Test Report

Product Name ： 2.4GHz wireless USB Adaptor
Model No. ： AWP30XA
FCC ID. ： NGVAWP30XA

Applicant ： AIRWAVE TECHNOLOGIES INC.
Address ： 4F, NO.9, INDUSTRY E. 9TH ROAD, SCIENCE-BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R.O.C

Date of Receipt ： 2010/07/22
Issued Date ： 2010/08/09
Report No. ： 107323R-RFUSP44V01
Version ： V1.0

Test Report Certification

Issued Date : 2010/08/09
Report No. : 107323R-RFUSP44V01

QuieTek

Product Name	:	2.4GHz wireless USB Adaptor
Applicant	:	AIRWAVE TECHNOLOGIES INC.
Address	:	4F, NO.9, INDUSTRY E. 9TH ROAD, SCIENCE-BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R.O.C
Manufacturer	:	AIRWAVE TECHNOLOGIES INC.
Model No.	:	AWP30XA
Trade Name	:	AIRWAVE
FCC ID.	:	NGVAWP30XA
EUT Voltage	:	DC 5V
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C Section 15.249: 2009
Test Result	:	Complied

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Documented By : Carol Tsai

(Carol Tsai / Engineering Adm. Specialist)

Tested By : Lucia Lu

(Lucia Lu / Assistant Engineer)

Approved By : Roy Wang

(Roy Wang / Manager)

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1. General Information

1.1. EUT Description

Product Name	2.4GHz wireless USB Adaptor
Trade Name	AIRWAVE
Model No.	AWP30XA
Frequency Range	2408~2472MHz
Antenna Gain	-0.3846dBi
Channel Number	65
Type of Modulation	GFSK
Channel Control	AUTO
Antenna Type	Printed

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01	2408 MHz	Channel 18	2425 MHz	Channel 35	2442 MHz	Channel 52	2459 MHz
Channel 02	2409 MHz	Channel 19	2426 MHz	Channel 36	2443 MHz	Channel 53	2460 MHz
Channel 03	2410 MHz	Channel 20	2427 MHz	Channel 37	2444 MHz	Channel 54	2461 MHz
Channel 04	2411 MHz	Channel 21	2428 MHz	Channel 38	2445 MHz	Channel 55	2462 MHz
Channel 05	2412 MHz	Channel 22	2429 MHz	Channel 39	2446 MHz	Channel 56	2463 MHz
Channel 06	2413 MHz	Channel 23	2430 MHz	Channel 40	2447 MHz	Channel 57	2464 MHz
Channel 07	2414 MHz	Channel 24	2431 MHz	Channel 41	2448 MHz	Channel 58	2465 MHz
Channel 08	2415 MHz	Channel 25	2432 MHz	Channel 42	2449 MHz	Channel 59	2466 MHz
Channel 09	2416 MHz	Channel 26	2433 MHz	Channel 43	2450 MHz	Channel 60	2467 MHz
Channel 10	2417 MHz	Channel 27	2434 MHz	Channel 44	2451 MHz	Channel 61	2468 MHz
Channel 11	2418 MHz	Channel 28	2435 MHz	Channel 45	2452 MHz	Channel 62	2469 MHz
Channel 12	2419 MHz	Channel 29	2436 MHz	Channel 46	2453 MHz	Channel 63	2470 MHz
Channel 13	2420 MHz	Channel 30	2437 MHz	Channel 47	2454 MHz	Channel 64	2471 MHz
Channel 14	2421 MHz	Channel 31	2438 MHz	Channel 48	2455 MHz	Channel 65	2472 MHz
Channel 15	2422 MHz	Channel 32	2439 MHz	Channel 49	2556 MHz		
Channel 16	2423 MHz	Channel 33	2440 MHz	Channel 50	2457 MHz		
Channel 17	2424 MHz	Channel 34	2441 MHz	Channel 51	2458 MHz		

Note:

1. This device is a 2.4GHz wireless USB Adaptor included a 2.4GHz receiving function, and 2.4GHz transmitting function.
2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249.
3. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
4. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 107323R-RFUSP37V02 under Declaration of Conformity.

1.3. Test Mode

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
EMI	Mode 1: Transmit
Final Test Mode	
TX	Mode 1: Transmit

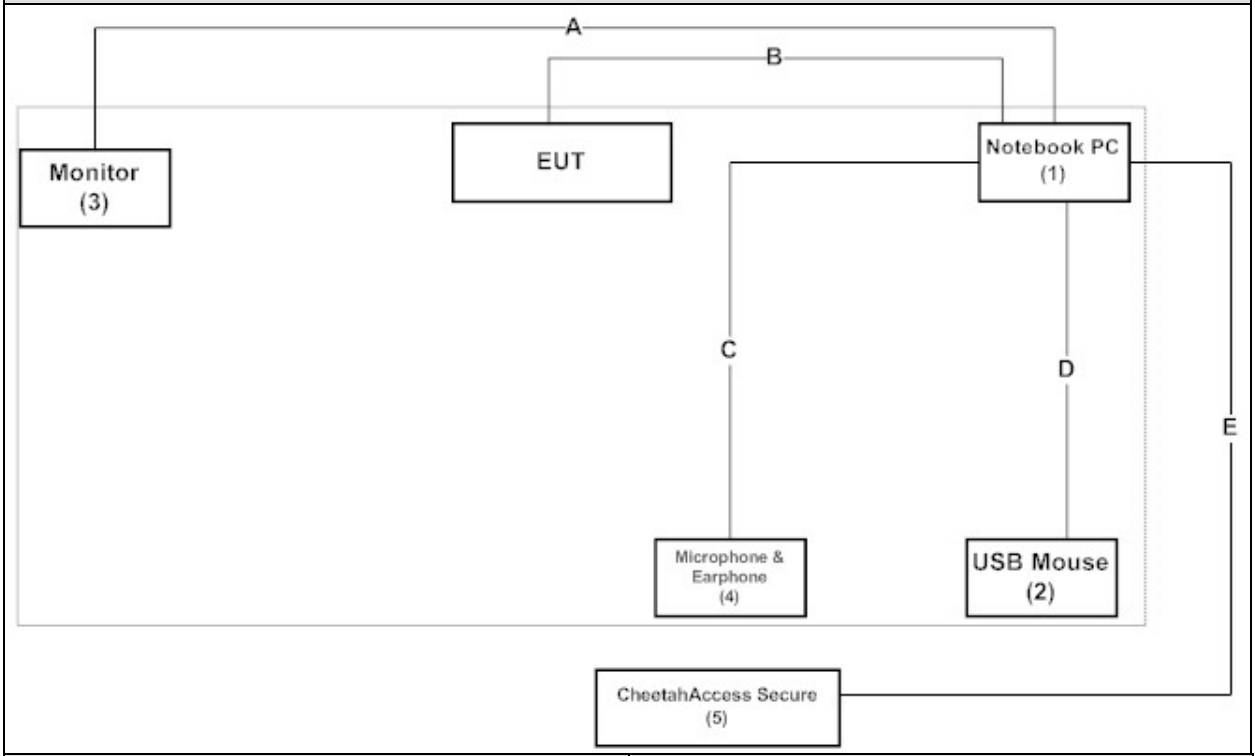
Emission	
Performed Item	Test
Conducted Emission	Yes
Radiated Emission	Yes
Band Edge	Yes

1.4. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	Precision M65	28G9NIS	Non-Shielded, 1.8m
2	USB Mouse	SANYO	SYMS-M8	N/A	--
3	Monitor	ViewSonic	E653	ER01502861	Non-Shielded, 1.8m
4	Microphone & Earphone	Fujiei	SBZ-38	N/A	--
5	CheetahAccess Secure	Accton	AC-IG1104	N/A	Non-Shielded, 1.8m

1.5. Configuration of tested System

Connection Diagram


Signal Cable Type		Signal cable Description
A	VGA Cable	Shielded, 1.8m, two ferrite cores bonded.
B	USB Cable	Shielded, 0.8m
C	Microphone & Earphone Cable	Non-Shielded, 1.2m
D	USB Mouse Cable	Shielded, 1.5m
E	LAN Cable	Non-Shielded, 10m

