

EXHIBIT B

Test Report

Report No	D1315158
Specifications	FCC Part 15 Class B
Test Method	ANSI C63.4 1992
Applicant address	3F, NO. 1448-1 Nei Hu Rd, Sec. 2, TAIPEI, TAIWAN
Applicant	Datacomp Electronics CO., LTD.
Items tested	Infrared Receiver (Keyboard, Mouse, and Controller)
Model No.	DR-1
Results	As detailed within this report
Sample received data	11/28/1997 (month / day / year) (Sample # D13158)
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Chapter 1 Introduction

Description of EUT:

The Infrared Keyboard set is a cableless facility with a infrared receiver connected to keyboard and mouse port. It can transmit data to computer by pressing the keys through a infrared receiver.

Connections of EUT:

Connect the infrared receiver of EUT to the keyboard port and serial port of PC.

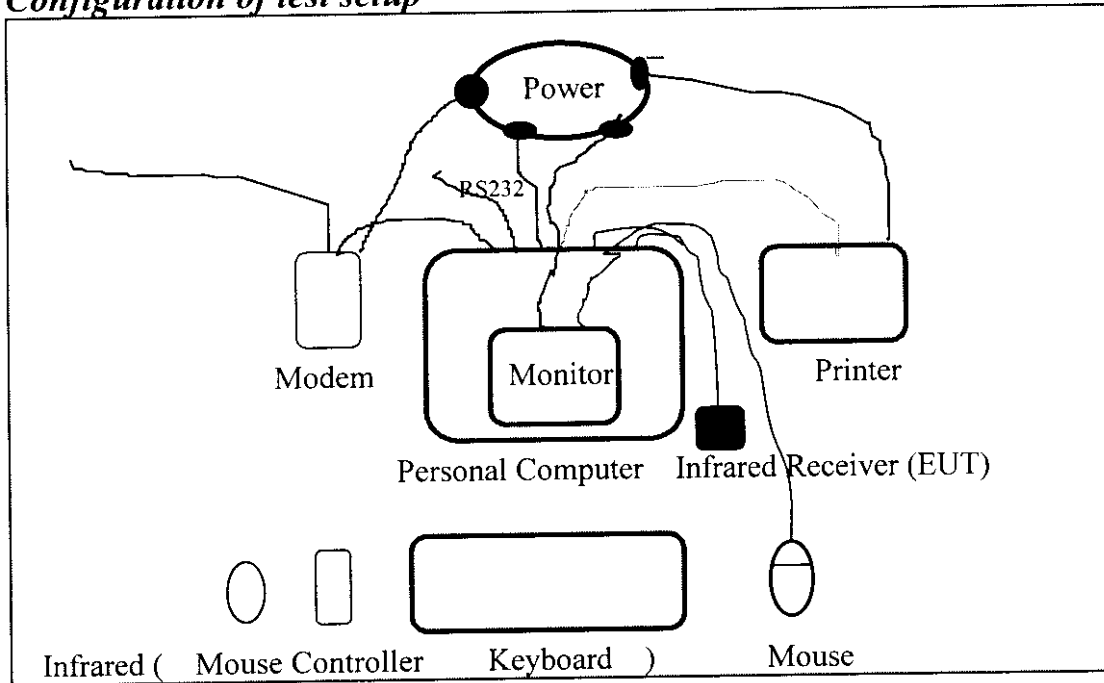
Test method:

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 is worse than standby mode. So, The final test is made at the operating mode.

During testing, the EUT was depressed one key continuously. This was done in order to ensure that maximum emission levels were attained. 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 --- EUT
 - *Serial B port --- a 76 cm shielded RS232 cable
 - *Printer port --- a Printer
 - *Keyboard port --- EUT
 - *Mouse port --- a mouse
 - *Monitor port --- a monitor
- (Each port on PC is connected with suitable device)

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

Model : Vectra VE2
Serial No. : SG61803151(SG61802786)
FCC ID : HCJVECTRAVL5
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

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)

