Test Report

Product Name	Dongle
Model No.	JS-006R
FCC ID.	DoC

Applicant	BYD PRECISION MFR CO LTD
Address	No.1.Baoping Road, Baolong Industrial Park,Longgang Shenzhen,518116, P.R.China

Date of Receipt	June 29, 2010
Issued Date	July 12, 2010
Report No.	107031R-RFUSP37V02
Report Version	V1.0

Test Report Certification

Issued Date: July 12, 2010

Report No. : 107031R-RFUSP37V02

Product Name	Dongle
Applicant	BYD PRECISION MFR CO LTD
Address	No. 492, Sec. 5, Chung Hsin Rd., San Chung, Taipei Hsien, 24160, Taiwan, R.O.C.
Manufacturer	BYD PRECISION MFR CO LTD
Model No.	JS-006R
FCC ID.	DoC
EUT Rated Voltage	DC 5V (Power by USB)
EUT Test Voltage	DC 5V (Power by USB)
Trade Name	verizon wireless
Applicable Standard	FCC CFR Title 47 Part 15 Subpart B: 2009 CISPR 22: 2005, ANSI C63.4: 2003 NVLAP Lab Code: 200533-0
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.

This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : Genie Chang

(Senior Adm. Specialist / Genie Chang)

Tested By : Joe Guo

(Engineer / Joe Guo)

Approved By :

(Manager / Vincent Lin)

Testing Laboratory 0914

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Dongle
Trade Name	verizon wireless
Model No.	JS-006R
Frequency Range	2405~2476MHz
Channel Control	Auto
Channel Separation	1MHz
Antenna Type	Printed on PCB
Channel Number	64
Type of Modulation	GFSK

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	BYD PRECISION MFR CO LTD	N/A	-4.51dBi for 2.4GHz

Note: The antenna of EUT is conform to FCC 15.203

Frequency of Each Channel

Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	2405MHz	Channel 23:	2429MHz	Channel 45:	2457MHz
Channel 2:	2406MHz	Channel 24:	2430MHz	Channel 46:	2458MHz
Channel 3:	2407MHz	Channel 25:	2431MHz	Channel 47:	2459MHz
Channel 4:	2408MHz	Channel 26:	2432MHz	Channel 48:	2460MHz
Channel 5:	2409MHz	Channel 27:	2434MHz	Channel 49:	2461MHz
Channel 6:	2410MHz	Channel 28:	2435MHz	Channel 50:	2462MHz
Channel 7:	2411MHz	Channel 29:	2436MHz	Channel 51:	2463MHz
Channel 8:	2412MHz	Channel 30:	2437MHz	Channel 52:	2464MHz
Channel 9:	2413MHz	Channel 31:	2438MHz	Channel 53:	2465MHz
Channel 10:	2414MHz	Channel 32:	2439MHz	Channel 54:	2466MHz
Channel 11:	2415MHz	Channel 33:	2442MHz	Channel 55:	2467MHz
Channel 12:	2416MHz	Channel 34:	2443MHz	Channel 56:	2468MHz
Channel 13:	2417MHz	Channel 35:	2444MHz	Channel 57:	2469MHz
Channel 14:	2418MHz	Channel 36:	2446MHz	Channel 58:	2470MHz
Channel 15:	2419MHz	Channel 37:	2447MHz	Channel 59:	2471MHz
Channel 16:	2420MHz	Channel 38:	2448MHz	Channel 60:	2472MHz
Channel 17:	2421MHz	Channel 39:	2449MHz	Channel 61:	2473MHz
Channel 18:	2422MHz	Channel 40:	2451MHz	Channel 62:	2474MHz
Channel 19:	2423MHz	Channel 41:	2452MHz	Channel 63:	2475MHz
Channel 20:	2425MHz	Channel 42:	2453MHz	Channel 64:	2476MHz
Channel 21:	2427MHz	Channel 43:	2455MHz		
Channel 22:	2428MHz	Channel 44:	2456MHz		

Note:

1. This device is a Dongle with a built-in 2.4GHz transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart B for spread spectrum devices.

