FCC RF Test Report

APPLICANT	:	Motorola Mobility, Inc.
EQUIPMENT	:	CDMA/GSM Dual-SIM Dual-Standby Dual-Active digital mobile phone with BT/ Wi-Fi
BRAND NAME	:	Motorola
MODEL NAME	:	XT788
MARKETING NAME	:	MOTOLUXE XT XT788
TYPE NAME	:	M0D71
GPPD NUMBER	:	3441
FCC ID	:	IHDT56NY1
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Jul. 03, 2012 and completely tested on Oct. 12, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the 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 INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai

Jones Tsai / Manager

Testing Laboratory
1190

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR270338B	Rev. 01	Initial issue of report	Sep. 21, 2012
FR270338B	Rev. 02	Update report for adding 802.11g/n (BW 20MHz) (400ns) power	Oct. 12, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)	A8.4	Power Output	≤ 30dBm	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	< 20 dBc	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm	Pass	-
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 8.61 dB at 2.110 MHz for Quasi-Peak
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.01 dB at 2483.500 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Motorola Mobility, Inc.
9F., No. 9, Songgao Rd. Taipei 110,Taiwan, R.O.C.

1.2 Manufacturer

Huizhou BYD Electronic Co., Ltd.
Xiangshui River, Economic Development Zone, Daya Bay, Huizhou, Guangdong

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	CDMA/GSM Dual-SIM Dual-Standby Dual-Active digital mobile phone with BT/ Wi-Fi
Brand Name	Motorola
Model Name	XT788
Marketing Name	MOTOLUXE XT XT788
FCC ID	IHDT56NY1
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Channel Spacing	5 MHz
Maximum Output Power to Antenna	802.11b : 15.73 dBm (0.0374 W) 802.11g : 17.98 dBm (0.0628 W) 802.11g/n (BW 20MHz) : 18.07 dBm (0.0641 W)
Antenna Type	PIFA Antenna with gain -1.5 dBi
HW Version	B2
SW Version	IRPMCT_B_02.41.00RDD
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
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 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	03CH01-KS	CO01-KS	149928/4086E-1

1.5 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 DR01
- ANSI C63.4-2003 and ANSI C63.10-2009
- IC RSS-210 Issue 8
- IC RSS-Gen Issue 3

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.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	Router	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
3.	Notebook	Dell	P08S	QDS-BRCM1030	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Nokia	BH-106	QTLBH-106	N/A	N/A
5.	DC Power Supply	GW	GPS-60300	N/A	N/A	Unshielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 RF Power

Preliminary tests were performed in different data rate and recorded the RF power output in the following table:

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	15.45	15.39	15.35	15.42
CH 06	2437 MHz	15.56	15.52	15.45	15.54
CH 11	2462 MHz	**15.73**	15.69	15.65	15.71

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	16.72	15.97	16.46	15.46	17.61	17.18	17.49	17.03
CH 06	2437 MHz	16.85	16.01	16.64	15.58	17.74	17.34	17.64	17.17
CH 11	2462 MHz	17.08	16.25	16.94	15.84	**17.98**	17.57	17.83	17.48

Channel	Frequency	2.4GHz 802.11g/n (BW 20MHz) (800ns) RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	15.76	15.29	15.48	16.24	16.45	16.38	17.56	16.62
CH 06	2437 MHz	15.88	15.74	15.84	16.36	16.58	16.62	17.75	16.77
CH 11	2462 MHz	16.16	16.07	16.24	16.62	16.87	16.75	**18.07**	16.98

Channel	Frequency	2.4GHz 802.11g/n (BW 20MHz) (400ns)RF Power (dBm)							
		OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412 MHz	15.19	14.63	15.12	15.02	15.38	15.52	16.76	15.84
CH 06	2437 MHz	15.18	14.77	15.37	15.72	15.71	15.52	16.92	15.78
CH 11	2462 MHz	15.02	14.82	15.25	15.93	15.87	15.89	**17.02**	16.02

Remark: The EUT is programmed to transmit signals continuously for all testing.

2.2 Maximum Peak Conducted Output Power:

Band	2.4GHz 802.11b RF Power (dBm)			2.4GHz 802.11g RF Power (dBm)		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power	15.45	15.56	**15.73**	17.61	17.74	**17.98**

Band	2.4GHz 802.11g/n (BW 20MHz) (800ns) RF Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Peak Power	17.56	17.75	**18.07**

Band	2.4GHz 802.11g/n (BW 20MHz) (400ns) RF Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Peak Power	16.76	16.92	**17.02**

Remark:

The data rates of WLAN 802.11b/g/n were set in 1Mbps for 802.11b, 24Mbps for 802.11g, MCS6 for 802.11g/n (BW 20MHz) (800ns) and MCS6 for 802.11g/n (BW 20MHz) (400ns), for all the test cases due to the highest RF output power.

2.3 Maximum Average Conducted Output Power:

Band	2.4GHz 802.11b RF Power (dBm)			2.4GHz 802.11g RF Power (dBm)		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Average Power	12.99	13.07	13.33	9.19	9.21	9.41

Band	2.4GHz 802.11g/n (BW 20MHz) (800ns) RF Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Average Power	8.53	8.58	8.72

Band	2.4GHz 802.11g/n (BW 20MHz) (400ns) RF Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Average Power	7.14	7.17	7.26

Remark:

1. The average power, which is used by the test method, AVG2, in DTS Meas. Guidance DR01, is reporting only.
2. The EUT is programmed to transmit signals continuously.

2.4 Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and ANSI C63.10-2009 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), radiated emission (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations, laptop / tablet modes.

The following tables are showing the test modes as the worst cases (Z plane) and recorded in this report.

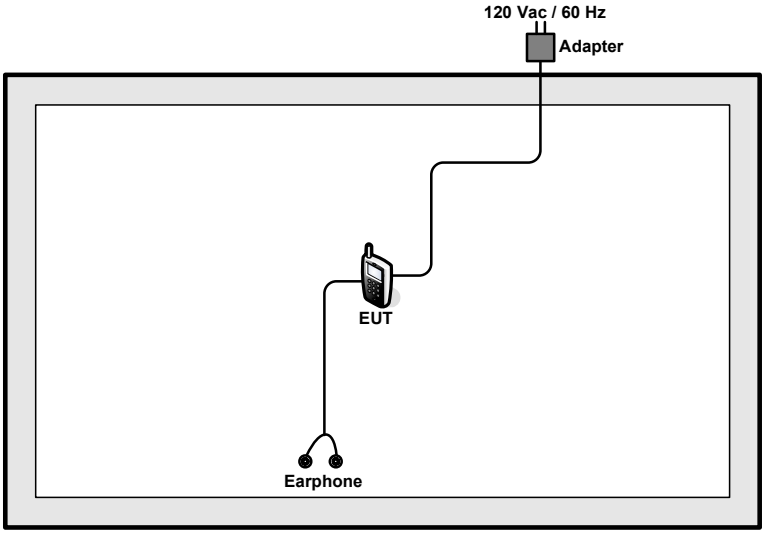
Test Cases		
Test Item	**802.11b (Modulation : DSSS)**	**802.11g/n (Modulation : OFDM)**
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz
AC Conducted Emission	Mode 1 : CDMA2000 BC0 + Bluetooth Link + WLAN Link + Earphone + Camera + USB Cable (Charging from Adapter 1) Mode 2 : GSM1900 Idle + Bluetooth Link + WLAN Link + Earphone + MPEG4 + USB Cable (Charging from Adapter 1)	

Remark:

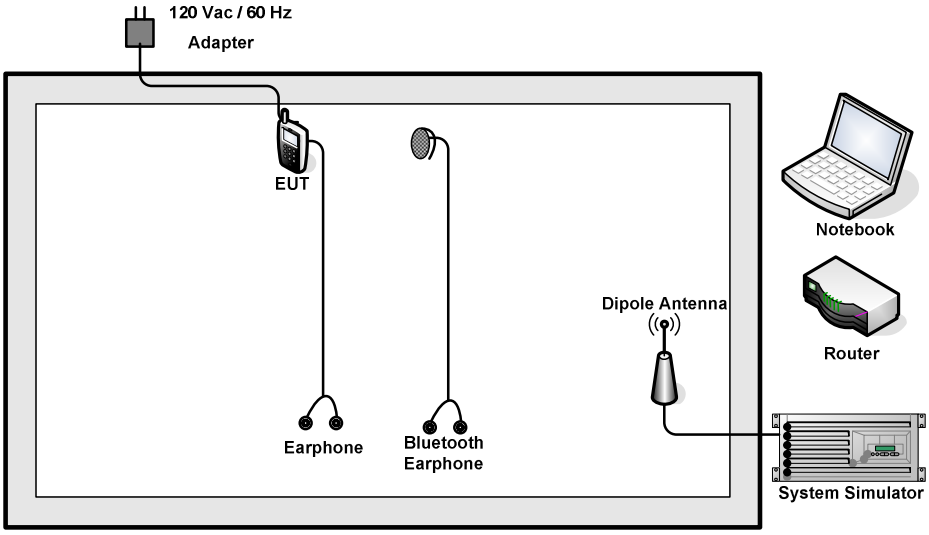
1. The worst case of conducted emission is mode 2; only the test data of it was reported.
2. All test items were performance with Adapter 1.

2.5 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.6 RF Utility

For WLAN function, key in “ADB” on the EUT directly. Then, the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

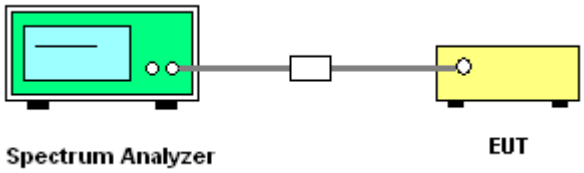
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance DR01.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 1-5% of the emission bandwidth (EBW).Set the Video bandwidth (VBW) ≥ 3 * RBW. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 KHz.
4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

3.1.4 Test Setup

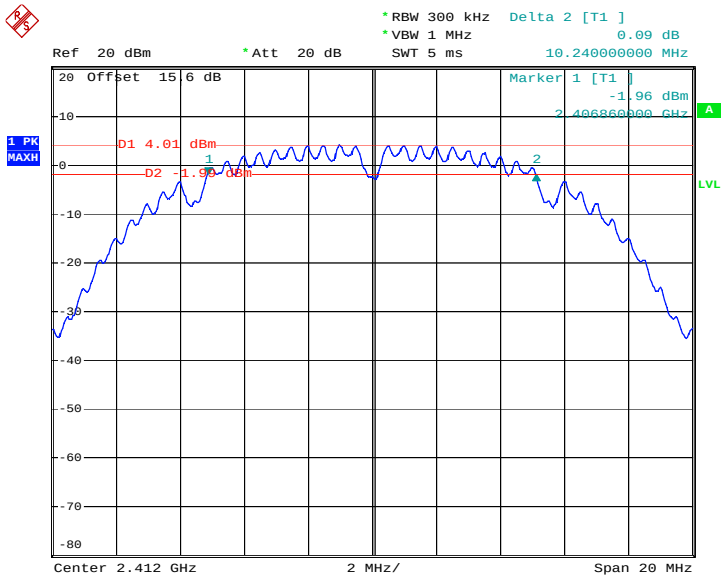


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

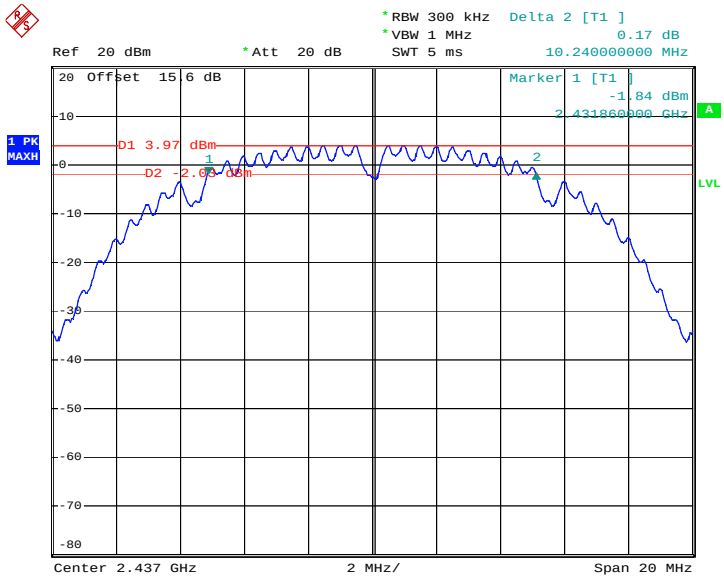
Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	10.24	0.5	Pass
06	2437	10.24	0.5	Pass
11	2462	10.20	0.5	Pass

Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



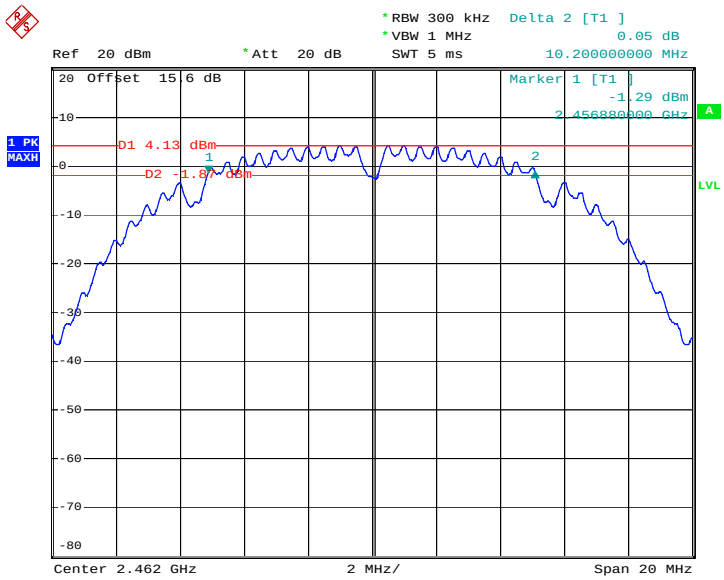
Date: 14.SEP.2012 15:36:12

Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06



Date: 14.SEP.2012 15:39:02

Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11

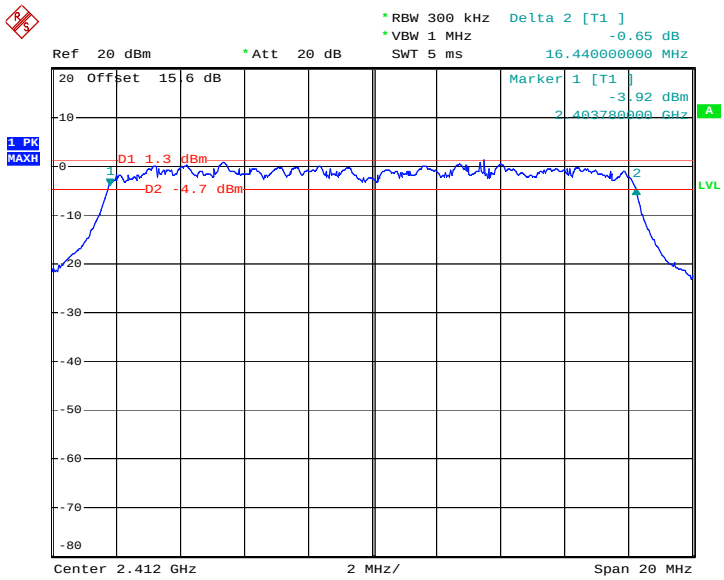


Date: 14.SEP.2012 15:42:03

Test Mode :	Mode 4, 5, 6	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.44	0.5	Pass
06	2437	16.44	0.5	Pass
11	2462	16.44	0.5	Pass

Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



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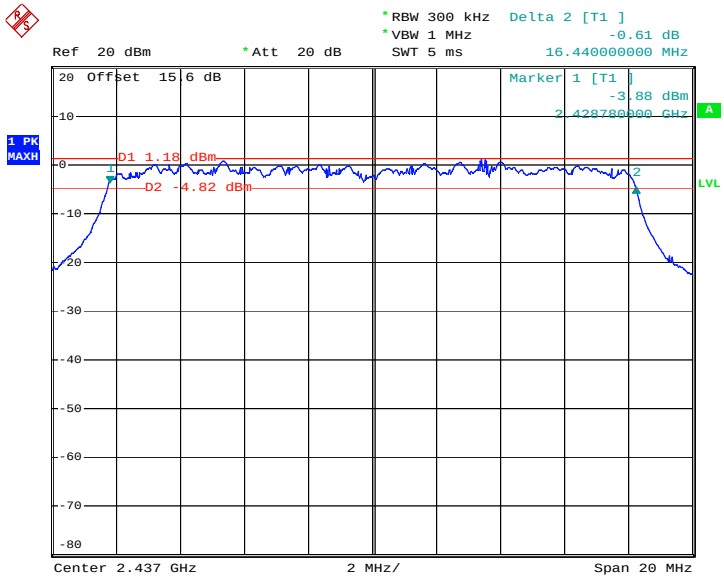
Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



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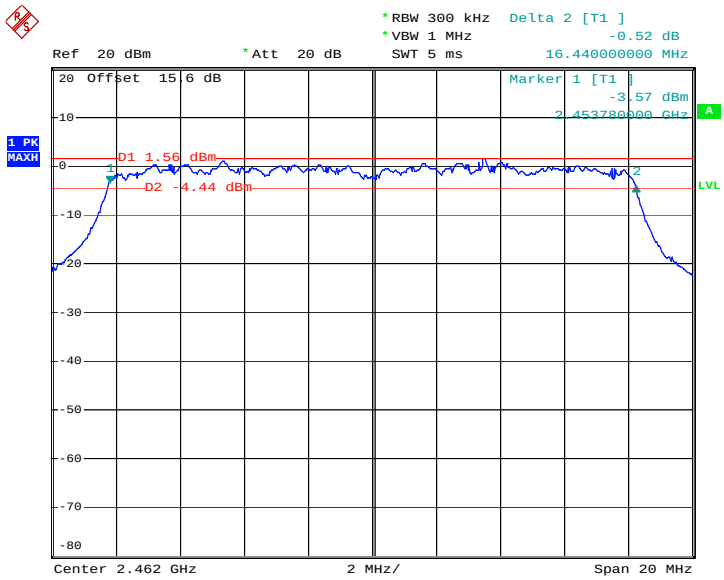
Mode 6 : 6 dB Bandwidth Plot on 802.11g Channel 11

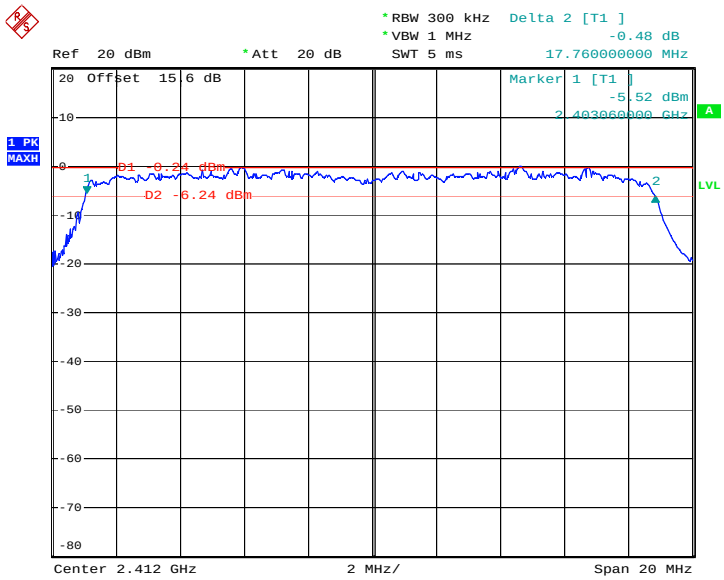


Date: 14.SEP.2012 15:54:26

Test Mode :	Mode 7, 8, 9	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

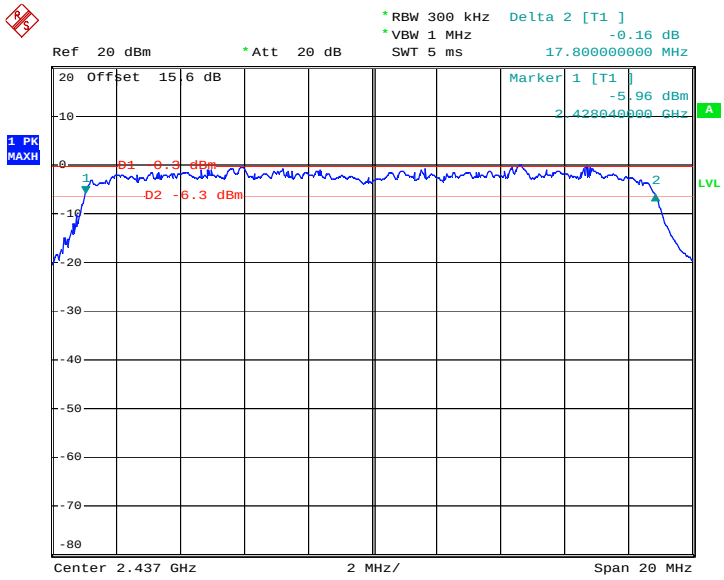
Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.76	0.5	Pass
06	2437	17.80	0.5	Pass
11	2462	17.74	0.5	Pass

Mode 7 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01



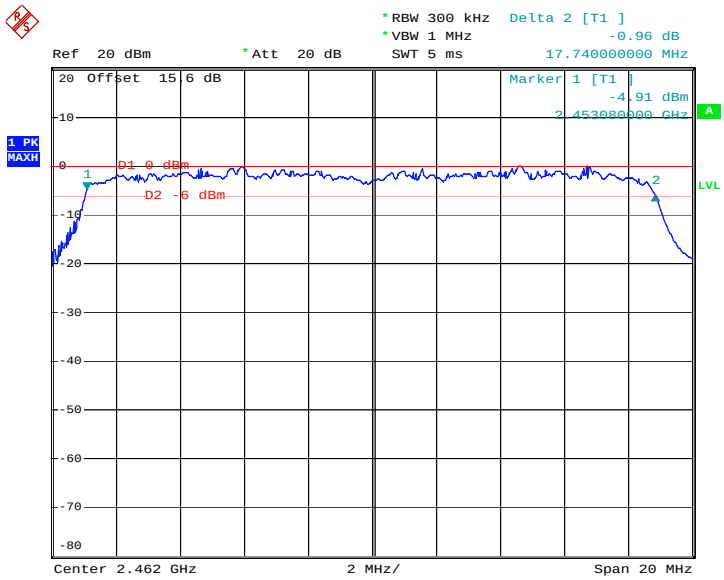
Date: 14.SEP.2012 15:58:00

Mode 8 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06



Date: 14.SEP.2012 16:02:14

Mode 9 : 6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 11



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3.2 Output Power Measurement

3.2.1 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.

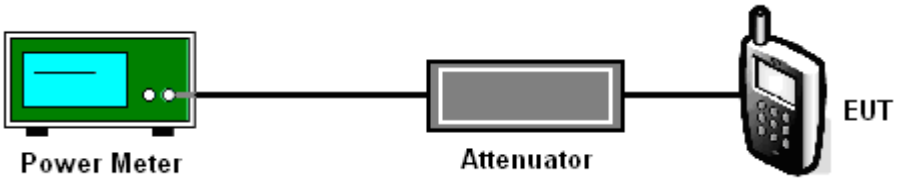
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure PK2 of FCC KDB No. 558074 DTS Meas. Guidance DR01.
2. The RF output of EUT was connected to the power meter by a low loss cable
3. Measure the power by power meter.

3.2.4 Test Setup



3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	15.45	30	Pass
06	2437	15.56	30	Pass
11	2462	15.73	30	Pass

Test Mode :	Mode 4, 5, 6	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.61	30	Pass
06	2437	17.74	30	Pass
11	2462	17.98	30	Pass

Test Mode :	Mode 7, 8, 9	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.56	30	Pass
06	2437	17.75	30	Pass
11	2462	18.07	30	Pass

3.3 Band Edges Measurement

3.3.1 Limit of Band Edges

In any 100 KHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. 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.

3.3.2 Measuring Instruments

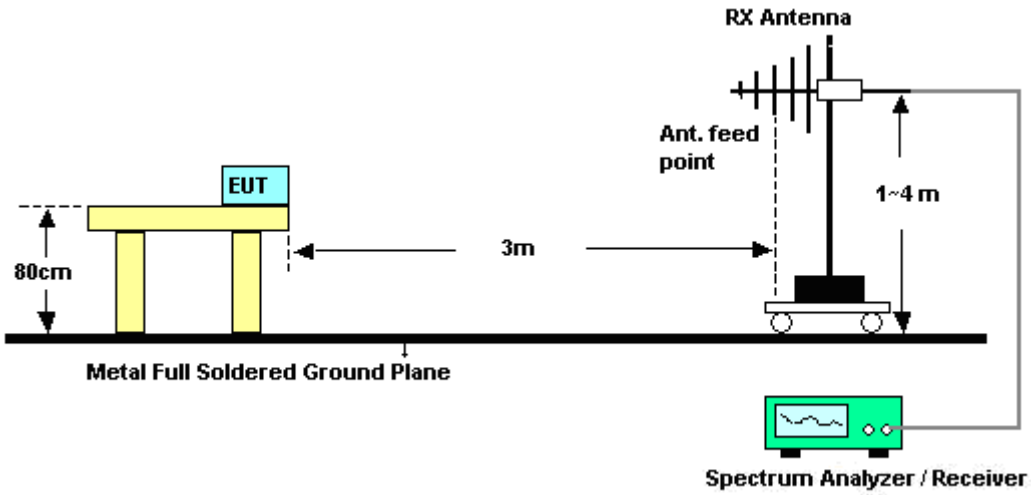
See list of measuring instruments of this test report.

3.3.3 Test Procedures

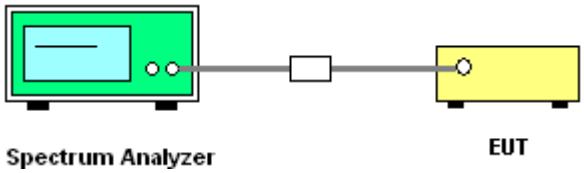
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance DR01.
2. Conducted emission test: Set RBW = 100 KHz, Video bandwidth (VBW) ≥ RBW. Out of the authorized frequency band emissions must be at least 20 dB lower than the highest emission level within the authorized band as measured with a 100 KHz RBW. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
3. Radiated emission test: Apply to band edge emissions that falling on the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, then modify the unit for continuous operation. Use the settings in this paragraph to correct the reading level by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation per 15.35(b) and (c).

3.3.4 Test Setup

<Radiated Band Edges>



<Conducted Band Edges>



3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	**Temperature :**	18~20℃
Test Band :	802.11b	**Relative Humidity :**	41~42%
Test Channel :	01	**Test Engineer :**	Jack Jia

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
2390	56.03	-17.97	74	48.02	32.86	4.23	29.08	149	39	Peak
2390	49.5	-4.5	54	41.49	32.86	4.23	29.08	149	39	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
2387.52	53.41	-20.59	74	45.4	32.86	4.23	29.08	177	300	Peak
2387.52	48.35	-5.65	54	40.34	32.86	4.23	29.08	177	300	Average

Test Mode :	Mode 3	**Temperature :**	18~20℃
Test Band :	802.11b	**Relative Humidity :**	41~42%
Test Channel :	11	**Test Engineer :**	Jack Jia

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
2483.5	55.69	-18.31	74	47.39	33.01	4.29	29	139	38	Peak
2483.5	50.99	-3.01	54	42.69	33.01	4.29	29	139	38	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
2484.04	54.32	-19.68	74	46.02	33.01	4.29	29	180	306	Peak
2484.04	48.55	-5.45	54	40.25	33.01	4.29	29	180	306	Average

Test Mode :	Mode 4	**Temperature :**	18~20℃
Test Band :	802.11g	**Relative Humidity :**	41~42%
Test Channel :	01	**Test Engineer :**	Jack Jia

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
2390	61.4	-12.6	74	53.39	32.86	4.23	29.08	111	44	Peak
2390	48.96	-5.04	54	40.95	32.86	4.23	29.08	111	44	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
2390	55.44	-18.56	74	47.43	32.86	4.23	29.08	131	308	Peak
2390	46.98	-7.02	54	38.97	32.86	4.23	29.08	131	308	Average

Test Mode :	Mode 6	**Temperature :**	18~20℃
Test Band :	802.11g	**Relative Humidity :**	41~42%
Test Channel :	11	**Test Engineer :**	Jack Jia

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
2483.5	65.07	-8.93	74	56.77	33.01	4.29	29	141	42	Peak
2483.5	50.86	-3.14	54	42.56	33.01	4.29	29	141	42	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
2483.5	63.03	-10.97	74	54.73	33.01	4.29	29	179	291	Peak
2483.5	49.65	-4.35	54	41.35	33.01	4.29	29	179	291	Average

Test Mode :	Mode 7	**Temperature :**	18~20℃
Test Band :	802.11g/n (BW 20MHz)	**Relative Humidity :**	41~42%
Test Channel :	01	**Test Engineer :**	Jack Jia

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
2390	57.5	-16.5	74	49.49	32.86	4.23	29.08	147	42	Peak
2390	49.81	-4.19	54	41.8	32.86	4.23	29.08	147	42	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
2390	54.25	-19.75	74	46.24	32.86	4.23	29.08	100	372	Peak
2390	43.14	-10.86	54	35.13	32.86	4.23	29.08	100	372	Average

Test Mode :	Mode 9	**Temperature :**	18~20℃
Test Band :	802.11g/n (BW 20MHz)	**Relative Humidity :**	41~42%
Test Channel :	11	**Test Engineer :**	Jack Jia

