FCC RF Test Report

APPLICANT	:	BYD Precision Manufacture Co.,Ltd.
EQUIPMENT	:	Trident
BRAND NAME	:	iRobot
MODEL NAME	:	AXC-Y1
FCC ID	:	ZW9AXCY1
STANDARD	:	FCC Part 15 Subpart E §15.407
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

The product was received on Sep. 29, 2017 and testing was completed on Dec. 08, 2017. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc.., the test report shall not be reproduced except in full.

James Huang

TESTING
NVLAP LAB CODE 600155-0

Approved by: James Huang / Manager

Sporton International (Kunshan) Inc.
No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR792901D	Rev. 01	Initial issue of report	Jan. 17, 2018

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	6dB, 26dB and 99% Occupied Bandwidth	> 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b)(4)(i) ≤ -17, -27 dBm/MHz &15.209(a)	Pass	Under limit 8.40 dB at 74.620 MHz
-	15.207	AC Conducted Emission	15.207(a)	Not Required	-
3.5	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.6	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.7	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

BYD Precision Manufacture Co.,Ltd.
No.3001, Bao He Road, Baolong Industry Zone, Longgang, Shenzhen, Guangdong Province, P.R.China

1.2 Manufacturer

Huizhou BYD Electronic Co.,Ltd.
Xiangshui River, Economic Development Zone, Daya Bay, Huizhou, Guangdong Province, P.R.China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Trident
Brand Name	iRobot
Model Name	AXC-Y1
FCC ID	ZW9AXCY1
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 Bluetooth v4.0 LE/ Bluetooth v4.2 LE
HW Version	Trident B2
SW Version	Trident_00.00.25_20171223
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power	802.11a : 15.10 dBm / 0.0324 W 802.11n HT20 : 15.07 dBm / 0.0321 W 802.11n HT40 : 14.16 dBm / 0.0261 W
99% Occupied Bandwidth	802.11a : 18.78 MHz 802.11n HT20 : 19.23 MHz 802.11n HT40 : 36.86 MHz
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
Antenna Type/Gain	Please see Remark 1

Remark:

1. The antenna provided to the EUT, please refer to the following table:

Antenna No.	Brand	Model	Gain(dBi)	Antenna Type	Frequency range (GHz to GHz)	Cable lengh (mm)
1(External)	Laird	MAF94109	3.2	PCB dipole antenna	2.4-2.483.5	100
1(External)	Laird	MAF94109	2.7	PCB dipole antenna	5.15-5.25	100
1(External)	Laird	MAF94109	3.1	PCB dipole antenna	5.25-5.35	100
1(External)	Laird	MAF94109	2.7	PCB dipole antenna	5.47-5.725	100
1(External)	Laird	MAF94109	2.6	PCB dipole antenna	5.725-5.85	100

1.5 Modification of EUT

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

1.6 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No. is CN5013.

Test Site	Sporton International (Kunshan) Inc.		
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**		**FCC Test Firm Registration No.**
	TH01-KS	03CH03-KS	630927

Note: The test site complies with ANSI C63.4 2014 requirement.

1.7 Applicable Standards

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

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the worst cases were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5745-5825 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	-	5775	165	5825

Note: The above Frequency and Channel in "*" was 802.11n HT40.

2.2 Test Mode

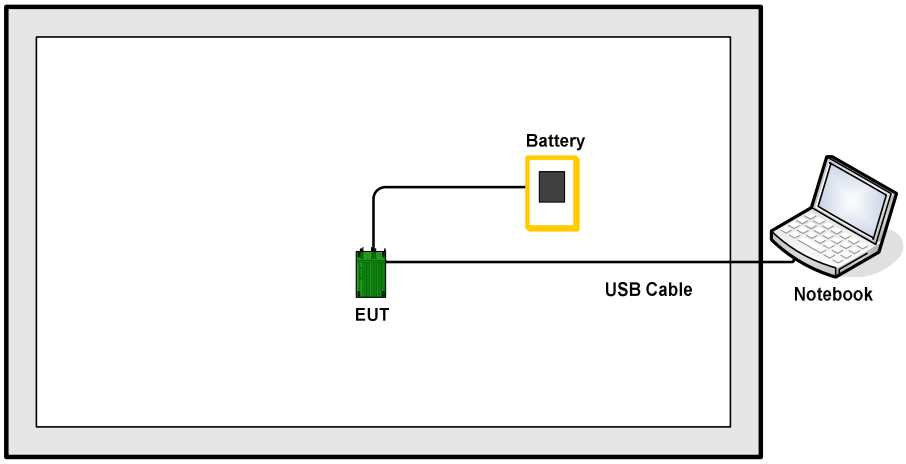
Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

Ch. #		Band IV：5745-5825 MHz		
		802.11a	802.11n HT20	802.11n HT40
L	Low	149	149	151
M	Middle	157	157	-
H	High	165	165	159

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Battery	N/A	N/A	N/A	N/A	N/A
2.	Notebook	Dell	Latitude3440	N/A	N/A	shielded cable DC O/P 1.8m , Unshielded AC I/P cable 1.8m
3.	USB Cable	N/A	N/A	N/A	Unshielded, 1.2m	N/A

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuously transmit/receive.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :
The spectrum analyzer offset is derived from RF cable loss.
Offset = RF cable loss.
Following shows an offset computation example with cable loss 7.10dB.

Offset(dB) = RF cable loss(dB).
= 7.10 (dB)

3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

26dB and 99% Occupied bandwidth are reporting only.

