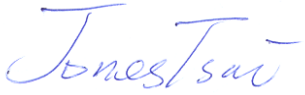
FCC RF Test Report

APPLICANT	:	Chicony Electronics Co., Ltd.
EQUIPMENT	:	Wireless Camcorder
BRAND NAME	:	C200
MODEL NAME	:	DC-D210
FCC ID	:	E8HDCD210C200
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Feb. 07, 2013 and completely tested on Apr. 08, 2013. 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: Joseph Lin / Supervisor



Approved 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
FR320717	Rev. 01	Initial issue of report	Apr. 23, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)	RSS-210 A8.4	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges	≤ 20dBc	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 1.36 dB at 2389.2000 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 5.60 dB at 0.558 MHz and 0.622 MHz
3.7	15.203 & 15.247(b)	RSS-210 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 Co., Ltd.
No. 25, Wugong 6th Rd., Wugu Dist., New Taipei City 248, Taiwan (R.O.C.)

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Wireless Camcorder
Brand Name	C200
Model Name	DC-D210
FCC ID	E8HDCD210C200
EUT supports Radios application	WLAN 11bg
HW Version	A2
SW Version	V100
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.

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2462 MHz
Maximum Output Power to Antenna	802.11b : 19.03 dBm (0.0800 W) 802.11g : 22.62 dBm (0.1828 W)
Antenna Type	monopole Antenna type with gain 2.89 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH06-HY	722060/4086B-1

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

1.6 Applied Standards

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

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
- ANSI C63.10-2009

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

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)	19.03	19.01	18.97	18.96

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)	22.62	22.59	22.26	22.37	22.42	22.19	22.15	22.11

2.3 Test Mode

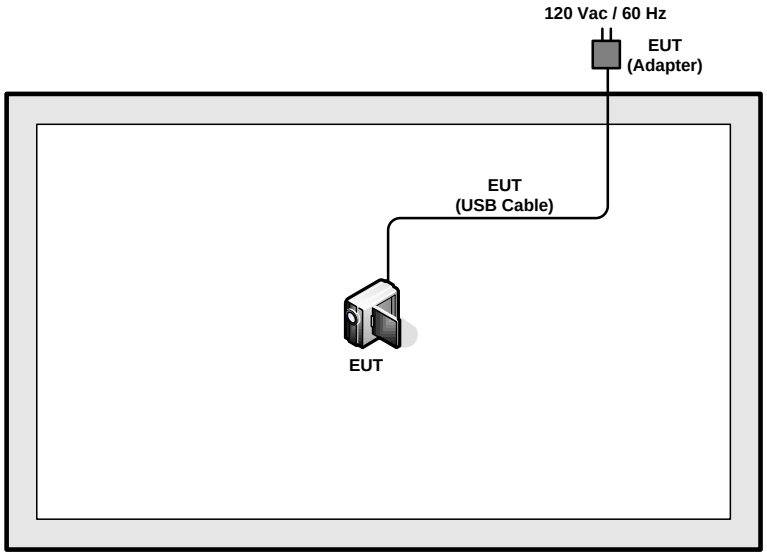
Final results of test modes, data rates and test channels are shown as following table.

Test Cases				
	Test Items	Mode	Data Rate	Test Channel
Conducted TCs	6dB 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

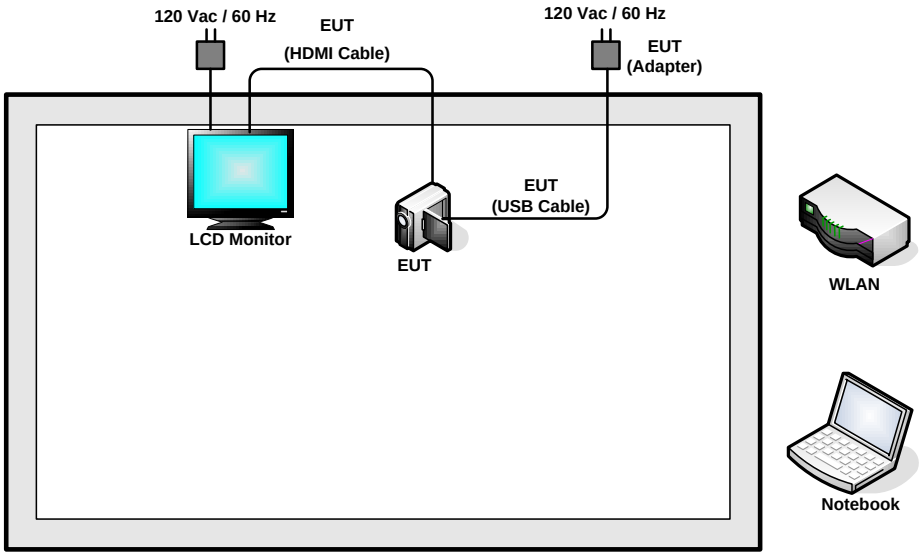
<Test Cases	
AC Conducted Emission	Mode 1 : WLAN Link + Record + HDMI + USB Cable (Charging from Adapter) + Battery

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

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

2.6 Description of RF Function Operation Test Setup

For WLAN function, programmed RF utility, “AT Command” installed in the notebook make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

2.7 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

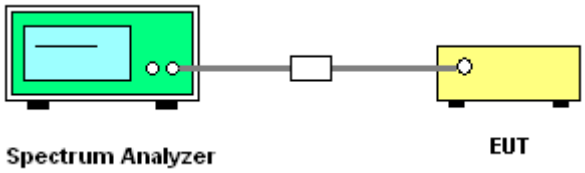
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 KHz.
5. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

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

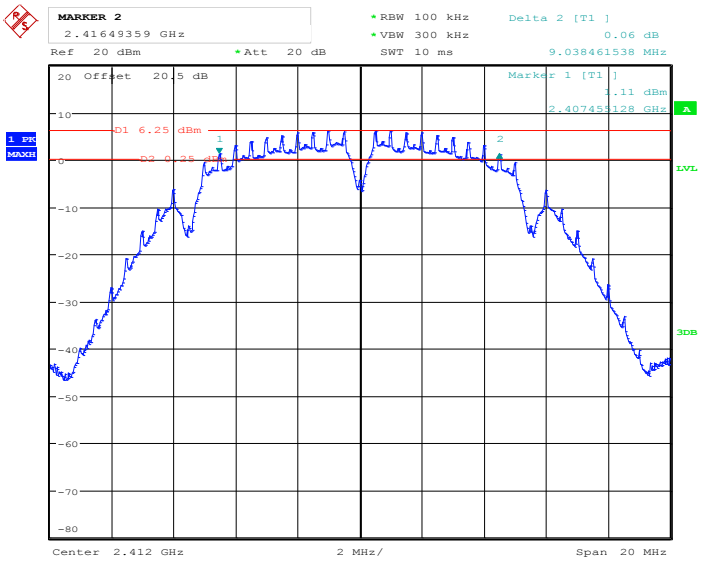
Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	9.04	0.5	Pass
06	2437	9.07	0.5	Pass
11	2462	9.04	0.5	Pass

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

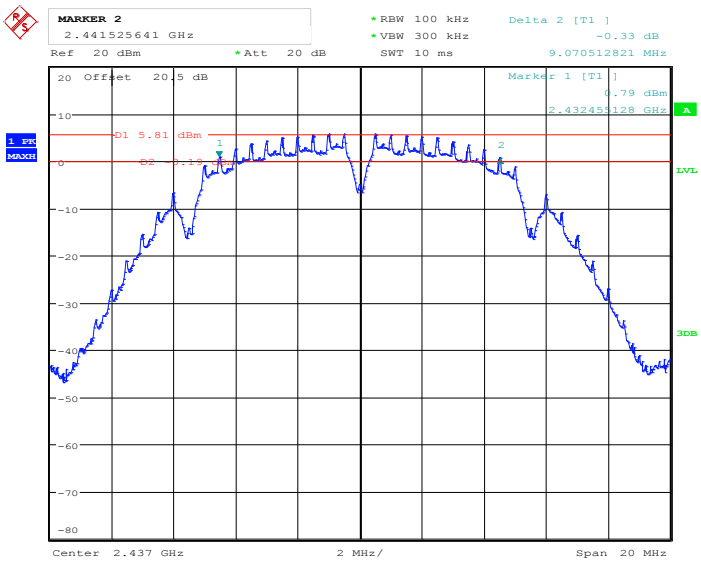
Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	15.78	0.5	Pass
06	2437	16.33	0.5	Pass
11	2462	16.35	0.5	Pass

3.1.6 Test Result of 6dB Bandwidth Plots

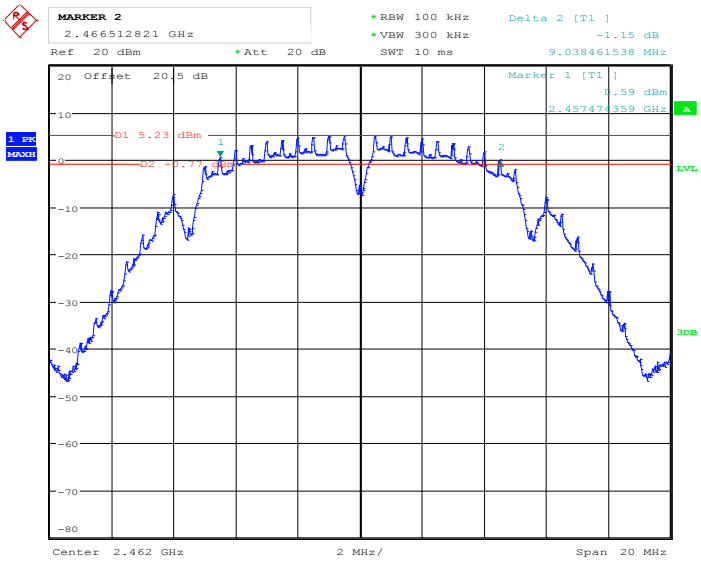
6 dB Bandwidth Plot on 802.11b Channel 01



