Report No.	C3115979
Specifications Test Method	FCC Part 15.109(g), Class B ANSI C63.4 1992
Applicant address	3F, No. 15, Alley 11, Lane 327, Sec. 2, Chung Shan Rd., Chung Ho City, Taipei Hsien, Taiwan, R.O.C.
Applicant Items tested Model No.	Chic Technology Corporation PS/2 Mouse CM-PS2-720 (Sample # C31979)
Results Sample received data	**Compliance** (As detailed within this report) 02/11/1999 (month / day / year)
Prepared by	project engineer
Authorized by	Vice General Manager (Jacob Lin)
Issue date	(month / day / year)
Modifications	**None**
Tested by Office and Open site at	Training Research Co., Ltd. No. 15, Lane 530, Pa-Lian RD., Sec. 1, Hsi-Chih Town, Taipei Hsien, Taiwan, R.O.C.

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★ ***FCC ID : IOWCM-PS2-720***

Contents

Chapter 1 Introduction

Chapter 2 Conducted Emission Test

Chapter 3 Radiated Emission Test

Appendix A :

Appendix B :

Chapter 1 Introduction

Description of EUT :

The tested EUT is a PS/2 mouse. It has two buttons and one scrolling wheel. It is suitable for IBM or compatible computer.

Connections of EUT :

Connect the mouse to the mouse port of PC

Test method :

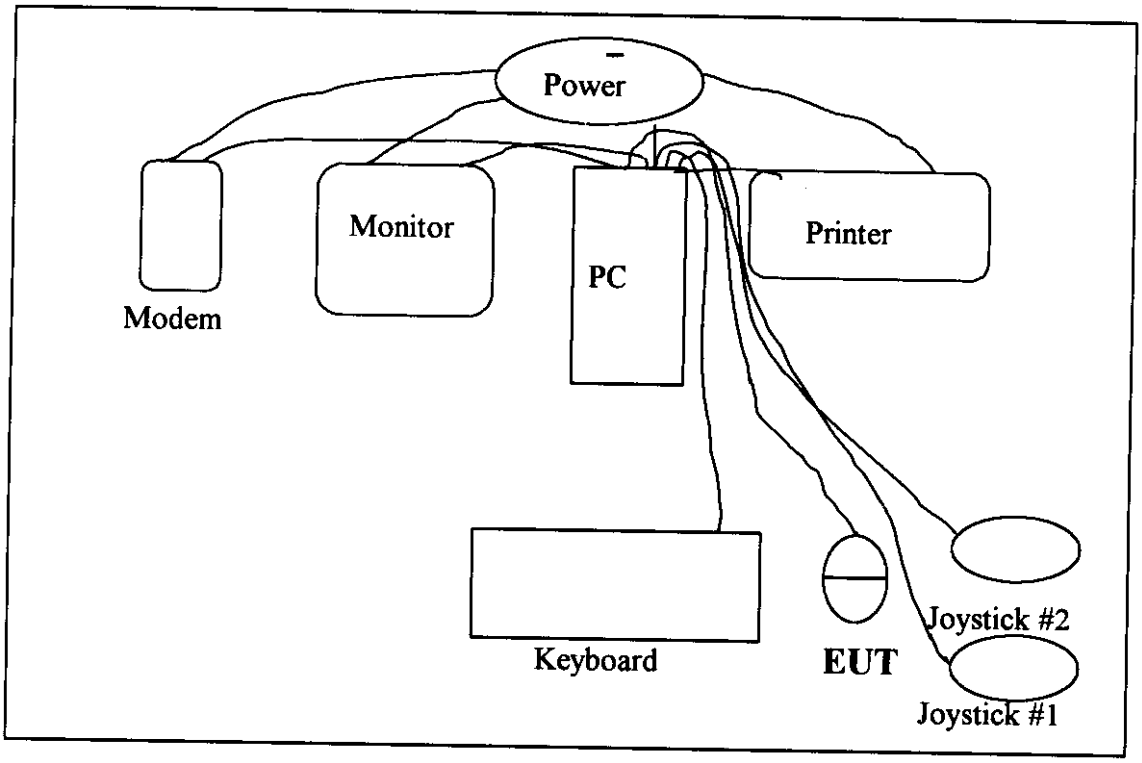
All measurements contained in this report were performed according to the techniques described in Measurement procedure ANSI C63.4 – 1992.

