Ke Mei Ou Laboratory Co., Ltd.

7A, Jiaxiangge, Jiahuixincheng, No.3027, Shennan Rd., Futian,
Shenzhen, Guangdong, P.R.China. Zip Code: 518033
Tel: + 86 755 83642690 Fax: + 86 755 83297077
www.kmolab.com

Ke Mei Ou Lab Corp.

FEDERAL COMMUNICATIONS COMMISSION
Registration Number: 125782
INDUSTRY CANADA
Registration Number: IC4986

FCC TEST REPORT

Under
FCC 15 Subpart C, Paragraph 15.227

Prepared For:

Shenzhen Longitek Technology Co., Ltd.

Block 37, Xinlesijie, Zone 37, Bao'an District, Shenzhen, China

FCC ID: R6TK905M308RC
EUT: Wireless Keyboard
Model: RF-K905M308RC

May 25, 2004

Report Type: Original Report
Test Engineer: Peter Lin
Test Date: May 18, 2004
Review By: _____ Apollo Liu / Manager

The test report consists 21 pages in total. It may be duplicated completely for legal use with the allowance of the applicant. It shall not be reproduced except in full, without the written approval of Ke Mei Ou Laboratory Corporation. The test result in the report only applied to the tested sample.

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1. General Information

1. 1 Notes

The test results of this report relate exclusively to the test item specified in 1.5. The KMO Lab does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the KMO Lab.

1. 2 Testing Laboratory

Ke Mei Ou Laboratory Co., Ltd.
7A, Jiaxiangge, Jiahuixincheng, No.3027, Shennan Rd., Futian, Shenzhen, Guangdong, P.R.China.
Tel: +86 755 83642690 Fax: +86 755 83297077
Email: kmo@kmolab.com
Internet: www.kmolab.com

Site on File with the Federal Communications Commission – United Sates
Registration Number: 125782
For 3 & 10 meter OATS

Site Listed with Industry Canada of Ottawa, Canada
Registration Number: IC4986
For 3 & 10 meter OATS

1. 3 Details of Applicant

Name : Shenzhen Longitek Technology Co., Ltd.
Address : Block 37, Xinlesijie, Zone 37, Baoan District, Shenzhen China
Contact : Chen Ziliang / Manager
Tel : + 86 755 27859185
Fax : + 86 755 27859851

1. 4 Application Details

Date of Receipt of Application : May 12, 2004
Date of Receipt of Test Item : May 12, 2004
Date of Test : May 18~May 22, 2004

1. 5 Test Item

Manufacturer : See Applicant
Brand Name : LONGITEK, KINYO, EVEREST
Model No. : RF-K905M308RC
Description : Wireless Keyboard

Additional Information

Frequency : 27.147MHz
Number of Channels : Single Channel with 256 random ID,
Power Supply : Two AAA Size Alkaline Batteries
Operation Distance : 2.0M (Typically under normal office environment)
Resolution : N/A

1. 6 Test Standards

FCC 15 Subpart C, Paragraph 15.227

Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.

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2. Technical Test

2. 1 Summary of Test Results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.207	Conducted Test	N/A	Owing to the DC operation of EUT, this test item is not performed.
FCC Part 15 Subpart C Paragraph 15.227 Limit	Field Strength of Fundamental	PASS	Minimum passing margin is -28.70 dB at 27.147 MHz Horizontal
FCC Part 15 , Paragraph 15.209	Radiated Test	PASS	Meets Class B Limit Minimum passing margin is -3.2 dB at 108.600 MHz Horizontal
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)).	Band Edge Test	PASS	The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in Section 15.209.

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3. EUT Modifications

No modification by Ke Mei Ou Laboratory Co., Ltd.

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4. Conducted Power Line Test

