



FCC TEST REPORT

**Test report
On Behalf of
Shenzhen Zidoo Technology Co., Ltd
For
SMART TV BOX
Model No.: X9S, X8

FCC ID: 2AGN7-X9S**

Prepared for : Shenzhen Zidoo Technology Co., Ltd
Room 12 D, Block A, CENTRAL GREAT SEARCHINGS, Xixiang
Avenue, BaoAn District, Shenzhen, Guangdong, P.R.C. 518100

Prepared By : Shenzhen HUAKE Testing Technology Co., Ltd.
F1-008, Tai Yi Building, No.1, Haicheng West Road, Xixiang Street, Bao'an
District, Shenzhen City, China

Date of Test: September. 25, 2016 ~ September. 29, 2016

Date of Report: September. 29, 2016

Report Number: HK1600920036-E



TEST RESULT CERTIFICATION

Applicant's name : Shenzhen Zidoo Technology Co., Ltd
 Address : Room 12 D, Block A, CENTRAL GREAT SEARCHINGS, Xixiang Avenue, BaoAn District, Shenzhen, Guangdong, P.R.C. 518100

Manufacture's Name..... : Shenzhen Zidoo Technology Co., Ltd
 Address : Room 12 D, Block A, CENTRAL GREAT SEARCHINGS, Xixiang Avenue, BaoAn District, Shenzhen, Guangdong, P.R.C. 518100


Product description

Trade Mark: zidoo
 Product name : SMART TV BOX
 Model and/or type reference : X9S, X8

Standards : FCC Rules and Regulations Part 15 Subpart C Section 15.407
 ANSI C63.10: 2013

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Date of Test :
 Date (s) of performance of tests : **September. 25, 2016 ~ September. 29, 2016**
 Date of Issue..... : **September. 29, 2016**
 Test Result..... : **Pass**

Testing Engineer : 

 (Eric Xie)

Technical Manager : 

 (Dora Qin)

Authorized Signatory : 

 (Kait Chen)



Table of Contents	Page
1 . TEST SUMMARY	5
2 . GENERAL INFORMATION	6
2.1 GENERAL DESCRIPTION OF EUT	6
2.2 DESCRIPTION OF TEST SETUP	9
2.3 MEASUREMENT INSTRUMENTS LIST	10
3 . CONDUCTED EMISSIONS TEST	11
3.1 Conducted Power Line Emission Limit	11
3.2 Test Setup	11
3.3 Test Procedure	11
3.4 Test Result	11
4 RADIATED EMISSION TEST	14
4.1 Radiation Limit	14
4.2 Test Setup	14
4.3 Test Procedure	15
4.4 Test Result	15
5 BAND EDGE	36
5.1 Limits	36
5.2 Test Procedure	36
5.3 Test Result	36
6 FREQUENCY STABILITY	53
6.1 Test Limit	53
6.2 Test Procedure	53
6.3 Measurement Equipment Used	53
6.4 Test Result	53
7 OCCUPIED BANDWIDTH MEASUREMENT	55
7.1 Test Limit	55
7.2 Test Procedure	55
7.3 Measurement Equipment Used	55
7.4 Test Result	55
8 POWER SPECTRAL DENSITY TEST	68
8.1 Test Limit	68
8.2 Test Procedure	68
8.3 Measurement Equipment Used	68
8.4 Test Result	68



Table of Contents	Page
9 PEAK OUTPUT POWER TEST	81
9.1 Test Limit	81
9.2 Test Procedure	81
9.3 Measurement Equipment Used	81
9.4 Test Result	81
10 ANTENNA REQUIREMENT	83
11 PHOTOGRAPH OF TEST	85
11.1 Radiated Emission	85
11.2 Conducted Emission	87



1. TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

DESCRIPTION OF TEST	RESULT
CONDUCTED EMISSIONS TEST	COMPLIANT
RADIATED EMISSION TEST	COMPLIANT
BAND EDGE	COMPLIANT
FREQUENCY STABILITY	COMPLIANT
OCCUPIED BANDWIDTH MEASUREMENT	COMPLIANT
POWER SPECTRAL DENSITY	COMPLIANT
PEAK OUTPUT POWER _{Peak}	COMPLIANT
ANTENNA REQUIREMENT	COMPLIANT

1.2 TEST FACILITY

Test Firm : Dongguan Dongdian Testing Service Co., Ltd
Certificated by FCC, Registration No.: 270092

Address : No.17 Zongbu road 2, Songshan Lake Sci&Tech Park, DongGuan
City, Guangdong province,523808 China

1.3 MEASUREMENT UNCERTAINTY

Measurement Uncertainty	
Conducted Emission Expanded Uncertainty	= 2.23dB, k=2
Radiated emission expanded uncertainty(9kHz-30MHz)	= 3.08dB, k=2
Radiated emission expanded uncertainty(30MHz-1000MHz)	= 4.42dB, k=2
Radiated emission expanded uncertainty(Above 1GHz)	= 4.06dB, k=2



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	SMART TV BOX
Model Name	X9S
Serial No	X8
Model Difference	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: X9S.
FCC ID	2AGN7-X9S
Antenna Type	reverse SMA
Antenna Gain	1 dBi
BT Operation frequency	2402-2480MHz
Number of Channels	79CH
Modulation Type	GFSK
Power Source	Adapter model:CS-1203000
Power Rating	DC12V form Adapter with AC 120V/60Hz

Equipment	SMART TV BOX
Model Name	X9S
Serial No	X8
Model Difference	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: X9S.
FCC ID	2AGN7-X9S
Antenna Type	reverse SMA
Antenna Gain	1 dBi
Operation frequency	802.11b/g/n 20:2412~2462 MHz 802.11n 40: 2422~2452MHz
Number of Channels	802.11b/g/n20: 11CH 802.11n 40: 7CH
Modulation Type	CCK/OFDM/DBPSK/DAPSK
Power Source	Adapter model:CS-1203000
Power Rating	DC12V form Adapter with AC 120V/60Hz



Equipment	SMART TV BOX
Model Name	X9S
Serial No	X8
Model Difference	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: X9S.
FCC ID	2AGN7-X9S
Antenna Type	reverse SMA
Antenna Gain	1 dBi
Operation frequency	802.11a/n 20:5180~5240 MHz; 5745~5825 MHz; 802.11n 40: 5190~5230 MHz; 5755~5795 MHz; 802.11ac:5210 MHz; 5755 MHz;
Number of Channels	802.11a/n20: 5.2G:4CH; 5.8G: 5CH 802.11n 40: 5.2G:2CH; 5.8G: 2CH 802.11 ac: 5.2G:1CH; 5.8G: 1CH
Modulation Type	CCK/OFDM/DBPSK/DAPSK
Power Source	Adapter model:CS-1203000
Power Rating	DC12V form Adapter with AC 120V/60Hz

Note: This report only 5G WIFI test report, BT and 2.4G WIFI transmitters see the other test report.



2.1.1 Carrier Frequency of Channels

Channel List for 802.11 a/n 20 with 5.2G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	40	5200	44	5220	48	5240
/	/	/	/	/	/	/	/

Channel List for 802.11 n(40MHz) with 5.2G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230	/	/	/	/
/	/	/	/	/	/	/	/

Channel List for 802.11 ac with 5.2G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	/	/	/	/	/	/
/	/	/	/	/	/	/	/

Channel List for 802.11 a/n 20 with 5.8G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH149	5745	CH153	5765	CH157	5785	CH161	5805
CH165	5825	/	/	/	/	/	/

Channel List for 802.11 n(40MHz) with 5.8G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH151	5755	CH159	5795	/	/	/	/
/	/	/	/	/	/	/	/

Channel List for 802.11 ac with 5.8G							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH155	5775	/	/	/	/	/	/
/	/	/	/	/	/	/	/

Operation of EUT during testing

Operating Mode

The mode is used: **Transmitting mode for 802.11 a/n 20 with 5.2G**

Low Channel: 5180MHz

Middle Channel: 5200MHz

High Channel: 5240MHz

Transmitting mode for 802.11 n(40MHz) with 5.2G

Low Channel: 5190MHz

High Channel: 5230MHz

Transmitting mode for 802.11 ac with 5.2G

Low Channel: 5210MHz



Transmitting mode for 802.11 a/n 20 with 5.8G

Low Channel: 5745MHz
Middle Channel: 5785MHz
High Channel: 5825MHz

Transmitting mode for 802.11 n(40MHz) with 5.8G

Low Channel: 5755MHz
High Channel: 5795MHz

Transmitting mode for 802.11 ac with 5.8G

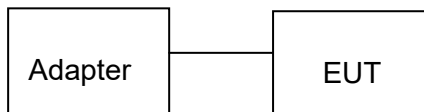
Low Channel: 5775MHz

2.2 DESCRIPTION OF TEST SETUP

Operation of EUT during conducted and below 1GHz Radiation testing:



Operation of EUT during Above1GHz Radiation testing:





2.3 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
2.	LISN	SchwarzBeck	NSLK 8126	8126377	Feb. 19, 2016	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Feb. 19, 2016	1 Year
4.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
5.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
6.	Trilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Feb. 19, 2016	1 Year
7.	Pre-amplifier	Compliance Direction	PAP-0203	22008	Feb. 19, 2016	1 Year
8.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
9.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
10.	LISN	SchwarzBeck	NSLK 8126	8126377	Feb. 19, 2016	1 Year
11.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Feb. 19, 2016	1 Year
12.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
13.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
14.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
15.	LISN	SchwarzBeck	NSLK 8126	8126377	Feb. 19, 2016	1 Year
16.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Feb. 19, 2016	1 Year
17.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
18.	Power Meter	R&S	NRVD	SEL0069	Feb. 19, 2016	1 Year
19.	Power Sensor	R&S	URV5-Z2	SEL0071	Feb. 19, 2016	1 Year
20.	Power Sensor	R&S	URV5-Z2	SEL0072	Feb. 19, 2016	1 Year
21.	Software EMC32	R&S	EMC32-S	SEL0082	N/A	N/A
22.	Log-periodic Antenna	Amplifier Reasearch	AX9S80	SEL0073	N/A	N/A
23.	Antenna Tripod	Amplifier Reasearch	TP1000A	SEL0074	N/A	N/A
24.	High Gain Horn Antenna(0.8-5GHz)	Amplifier Reasearch	AT4002A	SEL0075	N/A	N/A
25.	Spectrum analyzer	Agilent	N9020A	MY499110 048	Feb. 19, 2016	1 Year
26.	Spectrum analyzer	Agilent	E4407B	MY461843 26	Feb. 19, 2016	1 Year



3. CONDUCTED EMISSIONS TEST

3.1 Conducted Power Line Emission Limit

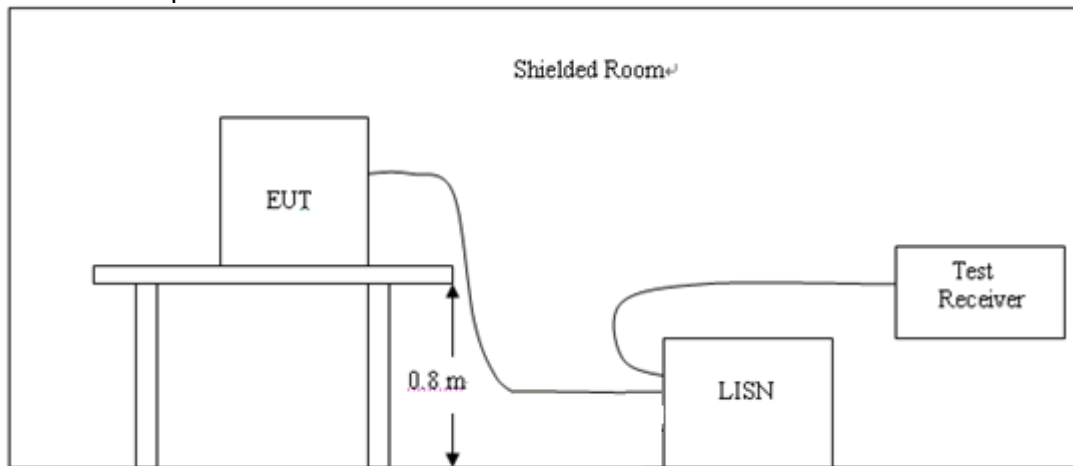
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following

Frequency (MHz)	Maximum RF Line Voltage (dB μ V)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

3.2 Test Setup



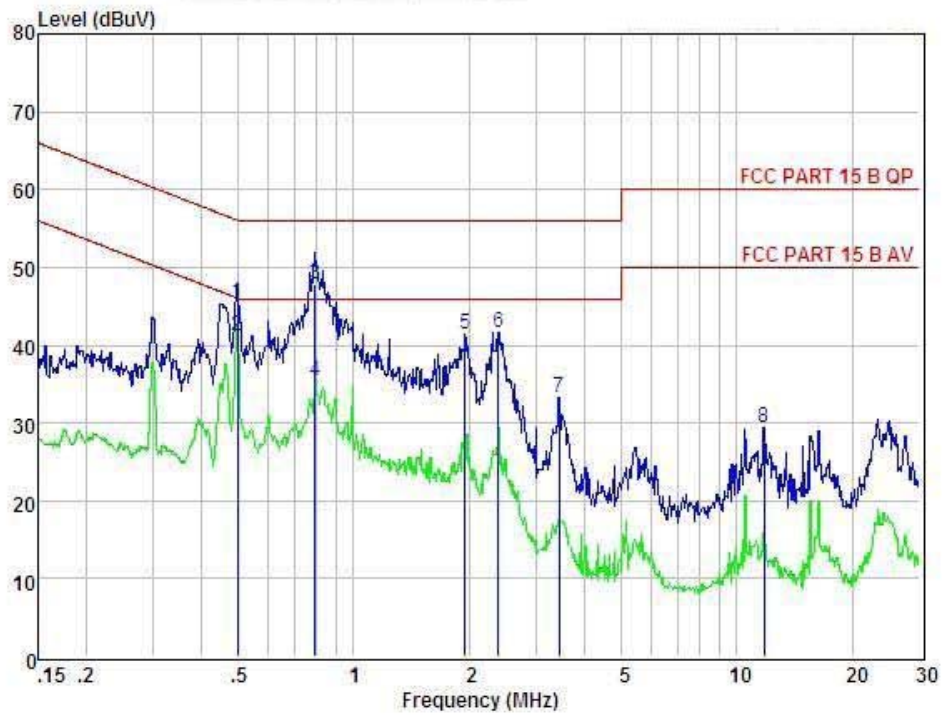
3.3 Test Procedure

- 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.
- 2, Support equipment, if needed, was placed as per ANSI C63.10.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's 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.

3.4 Test Result

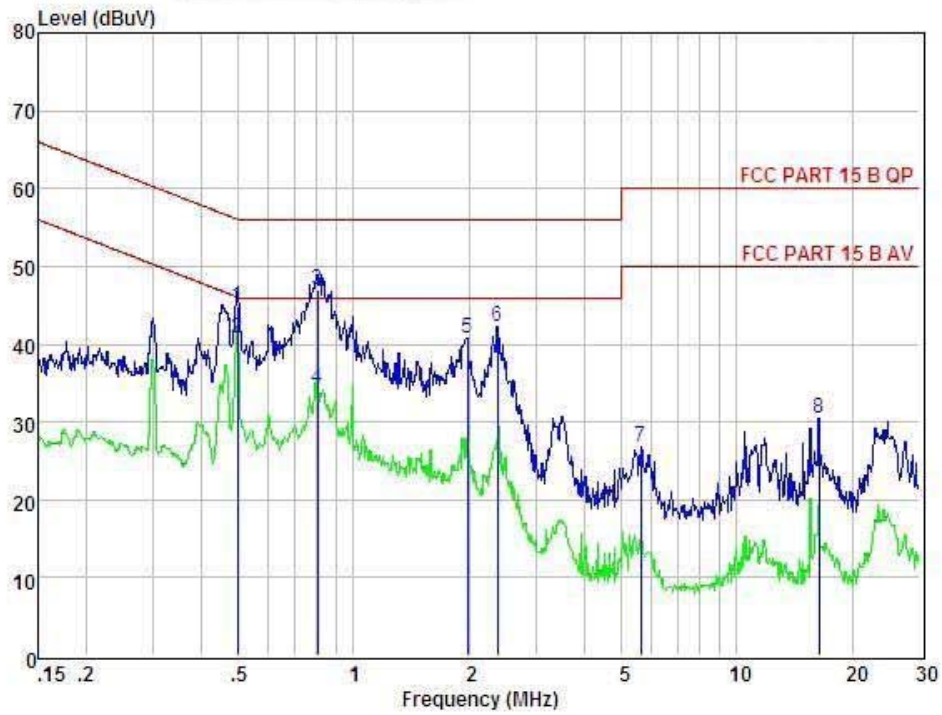
PASS

All the test modes completed for test.