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

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.

Configuration of test setup



Connections:

PC:

*Serial A port --- a external modem

*Serial B port --- a RS-232 cable left unterminal

*Monitor port --- a monitor

*Printer port --- a Printer

*Keyboard port --- a Keyboard

*Mouse port --- **EUT**

*USB ports --- two USB joysticks.

(Each port on PC is connected with suitable device)

EUT:

*PS/2 plug --- via a 1. 5m long, no ferrite bead, non-shielded cable to the mouse port of PC.

List of support equipment

Conducted (Radiated) test:

PC	:	**ACER**
Model	:	VKT33T –X30 –0637X
Serial No.	:	TV69584
FCC ID	:	HLZV65X-IDCATX
Power type	:	AC 110~120 / 220~240 VAC, Switching
Power cord	:	non-Shielded, 1.7m long, Plastic, no ferrite core
Monitor	:	**HP**
Model No.	:	D2821
Serial No.	:	TW 73512262 (TW 73147163)
FCC ID	:	A3KMO64
Power type	:	AC 110~120 / 220~240 VAC, Switching
Power cord	:	Non-Shielded, 3m long, no ferrite core
Data cable	:	Shielded, 1.8m long, with ferrite core
Keyboard	:	**Digital**
Model No.	:	KB-5923
Serial No.	:	9S74904837 (9S74904665)
FCC ID	:	E8HKB-5923
Power type	:	By PC
Data cable	:	Shielded, 1.8m long, with ferrite core
Printer	:	**HP**
Model No.	:	C2642A
Serial No.	:	SG69A196GV
FCC ID	:	B94C2642X
Power type	:	220 VAC, 50Hz
Power cord	:	Non-shielded, 2m long, no ferrite core
Data cable	:	Shielded, 1.84m long, no ferrite core (1.7m)

Modem	:	**ACEEX**
Model No.	:	XDM-9624
FCC ID	:	IFAXDM-9624
Power type	:	220VAC, 50Hz / 9VAC, 1A
Power cord	:	Non-shielded, 1.9m long, no ferrite cord
Data cable	:	RS232, Shielded, 1.2m long, no ferrite core
		RJ11C x 2, 7' long non-shielded, no ferrite core

Joystick	:	**Padix**
Model	:	QF-3U, QF-305U (DoC Approval)
Power Type	:	By PC

Chapter 2 Conducted emission test

Test condition and setup:

All the equipment is placed and setup according to the ANSI C63.4 - 1992.
The EUT is assembled on a wooden table that is 80 cm high, is placed 40 cm from the back-wall which is a vertical conducting plane. One LISN is for EUT, the other LISN is for support equipment. They are all placed on the conductive ground. The EUT's LISN connect a line switch box for selecting L1 or L2, then connect to a preamplifier and spectrum.

The spectrum scans from 150KHz to 30MHz. Conducted emission levels are detected at max. peak mode. But if the max. peak mode failed, it will be measured by CISPR's quasi-peak detection mode.

While testing, there is the worst-emission plot printed at peak detection mode, and there are more than 6 highest emissions relative to limit recorded. The plot is kept as the original data, not included in test report.

List of test Instrument :

				Calibration Date	
Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
Spectrum analyzer	8594EM	H P	3710A00279	01/07/99	01/07/00
LISN (EUT)	3825/2	EMCO	9411-2284	05/15/98	05/15/99
LISN (Support E.)	AC3-001	TRC	- - - - - - - - -	05/15/98	05/15/99
Preamplifier	AC3-002	TRC	- - - - - - - - -	05/15/98	05/15/99
Line switch box	AC3-003	TRC	- - - - - - - - -	05/15/98	05/15/99

The level of confidence of 95%, the uncertainty of measurement of conducted emission is ± 2.4 dB.