Test Mode:	Mode 1: Receive

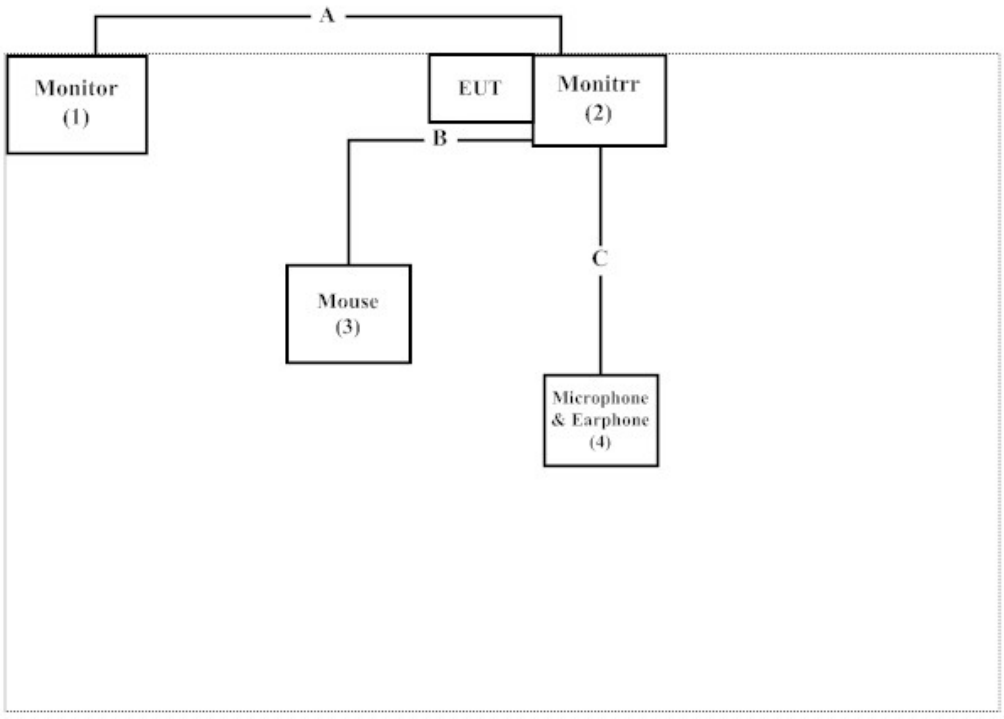
1.2. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
(1)	Monitor	LG	W2261VT	907YHED07299	Non-Shielded, 1.8m
(2)	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
(3)	Mouse	Logitech	M-SBM96B	810-000439	N/A
(4)	Microphone & Earphone	PCHOME	N/A	N/A	N/A

Signal Cable Type		Signal cable Description
A.	VGA Cable	Non-Shielded, 1.8m
B.	Mouse Cable	Non-Shielded, 1.8m
C.	Microphone & Earphone Cable	Non-Shielded, 1.5m

1.3. Configuration of Tested System



1.4. EUT Exercise Software

(1) Setup the EUT as shown in section 1.3

(2) Inserts the battery, start continuous transmit

(3) Verify that the EUT works correctly.