1.6. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.5.
2	Turn on the power.
3	The RF signal's status will continue transmit through EUT.
4	Repeat the above procedure (3)

1.7. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.209 Radiated Emission	15 - 35	25
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.249 Band Edge	15 - 35	25
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000

Site Description:

January 24, 2005 File on
Federal Communications Commission
Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 365520

Accredited by TAF
Accreditation Number: 1313
Effective through: December 27, 2010

Testing Laboratory 1313

Accredited by NVLAP
NVLAP Lab Code: 200347-0
Effective through: September 30, 2009

NVLAP Lab Code : 200347-0

Site Name: Quietek Corporation
Site Address: No.75-1, Wang-Yeh Valley, Yung-Hsing,
Chiung-Lin, Hsin-Chu County,
Taiwan, R.O.C.
TEL : 886-3-592-8858 / FAX : 886-3-592-8859
E-Mail : service@quietek.com

2. Conducted Emission

2.1. Test Equipment

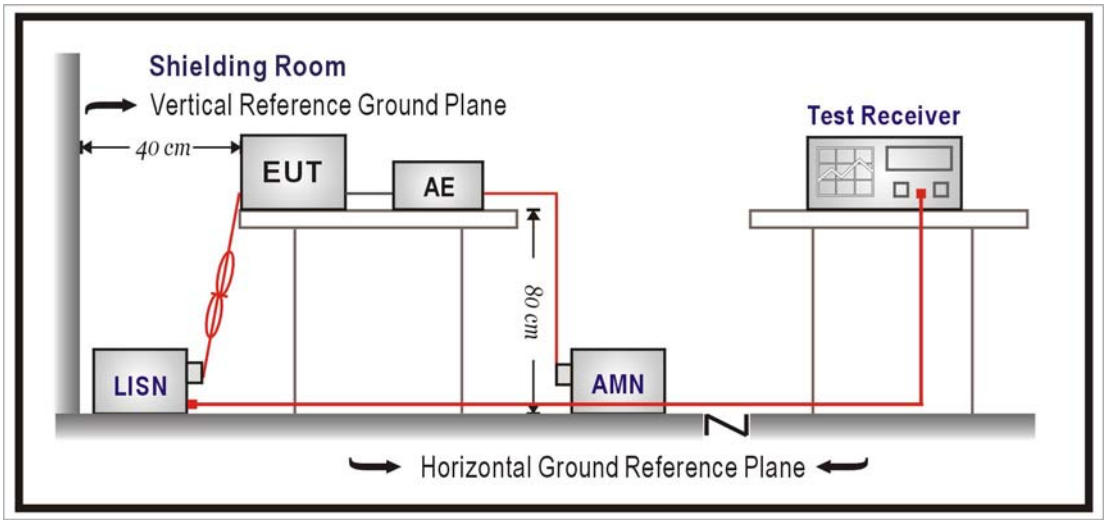
The following test equipment are used during the test:

Conducted Emission / SR3

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
LISN	R&S	ENV216	100096	2010/09/27
LISN	R&S	ESH3-Z5	836679/022	2011/05/30
Test Receiver	R&S	ESCS 30	825442/017	2011/02/04

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.) Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2009 on conducted measurement. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Test Specification

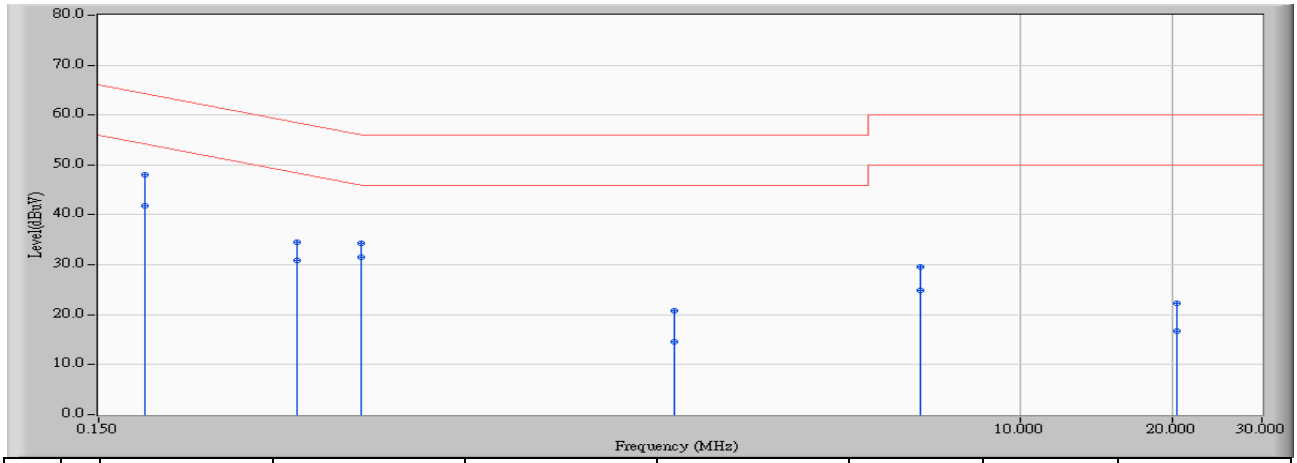
According to FCC Part 15 Subpart C Paragraph 15.207: 2009

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

Site : SR3	**Time : 2010/07/26 - 19:05**
Limit : CISPR_B_00M_QP	**Margin : 10**
Probe : SR3_LISN(16A) - Line1	**Power : DC5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit**

