

APPLICATION FOR CERTIFICATION

On Behalf of

Can Technology Co., Ltd.

Keyboard

Model : (1)OFFICE 800 (2)OFFICE 700 (3)OFFICE 300

FCC ID: IZI800700300

Prepared for : Can Technology Co., Ltd.
No. 827, Sec. 1, Chung-Hwa.Road,
Chung Li City, Taiwan.

Prepared By : Audix Corporation
No. 53-11, Tin-Fu Tsun, Lin-Kou,
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File Number : ATM-G911056
Report Number : TTEMC-F92020
Date of Test : Jan. 15 ~ 16, 2003
Date of Report : Feb. 08, 2003

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TEST REPORT CERTIFICATION

Applicant : Can Technology Co., Ltd.
 Manufacturer : President Computer Tech Co., Ltd.
 EUT Description : Keyboard
 FCC ID : IZI800700300
 (A) MODEL NO. : (1)OFFICE 800 (2)OFFICE 700
 (3)OFFICE 300
 (B) SERIAL NO. : N/A
 (C) POWER SUPPLY : DC 5V
 (Test Voltage: AC 120V/60Hz via PC)

Measurement Procedure Used :

FCC RULES AND CISPR 22 (DOCKET NO. 92-152, SEP. 1993) AND
 FCC / ANSI C63.4-1992
 (FCC Part 15/2002 and CISPR 22/1997)

The device described above was tested by Audix Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the CISPR 22 Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and Audix Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Corporation.

Date of Test : Jan. 15 ~ 16, 2003

Prepared by : Tina Huang Feb. 14, 2003
 (Tina Huang/Clerk)

Test Engineer : Allen Wang Feb. 17, 2003
 (Allen Wang/Deputy Manager)

Approve & Authorized Signer : Jackie Deng Feb. 17, 2003
 (Jackie Deng/Assistant General Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Keyboard
Model Number	:	(1)OFFICE 800 (2)OFFICE 700 (3)OFFICE 300
		1. The Model (1) and (2) difference is in appearance, the others is the same. 2. The Model (1) and (3) have the same Main IC and Layout the difference is in appearance and function key, (Please attached photograph) 3. The M/N (1)OFFICE 800 is representative selected in the test and included in this report.
FCC ID	:	IZI800700300
Applicant	:	Can Technology Co., Ltd. No. 827, Sec. 1, Chung-Hwa Road, Chung Li City, Taiwan.
Manufacturer	:	President Computer Tech Co., Ltd. No. 1 Building of Nancao, Xinqing Science & Technology Industrial Park, Doumen, Zhuhai City, Guang Dong, China
Data Cable	:	Non-Shielded, Undetachable, 1.3m
Date of Receipt of Sample	:	Oct. 31, 2002
Date of Test	:	Jan. 15 ~ 24, 2003

1.2. Tested Supporting System Details

1.2.1. PC SYSTEM

Model Number	:	HP VECTRA XE320
Serial Number	:	SG21101988
FCC ID	:	By DoC
BSMI ID	:	3912A318
Brand	:	HP
Manufacturer	:	First International Computer, Inc.
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.2. 15" LCD MONITOR

Model Number	:	D5063M
Serial Number	:	CN206A6568
FCC ID	:	By DoC
BSMI ID	:	R33037
Manufacturer	:	Top Victory Electronics (Fujian) Co., Ltd.
Data Cable (D-Sub)	:	Shielded, Detachable, 1.8m
		Bonded two ferrite cores
Audio Cable(*2EA)	:	Non-Shielded, Detachable, 1.2m
AC Adapter	:	Delta, M/N ADP-40TB
		BSMI ID 3892D142
		Cord: Shielded, Undetachable, 1.8m
		Bonded a ferrite core
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.3. DOT MATRIX PRINTER

Model Number	:	KX-P2135
Serial Number	:	8DMCN02139
FCC ID	:	ACJ5Z6KX-P2135
BSMI ID	:	3872A371
Manufacturer	:	Matsushita (Brand: Panasonic)
Data Cable	:	Shielded, Detachable, 1.5m
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.4. MODEM #1

