



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 01, 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.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR540109E	Rev. 01	Initial issue of report	May 15, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	6dB Bandwidth	> 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	$\leq -17, -27$ dBm/MHz & 15.209(a)	Pass	Under limit 3.99 dB at 5723.560 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	
Equipment	Tablet PC
Brand Name	ALCATEL ONETOUCH
Model Name	9006W
Marketing Name	ONETOUCH PIXI 2 (7)
FCC ID	2ACCJB014
EUT supports Radios application	GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/DC-HSDPA/LTE WLAN2.4GHz 802.11b/g/n HT20 WLAN5GHz 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	
Tx/Rx Channel Frequency Range	5725 MHz ~ 5850 MHz
Maximum Output Power	802.11a : 7.91 dBm / 0.0062 W 802.11n HT20 : 7.80 dBm / 0.0060 W 802.11n HT40 : 7.10 dBm / 0.0051 W
Minimum 6dB Bandwidth	802.11a : 16.36 MHz 802.11n HT20 : 17.60 MHz 802.11n HT40 : 35.12 MHz
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
Antenna Type / Gain	IFA Antenna with gain 2.40 dBi

1.5 Specification of Accessory

Specification of Accessory				
AC Adapter	Brand Name	ALCATEL onetouch	Model Name	UC13US
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA		
	P/N	CBA0059AG0C1		
Battery	Brand Name	ALCATEL onetouch	Model Name	TLp032B2
	Power Rating	3.7Vdc, 3240mAh		
USB Cable	Brand Name	NA	Model Name	NA
	Signal Line Type	0.82m, shielded cable, without core		

1.6 Modification of EUT

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

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	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	
Test Site No.	Sporton Site No.	
	TH01-SZ	CO01-SZ

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st 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	
Test Site No.	Sporton Site No.	FCC Registration No.
	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 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 and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	159	5795
	151	5755	161	5805
	153	5765	165	5825
	157	5785		

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 mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Average Power (dBm)	7.91	7.86	7.86	7.83	7.86	7.87	7.85	7.83

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power (dBm)	7.80	7.74	7.72	7.71	7.71	7.76	7.70	7.73

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power (dBm)	7.10	7.01	7.00	7.00	7.04	7.02	6.98	7.01

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.

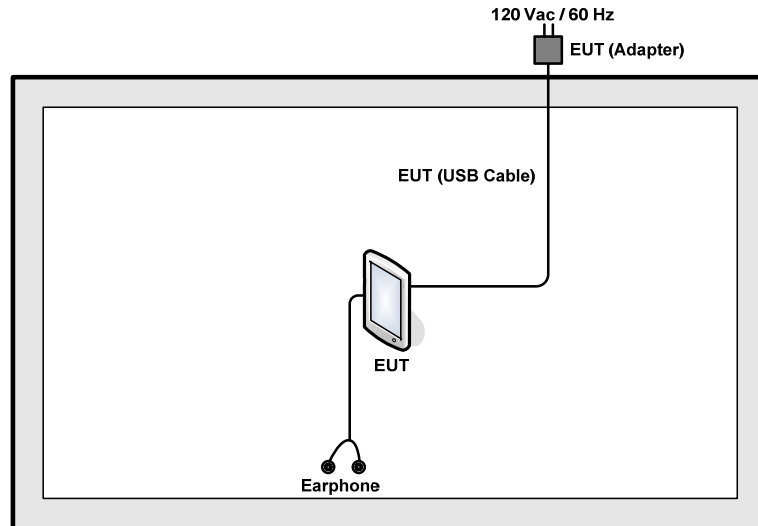
Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

AC Conducted Emission	Mode 1 : GPRS850 Idle + Bluetooth Link + WLAN (5G) Link + USB Cable (Charging from Adapter) + Battery + Earphone
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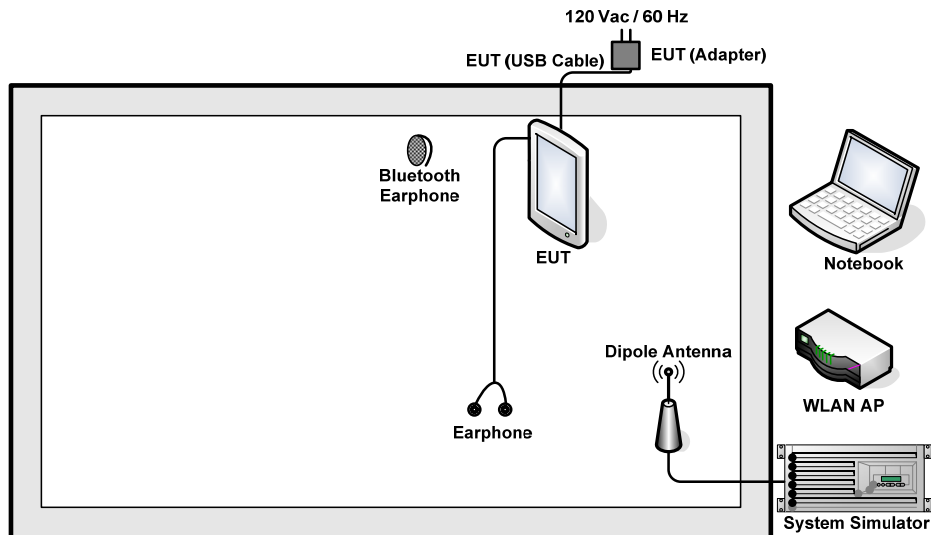
Ch. #		Band IV : 5725-5850 MHz		
		802.11a	802.11n HT20	802.11n HT40
L	Low	149	149	151
M	Middle	157	157	-
H	High	165	165	159

