



FCC RF Test Report

APPLICANT : Chicony Electronics Co., Ltd.
EQUIPMENT : Digital Video Camera
BRAND NAME : Chicony
MODEL NAME : C100
FCC ID : E8HDCB229C100
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Aug. 07, 2012 and completely tested on Sep. 11, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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FCC ID : E8HDCB229C100

Page Number : 1 of 57

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APPENDIX A. PHOTOGRAPHS OF EUT

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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 Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	-
			Radiated Spurious Emission		Pass	Under limit 0.65 dB at 2483.600 MHz
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 21.10 dB at 0.414 MHz
3.7	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Chicony Electronics Co., Ltd.

No. 25, Wugong 6th Rd., Wugu Dist., New Taipei City 248, Taiwan (R.O.C.)

1.2 Manufacturer

Chicony Electronics (Mainland China II) Co., Ltd.

San Zhong Gong Li Qu, Qingxi, Dongguan, China

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Digital Video Camera
Brand Name	Chicony
Model Name	C100
FCC ID	E8HDCB229C100
EUT supports Radios application	WLAN 11bg
HW Version	B3
SW Version	V200
EUT Stage	Production Unit

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

Product Specification subjective to this standard	
Tx/Rx Frequency Range	2412 MHz ~ 2462 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Maximum Output Power to Antenna	802.11b : 19.88 dBm (0.0973 W) 802.11g : 23.22 dBm (0.2099 W)
99% Occupied Bandwidth	802.11b : 13.85MHz 802.11g : 18.35MHz
Antenna Type	Monopole Antenna with gain 1.55 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)

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.
	TH02-HY	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
- ♦ FCC TCB Workshop 2012, April
- ♦ ANSI C63.4-2003 and ANSI C63.10-2009
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3

Remark:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	LCD Monitor	Dell	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 KHz to 30 MHz) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

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

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and antenna configurations as following table and the highest power data rates were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	19.88	19.84	19.51	19.83

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)	23.22	23.11	23.08	23.08	23.2	23.15	23.13	23.16

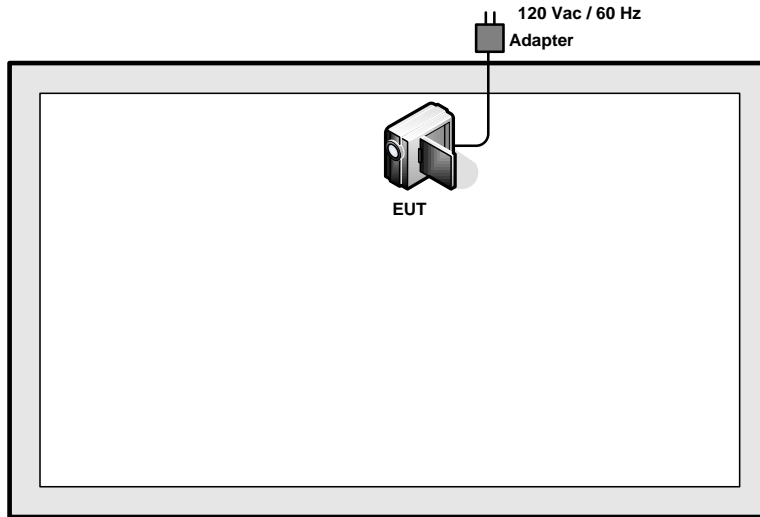
2.3 Test Mode

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

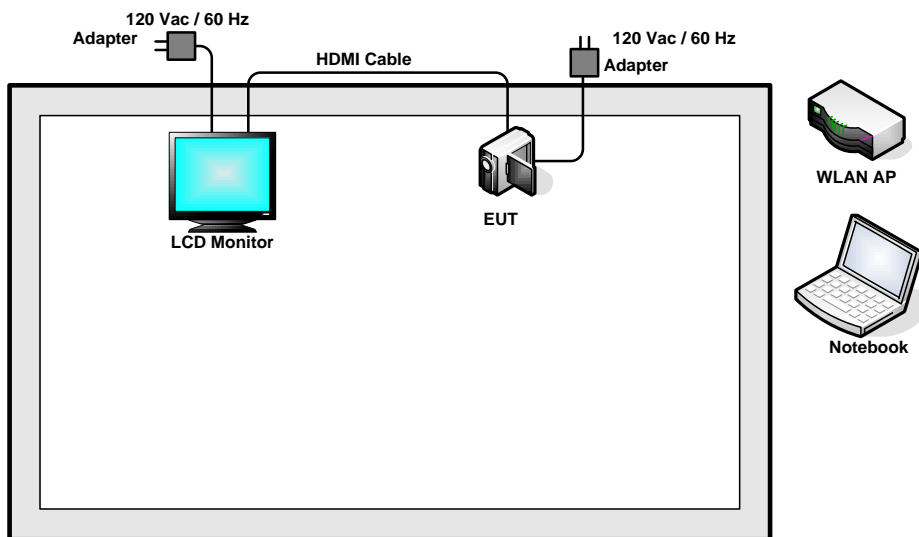
Test Cases				
	Test Items	Mode	Data Rate	Test Channel
Conducted TCs	6dB and 99% BW Power Spectral Density	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
	Output Power	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
	Conducted Band EDGE	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
Conducted Spurious Emission	802.11b	1 Mbps	1/6/11	
	802.11g	6 Mbps	1/6/11	
Radiated TCs	Radiated Band EDGE	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
AC Conducted Emission	Mode 1 : WLAN Link + Playback On + HDMI Cable Link with Monitor + Adapter			

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

The programmed RF utility 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 and 99% Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

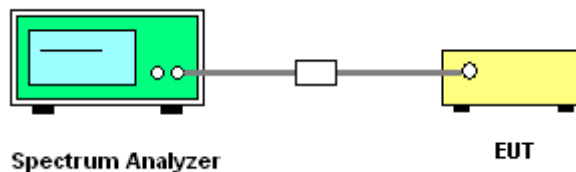
3.1.2 Measuring Instruments

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 and TCB Workshop 2012, April.
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. Set to the maximum power setting and enable the EUT transmit continuously.
4. 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.

3.1.4 Test Setup



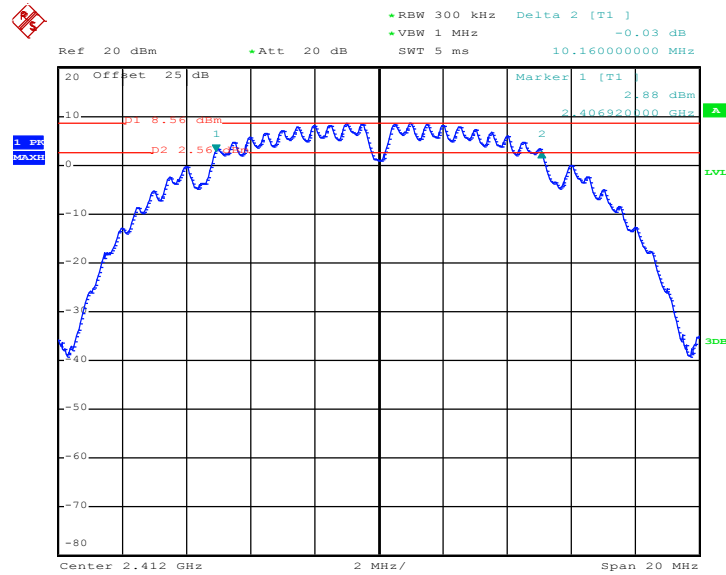


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Kenny Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	10.16	0.5	Pass
06	2437	10.16	0.5	Pass
11	2462	10.16	0.5	Pass

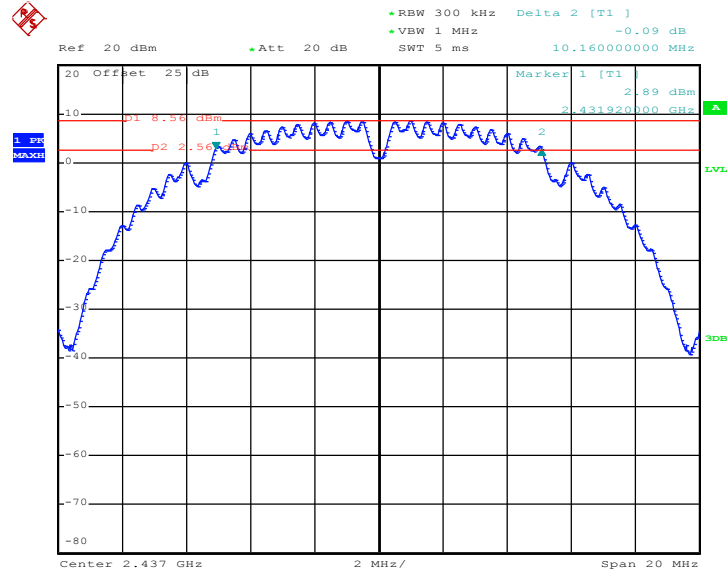
6 dB Bandwidth Plot on 802.11b Channel 01



Date: 29.AUG.2012 17:35:47

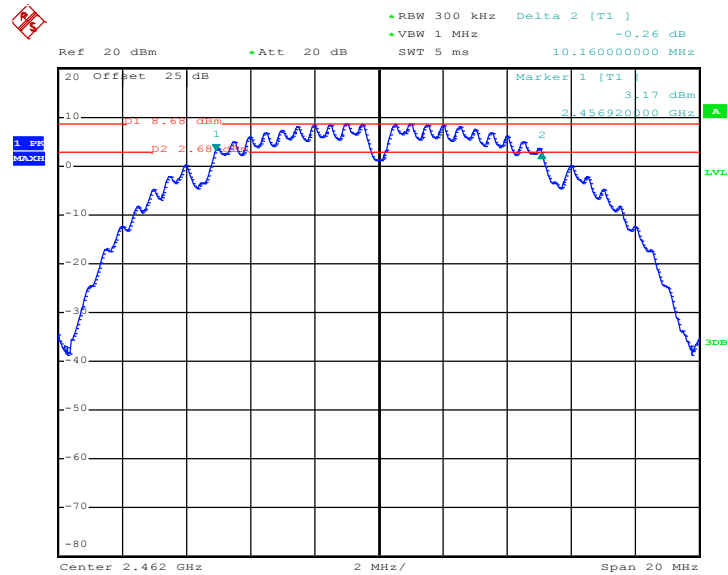


6 dB Bandwidth Plot on 802.11b Channel 06



Date: 29.AUG.2012 17:41:30

6 dB Bandwidth Plot on 802.11b Channel 11



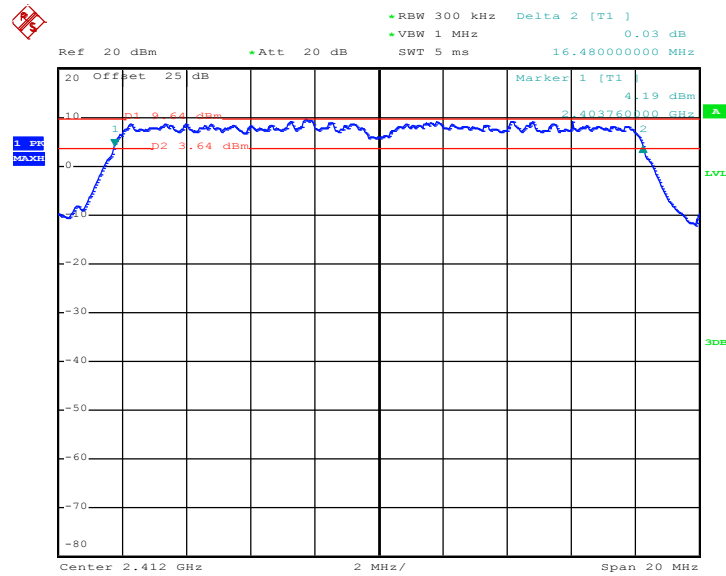
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Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Kenny Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.48	0.5	Pass
06	2437	16.52	0.5	Pass
11	2462	16.48	0.5	Pass