Model Number	:	DM-1414
Serial Number	:	980034394
FCC ID	:	IFAXDM1414
Manufacturer	:	Aceex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, Model AM-91000A
		Non-Shielded, Undetachable, 1.8m

1.2.5. MODEM #2

Model Number	:	DM-1414
Serial Number	:	980034385
FCC ID	:	IFAXDM1414
Manufacturer	:	Aceex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, Model AM-91000A
		Non-Shielded, Undetachable, 1.8m

1.2.6. PS2 MOUSE

Model Number	:	M-S48a
Serial Number	:	LZE20501511
FCC ID	:	JNZ201213
BSMI ID	:	4882A001
Manufacturer	:	Logitech (Brand: HP)
Data Cable	:	Non-Shielded, Undetachable, 1.8m

1.2.7. USB MOUSE #1

Model Number	:	CREUBB
Serial Number	:	N/A
FCC ID	:	NHM-CREUBE
BSMI ID	:	3872F083
Manufacturer	:	CRE Technology Co., Ltd.
Data Cable	:	Shielded, Undetachable, 1.8m

1.2.8. USB MOUSE #2

Model Number	:	CREUBB
Serial Number	:	N/A
FCC ID	:	NHM-CREUBE
BSMI ID	:	3872F083
Manufacturer	:	CRE Technology Co., Ltd.
Data Cable	:	Shielded, Undetachable, 1.8m

1.2.9. MICROPHONE

Model Number	:	HD-303
Serial Number	:	N/A
Manufacturer	:	Multimedia Microphone System
Data Cable	:	Non-Shielded, Undetachable, 2.2m

1.2.10. WALKMAN

Model Number	:	RQ-P35LT-K
Serial Number	:	HA08473
Manufacturer	:	Panasonic
Data Cable	:	Non-Shielded, Detachable, 1.8m

1.2.11. EARPHONE # 1

Model Number	:	N/A
Serial Number	:	N/A
Manufacturer	:	Panasonic
Earphone Cable	:	Non-Shielded, Undetachable, 1.1m

1.2.12. EARPHONE # 2

Model Number	:	N/A
Serial Number	:	N/A
Manufacturer	:	Panasonic
Earphone Cable	:	Non-Shielded, Undetachable, 1.1m

1.2.13. HUB

Model Number : DES-1005D
 Serial Number : 0212G1A06065
 FCC ID : By DoC
 Manufacturer : D-Link
 Lan Cable : Shielded, Detachable, 2m
 AC-DC Adapter : DVE, M/N DV-0751AS
 Cord: Non-Shielded, Undetachable, 1.8m

1.3. Test Facility

Name of Firm : Audix Corporation
 Site Description : No. 5 OATS
 Jan. 29, 2001 Re-File on
 Federal Communication Commission
 Registration Number: 90992
 Site Location #1 : No. 53-11, Tin-Fu Tsun, Lin-Kou,
 Taipei Hsien, Taiwan, R.O.C.
 Site Location #2 : No. 67-4, Tin-Fu Tsun, Lin-Kou,
 Taipei Hsien, Taiwan, R.O.C.
 NVLAP Lab Code : 200077-0

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150KHz~30MHz	±2.66dB
Radiation Test (Distance: 10m)	30MHz~300MHz	+4.5dB / -4.5dB
	300MHz~1000MHz	+3.88dB / -3.84dB

