



FCC RF Test Report

APPLICANT : Arima Communication Corporation
EQUIPMENT : 8" tablet
BRAND NAME : Nabi
MODEL NAME : NBX208HQCG
MARKETING NAME : Nabi ELEV-8
FCC ID : PJONBX208HQCG
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Jul. 08, 2015 and testing was completed on Aug. 03, 2015. 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.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR570801E	Rev. 01	Initial issue of report	Aug. 12, 2015



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(i)	RSS-247 Section 6	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	RSS-247 Section 6	Maximum Conducted Output Power	FCC ≤ 24 dBm (depend on band) IC RSS-247 Section 6 Limit	Pass	-
3.3	15.407(a)	RSS-247 Section 6	Power Spectral Density	FCC ≤ 11 dBm (depend on band) IC RSS-247 Section 6 Limit	Pass	-
3.4	15.407(b)	RSS-247 Section 6	Unwanted Emissions	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 4.21 dB at 5149.750 MHz
3.5	15.207	RSS-Gen 8.8	AC Conducted Emission	15.207(a)	Pass	Under limit 2.14 dB at 0.960 MHz
3.6	15.407(g)	-	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	RSS-247 6.4(2)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	N/A	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Arima Communication Corporation

No.16, Lane 658, Yingtao Rd., Yingge Dist., New Taipei City 23943, Taiwan (R.O.C.)

1.2 Manufacturer

Arima Communication Corporation

No.16, Lane 658, Yingtao Rd., Yingge Dist., New Taipei City 23943, Taiwan (R.O.C.)

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	8" tablet
Brand Name	Nabi
Model Name	NBX208HQCG
Marketing Name	Nabi ELEV-8
FCC ID	PJONBX208HQCG
EUT supports Radios application	NFC/WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN5GHz 802.11a/n HT20/HT40/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	3320MB-003
SW Version	S1_PCBA_DVT_0626_v1 with s1_CV_4.24V patch
EUT Stage	Production Unit

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

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5580 MHz 5660 MHz ~ 5700 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> 802.11a : 9.95 dBm / 0.0099 W 802.11n HT20 : 10.27 dBm / 0.0106 W 802.11n HT40 : 9.59 dBm / 0.0091 W <5260 MHz ~ 5320 MHz> 802.11a : 10.05 dBm / 0.0101 W 802.11n HT20 : 10.48 dBm / 0.0112 W 802.11n HT40 : 9.65 dBm / 0.0092 W <5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz > 802.11a : 10.23 dBm / 0.0105 W 802.11n HT20 : 9.61 dBm / 0.0091 W 802.11n HT40 : 10.15 dBm / 0.0104 W
Antenna Type	PIFA Antenna
Antenna Gain	<5180 MHz ~ 5240 MHz> : 1.94 dBi <5260 MHz ~ 5320 MHz> : 2.07 dBi <5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz > : 1.92 dBi
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)



1.5 Modification of EUT

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

1.6 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH01-KS	03CH02-KS	CO01-KS	418269/4086E

Note: The test site complies with ANSI C63.4 2009 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 v01
- ♦ ANSI C63.10-2013
- ♦ IC RSS-247 Issued 1
- ♦ IC RSS-Gen Issue 4

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. FCC permits the use of the 1.5 meter table above 1 GHz as an alternative in C63.10-2013 through inquiry tracking number 961829.
3. 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: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5180- 5240 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38	5190	46	5230
	40	5200	48	5240

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5260-5320 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54	5270	62	5310
	56	5280	64	5320

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5500-5580 MHz and 5660-5700 MHz Band 3 (U-NII-2C)	100	5500	116	5580
	102	5510	132	5660
	104	5520	134	5670
	108	5540	136	5680
	110	5550	140	5700
	112	5560		

Note: The above Frequency and Channel in boldface were 802.11n HT40.



2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

5GHz 802.11a RF Output Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index 6Mbps	Channel	9M bps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180	9.06	CH 44	9.76	9.83	9.82	9.81	9.92	9.86	9.94
CH 44	5220	9.95								
CH 48	5240	9.31								
CH 52	5260	10.05	CH 52	9.88	9.93	10.00	9.98	10.03	10.04	9.99
CH 60	5300	9.02								
CH 64	5320	9.65								
CH 100	5500	10.23	CH 100	10.11	10.14	10.19	10.17	10.13	10.18	10.21
CH 116	5580	8.78								
CH 140	5700	8.74								

5GHz 802.11n HT20 RF Output Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180	9.45	CH 44	10.11	10.18	10.25	10.14	10.22	10.23	10.26
CH 44	5220	10.27								
CH 48	5240	9.65								
CH 52	5260	10.48	CH 52	10.29	10.37	10.38	10.39	10.46	10.45	10.44
CH 60	5300	9.37								
CH 64	5320	10.06								
CH 100	5500	9.61	CH 100	9.58	9.50	9.53	9.54	9.60	9.55	9.59
CH 116	5580	8.15								
CH 140	5700	8.58								



5GHz 802.11n HT40 RF Output Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 38	5190	9.28	CH 46	9.41	9.48	9.49	9.52	9.56	9.55	9.58
CH 46	5230	9.59								
CH 54	5270	9.05	CH 62	9.53	9.53	9.46	9.59	9.51	9.55	9.64
CH 62	5310	9.65								
CH 102	5510	8.22	CH 134	10.01	10.08	10.05	10.11	10.10	10.09	10.14
CH 110	5550	8.54								
CH 134	5670	10.15								

2.3 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates from the power table described in section 2.2.

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

AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable 1 (Charging from Adapter) + USB Cable 2 (Data Link with Notebook)
Remark: For Radiated TCs, the tests were performed with adapter, earphone, USB cable 1 and USB cable 2.	



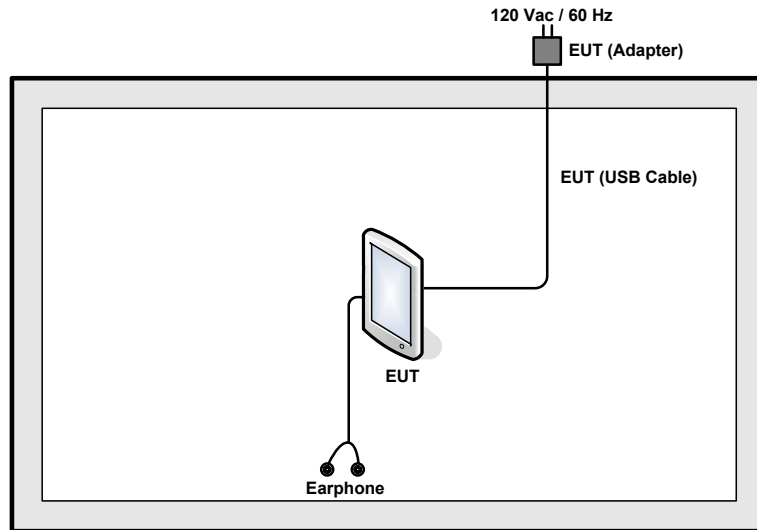
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5580 MHz and 5660-5700MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5580 MHz and 5660-5700MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

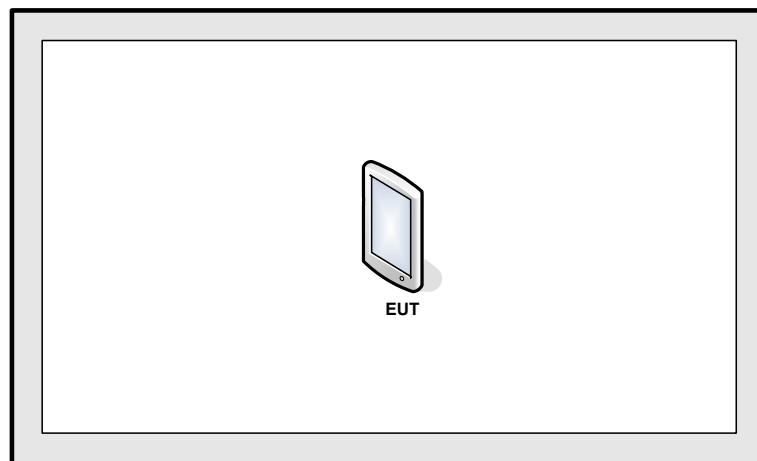
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5580 MHz and 5660-5700MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

2.4 Connection Diagram of Test System

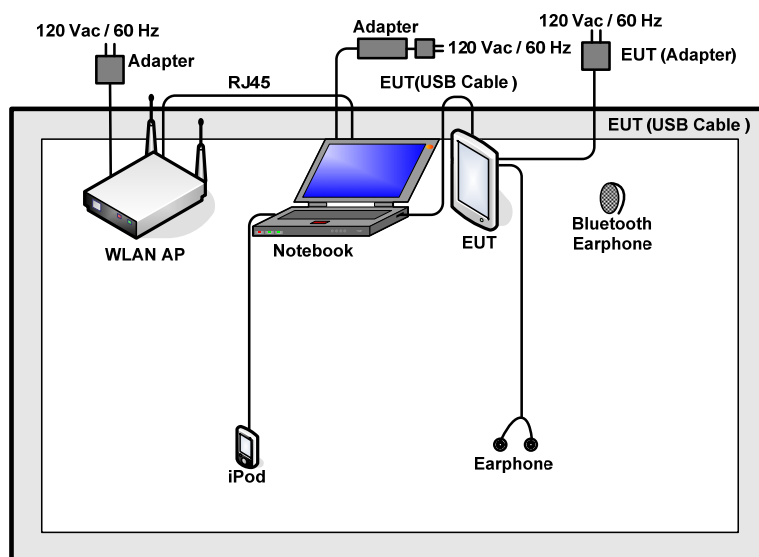
<WLAN 5GHz 802.11a/n HT20 Tx Mode>



<WLAN 5GHz 802.11n HT40 Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11	N/A	Unshielded, 1.8 m
2.	iPod	Apple	MC525ZP/A	FCC DoC	Shielded, 1.0 m	N/A
3.	Notebook	Lenovo	G480	PRC4	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A
5.	Earphone	Lenovo	SH100	N/A	Unshielded, 1.2 m	N/A

2.6 EUT Operation Test Setup

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

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

2.7 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 8.0 dB.

$$\begin{aligned}\text{Offset (dB)} &= \text{RF cable loss(dB)} \\ &= 8.0 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

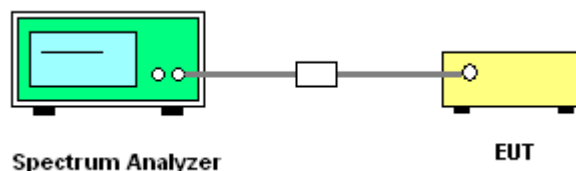
3.1.2 Measuring Instruments

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 v01.
Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.
Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) $\geq 3 * \text{RBW}$.
8. Measure and record the results in the test report.

