

FCC RF Test Report

APPLICANT : PEGATRON CORPORATION
EQUIPMENT : Tablet
BRAND NAME : TOSHIBA,Excite
MODEL NAME : TOSHIBA AT270,Excite 7 AT270,Excite 7 AT275
FCC ID : VUIPDS4330LB
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Mar. 01, 2012 and completely tested on Apr. 03, 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 / Manager



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
FR231932B	Rev. 01	Initial issue of report	Apr. 13, 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	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	Gen 4.6.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 16.00 dB at 0.726 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 1.35 dB at 2389.990 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

PEGATRON CORPORATION

No. 76, Ligong St., Beitou District, Taipei City 11261

1.2 Manufacturer

PEGATRON CORPORATION

No. 76, Ligong St., Beitou District, Taipei City 11261

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Tablet
Brand Name	TOSHIBA,Excite
Model Name	TOSHIBA AT270,Excite 7 AT270,Excite 7 AT275
Sample 1	EUT with 16G eMMC
Sample 2	EUT with 32G eMMC
Sample 3	EUT with 64G eMMC
FCC ID	VUIPDS4330LB
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 : 17.10 dBm (0.0513 W) 802.11g : 17.97 dBm (0.0627 W) 802.11g/n (BW 20MHz) : 16.98 dBm (0.0499 W)
Duty Cycle	802.11b : 100.00% 802.11g : 86.44% 802.11g/n (BW 20MHz) : 85.65%
Antenna Type	FPC Antenna with gain 3.20 dBi
HW Version	3.01
SW Version	Android 4.0.3
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. The model names (TOSHIBA AT270, Excite 7 AT270, Excite 7 AT275) are identical on hardware.
The only difference is the label of different branding for different customer.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st 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.	GPS Station	T&E	GS-50	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.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Bluetooth Earphone	Sony Ericsson	MW600	PY70DA2029	N/A	N/A
6.	iPod Earphone	Apple	N/A	FCC DoC	Unshielded, 1.2 m	N/A
7.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	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)) 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)	17.10	17.08	17.02	16.67

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)	17.97	17.75	17.62	17.07	17.05	16.22	15.81	15.75

2.4GHz 802.11g/n (BW 20MHz) mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	16.98	16.54	16.03	15.93	15.29	14.77	14.52	14.42

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	17.10	16.81	16.25	17.97	17.32	17.00

Band	2.4GHz 802.11g/n (BW 20MHz) RF Peak Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Peak Power	16.98	16.17	16.04

Remark:

The data rates of WLAN 802.11b/g/n were set in 1Mbps for 802.11b, 6Mbps for 802.11g, 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	14.61	14.07	13.70	11.95	11.31	10.94

Band	2.4GHz 802.11g/n (BW 20MHz) RF Peak Power (dBm)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Average Power	10.94	10.12	9.87

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).

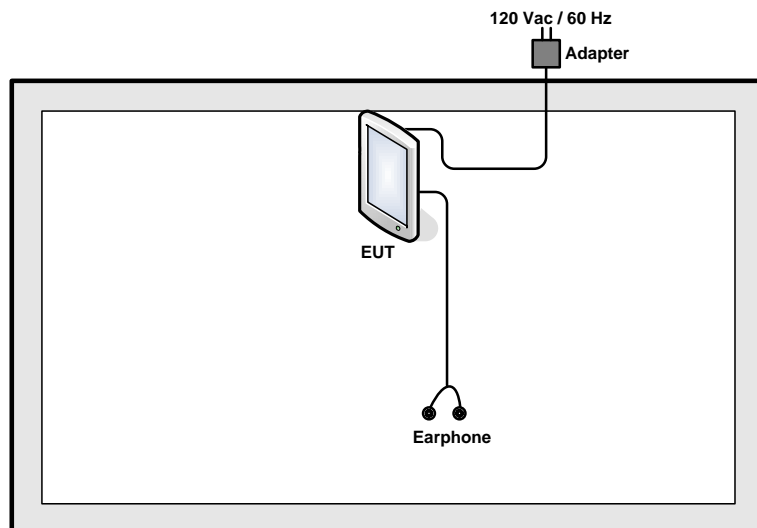
Pre-scanned tests were conducted to determine the final configuration from all possible combinations. Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations, tablet modes.

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

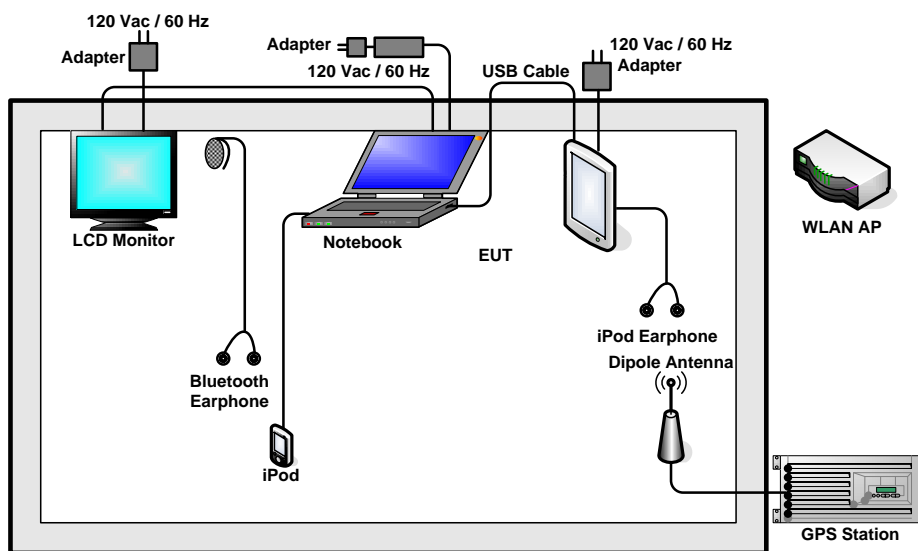
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11g/n (BW 20M)_CH01_2412 MHz Mode 8: 802.11g/n (BW 20M)_CH06_2437 MHz Mode 9: 802.11g/n (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: 802.11g/n (BW 20M)_CH01_2412 MHz Mode 8: 802.11g/n (BW 20M)_CH06_2437 MHz Mode 9: 802.11g/n (BW 20M)_CH11_2462 MHz
AC Conducted Emission	Mode 1 : WLAN Link + Bluetooth Link + GPS Rx + TC for Sample 1	
Remark: TC stands for Test Configuration, and consists of earphone, USB Cable (Data Link with Notebook), adapter, and SD Card.		

2.5 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.6 RF Utility

For WLAN function, programmed RF utility, "command" installed in the Notebook provides functions like channel selection and power level for continuous transmitting and receiving signals. 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 and 99% Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

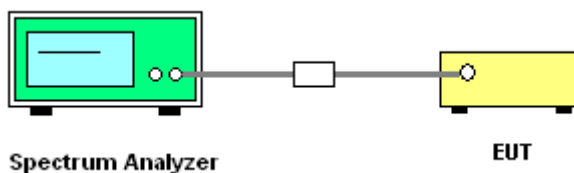
3.1.2 Measuring Instruments

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) $\geq 3 * RBW$. 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



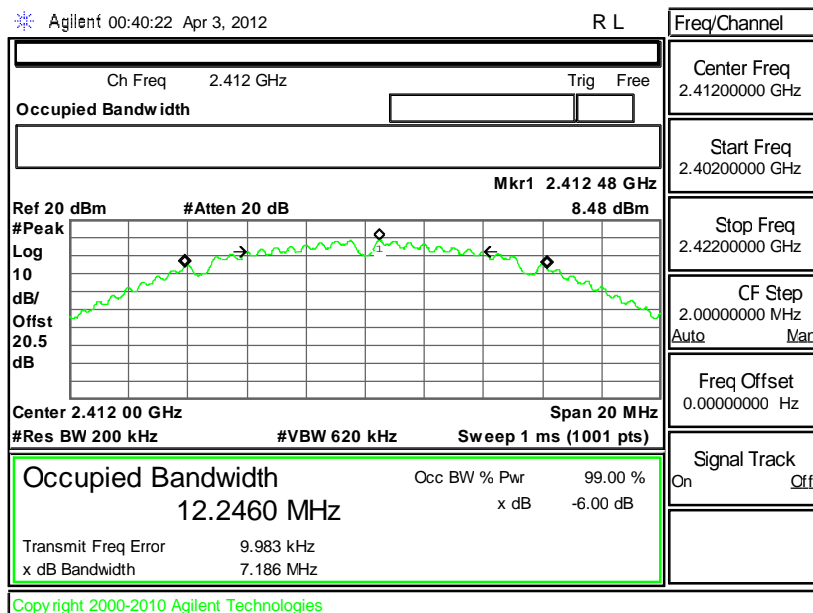


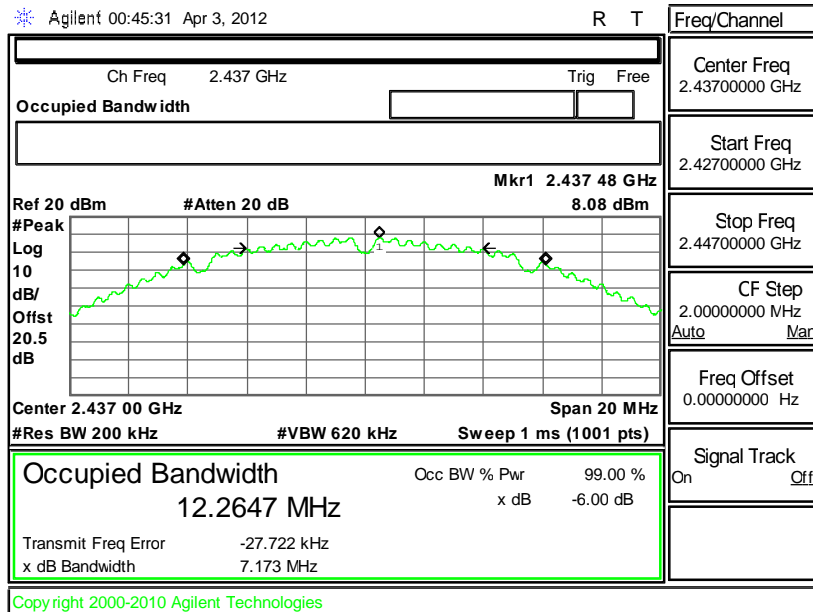
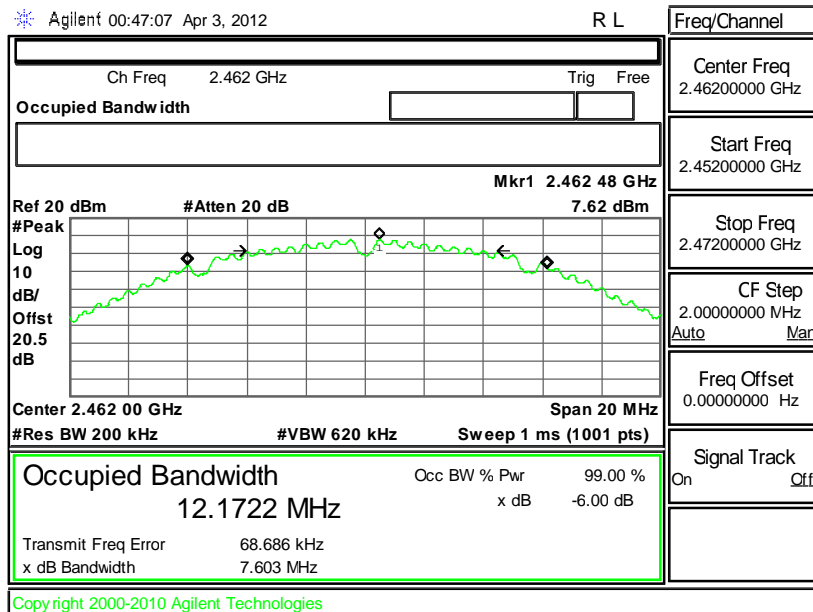
3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	7.186	0.5	Pass
06	2437	7.173	0.5	Pass
11	2462	7.603	0.5	Pass

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



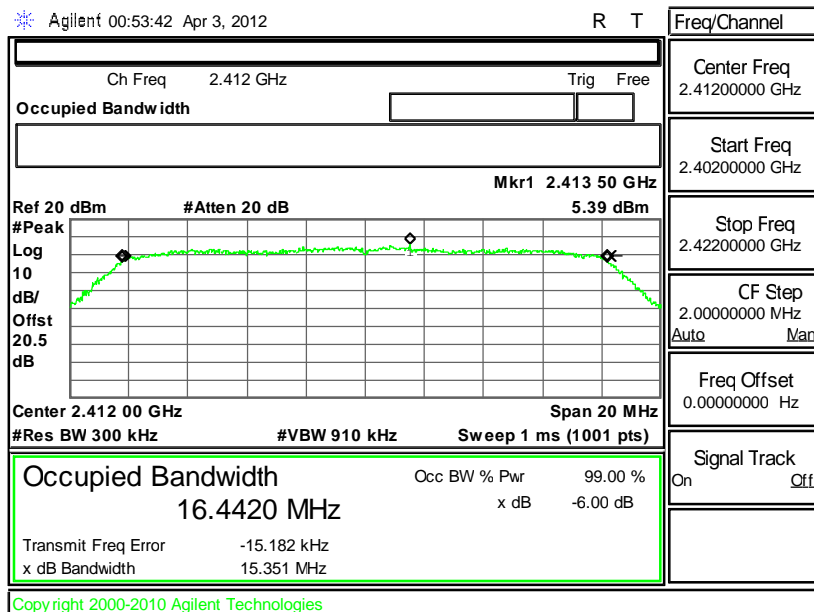
**Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06****Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11**



Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

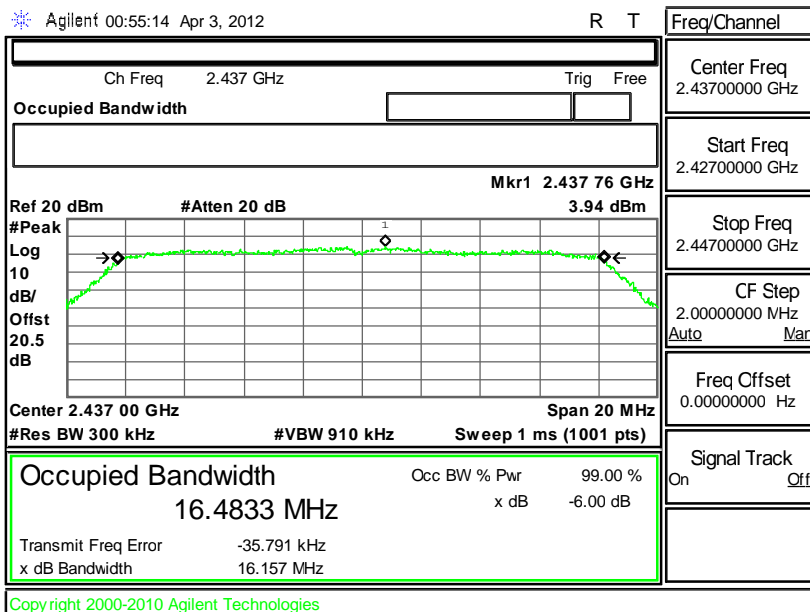
Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.351	0.5	Pass
06	2437	16.157	0.5	Pass
11	2462	15.857	0.5	Pass

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

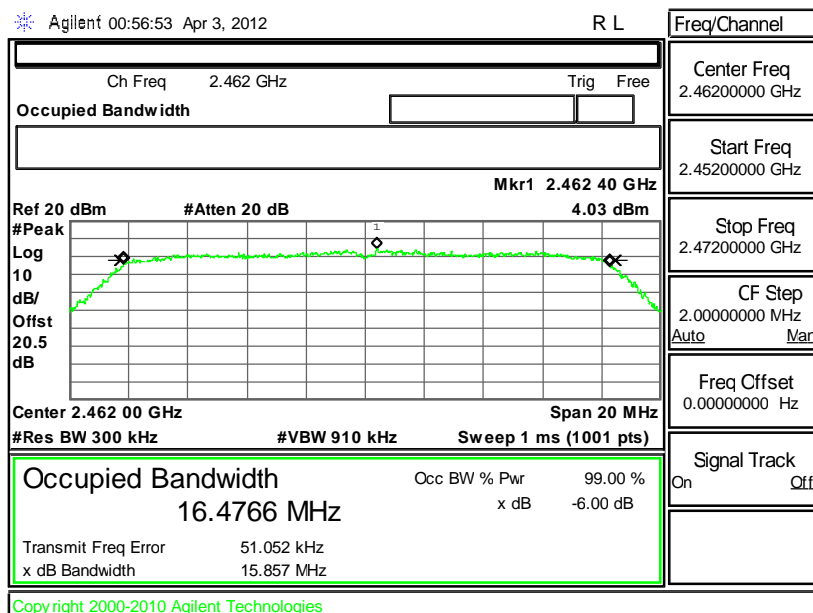




Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



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



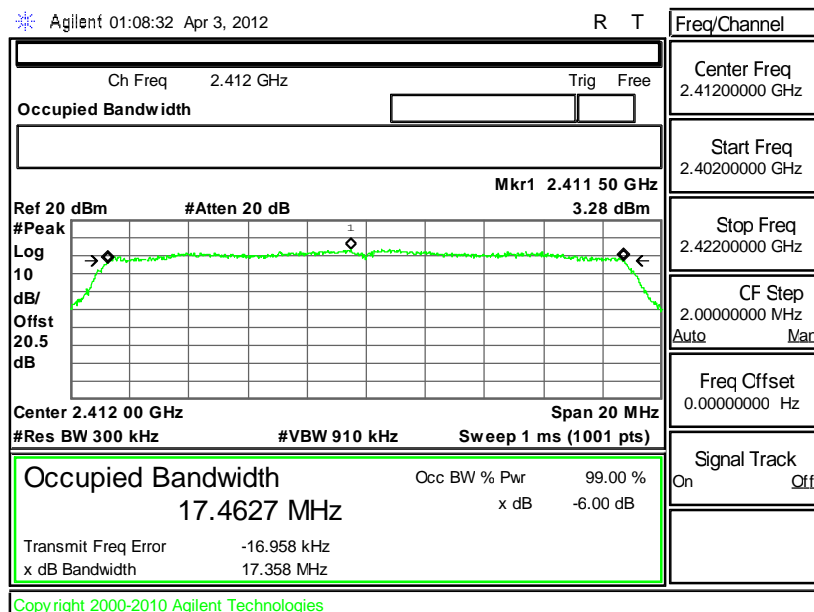


Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.358	0.5	Pass
06	2437	17.112	0.5	Pass
11	2462	17.320	0.5	Pass