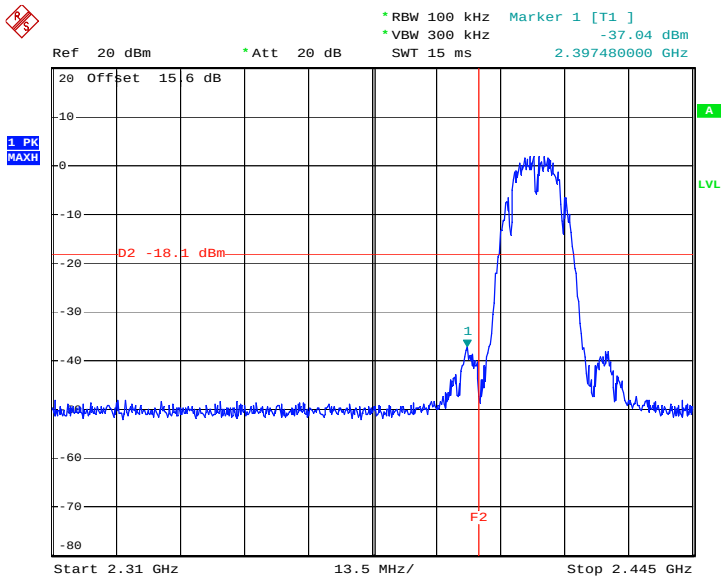
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	67.14	-6.86	74	58.84	33.01	4.29	29	139	40	Peak
2483.5	50.63	-3.37	54	42.33	33.01	4.29	29	139	40	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
2483.5	65.26	-8.74	74	56.96	33.01	4.29	29	179	309	Peak
2483.5	49.73	-4.27	54	41.43	33.01	4.29	29	179	309	Average

3.3.6 Test Plots of Conducted Band Edges

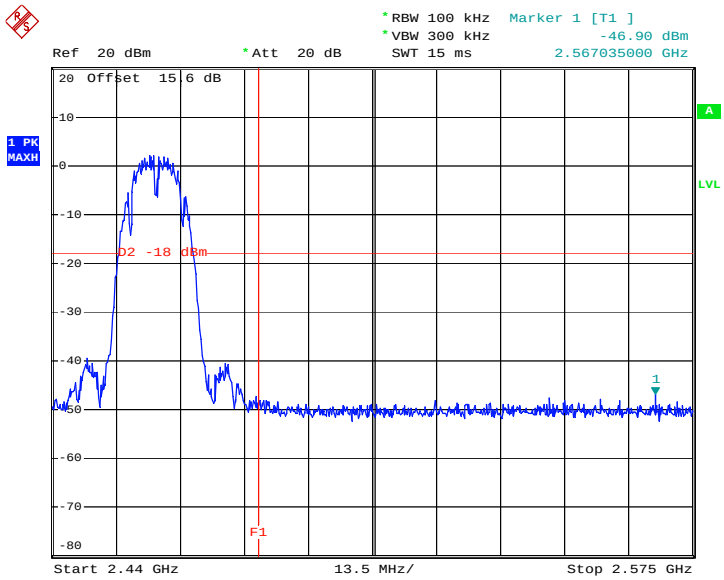
Test Mode :	Mode 1 and 3	**Temperature :**	24~26℃
Test Band :	802.11b	**Relative Humidity :**	50~53%
Test Channel :	01 and 11	**Test Engineer :**	Sage Lu

Low Band Edge Plot on 802.11b Channel 01



Date: 14.SEP.2012 15:36:52

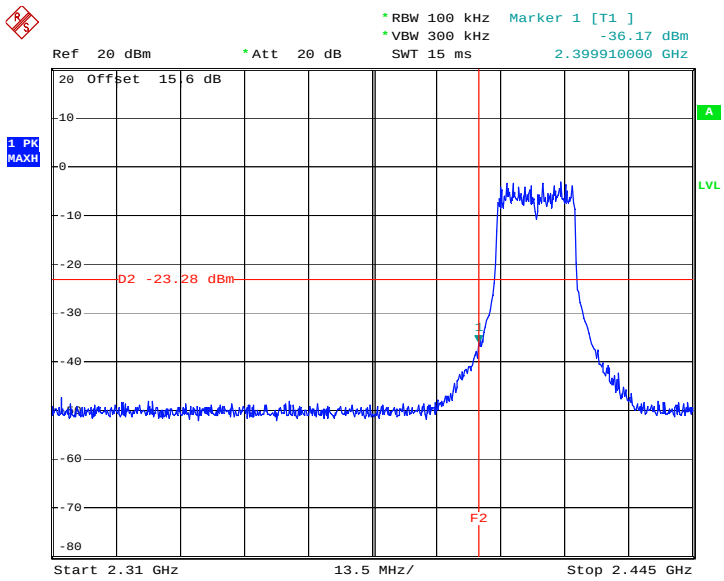
High Band Edge Plot on 802.11b Channel 11



Date: 14.SEP.2012 15:42:42

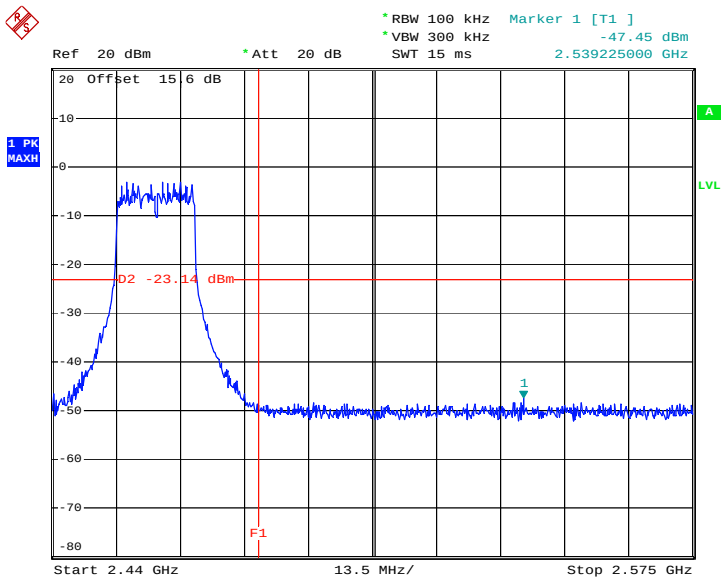
Test Mode :	Mode 4 and 6	**Temperature :**	24~26℃
Test Band :	802.11g	**Relative Humidity :**	50~53%
Test Channel :	01 and 11	**Test Engineer :**	Sage Lu

Low Band Edge Plot on 802.11g Channel 01



Date: 14.SEP.2012 15:45:44

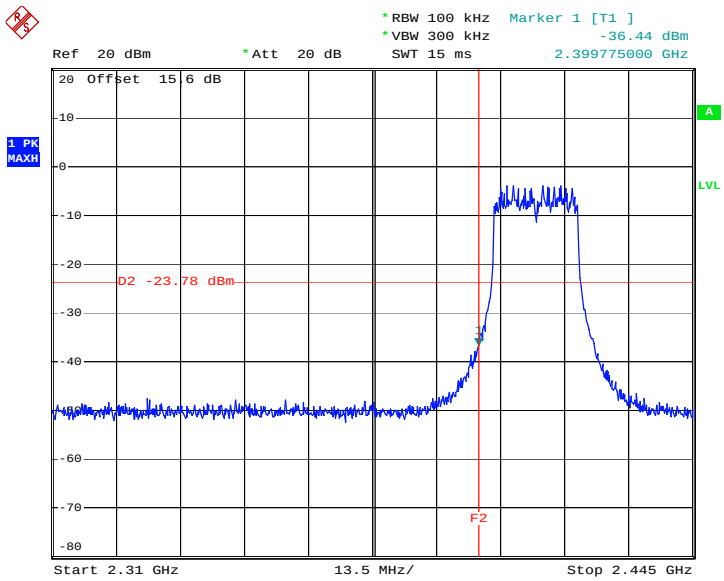
High Band Edge Plot on 802.11g Channel 11



Date: 14.SEP.2012 15:55:10

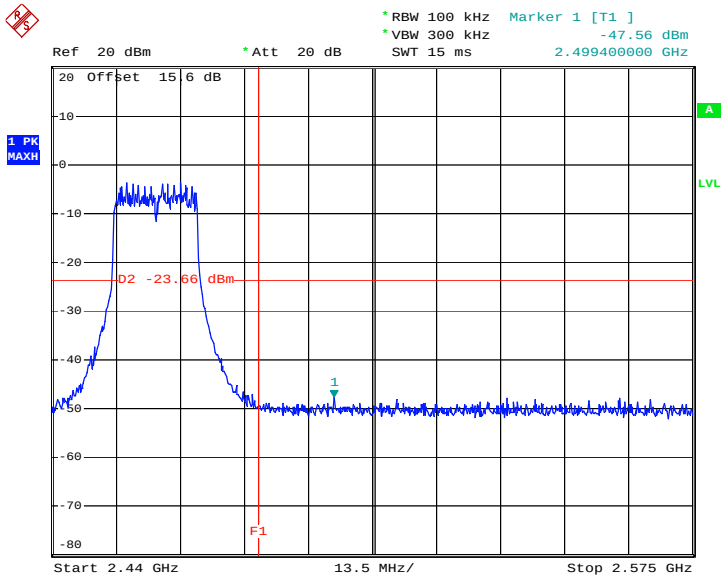
Test Mode :	Mode 7 and 9	**Temperature :**	24~26℃
Test Band :	802.11g/n (BW 20MHz)	**Relative Humidity :**	50~53%
Test Channel :	01 and 11	**Test Engineer :**	Sage Lu

Low Band Edge Plot on 802.11g/n (BW 20MHz) Channel 01



Date: 14.SEP.2012 15:59:25

High Band Edge Plot on 802.11g/n (BW 20MHz) Channel 11



Date: 14.SEP.2012 16:07:11

3.4 Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

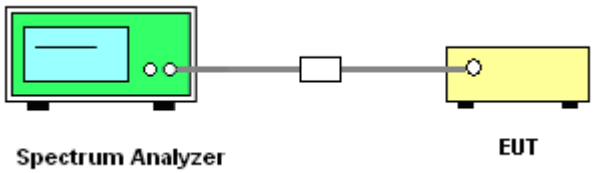
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable. The path loss was compensated to the results for each measurement.
2. Set RBW = 100 KHz, Video bandwidth (VBW) ≥ RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 KHz RBW.

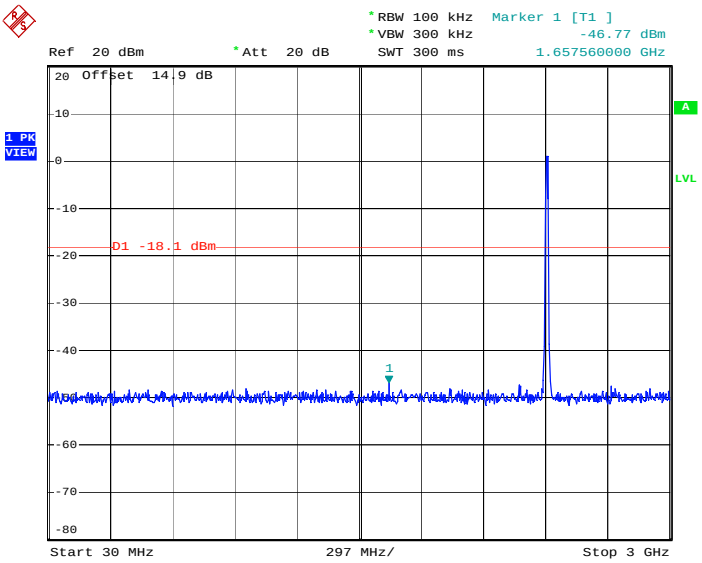
3.4.4 Test Setup



3.4.5 Test Plots of Spurious Emission

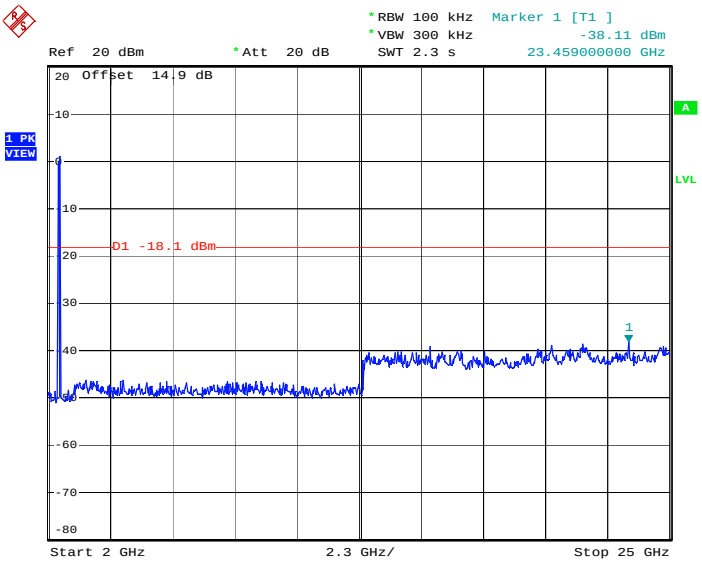
Test Mode :	Mode 1	**Temperature :**	24~26℃
Test Band :	802.11b	**Relative Humidity :**	50~53%
Test Channel :	01	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 15:37:18

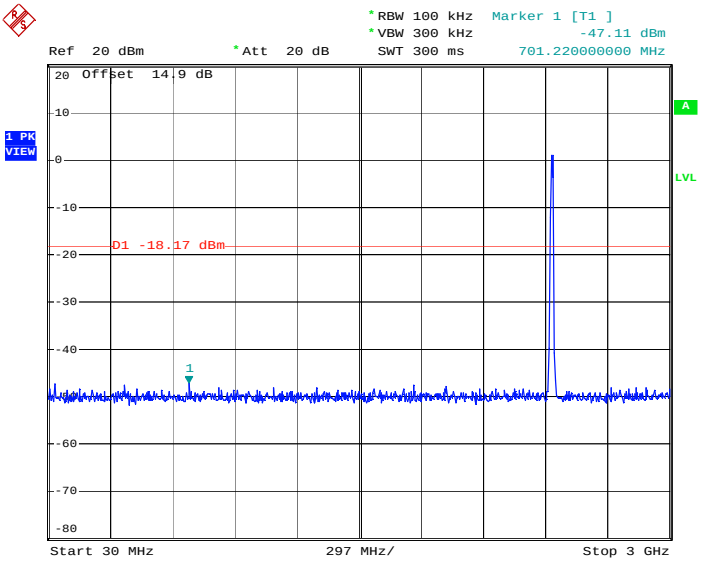
Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 15:37:37

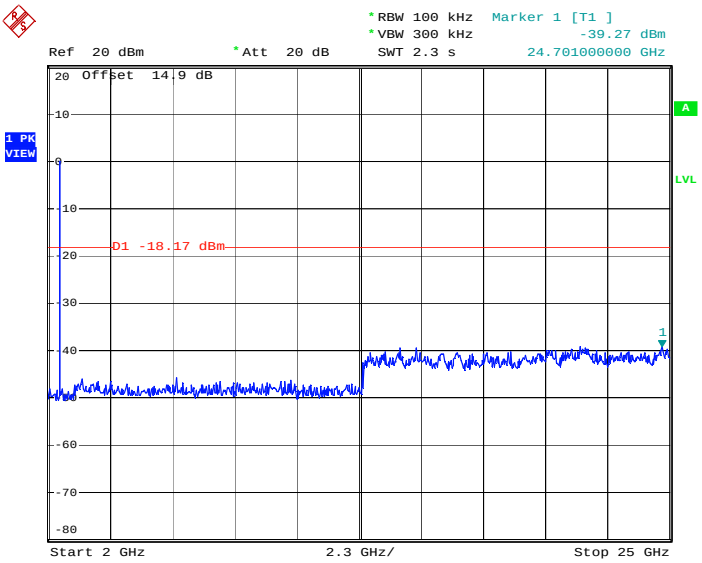
Test Mode :	Mode 2	**Temperature :**	24~26℃
Test Band :	802.11b	**Relative Humidity :**	50~53%
Test Channel :	06	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 15:39:54

