

# FCC RF Test Report

**APPLICANT** : TCL Communication Ltd.  
**EQUIPMENT** : Tablet PC  
**BRAND NAME** : ALCATEL ONETOUCH  
**MODEL NAME** : 9006W  
**MARKETING NAME** : ONETOUCH PIXI 2 (7)  
**FCC ID** : 2ACCJB014  
**STANDARD** : FCC Part 15 Subpart E §15.407  
**CLASSIFICATION** : (NII) Unlicensed National Information Infrastructure

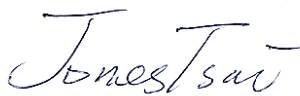
The product was received on Apr. 01, 2015 and testing was completed on May 07, 2015. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.



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Reviewed by: Joseph Lin / Supervisor



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Approved by: Jones Tsai / Manager



**SPORTON INTERNATIONAL (SHENZHEN) INC.**

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## REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR540109D	Rev. 01	Initial issue of report	May 15, 2015



## SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(i)	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	$\leq 24$ dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	$\leq 11$ dBm	Pass	-
3.4	15.407(b)	Unwanted Emissions	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 3.4 dB at 5149.850 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 3.55 dB at 0.520 MHz
3.6	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-

# 1 General Description

## 1.1 Applicant

**TCL Communication Ltd.**

5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203

## 1.2 Manufacturer

**TCL Communication Ltd.**

5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203

## 1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Tablet PC
Brand Name	ALCATEL ONETOUCH
Model Name	9006W
Marketing Name	ONETOUCH PIXI 2 (7)
FCC ID	2ACCJB014
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA HSPA+(Downlink Only)/LTE WLAN 2.4GHz 802.11b/g/n HT20/ WLAN 5GHz 802.11a/n HT20/HT40/ Bluetooth v3.0 + EDR/Bluetooth v4.1 LE
IMEI Code	Conducted: 014399000021048 Radiation: 014399000021063 Conduction: 014399000021071
HW Version	V03
SW Version	B2E
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	
<b>Tx/Rx Frequency Range</b>	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz
<b>Maximum Output Power to Antenna</b>	<b>&lt;5180 MHz ~ 5240 MHz&gt;</b> 802.11a : 7.11 dBm / 0.0051 W 802.11n HT20 : 7.16 dBm / 0.0052 W 802.11n HT40 : 6.89 dBm / 0.0049 W <b>&lt;5260 MHz ~ 5320 MHz&gt;</b> 802.11a : 7.94 dBm / 0.0062 W 802.11n HT20 : 7.86 dBm / 0.0061 W 802.11n HT40 : 7.46 dBm / 0.0056 W
<b>Antenna Type</b>	IFA Antenna
<b>Antenna Gain</b>	<b>&lt;5180 MHz ~ 5240 MHz&gt;</b> : 0.60 dBi <b>&lt;5260 MHz ~ 5320 MHz&gt;</b> : 1.50 dBi
<b>Type of Modulation</b>	OFDM (BPSK / QPSK / 16QAM / 64QAM)

## 1.5 Specification of Accessory

Specification of Accessory				
<b>AC Adapter</b>	<b>Brand Name</b>	ALCATEL onetouch	<b>Model Name</b>	UC13US
	<b>Power Rating</b>	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA		
	<b>P/N</b>	CBA0059AG0C1		
<b>Battery</b>	<b>Brand Name</b>	ALCATEL onetouch	<b>Model Name</b>	TLp032B2
	<b>Power Rating</b>	3.7Vdc, 3240mAh		
	<b>P/N</b>	C3240009C2YHYKFG		
<b>USB Cable</b>	<b>Brand Name</b>	NA	<b>Model Name</b>	NA
	<b>Signal Line Type</b>	0.8m shielded without core		

## 1.6 Modification of EUT

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

## 1.7 Testing Location

<b>Test Site</b>	SPORTON INTERNATIONAL (SHENZHEN) INC.	
<b>Test Site Location</b>	1F & 2F, Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	
	TH01-SZ	CO01-SZ

<b>Test Site</b>	SPORTON INTERNATIONAL INC.	
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC Registration No.</b>
	03CH05-HY	TW1022

**Note:** The test site complies with ANSI C63.4 2009 requirement.

## 1.8 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

### 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 (Z 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)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	<b>38</b>	<b>5190</b>	<b>46</b>	<b>5230</b>
	40	5200	48	5240

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	<b>54</b>	<b>5270</b>	<b>62</b>	<b>5310</b>
	56	5280	64	5320

**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	7.11	CH 36	7.06	7.00	7.04	7.07	7.01	6.93	6.98
CH 44	5220	6.82								
CH 48	5240	6.94								
CH 52	5260	7.24	CH 64	7.84	7.86	7.89	7.88	7.87	7.83	7.85
CH 60	5300	7.55								
CH 64	5320	7.94								

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	7.16	CH 36	7.07	7.06	7.08	7.09	7.13	7.08	7.10
CH 44	5220	6.79								
CH 48	5240	6.95								
CH 52	5260	7.25	CH 64	7.77	7.78	7.77	7.81	7.82	7.82	7.83
CH 60	5300	7.56								
CH 64	5320	7.86								

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	6.89	CH 38	6.81	6.80	6.75	6.84	6.84	6.81	6.83
CH 46	5230	6.55								
CH 54	5270	7.07	CH 62	7.37	7.37	7.33	7.43	7.40	7.38	7.43
CH 62	5310	7.46								

## 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 : GPRS1900 Idle + Bluetooth Link + WLAN (5GHz) Link + USB Cable (Charging from Adapter) + Earphone
Remark: For Radiated TCs, the tests were performed with adapter, earphone and USB cable.	



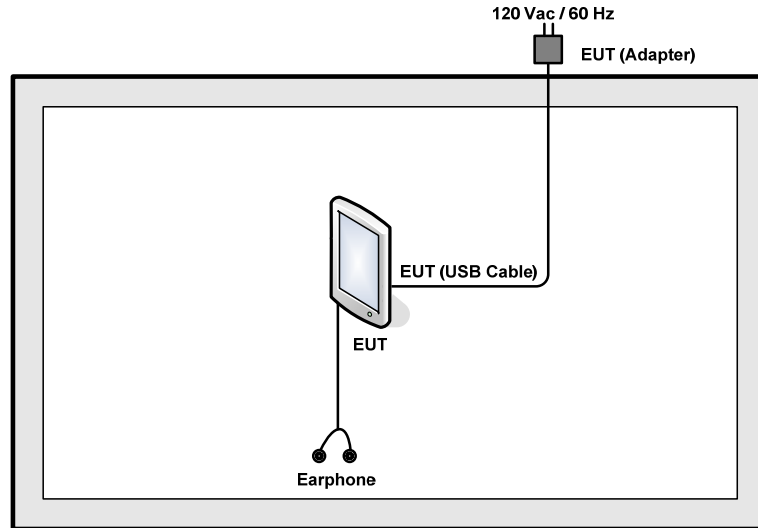
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz
		802.11a	802.11a
L	Low	36	52
M	Middle	44	60
H	High	48	64

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz
		802.11n HT20	802.11n HT20
L	Low	36	52
M	Middle	44	60
H	High	48	64

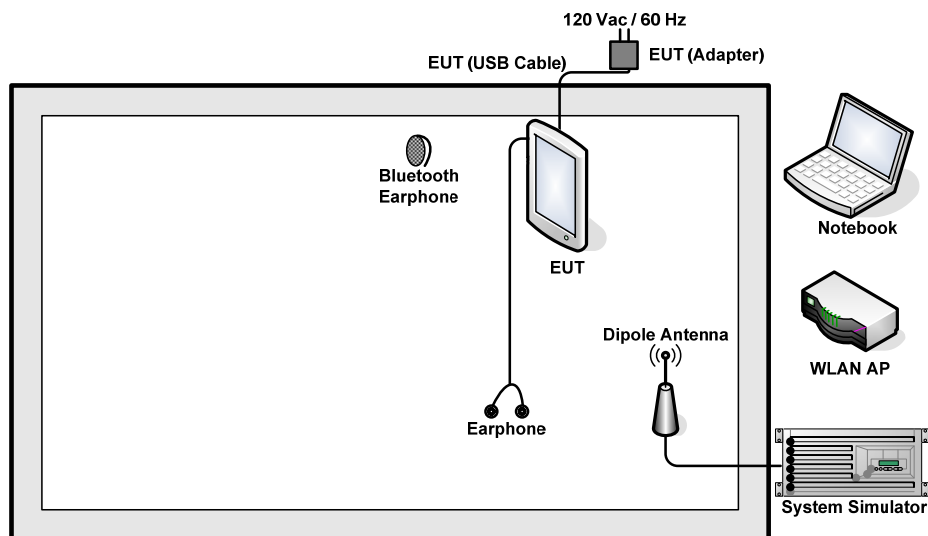
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz
		802.11n HT40	802.11n HT40
L	Low	38	54
M	Middle	-	-
H	High	46	62

## 2.4 Connection Diagram of Test System

### <WLAN 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	D-Link	DIR-815	KA2DIR815A1	N/A	Unshielded, 1.8 m
2.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Nokia	BH-108	PYAHS-107W	N/A	N/A
5.	iPod Earphone	Apple	MC690ZP/A	FCC DoC	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 and attenuator factor 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 and attenuator factor.