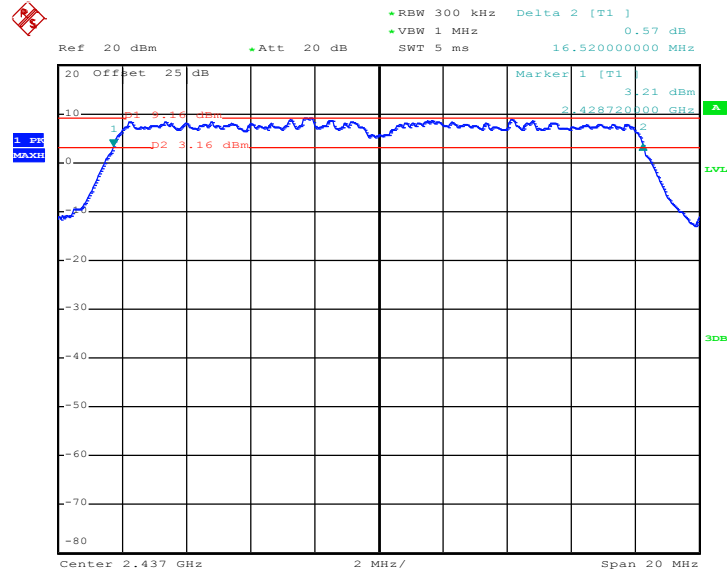
6 dB Bandwidth Plot on 802.11g Channel 01



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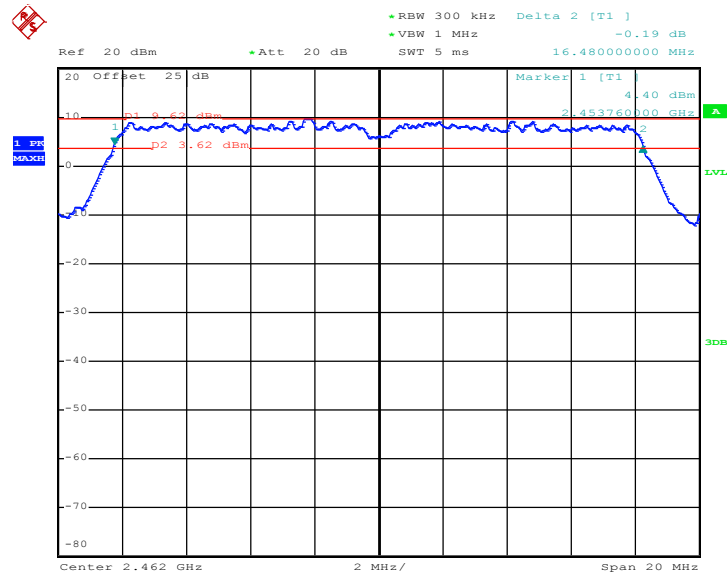


6 dB Bandwidth Plot on 802.11g Channel 06



Date: 29.AUG.2012 18:07:57

6 dB Bandwidth Plot on 802.11g Channel 11



Date: 29.AUG.2012 18:12:27

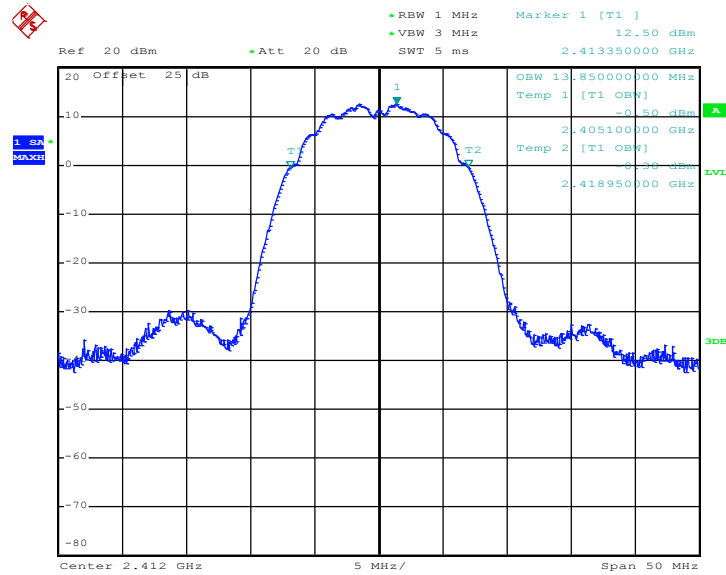


3.1.6 Test Result of 99% Occupied Bandwidth

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Kenny Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	13.85	Pass
06	2437	13.80	Pass
11	2462	13.80	Pass

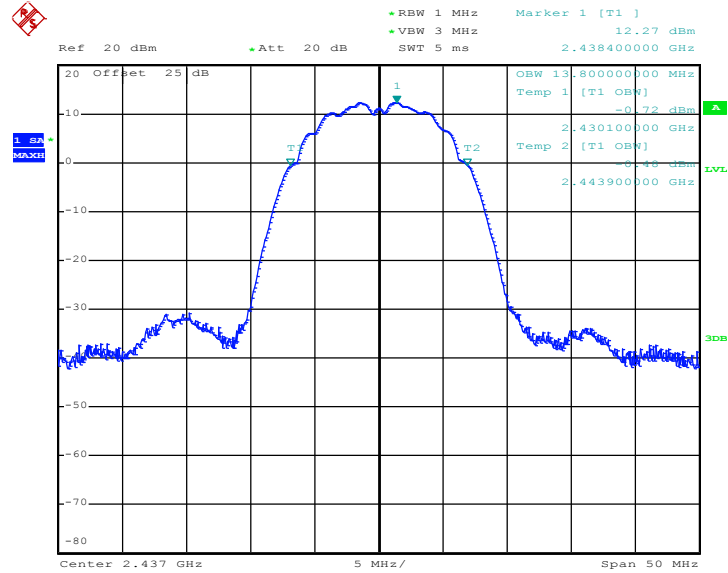
99% Occupied Bandwidth Plot on 802.11b Channel 01



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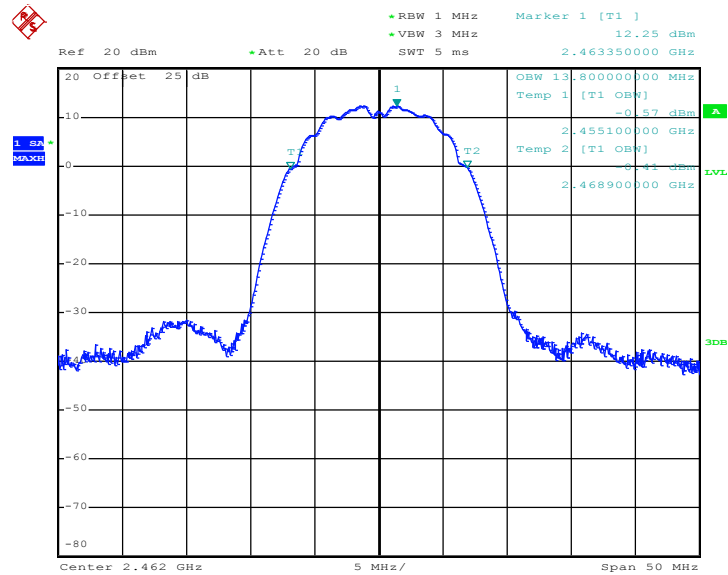


99% Occupied Bandwidth Plot on 802.11b Channel 06



Date: 29.AUG.2012 17:42:43

99% Occupied Bandwidth Plot on 802.11b Channel 11



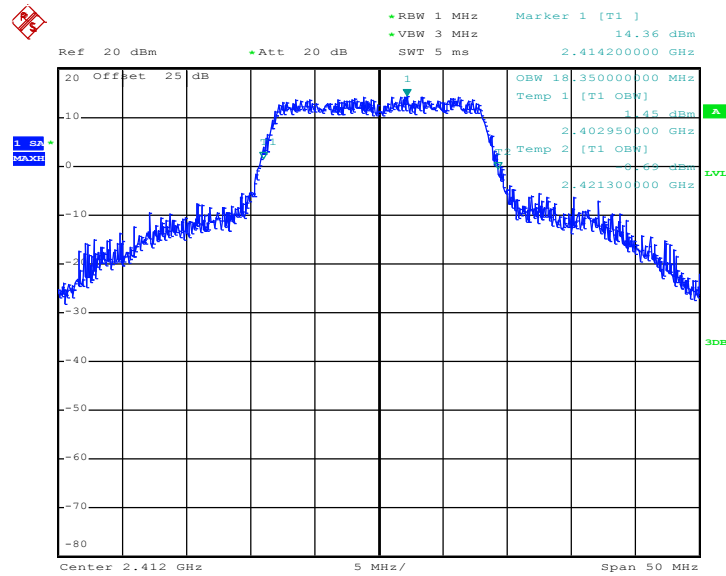
Date: 29.AUG.2012 17:53:55



Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Kenny Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	18.35	Pass
06	2437	18.10	Pass
11	2462	18.25	Pass

