



Test Report

Product Name : WLAN Keyboard

Model No. : FDC-6802

FCC ID. : JCKFDC-6802

Applicant : GIGA-BYTE TECHNOLOGY CO., LTD

Address : No. 6, Bau Chiang Road, Hsin-Tien, Taipei Hsien
231, Taiwan

Date of Receipt : 2005/08/30

Issued Date : 2005/09/07

Report No. : 059L012FI

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.

Test Report Certification

Issued Date : 2005/09/07

Report No. : 059L012FI



Product Name : WLAN Keyboard
 Applicant : GIGA-BYTE TECHNOLOGY CO., LTD
 Address : No. 6, Bau Chiang Road, Hsin-Tien, Taipei Hsien 231,
 Taiwan
 Manufacturer : GIGA-BYTE TECHNOLOGY CO., LTD
 Model No. : FDC-6802
 FCC ID. : JCKFDC-6802
 Rated Voltage : AC 120 V / 60 Hz
 EUT Voltage : DC 3V (Battery)
 Trade Name : GIGABYTE
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.249:2005
 Test Result : Complied



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

Documented By : Rita Huang
 (Rita Huang)



Tested By : Tim Sung
 (Tim Sung)

Approved By : Gene Chang
 (Gene Chang)



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1. General Information

1.1. EUT Description

Product Name	WLAN Keyboard
Trade Name	GIGABYTE
Model No.	FDC-6802
Frequency Range	2412MHz-2476MHz
Type of Modulation	GFSK
Channel Control	Manual
Antenna Type	Printed on PCB

Component	
Power Adapter	DELTA, ADP-180EB B Cable Out: Shielded, 1.8m with one ferrite core bonded.

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2466MHz	01	2412MHz	02	2424MHz	03	2428MHz
04	2440MHz	05	2444MHz	06	2456MHz	07	2460MHz
08	2472MHz	09	2476MHz	10	2418MHz	11	2422MHz
12	2434MHz	13	2438MHz	14	2450MHz	15	2454MHz

Note:

1. This device is a 2.4GHz WLAN Keyboard including a 2.4GHz transmitter.
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 059L012F under Declaration of Conformity.

1.2. Operation Description

The EUT is WLAN Keyboard. The operation frequency is from 2.412GHz to 2.476GHz with GFSK modulation. Sixteen channels are selectable. The signal will be transmitted through 2.4 GHz GFSK signals to the receiver. DC 3V shall be provided for EUT operation.

1.3. Test Mode

QuieTek is verified the construction and function in typical operation. All the test modes are carried out in normal operation and defined as:

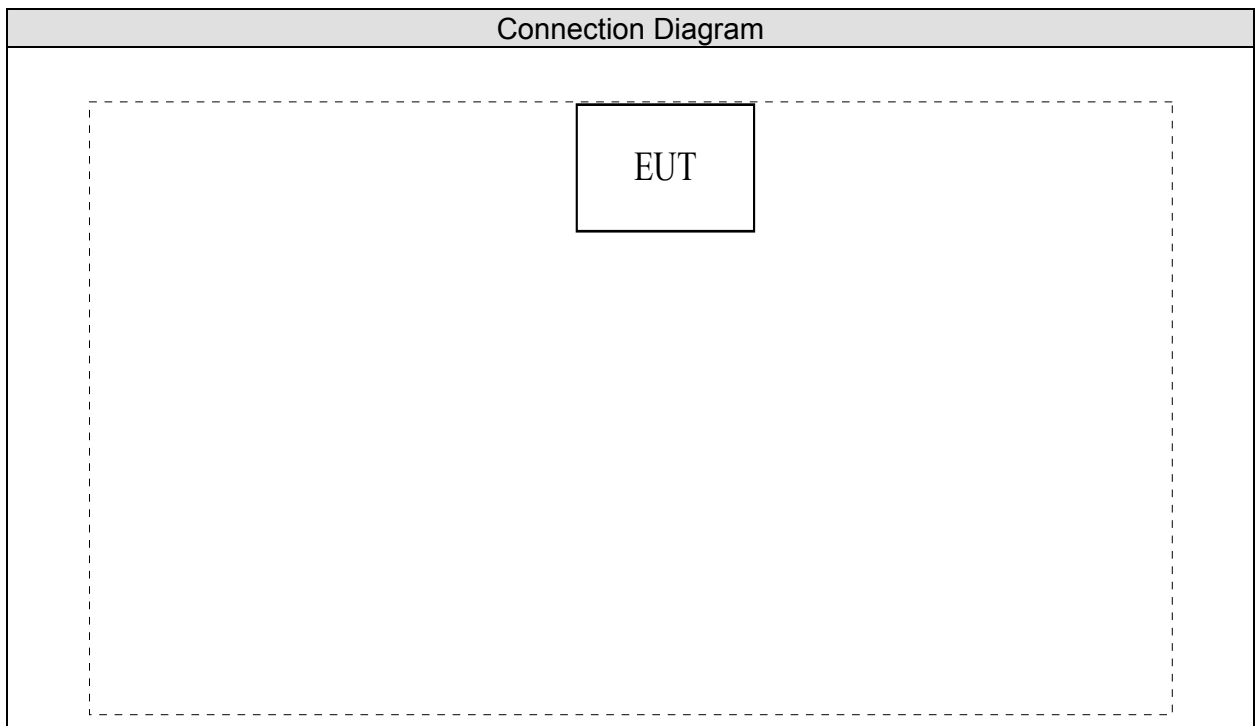
Pre-Test Mode	
EMI	Mode 1: Transmit
Final Test Mode	
TX	Mode 1: Transmit

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.	FCC ID	Power Cord
(1)	N/A	N/A	N/A	N/A	N/A	N/A

1.5. Configuration of tested System



1.6. EUT Exercise Software

1	Install batteries of the EUT
2	Setup the EUT as shown in Section 1.4.
3	Press a key and hold.
4	The EUT continuously transmit the RF signal to the receiver.