Remark : Uncertainty = $K\mu c(y)$

2. POWERLINE CONDUCTED TEST

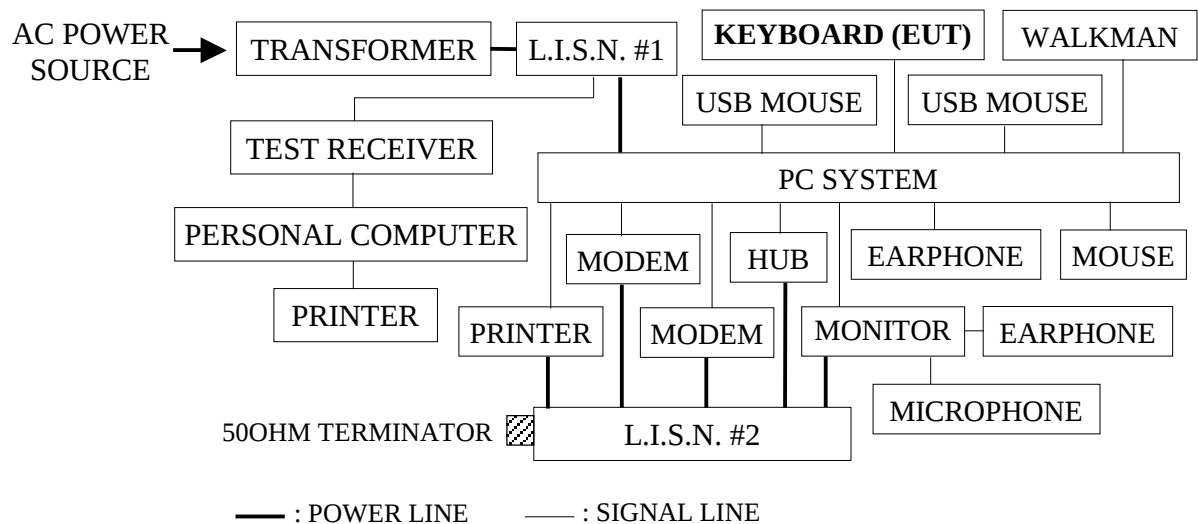
2.1. Test Equipment

The following test equipments are used during the power line conducted tests :

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS 30	825442/020	Aug. 01, 02'	1 Year
2.	L.I.S.N. #1	Kyoritsu	KNW-407	8-1370-10	May 29, 02'	1 Year
3.	L.I.S.N. #2	Kyoritsu	KNW-407	8-1370-9	May 29, 02'	1 Year

2.2. Block Diagram of Test Setup

2.2.1. Block Diagram of connection between EUT and simulators



2.3. Powerline Conducted Emission Limit (CISPR 22 CLASS B)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150KHz ~ 500KHz	66 ~ 56 dB	56 ~ 46 dB
500KHz ~ 5MHz	56 dB	46 dB
5MHz ~ 30MHz	60 dB	50 dB

Remark: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2.4. EUT's Configuration during Compliance Measurement

The following equipments were installed on RF LINE VOLTAGE measurement to meet the Commission requirement and operating in a manner which tended to maximize its emission characteristics in a normal application.

2.4.1. Keyboard (EUT)

Model Number	:	OFFICE 800
Serial Number	:	N/A
FCC ID	:	IZI800700300
Manufacturer	:	President Computer Tech Co., Ltd.
Data Cable	:	Non-Shielded, Undetachable, 1.3m

2.4.2. Supporting System : As in Section 1.2

2.5. Operating Condition of EUT

- 2.5.1. Setup the EUT and simulator as shown on 2.2.
- 2.5.2. Turned on the power of all equipment.
- 2.5.3. PC system reads data from disk.
- 2.5.4. Setup the PC system to drive the keyboard (EUT) through the EMI self-test program by windows.
- 2.5.5. PC system running the self-test program "H-Win" and sent "H" character to monitor, then the screen of monitor displayed and fill with "H" pattern.
- 2.5.6. The other peripheral devices were drove and operated in turn during all testing.
- 2.5.7. Repeat above procedure from 2.5.3. to 2.5.6.

2.6. Test Procedure

The EUT was connect to PC, then the PC's power was connected to the power mains through a line impedance stabilization network (L.I.S.N. #1) and the other peripheral devices power cord were connected to the power mains through a line impedance stabilization network (L.I.S.N. #2). This provided a 50ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.).

Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to FCC ANSI C63.4-1992 on conducted measurement.

The bandwidth of the R&S Test Receiver ESCS 30 was set at 9KHz.

The frequency range from 150KHz to 30MHz was checked.