1.5. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://tw.quietek.com/tw/emc/accreditations/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
Lin-Kou Shiang, Taipei,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

Testing Laboratory
0914

2. Conducted Emission

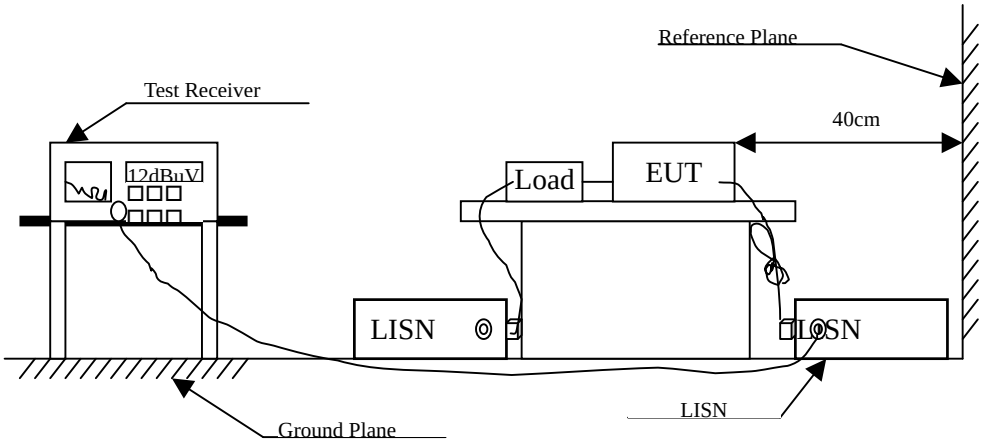
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2010	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2010	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2010	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2010	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	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: 2003 on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Dongle
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 1: Receive

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.181	9.724	42.900	52.624	-12.490	65.114
0.244	9.679	37.680	47.359	-15.955	63.314
0.302	9.650	29.750	39.400	-22.257	61.657
1.701	9.680	19.490	29.170	-26.830	56.000
3.396	9.690	22.200	31.890	-24.110	56.000
4.373	9.700	22.800	32.500	-23.500	56.000
Average					
0.181	9.724	34.830	44.554	-10.560	55.114
0.244	9.679	28.840	38.519	-14.795	53.314
0.302	9.650	23.080	32.730	-18.927	51.657
1.701	9.680	15.790	25.470	-20.530	46.000
3.396	9.690	13.850	23.540	-22.460	46.000
4.373	9.700	12.260	21.960	-24.040	46.000

Note:

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

Product : Dongle
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 1: Receive

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.181	9.732	42.460	52.192	-12.922	65.114
0.244	9.689	36.800	46.489	-16.825	63.314
0.302	9.660	29.240	38.900	-22.757	61.657
1.880	9.680	20.340	30.020	-25.980	56.000
3.697	9.700	25.600	35.300	-20.700	56.000
4.490	9.700	22.670	32.370	-23.630	56.000
Average					
0.181	9.732	32.500	42.232	-12.882	55.114
0.244	9.689	28.320	38.009	-15.305	53.314
0.302	9.660	22.080	31.740	-19.917	51.657
1.880	9.680	16.310	25.990	-20.010	46.000
3.697	9.700	15.440	25.140	-20.860	46.000
4.490	9.700	12.690	22.390	-23.610	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Radiated Emission