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	20
Humidity (%RH)		25 - 75	55
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.249 Band Edge	15 - 35	20
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.249 Radiated Emission	15 - 35	20
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000

Site Description: June 22, 2001 File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Reference 31040/SIT1300F2



July 03, 2001 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



2. Conducted Emission

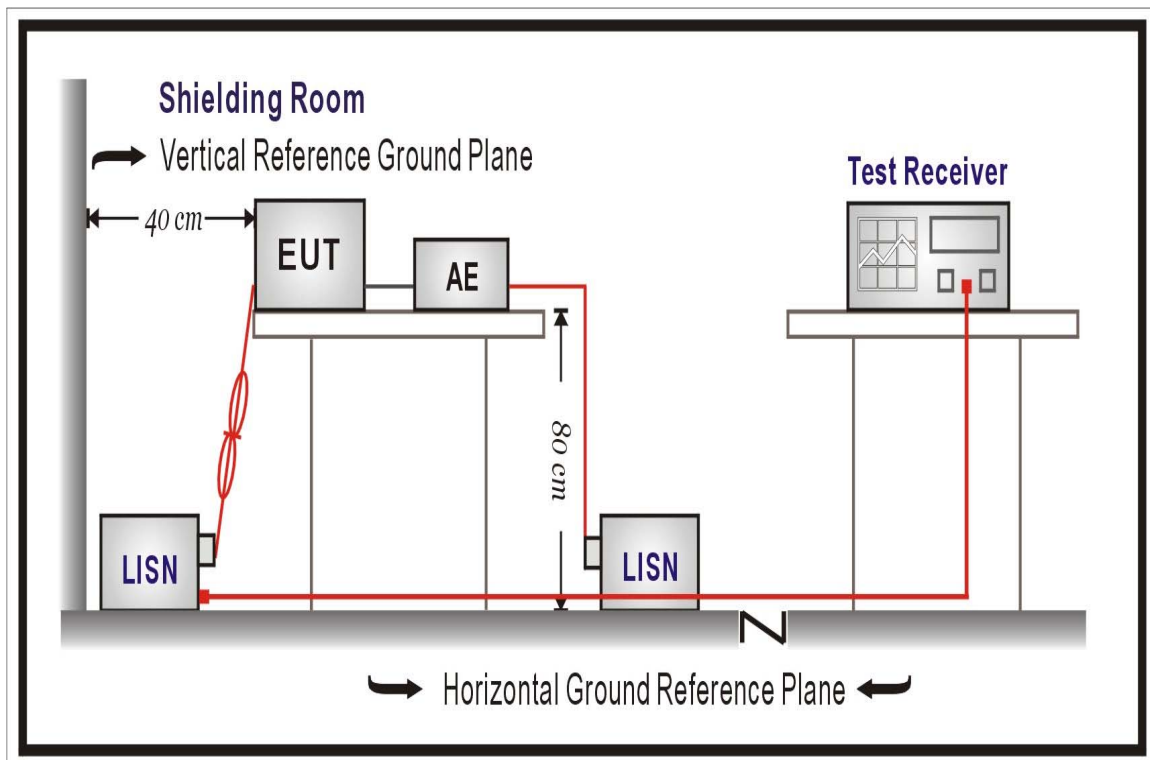
2.1. Test Equipment

The following test equipment are used during the test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/838251/001	Jan., 2005	
2	L.I.S.N.	R & S	ESH3-Z5/836679/0023	May, 2005	EUT
3	L.I.S.N.	R & S	ENV 4200/833209/0023	May, 2005	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2005	
5.	CDN	SCHAFFNER	ISNT400/16596	Feb., 2005	
6	No.2 Shielded Room			N/A	

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: 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. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2005

2.6. Test Result

The EUT is powered by batteries. This test item does not be performed.

3. Radiated Emission

3.1. Test Equipment

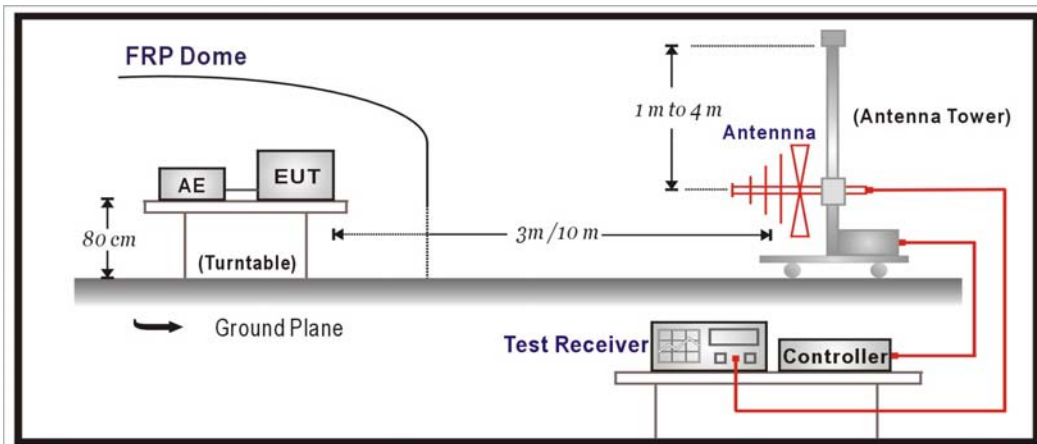
The following test equipment are used during the test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒OATS 3	Test Receiver	R & S	ESCS 30 / 100122	Feb., 2005
	Spectrum Analyzer	Advantest	R3162 / 120300652	Feb., 2005
	Pre-Amplifier	QTK	AP-025C / CHN-0202003	May, 2005
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2005
	Horn Antenna	ETS	3115 / 0005-6160	July, 2005
	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2005