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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	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.	SD Card	SanDisk	4G class 4	FCC DoC	N/A	N/A
6.	Earphone	Apple	A1285	FCC DoC	N/A	Unshielded, 1.2m

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 6dB Bandwidth Measurement

3.1.1 Description of 6dB Bandwidth

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

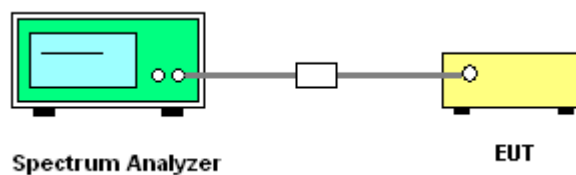
3.1.2 Measuring Instruments

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 for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

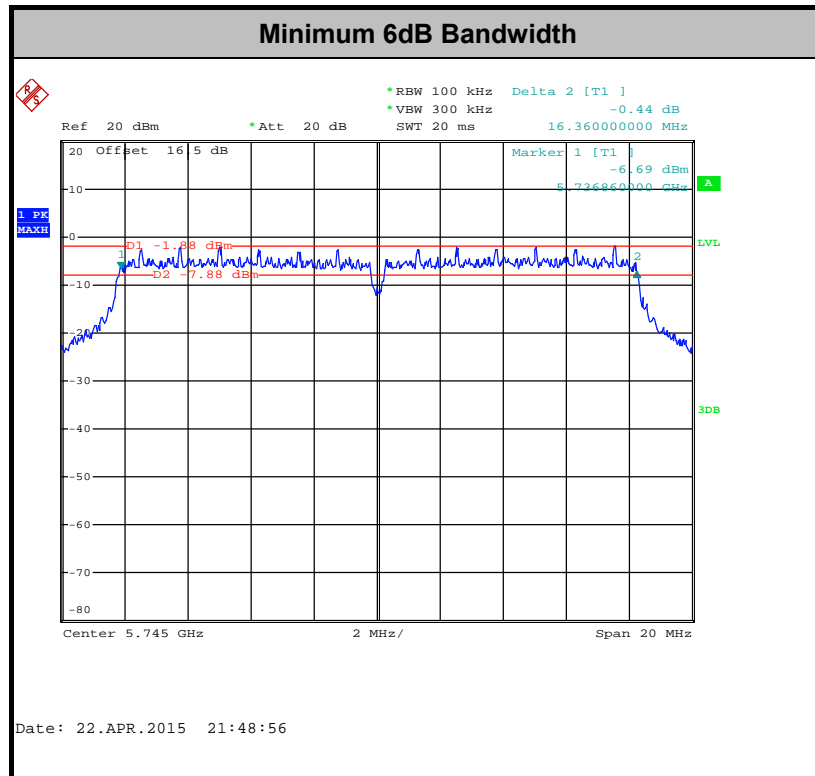
3.1.4 Test Setup





3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.



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

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

3.2.2 Measuring Instruments

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

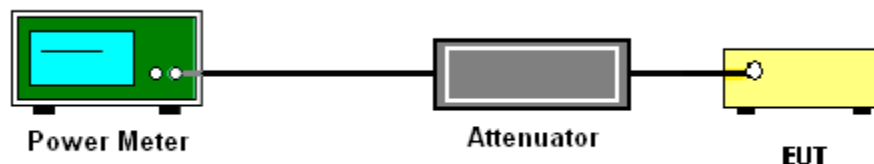
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules 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 the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

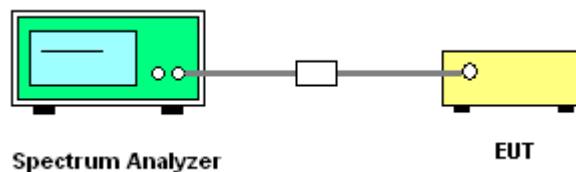
Section F) Maximum power spectral density.

Method SA-2

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

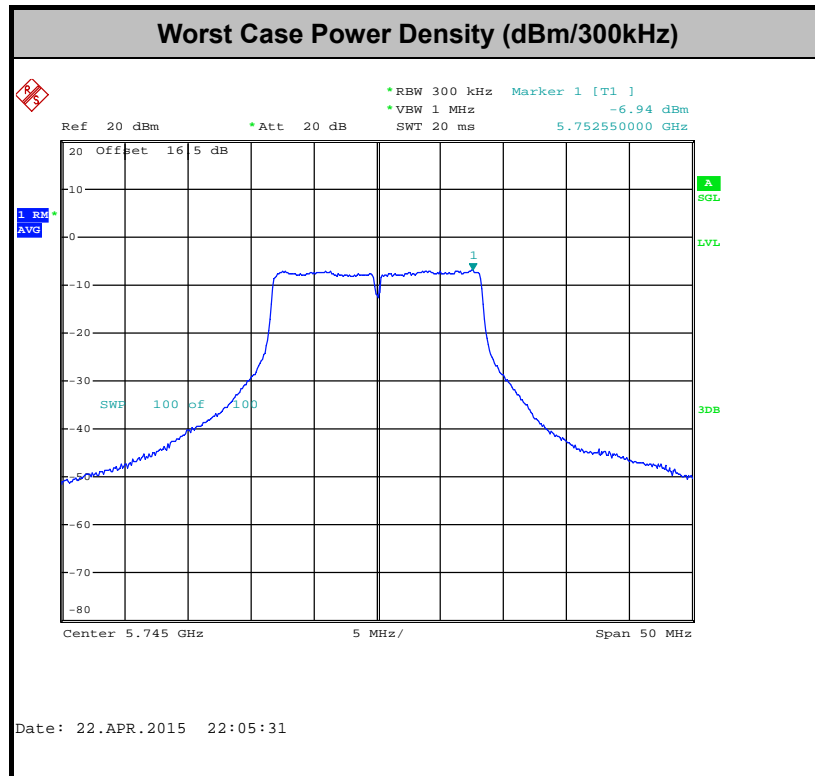
1. The testing follows Method SA-2 of FCC KDB 789033 D01 General UNII Test Procedures v01r03.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300 kHz.
 - Set VBW \geq 1 MHz.
 - Number of points in sweep \geq 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(500\text{kHz}/\text{RBW})$ to the test result.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
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.