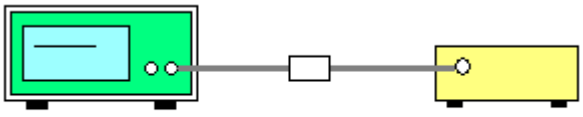
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02. Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

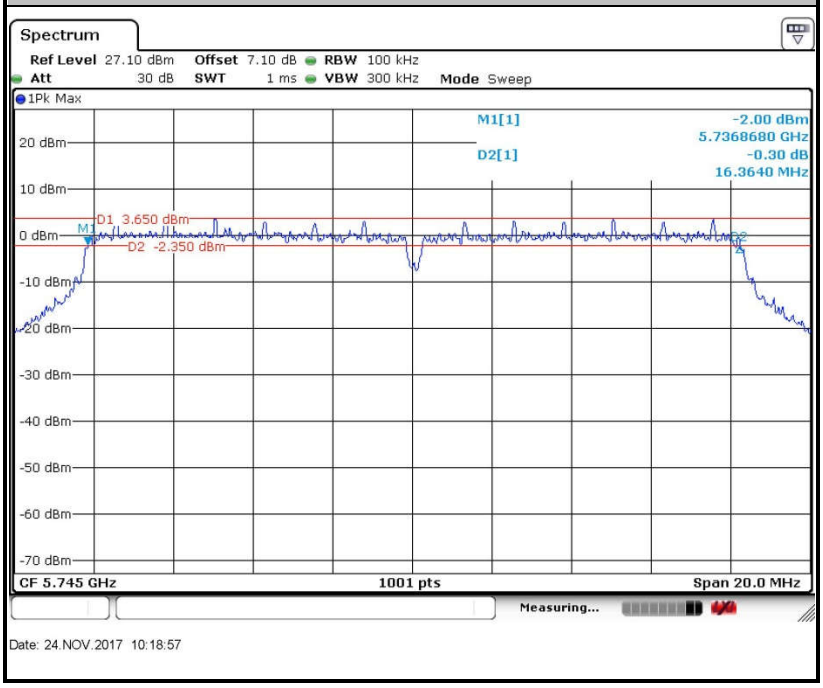
3.1.4 Test Setup



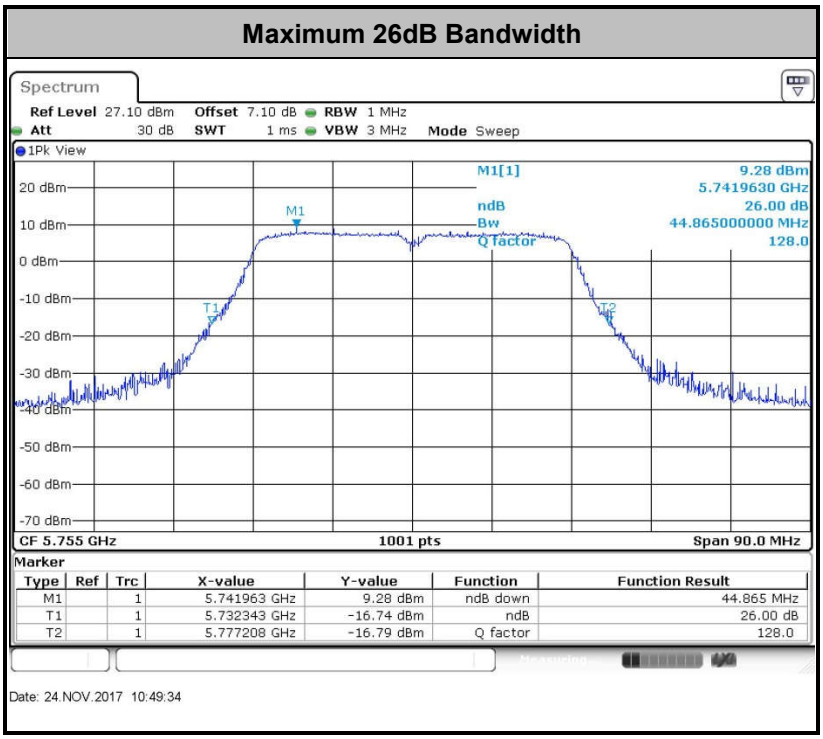
3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.