Condition		: FCC PART 15 B QP				POL: LINE	Temp: 25°C	Hum: 51 %	
Item	Freq	Read	LISN	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	dBuV	Factor	Factor	Loss	dBuV	dBuV	dBuV	
			dB	dB	dB				
1	0.50	35.83	0.03	-9.58	0.10	45.54	56.05	-10.51	QP
2	0.50	31.50	0.03	-9.58	0.10	41.21	46.05	-4.84	Average
3	0.79	38.23	0.00	-9.60	0.10	47.93	56.00	-8.07	QP
4	0.79	25.60	0.00	-9.60	0.10	35.30	46.00	-10.70	Average
5	1.95	31.58	0.06	-9.71	0.10	41.45	56.00	-14.55	Peak
6	2.38	31.73	0.06	-9.75	0.11	41.65	56.00	-14.35	Peak
7	3.44	23.26	0.08	-9.84	0.12	33.30	56.00	-22.70	Peak
8	11.81	19.08	0.25	-9.90	0.22	29.45	60.00	-30.55	Peak

Remark: Level = Read Level + LISN Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15 B QP									
POL: NEUTRAL Temp: 25°C Hum: 51 %									
Item	Freq	Read	LISN	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	dBuV	Factor	Factor	Loss	dBuV	dBuV	dBuV	
			dB	dB	dB				
1	0.50	35.05	0.03	-9.58	0.10	44.76	56.05	-11.29	QP
2	0.50	31.00	0.03	-9.58	0.10	40.71	46.05	-5.34	Average
3	0.80	37.28	0.02	-9.60	0.10	47.00	56.00	-9.00	QP
4	0.80	24.50	0.02	-9.60	0.10	34.22	46.00	-11.78	Average
5	1.98	30.96	0.06	-9.72	0.10	40.84	56.00	-15.16	Peak
6	2.37	32.26	0.06	-9.75	0.11	42.18	56.00	-13.82	Peak
7	5.62	16.55	0.10	-9.96	0.13	26.74	60.00	-33.26	Peak
8	16.40	20.04	0.26	-9.83	0.28	30.41	60.00	-29.59	Peak

Remark: Level = Read Level + LISN Factor - Preamp Factor + Cable Loss

4 RADIATED EMISSION TEST

4.1 Radiation Limit

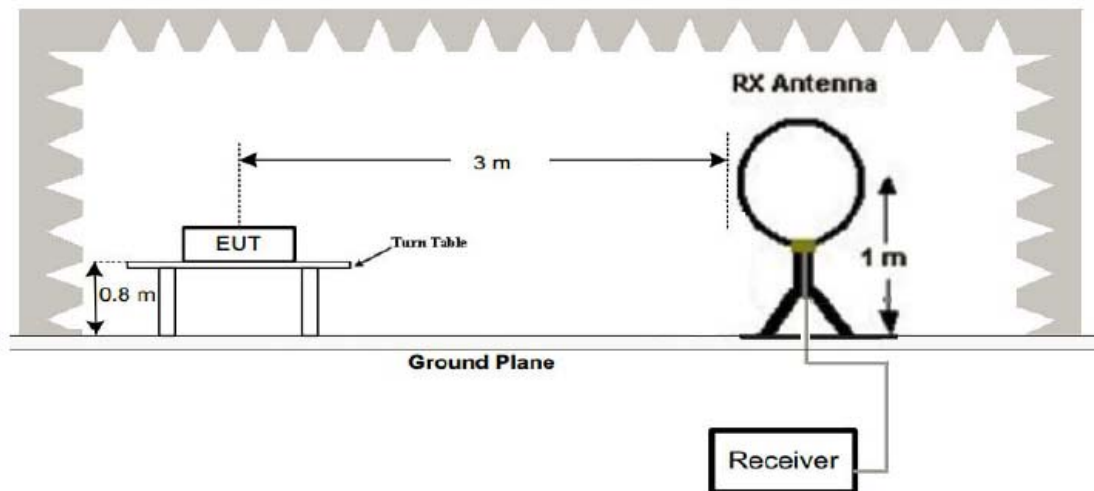
For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
30-88	3	40	100
88-216	3	43.5	150
216-960	3	46	200
Above 960	3	54	500

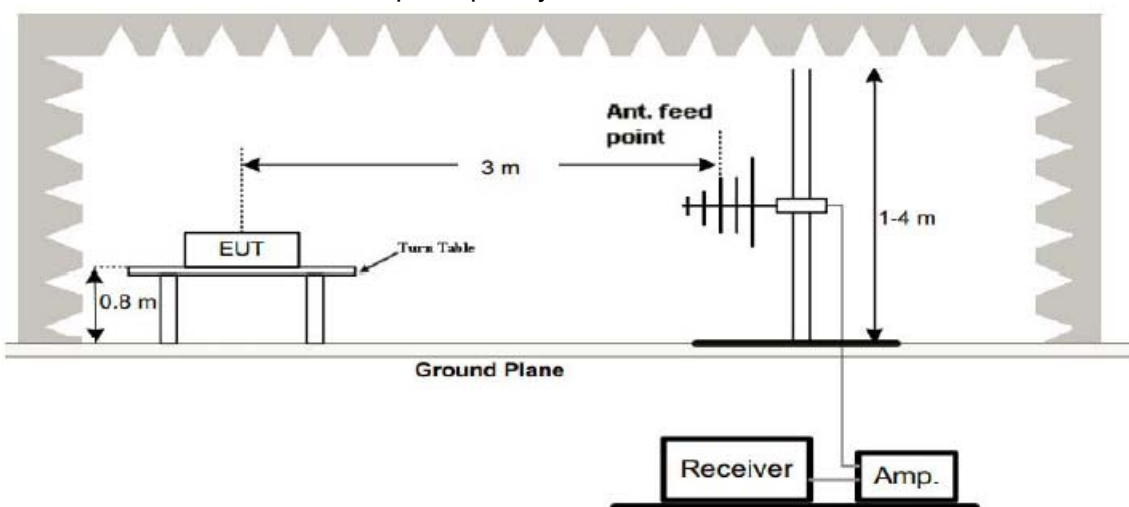
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

4.2 Test Setup

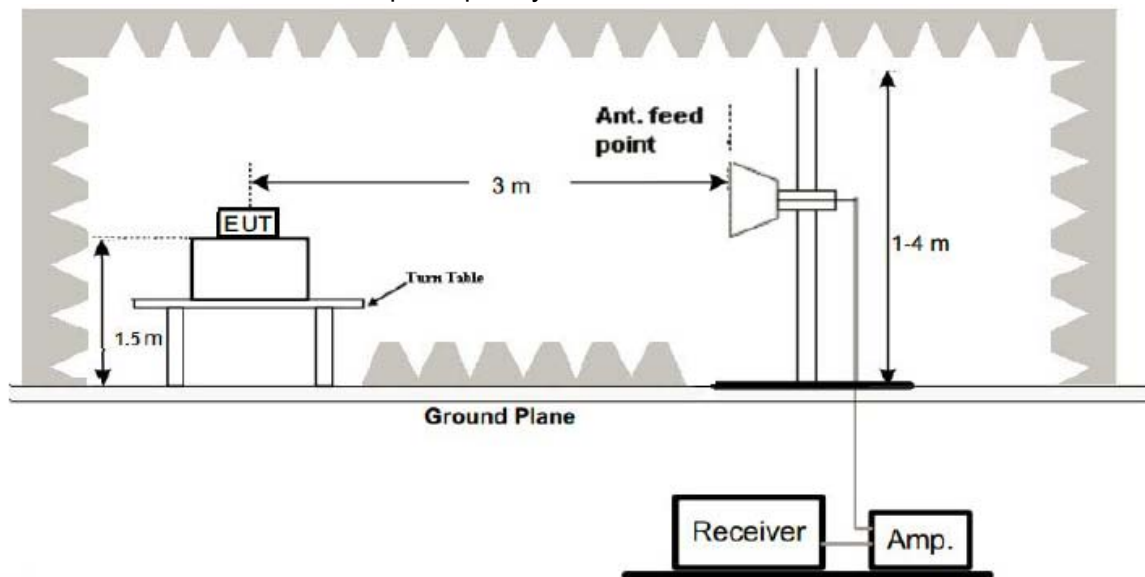
(1) Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.3 Test Procedure

1. Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The test frequency range from 9KHz to 25GHz per FCC PART 15.33(a).

Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

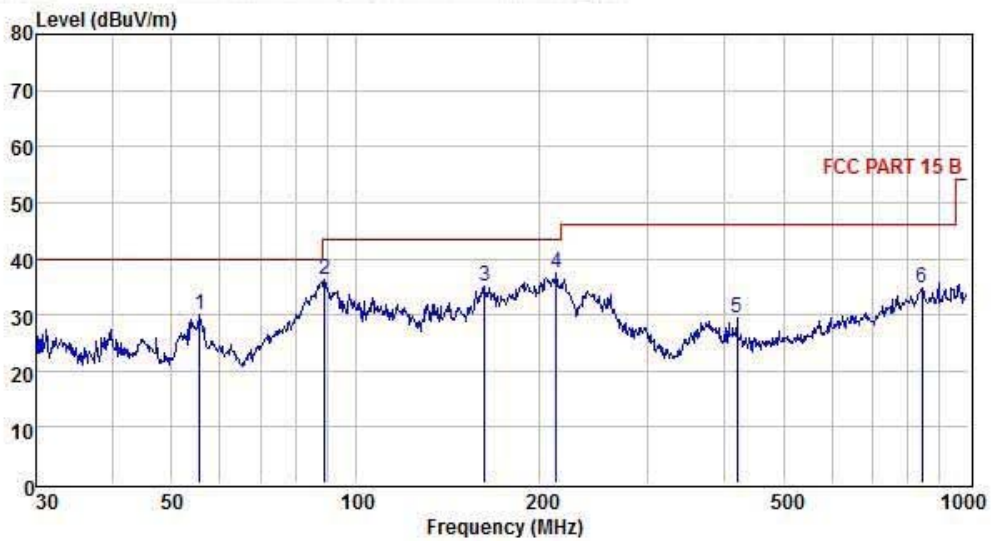
4.4 Test Result

PASS

All the test modes completed for test. The worst case of Radiated Emission; the test data of this mode was reported.



Below 1GHz Test Results:
Antenna polarity: H

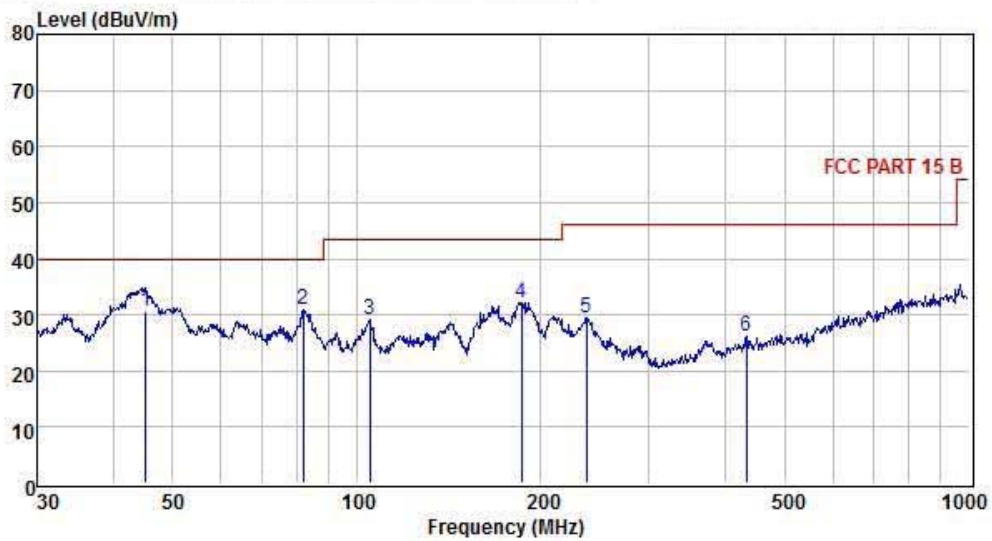


Condition		: FCC PART 15 B						
		POL: HORIZONTAL						
Item	Freq	Read Level	Antenna Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dBuV	
1	55.61	47.71	13.07	0.18	30.09	40.00	-9.91	Peak
2	88.96	56.64	9.44	0.33	36.22	43.50	-7.28	Peak
3	162.61	49.78	13.95	0.45	35.03	43.50	-8.47	Peak
4	213.02	55.26	10.18	0.55	37.50	43.50	-6.00	Peak
5	420.58	40.57	15.23	0.81	29.49	46.00	-16.51	Peak
6	842.13	37.05	20.98	1.69	34.88	46.00	-11.12	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Antenna polarity: V



Condition		: FCC PART 15 B						
		POL: VERTICAL						
Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	45.22	47.03	13.65	0.05	30.77	40.00	-9.23	QP
2	81.78	51.37	9.32	0.17	30.84	40.00	-9.16	Peak
3	104.90	47.98	10.74	0.36	29.04	43.50	-14.46	Peak
4	185.79	49.69	10.95	0.57	32.23	43.50	-11.27	Peak
5	237.48	45.84	11.40	0.50	29.52	46.00	-16.48	Peak
6	434.07	37.10	15.58	0.59	26.05	46.00	-19.95	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Remark:

- (1) Measuring frequencies from 9 KHz to the 1 GHz, Radiated emission test from 9KHz to 30MHz was verified, and no any emission was found except system noise floor.
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.



Above 1 GHz Test Results:

LOW CH 36 (802.11 a Mode)/5180
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3647	61.17	-4.59	56.58	74	-17.42	peak
3647	46.28	-4.59	41.69	54	-12.31	AVG
10360	56.01	3.74	59.75	74	-14.25	peak
10360	41.13	3.74	44.87	54	-9.13	AVG
---	---	---	---	---	---	---
---	---	---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3647	60.18	-4.59	55.59	74	-18.41	peak
3647	45.39	-4.59	40.8	54	-13.20	AVG
10360	54.90	3.74	58.64	74	-15.36	peak
10360	39.52	3.74	43.26	54	-10.74	AVG
---	---	---	---	---	---	---
---	---	---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



MID CH40 (802.11 a Mode)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3647	60.66	-4.59	56.07	74	-17.93	peak
3647	46.13	-4.59	41.54	54	-12.46	AVG
10400	53.82	3.74	57.56	74	-16.44	peak
10400	38.51	3.74	42.25	54	-11.75	AVG
---	---	---	---	---	---	---
---	---	---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3647	61.05	-4.59	56.46	74	-17.54	peak
3647	45.70	-4.59	41.11	54	-12.89	AVG
10400	54.44	3.74	58.18	74	-15.82	peak
10400	40.10	3.74	43.84	54	-10.16	AVG
---	---	---	---	---	---	---
---	---	---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH 48 (802.11a Mode)/5240
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3647	60.22	-4.59	55.63	74	-18.37	peak
3647	45.33	-4.59	40.74	54	-13.26	AVG
10480	54.54	3.75	58.29	74	-15.71	peak
10480	40.29	3.75	44.04	54	-9.96	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3647	61.30	-4.59	56.71	74	-17.29	peak
3647	46.41	-4.59	41.82	54	-12.18	AVG
10480	54.81	3.75	58.56	74	-15.44	peak
10480	39.73	3.75	43.48	54	-10.52	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH 36 (802.11 n20 Mode)/5180
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3054	61.96	-4.79	57.17	74	-16.83	peak
3054	47.07	-4.79	42.28	54	-11.72	AVG
10360	54.62	3.74	58.36	74	-15.64	peak
10360	39.91	3.74	43.65	54	-10.35	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3054	60.53	-4.79	55.74	74	-18.26	peak
3054	45.82	-4.79	41.03	54	-12.97	AVG
10360	53.68	3.74	57.42	74	-16.58	peak
10360	38.82	3.74	42.56	54	-11.44	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