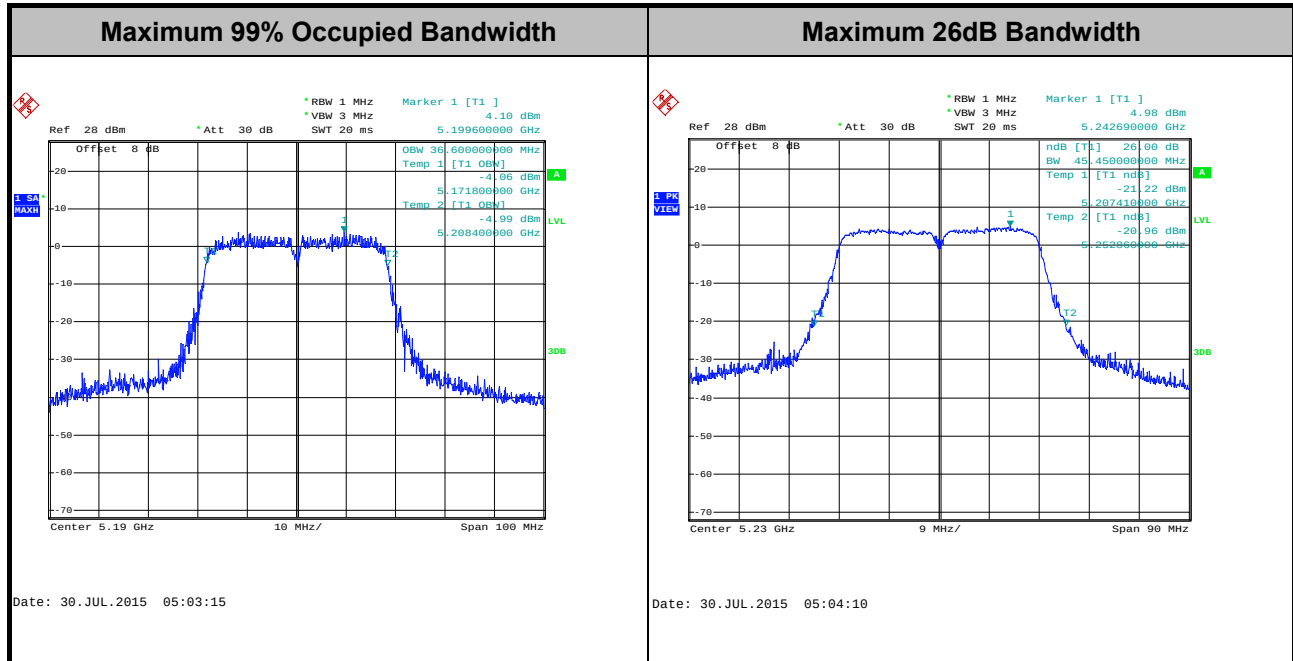
3.1.4 Test Setup





3.1.5 Test Result of 26dB & 99% Occupied Bandwidth Plots

Please refer to Appendix A.



3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For mobile and portable 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.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

<IC RSS-247 Section 6>

For the 5.15–5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

For the 5.25–5.35 GHz band, the maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever power is less.

For the 5.47–5.6 GHz and 5.65–5.725 GHz band, the maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever power is less.

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.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

3.2.2 Measuring Instruments

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

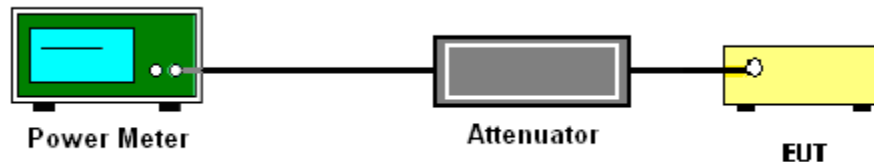
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.

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

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

<IC RSS-247 Section 6>

For the 5.15–5.25 GHz band, the e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

For the 5.25–5.35 GHz band, the power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

For the 5.47–5.6 GHz and 5.65–5.725 GHz band, the power spectral density shall not exceed 11 dBm in any 1.0 MHz 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 v01.

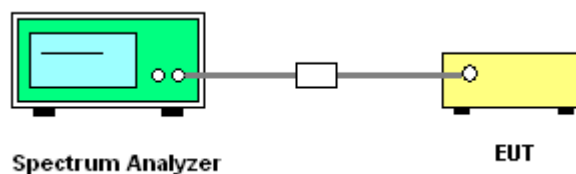
Section F) Maximum power spectral density.

Method SA-2

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

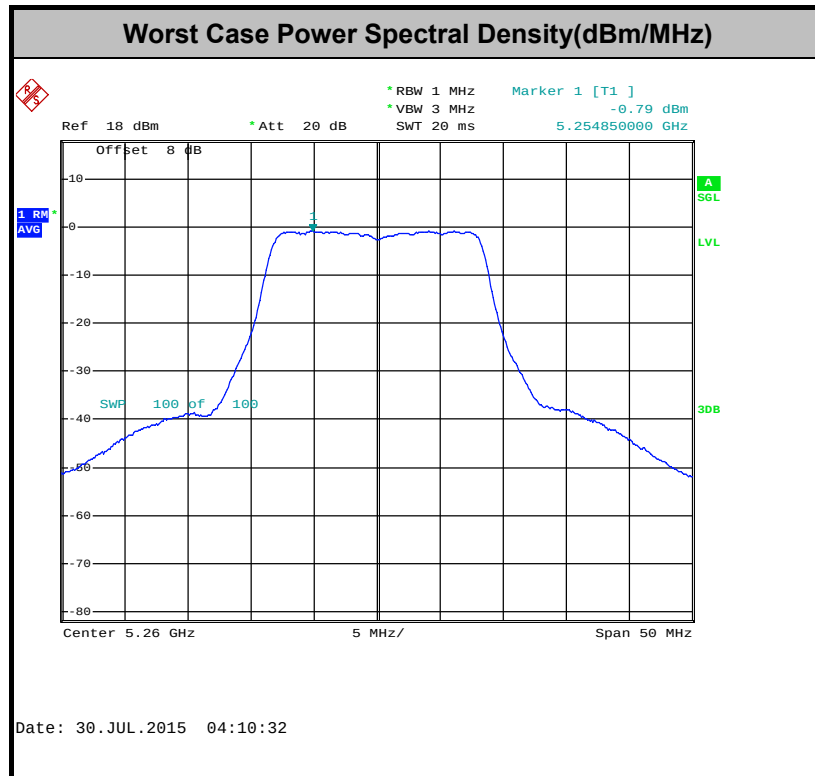
1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW $\geq$ 3 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - 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.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. 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.



Note: Average Power Density (dB) = Measured value+ Duty Factor

3.4 Unwanted Radiated Emission 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 Part 15.205.

3.4.1 Limit of Unwanted Emissions

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

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

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

- (2) Unwanted spurious emissions fallen in restricted bands per FCC Part 15.205 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.

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

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

- (3) KDB789033 v01 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

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 v01.

