FCC RF Test Report

APPLICANT	:	HTC Corporation
EQUIPMENT	:	Smartphone
MODEL NAME	:	PK76310
FCC ID	:	NM8PK76310
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Feb. 17, 2012 and completely tested on Mar. 16, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 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
FR221711B	Rev. 01	Initial issue of report	Mar. 23, 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	-
3.1	-	Gen 4.6.1	99% Bandwidth	-	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 7.70 dB at 0.190 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 5.13 dB at 2388.850 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

HTC Corporation
No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan

1.2 Manufacturer

HTC Corporation
No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Smartphone
Model Name	PK76310
FCC ID	NM8PK76310
Sample 1	EUT with LCM1, Camera 1, and Battery 1
Sample 2	EUT with LCM2, Camera 2, and Battery 2
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 : 18.29 dBm (0.0675 W) 802.11g : 17.52 dBm (0.0565 W) 802.11g/n (BW 20MHz) : 17.58 dBm (0.0573 W)
Duty Cycle	802.11b : 100.00% 802.11g : 92.99% 802.11g/n (BW 20MHz) : 93.77%
Antenna Type	PIFA Antenna with gain 2.00 dBi
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. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH07-HY	722060/4086B-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 v01
- ANSI C63.4-2003
- 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.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	P20G	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Sony Ericsson	MW600	PY70DA2029	N/A	N/A

2 Test Configuration of Equipment Under Test

2.1 Pre-Scanned RF Power

Preliminary tests were performed in different data rate as below table and the highest power data rates (11b, 11g, 11g/n (BW 20MHz), 11g/n (BW 40MHz) modes) were chosen for full test in the following sections to demonstrate compliance to the FCC limit line.

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	18.29	18.17	18.13	17.68

2.4GHz 802.11g mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	17.52	17.49	17.47	17.39	17.37	17.28	16.88	16.84

2.4GHz 802.11g/n (BW 20MHz) mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	17.58	17.26	17.22	17.13	16.95	16.70	16.48	16.22

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	18.29	17.87	18.19	17.46	17.10	17.52

Band	2.4GHz 802.11g/n (BW 20MHz) RF Peak Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Peak Power	17.58	17.23	17.37

Remark:

The data rates of WLAN 802.11b/g/n were set in 1Mbps for 802.11b, 6Mbps for 802.11g and MCS0 for 802.11g/n (BW 20MHz) 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	15.75	15.63	15.93	11.49	11.23	11.45

Band	2.4GHz 802.11g/n (BW 20MHz) RF Peak Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Average Power	11.37	11.16	11.39

Remark:

1. The average power, which is used by the test method, AVG2, in DTS Meas. Guidance v01, 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 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.

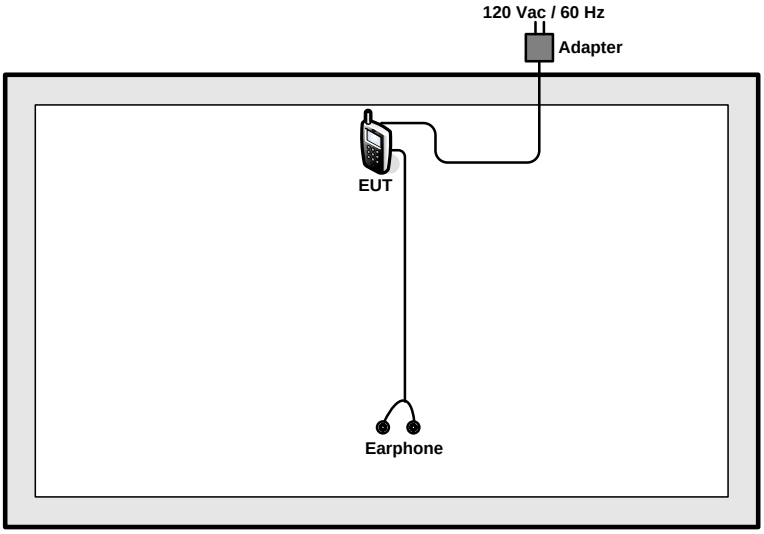
The following tables are showing the test modes as the worst cases (Z plane) and recorded in this report.

Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

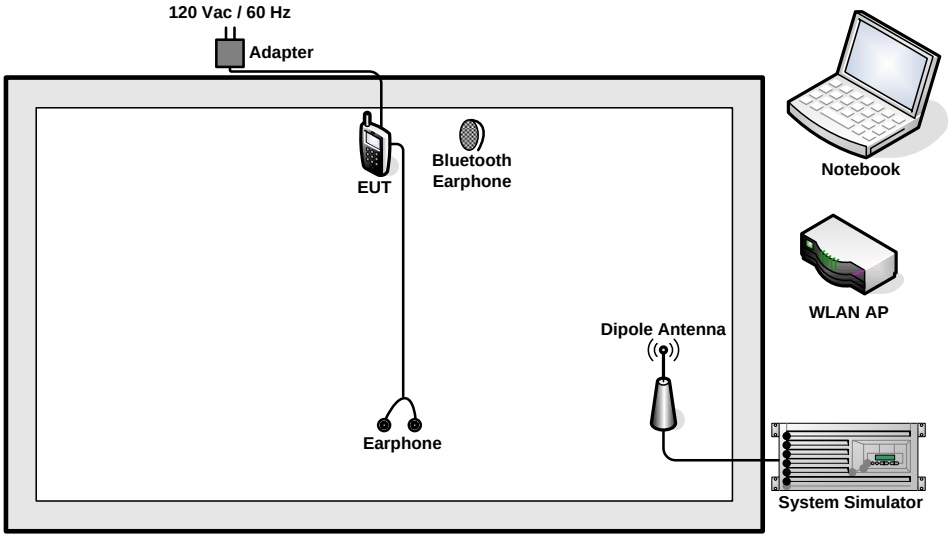
Test Cases	
Test Item	**802.11b (Modulation : DSSS)** **802.11g/n (Modulation : OFDM)**
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz for Sample 1 Mode 2 : 802.11b CH06_2437 MHz for Sample 1 Mode 3 : 802.11b CH11_2462 MHz for Sample 1 Mode 4: 802.11g_CH01_2412 MHz for Sample 1 Mode 5: 802.11g_CH06_2437 MHz for Sample 1 Mode 6: 802.11g_CH11_2462 MHz for Sample 1 Mode 7: 802.11g/n (BW 20M)_CH01_2412 MHz for Sample 1 Mode 8: 802.11g/n (BW 20M)_CH06_2437 MHz for Sample 1 Mode 9: 802.11g/n (BW 20M)_CH11_2462 MHz for Sample 1
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz for Sample 1 Mode 2 : 802.11b CH06_2437 MHz for Sample 1 Mode 3 : 802.11b CH11_2462 MHz for Sample 1 Mode 4 : 802.11b CH01_2412 MHz for Sample 2 Mode 5: 802.11g_CH01_2412 MHz for sample 1 Mode 6: 802.11g_CH06_2437 MHz for sample 1 Mode 7: 802.11g_CH11_2462 MHz for sample 1 Mode 8: 802.11g/n (BW 20M)_CH01_2412 MHz for Sample 1 Mode 9: 802.11g/n (BW 20M)_CH06_2437 MHz for Sample 1 Mode 10: 802.11g/n (BW 20M)_CH11_2462 MHz for Sample 1
AC Conducted Emission	Mode 1 : CDMA2000 BC1 Idle + Bluetooth Link + WLAN Link + MPEG4 + Earphone 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1 Mode 2 : CDMA2000 BC1 Idle + Bluetooth Link + WLAN Link + MPEG4 + Earphone 2 + USB Cable 2 (Charging from Adapter 2) for Sample 2
Remark: 1. The worst case of conducted emission is mode 1; only the test data of it was reported. 2. All the Radiation tests were performance with USB Cable 1, Adapter 1, and Earphone 1.	

2.5 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.6 RF Utility

The programmed RF utility ”HTC SSD Test Tool ==> WiFi Router” ==> “Remote 432X controller” is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

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 v01.
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.

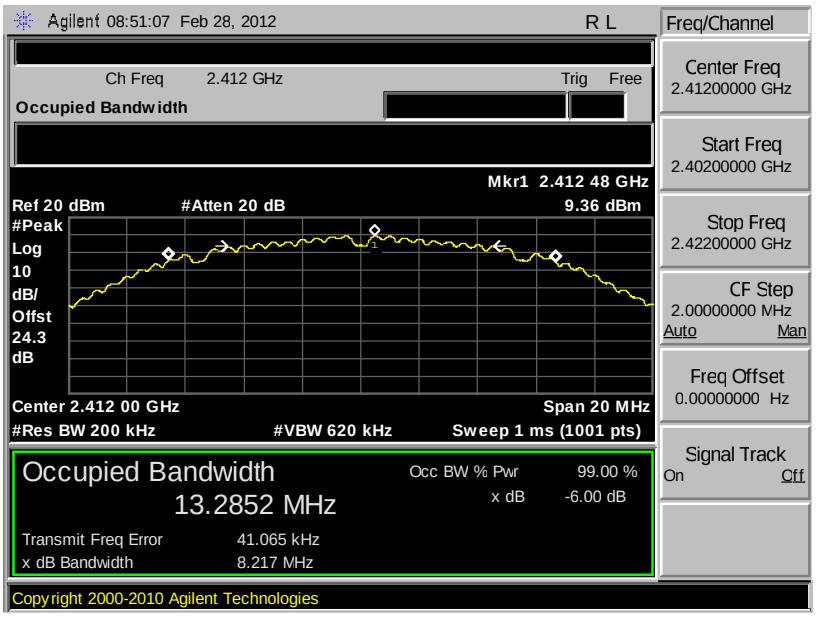
3.1.4 Test Setup

3.1.5 Test Result of 6dB Bandwidth

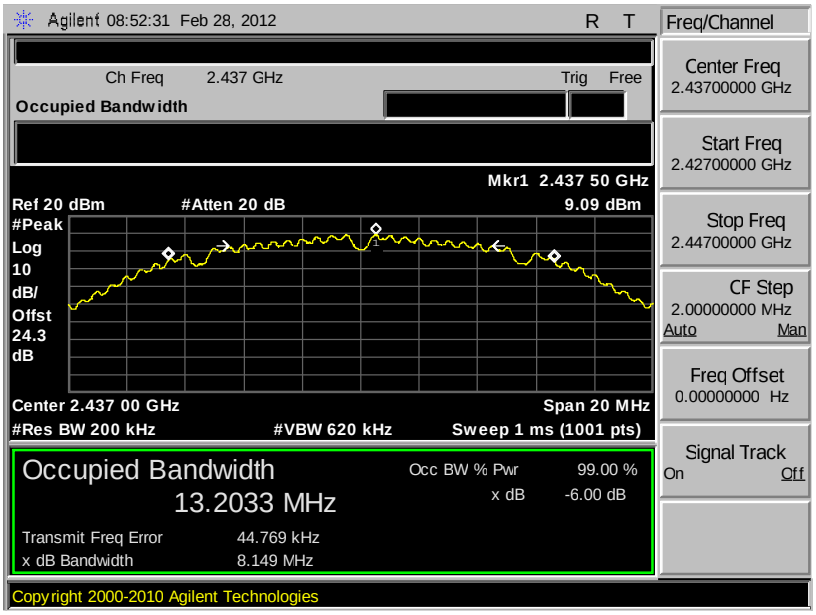
Test Mode :	Mode 1, 2, 3	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	8.217	0.5	Pass
06	2437	8.149	0.5	Pass
11	2462	8.137	0.5	Pass

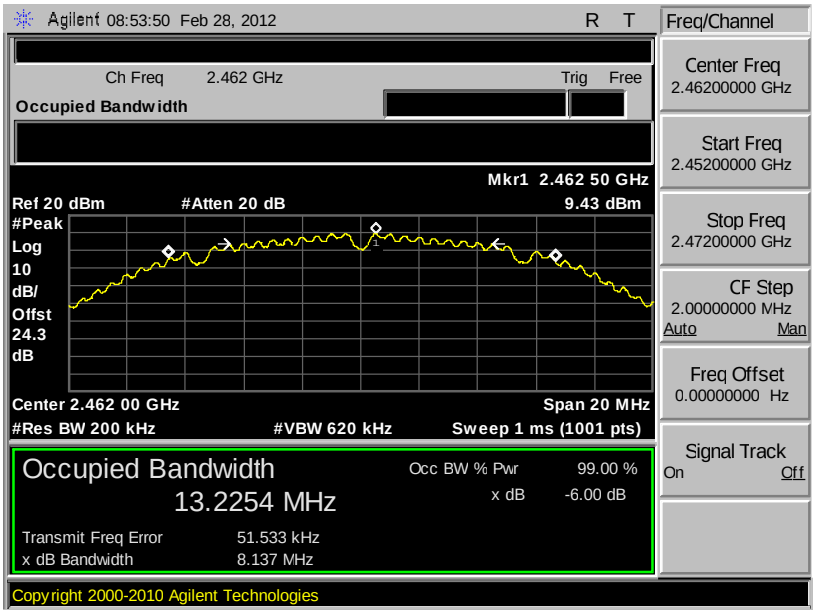
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



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



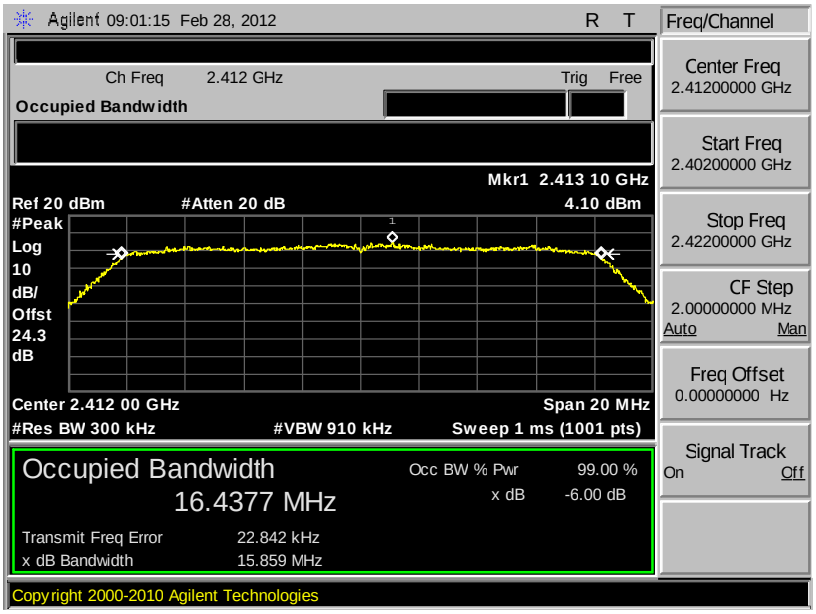
Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



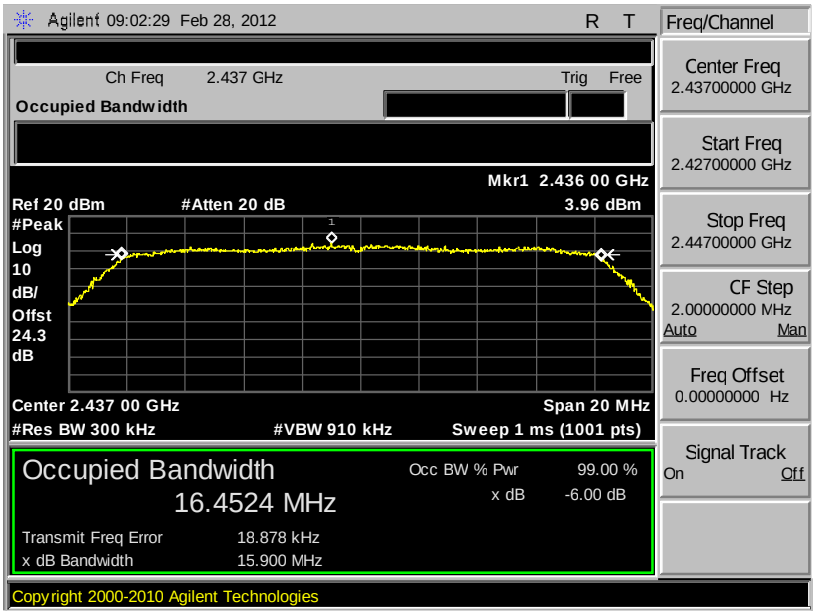
Test Mode :	Mode 4, 5, 6	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.859	0.5	Pass
06	2437	15.900	0.5	Pass
11	2462	15.934	0.5	Pass

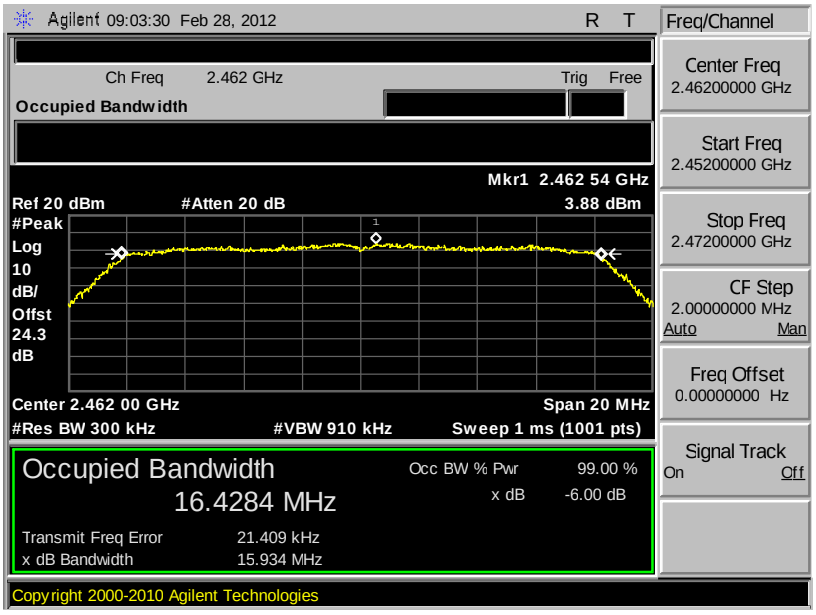
Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01