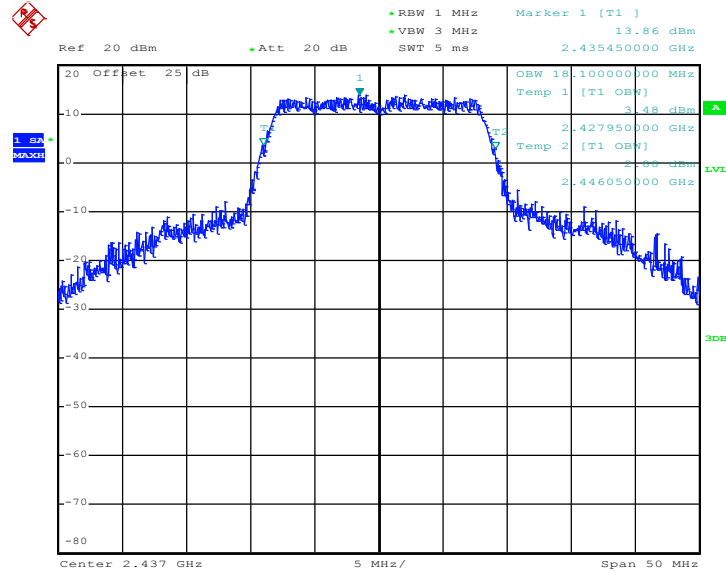
99% Occupied Bandwidth Plot on 802.11g Channel 01



Date: 29.AUG.2012 18:04:16

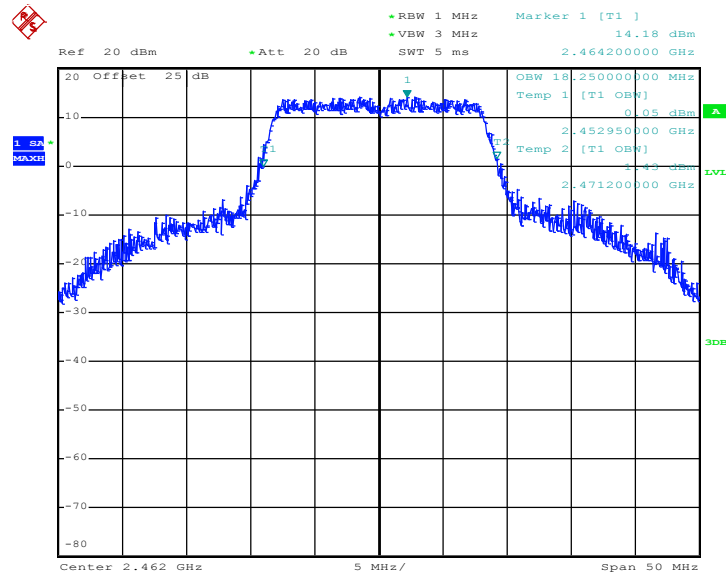


99% Occupied Bandwidth Plot on 802.11g Channel 06



Date: 29.AUG.2012 18:09:13

99% Occupied Bandwidth Plot on 802.11g Channel 11



Date: 29.AUG.2012 18:14:10

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.

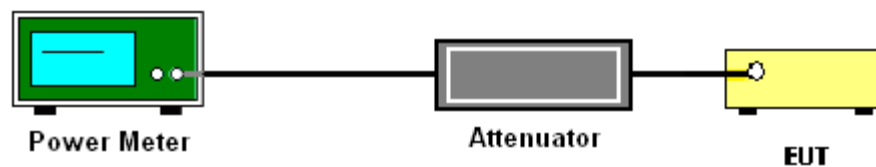
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance and TCB Workshop 2012, April.
2. The RF output of EUT was connected to the power meter by a low loss cable
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup





3.2.5 Test Result of Peak Output Power

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Kenny Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.03	30	Pass
06	2437	19.88	30	Pass
11	2462	18.94	30	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Kenny Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.98	30	Pass
06	2437	23.22	30	Pass
11	2462	21.65	30	Pass



3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	24~26
Test Engineer :	Kenny Chen	Relative Humidity :	50~53
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	16.45
06	2437	17.36
11	2462	16.42

Test Mode :	802.11g	Temperature :	24~26
Test Engineer :	Kenny Chen	Relative Humidity :	50~53
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	13.39
06	2437	17.50
11	2462	12.33

3.3 Power Spectral Density Measurement

3.3.1 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.

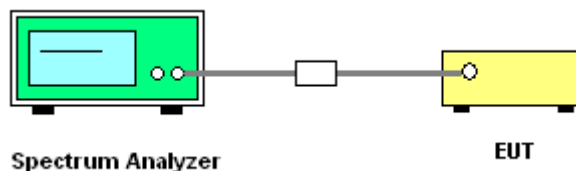
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 5.3.1 (Peak PSD) of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.
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. Set to the maximum power setting and enable the EUT transmit continuously.
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. Record the measurement data derived from spectrum analyzer.
7. 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 $BWCF = 10\log(3 \text{ kHz}/100 \text{ kHz} = -15.2 \text{ dB})$.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

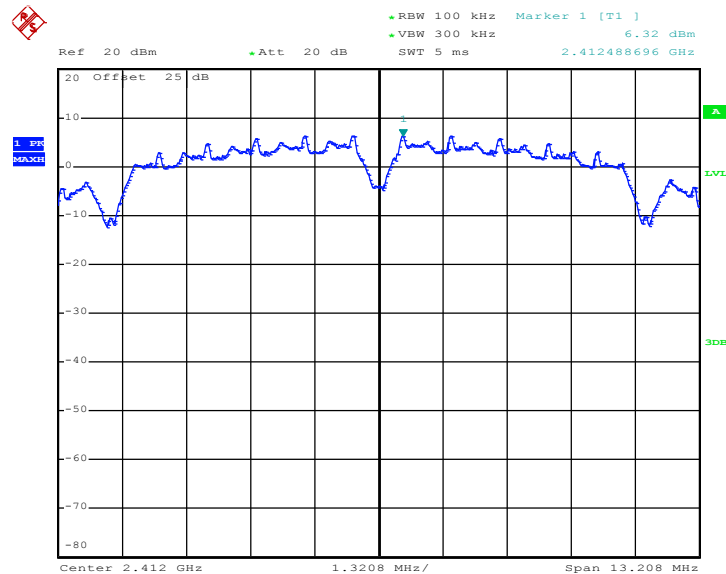
Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Kenny Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	6.32	-8.88	8	Pass
06	2437	6.41	-8.79	8	Pass
11	2462	6.36	-8.84	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. Power Density/ 3kHz (dBm) = Measured power density/ 100KHz (dBm) + BWCF (dB)

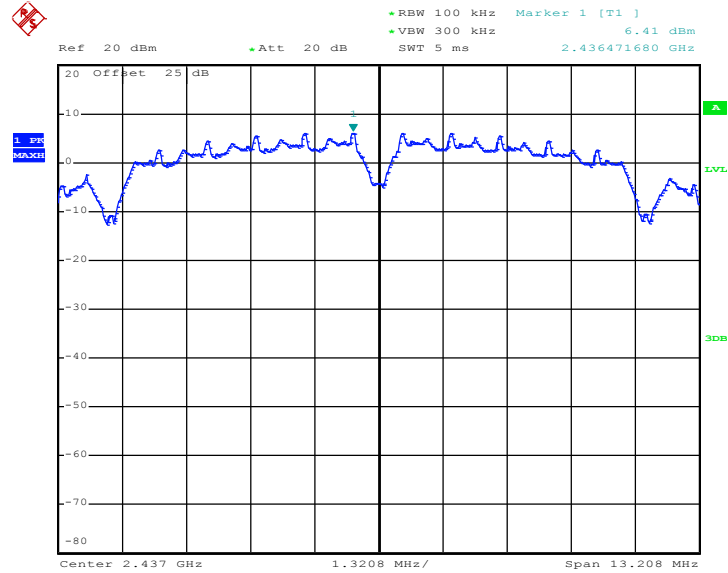
PSD Plot on 802.11b Channel 01



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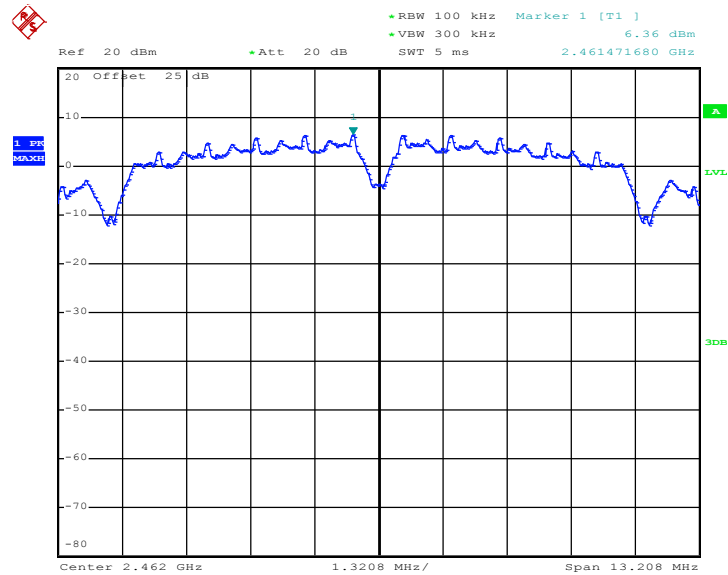


PSD Plot on 802.11b Channel 06



Date: 29.AUG.2012 17:41:50

PSD Plot on 802.11b Channel 11



Date: 29.AUG.2012 17:44:21



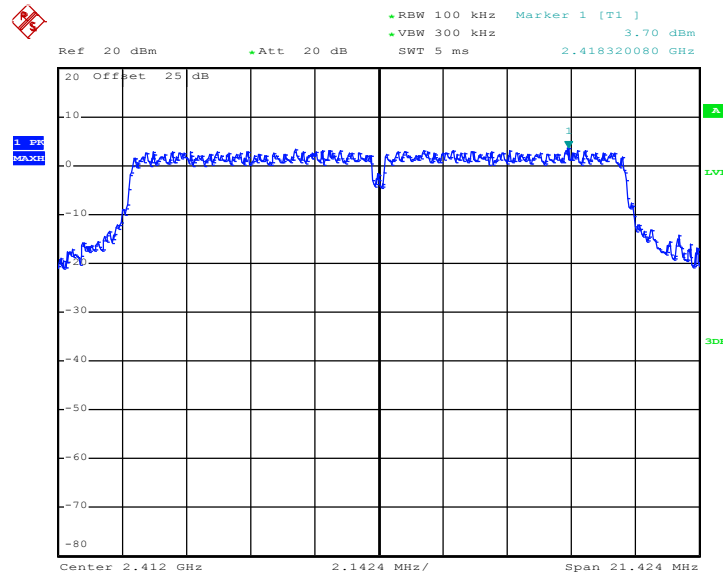
Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Kenny Chen	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm)	Pass/Fail
		Measured PSD/100KHz (dBm)	PSD/3KHz (dBm)		
01	2412	3.70	-11.50	8	Pass
06	2437	3.07	-12.13	8	Pass
11	2462	3.30	-11.90	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. Power Density/ 3KHz (dBm) = Measured power density/ 100KHz (dBm) + BWCF (dB)

