

## 6. TESTED SYSTEM DETAILS

### 6.1 Peripherals and Others :

<i>Description</i>	<i>Model Name</i>	<i>Serial No.</i>	<i>Manufacturer</i>	<i>FCC ID</i>
PC Monitor	M2978	CY52401HF3CV	LG Electronics, Inc.	BEJCA500
Personal Computer	PCG-505TR	3415556	Sony Corp.	DOC
Port Replicator	PCGA-PR5	126219	Sony Corp.	DOC
Floppy Disk Drive	PCGA-FD5	1215376	Sony Corp.	DOC
CD-ROM Drive	PCGA-CD51	3101473	Sony Corp.	DOC
AC Adapter	PCGA-AC51	9906A0361473	Sony Corp.	N/A
Key Board	SKR-2233	8AAE001175	Sejiner Electron, Inc.	GJJSKR-223C9
Mouse	2.1A	-	Microsoft Corp.	C3KKMP3
Scanner	AS-1	0009	Fuji Photo Film Co., Ltd.	F5GAS-1
Digital Camera	DX-9 Zoom	8A00003	Fuji Photo Film Co., Ltd.	F5GDX-9
AC Adapter (for DX-9)	AC-5VN	9937	Fuji Photo Film Co., Ltd.	N/A
AC Adaptor (for EUT)	AC-3VN	9914	Fuji Photo Film Co., Ltd.	N/A
Video Monitor	PVM-8040	2029411	Sony Corp.	N/A

(for AC Adapter of EUT and DX-9, Input: 120VAC, 60Hz / Output: 5VDC)

#### Note:

\*DOC: Declaration of Conformity by Manufacturer, Sony Corp.

\* N/A: Equipment required for the Verification.