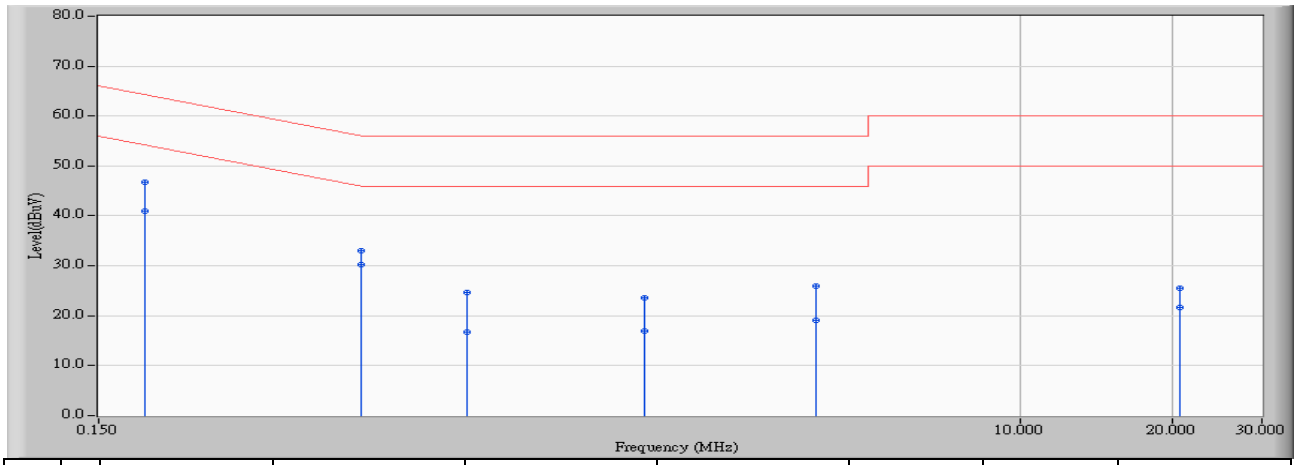


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.185	9.823	38.140	47.963	-16.288	64.251	QUASIPEAK
2	*	0.185	9.823	32.030	41.853	-12.398	54.251	AVERAGE
3		0.371	9.788	24.760	34.549	-23.935	58.484	QUASIPEAK
4		0.371	9.788	21.160	30.949	-17.535	48.484	AVERAGE
5		0.497	9.767	24.490	34.256	-21.798	56.054	QUASIPEAK
6		0.497	9.767	21.670	31.436	-14.618	46.054	AVERAGE
7		2.060	9.870	10.970	20.840	-35.160	56.000	QUASIPEAK
8		2.060	9.870	4.750	14.620	-31.380	46.000	AVERAGE
9		6.320	9.956	19.700	29.656	-30.344	60.000	QUASIPEAK
10		6.320	9.956	14.840	24.796	-25.204	50.000	AVERAGE
11		20.302	10.252	12.150	22.402	-37.598	60.000	QUASIPEAK
12		20.302	10.252	6.500	16.752	-33.248	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR3	**Time : 2010/07/26 - 19:09**
Limit : CISPR_B_00M_QP	**Margin : 10**
Probe : SR3_LISN(16A) - Line2	**Power : DC5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.185	9.823	36.840	46.663	-17.588	64.251	QUASIPEAK
2	*	0.185	9.823	31.120	40.943	-13.308	54.251	AVERAGE
3		0.495	9.767	23.350	33.117	-22.964	56.081	QUASIPEAK
4		0.495	9.767	20.560	30.327	-15.754	46.081	AVERAGE
5		0.804	9.757	14.940	24.697	-31.303	56.000	QUASIPEAK
6		0.804	9.757	6.960	16.717	-29.283	46.000	AVERAGE
7		1.800	9.848	13.710	23.558	-32.442	56.000	QUASIPEAK
8		1.800	9.848	7.170	17.018	-28.982	46.000	AVERAGE
9		3.923	9.889	16.070	25.959	-30.041	56.000	QUASIPEAK
10		3.923	9.889	9.130	19.019	-26.981	46.000	AVERAGE
11		20.670	10.447	15.120	25.567	-34.433	60.000	QUASIPEAK
12		20.670	10.447	11.280	21.727	-28.273	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

3. Radiated Emission

3.1. Test Equipment

The following test equipment are used during the test:

Fundamental Power / CB1

Instrument	Manufacturer	Type No.	Serial No	Next Cal. Date
Horn Antenna	Schwarzback	BBHA 9120D	743	2011/03/14
Spectrum Analyzer	Agilent	E4440A	MY46187335	2011/01/14
Coaxial Cable	Huber+Suhner AG	Sucoflex 102	25623/2	2011/04/07

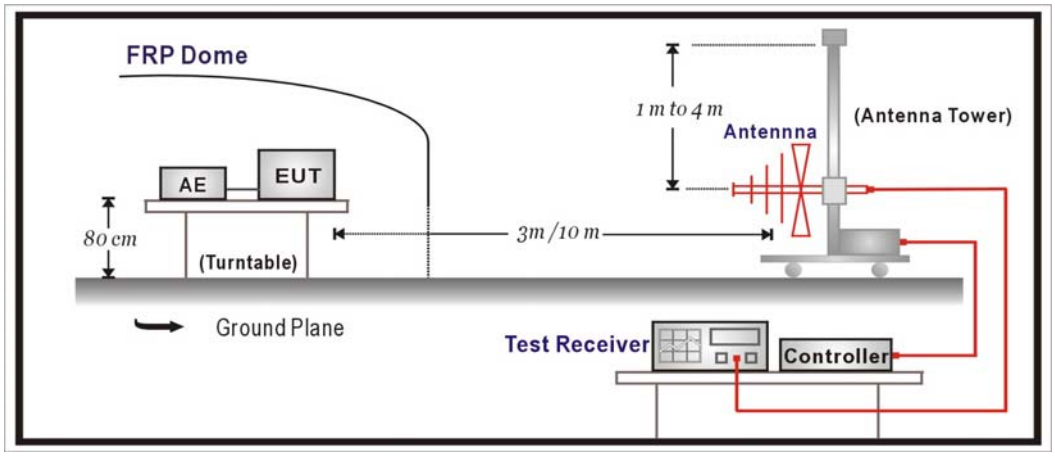
Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	SCHAFFNER	CBL6112B	2895	2010/08/14
Horn Antenna	Schwarzback	BBHA 9120D	743	2011/03/14
Pre-Amplifier	MITEQ	AMF-4D-005180-24-10P	888003	2010/12/03
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2011/03/25
Spectrum Analyzer	Agilent	E4440A	MY46187335	2011/01/14
Coaxial Cable	Huber+Suhner AG	Sucoflex 102	25623/2	2011/04/07

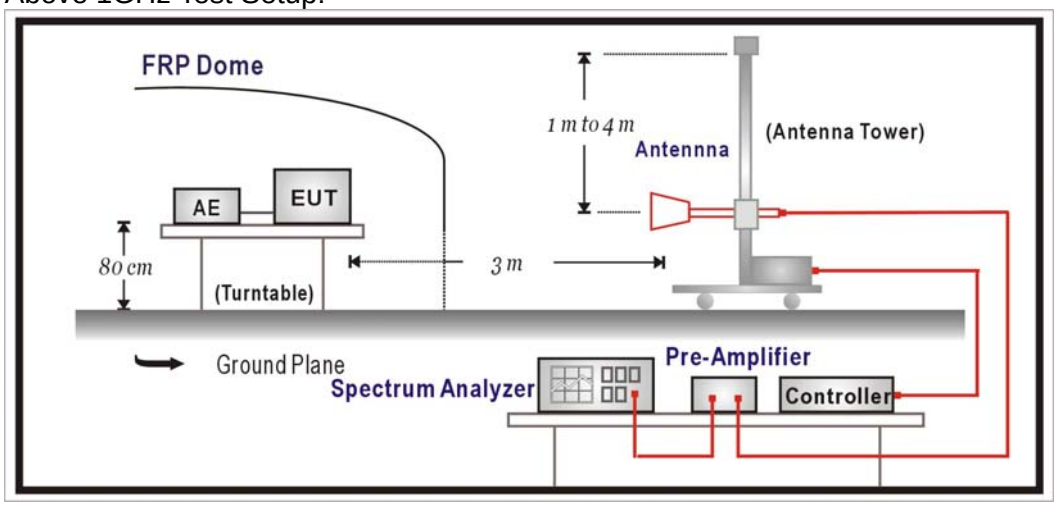
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

3.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



3.3. Limits

➢ Fundamental and Harmonics Emission Limits

FCC Part 15 Subpart C Paragraph 15.249 Limits				
Fundamental Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonics	
	mV/m	dBuV/m	uV/m	dBuV/m
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

➢ Spurious electric field strength limits

FCC Part 15 Subpart C Paragraph 15.209 Limits			
Frequency MHz	uV/m	dBuV/m	Measurement distance (meter)
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2009 on radiated measurement.

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.209 and Paragraph 15.249: 2009