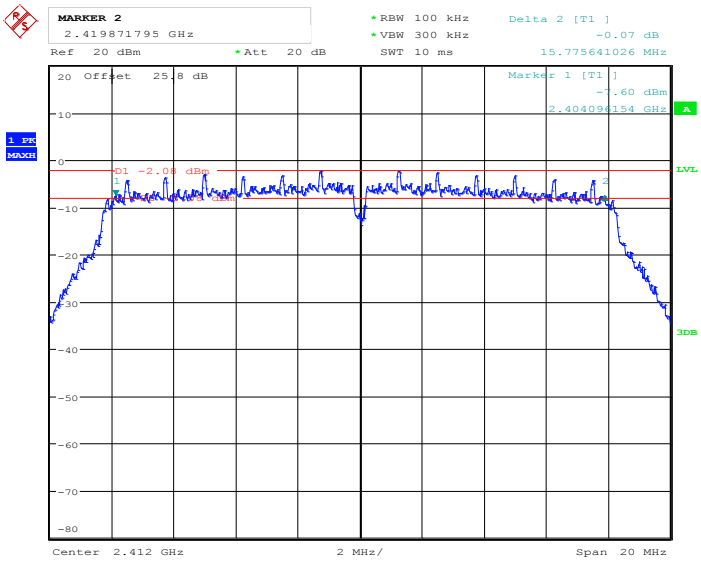
6 dB Bandwidth Plot on 802.11b Channel 06



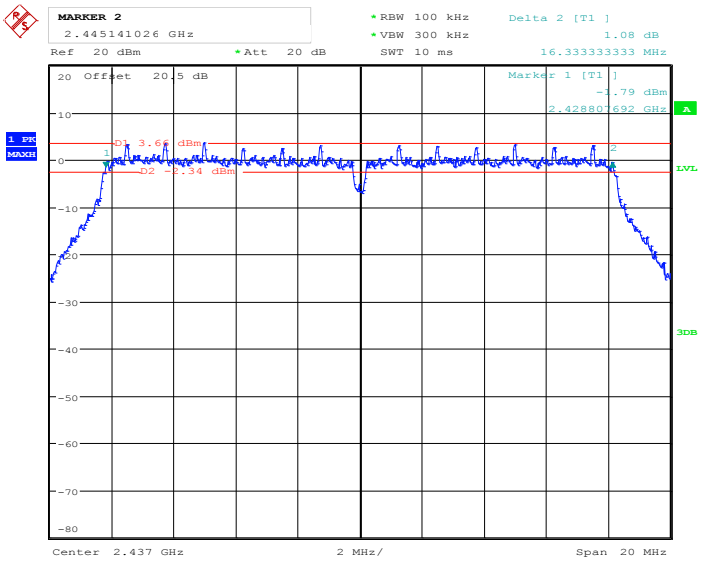
6 dB Bandwidth Plot on 802.11b Channel 11



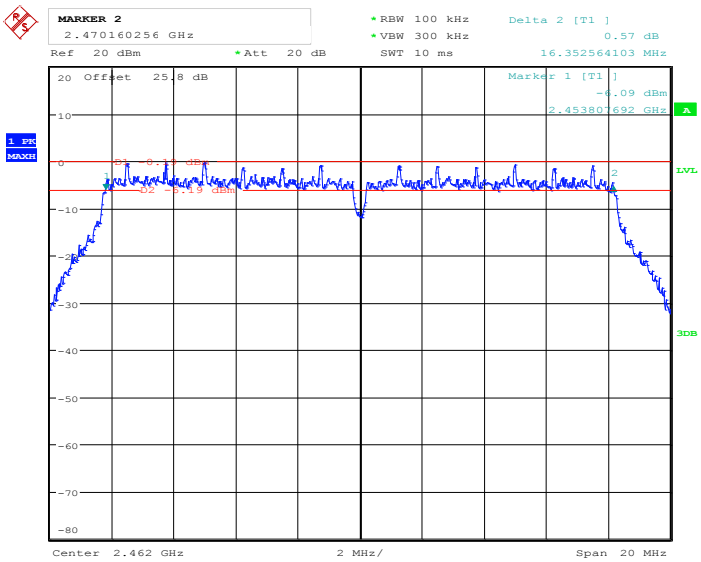
6 dB Bandwidth Plot on 802.11g Channel 01



6 dB Bandwidth Plot on 802.11g Channel 06



6 dB Bandwidth Plot on 802.11g 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.

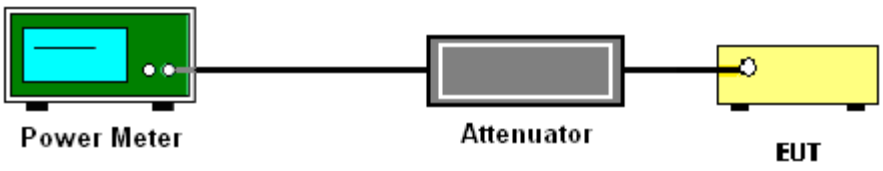
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Test Mode :	802.11b	Temperature :	24~26℃
Test Engineer :	Coyote Lin	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	18.51	30	Pass
11	2462	17.75	30	Pass

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

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.31	30	Pass
06	2437	22.62	30	Pass
11	2462	21.12	30	Pass

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.

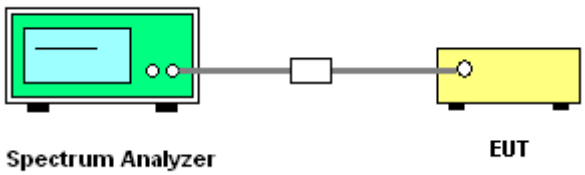
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
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.
6. Measure and record the results in the test report.
7. The Measured power density (dBm)/ 100KHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

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

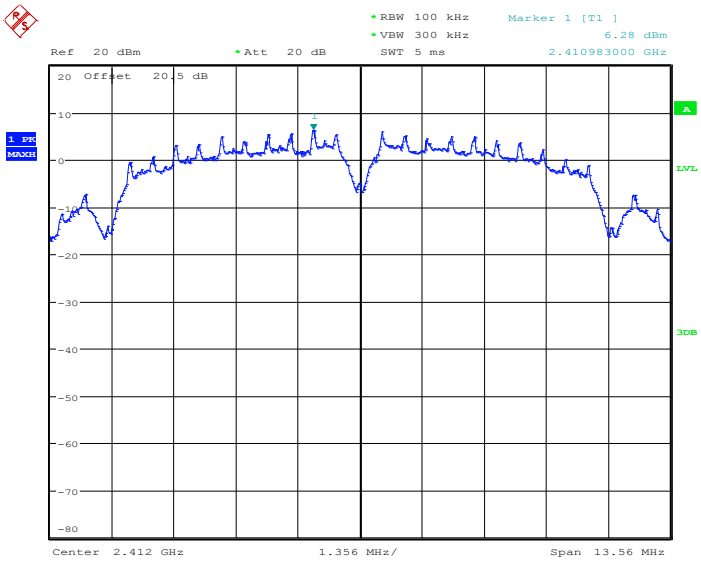
Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
01	2412	6.28	-7.21	8	Pass
06	2437	5.52	-8.39	8	Pass
11	2462	5.07	-8.36	8	Pass

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

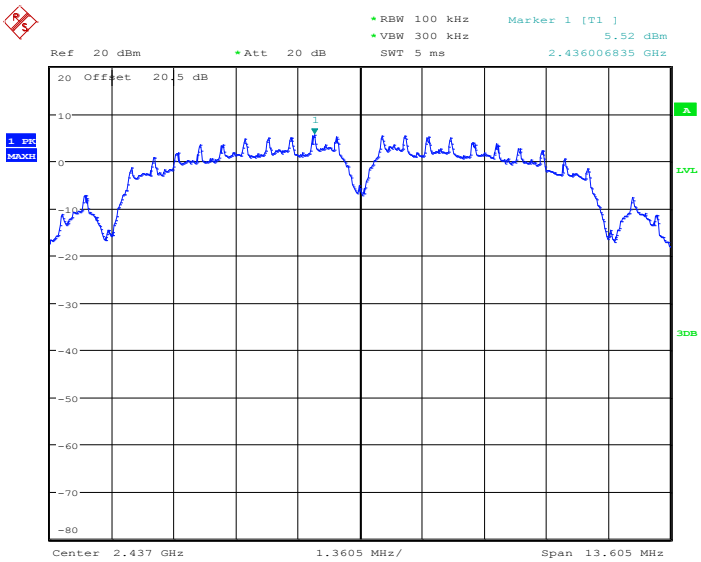
Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
01	2412	-2.14	-16.60	8	Pass
06	2437	3.59	-11.23	8	Pass
11	2462	-0.42	-14.85	8	Pass