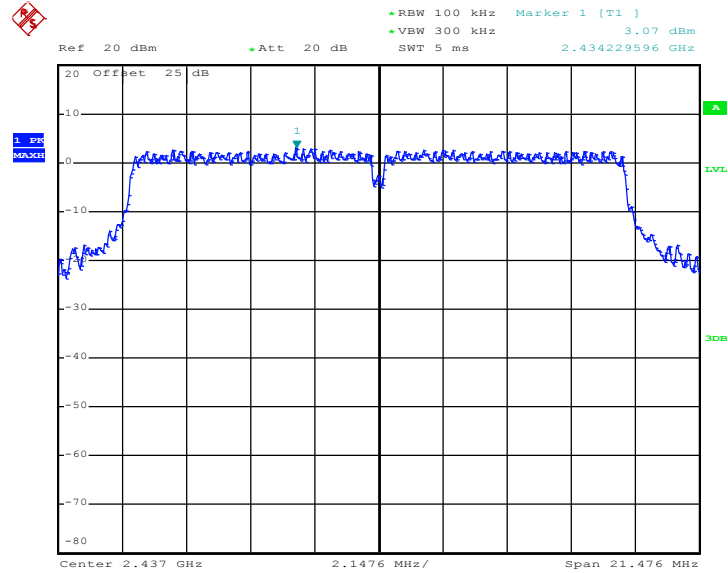
PSD Plot on 802.11g Channel 01



Date: 29.AUG.2012 18:01:47

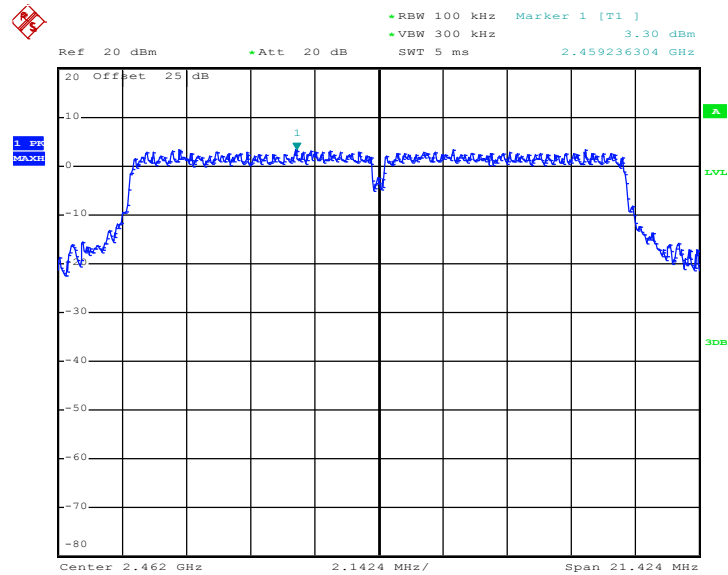


PSD Plot on 802.11g Channel 06



Date: 29.AUG.2012 18:08:19

PSD Plot on 802.11g Channel 11



Date: 29.AUG.2012 18:12:56

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

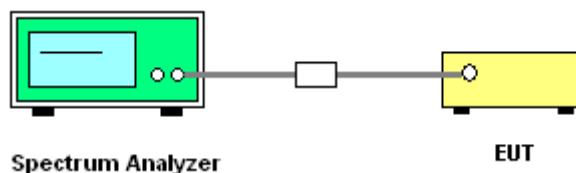
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows the guidelines in the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW = 100 KHz, VBW=300 KHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz, when maximum peak conducted output power procedure is used. The attenuation is set to 30dB, when maximum conducted output power procedure is used.
4. Measure and record the results in the test report.

3.4.4 Test Setup

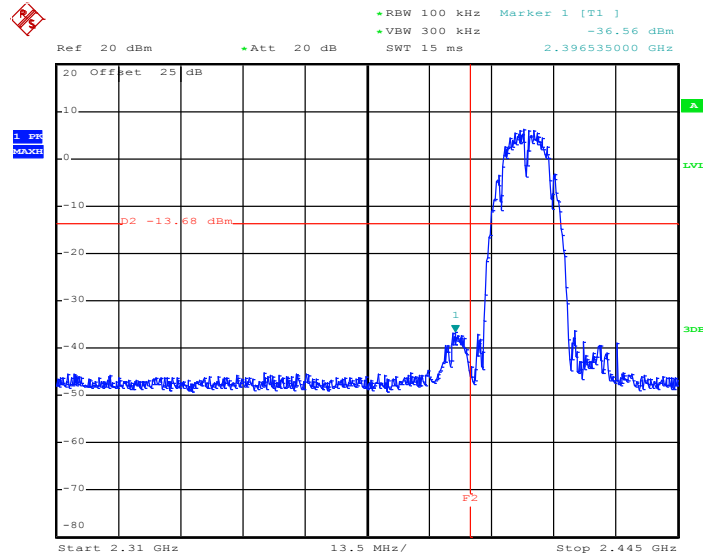




3.4.5 Test Plots of Conducted Band Edges

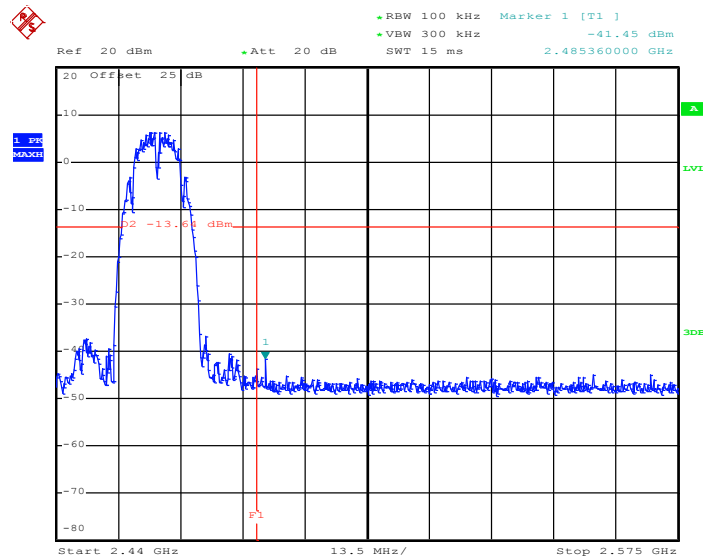
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Kenny Chen

Low Band Edge Plot on 802.11b Channel 01



Date: 29.AUG.2012 17:36:21

High Band Edge Plot on 802.11b Channel 11

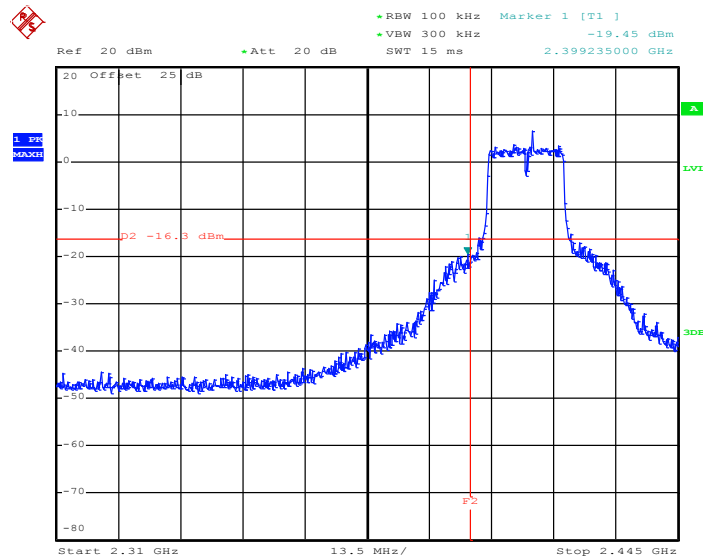


Date: 29.AUG.2012 17:44:36



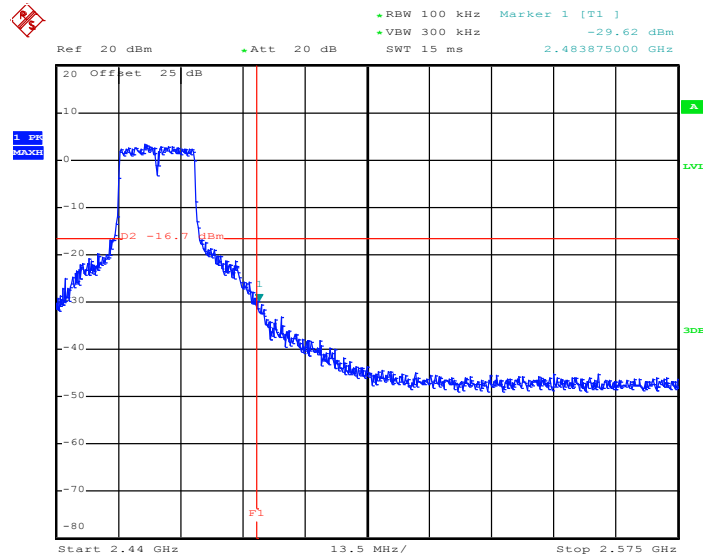
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Kenny Chen

Low Band Edge Plot on 802.11g Channel 01



Date: 29.AUG.2012 18:03:19

High Band Edge Plot on 802.11g Channel 11



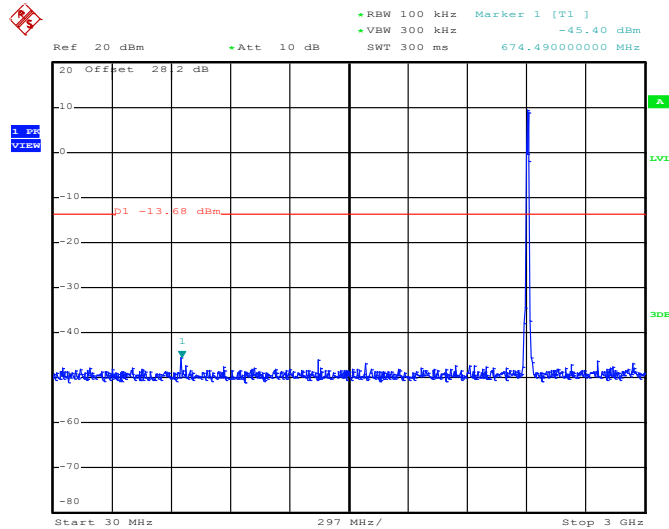
Date: 29.AUG.2012 18:13:13

3.4.6 Test Plots of Spurious Emission

Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Kenny Chen

802.11b 30 MHz~3 GHz

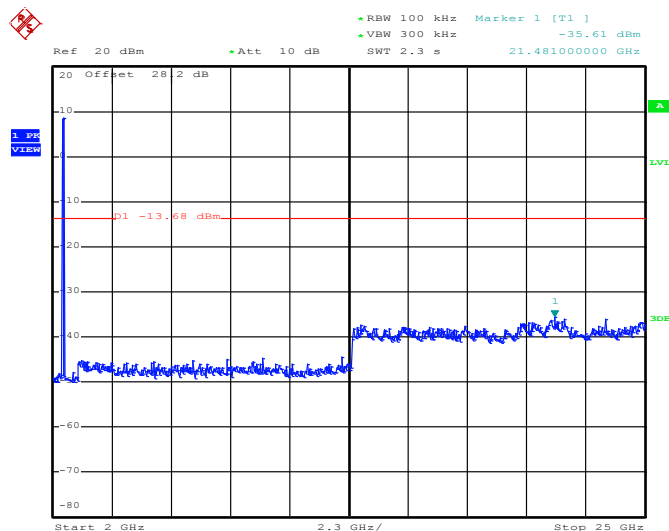
Conducted Spurious Emission Plot on Channel 01



