

EA95722

**MATSUSHITA-KOTOBUKI
ELECTRONICS INDUSTRIES LTD.**

SAIJO DIVISION

ADDRESS: 〒793-8510 247 FUKUTAKE, SAIJO, EHIME, JAPAN

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Date: Oct. 16, 1999

Report of Measurements (Part I)

REQUIRED IN () SUBPART B (TV INTERFACE DEVICE)
(X) SUBPART B (CLASS B PERIPHERALS)

EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D
Sheet 1 of 16 Sheets

Name of Manufacturer: Matsushita-Kotobuki Electronics Industries Ltd.

Address of Manufacturer: 247 Fukutake, Saijo, Ehime, Japan.

Device Under Measurement

FCC ID : ACJ927129K
Model No. : PV-DV600D
Trade Name : Panasonic
Applicant : Matsushita Electric Ind. Co., Ltd.

Certification

On the basis of the measurement data contained in Part II, all devices bearing the aforementioned FCC ID (model No., chassis No., and trade names) are stated by the undersigned to be capable of complying with the applicable sections of Part 15 of the FCC rules governing restricted radiation devices at the time of manufacture and may be expected to continue to comply under normal conditions and with usual maintenance. The undersigned also states that the device measured was an engineering prototype, pre-production, or production unit. If changes are applied to future units and such changes adversely alter spurious radiation, an amended report of measurements will be supplied to the FCC.



K. Ishikawa
Sr. Engineer

MATSUSHITA-KOTOBUKI ELECTRONICS INDUSTRIES LTD.

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EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

Sheet 2 of 16 Sheets

3" LCD Type

Part 15 Subpart B. (Class B Peripherals) - Part II

1) 15.107 Power Line Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Interference (dBuV)	
		1-end & Grounded	The other- End & Gro.
0.56	48.0	37.9	36.3
0.64	48.0	39.1	38.7
0.89	48.0	38.2	38.8
2.09	48.0	39.6	40.4
5.14	48.0	40.5	40.8
6.11	48.0	40.2	41.0

(Refer to Sheet 4, 8, 9, 14 of 16 Sheets)

2) 15.109 Radiated Emission

Freq. (MHz)	Limits (dBuV/m)	Emission (dBuV/m)	
		Horiz.	Vert.
108.00	43.5	37.7	21.1
121.50	43.5	37.3	21.6
256.50	46.0	37.3	26.6
337.50	46.0	41.0	34.8
351.00	46.0	40.5	35.4
391.50	46.0	36.9	36.7

(Refer to Sheet 6, 10, 11, 12, 13, 15, 16 of 16 Sheets)

MEASUREMENT SITE : MKS SITE

MEASUREMENT PROCEDURE : ANSI C63.4-1992

Note:

(1) Detailed report: Refer to attached sheets.

I HEREBY STATE THAT: The measurements shown in Part II of this form were made in accordance with The procedures indicated and the energy emitted by this equipment was found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements and vouch for the Qualifications of all persons taking them.

I FURTHER STATE THAT: On the basis of the measurements made, the device tested is capable of operation in compliance with the requirements of Part 15 of the FCC Rules under normal use and maintenance.



T. Watanabe

Engineer

MATSUSHITA-KOTOBUKI ELECTRONICS INDUSTRIES LTD.

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EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

Sheet 3 of 16 Sheets

4" LCD Type

Part 15 Subpart B. (Class B Peripherals) - Part II

1) 15.107 Power Line Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Interference (dBuV)	
		1-end & Grounded	The other- End & Gro.
0.56	48.0	38.2	37.1
0.64	48.0	39.4	38.5
0.89	48.0	37.6	38.3
2.09	48.0	39.1	40.0
5.14	48.0	40.4	40.6
6.11	48.0	40.0	40.5

(Refer to Sheet 5, 14 of 16 Sheets)

2) 15.109 Radiated Emission

Freq. (MHz)	Limits (DbuV/m)	Emission (dBuV/m)	
		Horiz.	Vert.
108.00	43.5	37.4	21.7
121.50	43.5	37.6	22.3
256.50	46.0	36.2	27.2
337.50	46.0	40.5	35.1
351.00	46.0	40.0	34.8
391.50	46.0	36.2	36.0

(Refer to Sheet 7, 15, 16 of 16 Sheets)

MEASUERMENT SITE : MKS SITE

MEASUERMENT PROCEDURE : ANSI C63.4-1992

Note:

(1) Detailed report: Refer to attached sheets.

I HEREBY STATE THAT: The measurements shown in Part II of this form were made in accordance with The procedures indicated and the energy emitted by this equipment was found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements and vouch for the Qualifications of all persons taking them.

I FURTHER STATE THAT: On the basis of the measurements made, the device tested is capable of operation in compliance with the requirements of Part 15 of the FCC Pules under normal use and maintenance.



T. Watanabe
Engineer

EXHIBIT # : 3-1
 FCC ID : ACJ927129K
 OUR REF. : MKES99-F021
 MODEL NO. : PV-DV600D

Sheet 4 of 16 Sheets

3" LCD Type

1) 15.107 Power Line Conducted Voltage

Mode	Freq. (MHz)	Meter Reading (dBuV)		LISN Factor (dB)	Matching Pad Loss (dB)	Interference (dBuV)	
		1-end & Grounded	The other- End & Gro.			1-end & Grounded	The other- End & Gro
DV	0.56	31.6	30.0	0.1	6.2	37.9	36.3
	0.64	32.8	32.4	0.1	6.2	39.1	38.7
	0.89	31.9	32.5	0.1	6.2	38.2	38.8
	2.09	33.2	34.0	0.2	6.2	39.6	40.4
	5.14	33.9	34.2	0.4	6.2	40.5	40.8
	6.11	33.6	34.4	0.4	6.2	40.2	41.0
Serial	0.64	31.3	32.4	0.1	6.2	37.6	38.7
	1.13	32.4	32.8	0.1	6.2	38.7	39.1
	1.93	33.8	33.0	0.2	6.2	40.2	39.4
	4.42	33.5	33.8	0.3	6.2	40.0	40.3
	4.83	33.2	33.7	0.3	6.2	39.7	40.2
	5.79	31.6	33.7	0.4	6.2	38.2	40.3

Note:

1. Sample calculation at

DV Mode 1-end & Gro., 0.56 MHz ; $31.6 + 0.1 + 6.2 = 37.9$ (dBuV)

2. Measuring Instruments:

- a) Field strength meter - Kyoritsu Electric Work Co., Ltd.
 Model : KNM-402C
 (1) Detector function : CISPR Q-PEAK
 (2) IF band width : 9 kHz
 (3) Input impedance : 75 ohms
- b) Line impedance stabilized network (LISN)
 - Kyoritsu Electric Work Co., Ltd.
 Model : KNW-406, KNW-407
 50 ohms / 50 uH network
- c) Matching pad - Kyoritsu Electric Work Co., Ltd.
 Model : KPD-401

3. The spectrum was checked from 0.45 MHz to 30 MHz and the six highest emissions relative to the appropriate limit were measured and reported.