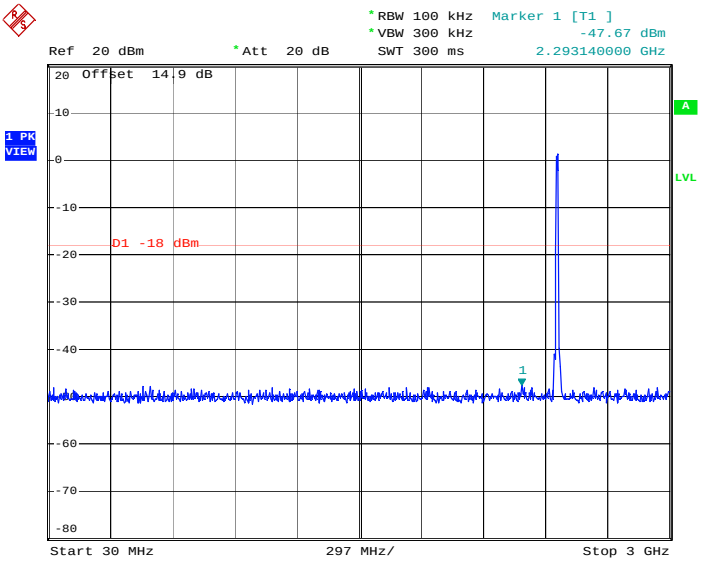
Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 15:40:12

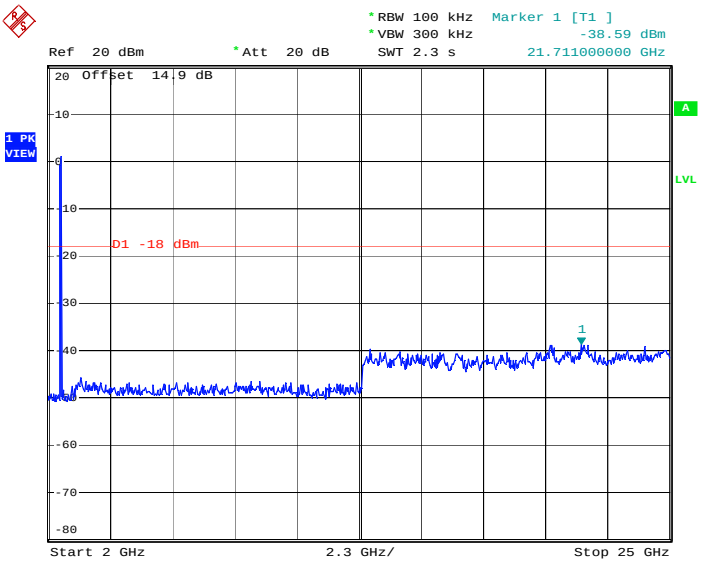
Test Mode :	Mode 3	**Temperature :**	24~26℃
Test Band :	802.11b	**Relative Humidity :**	50~53%
Test Channel :	11	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 15:43:05

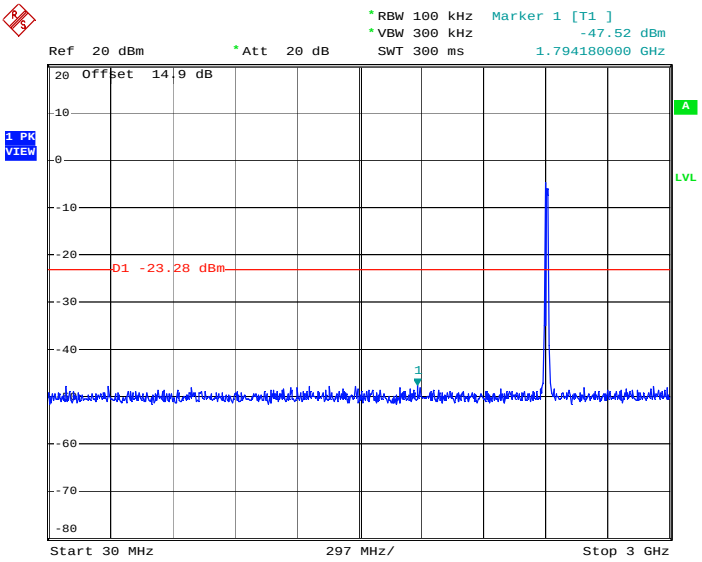
Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 15:43:23

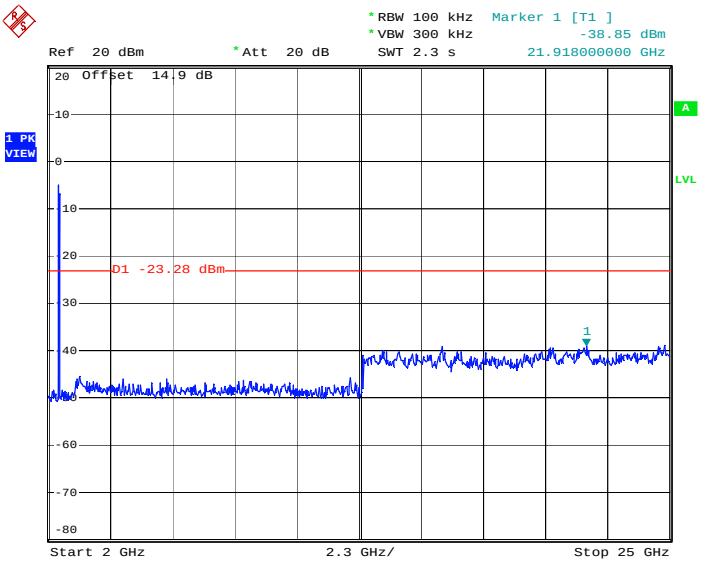
Test Mode :	Mode 4	**Temperature :**	24~26℃
Test Band :	802.11g	**Relative Humidity :**	50~53%
Test Channel :	01	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 15:46:09

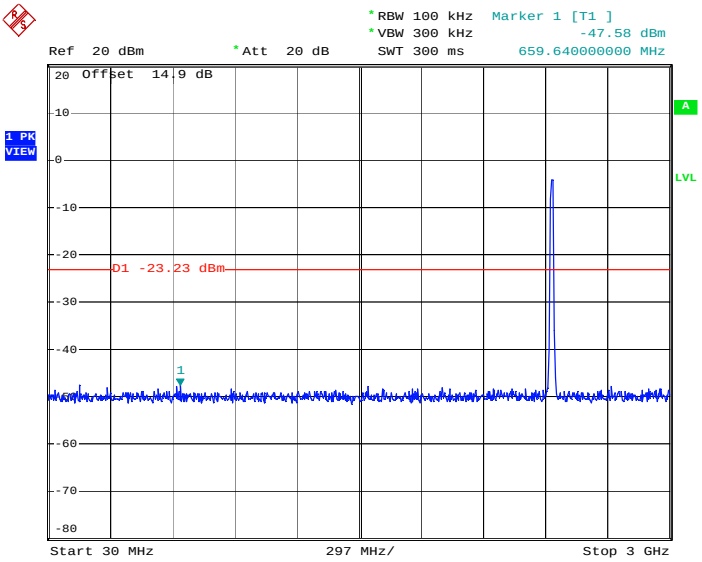
Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 15:46:27

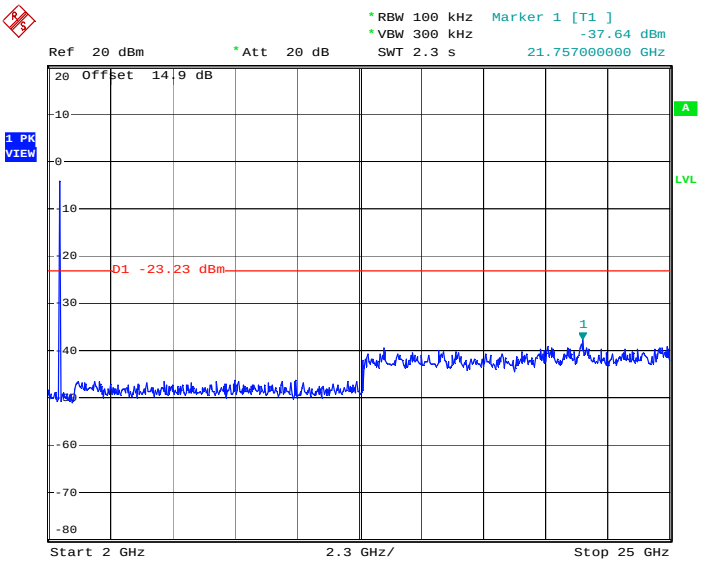
Test Mode :	Mode 5	**Temperature :**	24~26℃
Test Band :	802.11g	**Relative Humidity :**	50~53%
Test Channel :	06	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 15:49:26

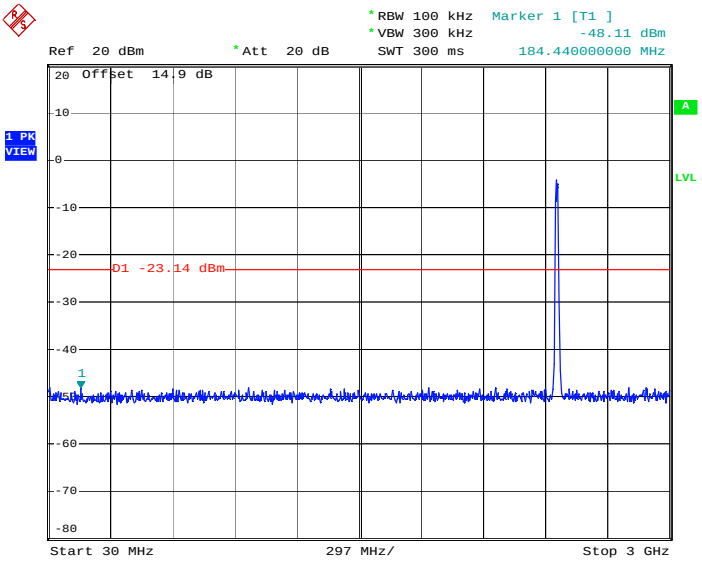
Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 15:49:44

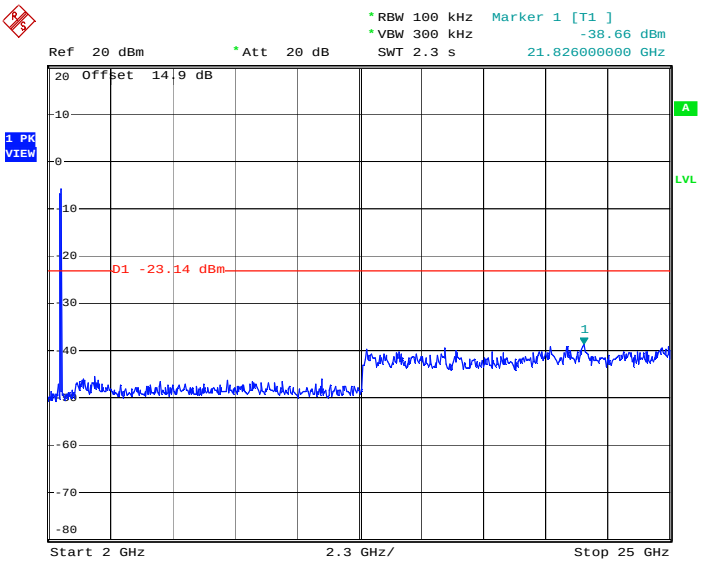
Test Mode :	Mode 6	**Temperature :**	24~26℃
Test Band :	802.11g	**Relative Humidity :**	50~53%
Test Channel :	11	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 15:55:39

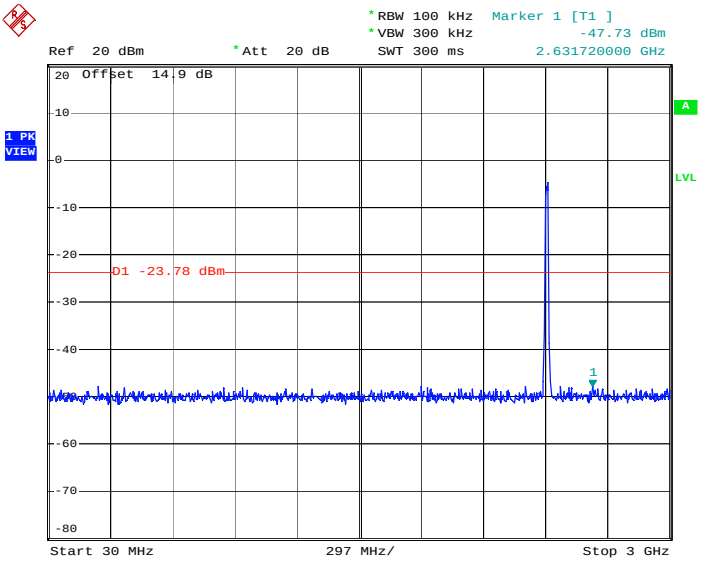
Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 15:55:57

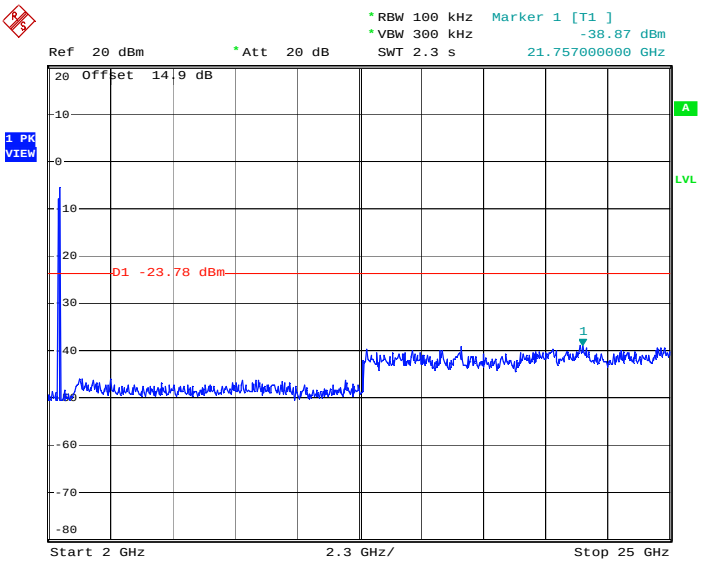
Test Mode :	Mode 7	**Temperature :**	24~26℃
Test Band :	802.11g/n (BW 20MHz)	**Relative Humidity :**	50~53%
Test Channel :	01	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 15:59:46

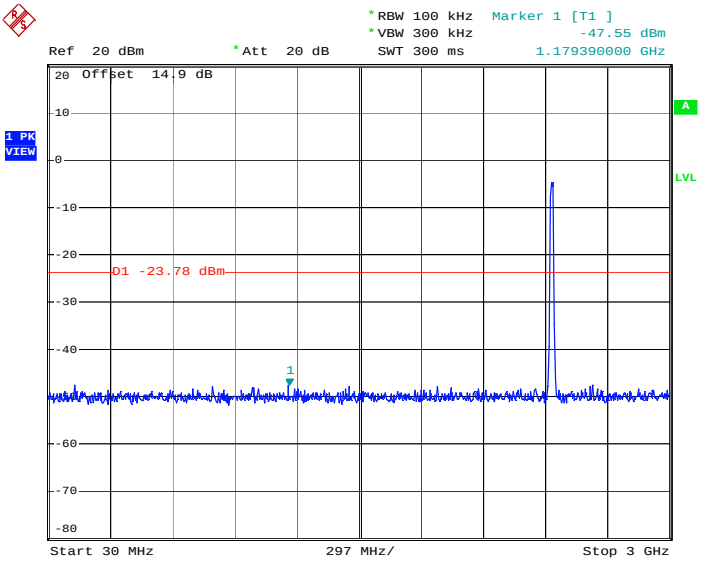
Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 16:00:03