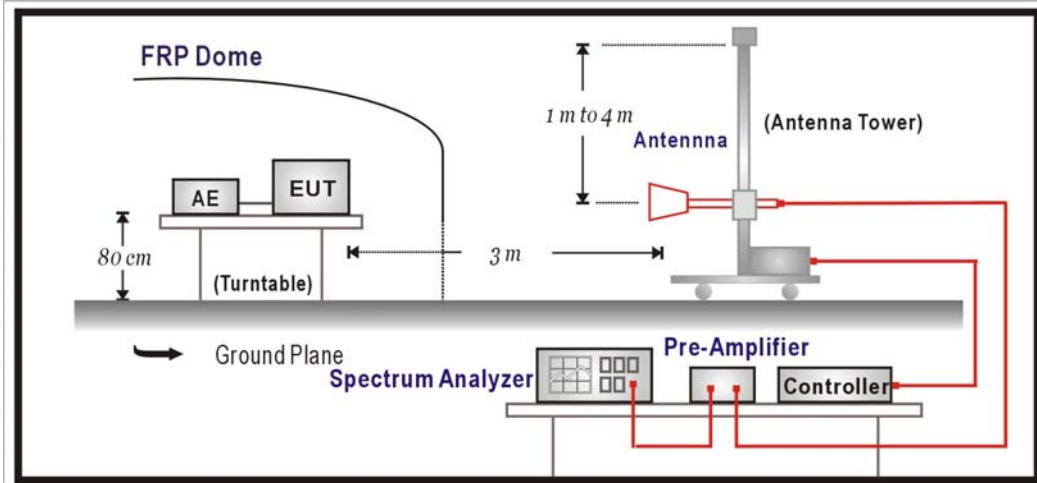
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

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 C63.4:2003 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: 2005

3.6. Test Result

Product	WLAN Keyboard		
Test Item	Radiated Emission (Fundamental)		
Test Mode	Mode 1: Transmit (2412MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 1

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

=====

Fundamental Radiated Emission

Horizontal

Peak

2412.250	2.72	28.53	19.94	63.88	75.20	38.80	114.00
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Note:

1. All Readings Levels are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Probe Factor + Cable Loss.
3. 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	WLAN Keyboard		
Test Item	Radiated Emission (Fundamental)		
Test Mode	Mode 1: Transmit (2412MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 1

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

=====

Fundamental Radiated Emission

Vertical

Peak

2411.750	2.72	28.53	19.94	66.12	77.44	36.56	114.00
----------	------	-------	-------	-------	-------	-------	--------

Note:

1. All Readings Levels are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Probe Factor + Cable Loss.
3. 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	WLAN Keyboard		
Test Item	Radiated Emission (Fundamental)		
Test Mode	Mode 1: Transmit (2444MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 5

Frequency	Cable	Probe	PreAMP	Reading	Emission	Margin	Limit
MHz	Loss	Factor	dB	Level	Level	dB	dBuV/m
	dB	dB/m		dBuV	dBuV/m		

=====

Fundamental Radiated Emission

Horizontal

Peak

2444.000	2.74	28.63	19.97	62.88	74.28	39.72	114.00
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Note:

1. All Readings Levels are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Probe Factor + Cable Loss.
3. 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	WLAN Keyboard		
Test Item	Radiated Emission (Fundamental)		
Test Mode	Mode 1: Transmit (2444MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 5

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

=====

Fundamental Radiated Emission

Vertical

Peak

2444.000	2.74	28.63	19.97	66.52	77.92	36.08	114.00
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Note:

1. All Readings Levels are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Probe Factor + Cable Loss.
3. 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	WLAN Keyboard		
Test Item	Radiated Emission (Fundamental)		
Test Mode	Mode 1: Transmit (2476MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 9

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

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Fundamental Radiated Emission

Horizontal

Peak

2475.750	2.75	28.66	20.01	67.00	78.40	35.60	114.00
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Note:

1. All Readings Levels are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Probe Factor + Cable Loss.
3. 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	WLAN Keyboard		
Test Item	Radiated Emission (Fundamental)		
Test Mode	Mode 1: Transmit (2476MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 9

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

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Fundamental Radiated Emission

Vertical

Peak

2475.500	2.75	28.66	20.01	64.94	76.34	37.66	114.00
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Note:

1. All Readings Levels are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Probe Factor + Cable Loss.
3. 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	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2412MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 1

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
------------------	---------------------	-------------------------	--------------	--------------------------	-----------------------------	--------------	-----------------