3.1. Test Equipment

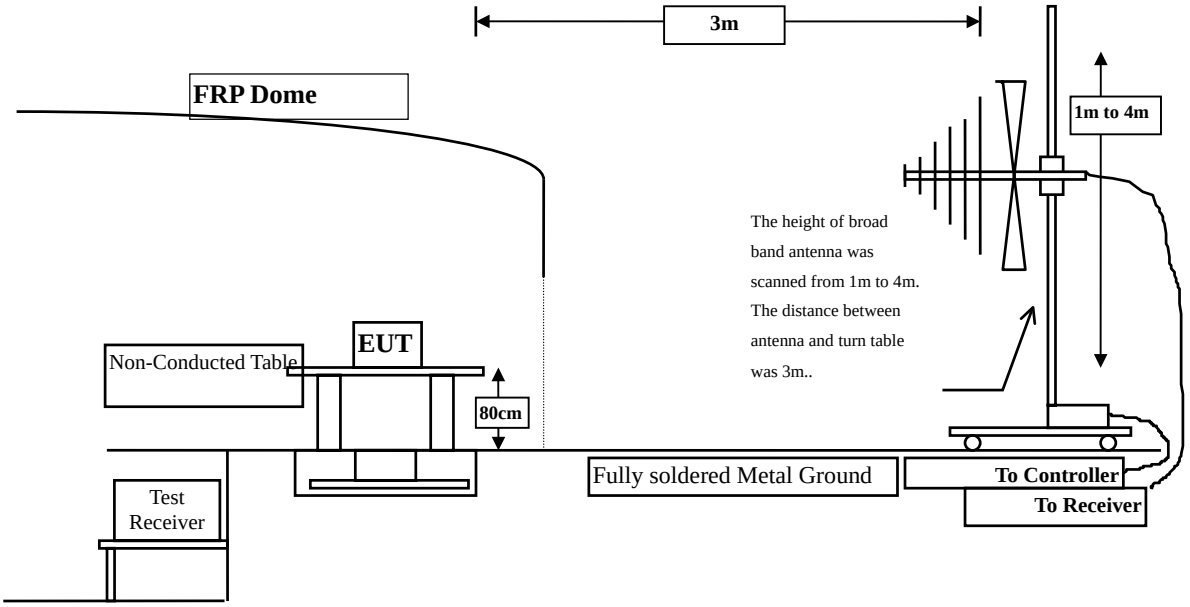
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2009
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2009
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2010
	X	Pre-Amplifier	AGILENT	8447D/2944A09549	Sep., 2009
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2009
	X	Spectrum Analyzer	Advantest	R3162/91700283	Oct., 2009
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2010
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

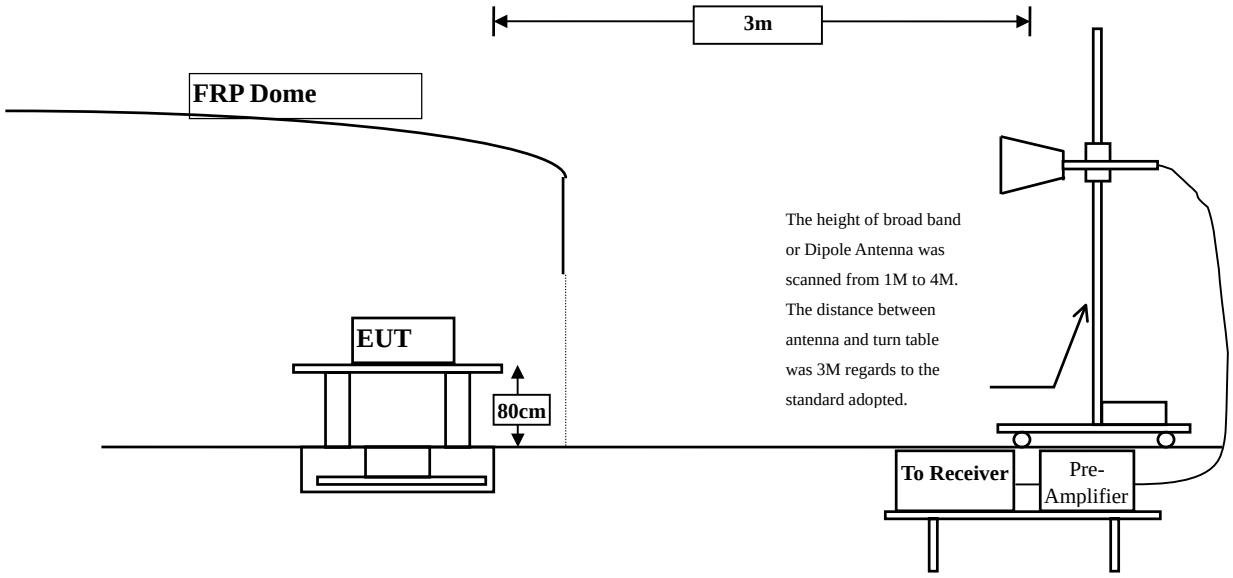
2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



3.3. Limits

FCC Part 15 Subpart B Paragraph 15.109 Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

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 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 C63.4:2003 on radiated measurement.