3.3.6 Test Result of Power Spectral Density Plots (100kHz)

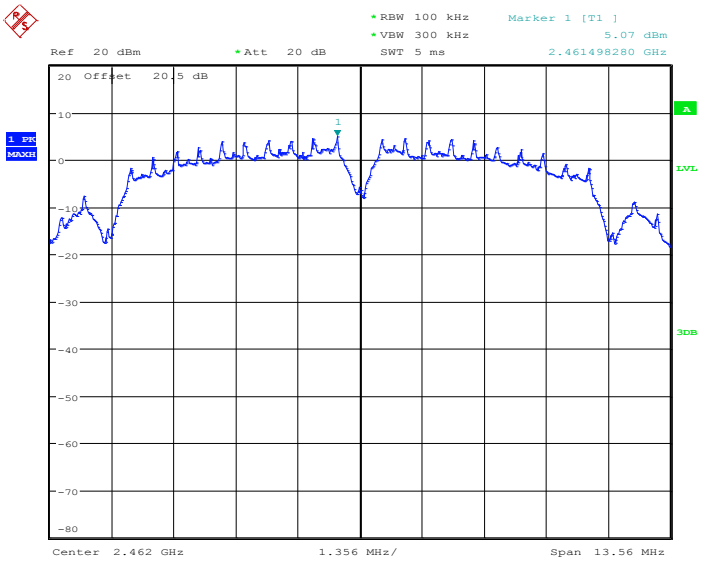
PSD 100kHz Plot on 802.11b Channel 01



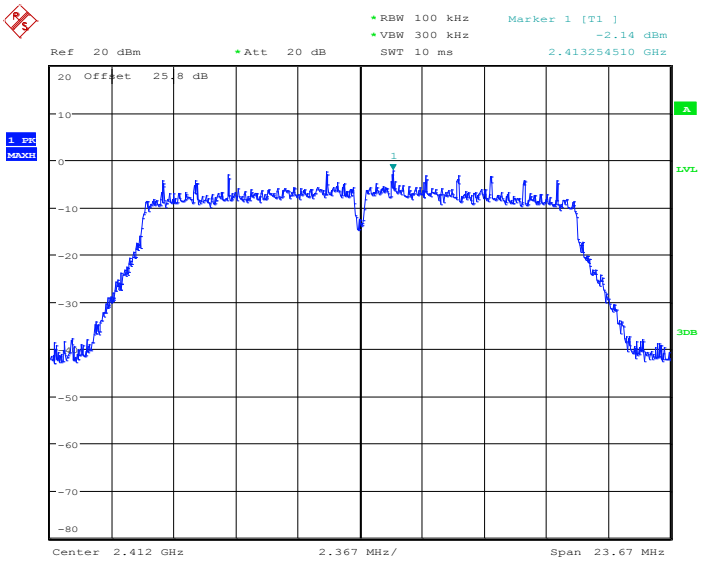
PSD 100kHz Plot on 802.11b Channel 06



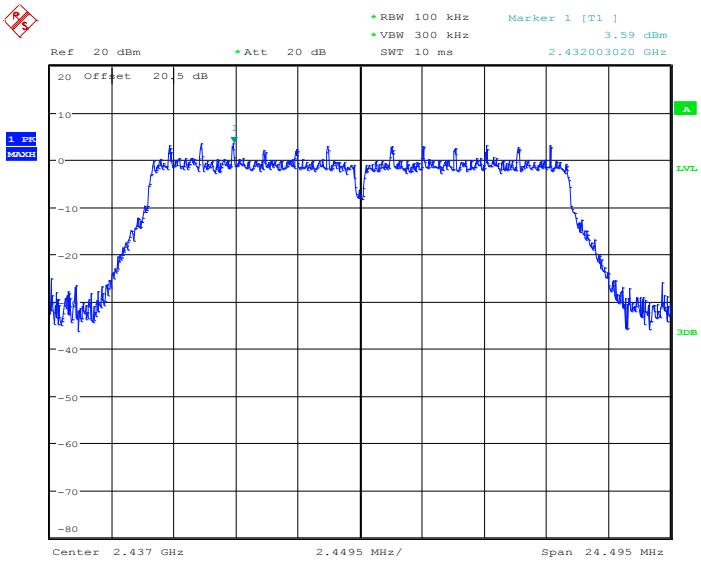
PSD 100kHz Plot on 802.11b Channel 11



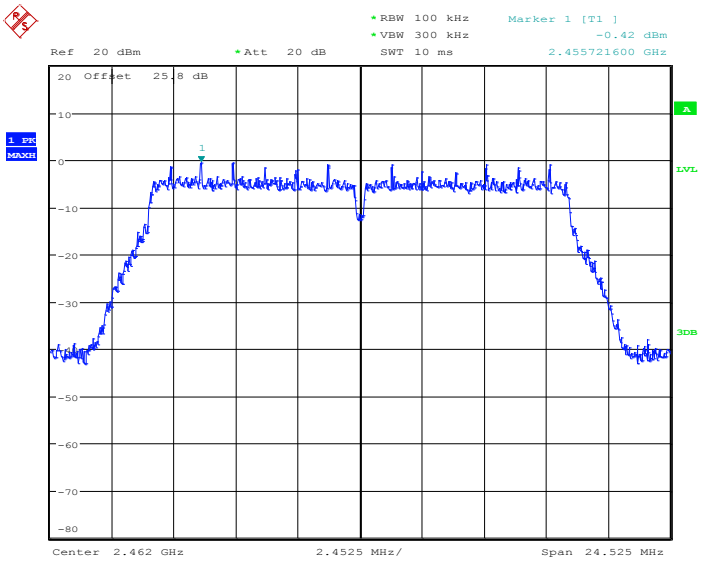
PSD 100kHz Plot on 802.11g Channel 01



PSD 100kHz Plot 802.11g Channel 06

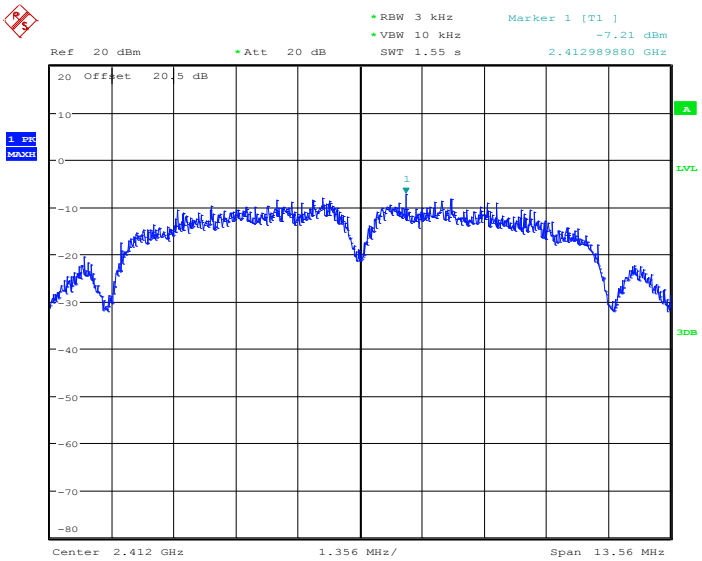


PSD 100kHz Plot 802.11g Channel 11

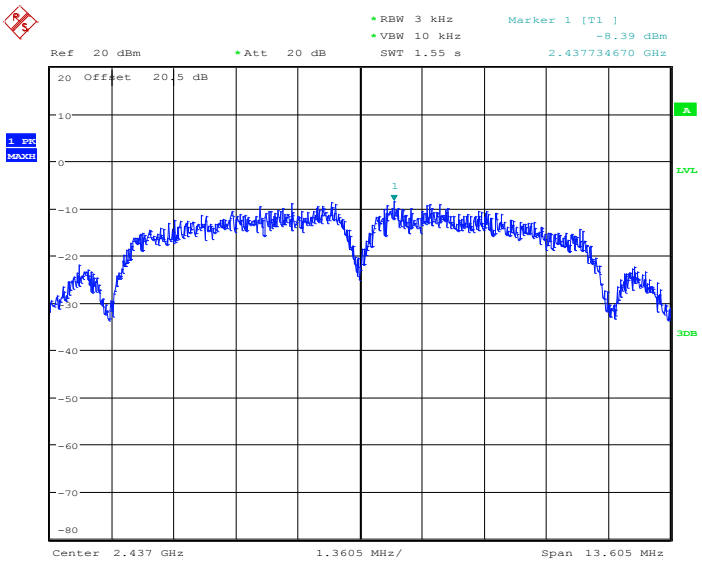


3.3.7 Test Result of Power Spectral Density Plots (3kHz)

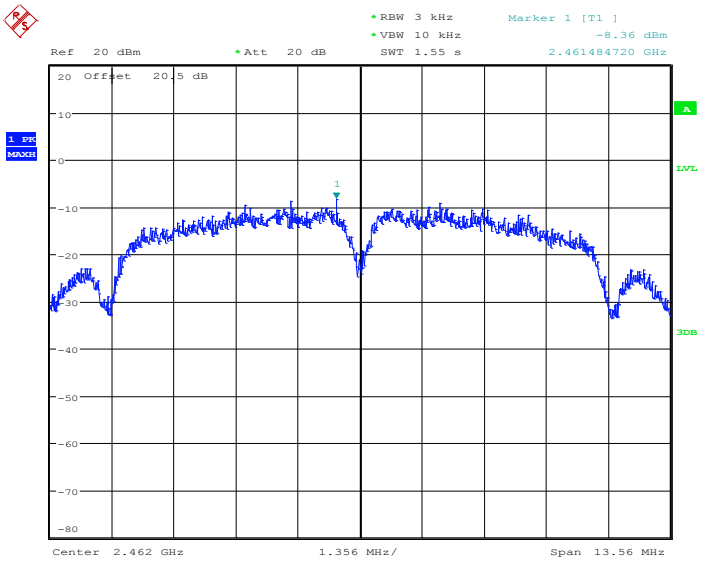
PSD 3kHz Plot on 802.11b Channel 01



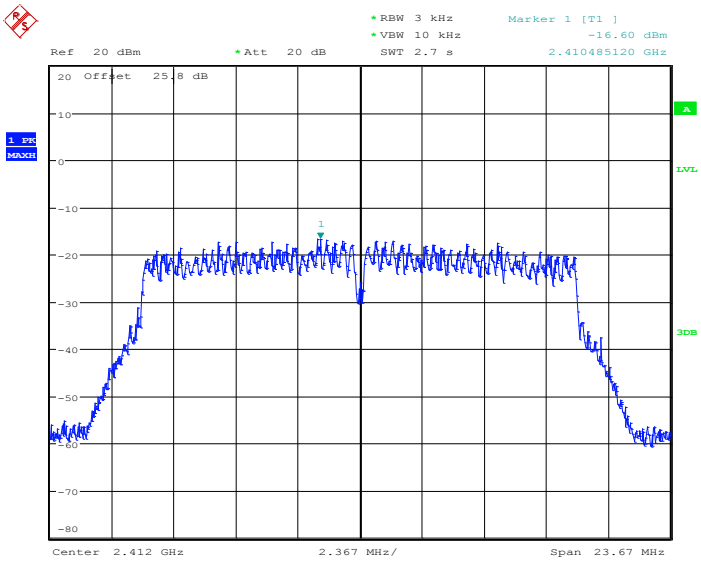
PSD 3kHz Plot on 802.11b Channel 06



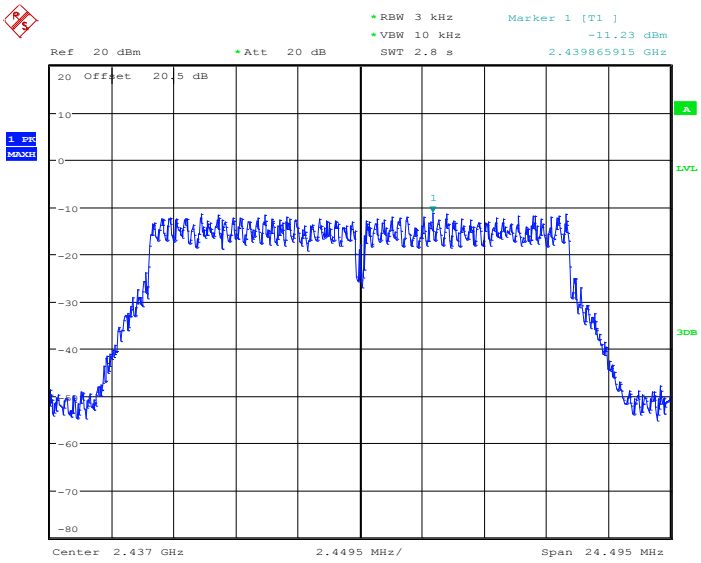
PSD 3kHz Plot on 802.11b Channel 11



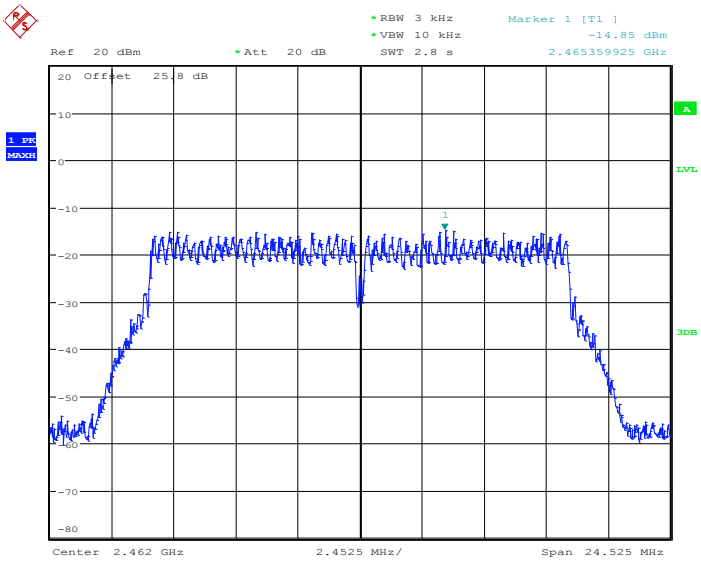
PSD 3kHz Plot on 802.11g Channel 01



PSD 3kHz Plot on 802.11g Channel 06



PSD 3kHz Plot on 802.11g Channel 11



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).

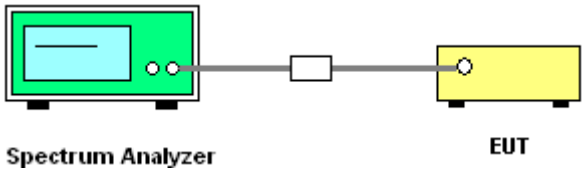