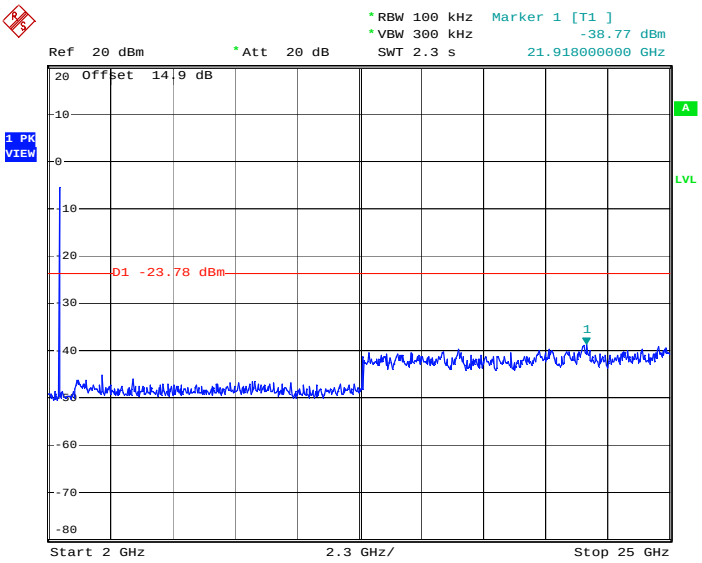
Test Mode :	Mode 8	**Temperature :**	24~26℃
Test Band :	802.11g/n (BW 20MHz)	**Relative Humidity :**	50~53%
Test Channel :	06	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 16:03:01

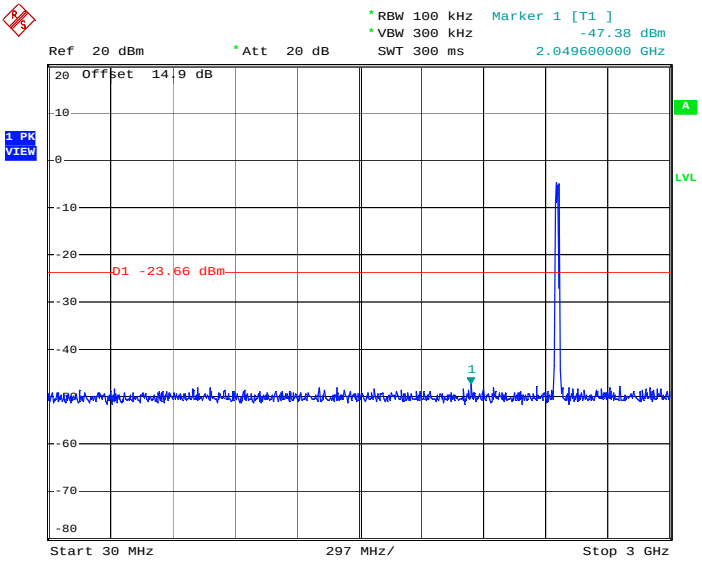
Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 16:03:19

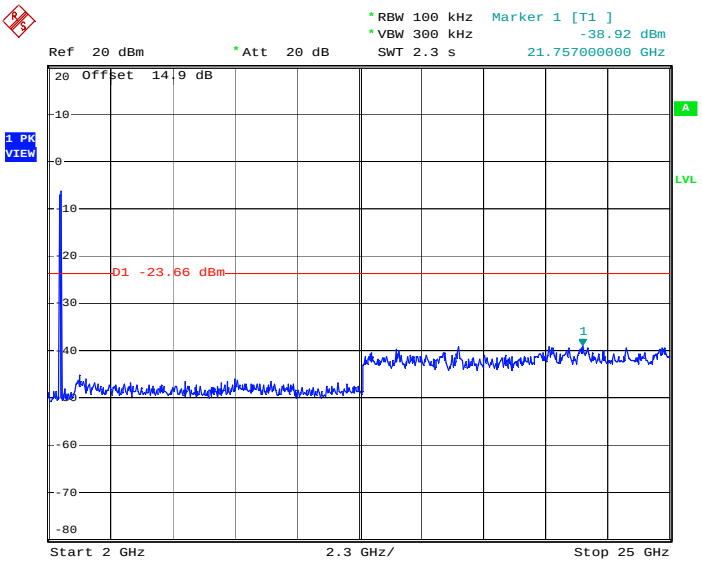
Test Mode :	Mode 9	**Temperature :**	24~26℃
Test Band :	802.11g/n (BW 20MHz)	**Relative Humidity :**	50~53%
Test Channel :	11	**Test Engineer :**	Sage Lu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 14.SEP.2012 16:08:16

Conducted Spurious Emission Plot between 2 GHz ~ 25 GHz



Date: 14.SEP.2012 16:08:34

3.5 Power Spectral Density Measurement

3.5.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3KHz band at any time interval of continuous transmission.

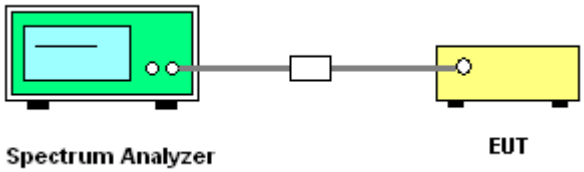
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. T The testing follows Measurement Procedure PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance DR01.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Record the measurement data derived from spectrum analyzer.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 KHz. Video bandwidth (VBW) >= 300 KHz In order to make an accurate measurement, set the span to 5-30% greater than Emission Bandwidth (EBW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).

3.5.4 Test Setup



3.5.5 Test Result of Power Spectral Density

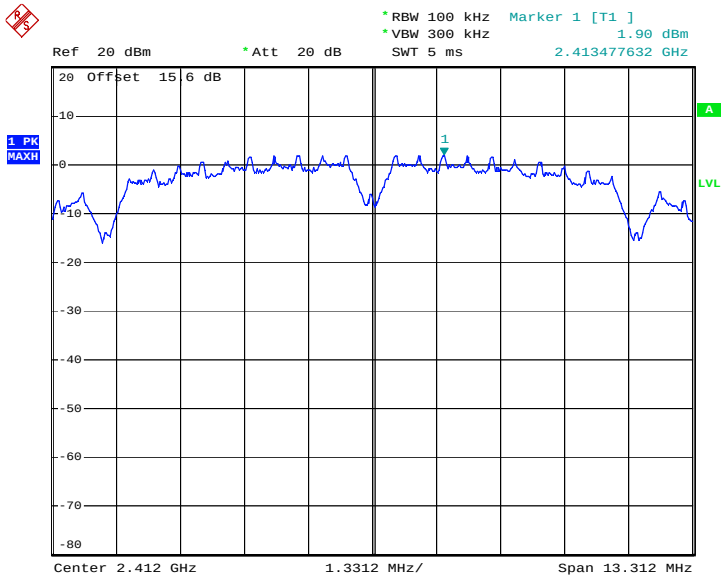
Test Mode :	Mode 1, 2, 3	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	1.90	-13.30	8	Pass
06	2437	1.83	-13.37	8	Pass
11	2462	2.00	-13.20	8	Pass

Note:

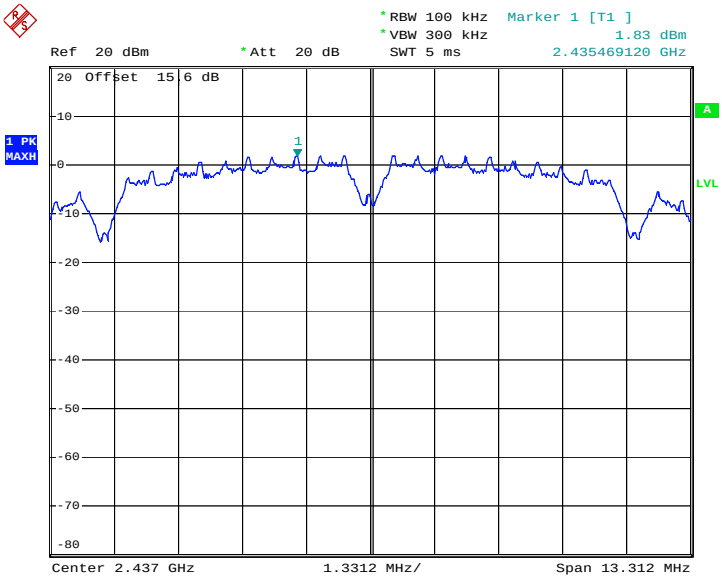
1. *Measured power density (dBm) has offset with cable loss.*
2. *BWCF (dB) = 10 log (3k/100k) = -15.2 dB*
3. *Power Density/ 3kHz (dBm)= Measured power density/ 100KHz (dBm) + BWCF (dB)*

Mode 1 : PSD Plot on 802.11b Channel 01



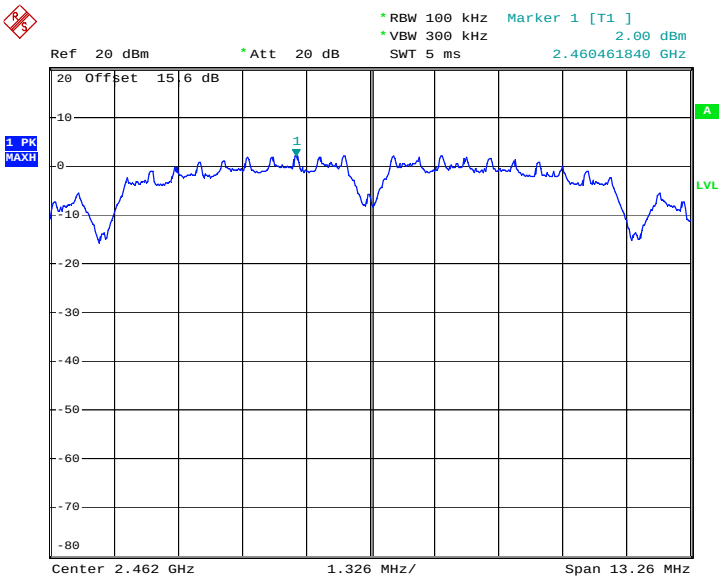
Date: 14.SEP.2012 15:36:35

Mode 2 : PSD Plot on 802.11b Channel 06



Date: 14.SEP.2012 15:39:27

Mode 3 : PSD Plot on 802.11b Channel 11



Date: 14.SEP.2012 15:42:26

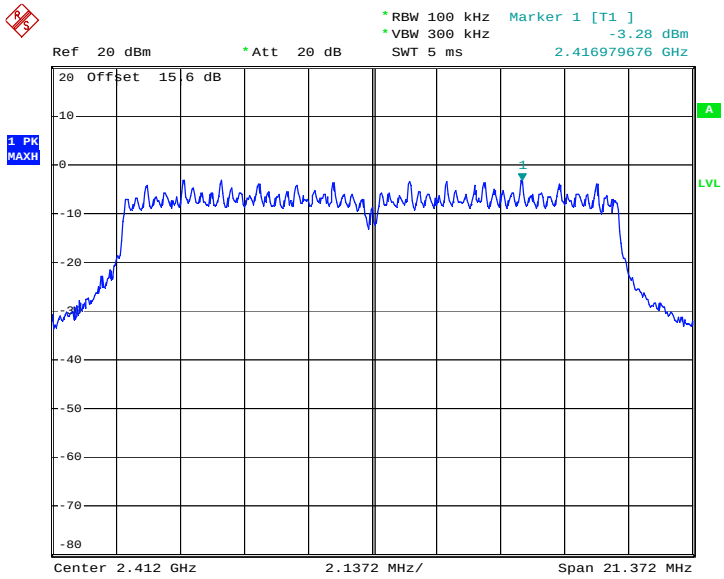
Test Mode :	Mode 4, 5, 6	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-3.28	-18.48	8	Pass
06	2437	-3.23	-18.43	8	Pass
11	2462	-3.14	-18.34	8	Pass

Note:

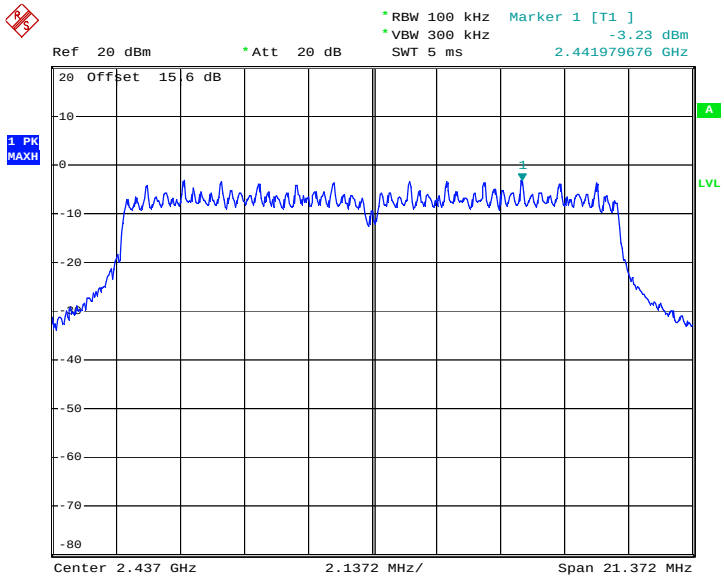
1. *Measured power density (dBm) has offset with cable loss.*
2. *BWCF (dB) = 10 log (3k/100k) = -15.2 dB*
3. *Power Density/ 3KHz (dBm)= Measured power density/ 100KHz (dBm) + BWCF (dB)*