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

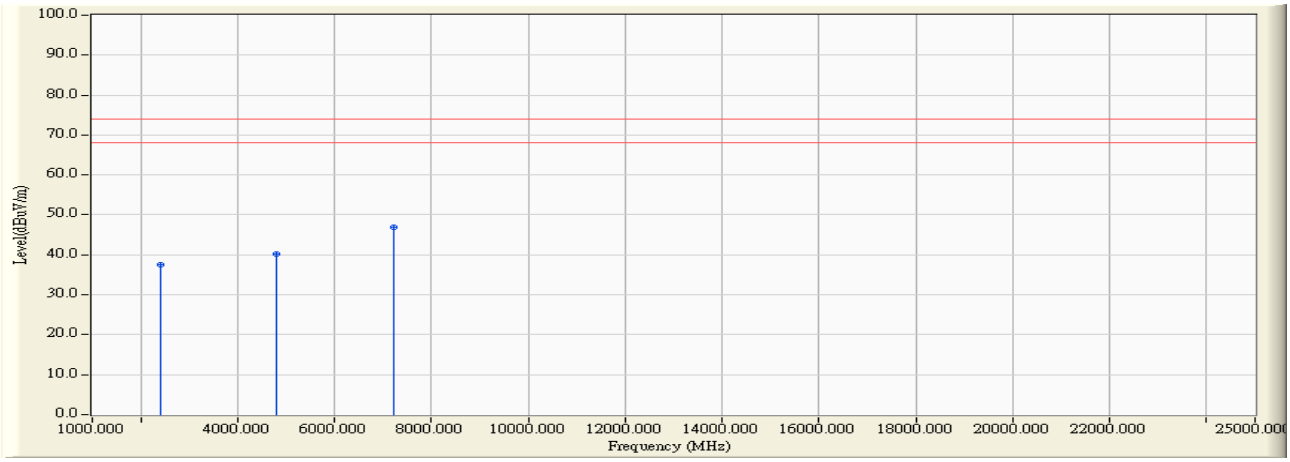
3.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

3.6. Test Result of Radiated Emission

Product : Dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Receive (2405 MHz)