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



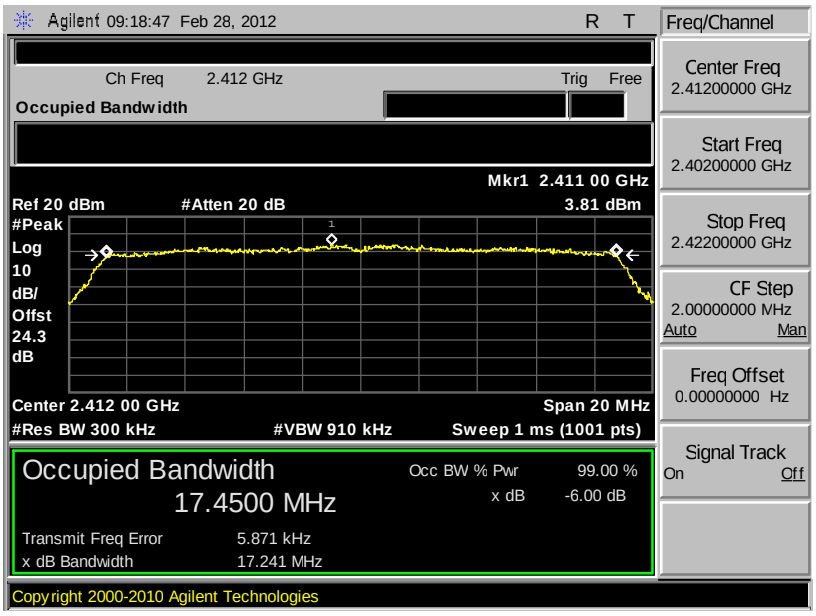
Mode 6 : 6 dB Bandwidth Plot on 802.11g Channel 11



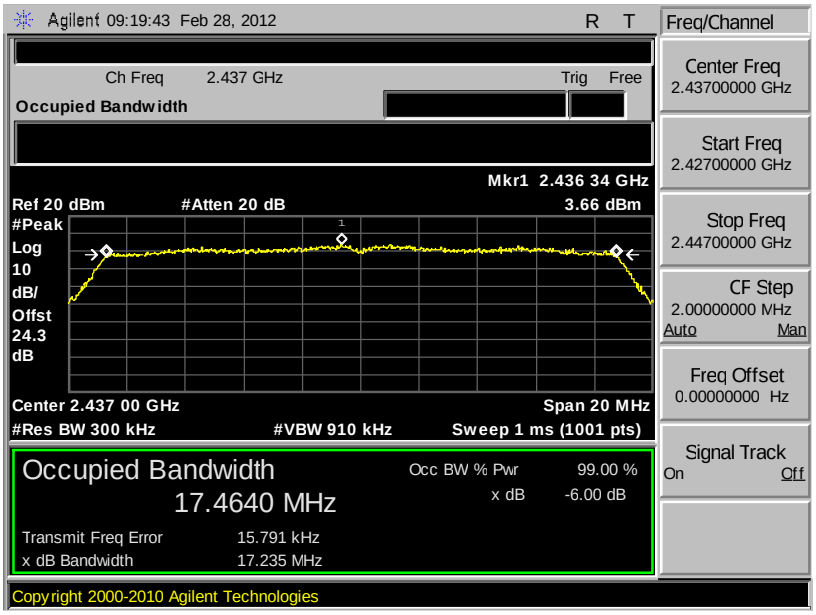
Test Mode :	Mode 7, 8, 9	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.241	0.5	Pass
06	2437	17.235	0.5	Pass
11	2462	16.548	0.5	Pass

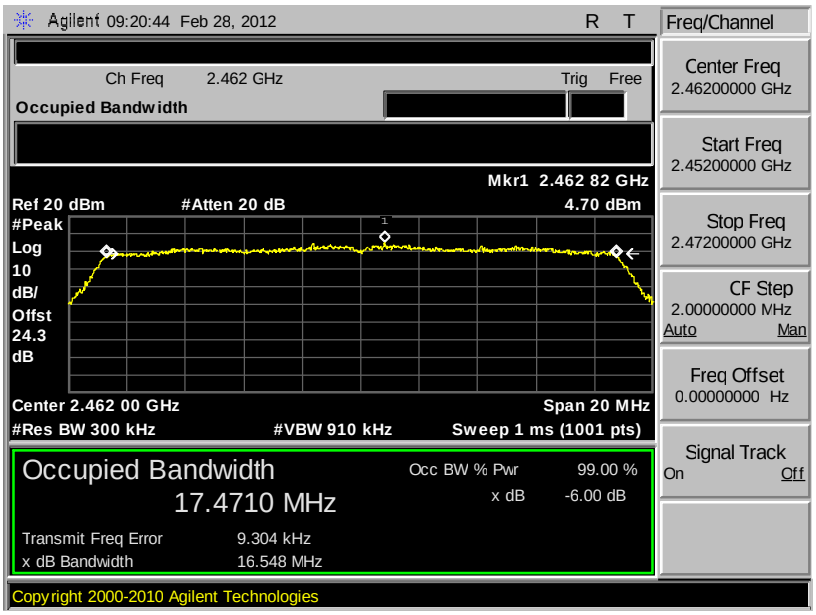
Mode 7 : 6 dB Bandwidth Plot on 802.11g/n(BW 20MHz) Channel 01



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



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



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.

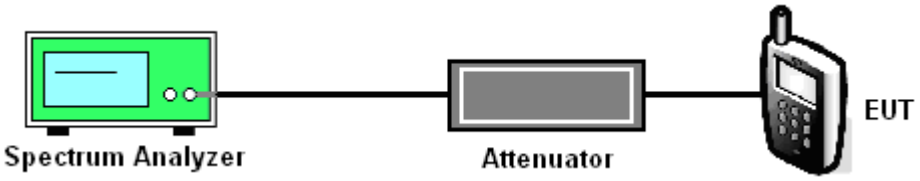
3.2.2 Measuring Instruments

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 v01.
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. The spectrum analyzer's settings are Resolution bandwidth (RBW) = 1MHz, Video bandwidth (VBW) = 3MHz, Peak Detector, auto sweep time, and the frequency span to a value that is 5-30 % greater than the EBW.
4. The spectrum analyzer's integrated band power measurement function is used to measure the peak power and the test results are demonstrated to compliance to the limit line as following plots.

3.2.4 Test Setup

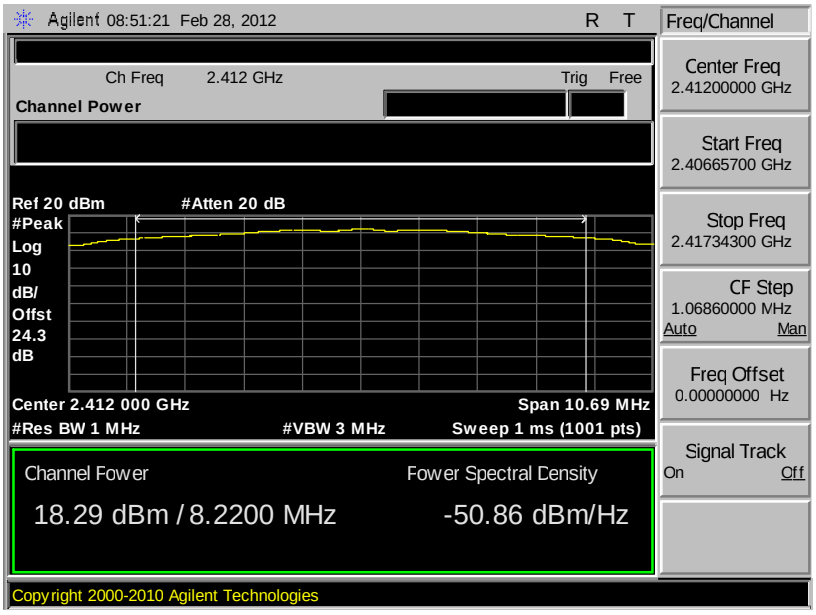


3.2.5 Test Result of Output Power

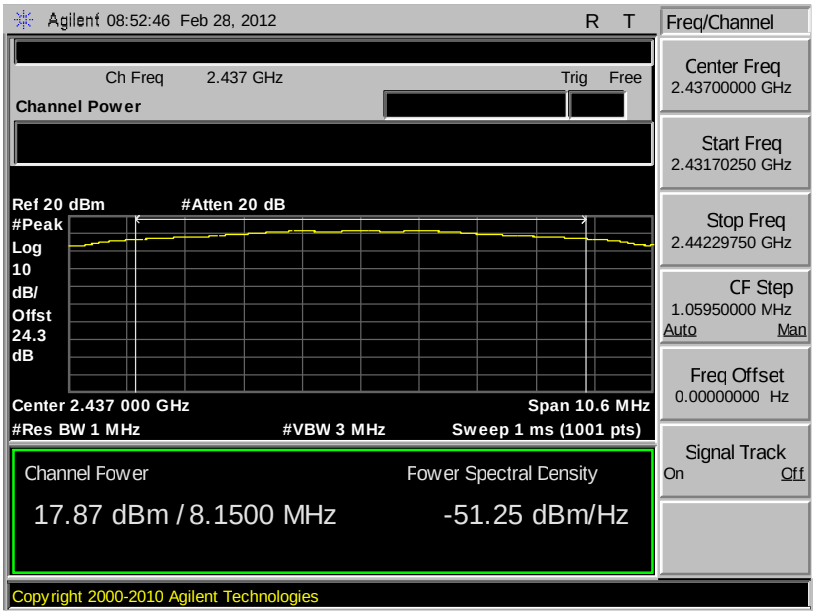
Test Mode :	Mode 1, 2, 3	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.29	30	Pass
06	2437	17.87	30	Pass
11	2462	18.19	30	Pass

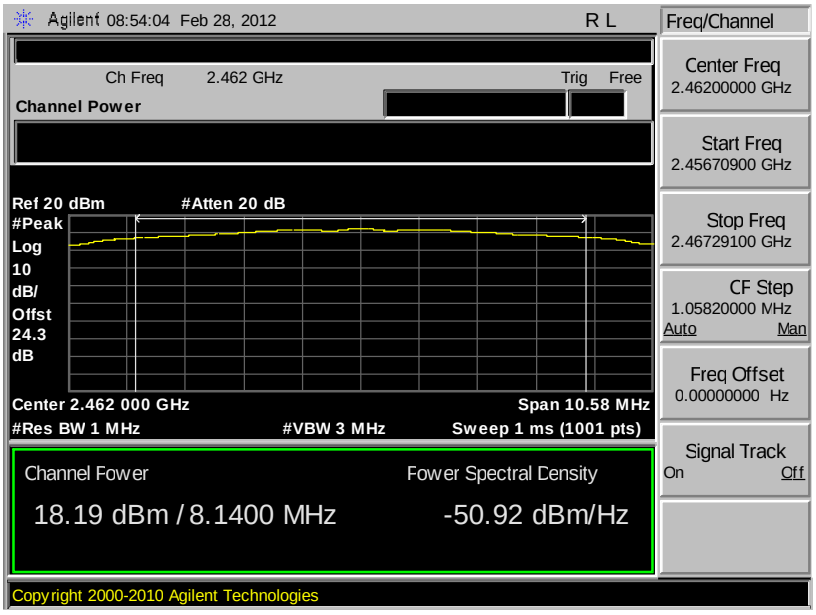
Mode 1 : Output Power Plot on 802.11b Channel 01



Mode 2 : Output Power Plot on 802.11b Channel 06



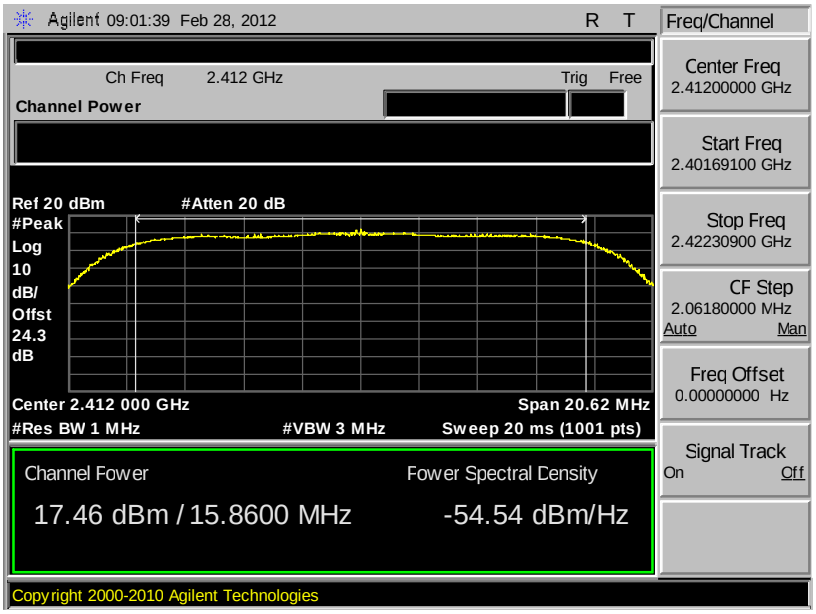
Mode 3 : Output Power Plot on 802.11b Channel 11



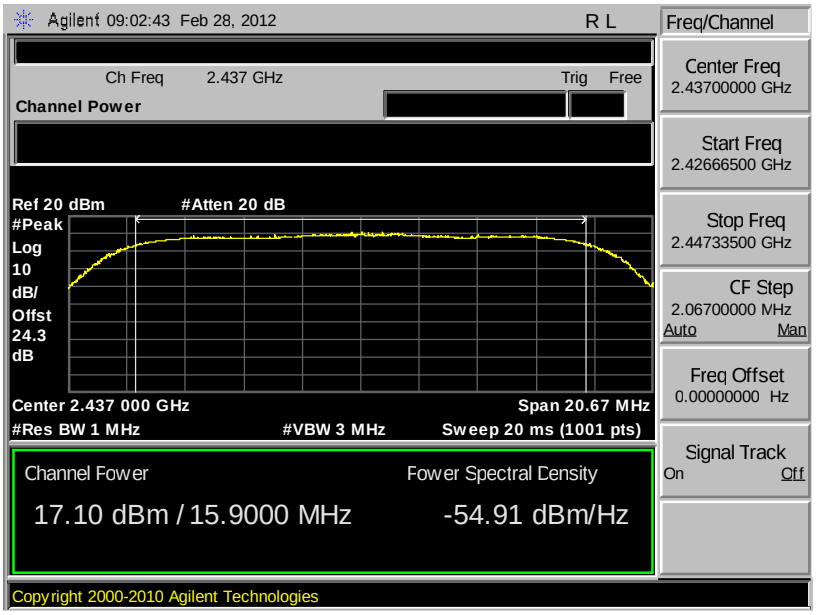
Test Mode :	Mode 4, 5, 6	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.46	30	Pass
06	2437	17.10	30	Pass
11	2462	17.52	30	Pass

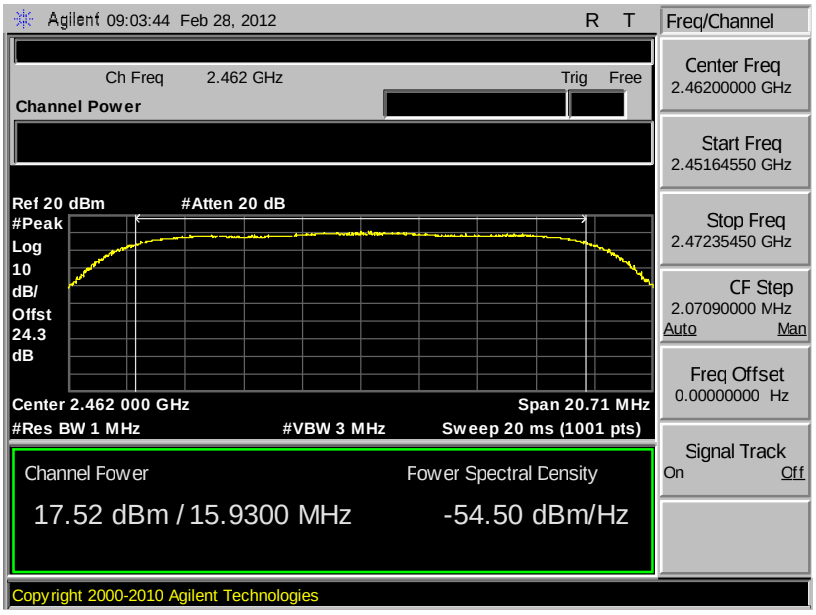
Mode 4 : Output Power Plot on 802.11g Channel 01