2.7. Line Conducted RF Voltage Measurement Results

PASSED. All the emissions not reported below are too low against the prescribed limits.

The EUT was linked to PC system and with AC 120V/60Hz supplying voltage were performed during conducted testing and all the test results are listed in next section.

EUT : Keyboard M/N : OFFICE 800

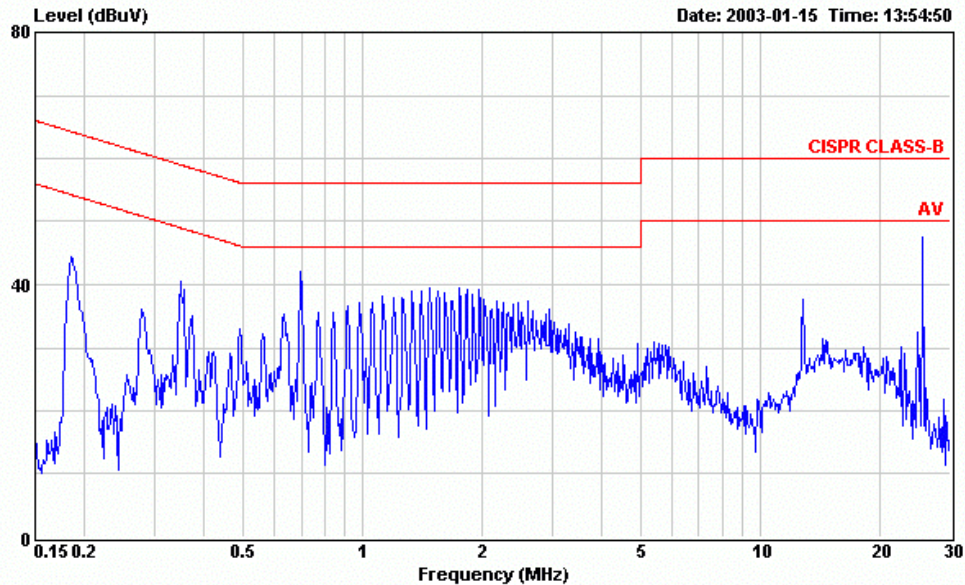
Test Date : Jan. 15, 2003 Temperature : 20°C Humidity : 50%

Reference Data # : # 23 (24, 25) ; # 26 (27, 28)



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Data#: 23 File#: D:\Can-G911056.EMI



Site : No.3 Shielded room
Condition : CISPR CLASS-B KNW-407 NEUTRAL
EUT : Keyboard M/N:Office 800
Power : 120Vac/60Hz (20°C/50%)
Memo : PC SYSTEM

Data#: 24 File#: D:\Can-G911056.EMI

Date: 2003-01-15 Time: 13:55:27

Site : No.3 Shielded room
Condition : CISPR CLASS-B KNW-407 NEUTRAL
EUT : Keyboard M/N:Office 800
Power : 120Vac/60Hz (20°C/50%)
Memo : PC SYSTEM

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.186	43.63	-20.59	64.22	43.03	0.40	0.20	QP
2	0.350	38.95	-20.02	58.97	38.45	0.30	0.20	QP
3	0.699	40.71	-15.29	56.00	40.21	0.30	0.20	QP
4	1.754	38.09	-17.91	56.00	37.39	0.30	0.40	QP
5	12.796	34.84	-25.16	60.00	33.44	0.70	0.70	QP
6	25.594	45.76	-14.24	60.00	43.86	1.20	0.70	QP