=====

Horizontal

Peak

4824.000	3.86	33.64	20.08	44.98	62.41	11.59	74.00
7236.000	5.01	36.77	19.24	25.58	48.13	25.87	74.00
9648.000	6.20	38.35	16.77	25.67	53.46	20.54	74.00

Average

4824.000	3.86	33.64	20.08	33.13	50.56	3.44	54.00
----------	------	-------	-------	-------	-------	------	-------

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
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	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2412MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 1

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
------------------	---------------------	-------------------------	--------------	--------------------------	-----------------------------	--------------	-----------------

=====

Vertical

Peak

4824.000	3.86	33.64	20.08	44.75	62.18	11.82	74.00
7236.000	5.01	36.77	19.24	25.67	48.22	25.78	74.00
9648.000	6.20	38.35	16.77	25.76	53.55	20.45	74.00

Average

4824.000	3.86	33.64	20.08	32.60	50.03	3.97	54.00
----------	------	-------	-------	-------	-------	------	-------

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
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	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2444MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 5

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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=====

Horizontal

Peak

4888.000	3.89	33.82	20.06	43.60	61.25	12.75	74.00
7332.000	5.05	37.02	18.92	25.04	48.19	25.81	74.00
9776.000	6.22	38.39	16.78	25.78	53.61	20.39	74.00

Average

4888.000	3.89	33.82	20.06	32.57	50.22	3.78	54.00
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Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
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	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2444MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 5

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
=====							

Vertical

Peak

4888.000	3.89	33.82	20.06	44.71	62.36	11.64	74.00
7332.000	5.05	37.02	18.92	25.12	48.27	25.73	74.00
9776.000	6.22	38.39	16.78	25.83	53.66	20.34	74.00

Average

4888.000	3.89	33.82	20.06	32.49	50.14	3.86	54.00
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Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
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	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2476MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 9

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
------------------	---------------------	-------------------------	--------------	--------------------------	-----------------------------	--------------	-----------------

=====

Horizontal

Peak

4952.000	3.93	33.95	20.05	44.50	62.33	11.67	74.00
7428.000	5.10	37.22	18.60	24.54	48.26	25.74	74.00
9904.000	6.27	38.49	16.86	25.82	53.72	20.28	74.00

Average

4952.000	3.93	33.95	20.05	32.02	49.85	4.15	54.00
----------	------	-------	-------	-------	-------	------	-------

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
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	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2476MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 9

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
=====							

Vertical

Peak

4952.000	3.93	33.95	20.05	44.63	62.46	11.54	74.00
7428.000	5.10	37.22	18.60	25.02	48.74	25.26	74.00
9904.000	6.27	38.49	16.86	25.94	53.84	20.16	74.00

Average

4952.000	3.93	33.95	20.05	32.14	49.97	4.03	54.00
----------	------	-------	-------	-------	-------	------	-------

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
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	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2412MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 1

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBUV	Emission Level dBUV/m	Margin dB	Limit dBUV/m
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=====

Horizontal

Quasi-Peak

304.020	2.28	12.38	0.00	7.45	22.11	23.89	46.00
381.620	2.68	13.88	0.00	9.64	26.20	19.80	46.00
461.650	3.10	16.62	0.00	8.84	28.56	17.44	46.00
544.100	3.51	17.80	0.00	8.53	29.84	16.16	46.00
595.030	3.78	17.81	0.00	8.99	30.59	15.41	46.00
* 745.380	4.55	18.37	0.00	8.43	31.36	14.64	46.00

Vertical

Quasi-Peak

333.120	2.43	12.61	0.00	10.31	25.36	20.64	46.00
524.700	3.42	16.79	0.00	7.65	27.86	18.14	46.00
595.030	3.78	19.68	0.00	5.34	28.80	17.20	46.00
* 619.280	3.90	19.27	0.00	7.34	30.51	15.49	46.00
801.150	4.85	19.26	0.00	4.71	28.82	17.18	46.00
929.670	5.50	21.42	0.00	0.64	27.56	18.44	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * " means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2444MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 5

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Horizontal
Quasi-Peak

461.650	3.10	16.62	0.00	8.66	28.38	17.62	46.00
515.000	3.37	16.87	0.00	8.97	29.20	16.80	46.00
544.100	3.51	17.80	0.00	9.71	31.02	14.98	46.00
595.030	3.78	17.81	0.00	9.42	31.02	14.98	46.00
716.280	4.41	18.20	0.00	7.41	30.01	15.99	46.00
* 825.400	4.96	19.25	0.00	8.46	32.67	13.33	46.00

Vertical
Quasi-Peak

177.930	1.63	8.28	0.00	13.30	23.21	20.29	43.50
257.950	2.04	12.77	0.00	8.15	22.97	23.03	46.00
284.620	2.18	12.24	0.00	9.24	23.66	22.34	46.00
333.120	2.43	12.61	0.00	10.50	25.55	20.45	46.00
595.030	3.78	19.68	0.00	5.80	29.26	16.74	46.00
* 619.280	3.90	19.27	0.00	6.80	29.97	16.03	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * " means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	WLAN Keyboard		
Test Item	Radiated Emission		
Test Mode	Mode 1: Transmit (2476MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

Channel 9

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Horizontal

Quasi-Peak

386.480	2.71	13.96	0.00	9.35	26.02	19.98	46.00
473.770	3.16	16.64	0.00	8.43	28.23	17.77	46.00
614.420	3.88	18.33	0.00	6.67	28.88	17.12	46.00
745.380	4.55	18.37	0.00	8.98	31.91	14.09	46.00
852.080	5.10	19.90	0.00	8.51	33.51	12.49	46.00
* 929.670	5.50	20.31	0.00	7.84	33.66	12.34	46.00