3.6. Uncertainty

The measurement uncertainty
30MHz～1GHz as ±3.43dB
1GHz～26.5GHz as ±3.65dB

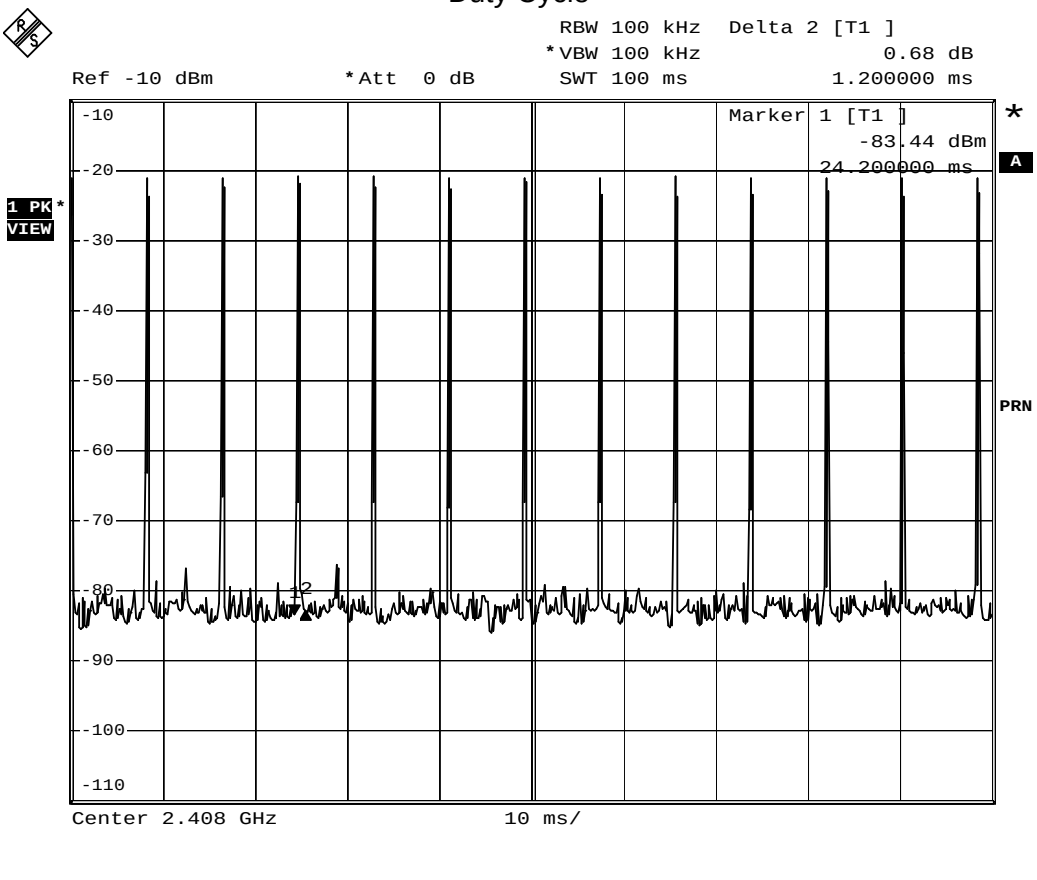
3.7. Test Result

Product	2.4GHz multifunction UFO Presender Air Mouse		
Test Item	Fundamental Radiated Emission		
Test Mode	Mode 1: Transmit (2408 MHz)		
Date of Test	2010/07/26	Test Site	CB1

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Peak Measure Level (dBuV/m)	Average Measure Level (dBuV/m)	Peak Limit dBuV/m	Average Limit dBuV/m
Horizontal						
Peak Detector:						
2408.500	27.646	61.857	89.503	73.365	114.000	94.000
Vertical						
Peak Detector:						
2407.733	27.277	54.552	81.829	65.691	114.000	94.000

Note1:
Average Power Measure Level = Peak level + 20Log (Duty Cycle)
Duty Cycle = (Ton / (Ton+Toff)) = ((1.2*13) / 100) = 0.156
20Log (Duty Cycle) = -16.138

Duty Cycle



Product	2.4GHz multifunction UFO Presender Air Mouse		
Test Item	Fundamental Radiated Emission		
Test Mode	Mode 1: Transmit (2441 MHz)		
Date of Test	2010/07/26	Test Site	CB1

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Peak Measure Level (dBuV/m)	Average Measure Level (dBuV/m)	Peak Limit dBuV/m	Average Limit dBuV/m
Horizontal Peak Detector:						
2439.790	29.499	54.560	84.059	67.921	114.000	94.000
Vertical Peak Detector:						
2439.730	27.571	50.660	78.231	62.093	114.000	94.000

Note1:
Average Power Measure Level = Peak level + 20Log (Duty Cycle)
Duty Cycle = (Ton / (Ton+Toff)) = ((1.2*13) / 100) = 0.156
20Log (Duty Cycle) = -16.138

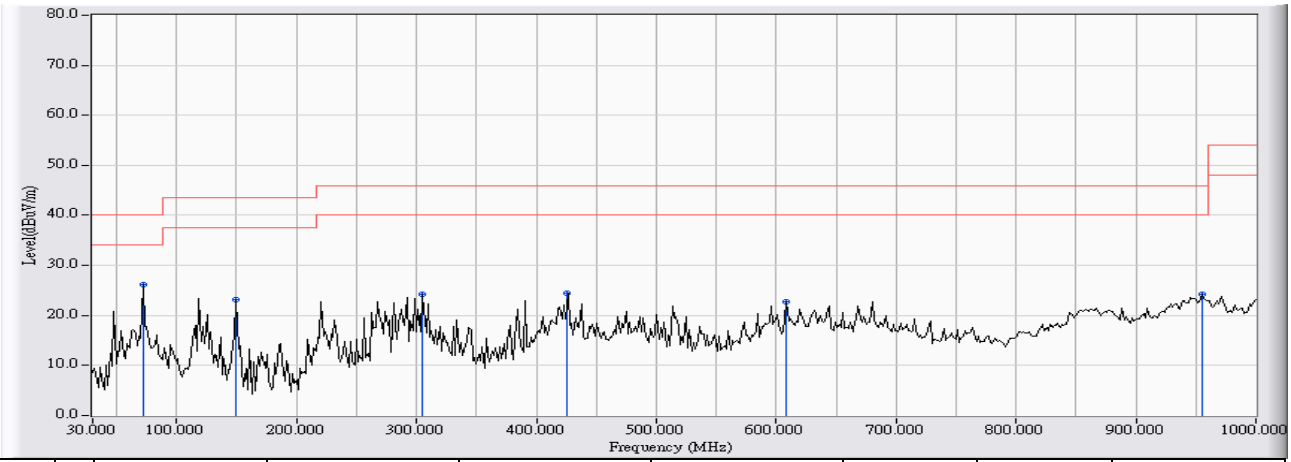
Product	2.4GHz multifunction UFO Presender Air Mouse		
Test Item	Fundamental Radiated Emission		
Test Mode	Mode 1: Transmit (2472 MHz)		
Date of Test	2010/07/26	Test Site	CB1

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Peak Measure Level (dBuV/m)	Average Measure Level (dBuV/m)	Peak Limit dBuV/m	Average Limit dBuV/m
Horizontal Peak Detector:						
2469.833	27.948	56.969	84.916	68.778	114.000	94.000
Vertical Peak Detector:						
2469.833	26.966	52.573	79.539	63.401	114.000	94.000

Note1:
Average Power Measure Level = Peak level + 20Log (Duty Cycle)
Duty Cycle = (Ton / (Ton+Toff)) = ((1.2*13) / 100) = 0.156
20Log (Duty Cycle) = -16.138

30 MHz-1 GHz Spurious:

Site : CB1	**Time : 2010/07/25 - 15:48**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : FCC_30-1G(2009) - HORIZONTAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit**

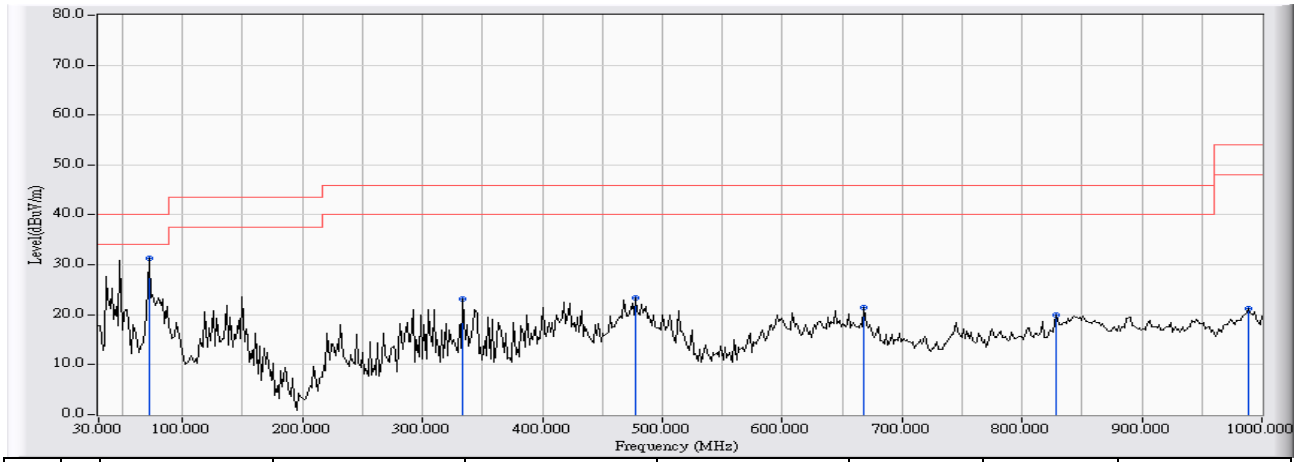


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	72.033	-15.385	41.535	26.150	-13.850	40.000	QUASIPEAK
2		149.633	-19.655	42.843	23.187	-20.313	43.500	QUASIPEAK
3		304.833	-8.469	32.744	24.275	-21.725	46.000	QUASIPEAK
4		426.083	-4.940	29.327	24.387	-21.613	46.000	QUASIPEAK
5		608.767	-3.288	26.041	22.753	-23.247	46.000	QUASIPEAK
6		954.733	2.222	21.954	24.175	-21.825	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : CB1	**Time : 2010/07/25 - 15:51**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : FCC_30-1G(2009) - VERTICAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit**