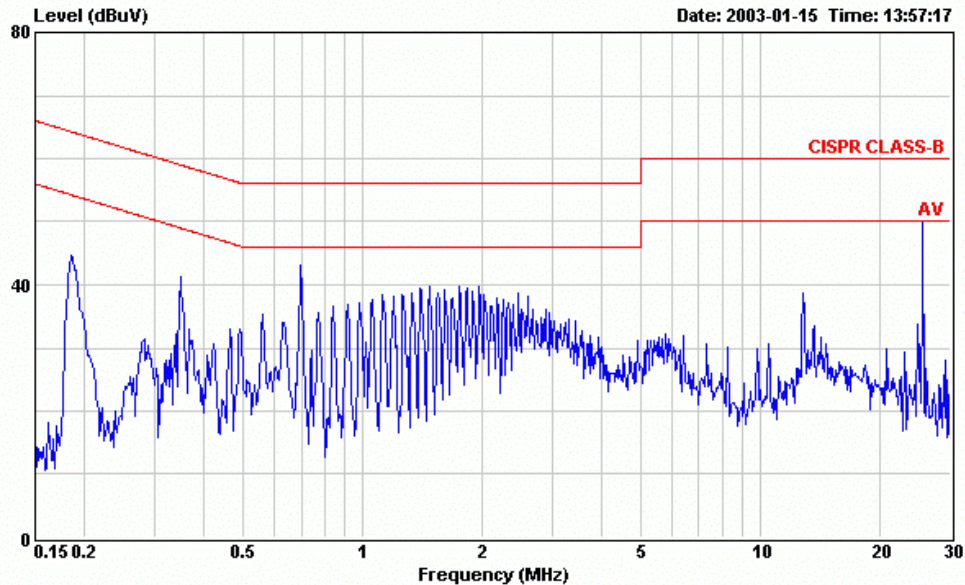
Data#: 25 File#: D:\Can-G911056.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.186	43.72	-10.50	54.22	43.12	0.40	0.20	Average
2	0.350	35.94	-13.03	48.97	35.44	0.30	0.20	Average
3 !	0.699	38.69	-7.31	46.00	38.19	0.30	0.20	Average
4 !	1.754	36.08	-9.92	46.00	35.38	0.30	0.40	Average
5	12.796	31.54	-18.46	50.00	30.14	0.70	0.70	Average
6 !	25.594	43.25	-6.75	50.00	41.35	1.20	0.70	Average



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 Email:ttemc@ttemc.com.tw

Data#: 26 File#: D:\Can-G911056.EMI



Site : No.3 Shielded room
 Condition : CISPR CLASS-B KNW-407 LINE
 EUT : Keyboard M/N:Office 800
 Power : 120Vac/60Hz (20°C/50%)
 Memo : PC SYSTEM

Data#: 27 File#: D:\Can-G911056.EMI

Date: 2003-01-15 Time: 13:57:49

Site : No.3 Shielded room
 Condition : CISPR CLASS-B KNW-407 LINE
 EUT : Keyboard M/N:Office 800
 Power : 120Vac/60Hz (20°C/50%)
 Memo : PC SYSTEM

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.187	43.49	-20.67	64.16	42.89	0.40	0.20	QP
2	0.351	38.55	-20.40	58.95	38.05	0.30	0.20	QP
3	0.700	41.37	-14.63	56.00	40.87	0.30	0.20	QP
4	1.755	38.86	-17.14	56.00	38.16	0.30	0.40	QP
5	12.797	38.55	-21.45	60.00	37.15	0.70	0.70	QP
6	25.596	47.61	-12.39	60.00	45.71	1.20	0.70	QP

Data#: 28 File#: D:\Can-G911056.EMI

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.187	43.45	-10.71	54.16	42.85	0.40	0.20	Average
2	0.351	35.33	-13.62	48.95	34.83	0.30	0.20	Average
3 !	0.700	39.18	-6.82	46.00	38.68	0.30	0.20	Average
4 !	1.755	36.77	-9.23	46.00	36.07	0.30	0.40	Average
5	12.797	34.49	-15.51	50.00	33.09	0.70	0.70	Average
6 !	25.596	46.42	-3.58	50.00	44.52	1.20	0.70	Average

