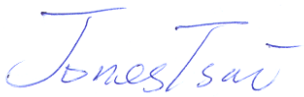
Variant FCC RF Test Report

APPLICANT	:	**Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd**
EQUIPMENT	:	**mobile phone**
BRAND NAME	:	**Coolpad**
MODEL NAME	:	**Coolpad 801EM**
FCC ID	:	**R38YL801EM**
STANDARD	:	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	:	**(DTS) Digital Transmission System**

This is a variant report which is only valid together with the original test report. The product was received on Aug. 09, 2013 and testing was completed on Aug. 23, 2013. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown to be compliant 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

SPORTON INTERNATIONAL (SHENZHEN) INC.
No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR311602-01B	Rev. 01	EUT is variant version of Coolpad 801E (FCC ID: R38YL801E), and now the variant sample is with FCC ID: R38YL801EM, please refer the product equality declaration exhibit submitted. Due to the similarity, the parent sample RF performance is representative and part of test data (Sporton Report Number FR311602B for FCC ID: R38YL801E) is referenced; only the conducted power and worst case of Spurious Emission was verified for the differences for the variant sample.	Sep. 18, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(b)	Power Output Measurement	≤ 30dBm	Pass	-
3.2	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.03 dB at 4824.000 MHz
3.3	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Coolpad Information Harbor, 2nd Mengxi Road, Northern Part of Science&Technology Park, Nanshan district, Shenzhen, P.R.China

1.2 Manufacturer

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Coolpad Information Harbor, 2nd Mengxi Road, Northern Part of Science&Technology Park, Nanshan district, Shenzhen, P.R.China

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	mobile phone
Brand Name	Coolpad
Model Name	Coolpad 801EM
FCC ID	R38YL801EM
EUT supports Radios application	CDMA/EV-DO/LTE/WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth v3.0 + EDR Bluetooth v4.0 + LE
HW Version	P0
SW Version	4.1.003.P0.130809.801EM
EUT Stage	Identical Prototype

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

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	802.11b/g/n : 2412 MHz ~ 2462 MHz
Maximum Output Power to Antenna	802.11b : 16.52 dBm (0.0449 W) 802.11g : 21.62 dBm (0.1452 W) 802.11n HT20 : 22.03 dBm (0.1596 W)
Antenna Type	PIFA Antenna with gain 0.80 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Modification of EUT

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

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.		
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL: +86-755- 3320-2398		
Test Site No.	**Sporton Site No.**		**FCC Registration No.**
	TH01-SZ	03CH01-SZ	831040

Note: The test site complies with ANSI C63.4 2003 requirement.

1.7 Applied Standards

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

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
- ANSI C63.4-2003

Remark:

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

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and the highest data rates of peak power were chosen for full test shown in the following tables.

Channel	Frequency	2.4GHz 802.11b RF Power (dBm)			
		DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	15.13	15.06	15.08	15.09
CH 06	2437 MHz	15.83	15.72	15.77	15.79
CH 11	2462 MHz	**16.52**	16.47	16.50	16.47

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	20.43	20.39	20.35	20.27	20.37	20.31	20.39	20.31
CH 06	2437 MHz	21.26	21.24	21.23	21.17	21.21	21.18	21.14	21.15
CH 11	2462 MHz	**21.62**	21.55	21.58	21.53	21.47	21.49	21.48	21.46

Channel	Frequency	2.4GHz 802.11n HT20 RF Power (dBm)							
		OFDM Data Rate							
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 01	2412 MHz	20.79	20.73	20.75	20.76	20.65	20.68	20.70	20.74
CH 06	2437 MHz	21.27	21.25	21.21	21.22	21.18	21.16	21.17	21.14
CH 11	2462 MHz	**22.03**	22.01	21.95	21.93	22.02	21.91	21.89	22.01