MID CH40 (802.11 n20 Mode)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3054	60.93	-4.79	56.14	74	-17.86	peak
3054	46.38	-4.79	41.59	54	-12.41	AVG
10400	55.07	3.74	58.81	74	-15.19	peak
10400	39.24	3.74	42.98	54	-11.02	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3054	59.33	-4.79	54.54	74	-19.46	peak
3054	44.51	-4.79	39.72	54	-14.28	AVG
10400	53.00	3.74	56.74	74	-17.26	peak
10400	37.77	3.74	41.51	54	-12.49	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH 48 (802.11 n20 Mode)/5240
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3054	61.13	-4.79	56.34	74	-17.66	peak
3054	45.95	-4.79	41.16	54	-12.84	AVG
10480	55.72	3.75	59.47	74	-14.53	peak
10480	40.40	3.75	44.15	54	-9.85	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3054	61.11	-4.79	56.32	74	-17.68	peak
3054	46.63	-4.79	41.84	54	-12.16	AVG
10480	54.63	3.75	58.38	74	-15.62	peak
10480	39.46	3.75	43.21	54	-10.79	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH38 (802.11n40 Mode)/5190
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3432	61.66	-5.21	56.45	74	-17.55	peak
3432	46.73	-5.21	41.52	54	-12.48	AVG
10380	56.99	3.74	60.73	74	-13.27	peak
10380	41.80	3.74	45.54	54	-8.46	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3432	60.48	-5.21	55.27	74	-18.73	peak
3432	45.52	-5.21	40.31	54	-13.69	AVG
10380	53.81	3.74	57.55	74	-16.45	peak
10380	38.94	3.74	42.68	54	-11.32	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH46 (802.11n40 Mode)/5230
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3432	60.13	-5.21	54.92	74	-19.08	peak
3432	45.76	-5.21	40.55	54	-13.45	AVG
10460	55.36	3.75	59.11	74	-14.89	peak
10460	41.32	3.75	45.07	54	-8.93	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3432	60.59	-5.21	55.38	74	-18.62	peak
3432	45.44	-5.21	40.23	54	-13.77	AVG
10460	53.77	3.75	57.52	74	-16.48	peak
10460	38.68	3.75	42.43	54	-11.57	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH 42 (802.11ac Mode)/5210
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
2921	61.26	-6.18	55.08	74	-18.92	peak
2921	45.96	-6.18	39.78	54	-14.22	AVG
10420	52.77	3.75	56.52	74	-17.48	peak
10420	37.86	3.75	41.61	54	-12.39	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
2921	61.14	-6.18	54.96	74	-19.04	peak
2921	45.97	-6.18	39.79	54	-14.21	AVG
10420	53.42	3.75	57.17	74	-16.83	peak
10420	38.51	3.75	42.26	54	-11.74	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH 149 (802.11 a Mode)/5745
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3489	61.30	-4.83	56.47	74	-17.53	peak
3489	46.16	-4.83	41.33	54	-12.67	AVG
11490	54.33	3.75	58.08	74	-15.92	peak
11490	39.59	3.75	43.34	54	-10.66	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3489	61.35	-4.83	56.52	74	-17.48	peak
3489	46.48	-4.83	41.65	54	-12.35	AVG
11490	53.78	3.75	57.53	74	-16.47	peak
11490	38.97	3.75	42.72	54	-11.28	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



MID CH157 (802.11 a Mode)/5785

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3489	59.47	-4.83	54.64	74	-19.36	peak
3489	45.37	-4.83	40.54	54	-13.46	AVG
10570	54.51	3.77	58.28	74	-15.72	peak
10570	39.59	3.77	43.36	54	-10.64	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3489	59.34	-4.83	54.51	74	-19.49	peak
3489	44.75	-4.83	39.92	54	-14.08	AVG
10570	54.39	3.77	58.16	74	-15.84	peak
10570	39.10	3.77	42.87	54	-11.13	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH 165 (802.11a Mode)/5825
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3489	60.08	-4.83	55.25	74	-18.75	peak
3489	45.55	-4.83	40.72	54	-13.28	AVG
11650	55.22	3.82	59.04	74	-14.96	peak
11650	40.34	3.82	44.16	54	-9.84	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3489	59.07	-4.83	54.24	74	-19.76	peak
3489	44.31	-4.83	39.48	54	-14.52	AVG
11650	53.81	3.82	57.63	74	-16.37	peak
11650	38.29	3.82	42.11	54	-11.89	AVG
---	---	---	---	---	---	---
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH 149 (802.11 n20 Mode)/5745
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3524	60.35	-4.67	55.68	74	-18.32	peak
3524	45.93	-4.67	41.26	54	-12.74	AVG
11490	53.71	3.75	57.46	74	-16.54	peak
11490	38.53	3.75	42.28	54	-11.72	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3524	59.40	-4.67	54.73	74	-19.27	peak
3524	45.53	-4.67	40.86	54	-13.14	AVG
11490	53.41	3.75	57.16	74	-16.84	peak
11490	37.30	3.75	41.05	54	-12.95	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



MID CH157 (802.11 n20 Mode)/5785

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3524	61.18	-4.67	56.51	74	-17.49	peak
3524	45.99	-4.67	41.32	54	-12.68	AVG
10570	54.65	3.77	58.42	74	-15.58	peak
10570	39.94	3.77	43.71	54	-10.29	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3524	60.31	-4.67	55.64	74	-18.36	peak
3524	45.20	-4.67	40.53	54	-13.47	AVG
10570	53.79	3.77	57.56	74	-16.44	peak
10570	38.50	3.77	42.27	54	-11.73	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH 165 (802.11 n20 Mode)/5825
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3524	59.59	-4.67	54.92	74	-19.08	peak
3524	44.38	-4.67	39.71	54	-14.29	AVG
11650	54.61	3.82	58.43	74	-15.57	peak
11650	39.31	3.82	43.13	54	-10.87	AVG
---	---	---	---	---	---	---
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3524	58.73	-4.67	54.06	74	-19.94	peak
3524	43.35	-4.67	38.68	54	-15.32	AVG
11650	54.10	3.82	57.92	74	-16.08	peak
11650	39.22	3.82	43.04	54	-10.96	AVG
---	---	---	---	---	---	---
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH151 (802.11n40 Mode)/5755
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3748	60.21	-4.19	56.02	74	-17.98	peak
3748	45.54	-4.19	41.35	54	-12.65	AVG
11510	54.78	3.79	58.57	74	-15.43	peak
11510	39.32	3.79	43.11	54	-10.89	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3748	58.87	-4.19	54.68	74	-19.32	peak
3748	44.01	-4.19	39.82	54	-14.18	AVG
11510	53.78	3.79	57.57	74	-16.43	peak
11510	38.64	3.79	42.43	54	-11.57	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH159 (802.11n40 Mode)/5795
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3748	59.43	-4.19	55.24	74	-18.76	peak
3748	44.70	-4.19	40.51	54	-13.49	AVG
11590	55.54	3.80	59.34	74	-14.66	peak
11590	40.63	3.80	44.43	54	-9.57	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
3748	58.25	-4.19	54.06	74	-19.94	peak
3748	44.01	-4.19	39.82	54	-14.18	AVG
11590	54.21	3.80	58.01	74	-15.99	peak
11590	38.77	3.80	42.57	54	-11.43	AVG
---	---	---	---	---	---	---
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH 155 (802.11ac Mode)/5775
Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3189	60.21	-5.47	54.74	74	-19.26	peak
3189	45.29	-5.47	39.82	54	-14.18	AVG
11550	53.64	3.79	57.43	74	-16.57	peak
11550	38.47	3.79	42.26	54	-11.74	AVG
---	---	---	---	---	---	---
---	---	---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
3189	59.06	-5.47	53.59	74	-20.41	peak
3189	43.93	-5.47	38.46	54	-15.54	AVG
11550	52.89	3.79	56.68	74	-17.32	peak
11550	37.78	3.79	41.57	54	-12.43	AVG
---	---	---	---	---	---	---
---	---	---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



5 BAND EDGE

5.1 Limits

FCC PART 15.247 Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Except as shown in paragraph (7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

1. For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
2. For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
3. For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
4. For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.
5. The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
6. Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
7. The provisions of §15.205 apply to intentional radiators operating under this section.
8. When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits

5.2 Test Procedure

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW to 100KHz and VBW to 300KHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength. The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW to 100 KHz and VBW to 300 KHz, to measure the conducted peak band edge.

5.3 Test Result

PASS.



Radiated Band Edge Test:
Operation Mode: 802.11a Mode TX CH Low with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5150	53.23	-2.49	50.74	74	-23.26	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5150	52.77	-2.49	50.28	74	-23.72	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH High with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5250	54.69	-2.28	52.41	74	-21.59	peak
5250	/	-2.28	/	54	/	AVG
5350	49.63	-2.11	47.52	74	-26.48	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5250	54.21	-2.28	51.93	74	-22.07	peak
5250	/	-2.28	/	54	/	AVG
5350	48.79	-2.11	46.68	74	-27.32	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH Low with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5460	48.70	-2.05	46.65	74	-27.35	peak
5460	/	-2.05	/	54	/	AVG
5725	52.50	-1.98	50.52	74	-23.48	peak
5725	/	-1.98	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5460	48.23	-2.05	46.18	74	-27.82	peak
5460	/	-2.05	/	54	/	AVG
5725	51.82	-1.98	49.84	74	-24.16	peak
5725	/	-1.98	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode:TX CH High with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5850	52.34	-1.93	50.41	74	-23.59	peak
5850	/	-1.93	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5850	51.27	-1.93	49.34	74	-24.66	peak
5850	/	-1.93	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: 802.11n20 Mode TX CH Low with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5150	51.65	-2.49	49.16	74	-24.84	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5150	51.28	-2.49	48.79	74	-25.21	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH High with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5250	55.01	-2.28	52.73	74	-21.27	peak
5250	/	-2.28	/	54	/	AVG
5350	50.49	-2.11	48.38	74	-25.62	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5250	53.93	-2.28	51.65	74	-22.35	peak
5250	/	-2.28	/	54	/	AVG
5350	49.32	-2.11	47.21	74	-26.79	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH Low with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5460	53.18	-2.05	51.13	74	-22.87	peak
5460	/	-2.05	/	54	/	AVG
5725	48.55	-1.98	46.57	74	-27.43	peak
5725	/	-1.98	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5460	52.54	-2.05	50.49	74	-23.51	peak
5460	/	-2.05	/	54	/	AVG
5725	48.04	-1.98	46.06	74	-27.94	peak
5725	/	-1.98	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH High with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5850	50.50	-1.93	48.57	74	-25.43	peak
5850	/	-1.93	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5850	48.97	-1.93	47.04	74	-26.96	peak
5850	/	-1.93	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: 802.11 n40 Mode TX CH Low with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5150	52.91	-2.49	50.42	74	-23.58	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5150	52.74	-2.49	50.25	74	-23.75	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH High with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5250	53.87	-2.28	51.59	74	-22.41	peak
5250	/	-2.28	/	54	/	AVG
5350	49.27	-2.11	47.16	74	-26.84	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5250	52.56	-2.28	50.28	74	-23.72	peak
5250	/	-2.28	/	54	/	AVG
5350	48.56	-2.11	46.45	74	-27.55	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH Low with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5460	52.11	-2.05	50.06	74	-23.94	peak
5460	/	-2.05	/	54	/	AVG
5725	48.62	-1.98	46.64	74	-27.36	peak
5725	/	-1.98	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5460	51.81	-2.05	49.76	74	-24.24	peak
5460	/	-2.05	/	54	/	AVG
5725	47.89	-1.98	45.91	74	-28.09	peak
5725	/	-1.98	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH High with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5850	49.12	-1.93	47.19	74	-26.81	peak
5850	/	-1.93	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5850	48.40	-1.93	46.47	74	-27.53	peak
5850	/	-1.93	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: 802.11ac Mode TX CH Low with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5150	50.90	-2.49	48.41	74	-25.59	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5150	50.17	-2.49	47.68	74	-26.32	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH High with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5250	54.12	-2.28	51.84	74	-22.16	peak
5250	/	-2.28	/	54	/	AVG
5350	49.54	-2.11	47.43	74	-26.57	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5250	52.44	-2.28	50.16	74	-23.84	peak
5250	/	-2.28	/	54	/	AVG
5350	48.82	-2.11	46.71	74	-27.29	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH Low with 5.8G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5460	52.62	-2.05	50.57	74	-23.43	peak
5460	/	-2.05	/	54	/	AVG
5725	49.30	-1.98	47.32	74	-26.68	peak
5725	/	-1.98	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5460	51.33	-2.05	49.28	74	-24.72	peak
5460	/	-2.05	/	54	/	AVG
5725	48.92	-1.98	46.94	74	-27.06	peak
5725	/	-1.98	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH High with 5.2G
Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5850	48.78	-1.93	46.85	74	-27.15	peak
5850	/	-1.93	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
5850	48.34	-1.93	46.41	74	-27.59	peak
5850	/	-1.93	/	54	/	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



6 FREQUENCY STABILITY

6.1 Test Limit

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 users manual.

6.2 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyser. EUT have transmitted absence of modulation signal and fixed channelize. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW =10 kHz with peak detector and maxhold settings. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c-f)/f_c \times 10^6$ ppm and the limit is less than ± 20 ppm (IEEE802.11a specification). The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
2. Extreme temperature rule is $-30^{\circ}\text{C}\sim 50^{\circ}\text{C}$.

6.3 Measurement Equipment Used

Same as Radiated Emission Measurement

6.4 Test Result

PASS

All the test modes completed for test.



Mode	Voltage (V)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
5.2G Band	132 V	5179.981	19	5239.984	16
	120 V	5179.982	18	5239.981	19
	108 V	5179.981	19	5239.972	28
5.8G Band	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
5.8G Band	132 V	5744.976	24	5824.977	23
	120 V	5744.978	22	5824.979	21
	108 V	5744.978	22	5824.979	21

Mode	Temperature (°C)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
5.2G Band	-30	5179.953	47	5239.952	48
	-20	5179.962	38	5239.966	34
	-10	5179.974	26	5239.975	25
	0	5179.976	27	5239.975	25
	10	5179.978	22	5239.975	25
	20	5179.988	12	5239.985	15
	30	5179.986	14	5239.981	19
	40	5179.979	21	5239.978	22
	50	5179.977	23	5239.974	26
5.8G Band	Temperature (°C)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
5.8G Band	-30	5744.956	44	5824.952	48
	-20	5744.961	39	5824.959	41
	-10	5744.971	29	5824.968	32
	0	5744.975	25	5824.974	26
	10	5744.982	18	5824.985	15
	20	5744.987	13	5824.989	11
	30	5744.985	15	5824.985	15
	40	5744.976	24	5824.976	24
	50	5744.973	27	5824.978	22



7 OCCUPIED BANDWIDTH MEASUREMENT

7.1 Test Limit

Please refer section 15.407

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz

7.2 Test Procedure

Details see the KDB558074 DTS Meas Guidance V03

a) The bandwidth is measured at an amplitude level reduced 26dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

b) The test receiver set $RBW = 1-5\% EBW$, $VBW \geq 3RBW$, Sweep time set auto, detail see the test plot.

7.3 Measurement Equipment Used

Same as Radiated Emission Measurement

7.4 Test Result

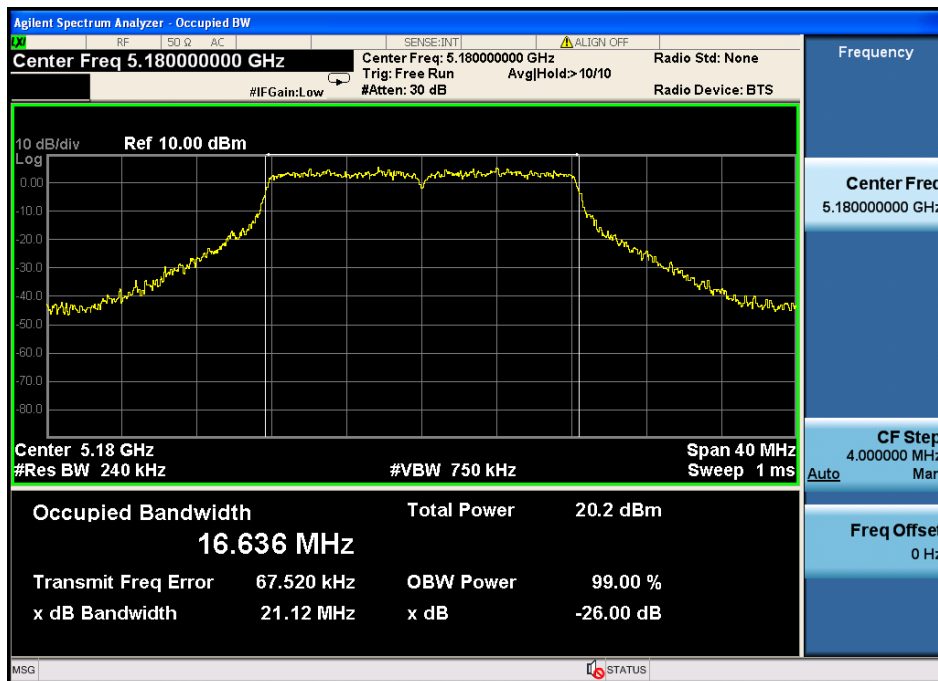
PASS

All the test modes completed for test.