*Offset = RF cable loss + attenuator factor.*

Following shows an offset computation example with cable loss 6.5 dB and 10dB attenuator.

$$\begin{aligned}
 \text{Offset (dB)} &= \text{RF cable loss (dB)} + \text{attenuator factor (dB)} \\
 &= 6.5 + 10 = 16.5 \text{ (dB)}
 \end{aligned}$$

### 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.

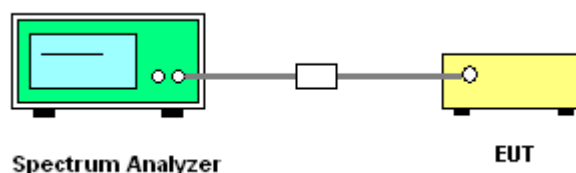
##### 3.1.2 Measuring Instruments

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.

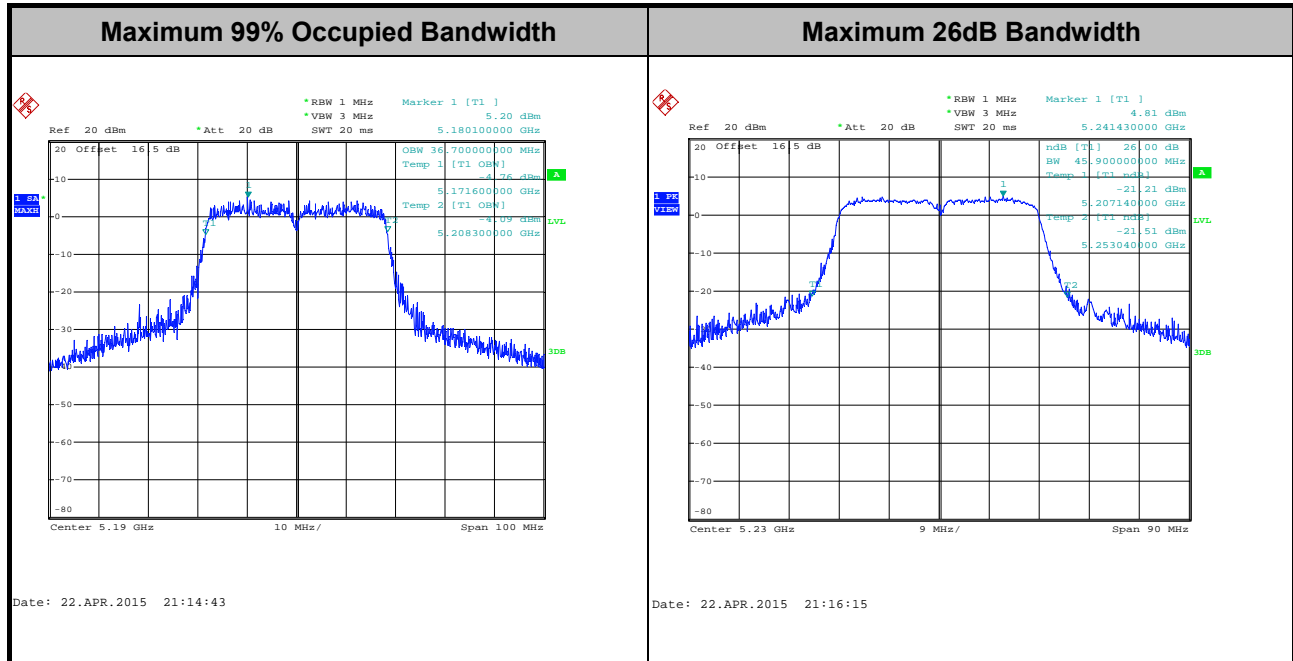
##### 3.1.4 Test Setup





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

Please refer to Appendix A.



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

#### <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 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.

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.

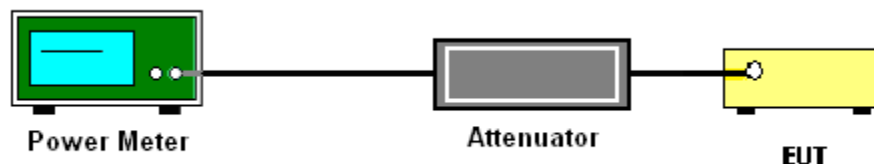
### 3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules 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 bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

If transmitting antennas of directional gain greater than 6 dBi are used, 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.

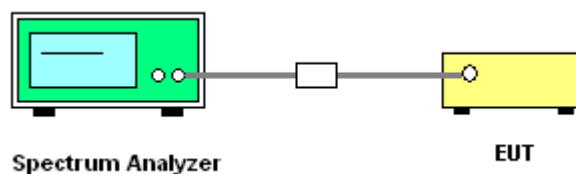
Section F) Maximum power spectral density.

#### # Method SA-2 #

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

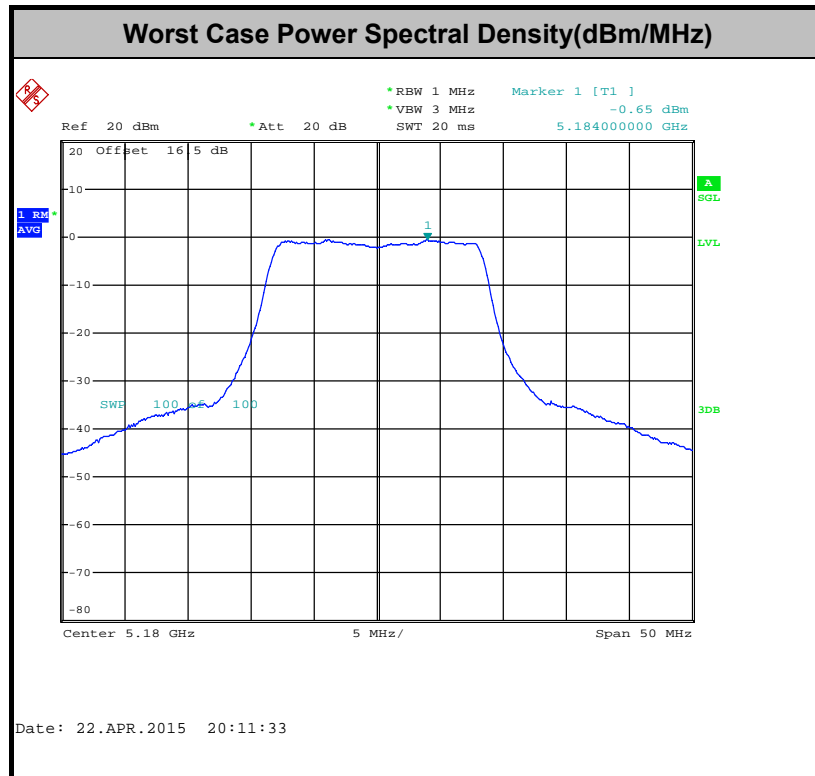
1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.
  - Measure the duty cycle.
  - Set span to encompass the entire emission bandwidth (EBW) of the signal.
  - Set RBW = 1 MHz.
  - Set VBW  $\geq$  3 MHz.
  - Number of points in sweep  $\geq$  2 Span / 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.
- (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