Test Result: Pass (Appendix A)

Chapter 3 Radiated emission test

Test condition and setup:

Pretest: Prior to the final test (OATS test), the EUT is placed in a anechoic chamber and scan from 30MHz to 1GHz. This is done to ensure the radiation exactly emits form the EUT.

Final test: Final radiation measurement is made on a **10 – meter,** open-field test site. The EUT is placed on a nonconductive table that is 0.8m height, the top surface is 1.0 x 1.5 meter. The placement is according to EN 55022.

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The EMCO whole range Antenna is used to measure frequency from 30 MHz to 1GHz. The final test is used the spectrum HP 8594EM.

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 data will be rechecked by the tester and the corrected data will be written in the test data sheet. If the emission is just within the ambient, the data from anechoic chamber will be taken as the final data.

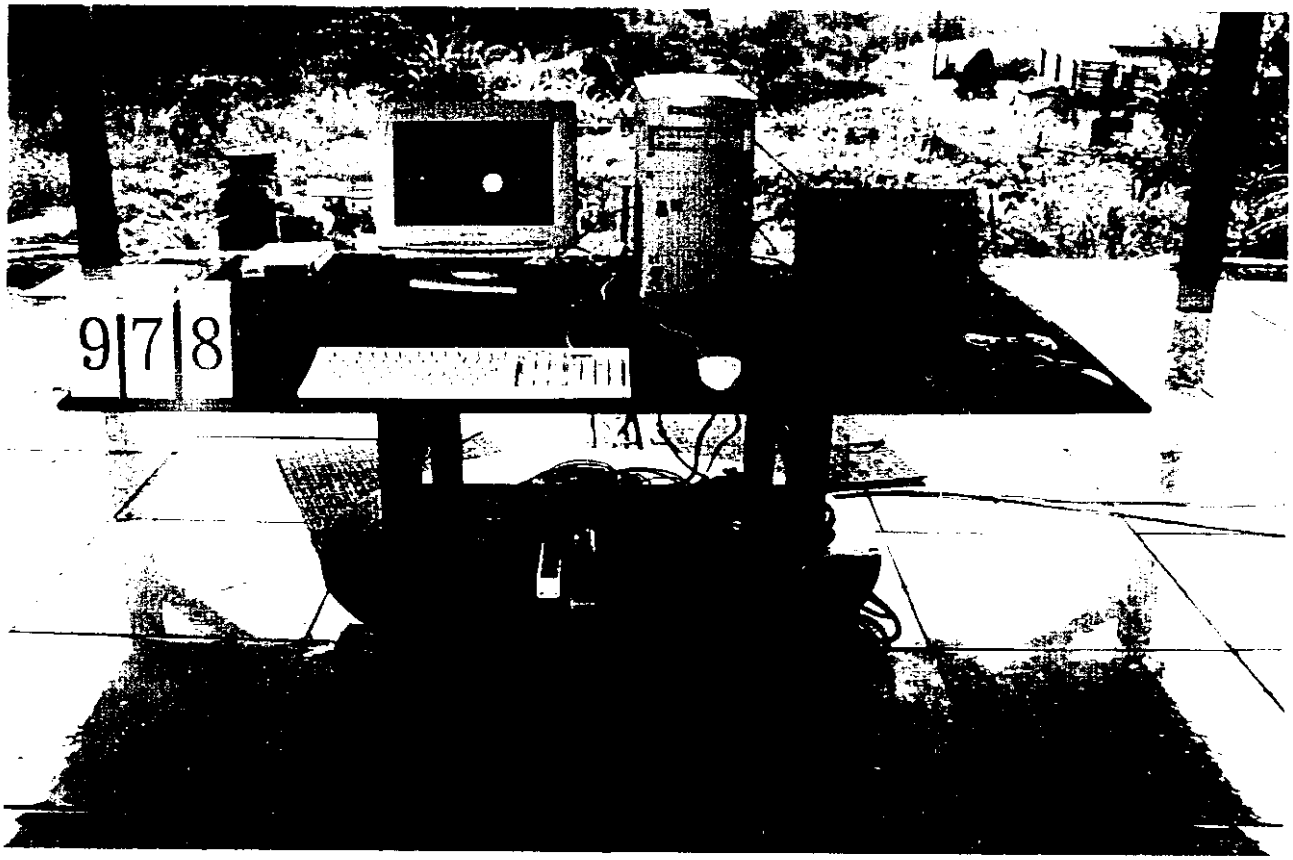
List of test Instrument:

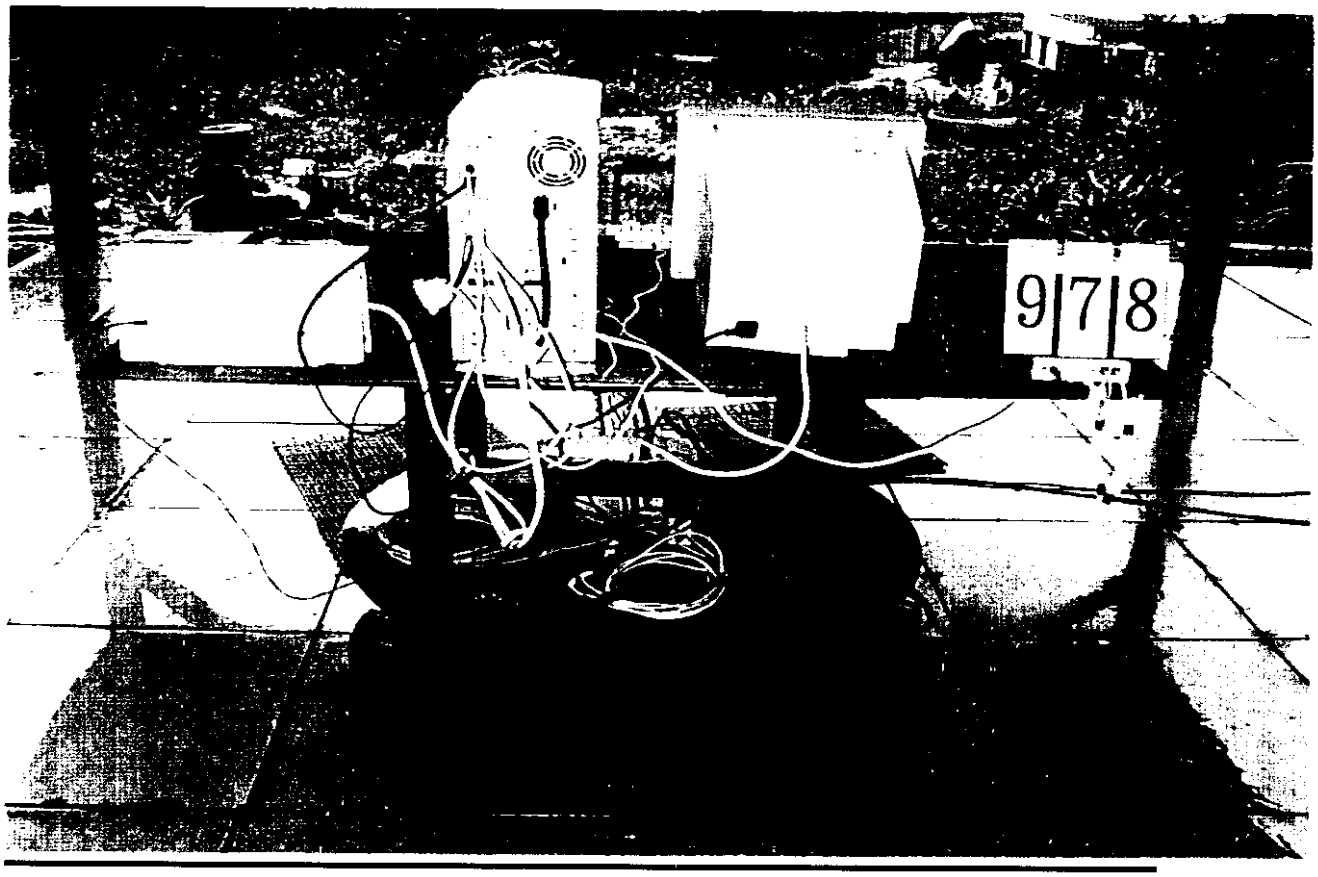
				Calibration Date	
Instrument Name	Model No.	Brand	Serial No.	Last	Next
Spectrum analyzer	8594EM	H P	3619A00198	11/17/98	11/17/99
RF Pre-selector	AC4-001	TRC	- - - - - - - - -	05/15/98	05/15/99
Antenna (30M-2G Hz)	3141	EMCO	9711-1076	12/17/98	12/17/99
Open test side (Antenna, Amplify, cable calibrated together)				05/15/98	05/15/99