3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part 15.205.

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5725-5850 MHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBμV/m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBμV/m).
- (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.

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

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

- (3) KDB789033 v01r03 H)2)c)(i) 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.

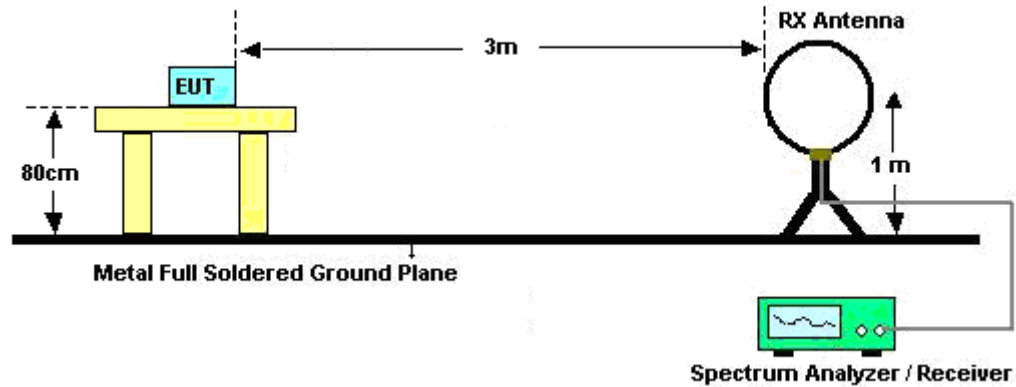
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11a	87.26	1.37	0.73	1kHz
1	802.11n HT20	86.30	1.27	0.79	1kHz
1	802.11n HT40	75.18	0.64	1.57	3kHz



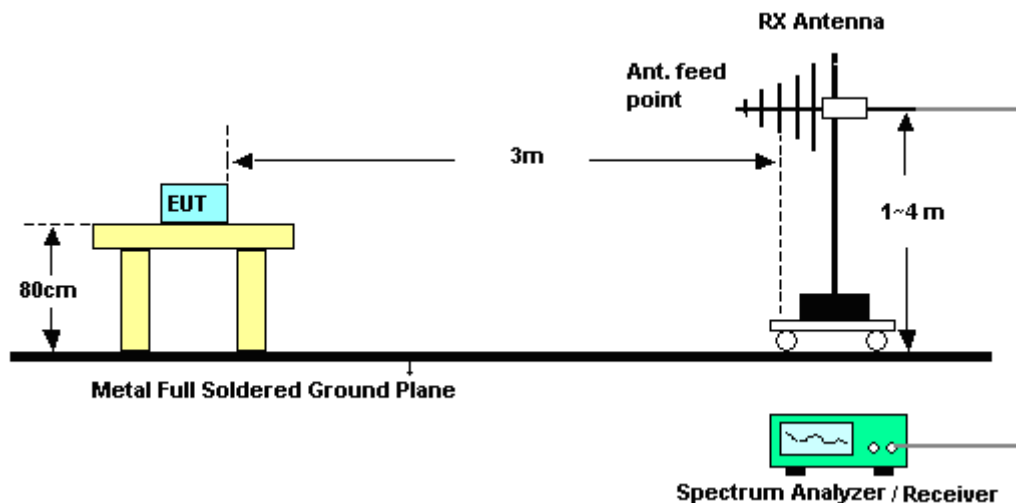
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

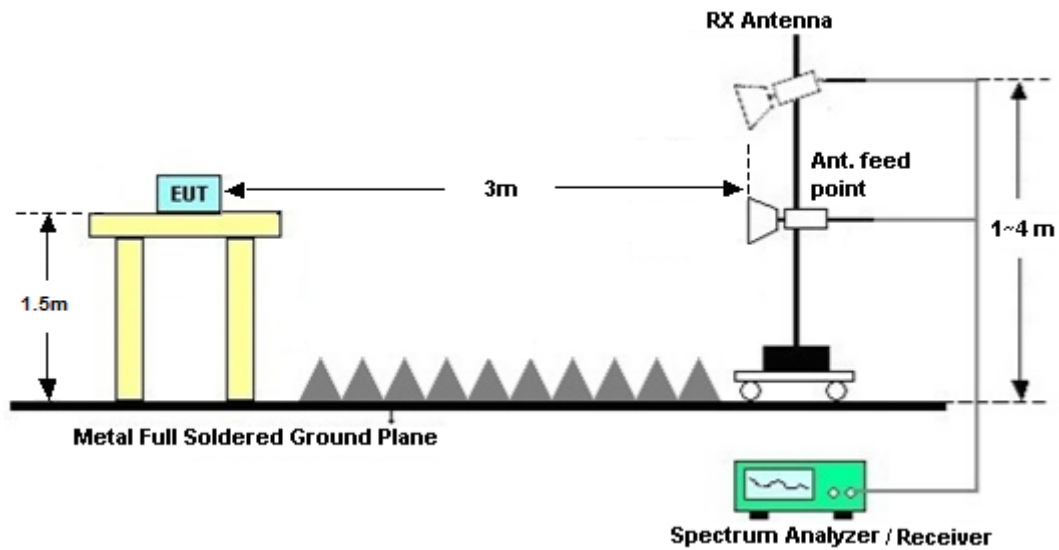
For radiated emissions below 30MHz



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 A.