Date: 29.AUG.2012 17:38:40

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

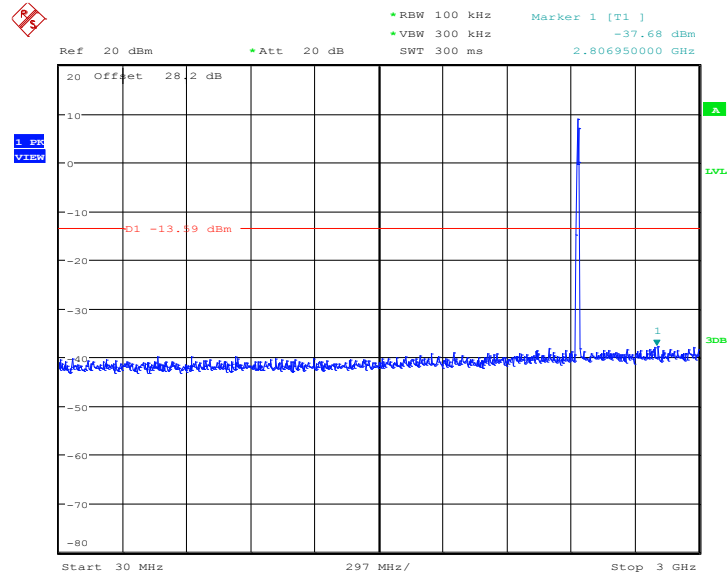


Date: 29.AUG.2012 17:38:57



802.11b 30 MHz~3 GHz

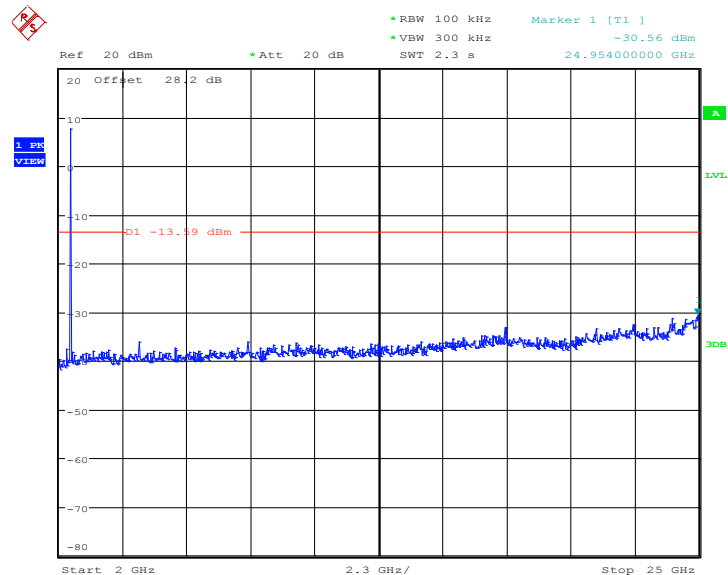
Conducted Spurious Emission Plot on Channel 06



Date: 11.SEP.2012 11:24:45

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

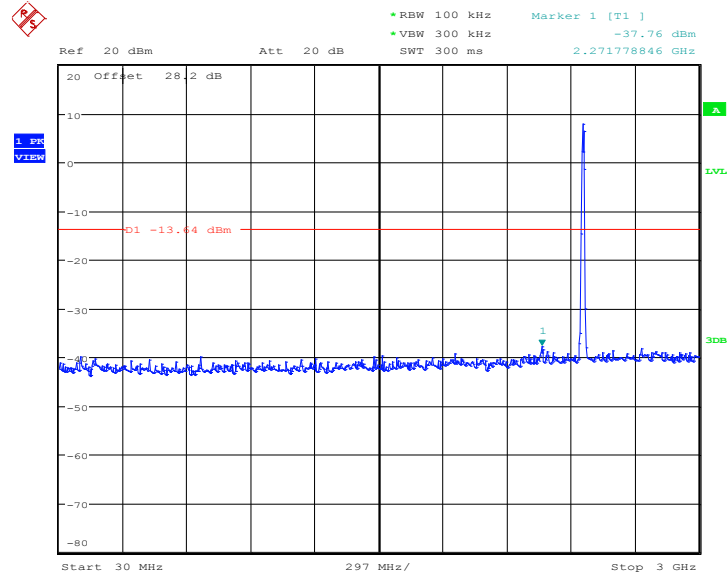


Date: 11.SEP.2012 11:25:02



802.11b 30 MHz~3 GHz

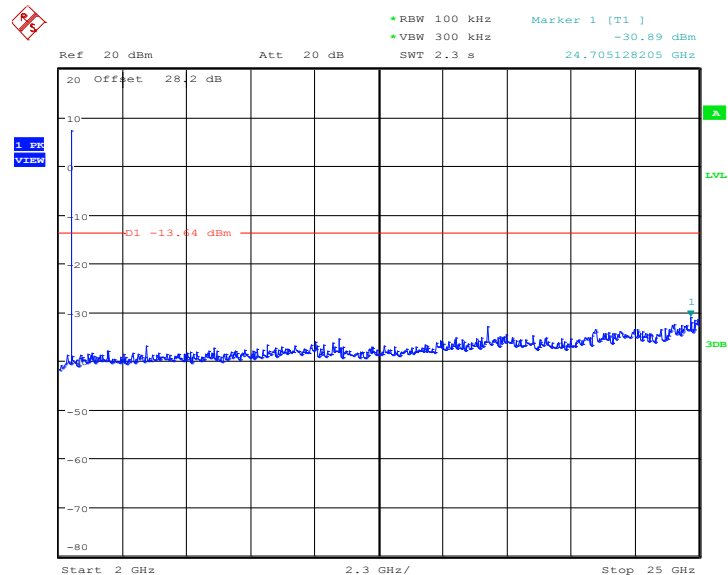
Conducted Spurious Emission Plot on Channel 11



Date: 7.SEP.2012 13:40:41

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



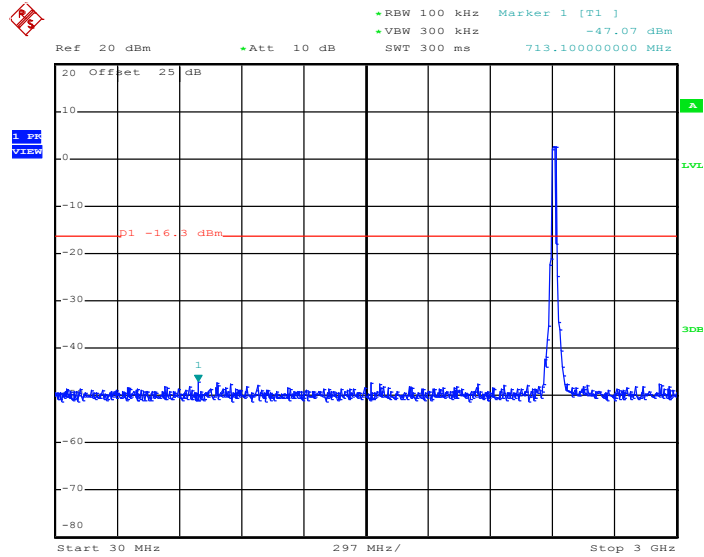
Date: 7.SEP.2012 13:39:30



Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Kenny Chen

802.11g 30 MHz~3 GHz

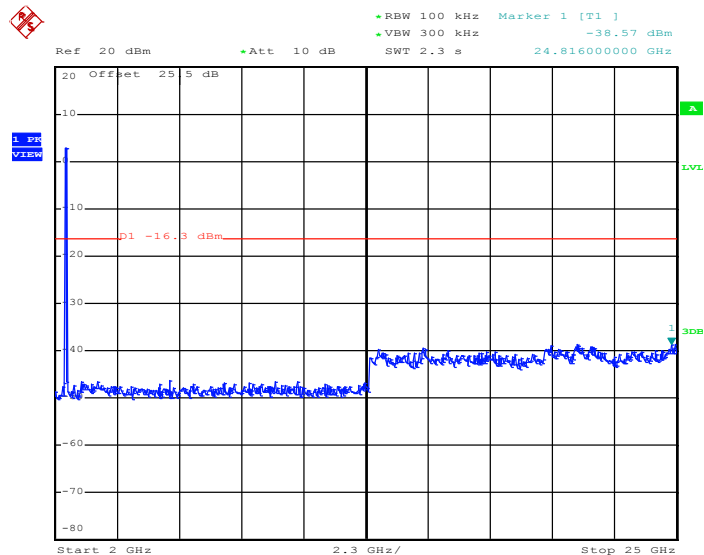
Conducted Spurious Emission Plot on Channel 01