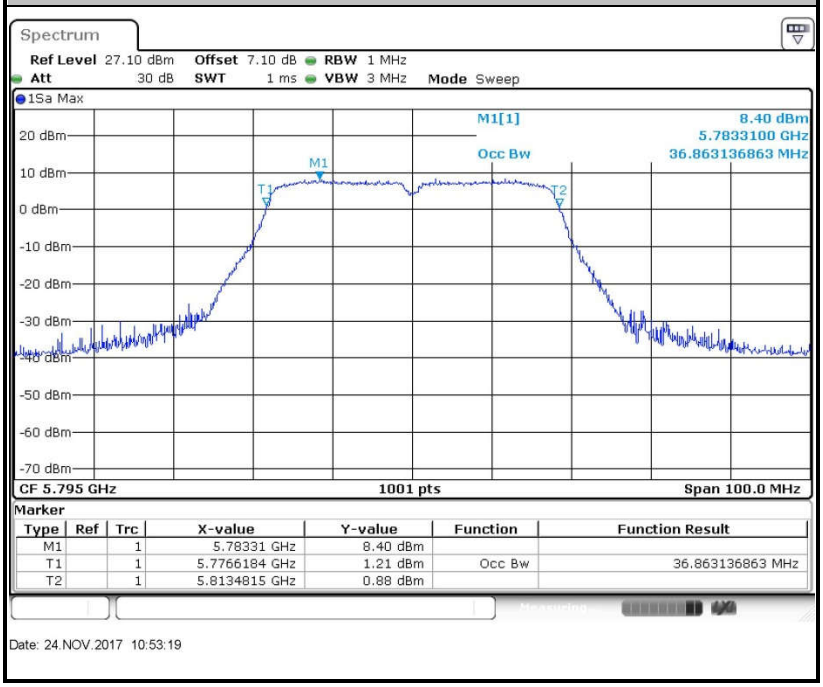
Minimum 6dB Bandwidth



Maximum 26dB Bandwidth



Maximum 99% Occupied Bandwidth



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

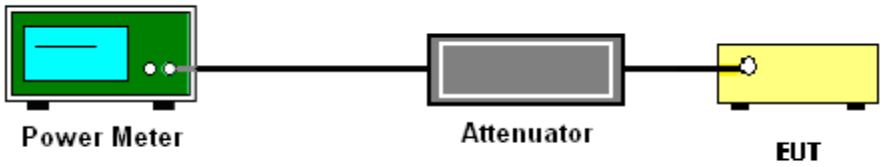
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02.
Section F) Maximum power spectral density.

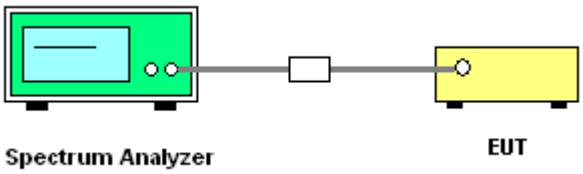
 # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW ≥ 1 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(500kHz/RBW) to the test result.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

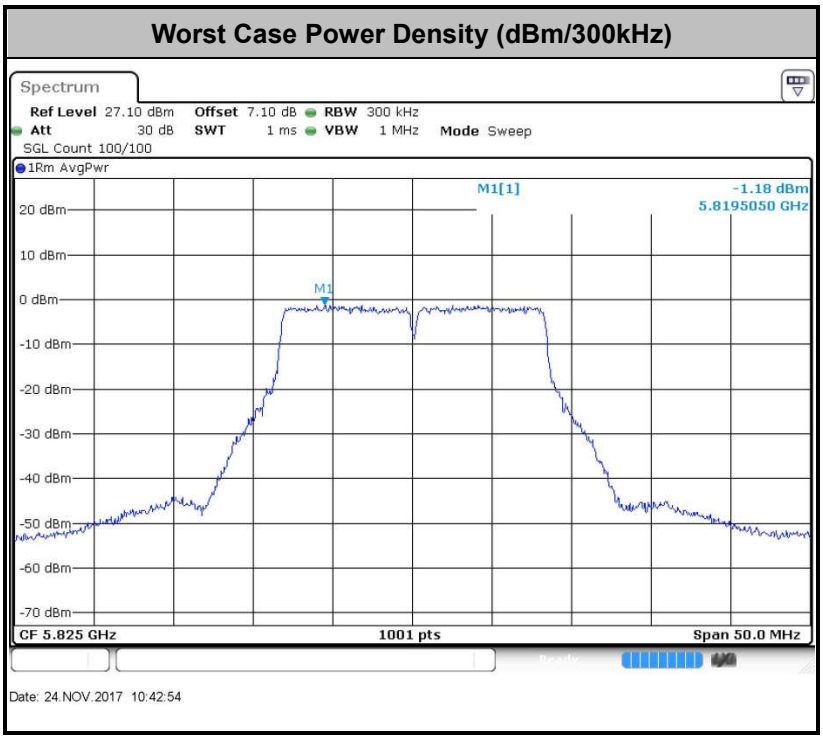
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/300kHz)



3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

3.4.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Note: The following formula is used to convert the EIRP to field strength.

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

EIRP (dBm)	Field Strength at 3m (dBμV/m)
-17	78.3
- 27	68.3

(3) KDB789033 D02 v02 G)2)c)

(i) Section 15.407(b)(1) to (b)(3) specify the unwanted emission limits for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.[3]

(ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.[4]

Note 3: An out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz peak emission limit.

Note 4: Only devices with antenna gains of 10 dBi or less may be approved using the emission limits specified in Section 15.247(d) till March 2, 2018; all other devices operating in this band must use the mask specified in Section 15.407(b)(4)(i).

3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02. Section G) Unwanted emissions measurement.

   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz

   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

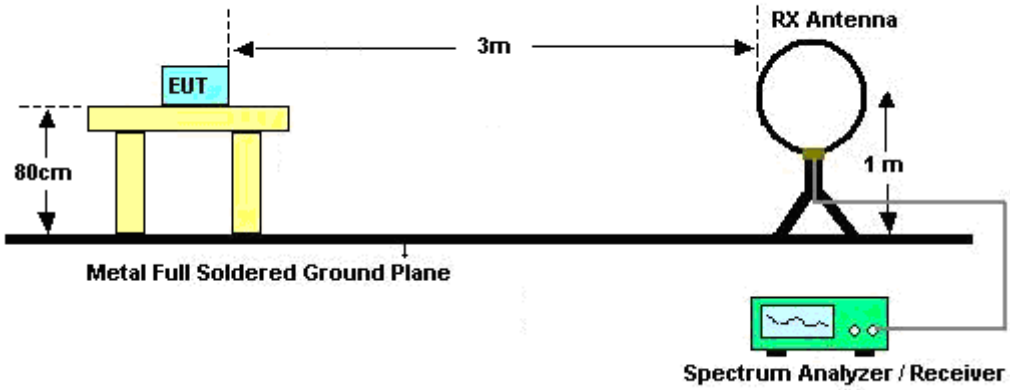
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