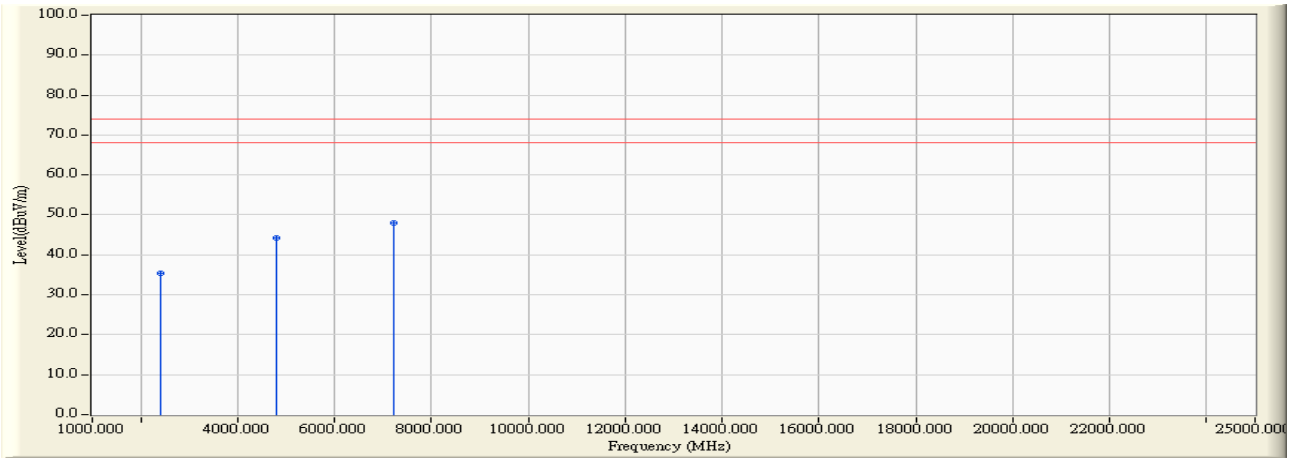


Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
2405.000	-1.055	38.510	37.454	-36.546	74.000
4810.000	3.142	37.110	40.252	-33.748	74.000
7215.000	10.194	36.840	47.035	-26.965	74.000
Average Detector					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Measurement Level = Reading Level + Correct Factor.
5. 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.

Product : Dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Receive (2405 MHz)

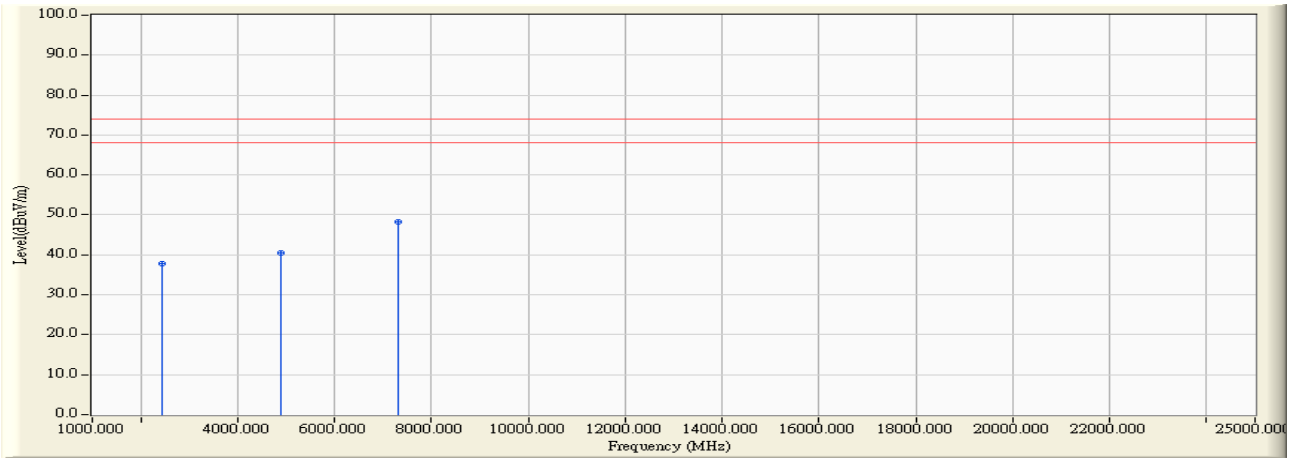


Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Vertical					
Peak Detector					
2405.000	-1.722	37.070	35.347	-38.653	74.000
4810.000	6.410	37.860	44.270	-29.730	74.000
7215.000	11.056	37.000	48.057	-25.943	74.000
Average Detector					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Measurement Level = Reading Level + Correct Factor.
5. 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.

Product : Dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Receive (2439 MHz)