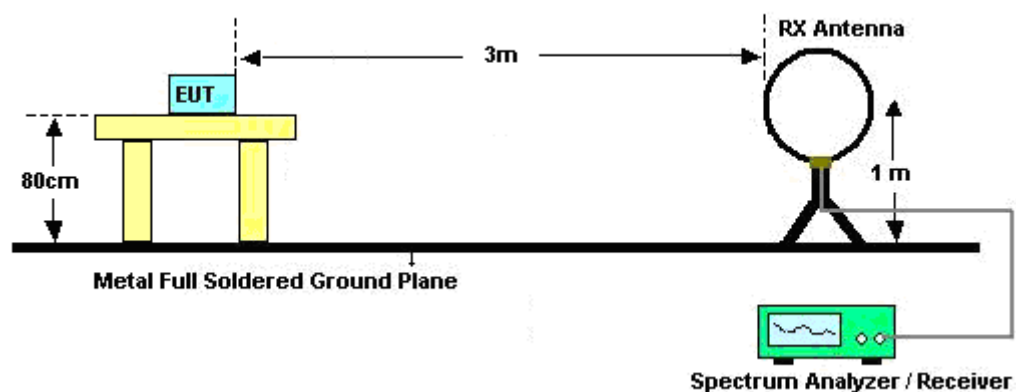
- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW  $\geq$  1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle (%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	87.26	1.37	0.73	1kHz
802.11n HT20	86.30	1.27	0.79	1kHz
802.11n HT40	75.18	0.64	1.57	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.

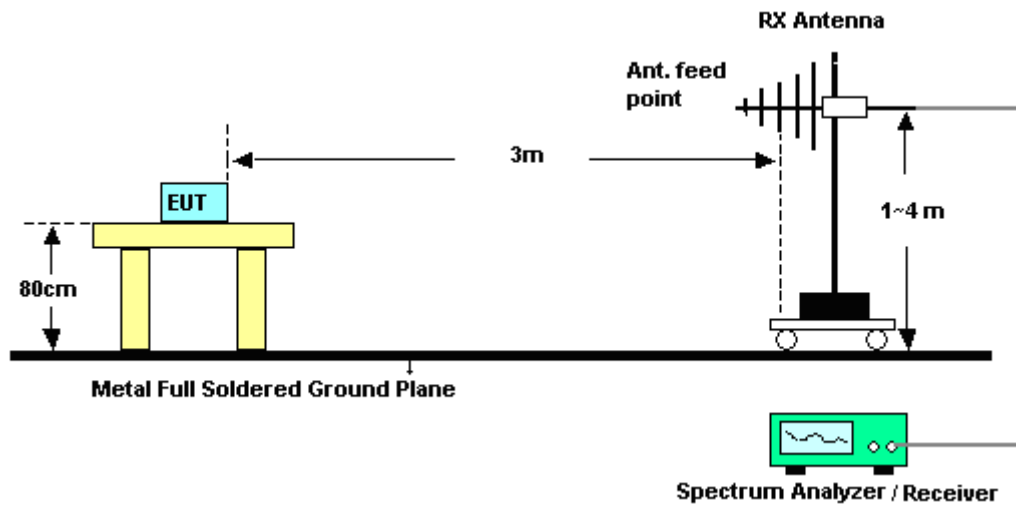
### 3.4.4 Test Setup

**For radiated emissions below 30MHz**

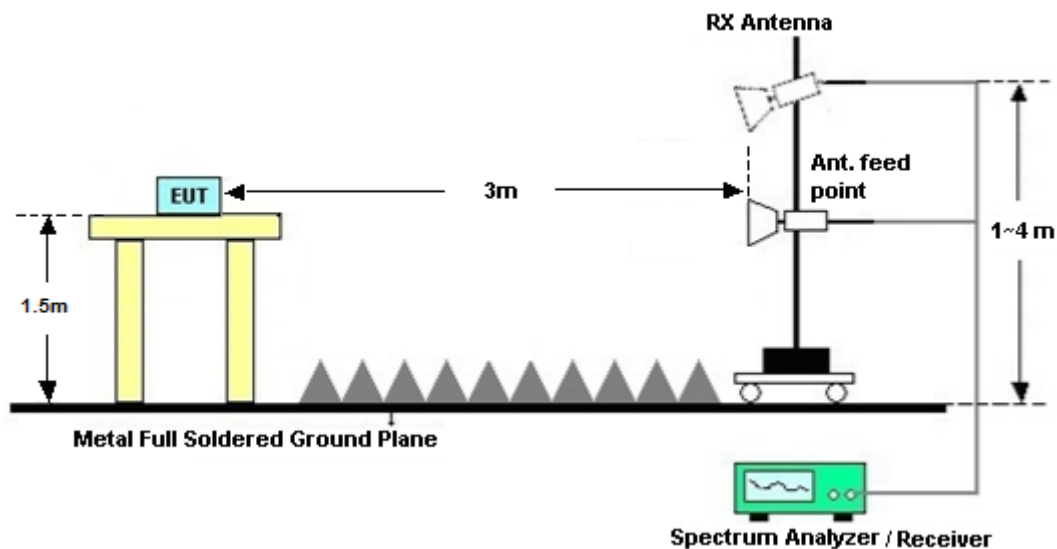




For radiated emissions from 30MHz to 1GHz



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 $\mu$ 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.