Mode 4 : PSD Plot on 802.11g Channel 01



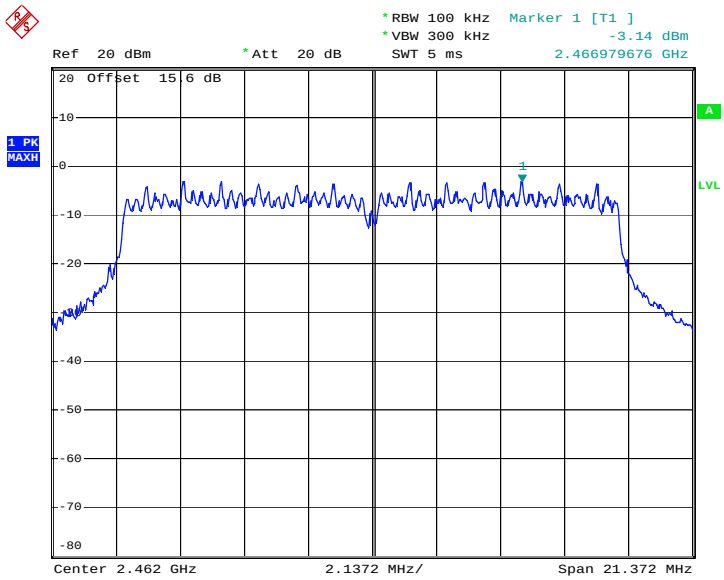
Date: 14.SEP.2012 15:45:27

Mode 5 : PSD Plot on 802.11g Channel 06



Date: 14.SEP.2012 15:48:55

Mode 6 : PSD Plot on 802.11g Channel 11



Date: 14.SEP.2012 15:54:49

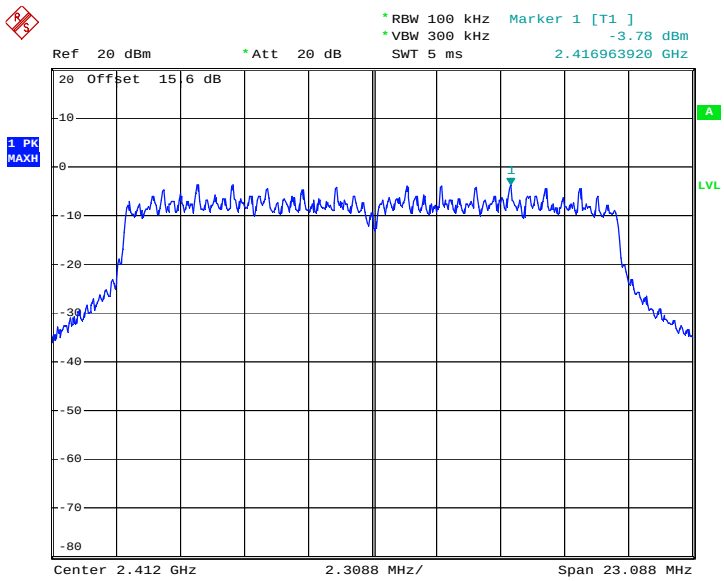
Test Mode :	Mode 7, 8, 9	**Temperature :**	24~26℃
Test Engineer :	Sage Lu	**Relative Humidity :**	50~53%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	-3.78	-18.98	8	Pass
06	2437	-3.78	-18.98	8	Pass
11	2462	-3.66	-18.86	8	Pass

Note:

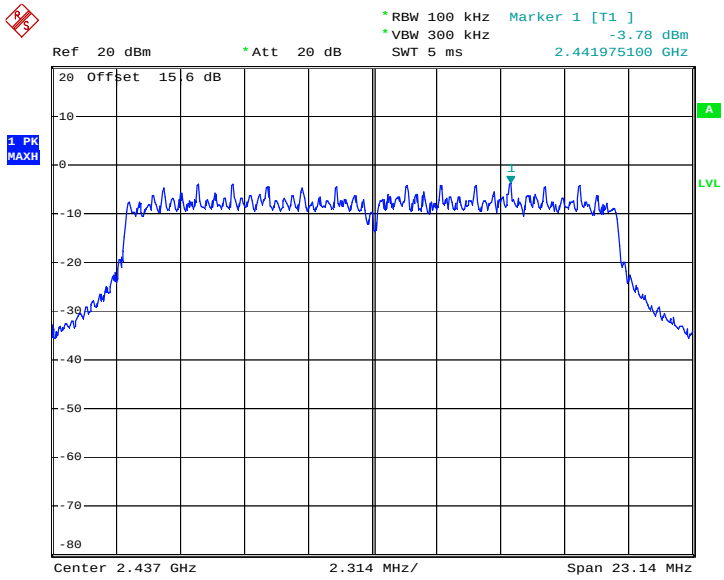
1. *Measured power density (dBm) has offset with cable loss.*
2. *BWCF (dB) = 10 log (3k/100k) = -15.2 dB*
3. *Power Density/ 3KHz (dBm)= Measured power density/ 100KHz (dBm) + BWCF (dB)*

Mode 7 : PSD Plot on 802.11g/n (BW 20MHz) Channel 01



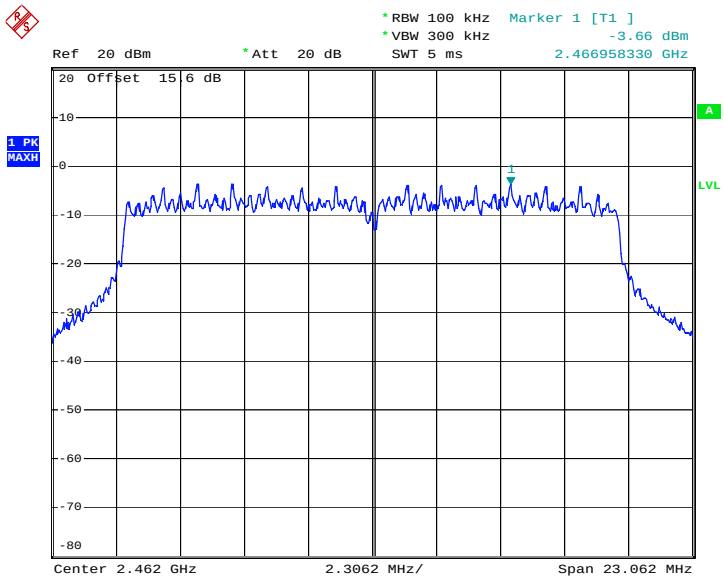
Date: 14.SEP.2012 15:58:23

Mode 8 : PSD Plot on802.11g/n (BW 20MHz) Channel 06



Date: 14.SEP.2012 16:02:36

Mode 9 : PSD Plot on 802.11g/n (BW 20MHz) Channel 11



Date: 14.SEP.2012 16:06:54

3.6 AC Conducted Emission Measurement

3.6.1 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 (dBuV)	
	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.

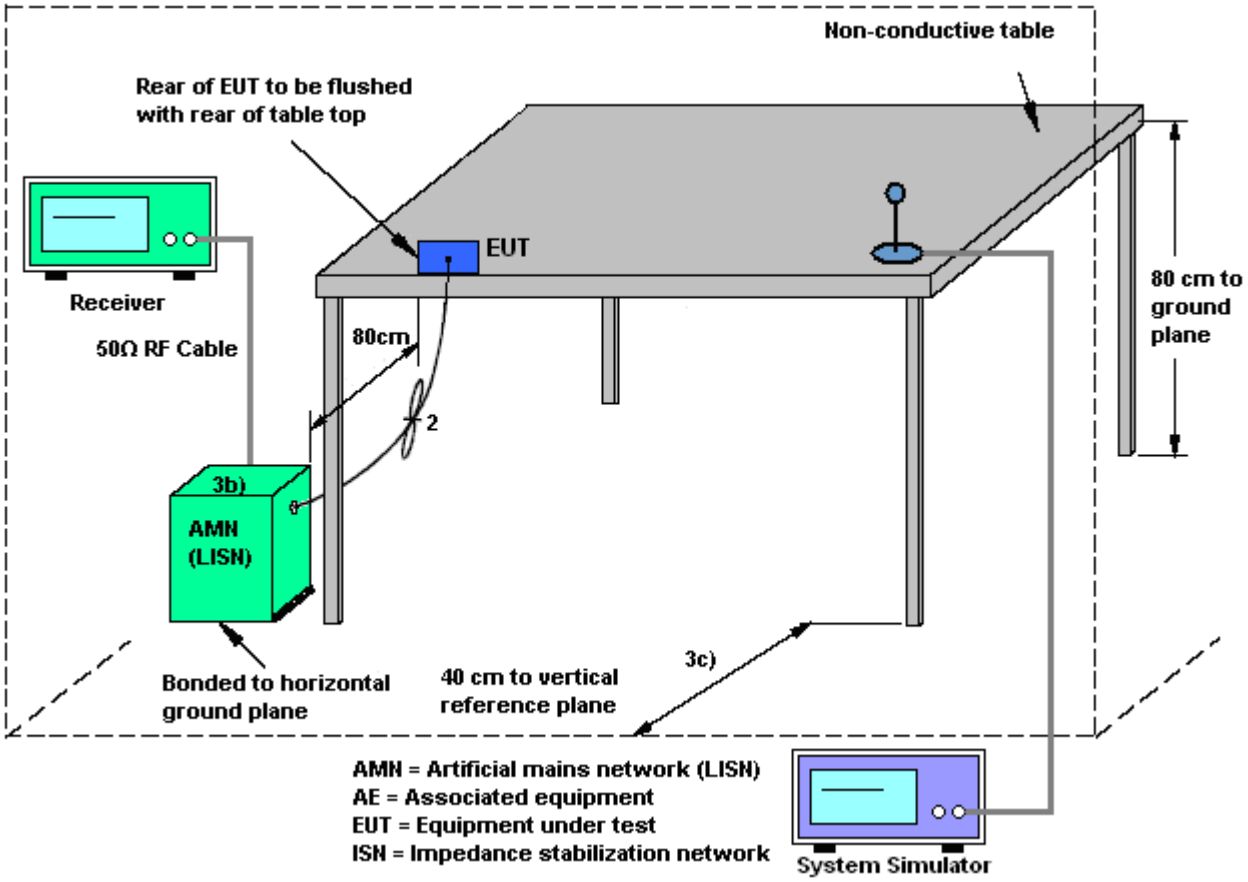
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

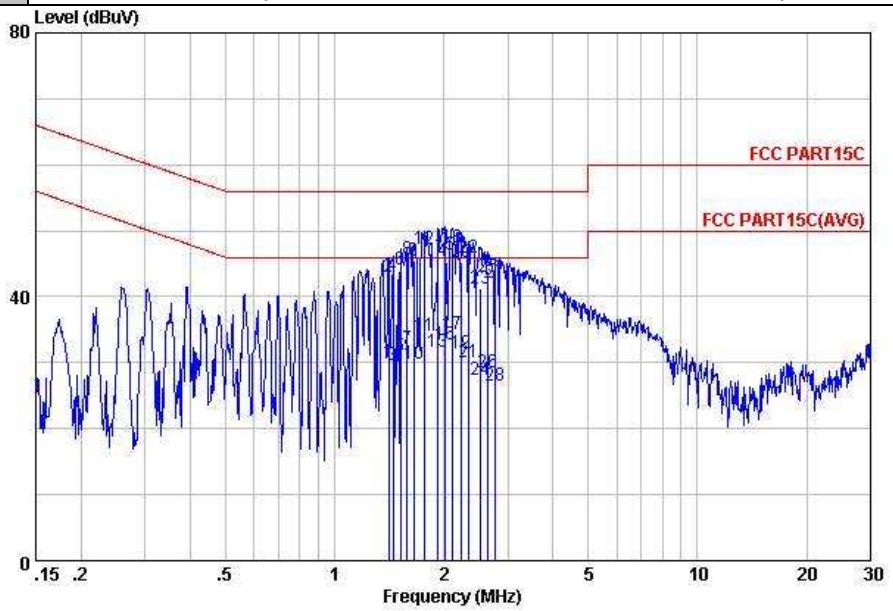
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 KHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

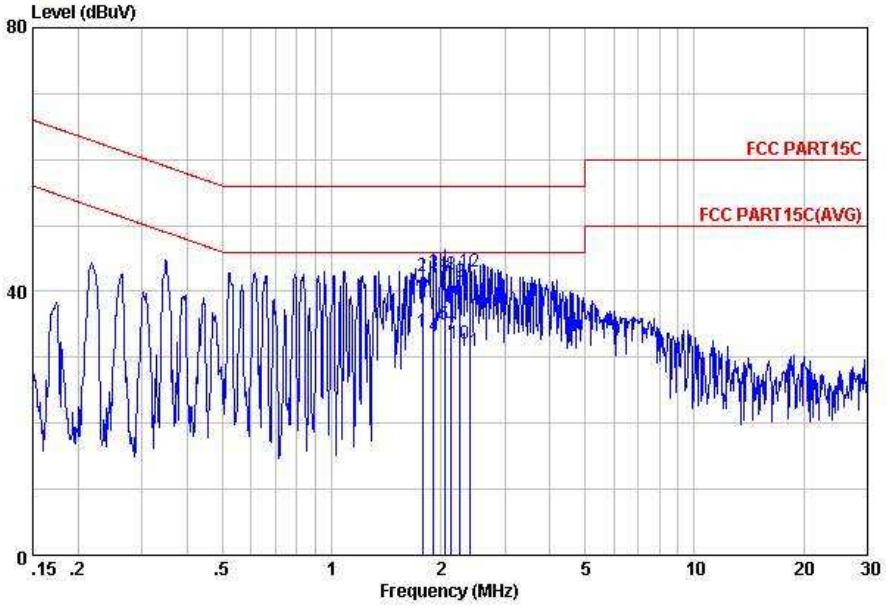
Test Mode :	Mode 2	**Temperature :**	19~20℃
Test Engineer :	Tom Wang	**Relative Humidity :**	39~40%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN Link + Earphone + MPEG4 + USB Cable (Charging from Adapter 1)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
Condition: FCC PART15C LISN-111230 LINE
Project : (FR) 270338
mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	1.41	30.17	-15.83	46.00	19.60	-0.10	10.67	Average
2	1.41	43.07	-12.93	56.00	32.50	-0.10	10.67	QP
3	1.45	29.57	-16.43	46.00	19.00	-0.11	10.68	Average
4	1.45	43.17	-12.83	56.00	32.60	-0.11	10.68	QP
5	1.52	30.88	-15.12	46.00	20.31	-0.11	10.68	Average
6	1.52	44.08	-11.92	56.00	33.51	-0.11	10.68	QP
7	1.59	32.08	-13.92	46.00	21.50	-0.11	10.69	Average
8	1.59	45.68	-10.32	56.00	35.10	-0.11	10.69	QP
9	1.65	45.38	-10.62	56.00	34.80	-0.11	10.69	QP
10	1.65	29.88	-16.12	46.00	19.30	-0.11	10.69	Average
11	1.76	33.99	-12.01	46.00	23.41	-0.11	10.69	Average
12	1.76	47.29	-8.71	56.00	36.71	-0.11	10.69	QP
13	1.93	31.69	-14.31	46.00	21.10	-0.11	10.70	Average
14	1.93	45.49	-10.51	56.00	34.90	-0.11	10.70	QP
15	2.01	46.39	-9.61	56.00	35.80	-0.11	10.70	QP
16	2.01	32.79	-13.21	46.00	22.20	-0.11	10.70	Average
17	2.11	34.29	-11.71	46.00	23.69	-0.11	10.71	Average
18	2.11	47.39	-8.61	56.00	36.79	-0.11	10.71	QP
19	2.24	31.50	-14.50	46.00	20.90	-0.11	10.71	Average
20	2.24	45.20	-10.80	56.00	34.60	-0.11	10.71	QP
21	2.33	30.01	-15.99	46.00	19.40	-0.11	10.72	Average
22	2.33	45.81	-10.19	56.00	35.20	-0.11	10.72	QP
23	2.51	41.22	-14.78	56.00	30.60	-0.11	10.73	QP
24	2.51	27.42	-18.58	46.00	16.80	-0.11	10.73	Average
25	2.64	43.03	-12.97	56.00	32.40	-0.11	10.74	QP
26	2.64	28.63	-17.37	46.00	18.00	-0.11	10.74	Average
27	2.78	42.04	-13.96	56.00	31.40	-0.12	10.76	QP
28	2.78	26.44	-19.56	46.00	15.80	-0.12	10.76	Average