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. 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. 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).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

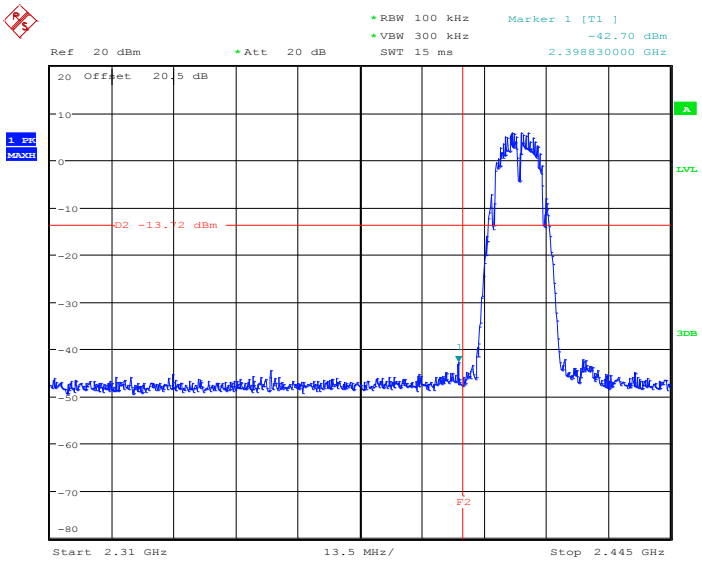
3.4.4 Test Setup



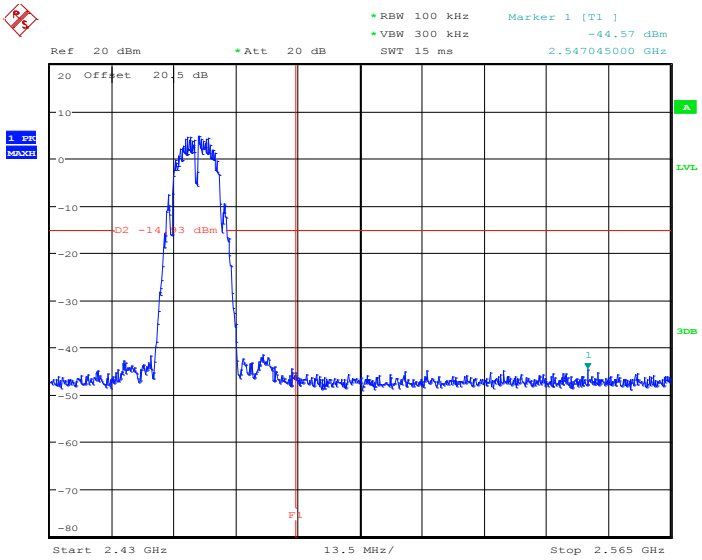
3.4.5 Test Result of Conducted Spurious at Band Edges

Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	50~53%
Test Channel :	01 and 11	**Test Engineer :**	Coyote Lin

Low Band Edge Plot on 802.11b Channel 01

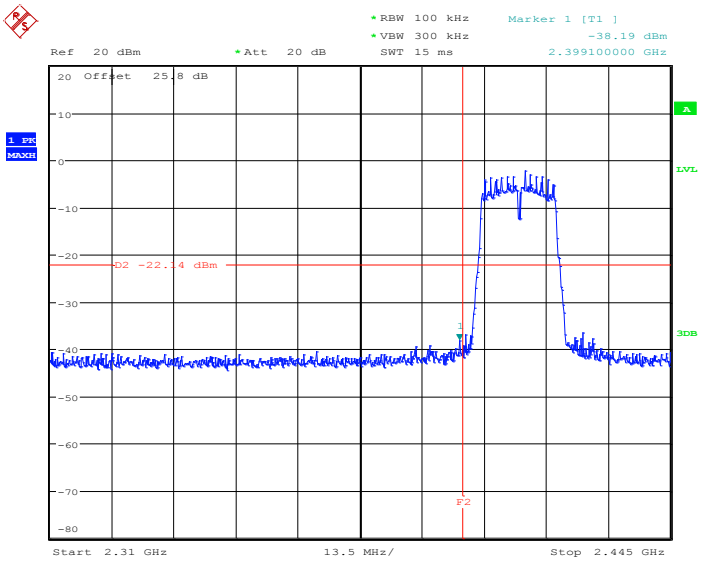


High Band Edge Plot on 802.11b Channel 11

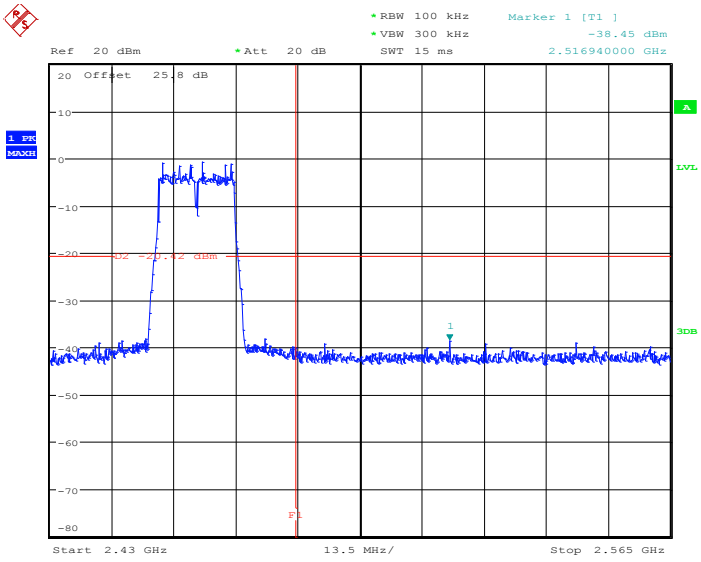


Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	50~53%
Test Channel :	01 and 11	**Test Engineer :**	Coyote Lin

Low Band Edge Plot on 802.11g Channel 01



High Band Edge Plot on 802.11g Channel 11

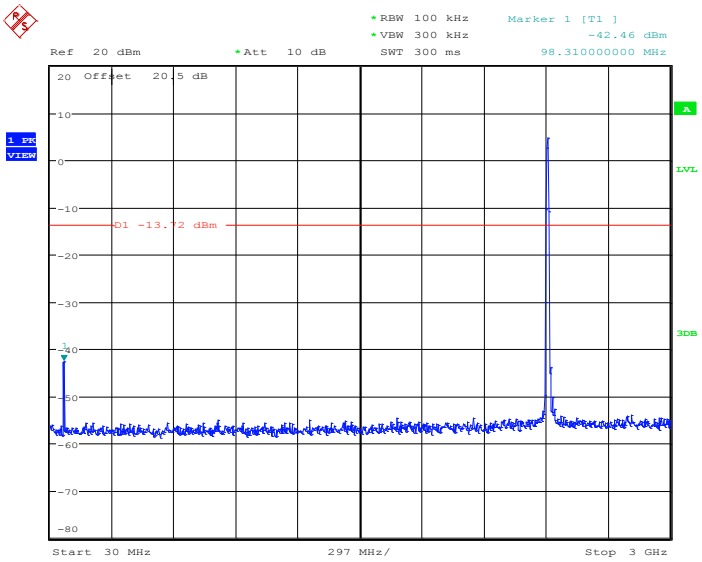


3.4.6 Test Result of Conducted Spurious Emission

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

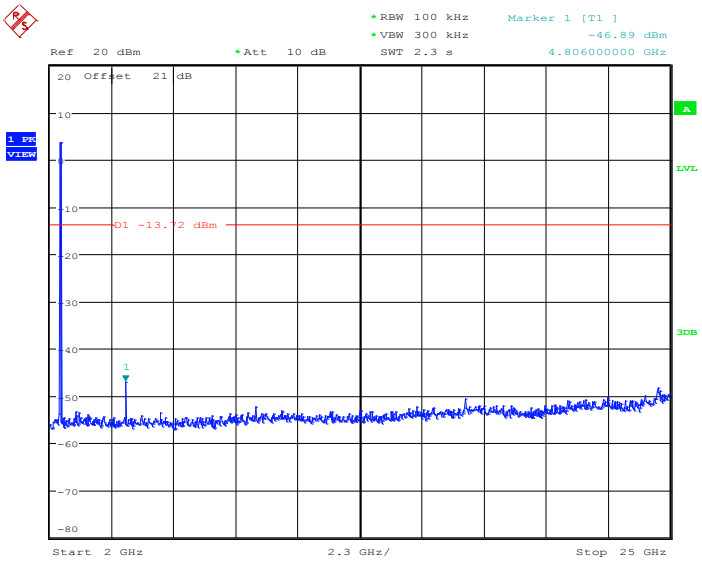
802.11b 30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01