Mode 5 : Output Power Plot on 802.11g Channel 06



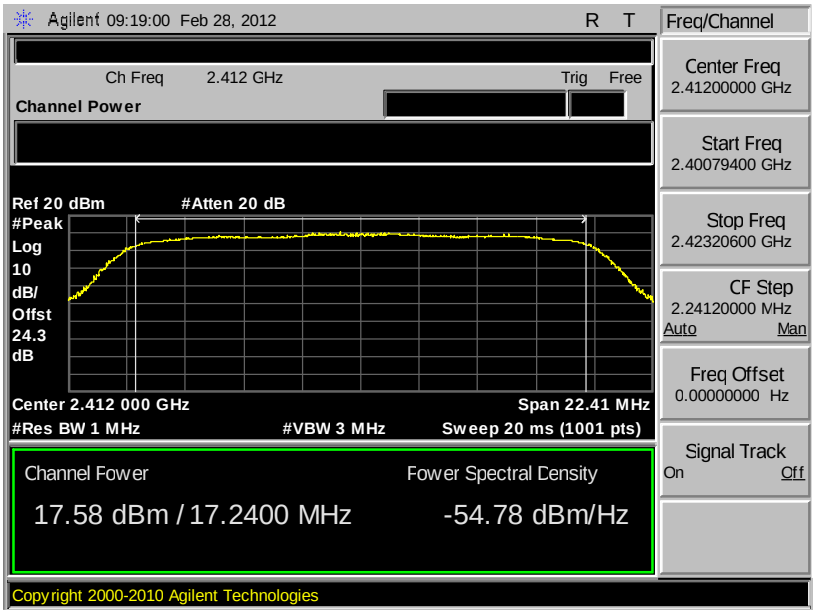
Mode 6 : Output Power Plot on 802.11g Channel 11



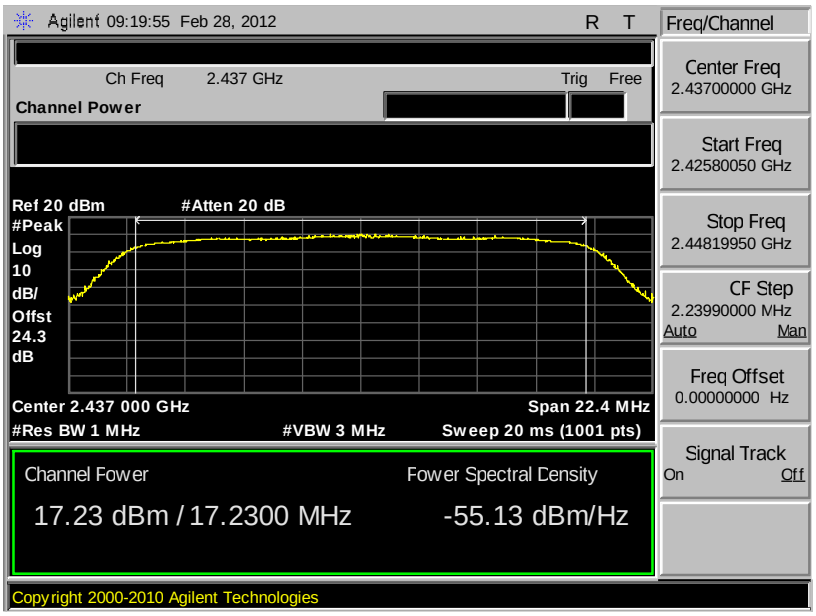
Test Mode :	Mode 7, 8, 9	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.58	30	Pass
06	2437	17.23	30	Pass
11	2462	17.37	30	Pass

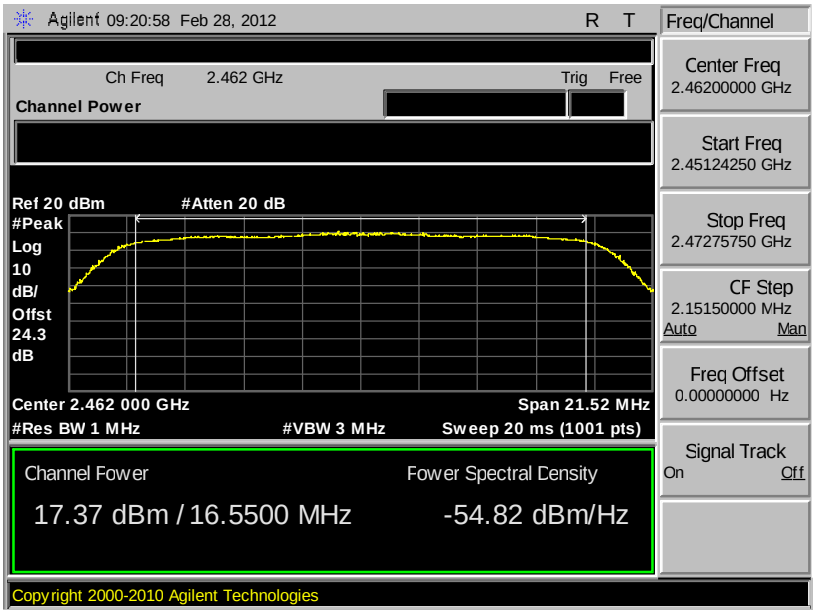
Mode 7: Output Power Plot on 802.11g/n (BW 20MHz) channel 01



Mode 8 : Output Power Plot on 802.11g/n (BW 20MHz) Channel 06



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



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

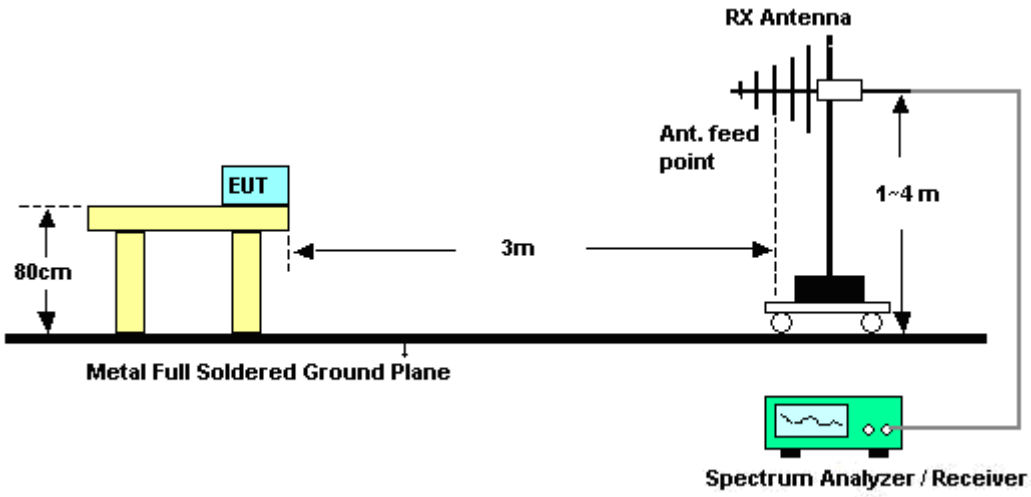
See list of measuring instruments of this test report.

3.3.3 Test Procedures

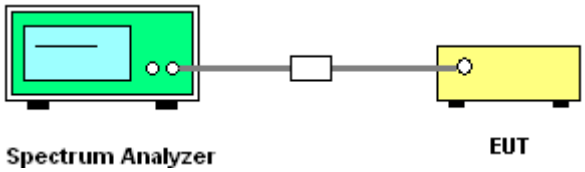
1. The testing follows the guidelines in ANSI C63.4-2003 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01.
2. Conducted emission test: Set RBW = 100 KHz, Video bandwidth (VBW) ≥ RBW. Out of the authorized frequency band emissions must be at least 20 dB lower 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 :	21~22℃
Test Band :	802.11b	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Gavin Wu

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
2388.85	58.93	-15.07	74	54.8	32.06	6.03	33.96	101	100	Peak
2388.85	48.87	-5.13	54	44.74	32.06	6.03	33.96	101	100	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
2388.85	55.75	-18.25	74	51.62	32.06	6.03	33.96	100	334	Peak
2388.85	46.46	-7.54	54	42.33	32.06	6.03	33.96	100	334	Average

Test Mode :	Mode 3	Temperature :	21~22℃
Test Band :	802.11b	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Gavin Wu

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
2484.61	57.15	-16.85	74	52.79	32.18	6.18	34	100	106	Peak
2484.61	47.11	-6.89	54	42.75	32.18	6.18	34	100	106	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
2488.98	53.55	-20.45	74	49.17	32.2	6.18	34	119	38	Peak
2488.98	42.9	-11.1	54	38.52	32.2	6.18	34	119	38	Average

Test Mode :	Mode 4	Temperature :	21~22℃
Test Band :	802.11b	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Gavin Wu

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
2388.85	54.5	-19.5	74	50.37	32.06	6.03	33.96	198	103	Peak
2388.85	46.53	-7.47	54	42.4	32.06	6.03	33.96	198	103	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
2389.61	55.43	-18.57	74	51.3	32.06	6.03	33.96	117	22	Peak
2389.61	47.33	-6.67	54	43.2	32.06	6.03	33.96	117	22	Average

Test Mode :	Mode 5	Temperature :	21~22℃
Test Band :	802.11g	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Gavin Wu

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
2382.58	59.97	-14.03	74	55.87	32.03	6.03	33.96	100	90	Peak
2382.58	43.03	-10.97	54	38.93	32.03	6.03	33.96	100	90	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
2389.99	57.95	-16.05	74	53.82	32.06	6.03	33.96	100	319	Peak
2389.99	41.67	-12.33	54	37.54	32.06	6.03	33.96	100	319	Average

Test Mode :	Mode 7	Temperature :	21~22℃
Test Band :	802.11g	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Gavin Wu

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
2489.17	63.35	-10.65	74	58.97	32.2	6.18	34	132	39	Peak
2489.17	46.79	-7.21	54	42.41	32.2	6.18	34	132	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
2486.7	60.73	-13.27	74	56.37	32.18	6.18	34	100	315	Peak
2486.7	44.77	-9.23	54	40.41	32.18	6.18	34	100	315	Average

Test Mode :	Mode 8	Temperature :	21~22℃
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Gavin Wu

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
2389.61	65.5	-8.5	74	61.37	32.06	6.03	33.96	103	98	Peak
2389.61	46.23	-7.77	54	42.1	32.06	6.03	33.96	103	98	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
2389.99	61.98	-12.02	74	57.85	32.06	6.03	33.96	100	319	Peak
2389.99	43.4	-10.6	54	39.27	32.06	6.03	33.96	100	319	Average

Test Mode :	Mode 10	Temperature :	21~22℃
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Gavin Wu

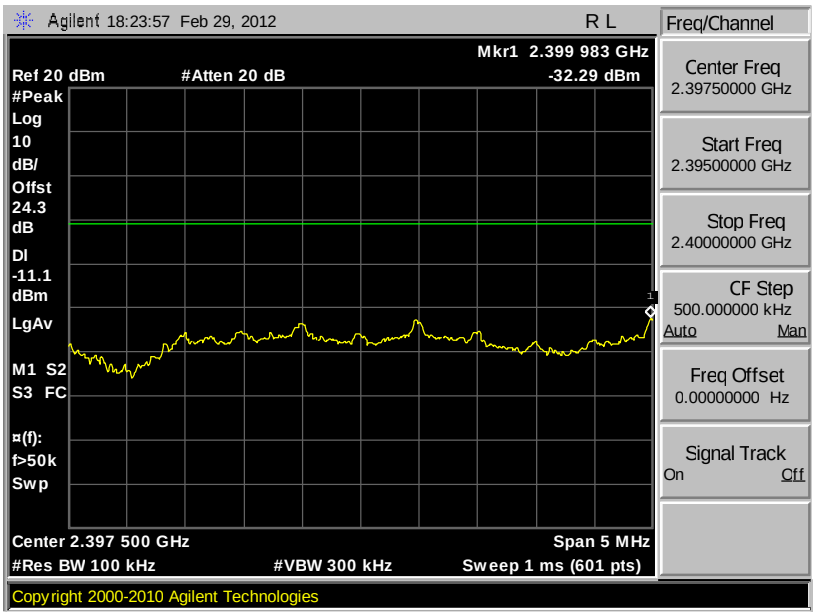
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.61	66.15	-7.85	74	61.79	32.18	6.18	34	100	95	Peak
2484.61	46.15	-7.85	54	41.79	32.18	6.18	34	100	95	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
2485.37	62.61	-11.39	74	58.25	32.18	6.18	34	130	82	Peak
2485.37	42.18	-11.82	54	37.82	32.18	6.18	34	130	82	Average

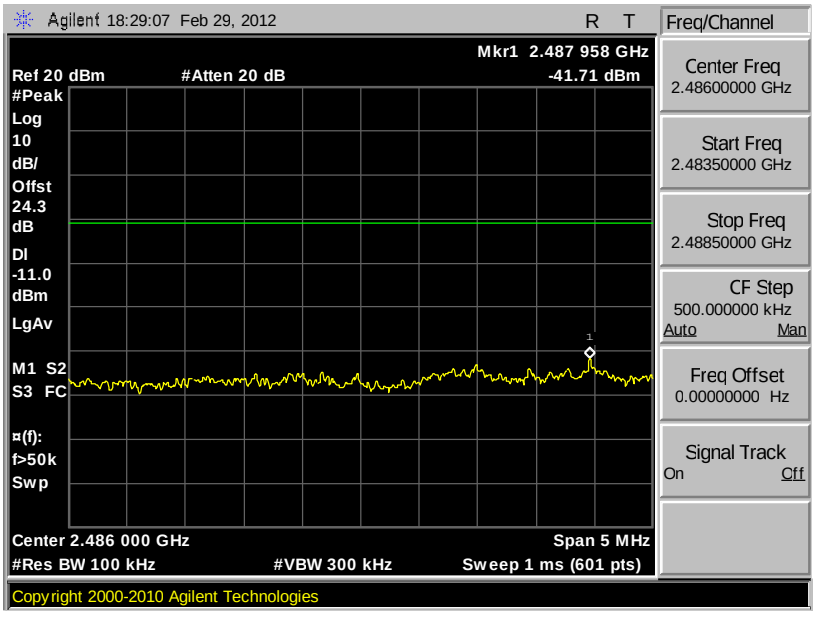
3.3.6 Test Plots of Conducted Band Edges

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

Low Band Edge Plot on 802.11b Channel 01

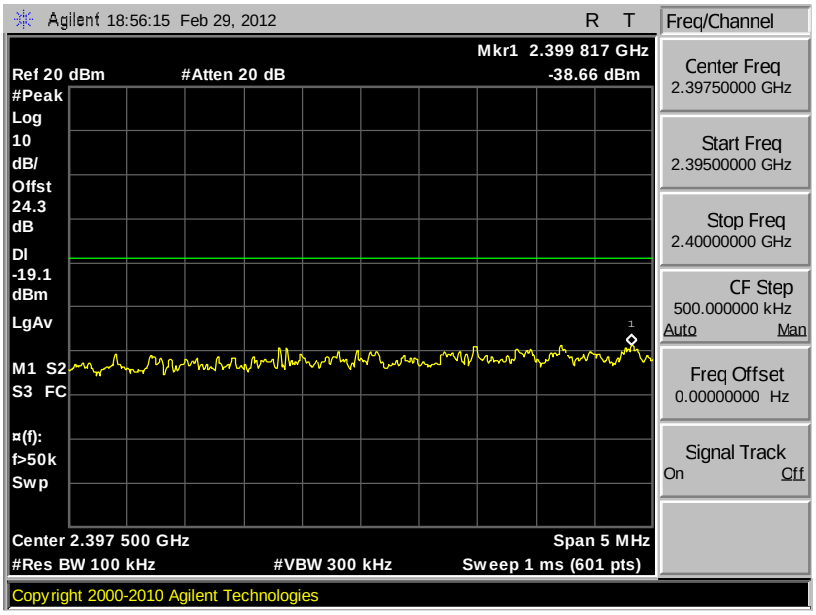


High Band Edge Plot on 802.11b Channel 11

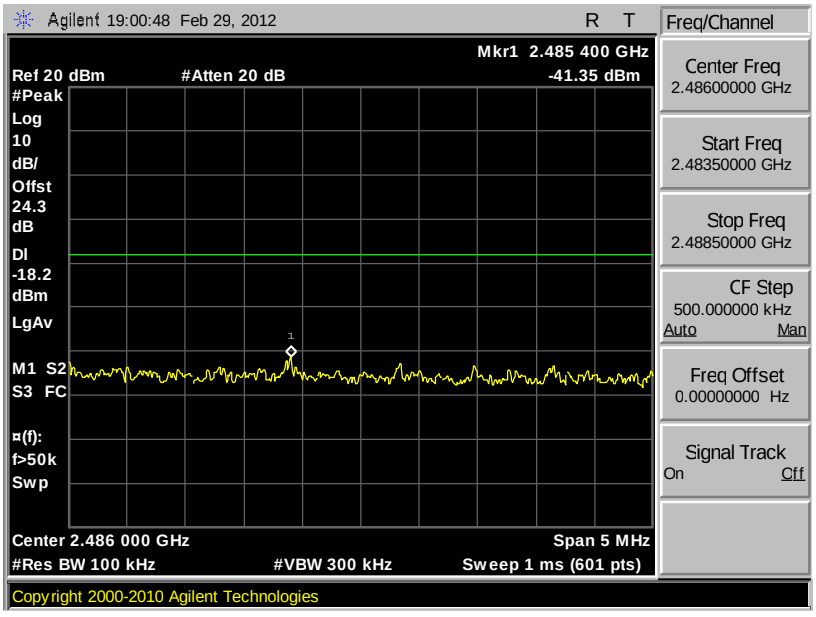


Test Mode :	Mode 4 and 6	Temperature :	24~26℃
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Pinkston Tu