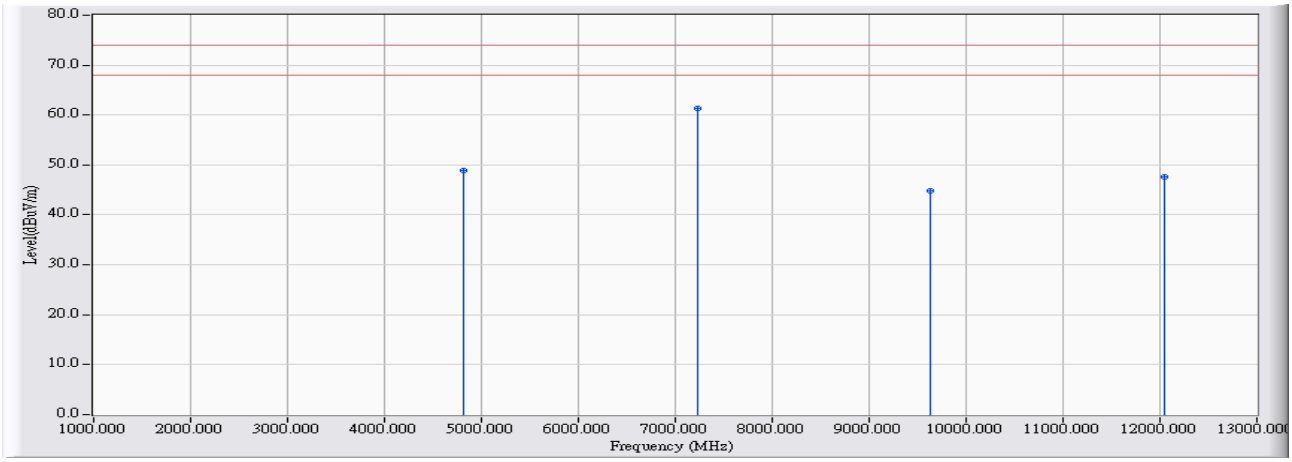
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	72.033	-15.507	46.865	31.358	-8.642	40.000	QUASIPEAK
2		333.933	-11.656	34.760	23.104	-22.896	46.000	QUASIPEAK
3		477.817	-4.261	27.701	23.440	-22.560	46.000	QUASIPEAK
4		668.583	-3.250	24.631	21.380	-24.620	46.000	QUASIPEAK
5		828.633	-3.646	23.519	19.873	-26.127	46.000	QUASIPEAK
6		988.683	-0.452	21.778	21.326	-32.674	54.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Above 1GHz Spurious：

Site : CB1	**Time : 2010/07/25 - 17:41**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - HORIZONTAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2408 MHz**

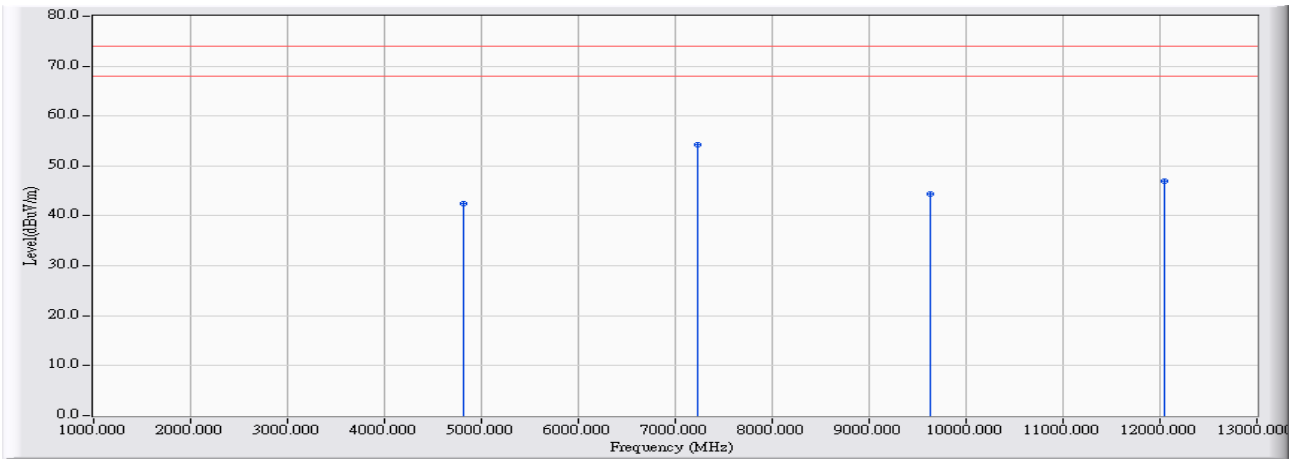


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4815.570	0.029	48.770	48.799	-25.201	74.000	54.00	PEAK
2	*	7223.930	5.807	55.630	61.437	-12.563	74.000	54.00	PEAK
3		9635.570	7.385	37.480	44.865	-29.135	74.000	54.00	PEAK
4		12043.600	11.947	35.710	47.658	-26.342	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2010/07/25 - 17:49**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - VERTICAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2408 MHz**

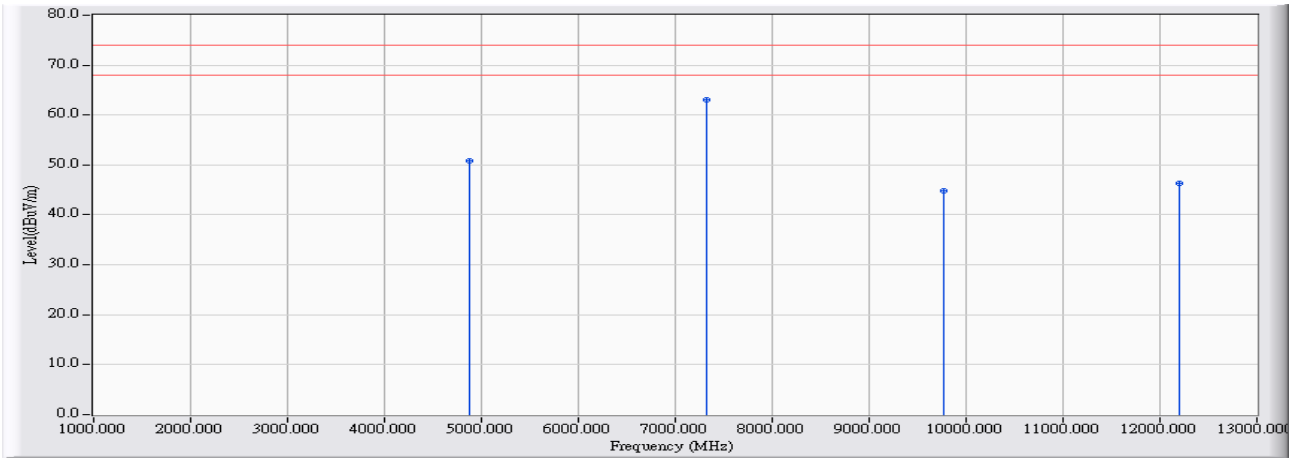


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4815.540	-0.086	42.590	42.504	-31.496	74.000	54.00	PEAK
2	*	7223.640	5.940	48.300	54.241	-19.759	74.000	54.00	PEAK
3		9635.390	7.611	36.850	44.462	-29.538	74.000	54.00	PEAK
4		12043.240	10.843	36.030	46.873	-27.127	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2010/07/25 - 17:57**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - HORIZONTAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2441 MHz**