Vertical

Quasi-Peak

177.930	1.63	8.28	0.00	13.44	23.35	20.15	43.50
284.620	2.18	12.24	0.00	9.19	23.61	22.39	46.00
459.230	3.08	16.42	0.00	4.21	23.71	22.29	46.00
* 619.280	3.90	19.27	0.00	7.03	30.20	15.80	46.00
752.650	4.59	20.66	0.00	3.07	28.33	17.67	46.00
818.120	4.93	18.87	0.00	5.46	29.26	16.74	46.00

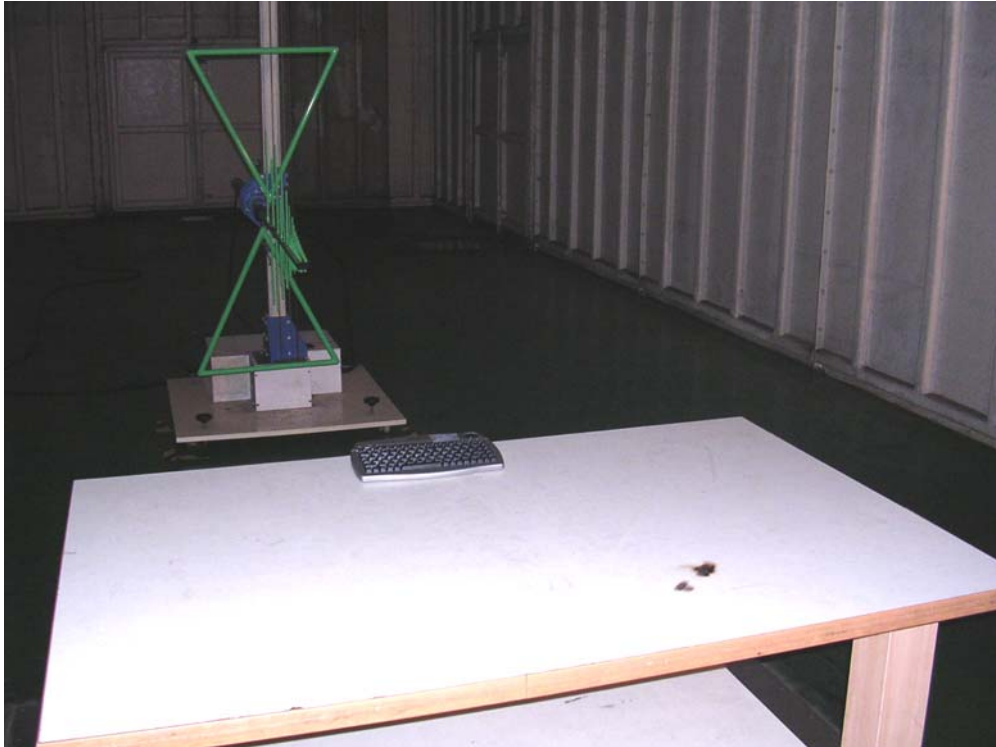
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * " means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

3.7. Test Photo

Test Mode : Mode 1: Transmit

Description : Front View of Radiated Emission Test Setup



Test Mode : Mode 1: Transmit

Description : Back View of Radiated Emission Test Setup



Test Mode : Mode 1: Transmit

Description : Front View of Radiated Emission Test Setup (Horn)



4. Band Edge

4.1. Test Equipment

The following test equipment are used during the test:

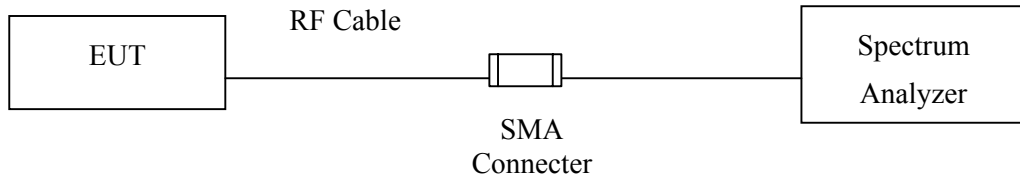
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum	HP	E4407B / US39440758	May, 2005
X	Test Receiver	R & S	ESCS 30 / 825442/14	May, 2005
X	Spectrum Analyzer	Advantest	R3261C / 71720140	May, 2005
X	Pre-Amplifier	HP	8447D/3307A01812	May, 2005
X	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 2005
X	Horn Antenna	EM	EM6917 / 103325	May, 2005