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 $\geq$ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

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

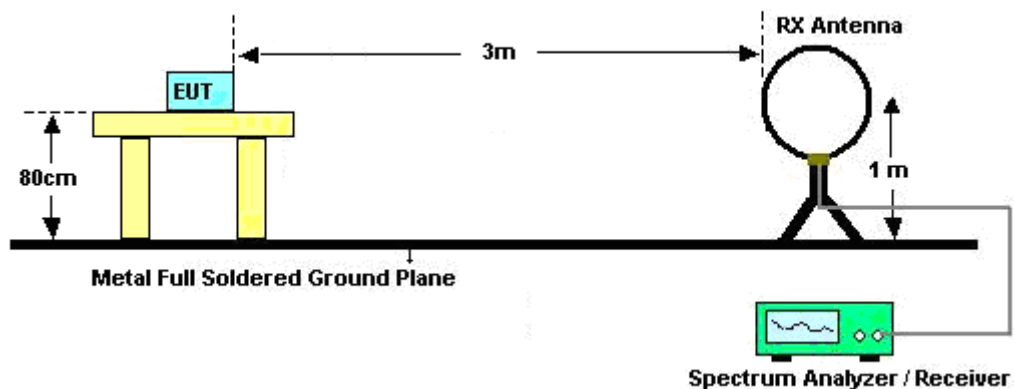
- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle (%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	87.20	1.36	0.73	1kHz
802.11n HT20	86.47	1.28	0.78	1kHz
802.11n HT40	76.30	0.64	1.55	3kHz

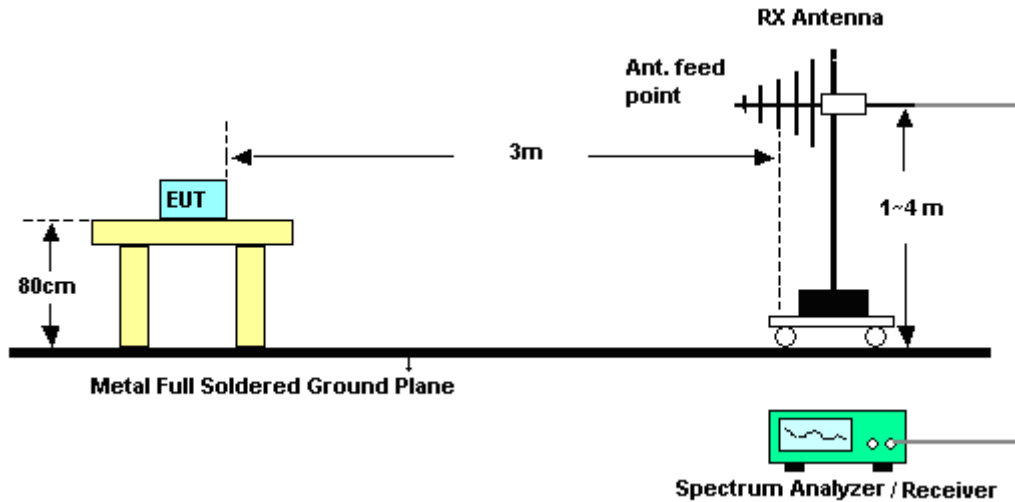
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband 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

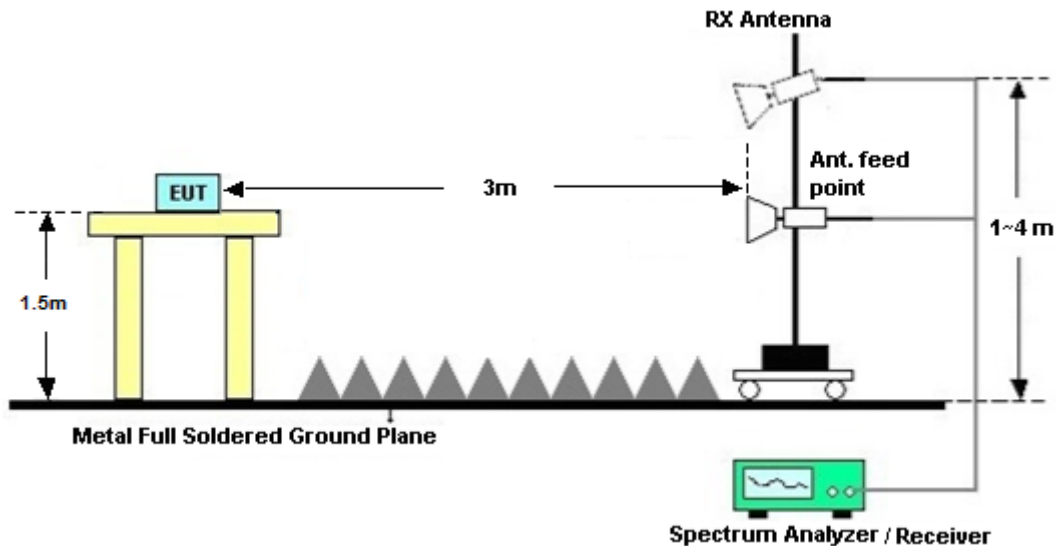
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.4.5 Test Results of Radiated 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 Band Edges

Please refer to Appendix B.

3.4.7 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

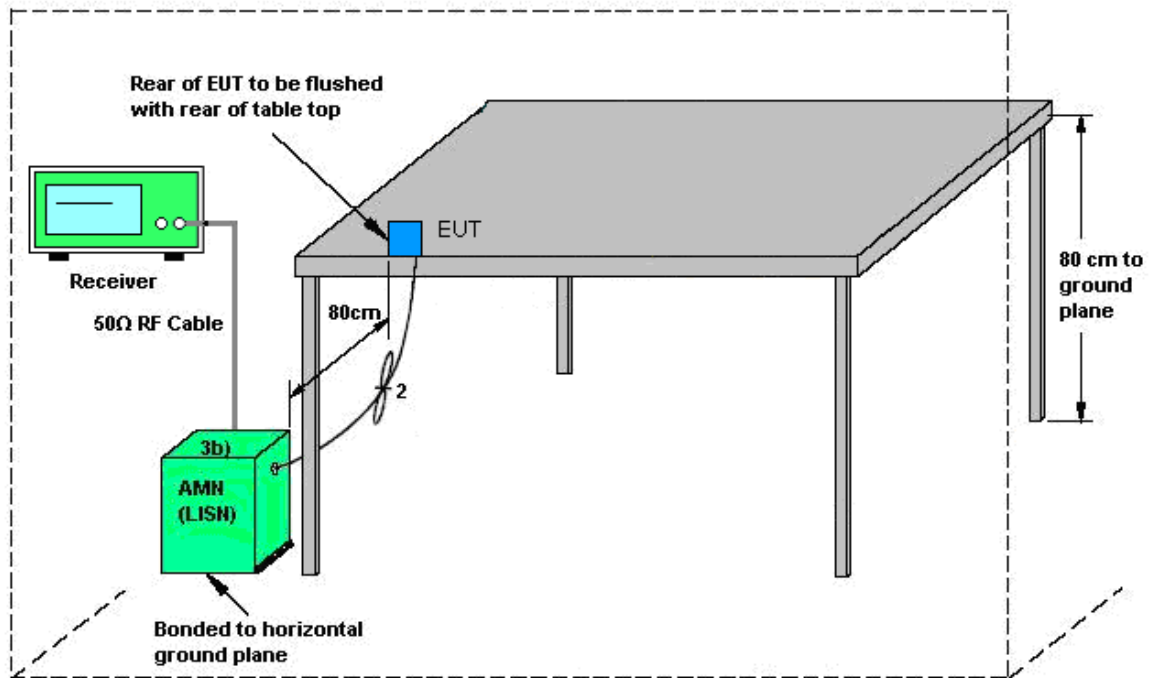
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup

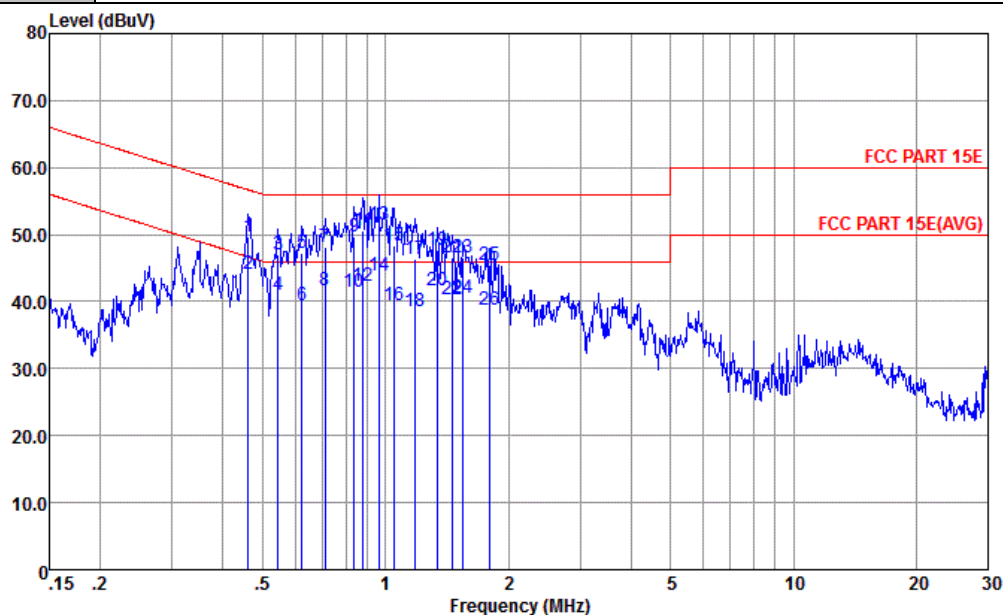


AMN = Artificial mains network (LISN)
 AE = Associated equipment
 EUT = Equipment under test
 ISN = Impedance stabilization network



3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Eko Guan	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable 1 (Charging from Adapter) + USB Cable 2 (Data Link with Notebook)		