Date: 29.AUG.2012 18:03:42

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

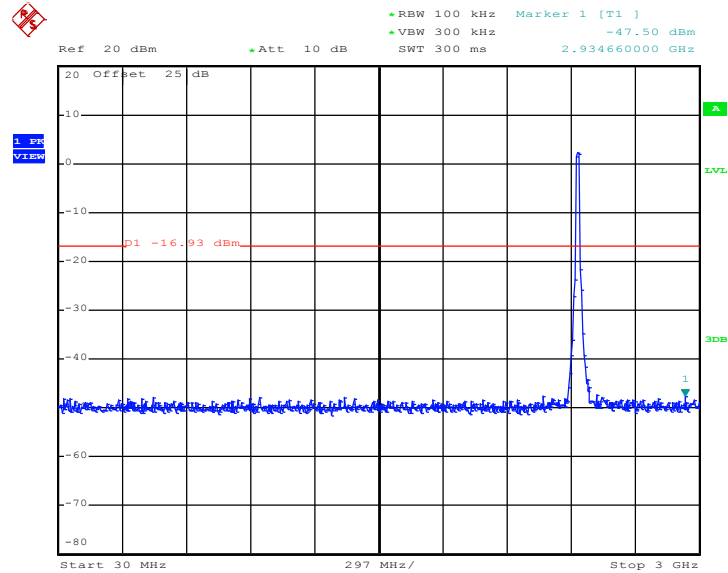


Date: 29.AUG.2012 18:03:59



802.11g 30 MHz~3 GHz

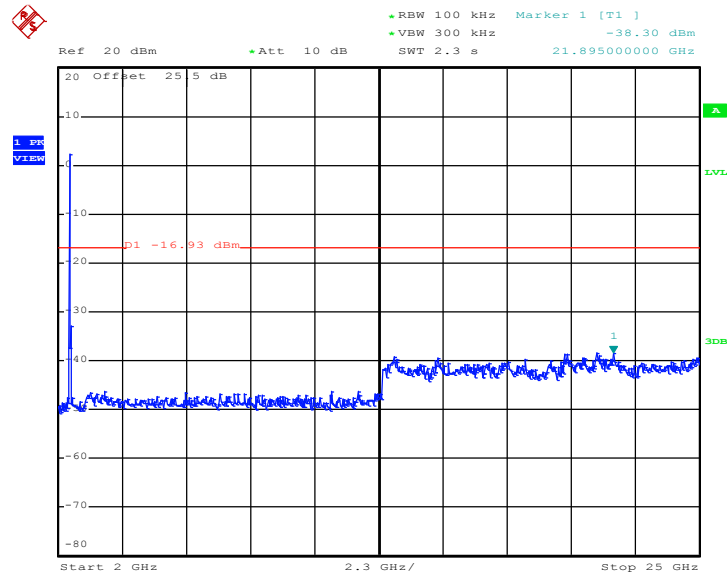
Conducted Spurious Emission Plot on Channel 06



Date: 29.AUG.2012 18:08:41

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

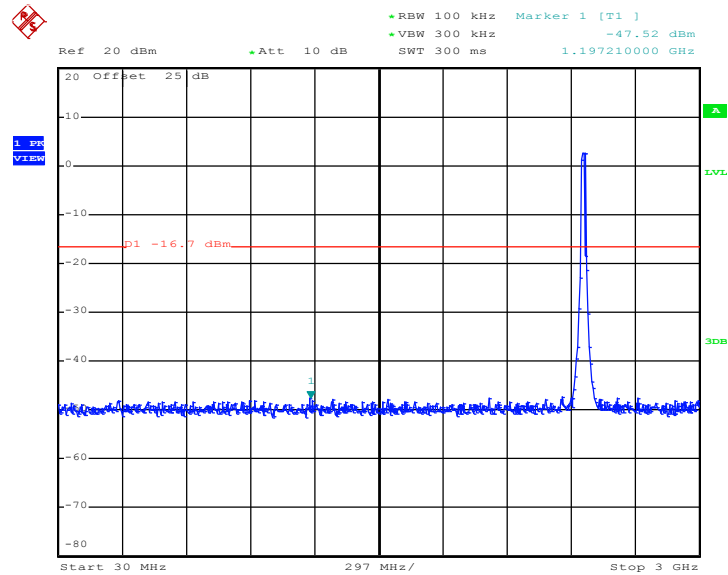


Date: 29.AUG.2012 18:08:59



802.11g 30 MHz~3 GHz

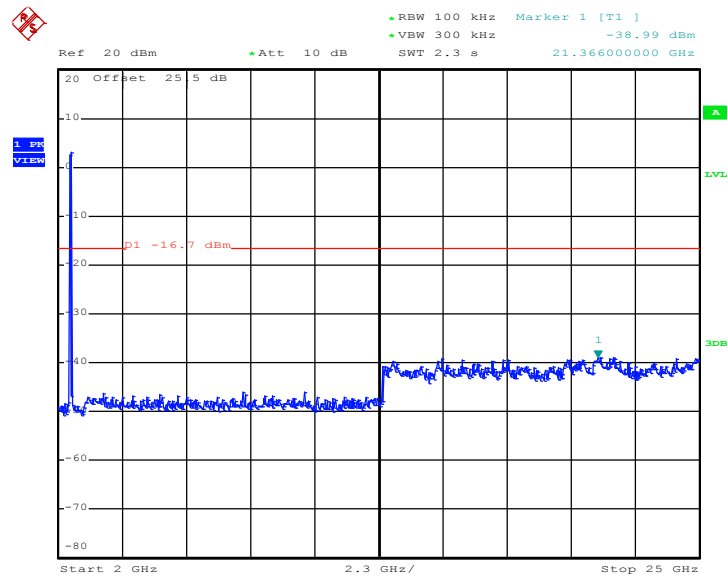
Conducted Spurious Emission Plot on Channel 11



Date: 29.AUG.2012 18:13:34

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



Date: 29.AUG.2012 18:13:51



3.5 Radiated Emission Measurement

3.5.1 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

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.



3.5.3 Test Procedures

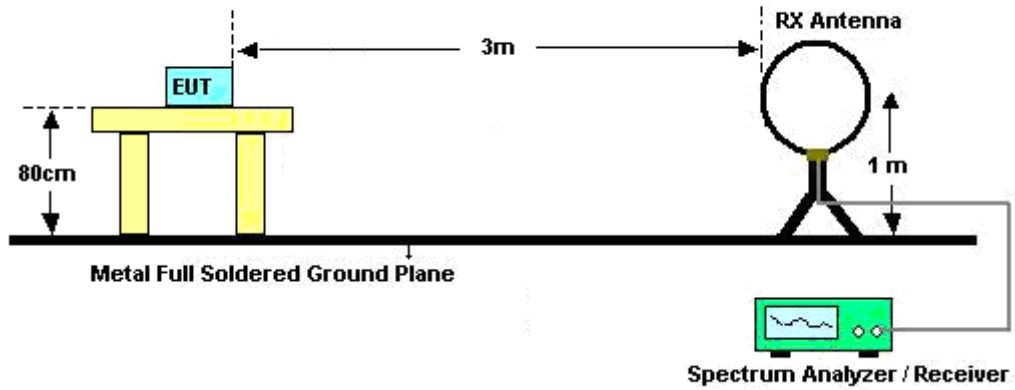
1. The testing follows the guidelines in ANSI C63. 10-2009
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 KHz for $f < 1$ GHz; $VBW \geq RBW$; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, $VBW = 3$ MHz for $f \geq 1$ GHz for peak measurement.
For average measurement:
 - $VBW = 10$ Hz, when duty cycle is no less than 98 percent.
 - $VBW \geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(us)	1/T(KHz)	VBW Setting
802.11b	100.00	-	-	10Hz
802.11g	100.00	-	-	10Hz

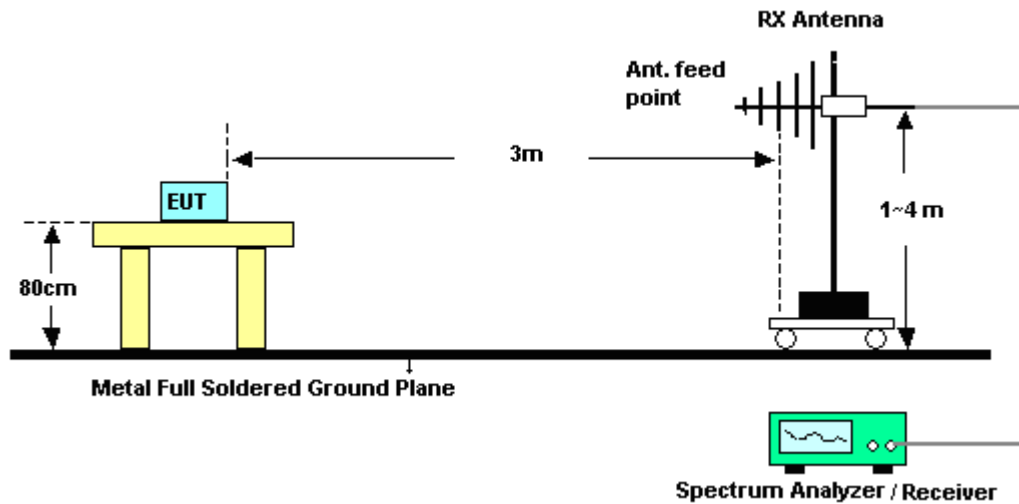
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

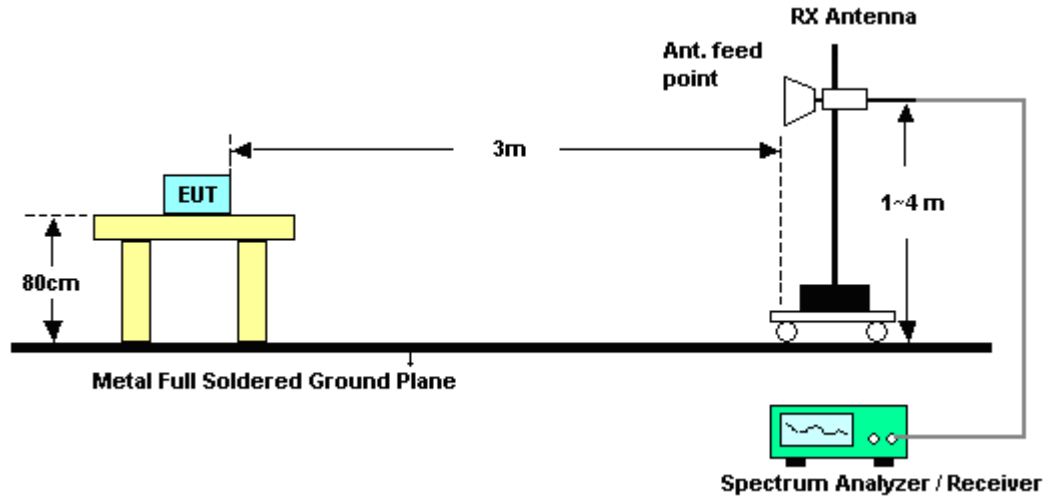
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 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.