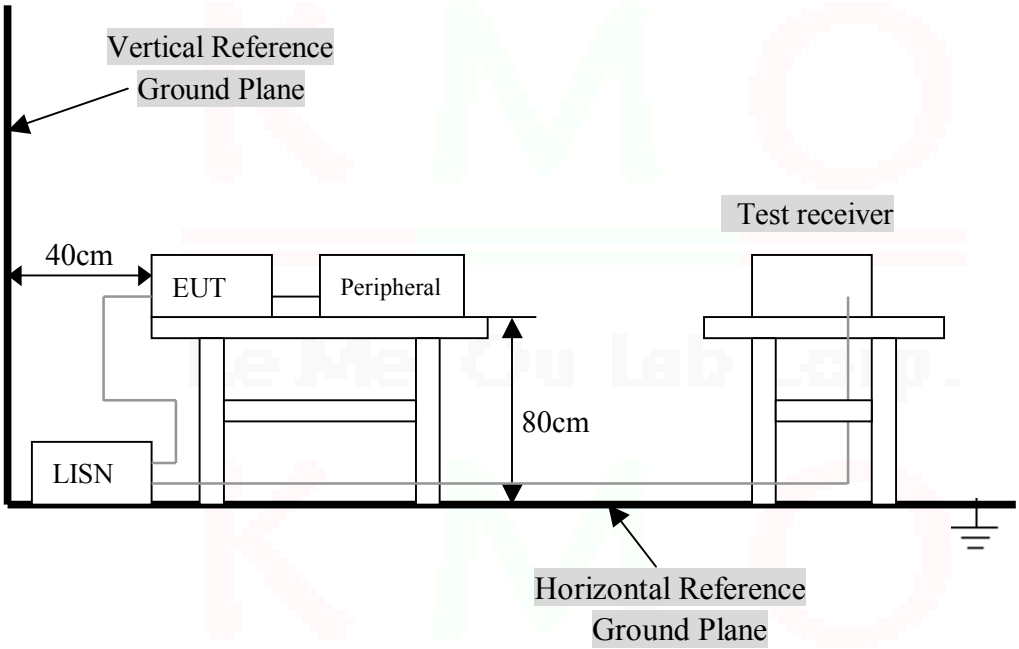
4. 1 Test Equipment

Please refer to Section 9 this report.

4. 2 Test Procedure

The EUT was tested according to ANSI C63.4 - 2001. The frequency spectrum from 0.45 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 uHenry as specified by section 5.1 OF ANSI C63.4 - 2001. cables and peripherals were moved to find the maximum emission levels for each frequency.

4. 3 Test Setup



For the actual test configuration, Please refer to the related items – Photos of Testing.

4. 4 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2001. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

DEVICE	MANUFACTURER	MODEL #	FCC ID
Wireless Keyboard	Shenzhen Longitek Technology Co., Ltd.	RF-K905M308RC	R6TK905M308RC

B. Internal Devices

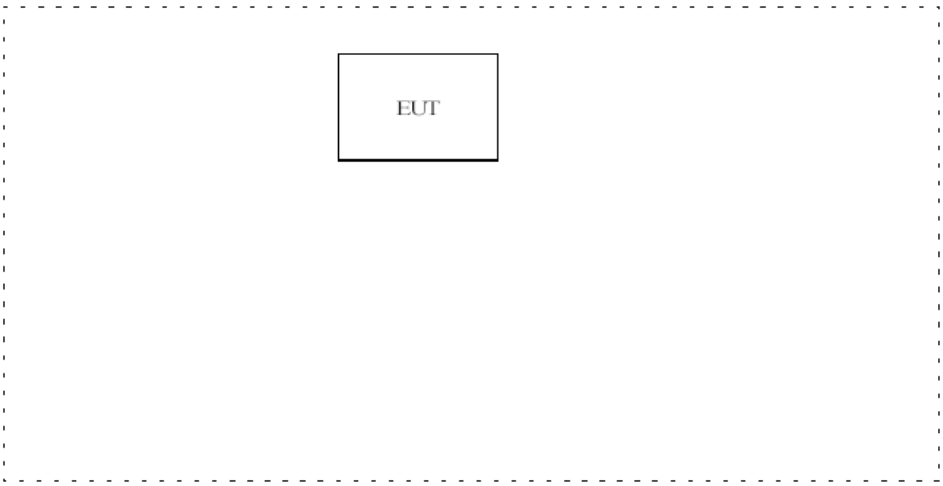
DEVICE	MANUFACTURER	MODEL #	FCCID / DoC
N/A			

C. Peripherals

DEVICE	MANUFAC-TURER	MODEL # SERIAL #	FCC ID/ DoC	CABLE
Printer	HP	HP930C	Doc	1.5m unshielded power cord 1.2m shielded data cable.
Modem	GVC	N/A	Doc	1.5m unshielded power cord 1.2m shielded data cable.
Notebook	IBM	A31	N/A	1.5m unshielded power cord

4. 5 EUT Operating Condition

Operating condition is according to ANSI C63.4 - 2001.
A. Setup the EUT and simulators as shown on follow.
B. Enable RF signal and confirm EUT active.
C. Modulate output capacity of EUT up to specification.