Modem : ACEEX 9624 External Fax / Modem

Model No. : XDM=9624
Serial No. : N / A
FCC ID : IFAXDM-9624
Power Type : Linear
Power Cord : Nonshielded, 5.5' long , Plastic hoods, No ferrite bead
Data Cable : RS-232 →Shielded, 3' long, Metal hoods , No bead
RJ-11C →Nonshielded, 7'long,Plastic hoods, No bead

Mouse : Hewlett Packard mouse
Model No. : C3751B
Serial No. : LCA52707170
FCC ID : DZL210582
Power type : Powered by PC
Power Cable : Non – Shielded. 5.5' long, Plastic hoods, No ferrite bead

Keyboard: Datacomp Infrared Keyboard

Model No. : IR-86
Power type : Better 6V
Data cable : None, by infrared

Mouse: Datacomp Infrared Mouse

Model No. : DM-1
Power type : Better 4.5V
Data cable : None, by infrared

Controller: Datacomp Infrared Controller

Model No. : DC-1
Power type : Better 4.5V
Data cable : None, by infrared

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 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 electing 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	10/06/97	10/06/98
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 ± 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 **3 - meter**, open-field test site. The EUT is placed on a nonconductive table which is 80 cm 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 meter 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 a□bient ,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.	<u>Calibration Date</u>	
				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 ± 4.96 dB .

Test Result : Pass (Appendix B)

Appendix A**Conducted Emission Test Result :**

Testing room : Temperature : 23.3° C Humidity : 63.1 % RH

Line 1

Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV/m)	Margin (dB)
1.410	37.40	48.00	-10.60
2.001	33.11	48.00	-14.89
7.234	32.18	48.00	-15.82
11.351	37.99	48.00	-10.01
11.865	36.71	48.00	-11.29
12.452	35.95	48.00	-12.05
16.703	36.14	48.00	-11.86
18.167	37.50	48.00	-10.50
21.748	33.53	48.00	-14.47
29.251	33.50	48.00	-14.50

Line 2

Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
1.632	33.32	48.00	-14.68
2.296	30.96	48.00	-17.04
10.690	35.13	48.00	-12.87
11.277	39.65	48.00	-8.35
11.498	39.33	48.00	-8.67
12.232	35.57	48.00	-12.43
17.069	34.23	48.00	-13.77
18.167	37.25	48.00	-10.75
24.228	31.14	48.00	-16.86
26.268	30.51	48.00	-17.49

Appendix B

Radiated Emission Test Result :(Horizontal)

Test Conditions:

Testing room : Temperature : 22.8 ° C Humidity : 53 % RH

Testing site : Temperature : 21.3° C Humidity : 80 % 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
35.308	37.87	4.00	5	-8.67	29.20	40.00	-10.80
41.218	36.86	2.50	156	-9.72	27.14	40.00	-12.86
42.196	36.98	4.00	132	-9.98	27.00	40.00	-13.00
126.100	47.91	1.00	49	-13.19	34.72	43.50	-8.78
171.843	46.57	4.00	96	-11.29	35.28	43.50	-8.22
180.575	44.83	4.00	261	-10.94	33.89	43.50	-9.61
431.058	44.34	1.00	242	-16.79	27.55	46.00	-18.45
729.479	43.36	1.00	189	-7.02	36.34	46.00	-9.66

Note:

1.Margin = Amplitude - limit, *if margin is minus means under limit.*

2.Corrected Amplitude = Reading Amplitude -

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	Ant.	Table	Correction	Corrected	Class B	Margin
	Amplitude	Height		Factors	Amplitude	limit	
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
35.308	45.83	1.00	295	-8.67	37.16	40.00	-2.84
41.218	37.58	1.00	294	-9.72	27.86	40.00	-12.14
42.196	45.40	1.00	149	-9.98	35.42	40.00	-4.58
126.100	45.31	1.00	306	-13.19	32.12	43.50	-11.38
171.843	49.56	1.00	142	-11.29	38.57	43.50	-4.93
180.575	42.47	1.00	119	-10.94	31.53	43.50	-11.97
431.058	52.64	1.00	267	-16.79	35.85	46.00	-10.15
729.479	42.97	4.00	265	-7.02	35.95	46.00	-10.05

Final statement :

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