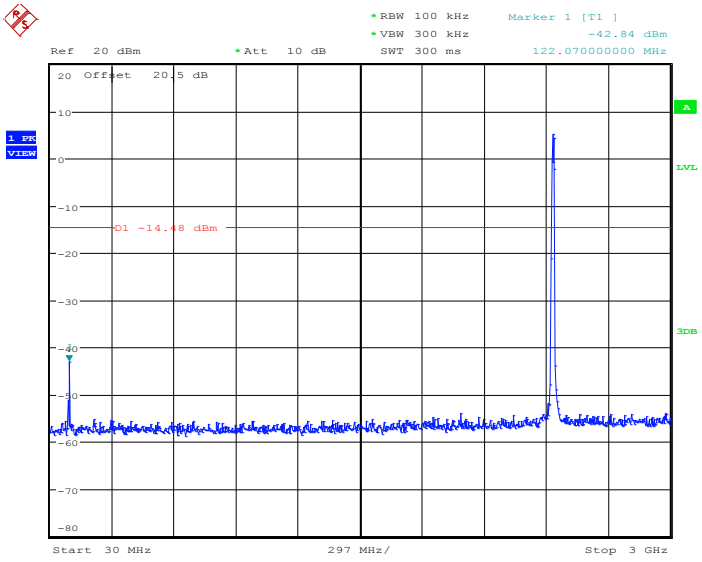
802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01



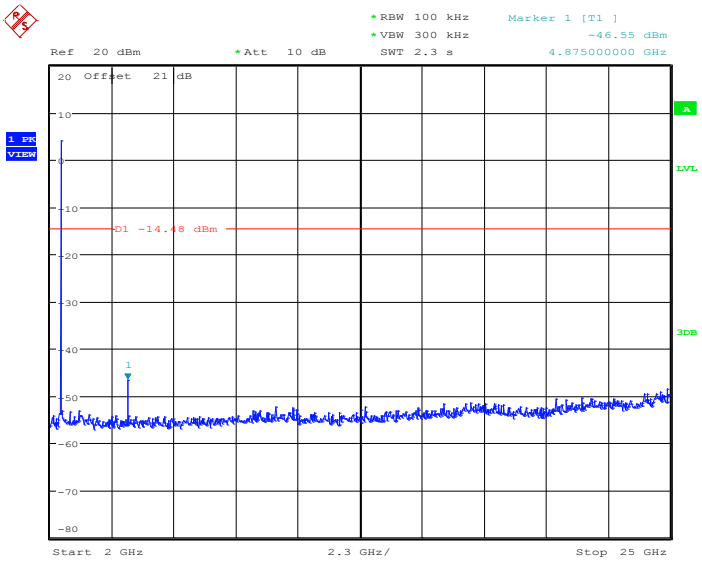
802.11b 30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06



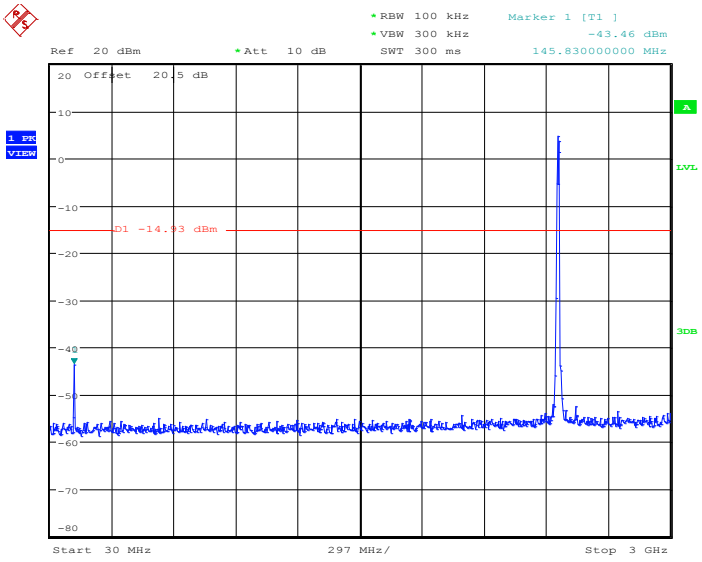
802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06



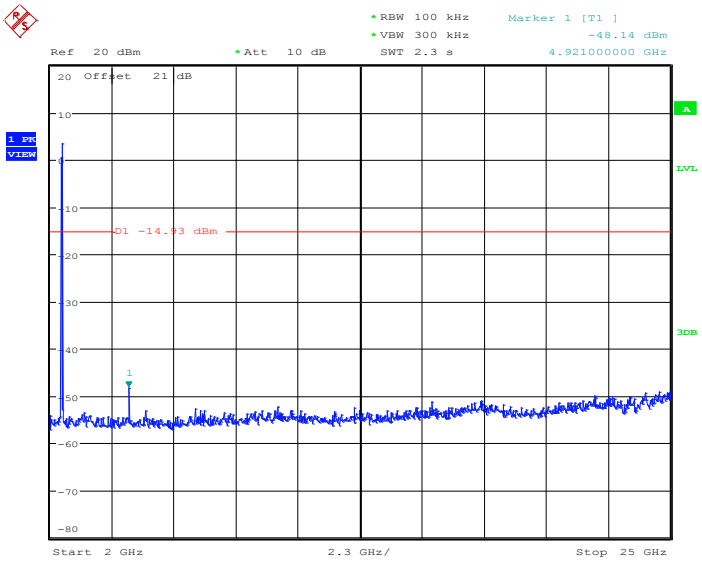
802.11b 30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 11



802.11b 2 GHz~25 GHz

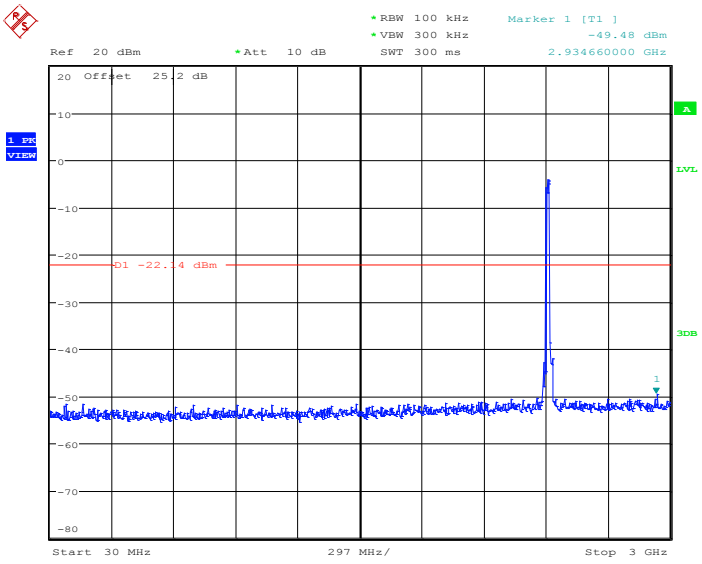
Conducted Spurious Emission Plot on Channel 11



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

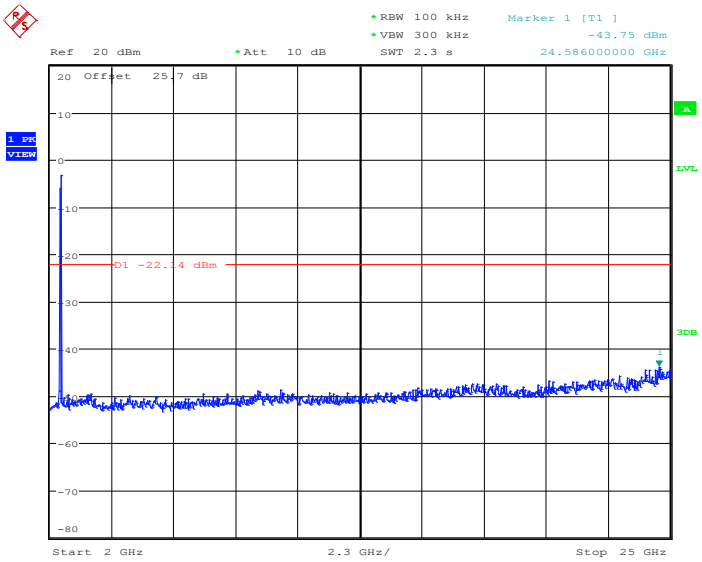
802.11g 30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01



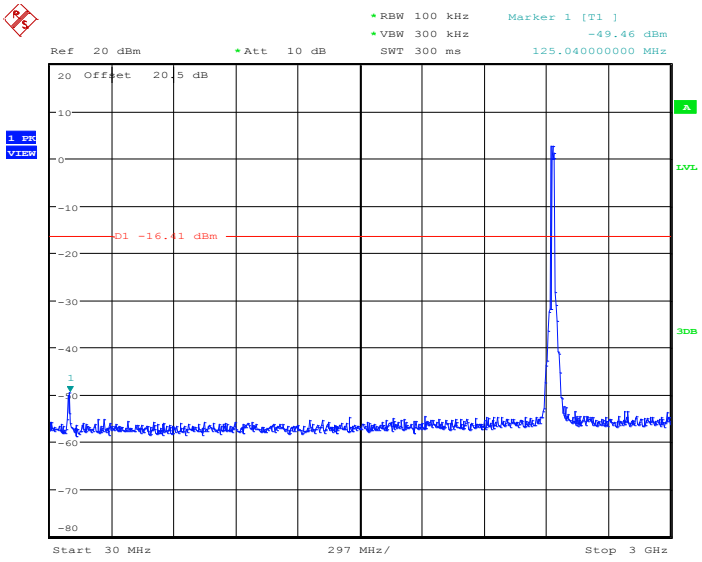
802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01