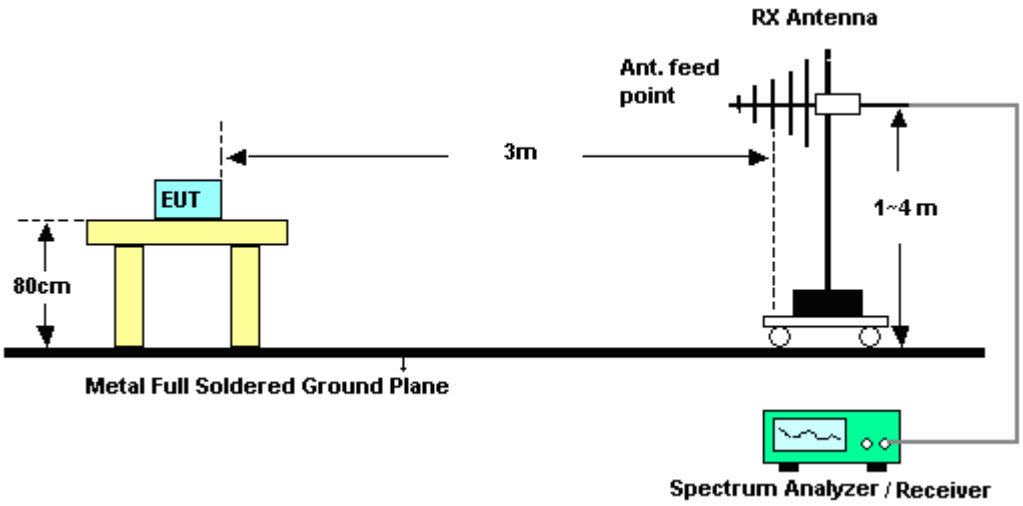
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.4 Test Setup

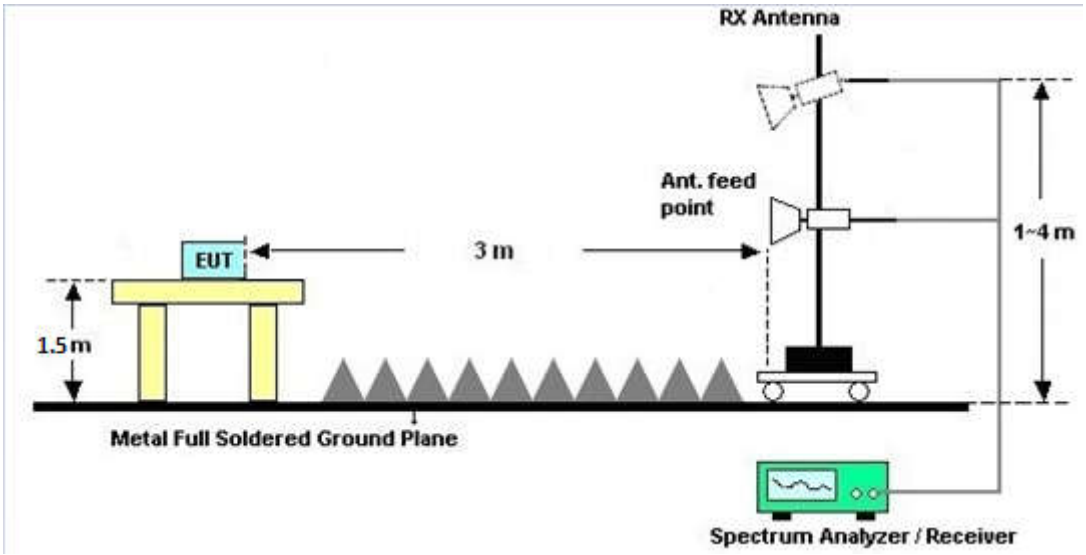
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.4.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B.

3.4.7 Duty Cycle

Please refer to Appendix C.

3.4.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix B.

3.5 Frequency Stability Measurement

3.5.1 Limit of Frequency Stability

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.

3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

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.

3.5.4 Test Setup

3.5.5 Test Result of Frequency Stability

Please refer to Appendix A.

3.6 Automatically Discontinue Transmission

3.6.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.7 Antenna Requirements

3.7.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.7.2 Antenna Anti-Replacement Construction

Non-standard antenna connector is used.

3.7.3 Antenna Gain

The antenna gain is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 08, 2017	Nov. 24, 2017	Aug. 07, 2018	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 19, 2017	Nov. 24, 2017	Jan. 18, 2018	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 19, 2017	Nov. 24, 2017	Jan. 18, 2018	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 12, 2017	Nov. 24, 2017	Oct. 11, 2018	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz; Max 30dBm	Oct. 19, 2017	Dec. 08, 2017	Oct. 18, 2018	Radiation (03CH03-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Apr. 18, 2017	Dec. 08, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 22, 2017	Dec. 08, 2017	Oct. 21, 2018	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 22, 2017	Dec. 08, 2017	Apr. 21, 2018	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 22, 2017	Dec. 08, 2017	Apr. 21, 2018	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 15, 2017	Dec. 08, 2017	Feb. 14, 2018	Radiation (03CH03-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1000MHz / 32 dB	Apr. 18, 2017	Dec. 08, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18GHz~40GHz	Oct. 12, 2017	Dec. 08, 2017	Oct. 11, 2018	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1GHz~18GHz	Apr. 18. 2017	Dec. 08, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 12, 2017	Dec. 08, 2017	Oct. 11, 2018	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Dec. 08, 2017	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Dec. 08, 2017	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Dec. 08, 2017	NCR	Radiation (03CH03-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.6dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.5dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.7dB**

Appendix A. Conducted Test Results

Report Number : FR792901D

Test Engineer:	Silent Hai	Temperature:	21~25	°C
Test Date:	2017/11/24	Relative Humidity:	51~55	%