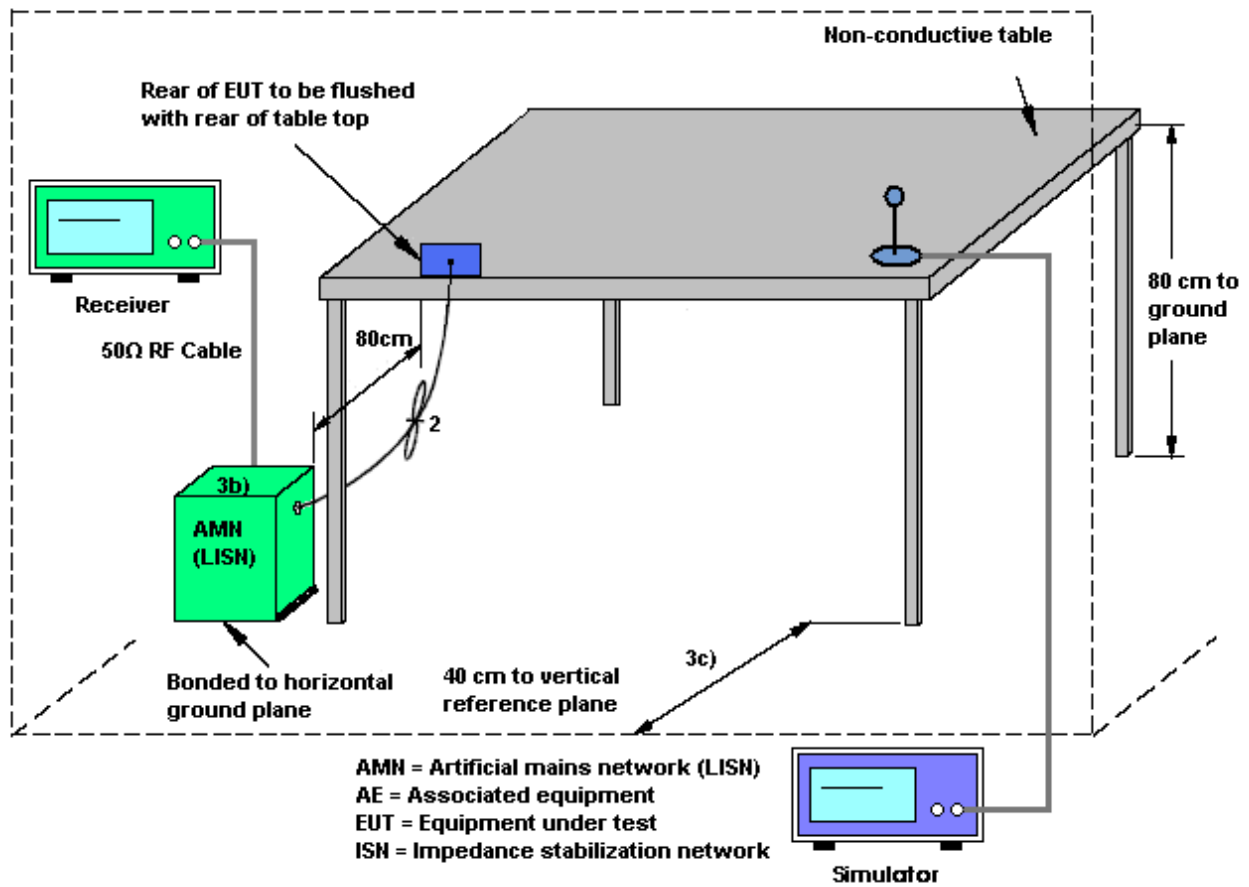
#### 3.5.2 Measuring Instruments

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

#### 3.5.3 Test Procedures

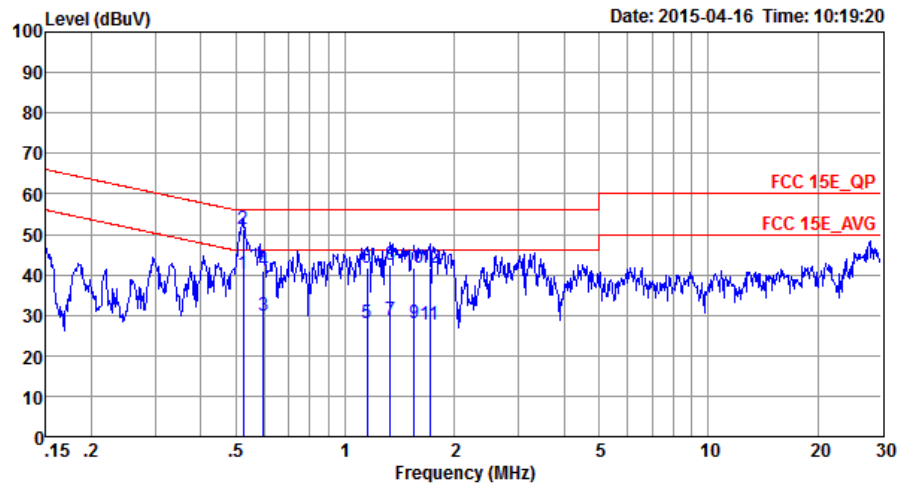
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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



### 3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~22℃
Test Engineer :	Min Yang	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GPRS1900 Idle + Bluetooth Link + WLAN (5GHz) Link + USB Cable (Charging from Adapter) + Earphone		



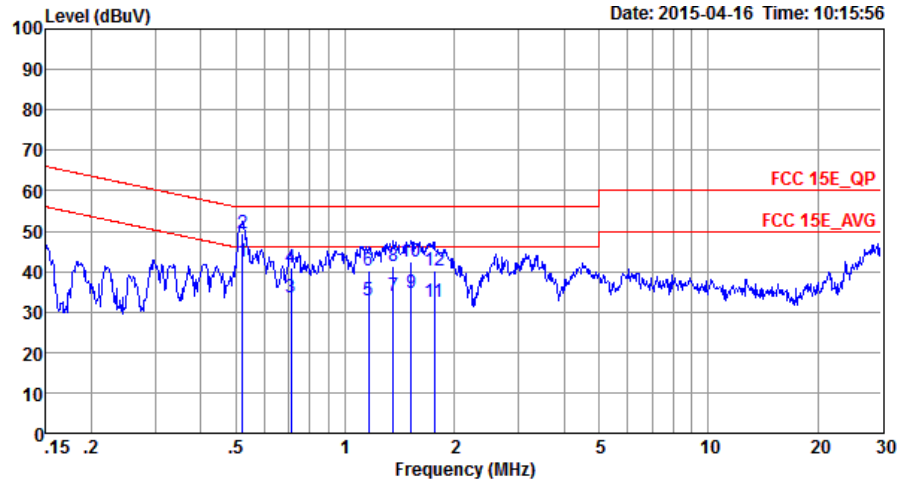
Site : C001-SZ  
Condition: FCC 15E\_QP LISN\_L\_20140304 LINE

Mode : Mode 1  
IMEI : 014399000021071

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.52	40.14	-5.86	46.00	29.71	0.28	10.15	Average
2 *	0.52	51.14	-4.86	56.00	40.71	0.28	10.15	QP
3	0.59	29.79	-16.21	46.00	19.40	0.24	10.15	Average
4	0.59	40.89	-15.11	56.00	30.50	0.24	10.15	QP
5	1.15	28.11	-17.89	46.00	17.70	0.25	10.16	Average
6	1.15	41.81	-14.19	56.00	31.40	0.25	10.16	QP
7	1.33	28.91	-17.09	46.00	18.50	0.24	10.17	Average
8	1.33	42.51	-13.49	56.00	32.10	0.24	10.17	QP
9	1.55	28.21	-17.79	46.00	17.81	0.23	10.17	Average
10	1.55	41.81	-14.19	56.00	31.41	0.23	10.17	QP
11	1.71	27.81	-18.19	46.00	17.40	0.23	10.18	Average
12	1.71	41.81	-14.19	56.00	31.40	0.23	10.18	QP



Test Mode :	Mode 1	Temperature :	21~22℃
Test Engineer :	Min Yang	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GPRS1900 Idle + Bluetooth Link + WLAN (5GHz) Link + USB Cable (Charging from Adapter) + Earphone		



Site : CO01-SZ  
Condition: FCC 15E\_QP LISN\_N\_20140304 NEUTRAL

Mode : Mode 1  
IMEI : 014399000021071

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 *	0.52	42.45	-3.55	46.00	31.91	0.39	10.15	Average
2	0.52	49.45	-6.55	56.00	38.91	0.39	10.15	QP
3	0.71	33.50	-12.50	46.00	23.10	0.25	10.15	Average
4	0.71	41.10	-14.90	56.00	30.70	0.25	10.15	QP
5	1.16	32.90	-13.10	46.00	22.40	0.34	10.16	Average
6	1.16	40.10	-15.90	56.00	29.60	0.34	10.16	QP
7	1.36	34.02	-11.98	46.00	23.50	0.35	10.17	Average
8	1.36	41.42	-14.58	56.00	30.90	0.35	10.17	QP
9	1.52	34.63	-11.37	46.00	24.11	0.35	10.17	Average
10	1.52	42.43	-13.57	56.00	31.91	0.35	10.17	QP
11	1.76	32.64	-13.36	46.00	22.10	0.36	10.18	Average
12	1.76	40.24	-15.76	56.00	29.70	0.36	10.18	QP