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

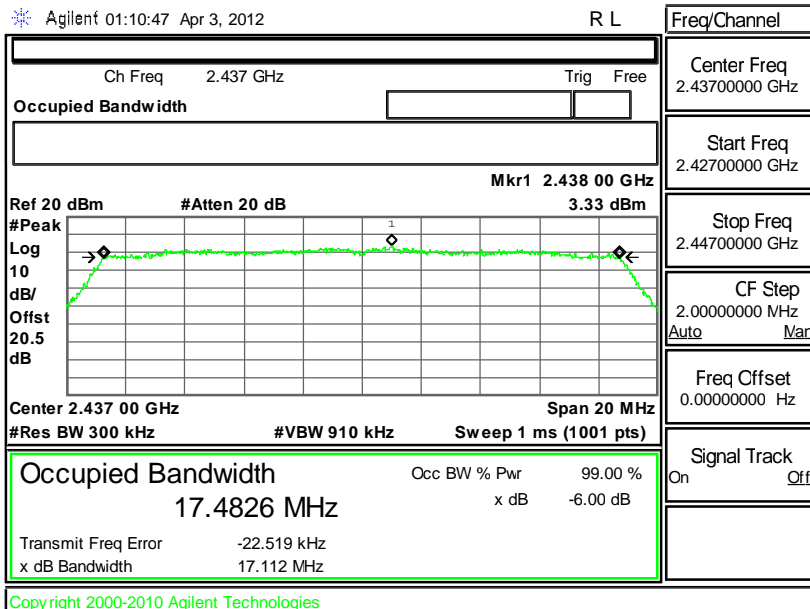
01





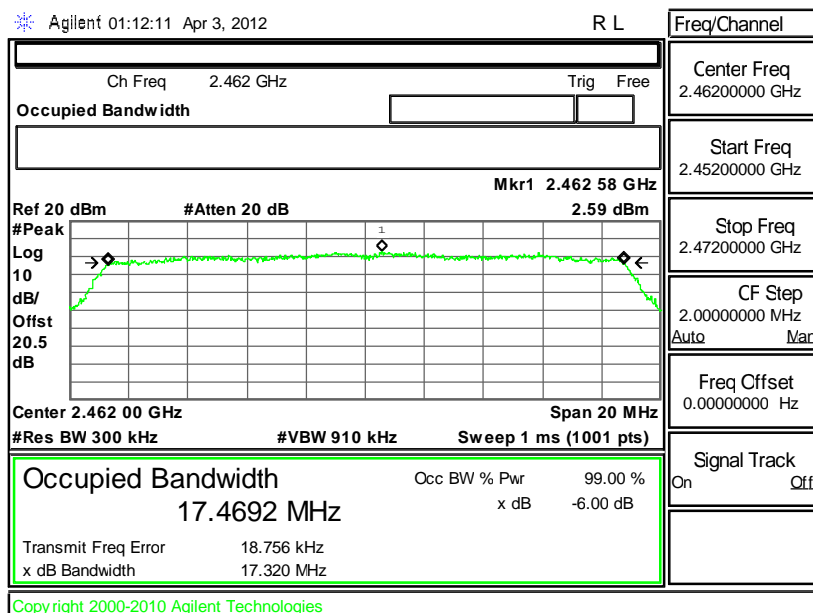
Mode 8 : 6 dB Bandwidth Plot on 802.11g/n(BW 20MHz) Channel

06



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

11



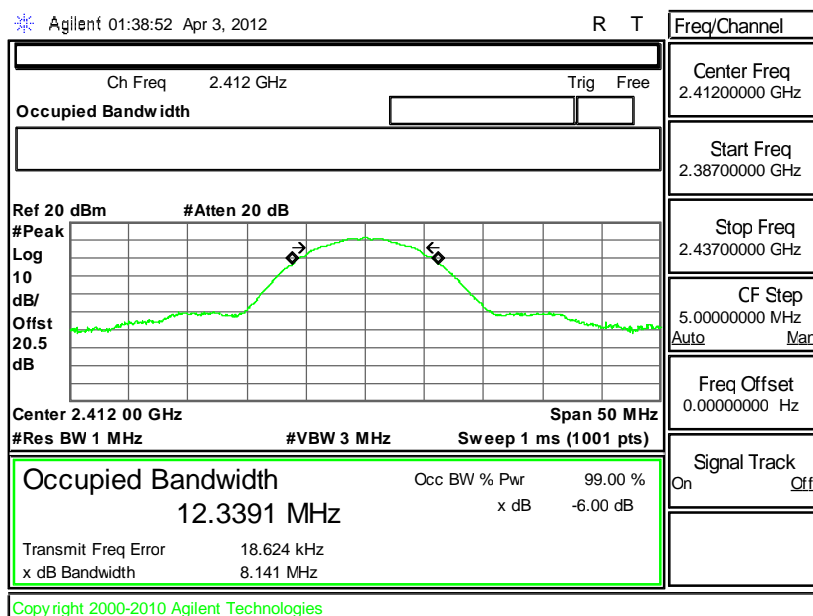


3.1.6 Test Result of 99% Occupied Bandwidth

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

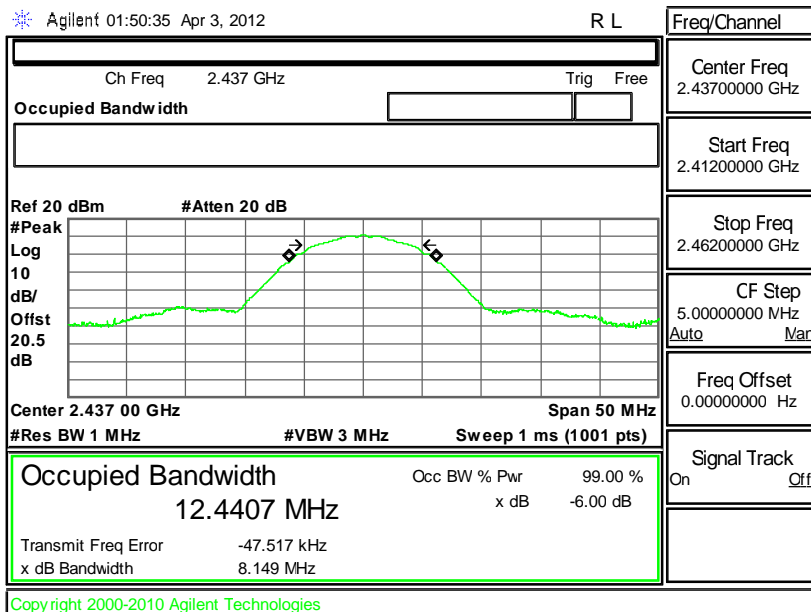
Channel	Frequency (MHz)	802.11b 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	12.3391	Pass
06	2437	12.4407	Pass
11	2462	12.2716	Pass

Mode 1 : 99% Occupied Bandwidth Plot on 802.11b Channel 01

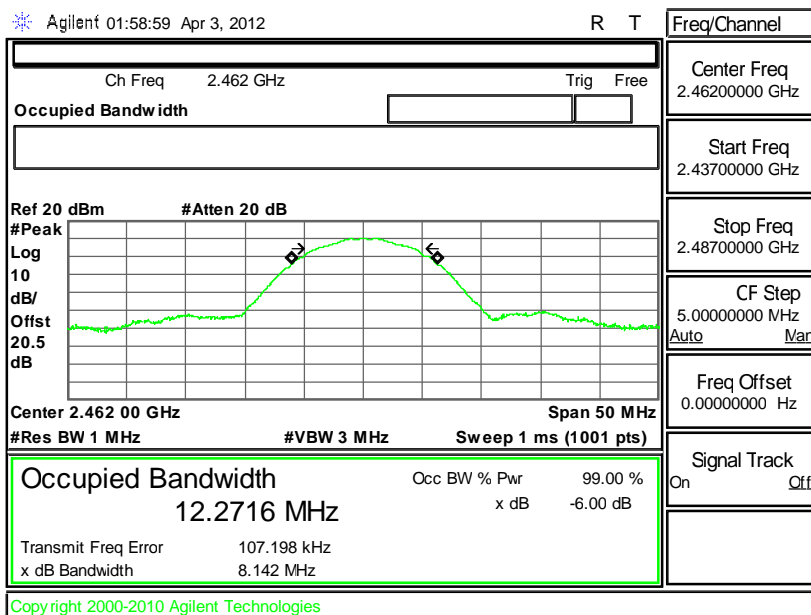




Mode 2 : 99% Occupied Bandwidth Plot on 802.11b Channel 06



Mode 3 : 99% Occupied Bandwidth Plot on 802.11b Channel 11

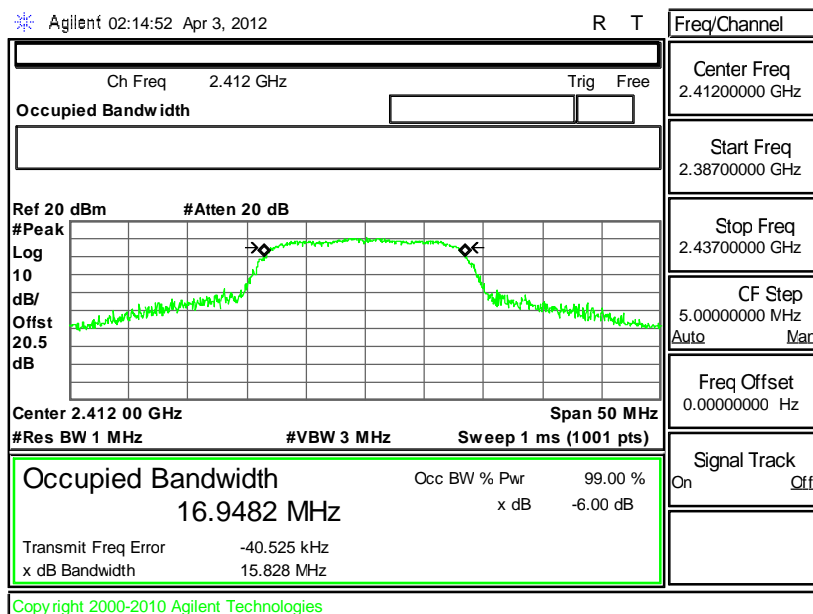


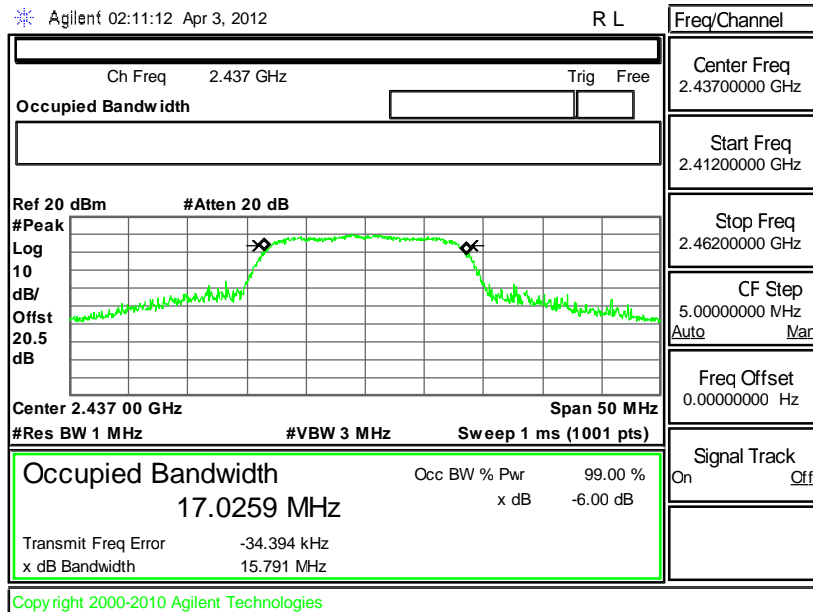
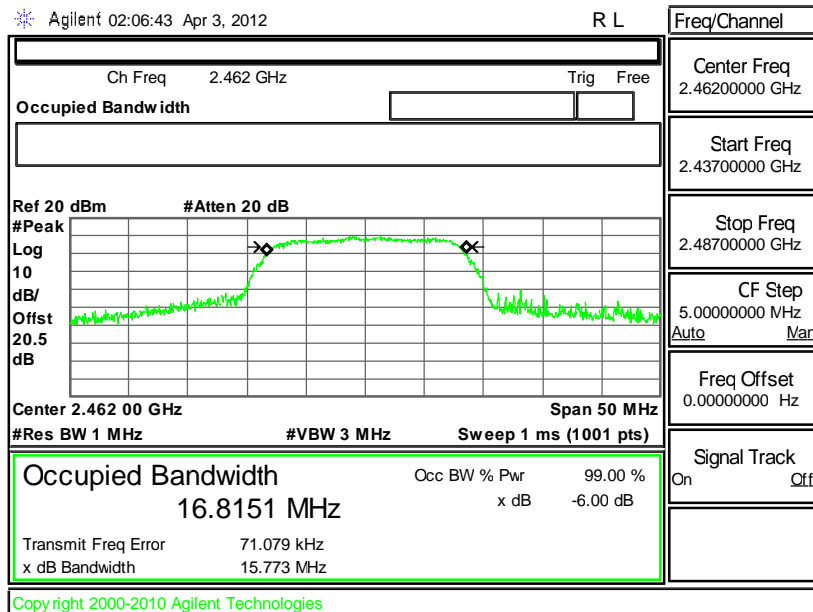


Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	16.9482	Pass
06	2437	17.0259	Pass
11	2462	16.8151	Pass

Mode 4 : 99% Occupied Bandwidth Plot on 802.11g Channel 01



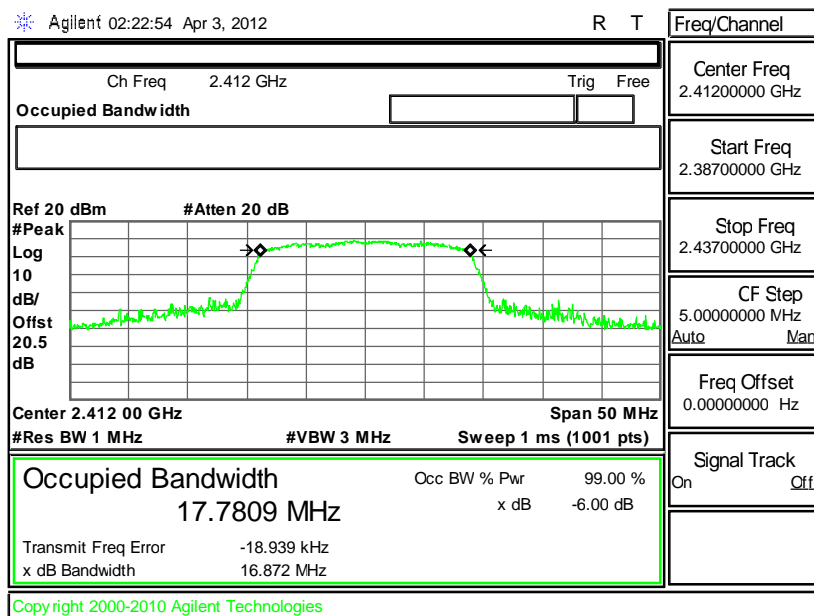
**Mode 5 : 99% Occupied Bandwidth Plot on 802.11g Channel 06****Mode 6 : 99% Occupied Bandwidth Plot on 802.11g Channel 11**



Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

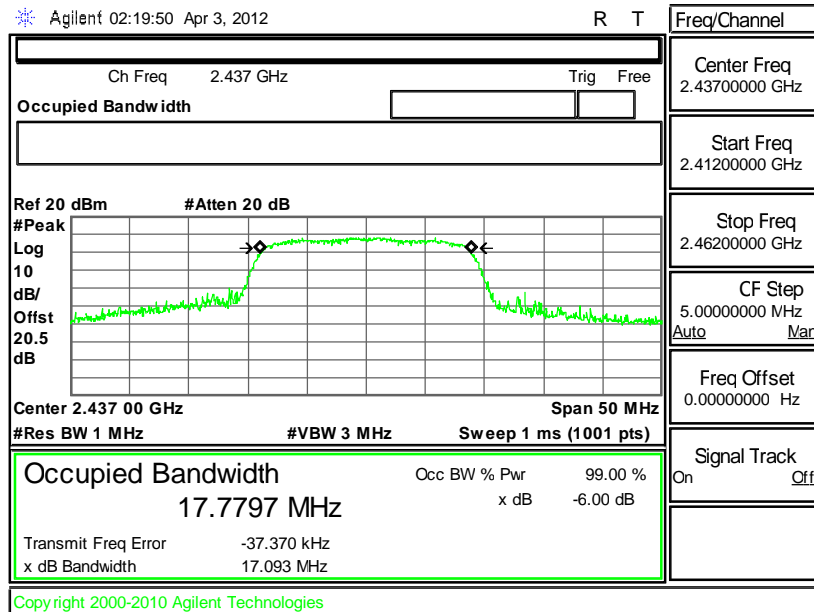
Channel	Frequency (MHz)	802.11g/n (BW 20MHz) 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	17.7809	Pass
06	2437	17.7797	Pass
11	2462	17.7412	Pass

Mode 7 : 99% Occupied Bandwidth Plot on 802.11g/n(BW 20MHz) Channel 01

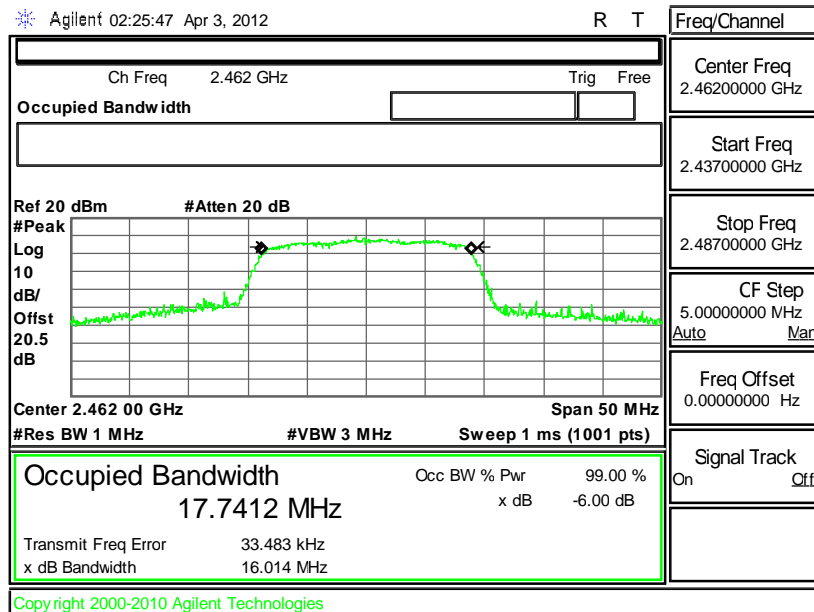




Mode 8 : 99% Occupied Bandwidth Plot on 802.11g/n(BW 20MHz) Channel 06



Mode 9 : 99% Occupied 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.