EXHIBIT # : 3-1
 FCC ID : ACJ927129K
 OUR REF. : MKES99-F021
 MODEL NO. : PV-DV600D

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4" LCD Type

2) 15.107 Power Line Conducted Voltage

Mode	Freq. (MHz)	Meter Reading (dBuV)		LISN Factor (dB)	Matching Pad Loss (dB)	Interference (dBuV)	
		1-end & Grounded	The other- End & Gro.			1-end & Grounded	The other- End & Gro
DV	0.56	31.9	30.8	0.1	6.2	38.2	37.1
	0.64	33.1	32.2	0.1	6.2	39.4	38.5
	0.89	31.3	32.0	0.1	6.2	37.6	38.3
	2.09	32.7	33.6	0.2	6.2	39.1	40.0
	5.14	33.8	34.0	0.4	6.2	40.4	40.6
	6.11	33.4	33.9	0.4	6.2	40.0	40.5
Serial	0.64	30.6	31.6	0.1	6.2	36.9	37.9
	1.13	32.5	33.1	0.1	6.2	38.8	39.4
	1.93	33.7	33.5	0.2	6.2	40.1	39.9
	4.42	33.2	33.5	0.3	6.2	39.7	40.0
	4.83	32.4	33.6	0.3	6.2	38.9	40.1
	5.79	31.8	33.2	0.4	6.2	38.4	39.8

Note:

1. Sample calculation at

DV Mode 1-end & Gro., 0.56 MHz ; $31.9 + 0.1 + 6.2 = 38.2$ (dBuV)

2. Measuring Instruments:

- a) Field strength meter - Kyoritsu Electric Work Co., Ltd.
 Model : KNM-402C
 (1) Detector function : CISPR Q-PEAK
 (2) IF band width : 9 kHz
 (3) Input impedance : 75 ohms
- b) Line impedance stabilized network (LISN)
 - Kyoritsu Electric Work Co., Ltd.
 Model : KNW-406, KNW-407
 50 ohms / 50 uH network
- c) Matching pad - Kyoritsu Electric Work Co., Ltd.
 Model : KPD-401

3. The spectrum was checked from 0.45 MHz to 30 MHz and the six highest emissions relative to the appropriate limit were measured and reported.

EXHIBIT # : 3-1
 FCC ID : ACJ927129K
 OUR REF. : MKES99-F021
 MODEL NO. : PV-DV600D

Sheet 6 of 16 Sheets

3" LCD Type

3) 15.109 Radiated Emission

Mode	Freq. (MHz)	Meter Reading Open Volt. (dBuV)		Correction Factor (dB) Open Vol.	Emission at 3 meters (DbuV)	
		Horiz.	Vert.		Horiz.	Vert.
DV	108.00	24.1	7.5	13.6	37.7	21.1
	121.50	21.9	6.2	15.4	37.3	21.6
	256.50	16.2	5.5	21.1	37.3	26.6
	337.50	21.3	15.1	19.7	41.0	34.8
	351.00	20.5	15.4	20.0	40.5	35.4
	391.50	16.0	15.8	20.9	36.9	36.7
Serial	108.00	21.8	8.5	13.6	35.4	22.1
	121.50	20.4	6.4	15.4	35.8	21.8
	256.50	15.1	4.7	21.1	36.2	25.8
	337.50	18.6	13.2	19.7	38.3	32.9
	351.00	17.6	14.1	20.0	37.6	34.1
	391.50	17.5	16.3	20.9	38.4	37.2

Note:

1. Sample calculation at

DV Mode Horiz., 108.00 MHz ; 24.1 + 13.6 = 37.7 (dBuV/m)

2. Measuring Instruments:

a) Field strength meter

- Rohde & Schwarz

(for 30 MHz to 1 G Hz)

Model : ESVP

(1) Frequency range : 20 MHz to 1300 MHz

(2) RF Input : 50 ohms

(3) IF band width : 7.5 kHz / 12 kHz/
120 kHz / 1 MHz

(4) Detector function: Average/

CISPR Q-PERK/PERK

c) Receiving antenna

- Schwarzbeck

Model : VHA9103 30 - 300 MHz

Model : UHALP9107 300 - 1000 MHz

- The Electro-Mechanics Company

Model : 3115 1 - 18 GHz

3. The Spectrum was checked from 30 MHz to 1000 MHz and the six highest emissions relative to the appropriate limit were measured and reported.

EXHIBIT # : 3-1
 FCC ID : ACJ927129K
 OUR REF. : MKES99-F021
 MODEL NO. : PV-DV600D

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4" LCD Type

4) 15.109 Radiated Emission

Mode	Freq. (MHz)	Meter Reading Open Volt. (dBuV)		Correction Factor (dB) Open Vol.	Emission at 3 meters (DbuV)	
		Horiz.	Vert.		Horiz.	Vert.
DV	108.00	23.8	8.1	13.6	37.4	21.7
	121.50	22.2	6.9	15.4	37.6	22.3
	256.50	15.1	6.1	21.1	36.2	27.2
	337.50	20.8	15.4	19.7	40.5	35.1
	351.00	20.0	14.8	20.0	40.0	34.8
	391.50	15.3	15.1	20.9	36.2	36.0
Serial	108.00	21.6	9.8	13.6	35.2	23.4
	121.50	20.4	6.2	15.4	35.8	21.6
	256.50	15.1	5.1	21.1	36.2	26.2
	337.50	18.2	13.3	19.7	37.9	33.0
	351.00	18.1	14.6	20.0	38.1	34.6
	391.50	17.2	16.5	20.9	38.1	37.4

Note:

1. Sample calculation at

DV Mode Horiz., 108.00 MHz ; $23.8 + 13.6 = 37.4$ (dBuV/m)

2. Measuring Instruments:

a) Field strength meter

- Rohde & Schwarz

(for 30 MHz to 1 G Hz)

Model : ESVP

(1) Frequency range : 20 MHz to 1300 MHz

(2) RF Input : 50 ohms

(3) IF band width : 7.5 kHz / 12 kHz/
120 kHz / 1 MHz

(4) Detector function: Average/

CISPR Q-PERK/PERK

c) Receiving antenna

- Schwarzbeck

Model : VHA9103 30 - 300 MHz

Model : UHALP9107 300 - 1000 MHz

- The Electro-Mechanics Company

Model : 3115 1 - 18 GHz

3. The Spectrum was checked from 30 MHz to 1000 MHz and the six highest emissions relative to the appropriate limit were measured and reported.

EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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15.107 POWER LINE CONDUCTED VOLTAGE

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -
(Arrangement of interface cable on the test table)

DV Mode

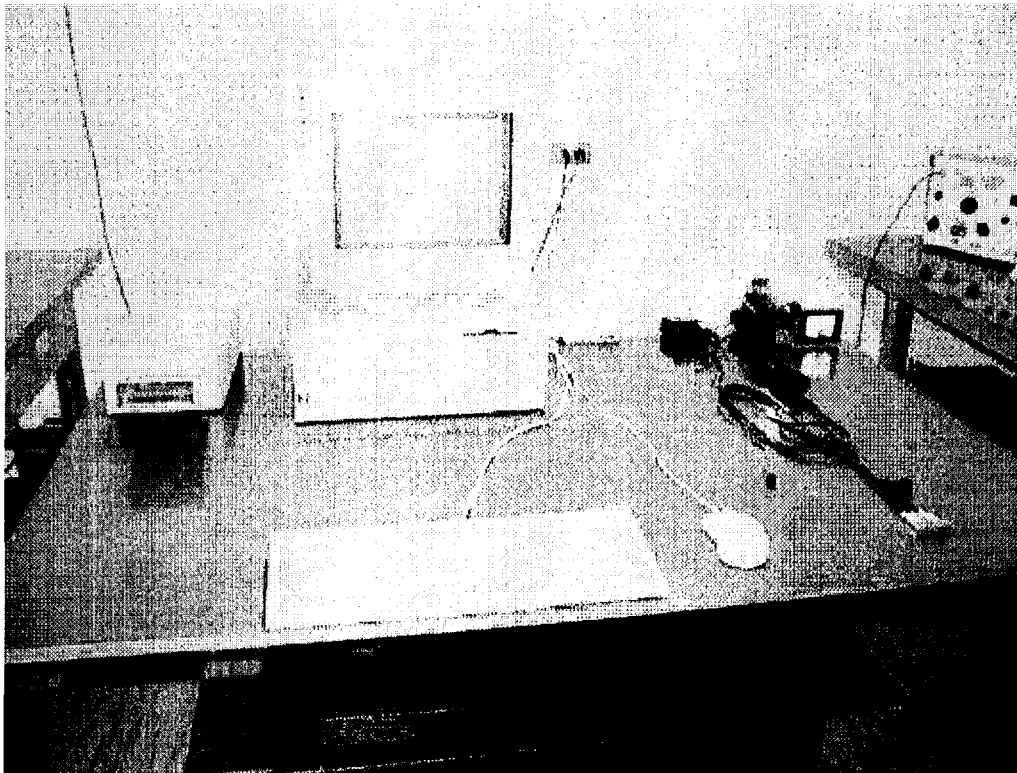


EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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15.107 POWER LINE CONDUCTED VOLTAGE

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -

(Arrangement of interface cable on the test table)

Serial Mode

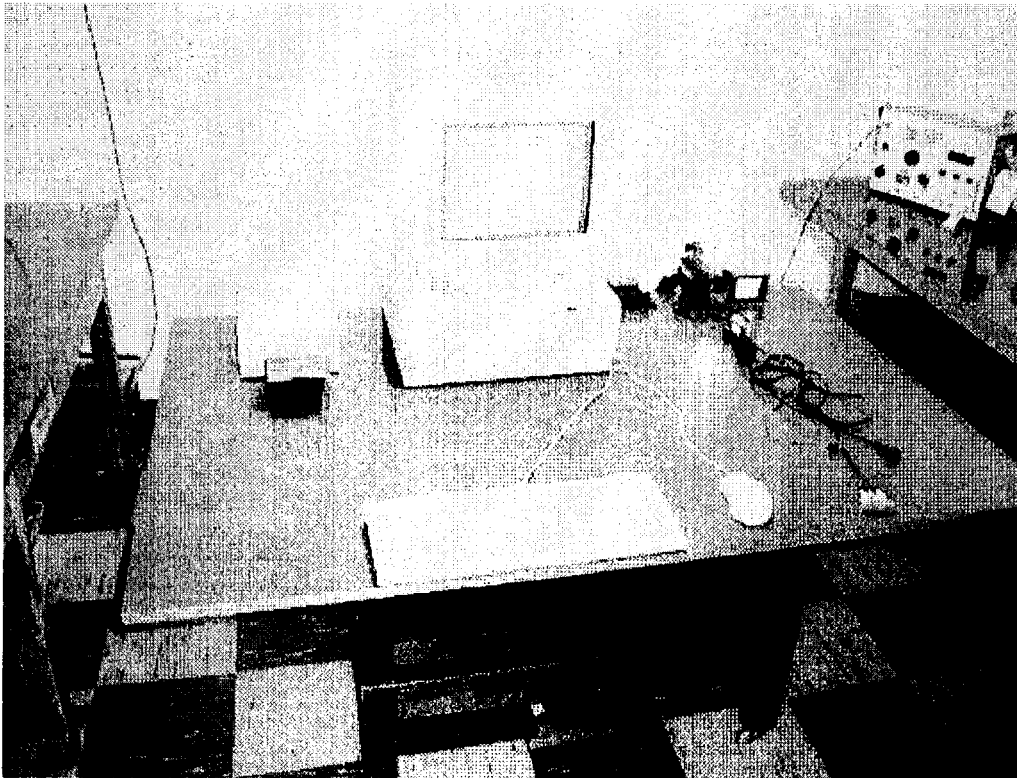


EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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15.109 RADIATED EMISSION

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -
(Arrangement of interface cable on the test table)