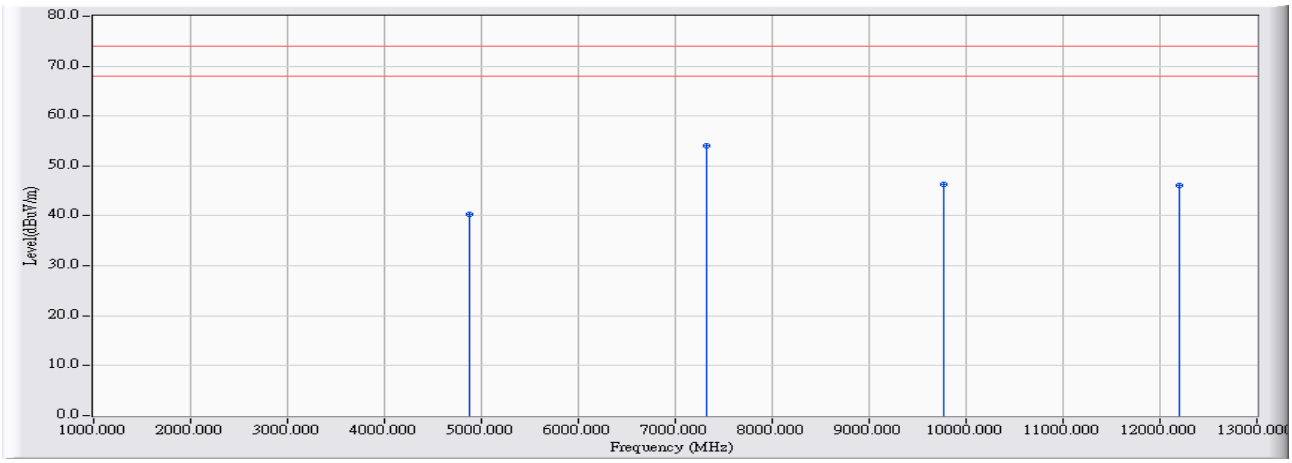


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4879.620	0.051	50.790	50.841	-23.159	74.000	54.00	PEAK
2	*	7319.370	6.463	56.640	63.103	-10.897	74.000	54.00	PEAK
3		9762.200	7.927	36.820	44.747	-29.253	74.000	54.00	PEAK
4		12203.370	11.306	34.990	46.296	-27.704	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2010/07/25 - 18:04**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - VERTICAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2441 MHz**

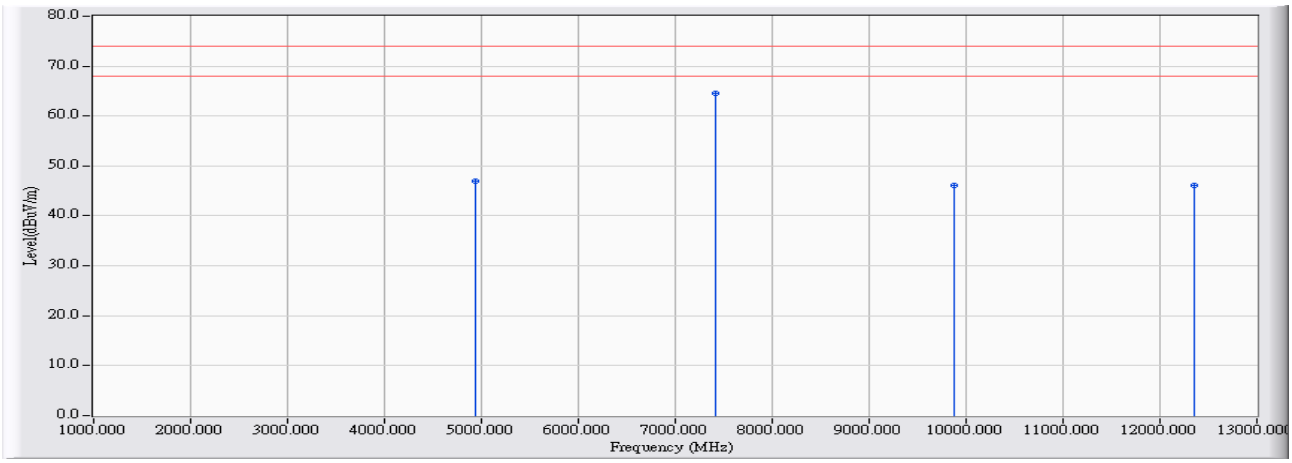


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4879.730	0.018	40.220	40.238	-33.762	74.000	54.00	PEAK
2	*	7319.370	6.211	47.740	53.951	-20.049	74.000	54.00	PEAK
3		9762.430	8.076	38.350	46.427	-27.573	74.000	54.00	PEAK
4		12203.460	10.220	35.960	46.179	-27.821	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2010/07/25 - 18:16**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - HORIZONTAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2472 MHz**

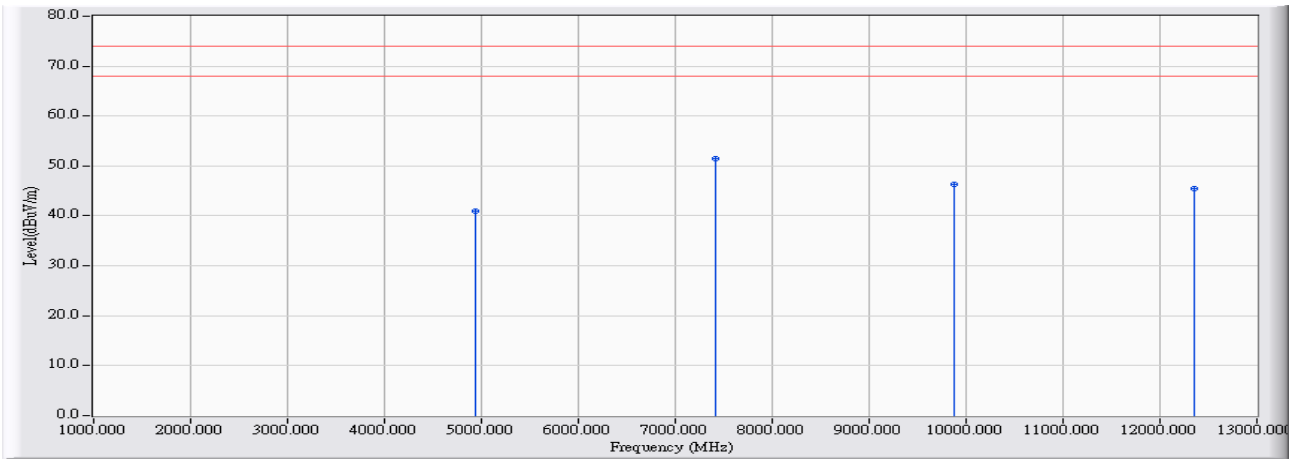


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4939.960	0.240	46.820	47.060	-26.940	74.000	54.00	PEAK
2	*	7410.260	7.145	57.510	64.655	-9.345	74.000	54.00	PEAK
3		9881.800	8.295	37.720	46.014	-27.986	74.000	54.00	PEAK
4		12353.710	10.274	35.940	46.214	-27.786	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2010/07/25 - 18:25**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - VERTICAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2472 MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4939.780	0.264	40.760	41.024	-32.976	74.000	54.00	PEAK
2	*	7409.300	6.520	44.960	51.479	-22.521	74.000	54.00	PEAK
3		9881.800	8.377	37.940	46.317	-27.683	74.000	54.00	PEAK
4		12353.460	9.198	36.290	45.487	-28.513	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