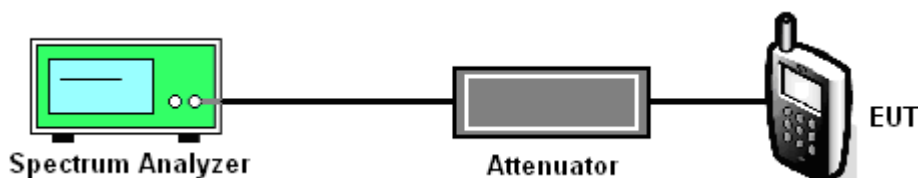
3.2.2 Measuring Instruments

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



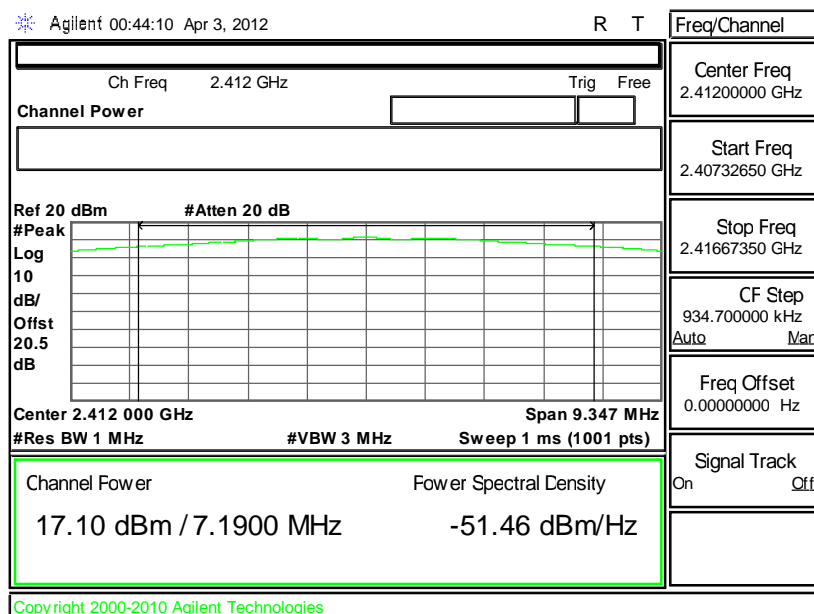


3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

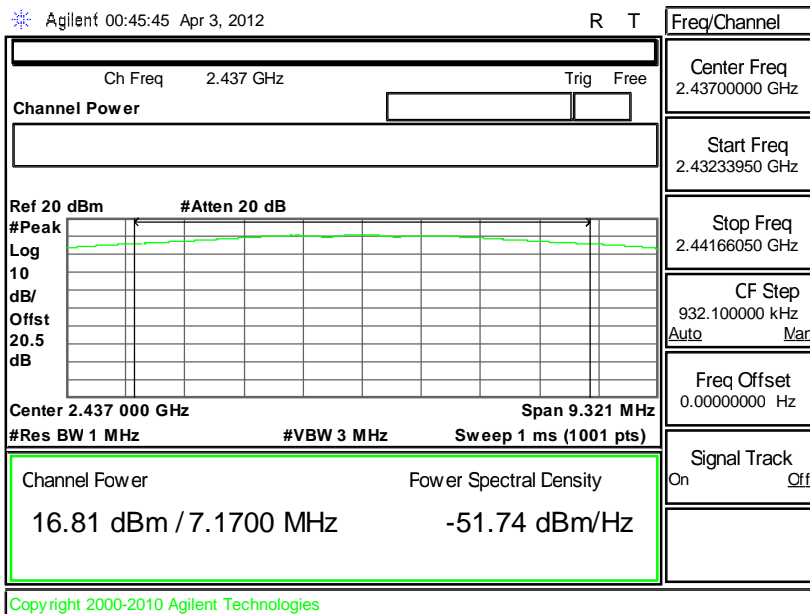
Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.10	30	Pass
06	2437	16.81	30	Pass
11	2462	16.25	30	Pass

Mode 1 : Output Power Plot on 802.11b Channel 01

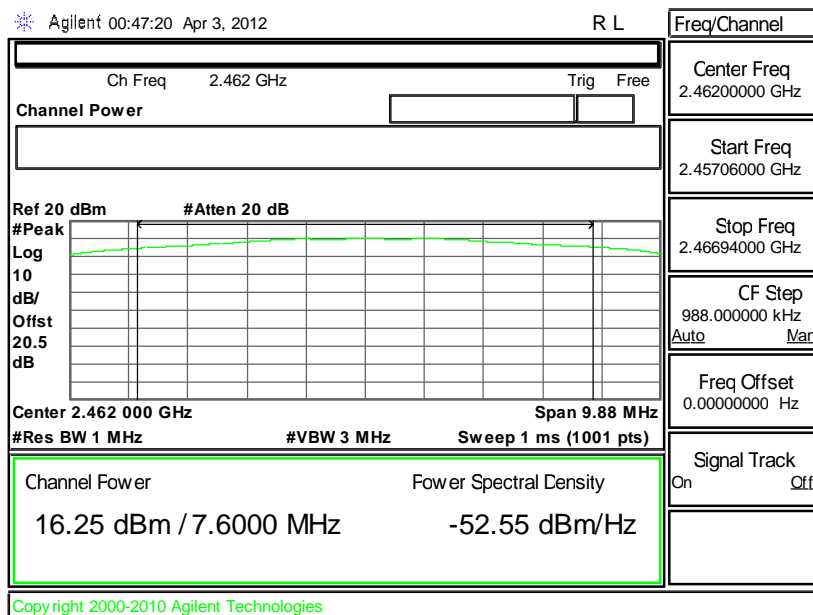




Mode 2 : Output Power Plot on 802.11b Channel 06



Mode 3 : Output Power Plot on 802.11b Channel 11

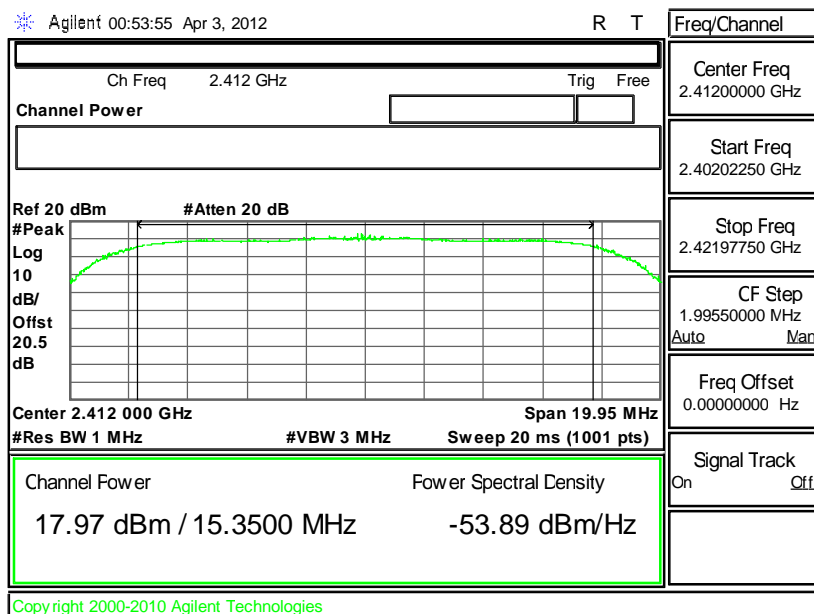


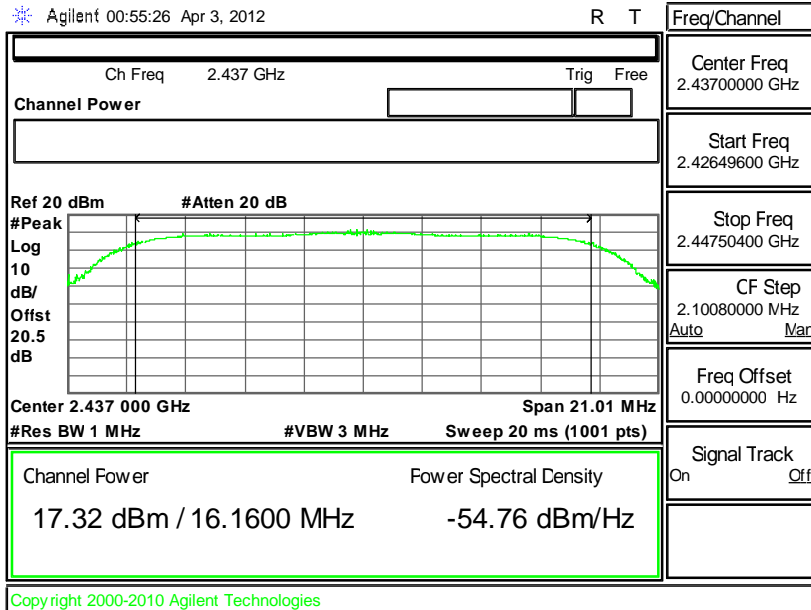
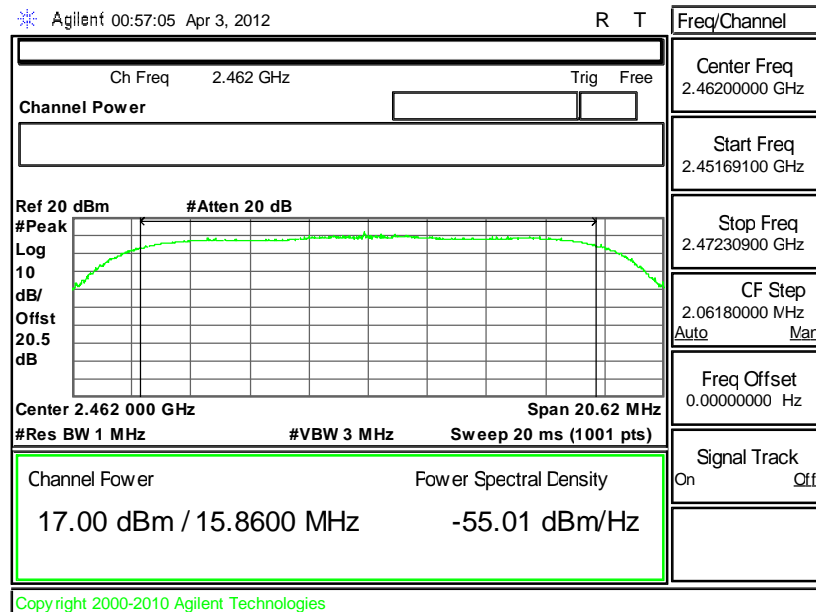


Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	17.97	30	Pass
06	2437	17.32	30	Pass
11	2462	17.00	30	Pass

Mode 4 : Output Power Plot on 802.11g Channel 01



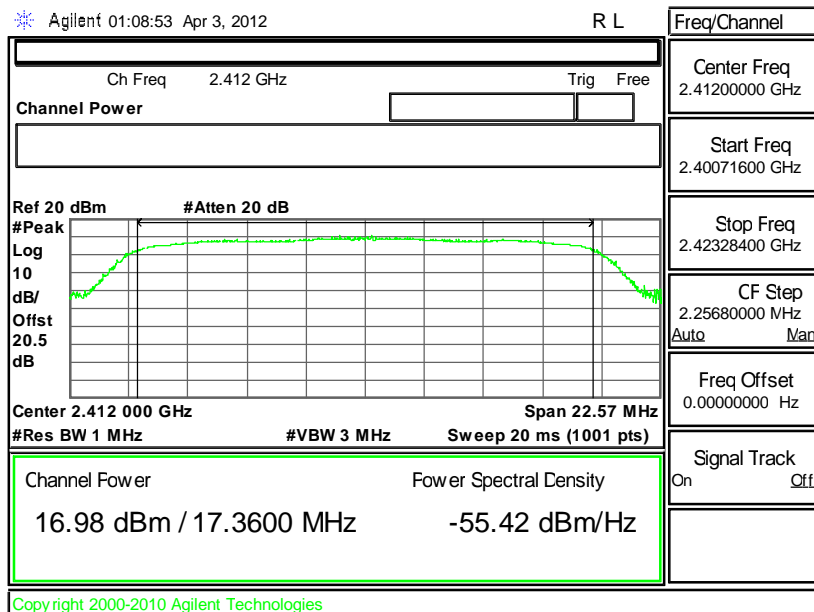
**Mode 5 : Output Power Plot on 802.11g Channel 06****Mode 6 : Output Power Plot on 802.11g Channel 11**

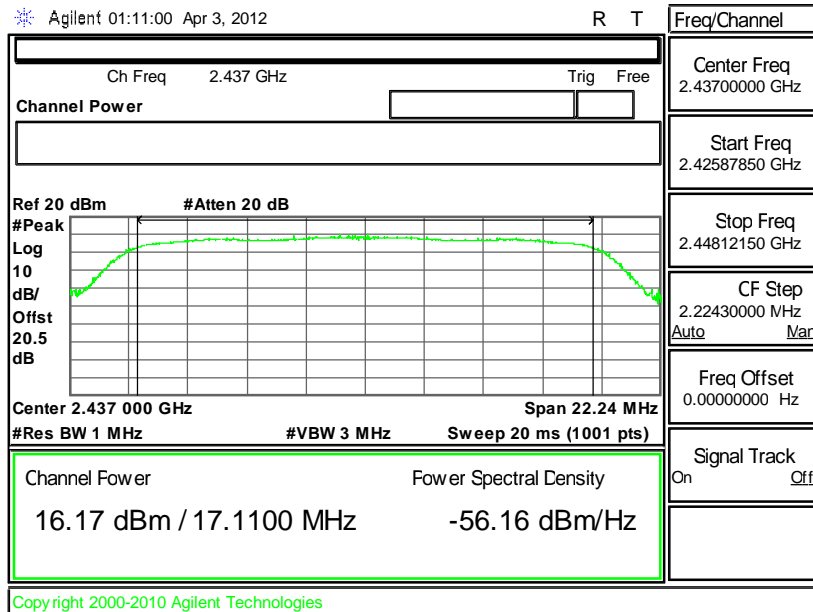
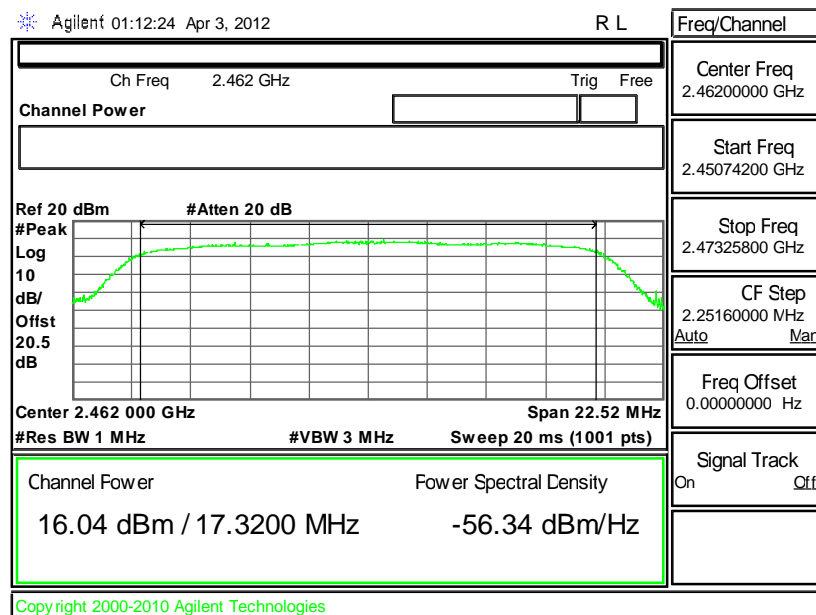


Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g/n (BW 20MHz) Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	16.98	30	Pass
06	2437	16.17	30	Pass
11	2462	16.04	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

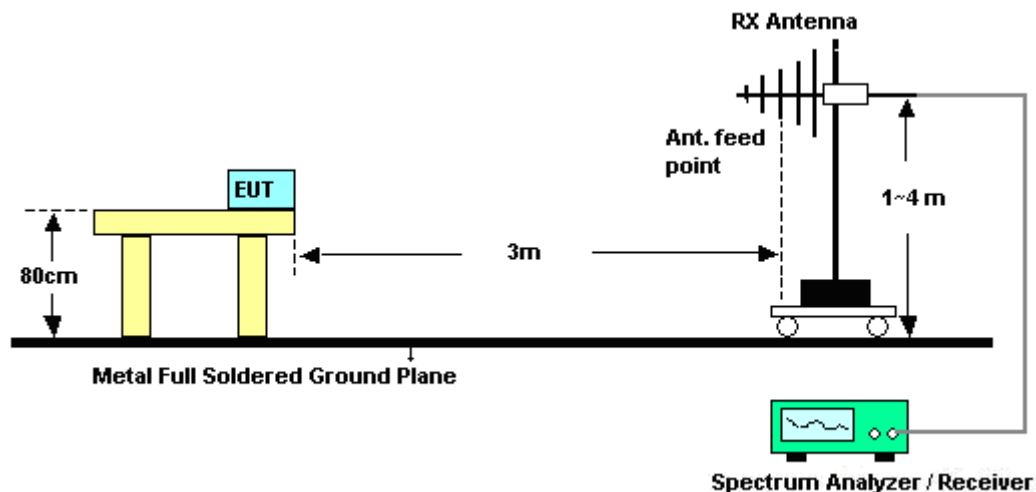
See list of measuring instruments of this test report.