DV Mode

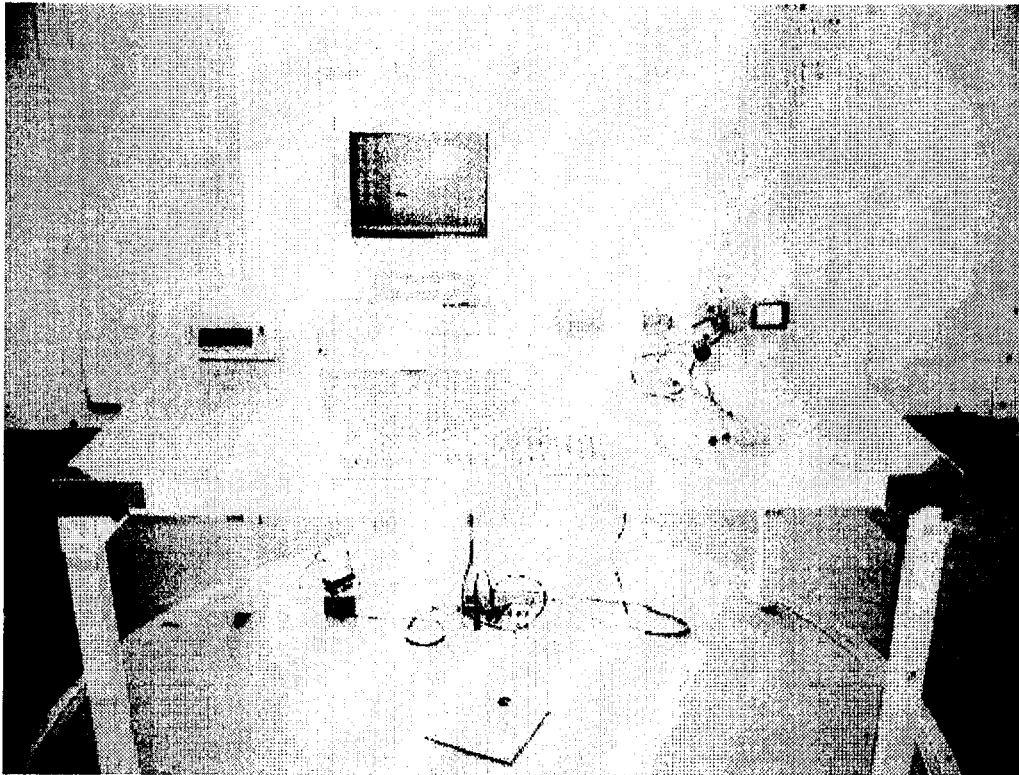


EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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15.109 RADIATED EMISSION .

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -
(Arrangement of interface cable on the test table)

DV Mode

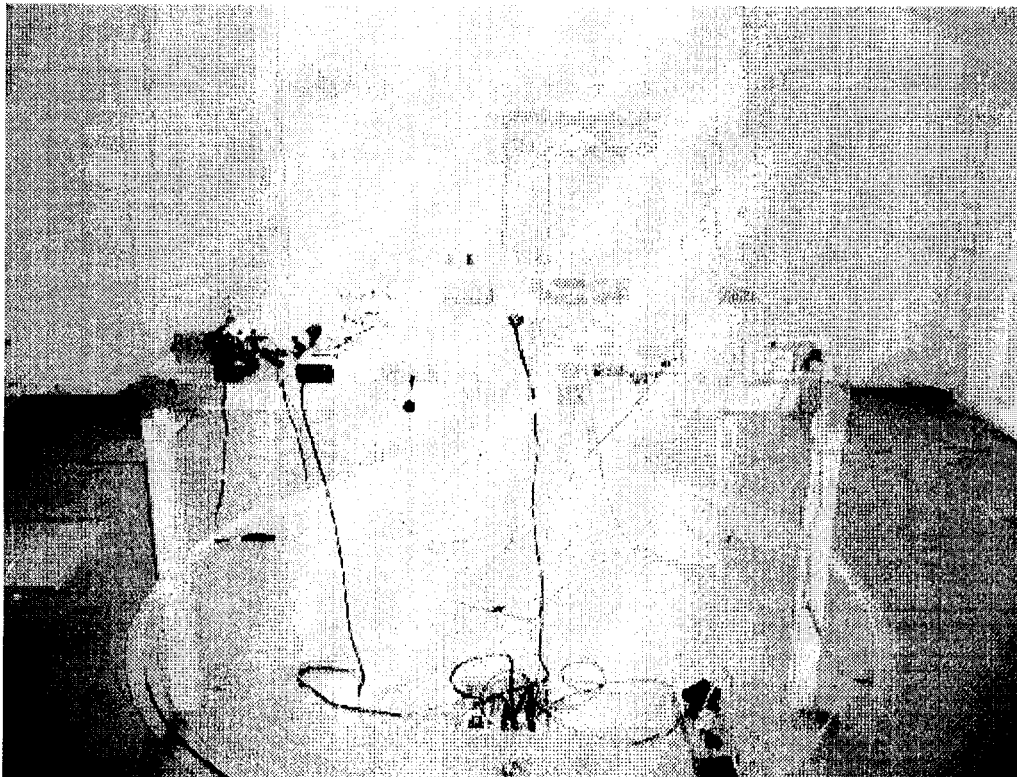


EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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15.109 RADIATED EMISSION

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -
(Arrangement of interface cable on the test table)

Serial Mode

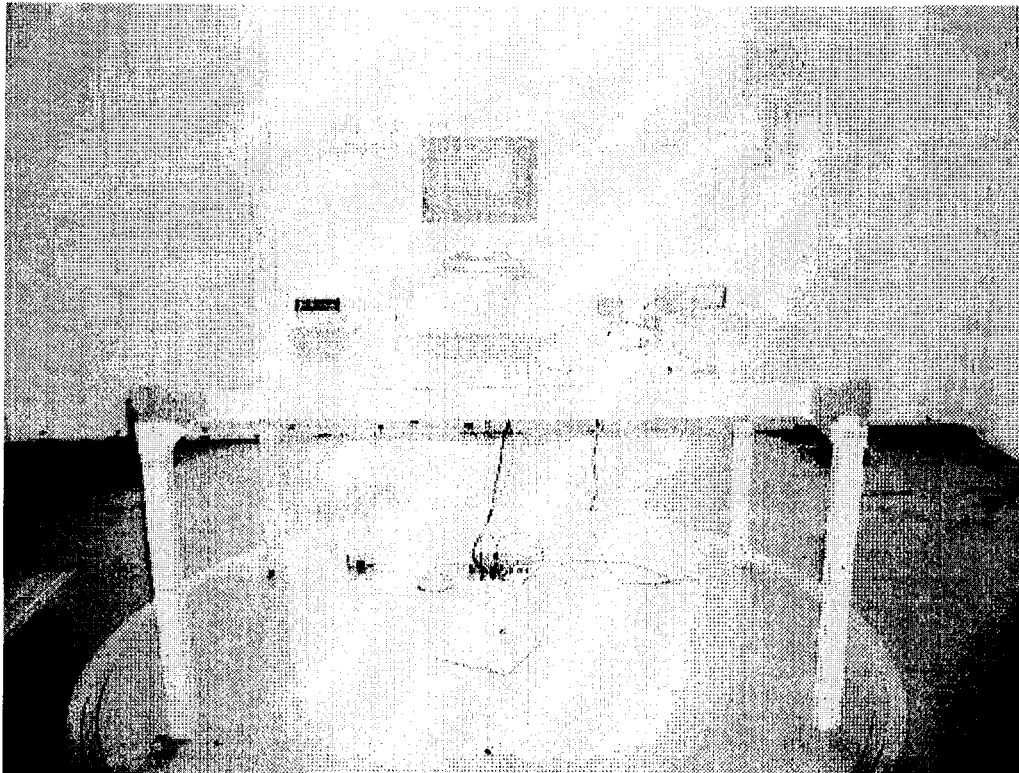


EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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15.109 RADIATED EMISSION