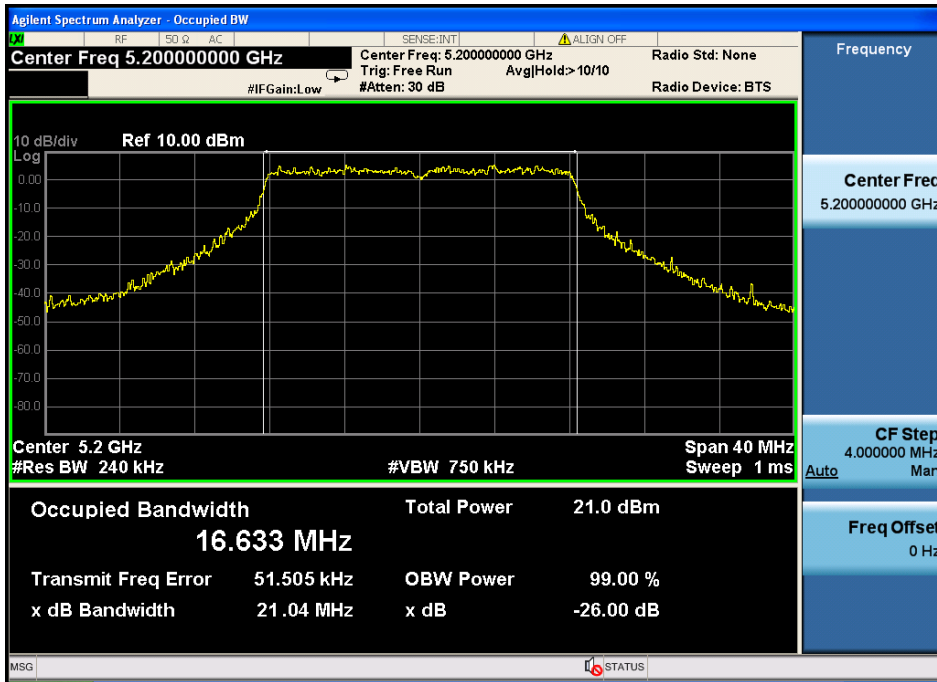
TX 802.11a Mode with 5.2G			
Frequency	26dB Bandwidth (MHz)	Channel Separation (MHz)	Result
5180 MHz	21.12	/	PASS
5200 MHz	21.04	/	PASS
5240 MHz	22.87	/	PASS

CH: 5180MHz

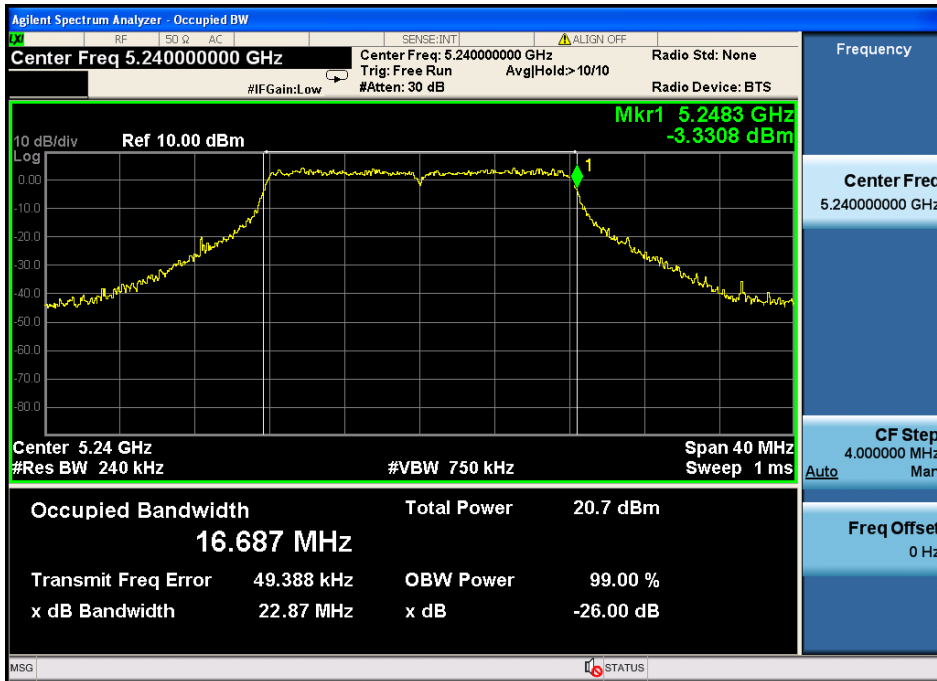




CH: 5200MHz



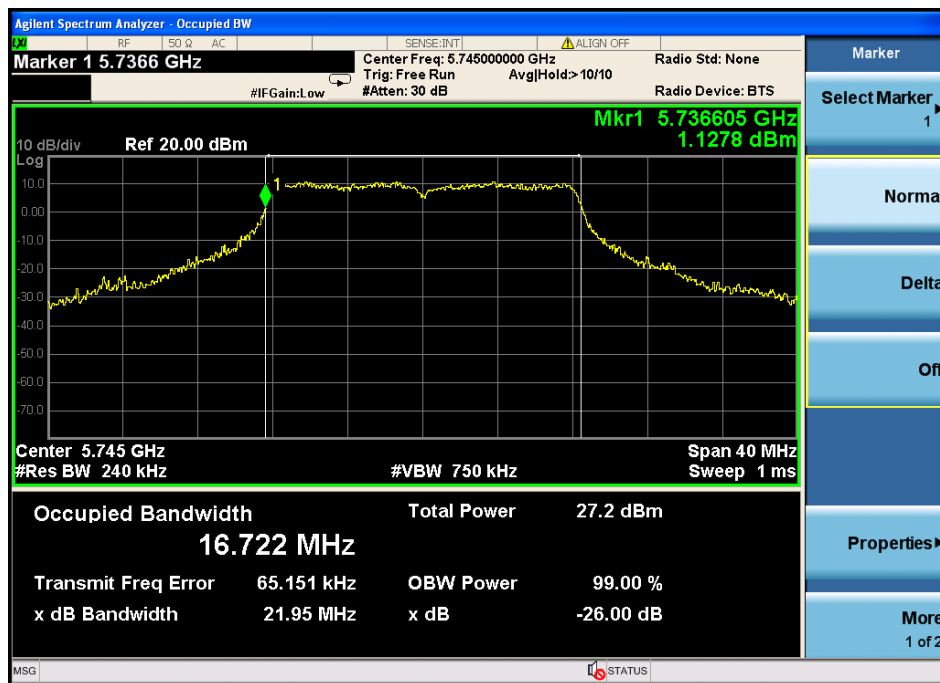
CH: 5240MHz





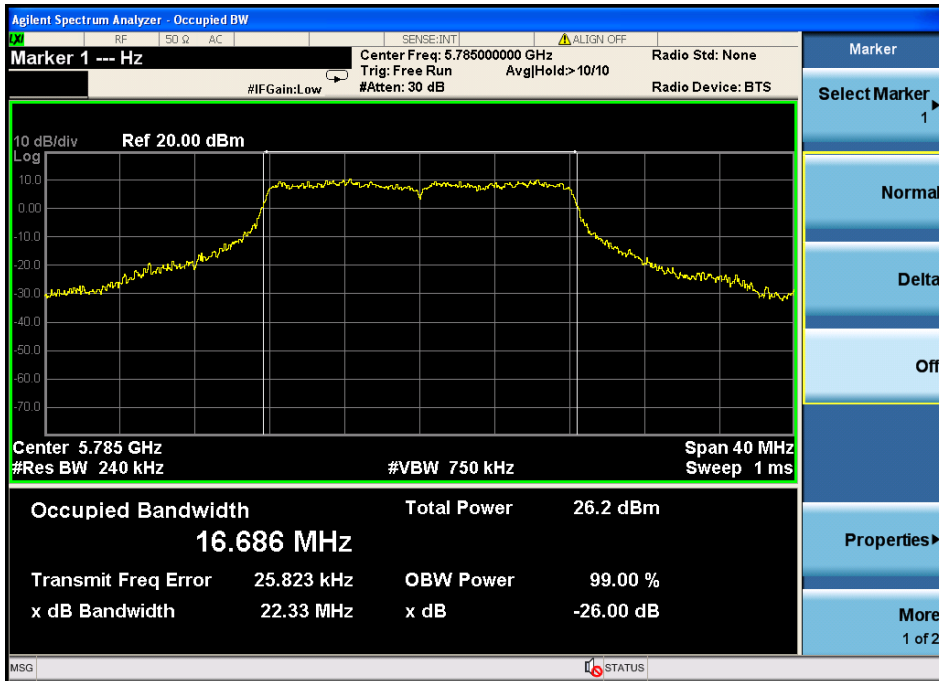
TX 802.11a Mode with 5.8G			
Frequency	26dB Bandwidth (MHz)	Channel Separation (MHz)	Result
5745 MHz	21.95	/	PASS
5785 MHz	22.33	/	PASS
5825 MHz	21.12	/	PASS

CH: 5745MHz

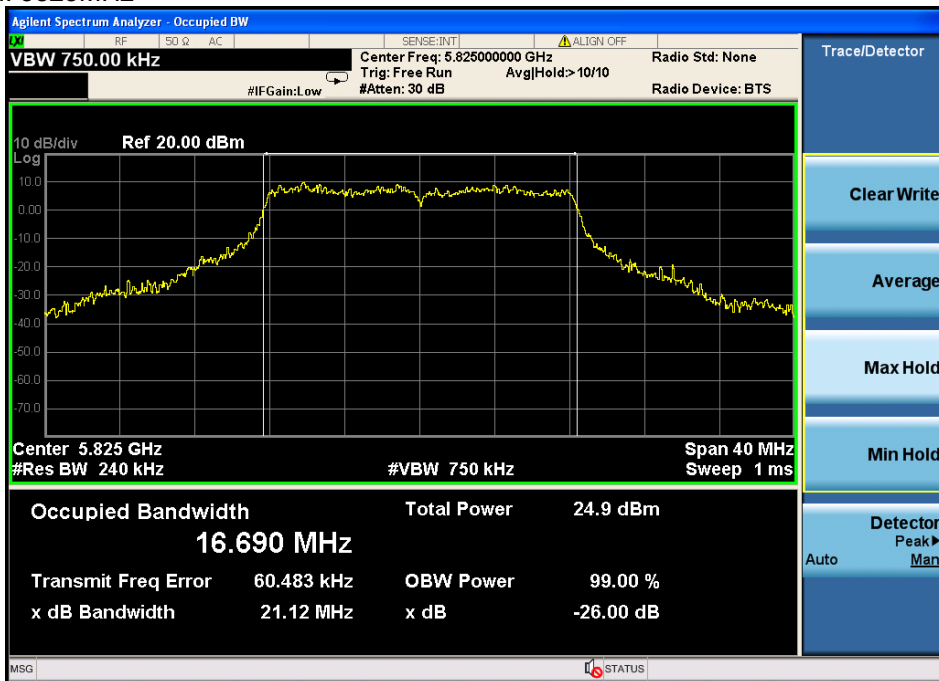




CH: 5785MHz



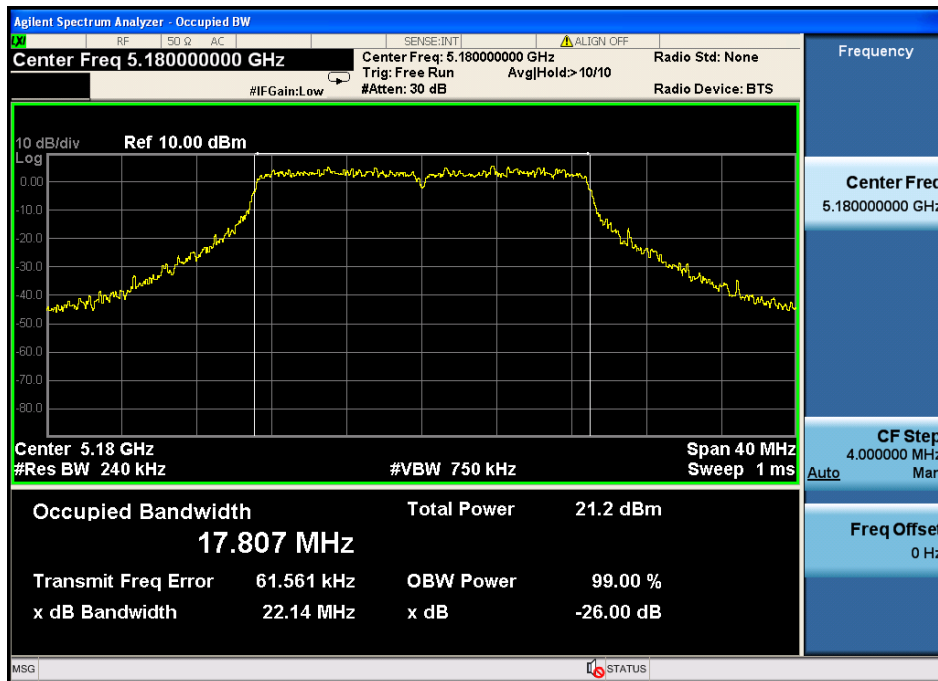
CH: 5825MHz





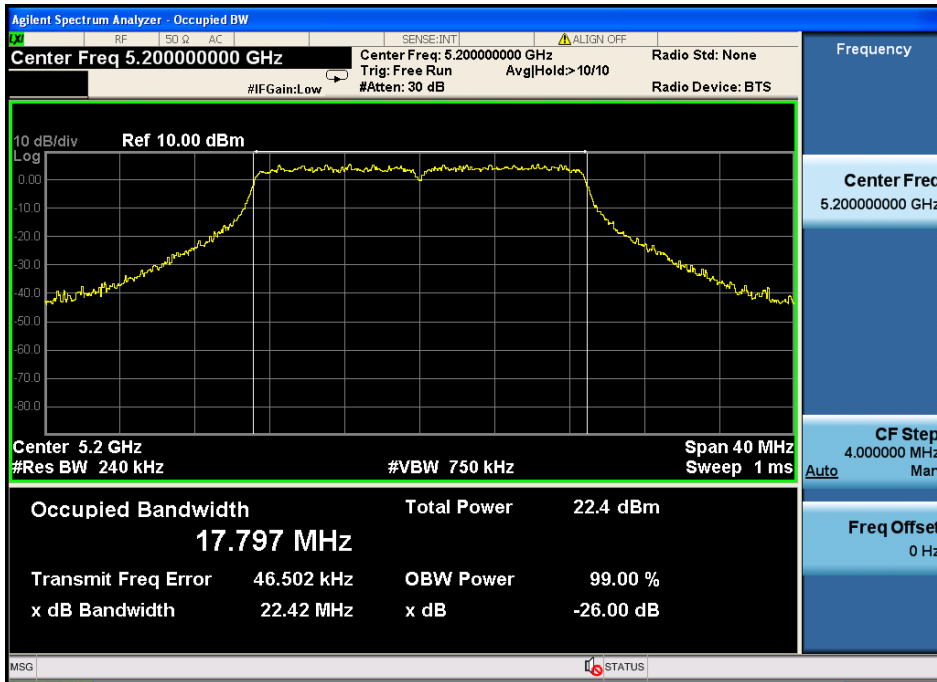
TX 802.11n20 Mode with 5.2G			
Frequency	26dB Bandwidth (MHz)	Channel Separation (MHz)	Result
5180 MHz	22.14	/	PASS
5200 MHz	22.42	/	PASS
5240 MHz	22.72	/	PASS