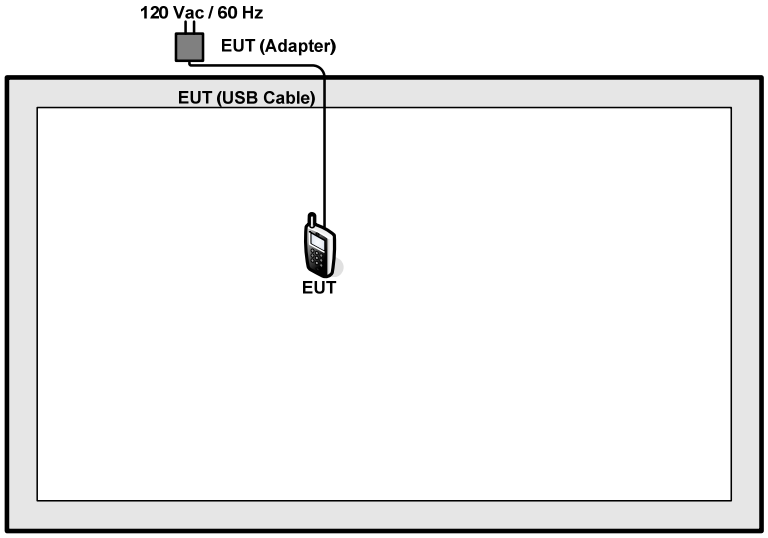
2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

Test Cases				
	Test Items	**Mode**	**Data Rate**	**Test Channel**
Conducted TCs	**Output Power**	**802.11b**	**1 Mbps**	**1/6/11**
		802.11g	**6 Mbps**	**1/6/11**
		802.11n HT20	**6.5 Mbps**	**1/6/11**
Radiated TCs	**Radiated Band Edge**	**802.11b**	**1 Mbps**	**1/11**
		802.11g	**6 Mbps**	**1/11**
		802.11n HT20	**6.5 Mbps**	**1/11**
	Radiated Spurious Emission	**802.11b**	**1 Mbps**	**1/6/11**
		802.11g	**6 Mbps**	**1/6/11**
		802.11n HT20	**6.5 Mbps**	**1/6/11**

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



2.5 EUT Operation Test Setup

For WLAN function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

3 Test Result

3.1 Output Power Measurement

3.1.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting Antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the Antenna exceeds 6dBi.

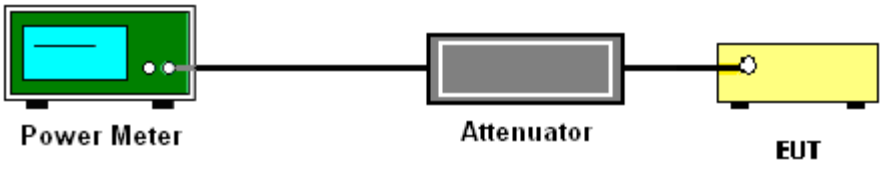
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v03r01.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of Peak Output Power

Test Mode :	802.11b	Temperature :	24~26℃
Test Engineer :	Henry Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	15.13	30	Pass
06	2437	15.83	30	Pass
11	2462	16.52	30	Pass

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Henry Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.43	30	Pass
06	2437	21.26	30	Pass
11	2462	21.62	30	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Henry Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.79	30	Pass
06	2437	21.27	30	Pass
11	2462	22.03	30	Pass

3.1.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	24~26℃
Test Engineer :	Henry Chen	Relative Humidity :	50~53%
Duty Cycle:	97.63%	Duty Factor:	0.10dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	12.58
06	2437	13.42
11	2462	14.03

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Henry Chen	Relative Humidity :	50~53%
Duty Cycle:	87.34%	Duty Factor:	0.59dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	11.32
06	2437	11.77
11	2462	12.51

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Henry Chen	Relative Humidity :	50~53%
Duty Cycle:	86.49%	Duty Factor:	0.63dB

Channel	Frequency (MHz)	802.11n HT20 Average Output Power (dBm)
01	2412	11.18
06	2437	11.98
11	2462	12.72