## 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.

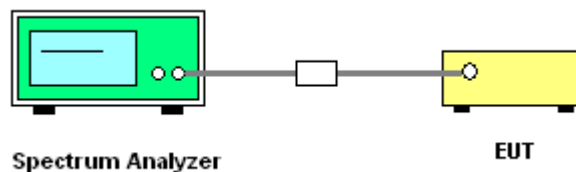
### 3.6.2 Measuring Instruments

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	FSP30	101400	9kHz~30GHz	Jan. 28, 2015	Apr. 22, 2015	Jan. 27, 2016	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	10Hz~40GHz	Jan. 28, 2015	Apr. 22, 2015	Jan. 27, 2016	Conducted (TH01-SZ)
Power Sensor	Anritsu	MA2411B	1207253	0.3GHz~40GHz	Jan. 28, 2015	Apr. 22, 2015	Jan. 27, 2016	Conducted (TH01-SZ)
DC Power Supply	GWINSTEK	GPS-3030D	EM882636	DC 10~30V	May 08, 2014	Apr. 22, 2015	May 07, 2015	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 05, 2015	May 07, 2015	May 04, 2016	Radiation (03CH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 09, 2014	May 07, 2015	Jun. 08, 2015	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	100315	9 kHz~30 MHz	Jul. 28, 2014	May 07, 2015	Jul. 27, 2015	Radiation (03CH05-HY)
Bilog Antenna	Schaffner	CBL6111C	2725	30MHz~1GHz	Sep. 27, 2014	May 07, 2015	Sep. 26, 2015	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	00066584	1GHz~18GHz	Aug. 30, 2014	May 07, 2015	Aug. 29, 2015	Radiation (03CH05-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Oct. 02, 2014	May 07, 2015	Oct. 01, 2015	Radiation (03CH05-HY)
Preamplifier	COM-POWER	PA-103A	161075	10MHz~1GHz	Apr. 09, 2015	May 07, 2015	Apr. 08, 2016	Radiation (03CH05-HY)
Preamplifier	MITEQ	AMF-7D-001 01800-30-10 P	1590074	100kHz~18GHz	Jul. 07, 2014	May 07, 2015	Jul. 06, 2015	Radiation (03CH05-HY)
Preamplifier	COM-POWER	PA-103	161075	9kHz~30MHz	Apr. 09, 2015	May 07, 2015	Apr. 08, 2016	Radiation (03CH05-HY)
Preamplifier	Miteq	TTA0204	1872107	18GHz~40GHz	May 23, 2014	May 07, 2015	May 22, 2015	Radiation (03CH05-HY)
Turn Table	HD	HD100	420/611	0 - 360 degree	N/A	May 07, 2015	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	HD100	240/666	1 m - 4 m	N/A	May 07, 2015	N/A	Radiation (03CH05-HY)
EMI TEST Receiver	R&S	ESCI7	100768	9kHz~3GHz	Jan. 28, 2015	Apr. 16, 2015	Jan. 27, 2016	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Feb. 02, 2015	Apr. 16, 2015	Feb. 01, 2016	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Feb. 02, 2015	Apr. 16, 2015	Feb. 01, 2016	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Sep. 29, 2014	Apr. 16, 2015	Sep. 28, 2015	Conduction (CO01-SZ)



## 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 : FR540109D

Test Engineer:	Mygai Mo	Temperature:	21~25	°C
Test Date:	2015/4/22	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	18.45	24.20	-	22.66		
11a	6Mbps	1	44	5220	18.25	24.15	-	22.61		
11a	6Mbps	1	48	5240	18.10	23.75	-	22.58		
HT20	MCS0	1	36	5180	19.15	24.70	-	22.82		
HT20	MCS0	1	44	5220	19.00	24.30	-	22.79		
HT20	MCS0	1	48	5240	18.95	24.50	-	22.78		
HT40	MCS0	1	38	5190	36.70	45.36	-	23.01		
HT40	MCS0	1	46	5230	36.60	45.90	-	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	7.11	24.00	0.60		Pass
11a	6Mbps	1	44	5220	0.59	6.82	24.00	0.60		Pass
11a	6Mbps	1	48	5240	0.59	6.94	24.00	0.60		Pass
HT20	MCS0	1	36	5180	0.64	7.16	24.00	0.60		Pass
HT20	MCS0	1	44	5220	0.64	6.79	24.00	0.60		Pass
HT20	MCS0	1	48	5240	0.64	6.95	24.00	0.60		Pass
HT40	MCS0	1	38	5190	1.24	6.89	24.00	0.60		Pass
HT40	MCS0	1	46	5230	1.24	6.55	24.00	0.60		Pass

**TEST RESULTS DATA**  
**Power Spectral Density**

FCC Band I										
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	36	5180	0.59	-0.06	11.00	0.60		Pass
11a	6Mbps	1	44	5220	0.59	-0.68	11.00	0.60		Pass
11a	6Mbps	1	48	5240	0.59	-0.66	11.00	0.60		Pass
HT20	MCS0	1	36	5180	0.64	-0.22	11.00	0.60		Pass
HT20	MCS0	1	44	5220	0.64	-0.94	11.00	0.60		Pass
HT20	MCS0	1	48	5240	0.64	-0.69	11.00	0.60		Pass
HT40	MCS0	1	38	5190	1.24	-3.19	11.00	0.60		Pass
HT40	MCS0	1	46	5230	1.24	-4.11	11.00	0.60		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	18.2	24.25	23.60	29.60	23.98	
11a	6Mbps	1	60	5300	18.3	24.3	23.62	29.62	23.98	
11a	6Mbps	1	64	5320	18.4	24.9	23.65	29.65	23.98	
HT20	MCS0	1	52	5260	19.05	24.25	23.80	29.80	23.98	
HT20	MCS0	1	60	5300	19	25.2	23.79	29.79	23.98	
HT20	MCS0	1	64	5320	19.2	26	23.83	29.83	23.98	
HT40	MCS0	1	54	5270	36.6	45.45	23.98	30.00	23.98	
HT40	MCS0	1	62	5310	36.6	45.72	23.98	30.00	23.98	



**TEST RESULTS DATA**  
**Average Power Table**

FCC Band II										
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	52	5260	0.59	7.24	23.98	1.50		Pass
11a	6Mbps	1	60	5300	0.59	7.55	23.98	1.50		Pass
11a	6Mbps	1	64	5320	0.59	7.94	23.98	1.50		Pass
HT20	MCS0	1	52	5260	0.64	7.25	23.98	1.50		Pass
HT20	MCS0	1	60	5300	0.64	7.56	23.98	1.50		Pass
HT20	MCS0	1	64	5320	0.64	7.86	23.98	1.50		Pass
HT40	MCS0	1	54	5270	1.24	7.07	23.98	1.50		Pass
HT40	MCS0	1	62	5310	1.24	7.46	23.98	1.50		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	-0.42	11.00	1.50		Pass
11a	6Mbps	1	60	5300	0.59	-0.61	11.00	1.50		Pass
11a	6Mbps	1	64	5320	0.59	-0.10	11.00	1.50		Pass
HT20	MCS0	1	52	5260	0.64	-0.56	11.00	1.50		Pass
HT20	MCS0	1	60	5300	0.64	-0.80	11.00	1.50		Pass
HT20	MCS0	1	64	5320	0.64	-0.42	11.00	1.50		Pass
HT40	MCS0	1	54	5270	1.24	-3.76	11.00	1.50		Pass
HT40	MCS0	1	62	5310	1.24	-3.65	11.00	1.50		Pass

**TEST RESULTS DATA**  
**Frequency Stability**

Band I										
Mod.	Data Rate	Ntx	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	3.6	
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	3.9	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	-30	3.9	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	50	3.9	

Band II										
Mod.	Data Rate	Ntx	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	3.6	
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	3.9	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	-30	3.9	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	50	3.9	



## 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		5148.65	53.56	-20.44	74	42.9	32.73	10.22	32.29	302	11	P	H
		5150	43.39	-10.61	54	32.73	32.73	10.22	32.29	302	11	A	H
	*	5178	97.46	-	-	86.7	32.74	10.3	32.28	302	11	P	H
	*	5178	87.26	-	-	76.5	32.74	10.3	32.28	302	11	A	H
		5149.1	60.49	-13.51	74	49.83	32.73	10.22	32.29	126	311	P	V
		5149.85	46.22	-7.78	54	35.56	32.73	10.22	32.29	126	311	A	V
	*	5173	106.02	-	-	95.27	32.73	10.3	32.28	126	311	P	V
	*	5173	96.02	-	-	85.27	32.73	10.3	32.28	126	311	A	V
802.11a CH 44 5220MHz		5004.8	52.93	-21.07	74	42.68	32.7	9.88	32.33	305	64	P	H
		5148.5	42.73	-11.27	54	32.07	32.73	10.22	32.29	305	64	A	H
	*	5218	96.34	-	-	85.55	32.74	10.32	32.27	305	64	P	H
	*	5218	86.18	-	-	75.39	32.74	10.32	32.27	305	64	A	H
		5394.22	53.18	-20.82	74	42.2	32.78	10.42	32.22	305	64	P	H
		5424.91	43.03	-10.97	54	32.03	32.78	10.43	32.21	305	64	A	H
		5017.4	52.59	-21.41	74	42.26	32.7	9.96	32.33	100	306	P	V
		5149.25	42.78	-11.22	54	32.12	32.73	10.22	32.29	100	306	A	V
	*	5218	104.46	-	-	93.67	32.74	10.32	32.27	100	306	P	V
	*	5218	94.31	-	-	83.52	32.74	10.32	32.27	100	306	A	V
		5438.88	53.35	-20.65	74	42.34	32.79	10.43	32.21	100	306	P	V
		5416.88	42.99	-11.01	54	31.99	32.78	10.43	32.21	100	306	A	V