**6.2 List of Cables :**

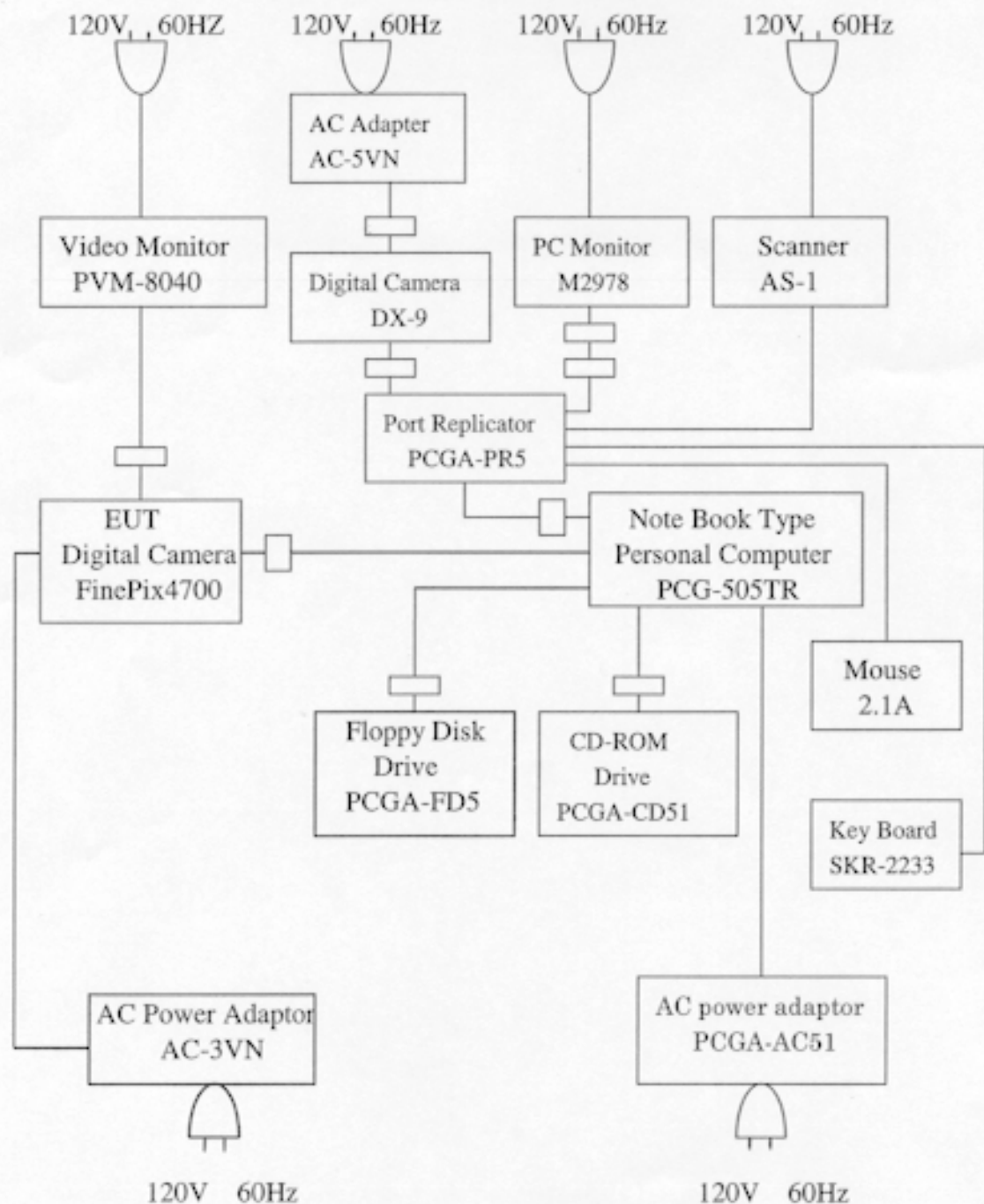
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<i>Description</i>	<i>Length</i>	<i>Type of shield</i>	<i>Ferrite Core</i>
EUT / Personal Computer	1.5 m	Shielded	Add
Port Replicator / Personal Computer	0.2 m	Shielded	Provided
Scanner / Port Replicator	1.5 m	Shielded	Provided
Digital Camera / Port Replicator	2.0 m	Shielded	Provided
EUT / Video Monitor	1.4 m	Shielded	Add
Personal Computer / CD-ROM	0.3 m	Shielded	Provided
Personal Computer / Floppy Drive	0.1 m	Shielded	Provided
Mouse / Personal Computer	1.9 m	Shielded	N/A
Key Board / Port Replicator	1.1 m	Shielded	N/A
PC Monitor / Port Replicator	1.65 m	Shielded	Provided
DC Power Cord (PC/AC adaptor)	2.2 m	Shielded	N/A
DC Power Cord (EUT/AC adaptor)	1.9 m	Non-shielded	Add
DC Power Cord (DX-9/AC adapter)	1.9 m	Non-shielded	Provided
AC Power Cord (PC Monitor)	1.7 m	Non-shielded	N/A
AC Power Cord (Video Monitor)	1.5 m	Non-shielded	N/A
AC Power Cord (Scanner)	1.8 m	Non-shielded	N/A

