

# ***EXHIBIT B***

## ***Test Report***

Report No.	C3115507
Specifications	FCC Part 15.109(g), Class B
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Applicant Items tested	Chic Technology Corporation. USB MOUSE
Results	As detailed within this report
Sample received date	04/09/98 (month / day / year ) (Sample #C31507)
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Modifications	None
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★ FCC ID : IOWCM-USB

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**Chapter 1 Introduction****Description of EUT :**

This device is a USB mouse that works in Windows 98. It is designed to be connected with PC by USB port .

**Connections of EUT:**

(1)Connect the EUT to USB Port of PC .

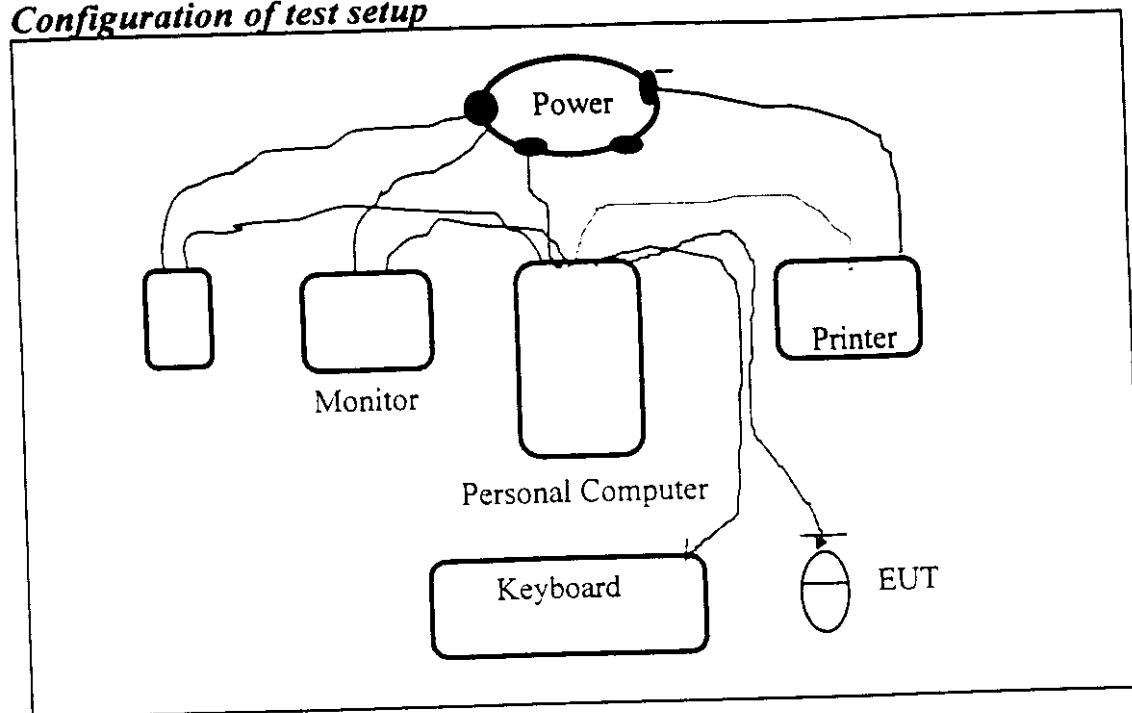
**Test method :**

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

During testing ,the PC was in Windows 98 and make sure that the EUT can work .

The test placement as the photographs showed is the worst case emission placed. (If the emission is close to the ambience, 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 shown on the next page.***

Configuration of test setupConnections :PC :

- \*Serial port --- a modem .
  - \*Printer port --- a Printer
  - \*Keyboard port --- a Keyboard
  - \*Mouse port --- a mouse
  - \*USB port ---- EUT
  - \*Monitor port --- a monitor
- (Each port on PC is connected with suitable device)

**List of support equipment****Conducted (Radiated) test :**

**PC : HP**  
Model : Brio 80XX  
Serial No. : SG75150105  
FCC ID : DOC approval  
Power type : AC 117 VAC ,switching  
Power cord : non-Shielded, 1.7m long ,Plastic ,no ferrite core

**Monitor : HP**  
Model No. : D2084(D2813)  
Serial No. : KR4397004(TW63803597)  
FCC ID : CSYSC-428VSP(A3KM043)  
Power type : 117VAC ,Switching  
Power cord : Non-Shielded, 3m long ,no ferrite core  
Data cable : Shielded, 1.8m long ,with ferrite core

**Keyboard : HP**  
Model No. : C3757 #ABO (C3346A #ABO)  
Serial No. : C3757-60423(C3346-60231)  
FCC ID : CIGE03614  
Power type : By PC  
Data cable : Shielded, 1.8m long ,with ferrite core

**Printer : EPSON**  
Model No. : P78PA(P70RA)  
Serial No. : 0EE0014030(10010386)  
FCC ID : BKM9A8P70RA  
Power type : Linear  
Power cord : Non-shielded, 2m long, no ferrite core  
Data cable : Shielded,1.84m long ,no ferrite core (1.7m)