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

Please refer to Appendix A.

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.

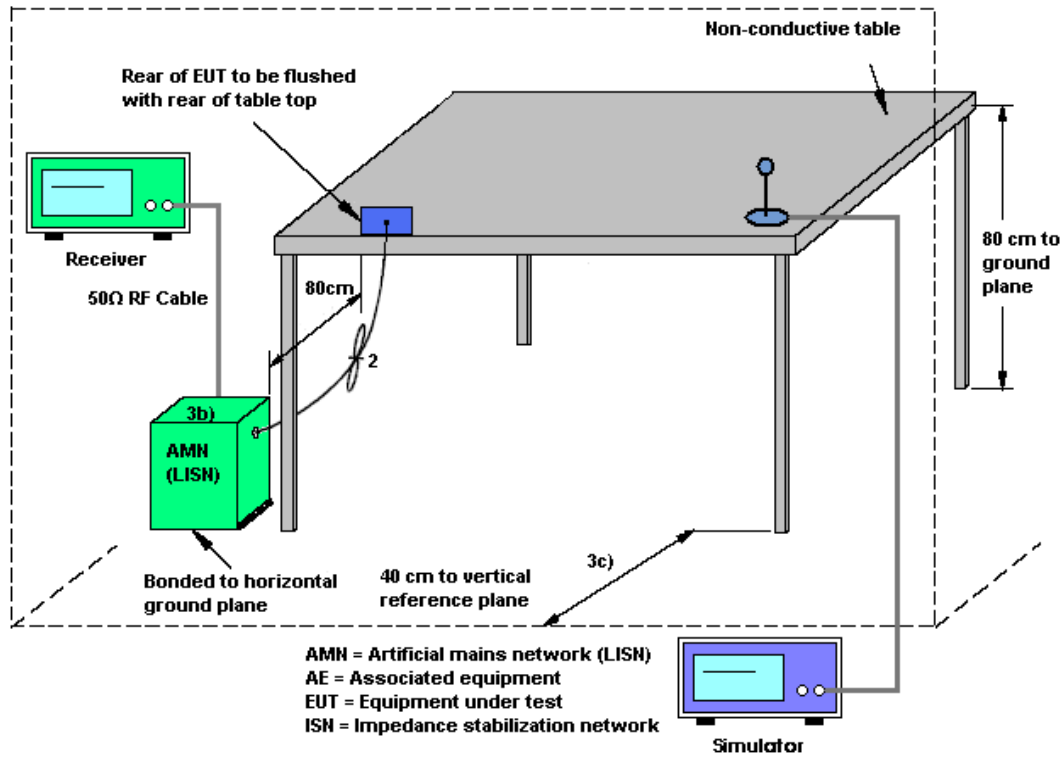
3.5.2 Measuring Instruments

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.

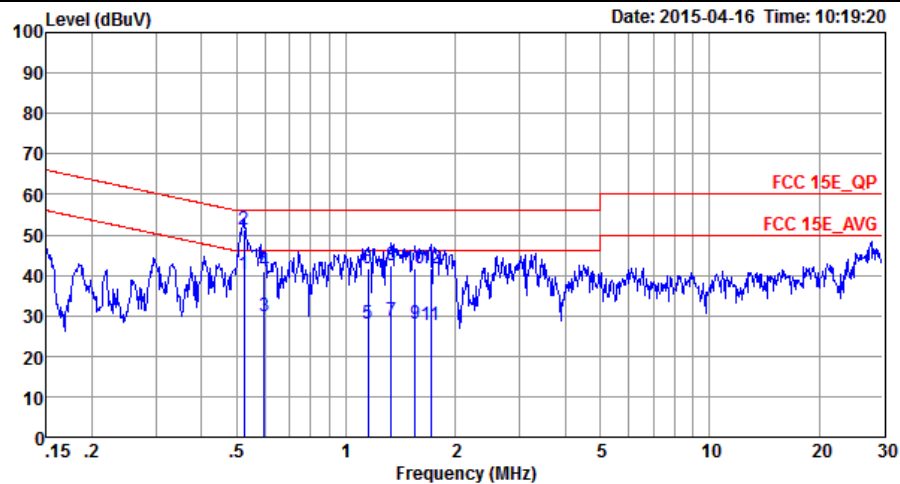
3.5.4 Test Setup





3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~22°C
Test Engineer :	Min Yang	Relative Humidity :	41~43%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GPRS850 Idle + Bluetooth Link + WLAN (5G) Link + USB Cable (Charging from Adapter) + Battery + Earphone		



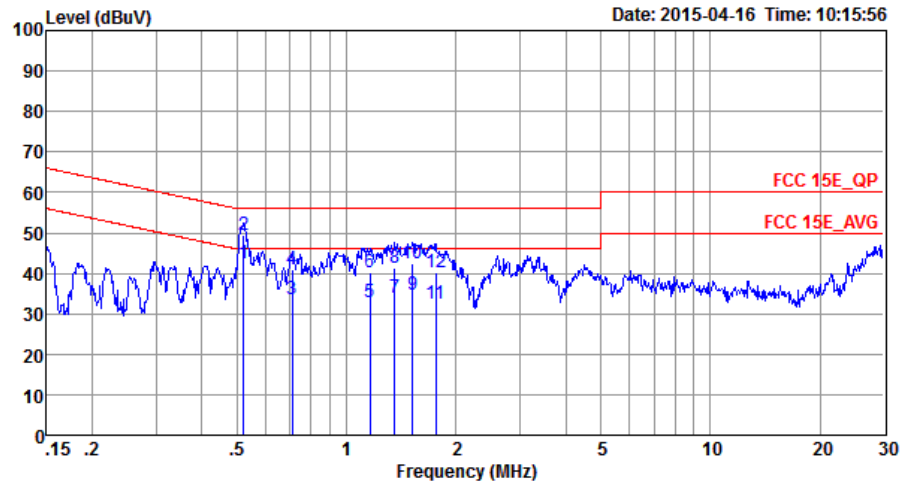
Site : CO01-SZ
Condition: FCC 15E_QP LISN_L_20140304 LINE