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

Band IV									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	6 dB Bandwidth (MHz)	6dB Bandwidth min. Limit (MHz)	Pass/Fail
11a	6M bps	1	149	5745	18.68	23.43	16.36	0.5	Pass
11a	6Mbps	1	157	5785	18.78	23.48	16.36	0.5	Pass
11a	6Mbps	1	165	5825	18.28	23.33	16.36	0.5	Pass
HT20	MCS 0	1	149	5745	19.23	23.58	17.56	0.5	Pass
HT20	MCS 0	1	157	5785	19.18	23.78	17.58	0.5	Pass
HT20	MCS 0	1	165	5825	19.13	23.63	17.56	0.5	Pass
HT40	MCS 0	1	151	5755	36.86	44.87	35.33	0.5	Pass
HT40	MCS 0	1	159	5795	36.86	44.60	35.33	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6M bps	1	149	5745	0.59	14.80	30.00	2.60		Pass
11a	6Mbps	1	157	5785	0.59	15.01	30.00	2.60		Pass
11a	6Mbps	1	165	5825	0.59	15.10	30.00	2.60		Pass
HT20	MCS 0	1	149	5745	0.65	14.90	30.00	2.60		Pass
HT20	MCS 0	1	157	5785	0.65	15.03	30.00	2.60		Pass
HT20	MCS 0	1	165	5825	0.65	15.07	30.00	2.60		Pass
HT40	MCS 0	1	151	5755	0.67	14.12	30.00	2.60		Pass
HT40	MCS 0	1	159	5795	0.67	14.16	30.00	2.60		Pass

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TEST RESULTS DATA
Power Spectral Density

Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	10log (500kHz /RBW) Factor (dB)	Average Power Density (dBm/500kHz)	Average PSD Limit (dBm/500kHz)	DG (dBi)	Pass/Fail
11a	6M bps	1	149	5745	0.59	2.22	1.14	30.00	2.60	Pass
11a	6Mbps	1	157	5785	0.59	2.22	1.11	30.00	2.60	Pass
11a	6Mbps	1	165	5825	0.59	2.22	1.63	30.00	2.60	Pass
HT20	MCS 0	1	149	5745	0.65	2.22	0.65	30.00	2.60	Pass
HT20	MCS 0	1	157	5785	0.65	2.22	0.48	30.00	2.60	Pass
HT20	MCS 0	1	165	5825	0.65	2.22	1.21	30.00	2.60	Pass
HT40	MCS 0	1	151	5755	0.67	2.22	-2.41	30.00	2.60	Pass
HT40	MCS 0	1	159	5795	0.67	2.22	-2.88	30.00	2.60	Pass

Report Number : FR792901D

TEST RESULTS DATA
Frequency Stability

Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stablility (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6M bps	1	149	5745	5745.050	0.050	8.70	50	4.2	
11a	6M bps	1	149	5745	5745.050	0.050	8.70	-30	4.2	
11a	6M bps	1	149	5745	5745.050	0.050	8.70	20	4.5	
11a	6M bps	1	149	5745	5745.050	0.050	8.70	20	3.9	
11a	6M bps	1	149	5745	5745.050	0.050	8.70	20	4.2	