3.3.3 Test Procedures

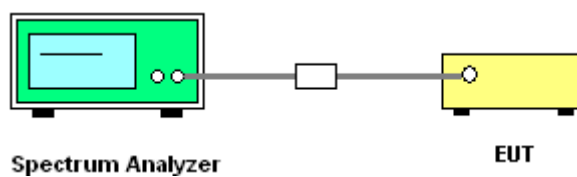
1. The testing follows the guidelines in ANSI C63.4-2003 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v01.
2. Conducted emission test: Set RBW = 100 KHz, Video bandwidth (VBW) \geq RBW. Out of the authorized frequency band emissions must be at least 20 dB lower 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 :	22~24℃
Test Band :	802.11b	Relative Humidity :	54~56%
Test Channel :	01	Test Engineer :	Kyle Zhuang

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	59.5	-14.5	74	55.37	32.06	6.03	33.96	111	331	Peak
2388.85	50.9	-3.1	54	46.77	32.06	6.03	33.96	111	331	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.42	49.56	-24.44	74	45.43	32.06	6.03	33.96	200	348	Peak
2389.42	39.27	-14.73	54	35.14	32.06	6.03	33.96	200	348	Average

Test Mode :	Mode 3	Temperature :	22~24℃
Test Band :	802.11b	Relative Humidity :	54~56%
Test Channel :	11	Test Engineer :	Kyle Zhuang

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	61.04	-12.96	74	56.68	32.18	6.18	34	109	334	Peak
2483.5	51.13	-2.87	54	46.77	32.18	6.18	34	109	334	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
2488.41	52.76	-21.24	74	48.38	32.2	6.18	34	160	352	Peak
2488.41	43.22	-10.78	54	38.84	32.2	6.18	34	160	352	Average



Test Mode :	Mode 4	Temperature :	22~24℃
Test Band :	802.11g	Relative Humidity :	54~56%
Test Channel :	01	Test Engineer :	Kyle Zhuang

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
2389.99	72.65	-1.35	74	68.52	32.06	6.03	33.96	100	327	Peak
2389.99	50.3	-3.7	54	46.17	32.06	6.03	33.96	100	327	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	62.96	-11.04	74	58.83	32.06	6.03	33.96	189	29	Peak
2389.99	43.92	-10.08	54	39.79	32.06	6.03	33.96	189	29	Average

Test Mode :	Mode 6	Temperature :	22~24℃
Test Band :	802.11g	Relative Humidity :	54~56%
Test Channel :	11	Test Engineer :	Kyle Zhuang

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	72.31	-1.69	74	67.95	32.18	6.18	34	107	332	Peak
2483.5	49.79	-4.21	54	45.43	32.18	6.18	34	107	332	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
2483.66	62.98	-11.02	74	58.62	32.18	6.18	34	100	62	Peak
2483.66	40.39	-13.61	54	36.03	32.18	6.18	34	100	62	Average



Test Mode :	Mode 7	Temperature :	22~24℃
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	54~56%
Test Channel :	01	Test Engineer :	Kyle Zhuang

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
2389.99	72.47	-1.53	74	68.34	32.06	6.03	33.96	100	328	Peak
2389.99	49.67	-4.33	54	45.54	32.06	6.03	33.96	100	328	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	61.95	-12.05	74	57.82	32.06	6.03	33.96	190	30	Peak
2389.61	41.92	-12.08	54	37.79	32.06	6.03	33.96	190	30	Average

Test Mode :	Mode 9	Temperature :	22~24℃
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	54~56%
Test Channel :	11	Test Engineer :	Kyle Zhuang

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	68.36	-5.64	74	64	32.18	6.18	34	198	330	Peak
2483.5	47.06	-6.94	54	42.7	32.18	6.18	34	198	330	Average

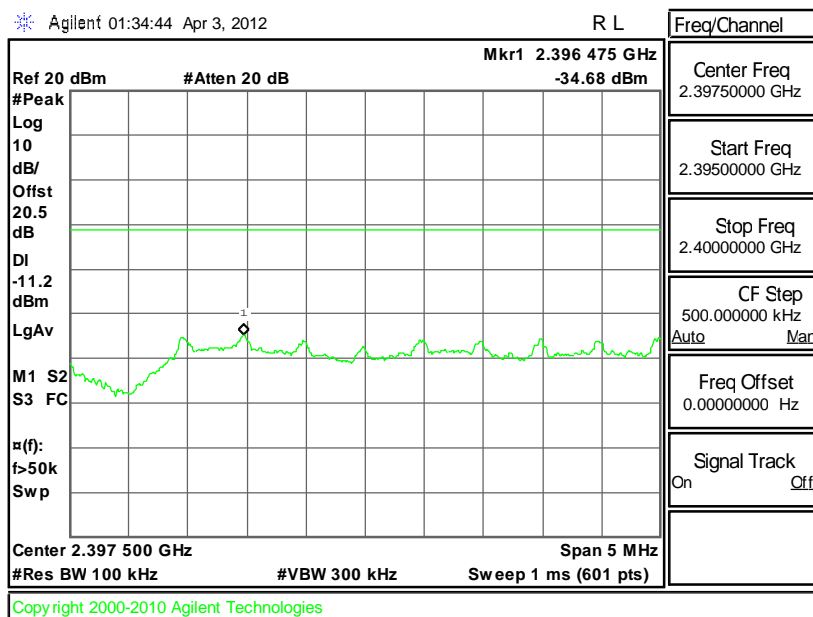
ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.85	61.39	-12.61	74	57.03	32.18	6.18	34	100	61	Peak
2483.85	39.78	-14.22	54	35.42	32.18	6.18	34	100	61	Average



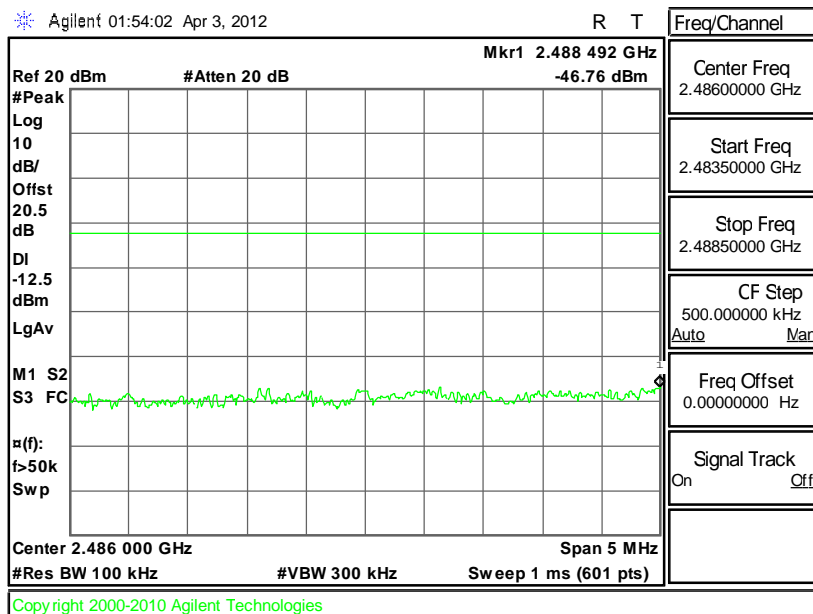
3.3.6 Test Plots of Conducted Band Edges

Test Mode :	Mode 1 and 3	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Reece Li

Low Band Edge Plot on 802.11b Channel 01

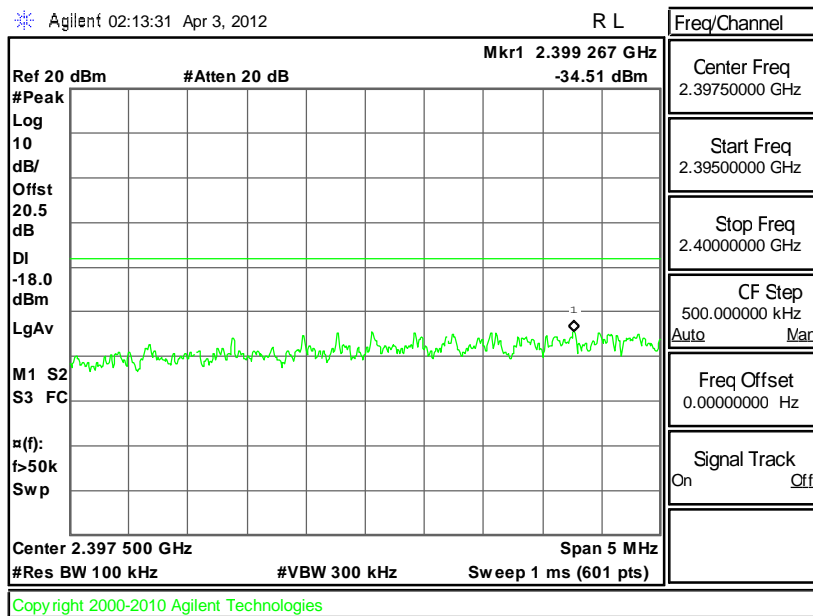
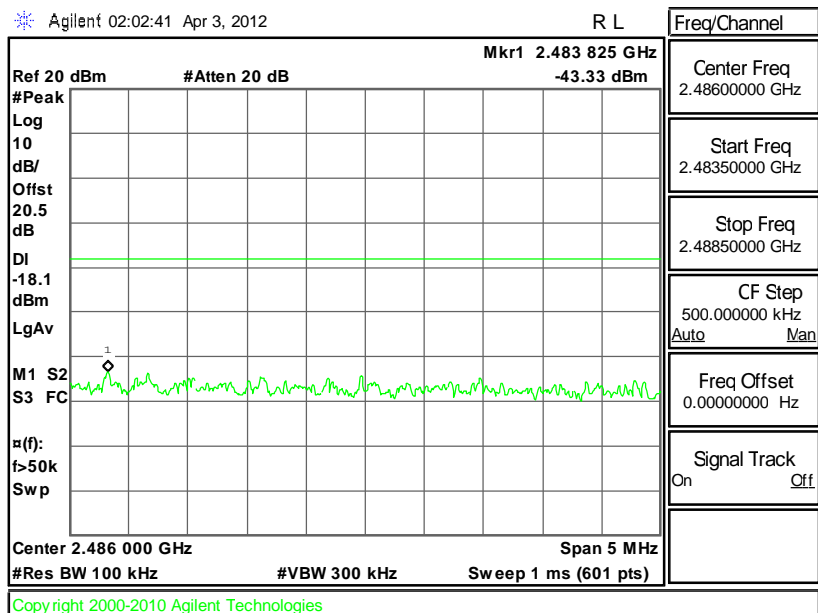


High Band Edge Plot on 802.11b Channel 11



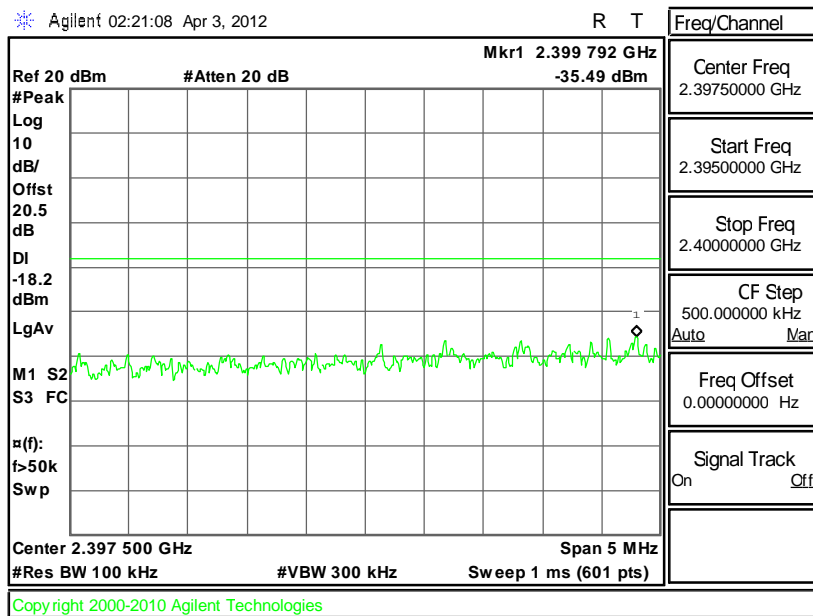
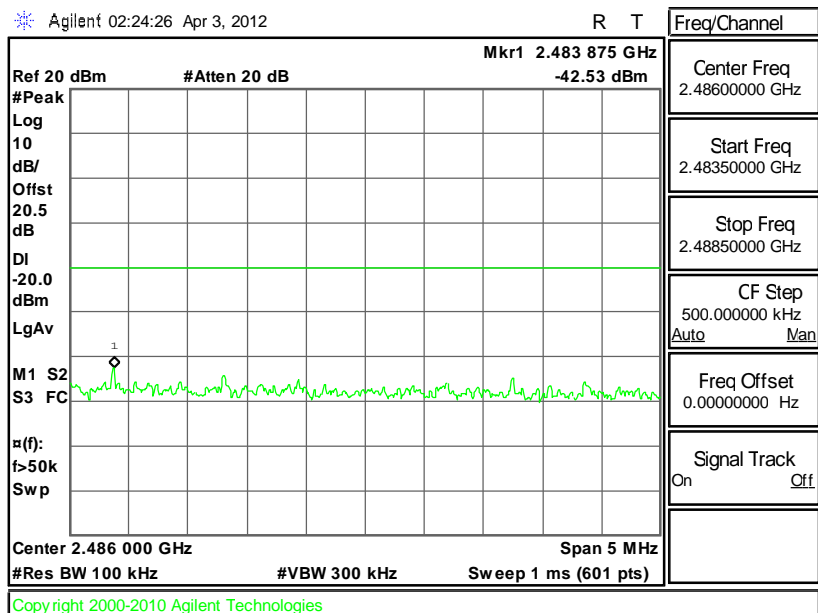


Test Mode :	Mode 4 and 6	Temperature :	24~26℃
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Reece Li

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°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Reece Li

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.

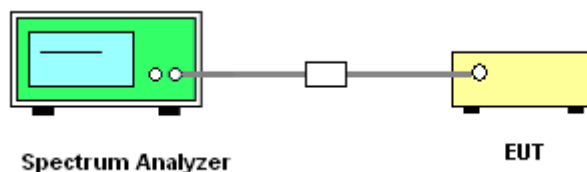
3.4.2 Measuring Instruments

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 loss cable. The path loss was compensated to the results for each measurement.
2. Set RBW = 100 KHz, Video bandwidth (VBW) \geq 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

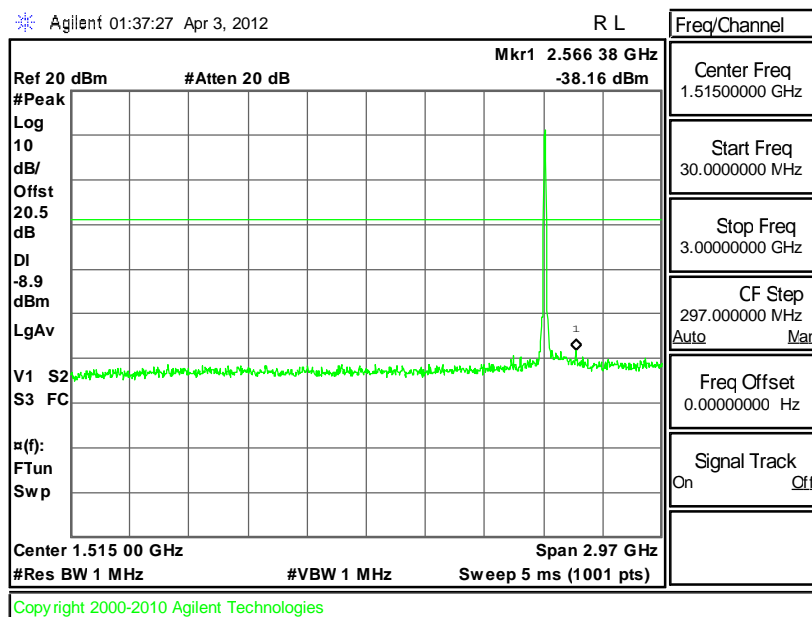




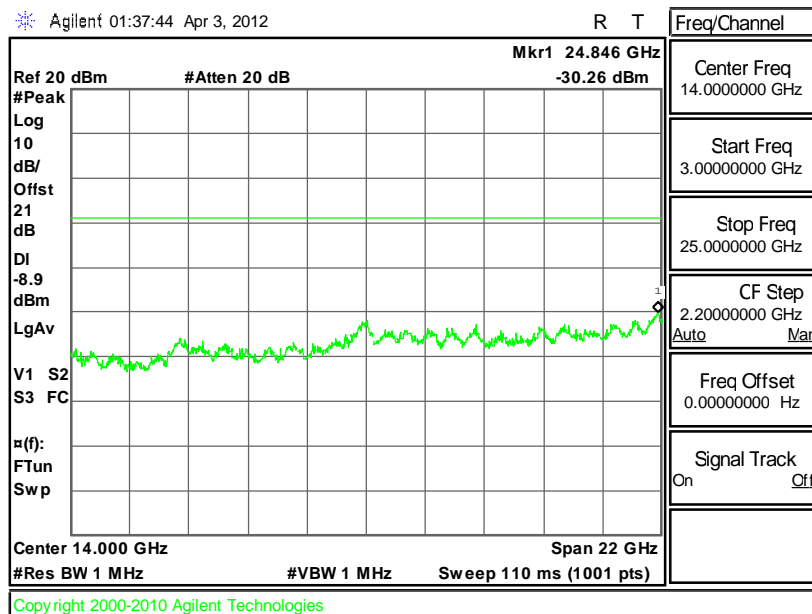
3.4.5 Test Plots of Spurious Emission

Test Mode :	Mode 1	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Reece Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