<b>802.11a CH 48 5240MHz</b>		5133.8	52.72	-21.28	74	42.06	32.73	10.22	32.29	127	352	P	H
		5146.25	42.67	-11.33	54	32.01	32.73	10.22	32.29	127	352	A	H
	*	5238	93.7	-	-	82.89	32.75	10.32	32.26	127	352	P	H
	*	5238	83.93	-	-	73.12	32.75	10.32	32.26	127	352	A	H
		5364.41	53.46	-20.54	74	42.52	32.77	10.4	32.23	127	352	P	H
		5427.11	43	-11	54	32	32.78	10.43	32.21	127	352	A	H
		5112.95	52.73	-21.27	74	42.18	32.72	10.13	32.3	130	308	P	V
		5146.25	42.74	-11.26	54	32.08	32.73	10.22	32.29	130	308	A	V
	*	5238	104.86	-	-	94.05	32.75	10.32	32.26	130	308	P	V
	*	5238	94.8	-	-	83.99	32.75	10.32	32.26	130	308	A	V
		5391.14	53.46	-20.54	74	42.48	32.78	10.42	32.22	130	308	P	V
		5424.69	43.02	-10.98	54	32.02	32.78	10.43	32.21	130	308	A	V
<b>Remark</b>	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		10360	44.04	-29.96	74	50.41	36.57	14.24	57.18	100	0	P	H
		15540	47.76	-26.24	74	46.12	41.41	18.5	58.27	100	0	P	H
		10360	43.7	-30.3	74	50.07	36.57	14.24	57.18	100	0	P	V
		15540	47.89	-26.11	74	46.25	41.41	18.5	58.27	100	0	P	V
802.11a CH 44 5220MHz		10440	44.83	-29.17	74	51.09	36.59	14.29	57.14	100	0	P	H
		15660	48.44	-25.56	74	46.51	41.46	18.65	58.18	100	0	P	H
		10440	43.65	-30.35	74	49.91	36.59	14.29	57.14	100	0	P	V
		15660	47.51	-26.49	74	45.58	41.46	18.65	58.18	100	0	P	V
802.11a CH 48 5240MHz		10480	44.39	-29.61	74	50.58	36.6	14.32	57.11	100	0	P	H
		15720	48.87	-25.13	74	46.75	41.49	18.75	58.12	100	0	P	H
		10480	43.8	-30.2	74	49.99	36.6	14.32	57.11	100	0	P	V
		15720	48.62	-25.38	74	46.5	41.49	18.75	58.12	100	0	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		5148.2	53.67	-20.33	74	43.01	32.73	10.22	32.29	275	69	P	H
		5149.85	43.43	-10.57	54	32.77	32.73	10.22	32.29	275	69	A	H
	*	5182	96.92	-	-	86.16	32.74	10.3	32.28	275	69	P	H
	*	5182	86.65	-	-	75.89	32.74	10.3	32.28	275	69	A	H
		5149.4	61.67	-12.33	74	51.01	32.73	10.22	32.29	100	278	P	V
		5150	46.81	-7.19	54	36.15	32.73	10.22	32.29	100	278	A	V
	*	5178	105.16	-	-	94.4	32.74	10.3	32.28	100	278	P	V
	*	5178	95.03	-	-	84.27	32.74	10.3	32.28	100	278	A	V
802.11n HT20 CH 44 5220MHz		5121.5	52.62	-21.38	74	42.07	32.72	10.13	32.3	387	332	P	H
		5131.85	42.73	-11.27	54	32.07	32.73	10.22	32.29	387	332	A	H
	*	5222	95.65	-	-	84.86	32.74	10.32	32.27	387	332	P	H
	*	5222	85.48	-	-	74.69	32.74	10.32	32.27	387	332	A	H
		5358.36	52.76	-21.24	74	41.82	32.77	10.4	32.23	387	332	P	H
		5458.13	43.04	-10.96	54	32.01	32.79	10.44	32.2	387	332	A	H
		5069.3	52.63	-21.37	74	42.18	32.71	10.05	32.31	100	309	P	V
		5149.55	42.83	-11.17	54	32.17	32.73	10.22	32.29	100	309	A	V
	*	5221	104.2	-	-	93.41	32.74	10.32	32.27	100	309	P	V
	*	5221	94.03	-	-	83.24	32.74	10.32	32.27	100	309	A	V
		5350.44	52.96	-21.04	74	42.02	32.77	10.4	32.23	100	309	P	V
		5428.1	43.08	-10.92	54	32.08	32.78	10.43	32.21	100	309	A	V