Low Band Edge Plot on 802.11g Channel 01

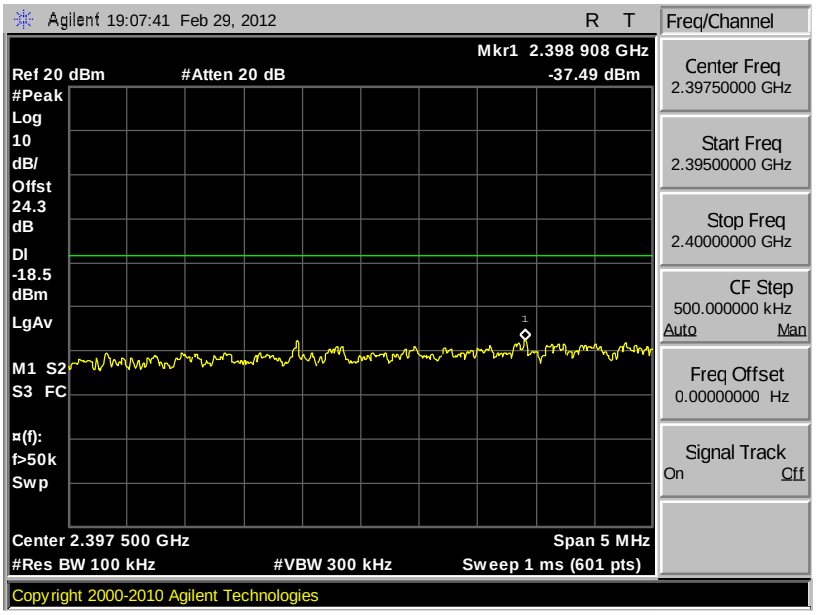


High Band Edge Plot on 802.11g Channel 11

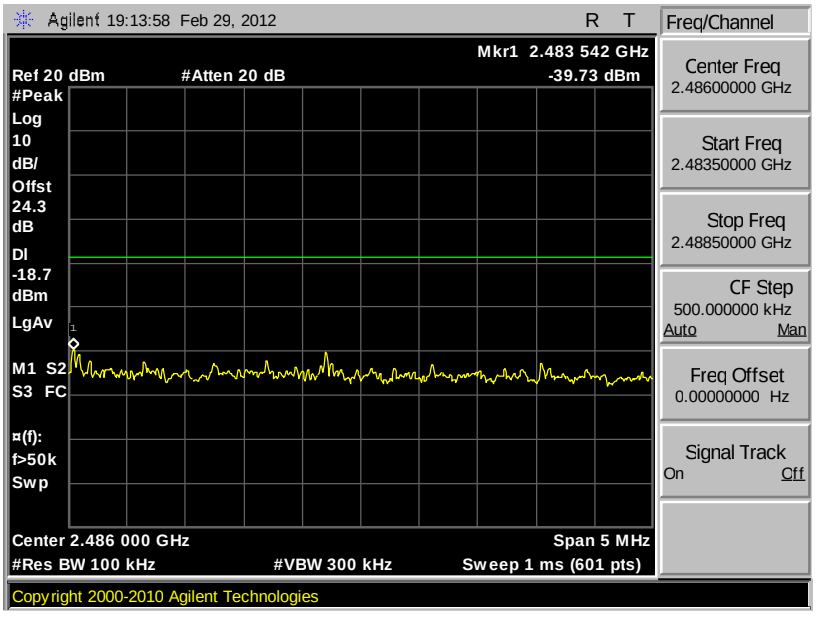


Test Mode :	Mode 7 and 9	**Temperature :**	24~26℃
Test Band :	802.11g/n (BW 20MHz)	**Relative Humidity :**	50~53%
Test Channel :	01 and 11	**Test Engineer :**	Pinkston Tu

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



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

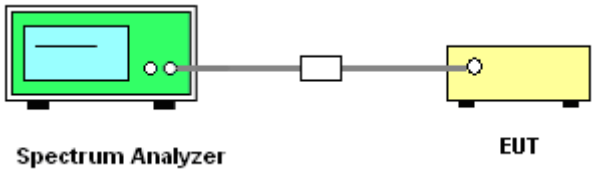
3.4.2 Measuring Instruments

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.

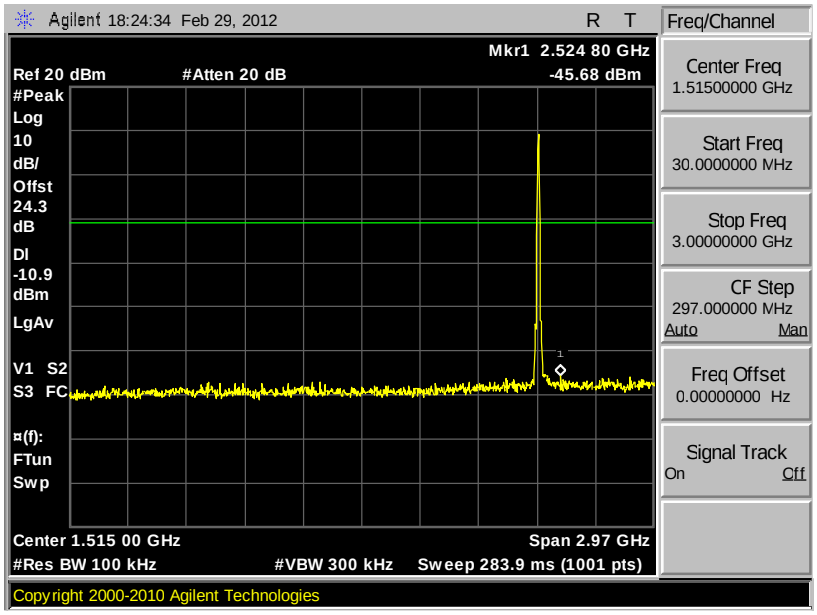
3.4.4 Test Setup



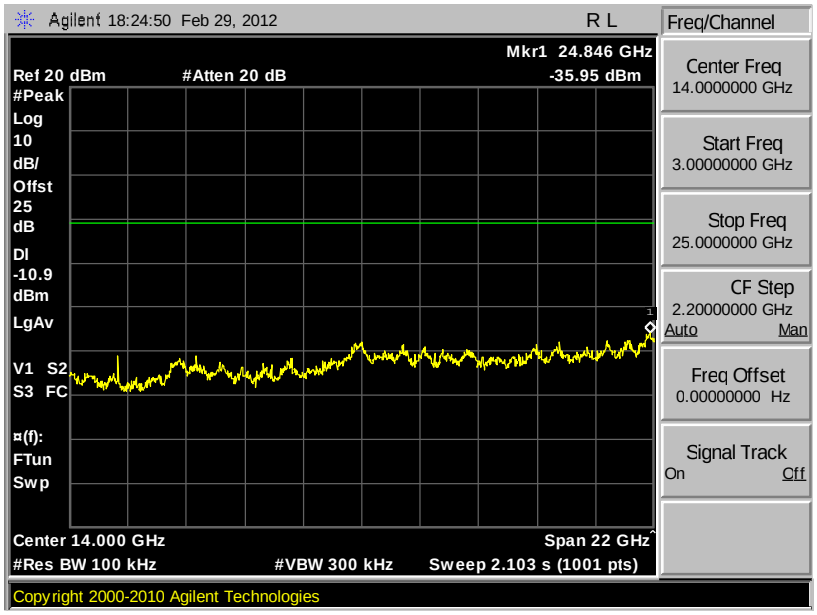
3.4.5 Test Plots of Spurious Emission

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

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

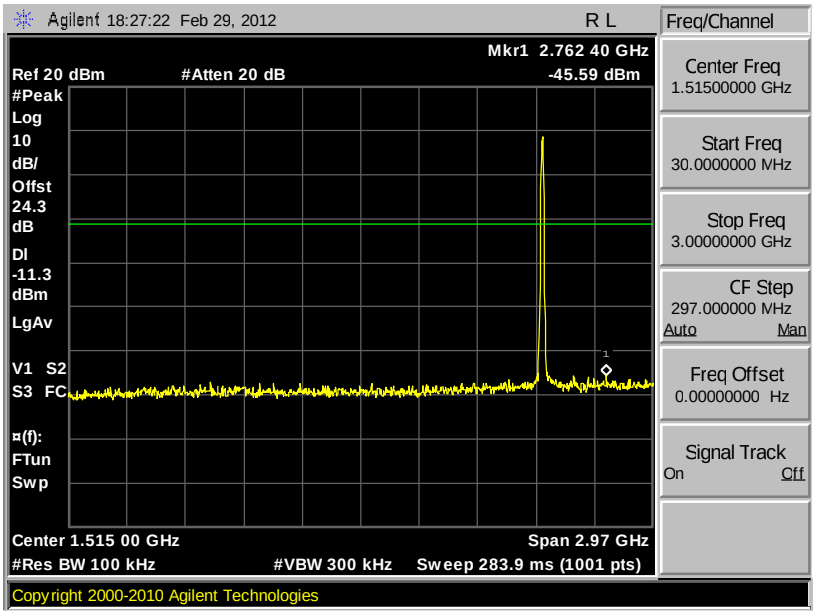


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

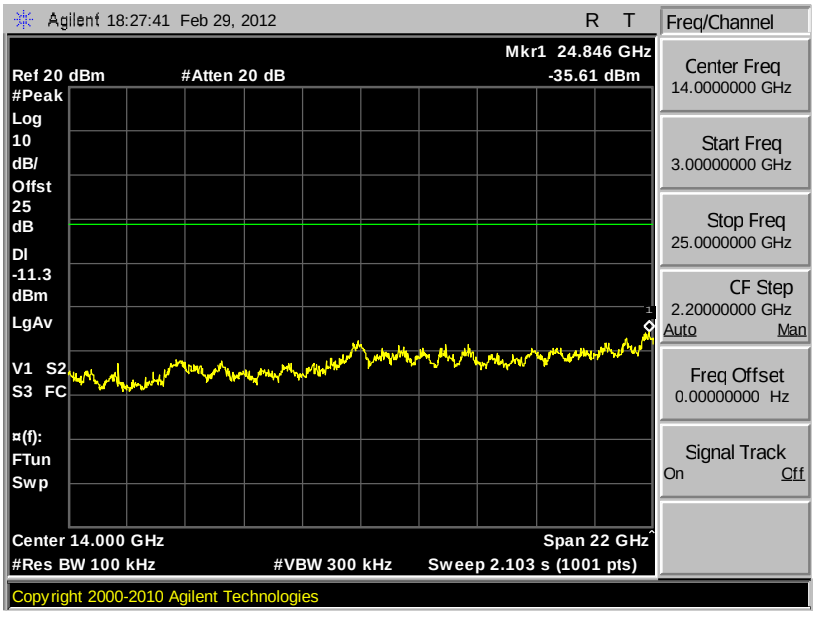


Test Mode :	Mode 2	Temperature :	24~26℃
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

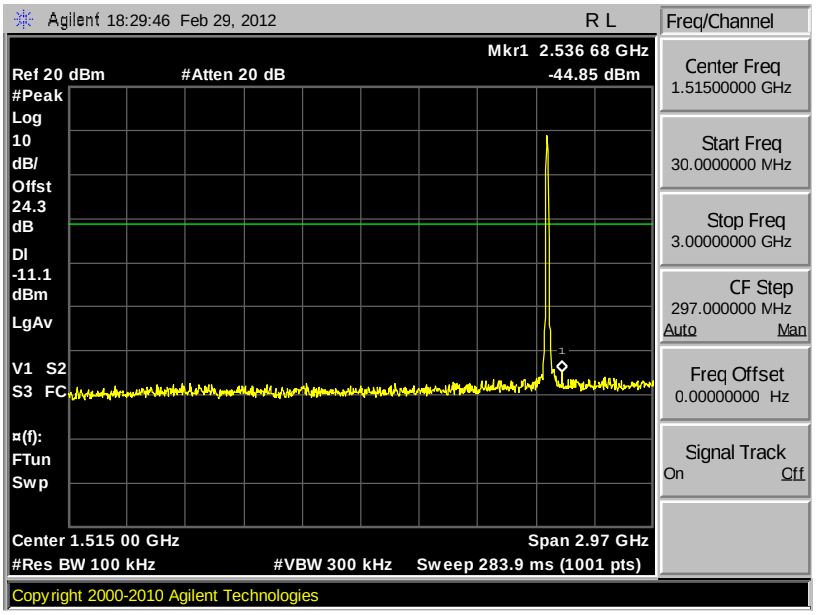


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

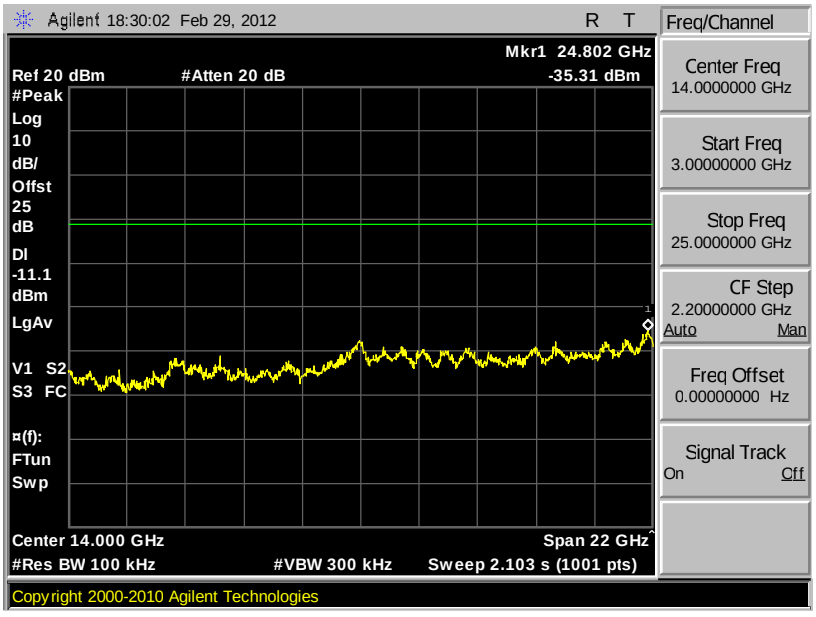


Test Mode :	Mode 3	Temperature :	24~26℃
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

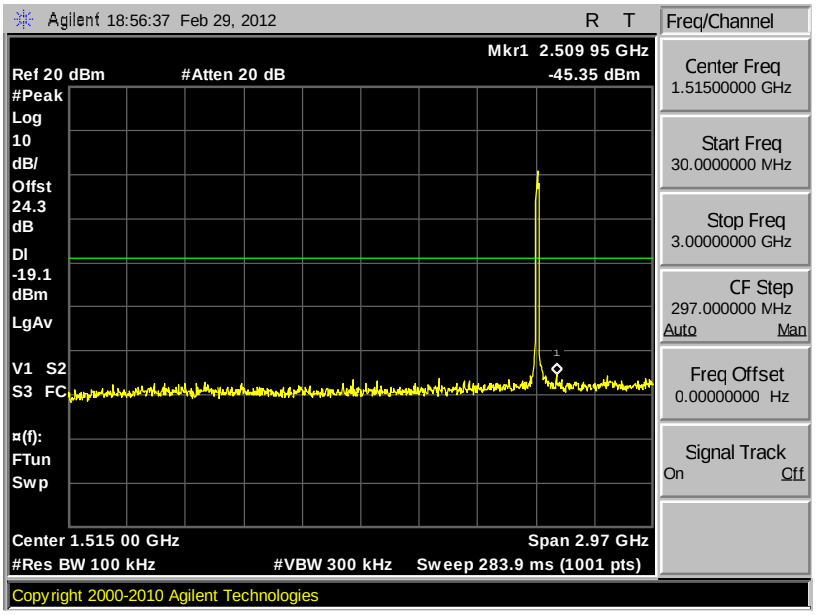


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

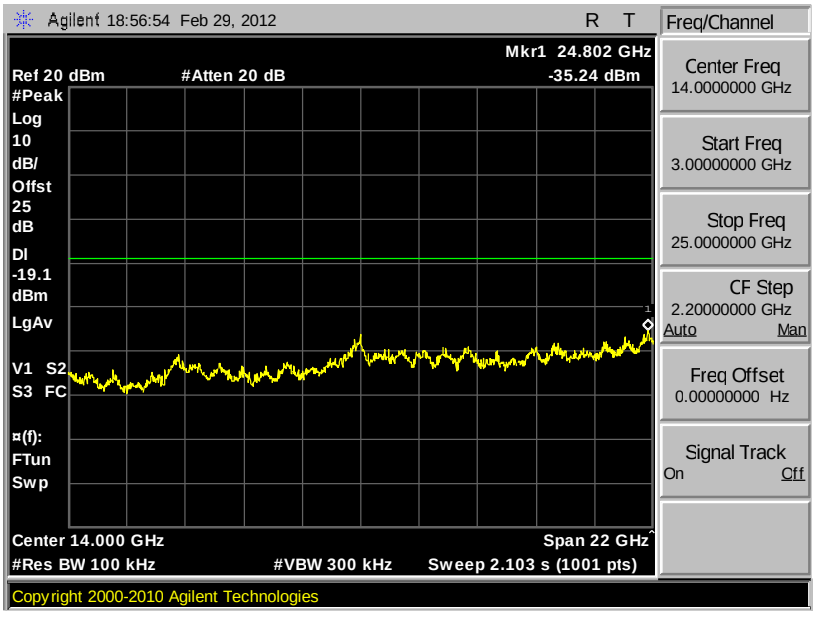


Test Mode :	Mode 4	Temperature :	24~26℃
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