Appendix B. Radiated Spurious Emission

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5641	47.64	-20.66	68.3	41.08	30.2	8.56	32.2	116	181	P	H
		5670	47.47	-35.67	83.14	40.71	30.48	8.57	32.29	116	181	P	H
		5712.6	48.24	-60.59	108.83	41.29	30.75	8.58	32.38	116	181	P	H
		5724.4	50.54	-70.39	120.93	43.5	30.89	8.58	32.43	116	181	P	H
		5740	92.5	-	-	85.36	31.03	8.59	32.48	116	181	P	H
		5740	85.92	-	-	78.78	31.03	8.59	32.48	116	181	A	H
		5610	47.43	-20.87	68.3	40.81	30.26	8.55	32.19	140	60	P	V
		5692.6	52.78	-47.06	99.84	45.93	30.62	8.57	32.34	140	60	P	V
		5718.4	54.34	-56.11	110.45	47.3	30.89	8.58	32.43	140	60	P	V
		5725	64.06	-58.24	122.3	57.02	30.89	8.58	32.43	140	60	P	V
		5738	103.08	-	-	95.94	31.03	8.59	32.48	140	60	P	V
		5738	96.73	-	-	89.59	31.03	8.59	32.48	140	60	A	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5612.8	47.44	-20.86	68.3	40.82	30.26	8.55	32.19	132	180	P	H
		5651.8	48.28	-21.36	69.64	41.62	30.34	8.57	32.25	132	180	P	H
		5708.8	47.94	-59.83	107.77	40.99	30.75	8.58	32.38	132	180	P	H
		5724.99	46.61	-75.67	122.28	39.57	30.89	8.58	32.43	132	180	P	H
		5780	93.28	-	-	85.94	31.31	8.6	32.57	132	180	P	H
		5780	85.91	-	-	78.57	31.31	8.6	32.57	132	180	A	H
		5851.5	47.67	-71.21	118.88	39.95	31.86	8.61	32.75	132	180	P	H
		5857	47.27	-63.07	110.34	39.45	32	8.62	32.8	132	180	P	H
		5901.5	48.61	-37.04	85.65	40.63	32.11	8.63	32.76	132	180	P	H
		5995.25	48.3	-20	68.3	39.87	32.42	8.66	32.65	132	180	P	H
		5648.2	47.97	-20.33	68.3	41.41	30.2	8.56	32.2	144	60	P	V
		5699.2	48.51	-56.2	104.71	41.66	30.62	8.57	32.34	144	60	P	V
		5717.2	48.53	-61.59	110.12	41.58	30.75	8.58	32.38	144	60	P	V
		5722.2	48.78	-67.14	115.92	41.74	30.89	8.58	32.43	144	60	P	V
		5788	104.32	-	-	96.89	31.45	8.6	32.62	144	60	P	V
		5788	96.85	-	-	89.42	31.45	8.6	32.62	144	60	A	V
		5850.75	48.48	-72.11	120.59	40.76	31.86	8.61	32.75	144	60	P	V
		5859.5	47.77	-61.87	109.64	39.95	32	8.62	32.8	144	60	P	V
		5910	48.54	-30.83	79.37	40.49	32.16	8.63	32.74	144	60	P	V
		5926	49.28	-19.02	68.3	41.16	32.21	8.64	32.73	144	60	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz		5828	93.61	-	-	85.99	31.72	8.61	32.71	103	178	P	H
		5828	86.46	-	-	78.84	31.72	8.61	32.71	103	178	A	H
		5851.75	47.45	-70.86	118.31	39.73	31.86	8.61	32.75	103	178	P	H
		5866	49.18	-58.64	107.82	41.36	32	8.62	32.8	103	178	P	H
		5893.75	48	-43.39	91.39	40.02	32.11	8.63	32.76	103	178	P	H
		5967.25	48.67	-19.63	68.3	40.39	32.32	8.65	32.69	103	178	P	H
		5830	105.07	-	-	97.45	31.72	8.61	32.71	134	34	P	V
		5830	97.28	-	-	89.66	31.72	8.61	32.71	134	34	A	V
		5853.5	51.48	-62.84	114.32	43.66	32	8.62	32.8	134	34	P	V
		5856.5	51.39	-59.09	110.48	43.57	32	8.62	32.8	134	34	P	V
		5877.25	52.45	-51.18	103.63	44.56	32.05	8.62	32.78	134	34	P	V
		5956	49.58	-18.72	68.3	41.3	32.32	8.65	32.69	134	34	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a		11490	45.78	-28.22	74	55.88	39.57	12.91	62.58	100	360	P	H
CH 149 5745MHz		11490	46.89	-27.11	74	56.99	39.57	12.91	62.58	100	360	P	V
802.11a		11570	45.83	-28.17	74	56.3	39.39	12.84	62.7	100	360	P	H
CH 157 5785MHz		11570	46.4	-27.6	74	56.87	39.39	12.84	62.7	100	360	P	V
802.11a		11650	44.57	-29.43	74	55.44	39.19	12.78	62.84	100	360	P	H
CH 165 5825MHz		11650	44.97	-29.03	74	55.84	39.19	12.78	62.84	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		5643.2	48.31	-19.99	68.3	41.75	30.2	8.56	32.2	261	176	P	H
		5692.4	48.63	-51.07	99.7	41.78	30.62	8.57	32.34	261	176	P	H
		5719.6	48.19	-62.6	110.79	41.15	30.89	8.58	32.43	261	176	P	H
		5723.8	50.4	-69.16	119.56	43.36	30.89	8.58	32.43	261	176	P	H
		5750	95.3	-	-	88.16	31.03	8.59	32.48	261	176	P	H
		5750	88.59	-	-	81.45	31.03	8.59	32.48	261	176	A	H
		5636.4	46.96	-21.34	68.3	40.4	30.2	8.56	32.2	100	346	P	V
		5692.8	52.71	-47.28	99.99	45.86	30.62	8.57	32.34	100	346	P	V
		5718.6	53.01	-57.5	110.51	45.97	30.89	8.58	32.43	100	346	P	V
		5724.4	61.02	-59.91	120.93	53.98	30.89	8.58	32.43	100	346	P	V
		5752	103.91	-	-	96.67	31.17	8.59	32.52	100	346	P	V
		5752	96.94	-	-	89.7	31.17	8.59	32.52	100	346	A	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5646.6	47.55	-20.75	68.3	40.99	30.2	8.56	32.2	289	333	P	H
		5668.8	47.93	-34.32	82.25	41.17	30.48	8.57	32.29	289	333	P	H
		5708.4	47.08	-60.57	107.65	40.13	30.75	8.58	32.38	289	333	P	H
		5725	46.72	-75.58	122.3	39.68	30.89	8.58	32.43	289	333	P	H
		5780	93.62	-	-	86.28	31.31	8.6	32.57	289	333	P	H
		5780	86.71	-	-	79.37	31.31	8.6	32.57	289	333	A	H
		5850	47.32	-74.98	122.3	39.6	31.86	8.61	32.75	289	333	P	H
		5857.75	47.75	-62.38	110.13	39.93	32	8.62	32.8	289	333	P	H
802.11n		5875.75	48.88	-55.86	104.74	40.99	32.05	8.62	32.78	289	333	P	H
HT20		5967	48.82	-19.48	68.3	40.54	32.32	8.65	32.69	289	333	P	H
CH 157		5605.2	47.5	-20.8	68.3	40.88	30.26	8.55	32.19	100	349	P	V
5785MHz		5673.2	48.13	-37.38	85.51	41.37	30.48	8.57	32.29	100	349	P	V
		5719.4	49.37	-61.36	110.73	42.33	30.89	8.58	32.43	100	349	P	V
		5721.2	49.07	-64.57	113.64	42.03	30.89	8.58	32.43	100	349	P	V
		5778	103.97	-	-	96.63	31.31	8.6	32.57	100	349	P	V
		5778	97.16	-	-	89.82	31.31	8.6	32.57	100	349	A	V
		5854.75	49.26	-62.21	111.47	41.44	32	8.62	32.8	100	349	P	V
		5867	47.76	-59.78	107.54	39.94	32	8.62	32.8	100	349	P	V
		5875.5	48.38	-56.55	104.93	40.49	32.05	8.62	32.78	100	349	P	V
		5972.75	48.13	-20.17	68.3	39.78	32.37	8.65	32.67	100	349	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz		5850.25	46.74	-74.99	121.73	39.02	31.86	8.61	32.75	100	335	P	H
		5874	48.82	-56.76	105.58	40.93	32.05	8.62	32.78	100	335	P	H
		5875.5	49.4	-55.53	104.93	41.51	32.05	8.62	32.78	100	335	P	H
		5925.75	48.56	-19.74	68.3	40.44	32.21	8.64	32.73	100	335	P	H
		5820	93.14	-	-	85.52	31.72	8.61	32.71	100	335	P	H
		5820	86.09	-	-	78.47	31.72	8.61	32.71	100	335	A	H
		5852.5	52.34	-64.26	116.6	44.62	31.86	8.61	32.75	113	354	P	V
		5862.75	49.12	-59.61	108.73	41.3	32	8.62	32.8	113	354	P	V
		5878	52.46	-50.61	103.07	44.57	32.05	8.62	32.78	113	354	P	V
		5979.5	48.34	-19.96	68.3	39.99	32.37	8.65	32.67	113	354	P	V
		5830	103.72	-	-	96.1	31.72	8.61	32.71	113	354	P	V
		5830	96.66	-	-	89.04	31.72	8.61	32.71	113	354	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		11490	48.35	-25.65	74	58.45	39.57	12.91	62.58	100	360	P	H
		11490	46.7	-27.3	74	56.8	39.57	12.91	62.58	100	360	P	V
802.11n HT20 CH 157 5785MHz		11570	45.51	-28.49	74	55.98	39.39	12.84	62.7	100	360	P	H
		11570	46.63	-27.37	74	57.1	39.39	12.84	62.7	100	360	P	V
802.11n HT20 CH 165 5825MHz		11650	44.17	-29.83	74	55.04	39.19	12.78	62.84	100	360	P	H
		11650	45.97	-28.03	74	56.84	39.19	12.78	62.84	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5647.4	48.56	-19.74	68.3	42	30.2	8.56	32.2	298	164	P	H
		5689.4	48.41	-49.07	97.48	41.56	30.62	8.57	32.34	298	164	P	H
		5719.4	49.52	-61.21	110.73	42.48	30.89	8.58	32.43	298	164	P	H
		5724.8	49.96	-71.88	121.84	42.92	30.89	8.58	32.43	298	164	P	H
		5744	91.03	-	-	83.89	31.03	8.59	32.48	298	164	P	H
		5744	83.43	-	-	76.29	31.03	8.59	32.48	298	164	A	H
		5853.75	46.64	-67.11	113.75	38.82	32	8.62	32.8	298	164	P	H
		5873.5	48.89	-56.83	105.72	41	32.05	8.62	32.78	298	164	P	H
802.11n		5889.25	49.06	-45.66	94.72	41.08	32.11	8.63	32.76	298	164	P	H
HT40		5995.5	49.1	-19.2	68.3	40.67	32.42	8.66	32.65	298	164	P	H
CH 151		5607.6	47.95	-20.35	68.3	41.33	30.26	8.55	32.19	100	350	P	V
5755MHz		5651.2	49.77	-19.42	69.19	43.11	30.34	8.57	32.25	100	350	P	V
		5716.6	58.07	-51.88	109.95	51.12	30.75	8.58	32.38	100	350	P	V
		5723.8	61.61	-57.95	119.56	54.57	30.89	8.58	32.43	100	350	P	V
		5744	101.16	-	-	94.02	31.03	8.59	32.48	100	350	P	V
		5744	93.84	-	-	86.7	31.03	8.59	32.48	100	350	A	V
		5851.5	47.41	-71.47	118.88	39.69	31.86	8.61	32.75	100	350	P	V
		5873.25	50	-55.79	105.79	42.11	32.05	8.62	32.78	100	350	P	V
		5875	48.63	-56.67	105.3	40.74	32.05	8.62	32.78	100	350	P	V
		5998.25	48.29	-20.01	68.3	39.86	32.42	8.66	32.65	100	350	P	V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5626.4	48.13	-20.17	68.3	41.54	30.23	8.56	32.2	128	235	P	H
		5659	47.69	-27.29	74.98	41.03	30.34	8.57	32.25	128	235	P	H
		5700.6	47.31	-58.16	105.47	40.36	30.75	8.58	32.38	128	235	P	H
		5723.8	47.09	-72.47	119.56	40.05	30.89	8.58	32.43	128	235	P	H
		5786	90.35	-	-	82.92	31.45	8.6	32.62	128	235	P	H
		5786	83.15	-	-	75.72	31.45	8.6	32.62	128	235	A	H
		5851.75	49.56	-68.75	118.31	41.84	31.86	8.61	32.75	128	235	P	H
		5857	49.27	-61.07	110.34	41.45	32	8.62	32.8	128	235	P	H
		5898.25	48.83	-39.23	88.06	40.85	32.11	8.63	32.76	128	235	P	H
		5941.5	49.84	-18.46	68.3	41.64	32.27	8.64	32.71	128	235	P	H
		5629	47.8	-20.5	68.3	41.21	30.23	8.56	32.2	115	351	P	V
		5692.4	49.02	-50.68	99.7	42.17	30.62	8.57	32.34	115	351	P	V
		5702.6	48.91	-57.12	106.03	41.96	30.75	8.58	32.38	115	351	P	V
		5722.6	48.24	-68.59	116.83	41.2	30.89	8.58	32.43	115	351	P	V
		5782	100.9	-	-	93.56	31.31	8.6	32.57	115	351	P	V
		5782	93.54	-	-	86.2	31.31	8.6	32.57	115	351	A	V
		5852.5	48.13	-68.47	116.6	40.41	31.86	8.61	32.75	115	351	P	V
		5872.75	48.56	-57.37	105.93	40.67	32.05	8.62	32.78	115	351	P	V
		5907	49.04	-32.54	81.58	40.99	32.16	8.63	32.74	115	351	P	V
		5933	49.38	-18.92	68.3	41.26	32.21	8.64	32.73	115	351	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		11510	45.18	-28.82	74	55.24	39.6	12.9	62.56	100	360	P	H
		11510	45.54	-28.46	74	55.6	39.6	12.9	62.56	100	360	P	V
802.11n HT40 CH 159 5795MHz		11590	44.34	-29.66	74	54.92	39.34	12.82	62.74	100	360	P	H
		11590	45.13	-28.87	74	55.71	39.34	12.82	62.74	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