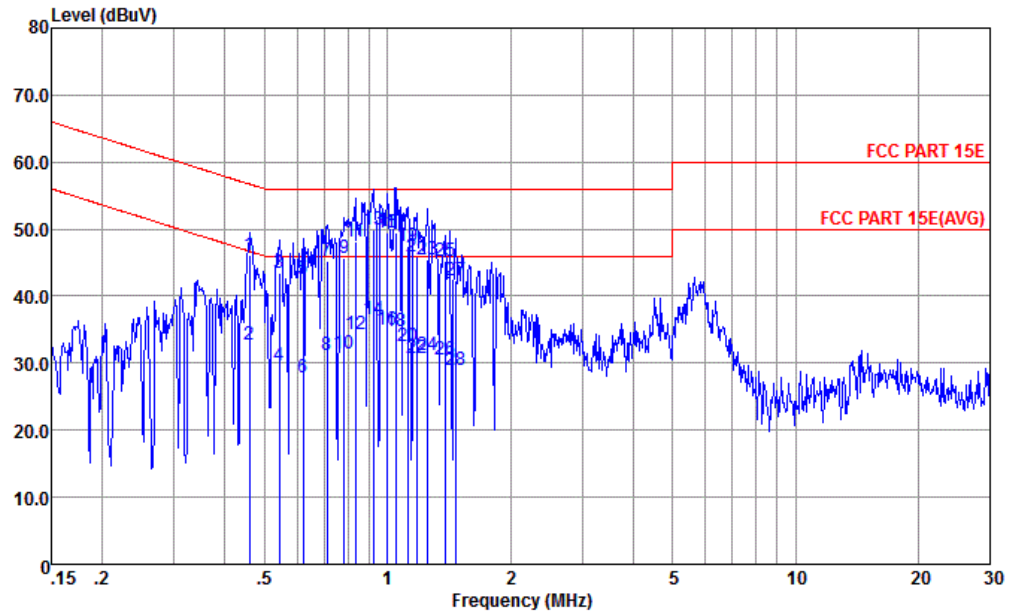


Site : CO01-KS
Condition : FCC PART 15E LISN-L20140306 LINE

mode		: Mode 1						
	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.46	49.66	-7.01	56.67	38.80	0.24	10.62	QP
2	0.46	44.06	-2.61	46.67	33.20	0.24	10.62	Average
3	0.55	47.03	-8.97	56.00	36.20	0.20	10.63	QP
4	0.55	41.03	-4.97	46.00	30.20	0.20	10.63	Average
5	0.62	47.33	-8.67	56.00	36.50	0.20	10.63	QP
6	0.62	39.33	-6.67	46.00	28.50	0.20	10.63	Average
7	0.71	48.04	-7.96	56.00	37.20	0.20	10.64	QP
8	0.71	41.64	-4.36	46.00	30.80	0.20	10.64	Average
9	0.84	49.59	-6.41	56.00	38.79	0.15	10.65	QP
10	0.84	41.49	-4.51	46.00	30.69	0.15	10.65	Average
11	0.88	50.68	-5.32	56.00	39.90	0.13	10.65	QP
12	0.88	42.28	-3.72	46.00	31.50	0.13	10.65	Average
13	0.96	51.46	-4.54	56.00	40.70	0.11	10.65	QP
14 *	0.96	43.86	-2.14	46.00	33.10	0.11	10.65	Average
15	1.05	48.45	-7.55	56.00	37.70	0.10	10.65	QP
16	1.05	39.45	-6.55	46.00	28.70	0.10	10.65	Average
17	1.18	46.26	-9.74	56.00	35.50	0.10	10.66	QP
18	1.18	38.46	-7.54	46.00	27.70	0.10	10.66	Average
19	1.34	47.67	-8.33	56.00	36.90	0.10	10.67	QP
20	1.34	41.67	-4.33	46.00	30.90	0.10	10.67	Average
21	1.46	46.48	-9.52	56.00	35.70	0.10	10.68	QP
22	1.46	40.38	-5.62	46.00	29.60	0.10	10.68	Average
23	1.55	46.59	-9.41	56.00	35.80	0.10	10.69	QP
24	1.55	40.49	-5.51	46.00	29.70	0.10	10.69	Average
25	1.80	45.50	-10.50	56.00	34.70	0.10	10.70	QP
26	1.80	38.70	-7.30	46.00	27.90	0.10	10.70	Average



Test Mode :	Mode 1	Temperature :	22~24°C
Test Engineer :	Eko Guan	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable 1 (Charging from Adapter) + USB Cable 2 (Data Link with Notebook)		



Site : CO01-KS
Condition : FCC PART 15E LISN-N20140306 NEUTRAL

mode : Mode 1

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.46	46.16	-10.55	56.71	35.21	0.33	10.62	QP
2	0.46	32.76	-13.95	46.71	21.81	0.33	10.62	Average
3	0.54	43.41	-12.59	56.00	32.50	0.28	10.63	QP
4	0.54	29.71	-16.29	46.00	18.80	0.28	10.63	Average
5	0.62	42.66	-13.34	56.00	31.80	0.23	10.63	QP
6	0.62	27.76	-18.24	46.00	16.90	0.23	10.63	Average
7	0.71	45.34	-10.66	56.00	34.50	0.20	10.64	QP
8	0.71	31.24	-14.76	46.00	20.40	0.20	10.64	Average
9	0.78	45.62	-10.38	56.00	34.81	0.17	10.64	QP
10	0.78	31.32	-14.68	46.00	20.51	0.17	10.64	Average
11	0.83	48.10	-7.90	56.00	37.30	0.15	10.65	QP
12	0.83	34.30	-11.70	46.00	23.50	0.15	10.65	Average
13 *	0.92	49.87	-6.13	56.00	39.10	0.12	10.65	QP
14	0.92	36.47	-9.53	46.00	25.70	0.12	10.65	Average
15	1.00	49.55	-6.45	56.00	38.80	0.10	10.65	QP
16	1.00	34.95	-11.05	46.00	24.20	0.10	10.65	Average
17	1.05	49.55	-6.45	56.00	38.80	0.10	10.65	QP
18	1.05	34.65	-11.35	46.00	23.90	0.10	10.65	Average
19	1.12	47.56	-8.44	56.00	36.80	0.10	10.66	QP
20	1.12	32.46	-13.54	46.00	21.70	0.10	10.66	Average
21	1.18	45.96	-10.04	56.00	35.20	0.10	10.66	QP
22	1.18	30.86	-15.14	46.00	20.10	0.10	10.66	Average
23	1.26	45.56	-10.44	56.00	34.80	0.10	10.66	QP
24	1.26	31.16	-14.84	46.00	20.40	0.10	10.66	Average
25	1.39	45.27	-10.73	56.00	34.50	0.10	10.67	QP
26	1.39	30.57	-15.43	46.00	19.80	0.10	10.67	Average
27	1.47	42.28	-13.72	56.00	31.50	0.10	10.68	QP
28	1.47	28.98	-17.02	46.00	18.20	0.10	10.68	Average

3.6 Frequency Stability Measurement

3.6.1 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.

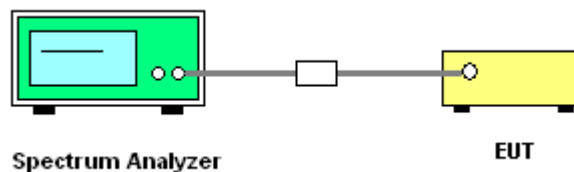
3.6.2 Measuring Instruments

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

3.6.3 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.

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Please refer to Appendix A.



3.7 Automatically Discontinue Transmission

3.7.1 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.

3.7.2 Measuring Instruments

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

3.7.3 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.



3.8 Antenna Requirements

3.8.1 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.

3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.8.3 Antenna Gain

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



4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Oct. 28, 2014	Jul. 30, 2015	Oct. 27, 2015	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	30MHz~40GHz	Jan. 23, 2015	Jul. 30, 2015	Jan. 22, 2016	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 23, 2015	Jul. 30, 2015	Jan. 22, 2016	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 25, 2014	Jul. 30, 2015	Oct. 24, 2015	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Sep. 29, 2014	Aug. 03, 2015	Sep. 28, 2015	Radiation (03CH02-KS)
Spectrum Analyzer	R&S	FSV40	101040	10kHz~40GHz; Max 30dBm	Sep. 25, 2014	Aug. 03, 2015	Sep. 24, 2015	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 13, 2014	Aug. 03, 2015	Nov. 12, 2015	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	37879	30MHz~2GHz	Sep. 13, 2014	Aug. 03, 2015	Sep. 12, 2015	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 08, 2014	Aug. 03, 2015	Nov. 07, 2015	Radiation (03CH02-KS)
Active Horn Antenna	com-power	AHA-118	701030	1GHz~18GHz	Nov. 08, 2014	Aug. 03, 2015	Nov. 07, 2015	Radiation (03CH02-KS)
SHF-EHF Horn	com-power	AH-840	101070	18GHz~40GHz	Sep. 04, 2014	Aug. 03, 2015	Sep. 03, 2015	Radiation (03CH02-KS)
Amplifier	com-power	PA-103A	161069	1kHz~1000MHz / 32 dB	May 04, 2015	Aug. 03, 2015	May 03, 2016	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1GHz~26.5GHz Gain 30dB	Oct. 28, 2014	Aug. 03, 2015	Oct. 27, 2015	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Aug. 03, 2015	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Aug. 03, 2015	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Aug. 03, 2015	NCR	Radiation (03CH02-KS)
EMI Receiver	R&S	ESC17	100768	9kHz~7GHz;	May 04, 2015	Jul. 27, 2015	May 03, 2016	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 25, 2014	Jul. 27, 2015	Oct. 24, 2015	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 25, 2014	Jul. 27, 2015	Oct. 24, 2015	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 25, 2014	Jul. 27, 2015	Oct. 24, 2015	Conduction (CO01-KS)



5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.3 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1 dB
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Appendix A. Conducted Test Results

Report Number : FR570801E

Test Engineer:	Fire Huang	Temperature:	21~25	°C
Test Date:	2015/7/30	Relative Humidity:	51~54	%

TEST RESULTS DATA
26dB and 99% OBW

Band I										
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	IC 99% Bandwidth Power Limit (dBm)	IC 99% Bandwidth EIRP Limit (dBm)		
11a	6Mbps	1	36	5180	18.00	23.40	-	22.55		
11a	6Mbps	1	44	5220	18.10	23.70	-	22.58		
11a	6Mbps	1	48	5240	17.95	23.60	-	22.54		
HT20	MCS0	1	36	5180	18.80	24.20	-	22.74		
HT20	MCS0	1	44	5220	18.85	23.75	-	22.75		
HT20	MCS0	1	48	5240	18.95	23.70	-	22.78		
HT40	MCS0	1	38	5190	36.60	44.55	-	23.01		
HT40	MCS0	1	46	5230	36.50	45.45	-	23.01		