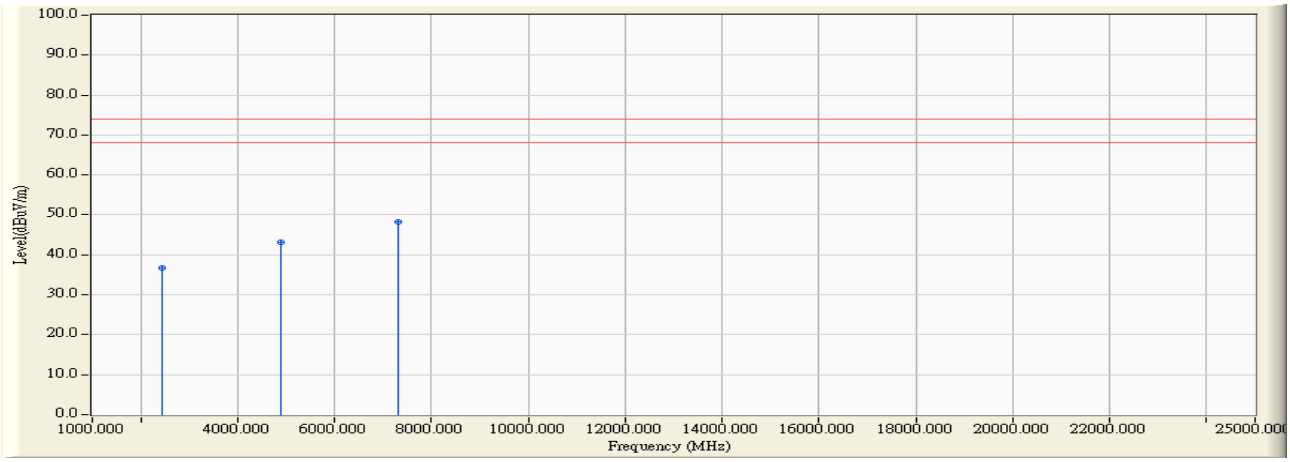


Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
2439.000	-0.842	38.730	37.888	-36.112	74.000
4878.000	2.903	37.610	40.513	-33.487	74.000
7317.000	11.755	36.440	48.195	-25.805	74.000
Average Detector					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Measurement Level = Reading Level + Correct Factor.
5. 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.

Product : Dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Receive (2439 MHz)

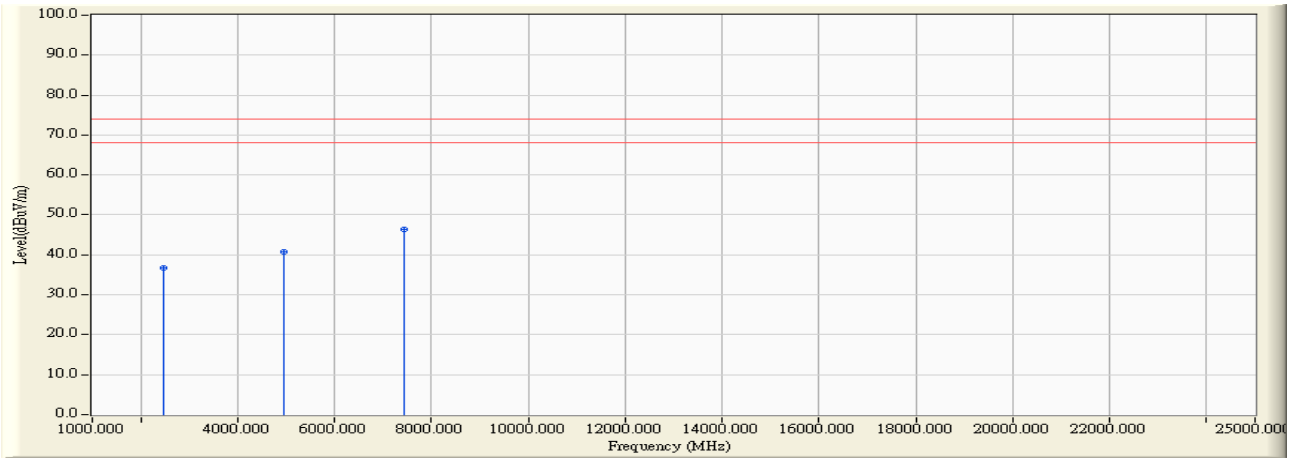


Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Vertical					
Peak Detector					
2439.000	-1.554	38.260	36.706	-37.294	74.000
4878.000	5.646	37.570	43.217	-30.783	74.000
7317.000	12.613	35.640	48.253	-25.747	74.000
Average Detector					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Measurement Level = Reading Level + Correct Factor.
5. 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.