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 :	41~43%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GPRS850 Idle + Bluetooth Link + WLAN (5G) Link + USB Cable (Charging from Adapter) + Battery + 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 peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101400	9kHz~40GHz	Jan. 28, 2015	Apr. 22, 2015	Jan. 27, 2016	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1207253	30MHz~40GHz	Jan. 28, 2015	Apr. 22, 2015	Jan. 27, 2016	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Jan. 28, 2015	Apr. 22, 2015	Jan. 27, 2016	Conducted (TH01-SZ)
Thermal Chamber	Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Sep. 16, 2014	Apr. 22, 2015	Sep. 15, 2015	Conducted (TH01-SZ)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 15, 2014	Apr. 29, 2015~May 01, 2015	Dec. 14, 2015	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	100315	9 kHz~30 MHz	Jul. 28, 2014	Apr. 29, 2015~May 01, 2015	Jul. 27, 2015	Radiation (03CH05-HY)
Bilog Antenna	Schaffner	CBL6111C	2725	30MHz~1GHz	Sep. 27, 2014	Apr. 29, 2015~May 01, 2015	Sep. 26, 2015	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	00066584	1GHz~18GHz	Aug. 30, 2014	Apr. 29, 2015~May 01, 2015	Aug. 29, 2015	Radiation (03CH05-HY)
SHF-EHF Horn Antenna	SCHWARZBEC K	BBHA 9170	BBHA9170251	18GHz~40GHz	Oct. 02, 2014	Apr. 29, 2015~May 01, 2015	Oct. 01, 2015	Radiation (03CH05-HY)
Preamplifier	MITEQ	AMF-7D-001 01800-30-10	1590074	100kHz~18GHz	Jul. 07, 2014	Apr. 29, 2015~May 01, 2015	Jul. 06, 2015	Radiation (03CH05-HY)
Preamplifier	EMCI	EMC011830	980148	1GHz~18GHz	Jun. 23, 2014	Apr. 29, 2015~May 01, 2015	Jun. 22, 2015	Radiation (03CH05-HY)
Preamplifier	COM-POWER	PA-103	161075	9kHz~30MHz	Apr. 09, 2015	Apr. 29, 2015~May 01, 2015	Apr. 08, 2016	Radiation (03CH05-HY)
Turn Table	EMEC	TT 2000	N/A	0-360 degree	N/A	Apr. 29, 2015~May 01, 2015	N/A	Radiation (03CH05-HY)
Antenna Mast	ChamPro	AM-BS-4500-B	N/A	1~4m	N/A	Apr. 29, 2015~May 01, 2015	N/A	Radiation (03CH05-HY)
RF Cable	Infinet	LL142	Infinet CA3601-360 1-1000	30MHz~1GHz	Jan. 06, 2015	Apr. 29, 2015~May 01, 2015	Jan. 05, 2016	Radiation (03CH05-HY)
RF Cable	Infinet	LL142	Infinet CA3601-360 1-1000	1GHz~25GHz	Jan. 06, 2015	Apr. 29, 2015~May 01, 2015	Jan. 05, 2016	Radiation (03CH05-HY)
RF Cable	Infinet	LL142	Infinet CA3601-360 1-1000	25GHz~40GHz	Jan. 06, 2015	Apr. 29, 2015~May 01, 2015	Jan. 05, 2016	Radiation (03CH05-HY)
EMI Receiver	R&S	ESCI7	100724	9kHz~3GHz	Jan. 28, 2015	Apr. 16, 2015	Jan. 27, 2016	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	103892	9kHz~30MHz	Feb. 02, 2015	Apr. 16, 2015	Feb. 01, 2016	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	AN3016	16850	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)
Pulse Limiter	COM-POWER	LIT-153 Transient Limiter	53139	150kHz~30MHz	Oct. 24, 2014	Apr. 16, 2015	Oct. 24, 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 : FR540109E

Test Engineer:	Mygai	Temperature:	21~25	°C
Test Date:	2015/4/22	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% OBW

Band IV							
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	6 dB Bandwidth (MHz)	FCC 6dB Bandwidth Limit (MHz)	Pass/Fail
11a	6Mbps	1	149	5745	16.36	0.5	Pass
11a	6Mbps	1	157	5785	16.36	0.5	Pass
11a	6Mbps	1	165	5825	16.36	0.5	Pass
HT20	MCS0	1	149	5745	17.6	0.5	Pass
HT20	MCS0	1	157	5785	17.6	0.5	Pass
HT20	MCS0	1	165	5825	17.6	0.5	Pass
HT40	MCS0	1	151	5755	35.44	0.5	Pass
HT40	MCS0	1	159	5795	35.12	0.5	Pass