Test Mode :	Mode 2	**Temperature :**	19~20℃
Test Engineer :	Tom Wang	**Relative Humidity :**	39~40%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN Link + Earphone + MPEG4 + USB Cable (Charging from Adapter 1)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
Condition: FCC PART15C LISN-111230 NEUTRAL
Project : (FR) 270338
mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	1.78	33.79	-12.21	46.00	23.21	-0.11	10.69	Average
2	1.78	42.29	-13.71	56.00	31.71	-0.11	10.69	QP
3	1.91	42.79	-13.21	56.00	32.20	-0.11	10.70	QP
4	1.91	33.19	-12.81	46.00	22.60	-0.11	10.70	Average
5	2.04	35.09	-10.91	46.00	24.50	-0.11	10.70	Average
6	2.04	42.19	-13.81	56.00	31.60	-0.11	10.70	QP
7	2.13	33.50	-12.50	46.00	22.90	-0.11	10.71	Average
8	2.13	42.50	-13.50	56.00	31.90	-0.11	10.71	QP
9	2.26	41.40	-14.60	56.00	30.80	-0.11	10.71	QP
10	2.26	32.10	-13.90	46.00	21.50	-0.11	10.71	Average
11	2.40	30.91	-15.09	46.00	20.30	-0.11	10.72	Average
12	2.40	43.11	-12.89	56.00	32.50	-0.11	10.72	QP

3.7 Radiated Emission Measurement

3.7.1 Limit of Radiated Emission

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

3.7.2 Measuring Instruments

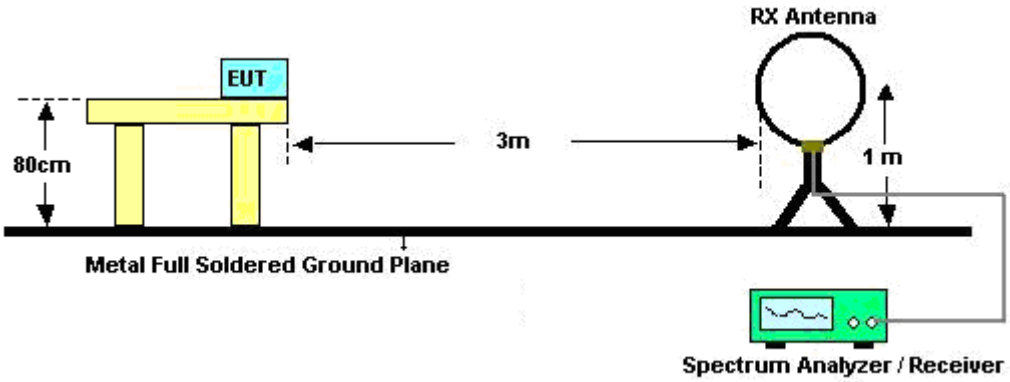
See list of measuring instruments of this test report.

3.7.3 Test Procedures

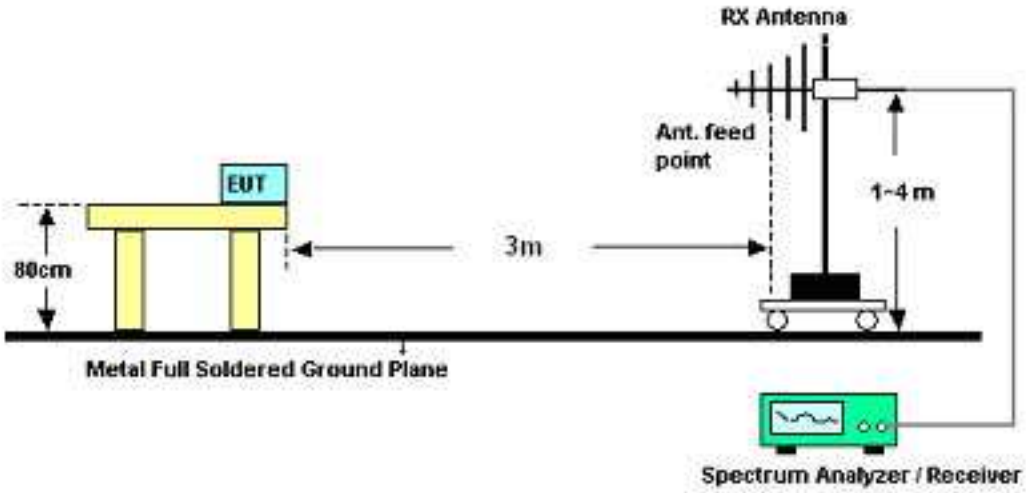
1. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW = 1 MHz for f ≥ 1 GHz, 100 KHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Measurement above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB per decade from 3m to 1m.
   Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB)
2. Maximize the emission by rotating the EUT for three orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.

3.7.4 Test Setup

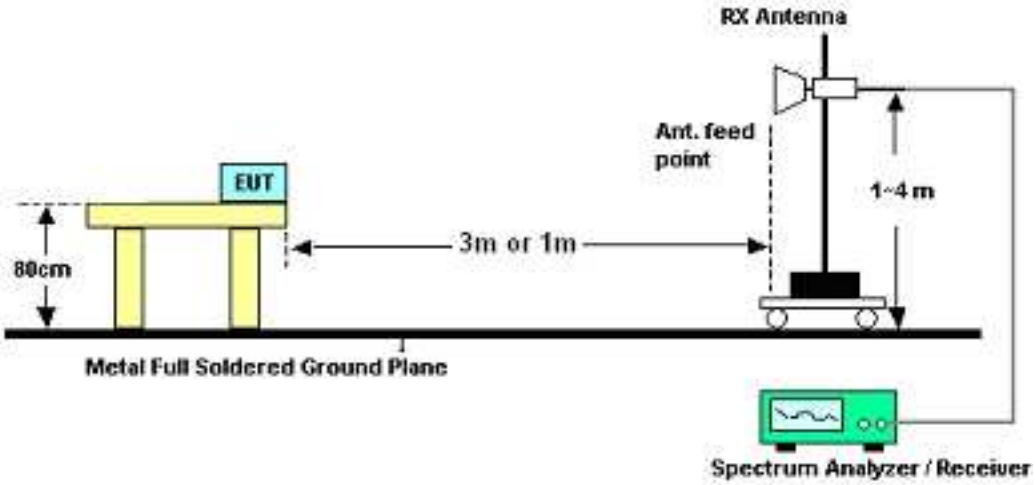
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.7.5 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.

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

Test Mode :	Mode 1	**Temperature :**	18~20℃
Test Channel :	01	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
37.548	17.23	-22.77	40	33.35	13.7	0.24	30.06	-	-	Peak
88.964	23.3	-20.2	43.5	44.29	8.61	0.39	29.99	-	-	Peak
110.182	23.04	-20.46	43.5	40.78	11.8	0.43	29.97	-	-	Peak
215.268	24.41	-19.09	43.5	44.02	9.77	0.61	29.99	-	-	Peak
312.179	22.4	-23.6	46	38.31	13.3	0.74	29.95	-	-	Peak
942.131	34.32	-11.68	46	41.82	20.7	1.33	29.53	100	56	Peak
2390	56.03	-17.97	74	48.02	32.86	4.23	29.08	149	39	Peak
2390	49.5	-4.5	54	41.49	32.86	4.23	29.08	149	39	Average
2412	112.47	-	-	104.39	32.89	4.24	29.05	116	38	Peak
2412	107.46	-	-	99.38	32.89	4.24	29.05	116	38	Average
2499.62	52.74	-21.26	74	44.37	33.05	4.31	28.99	175	231	Peak
2499.62	45.88	-8.12	54	37.51	33.05	4.31	28.99	175	231	Average

Test Mode :	Mode 1	**Temperature :**	18~20℃
Test Channel :	01	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
30.962	22.08	-17.92	40	34.62	17.29	0.25	30.08	-	-	Peak
38.078	19.33	-20.67	40	35.45	13.7	0.24	30.06	-	-	Peak
62.651	22.33	-17.67	40	46.88	5.25	0.32	30.12	-	-	Peak
88.964	23.31	-20.19	43.5	44.3	8.61	0.39	29.99	-	-	Peak
107.51	22.31	-21.19	43.5	40.28	11.56	0.43	29.96	-	-	Peak
942.131	34.22	-11.78	46	41.72	20.7	1.33	29.53	100	191	Peak
2387.52	53.41	-20.59	74	45.4	32.86	4.23	29.08	177	300	Peak
2387.52	48.35	-5.65	54	40.34	32.86	4.23	29.08	177	300	Average
2412	107.64	-	-	99.56	32.89	4.24	29.05	180	303	Peak
2412	102.65	-	-	94.57	32.89	4.24	29.05	180	303	Average
2492.02	52.41	-21.59	74	44.05	33.05	4.3	28.99	100	0	Peak
2492.02	47.5	-6.5	54	39.14	33.05	4.3	28.99	100	0	Average

Test Mode :	Mode 2	**Temperature :**	18~20℃
Test Channel :	06	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
93.113	23.03	-20.47	43.5	43.1	9.51	0.4	29.98	-	-	Peak
107.134	23.41	-20.09	43.5	41.38	11.56	0.43	29.96	-	-	Peak
214.514	24.09	-19.41	43.5	43.76	9.71	0.61	29.99	-	-	Peak
330.195	21.91	-24.09	46	37.12	13.95	0.78	29.94	-	-	Peak
900.147	29.09	-16.91	46	36.82	20.45	1.3	29.48	-	-	Peak
942.131	34.58	-11.42	46	42.08	20.7	1.33	29.53	100	63	Peak
2376.69	52.6	-21.4	74	44.65	32.83	4.22	29.1	139	43	Peak
2376.69	46.9	-7.1	54	38.95	32.83	4.22	29.1	139	43	Average
2437	112.98	-	-	104.81	32.95	4.25	29.03	115	39	Peak
2437	108.02	-	-	99.85	32.95	4.25	29.03	115	39	Average
2497.53	53.51	-20.49	74	45.15	33.05	4.3	28.99	200	122	Peak
2497.53	47.51	-6.49	54	39.15	33.05	4.3	28.99	200	122	Average

Test Mode :	Mode 2	**Temperature :**	18~20℃
Test Channel :	06	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
44.12	16.84	-23.16	40	37.1	9.6	0.27	30.13	-	-	Peak
63.092	22.25	-17.75	40	46.8	5.25	0.32	30.12	-	-	Peak
88.964	22.88	-20.62	43.5	43.87	8.61	0.39	29.99	-	-	Peak
108.647	23.92	-19.58	43.5	41.77	11.68	0.43	29.96	-	-	Peak
716.682	22.41	-23.59	46	31.46	19.48	1.14	29.67	-	-	Peak
942.131	33.74	-12.26	46	41.24	20.7	1.33	29.53	100	0	Peak
2379.35	53.22	-20.78	74	45.26	32.83	4.22	29.09	188	310	Peak
2379.35	47.78	-6.22	54	39.82	32.83	4.22	29.09	188	310	Average
2437	107.01	-	-	98.84	32.95	4.25	29.03	184	304	Peak
2437	102.33	-	-	94.16	32.95	4.25	29.03	184	304	Average
2497.15	52.21	-21.79	74	43.85	33.05	4.3	28.99	112	55	Peak
2497.15	46.63	-7.37	54	38.27	33.05	4.3	28.99	112	55	Average

Test Mode :	Mode 3	**Temperature :**	18~20℃
Test Channel :	11	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
92.462	23.32	-20.18	43.5	43.56	9.35	0.39	29.98	-	-	Peak
107.134	23.9	-19.6	43.5	41.87	11.56	0.43	29.96	-	-	Peak
199.986	22.69	-20.81	43.5	43.11	9	0.59	30.01	-	-	Peak
215.268	23.51	-19.99	43.5	43.12	9.77	0.61	29.99	-	-	Peak
311.087	22.69	-23.31	46	38.63	13.27	0.74	29.95	-	-	Peak
942.131	34.71	-11.29	46	42.21	20.7	1.33	29.53	100	293	Peak
2358.83	52.71	-21.29	74	44.82	32.81	4.21	29.13	200	317	Peak
2358.83	47.43	-6.57	54	39.54	32.81	4.21	29.13	200	317	Average
2462	112.58	-	-	104.34	32.98	4.27	29.01	112	39	Peak
2462	107.49	-	-	99.25	32.98	4.27	29.01	112	39	Average
2483.5	55.69	-18.31	74	47.39	33.01	4.29	29	139	38	Peak
2483.5	50.99	-3.01	54	42.69	33.01	4.29	29	139	38	Average

Test Mode :	Mode 3	**Temperature :**	18~20℃
Test Channel :	11	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
40.276	17.64	-22.36	40	35.8	11.64	0.25	30.05	-	-	Peak
62.431	22.38	-17.62	40	46.92	5.27	0.32	30.13	-	-	Peak
88.964	23.27	-20.23	43.5	44.26	8.61	0.39	29.99	-	-	Peak
107.51	23.27	-20.23	43.5	41.24	11.56	0.43	29.96	-	-	Peak
574.626	22.19	-23.81	46	32.26	18.55	1.03	29.65	-	-	Peak
942.131	34.23	-11.77	46	41.73	20.7	1.33	29.53	100	281	Peak
2380.87	53.23	-20.77	74	45.27	32.83	4.22	29.09	100	38	Peak
2380.87	46.94	-7.06	54	38.98	32.83	4.22	29.09	100	38	Average
2462	106.14	-	-	97.9	32.98	4.27	29.01	184	306	Peak
2462	101.27	-	-	93.03	32.98	4.27	29.01	184	306	Average
2484.04	54.32	-19.68	74	46.02	33.01	4.29	29	180	306	Peak
2484.04	48.55	-5.45	54	40.25	33.01	4.29	29	180	306	Average

Test Mode :	Mode 4	**Temperature :**	18~20℃
Test Channel :	01	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
92.462	23.16	-20.34	43.5	43.4	9.35	0.39	29.98	-	-	Peak
107.134	23.62	-19.88	43.5	41.59	11.56	0.43	29.96	-	-	Peak
146.374	18.63	-24.87	43.5	37.82	10.29	0.5	29.98	-	-	Peak
215.268	24.14	-19.36	43.5	43.75	9.77	0.61	29.99	-	-	Peak
322.189	21.54	-24.46	46	37.11	13.62	0.76	29.95	-	-	Peak
942.131	33.75	-12.25	46	41.25	20.7	1.33	29.53	100	198	Peak
2390	61.4	-12.6	74	53.39	32.86	4.23	29.08	111	44	Peak
2390	48.96	-5.04	54	40.95	32.86	4.23	29.08	111	44	Average
2412	109.88	-	-	101.8	32.89	4.24	29.05	147	45	Peak
2412	98.26	-	-	90.18	32.89	4.24	29.05	147	45	Average
2499.05	52.27	-21.73	74	43.9	33.05	4.31	28.99	200	0	Peak
2499.05	47.26	-6.74	54	38.89	33.05	4.31	28.99	200	0	Average