4. 6 Conducted Power Line Emission Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
FREQUENCY RANGE (MHz)	**CLASS A QP/AV**	**CLASS B QP/AV**
0.15 – 0.5	79/66	66-56/56-46
0.5 – 5.0	73/60	56/46
5.0 - 30	73/60	60/50

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

4. 7 Conducted Power Line Test Result

Owing to the DC operation of EUT, this test item is not performed.

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5. Radiated Emission Test

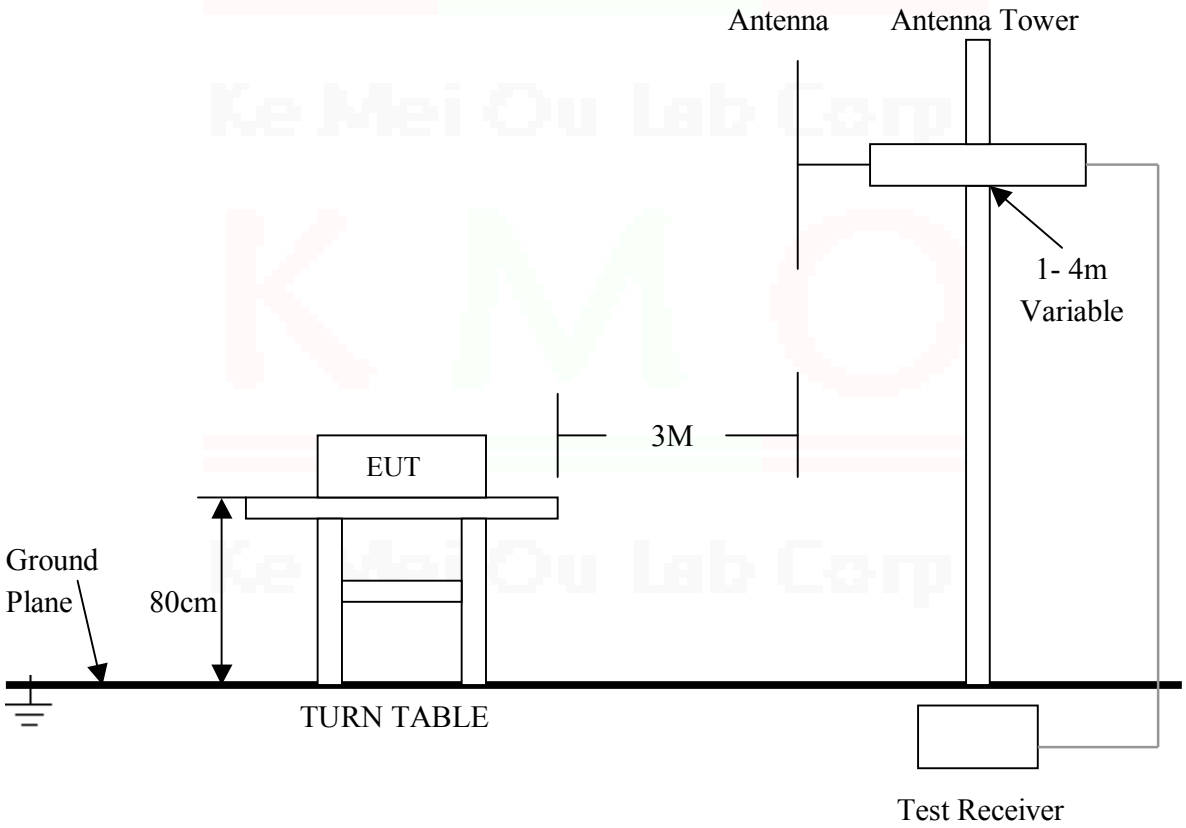
5. 1 Test Equipment

Please refer to Section 9 this report.

5. 2 Test Procedure

1. The EUT was tested according to ANSI C63.4 - 2001. The radiated test was performed at Ke Mei Ou Laboratory. This site is on file with the FCC laboratory division, Registration No. 125782.
2. The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2001.
3. The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz , peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters.
4. The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
5. Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.
6. The antenna polarization : Vertical polarization and Horizontal polarization.

5. 3 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing.

5. 4 Configuration of The EUT

Same as section 4 . 4 of this report

5. 5 EUT Operating Condition

Same as section 4 . 5 of this report.