TEST RESULTS DATA
Average Power Table

FCC Band I										
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6Mbps	1	36	5180	0.59	9.06	24.00	1.94		Pass
11a	6Mbps	1	44	5220	0.59	9.95	24.00	1.94		Pass
11a	6Mbps	1	48	5240	0.59	9.31	24.00	1.94		Pass
HT20	MCS0	1	36	5180	0.63	9.45	24.00	1.94		Pass
HT20	MCS0	1	44	5220	0.63	10.27	24.00	1.94		Pass
HT20	MCS0	1	48	5240	0.63	9.65	24.00	1.94		Pass
HT40	MCS0	1	38	5190	1.17	9.28	24.00	1.94		Pass
HT40	MCS0	1	46	5230	1.17	9.59	24.00	1.94		Pass

IC Band I										
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	IC Conducted Power Limit (dBm)	DG (dBi)	IC EIRP Power Limit (dBm)	Pass/Fail
11a	6Mbps	1	36	5180	0.59	9.06	20.61	1.94	22.55	Pass
11a	6Mbps	1	44	5220	0.59	9.95	20.64	1.94	22.58	Pass
11a	6Mbps	1	48	5240	0.59	9.31	20.60	1.94	22.54	Pass
HT20	MCS0	1	36	5180	0.63	9.45	20.80	1.94	22.74	Pass
HT20	MCS0	1	44	5220	0.63	10.27	20.81	1.94	22.75	Pass
HT20	MCS0	1	48	5240	0.63	9.65	20.84	1.94	22.78	Pass
HT40	MCS0	1	38	5190	1.17	9.28	21.07	1.94	23.01	Pass
HT40	MCS0	1	46	5230	1.17	9.59	21.07	1.94	23.01	Pass

TEST RESULTS DATA
Power Spectral Density

FCC Band I										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)	-	Pass/Fail
11a	6Mbps	1	36	5180	0.59	-0.89	11.00	1.94		Pass
11a	6Mbps	1	44	5220	0.59	-0.37	11.00	1.94		Pass
11a	6Mbps	1	48	5240	0.59	-0.38	11.00	1.94		Pass
HT20	MCS0	1	36	5180	0.63	-1.10	11.00	1.94		Pass
HT20	MCS0	1	44	5220	0.63	-0.59	11.00	1.94		Pass
HT20	MCS0	1	48	5240	0.63	-0.54	11.00	1.94		Pass
HT40	MCS0	1	38	5190	1.17	-3.93	11.00	1.94		Pass
HT40	MCS0	1	46	5230	1.17	-3.61	11.00	1.94		Pass

IC Band I										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)	IC EIRP PSD Limit (dBm/MHz)	Pass/Fail
11a	6Mbps	1	36	5180	0.59	-0.89	8.06	1.94	10	Pass
11a	6Mbps	1	44	5220	0.59	-0.37	8.06	1.94	10	Pass
11a	6Mbps	1	48	5240	0.59	-0.38	8.06	1.94	10	Pass
HT20	MCS0	1	36	5180	0.63	-1.10	8.06	1.94	10	Pass
HT20	MCS0	1	44	5220	0.63	-0.59	8.06	1.94	10	Pass
HT20	MCS0	1	48	5240	0.63	-0.54	8.06	1.94	10	Pass
HT40	MCS0	1	38	5190	1.17	-3.93	8.06	1.94	10	Pass
HT40	MCS0	1	46	5230	1.17	-3.61	8.06	1.94	10	Pass

TEST RESULTS DATA
26dB and 99% OBW

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	IC 99% Bandwidth Power Limit (dBm)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6Mbps	1	52	5260	18.05	24.00	23.56	29.56	23.98	
11a	6Mbps	1	60	5300	18.20	23.85	23.60	29.60	23.98	
11a	6Mbps	1	64	5320	18.00	23.45	23.55	29.55	23.98	
HT20	MCS0	1	52	5260	18.95	23.95	23.78	29.78	23.98	
HT20	MCS0	1	60	5300	19.00	23.85	23.79	29.79	23.98	
HT20	MCS0	1	64	5320	18.85	24.10	23.75	29.75	23.98	
HT40	MCS0	1	54	5270	36.40	44.73	23.98	30.00	23.98	
HT40	MCS0	1	62	5310	36.50	45.00	23.98	30.00	23.98	

TEST RESULTS DATA
Average Power Table

FCC Band II										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6Mbps	1	52	5260	0.59	10.05	23.98	2.07		Pass
11a	6Mbps	1	60	5300	0.59	9.02	23.98	2.07		Pass
11a	6Mbps	1	64	5320	0.59	9.65	23.98	2.07		Pass
HT20	MCS0	1	52	5260	0.63	10.48	23.98	2.07		Pass
HT20	MCS0	1	60	5300	0.63	9.37	23.98	2.07		Pass
HT20	MCS0	1	64	5320	0.63	10.06	23.98	2.07		Pass
HT40	MCS0	1	54	5270	1.17	9.05	23.98	2.07		Pass
HT40	MCS0	1	62	5310	1.17	9.65	23.98	2.07		Pass

IC Band II										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	IC Conducted Power Limit (dBm)	DG (dBi)	IC EIRP Power Limit (dBm)	Pass/Fail
11a	6Mbps	1	52	5260	0.59	10.05	23.56	2.07	29.56	Pass
11a	6Mbps	1	60	5300	0.59	9.02	23.60	2.07	29.60	Pass
11a	6Mbps	1	64	5320	0.59	9.65	23.55	2.07	29.55	Pass
HT20	MCS0	1	52	5260	0.63	10.48	23.78	2.07	29.78	Pass
HT20	MCS0	1	60	5300	0.63	9.37	23.79	2.07	29.79	Pass
HT20	MCS0	1	64	5320	0.63	10.06	23.75	2.07	29.75	Pass
HT40	MCS0	1	54	5270	1.17	9.05	23.98	2.07	30.00	Pass
HT40	MCS0	1	62	5310	1.17	9.65	23.98	2.07	30.00	Pass

TEST RESULTS DATA
Power Spectral Density

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6Mbps	1	52	5260	0.59	-0.20	11.00	2.07		Pass
11a	6Mbps	1	60	5300	0.59	-0.84	11.00	2.07		Pass
11a	6Mbps	1	64	5320	0.59	-0.26	11.00	2.07		Pass
HT20	MCS0	1	52	5260	0.63	-0.24	11.00	2.07		Pass
HT20	MCS0	1	60	5300	0.63	-0.80	11.00	2.07		Pass
HT20	MCS0	1	64	5320	0.63	-0.33	11.00	2.07		Pass
HT40	MCS0	1	54	5270	1.17	-4.46	11.00	2.07		Pass
HT40	MCS0	1	62	5310	1.17	-3.53	11.00	2.07		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	IC 99% Bandwidth Power Limit (dBm)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6Mbps	1	100	5500	18.15	23.60	23.59	29.59	23.98	
11a	6Mbps	1	116	5580	17.95	23.85	23.54	29.54	23.98	
11a	6Mbps	1	140	5700	18.00	23.45	23.55	29.55	23.98	
HT20	MCS0	1	100	5500	18.85	24.10	23.75	29.75	23.98	
HT20	MCS0	1	116	5580	18.95	23.95	23.78	29.78	23.98	
HT20	MCS0	1	140	5700	18.85	23.95	23.75	29.75	23.98	
HT40	MCS0	1	102	5510	36.40	45.45	23.98	30.00	23.98	
HT40	MCS0	1	110	5550	36.50	44.82	23.98	30.00	23.98	
HT40	MCS0	1	134	5670	36.50	44.82	23.98	30.00	23.98	

TEST RESULTS DATA
Average Power Table

FCC Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6Mbps	1	100	5500	0.59	10.23	23.98	1.92		Pass
11a	6Mbps	1	116	5580	0.59	8.78	23.98	1.92		Pass
11a	6Mbps	1	140	5700	0.59	8.74	23.98	1.92		Pass
HT20	MCS0	1	100	5500	0.63	9.61	23.98	1.92		Pass
HT20	MCS0	1	116	5580	0.63	8.15	23.98	1.92		Pass
HT20	MCS0	1	140	5700	0.63	8.58	23.98	1.92		Pass
HT40	MCS0	1	102	5510	1.17	8.22	23.98	1.92		Pass
HT40	MCS0	1	110	5550	1.17	8.54	23.98	1.92		Pass
HT40	MCS0	1	134	5670	1.17	10.15	23.98	1.92		Pass

IC Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	IC Conducted Power Limit (dBm)	DG (dBi)	IC EIRP Power Limit (dBm)	Pass/Fail
11a	6Mbps	1	100	5500	0.59	10.23	23.59	1.92	29.59	Pass
11a	6Mbps	1	116	5580	0.59	8.78	23.54	1.92	29.54	Pass
11a	6Mbps	1	140	5700	0.59	8.74	23.55	1.92	29.55	Pass
HT20	MCS0	1	100	5500	0.63	9.61	23.75	1.92	29.75	Pass
HT20	MCS0	1	116	5580	0.63	8.15	23.78	1.92	29.78	Pass
HT20	MCS0	1	140	5700	0.63	8.58	23.75	1.92	29.75	Pass
HT40	MCS0	1	102	5510	1.17	8.22	23.98	1.92	30.00	Pass
HT40	MCS0	1	110	5550	1.17	8.54	23.98	1.92	30.00	Pass
HT40	MCS0	1	134	5670	1.17	10.15	23.98	1.92	30.00	Pass