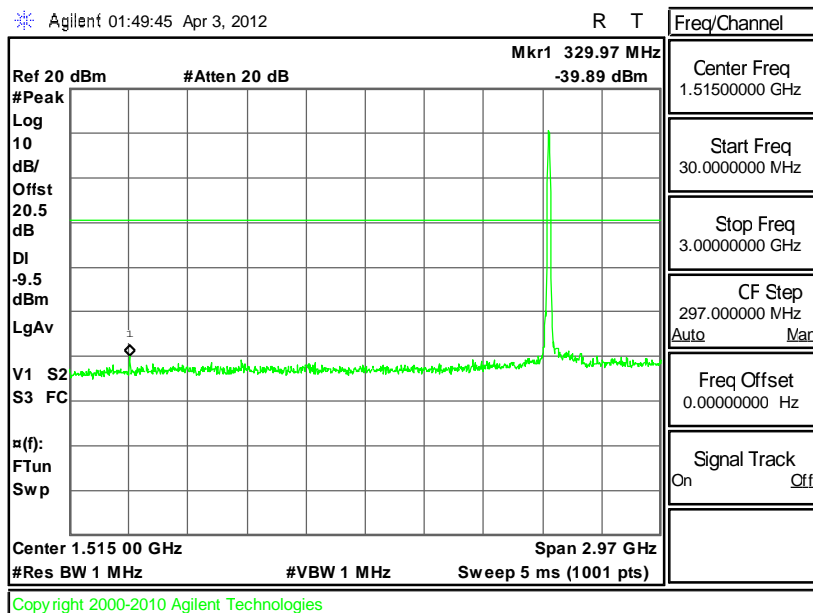
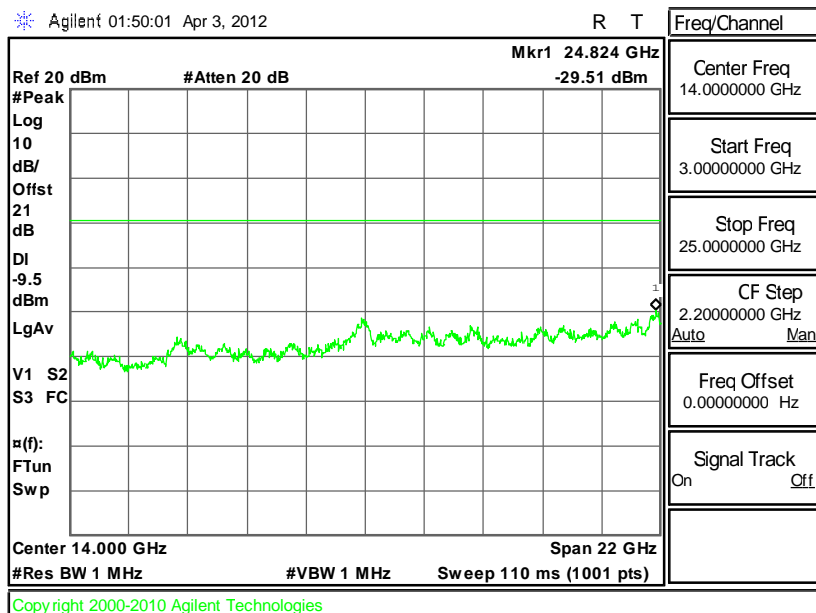


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz





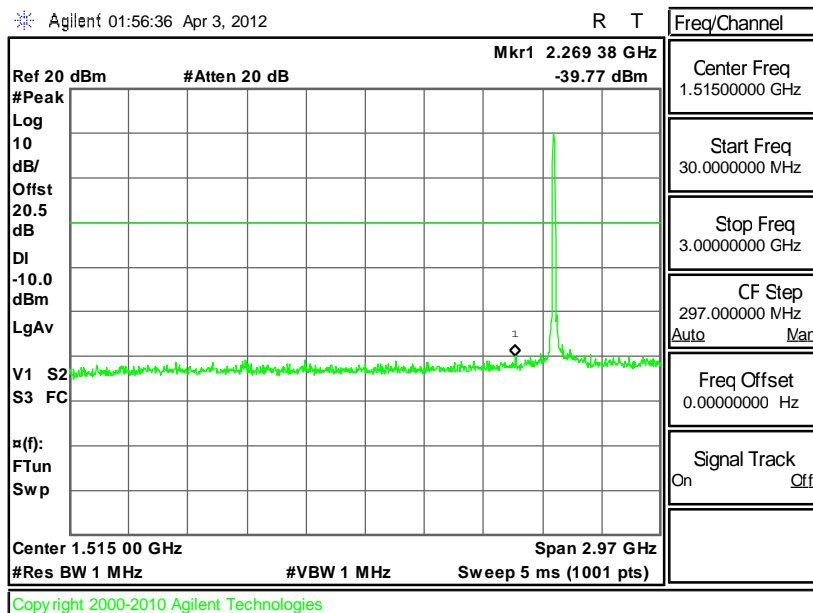
Test Mode :	Mode 2	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Reece Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz**Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz**

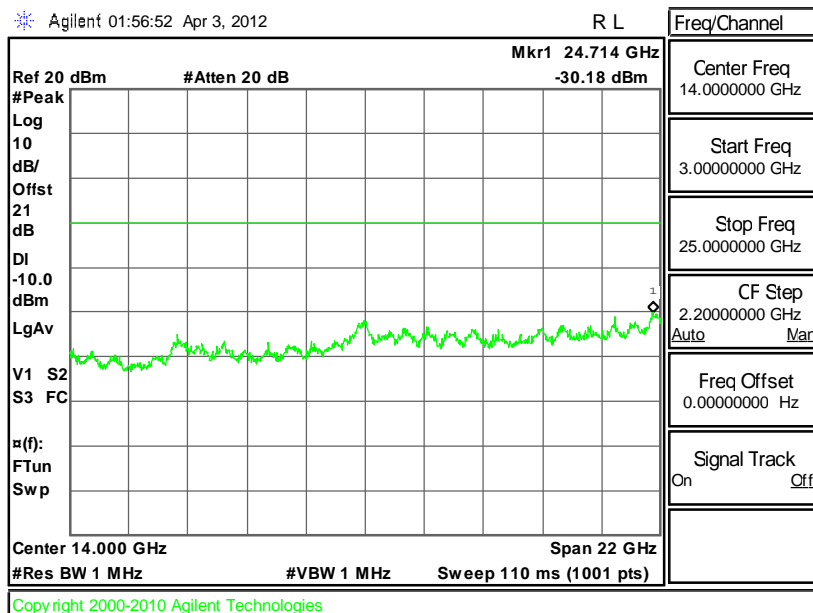


Test Mode :	Mode 3	Temperature :	24~26°C
Test Band :	802.11b	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Reece Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



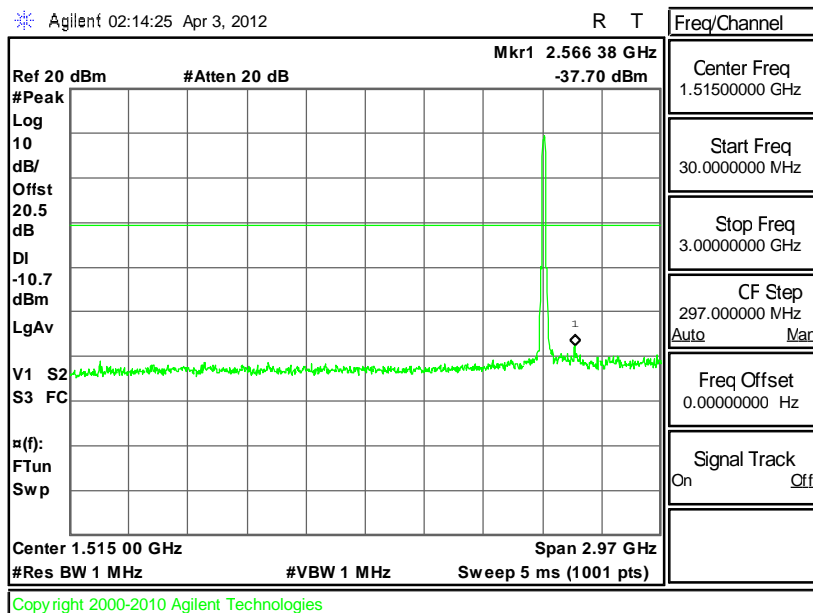
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



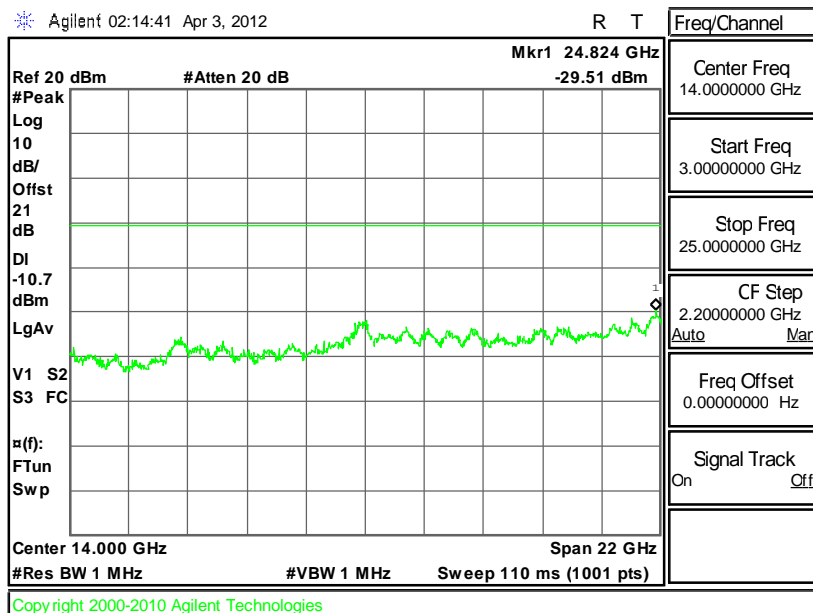


Test Mode :	Mode 4	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Reece Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



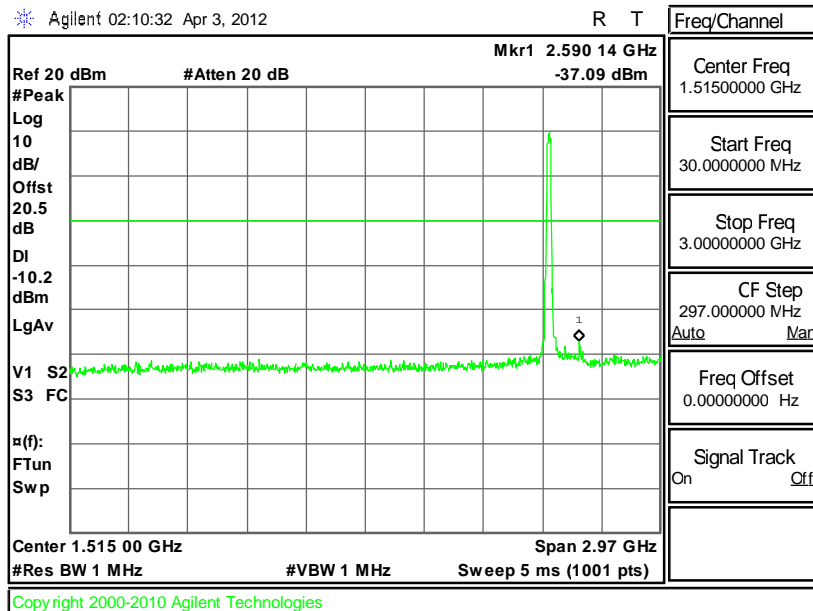
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



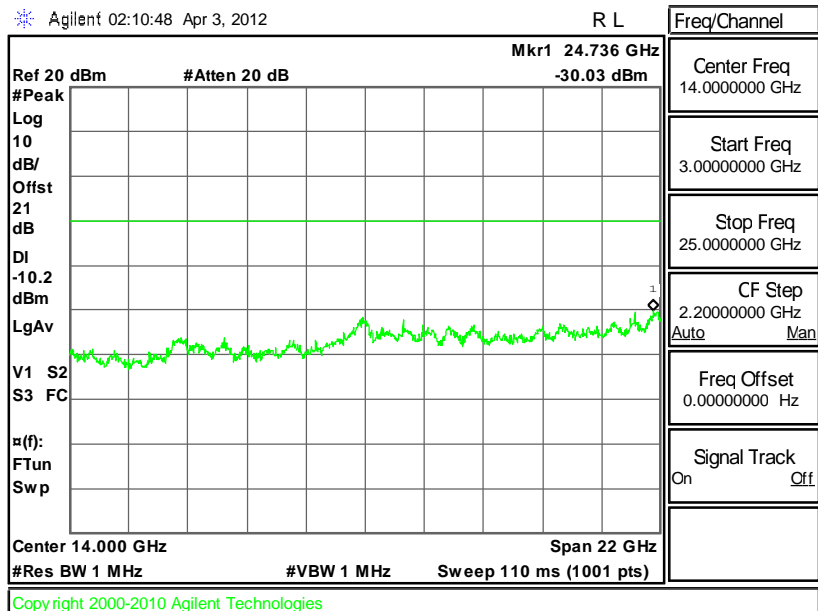


Test Mode :	Mode 5	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Reece Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



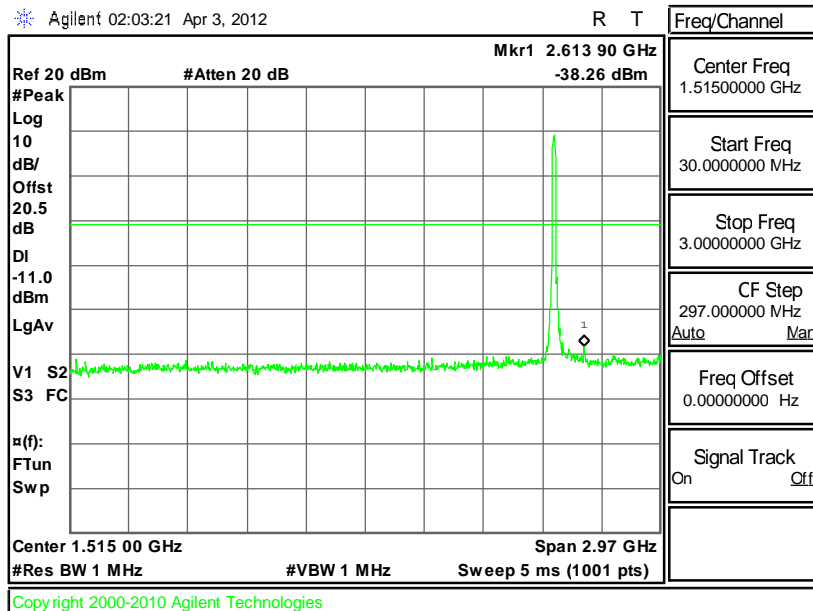
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



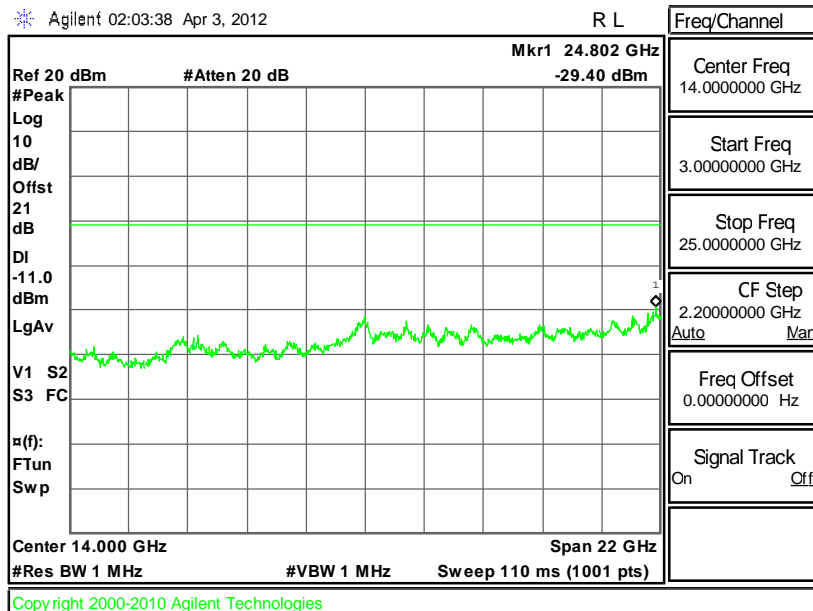


Test Mode :	Mode 6	Temperature :	24~26°C
Test Band :	802.11g	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Reece Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz

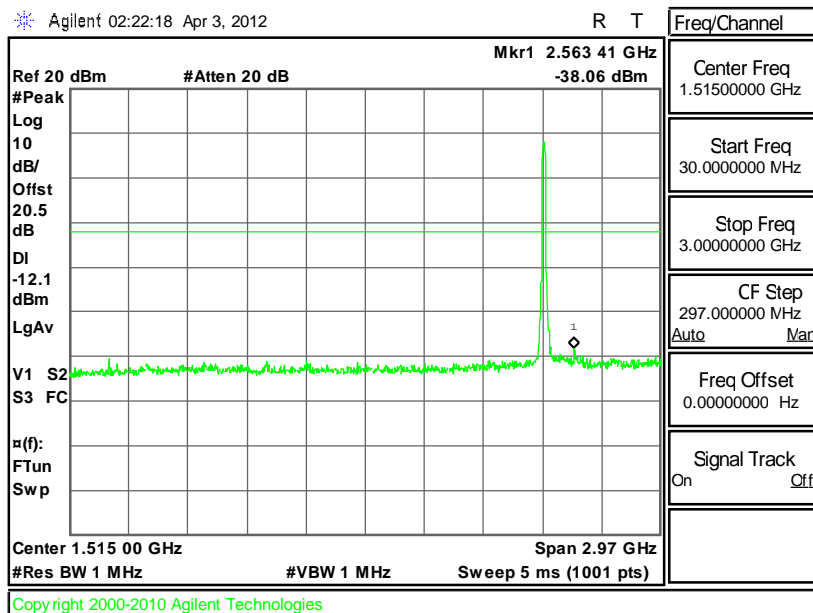
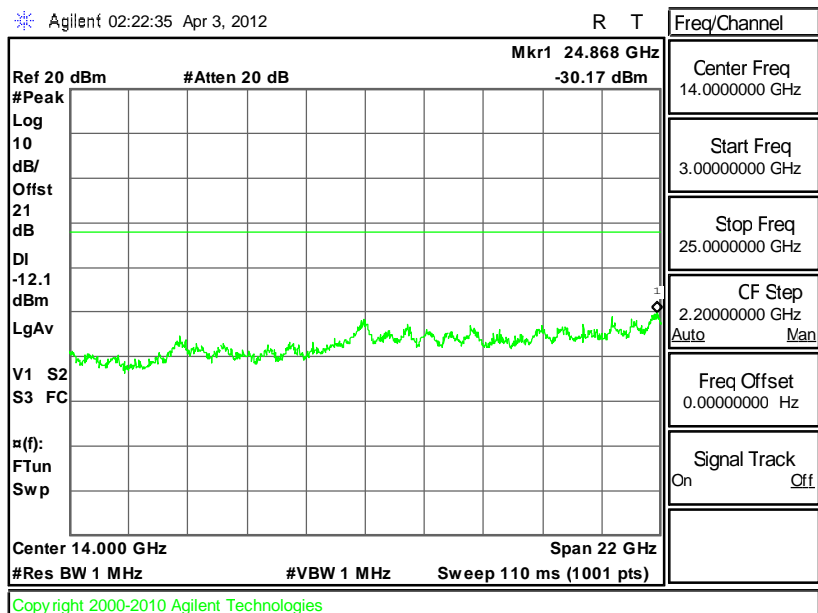


Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



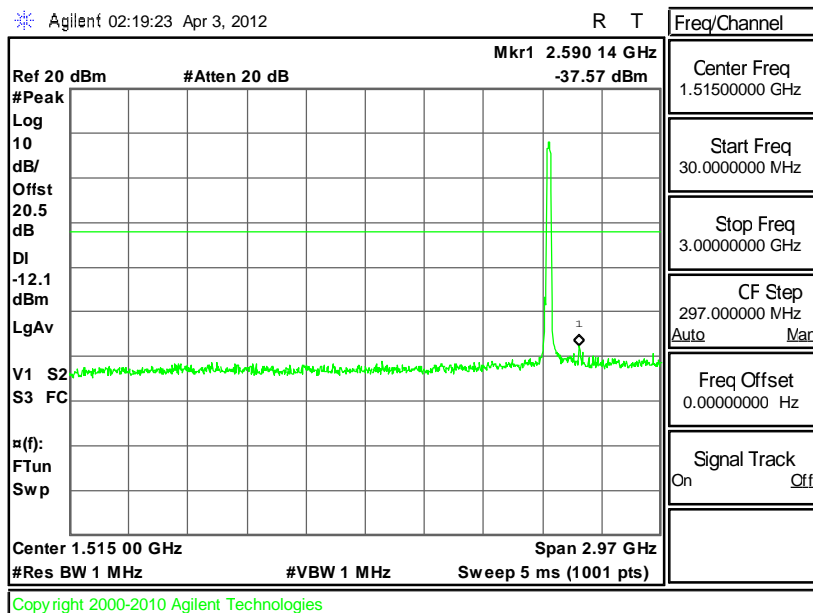
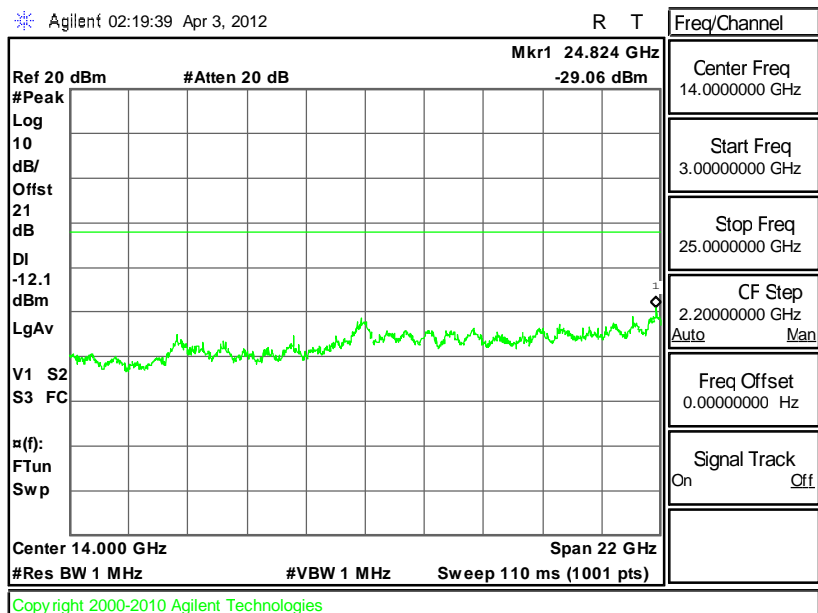


Test Mode :	Mode 7	Temperature :	24~26°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Reece Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz**Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz**

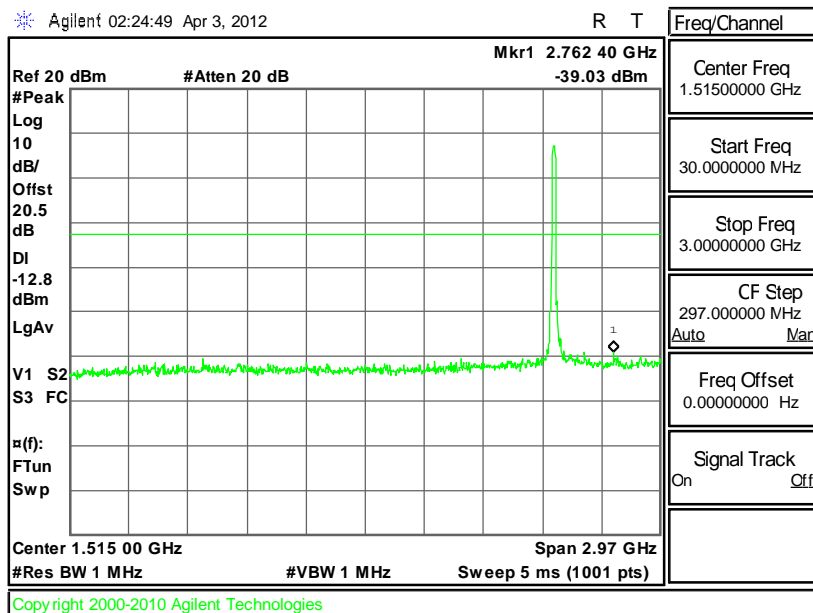
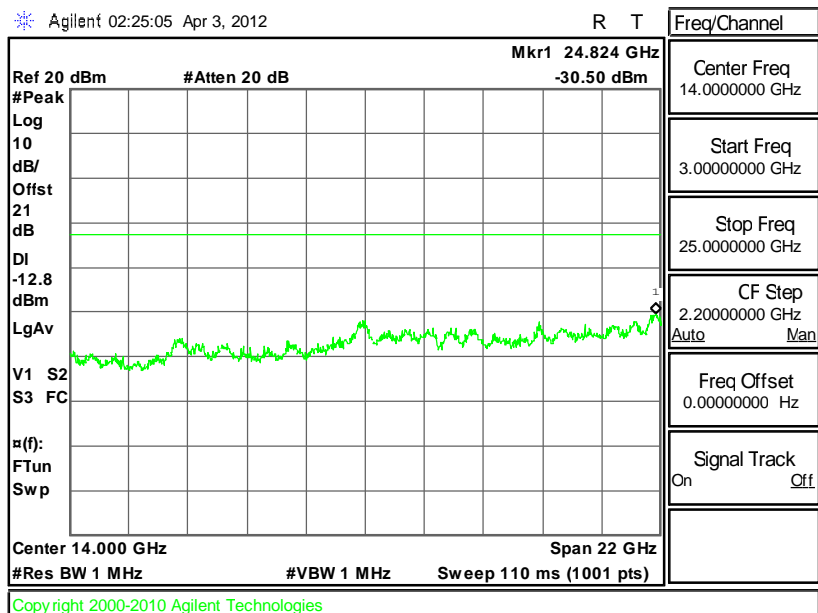


Test Mode :	Mode 8	Temperature :	24~26°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Reece Li

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz**Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz**



Test Mode :	Mode 9	Temperature :	24~26°C
Test Band :	802.11g/n (BW 20MHz)	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Reece Li

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.

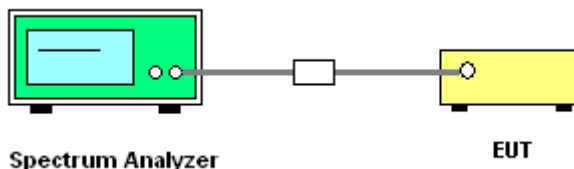
3.5.2 Measuring Instruments

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) \geq 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 $BWCF = 10\log(3\text{ kHz}/100\text{ kHz} = -15.2\text{ dB})$.

3.5.4 Test Setup



3.5.5 Test Result of Power Spectral Density

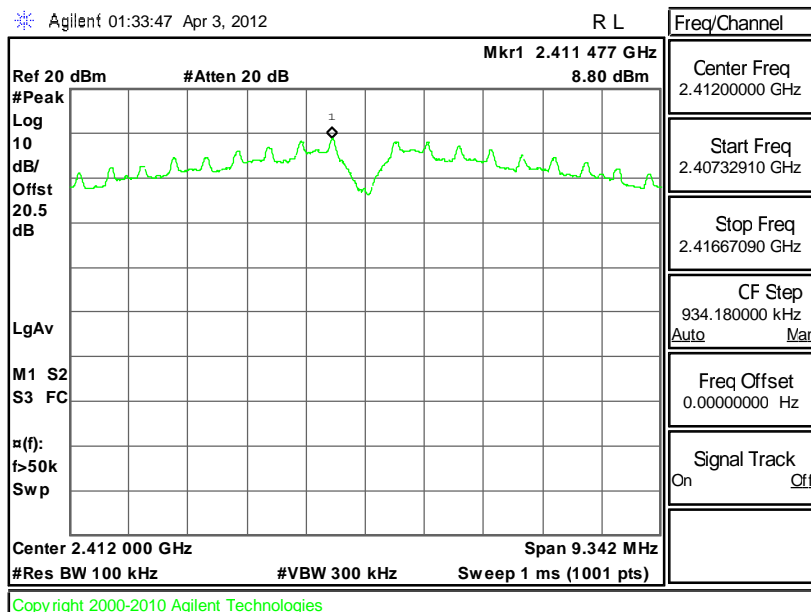
Test Mode :	Mode 1, 2, 3	Temperature :	24~26℃
Test Engineer :	Reece Li	Relative Humidity :	50~53%

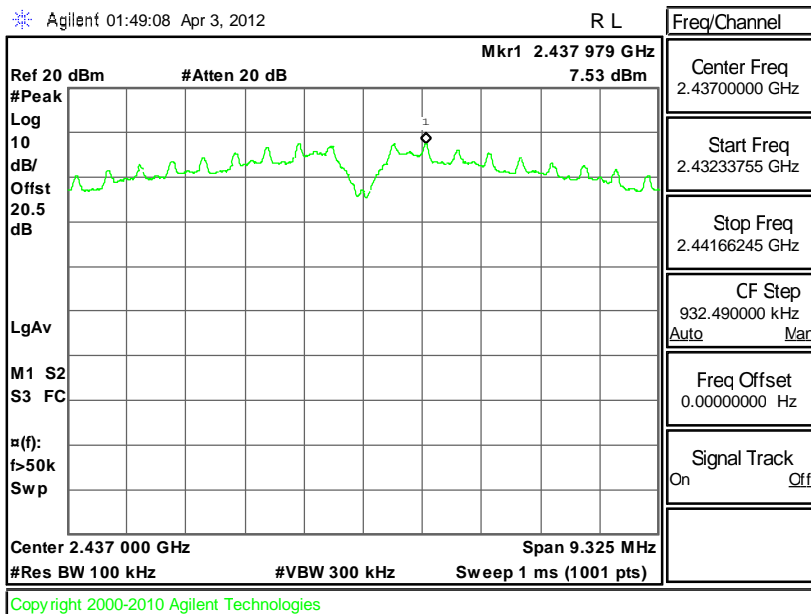
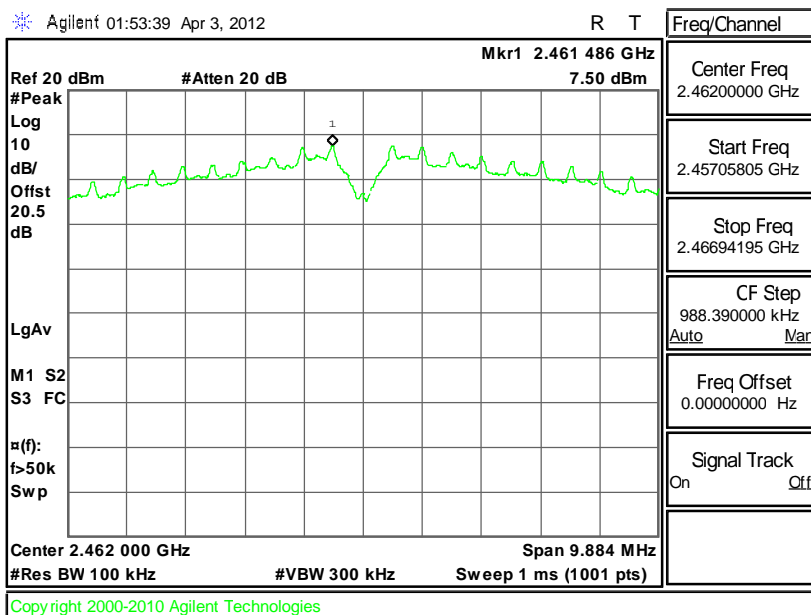
Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	8.80	-6.40	8	Pass
06	2437	7.53	-7.67	8	Pass
11	2462	7.50	-7.70	8	Pass

Note:

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

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**



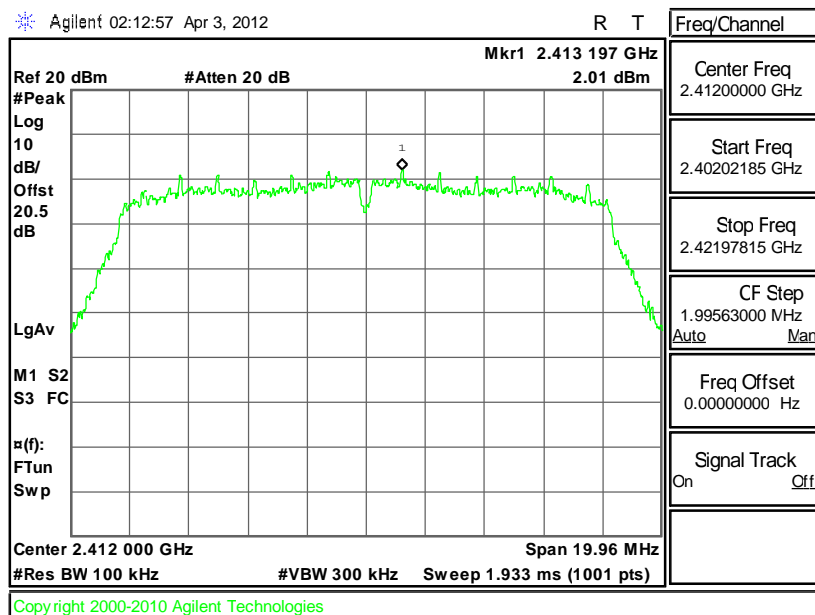
Test Mode :	Mode 4, 5, 6	Temperature :	24~26°C
Test Engineer :	Reece Li	Relative Humidity :	50~53%

