Test Report

Report No.

FCC ID

Specifications

Test Method

Applicant

Applicant

address

Chic Technology Corp.

C3115193

IOWCKM33XXX

ANSI C63.4 1992

FCC Part 15, Class B

16F, No. 150, Chien-I Road, 235 Chung Ho City,

Taipei Hsien, Taiwan, R.O.C.

Items tested

Model No.

Frequency Range

Wireless Keyboard

CKB-330; CHIC 1440UP; MD6434 (Sample # C31192)

26.96MHz to 27.28MHz

Results

Date

Compliance (As detailed within this report)

12/30/2002 (month / day / year) (Sample Received)

02/26/2003 (month / day / year) (Tested)

Prepared by

Authorized by

Issue dat

Project Engineer

V.General Manager (Jacob Lin)

(month / day / year)

Modifications

Tested by

Office at

Open site at

Training Research Co., Ltd. (Accredited by NVLAP)

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Conditions of issue:

This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.

April 9, 2003

The test data in this test report are following the procedures in accordance with the terms of accreditation.

- This test report and measurements made by TRC are traceable to the NIST only Conducted and Radiated Method (TRC is accredited by NVLAP, code No.: 200174-0).
- The device has been tested is fully complied with the requirements the Directive FCC Part 15.

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# Chapter 1 Introduction

## Description of EUT:

**EUT** : Wireless Keyboard

Model No. : CKB-330; CHIC 1440UP; MD6434

**Product name**: Wireless Optical Mouse & Keyboard

**Frequency Range :** 26.96 – 27.28 MHz

**Power Type** : Transmitter: Powered by two 1.5VDC AA batteries

\*This EUT has two channels (each with 256 IDs):

1. 27.0450 MHz 2. 27.0950 MHz

#### Test method:

Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

During the measurement, there are two modes were tested: "Channel 1" and "Channel 2" modes. The radiation pretest was found out the testing mode: "Channel 1" was the worst case and we only recorded worse cases in this report.

While testing, the EUT was made to transmit continuously and adjusted at a position, which transmitted the maximum emission.

The test placement as the photographs showed is the worst case emission placed. (If the emission is close to the ambient, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

The testing configuration of test setup is showing in the next page.

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onfiguration of Test Setup	
EUT (Tx)	

# **EUT:**

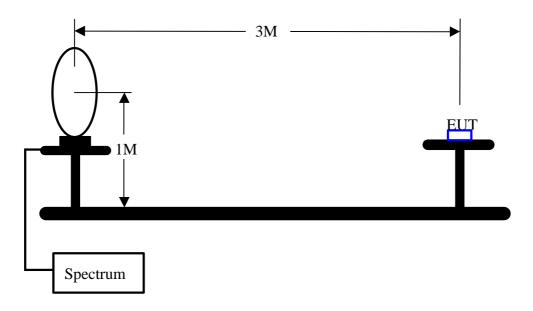
Put three AA size, 1.5V battery into the battery cell of EUT, powers the subject device. The EUT does not be connected with any product.

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# Chapter 2 Peak Power Measurement (Frequency Band: 26.96 ~ 27.28)

#### Test Setup:

# 1. Test Setup:



#### 2. Test Procedure:

- a. The EUT was setup in the anechoic chamber as shown above.
- b. The loop antenna was located upon its plane vertical, 3-meter distance from the EUT. The center of the loop is 1-meter above the ground plane.
- c. In order to find the maximum radiation, the EUT was rotated 360°. The measuring antenna was rotated about its axis at each azimuth about the EUT.

## List of test Instrument:

				<u>Calibration</u>	<u>n Date</u>
Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
Receiver	SCR3102	SCHAFFNER	012	03/29/03	03/28/04
Control Box	TRC-CB-2	TRC	CB-002	N/A	N/A
Antenna	6502	EMCO	9206-2777	06/10/02	06/09/03
Open test side (An	tenna, Amplify	, cable calibrated tog	gether)	05/16/02	05/15/03

The level of confidence of 95%, the uncertainty of measurement of radiated emission is  $\pm$  3.44 dB.

# Test Result : Appendix A

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# Chapter 3 Radiated Emission Test

# Test Condition and Setup:

**Pretest:** Prior to the final test ,the EUT is placed in an anechoic chamber, and scan from 30MHz to 1GHz. The devices rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit. This is done to ensure the radiation exactly emits form the EUT.

**Final test:** Final radiation measurements is made on a 3 – **meter** open-field test site. The EUT's maximum emission of radiation is placed on a nonconductive table, which is 0.8m height, the top surface is  $1.0 \times 1.5$  meter. All placement is according to ANSI C63.4 - 1992.

The emissions was examined from 30 MHz to 1000 MHz measured by receiver.

The whole range Antenna is used to measure frequency from 30 MHz to 1 GHz. The final test is used the receiver.

Measure more than six top marked frequencies generated form pretest by computer step by step at each frequency. The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meters to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier, which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading. The spectrum analyzer's 6dB bandwidth is set to 120 KHz, and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient, the tester will recheck the data and the corrected data will be written in the test data sheet. If the emission is just within the ambient, the data from shield room will be taken as the final data.

#### List of test Instrument:

				Calibration Date			
Instrument Name	Model No.	Brand	Serial No.	Last time	Next time		
RECEIVER	SCR3102	SCHAFFNER	012	03/29/03	03/28/04		
Control Box	TRC-CB-2	TRC	CB-002	N/A	N/A		
Antenna	VULB 9160	SCHAFFNER	4188	11/29/02	11/29/03		
Open test side (Antenna, Amplify, cable calibrated together) 05/16/02 05/15/03							

The level of confidence of 95%, the uncertainty of measurement of radiated emission is  $\pm$  3.44 dB.