**Chapter 2 Conducted emission test****Test condition and set up :**

All the equipment is placed and setup according to the ANSI C63.4 - 1992 .  
The EUT is assembled on a wooden table which 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 450KHz 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 a 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 :**

Instrument Name	Model No.	Brand	Serial No.	<u>Calibration Date</u>	
				Last time	Next time
Spectrum analyzer	8591EM	H P	3619A00821	08/29/96	08/29/97
LISN (EUT)	3825/2	EMCO	9411-2284	05/15/97	05/15/98
Preamplifier	8447F	H P	2944A03706	05/13/97	05/15/98
Line switch box	AC1-003	TRC	-----	05/15/97	05/15/98
Line selector	AC1-002	TRC	-----	05/15/97	05/15/98

The level of confidence of 95% ,the uncertainty of measurement of conducted emission is  $\pm 2.4$  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 shielded enclosure ,GTEM, and scan from 30MHz to 1GHz.This is done to ensure the radiation exactly emits form the EUT.

**Final test :** Final radiation measurements is made on a **10 – meter**, open-field test site. The EUT is placed on a nonconductive table which is 0.8 m height, the top surface is 1.0 x 1.5 meter. All the placement is according to ANSI C63.4 - 1992.

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 K Hz , and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambience, 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 GTEM will be taken as the final data.

#### List of test Instrument :

Instrument name	Model No.	Brand	Serial No.	Calibration Date	
				Last	Next
Spectrum analyzer	8568B	H P	3004A18617	05/15/97	05/15/98
Quasi-peak Adapter	85650A	H P	2521A00984	05/15/97	05/15/98
RF Pre-selector	85685A	H P	2947A01011	05/15/97	05/15/98
Spectrum analyzer	8594EM	H P	3619A00198	08/13/97	08/13/98
Antenna(30M-2G Hz)	3142	EMCO	9610-1094	10/30/96	10/30/97
Open test side (Antenna ,Amplify, cable calibrated together )				05/15/97	05/15/98

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

#### Test Result : Pass (Appendix B)



## Appendix A

### Conducted Emission Test Result:

Testing room : Temperature : 25 ° C      Humidity : 67 % RH

#### Line 1

Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV/m)	Margin (dB)
0.150	51.47	56.00	-4.53
3.505	31.14	50.00	-14.86
8.043	33.00	50.00	-17.00
9.677	36.95	50.00	-13.05
9.826	43.06	50.00	-6.94
10.568	33.92	50.00	-16.08
12.052	33.39	50.00	-16.61
20.116	40.06	50.00	-9.94
24.097	39.57	50.00	-10.43
28.070	32.27	50.00	-17.73

#### Line 2

Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
0.225	49.34	53.87	-4.53
3.803	30.58	46.00	-15.42
8.043	32.71	50.00	-17.29
9.752	41.01	50.00	-8.99
9.826	40.60	50.00	-9.40
10.568	33.96	50.00	-16.04
12.052	33.66	50.00	-16.34
20.116	39.87	50.00	-10.13
24.097	39.83	50.00	-10.17
28.070	30.68	50.00	-19.32

*All emissions are under average limit.*

## Appendix B

## Radiated Emission Test Result :(Horizontal)

Test Conditions:

Testing room : Temperature: 26.4 ° C Humidity : 65 % RH  
 Testing site : Temperature: 30° C Humidity : 85 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB

48.803	36.55	4.00	264	-12.20	24.35	30.00	-5.65
60.284	36.65	4.00	131	-14.42	22.23	30.00	-7.77
120.934	37.03	4.00	346	-14.01	23.02	30.00	-6.98
432.068	42.48	4.00	184	-16.41	26.07	37.00	-10.93
465.329	44.13	4.00	279	-15.29	28.84	37.00	-8.16
498.551	38.86	4.00	6	-14.24	24.62	37.00	-12.38
531.817	39.99	1.00	89	-13.04	26.95	37.00	-10.05
598.289	38.92	1.00	172	-10.05	28.87	37.00	-8.13
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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)

***Radiated Emission Test Result: (Vertical)***

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	DBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB

48.803	36.84	1.00	177	-12.20	24.64	30.00	-5.36
60.284	36.77	4.01	71	-14.42	22.35	30.00	-7.65
120.934	37.98	4.00	36	-14.01	23.97	30.00	-6.03
432.068	43.38	1.00	20	-16.41	26.97	37.00	-10.03
465.329	40.84	1.00	37	-15.29	25.55	37.00	-11.45
498.551	41.83	1.00	237	-14.24	27.59	37.00	-9.41
531.817	38.95	4.01	343	-13.04	25.91	37.00	-11.09
598.289	41.38	4.01	214	-10.05	31.33	37.00	-5.67
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***This test report, measurements made by TRC are traceable to the NIST.***