

26-30, NISHIAZABU 2-CHOME, MINATO-KU, TOKYO 106, JAPAN

Telephone: (03) 3406-2934 Facsimiles: (03) 3406-9967

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FCC ID: F5GFP-A101

Part 15 Sub.part B Class B Digital Device

### 6. TESTED SYSTEM DETAILS

### 6.1 Peripherals and Others:

Description	Model Name	e Serial No.	Manufacturer	FCC ID
Personal Compute	er 12XL212	1V08FHNJE1N5	Compaq Computer Co., Ltd.	DOC
Mouse	M-BB48	LZE01271677	Logitech	DOC
PC Monitor	M2978	CY52401HF3CV	LG Electronics, Inc.	BEJCA500
Scanner	AS-1	0009	Fuji Photo Film Co., Ltd.	F5GAS-1
AC Adapter (for I	PC) LE-9702B-	01 177625-001	Compaq Computer Co., Ltd.	N/A
AC Adaptor (for I	EUT) AC-3V	0044	Fuji Photo Film Co., Ltd.	N/A

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

#### Note:

<sup>\*</sup>DOC: Declaration of Conformity by Manufacturer, Compaq Computer Co., Ltd., or Logitech.

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



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#### 6.2 List of Cables:

Description	Length	Type of shield	Ferrite Core
EUT / Personal Computer	1.2 m	Shielded	Add
DC Power Cord (EUT/AC adaptor)	1.9 m	Non-shielded	Add
Scanner / Personal Computer	1.5 m	Shielded	Provided
PC Monitor / Personal Computer	1.65 m	Shielded	Provide
Mouse / Personal Computer	1.9 m	Shielded	N/A
DC Power Cord (PC/AC adaptor)	1.55 m	Non-shielded	Provide
AC Power Cord (PC/AC adapter)	1.7 m	Non-shielded	N/A
AC Power Cord (Scanner)	1.8 m	Non-shielded	N/A
AC Power Cord (PC Monitor)	1.7 m	Non-shielded	N/A

#### Note:

<sup>\*</sup> Provided: The cable is an accessory for Personal Computer, Scanner or PC Monitor that was attached a ferrite core.



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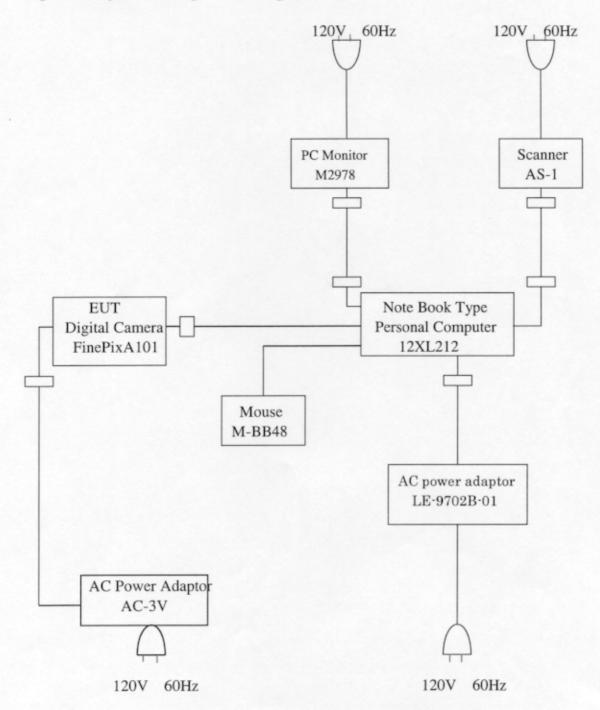
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Figure 6-1 System Configuration Diagram:





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### 7. TEST RESULTS

7.1 Conducted Radio Noise Measurement

### 7.1.1 Measurement Instrumentation Used:

(Model / Serial No. / Manufacturer)

Test Receiver ----- (ESCS 30 / 825788-007 / 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: Camera Mode
Test Procedure: ANSI C63.4-1992