3.2 Radiated Band Edges and Spurious Emission Measurement

3.2.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

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

3.2.2 Measuring Instruments

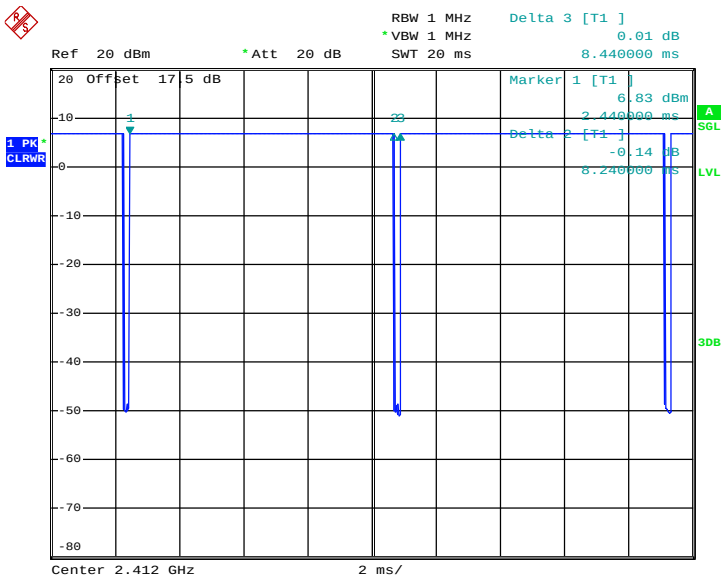
See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11b	97.63	8.24	0.121	300hz
802.11g	87.34	1.366	0.732	1khz
2.4GHz 802.11n HT20	86.49	1.28	0.781	1khz

802.11b Duty Cycle

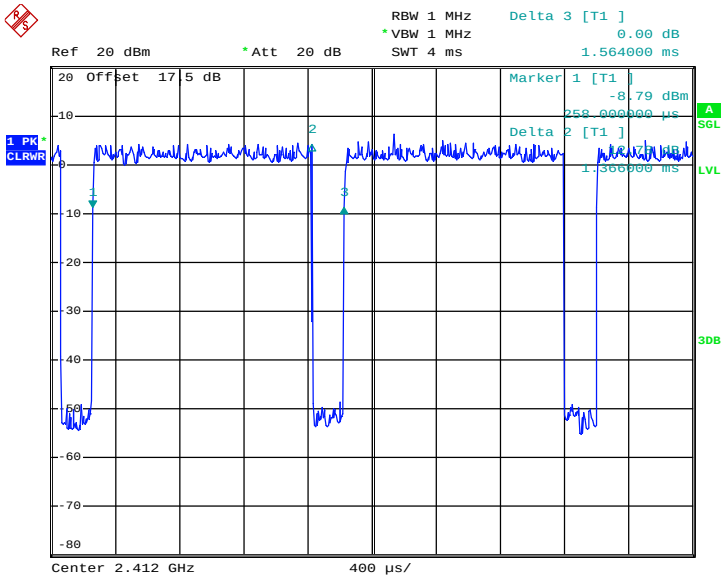


Date: 21.AUG.2013 23:02:28

Note:

The total loss is 17.5dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

802.11g Duty Cycle

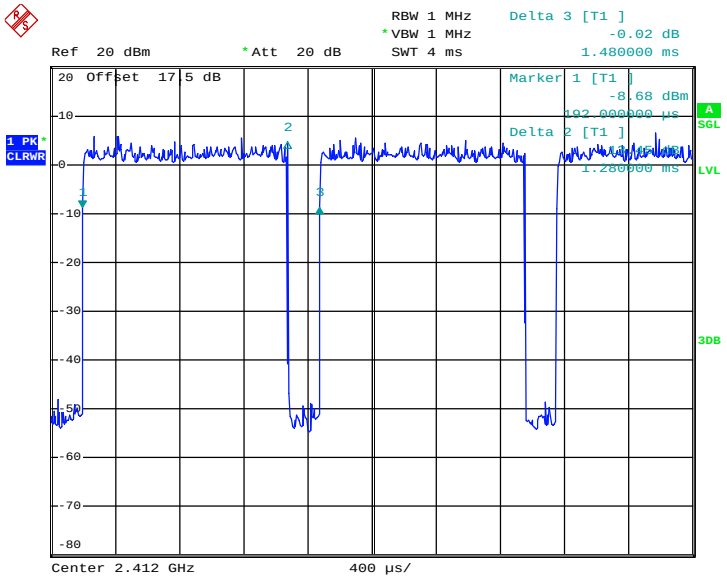


Date: 21.AUG.2013 23:23:40

Note:

The total loss is 17.5dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

2.4GHz 802.11n HT20 Duty Cycle



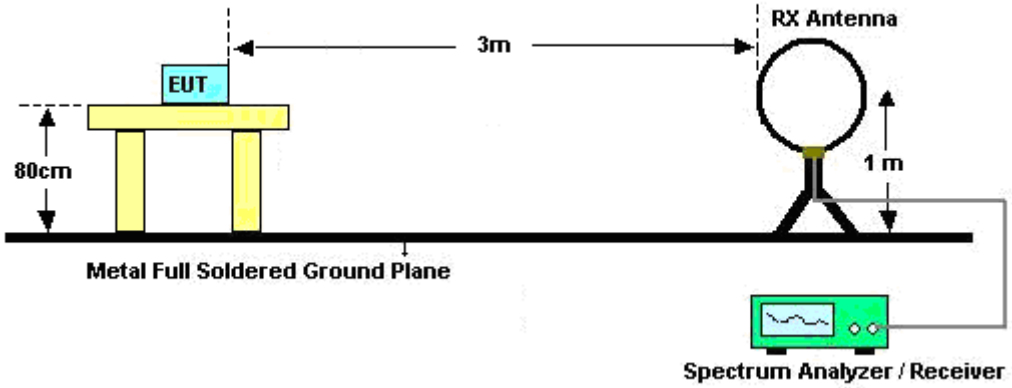
Date: 21.AUG.2013 23:56:31

Note:

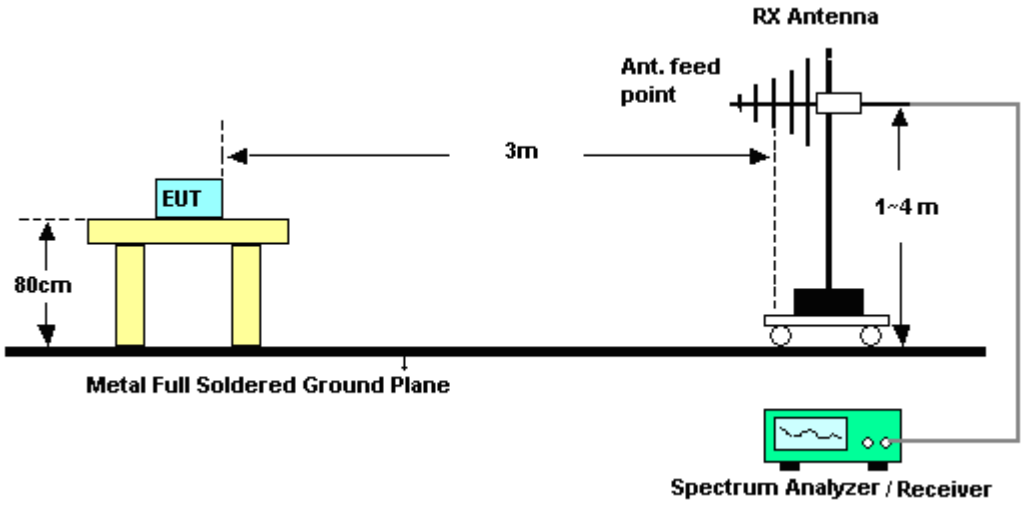
The total loss is 17.5dB of the RF cable and attenuator, and has been compensated to the spectrum analyzer by setting into the amplitude level offset. That means the measured result shown on the spectrum analyzer has added the total loss and been compliance with the limit line.

3.2.4 Test Setup

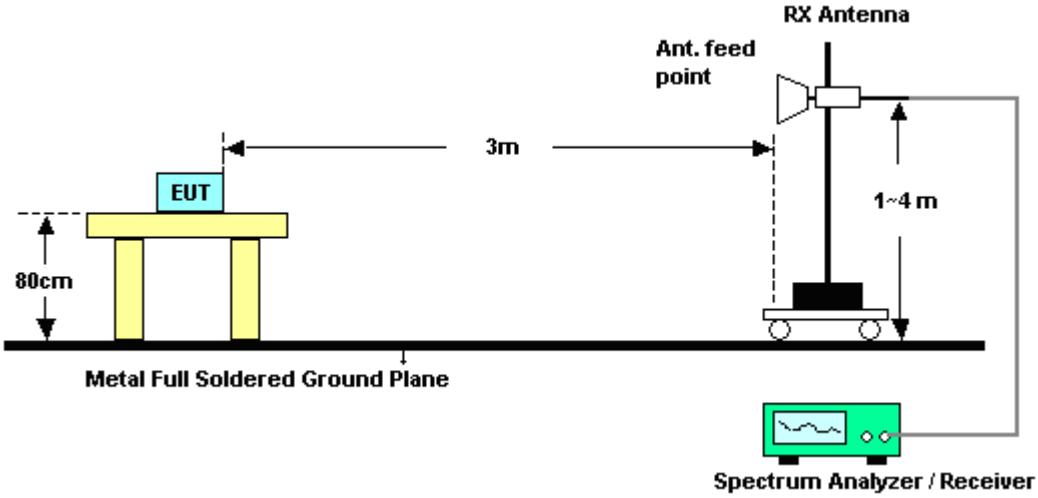
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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.