TEST RESULTS DATA
Average Power Table

FCC Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6Mbps	1	149	5745	0.59	7.91	30.00	-4.10		Pass
11a	6Mbps	1	157	5785	0.59	7.36	30.00	-4.10		Pass
11a	6Mbps	1	165	5825	0.59	7.46	30.00	-4.10		Pass
HT20	MCS0	1	149	5745	0.64	7.80	30.00	-4.10		Pass
HT20	MCS0	1	157	5785	0.64	7.29	30.00	-4.10		Pass
HT20	MCS0	1	165	5825	0.64	7.38	30.00	-4.10		Pass
HT40	MCS0	1	151	5755	1.24	7.10	30.00	-4.10		Pass
HT40	MCS0	1	159	5795	1.24	7.03	30.00	-4.10		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	10log (500kHz /RBW) Factor (dB)	Average Power Density (dBm/500kHz)	Average PSD Limit (dBm/500kHz)	DG (dBi)	Pass/Fail
11a	6Mbps	1	149	5745	0.59	2.22	-4.13	30.00	-4.10	Pass
11a	6Mbps	1	157	5785	0.59	2.22	-4.20	30.00	-4.10	Pass
11a	6Mbps	1	165	5825	0.59	2.22	-4.37	30.00	-4.10	Pass
HT20	MCS0	1	149	5745	0.64	2.22	-4.35	30.00	-4.10	Pass
HT20	MCS0	1	157	5785	0.64	2.22	-4.73	30.00	-4.10	Pass
HT20	MCS0	1	165	5825	0.64	2.22	-4.47	30.00	-4.10	Pass
HT40	MCS0	1	151	5755	1.24	2.22	-6.49	30.00	-4.10	Pass
HT40	MCS0	1	159	5795	1.24	2.22	-6.59	30.00	-4.10	Pass

TEST RESULTS DATA
Frequency Stability

Band IV										
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	20	3.6	
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	20	4.2	
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	20	3.9	
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	-30	3.9	
11a	6Mbps	1	149	5745	5745.050	0.050	8.70	50	3.9	