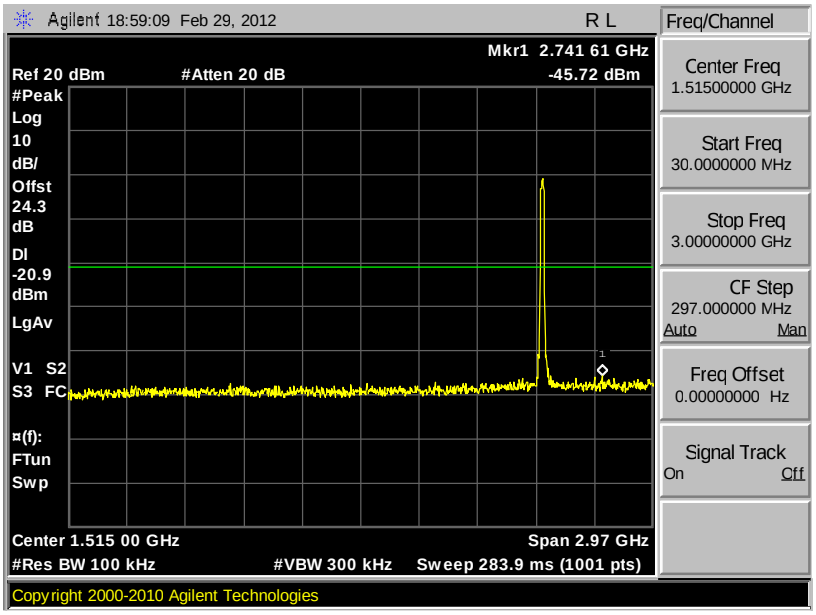


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

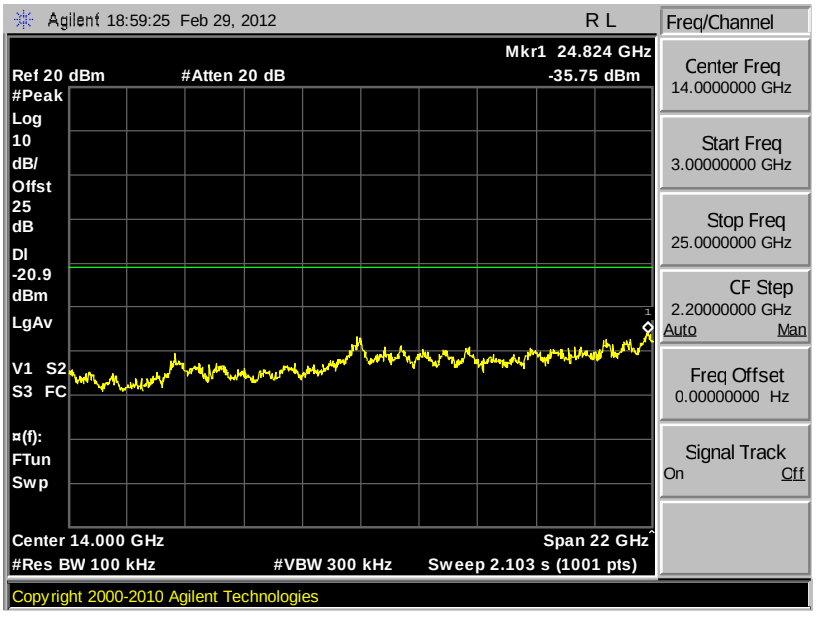


Test Mode :	Mode 5	Temperature :	24~26
Test Band :	802.11g	Relative Humidity :	50~53
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

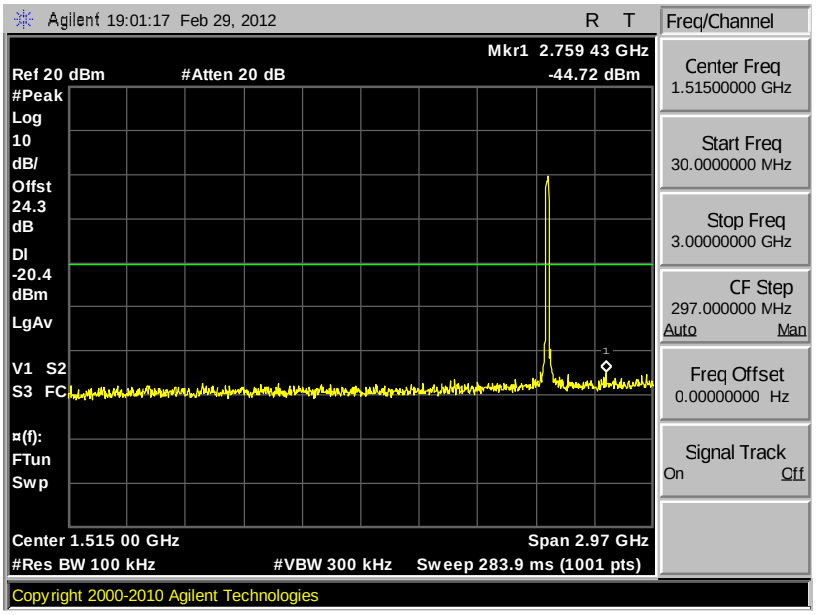


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

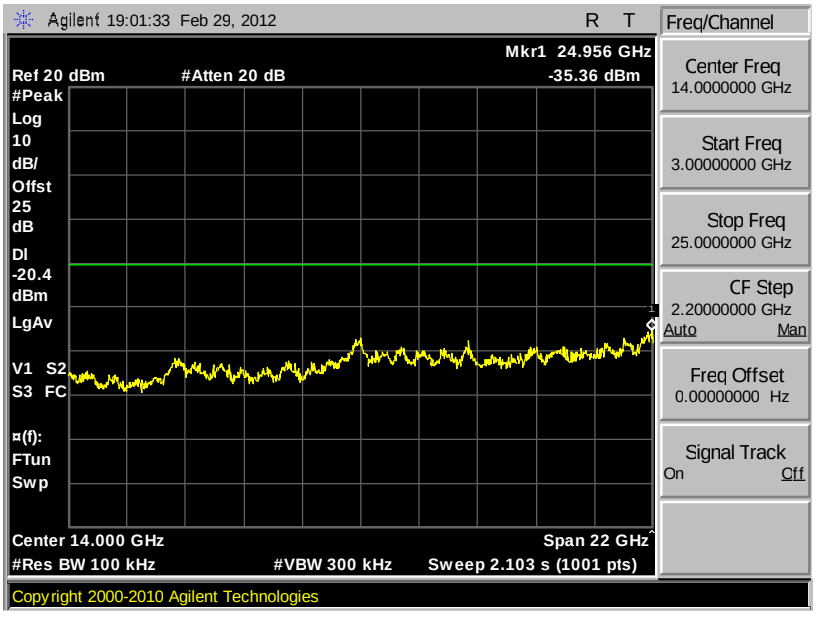


Test Mode :	Mode 6	Temperature :	24~26℃
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

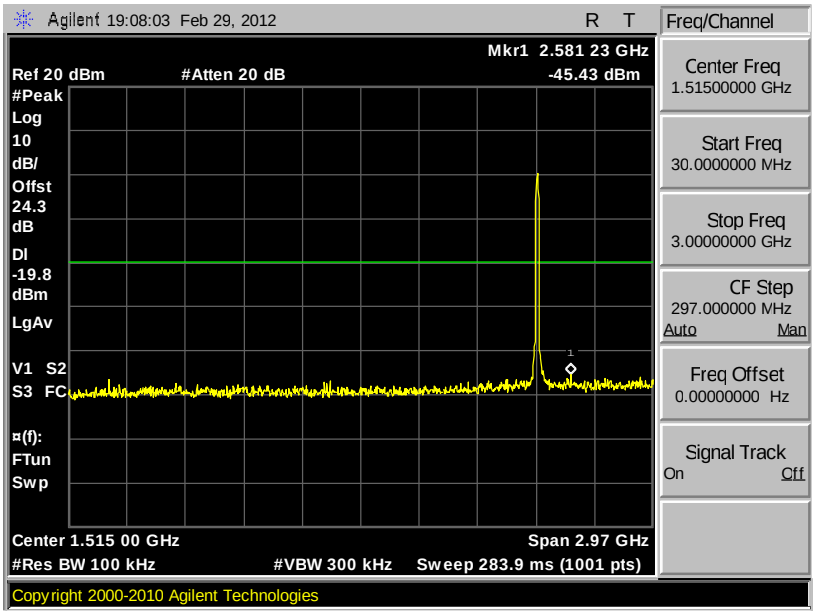


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

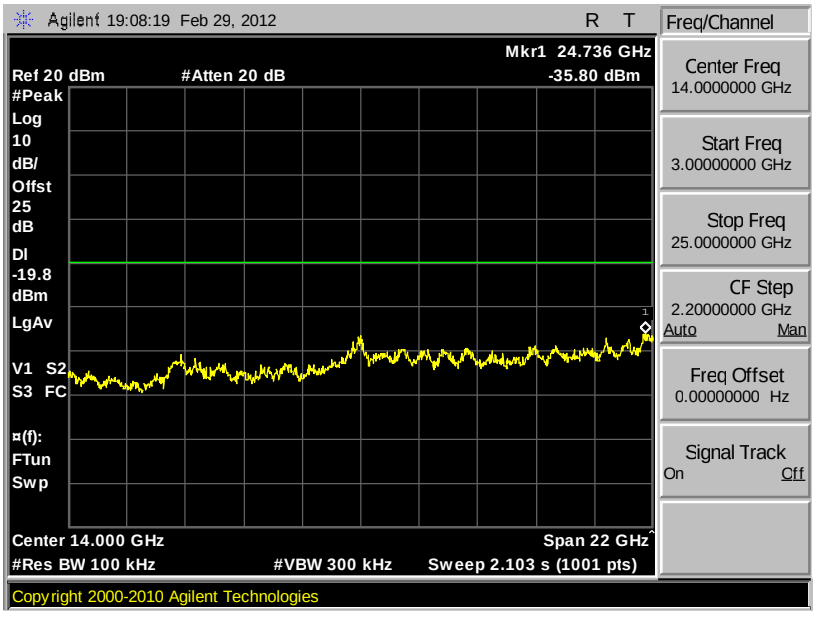


Test Mode :	Mode 7	Temperature :	24~26℃
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

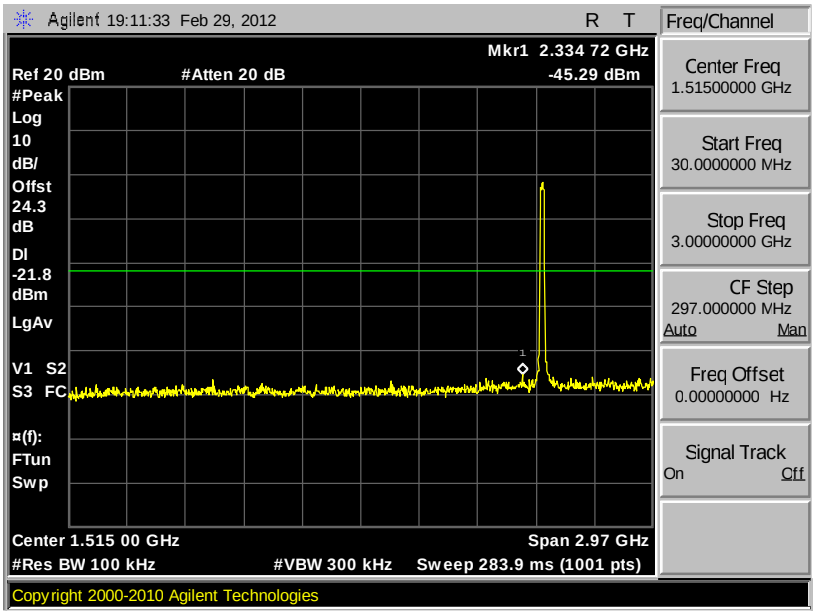


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

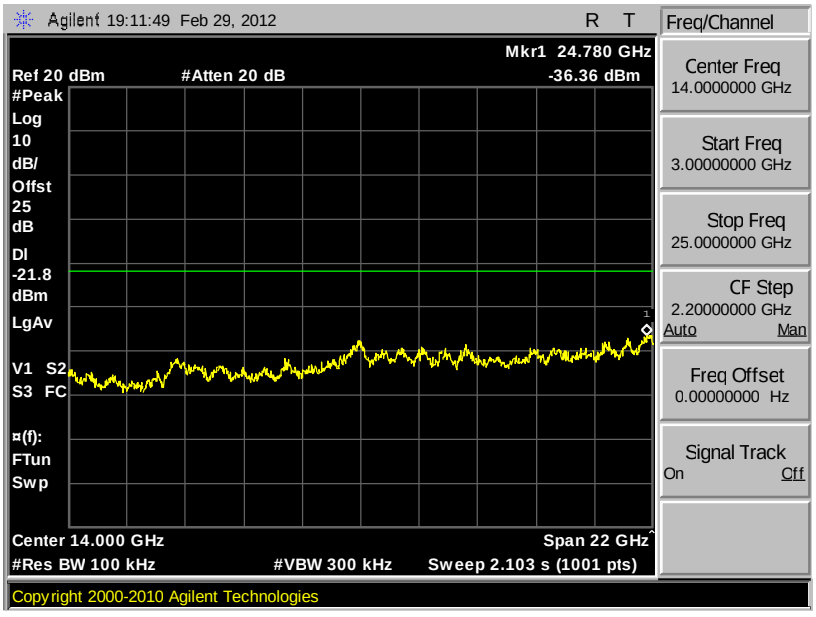


Test Mode :	Mode 8	Temperature :	24~26℃
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

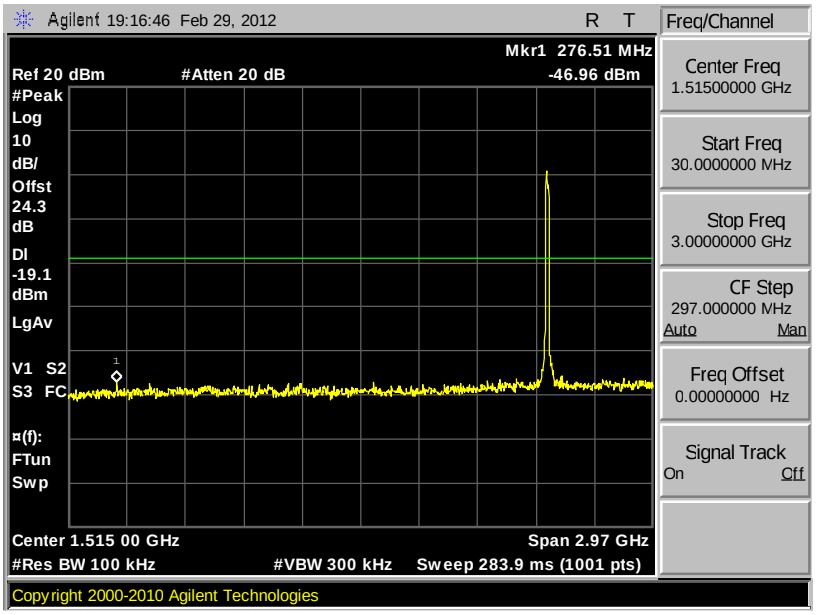


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz

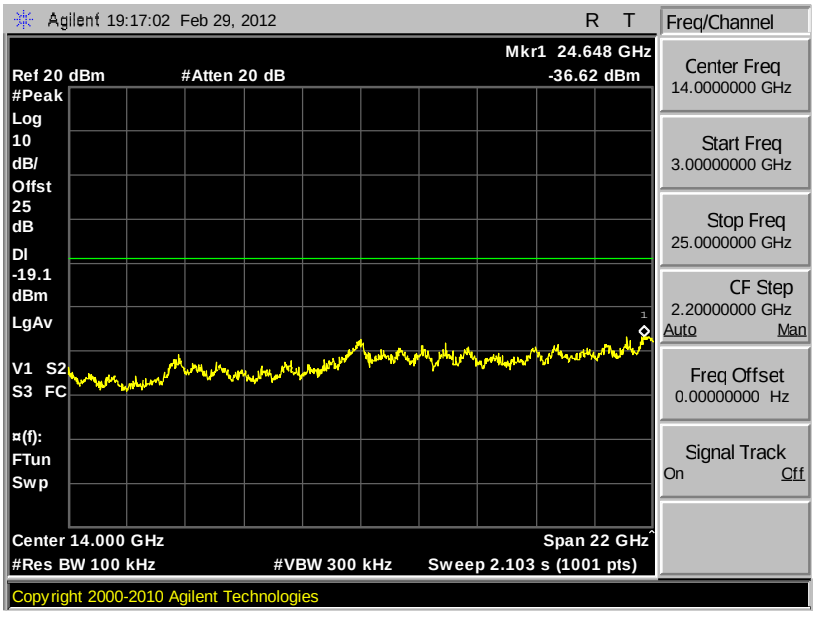


Test Mode :	Mode 9	Temperature :	24~26℃
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



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.