TX Channel 2408 MHz					
HORIZONTAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
4815.57	48.799	0.156	32.661	-21.339	54
7223.93	61.437		45.299	-8.701	54
9635.57	44.865		28.727	-25.273	54
12043.6	47.658		31.520	-22.480	54

TX Channel 2408 MHz					
VERTICAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
4815.54	42.504	0.156	26.366	-27.634	54
7223.64	54.241		38.103	-15.897	54
9635.39	44.462		28.324	-25.676	54
12043.24	46.873		30.735	-23.265	54

TX Channel 2441 MHz					
HORIZONTAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
4879.62	50.841	0.156	34.703	-19.297	54
7319.37	63.103		46.965	-7.035	54
9762.2	44.747		28.609	-25.391	54
12203.37	46.296		30.158	-23.842	54

TX Channel 2441 MHz					
VERTICAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
4879.73	40.238	0.156	24.100	-29.900	54
7319.37	53.951		37.813	-16.187	54
9762.43	46.427		30.289	-23.711	54
12203.46	46.179		30.041	-23.959	54

TX Channel 2472 MHz					
HORIZONTAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
4939.96	47.06	0.156	30.922	-23.078	54
7410.26	64.655		48.517	-5.483	54
9881.8	46.014		29.876	-24.124	54
12353.71	46.214		30.076	-23.924	54

TX Channel 2472 MHz					
VERTICAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
4939.78	41.024	0.156	24.886	-29.114	54
7409.3	51.479		35.341	-18.659	54
9881.8	46.317		30.179	-23.821	54
12353.46	45.487		29.349	-24.651	54

Note:

Average level ＝Peak level+ 20 log duty cycle

Duty cycle = (1.2ms*13) / 100ms = 0.156

20Log (Duty Cycle) = -16.138

4. Band Edge

4.1. Test Equipment

The following test equipment are used during the test:

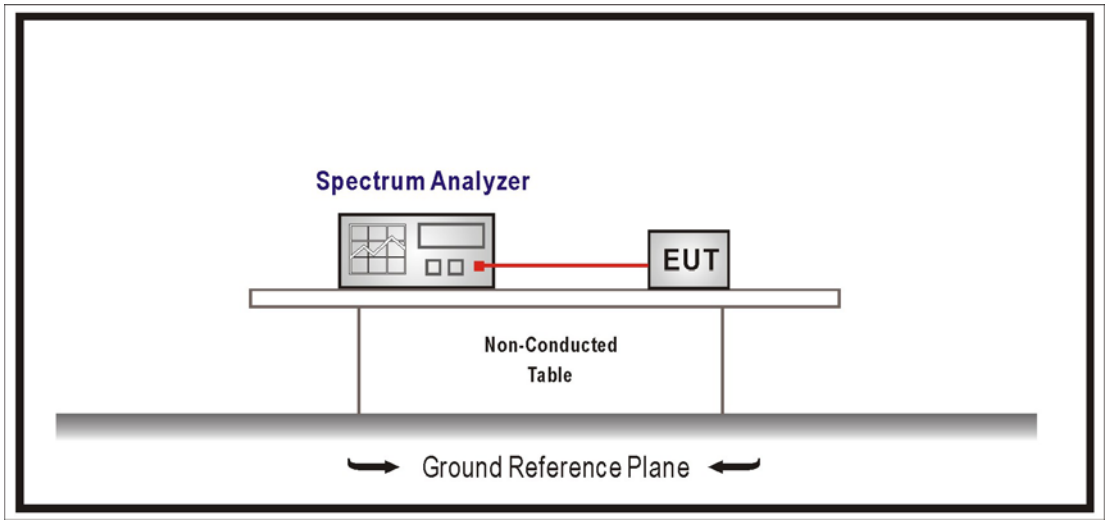
Band Edge / CB1

Instrument	Manufacturer	Type No.	Serial No	Next Cal. Date
Horn Antenna	Schwarzback	BBHA 9120D	743	2011/03/14
Spectrum Analyzer	Agilent	E4440A	MY46187335	2011/01/14
Coaxial Cable	Huber+Suhner AG	Sucoflex 102	25623/2	2011/04/07

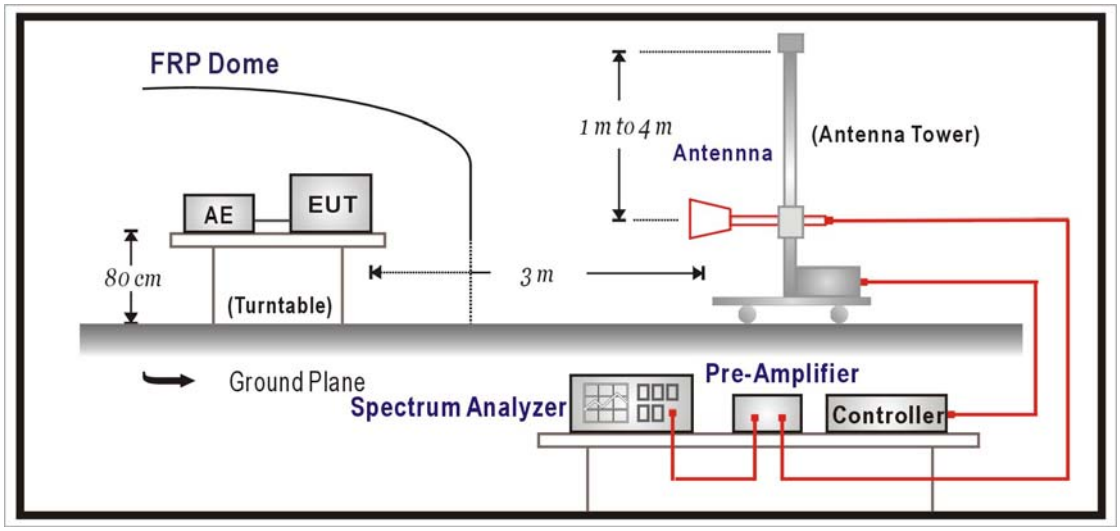
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

4.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



4.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 50 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, 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) (see Section 15.205(c)).

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2009 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.249: 2009

4.6. Uncertainty

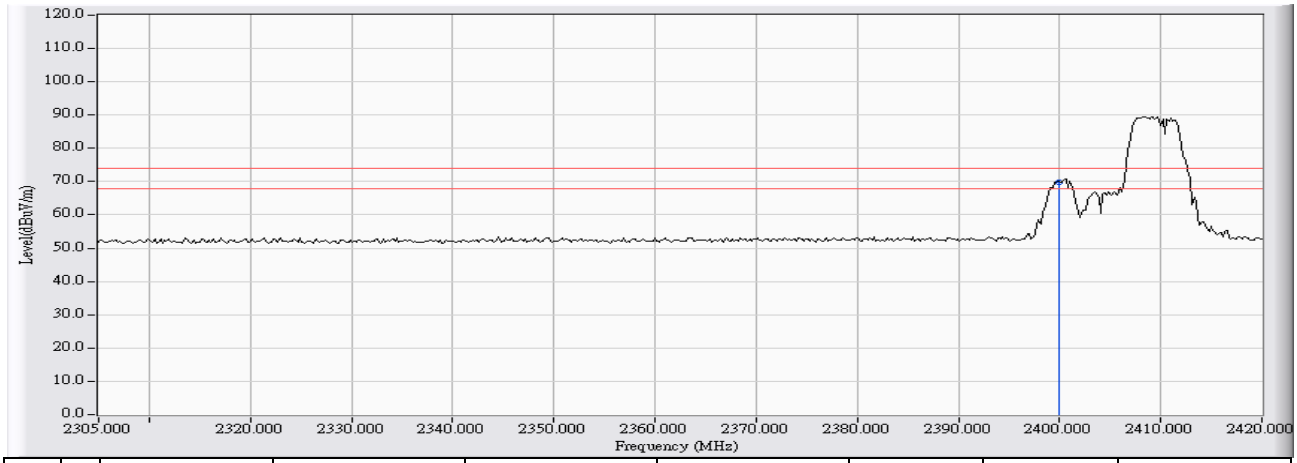
The measurement uncertainty

Conducted is defined as ± 1.27dB

Radiated is defined as ± 3.9dB

4.7. Test Result

Site : CB1	**Time : 2010/07/29 - 16:54**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - HORIZONTAL	**Power :**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit2408 MHz**