Date of measurement: June 5, 2001 Temperature: 19 degree C

Humidity: 60 %

Frequency	Re.	sults	Results	Limit	Margin	
	Meter Reading.		Emission Level			
	VA.	VB.				
(MHz)	(dBu	V/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
0.4700	27.6	25.6	27.6	47.9	20.3	
0.9200	41.0	38.9	41.0	47.9	6.9	
1.2300	37.9	33.1	37.9	47.9	10.0	
2.3500	28.2	25.6	28.2	47.9	19.7	
4.1200	21.6	13.8	21.6	47.9	26.3	
18.8800	10.9	8.4	10.9	47.9	37.0	

#### Note:

- 1) Emission Levels are higher levels of VA or VB of Meter Readings + Correction Factor.
- 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 ----- (ESCS 30 / 834115-020 / 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 turntable 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: USB Mode

Test Procedure: ANSI C63.4-1992

Date of measurement: June 5, 2001

Temperature: 19 degree C Humidity: 58 %

Frequency	Correction Factor	Results Meter Reading.		Results Emission Level	Limit	Margin	
(Mhz)	(dB)		uV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
		Hori.	Vert.				
62.730	8.8	-	24.3	24.3	40.0	15.7	
69.080	7.9	25.5	-	25.5	40.0	14.5	
70.250	7.8	-	29.1	29.1	40.0	10.9	
93.350	10.7	34.7	30.8	34.7	43.5	8.8	
100.010	12.0	35.7	29.0	35.7	43.5	7.8	
128.860	15.9	27.6	24.4	27.6	43.5	15.9	
186.140	18.8	-	23.1	23.1	43.5	20.4	
220.030	20.3	35.5	-	35.5	46.0	10.5	
240.020	20.7	36.5	-	36.5	46.0	9.5	
311.420	19.8	37.7	32.9	37.7	46.0	8.3	
320.050	20.0	35.4	33.7	35.4	46.0	10.6	
404.990	21.5	37.7	28.9	37.7	46.0	8.3	
435.550	22.3	32.4	31.5	32.4	46.0	13.6	
520.080	24.0	35.6	-	35.6	46.0	10.4	
580.970	25.5	-	36.7	36.7	46.0	9.3	
587.040	25.7	37.5	-	37.5	46.0	8.5	
596.400	25.9	37.1	40.3	40.3	46.0	5.7	
899.040	31.8	40.2	44.4	44.4	46.0	1.6	

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.
- The Emission Level at 899.040 MHz is the radiated one from a personal computer.



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Operating mode: USB Mode

Test Procedure: ANSI C63.4-1992

Date of measurement: June 5, 2001 Temperature: 19 degree C

Humidity: 58 %

Frequency	Correction		ults	Results	Limit	Margin
(141-)	Factor		Reading.	Emission Level	(dBuV/m)	(dBuV/m)
(Mhz)	(dB)	Hori.	uV/m) Vert.	(dBuV/m)	(abuv/m)	(abuv/m)
62.730	8.8	nort.	24.3	24.3	40.0	15.7
69.080	7.9	25.5		25.5	40.0	14.5
70.250	7.8	-	29.1	29.1	40.0	10.9
93.350	10.7	34.7	30.8	34.7	43.5	8.8
100.010	12.0	35.7	29.0	35.7	43.5	7.8
128.860	15.9	27.6	24.4	27.6	43.5	15.9
186.140	18.8	-	23.1	23.1	43.5	20.4
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435.550	22.3	32.4	31.5	32.4	46.0	13.6
520.080	24.0	35.6	-	35.6	46.0	10.4
580.970	25.5	-	36.7	36.7	46.0	9.3
587.040	25.7	37.5	-	37.5	46.0	8.5
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899.040	31.8	40.2	44.4	44.4	46.0	1.6

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

<sup>2)</sup> Emission Levels are higher levels of Hori. or Vert. of Meter Readings.

<sup>3)</sup> 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;

RRN = TRM + CF Margin = Limit - 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.