CH: 5180MHz

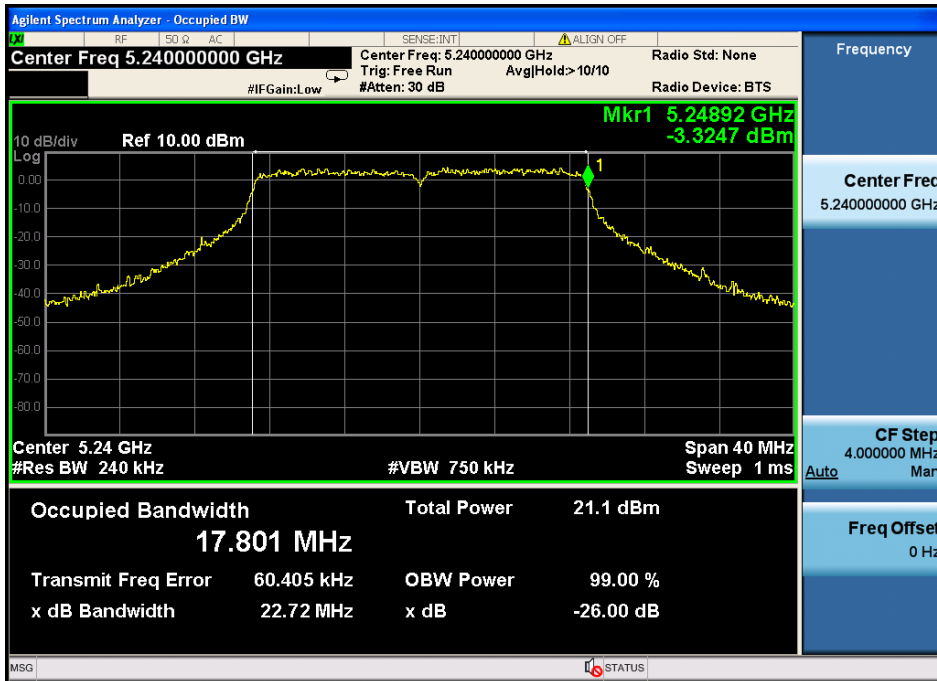




CH: 5200MHz



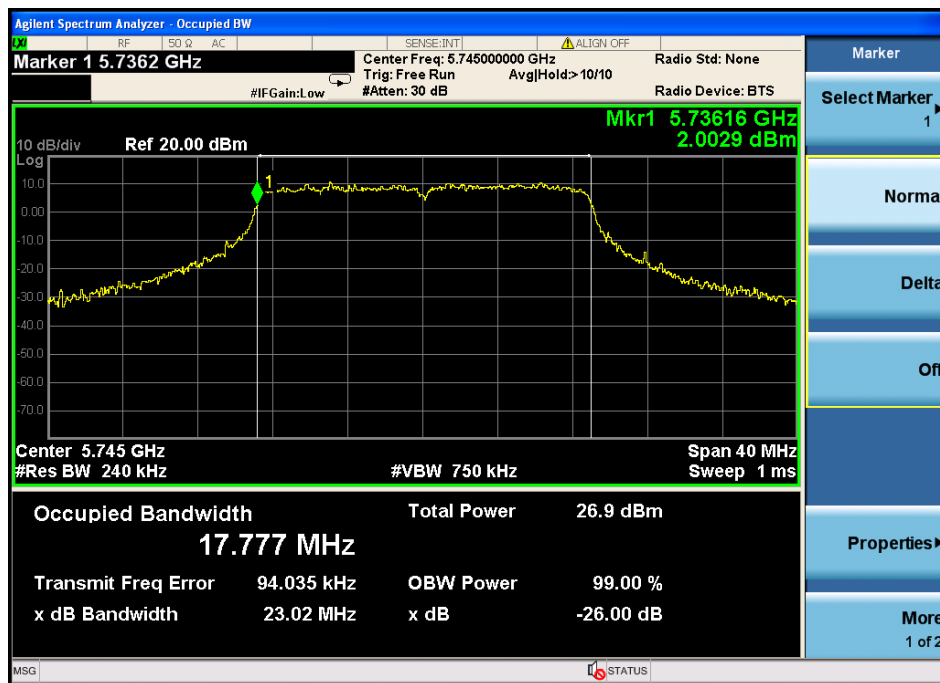
CH: 5240MHz





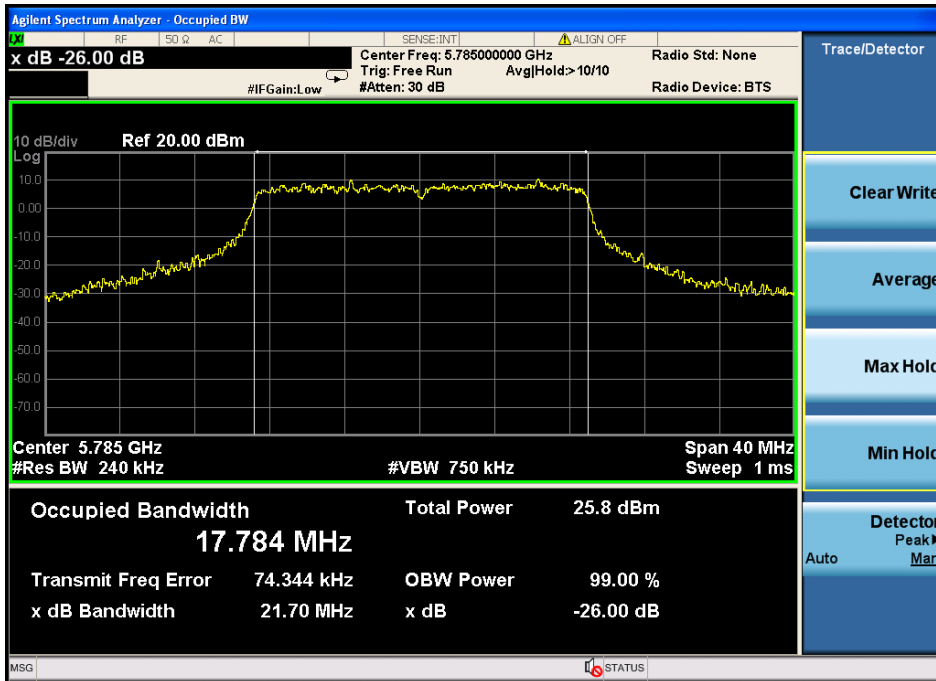
TX 802.11n20 Mode with 5.8G			
Frequency	26dB Bandwidth (MHz)	Channel Separation (MHz)	Result
5745 MHz	23.02	/	PASS
5785 MHz	21.70	/	PASS
5825 MHz	22.31	/	PASS

CH: 5745MHz

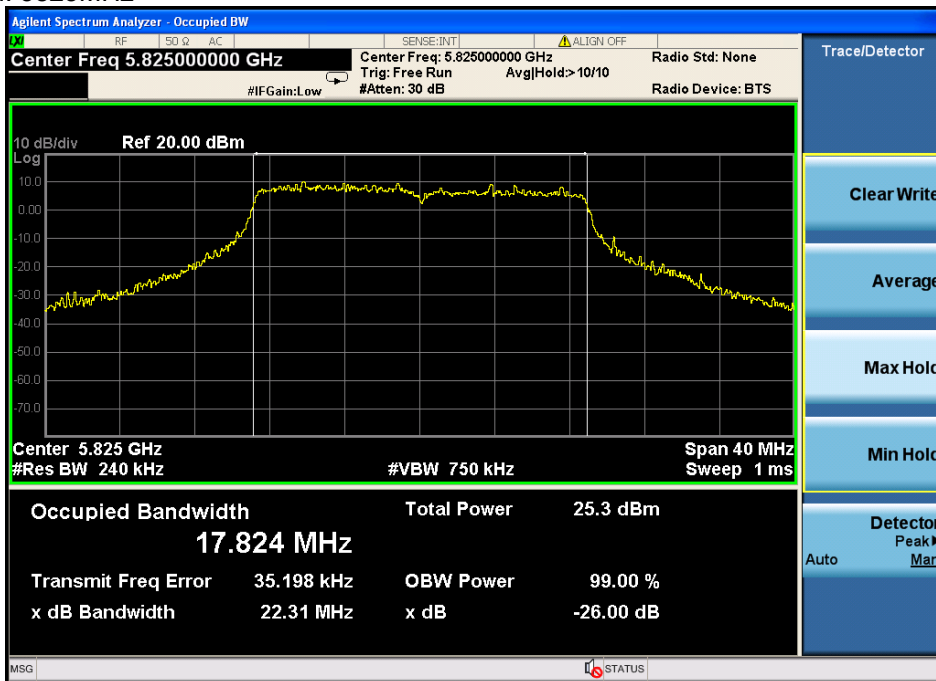




CH: 5785MHz



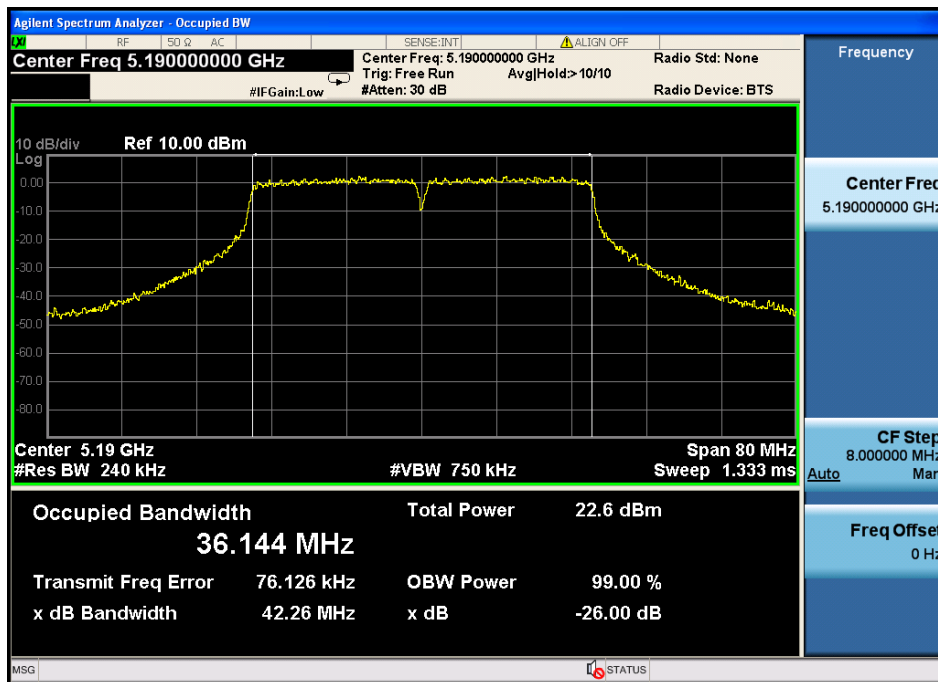
CH: 5825MHz





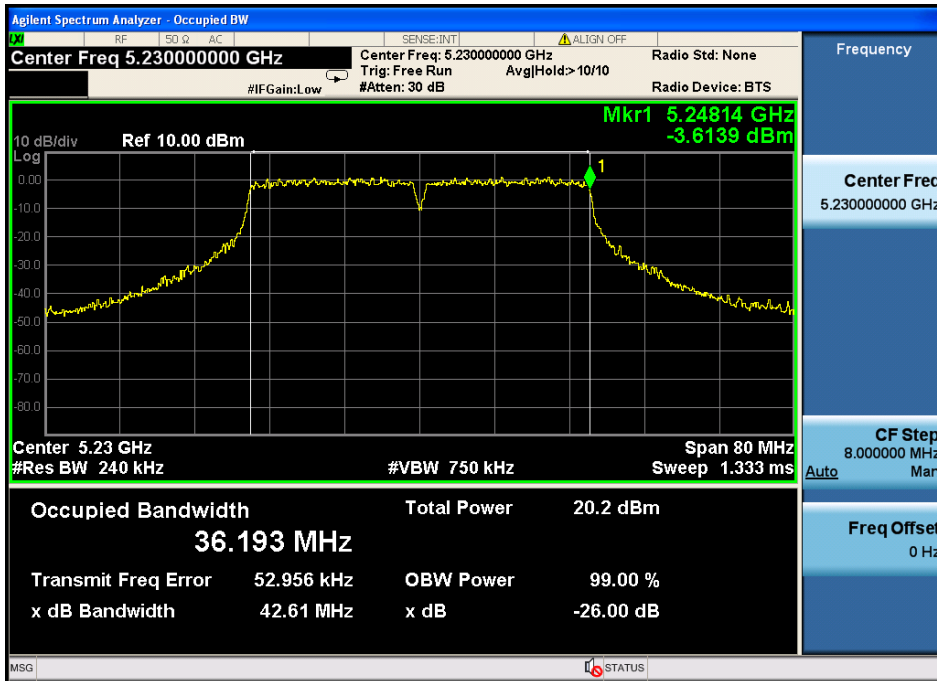
TX 802.11n40 Mode			
Frequency	26dB Bandwidth (MHz)	Channel Separation (MHz)	Result
5190 MHz	42.26	/	PASS
5230 MHz	42.61	/	PASS
5755 MHz	43.01	/	PASS
5795 MHz	42.02	/	PASS