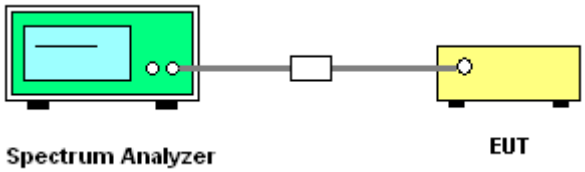
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The testing follows Measurement Procedure PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01.
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

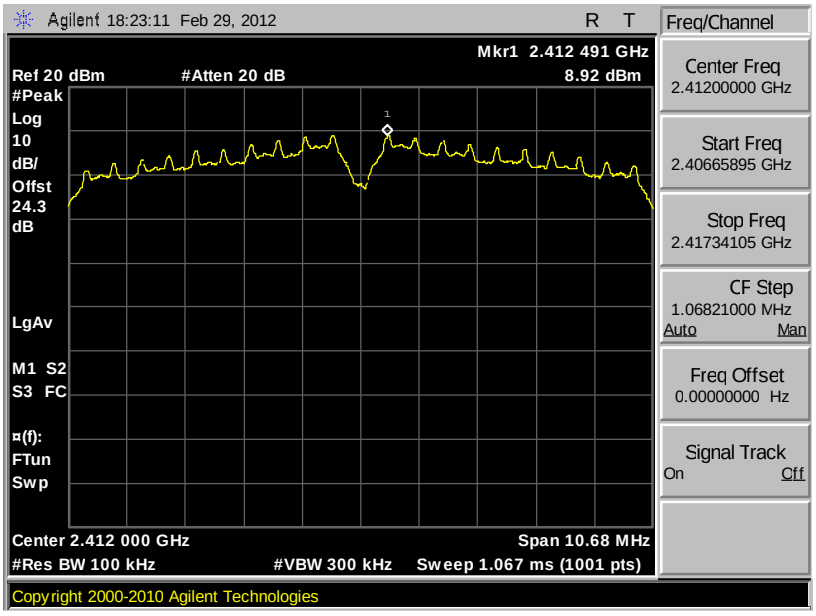
Test Mode :	Mode 1, 2, 3	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	8.92	-6.28	8	Pass
06	2437	8.92	-6.28	8	Pass
11	2462	8.98	-6.22	8	Pass

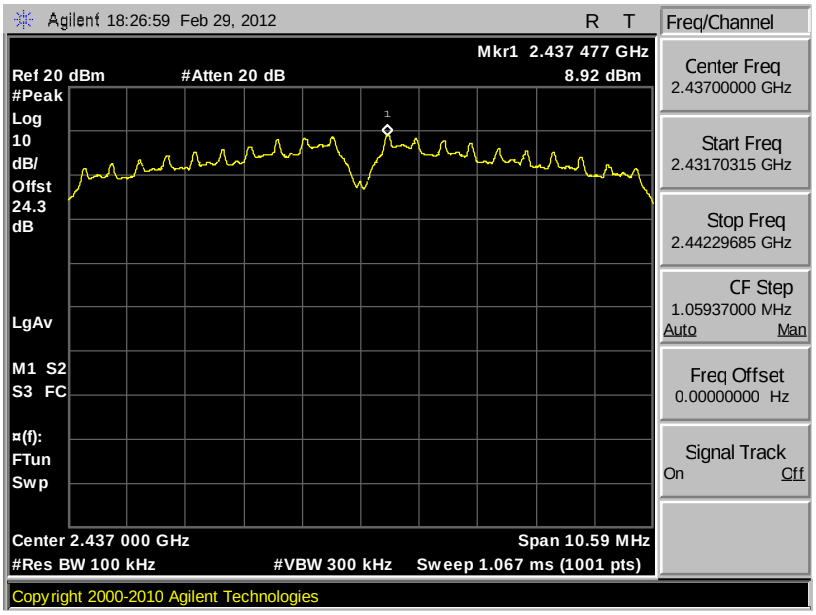
Note:

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)*

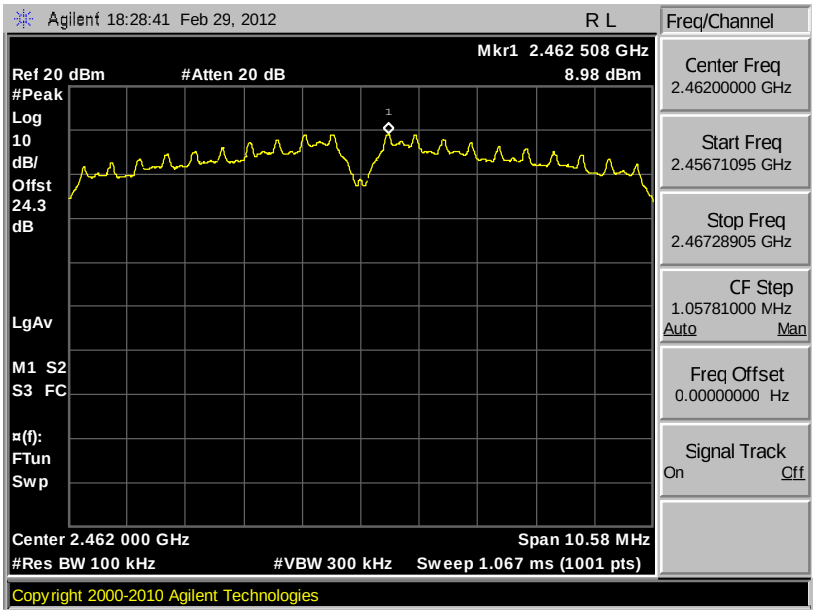
Mode 1 : PSD Plot on 802.11b Channel 01



Mode 2 : PSD Plot on 802.11b Channel 06



Mode 3 : PSD Plot on 802.11b Channel 11



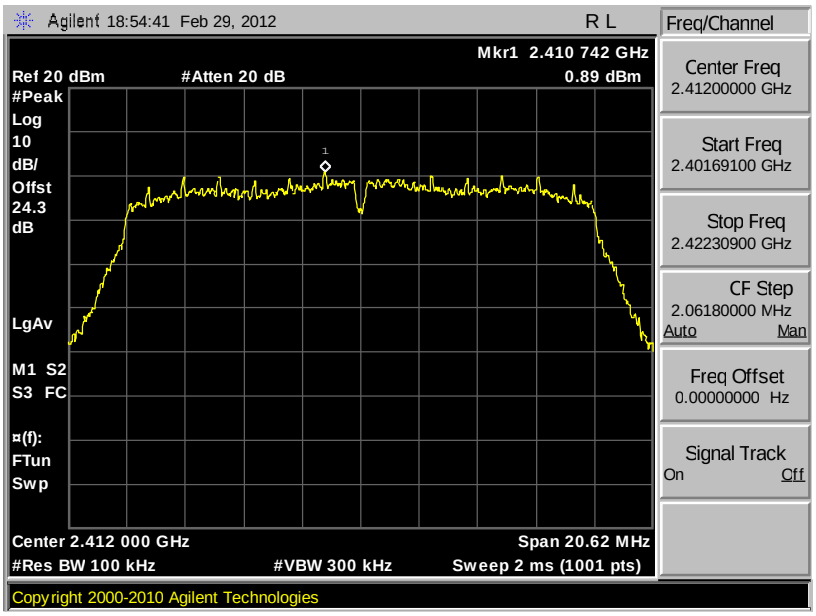
Test Mode :	Mode 4, 5, 6	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	0.89	-14.31	8	Pass
06	2437	1.58	-13.62	8	Pass
11	2462	1.84	-13.36	8	Pass

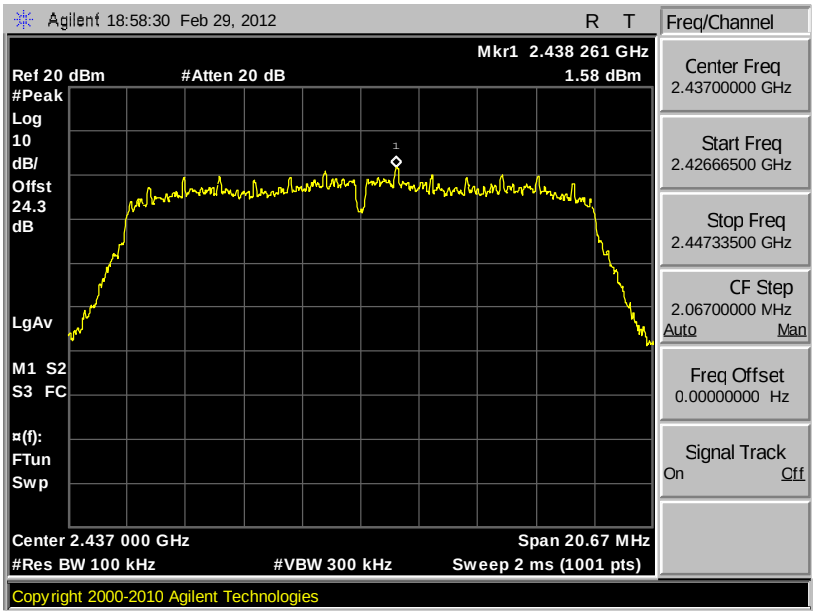
Note:

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)*

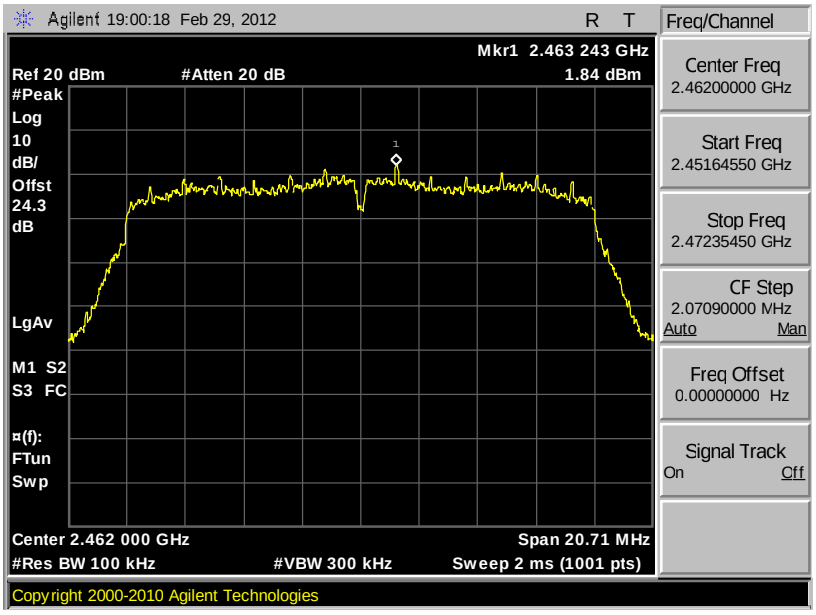
Mode 4 : PSD Plot on 802.11g Channel 01



Mode 5 : PSD Plot on 802.11g Channel 06



Mode 6 : PSD Plot on 802.11g Channel 11



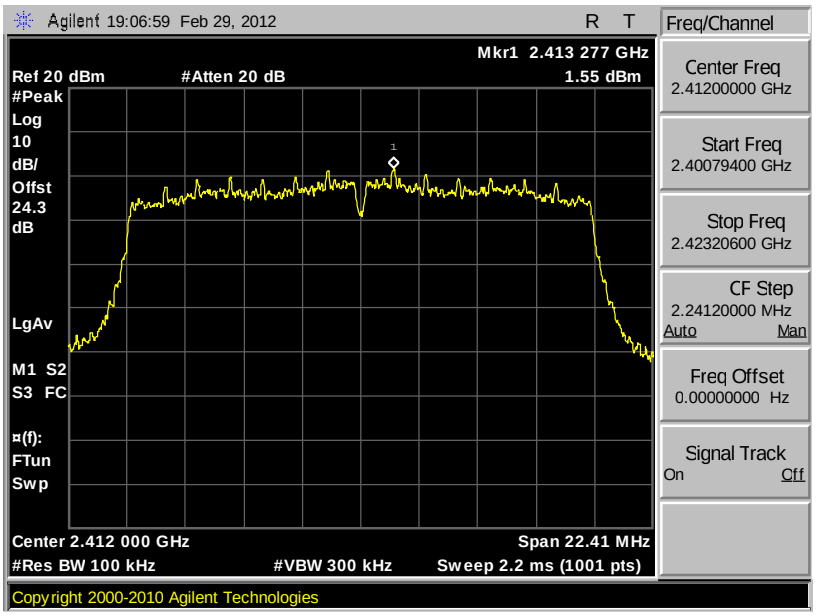
Test Mode :	Mode 7, 8, 9	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	1.55	-13.65	8	Pass
06	2437	1.47	-13.73	8	Pass
11	2462	1.29	-13.91	8	Pass

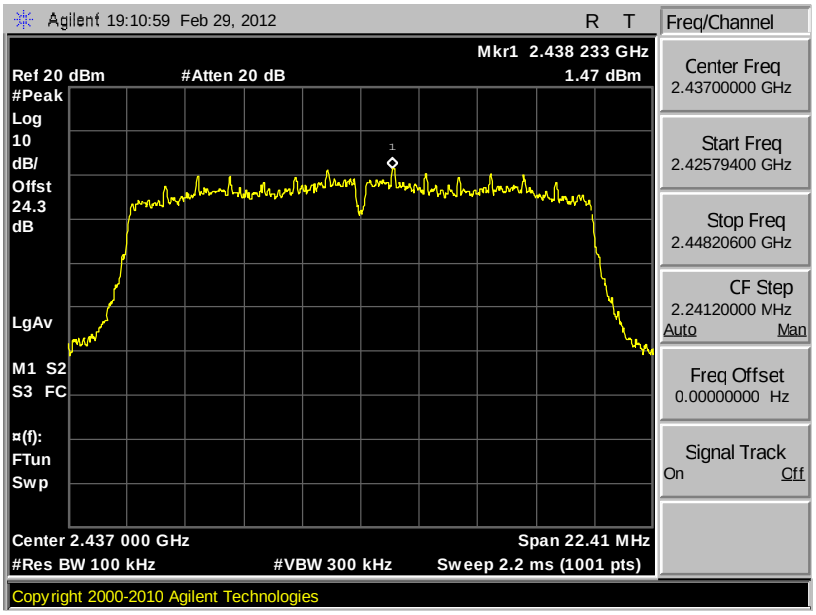
Note:

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)*

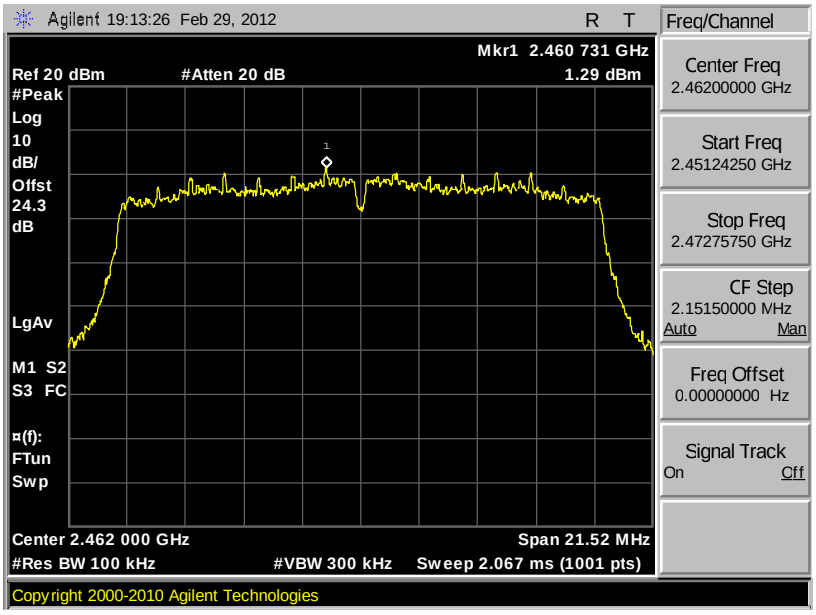
Mode 7 : PSD Plot on 802.11g/n (BW 20MHz) Channel 01



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



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



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.