Appendix B. Radiated Spurious Emission

Band 4 - 5725~5850MHz

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 149 5745MHz		5712.2	55.46	-18.54	74	43.85	33.21	10.52	32.12	113	337	P	H
		5714.84	44.16	-9.84	54	32.55	33.21	10.52	32.12	113	337	A	H
		5725	70.39	-7.91	78.3	58.74	33.25	10.52	32.12	113	337	P	H
	*	5747	93.75	-	-	82.05	33.28	10.53	32.11	113	337	P	H
	*	5747	82.94	-	-	71.24	33.28	10.53	32.11	113	337	A	H
		5714.76	63.38	-10.62	74	51.77	33.21	10.52	32.12	132	272	P	V
		5714.6	45.5	-8.5	54	33.89	33.21	10.52	32.12	132	272	A	V
		5725	73.4	-4.9	78.3	61.75	33.25	10.52	32.12	132	272	P	V
	*	5743	99.37	-	-	87.67	33.28	10.53	32.11	132	272	P	V
	*	5743	88.98	-	-	77.28	33.28	10.53	32.11	132	272	A	V
802.11a CH 157 5785MHz		5711.24	53.11	-20.89	74	41.5	33.21	10.52	32.12	114	335	P	H
		5712.84	43.66	-10.34	54	32.05	33.21	10.52	32.12	114	335	A	H
		5719.56	53.94	-24.36	78.3	42.29	33.25	10.52	32.12	114	335	P	H
	*	5787	93.08	-	-	81.24	33.39	10.55	32.1	114	335	P	H
	*	5787	82.86	-	-	71.02	33.39	10.55	32.1	114	335	A	H
		5853.36	54.38	-23.92	78.3	42.28	33.49	10.69	32.08	114	335	P	H
		5866.64	54.3	-19.7	74	42.16	33.52	10.69	32.07	114	335	P	H
		5889.52	44.27	-9.73	54	31.99	33.59	10.75	32.06	114	335	A	H
		5702.68	53.71	-20.29	74	42.1	33.21	10.52	32.12	135	270	P	V
		5713.4	43.7	-10.3	54	32.09	33.21	10.52	32.12	135	270	A	V
		5723.48	53.69	-24.61	78.3	42.04	33.25	10.52	32.12	135	270	P	V
	*	5787	99.24	-	-	87.4	33.39	10.55	32.1	135	270	P	V
	*	5787	89.07	-	-	77.23	33.39	10.55	32.1	135	270	A	V
		5852.88	53.69	-24.61	78.3	41.59	33.49	10.69	32.08	135	270	P	V
		5861.04	54.52	-19.48	74	42.38	33.52	10.69	32.07	135	270	P	V
		5882	44.3	-9.7	54	32.12	33.56	10.69	32.07	135	270	A	V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5827	93.8	-	-	81.81	33.46	10.62	32.09	120	286	P	H
	*	5827	83.77	-	-	71.78	33.46	10.62	32.09	120	286	A	H
		5850.88	57.35	-20.95	78.3	45.25	33.49	10.69	32.08	120	286	P	H
		5861.12	55.36	-18.64	74	43.22	33.52	10.69	32.07	120	286	P	H
		5877.52	44.45	-9.55	54	32.27	33.56	10.69	32.07	120	286	A	H
	*	5823	98.98	-	-	86.99	33.46	10.62	32.09	279	267	P	V
	*	5823	88.81	-	-	76.82	33.46	10.62	32.09	279	267	A	V
		5850.32	62.49	-15.81	78.3	50.39	33.49	10.69	32.08	279	267	P	V
		5878.24	54.8	-19.2	74	42.62	33.56	10.69	32.07	279	267	P	V
		5877.44	44.8	-9.2	54	32.62	33.56	10.69	32.07	279	267	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (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 149 5745MHz		11490	43.49	-30.51	74	49.23	36.19	14.98	56.91	100	0	P	H
		17232	48.63	-25.37	74	45.4	41.87	19.07	57.71	100	0	P	H
		11492	48.13	-25.87	74	53.87	36.19	14.98	56.91	100	0	P	V
		17232	48.84	-25.16	74	45.61	41.87	19.07	57.71	100	0	P	V
802.11a CH 157 5785MHz		11570	44.13	-29.87	74	49.89	36.12	15.03	56.91	100	0	P	H
		17352	48.56	-25.44	74	45.44	42.06	19.07	58.01	100	0	P	H
		11572	49.39	-24.61	74	55.15	36.12	15.03	56.91	100	0	P	V
		17352	47.4	-26.6	74	44.28	42.06	19.07	58.01	100	0	P	V
802.11a CH 165 5825MHz		11650	42.63	-31.37	74	48.44	36.03	15.09	56.93	100	0	P	H
		17472	47.03	-26.97	74	44.03	42.25	19.06	58.31	100	0	P	H
		11652	50.31	-23.69	74	56.14	36.01	15.09	56.93	100	0	P	V
		17472	47.48	-26.52	74	44.48	42.25	19.06	58.31	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		5713.64	61.74	-12.26	74	50.13	33.21	10.52	32.12	174	337	P	H
		5715	44.13	-9.87	54	32.52	33.21	10.52	32.12	174	337	A	H
		5724.92	66.24	-12.06	78.3	54.59	33.25	10.52	32.12	174	337	P	H
	*	5747	92.61	-	-	80.91	33.28	10.53	32.11	174	337	P	H
	*	5747	82.24	-	-	70.54	33.28	10.53	32.11	174	337	A	H
		5712.92	61.4	-12.6	74	49.79	33.21	10.52	32.12	129	261	P	V
		5714.76	45.1	-8.9	54	33.49	33.21	10.52	32.12	129	261	A	V
		5723.56	74.31	-3.99	78.3	62.66	33.25	10.52	32.12	129	261	P	V
	*	5743	98.19	-	-	86.49	33.28	10.53	32.11	129	261	P	V
	*	5743	87.86	-	-	76.16	33.28	10.53	32.11	129	261	A	V
802.11n HT20 CH 157 5785MHz		5701.72	53.77	-20.23	74	42.16	33.21	10.52	32.12	237	336	P	H
		5713.56	43.67	-10.33	54	32.06	33.21	10.52	32.12	237	336	A	H
		5718.12	53.8	-24.5	78.3	42.15	33.25	10.52	32.12	237	336	P	H
	*	5783	92.15	-	-	80.35	33.35	10.55	32.1	237	336	P	H
	*	5783	81.93	-	-	70.13	33.35	10.55	32.1	237	336	A	H
		5855.52	54.5	-23.8	78.3	42.36	33.52	10.69	32.07	237	336	P	H
		5877.36	54.7	-19.3	74	42.52	33.56	10.69	32.07	237	336	P	H
		5881.92	44.27	-9.73	54	32.09	33.56	10.69	32.07	237	336	A	H
		5685.88	53.68	-20.32	74	42.11	33.18	10.52	32.13	281	266	P	V
		5709.4	43.68	-10.32	54	32.07	33.21	10.52	32.12	281	266	A	V
		5717.48	54.1	-24.2	78.3	42.49	33.21	10.52	32.12	281	266	P	V
	*	5787	98.75	-	-	86.91	33.39	10.55	32.1	281	266	P	V
	*	5787	88.32	-	-	76.48	33.39	10.55	32.1	281	266	A	V
		5860	53.74	-24.56	78.3	41.6	33.52	10.69	32.07	281	266	P	V
		5883.44	54.52	-19.48	74	42.34	33.56	10.69	32.07	281	266	P	V
		5879.92	44.34	-9.66	54	32.16	33.56	10.69	32.07	281	266	A	V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz	*	5823	91.67	-	-	79.68	33.46	10.62	32.09	100	354	P	H