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -

(Arrangement of interface cable on the test table)

Serial Mode

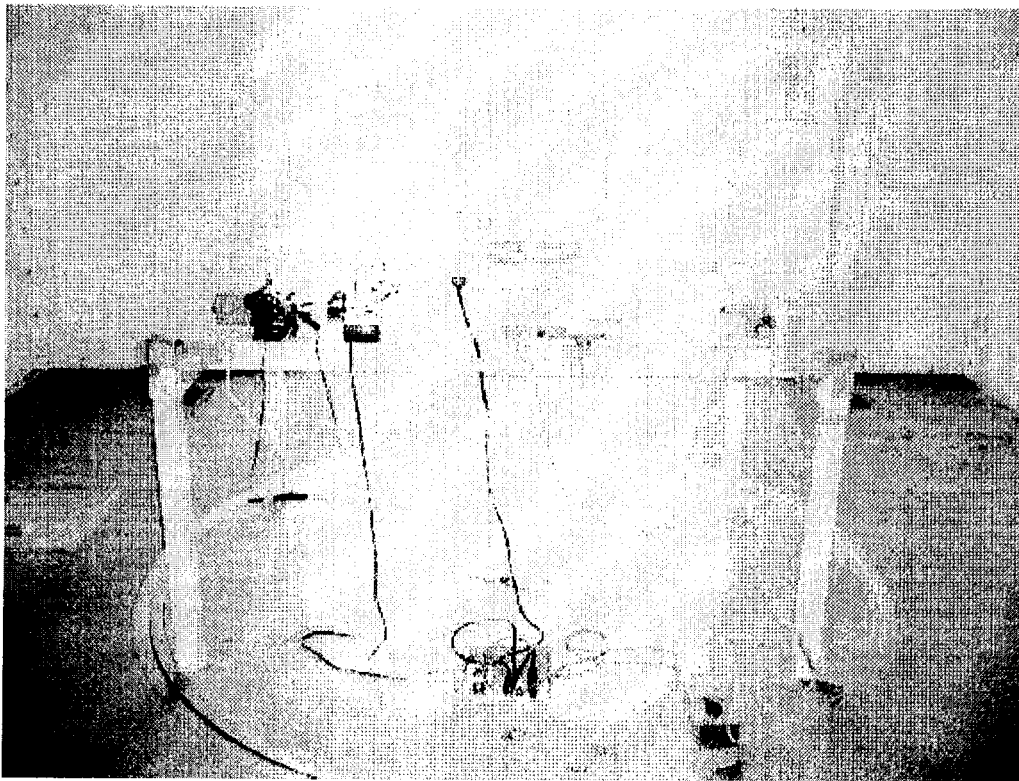


EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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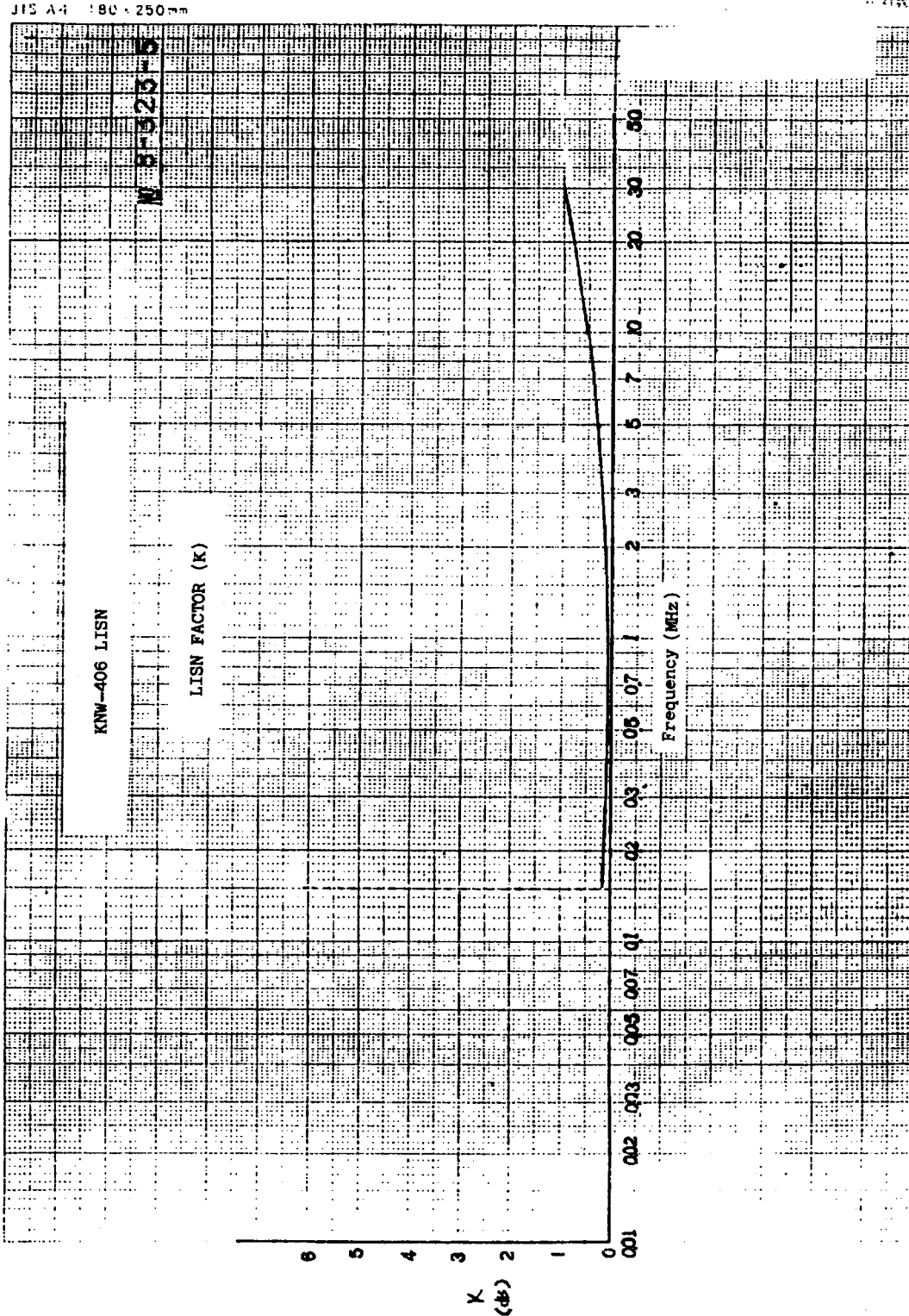
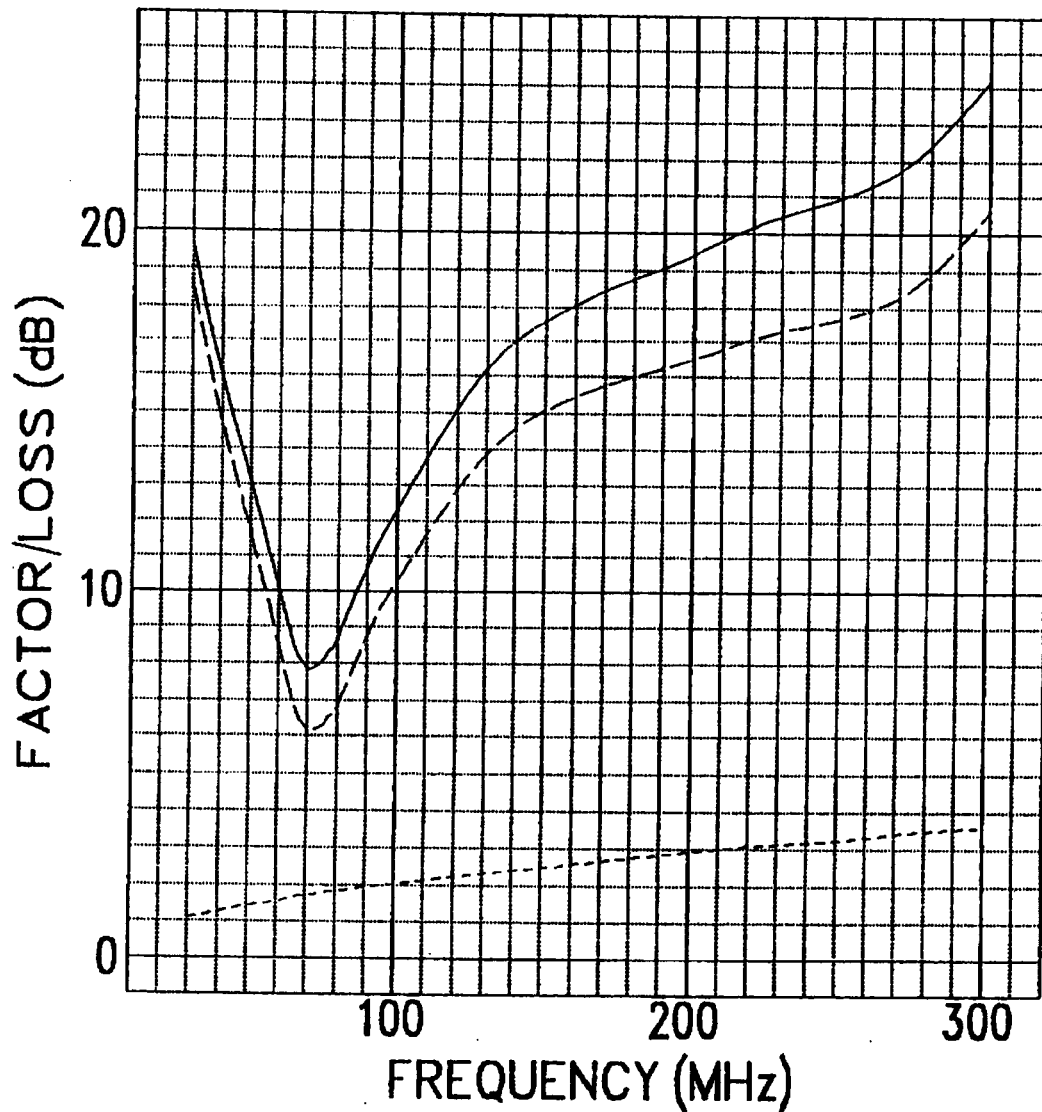


EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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CORRECTION FACTOR OF BBA9106



$$E = V + K$$

E : Field Strength

V : Correction Factor (dB)

— : Correction Factor

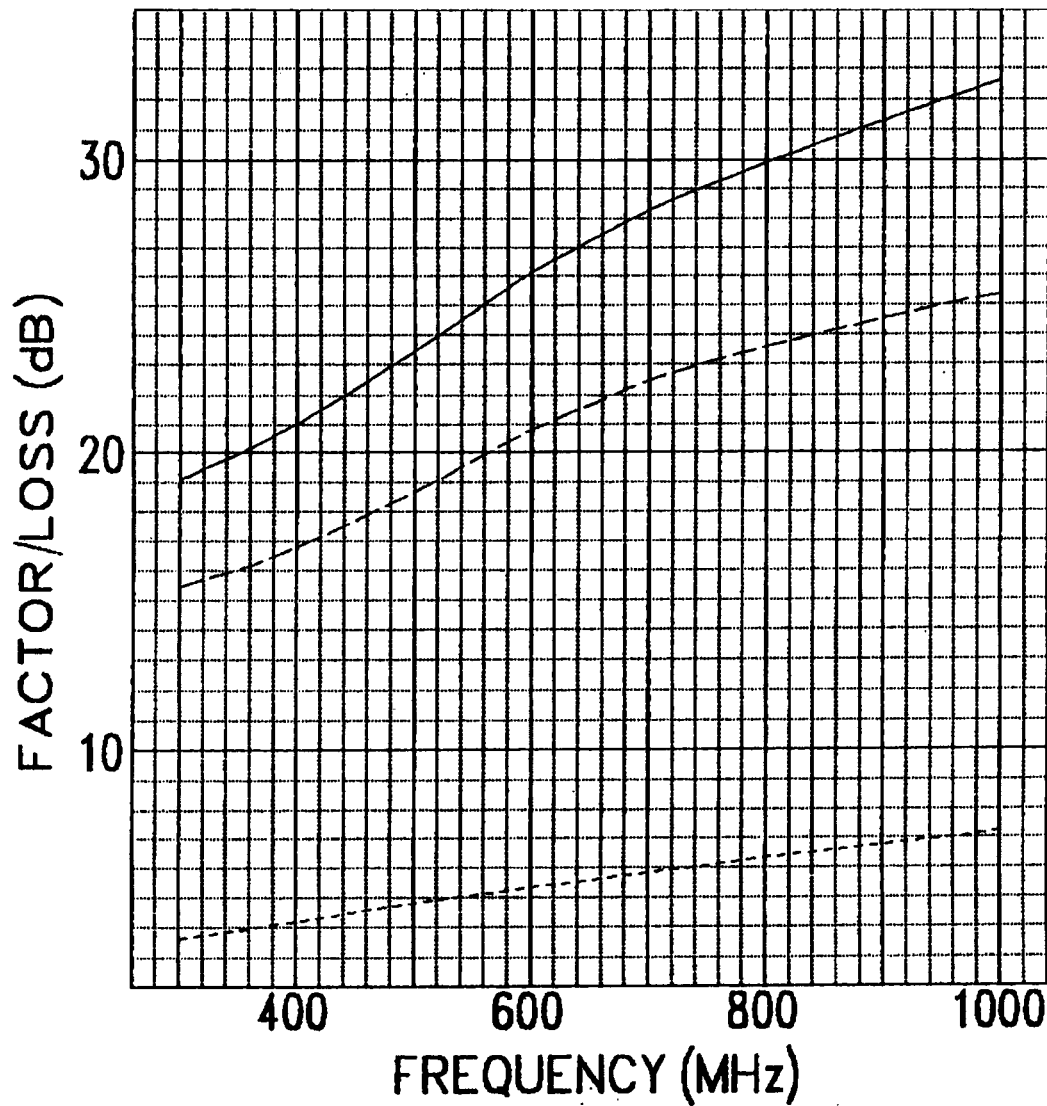
--- : Antenna Factor

..... : Cable Loss

EXHIBIT # : 3-1
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

Sheet 16 of 16 Sheets

CORRECTION FACTOR OF UHALP9107



$$E = V + K$$

E : Field Strength

V : Correction Factor (dB)

———— : Correction Factor

----- : Antenna Factor

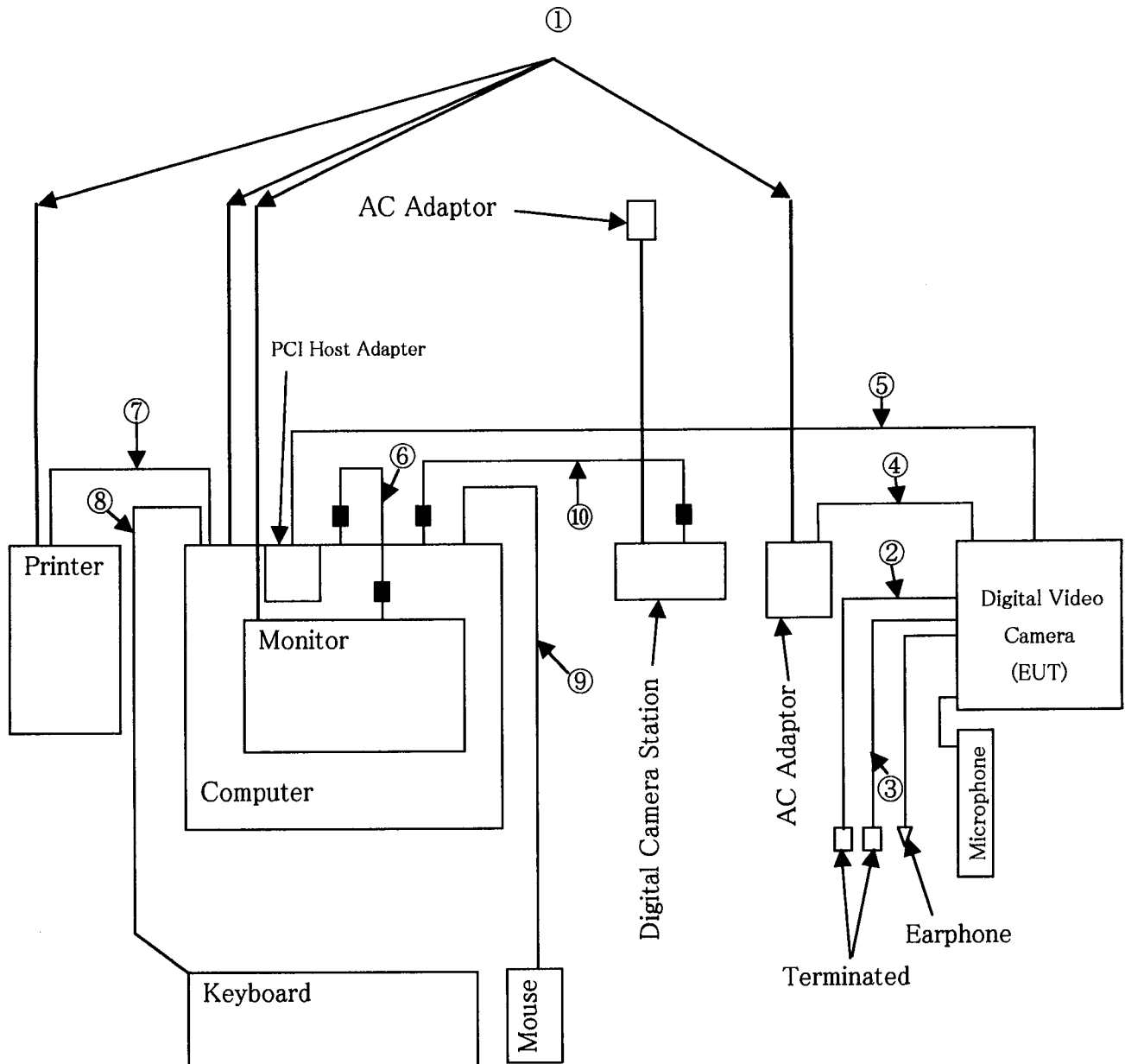
..... : Cable Loss

Block Diagram of System for Measurements

EXHIBIT # : 3-2
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

DV Mode

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DV Mode

Type of Interface Cable

1. Power Cord
2. Audio/Video Cable (1.5 m) : Shielded Cable; Circular Cable
3. S-Video Cable (1.5 m) : Shielded Cable; Circular Cable
4. DC Cable (2.0 m) : Circular Cable
5. PC Interface cable (2.0 m) : Shielded Cable; Circular Cable
6. Monitor Cable (1.5 m) : Shielded Cable with Ferrite Cores ; Circular Cable
(Permanently attached to the Monitor)
7. Printer Cable (1.5 m) : Shielded Cable; Circular Cable
(Parallel Cable)
8. Keyboard Cable (1.7 m) : Shielded Cable ; Circular Cable
(Permanently attached to the Keyboard)
9. Mouse Cable (1.8 m) : Shielded Cable ; Circular Cable
(Permanently attached to the Mouse)
10. PC Connection cable (2.0 m) : Shielded Cable with Ferrite Cores ; Circular Cable
(Serial Cable)

EXHIBIT # : 3-2
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D
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DV Mode