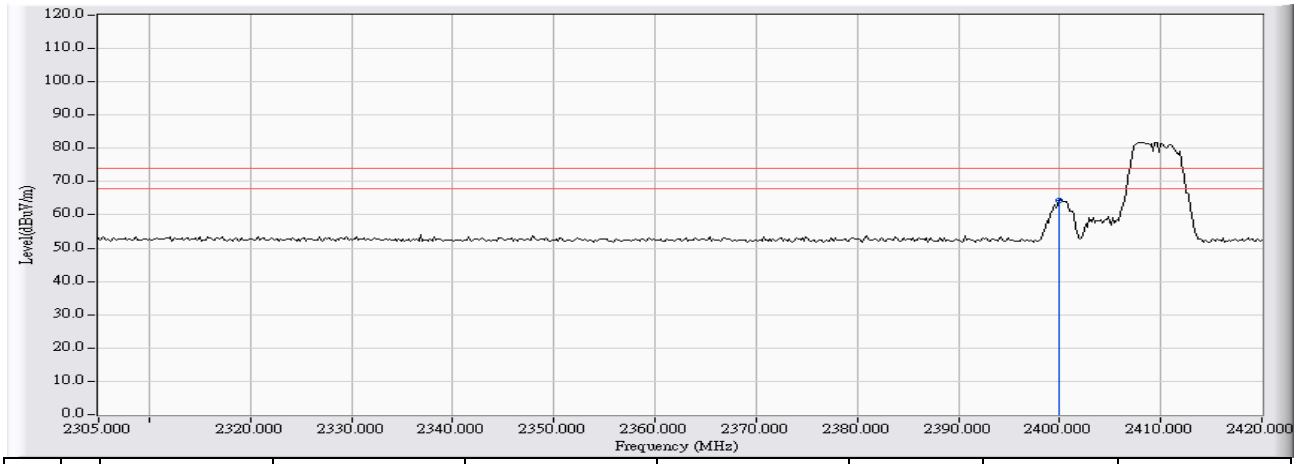


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2399.875	27.600	42.373	69.973	-4.027	74.000	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2010/07/25 - 19:08**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - VERTICAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2408 MHz**

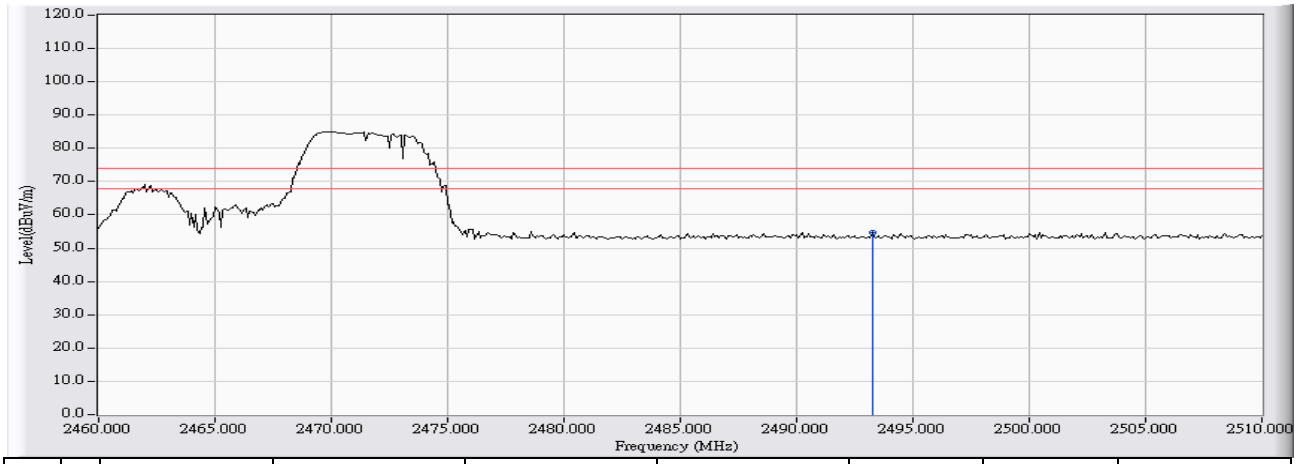


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2400.000	27.318	37.147	64.465	-9.535	74.000	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2010/07/25 - 19:17**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - HORIZONTAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2472 MHz**

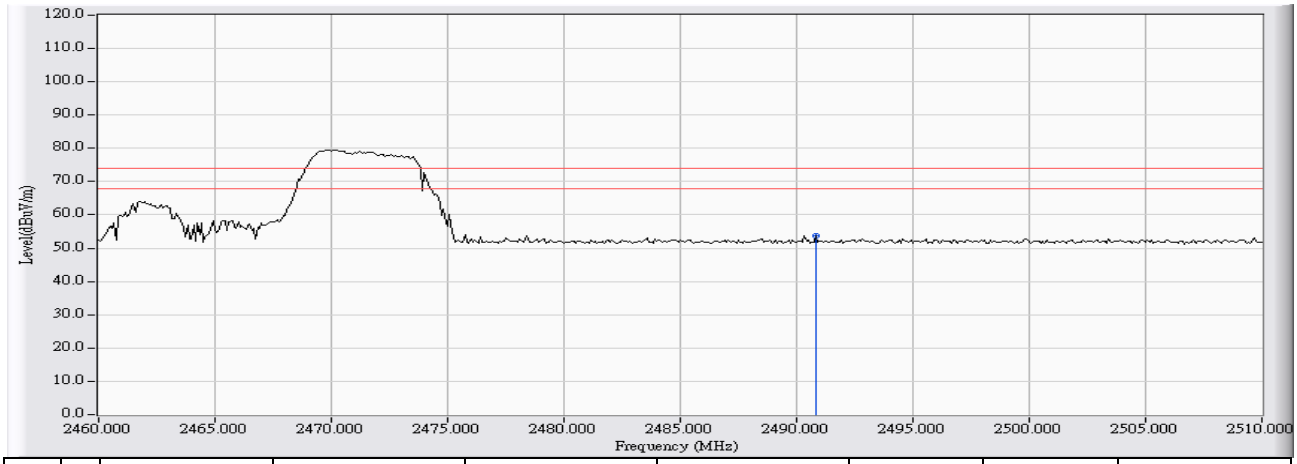


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2493.250	28.066	26.747	54.812	-19.188	74.000	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2010/07/25 - 19:22**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_EFS_1-18G(2009-11) - VERTICAL	**Power : DC 5V**
EUT : 2.4GHz wireless USB Adaptor	**Note : Mode 1: Transmit-2472 MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2490.833	26.854	26.965	53.819	-20.181	74.000	PEAK

Note:

1. All Readings below 1GHz are Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

TX Channel 2408 MHz					
HORIZONTAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
2399.875	69.973	0.156	53.835	-0.165	54

TX Channel 2408 MHz					
VERTICAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
2400	64.465	0.156	48.327	-5.673	54

TX Channel 2472 MHz					
HORIZONTAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
2493.25	54.812	0.156	38.674	-15.326	54

TX Channel 2472 MHz					
VERTICAL					
Frequency	Peak level	Duty cycle	Average level	Margin	Limit
2490.833	53.819	0.156	37.681	-16.319	54

Note:

Average level ＝Peak level+ 20 log duty cycle

Duty cycle = 15.6ms / 100ms = 0.156

20Log (Duty Cycle) = -16.138