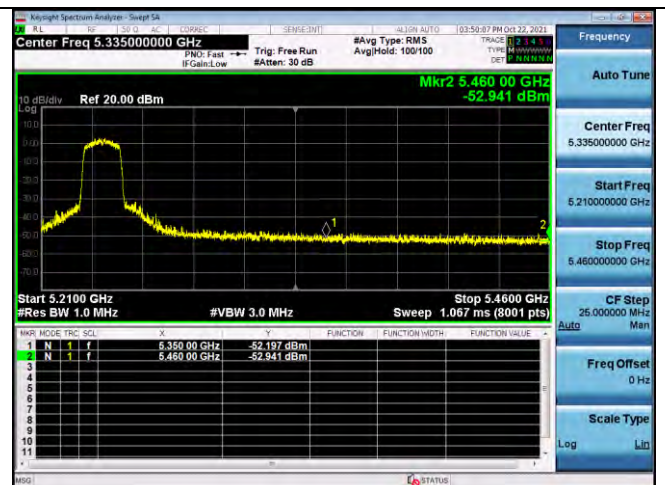
Test plot as follows:

Test mode:



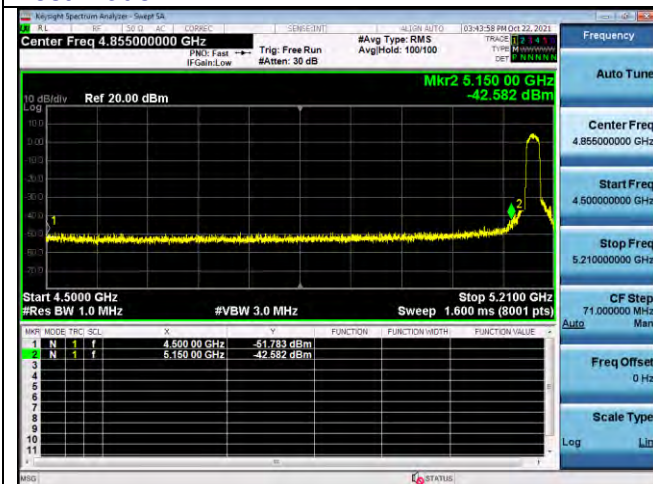
Lowest channel

Band1-802.11a20



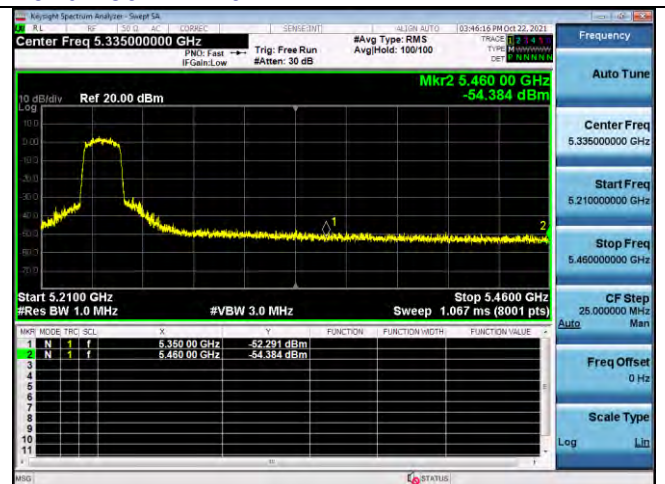
Highest channel

Test mode:



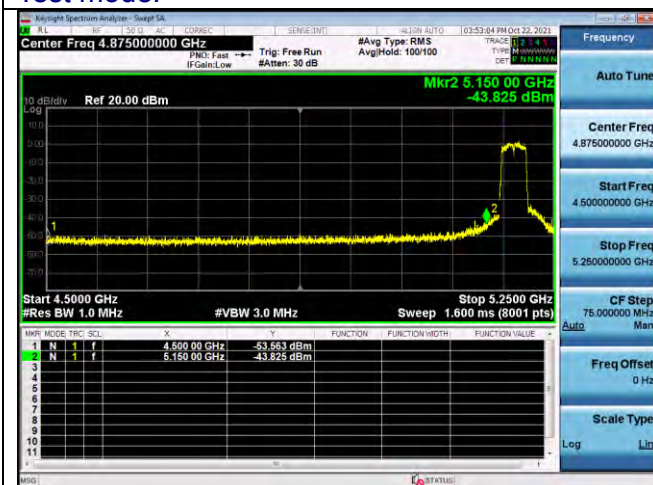
Lowest channel

Band1-802.11n20



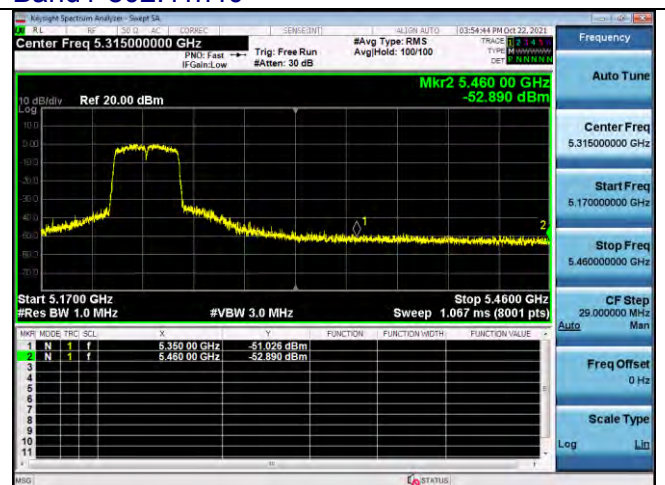
Highest channel

Test mode:



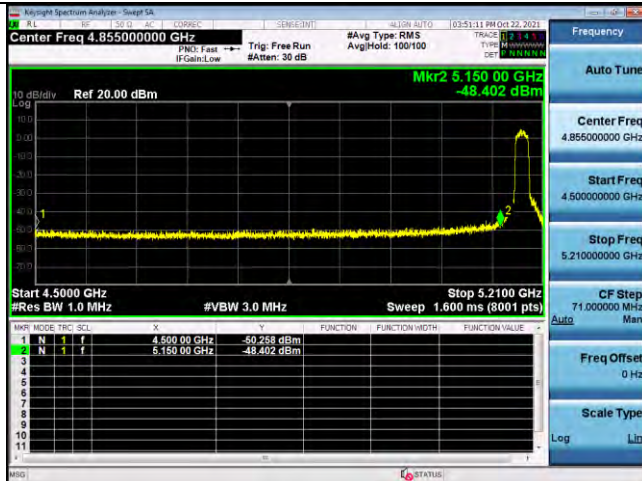
Lowest channel

Band1-802.11n40



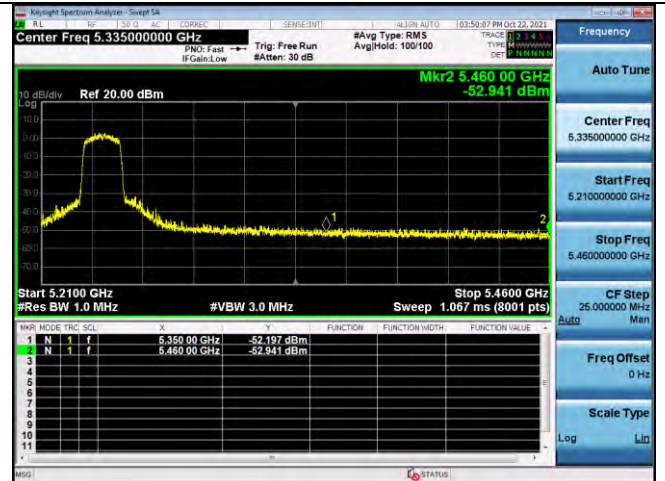
Highest channel

Test mode:



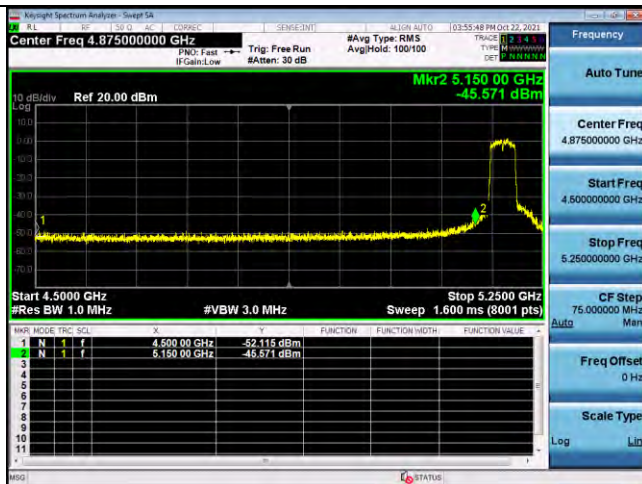
Lowest channel

Band1-802.11ac20



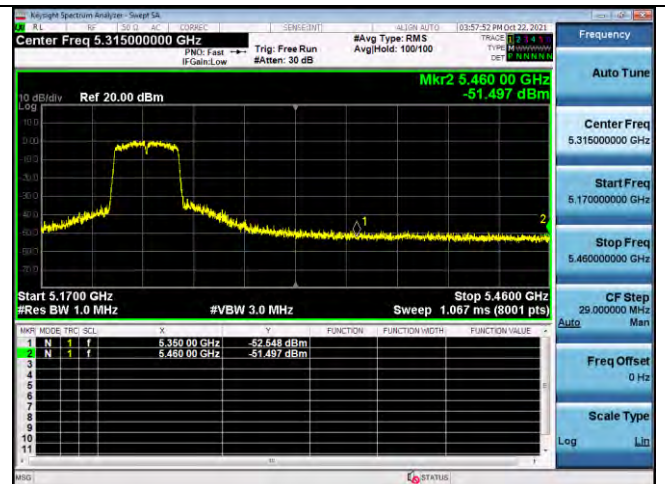
Highest channel

Test mode:



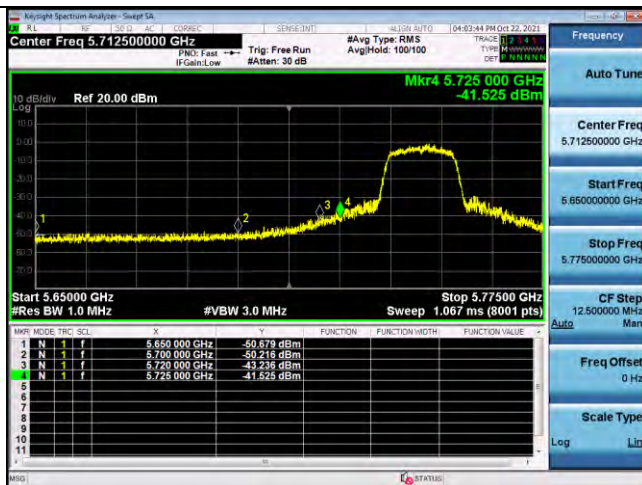
Lowest channel

Band1-802.11ac40



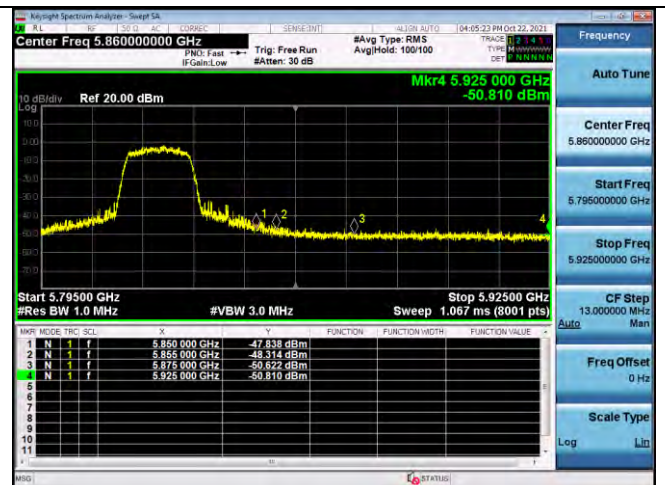
Highest channel

Test mode:



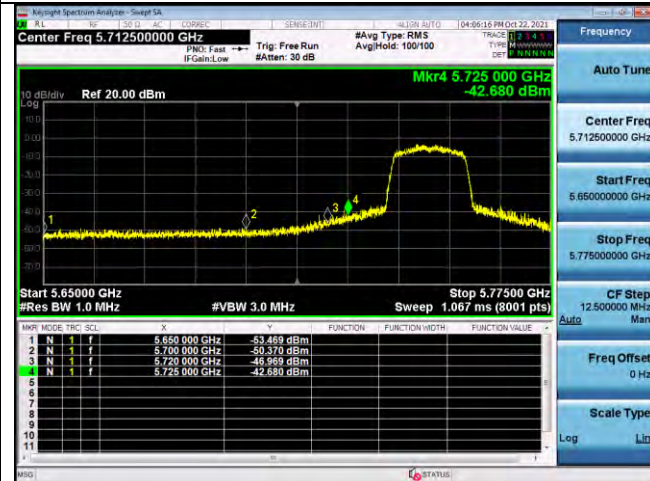
Lowest channel

Band4-802.11a20



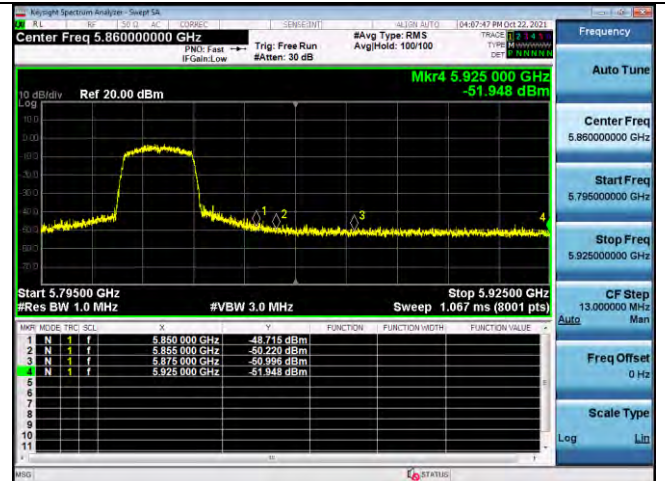
Highest channel

Test mode:



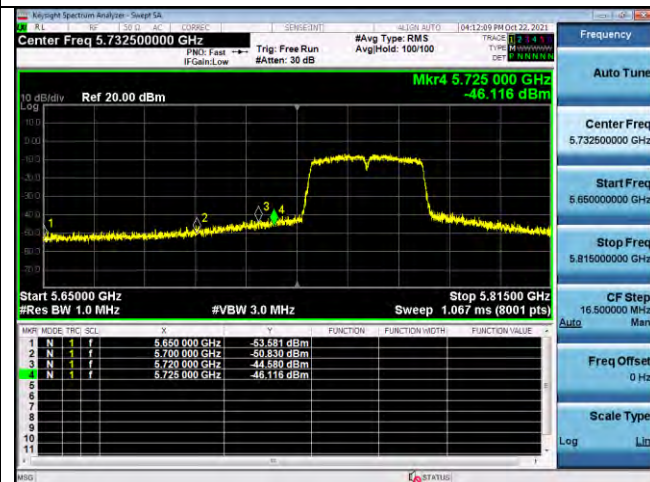
Lowest channel

Band4-802.11n20



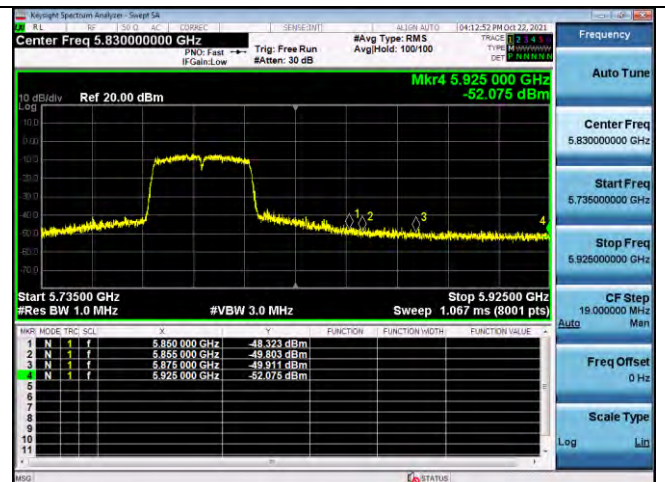
Highest channel

Test mode:



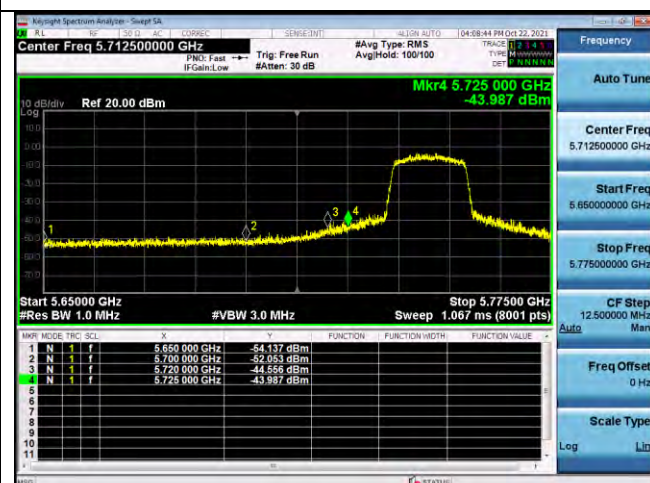
Lowest channel

Band4-802.11n40



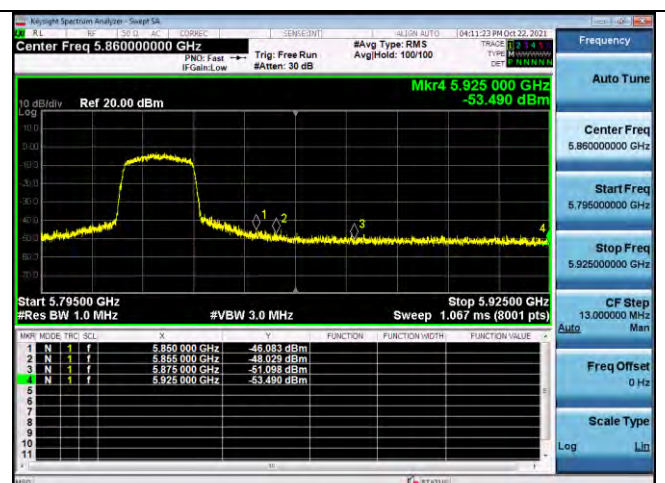
Highest channel

Test mode:



Lowest channel

Band4-802.11ac20



Highest channel

Test mode:

Band4-802.11ac40



Lowest channel

Highest channel

9. FREQUENCY STABILITY MEASUREMENT

9.1 LIMIT

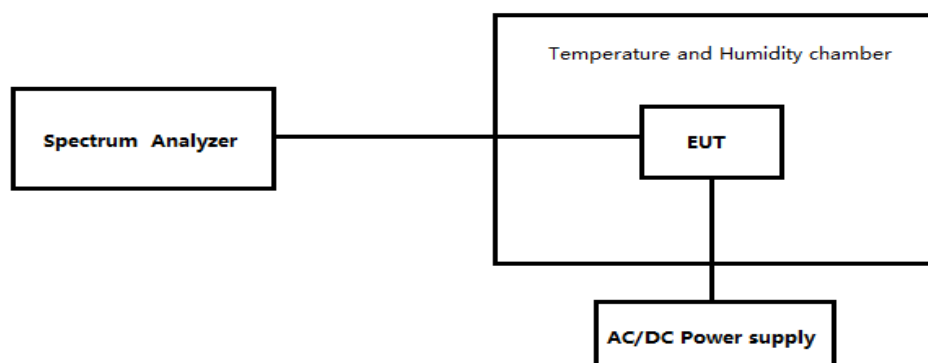
According to §15.407(g), Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of

normal operation as specified in the user's manual.

9.2 TEST PROCEDURE

1. To ensure emission at the band edge is maintained 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, which is set to maximum hold function and peak detector. The peak value of the power envelope was 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 TEST CONFIGURATION



9.4 TEST RESULT

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V

802.11a-CH36

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	86	0.0165
40	120V	66	0.0128
30	120V	85	0.0164
20	120V	68	0.0132

10	120V	76	0.0147
0	120V	82	0.0158
-10	120V	65	0.0126
-20	120V	62	0.0119
-30	120V	75	0.0144

802.11a-CH40

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	74	0.0143
40	120V	83	0.0159
30	120V	83	0.0159
20	120V	68	0.0130
10	120V	62	0.0120
0	120V	75	0.0144
-10	120V	62	0.0120
-20	120V	70	0.0134
-30	120V	79	0.0152

802.11a-CH48

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	61	0.0117
40	120V	75	0.0142
30	120V	69	0.0133
20	120V	90	0.0172
10	120V	76	0.0145
0	120V	68	0.0131
-10	120V	83	0.0159
-20	120V	85	0.0162
-30	120V	91	0.0174