CH: 5190 MHz

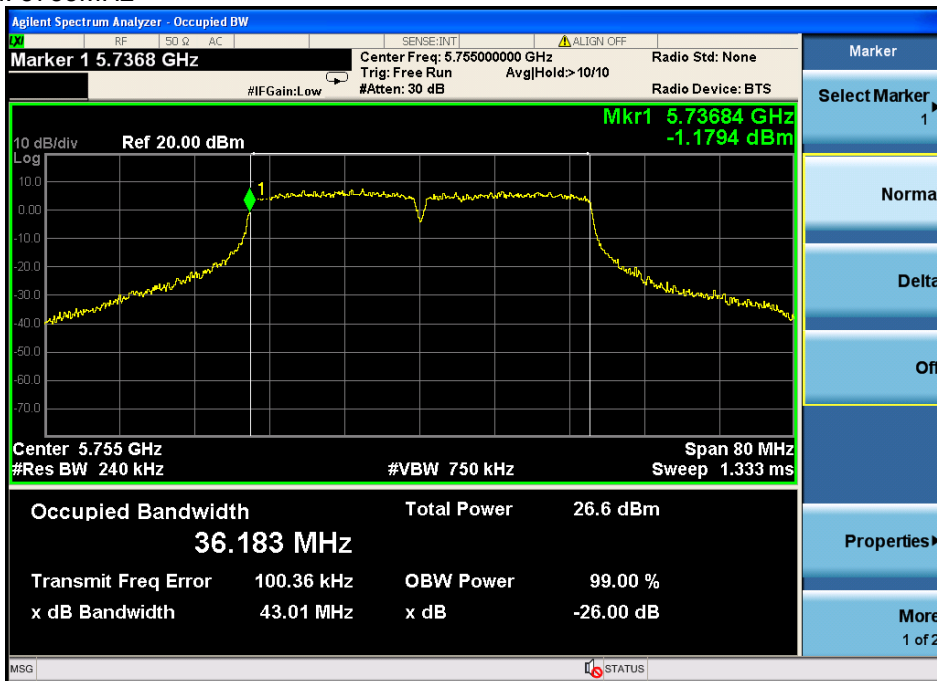




CH: 5230 MHz

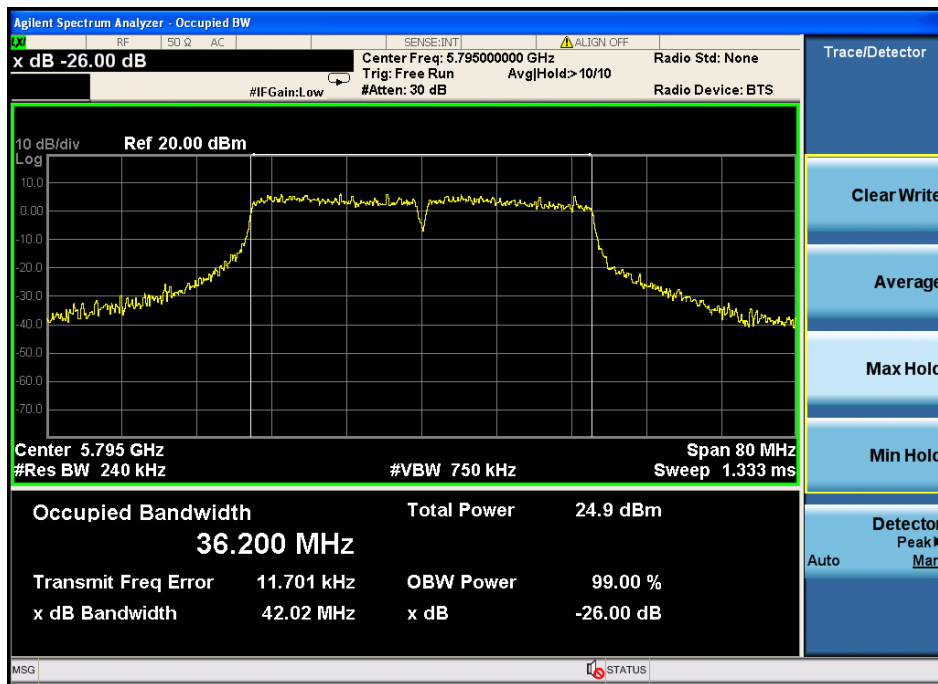


CH: 5755MHz





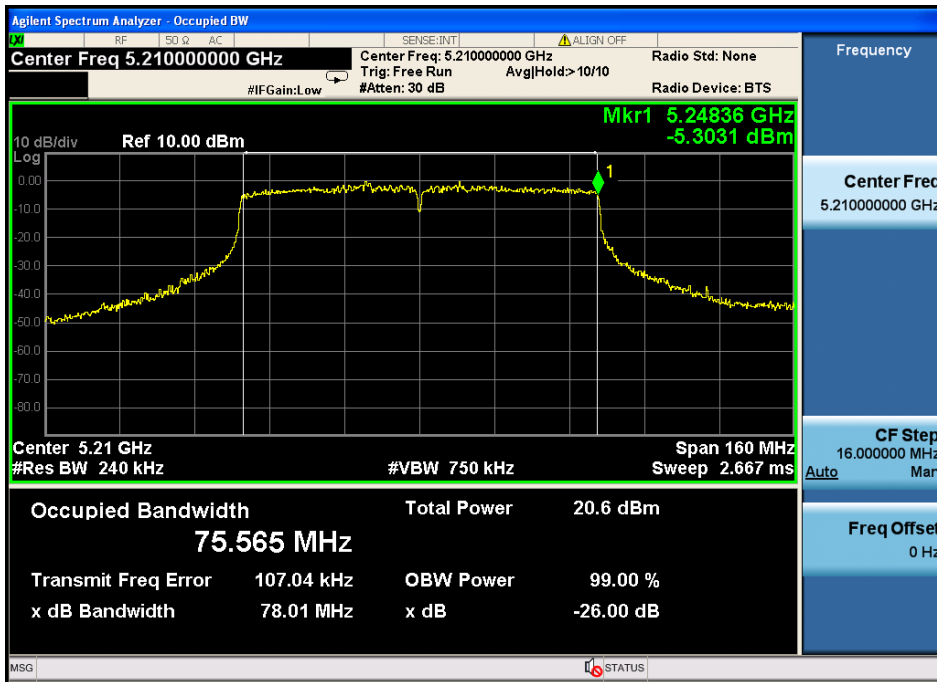
CH: 5795MHz



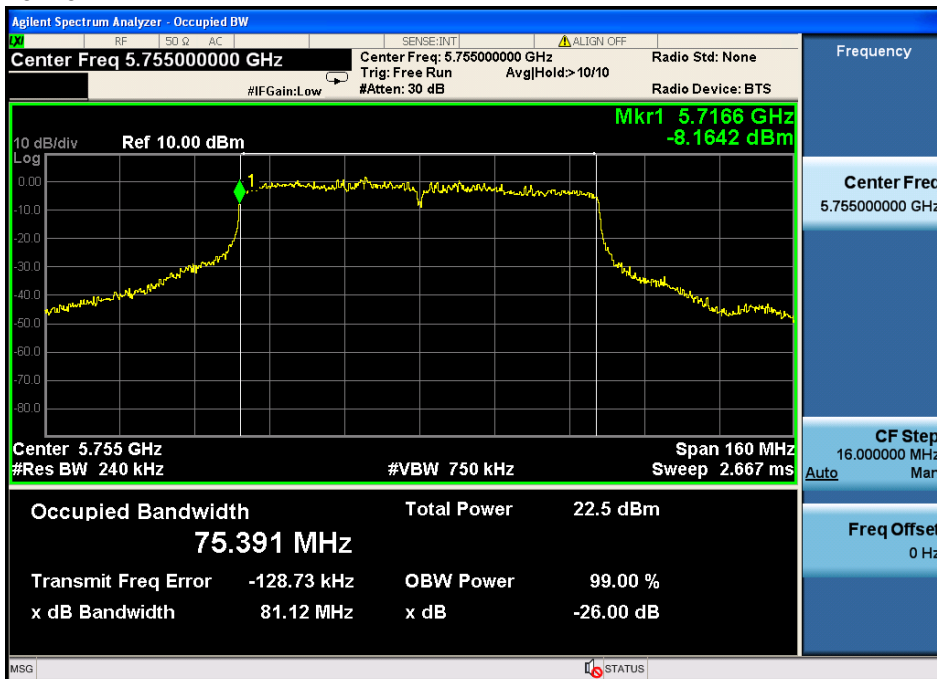


TX 802.11ac Mode			
Frequency	26dB Bandwidth (MHz)	Channel Separation (MHz)	Result
5210 MHz	78.01	/	PASS
5775 MHz	81.12	/	PASS

CH: 5210MHz



CH: 5775MHz





8 POWER SPECTRAL DENSITY TEST

8.1 Test Limit

Band 5150-5250MHz

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

Band 5725-5850MHz

The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band

8.2 Test Procedure

Details see the KDB558074 DTS Meas Guidance V03

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, span=5-30%EBW, detail see the test plot.
4. Record the max reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.

8.3 Measurement Equipment Used

Same as Radiated Emission Measurement

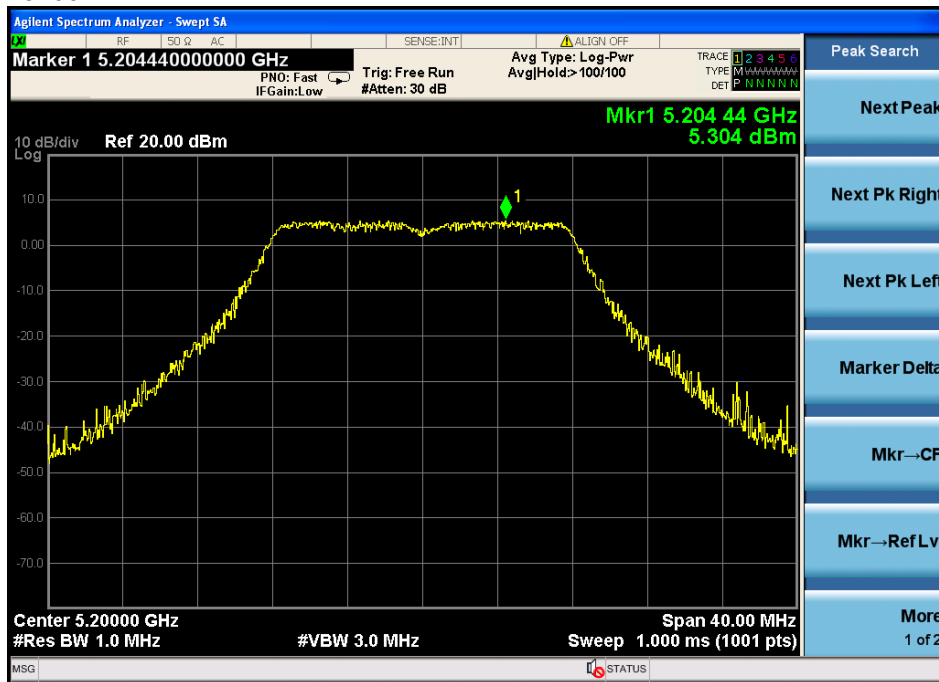
8.4 Test Result

PASS

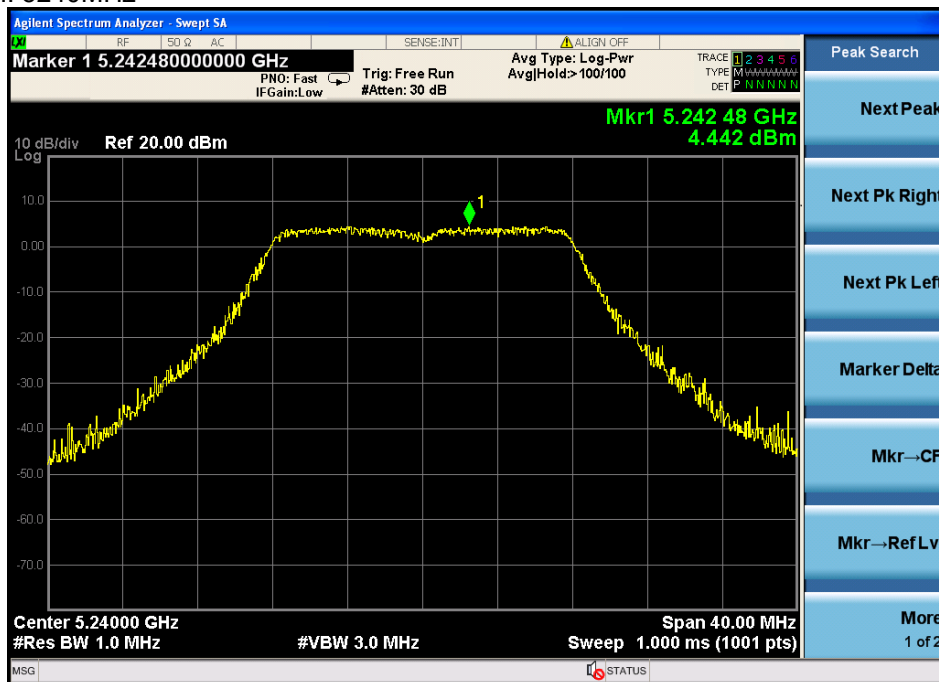
All the test modes completed for test.



CH: 5200MHz



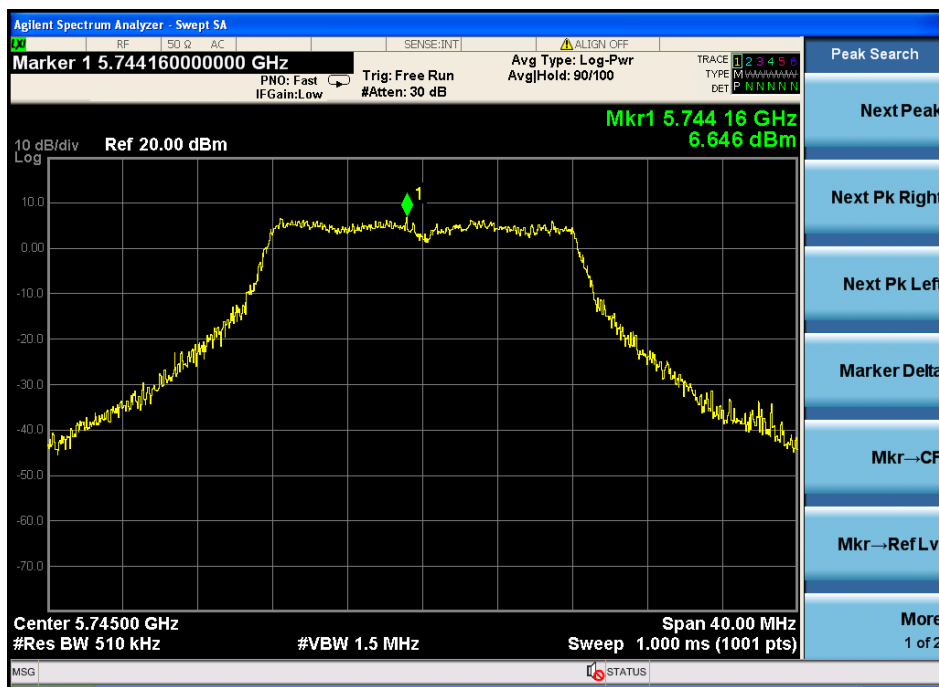
CH: 5240MHz





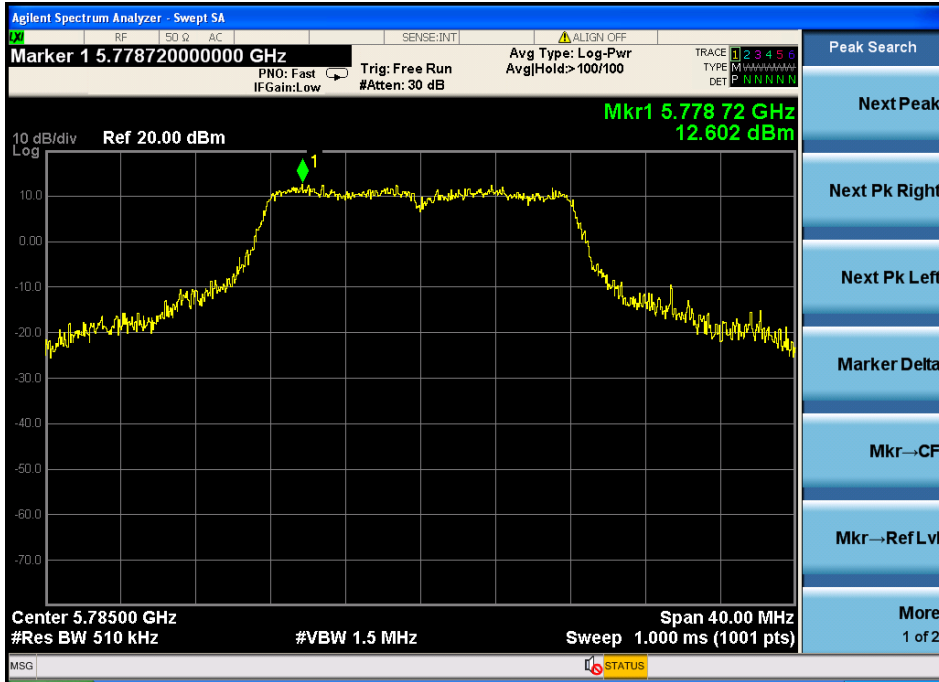
TX 802.11a Mode with 5.8G			
Frequency	Power Density (dBm)	Limit (dBm)	Result
5745 MHz	6.646	30	PASS
5785 MHz	12.602	30	PASS
5825 MHz	5.081	30	PASS