TEST RESULTS DATA
Power Spectral Density

Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6Mbps	1	100	5500	0.59	-0.68	11.00	1.92		Pass
11a	6Mbps	1	116	5580	0.59	-1.33	11.00	1.92		Pass
11a	6Mbps	1	140	5700	0.59	-0.86	11.00	1.92		Pass
HT20	MCS0	1	100	5500	0.63	-1.82	11.00	1.92		Pass
HT20	MCS0	1	116	5580	0.63	-2.60	11.00	1.92		Pass
HT20	MCS0	1	140	5700	0.63	-1.69	11.00	1.92		Pass
HT40	MCS0	1	102	5510	1.17	-4.80	11.00	1.92		Pass
HT40	MCS0	1	110	5550	1.17	-4.60	11.00	1.92		Pass
HT40	MCS0	1	134	5670	1.17	-3.09	11.00	1.92		Pass

TEST RESULTS DATA
Frequency Stability

Band I										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	20	3.55	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	20	4.2	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	20	3.7	
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	-30	3.7	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	50	3.7	

Band II										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	20	3.55	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	20	4.2	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	20	3.7	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	-30	3.7	
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	50	3.7	

Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	100	5500	5500.075	0.075	13.64	20	3.55	
11a	6Mbps	1	100	5500	5500.050	0.050	9.09	20	4.2	
11a	6Mbps	1	100	5500	5500.050	0.050	9.09	20	3.7	
11a	6Mbps	1	100	5500	5500.050	0.050	9.09	-30	3.7	
11a	6Mbps	1	100	5500	5500.050	0.050	9.09	50	3.7	



Appendix B. Radiated Test Results

Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 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)
802.11a CH 36 5180MHz		5148.45	59.33	-14.67	74	49.13	35.04	9.01	33.85	150	43	P	H
		5127.8	44.42	-9.58	54	34.17	35.04	9.01	33.8	150	43	A	H
	*	5186	101.77	-	-	91.62	35.05	9.06	33.96	150	43	P	H
	*	5184	91.55	-	-	81.4	35.05	9.06	33.96	150	43	A	H
		5122.3	58.05	-15.95	74	47.8	35.03	8.97	33.75	259	90	P	V
		5106.3	43.93	-10.07	54	33.68	35.03	8.97	33.75	259	90	A	V
	*	5178	92.32	-	-	82.17	35.05	9.06	33.96	259	90	P	V
	*	5186	81.51	-	-	71.36	35.05	9.06	33.96	259	90	A	V
802.11a CH 44 5220MHz	*	5224	102.9	-	-	92.9	35.06	9.1	34.16	150	42	P	H
	*	5224	91.3	-	-	81.3	35.06	9.1	34.16	150	42	A	H
	*	5226	91.99	-	-	82.13	35.07	9.1	34.31	151	88	P	V
	*	5224	80.02	-	-	70.02	35.06	9.1	34.16	151	88	A	V
802.11a CH 48 5240MHz		5394	57.16	-16.84	74	48.42	35.12	9.27	35.65	154	39	P	H
		5352.05	42.87	-11.13	54	33.88	35.11	9.23	35.35	154	39	A	H
	*	5234	101.47	-	-	91.61	35.07	9.1	34.31	154	39	P	H
	*	5244	91.28	-	-	81.52	35.08	9.14	34.46	154	39	A	H
		5370.75	57.21	-16.79	74	48.33	35.11	9.27	35.5	222	268	P	V
		5364.75	42.89	-11.11	54	34.01	35.11	9.27	35.5	222	268	A	V
	*	5246	92.17	-	-	82.41	35.08	9.14	34.46	222	268	P	V
	*	5244	81.98	-	-	72.22	35.08	9.14	34.46	222	268	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 1 5150~5250MHz****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 CH 36 5180MHz		10359	48.36	-25.64	74	58.01	38.3	13.15	61.1	166	230	P	H
		10359	48.19	-25.81	74	57.84	38.3	13.15	61.1	178	169	P	V
802.11a CH 44 5220MHz		10440	48.17	-25.83	74	57.71	38.35	13.18	61.07	199	261	P	H
		10440	46.45	-27.55	74	55.99	38.35	13.18	61.07	174	309	P	V
802.11a CH 48 5240MHz		10479	47.7	-26.3	74	57.15	38.39	13.2	61.04	166	230	P	H
		10479	46.7	-27.3	74	56.15	38.39	13.2	61.04	257	105	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

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 36 5180MHz		5147	60.07	-13.93	74	49.87	35.04	9.01	33.85	213	53	P	H
		5127.9	44.19	-9.81	54	33.94	35.04	9.01	33.8	213	53	A	H
	*	5186	101.27	-	-	91.12	35.05	9.06	33.96	213	53	P	H
	*	5184	90.43	-	-	80.28	35.05	9.06	33.96	213	53	A	H
		5102.9	58.31	-15.69	74	48	35.03	8.97	33.69	156	109	P	V
		5104.4	44.14	-9.86	54	33.83	35.03	8.97	33.69	156	109	A	V
	*	5176	92.43	-	-	82.28	35.05	9.06	33.96	156	109	P	V
	*	5178	82.31	-	-	72.16	35.05	9.06	33.96	156	109	A	V
802.11n HT20 CH 44 5220MHz	*	5214	101.54	-	-	91.54	35.06	9.1	34.16	206	48	P	H
	*	5224	90.88	-	-	80.88	35.06	9.1	34.16	206	48	A	H
	*	5224	91.02	-	-	81.02	35.06	9.1	34.16	272	96	P	V
	*	5224	81.15	-	-	71.15	35.06	9.1	34.16	272	96	A	V
802.11n HT20 CH 48 5240MHz		5360.5	56.88	-17.12	74	47.89	35.11	9.23	35.35	162	45	P	H
		5367.2	42.94	-11.06	54	34.06	35.11	9.27	35.5	162	45	A	H
	*	5234	100.85	-	-	90.99	35.07	9.1	34.31	162	45	P	H
	*	5234	90.57	-	-	80.71	35.07	9.1	34.31	162	45	A	H
		5366.5	57.31	-16.69	74	48.43	35.11	9.27	35.5	175	97	P	V
		5397.85	42.8	-11.2	54	34.21	35.12	9.27	35.8	175	97	A	V
	*	5234	91.85	-	-	81.99	35.07	9.1	34.31	175	97	P	V
	*	5232	81.11	-	-	71.25	35.07	9.1	34.31	175	97	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
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 36 5180MHz		10360	49.11	-24.89	74	58.76	38.3	13.15	61.1	152	60	P	H
		10360	48.48	-25.52	74	58.13	38.3	13.15	61.1	158	54	P	V
802.11n HT20 CH 44 5220MHz		10440	48.46	-25.54	74	58	38.35	13.18	61.07	154	201	P	H
		10440	47.42	-26.58	74	56.96	38.35	13.18	61.07	185	261	P	V
802.11n HT20 CH 48 5240MHz		10479	47.82	-26.18	74	57.27	38.39	13.2	61.04	160	52	P	H
		10479	47.85	-26.15	74	57.3	38.39	13.2	61.04	184	210	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

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)
802.11n HT40 CH 38 5190MHz		5149.75	65.67	-8.33	74	55.47	35.04	9.01	33.85	210	52	P	H
	!	5149.75	49.79	-4.21	54	39.59	35.04	9.01	33.85	210	52	A	H
	*	5176	99.58	-	-	89.43	35.05	9.06	33.96	210	52	P	H
	*	5184	89.62	-	-	79.47	35.05	9.06	33.96	210	52	A	H
		5105.65	58.27	-15.73	74	48.02	35.03	8.97	33.75	150	57	P	V
		5149.85	45.01	-8.99	54	34.81	35.04	9.01	33.85	150	57	A	V
	*	5184	89.15	-	-	79	35.05	9.06	33.96	150	57	P	V
	*	5184	79.12	-	-	68.97	35.05	9.06	33.96	150	57	A	V
802.11n HT40 CH 46 5230MHz		5350	57.16	-16.84	74	48.17	35.11	9.23	35.35	195	45	P	H
		5364.75	43.8	-10.2	54	34.92	35.11	9.27	35.5	195	45	A	H
	*	5240	97.56	-	-	87.7	35.07	9.1	34.31	195	45	P	H
	*	5226	86.84	-	-	76.98	35.07	9.1	34.31	195	45	A	H
		5398.4	56.93	-17.07	74	48.34	35.12	9.27	35.8	209	135	P	V
		5367.2	43.82	-10.18	54	34.94	35.11	9.27	35.5	209	135	A	V
	*	5226	89.69	-	-	79.83	35.07	9.1	34.31	209	135	P	V
	*	5242	79.97	-	-	70.25	35.08	9.1	34.46	209	135	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
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 38 5190MHz		10380	47.15	-26.85	74	56.77	38.31	13.17	61.1	165	230	P	H
		10380	47.1	-26.9	74	56.72	38.31	13.17	61.1	210	162	P	V
802.11n HT40 CH 46 5230MHz		10461	47.62	-26.38	74	57.09	38.38	13.2	61.05	150	140	P	H
		10461	46.36	-27.64	74	55.83	38.38	13.2	61.05	210	306	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 - 5250~5350MHz