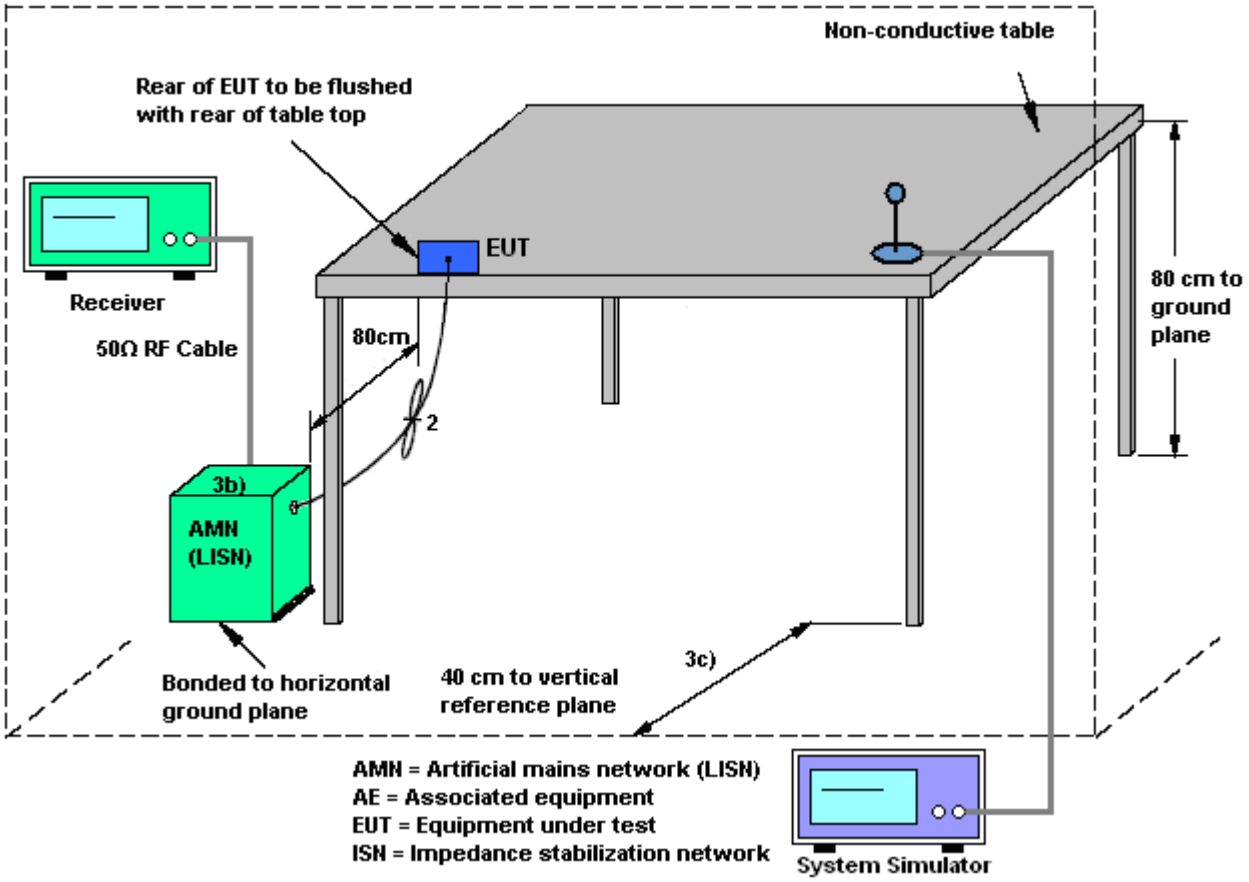
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

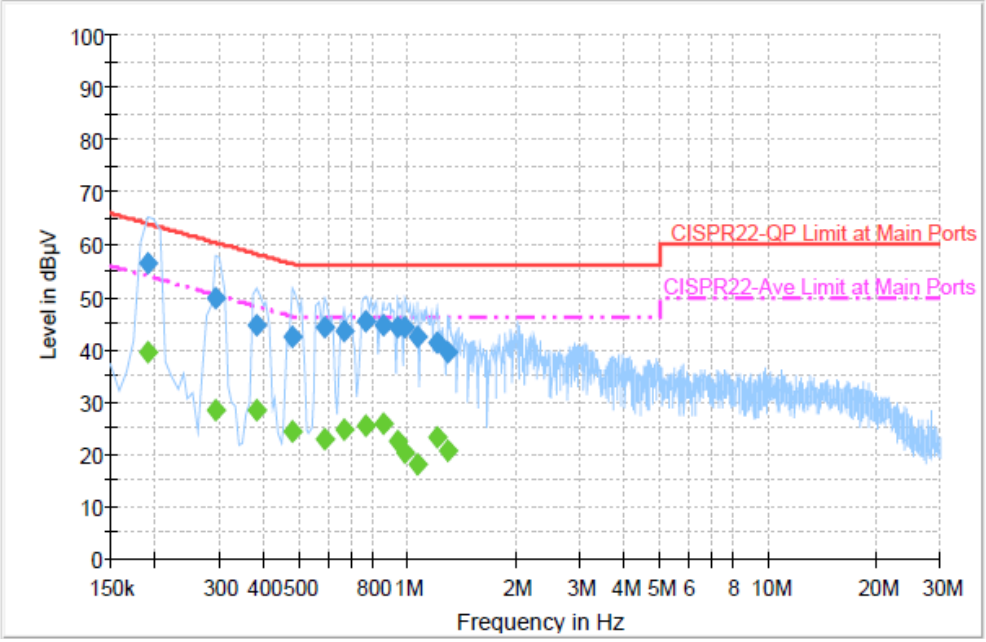
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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

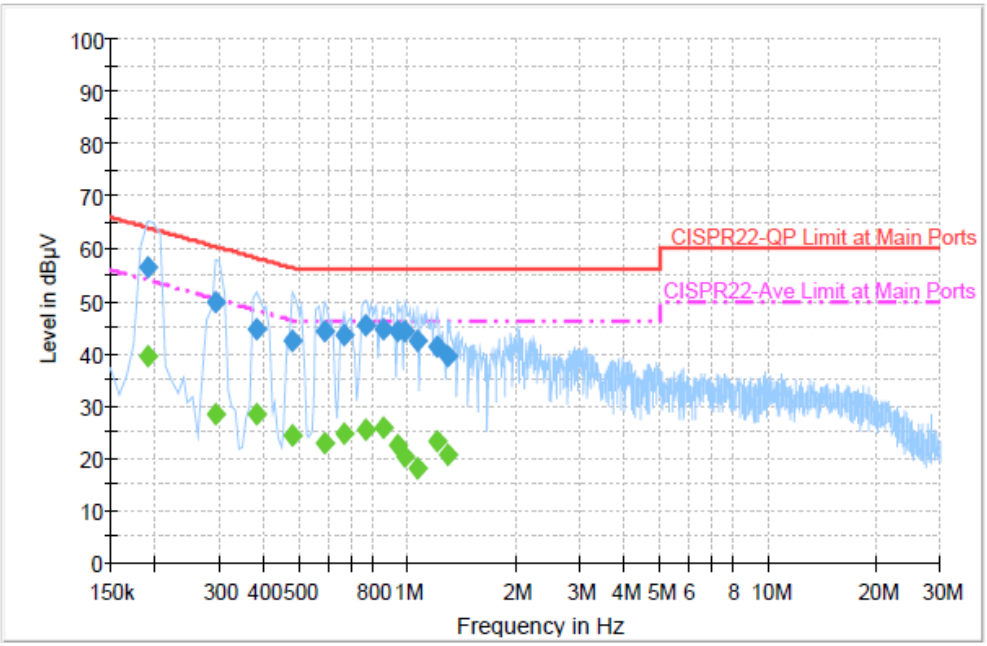
Test Mode :	Mode 1	**Temperature :**	23~24℃
Test Engineer :	Hayden Wu	**Relative Humidity :**	47~48%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	CDMA2000 BC1 Idle + Bluetooth Link + WLAN Link + MPEG4 + Earphone 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	56.3	Off	L1	19.4	7.7	64.0
0.294000	49.9	Off	L1	19.3	10.5	60.4
0.382000	44.6	Off	L1	19.4	13.6	58.2
0.478000	42.4	Off	L1	19.4	14.0	56.4
0.590000	44.3	Off	L1	19.3	11.7	56.0
0.670000	43.5	Off	L1	19.4	12.5	56.0
0.766000	45.3	Off	L1	19.4	10.7	56.0
0.854000	44.6	Off	L1	19.5	11.4	56.0
0.942000	44.2	Off	L1	19.4	11.8	56.0
0.982000	44.4	Off	L1	19.4	11.6	56.0
1.070000	42.6	Off	L1	19.4	13.4	56.0
1.206000	41.4	Off	L1	19.4	14.6	56.0
1.286000	39.6	Off	L1	19.4	16.4	56.0

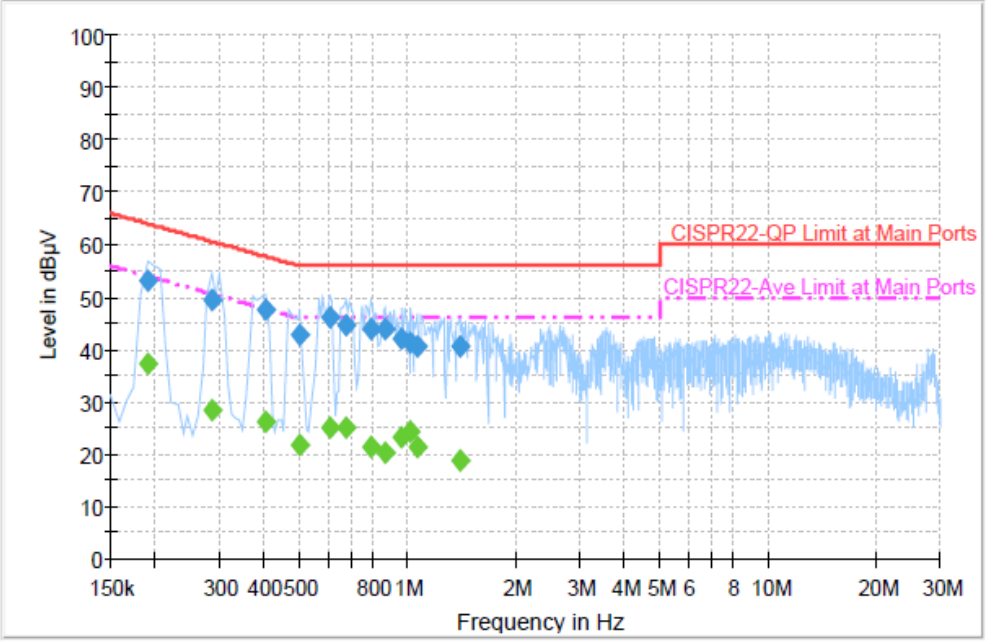
Test Mode :	Mode 1	Temperature :	23~24℃
Test Engineer :	Hayden Wu	Relative Humidity :	47~48%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	CDMA2000 BC1 Idle + Bluetooth Link + WLAN Link + MPEG4 + Earphone 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	39.6	Off	L1	19.4	14.4	54.0
0.294000	28.5	Off	L1	19.3	21.9	50.4
0.382000	28.3	Off	L1	19.4	19.9	48.2
0.478000	24.4	Off	L1	19.4	22.0	46.4
0.590000	22.7	Off	L1	19.3	23.3	46.0
0.670000	24.7	Off	L1	19.4	21.3	46.0
0.766000	25.4	Off	L1	19.4	20.6	46.0
0.854000	25.9	Off	L1	19.5	20.1	46.0
0.942000	22.6	Off	L1	19.4	23.4	46.0
0.982000	20.3	Off	L1	19.4	25.7	46.0
1.070000	18.1	Off	L1	19.4	27.9	46.0
1.206000	23.1	Off	L1	19.4	22.9	46.0
1.286000	20.7	Off	L1	19.4	25.3	46.0

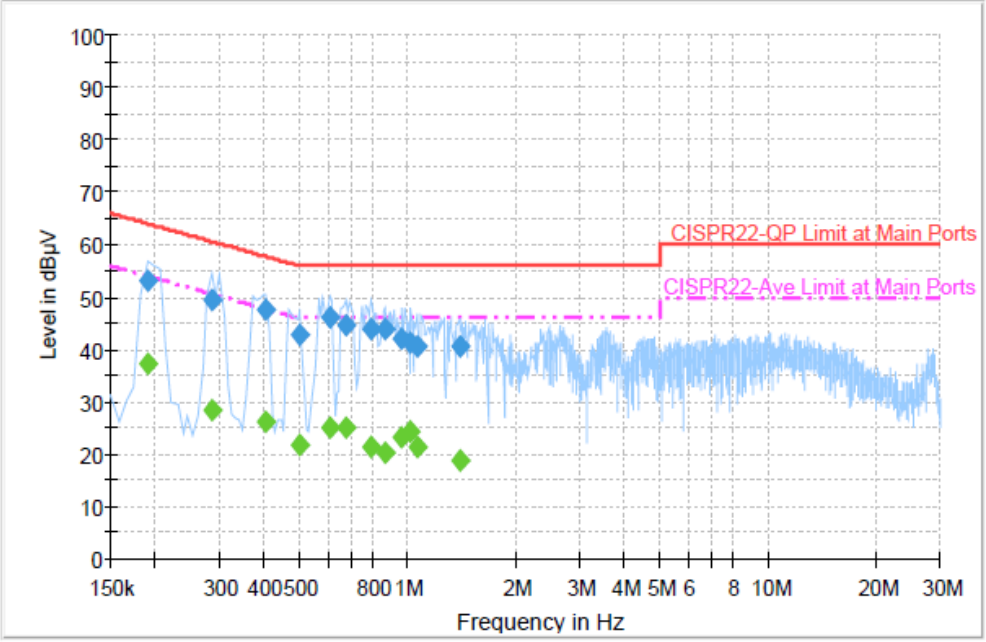
Test Mode :	Mode 1	Temperature :	23~24℃
Test Engineer :	Hayden Wu	Relative Humidity :	47~48%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC1 Idle + Bluetooth Link + WLAN Link + MPEG4 + Earphone 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	53.3	Off	N	19.4	10.7	64.0
0.286000	49.3	Off	N	19.3	11.3	60.6
0.406000	47.5	Off	N	19.4	10.2	57.7
0.502000	42.7	Off	N	19.3	13.3	56.0
0.606000	46.2	Off	N	19.4	9.8	56.0
0.678000	44.8	Off	N	19.5	11.2	56.0
0.790000	43.8	Off	N	19.4	12.2	56.0
0.870000	43.9	Off	N	19.4	12.1	56.0
0.966000	42.2	Off	N	19.4	13.8	56.0
1.022000	41.2	Off	N	19.4	14.8	56.0
1.062000	40.7	Off	N	19.4	15.3	56.0
1.398000	40.7	Off	N	19.4	15.3	56.0

Test Mode :	Mode 1	Temperature :	23~24℃
Test Engineer :	Hayden Wu	Relative Humidity :	47~48%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA2000 BC1 Idle + Bluetooth Link + WLAN Link + MPEG4 + Earphone 2 + USB Cable 2 (Charging from Adapter 2) for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	37.4	Off	N	19.4	16.6	54.0
0.286000	28.4	Off	N	19.3	22.2	50.6
0.406000	26.1	Off	N	19.4	21.6	47.7
0.502000	21.7	Off	N	19.3	24.3	46.0
0.606000	25.1	Off	N	19.4	20.9	46.0
0.678000	25.0	Off	N	19.5	21.0	46.0
0.790000	21.5	Off	N	19.4	24.5	46.0
0.870000	20.4	Off	N	19.4	25.6	46.0
0.966000	23.2	Off	N	19.4	22.8	46.0
1.022000	24.2	Off	N	19.4	21.8	46.0
1.062000	21.5	Off	N	19.4	24.5	46.0
1.398000	18.7	Off	N	19.4	27.3	46.0

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

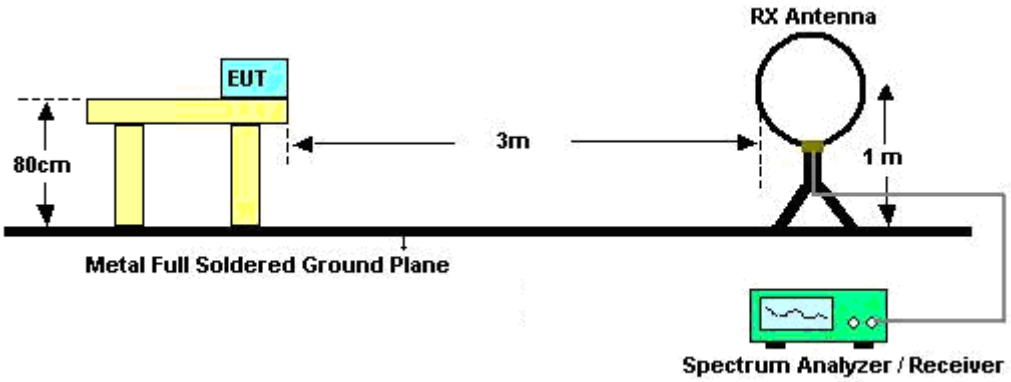
See list of measuring instruments of this test report.

3.7.3 Test Procedures

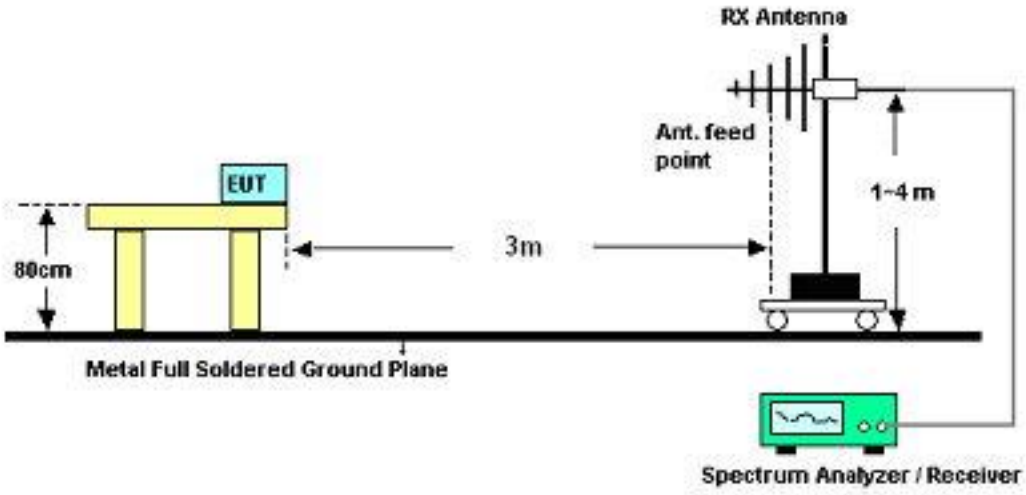
1. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW = 1 MHz for f ≥ 1 GHz, 100 KHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Measurement above 18 GHz shall be extrapolated 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.