5GHz WIFI 802.11n HT40 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11n HT40 LF		30.97	25.23	-14.77	40	29.99	25.74	0.58	31.08	-	-	P	H
		74.62	31.6	-8.4	40	47.48	14.6	0.92	31.4	106	75	P	H
		152.22	30.76	-12.74	43.5	43.1	17.24	1.33	30.91	-	-	P	H
		211.39	27.72	-15.78	43.5	41.07	16.21	1.56	31.12	-	-	P	H
		294.81	29.02	-16.98	46	39.18	19.43	1.88	31.47	-	-	P	H
		937.92	31.47	-14.53	46	29.32	29.94	3.46	31.25	-	-	P	H
		30.97	25.02	-14.98	40	29.78	25.74	0.58	31.08	147	130	P	V
		74.62	21.92	-18.08	40	37.8	14.6	0.92	31.4	-	-	P	V
		82.38	22.32	-17.68	40	37	15.72	1	31.4	-	-	P	V
		145.43	20.88	-22.62	43.5	33.11	17.35	1.3	30.88	-	-	P	V
		216.24	20.96	-25.04	46	34.09	16.42	1.58	31.13	-	-	P	V
		561.56	25.55	-20.45	46	29.47	24.96	2.62	31.5	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is **over limit** line.
P/A	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