Description

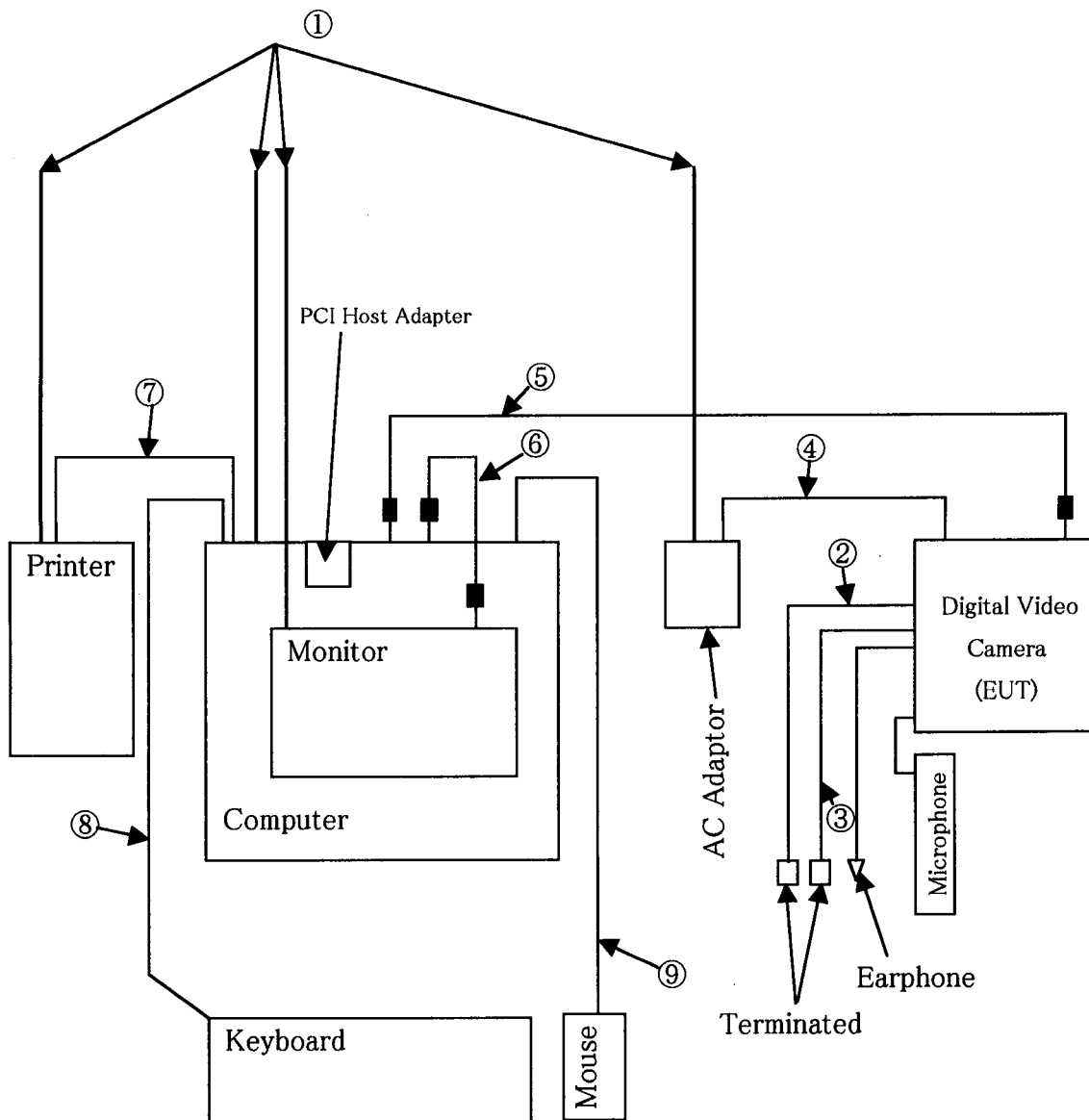
Digital Video Camera (Application Device)	Model No. : PV-DV600D Trade Name : Panasonic FCC ID : ACJ927129K
AC Adaptor (For Digital Video Camera)	Model No. : PV-DAC10 Trade Name : Panasonic
Microphone	Model No. : ECM-K57 Trade Name : SONY
Monitor (Certified Device)	Model No. : 500-069EV Trade Name : Gateway FCC ID : BEJCS592
Computer (DoC Device)	Model No. : DCM Trade Name : DELL Computer Corporation
1394-to-PCI Host Adapter (DoC Device)	Model No. : AHA-8940 Trade Name : Adaptec, Inc.
Keyboard (Certified Device)	Model No. : SK-1000REW Trade Name : DELL Computer Corporation FCC ID : GYUR36SK
Mouse (Certified Device)	Model No. : 90741 Trade Name : Microsoft Corporation FCC ID : C3KKMP3
Printer (Certified Device)	Model No. : P-200JD Trade Name : Panasonic FCC ID : IUO5LU0002
Digital Camera Station (Certified Device)	Model No. : LSSQ0141 Trade Name : Panasonic FCC ID : ACJ927117K
AC Adaptor (For Digital Camera Station)	Model No. : LSSQ0142 Trade Name : Panasonic

Block Diagram of System for Measurements

EXHIBIT # : 3-2
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

Serial Mode

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Serial Mode

Type of Interface Cable

1. Power Cord
2. Audio/Video Cable (1.5 m) : Shielded Cable ; Circular Cable
3. S-Video Cable (1.5 m) : Shielded Cable ; Circular Cable
4. DC Cable (2.0 m) : Circular Cable
5. PC Interface cable (2.0 m) : Shielded Cable with Ferrite Cores ; Circular Cable
(Serial Cable)
6. Monitor Cable (1.5 m) : Shielded Cable with Ferrite Cores ; Circular Cable
(Permanently attached to the Monitor)
7. Printer Cable (1.5 m) : Shielded Cable ; Circular Cable
(Parallel Cable)
8. Keyboard Cable (1.7 m) : Shielded Cable ; Circular Cable
(Permanently attached to the Keyboard)
9. Mouse Cable (1.8 m) : Shielded Cable ; Circular Cable
(Permanently attached to the Mouse)

EXHIBIT # : 3-2
FCC ID : ACJ927129K
OUR REF. : MKES99-F021
MODEL NO. : PV-DV600D

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Serial Mode

Description

Digital Video Camera
(Application Device)

Model No. : PV-DV600D
Trade Name : Panasonic
FCC ID : ACJ927129K

AC Adaptor
(For Digital Video Camera)

Model No. : PV-DAC10
Trade Name : Panasonic

Microphone

Model No. : ECM-K57
Trade Name : SONY

Monitor
(Certified Device)

Model No. : 500-069EV
Trade Name : Gateway
FCC ID : BEJCS592

Computer
(DoC Device)

Model No. : DCM
Trade Name : DELL Computer Corporation

1394-to-PCI Host Adapter
(DoC Device)

Model No. : AHA-8940
Trade Name : Adaptec, Inc.

Keyboard
(Certified Device)

Model No. : SK-1000REW
Trade Name : DELL Computer Corporation
FCC ID : GYUR36SK

Mouse
(Certified Device)

Model No. : 90741
Trade Name : Microsoft Corporation
FCC ID : C3KKMP3

Printer
(Certified Device)

Model No. : P-200JD
Trade Name : Panasonic
FCC ID : IUO5LU0002