802.11a-CH149

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	93	0.0161
40	120V	78	0.0137
30	120V	79	0.0138
20	120V	88	0.0153
10	120V	89	0.0155
0	120V	95	0.0165
-10	120V	82	0.0142
-20	120V	96	0.0167
-30	120V	60	0.0105

802.11a-CH157

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	68	0.0117

40	120V	70	0.0122
30	120V	65	0.0112
20	120V	91	0.0158
10	120V	75	0.0129
0	120V	64	0.0111
-10	120V	94	0.0162
-20	120V	87	0.0151
-30	120V	89	0.0153

802.11a-CH165

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	96	0.0164
40	120V	63	0.0109
30	120V	92	0.0158
20	120V	77	0.0132
10	120V	79	0.0135
0	120V	80	0.0137
-10	120V	78	0.0134
-20	120V	86	0.0147
-30	120V	70	0.0121

802.11n20-CH36

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	75	0.0144
40	120V	94	0.0181
30	120V	82	0.0158
20	120V	95	0.0184
10	120V	75	0.0145
0	120V	67	0.0129
-10	120V	71	0.0136
-20	120V	87	0.0169
-30	120V	79	0.0152

802.11n20-CH40

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	80	0.0154
40	120V	61	0.0117
30	120V	69	0.0133
20	120V	63	0.0121
10	120V	62	0.0119
0	120V	67	0.0129
-10	120V	74	0.0142
-20	120V	87	0.0168
-30	120V	76	0.0147

802.11n20-CH48

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	76	0.0145
40	120V	62	0.0118
30	120V	69	0.0131
20	120V	68	0.0129
10	120V	81	0.0154
0	120V	95	0.0182
-10	120V	76	0.0146
-20	120V	78	0.0149
-30	120V	67	0.0127

802.11n20-CH149

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	71	0.0123
40	120V	65	0.0112
30	120V	90	0.0156
20	120V	81	0.0140
10	120V	62	0.0107
0	120V	73	0.0127
-10	120V	81	0.0142
-20	120V	78	0.0136
-30	120V	89	0.0154

802.11n20-CH157

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	90	0.0155
40	120V	96	0.0166
30	120V	87	0.0151
20	120V	95	0.0164
10	120V	91	0.0158
0	120V	83	0.0144
-10	120V	74	0.0127
-20	120V	68	0.0118
-30	120V	96	0.0165

802.11n20-CH165

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	63	0.0108
40	120V	65	0.0111
30	120V	64	0.0110
20	120V	94	0.0162
10	120V	96	0.0165
0	120V	79	0.0136

-10	120V	80	0.0137
-20	120V	95	0.0163
-30	120V	62	0.0107

802.11n40-CH38

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	96	0.0184
40	120V	80	0.0154
30	120V	78	0.0151
20	120V	71	0.0137
10	120V	60	0.0116
0	120V	94	0.0181
-10	120V	91	0.0175
-20	120V	84	0.0163
-30	120V	76	0.0146

802.11n40-CH46

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	78	0.0149
40	120V	91	0.0174
30	120V	71	0.0136
20	120V	80	0.0153
10	120V	73	0.0139
0	120V	91	0.0174
-10	120V	77	0.0146
-20	120V	95	0.0182
-30	120V	82	0.0157

802.11n40-CH151

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	68	0.0118
40	120V	90	0.0156
30	120V	62	0.0108
20	120V	91	0.0158
10	120V	90	0.0156
0	120V	72	0.0125
-10	120V	96	0.0166
-20	120V	76	0.0131
-30	120V	69	0.0120

802.11n40-CH159

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)

50	120V	62	0.0107
40	120V	75	0.0129
30	120V	96	0.0166
20	120V	64	0.0110
10	120V	74	0.0127
0	120V	65	0.0112
-10	120V	68	0.0117
-20	120V	70	0.0121
-30	120V	63	0.0108

802.11ac20-CH36

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	66	0.0128
40	120V	94	0.0182
30	120V	77	0.0148
20	120V	92	0.0178
10	120V	85	0.0165
0	120V	69	0.0133
-10	120V	68	0.0131
-20	120V	61	0.0117
-30	120V	68	0.0132