CH: 5745MHz

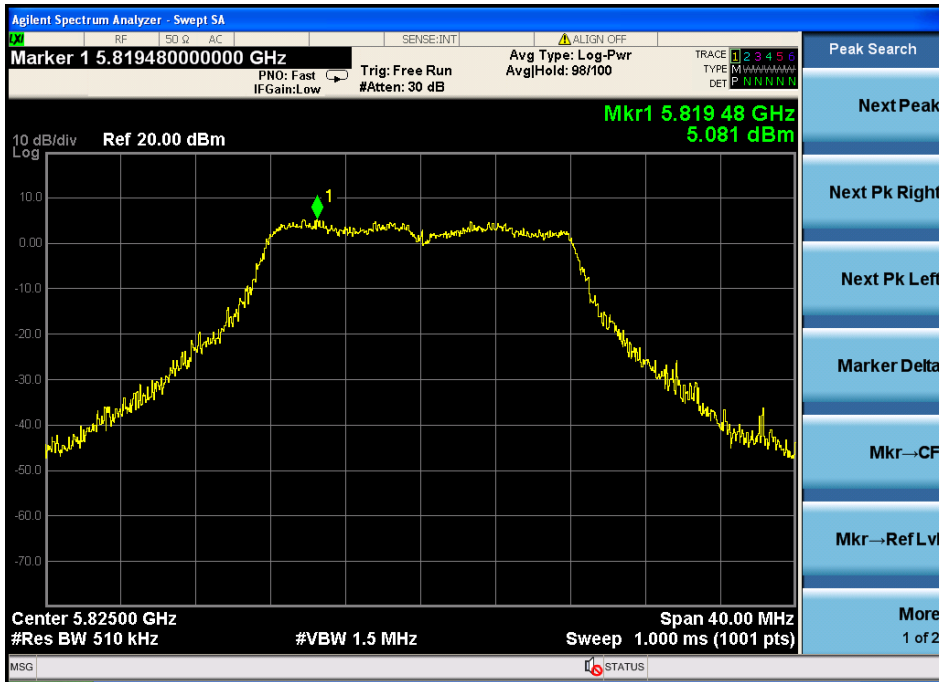




CH: 5785MHz



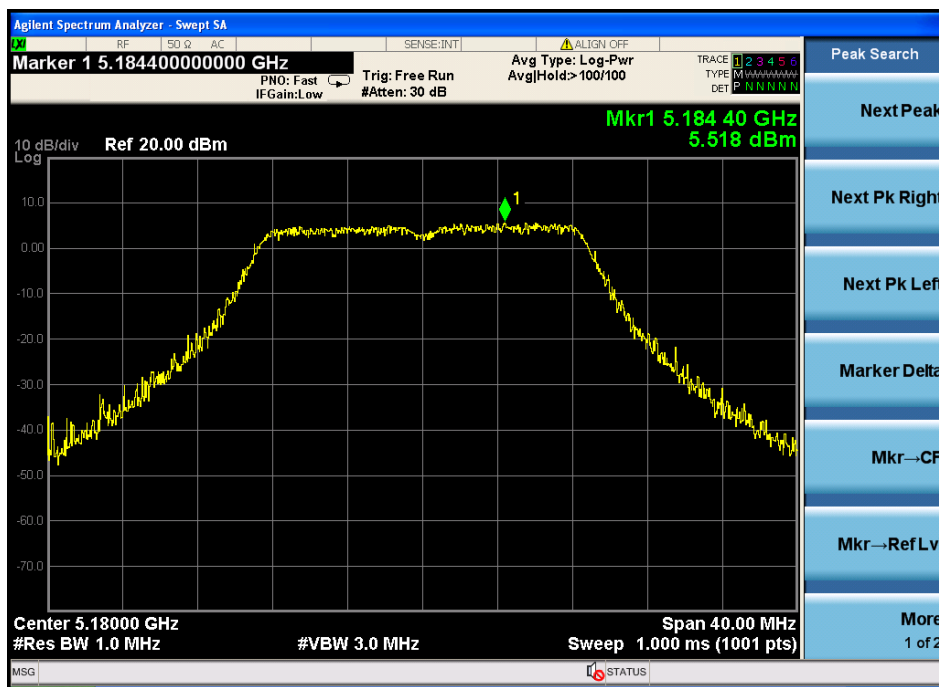
CH: 5825MHz





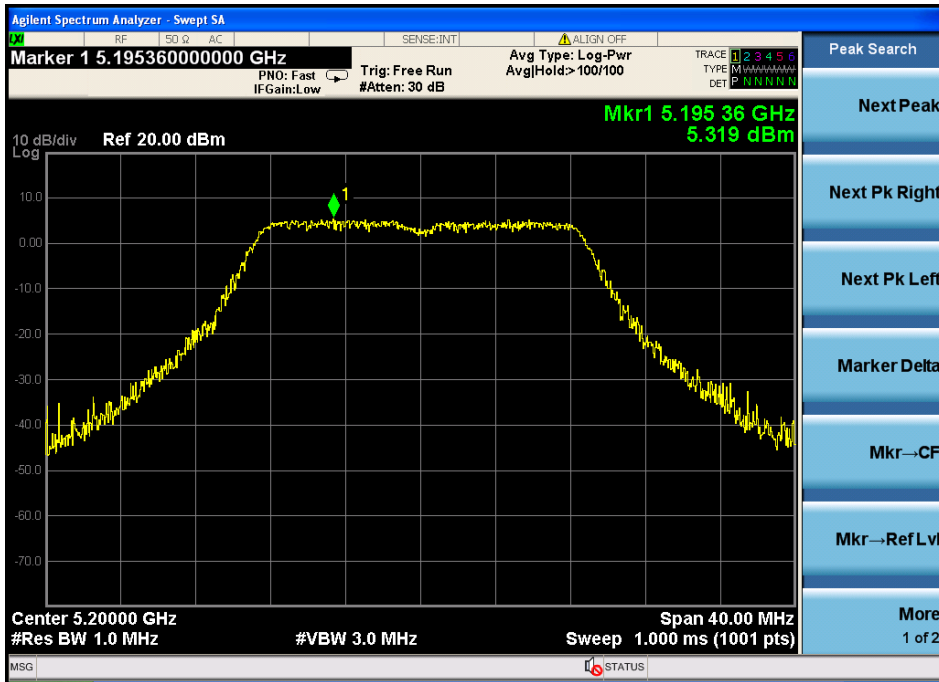
TX 802.11n20 Mode with 5.2G			
Frequency	Power Density (dBm)	Limit (dBm)	Result
5180 MHz	5.518	11	PASS
5200 MHz	5.319	11	PASS
5240 MHz	4.135	11	PASS

CH: 5180MHz

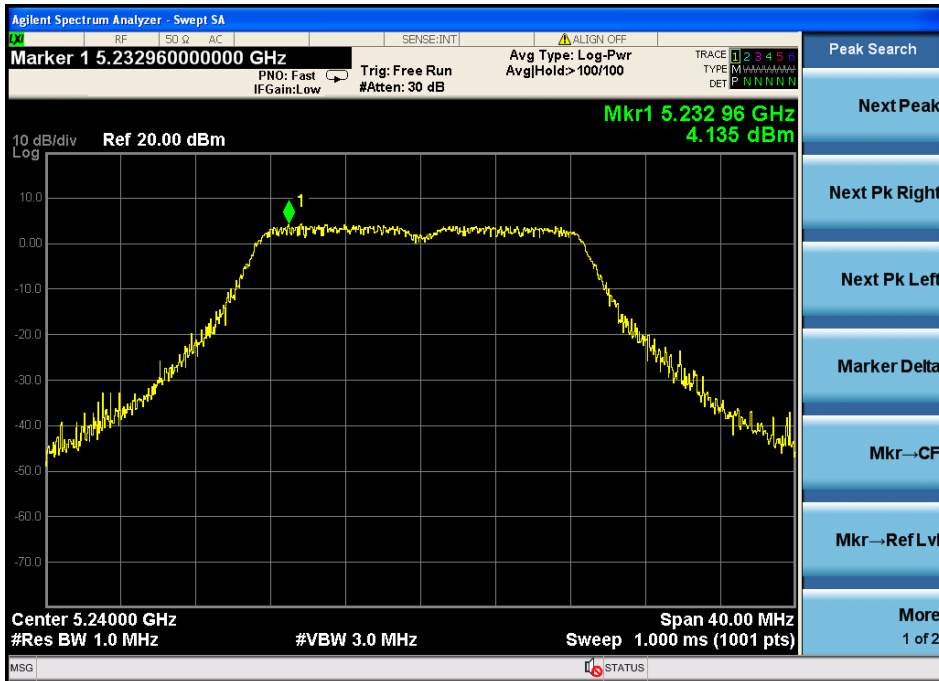




CH: 5200MHz



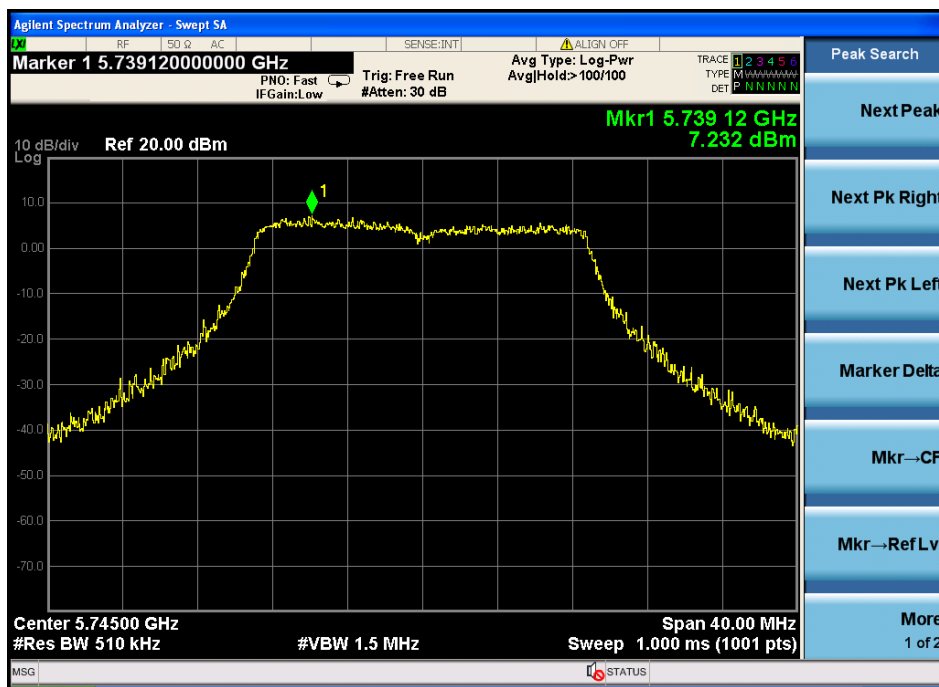
CH: 5240MHz





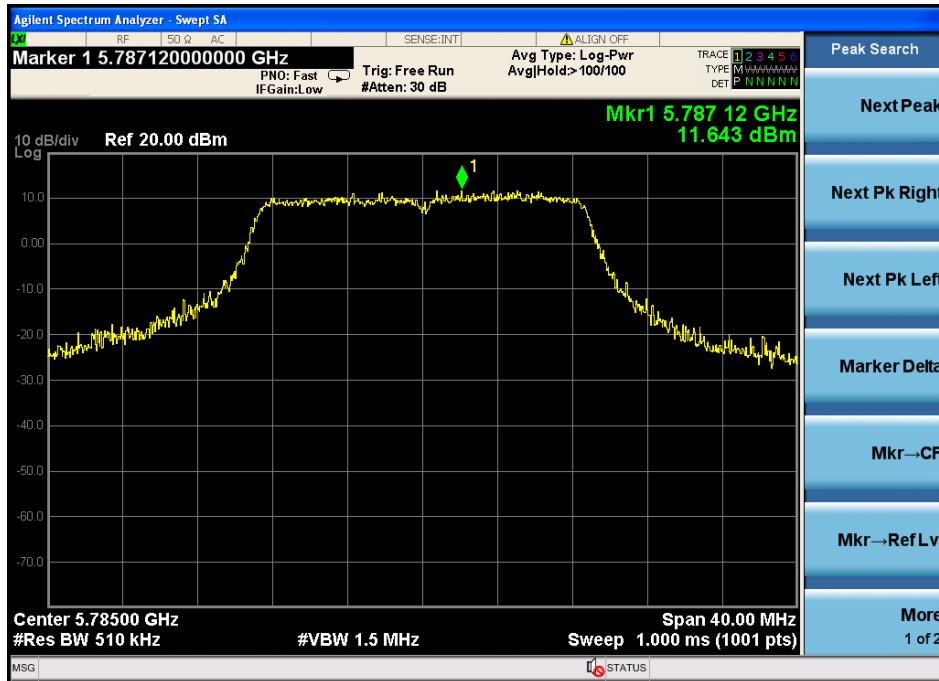
TX 802.11n20 Mode with 5.8G			
Frequency	Power Density (dBm)	Limit (dBm)	Result
5745 MHz	7.232	30	PASS
5785 MHz	11.643	30	PASS
5825 MHz	5.252	30	PASS

CH: 5745MHz

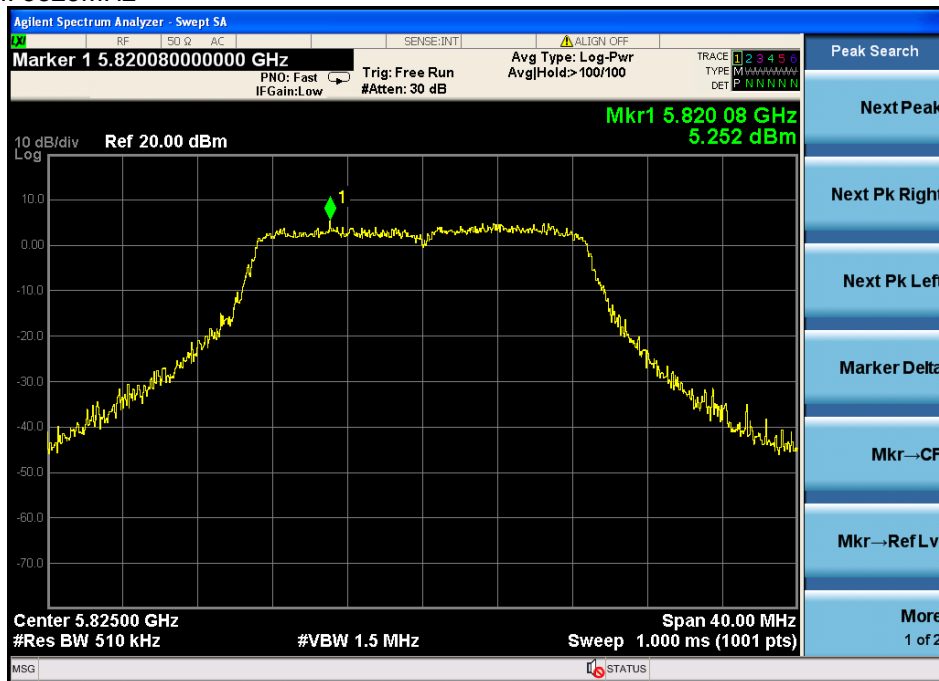




CH: 5785MHz



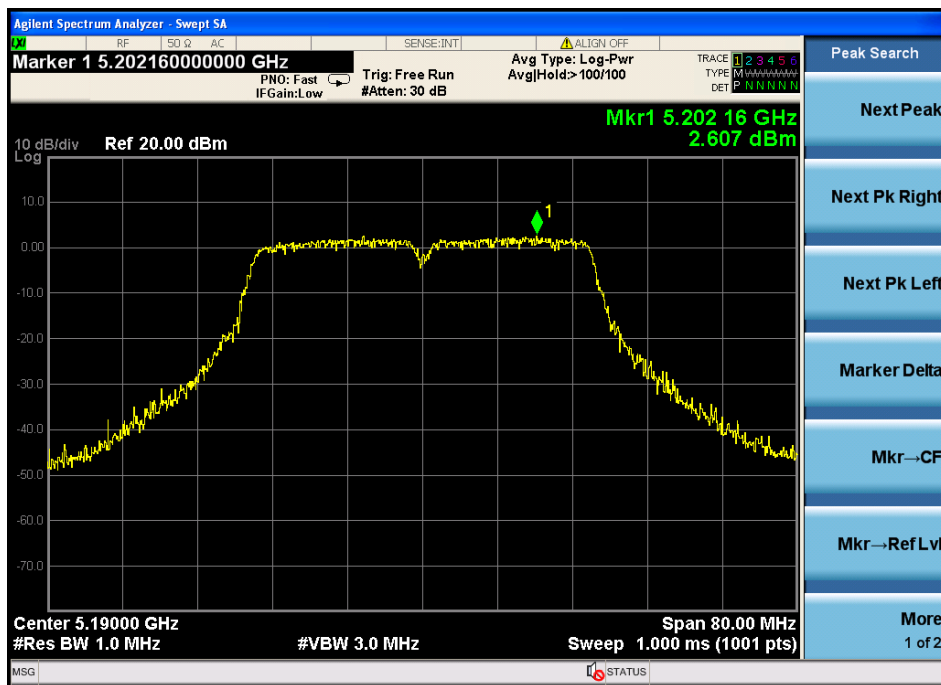
CH: 5825MHz





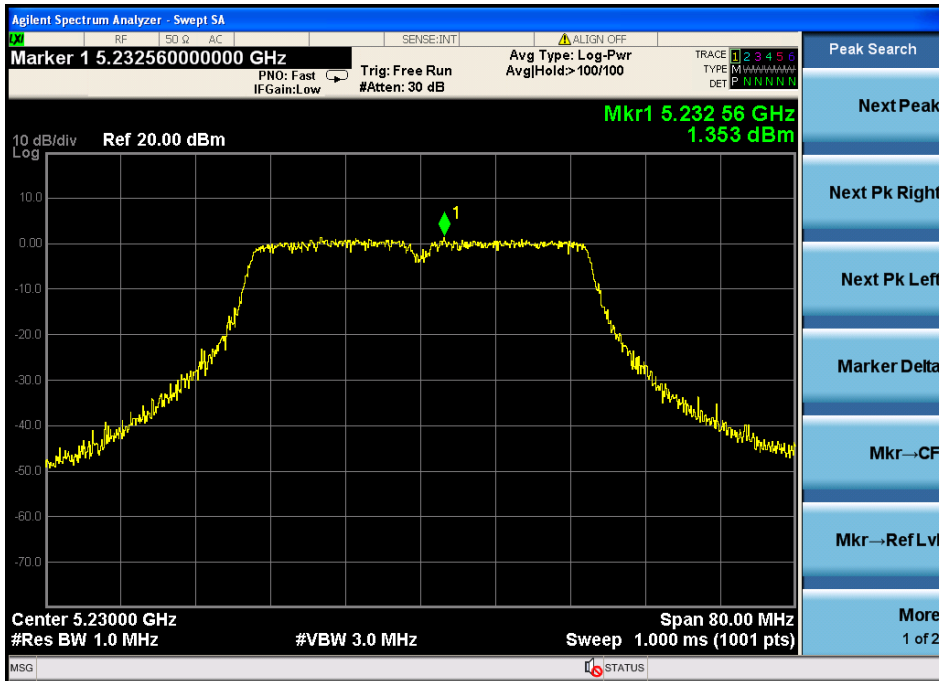
TX 802.11n40 Mode			
Frequency	Power Density (dBm)	Limit (dBm)	Result
5190 MHz	2.607	11	PASS
5230 MHz	1.353	11	PASS
5755 MHz	5.602	30	PASS
5795 MHz	5.452	30	PASS