3.2.6 Test Result of Radiated Spurious at Band Edges

Test Mode :	802.11b	Temperature :	25~28°C
Test Band :	Low	Relative Humidity :	49~52%
Test Channel :	01	Test Engineer :	Robin Luo

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.56	47.87	-26.13	74	39.93	32.14	5.59	29.79	100	331	Peak
2389.02	37.78	-16.22	54	29.84	32.14	5.59	29.79	100	331	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	48.57	-25.43	74	40.59	32.14	5.62	29.78	134	102	Peak
2389.02	38.53	-15.47	54	30.59	32.14	5.59	29.79	134	102	Average

Test Mode :	802.11g	Temperature :	25~28°C
Test Band :	Low	Relative Humidity :	49~52%
Test Channel :	01	Test Engineer :	Robin Luo

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.92	58.09	-15.91	74	50.11	32.14	5.62	29.78	105	325	Peak
2389.92	42.75	-11.25	54	34.77	32.14	5.62	29.78	105	325	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.65	54.61	-19.39	74	46.67	32.14	5.59	29.79	130	107	Peak
2389.92	40.07	-13.93	54	32.09	32.14	5.62	29.78	130	107	Average

Test Mode :	802.11n HT20	Temperature :	25~28°C
Test Band :	Low	Relative Humidity :	49~52%
Test Channel :	01	Test Engineer :	Robin Luo

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.38	58.01	-15.99	74	50.07	32.14	5.59	29.79	102	327	Peak
2389.92	42.86	-11.14	54	34.88	32.14	5.62	29.78	102	327	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.66	57.26	-16.74	74	49.32	32.14	5.59	29.79	127	115	Peak
2389.92	40.81	-13.19	54	32.83	32.14	5.62	29.78	127	115	Average

3.2.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Note: Pre-scanned all test modes and only choose the worst case mode recorded in the test report for radiated spurious emission below 1GHz.

Test Mode :	802.11b	**Temperature :**	25~28°C
Test Channel :	01	**Relative Humidity :**	49~52 %
Test Engineer :	Robin Luo	**Polarization :**	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 103.53dBµV/m - 20dB = 83.53 dBµV/m.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.36	15.85	-27.65	43.5	32.66	12.37	1.39	30.57	-	-	Peak
189.57	13.98	-29.52	43.5	32.8	9.9	1.65	30.37	-	-	Peak
268.68	18.32	-27.68	46	33.54	12.97	1.91	30.1	-	-	Peak
358.1	25.56	-20.44	46	38.18	15.02	2.17	29.81	-	-	Peak
643	28.54	-17.46	46	35.78	19.06	2.84	29.14	100	0	Peak
909	28.04	-17.96	46	31.94	21.54	3.35	28.79	-	-	Peak
2412	103.53	-	-	95.52	32.17	5.62	29.78	100	330	Peak
2412	100.69	-	-	92.68	32.17	5.62	29.78	100	330	Average
4824	52.27	-21.73	74	67.49	33.68	8.36	57.26	100	351	Peak
4824	50.97	-3.03	54	66.19	33.68	8.36	57.26	100	351	Average
7236	39.84	-43.69	83.53	51.82	35.29	9.97	57.24	189	185	Peak