3.5.6 Test Result of Radiated Band Edges

Test Mode :	802.11b	Temperature :	25~26°C
Test Band :	Low	Relative Humidity :	45~46%
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
2369.67	58.13	-15.87	74	53.81	32.28	5.99	33.95	107	173	Peak
2389.38	47.44	-6.56	54	43.07	32.3	6.03	33.96	107	173	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
2389.38	50.08	-23.92	74	45.71	32.3	6.03	33.96	102	159	Peak
2389.38	39.54	-14.46	54	35.17	32.3	6.03	33.96	102	159	Average

Test Mode :	802.11b	Temperature :	25~26°C
Test Band :	High	Relative Humidity :	45~46%
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
2483.82	59.13	-14.87	74	54.57	32.38	6.18	34	104	184	Peak
2483.5	51.99	-2.01	54	47.43	32.38	6.18	34	104	184	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
2483.64	53.69	-20.31	74	49.13	32.38	6.18	34	100	352	Peak
2483.5	43.81	-10.19	54	39.25	32.38	6.18	34	100	352	Average



Test Mode :	802.11g	Temperature :	25~26°C
Test Band :	Low	Relative Humidity :	45~46%
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
2389.11	72.89	-1.11	74	68.52	32.3	6.03	33.96	108	178	Peak
2390	52.74	-1.26	54	48.37	32.3	6.03	33.96	108	178	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
2389.2	63.6	-10.4	74	59.23	32.3	6.03	33.96	144	284	Peak
2390	44.86	-9.14	54	40.49	32.3	6.03	33.96	144	284	Average

Test Mode :	802.11g	Temperature :	25~26°C
Test Band :	High	Relative Humidity :	45~46%
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
2483.6	73.35	-0.65	74	68.79	32.38	6.18	34	104	184	Peak
2483.5	49.87	-4.13	54	45.31	32.38	6.18	34	104	184	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
2483.68	66.73	-7.27	74	62.17	32.38	6.18	34	100	352	Peak
2483.56	43.9	-10.1	54	39.34	32.38	6.18	34	100	352	Average

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

Test Mode :	802.11b	Temperature :	25~26°C
Test Channel :	01	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	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, 113.85 dBuV/m - 20dB = 93.85 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
2412	108.98	-	-	104.57	32.31	6.07	33.97	107	173	Average
2412	113.85	-	-	109.44	32.31	6.07	33.97	107	173	Peak
4824	50.69	-23.31	74	65.07	33.97	9.12	57.47	100	0	Peak
7236	54.1	-39.75	93.85	66.5	35.55	10.03	57.98	100	0	Peak
12057	43.88	-30.12	74	50.51	38.84	13.44	58.91	100	0	Peak

Test Mode :	802.11b	Temperature :	25~26°C
Test Channel :	01	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	99.56	-	-	95.15	32.31	6.07	33.97	102	159	Average
2412	104.07	-	-	99.66	32.31	6.07	33.97	102	159	Peak
4824	49.13	-4.87	54	63.51	33.97	9.12	57.47	127	127	Average
4824	52.06	-21.94	74	66.44	33.97	9.12	57.47	127	127	Peak
7236	54.77	-29.3	84.07	67.17	35.55	10.03	57.98	100	0	Peak
12060	44.69	-29.31	74	51.33	38.86	13.44	58.94	100	0	Peak



Test Mode :	802.11b	Temperature :	25~26°C
Test Channel :	06	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. 9747 MHz and 14622 MHz are 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
2437	108.07	-	-	103.59	32.35	6.11	33.98	105	54	Average
2437	112.95	-	-	108.47	32.35	6.11	33.98	105	54	Peak
4875	51.16	-2.84	54	65.56	33.95	9.13	57.48	144	311	Average
4875	51.54	-22.46	74	65.94	33.95	9.13	57.48	144	310	Peak
7311	51.98	-2.02	54	64.4	35.54	10.06	58.02	131	260	Average
7311	55.89	-18.11	74	68.31	35.54	10.06	58.02	131	260	Peak
9747	52.33	-40.62	92.95	61.97	36.66	11.94	58.24	100	0	Peak
12186	43.98	-30.02	74	50.73	38.95	13.49	59.19	100	0	Peak
14622	48.77	-44.18	92.95	53.1	39.82	14.05	58.2	100	0	Peak



Test Mode :	802.11b	Temperature :	25~26°C
Test Channel :	06	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. 9747 MHz and 14622 MHz are 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
2437	102.69	-	-	98.21	32.35	6.11	33.98	149	298	Average
2437	107.56	-	-	103.08	32.35	6.11	33.98	149	298	Peak
4875	52.6	-1.4	54	67	33.95	9.13	57.48	143	6	Average
4875	54.06	-19.94	74	68.46	33.95	9.13	57.48	143	6	Peak
7311	53	-1	54	65.42	35.54	10.06	58.02	100	67	Average
7311	57.53	-16.47	74	69.95	35.54	10.06	58.02	100	67	Peak
9747	51.71	-35.85	87.56	61.35	36.66	11.94	58.24	100	0	Peak
12186	45.73	-28.27	74	52.48	38.95	13.49	59.19	100	0	Peak
14622	49.61	-37.95	87.56	53.94	39.82	14.05	58.2	100	0	Peak



Test Mode :	802.11b	Temperature :	25~26°C
Test Channel :	11	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9849 MHz and 14772 MHz are 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
2462	109.91	-	-	105.39	32.37	6.14	33.99	104	184	Average
2462	114.33	-	-	109.81	32.37	6.14	33.99	104	184	Peak
4923	50	-4	54	64.41	33.93	9.14	57.48	154	311	Average
4923	51.39	-22.61	74	65.8	33.93	9.14	57.48	154	311	Peak
7386	49.66	-4.34	54	62.12	35.52	10.1	58.08	147	262	Average
7386	54.61	-19.39	74	67.07	35.52	10.1	58.08	147	262	Peak
9849	48.95	-45.38	94.33	58.51	36.81	11.88	58.25	100	0	Peak
12309	45.18	-28.82	74	52.03	39.05	13.53	59.43	100	0	Peak
14772	48.23	-46.1	94.33	52.26	39.97	14.12	58.12	100	0	Peak



Test Mode :	802.11b	Temperature :	25~26°C
Test Channel :	11	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9846 MHz and 14775 MHz are 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
2462	102.31	-	-	97.79	32.37	6.14	33.99	100	352	Average
2462	107.1	-	-	102.58	32.37	6.14	33.99	100	352	Peak
4923	52.28	-1.72	54	66.69	33.93	9.14	57.48	168	119	Average
4923	53.69	-20.31	74	68.1	33.93	9.14	57.48	168	119	Peak
7386	52.92	-1.08	54	65.38	35.52	10.1	58.08	108	294	Average
7386	55.21	-18.79	74	67.67	35.52	10.1	58.08	108	294	Peak
9846	49.13	-37.97	87.1	58.72	36.78	11.88	58.25	100	0	Peak
12309	46.04	-27.96	74	52.89	39.05	13.53	59.43	100	0	Peak
14775	50.62	-36.48	87.1	54.65	39.97	14.12	58.12	100	0	Peak



Test Mode :	802.11g	Temperature :	25~26°C
Test Channel :	01	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7239 MHz and 9645 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	100.29	-	-	95.88	32.31	6.07	33.97	108	178	Average
2412	110.73	-	-	106.32	32.31	6.07	33.97	108	178	Peak
4824	44.94	-29.06	74	59.32	33.97	9.12	57.47	100	0	Peak
7239	52.33	-38.4	90.73	64.73	35.55	10.03	57.98	100	0	Peak
9645	47.05	-43.68	90.73	56.77	36.52	11.99	58.23	100	0	Peak

Test Mode :	802.11g	Temperature :	25~26°C
Test Channel :	01	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7239 MHz and 9639 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2412	93.44	-	-	89.03	32.31	6.07	33.97	144	284	Average
2412	103.84	-	-	99.43	32.31	6.07	33.97	144	284	Peak
4818	47.64	-26.36	74	62.02	33.97	9.12	57.47	100	0	Peak
7239	52.14	-31.7	83.84	64.54	35.55	10.03	57.98	100	0	Peak
9639	47.51	-36.33	83.84	57.26	36.49	11.99	58.23	100	0	Peak



Test Mode :	802.11g	Temperature :	25~26°C
Test Channel :	06	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. 9750 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
2437	104.73	-	-	100.25	32.35	6.11	33.98	105	54	Average
2437	114.89	-	-	110.41	32.35	6.11	33.98	105	54	Peak
4875	49.55	-24.45	74	63.95	33.95	9.13	57.48	100	0	Peak
7311	46.15	-7.85	54	58.57	35.54	10.06	58.02	129	264	Average
7311	57.9	-16.1	74	70.32	35.54	10.06	58.02	129	264	Peak
9750	54.55	-40.34	94.89	64.2	36.66	11.93	58.24	100	0	Peak

Test Mode :	802.11g	Temperature :	25~26°C
Test Channel :	06	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. 9756 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
2437	99.38	-	-	94.9	32.35	6.11	33.98	150	320	Average
2437	109.32	-	-	104.84	32.35	6.11	33.98	150	320	Peak
4869	49.8	-24.2	74	64.2	33.95	9.13	57.48	100	0	Peak
7314	47.65	-6.35	54	60.07	35.54	10.06	58.02	132	49	Average
7314	60.95	-13.05	74	73.37	35.54	10.06	58.02	132	49	Peak
9756	55.86	-33.46	89.32	65.51	36.66	11.93	58.24	100	0	Peak



Test Mode :	802.11g	Temperature :	25~26°C
Test Channel :	11	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9846 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
30.81	28.15	-11.85	40	40.2	19.28	0.54	31.87	-	-	Peak
47.82	25.62	-14.38	40	47.3	9.3	0.67	31.65	-	-	Peak
291.09	31.63	-14.37	46	48.16	13.18	1.7	31.41	-	-	Peak
351.1	40.31	-5.69	46	55.05	14.69	1.98	31.41	100	37	Peak
701.8	34.02	-11.98	46	40.94	20.63	2.94	30.49	-	-	Peak
837.6	33.5	-12.5	46	38.23	22.48	3.24	30.45	-	-	Peak
2462	101.54	-	-	97.02	32.37	6.14	33.99	104	184	Average
2462	112.06	-	-	107.54	32.37	6.14	33.99	104	184	Peak
4923	44.77	-29.23	74	59.18	33.93	9.14	57.48	100	0	Peak
7383	36.62	-17.38	54	49.07	35.52	10.1	58.07	127	268	Average
7383	51.49	-22.51	74	63.94	35.52	10.1	58.07	127	268	Peak
9846	47.91	-44.15	92.06	57.5	36.78	11.88	58.25	100	0	Peak