802.11ac20-CH40

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	75	0.0145
40	120V	83	0.0159
30	120V	88	0.0168
20	120V	65	0.0125
10	120V	80	0.0154
0	120V	90	0.0173
-10	120V	81	0.0156
-20	120V	83	0.0160
-30	120V	80	0.0154

802.11ac20-CH48

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	69	0.0133
40	120V	87	0.0166
30	120V	84	0.0161
20	120V	64	0.0121
10	120V	64	0.0122
0	120V	96	0.0183
-10	120V	78	0.0149
-20	120V	70	0.0135
-30	120V	77	0.0147

802.11ac20-CH149

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	81	0.0140
40	120V	87	0.0151
30	120V	72	0.0125
20	120V	62	0.0107
10	120V	78	0.0136
0	120V	69	0.0120
-10	120V	61	0.0105
-20	120V	95	0.0166
-30	120V	82	0.0142

802.11ac20-CH157

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	92	0.0159
40	120V	60	0.0104
30	120V	87	0.0150
20	120V	79	0.0137
10	120V	80	0.0139
0	120V	73	0.0126
-10	120V	66	0.0115
-20	120V	87	0.0150
-30	120V	91	0.0158

802.11ac20-CH165

Temperature (°C)	Voltage (VDC)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	78	0.0133
40	120V	64	0.0110
30	120V	84	0.0144
20	120V	81	0.0140
10	120V	78	0.0134
0	120V	93	0.0159
-10	120V	77	0.0132
-20	120V	71	0.0122
-30	120V	60	0.0103

802.11ac40-CH38

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	83	0.0160
40	120V	78	0.0151
30	120V	92	0.0177
20	120V	69	0.0133
10	120V	80	0.0155

0	120V	75	0.0145
-10	120V	96	0.0184
-20	120V	62	0.0120
-30	120V	67	0.0129

802.11ac40-CH46

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	87	0.0166
40	120V	94	0.0180
30	120V	67	0.0129
20	120V	73	0.0140
10	120V	61	0.0116
0	120V	65	0.0124
-10	120V	82	0.0157
-20	120V	69	0.0132
-30	120V	69	0.0131

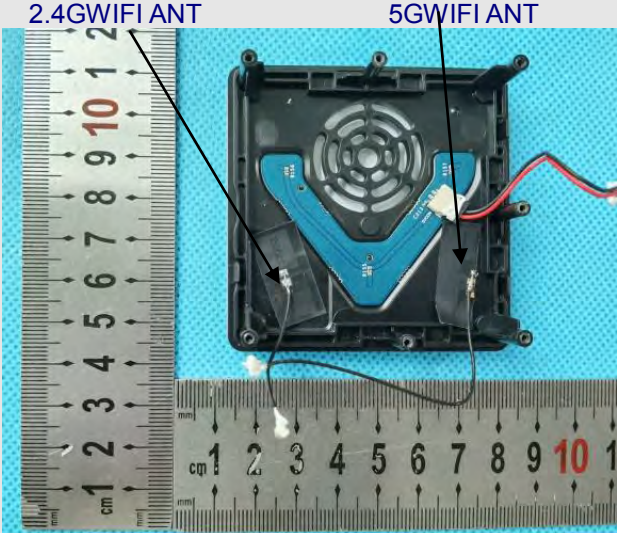
802.11ac40-CH151

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	78	0.0135
40	120V	93	0.0162
30	120V	65	0.0113
20	120V	69	0.0120
10	120V	79	0.0136
0	120V	74	0.0129
-10	120V	70	0.0122
-20	120V	76	0.0132
-30	120V	79	0.0138

802.11ac40CH159

Temperature (°C)	Voltage (V)	Frequency Measure with time Elapsed	
		MCF	(ppm)
50	120V	71	0.0122
40	120V	72	0.0125
30	120V	91	0.0156
20	120V	66	0.0115
10	120V	86	0.0149
0	120V	73	0.0125
-10	120V	90	0.0154
-20	120V	75	0.0129
-30	120V	89	0.0153

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. Antenna Connected Construction The FPC antenna used in the product is a permanently connected antenna that complies with the provisions of part 15.203 requirement in this section. The antenna used in this product is a FPC antenna, The directional gains of antenna used for transmitting is 2.3 dBi.	
EUT Antenna: 	

10. TEST SETUP PHOTO

Reference to the test setup file for details.

11. EUT CONSTRUCTIONAL DETAILS

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

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