5. 6 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below ：

A. FCC Part 15 Subpart C Paragraph 15.227 Limit

Fundamental Frequency (MHz)	Field Strength of Fundamental	
	uV/m	dBuV/m
26.96 – 27.28	10000	80.0

Note:
(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. Measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency (MHz)	Distance (m)	Field Strength (dBuV/m)
30 - 88	3	40.0
88 - 216	3	43.5
216 - 960	3	46.0
Above 960	3	54.0

Note:
(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

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5. 7 Radiated Emission Test Result

A. Fundamental Radiated Emission Data

Product	: Wireless Keyboard	Test Mode	: Normal
Test Item	: Fundamental Radiated Emission Data	Temperature	: 25 ℃
Test Voltage	: DC 3V (Power by Battery)	Humidity	: 50%RH
Test Result	: **PASS**		

Freq. (MHz)	Emission (dBuV/m)	HORIZ / VERT	Limits (dBuV/m)	Margin (dB)
27.147	51.30	HORIZ	80	-28.70
27.147	47.20	VERT	80	-32.80

Note:
(1) All Readings are Peak value.
(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.

B. General Radiated Emission Data

Product	: Wireless Keyboard	Test Mode	: Normal
Test Item	: General Radiated Emission Data	Temperature	: 25 ℃
Test Voltage	: DC 3V (Power by Battery)	Humidity	: 50%RH
Test Result	: **PASS**		

Freq. (MHz)	Emission Peak (dBuV/m)	HORIZ / VERT	Limits (dBuV/m)	Margin (dB)
108.600	40.3	HORIZ	43.5	-3.2
54.280	34.7	VERT	40.0	-5.3
327.160	36.8	HORZ	46.0	-9.2
339.600	33.8	VERT	46.0	-12.2
488.680	37.4	HORZ	46.0	-8.6
465.360	36.2	VERT	46.0	-9.8

Note:
(1) All Reading Levels below 1GHz are Quasi-Peak, above are peak and average value.
(2) Emission Level = Reading Level + Probe Factor + Cable Loss.