WIFI 802.11a (Band Edge @ 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)
802.11a CH 52 5260MHz		5116.1	57.74	-16.26	74	47.49	35.03	8.97	33.75	170	50	P	H
		5110	43.73	-10.27	54	33.48	35.03	8.97	33.75	170	50	A	H
	*	5256	100.96	-	-	91.2	35.08	9.14	34.46	170	48	P	H
	*	5256	89.56	-	-	79.8	35.08	9.14	34.46	170	48	A	H
		5102.85	58.03	-15.97	74	47.72	35.03	8.97	33.69	240	276	P	V
		5106.15	43.61	-10.39	54	33.36	35.03	8.97	33.75	240	276	A	V
	*	5256	93.24	-	-	83.48	35.08	9.14	34.46	240	276	P	V
	*	5254	82.54	-	-	72.78	35.08	9.14	34.46	240	276	A	V
802.11a CH 60 5300MHz	*	5304	100.02	-	-	90.65	35.09	9.18	34.9	150	46	P	H
	*	5296	88.58	-	-	79.21	35.09	9.18	34.9	150	46	A	H
	*	5306	88.23	-	-	78.86	35.09	9.18	34.9	161	289	P	V
	*	5304	77.83	-	-	68.46	35.09	9.18	34.9	161	289	A	V
802.11a CH 64 5320MHz		5352.85	58.86	-15.14	74	49.87	35.11	9.23	35.35	195	39	P	H
		5372	43.14	-10.86	54	34.26	35.11	9.27	35.5	195	39	A	H
	*	5324	99.87	-	-	90.59	35.1	9.23	35.05	195	39	P	H
	*	5326	89.32	-	-	80.04	35.1	9.23	35.05	195	39	A	H
		5376.65	56.82	-17.18	74	47.94	35.11	9.27	35.5	155	38	P	V
		5369.5	42.89	-11.11	54	34.01	35.11	9.27	35.5	155	38	A	V
	*	5324	82.82	-	-	73.54	35.1	9.23	35.05	155	38	P	V
	*	5316	72.73	-	-	63.5	35.1	9.18	35.05	155	38	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz****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 CH 52 5260MHz		10521	47.66	-26.34	74	57.05	38.42	13.22	61.03	188	256	P	H
		10521	47.2	-26.8	74	56.59	38.42	13.22	61.03	199	230	P	V
802.11a CH 60 5300MHz		10599	47.29	-26.71	74	56.49	38.49	13.29	60.98	166	230	P	H
		10599	47.05	-26.95	74	56.25	38.49	13.29	60.98	187	265	P	V
802.11a CH 64 5320MHz		10641	46.84	-27.16	74	55.98	38.51	13.32	60.97	184	260	P	H
		10641	46.29	-27.71	74	55.43	38.51	13.32	60.97	197	45	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

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 52 5260MHz		5116.35	58.32	-15.68	74	48.07	35.03	8.97	33.75	164	46	P	H
		5112.8	43.96	-10.04	54	33.71	35.03	8.97	33.75	164	46	A	H
	*	5262	100.21	-	-	90.6	35.08	9.14	34.61	164	46	P	H
	*	5254	90	-	-	80.24	35.08	9.14	34.46	164	46	A	H
		5113.35	58.47	-15.53	74	48.22	35.03	8.97	33.75	150	270	P	V
		5106.7	43.75	-10.25	54	33.5	35.03	8.97	33.75	150	270	A	V
	*	5254	89.35	-	-	79.59	35.08	9.14	34.46	150	270	P	V
	*	5252	78.7	-	-	68.94	35.08	9.14	34.46	150	270	A	V
802.11n HT20 CH 60 5300MHz	*	5306	100.24	-	-	90.87	35.09	9.18	34.9	180	41	P	H
	*	5304	89.82	-	-	80.45	35.09	9.18	34.9	180	41	A	H
	*	5296	87.72	-	-	78.35	35.09	9.18	34.9	151	325	P	V
	*	5294	77.38	-	-	68.01	35.09	9.18	34.9	151	325	A	V
802.11n HT20 CH 64 5320MHz		5351.2	58.89	-15.11	74	49.9	35.11	9.23	35.35	173	41	P	H
		5350.55	45.21	-8.79	54	36.22	35.11	9.23	35.35	173	41	A	H
	*	5326	99.74	-	-	90.46	35.1	9.23	35.05	173	41	P	H
	*	5326	89.66	-	-	80.38	35.1	9.23	35.05	173	41	A	H
		5399.2	56.56	-17.44	74	47.97	35.12	9.27	35.8	150	299	P	V
		5377.3	42.85	-11.15	54	33.97	35.11	9.27	35.5	150	299	A	V
	*	5322	89.65	-	-	80.37	35.1	9.23	35.05	150	299	P	V
	*	5326	79.37	-	-	70.09	35.1	9.23	35.05	150	299	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
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 52 5260MHz		10521	48.46	-25.54	74	57.85	38.42	13.22	61.03	180	210	P	H
		10521	47.13	-26.87	74	56.52	38.42	13.22	61.03	184	260	P	V
802.11n HT20 CH 60 5300MHz		10599	47.37	-26.63	74	56.57	38.49	13.29	60.98	185	123	P	H
		10599	46.81	-27.19	74	56.01	38.49	13.29	60.98	200	0	P	V
802.11n HT20 CH 64 5320MHz		10641	47.5	-26.5	74	56.64	38.51	13.32	60.97	156	202	P	H
		10641	47.42	-26.58	74	56.56	38.51	13.32	60.97	154	203	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