<b>802.11n</b> <b>HT20</b> <b>CH 48</b> <b>5240MHz</b>		5124.35	52.8	-21.2	74	42.23	32.73	10.13	32.29	303	337	P	H
		5130.2	42.79	-11.21	54	32.13	32.73	10.22	32.29	303	337	A	H
	*	5242	95.4	-	-	84.59	32.75	10.32	32.26	303	337	P	H
	*	5242	85.5	-	-	74.69	32.75	10.32	32.26	303	337	A	H
		5400.38	53.94	-20.06	74	42.96	32.78	10.42	32.22	303	337	P	H
		5435.47	43.06	-10.94	54	32.05	32.79	10.43	32.21	303	337	A	H
		5132.6	53.33	-20.67	74	42.67	32.73	10.22	32.29	151	307	P	V
		5146.7	42.86	-11.14	54	32.2	32.73	10.22	32.29	151	307	A	V
	*	5238	104.29	-	-	93.48	32.75	10.32	32.26	151	307	P	V
	*	5238	94.36	-	-	83.55	32.75	10.32	32.26	151	307	A	V
		5429.97	52.78	-21.22	74	41.77	32.79	10.43	32.21	151	307	P	V
		5428.21	43.1	-10.9	54	32.1	32.78	10.43	32.21	151	307	A	V
<b>Remark</b>	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	44.12	-29.88	74	50.49	36.57	14.24	57.18	100	0	P	H
		15540	48.41	-25.59	74	46.77	41.41	18.5	58.27	100	0	P	H
		10360	45.92	-28.08	74	52.29	36.57	14.24	57.18	100	0	P	V
		15540	48.42	-25.58	74	46.78	41.41	18.5	58.27	100	0	P	V
802.11n HT20 CH 44 5220MHz		10440	44.63	-29.37	74	50.89	36.59	14.29	57.14	100	0	P	H
		15660	48.58	-25.42	74	46.65	41.46	18.65	58.18	100	0	P	H
		10440	44.28	-29.72	74	50.54	36.59	14.29	57.14	100	0	P	V
		15660	47.92	-26.08	74	45.99	41.46	18.65	58.18	100	0	P	V
802.11n HT20 CH 48 5240MHz		10480	44.72	-29.28	74	50.91	36.6	14.32	57.11	100	0	P	H
		15720	49.14	-24.86	74	47.02	41.49	18.75	58.12	100	0	P	H
		10480	44.98	-29.02	74	51.17	36.6	14.32	57.11	100	0	P	V
		15720	49.06	-24.94	74	46.94	41.49	18.75	58.12	100	0	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		5147.6	54.1	-19.9	74	43.44	32.73	10.22	32.29	100	347	P	H
		5148.95	44.05	-9.95	54	33.39	32.73	10.22	32.29	100	347	A	H
	*	5188	88.71	-	-	77.95	32.74	10.3	32.28	100	347	P	H
	*	5188	79.12	-	-	68.36	32.74	10.3	32.28	100	347	A	H
		5457.8	53.1	-20.9	74	42.07	32.79	10.44	32.2	100	347	P	H
		5440.2	43.28	-10.72	54	32.27	32.79	10.43	32.21	100	347	A	H
		5147.3	66.12	-7.88	74	55.46	32.73	10.22	32.29	166	101	P	V
		5149.85	50.6	-3.4	54	39.94	32.73	10.22	32.29	166	101	A	V
	*	5188	100.18	-	-	89.42	32.74	10.3	32.28	166	101	P	V
	*	5188	90.34	-	-	79.58	32.74	10.3	32.28	166	101	A	V
		5351.21	53.4	-20.6	74	42.46	32.77	10.4	32.23	166	101	P	V
		5425.13	43.3	-10.7	54	32.3	32.78	10.43	32.21	166	101	A	V
802.11n HT40 CH 46 5230MHz		5140.55	53.23	-20.77	74	42.57	32.73	10.22	32.29	100	20	P	H
		5127.35	43.02	-10.98	54	32.36	32.73	10.22	32.29	100	20	A	H
	*	5228	89.63	-	-	78.82	32.75	10.32	32.26	100	20	P	H
	*	5228	79.73	-	-	68.92	32.75	10.32	32.26	100	20	A	H
		5394.66	53.83	-20.17	74	42.85	32.78	10.42	32.22	100	20	P	H
		5359.13	43.31	-10.69	54	32.37	32.77	10.4	32.23	100	20	A	H
		5150	53.55	-20.45	74	42.89	32.73	10.22	32.29	184	76	P	V
		5150	43.46	-10.54	54	32.8	32.73	10.22	32.29	184	76	A	V
	*	5228	101.91	-	-	91.1	32.75	10.32	32.26	184	76	P	V
	*	5228	92.04	-	-	81.23	32.75	10.32	32.26	184	76	A	V
		5400.93	54.08	-19.92	74	43.1	32.78	10.42	32.22	184	76	P	V
		5430.3	43.31	-10.69	54	32.3	32.79	10.43	32.21	184	76	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	43.82	-30.18	74	50.14	36.58	14.27	57.17	100	0	P	H
		15570	48.44	-25.56	74	46.7	41.43	18.55	58.24	100	0	P	H
		10380	46.01	-27.99	74	52.33	36.58	14.27	57.17	100	0	P	V
		15570	48.83	-25.17	74	47.09	41.43	18.55	58.24	100	0	P	V
802.11n HT40 CH 46 5230MHz		10460	45.34	-28.66	74	51.56	36.59	14.32	57.13	100	0	P	H
		15690	49.08	-24.92	74	47.05	41.48	18.7	58.15	100	0	P	H
		10460	44.37	-29.63	74	50.59	36.59	14.32	57.13	100	0	P	V
		15690	48.38	-25.62	74	46.35	41.48	18.7	58.15	100	0	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		5109.65	52.48	-21.52	74	41.93	32.72	10.13	32.3	284	66	P	H
		5137.85	42.74	-11.26	54	32.08	32.73	10.22	32.29	284	66	A	H
	*	5262	96.48	-	-	85.64	32.75	10.35	32.26	284	66	P	H
	*	5262	86.45	-	-	75.61	32.75	10.35	32.26	284	66	A	H
		5410.39	53.39	-20.61	74	42.4	32.78	10.43	32.22	284	66	P	H
		5448.56	43.01	-10.99	54	31.98	32.79	10.44	32.2	284	66	A	H
		5085.05	52.75	-21.25	74	42.29	32.72	10.05	32.31	105	296	P	V
		5126	42.71	-11.29	54	32.14	32.73	10.13	32.29	105	296	A	V
	*	5258	105.67	-	-	94.83	32.75	10.35	32.26	105	296	P	V
	*	5258	95.44	-	-	84.6	32.75	10.35	32.26	105	296	A	V
		5448.12	52.76	-21.24	74	41.73	32.79	10.44	32.2	105	296	P	V
		5360.45	43.05	-10.95	54	32.11	32.77	10.4	32.23	105	296	A	V
802.11a CH 60 5300MHz		5089.55	53.54	-20.46	74	42.99	32.72	10.13	32.3	312	67	P	H
		5146.7	42.7	-11.3	54	32.04	32.73	10.22	32.29	312	67	A	H
	*	5298	96.4	-	-	85.52	32.76	10.37	32.25	312	67	P	H
	*	5298	86.31	-	-	75.43	32.76	10.37	32.25	312	67	A	H
		5386.41	53.38	-20.62	74	42.4	32.78	10.42	32.22	312	67	P	H
		5352.2	43.14	-10.86	54	32.2	32.77	10.4	32.23	312	67	A	H
		5148.95	52.36	-21.64	74	41.7	32.73	10.22	32.29	130	309	P	V
		5146.25	42.76	-11.24	54	32.1	32.73	10.22	32.29	130	309	A	V
	*	5302	104.57	-	-	93.69	32.76	10.37	32.25	130	309	P	V
	*	5302	94.47	-	-	83.59	32.76	10.37	32.25	130	309	A	V
		5352.42	56.01	-17.99	74	45.07	32.77	10.4	32.23	130	309	P	V
		5352.31	45.35	-8.65	54	34.41	32.77	10.4	32.23	130	309	A	V



<b>802.11a CH 64 5320MHz</b>	*	5322	94.84	-	-	83.95	32.76	10.37	32.24	100	286	P	H
	*	5322	84.9	-	-	74.01	32.76	10.37	32.24	100	286	A	H
		5356.49	54.08	-19.92	74	43.14	32.77	10.4	32.23	100	286	P	H
		5350.88	43.36	-10.64	54	32.42	32.77	10.4	32.23	100	286	A	H
	*	5322	104.58	-	-	93.69	32.76	10.37	32.24	114	308	P	V
	*	5322	94.78	-	-	83.89	32.76	10.37	32.24	114	308	A	V
		5351.76	61.6	-12.4	74	50.66	32.77	10.4	32.23	114	308	P	V
		5350	46.4	-7.6	54	35.46	32.77	10.4	32.23	114	308	A	V
<b>Remark</b>	<ol style="list-style-type: none"><li>1. No other spurious found.</li><li>2. All results are PASS against Peak and Average limit line.</li></ol>												



## 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		10520	44.44	-29.56	74	50.62	36.58	14.34	57.1	100	0	P	H
		15780	47.72	-26.28	74	45.49	41.51	18.8	58.08	100	0	P	H
		10520	43.64	-30.36	74	49.82	36.58	14.34	57.1	100	0	P	V
		15780	48.04	-25.96	74	45.81	41.51	18.8	58.08	100	0	P	V
802.11a CH 60 5300MHz		10600	44.17	-29.83	74	50.44	36.46	14.39	57.12	100	0	P	H
		15900	48.93	-25.07	74	46.4	41.56	18.95	57.98	100	0	P	H
		10600	44.17	-29.83	74	50.44	36.46	14.39	57.12	100	0	P	V
		15900	48.01	-25.99	74	45.48	41.56	18.95	57.98	100	0	P	V
802.11a CH 64 5320MHz		10640	43.22	-30.78	74	49.52	36.41	14.42	57.13	100	0	P	H
		15960	47.82	-26.18	74	45.11	41.59	19.05	57.93	100	0	P	H
		10640	43.33	-30.67	74	49.63	36.41	14.42	57.13	100	0	P	V
		15960	48.64	-25.36	74	45.93	41.59	19.05	57.93	100	0	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		5107.4	52.6	-21.4	74	42.05	32.72	10.13	32.3	286	67	P	H
		5149.1	42.76	-11.24	54	32.1	32.73	10.22	32.29	286	67	A	H
	*	5262	96.46	-	-	85.62	32.75	10.35	32.26	286	67	P	H
	*	5262	86.56	-	-	75.72	32.75	10.35	32.26	286	67	A	H
		5358.14	53.21	-20.79	74	42.27	32.77	10.4	32.23	286	67	P	H
		5419.3	43.1	-10.9	54	32.1	32.78	10.43	32.21	286	67	A	H
		5148.95	52.9	-21.1	74	42.24	32.73	10.22	32.29	108	307	P	V
		5130.2	42.81	-11.19	54	32.15	32.73	10.22	32.29	108	307	A	V
	*	5262	104.55	-	-	93.71	32.75	10.35	32.26	108	307	P	V
	*	5262	94.64	-	-	83.8	32.75	10.35	32.26	108	307	A	V
		5371.78	53.02	-20.98	74	42.06	32.77	10.42	32.23	108	307	P	V
		5446.25	43.1	-10.9	54	32.07	32.79	10.44	32.2	108	307	A	V
802.11n HT20 CH 60 5300MHz		5056.4	52.61	-21.39	74	42.16	32.71	10.05	32.31	313	67	P	H
		5148.5	42.74	-11.26	54	32.08	32.73	10.22	32.29	313	67	A	H
	*	5298	96.44	-	-	85.56	32.76	10.37	32.25	313	67	P	H
	*	5298	86.37	-	-	75.49	32.76	10.37	32.25	313	67	A	H
		5458.02	53.46	-20.54	74	42.43	32.79	10.44	32.2	313	67	P	H
		5351.32	43.18	-10.82	54	32.24	32.77	10.4	32.23	313	67	A	H
		5148.05	52.84	-21.16	74	42.18	32.73	10.22	32.29	100	296	P	V
		5142.65	42.77	-11.23	54	32.11	32.73	10.22	32.29	100	296	A	V
	*	5298	104.62	-	-	93.74	32.76	10.37	32.25	100	296	P	V
	*	5298	94.63	-	-	83.75	32.76	10.37	32.25	100	296	A	V
		5353.19	56.75	-17.25	74	45.81	32.77	10.4	32.23	100	296	P	V
		5351.65	46.17	-7.83	54	35.23	32.77	10.4	32.23	100	296	A	V