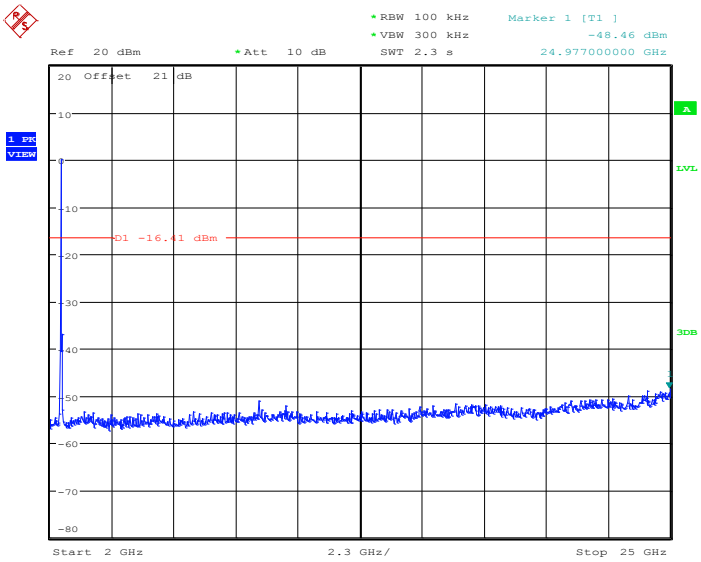
802.11g 30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06



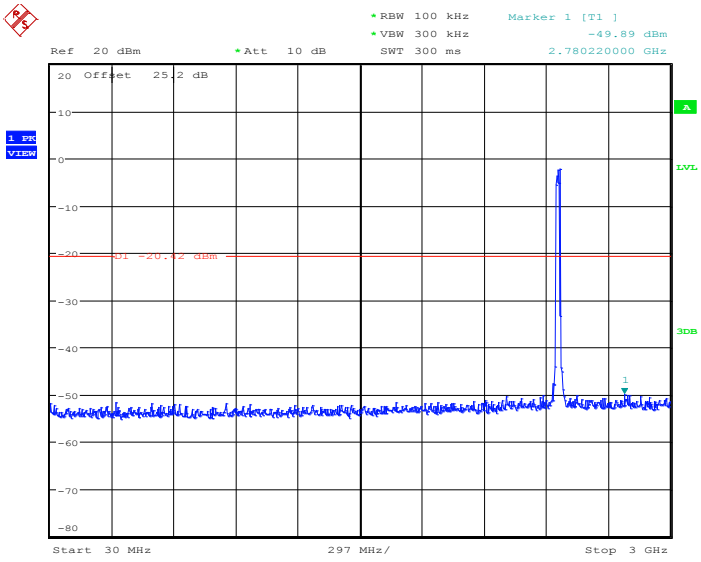
802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06



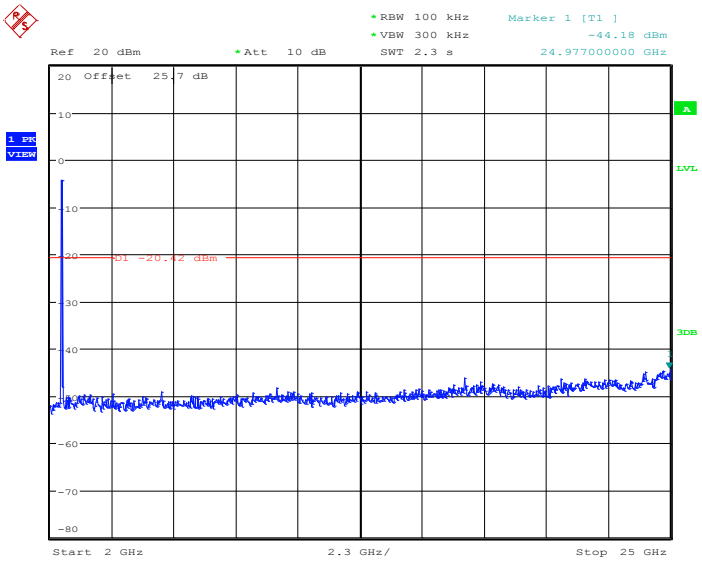
802.11g 30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 11



802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

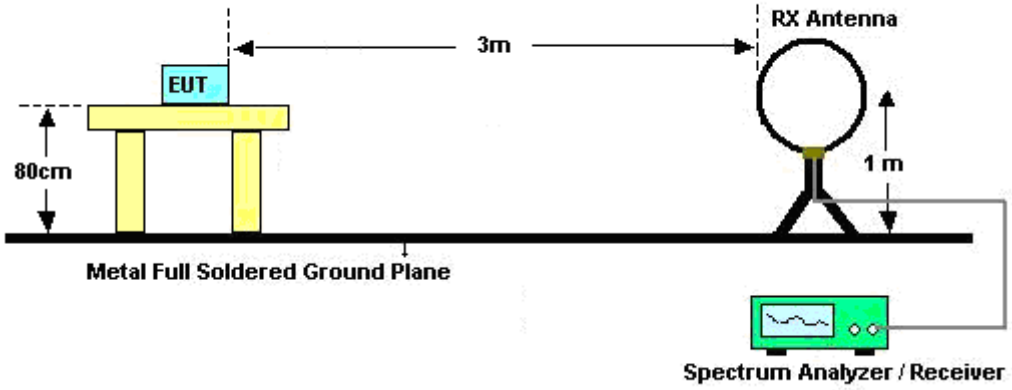
1. The testing follows the guidelines in ANSI C63.10-2009.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better 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 ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(μs)	1/T(kHz)	VBW Setting
802.11b	100.00	-	-	10Hz
802.11g	97.20	1390.000	0.719	1KHz

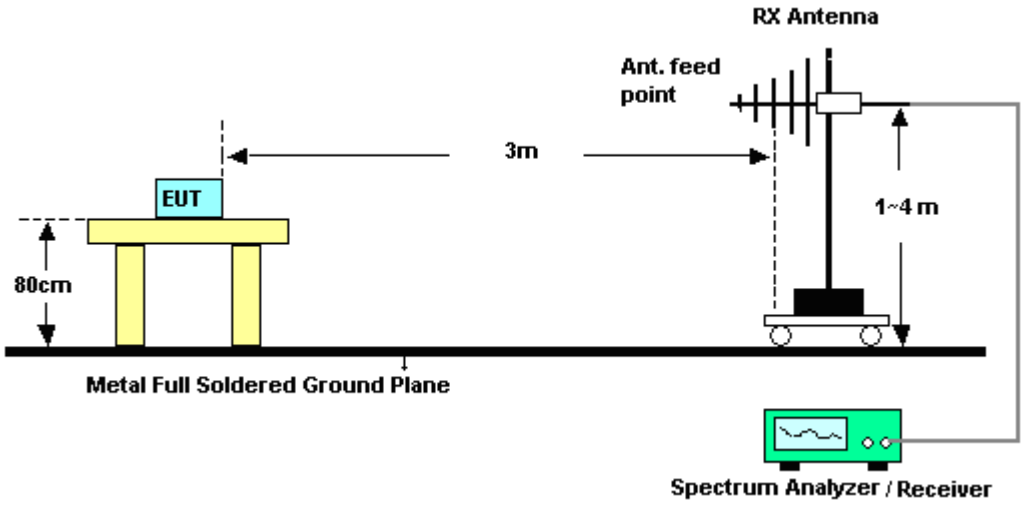
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

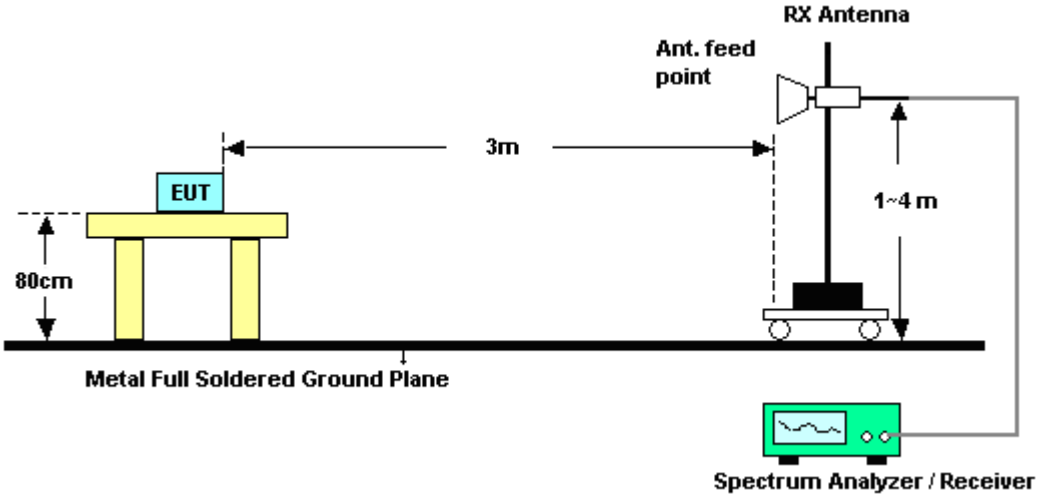
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Emissions (9KHz ~ 30MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.5.6 Test Result of Radiated Band Edges

Test Mode :	802.11b	**Temperature :**	21~23 °C
Test Band :	Low	**Relative Humidity :**	44~46%
Test Channel :	01	**Test Engineer :**	Marlboro Hsu

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**
2387.13	54.77	-19.23	74	50.52	32.36	6.45	34.56	104	291	Peak
2390	42.88	-11.12	54	38.63	32.36	6.45	34.56	104	291	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	**Level (dBµV/m)**	**Over Limit (dB)**	**Limit Line (dBµV/m)**	**Read Level (dBµV)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Ant Pos (cm)**	**Table Pos (deg)**	**Remark**
2389.65	53.25	-20.75	74	49	32.36	6.45	34.56	120	312	Peak
2387.67	41.33	-12.67	54	37.08	32.36	6.45	34.56	120	312	Average

Test Mode :	802.11b	**Temperature :**	21~23 °C
Test Band :	High	**Relative Humidity :**	44~46%
Test Channel :	11	**Test Engineer :**	Marlboro Hsu

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**
2483.59	57.02	-16.98	74	52.5	32.48	6.59	34.55	102	288	Peak
2483.5	46.16	-7.84	54	41.64	32.48	6.59	34.55	102	288	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	**Level (dBµV/m)**	**Over Limit (dB)**	**Limit Line (dBµV/m)**	**Read Level (dBµV)**	**Antenna Factor (dB)**	**Cable Loss (dB)**	**Preamp Factor (dB)**	**Ant Pos (cm)**	**Table Pos (deg)**	**Remark**
2484.7	50.45	-23.55	74	45.93	32.48	6.59	34.55	100	312	Peak
2483.5	38.87	-15.13	54	34.35	32.48	6.59	34.55	100	312	Average