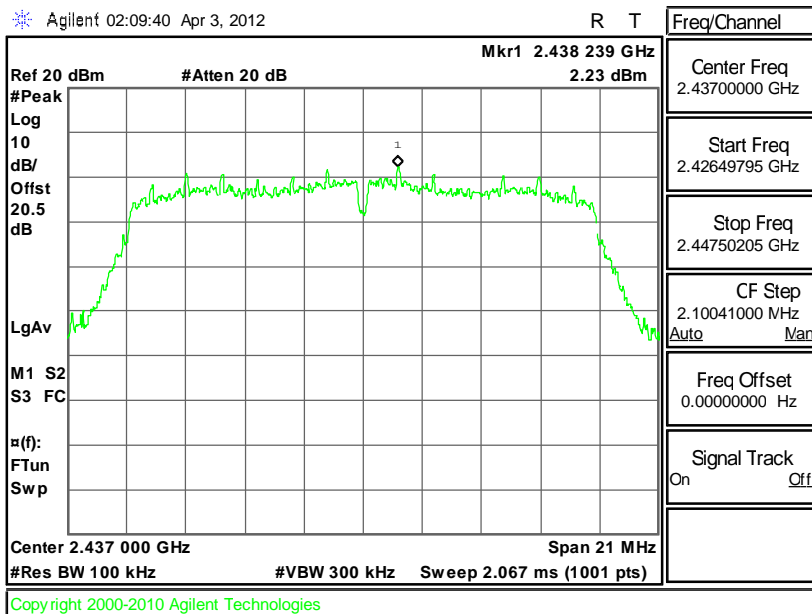
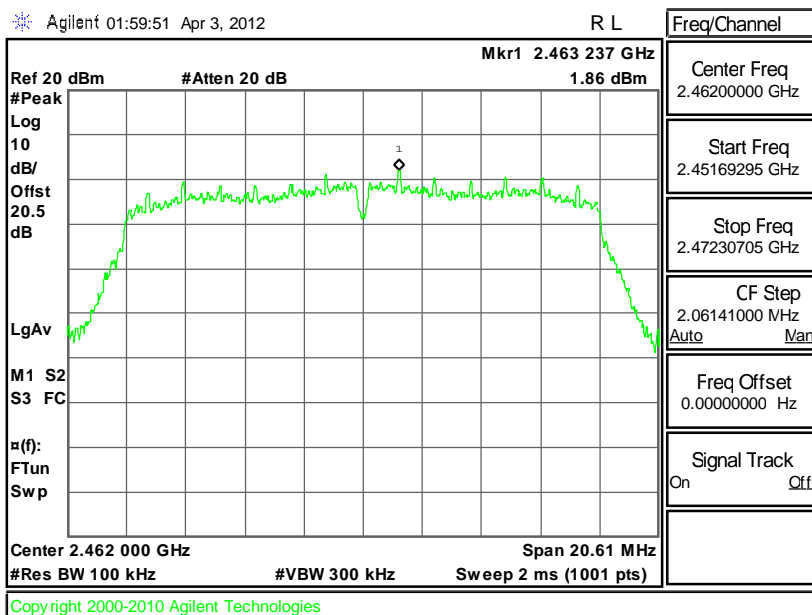
Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	2.01	-13.19	8	Pass
06	2437	2.23	-12.97	8	Pass
11	2462	1.86	-13.34	8	Pass

Note:

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

Mode 4 : PSD Plot on 802.11g Channel 01



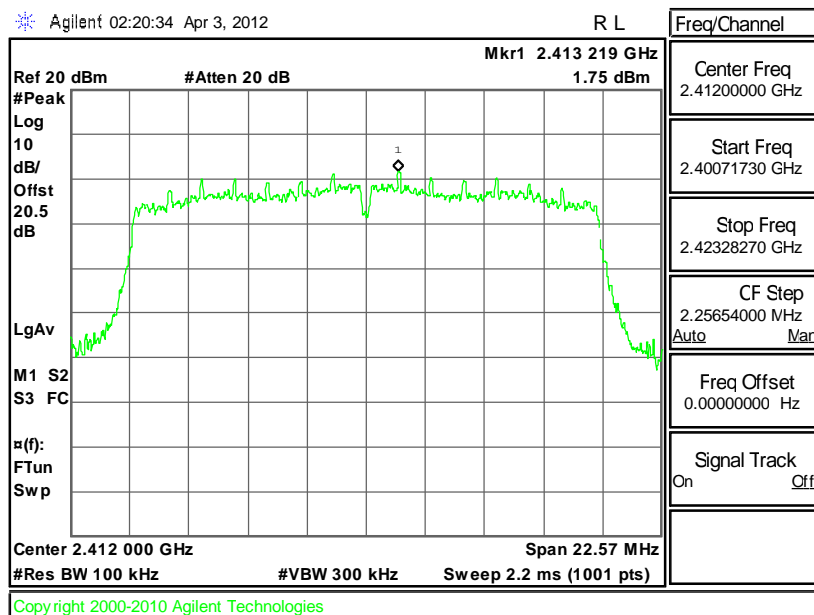
**Mode 5 : PSD Plot on 802.11g Channel 06****Mode 6 : PSD Plot on 802.11g Channel 11**

Test Mode :	Mode 7, 8, 9	Temperature :	24~26°C
Test Engineer :	Reece Li	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	1.75	-13.45	8	Pass
06	2437	1.08	-14.12	8	Pass
11	2462	-0.05	-15.25	8	Pass

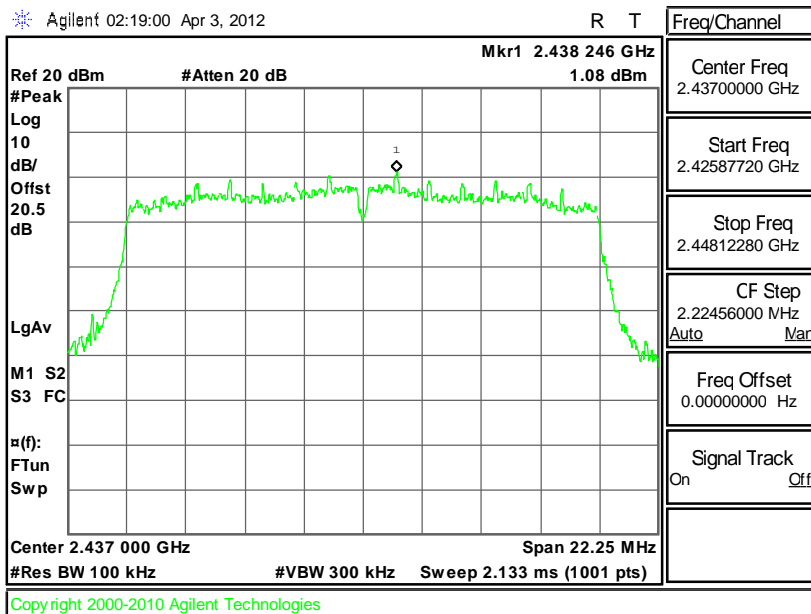
Note:

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

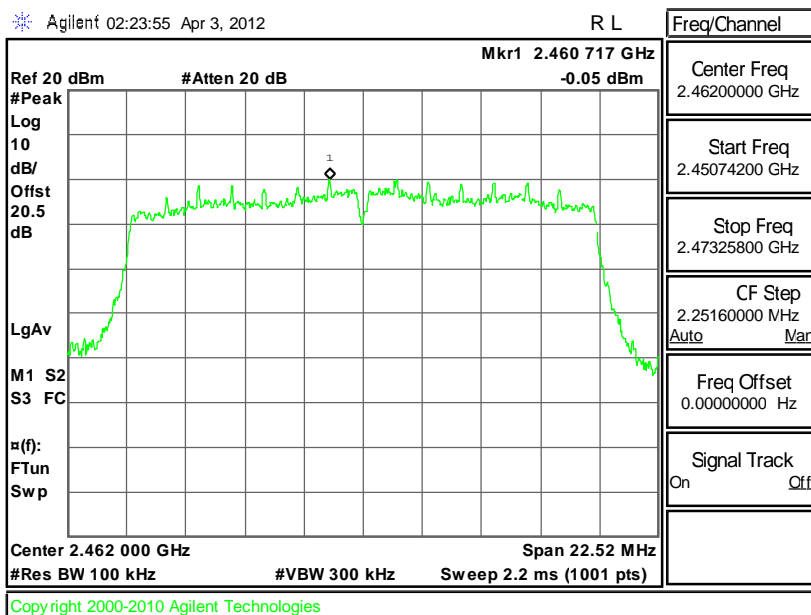
Mode 7 : PSD Plot on 802.11g/n (BW 20MHz) Channel 01




Mode 8 : PSD Plot on 802.11g/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.

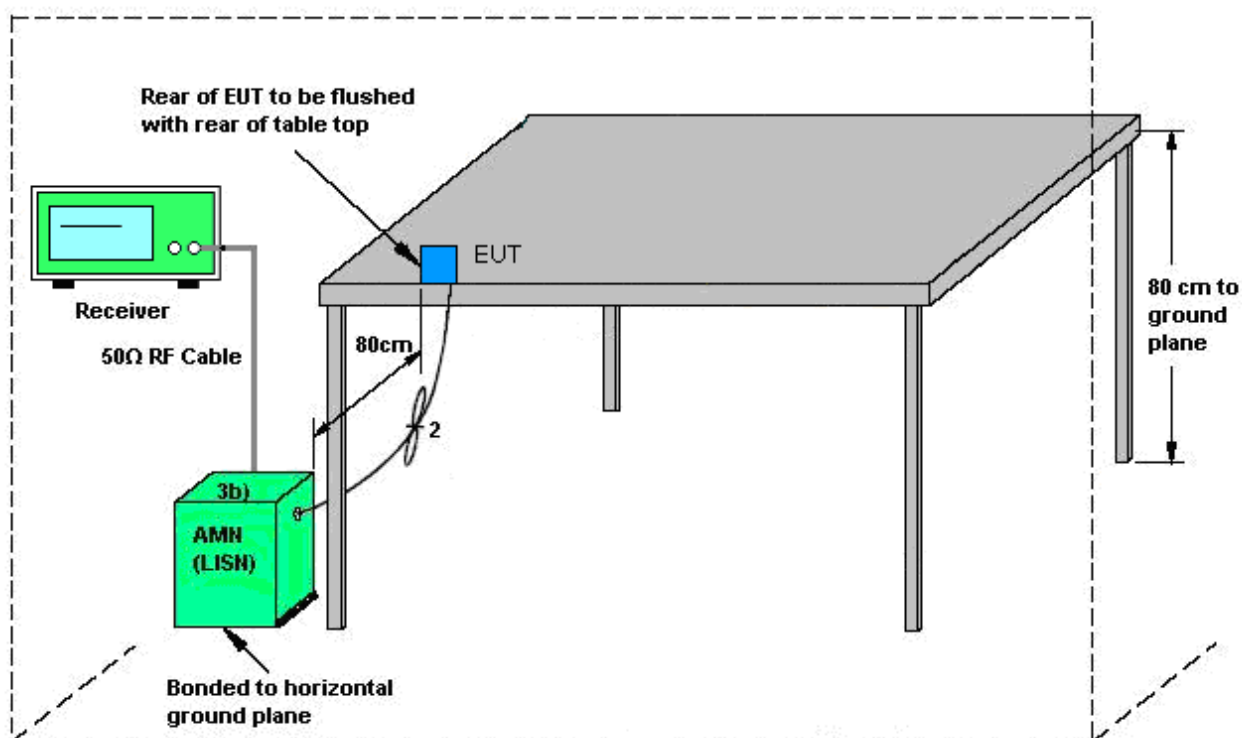
3.6.2 Measuring Instruments

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.

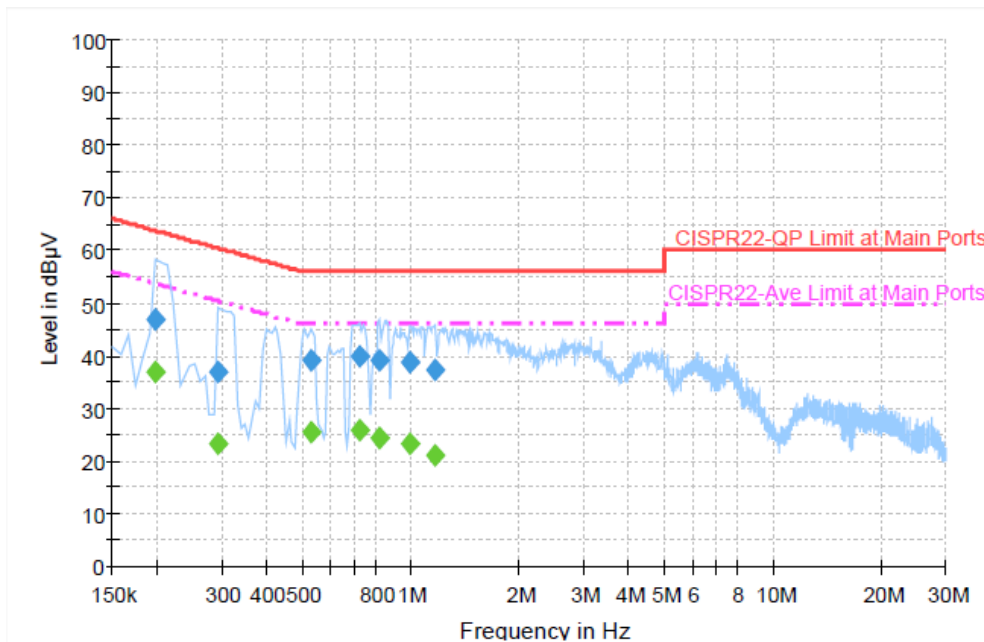
3.6.4 Test Setup



AMN = Artificial mains network (LISN)
 AE = Associated equipment
 EUT = Equipment under test
 ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	50~52%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Bluetooth Link + GPS Rx + TC for Sample 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



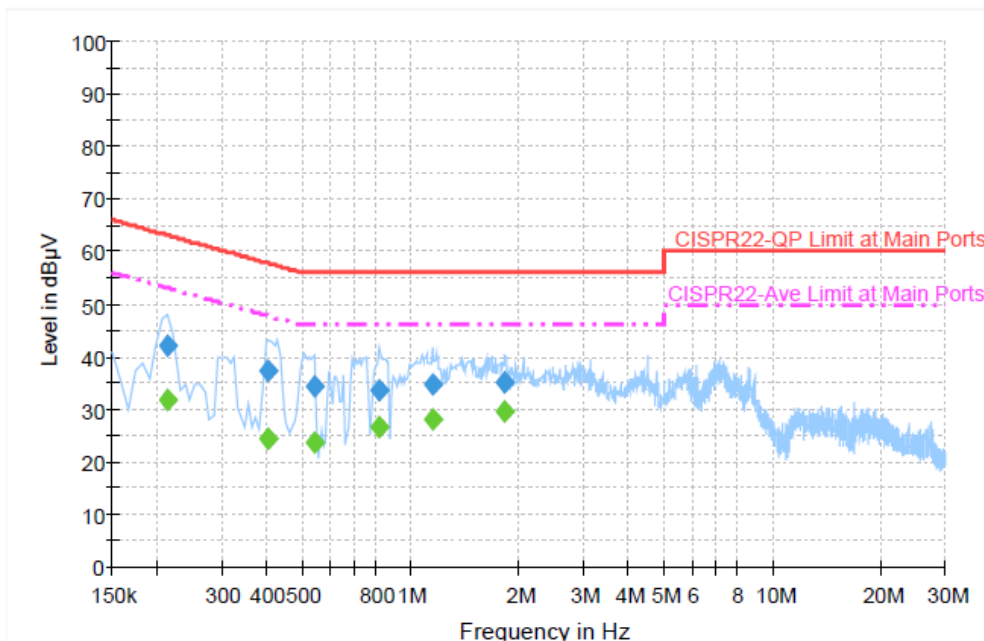
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.198000	46.8	Off	L1	19.3	16.9	63.7
0.294000	37.0	Off	L1	19.3	23.4	60.4
0.534000	39.3	Off	L1	19.3	16.7	56.0
0.726000	40.0	Off	L1	19.4	16.0	56.0
0.822000	39.0	Off	L1	19.5	17.0	56.0
0.990000	38.7	Off	L1	19.4	17.3	56.0
1.166000	37.2	Off	L1	19.4	18.8	56.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.198000	37.0	Off	L1	19.3	16.7	53.7
0.294000	23.2	Off	L1	19.3	27.2	50.4
0.534000	25.6	Off	L1	19.3	20.4	46.0
0.726000	25.8	Off	L1	19.4	20.2	46.0
0.822000	24.2	Off	L1	19.5	21.8	46.0
0.990000	23.4	Off	L1	19.4	22.6	46.0
1.166000	21.2	Off	L1	19.4	24.8	46.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	50~52%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Bluetooth Link + GPS Rx + TC 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)
0.214000	42.0	Off	N	19.4	21.0	63.0
0.406000	37.3	Off	N	19.4	20.4	57.7
0.542000	34.2	Off	N	19.3	21.8	56.0
0.822000	33.4	Off	N	19.5	22.6	56.0
1.150000	34.8	Off	N	19.5	21.2	56.0
1.822000	35.2	Off	N	19.5	20.8	56.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.214000	31.6	Off	N	19.4	21.4	53.0
0.406000	24.4	Off	N	19.4	23.3	47.7
0.542000	23.8	Off	N	19.3	22.2	46.0
0.822000	26.7	Off	N	19.5	19.3	46.0
1.150000	28.1	Off	N	19.5	17.9	46.0
1.822000	29.7	Off	N	19.5	16.3	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

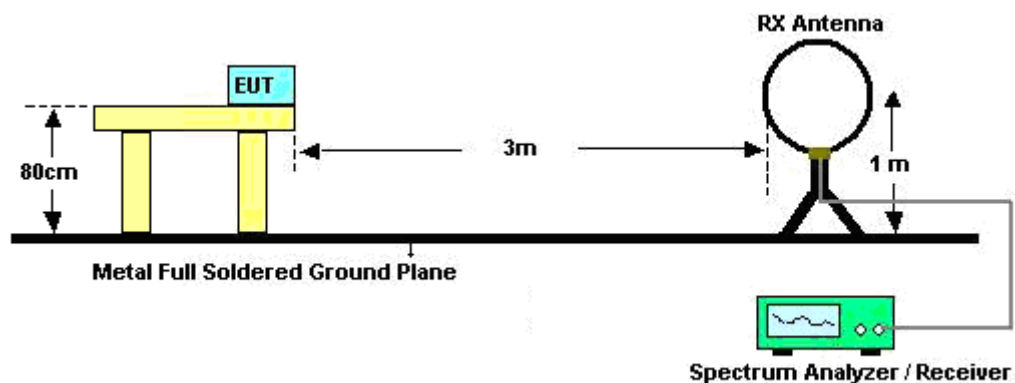
See list of measuring instruments of this test report.