CH: 5190 MHz

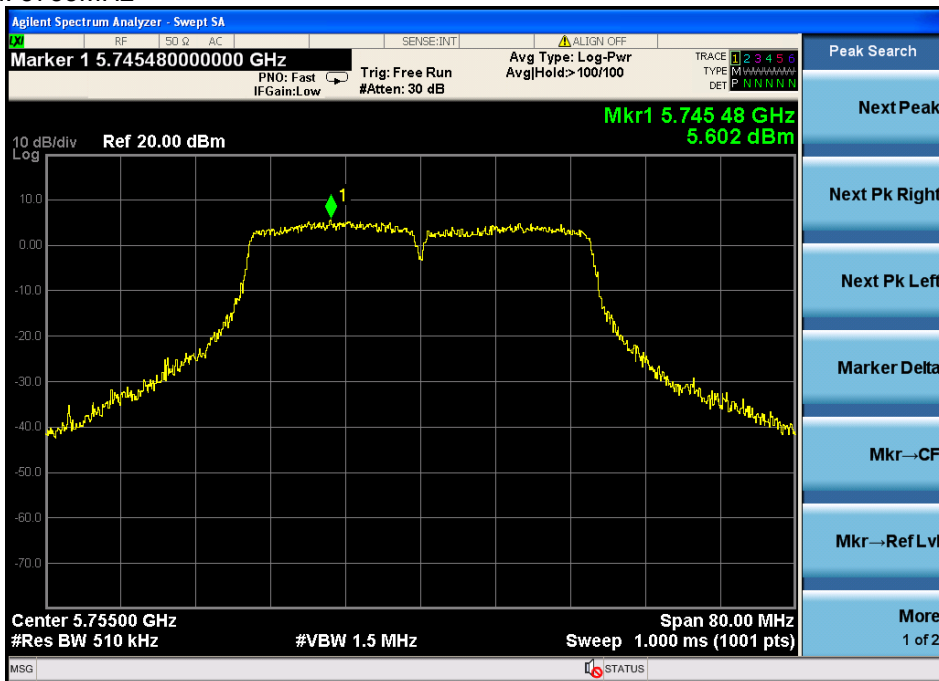




CH: 5230 MHz

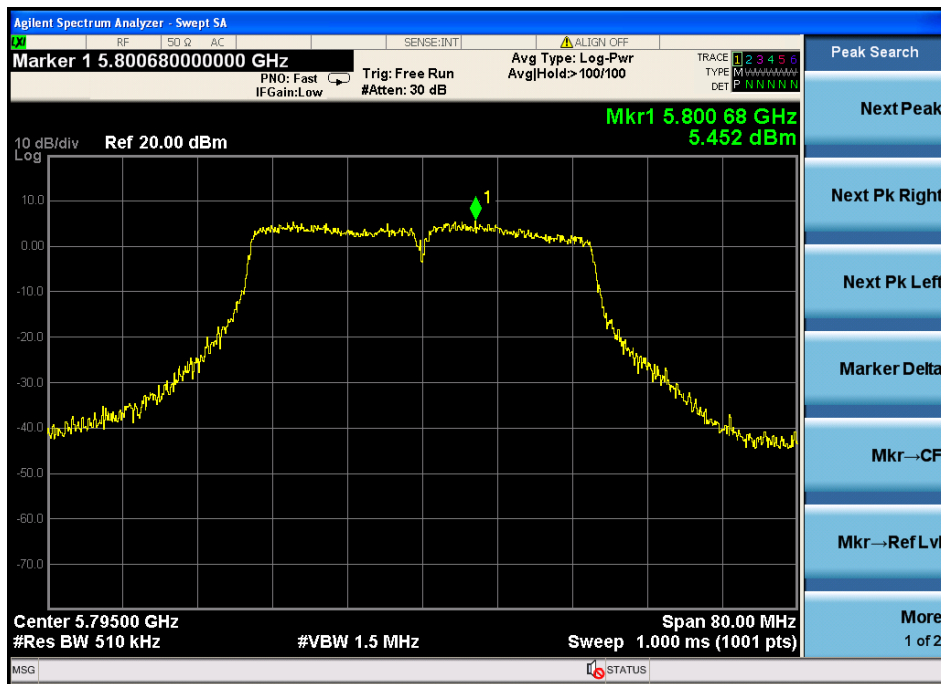


CH: 5755MHz





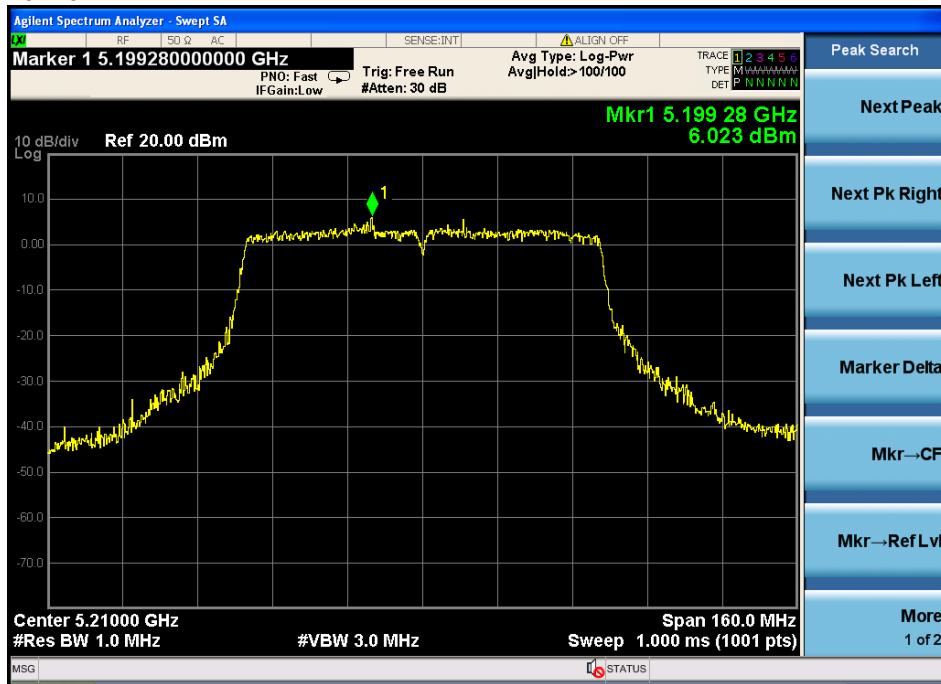
CH: 5795MHz



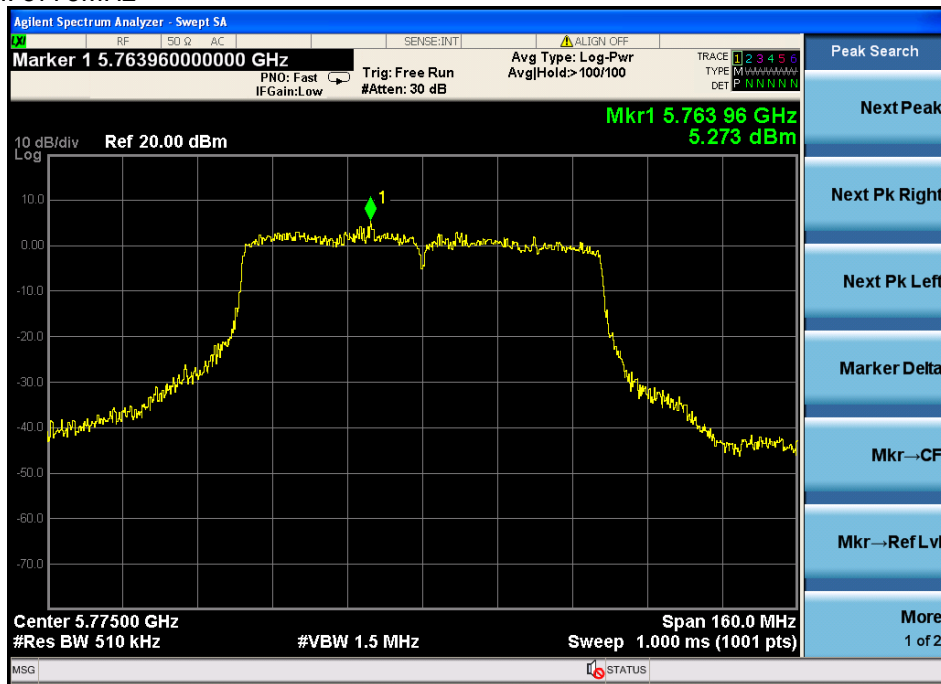


TX 802.11ac Mode			
Frequency	Power Density (dBm)	Limit (dBm)	Result
5210 MHz	6.023	11	PASS
5775 MHz	5.273	30	PASS

CH: 5210MHz



CH: 5775MHz





9 PEAK OUTPUT POWER TEST

9.1 Test Limit

Band 5150-5250MHz

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

Band 5725-5850MHz

The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band

9.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The EUT was directly connected to the Power meter.

9.3 Measurement Equipment Used

Same as Radiated Emission Measurement

9.4 Test Result

PASS

All the test modes completed for test.



TX 802.11a Mode with 5.2G			
Test	Frequency	Maximum Peak Conducted Output Power	LIMIT
Channe	(MHz)	(dBm)	dBm
CH36	5180	15.46	24
CH40	5200	15.75	24
CH48	5240	15.68	24
TX 802.11n20 Mode with 5.2G			
CH36	5180	15.37	24
CH40	5200	15.35	24
CH48	5240	15.39	24
TX 802.11n40 Mode with 5.2G			
CH38	5190	15.42	24
CH46	5230	15.54	24
TX 802.11ac Mode with 5.2G			
CH42	5210	15.28	24
TX 802.11a Mode with 5.8G			
Test	Frequency	Maximum Peak Conducted Output Power	LIMIT
Channe	(MHz)	(dBm)	dBm
CH149	5745	19.71	30
CH157	5785	19.63	30
CH165	5825	19.25	30
TX 802.11n20 Mode with 5.8G			
CH149	5745	19.43	30
CH157	5785	19.29	30
CH165	5825	19.84	30
TX 802.11n40 Mode with 5.8G			
CH151	5755	19.62	30
CH159	5795	19.55	30
TX 802.11ac Mode with 5.8G			
CH155	5775	19.18	30

10 ANTENNA REQUIREMENT

Standard Applicable

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 15.249, 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.

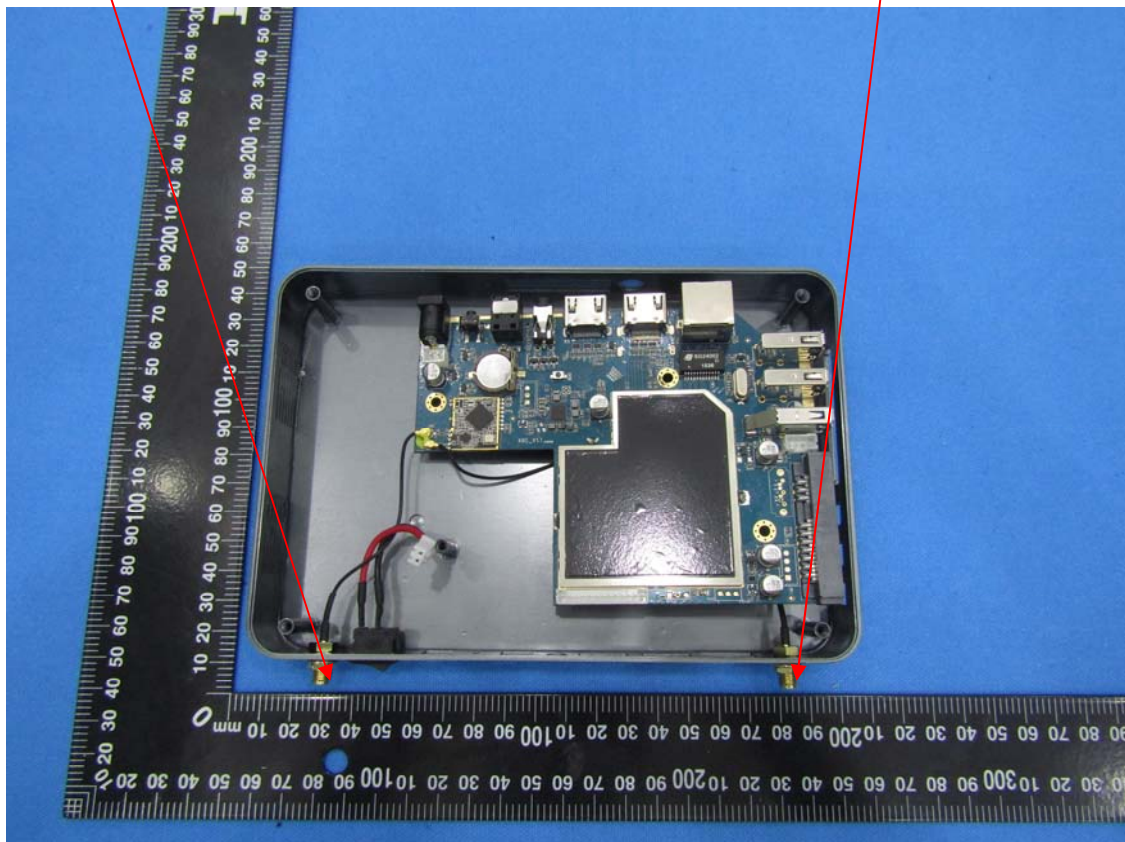
The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

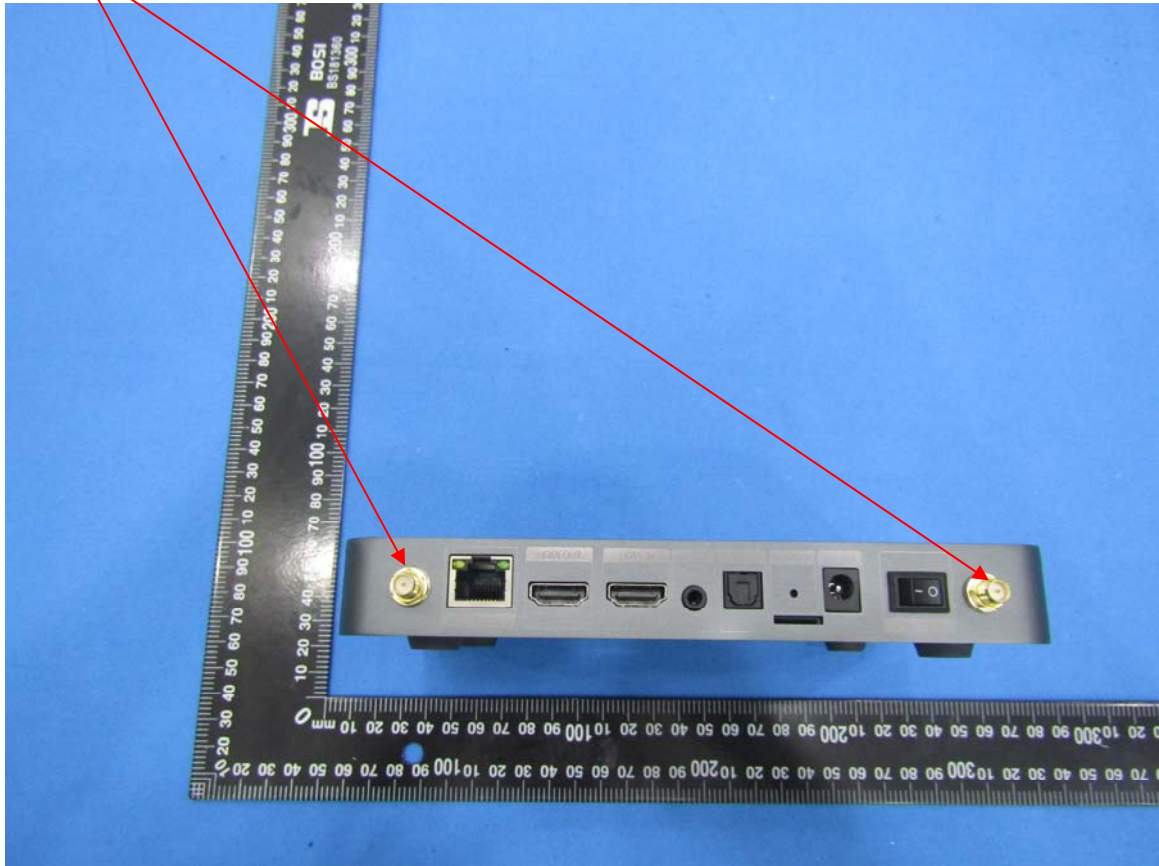
The antenna used is a detachable antenna, using a reverse SMA connector (Provided by non-manufacturers will use the product can not work), considered a special connector accepted by the FCC to comply with rule part 15.203. Please see EUT photos for details, it comply with the standard requirement, The directional gains of antenna used for transmitting is 1dBi.

BT and 5G WIFI ANTENNA

2.4G WIFI ANTENNA



reverse SMA connector



11 PHOTOGRAPH OF TEST

11.1 Radiated Emission







11.2 Conducted Emission