Test Mode :	802.11g	Temperature :	21~23 °C
Test Band :	Low	Relative Humidity :	44~46%
Test Channel :	01	Test Engineer :	Marlboro Hsu

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
2389.2	72.64	-1.36	74	68.39	32.36	6.45	34.56	104	294	Peak
2390	47.93	-6.07	54	43.68	32.36	6.45	34.56	104	294	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	67.41	-6.59	74	63.16	32.36	6.45	34.56	100	312	Peak
2389.83	44.26	-9.74	54	40.01	32.36	6.45	34.56	100	312	Average

Test Mode :	802.11g	Temperature :	21~23 °C
Test Band :	High	Relative Humidity :	44~46%
Test Channel :	11	Test Engineer :	Marlboro Hsu

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
2483.89	72.62	-1.38	74	68.1	32.48	6.59	34.55	100	272	Peak
2483.5	50.99	-3.01	54	46.47	32.48	6.59	34.55	100	272	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.5	64.14	-9.86	74	59.62	32.48	6.59	34.55	130	56	Peak
2483.5	44.06	-9.94	54	39.54	32.48	6.59	34.55	130	56	Average

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

Test Mode :	802.11b	Temperature :	21~23 °C
Test Channel :	01	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2413 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, 111.79 dBµV/m - 20dB = 91.79 dBµV/m. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2413	106.08	-	-	101.77	32.38	6.49	34.56	104	291	Average
2413	111.79	-	-	107.48	32.38	6.49	34.56	104	291	Peak
4824	50.56	-23.44	74	61.11	34.87	10.17	55.59	100	0	Peak
7236	50.42	-41.37	91.79	59.73	36.15	10.96	56.42	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23 °C
Test Channel :	01	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2413 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. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2413	103.94	-	-	99.63	32.38	6.49	34.56	120	312	Average
2413	108.97	-	-	104.66	32.38	6.49	34.56	120	312	Peak
4824	49.28	-24.72	74	59.83	34.87	10.17	55.59	100	0	Peak
7236	49.9	-39.07	88.97	59.21	36.15	10.96	56.42	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23 °C
Test Channel :	06	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2438	106.75	-	-	102.36	32.43	6.52	34.56	100	290	Average
2438	111.6	-	-	107.21	32.43	6.52	34.56	100	290	Peak
4875	50.22	-3.78	54	60.87	34.85	10.18	55.68	109	18	Average
4875	52.69	-21.31	74	63.34	34.85	10.18	55.68	109	18	Peak
7311	48.76	-25.24	74	57.96	36.14	10.94	56.28	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23 °C
Test Channel :	06	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2436 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
2436	102.54	-	-	98.18	32.4	6.52	34.56	100	308	Average
2436	107.43	-	-	103.07	32.4	6.52	34.56	100	308	Peak
4875	49.53	-24.47	74	60.18	34.85	10.18	55.68	100	0	Peak
7311	49.85	-24.15	74	59.05	36.14	10.94	56.28	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23 °C
Test Channel :	11	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2463 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
216.3	38.93	-7.07	46	59.56	9.02	2.01	31.66	-	-	Peak
233.85	41.86	-4.14	46	60.65	10.64	2.19	31.62	-	-	Peak
258.15	42.36	-3.64	46	58.44	13.44	2.19	31.71	-	-	Peak
352.5	42.67	-3.33	46	57.48	14.36	2.39	31.56	100	21	Peak
380.5	38.67	-7.33	46	53.12	15	2.3	31.75	-	-	Peak
809.6	39.46	-6.54	46	47.89	20	3.53	31.96	-	-	Peak
2463	106.14	-	-	101.69	32.45	6.56	34.56	102	288	Average
2463	110.89	-	-	106.44	32.45	6.56	34.56	102	288	Peak
4926	50.4	-3.6	54	61.14	34.83	10.21	55.78	105	39	Average
4926	52.67	-21.33	74	63.41	34.83	10.21	55.78	105	39	Peak
7386	50	-24	74	59.07	36.12	10.92	56.11	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23 °C
Test Channel :	11	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

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
233.85	36.45	-9.55	46	55.24	10.64	2.19	31.62	-	-	Peak
258.15	37.53	-8.47	46	53.61	13.44	2.19	31.71	-	-	Peak
297.3	32.85	-13.15	46	48.99	13.16	2.36	31.66	-	-	Peak
352.5	42.03	-3.97	46	56.84	14.36	2.39	31.56	100	155	Peak
606.6	38.28	-7.72	46	48.46	18.86	3.07	32.11	-	-	Peak
809.6	35.43	-10.57	46	43.86	20	3.53	31.96	-	-	Peak
2462	102.06	-	-	97.61	32.45	6.56	34.56	100	312	Average
2462	106.82	-	-	102.37	32.45	6.56	34.56	100	312	Peak
4926	50.28	-23.72	74	61.02	34.83	10.21	55.78	100	0	Peak
7386	50.18	-23.82	74	59.25	36.12	10.92	56.11	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23 °C
Test Channel :	01	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	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. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
184.44	39.1	-4.4	43.5	59.84	8.94	1.99	31.67	-	-	Peak
233.85	41.6	-4.4	46	60.39	10.64	2.19	31.62	-	-	Peak
246	41.58	-4.42	46	58.96	12	2.27	31.65	-	-	Peak
352.5	40.49	-5.51	46	55.3	14.36	2.39	31.56	-	-	Peak
378.4	42.02	-3.98	46	56.48	14.96	2.31	31.73	100	113	Peak
809.6	41.13	-4.87	46	49.56	20	3.53	31.96	-	-	Peak
2412	97.92	-	-	93.61	32.38	6.49	34.56	104	294	Average
2412	108.11	-	-	103.8	32.38	6.49	34.56	104	294	Peak
4824	48.16	-25.84	74	58.71	34.87	10.17	55.59	100	0	Peak
7236	49.08	-39.03	88.11	58.39	36.15	10.96	56.42	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23 °C
Test Channel :	01	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2411 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. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
184.44	33.35	-10.15	43.5	54.09	8.94	1.99	31.67	-	-	Peak
233.85	37.28	-8.72	46	56.07	10.64	2.19	31.62	-	-	Peak
258.15	38.41	-7.59	46	54.49	13.44	2.19	31.71	-	-	Peak
352.5	42.15	-3.85	46	56.96	14.36	2.39	31.56	100	184	Peak
378.4	38.43	-7.57	46	52.89	14.96	2.31	31.73	-	-	Peak
606.6	39.76	-6.24	46	49.94	18.86	3.07	32.11	-	-	Peak
2411	94.05	-	-	89.74	32.38	6.49	34.56	100	312	Average
2411	104.53	-	-	100.22	32.38	6.49	34.56	100	312	Peak
4824	47.6	-26.4	74	58.15	34.87	10.17	55.59	100	0	Peak
7236	49.98	-34.55	84.53	59.29	36.15	10.96	56.42	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23 °C
Test Channel :	06	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. 9747 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2438	103.18	-	-	98.79	32.43	6.52	34.56	100	288	Average
2438	113.45	-	-	109.06	32.43	6.52	34.56	100	288	Peak
4875	50.51	-23.49	74	61.16	34.85	10.18	55.68	100	0	Peak
7311	50.43	-23.57	74	59.63	36.14	10.94	56.28	100	0	Peak
9747	52.85	-40.6	93.45	61.17	37.06	10.56	55.94	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23 °C
Test Channel :	06	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2436 MHz is fundamental signal which can be ignored. 2. 9747 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2436	98.96	-	-	94.6	32.4	6.52	34.56	100	308	Average
2436	109.22	-	-	104.86	32.4	6.52	34.56	100	308	Peak
4875	48.48	-25.52	74	59.13	34.85	10.18	55.68	100	0	Peak
7311	49.32	-24.68	74	58.52	36.14	10.94	56.28	100	0	Peak
9747	54.83	-34.39	89.22	63.15	37.06	10.56	55.94	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23 °C
Test Channel :	11	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2461 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. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2461	100.04	-	-	95.59	32.45	6.56	34.56	100	272	Average
2461	109.97	-	-	105.52	32.45	6.56	34.56	100	272	Peak
4923	48.72	-25.28	74	59.47	34.83	10.2	55.78	100	0	Peak
7386	50.19	-23.81	74	59.26	36.12	10.92	56.11	100	0	Peak
9849	50.91	-39.06	89.97	59.01	37.21	10.57	55.88	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23 °C
Test Channel :	11	Relative Humidity :	44~46%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2461 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. 3. Average measurement was not performed if peak level went lower than the average limit.		

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
2461	94.75	-	-	90.3	32.45	6.56	34.56	130	56	Average
2461	104.85	-	-	100.4	32.45	6.56	34.56	130	56	Peak
4923	48.48	-25.52	74	59.23	34.83	10.2	55.78	100	0	Peak
7386	49.51	-24.49	74	58.58	36.12	10.92	56.11	100	0	Peak
9849	52.22	-32.63	84.85	60.32	37.21	10.57	55.88	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 (dBμV)	
	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.