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

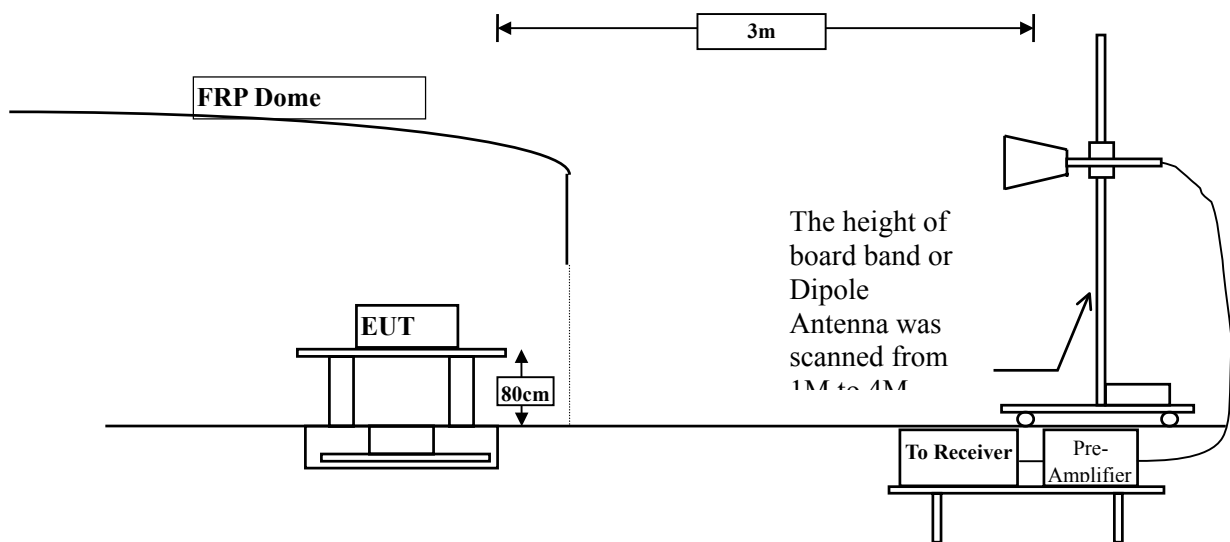
2. Mark "X" test instruments are used to measure the final test results.

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 C63.4:2003 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: 2005

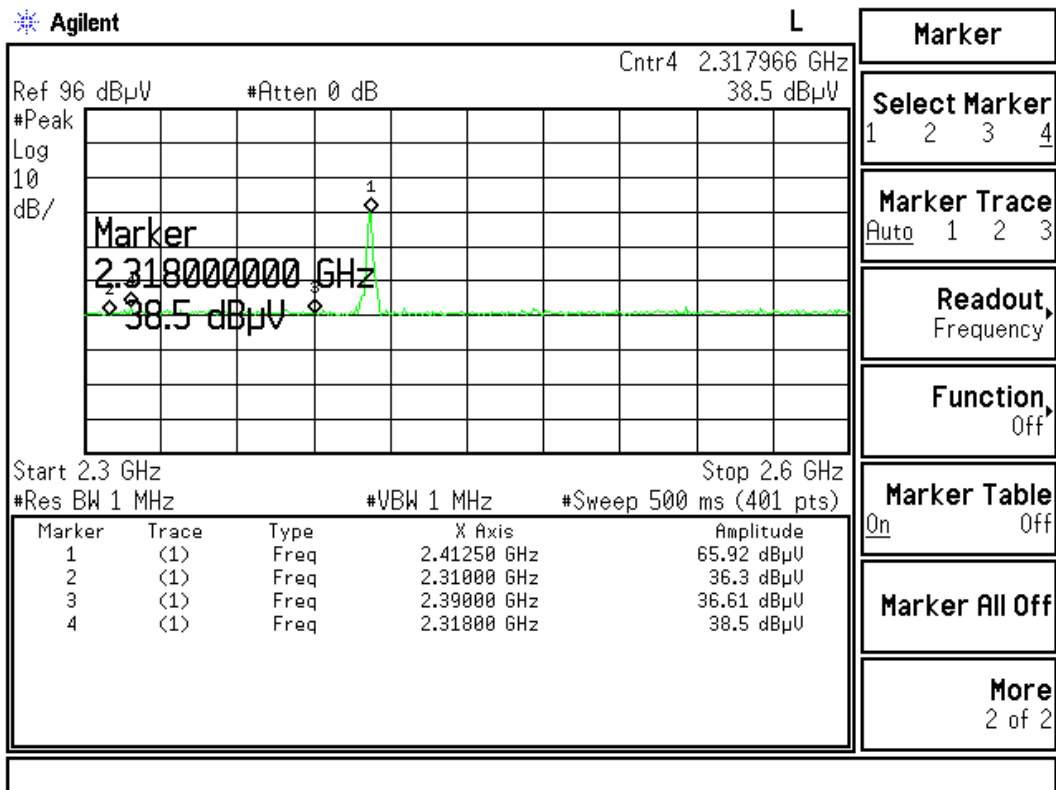
4.6. Test Result

Product	WLAN Keyboard		
Test Item	Band Edge		
Test Mode	Mode 1: Transmit (2412MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2318.000	38.50	49.69	74.00	54.00	Pass
1 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 1: (Horizontal)