Test Mode :	802.11b	**Temperature :**	25~28°C
Test Channel :	01	**Relative Humidity :**	49~52 %
Test Engineer :	Robin Luo	**Polarization :**	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
116.13	15.82	-27.68	43.5	32.96	12.13	1.34	30.61	-	-	Peak
206.85	13.49	-30.01	43.5	32.74	9.35	1.71	30.31	-	-	Peak
293.25	17.97	-28.03	46	32.53	13.47	1.99	30.02	-	-	Peak
355.3	22.08	-23.92	46	34.89	14.85	2.16	29.82	-	-	Peak
636.7	30.43	-15.57	46	37.72	19.04	2.82	29.15	100	0	Peak
960.1	27.35	-26.65	54	30.84	21.8	3.43	28.72	-	-	Peak
2412	101.61	-	-	93.6	32.17	5.62	29.78	134	101	Peak
2412	99.5	-	-	91.49	32.17	5.62	29.78	134	101	Average
4824	48.47	-25.53	74	63.69	33.68	8.36	57.26	100	254	Peak
4824	46.97	-7.03	54	62.19	33.68	8.36	57.26	100	254	Average
7236	39.65	-41.96	81.61	51.63	35.29	9.97	57.24	189	185	Peak

Test Mode :	802.11g	Temperature :	25~28°C
Test Channel :	01	Relative Humidity :	49~52 %
Test Engineer :	Robin Luo	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	105.23	-	-	97.22	32.17	5.62	29.78	105	325	Peak
2412	96.57	-	-	88.56	32.17	5.62	29.78	105	325	Average
4824	39.98	-34.02	74	55.2	33.68	8.36	57.26	105	198	Peak
7236	39.53	-45.7	85.23	51.51	35.29	9.97	57.24	200	360	Peak

Test Mode :	802.11g	Temperature :	25~28°C
Test Channel :	01	Relative Humidity :	49~52 %
Test Engineer :	Robin Luo	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	100.58	-	-	92.57	32.17	5.62	29.78	130	107	Peak
2412	91.47	-	-	83.46	32.17	5.62	29.78	130	107	Average
4824	38.88	-35.12	74	54.1	33.68	8.36	57.26	110	360	Peak
7236	39.78	-40.8	80.58	51.76	35.29	9.97	57.24	200	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	25~28°C
Test Channel :	01	Relative Humidity :	49~52 %
Test Engineer :	Robin Luo	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	104.72	-	-	96.71	32.17	5.62	29.78	102	326	Peak
2412	95.6	-	-	87.59	32.17	5.62	29.78	102	326	Average
4824	46.14	-27.86	74	61.36	33.68	8.36	57.26	105	198	Peak
7236	40.77	-43.95	84.72	52.75	35.29	9.97	57.24	189	185	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	25~28°C
Test Channel :	01	Relative Humidity :	49~52 %
Test Engineer :	Robin Luo	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	100.73	-	-	92.72	32.17	5.62	29.78	126	115	Peak
2412	91.38	-	-	83.37	32.17	5.62	29.78	126	115	Average
4824	43.62	-30.38	74	58.84	33.68	8.36	57.26	105	198	Peak
7236	40.66	-40.07	80.73	52.64	35.29	9.97	57.24	189	185	Peak

3.3 Antenna Requirements

3.3.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.3.2 Antenna Anti-Replacement Construction

Non-standard antenna connector is used.

3.3.3 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~30GHz	Mar. 28, 2013	Aug. 23, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	N/A	Mar. 28, 2013	Aug. 23, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
Power Sensor	Anritsu	MA2411B	1207253	N/A	Mar. 28, 2013	Aug. 23, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
Spectrum Analyzer	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	Apr. 04, 2013	Aug. 21, 2013	Apr. 03, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 12, 2012	Aug. 21, 2013	Oct. 11, 2013	Radiation (03CH01-SZ)
Bilog Antenna	SCHAFFNER	CBL6112B	2614	30MHz~2GHz	Nov. 03, 2012	Aug. 21, 2013	Nov. 02, 2013	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz-3000MHz GAIN 30db	Mar. 28, 2013	Aug. 21, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	Mar. 28, 2013	Aug. 21, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
SHF-EHF-Horn	Schwarzbeck	BBHA9170	BBHA9170249	14GHz~40GHz	Nov. 23, 2012	Aug. 21, 2013	Nov. 22, 2013	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz-30MHz	Oct. 22, 2012	Aug. 21, 2013	Oct. 21, 2013	Radiation (03CH01-SZ)
Turn Table	EM Electronice	EM 1000	N/A	0 ~ 360 degree	N/A	Aug. 21, 2013	N/A	Radiation (03CH01-SZ)
Antenna Mast	EM Electronice	EM 1000	N/A	1 m - 4 m	N/A	Aug. 21, 2013	N/A	Radiation (03CH01-SZ)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**