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)
802.11n HT40 CH 54 5270MHz		5100.3	57.9	-16.1	74	47.59	35.03	8.97	33.69	150	47	P	H
		5117.45	44.3	-9.7	54	34.05	35.03	8.97	33.75	150	47	A	H
	*	5258	97.2	-	-	87.44	35.08	9.14	34.46	150	47	P	H
	*	5256	86.85	-	-	77.09	35.08	9.14	34.46	150	47	A	H
		5108.05	57.98	-16.02	74	47.73	35.03	8.97	33.75	150	44	P	V
		5110.15	44.22	-9.78	54	33.97	35.03	8.97	33.75	150	44	A	V
	*	5256	84.04	-	-	74.28	35.08	9.14	34.46	150	44	P	V
	*	5256	74.51	-	-	64.75	35.08	9.14	34.46	150	44	A	V
802.11n HT40 CH 62 5310MHz		5355.95	59.02	-14.98	74	50.03	35.11	9.23	35.35	162	42	P	H
		5350.3	45.25	-8.75	54	36.26	35.11	9.23	35.35	162	42	A	H
	*	5314	96.82	-	-	87.59	35.1	9.18	35.05	162	42	P	H
	*	5322	86.44	-	-	77.16	35.1	9.23	35.05	162	42	A	H
		5378.5	56.39	-17.61	74	47.65	35.12	9.27	35.65	212	32	P	V
		5350.9	43.49	-10.51	54	34.5	35.11	9.23	35.35	212	32	A	V
	*	5322	85.55	-	-	76.27	35.1	9.23	35.05	212	32	P	V
	*	5322	76.01	-	-	66.73	35.1	9.23	35.05	212	32	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
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 54 5270MHz		10540	46.28	-27.72	74	55.62	38.43	13.25	61.02	185	260	P	H
		10540	45.8	-28.2	74	55.14	38.43	13.25	61.02	196	253	P	V
802.11n HT40 CH 62 5310MHz		10620	46.39	-27.61	74	55.55	38.5	13.32	60.98	160	95	P	H
		10620	46.76	-27.24	74	55.92	38.5	13.32	60.98	185	201	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 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)
802.11a CH 100 5500MHz		5470	57.39	-16.61	74	48.5	35.15	9.36	35.62	178	37	P	H
		5470	43.96	-10.04	54	35.07	35.15	9.36	35.62	178	37	A	H
	*	5498	102.6	-	-	93.57	35.16	9.4	35.53	178	37	P	H
	*	5494	92.52	-	-	83.54	35.15	9.4	35.57	178	37	A	H
		5470	55.97	-18.03	74	47.08	35.15	9.36	35.62	247	37	P	V
		5470	43.28	-10.72	54	34.39	35.15	9.36	35.62	247	37	A	V
	*	5498	94.32	-	-	85.29	35.16	9.4	35.53	247	37	P	V
	*	5504	84.13	-	-	75.1	35.16	9.4	35.53	247	37	A	V
802.11a CH 116 5580MHz	*	5584	102.32	-	-	92.96	35.18	9.48	35.3	236	43	P	H
	*	5584	91.78	-	-	82.42	35.18	9.48	35.3	236	43	A	H
	*	5586	92.34	-	-	82.98	35.18	9.48	35.3	153	38	P	V
	*	5586	81.92	-	-	72.56	35.18	9.48	35.3	153	38	A	V
802.11a CH 140 5700MHz		5725	56.5	-17.5	74	47.1	35.28	9.63	35.51	247	35	P	H
		5725	43.87	-10.13	54	34.47	35.28	9.63	35.51	247	35	A	H
	*	5696	100.13	-	-	90.73	35.25	9.59	35.44	247	35	P	H
	*	5694	89.59	-	-	80.19	35.25	9.59	35.44	247	35	A	H
		5725	57.15	-16.85	74	47.75	35.28	9.63	35.51	152	41	P	V
		5725	43.43	-10.57	54	34.03	35.28	9.63	35.51	152	41	A	V
	*	5704	95.62	-	-	86.24	35.26	9.59	35.47	152	41	P	V
	*	5696	84.83	-	-	75.43	35.25	9.59	35.44	152	41	A	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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 CH 100 5500MHz		11001	47.59	-26.41	74	55.95	38.8	13.63	60.79	256	130	P	H
		11001	48.28	-25.72	74	56.64	38.8	13.63	60.79	194	201	P	V
802.11a CH 116 5580MHz		11160	48.07	-25.93	74	56.06	38.93	13.79	60.71	187	156	P	H
		11160	47	-27	74	54.99	38.93	13.79	60.71	216	210	P	V
802.11a CH 140 5700MHz		11400	49.12	-24.88	74	56.56	39.12	14.03	60.59	157	260	P	H
		11400	48.72	-25.28	74	56.16	39.12	14.03	60.59	194	256	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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 100 5500MHz		5470	55.83	-18.17	74	46.94	35.15	9.36	35.62	183	43	P	H
		5470	44.13	-9.87	54	35.24	35.15	9.36	35.62	183	43	A	H
	*	5494	100.91	-	-	91.93	35.15	9.4	35.57	183	43	P	H
	*	5494	89.86	-	-	80.88	35.15	9.4	35.57	183	43	A	H
		5470	55.21	-18.79	74	46.32	35.15	9.36	35.62	253	338	P	V
		5470	42.7	-11.3	54	33.81	35.15	9.36	35.62	253	338	A	V
	*	5504	94.59	-	-	85.56	35.16	9.4	35.53	253	338	P	V
	*	5492	84.2	-	-	75.22	35.15	9.4	35.57	253	338	A	V
802.11n HT20 CH 116 5580MHz	*	5584	102.22	-	-	92.86	35.18	9.48	35.3	202	44	P	H
	*	5584	91.95	-	-	82.59	35.18	9.48	35.3	202	44	A	H
	*	5582	93.28	-	-	83.92	35.18	9.48	35.3	231	339	P	V
	*	5574	83.26	-	-	73.94	35.18	9.48	35.34	231	339	A	V
802.11n HT20 CH 140 5700MHz		5725	60.35	-13.65	74	50.95	35.28	9.63	35.51	186	39	P	H
		5725	44.74	-9.26	54	35.34	35.28	9.63	35.51	186	39	A	H
	*	5706	101.2	-	-	91.82	35.26	9.59	35.47	186	39	P	H
	*	5694	90.66	-	-	81.26	35.25	9.59	35.44	186	39	A	H
		5725	55.75	-18.25	74	46.35	35.28	9.63	35.51	151	44	P	V
		5725	43.13	-10.87	54	33.73	35.28	9.63	35.51	151	44	A	V
	*	5704	94.94	-	-	85.56	35.26	9.59	35.47	151	44	P	V
	*	5696	82.44	-	-	73.04	35.25	9.59	35.44	151	44	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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		11001	48.71	-25.29	74	57.07	38.8	13.63	60.79	155	0	P	H
CH 100 5500MHz		11001	48.25	-25.75	74	56.61	38.8	13.63	60.79	184	35	P	V
802.11n HT20		11160	47.93	-26.07	74	55.92	38.93	13.79	60.71	184	58	P	H
CH 116 5580MHz		11160	47.92	-26.08	74	55.91	38.93	13.79	60.71	201	141	P	V
802.11n HT20		11400	49.28	-24.72	74	56.72	39.12	14.03	60.59	185	210	P	H
CH 140 5700MHz		11400	48.87	-25.13	74	56.31	39.12	14.03	60.59	150	140	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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)
802.11n HT40 CH 102 5510MHz		5470	57.65	-16.35	74	48.76	35.15	9.36	35.62	182	44	P	H
		5470	45.08	-8.92	54	36.19	35.15	9.36	35.62	182	44	A	H
	*	5522	97.39	-	-	88.27	35.16	9.44	35.48	182	44	P	H
	*	5520	87.11	-	-	77.99	35.16	9.44	35.48	182	44	A	H
		5470	54.87	-19.13	74	45.98	35.15	9.36	35.62	234	50	P	V
		5470	43.48	-10.52	54	34.59	35.15	9.36	35.62	234	50	A	V
	*	5498	89.45	-	-	80.42	35.16	9.4	35.53	234	50	P	V
	*	5522	79.82	-	-	70.7	35.16	9.44	35.48	234	50	A	V
802.11n HT40 CH 110 5550MHz		5558	97.71	-	-	88.49	35.17	9.44	35.39	175	43	P	H
		5552	87.66	-	-	78.44	35.17	9.44	35.39	175	43	A	H
		5548	89.47	-	-	80.25	35.17	9.44	35.39	232	40	P	V
		5552	79.29	-	-	70.07	35.17	9.44	35.39	232	40	A	V
802.11n HT40 CH 134 5670MHz		5725	55.33	-18.67	74	45.93	35.28	9.63	35.51	198	39	P	H
		5725	43.69	-10.31	54	34.29	35.28	9.63	35.51	198	39	A	H
	*	5672	98.74	-	-	89.36	35.23	9.55	35.4	198	39	P	H
	*	5674	89.31	-	-	79.93	35.23	9.55	35.4	198	39	A	H
		5725	56.3	-17.7	74	46.9	35.28	9.63	35.51	242	38	P	V
		5725	43.64	-10.36	54	34.24	35.28	9.63	35.51	242	38	A	V
	*	5676	92.52	-	-	83.14	35.23	9.55	35.4	242	38	P	V
	*	5672	81.54	-	-	72.16	35.23	9.55	35.4	242	38	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
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 102 5510MHz		11020	47.4	-26.6	74	31.09	38.81	13.67	36.17	187	256	P	H
		11020	47.14	-26.86	74	55.44	38.81	13.67	60.78	150	62	P	V
802.11n HT40 CH 110 5550MHz		11100	47.59	-26.41	74	55.7	38.88	13.75	60.74	185	260	P	H
		11100	46.99	-27.01	74	55.1	38.88	13.75	60.74	152	306	P	V
802.11n HT40 CH 134 5670MHz		11340	49.31	-24.69	74	56.87	39.07	13.99	60.62	196	53	P	H
		11340	47.56	-26.44	74	55.12	39.07	13.99	60.62	154	230	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11a (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)
802.11a LF		31.94	19.75	-20.25	40	32.88	18.22	1.3	32.65	-	-	P	H
		69.77	23.18	-16.82	40	46.05	8.2	1.58	32.65	-	-	P	H
		100.81	18.94	-24.56	43.5	38.41	11.31	1.85	32.63	-	-	P	H
		147.37	20.64	-22.86	43.5	39.53	11.68	1.99	32.56	-	-	P	H
		206.54	28.25	-15.25	43.5	48.18	10.11	2.44	32.48	103	84	P	H
		322.94	27.71	-18.29	46	43.33	13.92	2.86	32.4	-	-	P	H
		32.91	33.68	-6.32	40	47.31	17.73	1.28	32.64	118	263	P	V
		50.37	25.65	-14.35	40	48.34	8.7	1.23	32.62	-	-	P	V
		184.23	24.89	-18.61	43.5	44.87	10.4	2.08	32.46	-	-	P	V
		192.96	27.48	-16.02	43.5	47.62	10.06	2.27	32.47	-	-	P	V
		200.72	30.92	-12.58	43.5	51.13	9.84	2.42	32.47	-	-	P	V
		267.65	24.3	-21.7	46	41.7	12.42	2.62	32.44	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Emission below 1GHz

WIFI 802.11n HT20 (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)
802.11n HT20 LF		31.94	21.75	-18.25	40	34.88	18.22	1.3	32.65	180	130	P	H
		69.77	20.18	-19.82	40	43.05	8.2	1.58	32.65	-	-	P	H
		100.81	23.94	-19.56	43.5	43.41	11.31	1.85	32.63	-	-	P	H
		147.37	23.64	-19.86	43.5	42.53	11.68	1.99	32.56	-	-	P	H
		199.75	24.93	-18.57	43.5	45.18	9.8	2.42	32.47	-	-	P	H
		310.33	27.12	-18.88	46	43.33	13.42	2.77	32.4	-	-	P	H
		32.91	28.68	-11.32	40	42.31	17.73	1.28	32.64	-	-	P	V
		40.67	29.81	-10.19	40	47.39	13.79	1.24	32.61	162	0	P	V
		54.25	26.77	-13.23	40	50.43	7.66	1.28	32.6	-	-	P	V
		95.96	28.8	-14.7	43.5	48.73	10.86	1.81	32.6	-	-	P	V
		184.23	27.89	-15.61	43.5	47.87	10.4	2.08	32.46	-	-	P	V
		200.72	30.92	-12.58	43.5	51.13	9.84	2.42	32.47	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Emission below 1GHz

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)
802.11n HT40 LF		31.94	14.75	-25.25	40	27.88	18.22	1.3	32.65	-	-	P	H
		100.81	15.94	-27.56	43.5	35.41	11.31	1.85	32.63	-	-	P	H
		147.37	17.64	-25.86	43.5	36.53	11.68	1.99	32.56	-	-	P	H
		206.54	23.25	-20.25	43.5	43.18	10.11	2.44	32.48	133	47	P	H
		216.24	22.86	-23.14	46	42.33	10.55	2.47	32.49	-	-	P	H
		322.94	23.71	-22.29	46	39.33	13.92	2.86	32.4	-	-	P	H
		32.91	20.68	-19.32	40	34.31	17.73	1.28	32.64	102	43	P	V
		54.25	18.77	-21.23	40	42.43	7.66	1.28	32.6	-	-	P	V
		63.95	17.76	-22.24	40	42.16	6.94	1.25	32.59	-	-	P	V
		184.23	18.89	-24.61	43.5	38.87	10.4	2.08	32.46	-	-	P	V
		200.72	20.92	-22.58	43.5	41.13	9.84	2.42	32.47	-	-	P	V
		267.65	19.3	-26.7	46	36.7	12.42	2.62	32.44	-	-	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.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		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”.