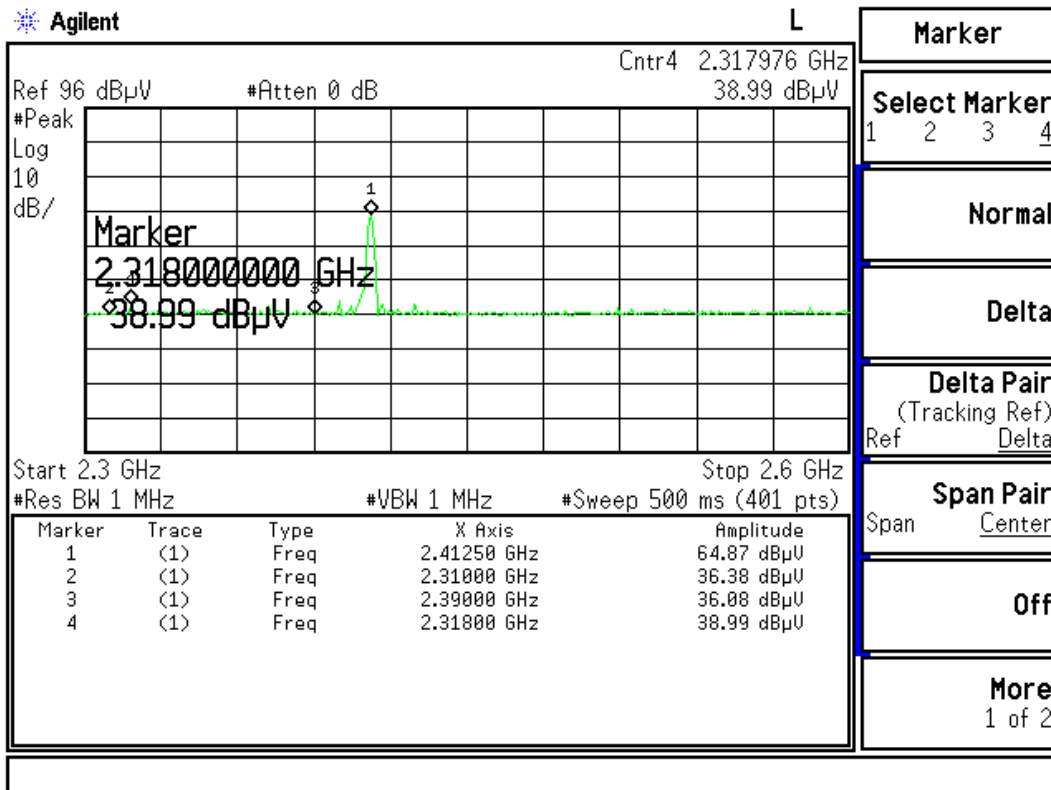


Product	WLAN Keyboard		
Test Item	Band Edge		
Test Mode	Mode 1: Transmit (2412MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2318.000	38.99	50.18	74.00	54.00	Pass
1 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 1: (Vertical)

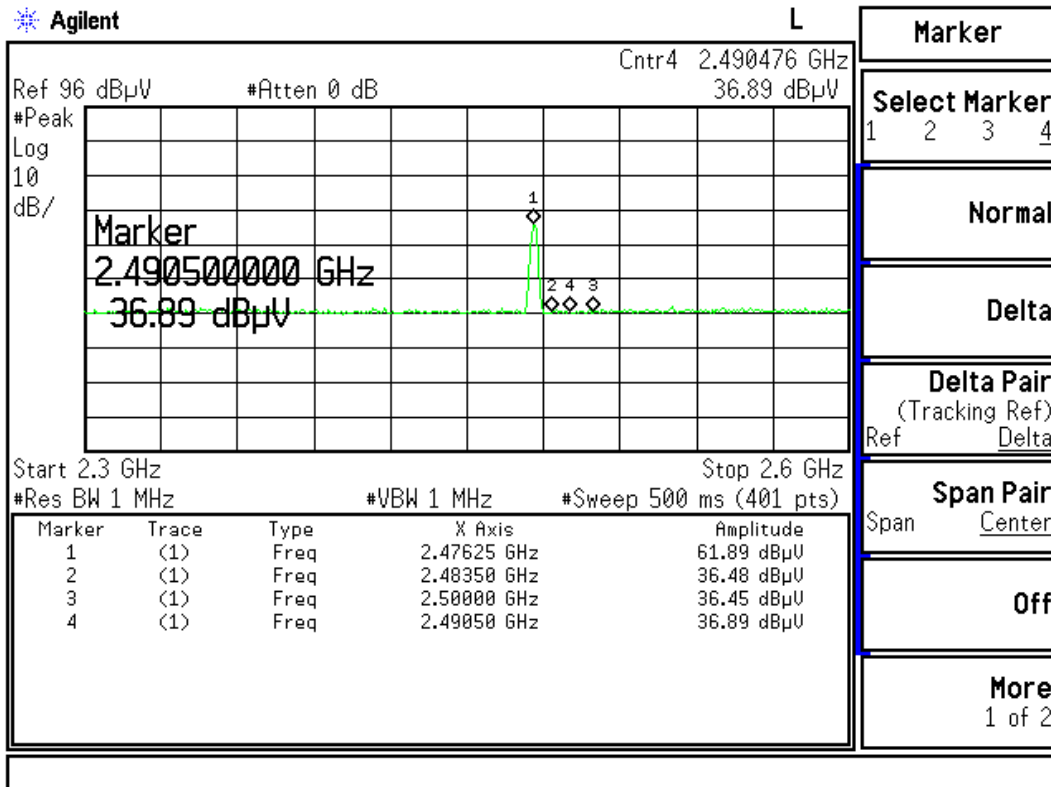


Product	WLAN Keyboard		
Test Item	Band Edge		
Test Mode	Mode 1: Transmit (2476MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
9 (Peak)	2490.500	36.89	48.26	74.00	54.00	Pass
9 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 9: (Horizontal)