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**Note:**

\* Provided : The cable is an accessory for Personal Computer, Digital Camera, Scanner or PC Monitor which was attached a ferrite core.

**Figure 6-1 System Configuration Diagram :**




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MINATO-KU, TOKYO 106, JAPAN

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FCC ID : F5GFP-4700

Part 15 Sub.part B Class B Digital Device

## 7. TEST RESULTS

### 7.1 Conducted Radio Noise Measurement

#### 7.1.1 Measurement Instrumentation Used:

*(Model / Serial No. / Manufacturer)*

Test Receiver ----- (ESH-3 / 872079-020 / Rohde & Schwarz)

L. I. S. N ----- (KNW-407 / 8-823-10 /Kyoritsu Electrical)

L. I. S. N ----- (KNW-407 / 8-680-7 /Kyoritsu Electrical)

Spectrum Analyzer System ----- (8568S / 2445A00924 / Hewlett Packard)

#### 7.1.2 Measurement Procedure:

The power line conducted interference measurements were performed in a shield enclosure with peripherals placed on a table, 80cm high over a metal floor.

It was located more than required distance away from the shielded enclosure wall.

The EUT was plugged into the L.I.S.N. and the frequency range of interest scanned.

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### 7.1.3 Test Data

**Table 7.1-1 Conducted Radio Noise Measurement Results:**

Operating mode: PC Mode

Date of measurement: February 7, 2000

Test Procedure: ANSI C63.4-1992

Temperature: 18 degree C

Humidity: 42 %

Frequency  (MHz)	Results Meter Reading.		Results	Limit (dBuV/m)	Margin (dBuV/m)
	VA.	VB.	Emission Level		
	(dBuV/m)		(dBuV/m)		
0.4500	30.0	30.1	30.1	47.9	17.8
0.5600	30.6	31.8	31.8	47.9	16.1
0.9000	37.8	38.3	38.3	47.9	9.6
1.0100	38.0	38.7	38.7	47.9	9.2
1.3500	33.9	34.8	34.8	47.9	13.1
4.3700	23.0	24.8	24.8	47.9	23.1
24.0600	20.1	19.9	20.1	47.9	27.8
28.0800	20.2	19.2	20.2	47.9	27.7

Note:

- 1) Emission Levels are higher levels of VA or VB of Meter Readings + Correction Factor.
- 2) VA: Between one end of the power cable and the grounded.  
VB: Between the other end of power cable and the grounded.

### 7.1.4 Conducted Radio Noise Calculation

The conducted radio noise is calculated by adding the calibration factor to the measured reading. The basic equation and a sample calculation are as follows:

$$CRN = TRM + CF$$

$$Margin = Limit - CRN$$

where CRN = Conducted Radio Noise (dBuV)

TRM = Test Receiver Reading (dBuV)

CF : Correction Factor (dB/m)

The Correction factor includes cable loss and LISN factor.



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## 7.2 Radiated Radio Noise Measurement

### 7.2.1 Measurement Instrumentation Used :

*(Model / Serial No. / Manufacturer)*

Test Receiver ----- (ESVP / 879529-016 / Rohde & Schwarz)

Bi-Conical Antenna ----- (BBA9106 / D-6901 No.2 / Schwarzbeck)

Log-Periodic Antenna ----- (UHALP9107 / 424-517 / Schwarzbeck)

Spectrum Analyzer System ----- (8568S / 2445A00924 / Hewlett Packard)

### 7.2.2 Measurement Procedure:

The EUT was placed in a 80cm high table along with the peripherals.

The turn table was separated from the antenna at a distance of 3 meter. Cables were placed in a position to produce maximum emission as determined by experimentation, and operation mode was selected for maximum.

The frequencies and amplitudes of maximum emission were measured at varying azimuths, antenna heights and antenna polarities.

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## 7.2.3 Test Data

**Table 7.2-1 Radiated Radio Noise Measurement Results:**

Operating mode: PC Mode

Date of measurement: February 7, 2000

Test Procedure: ANSI C63.4-1992

Temperature: 15 degree C

Humidity: 30 %

Frequency (Mhz)	Correction Factor (dB)	Results		Results	Limit (dBuV/m)	Margin (dBuV/m)
		Meter Reading.		Emission Level		
		Hori. (dBuV/m)	Vert. (dBuV/m)	(dBuV/m)		
30.060	20.0	-	34.4	34.4	40.0	5.6
32.070	19.1	23.5	34.6	34.6	40.0	5.4
36.070	17.5	23.4	28.1	28.1	40.0	11.9
46.530	13.7	-	26.4	26.4	40.0	13.6
96.000	11.4	24.8	23.7	24.8	43.5	18.7
140.020	16.6	24.8	-	24.8	43.5	18.7
196.610	19.5	-	26.3	26.3	43.5	17.2
220.030	20.6	32.6	-	32.6	46.0	13.4
240.040	21.1	37.0	29.4	37.0	46.0	9.0
254.150	21.0	34.6	26.5	34.6	46.0	11.4
272.040	21.8	31.5	-	31.5	46.0	14.5
311.420	20.1	30.7	-	30.7	46.0	15.3
320.050	20.3	30.3	28.2	30.3	46.0	15.7
528.090	24.7	33.8	30.9	33.8	46.0	12.2
959.310	33.4	38.9	35.3	38.9	46.0	7.1
987.950	33.8	36.7	-	36.7	46.0	17.2

Note: 1) Meter Readings are corrected by all Correction Factors.

2) Emission Levels are higher levels of Hori. or Vert. of Meter Readings.

3) Margin = Limit - Emission Level.



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## 7.2.4 Radiated Radio Noise Calculation

The radiated radio noise is calculated by adding the correction factor to the measured reading. The basic equation and a sample of calculation are as follows;

$$\text{RRN} = \text{TRM} + \text{CF}$$

$$\text{Margin} = \text{Limit} - \text{RRN}$$

where RRN = Radiated Radio Noise (dBuV)

TRM = Test Receiver Reading (dBuV)

CF : Correction Factor (dB/m), The correction factor includes pre-amplifier gain, cable loss and antenna factor.