# <u>Test Result : Pass (Appendix A)</u>

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# Radiated Test Placement: (Photographs)





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Training Research Co., Ltd., TEL: 886-2-26461146, Fax: 886-2-26461778

# Appendix A

## Peak Power Test Result: (Horizontal)

Frequency	Reading Amplitude	Correction Factors	Corrected Amplitude	Limit	Margin
MHz	dΒμV	dB/m	dBµV/m	dBµV/m	dB
27.2000	63.09	-8.30	54.79	80.00	-25.21

### Radiated Emission Test Result: (Horizontal)

**Test Conditions:** 

Testing site : Temperature : 30 ° C Humidity : 70 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B Limit	Margin
MHz	dBμV	m	degree	dB/m	$dB\mu V/m$	dBμV/m	dB
54.3975	31.34	1.01	109	-6.33	25.01	40.00	-14.99
81.5963	38.67	2.51	40	-9.86	28.81	40.00	-11.19
135.9938	39.48	1.01	33	-4.40	35.08	43.52	-8.44
163.1938	42.01	1.01	204	-5.63	36.38	43.52	-7.14
190.3913	42.97	1.01	193	-4.57	38.40	43.52	-5.12
217.5875	33.23	2.51	6	-2.51	30.72	46.02	-15.30
244.7880	37.65	2.51	191	-2.16	35.49	46.02	-10.53
326.3850	31.47	2.51	0	0.19	31.66	46.02	-14.36
***							

#### Note:

- 1. Margin = Amplitude limit, *if margin is minus means under limit*.
- 2. Corrected Amplitude = Reading Amplitude Correction Factors
- 3. Correction factor = Antenna factor + ( Cable Loss Amplitude gain)

(For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

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# Peak Power Test Result: (Vertical)

Frequency	Reading Amplitude	Correction Factors	Corrected Amplitude	Limit	Margin
MHz	dΒμV	dB/m	dBμV/m	dBµV/m	dB
27.1950	65.67	-8.30	57.37	80.00	-22.63

### Radiated Emission Test Result: (Vertical)

**Test Conditions:** 

Testing site : Temperature : 30 ° C Humidity : 70 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B Limit	Margin
MHz	dBμV	m	degree	dB/m	$dB\mu V/m$	$dB\mu V/m$	dB
54.3970	28.30	1.00	88	-6.33	21.97	40.00	-18.03
81.5961	40.95	1.00	309	-9.86	31.09	40.00	-8.91
135.9938	34.63	3.98	355	-4.40	30.23	43.52	-13.29
163.1938	42.59	3.98	258	-5.63	36.96	43.52	-6.56
190.3911	32.65	3.98	102	-4.57	28.08	43.52	-15.44
217.5865	33.74	3.98	288	-2.51	31.23	46.02	-14.79
244.7780	30.95	2.51	296	-2.17	28.78	46.02	-17.24
***							

### Note:

- 1. Margin = Amplitude limit, *if margin is minus means under limit*.
- 2. Corrected Amplitude = Reading Amplitude Correction Factors
- 3. Correction factor = Antenna factor + ( Cable Loss Amplitude gain)

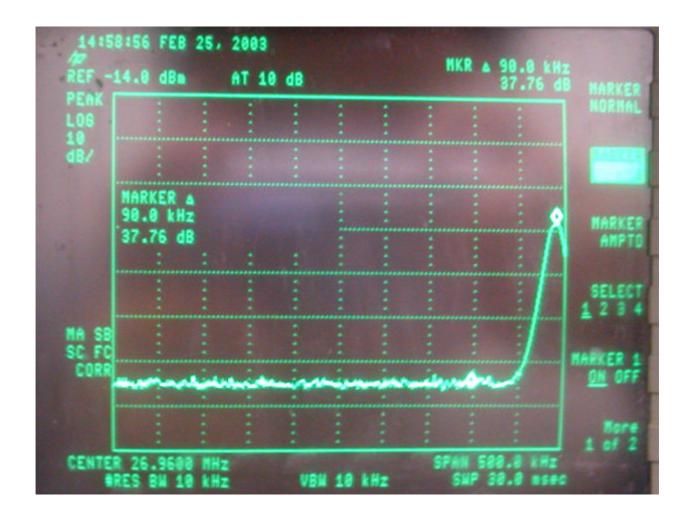
(For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

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# Appendix B

Band Edge of Measurement: (Frequency Band: 26.96 ~ 27.28)

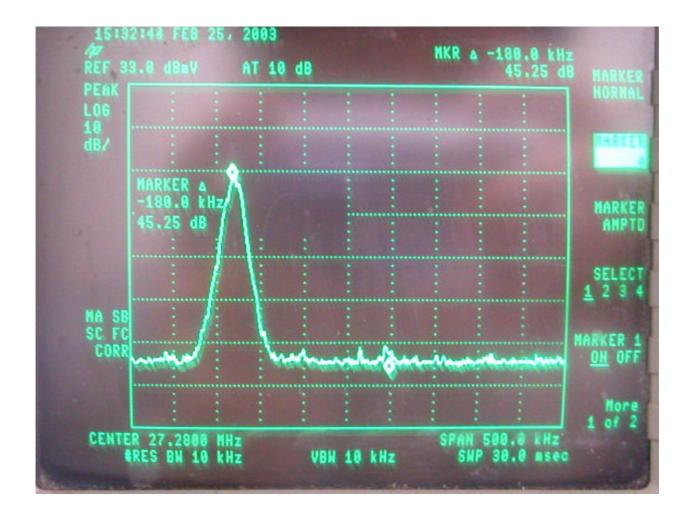
#### Lower channel



26.96MHz << Class B Limit.

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# **Upper channel:**



**27.28** MHz < < Class B Limit.