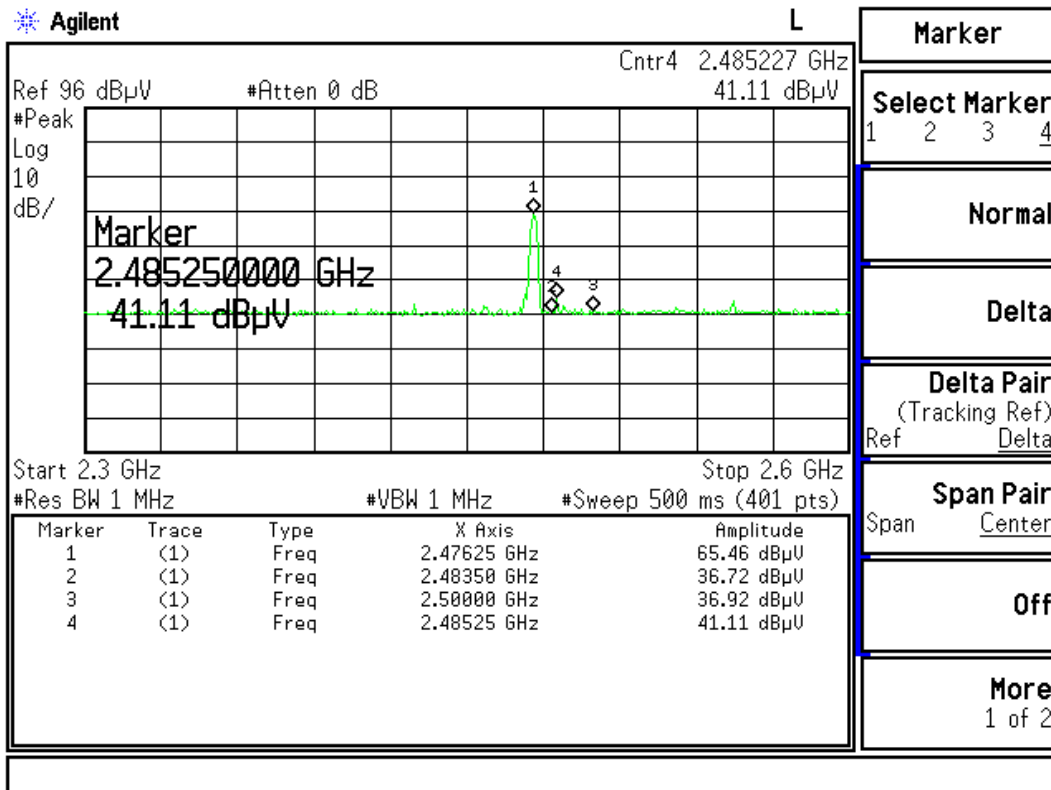


Product	WLAN Keyboard		
Test Item	Band Edge		
Test Mode	Mode 1: Transmit (2476MHz)		
Date of Test	2005/09/01	Test Site	No.3 OATS

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
9 (Peak)	2485.250	41.11	52.48	74.00	54.00	Pass
9 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 9: (Vertical)



Attachement

➤ **EUT Photograph**

(1) EUT Photo



(2) EUT Photo



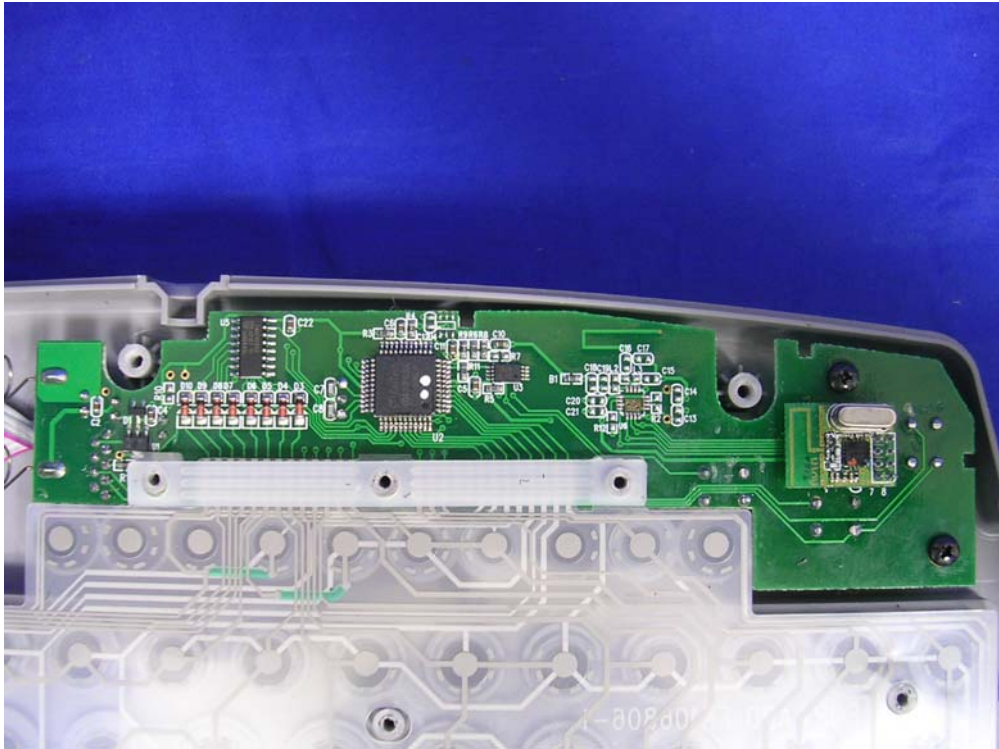
(3) EUT Photo



(4) EUT Photo



(5) EUT Photo



(6) EUT Photo