Product : Dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Receive (2476 MHz)

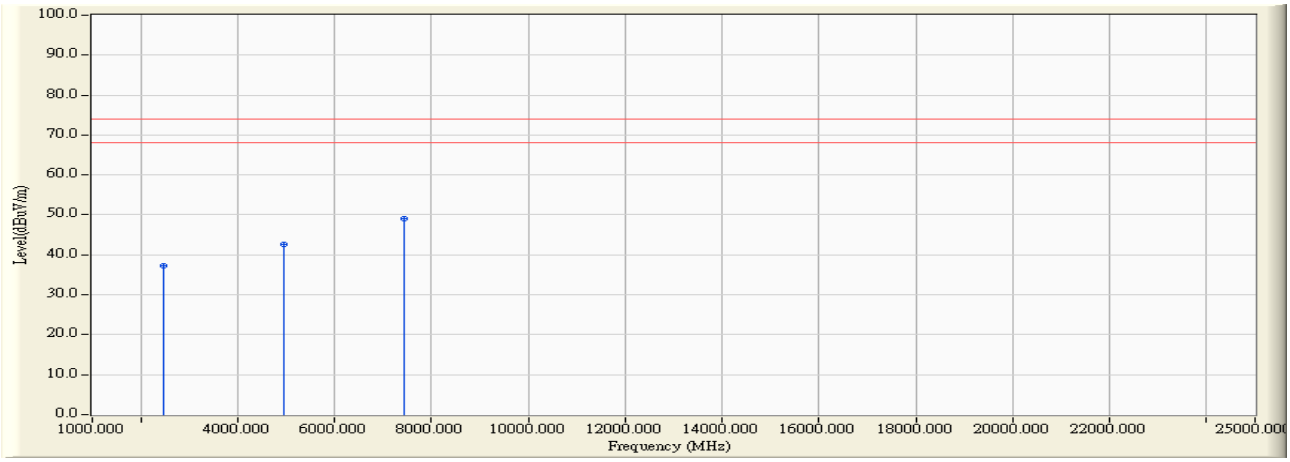


Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
2476.000	-0.606	37.400	36.794	-37.206	74.000
4952.000	2.737	38.130	40.867	-33.133	74.000
7428.000	12.359	34.130	46.489	-27.511	74.000
Average Detector					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Measurement Level = Reading Level + Correct Factor.
5. 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.

Product : Dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Receive (2476 MHz)



Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Vertical					
Peak Detector					
2476.000	-1.347	38.720	37.373	-36.627	74.000
4952.000	5.504	37.050	42.554	-31.446	74.000
7428.000	13.315	35.780	49.095	-24.905	74.000
Average Detector					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Measurement Level = Reading Level + Correct Factor.
5. 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.

Product : Dongle
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Receive (2439MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
41.640	-3.949	28.596	24.647	-15.353	40.000
264.740	-4.991	42.575	37.584	-8.416	46.000
542.160	3.011	36.499	39.510	-6.490	46.000
567.380	1.664	32.578	34.242	-11.758	46.000
648.860	2.038	34.156	36.194	-9.806	46.000
833.160	5.643	28.457	34.099	-11.901	46.000
Vertical					
Peak Detector					
262.800	-7.543	46.573	39.030	-6.970	46.000
344.280	-3.171	36.541	33.371	-12.629	46.000
499.480	-0.852	35.698	34.846	-11.154	46.000
565.440	-5.379	39.127	33.748	-12.252	46.000
901.060	3.331	31.595	34.926	-11.074	46.000
967.020	8.071	32.092	40.163	-13.837	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

4. EMI Reduction Method During Compliance Testing

No modification was made during testing.