

EXHIBIT B

Test Report

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Chapter 1 Introduction

Description of EUT :

The receiver of wireless keyboard is connected to keyboard port and serial port of PC. It can transmit data to computer from a wireless keyboard

Connections of EUT :

Connect the 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 received RF signal that emitted from wireless keyboard when depressed one key continuously. The relative TX is applying in the same time, FCC ID is OCNK900TX.

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.

List of support equipment:

Radiated (Conducted) test:

PC : HP
Model No. : D3139A
Serial No. : 3445S00739 (SG61802786)
FCC ID : HCJVECTRA486-XX (HCJVECTRAVL5 0
Power type : AC 120 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 : 120VAC, 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 : Non-shielded, 5.5' long, Plastic hoods, No ferrite bead
Data Cable : RS-232→Shielded, 3' long, Metal hoods, No bead
RJ-11C→Non-shielded, 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

Wireless Keyboard: Pan-International Industrial Corp.

Model No. : K900TX
FCC ID : OCNK900TX
Power type : Four AA sized 1.5V batteries
Data cable : N/A

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 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 :

<u>Instrument Name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Calibration Date</u>	
				<u>Last time</u>	<u>Next time</u>
Spectrum analyzer	8591EM	H P	3619A00821	10/29/98	10/29/99
LISN (EUT)	3825/2	EMCO	9411-2284	05/15/98	05/15/99
LISN (Support E.)	3825/2	EMCO	9210-2007	05/15/98	05/15/99
Preamplifier	8447F	H P	2944A03706	05/13/98	05/15/99
Line switch box	AC1-003	TRC	-----	05/15/98	05/15/99
Line selector	AC1-002	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 shielded enclosure, 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 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 20 GHz measured by HP spectrum.

The field strength below 1 GHz was measured by EMCO Bi-Log Periodic Antenna (model 3142) at 3 meter, and the EMCO Double Ridged Guide Antenna (model 3115) was used in frequencies 1 ~ 20 GHz at a distance of 1 meter. All test results were extrapolated ^(H) equivalent signal at 3 meters utilizing an inverse linear distance extrapolated factor (20dB/decade).

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 frequency below or equal to 1000MHz apply a quasi-peak detector and the frequency above 1000MHz is measured both peak and average detector. If the peak value of EUT complies with limits then the average reading is not required.

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 shield room 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	05/15/98	05/15/99
Quasi-peak Adapter	85650A	H P	2521A00984	05/15/98	05/15/99
RF Pre-selector	85685A	H P	2947A01011	05/15/98	05/15/99
Spectrum analyzer	8564E	H P	US36433002	08/09/98	08/09/99
Antenna(1G-18G Hz)	3115	EMCO	5178	08/09/98	08/09/99
Antenna (30M-2G Hz)	3142	EMCO	1296	06/10/98	06/10/99
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)

Appendix A

Conducted Emission Test Result :

Testing room : Temperature : 21 ° C Humidity : 65 % RH

Line 1

<i>Frequency (KHz)</i>	<i>Amplitude (dBuV)</i>	<i>Limit (dBuV/m)</i>	<i>Margin (dB)</i>
480.00	36.95	48.00	-11.05
545.00	35.87	48.00	-12.13
608.00	35.36	48.00	-12.64
675.00	36.98	48.00	-11.02
798.00	37.35	48.00	-10.65
929.00	36.95	48.00	-11.05
991.00	35.19	48.00	-12.81
1055.00	36.83	48.00	-11.17
1120.00	35.46	48.00	-12.54
1249.00	35.29	48.00	-12.71

Line 2

<i>Frequency (KHz)</i>	<i>Amplitude (dBuV)</i>	<i>Limit (dBuV/m)</i>	<i>Margin (dB)</i>
480.00	36.09	48.00	-11.91
608.00	36.44	48.00	-11.56
734.00	36.83	48.00	-11.17
862.00	35.40	48.00	-12.60
991.00	35.54	48.00	-12.46
1120.00	36.06	48.00	-11.94
1184.00	36.14	48.00	-11.86
1249.00	35.43	48.00	-12.57
1439.00	35.32	48.00	-12.68
1564.00	36.84	48.00	-11.16

Appendix B

Radiated Emission Test Result for 30MHz ~ 1GHz : (Horizontal)

Test Conditions:

Testing room : Temperature : 20 ° C Humidity : 68 % RH

Testing site : Temperature : 18 ° C Humidity : 81 % 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

48.010	39.80	4.00	247	-14.12	25.68	40.00	-14.32
567.990	30.40	1.00	195	0.53	30.93	46.00	-15.07
596.860	25.30	1.00	132	1.46	26.76	46.00	-19.24
601.400	30.80	1.00	353	1.65	32.45	46.00	-13.55
961.000	30.10	1.00	46	8.14	38.24	54.00	-15.76

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 for 30MHz ~ 1GHz : (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

48.011	49.80	1.00	241	-14.12	35.68	40.00	-4.32
96.007	44.50	1.00	273	-15.02	29.48	43.50	-14.02
420.029	33.90	1.00	52	-3.96	29.94	46.00	-16.06

Radiated Emission Test Result for 1GHz ~ 18GHz : (Horizontal)

Radiated Emission				Correction Factors	Distance	Corrected Amplitude	FCC Class B (3M)	
Frequency	Amplitude	Ant. H.	Table				Limit	Margin
(GHz)	(dBuV/m)	(m)	(°)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)

1.000	46.50	1.00	215	-8.67	-9.54	28.29	54	-25.71
1.092	47.84	1.00	11	-8.67	-9.54	29.63	54	-24.37
1.158	45.50	1.00	42	-8.67	-9.54	27.29	54	-26.71
1.200	48.67	1.00	127	-8.67	-9.54	30.46	54	-23.54
1.292	47.17	1.00	29	-8.67	-9.54	28.96	54	-25.04
1.392	47.34	1.00	219	-8.67	-9.54	29.13	54	-24.87
1.913	52.34	1.00	191	-8.67	-9.54	34.13	54	-19.87
1.921	50.84	1.00	291	-8.67	-9.54	32.63	54	-21.37
2.875	51.17	1.00	65	-6.84	-9.54	34.79	54	-19.21

Note:

1. Margin = Corrected - Limit.
2. Peak amplitude + Correction Factor + Distance = Corrected

Radiated Emission Test Result for 1GHz ~ 18GHz : (Vertical)

Radiated Emission				Correction Factors	Distance	Corrected Amplitude	FCC Class B (3M)	
Frequency	Amplitude	Ant. H.	Table				Limit	Margin
(GHz)	(dBuV/m)	(m)	(°)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)

1.000	47.34	1.00	15	-8.67	-9.54	29.13	54	-24.87
1.092	51.50	1.00	181	-8.67	-9.54	33.29	54	-20.71
1.158	51.67	1.00	27	-8.67	-9.54	33.46	54	-20.54
1.200	47.84	1.00	178	-8.67	-9.54	29.63	54	-24.37
1.292	52.34	1.00	123	-8.67	-9.54	34.13	54	-19.87
1.342	47.84	1.00	209	-8.67	-9.54	29.63	54	-24.37
1.392	49.50	1.00	91	-8.67	-9.54	31.29	54	-22.71
1.921	51.34	1.00	47	-8.67	-9.54	33.13	54	-20.87
2.792	49.17	1.00	55	-6.84	-9.54	32.79	54	-21.21
2.875	48.51	1.00	347	-6.84	-9.54	32.13	54	-21.87
2.996	49.17	1.00	85	-6.84	-9.54	32.79	54	-21.21