6. Band Edge

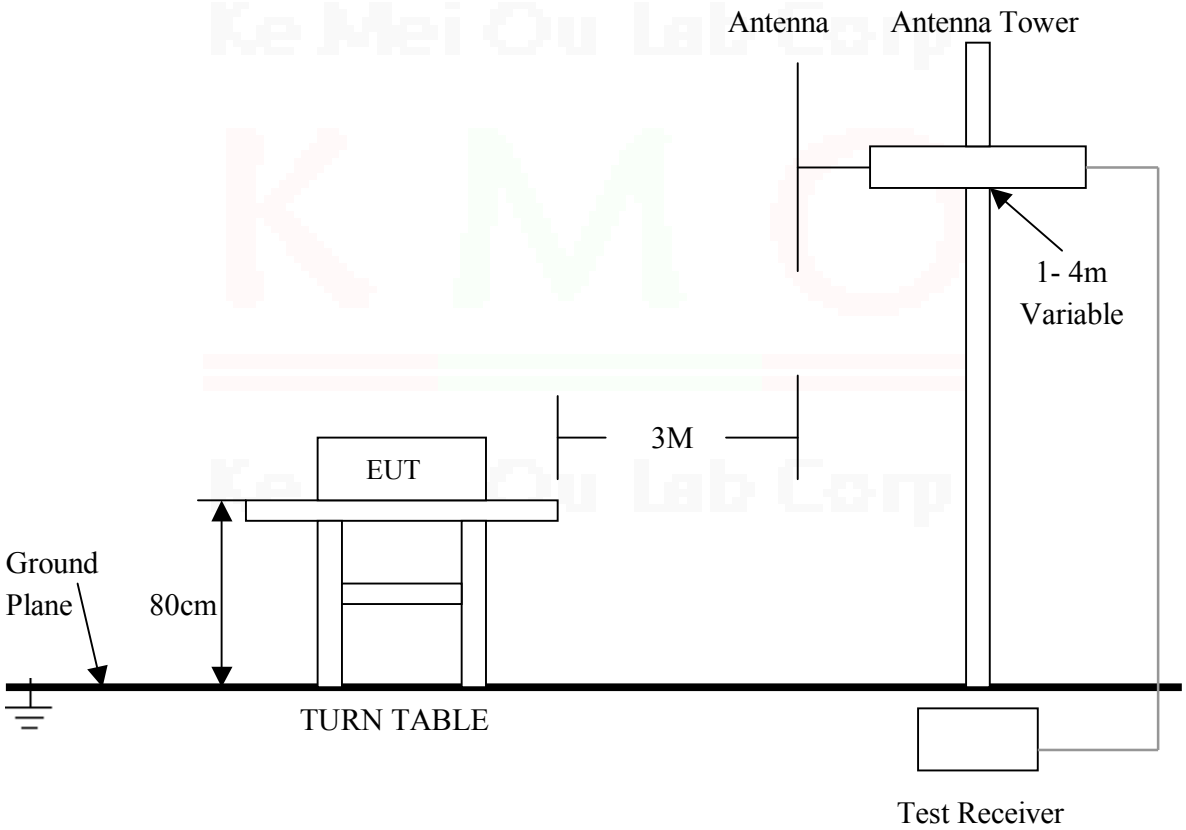
6. 1 Test Equipment

Please refer to Section 9 this report.

6. 2 Test Procedure

1. The EUT was tested according to ANSI C63.4 - 2001. The radiated test was performed at Ke Mei Ou Laboratory. This site is on file with the FCC laboratory division, Registration No. 125782.
2. The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2001.
3. The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz , peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters.
4. The antenna high were varied from 1 m to 4 m high to find the maximum emission for each frequency.
5. The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement. The bandwidth below 30MHz setting on the field strength meter is 10 kHz, above 1GHz are 1 MHz.
6. Maximizing procedure was performed on the highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.
7. The antenna polarization ： Vertical polarization and horizontal polarization.

6. 3 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing

6. 4 Configuration of The EUT

Same as section 4 . 4 of this report

6. 5 EUT Operating Condition

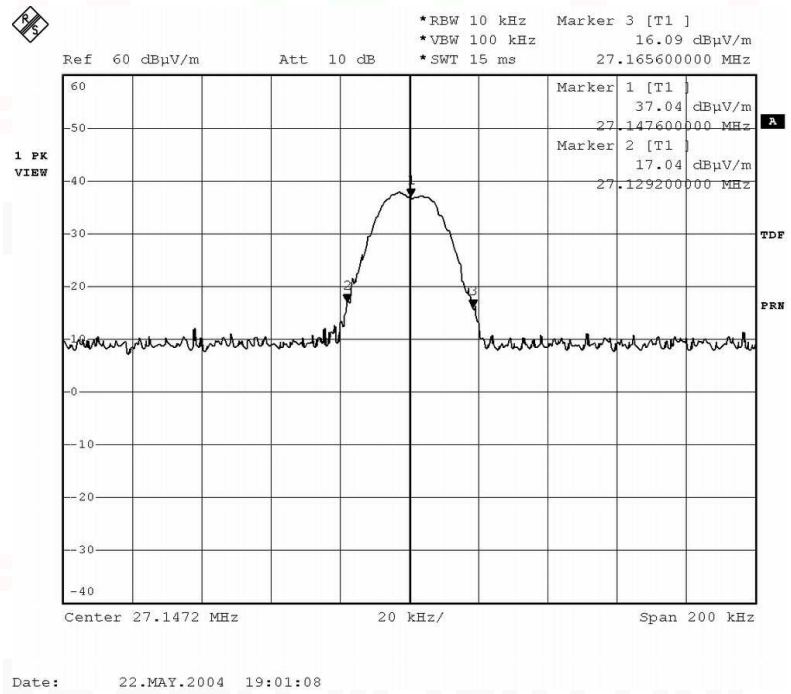
Same as section 4 . 5 of this report.

6. 6 Band Edge Limit

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)).

6. 7 Band Edge Test Result

Product	: Wireless Keyboard	Test Mode	: Normal
Test Item	: Band Edge Data	Temperature	: 25 ℃
Test Voltage	: DC 3V (Power by Battery)	Humidity	: 50%RH
Test Result	: **PASS**		



Note: (1) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in Section 15.209.

(2) The average measurement was not performed when the peak measured data under the limit of average detection.