The level of confidence of 95%, the uncertainty of measurement of radiated emission is ± 4.96 dB.

Test Result: Pass (Appendix B)

Radiated Test Placement : (Photographs)





Appendix A

Conducted Emission Test Result:

Testing room : Temperature : 28 ° C Humidity : 46 % RH

Line 1

FREQUENCY (KHz)	READING AMPLITUDE			LIMIT		MARGIN (dB)
	Peak (dBμV/m)	Quasi-peak (dBμV/m)	Average (dBμV/m)	Quasi-Peak (dBμV/m)	Average (dBμV/m)	
157	47.88	***.**	***.**	65.80	55.80	-7.92
518	33.77	***.**	***.**	56.00	46.00	-12.23
641	35.82	***.**	***.**	56.00	46.00	-10.18
764	35.73	***.**	***.**	56.00	46.00	-10.27
857	34.69	***.**	***.**	56.00	46.00	-11.31
886	35.36	***.**	***.**	56.00	46.00	-10.64
1099	34.88	***.**	***.**	56.00	46.00	-11.12
1224	34.59	***.**	***.**	56.00	46.00	-11.41
1526	34.09	***.**	***.**	56.00	46.00	-11.91
1646	34.35	***.**	***.**	56.00	46.00	-11.65

Line 2

FREQUENCY (KHz)	READING AMPLITUDE			LIMIT		MARGIN (dB)
	Peak (dBμV/m)	Quasi-peak (dBμV/m)	Average (dBμV/m)	Quasi-Peak (dBμV/m)	Average (dBμV/m)	
157	45.63	***.**	***.**	65.80	55.80	-10.17
518	34.00	***.**	***.**	56.00	46.00	-12.00
641	35.70	***.**	***.**	56.00	46.00	-10.30
764	35.85	***.**	***.**	56.00	46.00	-10.15
857	33.69	***.**	***.**	56.00	46.00	-12.31
891	36.34	***.**	***.**	56.00	46.00	-9.66
978	33.99	***.**	***.**	56.00	46.00	-12.01
1099	34.30	***.**	***.**	56.00	46.00	-11.70
1274	33.77	***.**	***.**	56.00	46.00	-12.23
1410	34.03	***.**	***.**	56.00	46.00	-11.97

* The reading amplitudes are all under average limit.

Appendix B

Radiated Emission Test Result: (Vertical)

Test Conditions:

Testing room : Temperature : 14 ° C Humidity : 66 % RH

Testing site : Temperature : 15 ° C Humidity : 62 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	dBμV/m	m	degree	dB/m	dBμV/m	dBμV/m	dB
39.990	51.34	0.99	247	-25.84	25.50	30.00	-4.50
48.010	53.07	2.49	249	-26.45	26.62	30.00	-3.38
200.490	51.13	4.00	167	-22.73	28.40	30.00	-1.60
389.510	41.64	4.00	187	-15.81	25.83	37.00	-11.17
457.220	42.72	0.99	130	-14.01	28.71	37.00	-8.29
600.150	42.54	4.00	30	14.56	57.10	37.00	20.10
***							

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)

4.**The other emissions of horizontal and vertical polarity are all under the limit more than twenty dB in OATS.**

Final statement :

This test report, measurements made by TRC are traceable to the NIST.