	*	5823	81.74	-	-	69.75	33.46	10.62	32.09	100	354	A	H
		5850.16	56.36	-21.94	78.3	44.26	33.49	10.69	32.08	100	354	P	H
		5886.08	54.77	-19.23	74	42.53	33.56	10.75	32.07	100	354	P	H
		5877.76	44.31	-9.69	54	32.13	33.56	10.69	32.07	100	354	A	H
	*	5823	98.21	-	-	86.22	33.46	10.62	32.09	281	268	P	V
	*	5823	88.28	-	-	76.29	33.46	10.62	32.09	281	268	A	V
		5850.08	65.61	-12.69	78.3	53.51	33.49	10.69	32.08	281	268	P	V
		5860.56	56.34	-17.66	74	44.2	33.52	10.69	32.07	281	268	P	V
		5876.4	44.87	-9.13	54	32.69	33.56	10.69	32.07	281	268	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		11490	42.52	-31.48	74	48.26	36.19	14.98	56.91	100	0	P	H
		17232	47.11	-26.89	74	43.88	41.87	19.07	57.71	100	0	P	H
		11492	48.54	-25.46	74	54.28	36.19	14.98	56.91	100	0	P	V
		17232	48.67	-25.33	74	45.44	41.87	19.07	57.71	100	0	P	V
802.11n HT20 CH 157 5785MHz		11570	42.64	-31.36	74	48.4	36.12	15.03	56.91	100	0	P	H
		17352	47.59	-26.41	74	44.47	42.06	19.07	58.01	100	0	P	H
		11572	49.04	-24.96	74	54.8	36.12	15.03	56.91	100	0	P	V
		17352	49.78	-24.22	74	46.66	42.06	19.07	58.01	100	0	P	V
802.11n HT20 CH 165 5825MHz		11650	42.71	-31.29	74	48.52	36.03	15.09	56.93	100	0	P	H
		17472	48.02	-25.98	74	45.02	42.25	19.06	58.31	100	0	P	H
		11652	49.54	-24.46	74	55.37	36.01	15.09	56.93	100	0	P	V
		17472	48.35	-25.65	74	45.35	42.25	19.06	58.31	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		5710.52	61.82	-12.18	74	50.21	33.21	10.52	32.12	190	285	P	H
		5713.72	46.36	-7.64	54	34.75	33.21	10.52	32.12	190	285	A	H
		5723.72	65.04	-13.26	78.3	53.39	33.25	10.52	32.12	190	285	P	H
	*	5757	90.49	-	-	78.75	33.32	10.53	32.11	190	285	P	H
	*	5757	80.9	-	-	69.16	33.32	10.53	32.11	190	285	A	H
		5851.92	54.08	-24.22	78.3	41.98	33.49	10.69	32.08	190	285	P	H
		5886.64	54.24	-19.76	74	42	33.56	10.75	32.07	190	285	P	H
		5884.24	44.42	-9.58	54	32.24	33.56	10.69	32.07	190	285	A	H
		5714.04	68.63	-5.37	74	57.02	33.21	10.52	32.12	117	263	P	V
		5713.8	49.4	-4.6	54	37.79	33.21	10.52	32.12	117	263	A	V
		5722.28	70.66	-7.64	78.3	59.01	33.25	10.52	32.12	117	263	P	V
	*	5753	95.13	-	-	83.39	33.32	10.53	32.11	117	263	P	V
	*	5753	85.31	-	-	73.57	33.32	10.53	32.11	117	263	A	V
		5858.08	54.55	-23.75	78.3	42.41	33.52	10.69	32.07	117	263	P	V
		5874.88	55.18	-18.82	74	43	33.56	10.69	32.07	117	263	P	V
		5889.2	44.57	-9.43	54	32.29	33.59	10.75	32.06	117	263	A	V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5711	53.19	-20.81	74	41.58	33.21	10.52	32.12	193	336	P	H
		5713.64	43.89	-10.11	54	32.28	33.21	10.52	32.12	193	336	A	H
		5716.68	54.18	-24.12	78.3	42.57	33.21	10.52	32.12	193	336	P	H
	*	5797	90.61	-	-	78.77	33.39	10.55	32.1	193	336	P	H
	*	5797	80.79	-	-	68.95	33.39	10.55	32.1	193	336	A	H
		5850.08	55.21	-23.09	78.3	43.11	33.49	10.69	32.08	193	336	P	H
		5866.4	54.31	-19.69	74	42.17	33.52	10.69	32.07	193	336	P	H
		5889.28	44.52	-9.48	54	32.24	33.59	10.75	32.06	193	336	A	H
		5690.6	54.02	-19.98	74	42.45	33.18	10.52	32.13	115	266	P	V
		5714.36	44.09	-9.91	54	32.48	33.21	10.52	32.12	115	266	A	V
		5724.2	55.15	-23.15	78.3	43.5	33.25	10.52	32.12	115	266	P	V
	*	5797	95.21	-	-	83.37	33.39	10.55	32.1	115	266	P	V
	*	5797	85.26	-	-	73.42	33.39	10.55	32.1	115	266	A	V
		5854.16	57.9	-20.4	78.3	45.76	33.52	10.69	32.07	115	266	P	V
		5862.88	56.54	-17.46	74	44.4	33.52	10.69	32.07	115	266	P	V
		5872.24	44.68	-9.32	54	32.5	33.56	10.69	32.07	115	266	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		11510	43.08	-30.92	74	48.8	36.2	14.98	56.9	100	0	P	H
		17268	49.19	-24.81	74	45.98	41.93	19.07	57.79	100	0	P	H
		11512	48.87	-25.13	74	54.59	36.2	14.98	56.9	100	0	P	V
		17268	47.79	-26.21	74	44.58	41.93	19.07	57.79	100	0	P	V
802.11n HT40 CH 159 5795MHz		11590	44.94	-29.06	74	50.73	36.1	15.03	56.92	100	0	P	H
		17388	47.98	-26.02	74	44.9	42.11	19.07	58.1	100	0	P	H
		11590	48.76	-25.24	74	54.55	36.1	15.03	56.92	100	0	P	V
		17388	48.08	-25.92	74	45	42.11	19.07	58.1	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11n HT40 LF		64.02	15.32	-24.68	40	38.56	5.98	1.22	30.44	-	-	P	H
		192	19.61	-23.89	43.5	39.26	8.8	1.89	30.34	-	-	P	H
		216.84	21.53	-24.47	46	40.54	9.27	2.02	30.3	-	-	P	H
		422.5	28.13	-17.87	46	38.65	16.76	2.68	29.96	-	-	P	H
		518.4	27.95	-18.05	46	36.66	18.1	2.96	29.77	-	-	P	H
		633.9	32.3	-13.7	46	38.07	20.46	3.33	29.56	100	0	P	H
		76.44	15.81	-24.19	40	38.12	6.9	1.22	30.43	-	-	P	V
		98.31	24.52	-18.98	43.5	43.53	9.92	1.48	30.41	-	-	P	V
		216.84	16.57	-29.43	46	35.58	9.27	2.02	30.3	-	-	P	V
		402.9	24.68	-21.32	46	36.06	16.01	2.6	29.99	-	-	P	V
		518.4	27.66	-18.34	46	36.37	18.1	2.96	29.77	-	-	P	V
		633.9	29.95	-16.05	46	35.72	20.46	3.33	29.56	100	0	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	Peak or Average
H/V	Horizontal or Vertical



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”.