7. Photos of Testing

7. 1 EUT Test Photographs

Radiated emission test view

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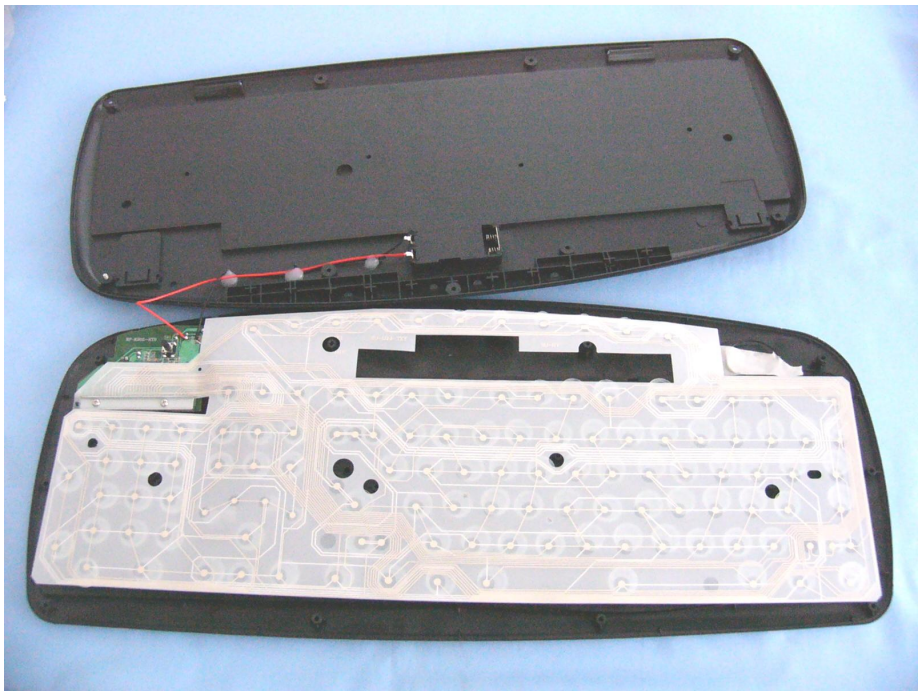
7. 2 EUT Detailed Photographs

Tx top view

Tx bottom view

Tx inside whole view



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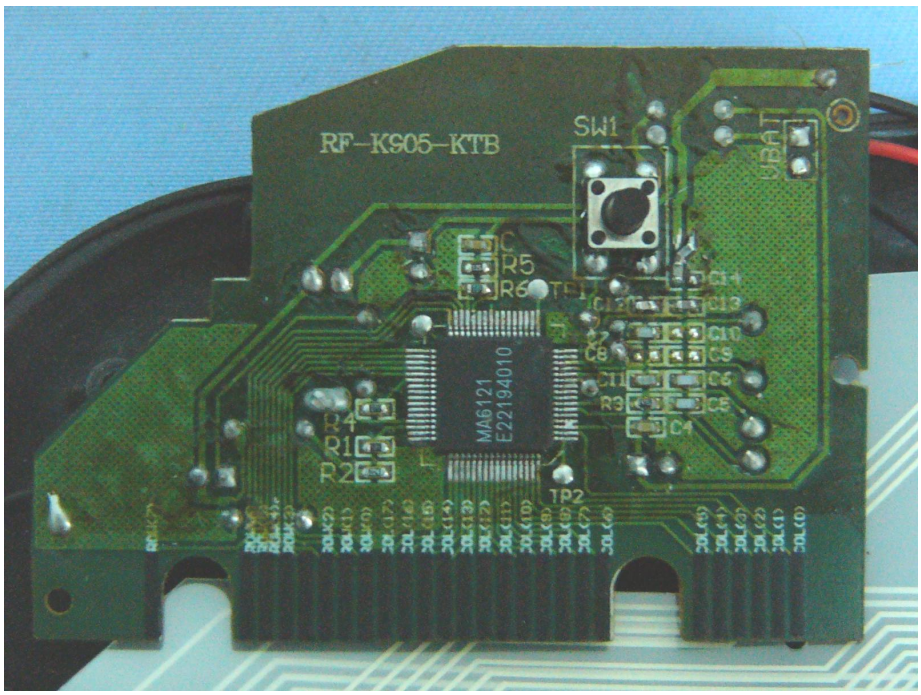
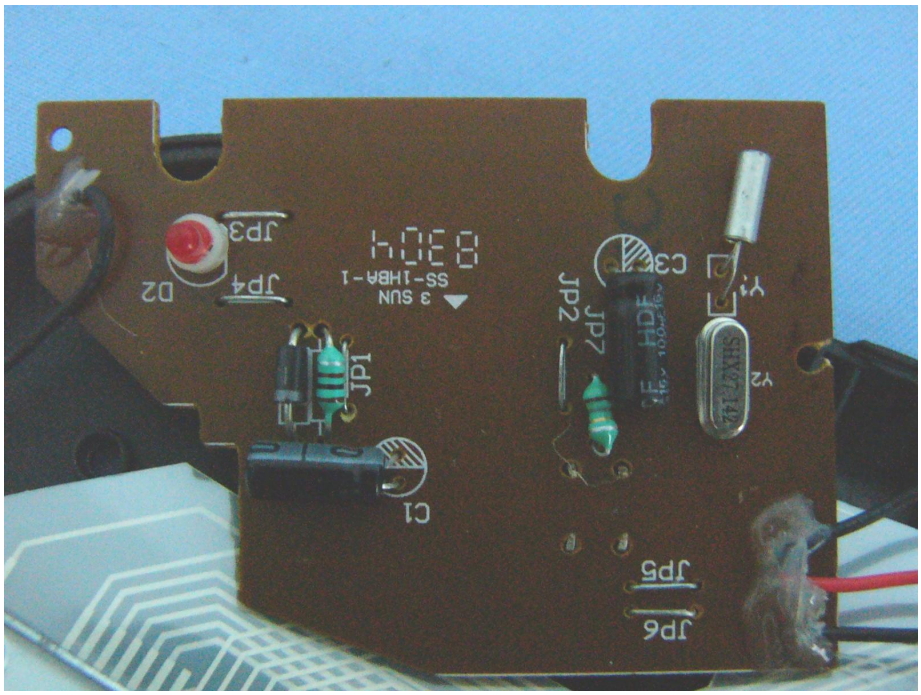
Tx board component side