3. RADIATED EMISSION TEST

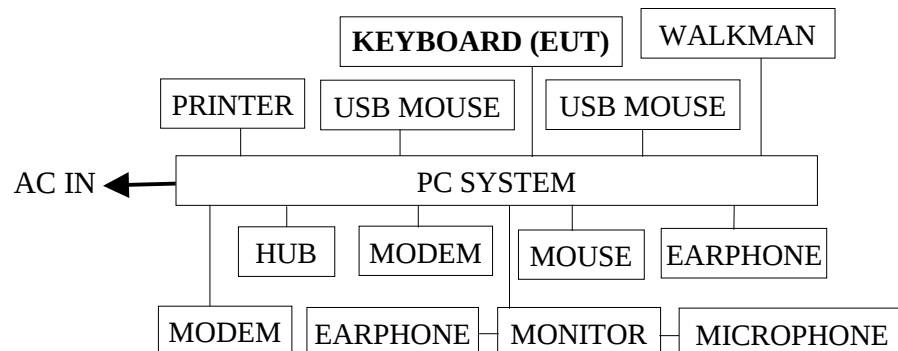
3.1. Test Equipment

The following test equipments are used during the radiated emission tests :

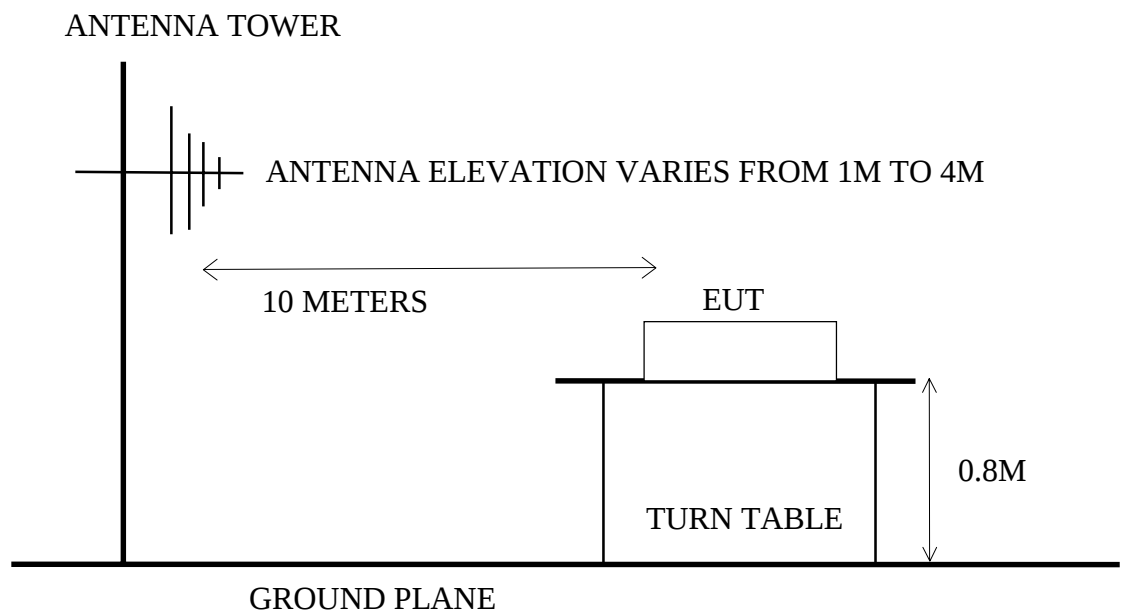
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	HP	8593EM	3826A00272	May 30, 02'	1 Year
2.	Test Receiver	R&S	ESVS10	849231/017	Dec.20, 02'	1 Year
3.	Biconical Antenna	Chase	VBA6106A	1227	Nov.26, 02'	1 Year
4.	Log Periodic Antenna	Chase	UPA6109	1061	Nov.26, 02'	1 Year

3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Open Field Test Site Setup Diagram



3.3. Radiation Limit (CISPR 22)

All emanations from a class B computing devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBuV/m)
30 ~ 230	10	30
230 ~ 1000	10	37

- Note :
- (1) The tighter limit shall apply at the edge between two frequency bands.
 - (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the E.U.T..

3.4. EUT's Configuration during Compliance Measurement

The configuration of EUT and its simulators were the same as those used in conducted measurement. Please refer to 2.4.