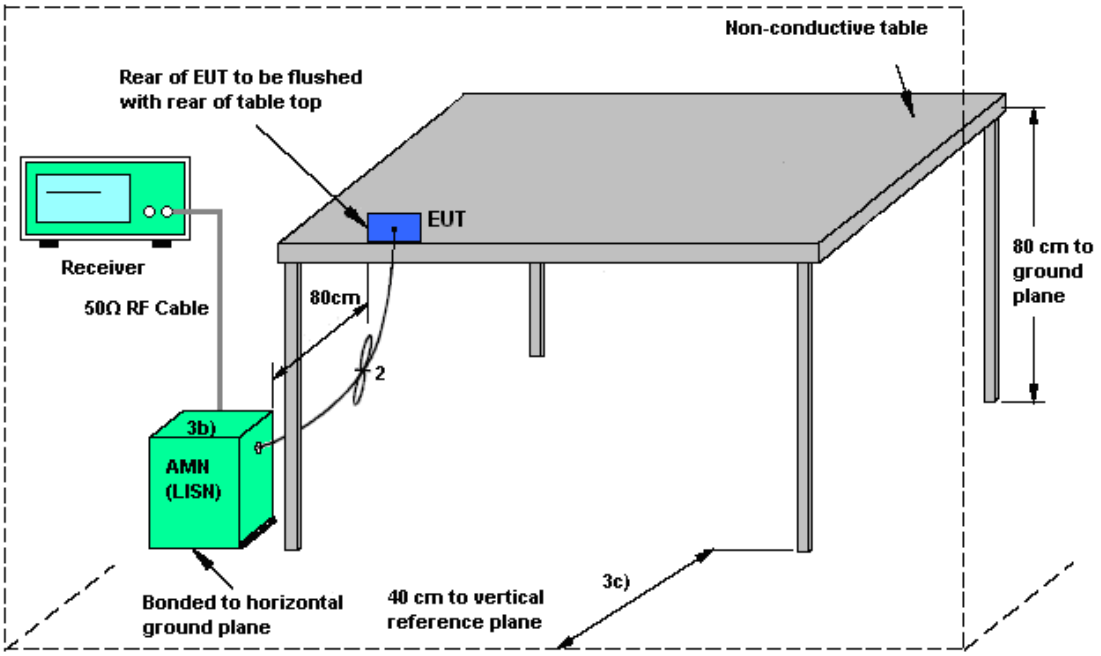
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.10-2009.
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.

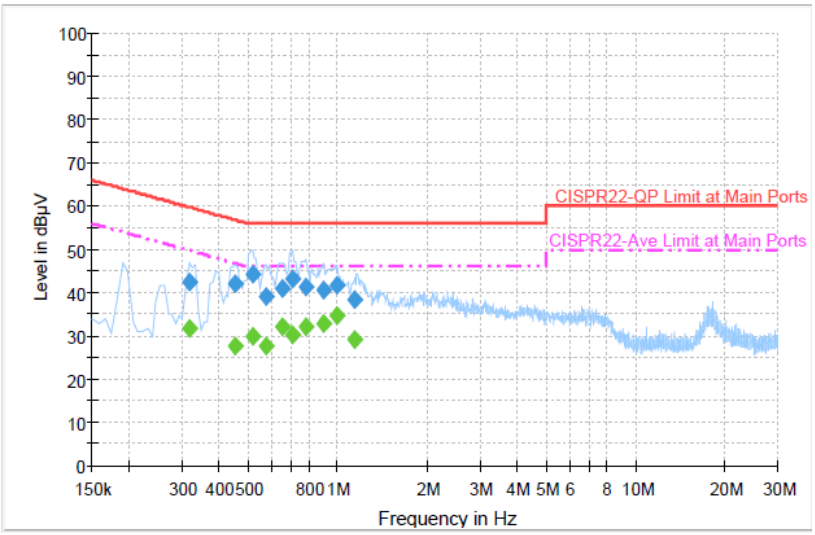
3.6.4 Test Setup



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

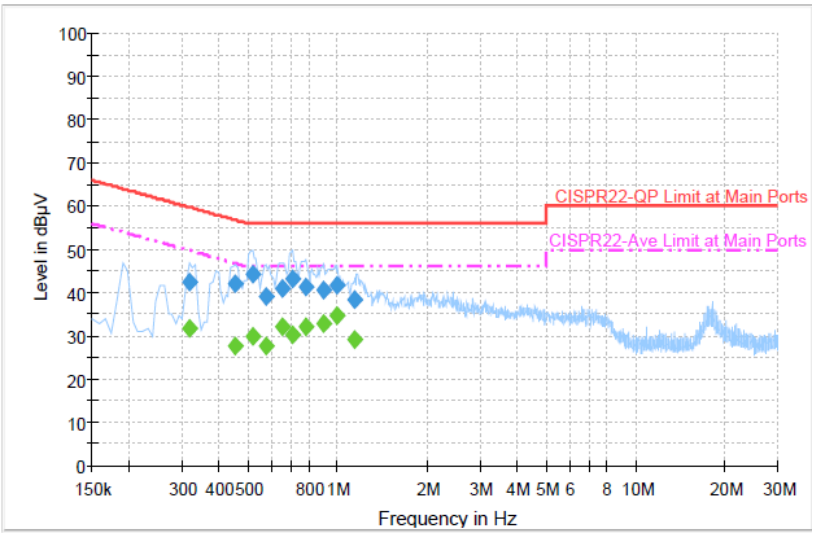
Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Record + HDMI + USB Cable (Charging from Adapter) + Battery		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.318000	42.6	Off	L1	19.4	17.2	59.8
0.454000	42.2	Off	L1	19.3	14.6	56.8
0.518000	44.4	Off	L1	19.4	11.6	56.0
0.574000	39.0	Off	L1	19.4	17.0	56.0
0.654000	41.0	Off	L1	19.4	15.0	56.0
0.710000	43.3	Off	L1	19.5	12.7	56.0
0.782000	41.2	Off	L1	19.5	14.8	56.0
0.902000	40.4	Off	L1	19.4	15.6	56.0
0.998000	41.8	Off	L1	19.4	14.2	56.0
1.142000	38.5	Off	L1	19.4	17.5	56.0

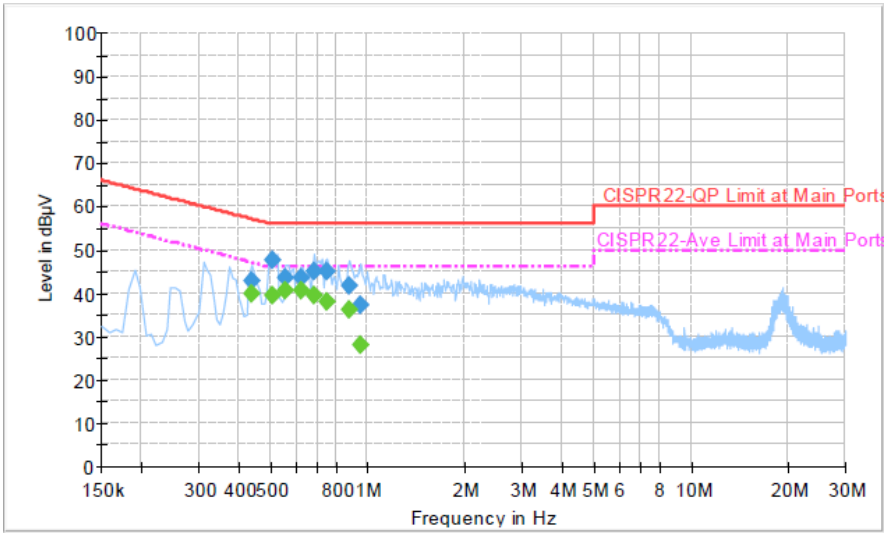
Test Mode :	Mode 1	**Temperature :**	20~22℃
Test Engineer :	Slash Huang	**Relative Humidity :**	45~47%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WLAN Link + Record + HDMI + USB Cable (Charging from Adapter) + Battery		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.318000	31.6	Off	L1	19.4	18.2	49.8
0.454000	27.8	Off	L1	19.3	19.0	46.8
0.518000	29.7	Off	L1	19.4	16.3	46.0
0.574000	27.5	Off	L1	19.4	18.5	46.0
0.654000	32.1	Off	L1	19.4	13.9	46.0
0.710000	30.3	Off	L1	19.5	15.7	46.0
0.782000	32.2	Off	L1	19.5	13.8	46.0
0.902000	32.8	Off	L1	19.4	13.2	46.0
0.998000	34.7	Off	L1	19.4	11.3	46.0
1.142000	29.0	Off	L1	19.4	17.0	46.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Record + HDMI + USB Cable (Charging from Adapter) + Battery		
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)
0.438000	42.8	Off	N	19.4	14.3	57.1
0.510000	47.5	Off	N	19.4	8.5	56.0
0.558000	43.7	Off	N	19.4	12.3	56.0
0.622000	43.4	Off	N	19.4	12.6	56.0
0.686000	44.8	Off	N	19.5	11.2	56.0
0.750000	45.0	Off	N	19.4	11.0	56.0
0.878000	41.8	Off	N	19.4	14.2	56.0
0.950000	37.3	Off	N	19.4	18.7	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.438000	39.9	Off	N	19.4	7.2	47.1
0.510000	39.6	Off	N	19.4	6.4	46.0
0.558000	40.4	Off	N	19.4	5.6	46.0
0.622000	40.4	Off	N	19.4	5.6	46.0
0.686000	39.6	Off	N	19.5	6.4	46.0
0.750000	37.9	Off	N	19.4	8.1	46.0
0.878000	36.3	Off	N	19.4	9.7	46.0
0.950000	28.0	Off	N	19.4	18.0	46.0

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	Mar. 25, 2013~ Apr. 01, 2013	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Mar. 25, 2013~ Apr. 01, 2013	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Mar. 25, 2013~ Apr. 01, 2013	Sep. 07, 2013	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz~30GHz	Nov. 07, 2012	Mar. 30, 2013	Nov. 06, 2013	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz ~ 26.5GHz	Nov. 26, 2012	Mar. 30, 2013	Nov. 25, 2013	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 04, 2012	Mar. 30, 2013	May 03, 2013	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 06, 2012	Mar. 30, 2013	Oct. 05, 2013	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Mar. 30, 2013	Jul. 31, 2013	Radiation (03CH06-HY)
Double Ridge Horn Antenna	COM-POWER	AH-118	071025	1GHz~18GHz	Aug. 09, 2012	Mar. 30, 2013	Aug. 08, 2013	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Mar. 30, 2013	Sep. 27, 2013	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Apr. 13, 2012	Mar. 30, 2013	Apr. 12, 2013	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz ~ 1GHz	Apr. 11, 2012	Mar. 30, 2013	Apr. 10, 2013	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 21, 2012	Mar. 30, 2013	Jul. 20, 2013	Radiation (03CH06-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	159087	1GHz~18GHz	Feb. 26, 2013	Mar. 30, 2013	Feb. 25, 2014	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Mar. 30, 2013	Jul. 02, 2013	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9KHz – 2.75GHz	Nov. 13, 2012	Apr. 08, 2013	Nov. 12, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100081	9KHz ~ 30MHz	Dec. 12, 2012	Apr. 08, 2013	Dec. 11, 2013	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9KHz ~ 30MHz	Dec. 06, 2012	Apr. 08, 2013	Dec. 05, 2013	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Apr. 08, 2013	N/A	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

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

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

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

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

Appendix A. Photographs of EUT

Please refer to Sporton report number EP320717 as below.