Tx Main board solder side



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8. FCC ID Label

FCC ID: R6TK905M308RC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Label must not be a stick-on paper label. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT

EUT Bottom View/Proposed FCC ID Label Location

9. Test Equipment

The following test equipments were used during the radiated & conducted emission test:

Equipment/ Facilities	Manufacturer	Model #	Serial No.	Date of Cal.	Due Date
Turntable	KMO	KSZ001T	200306	NCR	NCR
Antenna Tower	KMO	KSZ002AT	200307	NCR	NCR
OATS	KMO	KSZSITE001	N/A	July 06, 2003	July 06, 2004
EMI Test Receiver	Rohde & Schwarz	ESPI3	100180	Oct.18, 2003	Oct.18, 2004
Signal Generator	Rohde & Schwarz	SMT03	100059	Feb.01, 2004	Feb.01, 2005
Biconical Antenna	Rohde & Schwarz	HK116	EMC0502	Dec. 14,2003	Dec. 14,2004
Bilog Antenna	Chase	CBL6111C	2576	Feb.01, 2004	Feb.01, 2005
Ultra Broadband Antenna	Rohde & Schwarz	HL 562	100110	June.05, 2004	June.05, 2004
AMN	Rohde & Schwarz	ESH3-Z5	100196	Oct. 23,2003	Oct. 23, 2004
AMN	Rohde & Schwarz	ESH3-Z5	100197	Oct. 23,2003	Oct. 23, 2004
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A	N/A
KMO Shielded Room	KMO	KMO-001	N/A	N/A	N/A
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	Feb. 27, 2004	Feb.27, 2005
AMN	Rohde & Schwarz	ESH3-Z5	100002	Feb. 01, 2004	Feb.01, 2005
LISN	Kyoritsu	KNW-407	8-1441-8	Feb. 23, 2004	Feb.23, 2005
EMI Test Receiver	Rohde & Schwarz	ESI26	838786/013	Feb. 01, 2004	Feb.01, 2005
Bilog Antenna	Chase	CBL6112B	2591	Feb. 01, 2004	Feb.01, 2005
Horn Antenna	Rohde & Schwarz	HF906	100014	Feb. 01, 2004	Feb.01, 2005
Power Meter	Rohde & Schwarz	NRVD	100041	Feb. 01, 2004	Feb.01, 2005
Radio Communication Test Set	Rohde & Schwarz	CMS 54	846621/024	Feb 01, 2004	Feb 01, 2005
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb 01, 2004	Feb 01, 2005
Temperature Chamber	TABAI	PSL-4GTW	N/A	Feb 06,2004	Feb 06, 2005
3m Semi-Anechoic Chamber	Albatross Projects	9mX6mX6m	N/A	Feb. 01, 2004	Feb.01, 2005