3.5. Operating Condition of EUT

Same as conducted measurement which was listed in 2.5. except the test set up replaced by section 3.2.

3.6. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 10 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) and dipole antenna are used as receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4-1992 on radiated measurement.

The bandwidth of the R&S Test Receiver ESVS10 was set at 120KHz.

The frequency range from 30MHz to 1000MHz is checked.

The EUT was linked to PC and with test voltage of AC 120V/60Hz were done during radiated measurement and all the test results are listed in section 3.8.

3.7. Test Results

PASSED. Please refer to the following pages.

3.8. Radiated Emission Measurement Results

All the emissions not report below are too low against the CISPR 22 Class B limit.

Date of Test : Jan. 16, 2003 Temperature : 20°C
 EUT : Keyboard, M/N OFFICE 800 Humidity : 54%

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBuV	Emission Level Horizontal dBuV/m	Limits dBuV/m	Margin dB
46.440	17.11	0.81	-4.89	13.03	30.00	16.97
89.415	15.90	1.07	-4.20	12.77	30.00	17.23
118.065	19.10	1.20	-3.89	16.41	30.00	13.59
161.040	20.58	1.42	-4.03	17.97	30.00	12.03
* 218.340	21.85	1.52	-3.56	19.81	30.00	10.19
289.965	24.77	1.80	-1.26	25.31	37.00	11.69
332.774	15.05	2.01	1.61	18.67	37.00	18.33
418.724	16.31	2.28	-1.75	16.84	37.00	20.16
490.349	17.99	2.38	-2.51	17.86	37.00	19.14
533.324	19.04	2.46	-2.09	19.41	37.00	17.59
605.000	20.87	2.69	-2.16	21.40	37.00	15.60
662.377	21.84	2.90	-2.36	22.38	37.00	14.62
734.040	22.29	3.11	-0.59	24.81	37.00	12.19

- Remarks :
1. All readings are Quasi-Peak values.
 2. Emission Level = Antenna Factor + Cable Loss + Meter Reading
 3. The worst emission was detected at 218.340MHz with corrected signal level of 19.81dBμV/m (limit is 30.0dBμV/m) when the antenna was at horizontal polarization and was at 4m high and the turn table was at 135° .
 4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

Date of Test : Jan. 16, 2003 Temperature : 20°C

EUT : Keyboard, M/N OFFICE 800 Humidity : 54%

Frequency MHz	Antenna	Cable	Meter Reading	Emission Level		Margin dB
	Factor dB/m	Loss dB	Vertical dBuV	Vertical dBuV/m	Limits dBuV/m	
46.620	17.41	0.81	-5.02	13.20	30.00	16.80
89.634	15.70	1.07	-4.19	12.58	30.00	17.42
118.322	19.22	1.20	-3.84	16.58	30.00	13.42
161.297	21.79	1.42	-4.04	19.17	30.00	10.83
* 204.302	22.23	1.49	-3.81	19.91	30.00	10.09
261.628	23.75	1.74	-3.45	22.04	37.00	14.96
318.386	14.39	1.85	4.55	20.79	37.00	16.21
361.361	15.67	2.17	0.37	18.21	37.00	18.79
432.986	17.46	2.31	-0.91	18.86	37.00	18.14
490.286	18.64	2.38	-2.52	18.50	37.00	18.50
533.261	18.87	2.46	-2.06	19.27	37.00	17.73
619.211	20.69	2.73	-2.38	21.04	37.00	15.96
705.122	21.79	3.04	-2.73	22.10	37.00	14.90

- Remarks :
1. All readings are Quasi-Peak values.
 2. Emission Level = Antenna Factor + Cable Loss + Meter Reading
 3. The worst emission was detected at 204.302MHz with corrected signal level of 19.91dBμV/m (limit is 30.0dBμV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 190° .
 4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

4. MODIFICATIONS TO EUT

1. Added a ferrite core on the data cable that inside the case.

5. DEVIATION TO TEST SPECIFICATIONS

【NONE】