Test Mode :	Mode 4	**Temperature :**	18~20℃
Test Channel :	01	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
35.624	19.17	-20.83	40	34.37	14.65	0.23	30.08	-	-	Peak
44.12	16.89	-23.11	40	37.15	9.6	0.27	30.13	-	-	Peak
62.431	22.23	-17.77	40	46.77	5.27	0.32	30.13	-	-	Peak
88.964	22.53	-20.97	43.5	43.52	8.61	0.39	29.99	-	-	Peak
107.134	23.77	-19.73	43.5	41.74	11.56	0.43	29.96	-	-	Peak
942.131	34.04	-11.96	46	41.54	20.7	1.33	29.53	100	20	Peak
2390	55.44	-18.56	74	47.43	32.86	4.23	29.08	131	308	Peak
2390	46.98	-7.02	54	38.97	32.86	4.23	29.08	131	308	Average
2412	101.81	-	-	93.73	32.89	4.24	29.05	101	23	Peak
2412	90.52	-	-	82.44	32.89	4.24	29.05	101	23	Average
2489.93	52.84	-21.16	74	44.49	33.05	4.3	29	176	311	Peak
2489.93	45.19	-8.81	54	36.84	33.05	4.3	29	176	311	Average

Test Mode :	Mode 5	**Temperature :**	18~20℃
Test Channel :	06	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
91.175	23.04	-20.46	43.5	43.52	9.12	0.39	29.99	-	-	Peak
110.569	22.97	-20.53	43.5	40.71	11.8	0.43	29.97	-	-	Peak
213.763	24.62	-18.88	43.5	44.35	9.65	0.61	29.99	-	-	Peak
318.817	21.61	-24.39	46	37.3	13.51	0.75	29.95	-	-	Peak
896.997	29.06	-16.94	46	36.8	20.45	1.3	29.49	-	-	Peak
942.131	33.42	-12.58	46	40.92	20.7	1.33	29.53	100	186	Peak
2326.72	52.72	-21.28	74	44.95	32.76	4.2	29.19	101	148	Peak
2326.72	43.65	-10.35	54	35.88	32.76	4.2	29.19	101	148	Average
2437	110.7	-	-	102.53	32.95	4.25	29.03	114	36	Peak
2437	91.79	-	-	83.62	32.95	4.25	29.03	114	36	Average
2494.68	52.73	-21.27	74	44.37	33.05	4.3	28.99	188	246	Peak
2494.68	43.63	-10.37	54	35.27	33.05	4.3	28.99	188	246	Average

Test Mode :	Mode 5	**Temperature :**	18~20℃
Test Channel :	06	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
45.058	16.77	-23.23	40	37.38	9.25	0.27	30.13	-	-	Peak
64.433	22.15	-17.85	40	46.73	5.22	0.32	30.12	-	-	Peak
88.964	23.1	-20.4	43.5	44.09	8.61	0.39	29.99	-	-	Peak
108.267	24.38	-19.12	43.5	42.23	11.68	0.43	29.96	-	-	Peak
549.02	22.47	-23.53	46	32.67	18.48	1	29.68	-	-	Peak
942.131	33.95	-12.05	46	41.45	20.7	1.33	29.53	100	213	Peak
2357.12	52.64	-21.36	74	44.75	32.81	4.21	29.13	183	303	Peak
2357.12	42.83	-11.17	54	34.94	32.81	4.21	29.13	183	303	Average
2437	106.5	-	-	98.33	32.95	4.25	29.03	179	294	Peak
2437	95.01	-	-	86.84	32.95	4.25	29.03	179	294	Average
2498.67	52.26	-21.74	74	43.9	33.05	4.3	28.99	120	54	Peak
2498.67	43.85	-10.15	54	35.49	33.05	4.3	28.99	120	54	Average

Test Mode :	Mode 6	**Temperature :**	18~20℃
Test Channel :	11	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
92.139	23.92	-19.58	43.5	44.16	9.35	0.39	29.98	-	-	Peak
107.51	22.85	-20.65	43.5	40.82	11.56	0.43	29.96	-	-	Peak
216.024	24.78	-21.22	46	44.33	9.83	0.61	29.99	-	-	Peak
326.74	21.31	-24.69	46	36.63	13.84	0.78	29.94	-	-	Peak
900.147	28.68	-17.32	46	36.41	20.45	1.3	29.48	-	-	Peak
942.131	33.97	-12.03	46	41.47	20.7	1.33	29.53	100	260	Peak
2379.54	53.3	-20.7	74	45.34	32.83	4.22	29.09	100	281	Peak
2379.54	40.65	-13.35	54	32.69	32.83	4.22	29.09	100	281	Average
2462	110.03	-	-	101.79	32.98	4.27	29.01	144	43	Peak
2462	99.06	-	-	90.82	32.98	4.27	29.01	144	43	Average
2483.5	65.07	-8.93	74	56.77	33.01	4.29	29	141	42	Peak
2483.5	50.86	-3.14	54	42.56	33.01	4.29	29	141	42	Average

Test Mode :	Mode 6	**Temperature :**	18~20℃
Test Channel :	11	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
36.766	18.78	-21.22	40	34.42	14.19	0.24	30.07	-	-	Peak
62.871	22.1	-17.9	40	46.65	5.25	0.32	30.12	-	-	Peak
88.964	22.54	-20.96	43.5	43.53	8.61	0.39	29.99	-	-	Peak
108.647	23.83	-19.67	43.5	41.68	11.68	0.43	29.96	-	-	Peak
900.147	28.24	-17.76	46	35.97	20.45	1.3	29.48	-	-	Peak
942.131	33.48	-12.52	46	40.98	20.7	1.33	29.53	100	281	Peak
2352.56	52.7	-21.3	74	44.82	32.81	4.21	29.14	131	43	Peak
2352.56	42.45	-11.55	54	34.57	32.81	4.21	29.14	131	43	Average
2462	105.97	-	-	97.73	32.98	4.27	29.01	176	290	Peak
2462	94.99	-	-	86.75	32.98	4.27	29.01	176	290	Average
2483.5	63.03	-10.97	74	54.73	33.01	4.29	29	179	291	Peak
2483.5	49.65	-4.35	54	41.35	33.01	4.29	29	179	291	Average

Test Mode :	Mode 7	**Temperature :**	18~20℃
Test Channel :	01	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
34.639	17.22	-22.78	40	31.98	15.1	0.23	30.09	-	-	Peak
93.113	22.15	-21.35	43.5	42.22	9.51	0.4	29.98	-	-	Peak
109.029	22.27	-21.23	43.5	40.12	11.68	0.43	29.96	-	-	Peak
215.268	23.44	-20.06	43.5	43.05	9.77	0.61	29.99	-	-	Peak
900.147	28.49	-17.51	46	36.22	20.45	1.3	29.48	-	-	Peak
942.131	32.66	-13.34	46	40.16	20.7	1.33	29.53	100	285	Peak
2390	57.5	-16.5	74	49.49	32.86	4.23	29.08	147	42	Peak
2390	49.81	-4.19	54	41.8	32.86	4.23	29.08	147	42	Average
2412	98.67	-	-	90.59	32.89	4.24	29.05	148	39	Average
2412	109.68	-	-	101.6	32.89	4.24	29.05	148	39	Peak
2493.35	53.28	-20.72	74	44.92	33.05	4.3	28.99	200	337	Peak
2493.35	44.03	-9.97	54	35.67	33.05	4.3	28.99	200	337	Average

Test Mode :	Mode 7	**Temperature :**	18~20℃
Test Channel :	01	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
36.127	20.21	-19.79	40	35.41	14.65	0.23	30.08	-	-	Peak
63.092	22.36	-17.64	40	46.91	5.25	0.32	30.12	-	-	Peak
88.964	22.4	-21.1	43.5	43.39	8.61	0.39	29.99	-	-	Peak
109.029	22.72	-20.78	43.5	40.57	11.68	0.43	29.96	-	-	Peak
900.147	28.11	-17.89	46	35.84	20.45	1.3	29.48	-	-	Peak
942.131	32.08	-13.92	46	39.58	20.7	1.33	29.53	100	316	Peak
2390	54.25	-19.75	74	46.24	32.86	4.23	29.08	100	372	Peak
2390	43.14	-10.86	54	35.13	32.86	4.23	29.08	100	372	Average
2412	100.97	-	-	92.89	32.89	4.24	29.05	100	269	Peak
2412	89.62	-	-	81.54	32.89	4.24	29.05	100	269	Average
2497.53	52.47	-21.53	74	44.11	33.05	4.3	28.99	114	37	Peak
2497.53	44.32	-9.68	54	35.96	33.05	4.3	28.99	114	37	Average

Test Mode :	Mode 8	**Temperature :**	18~20℃
Test Channel :	06	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
90.855	22.47	-21.03	43.5	42.95	9.12	0.39	29.99	-	-	Peak
109.412	22.17	-21.33	43.5	39.91	11.8	0.43	29.97	-	-	Peak
144.335	18.71	-24.79	43.5	37.75	10.45	0.5	29.99	-	-	Peak
212.27	25	-18.5	43.5	44.78	9.6	0.61	29.99	-	-	Peak
326.74	22.33	-23.67	46	37.65	13.84	0.78	29.94	-	-	Peak
942.131	32.2	-13.8	46	39.7	20.7	1.33	29.53	200	151	Peak
2374.22	52.46	-21.54	74	44.51	32.83	4.22	29.1	152	318	Peak
2374.22	43.96	-10.04	54	36.01	32.83	4.22	29.1	152	318	Average
2437	108.28	-	-	100.11	32.95	4.25	29.03	116	40	Peak
2437	97.32	-	-	89.15	32.95	4.25	29.03	116	40	Average
2498.1	52.52	-21.48	74	44.16	33.05	4.3	28.99	110	360	Peak
2498.1	43.64	-10.36	54	35.28	33.05	4.3	28.99	110	360	Average

Test Mode :	Mode 8	**Temperature :**	18~20℃
Test Channel :	06	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
37.285	18.27	-21.73	40	34.39	13.7	0.24	30.06	-	-	Peak
65.114	17.22	-22.78	40	41.81	5.2	0.32	30.11	-	-	Peak
88.964	22.33	-21.17	43.5	43.32	8.61	0.39	29.99	-	-	Peak
108.267	19.75	-23.75	43.5	37.6	11.68	0.43	29.96	-	-	Peak
588.905	21.55	-24.45	46	31.54	18.58	1.06	29.63	-	-	Peak
942.131	32.05	-13.95	46	39.55	20.7	1.33	29.53	100	287	Peak
2361.49	52.36	-21.64	74	44.46	32.81	4.21	29.12	100	36	Peak
2361.49	43.54	-10.46	54	35.64	32.81	4.21	29.12	100	36	Average
2437	104.54	-	-	96.37	32.95	4.25	29.03	179	294	Peak
2437	93.59	-	-	85.42	32.95	4.25	29.03	179	294	Average
2483.66	52.65	-21.35	74	44.35	33.01	4.29	29	157	216	Peak
2483.66	43.35	-10.65	54	35.05	33.01	4.29	29	157	216	Average

Test Mode :	Mode 9	**Temperature :**	18~20℃
Test Channel :	11	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
92.787	23.18	-20.32	43.5	43.25	9.51	0.4	29.98	-	-	Peak
112.131	22.32	-21.18	43.5	40.05	11.8	0.44	29.97	-	-	Peak
215.268	24.38	-19.12	43.5	43.99	9.77	0.61	29.99	-	-	Peak
321.061	21.59	-24.41	46	37.19	13.59	0.76	29.95	-	-	Peak
900.147	28.3	-17.7	46	36.03	20.45	1.3	29.48	-	-	Peak
942.131	32.37	-13.63	46	39.87	20.7	1.33	29.53	100	89	Peak
2375.74	52.92	-21.08	74	44.97	32.83	4.22	29.1	125	357	Peak
2375.74	43.18	-10.82	54	35.23	32.83	4.22	29.1	125	357	Average
2462	109.3	-	-	101.06	32.98	4.27	29.01	114	42	Peak
2462	98.19	-	-	89.95	32.98	4.27	29.01	114	42	Average
2483.5	67.14	-6.86	74	58.84	33.01	4.29	29	139	40	Peak
2483.5	50.63	-3.37	54	42.33	33.01	4.29	29	139	40	Average

Test Mode :	Mode 9	**Temperature :**	18~20℃
Test Channel :	11	**Relative Humidity :**	41~42%
Test Engineer :	Jack Jia	**Polarization :**	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
42.9	20.99	-19.01	40	40.34	10.48	0.26	30.09	-	-	Peak
63.092	21.87	-18.13	40	46.42	5.25	0.32	30.12	-	-	Peak
88.964	23.38	-20.12	43.5	44.37	8.61	0.39	29.99	-	-	Peak
108.647	22.12	-21.38	43.5	39.97	11.68	0.43	29.96	-	-	Peak
900.147	28.5	-17.5	46	36.23	20.45	1.3	29.48	-	-	Peak
942.131	31.83	-14.17	46	39.33	20.7	1.33	29.53	100	312	Peak
2356.55	53.2	-20.8	74	45.31	32.81	4.21	29.13	200	360	Peak
2356.55	44.55	-9.45	54	36.66	32.81	4.21	29.13	200	360	Average
2462	106.05	-	-	97.81	32.98	4.27	29.01	176	306	Peak
2462	95.62	-	-	87.38	32.98	4.27	29.01	176	306	Average
2483.5	65.26	-8.74	74	56.96	33.01	4.29	29	179	309	Peak
2483.5	49.73	-4.27	54	41.43	33.01	4.29	29	179	309	Average

3.8 Antenna Requirements

3.8.1 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.

3.8.2 Antenna Connected Construction

The antennas type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement.

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	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Sep. 04, 2012 ~ Oct. 12, 2012	Dec. 29, 2012	Conducted (TH01-KS)
Power Meter	Agilent	E4416A	MY45101555	N/A	Aug. 22, 2012	Sep. 04, 2012 ~ Oct. 12, 2012	Aug. 21, 2013	Conducted (TH01-KS)
Power Sensor	Agilent	E9327A	MY44421198	N/A	Aug. 22, 2012	Sep. 04, 2012 ~ Oct. 12, 2012	Aug. 21, 2013	Conducted (TH01-KS)
DC Power Supply	GW INSTEK	GPS-3030 D	E1884515	N/A	Aug. 22, 2012	Sep. 04, 2012 ~ Oct. 12, 2012	Aug. 21, 2013	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 01, 2012	Sep. 10, 2012	May 31, 2013	Conduction (CO01-KS)
LISN	MessTec	AN3016	060103	9kHz~30MHz	Dec. 30, 2011	Sep. 10, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	060105	9kHz~30MHz	Dec. 30, 2011	Sep. 10, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 16, 2011	Sep. 10, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	116456	Full-Band	Sep. 20, 2011	Sep. 10, 2012	Sep. 19, 2012	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	Sep. 13, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Sep. 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	Sep. 13, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	Sep. 13, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060029	9KHz~2GHz	Jan. 06, 2012	Sep. 13, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060004	30MHz~2GHz	Dec. 30, 2011	Sep. 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	Sep. 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1G-18GHz	Nov. 07, 2011	Sep. 13, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15-40GHz	Oct. 11, 2011	Sep. 13, 2012	Oct. 10, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Sep. 13, 2012	Jul. 02, 2014	Radiation (03CH01-KS)

5 Uncertainty of Evaluation

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

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
Combined Standard Uncertainty Uc(y)	**1.13**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**		

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

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty Uc(y)	**1.27**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**		

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

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1 = 0.197 Antenna VSWR Γ2 = 0.194 Uncertainty = 20Log(1-Γ1*Γ2)	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty Uc(y)	**2.36**				
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**				