3.7.4 Test Setup

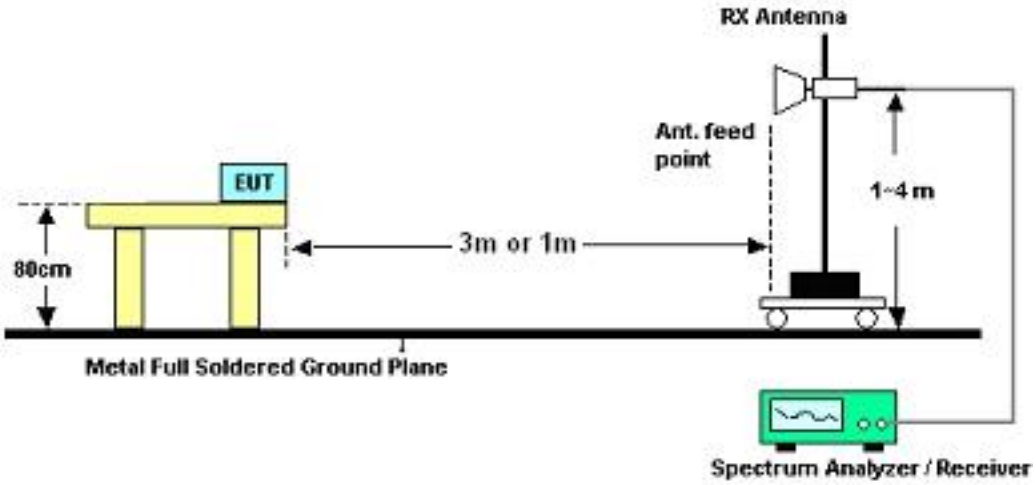
For radiated emissions below 30MHz



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 :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

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
92.37	13.69	-29.81	43.5	35.41	8.84	0.96	31.52	-	-	Peak
156.9	22.55	-20.95	43.5	42.15	10.71	1.22	31.53	-	-	Peak
218.73	23.82	-22.18	46	43.42	10.45	1.41	31.46	-	-	Peak
324.5	25.79	-20.21	46	41.3	13.98	1.83	31.32	111	194	Peak
626.9	20.86	-25.14	46	28.97	20.01	2.77	30.89	-	-	Peak
758.5	22.63	-23.37	46	28.79	21.47	3.07	30.7	-	-	Peak
2388.85	58.93	-15.07	74	54.8	32.06	6.03	33.96	101	100	Peak
2388.85	48.87	-5.13	54	44.74	32.06	6.03	33.96	101	100	Average
2412	110.32	-	-	106.14	32.08	6.07	33.97	101	100	Peak
2412	106.29	-	-	102.11	32.08	6.07	33.97	101	100	Average
2484	40.24	-13.76	54	35.88	32.18	6.18	34	101	100	Average
2484	52.01	-21.99	74	47.65	32.18	6.18	34	101	100	Peak
4824	46.55	-27.45	74	62.44	34.1	9.12	59.11	100	0	Peak

Test Mode :	Mode 1	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

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
42.69	25.82	-14.18	40	44.98	11.7	0.64	31.5	103	134	Peak
106.41	28.66	-14.84	43.5	48.75	10.43	1.03	31.55	-	-	Peak
229.53	24.36	-21.64	46	43.13	11.19	1.48	31.44	-	-	Peak
313.3	21.93	-24.07	46	37.78	13.67	1.8	31.32	-	-	Peak
349.7	19.62	-26.38	46	34.27	14.66	1.97	31.28	-	-	Peak
568.1	20.19	-25.81	46	29.29	19.26	2.6	30.96	-	-	Peak
2388.85	55.75	-18.25	74	51.62	32.06	6.03	33.96	100	334	Peak
2388.85	46.46	-7.54	54	42.33	32.06	6.03	33.96	100	334	Average
2412	107.73	-	-	103.55	32.08	6.07	33.97	100	334	Peak
2412	103.65	-	-	99.47	32.08	6.07	33.97	100	334	Average
2494	37.29	-16.71	54	32.91	32.2	6.18	34	100	334	Average
2494	48.06	-25.94	74	43.68	32.2	6.18	34	100	334	Peak
4824	44.78	-29.22	74	60.67	34.1	9.12	59.11	100	0	Peak

Test Mode :	Mode 2	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

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	50.96	-23.04	74	46.83	32.06	6.03	33.96	100	97	Peak
2390	39.49	-14.51	54	35.36	32.06	6.03	33.96	100	97	Average
2437	109.22	-	-	104.99	32.1	6.11	33.98	100	97	Peak
2437	105.33	-	-	101.07	32.13	6.11	33.98	100	97	Average
2484	52.17	-21.83	74	47.81	32.18	6.18	34	100	97	Peak
2484	40.42	-13.58	54	36.06	32.18	6.18	34	100	97	Average
4874	47.1	-26.9	74	62.91	34.1	9.13	59.04	100	0	Peak

Test Mode :	Mode 2	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

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	49.28	-24.72	74	45.15	32.06	6.03	33.96	101	89	Peak
2390	37.33	-16.67	54	33.2	32.06	6.03	33.96	101	89	Average
2437	106.3	-	-	102.04	32.13	6.11	33.98	101	89	Peak
2437	102.34	-	-	98.08	32.13	6.11	33.98	101	89	Average
2484	51.77	-22.23	74	47.41	32.18	6.18	34	101	89	Peak
2484	39.75	-14.25	54	35.39	32.18	6.18	34	101	89	Average
4874	45.73	-28.27	74	61.53	34.1	9.14	59.04	100	0	Peak

Test Mode :	Mode 3	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

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	46.31	-27.69	74	42.18	32.06	6.03	33.96	100	106	Peak
2388	35.57	-18.43	54	31.44	32.06	6.03	33.96	100	106	Average
2462	108.05	-	-	103.75	32.15	6.14	33.99	100	106	Peak
2462	104.21	-	-	99.91	32.15	6.14	33.99	100	106	Average
2484.61	57.15	-16.85	74	52.79	32.18	6.18	34	100	106	Peak
2484.61	47.11	-6.89	54	42.75	32.18	6.18	34	100	106	Average
4924	48.4	-25.6	74	64.11	34.1	9.15	58.96	100	0	Peak

Test Mode :	Mode 3	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

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	45.62	-28.38	74	41.49	32.06	6.03	33.96	119	38	Peak
2388	33.2	-20.8	54	29.07	32.06	6.03	33.96	119	38	Average
2462	105.63	-	-	101.33	32.15	6.14	33.99	119	38	Peak
2462	101.72	-	-	97.42	32.15	6.14	33.99	119	38	Average
2488.98	53.55	-20.45	74	49.17	32.2	6.18	34	119	38	Peak
2488.98	42.9	-11.1	54	38.52	32.2	6.18	34	119	38	Average
4924	46.71	-27.29	74	62.42	34.1	9.15	58.96	100	0	Peak

Test Mode :	Mode 4	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

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
47.82	24.67	-15.33	40	46.22	9.3	0.67	31.52	103	164	Peak
159.33	22.74	-20.76	43.5	42.47	10.57	1.22	31.52	-	-	Peak
223.05	25.03	-20.97	46	44.32	10.72	1.44	31.45	-	-	Peak
340.6	26.43	-19.57	46	41.44	14.4	1.89	31.3	-	-	Peak
629.7	21.04	-24.96	46	29.12	20.03	2.78	30.89	-	-	Peak
699	22.23	-23.77	46	29.52	20.59	2.94	30.82	-	-	Peak
2388.85	46.53	-7.47	54	42.4	32.06	6.03	33.96	198	103	Average
2388.85	54.5	-19.5	74	50.37	32.06	6.03	33.96	198	103	Peak
2412	106.37	-	-	102.19	32.08	6.07	33.97	198	103	Peak
2412	102.22	-	-	98.04	32.08	6.07	33.97	198	103	Average
2484	46.95	-27.05	74	42.59	32.18	6.18	34	198	103	Peak
2484	34.82	-19.18	54	30.46	32.18	6.18	34	198	103	Average
4824	45.68	-28.32	74	61.57	34.1	9.12	59.11	100	0	Peak

Test Mode :	Mode 4	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

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
42.69	26.12	-13.88	40	45.28	11.7	0.64	31.5	102	127	Peak
106.41	27.23	-16.27	43.5	47.32	10.43	1.03	31.55	-	-	Peak
231.69	23.47	-22.53	46	42.1	11.32	1.49	31.44	-	-	Peak
318.2	21.34	-24.66	46	37.05	13.8	1.81	31.32	-	-	Peak
596.1	21.14	-24.86	46	29.65	19.73	2.68	30.92	-	-	Peak
747.3	22.49	-23.51	46	28.85	21.3	3.05	30.71	-	-	Peak
2389.61	55.43	-18.57	74	51.3	32.06	6.03	33.96	117	22	Peak
2389.61	47.33	-6.67	54	43.2	32.06	6.03	33.96	117	22	Average
2412	107.4	-	-	103.22	32.08	6.07	33.97	117	22	Peak
2412	103.53	-	-	99.35	32.08	6.07	33.97	117	22	Average
2486	40.23	-13.77	54	35.87	32.18	6.18	34	117	22	Average
2486	52.01	-21.99	74	47.65	32.18	6.18	34	117	22	Peak
4824	48.03	-25.97	74	63.92	34.1	9.12	59.11	100	0	Peak

Test Mode :	Mode 5	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

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
2382.58	59.97	-14.03	74	55.87	32.03	6.03	33.96	100	90	Peak
2382.58	43.03	-10.97	54	38.93	32.03	6.03	33.96	100	90	Average
2412	106.32	-	-	102.14	32.08	6.07	33.97	100	90	Peak
2412	92.1	-	-	87.92	32.08	6.07	33.97	100	90	Average
2484	34.71	-19.29	54	30.35	32.18	6.18	34	100	90	Average
2484	47.47	-26.53	74	43.11	32.18	6.18	34	100	90	Peak

Test Mode :	Mode 5	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

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
2389.99	57.95	-16.05	74	53.82	32.06	6.03	33.96	100	319	Peak
2389.99	41.67	-12.33	54	37.54	32.06	6.03	33.96	100	319	Average
2412	103.11	-	-	98.93	32.08	6.07	33.97	100	319	Peak
2412	90.29	-	-	86.11	32.08	6.07	33.97	100	319	Average
2486	35.58	-18.42	54	31.22	32.18	6.18	34	100	319	Average
2486	47.56	-26.44	74	43.2	32.18	6.18	34	100	319	Peak

Test Mode :	Mode 6	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

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	49.95	-24.05	74	45.82	32.06	6.03	33.96	100	98	Peak
2390	37.42	-16.58	54	33.29	32.06	6.03	33.96	100	98	Average
2437	106.43	-	-	102.17	32.13	6.11	33.98	100	98	Peak
2437	93.56	-	-	89.3	32.13	6.11	33.98	100	98	Average
2484	52.19	-21.81	74	47.83	32.18	6.18	34	100	98	Peak
2484	37.57	-16.43	54	33.21	32.18	6.18	34	100	98	Average

Test Mode :	Mode 6	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

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	48.02	-25.98	74	43.89	32.06	6.03	33.96	136	79	Peak
2390	34.89	-19.11	54	30.76	32.06	6.03	33.96	136	79	Average
2437	102.86	-	-	98.63	32.1	6.11	33.98	136	79	Peak
2437	90.99	-	-	86.73	32.13	6.11	33.98	136	79	Average
2484	48.42	-25.58	74	44.06	32.18	6.18	34	136	79	Peak
2484	35.67	-18.33	54	31.31	32.18	6.18	34	136	79	Average

Test Mode :	Mode 7	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

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
2380	46.68	-27.32	74	42.58	32.03	6.03	33.96	132	39	Peak
2380	34.01	-19.99	54	29.91	32.03	6.03	33.96	132	39	Average
2462	106.79	-	-	102.49	32.15	6.14	33.99	132	39	Peak
2462	93.6	-	-	89.3	32.15	6.14	33.99	132	39	Average
2489.17	63.35	-10.65	74	58.97	32.2	6.18	34	132	39	Peak
2489.17	46.79	-7.21	54	42.41	32.2	6.18	34	132	39	Average

Test Mode :	Mode 7	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

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
2380	46.5	-27.5	74	42.4	32.03	6.03	33.96	100	315	Peak
2380	34.26	-19.74	54	30.16	32.03	6.03	33.96	100	315	Average
2462	103.91	-	-	99.61	32.15	6.14	33.99	100	315	Peak
2462	91.43	-	-	87.13	32.15	6.14	33.99	100	315	Average
2486.7	60.73	-13.27	74	56.37	32.18	6.18	34	100	315	Peak
2486.7	44.77	-9.23	54	40.41	32.18	6.18	34	100	315	Average

Test Mode :	Mode 8	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

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
2389.61	65.5	-8.5	74	61.37	32.06	6.03	33.96	103	98	Peak
2389.61	46.23	-7.77	54	42.1	32.06	6.03	33.96	103	98	Average
2412	107.51	-	-	103.33	32.08	6.07	33.97	103	98	Peak
2412	93.75	-	-	89.57	32.08	6.07	33.97	103	98	Average
2486	36.22	-17.78	54	31.86	32.18	6.18	34	103	98	Average
2486	48.2	-25.8	74	43.84	32.18	6.18	34	103	98	Peak

Test Mode :	Mode 8	Temperature :	21~22℃
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

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
2389.99	61.98	-12.02	74	57.85	32.06	6.03	33.96	100	319	Peak
2389.99	43.4	-10.6	54	39.27	32.06	6.03	33.96	100	319	Average
2412	104.62	-	-	100.44	32.08	6.07	33.97	100	319	Peak
2412	91.56	-	-	87.38	32.08	6.07	33.97	100	319	Average
2484	36.23	-17.77	54	31.87	32.18	6.18	34	100	319	Average
2484	48.87	-25.13	74	44.51	32.18	6.18	34	100	319	Peak

Test Mode :	Mode 9	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

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	53.23	-20.77	74	49.1	32.06	6.03	33.96	100	98	Peak
2390	37.48	-16.52	54	33.35	32.06	6.03	33.96	100	98	Average
2437	106.46	-	-	102.23	32.1	6.11	33.98	100	98	Peak
2437	92.8	-	-	88.54	32.13	6.11	33.98	100	98	Average
2484	52.79	-21.21	74	48.43	32.18	6.18	34	100	98	Peak
2484	38.04	-15.96	54	33.68	32.18	6.18	34	100	98	Average

Test Mode :	Mode 9	Temperature :	21~22℃
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

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	49.21	-24.79	74	45.08	32.06	6.03	33.96	124	316	Peak
2390	35.54	-18.46	54	31.41	32.06	6.03	33.96	124	316	Average
2437	104.18	-	-	99.95	32.1	6.11	33.98	124	316	Peak
2437	91.01	-	-	86.75	32.13	6.11	33.98	124	316	Average
2484	54.82	-19.18	74	50.46	32.18	6.18	34	124	316	Peak
2484	37.98	-16.02	54	33.62	32.18	6.18	34	124	316	Average

Test Mode :	Mode 10	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

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
2372	47.82	-26.18	74	43.75	32.03	5.99	33.95	100	95	Peak
2372	35.6	-18.4	54	31.53	32.03	5.99	33.95	100	95	Average
2462	93.2	-	-	88.9	32.15	6.14	33.99	100	95	Average
2462	106.24	-	-	101.94	32.15	6.14	33.99	100	95	Peak
2484.61	66.15	-7.85	74	61.79	32.18	6.18	34	100	95	Peak
2484.61	46.15	-7.85	54	41.79	32.18	6.18	34	100	95	Average

Test Mode :	Mode 10	Temperature :	21~22℃
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

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	45.77	-28.23	74	41.64	32.06	6.03	33.96	130	82	Peak
2388	34.35	-19.65	54	30.22	32.06	6.03	33.96	130	82	Average
2462	91.4	-	-	87.1	32.15	6.14	33.99	130	82	Average
2462	103.41	-	-	99.11	32.15	6.14	33.99	130	82	Peak
2485.37	62.61	-11.39	74	58.25	32.18	6.18	34	130	82	Peak
2485.37	42.18	-11.82	54	37.82	32.18	6.18	34	130	82	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	100055	9kHz~40GHz	Jun. 13, 2011	Feb. 28, 2012~ Feb. 29, 2012	Jun. 12, 2012	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Mar. 06, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Mar. 06, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Mar. 06, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000 W	N/A	N/A	N/A	Mar. 06, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117591	N/A	Oct. 21, 2011	Mar. 06, 2012	Oct. 20, 2012	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Mar. 14, 2012 ~ Mar. 16, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Mar. 14, 2012 ~ Mar. 16, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 10, 2011	Mar. 14, 2012 ~ Mar. 16, 2012	Aug. 09, 2012	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Mar. 14, 2012 ~ Mar. 16, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10 ~ 1000MHz 32dB GAIN	Mar. 29, 2011	Mar. 14, 2012 ~ Mar. 16, 2012	Mar. 28, 2012	Radiation (03CH07-HY)
EMI TEST RECEIVER	R&S	ESCI 7	100724	9kHz ~ 7GHz	Aug. 22, 2011	Mar. 14, 2012 ~ Mar. 16, 2012	Aug. 21, 2012	Radiation (03CH07-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 18, 2011	Mar. 14, 2012 ~ Mar. 16, 2012	Jul. 17, 2012	Radiation (03CH07-HY)
System Simulator	R&S	CMU200	117591	N/A	Oct. 21, 2011	Mar. 14, 2012 ~ Mar. 16, 2012	Oct. 20, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Mar. 14, 2012 ~ Mar. 16, 2012	Jul. 28, 2012	Radiation (03CH07-HY)

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**				