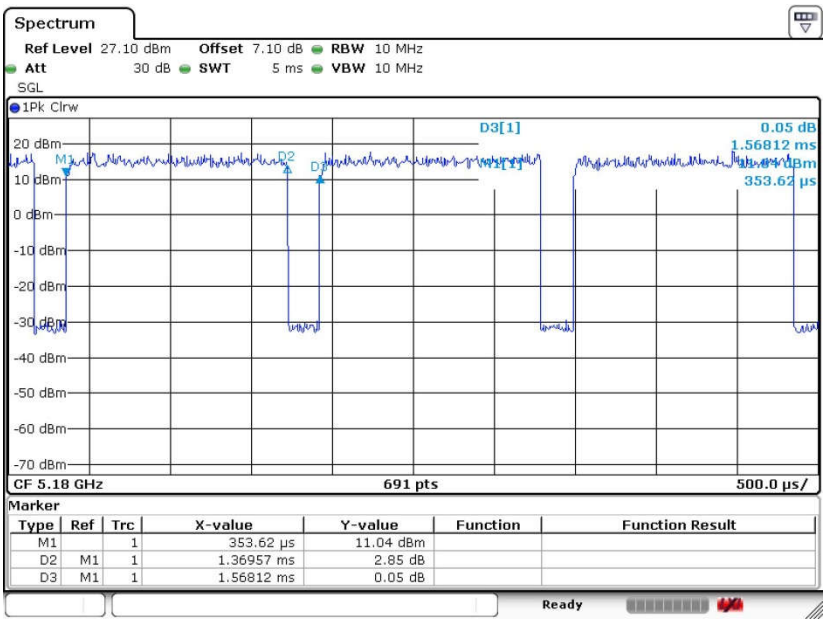
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.

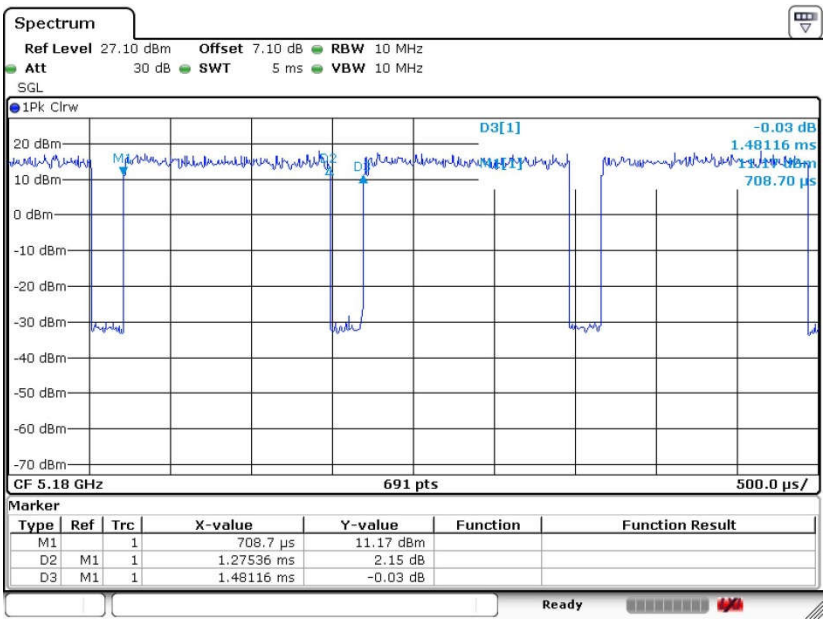
Appendix C. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	87.34	1.370	0.730	1kHz
802.11n HT20	86.11	1.275	0.784	1kHz
802.11n HT40	85.61	1.225	0.817	1kHz

802.11a



802.11n HT20



802.11n HT40