Test Mode :	802.11g	Temperature :	25~26°C
Test Channel :	11	Relative Humidity :	45~46%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9849 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
30.27	23.67	-16.33	40	35.01	20	0.53	31.87	-	-	Peak
96.96	24.84	-18.66	43.5	46.09	9.44	0.98	31.67	-	-	Peak
193.89	23.96	-19.54	43.5	44.94	9.04	1.3	31.32	-	-	Peak
351.1	39.12	-6.88	46	53.86	14.69	1.98	31.41	100	187	Peak
621.3	31.66	-14.34	46	39.4	19.97	2.75	30.46	-	-	Peak
837.6	31.18	-14.82	46	35.91	22.48	3.24	30.45	-	-	Peak
2462	93.9	-	-	89.38	32.37	6.14	33.99	100	352	Average
2462	104.41	-	-	99.89	32.37	6.14	33.99	100	352	Peak
4926	47.1	-26.9	74	61.5	33.93	9.15	57.48	100	0	Peak
7383	39.9	-14.1	54	52.35	35.52	10.1	58.07	133	300	Average
7383	54.61	-19.39	74	67.06	35.52	10.1	58.07	133	300	Peak
9849	49.14	-35.27	84.41	58.7	36.81	11.88	58.25	100	0	Peak

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

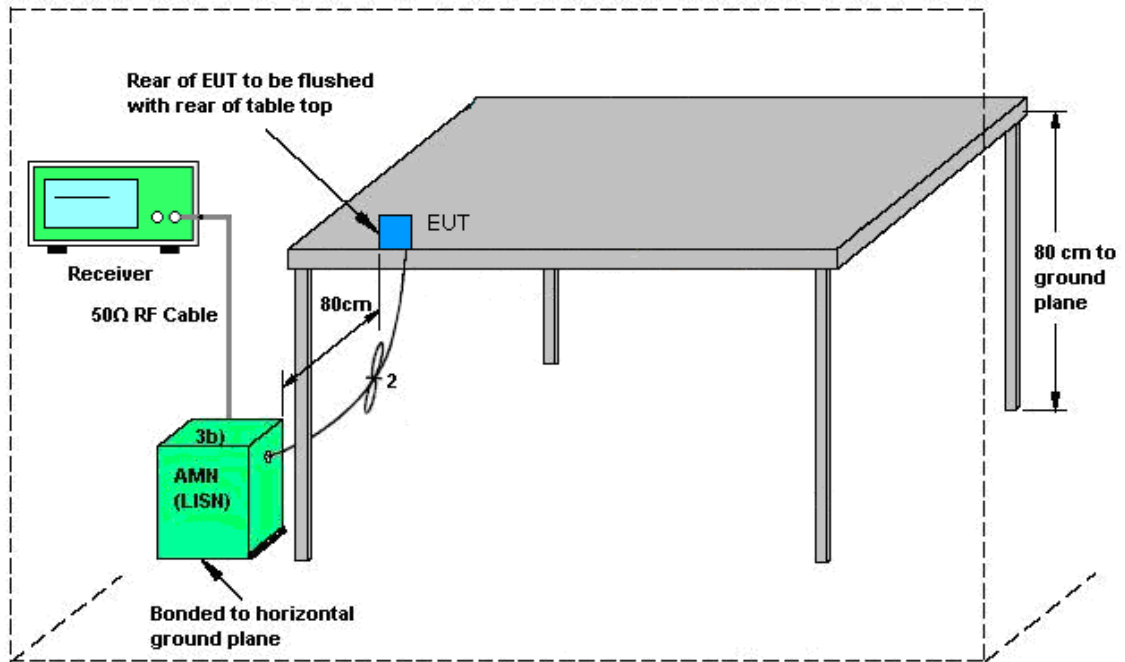
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

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

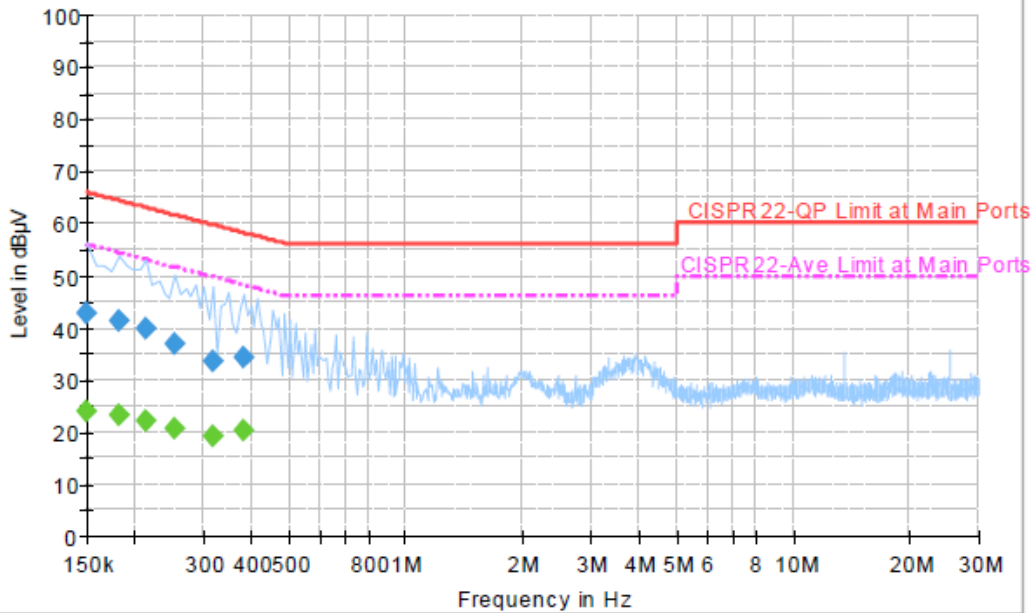
3.6.4 Test Setup



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 :	20~21°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Playback On + HDMI Cable Link with Monitor + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



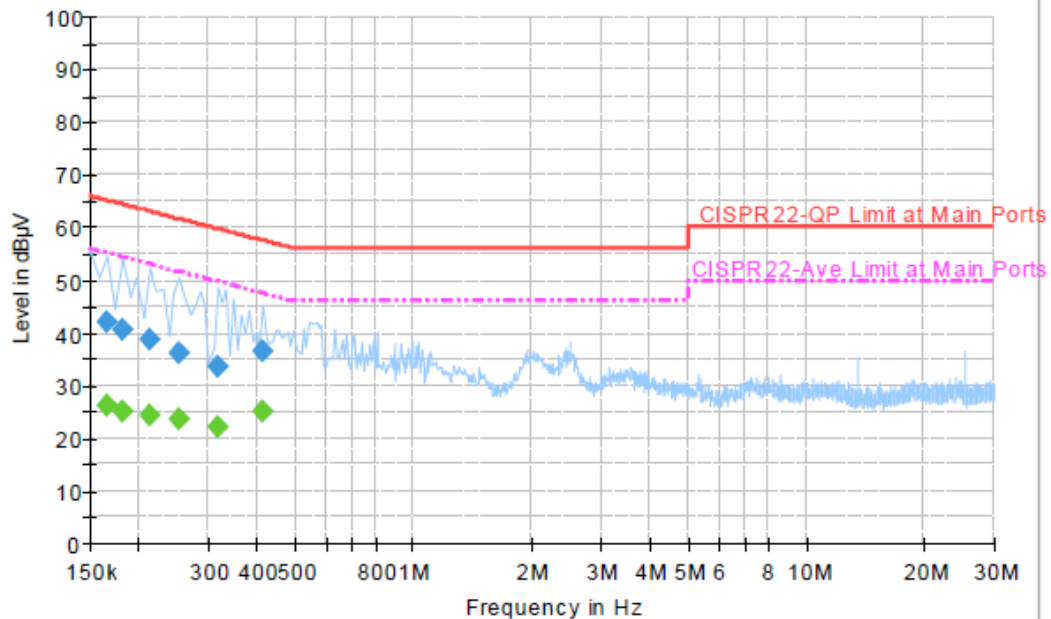
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	42.8	Off	L1	19.4	23.2	66.0
0.182000	41.4	Off	L1	19.4	23.0	64.4
0.214000	39.8	Off	L1	19.4	23.2	63.0
0.254000	36.9	Off	L1	19.4	24.7	61.6
0.318000	33.7	Off	L1	19.3	26.1	59.8
0.382000	34.3	Off	L1	19.4	23.9	58.2

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	24.1	Off	L1	19.4	31.9	56.0
0.182000	23.1	Off	L1	19.4	31.3	54.4
0.214000	22.0	Off	L1	19.4	31.0	53.0
0.254000	20.7	Off	L1	19.4	30.9	51.6
0.318000	19.2	Off	L1	19.3	30.6	49.8
0.382000	20.2	Off	L1	19.4	28.0	48.2

Test Mode :	Mode 1	Temperature :	20~21°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Playback On + HDMI Cable Link with Monitor + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	42.0	Off	N	19.3	23.2	65.2
0.182000	40.6	Off	N	19.4	23.8	64.4
0.214000	38.8	Off	N	19.4	24.2	63.0
0.254000	36.1	Off	N	19.4	25.5	61.6
0.318000	33.8	Off	N	19.3	26.0	59.8
0.414000	36.5	Off	N	19.4	21.1	57.6

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	26.1	Off	N	19.3	29.1	55.2
0.182000	25.0	Off	N	19.4	29.4	54.4
0.214000	24.2	Off	N	19.4	28.8	53.0
0.254000	23.5	Off	N	19.4	28.1	51.6
0.318000	22.0	Off	N	19.3	27.8	49.8
0.414000	25.1	Off	N	19.4	22.5	47.6



3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Connected Construction

Non-standard connector used.

3.7.3 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. 06, 2012	Aug. 27, 2012~ Sep. 11, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 18, 2011	Aug. 27, 2012~ Sep. 11, 2012	Sep. 17, 2012	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 18, 2011	Aug. 27, 2012~ Sep. 11, 2012	Sep. 17, 2012	Conducted (TH02-HY)
EMI Test Receiver	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Aug. 30, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Aug. 30, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Aug. 30, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000 W	N/A	N/A	N/A	Aug. 30, 2012	N/A	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Sep. 04, 2012~ Sep. 05, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Sep. 04, 2012~ Sep. 05, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Sep. 04, 2012~ Sep. 05, 2012	Jul. 31, 2013	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Sep. 04, 2012~ Sep. 05, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Sep. 04, 2012~ Sep. 05, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
Signal Analyzer	Rohde & Schwarz	FSQ	200578/026	20Hz~26.5GHz	Feb. 06, 2012	Sep. 04, 2012~ Sep. 05, 2012	Feb. 05, 2013	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-00 101800-30- 10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Sep. 04, 2012~ Sep. 05, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	15GHz ~ 40GHz	Oct. 21, 2011	Sep. 04, 2012~ Sep. 05, 2012	Oct. 20, 2012	Radiation (03CH07-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP280756 as below.