<b>802.11n</b> <b>HT20</b> <b>CH 64</b> <b>5320MHz</b>		5091.2	52.56	-21.44	74	42.01	32.72	10.13	32.3	100	286	P	H
		5148.5	42.75	-11.25	54	32.09	32.73	10.22	32.29	100	286	A	H
	*	5322	94.51	-	-	83.62	32.76	10.37	32.24	100	286	P	H
	*	5322	84.14	-	-	73.25	32.76	10.37	32.24	100	286	A	H
		5354.62	54.53	-19.47	74	43.59	32.77	10.4	32.23	100	286	P	H
		5350.77	43.62	-10.38	54	32.68	32.77	10.4	32.23	100	286	A	H
		5041.7	53.25	-20.75	74	42.9	32.71	9.96	32.32	100	289	P	V
		5149.55	42.84	-11.16	54	32.18	32.73	10.22	32.29	100	289	A	V
	*	5322	104.75	-	-	93.86	32.76	10.37	32.24	100	289	P	V
	*	5322	94.26	-	-	83.37	32.76	10.37	32.24	100	289	A	V
		5350.99	64.03	-9.97	74	53.09	32.77	10.4	32.23	100	289	P	V
		5350	47.74	-6.26	54	36.8	32.77	10.4	32.23	100	289	A	V
<b>Remark</b>	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		10520	45.44	-28.56	74	51.62	36.58	14.34	57.1	100	0	P	H
		15780	47.83	-26.17	74	45.6	41.51	18.8	58.08	100	0	P	H
		10520	44.47	-29.53	74	50.65	36.58	14.34	57.1	100	0	P	V
		15780	48.23	-25.77	74	46	41.51	18.8	58.08	100	0	P	V
802.11n HT20 CH 60 5300MHz		10600	43.54	-30.46	74	49.81	36.46	14.39	57.12	100	0	P	H
		15900	49.41	-24.59	74	46.88	41.56	18.95	57.98	100	0	P	H
		10600	43.71	-30.29	74	49.98	36.46	14.39	57.12	100	0	P	V
		15900	48.61	-25.39	74	46.08	41.56	18.95	57.98	100	0	P	V
802.11n HT20 CH 64 5320MHz		10640	43.91	-30.09	74	50.21	36.41	14.42	57.13	100	0	P	H
		15960	47.47	-26.53	74	44.76	41.59	19.05	57.93	100	0	P	H
		10640	44.16	-29.84	74	50.46	36.41	14.42	57.13	100	0	P	V
		15960	47.6	-26.4	74	44.89	41.59	19.05	57.93	100	0	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		5129.9	52.86	-21.14	74	42.2	32.73	10.22	32.29	201	243	P	H
		5148.95	43.14	-10.86	54	32.48	32.73	10.22	32.29	201	243	A	H
	*	5272	93.03	-	-	82.19	32.75	10.35	32.26	201	243	P	H
	*	5272	82.95	-	-	72.11	32.75	10.35	32.26	201	243	A	H
		5418.2	52.91	-21.09	74	41.91	32.78	10.43	32.21	201	243	P	H
		5433.6	43.42	-10.58	54	32.41	32.79	10.43	32.21	201	243	A	H
		5115.2	53.34	-20.66	74	42.79	32.72	10.13	32.3	196	67	P	V
		5122.25	43.18	-10.82	54	32.63	32.72	10.13	32.3	196	67	A	V
	*	5272	101.98	-	-	91.14	32.75	10.35	32.26	196	67	P	V
	*	5272	92.14	-	-	81.3	32.75	10.35	32.26	196	67	A	V
		5351.65	54.17	-19.83	74	43.23	32.77	10.4	32.23	196	67	P	V
		5350.22	43.88	-10.12	54	32.94	32.77	10.4	32.23	196	67	A	V
802.11n HT40 CH 62 5310MHz		5100.05	52.96	-21.04	74	42.41	32.72	10.13	32.3	102	344	P	H
		5148.05	43.07	-10.93	54	32.41	32.73	10.22	32.29	102	344	A	H
	*	5308	90.28	-	-	79.4	32.76	10.37	32.25	102	344	P	H
	*	5308	80.48	-	-	69.6	32.76	10.37	32.25	102	344	A	H
		5350.44	58.24	-15.76	74	47.3	32.77	10.4	32.23	102	344	P	H
		5350.55	44.4	-9.6	54	33.46	32.77	10.4	32.23	102	344	A	H
		5137.4	53.12	-20.88	74	42.46	32.73	10.22	32.29	151	94	P	V
		5147.75	43.18	-10.82	54	32.52	32.73	10.22	32.29	151	94	A	V
	*	5308	101.14	-	-	90.26	32.76	10.37	32.25	151	94	P	V
	*	5308	91.26	-	-	80.38	32.76	10.37	32.25	151	94	A	V
		5351.43	67.36	-6.64	74	56.42	32.77	10.4	32.23	151	94	P	V
		5350.99	50.33	-3.67	54	39.39	32.77	10.4	32.23	151	94	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	44.11	-29.89	74	50.3	36.55	14.37	57.11	100	0	P	H
		15810	47.11	-26.89	74	44.79	41.52	18.85	58.05	100	0	P	H
		10540	44.38	-29.62	74	50.57	36.55	14.37	57.11	100	0	P	V
		15810	48.14	-25.86	74	45.82	41.52	18.85	58.05	100	0	P	V
802.11n HT40 CH 62 5310MHz		10620	43.17	-30.83	74	49.44	36.43	14.42	57.12	100	0	P	H
		15930	48.97	-25.03	74	46.36	41.57	19	57.96	100	0	P	H
		10620	43.34	-30.66	74	49.61	36.43	14.42	57.12	100	0	P	V
		15930	48.66	-25.34	74	46.05	41.57	19	57.96	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average 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		45.39	16.77	-23.23	40	36.2	10.05	0.92	30.4	-	-	P	H
		164.19	17.13	-26.37	43.5	35.84	9.94	1.71	30.36	-	-	P	H
		216.84	21.76	-24.24	46	40.77	9.27	2.02	30.3	-	-	P	H
		360.9	19.5	-26.5	46	32.47	14.63	2.46	30.06	-	-	P	H
		650	28.2	-17.8	46	33.97	20.4	3.37	29.54	-	-	P	H
		748.7	28.9	-17.1	46	32.59	22.2	3.54	29.43	100	0	P	H
		73.74	17.99	-22.01	40	40.48	6.72	1.22	30.43	-	-	P	V
		109.92	23.8	-19.7	43.5	41.82	10.9	1.48	30.4	-	-	P	V
		216.84	19.66	-26.34	46	38.67	9.27	2.02	30.3	-	-	P	V
		449.8	21.58	-24.42	46	31.52	17.2	2.77	29.91	-	-	P	V
		595.4	24.26	-21.74	46	30.93	19.65	3.29	29.61	-	-	P	V
		768.3	27.64	-18.36	46	31.39	22.12	3.54	29.41	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

**Note symbol**

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