3.7.3 Test Procedures

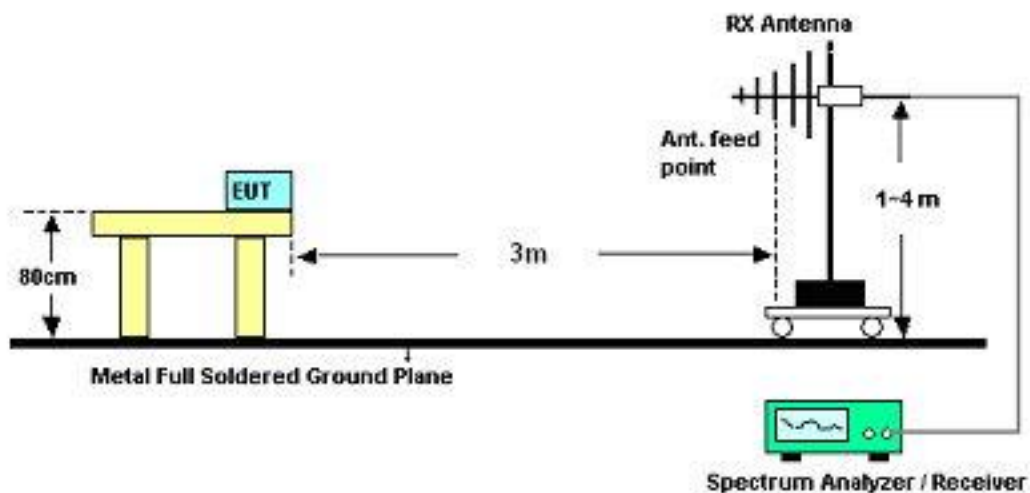
1. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW = 1 MHz for $f \geq 1$ GHz, 100 KHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Measurement above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB per decade from 3m to 1m.
Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (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

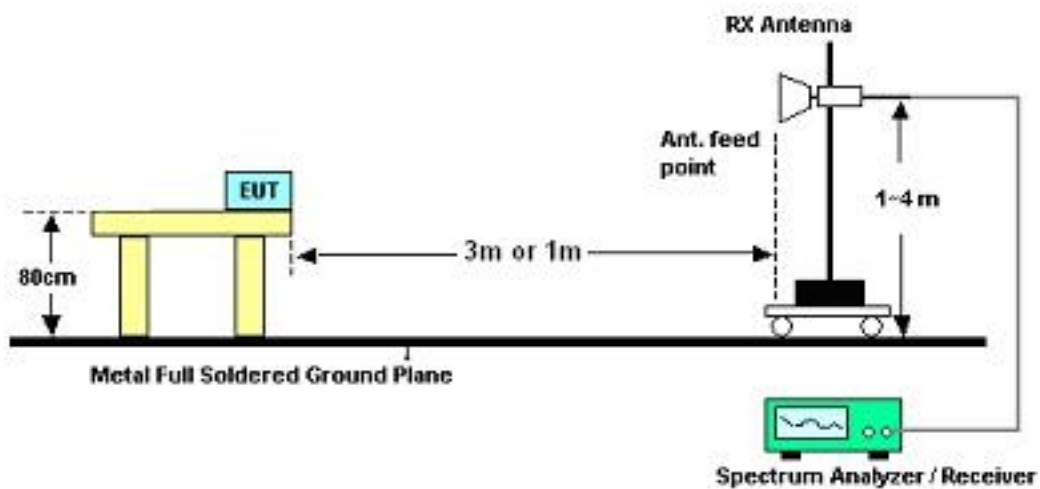
For radiated emissions below 30MHz



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 :	22~24℃
Test Channel :	01	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 111.07 dBuV/m - 20dB = 91.07 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.85	59.5	-14.5	74	55.37	32.06	6.03	33.96	111	331	Peak
2388.85	50.9	-3.1	54	46.77	32.06	6.03	33.96	111	331	Average
2412	111.07	-	-	106.89	32.08	6.07	33.97	111	331	Peak
2412	106.59	-	-	102.41	32.08	6.07	33.97	111	331	Average
2492	43.36	-10.64	54	38.98	32.2	6.18	34	111	331	Average
2492	54.59	-19.41	74	50.21	32.2	6.18	34	111	331	Peak
4824	46.31	-27.69	74	62.2	34.1	9.12	59.11	100	0	Peak
7236	46.97	-44.1	91.07	59.35	35.7	10.03	58.11	100	0	Peak

Test Mode :	Mode 1	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.42	49.56	-24.44	74	45.43	32.06	6.03	33.96	200	348	Peak
2389.42	39.27	-14.73	54	35.14	32.06	6.03	33.96	200	348	Average
2412	101.65	-	-	97.47	32.08	6.07	33.97	200	348	Peak
2412	96.26	-	-	92.08	32.08	6.07	33.97	200	348	Average
2492	37	-17	54	32.62	32.2	6.18	34	200	348	Average
2492	48.5	-25.5	74	44.12	32.2	6.18	34	200	348	Peak
4824	42.77	-31.23	74	58.66	34.1	9.12	59.11	100	0	Peak
7236	48.14	-33.51	81.65	60.52	35.7	10.03	58.11	100	0	Peak

Test Mode :	Mode 2	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	51.99	-22.01	74	47.86	32.06	6.03	33.96	107	331	Peak
2390	39.15	-14.85	54	35.02	32.06	6.03	33.96	107	331	Average
2437	110.6	-	-	106.34	32.13	6.11	33.98	107	331	Peak
2437	105.77	-	-	101.51	32.13	6.11	33.98	107	331	Average
2492	55.79	-18.21	74	51.41	32.2	6.18	34	107	331	Peak
2492	44.44	-9.56	54	40.06	32.2	6.18	34	107	331	Average

Test Mode :	Mode 2	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	46.83	-27.17	74	42.7	32.06	6.03	33.96	199	351	Peak
2390	34.58	-19.42	54	30.45	32.06	6.03	33.96	199	351	Average
2437	102.59	-	-	98.33	32.13	6.11	33.98	199	351	Peak
2437	97.77	-	-	93.51	32.13	6.11	33.98	199	351	Average
2492	48.95	-25.05	74	44.57	32.2	6.18	34	199	351	Peak
2492	37.7	-16.3	54	33.32	32.2	6.18	34	199	351	Average

Test Mode :	Mode 3	Temperature :	22~24℃
Test Channel :	11	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	54.06	-19.94	74	49.96	32.03	6.03	33.96	109	334	Peak
2380	42.96	-11.04	54	38.86	32.03	6.03	33.96	109	334	Average
2462	111.24	-	-	106.94	32.15	6.14	33.99	109	334	Peak
2462	105.91	-	-	101.61	32.15	6.14	33.99	109	334	Average
2483.5	61.04	-12.96	74	56.68	32.18	6.18	34	109	334	Peak
2483.5	51.13	-2.87	54	46.77	32.18	6.18	34	109	334	Average

Test Mode :	Mode 3	Temperature :	22~24℃
Test Channel :	11	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	45.65	-28.35	74	41.55	32.03	6.03	33.96	160	352	Peak
2380	34.36	-19.64	54	30.26	32.03	6.03	33.96	160	352	Average
2462	102.65	-	-	98.35	32.15	6.14	33.99	160	352	Peak
2462	98.18	-	-	93.88	32.15	6.14	33.99	160	352	Average
2488.41	52.76	-21.24	74	48.38	32.2	6.18	34	160	352	Peak
2488.41	43.22	-10.78	54	38.84	32.2	6.18	34	160	352	Average

Test Mode :	Mode 4	Temperature :	22~24℃
Test Channel :	01	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
48.9	26.32	-13.68	40	48.27	8.9	0.68	31.53	100	174	Peak
147.45	20.14	-23.36	43.5	39.24	11.25	1.21	31.56	-	-	Peak
223.86	23.2	-22.8	46	42.43	10.78	1.44	31.45	-	-	Peak
380.5	19.69	-26.31	46	33.35	15.48	2.1	31.24	-	-	Peak
707.4	23.23	-22.77	46	30.37	20.7	2.96	30.8	-	-	Peak
831.3	24.76	-21.24	46	29.84	22.41	3.22	30.71	-	-	Peak
2389.99	72.65	-1.35	74	68.52	32.06	6.03	33.96	100	327	Peak
2389.99	50.3	-3.7	54	46.17	32.06	6.03	33.96	100	327	Average
2412	111.38	-	-	107.2	32.08	6.07	33.97	100	327	Peak
2412	94.11	-	-	89.93	32.08	6.07	33.97	100	327	Average
2486	40.96	-13.04	54	36.6	32.18	6.18	34	100	327	Average
2486	54.96	-19.04	74	50.6	32.18	6.18	34	100	327	Peak
4824	41.89	-32.11	74	57.78	34.1	9.12	59.11	100	0	Peak
7236	44.45	-46.93	91.38	56.82	35.7	10.03	58.1	100	0	Peak

Test Mode :	Mode 4	Temperature :	22~24℃
Test Channel :	01	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
48.9	29.49	-10.51	40	51.44	8.9	0.68	31.53	100	132	Peak
148.53	26.56	-16.94	43.5	45.67	11.24	1.21	31.56	-	-	Peak
222.78	28.64	-17.36	46	47.93	10.72	1.44	31.45	-	-	Peak
318.2	19.42	-26.58	46	35.13	13.8	1.81	31.32	-	-	Peak
533.8	22.69	-23.31	46	32.52	18.66	2.52	31.01	-	-	Peak
590.5	23.62	-22.38	46	32.26	19.63	2.66	30.93	-	-	Peak
2389.99	62.96	-11.04	74	58.83	32.06	6.03	33.96	189	29	Peak
2389.99	43.92	-10.08	54	39.79	32.06	6.03	33.96	189	29	Average
2412	104.45	-	-	100.27	32.08	6.07	33.97	189	29	Peak
2412	87.56	-	-	83.38	32.08	6.07	33.97	189	29	Average
2500	34.53	-19.47	54	30.15	32.2	6.18	34	189	29	Average
2500	47.18	-26.82	74	42.8	32.2	6.18	34	189	29	Peak
7236	45.32	-39.13	84.45	57.7	35.7	10.03	58.11	100	0	Peak

Test Mode :	Mode 5	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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
2382	55.56	-18.44	74	51.46	32.03	6.03	33.96	108	326	Peak
2382	39.13	-14.87	54	35.03	32.03	6.03	33.96	108	326	Average
2437	111.1	-	-	106.87	32.1	6.11	33.98	108	326	Peak
2437	93.26	-	-	89	32.13	6.11	33.98	108	326	Average
2484	59.25	-14.75	74	54.89	32.18	6.18	34	108	326	Peak
2484	41.51	-12.49	54	37.15	32.18	6.18	34	108	326	Average
7311	45.07	-28.93	74	57.44	35.7	10.06	58.13	100	0	Peak

Test Mode :	Mode 5	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	47.99	-26.01	74	43.86	32.06	6.03	33.96	100	59	Peak
2390	34.12	-19.88	54	29.99	32.06	6.03	33.96	100	59	Average
2437	101.08	-	-	96.85	32.1	6.11	33.98	100	59	Peak
2437	84.35	-	-	80.09	32.13	6.11	33.98	100	59	Average
2484	47.86	-26.14	74	43.5	32.18	6.18	34	100	59	Peak
2484	35.05	-18.95	54	30.69	32.18	6.18	34	100	59	Average
7311	45.38	-28.62	74	57.75	35.7	10.06	58.13	100	0	Peak

Test Mode :	Mode 6	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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
2382	50.71	-23.29	74	46.61	32.03	6.03	33.96	107	332	Peak
2382	38.07	-15.93	54	33.97	32.03	6.03	33.96	107	332	Average
2462	110.09	-	-	105.79	32.15	6.14	33.99	107	332	Peak
2462	93.1	-	-	88.8	32.15	6.14	33.99	107	332	Average
2483.5	72.31	-1.69	74	67.95	32.18	6.18	34	107	332	Peak
2483.5	49.79	-4.21	54	45.43	32.18	6.18	34	107	332	Average
7386	43.91	-30.09	74	56.28	35.7	10.1	58.17	100	0	Peak

Test Mode :	Mode 6	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	46.61	-27.39	74	42.48	32.06	6.03	33.96	100	62	Peak
2388	33.88	-20.12	54	29.75	32.06	6.03	33.96	100	62	Average
2462	101.05	-	-	96.75	32.15	6.14	33.99	100	62	Peak
2462	83.57	-	-	79.27	32.15	6.14	33.99	100	62	Average
2483.66	62.98	-11.02	74	58.62	32.18	6.18	34	100	62	Peak
2483.66	40.39	-13.61	54	36.03	32.18	6.18	34	100	62	Average
7386	45.89	-28.11	74	58.26	35.7	10.1	58.17	100	0	Peak

Test Mode :	Mode 7	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	72.47	-1.53	74	68.34	32.06	6.03	33.96	100	328	Peak
2389.99	49.67	-4.33	54	45.54	32.06	6.03	33.96	100	328	Average
2412	109.9	-	-	105.72	32.08	6.07	33.97	100	328	Peak
2412	92.53	-	-	88.35	32.08	6.07	33.97	100	328	Average
2484	40.12	-13.88	54	35.76	32.18	6.18	34	100	328	Average
2484	53.42	-20.58	74	49.06	32.18	6.18	34	100	328	Peak
7236	43.18	-46.72	89.9	55.55	35.7	10.03	58.1	100	0	Peak

Test Mode :	Mode 7	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.61	61.95	-12.05	74	57.82	32.06	6.03	33.96	190	30	Peak
2389.61	41.92	-12.08	54	37.79	32.06	6.03	33.96	190	30	Average
2412	102.78	-	-	98.6	32.08	6.07	33.97	190	30	Peak
2412	85.42	-	-	81.24	32.08	6.07	33.97	190	30	Average
2494	33.74	-20.26	54	29.36	32.2	6.18	34	190	30	Average
2494	45.5	-28.5	74	41.12	32.2	6.18	34	190	30	Peak
7236	45.8	-36.98	82.78	58.18	35.7	10.03	58.11	100	0	Peak

Test Mode :	Mode 8	Temperature :	22~24℃
Test Channel :	06	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	55.34	-18.66	74	51.21	32.06	6.03	33.96	122	327	Peak
2390	38.76	-15.24	54	34.63	32.06	6.03	33.96	122	327	Average
2437	110.51	-	-	106.25	32.13	6.11	33.98	122	327	Peak
2437	92.59	-	-	88.33	32.13	6.11	33.98	122	327	Average
2484	58.84	-15.16	74	54.48	32.18	6.18	34	122	327	Peak
2484	41.87	-12.13	54	37.51	32.18	6.18	34	122	327	Average
7311	43.7	-30.3	74	56.07	35.7	10.06	58.13	100	0	Peak

Test Mode :	Mode 8	Temperature :	22~24℃
Test Channel :	06	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	47.95	-26.05	74	43.82	32.06	6.03	33.96	153	30	Peak
2390	34.59	-19.41	54	30.46	32.06	6.03	33.96	153	30	Average
2437	103.75	-	-	99.52	32.1	6.11	33.98	153	30	Peak
2437	86.42	-	-	82.16	32.13	6.11	33.98	153	30	Average
2484	52.46	-21.54	74	48.1	32.18	6.18	34	153	30	Peak
2484	37.12	-16.88	54	32.76	32.18	6.18	34	153	30	Average
7311	44.73	-29.27	74	57.1	35.7	10.06	58.13	100	0	Peak

Test Mode :	Mode 9	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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	47.85	-26.15	74	43.72	32.06	6.03	33.96	198	330	Peak
2388	35.84	-18.16	54	31.71	32.06	6.03	33.96	198	330	Average
2462	91.9	-	-	87.6	32.15	6.14	33.99	198	330	Average
2462	109.69	-	-	105.39	32.15	6.14	33.99	198	330	Peak
2483.5	68.36	-5.64	74	64	32.18	6.18	34	198	330	Peak
2483.5	47.06	-6.94	54	42.7	32.18	6.18	34	198	330	Average
7386	43.43	-30.57	74	55.79	35.7	10.1	58.16	100	0	Peak

Test Mode :	Mode 9	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	54~56%
Test Engineer :	Kyle Zhuang	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
2334	45.89	-28.11	74	41.92	31.96	5.95	33.94	100	61	Peak
2334	33.39	-20.61	54	29.42	31.96	5.95	33.94	100	61	Average
2462	100.47	-	-	96.17	32.15	6.14	33.99	100	61	Peak
2462	83.64	-	-	79.34	32.15	6.14	33.99	100	61	Average
2483.85	61.39	-12.61	74	57.03	32.18	6.18	34	100	61	Peak
2483.85	39.78	-14.22	54	35.42	32.18	6.18	34	100	61	Average
7386	44.9	-29.1	74	57.27	35.7	10.1	58.17	100	0	Peak

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 FPC 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	Agilent	E4445A	MY482028 7	3Hz~13.2GHz	Nov. 02, 2011	Mar. 14, 2012~ Apr. 03, 2012	Nov. 01, 2013	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Mar. 01, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Mar. 01, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Mar. 01, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Mar. 01, 2012	N/A	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Mar. 26, 2012~ Apr. 02, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Mar. 26, 2012~ Apr. 02, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 10, 2011	Mar. 26, 2012~ Apr. 02, 2012	Aug. 09, 2012	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A023 62	1GHz ~ 26.5GHz	Dec. 05, 2011	Mar. 26, 2012~ Apr. 02, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
EMI TEST RECEIVER	R&S	ESCI 7	100724	9kHz ~ 7GHz	Aug. 22, 2011	Mar. 26, 2012~ Apr. 02, 2012	Aug. 21, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/00 1	9 kHz~30 MHz	Jul. 29, 2010	Mar. 26, 2012~ Apr. 02, 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 $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	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 $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	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 $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP231932 as below.