

EXHIBIT #2  
Fty control No. : KM698-F002  
FCC ID : ACJ5Z6KX-P1131

TECHNICAL REPORT PURSUANT  
TO  
SUBPART B OF PART 15

- Manufacturer's Name and Address  
Kyushu Matsushita Electric Co.,Ltd.  
1471 Murata-cho, Tosu-shi, Saga 841-8501, Japan
- Trade Name  
Panasonic
- Model Number  
KX-P1131
- List of Additional Model Number / Trade Name  
Not Applicable.
- Block Diagram  
See Exhibit #5
- Operating Instructions  
See Exhibit #6
- Photographs  
See following Exhibits.  
#1-1.Front Appearance  
#1-2. Rear Appearance  
#1-3.Internal View  
#1-4.Pattern View of PWBs

EXHIBIT #4  
Fty control No. : KM698-F002  
FCC ID : ACJ5Z6KX-P1131

**REPORT OF MEASUREMENT  
ON COMPUTING DEVICE  
ISSUED BY KME EMC SITE**

**MEASUREMENT REPORT**

CLASS B DIGITAL DEVICE

Model No.: **KX-P1131**

FCC I/D : ACJ5Z6KX-P1131

**KME**

KME EMC SAGA SITE

July 1, 1998

Kyushu Matsushita Electric Co., LTD. ( K M E )  
Corporate Quality Assurance Division ( C Q A D )  
KME EMC SAGA SITE

1471 , Murata-cho, Tosu-shi,  
Saga-ken 841-8501, Japan TEL 0942-83-3131

Do not reproduce except in full, without the written  
approval of KME EMC SITE.



Kyushu Matsushita Electric Co., Ltd.

KME EMC SAGA SITE

1471, Murata-cho, Tosu-shi,

Saga-ken, 841-8501 JAPAN

TEL 0942-83-3131

FAX 0942-85-1873

REPORT OF MEASUREMENT ON DIGITAL DEVICE

KME APPLICATION NO.: SS98487

1. Applicant : Kyushu Matsushita Electric Co., Ltd.  
1-62, 4-CHOME, MINOSHIMA  
HAKATA-KU, FUKUOKA, 812-8531 JAPAN
2. Manufacturer : Kyushu Matsushita Electric Co., Ltd.  
Saga-Division  
1471, Murata-cho, Tosu-shi,  
Saga-ken, 841-8501 JAPAN
3. Description of Device: **Dot Matrix Printer**
  - a) Type of EUT : Desk-top Type
  - b) Category : Class B Digital Device
  - c) FCC I/D : ACJ5Z6KX-P1131
  - d) Trade Name : Panasonic
  - e) Model No. : **KX-P1131**
  - f) Serial No. : 8EMEUA00035
  - g) Date of Manufacture : May, 1998
  - h) Power Supply : 120VAC 60Hz
4. Date of Measurement : June 23, 24 1998
5. Regulations Applied : FCC Rules and Regulations Part 15  
Subpart B - Unintentional Radiators
6. Measurement Procedure: ANSI C63.4-1992
7. Place of Measurement : Kyushu Matsushita Electric Co.,Ltd.  
KME EMC SAGA SITE (31040/SIT/KYUSHU)
8. Measurement Results : The results obtained from the measuring of  
the above-mentioned device are as shown in  
the attached sheets.
9. Summary of Results.  
Test sample complies with FCC Rules and Regulations  
Part 15 Subpart B - Unintentional Radiators (Class B)  
Worst Margin(Radiated Emission): 35.99 MHz (V) 4.3dB (at page 4)  
Worst Margin(Conducted Emission): 16.04 MHz 11.2dB (at page 6)

July 1, 1998

Chikito Kuwano  
Deputy Chief manager

C. Kuwano

**[ 1 ] TEST RESULT**

**\* TEST CONDITION OF EQUIPMENT UNDER TEST (EUT)**

- 1) Configuration of EUT : Refer to the sheet No. 12
- 2) Operating Condition : Serial Mode, Parallel Mode
- 3) EUT Grounding : Grounded at the plug end of the line cord
- 4) Power Rating : 120VAC 60Hz

**1. RADIATED EMISSION MEASUREMENTS [ 30 - 1000 MHz ]**

[ Test Site : Open Area Test Site ]

**\* TEST CONDITION OF INSTRUMENT**

EUT Warm-up Time : 30 minutes

- 1) Resolution Bandwidth : 120kHz
  - 2) Detector Function : QP
  - ( 1 - 1 ) Parallel Mode
- DATE: June 23, 1998  
 Temp.: 29 °C Humi.: 73 %

EMISSION FREQUENCY ( MHz )	ANTENNA POLARITY ( H, V )	METER READING at 3 m ( dB μ V )	ANTENNA FACTOR AND PREAMPGAIN ( dB )	EMISSION LEVEL at 3 m		F C C LIMIT at 3m ( μ V/m )
				( dB μ V/m )	( μ V/m )	
84.028	V	45.1	-18.3	26.8	21.9	100
84.028	H	44.7	-18.3	26.4	20.9	100
92.057	V	42.2	-17.5	24.7	17.2	150
92.057	H	40.4	-17.5	22.9	14.0	150
128.067	V	37.8	-14.4	23.4	14.8	150
128.067	H	40.3	-14.4	25.9	19.8	150
156.064	V	38.1	-12.2	25.9	19.8	150
156.064	H	42.0	-12.2	29.8	31.0	150
188.051	V	35.1	-10.0	25.1	18.0	150
188.051	H	40.1	-10.0	30.1	32.0	150
204.949	V	27.1	-9.0	18.1	8.1	150
204.949	H	31.1	-9.0	22.1	12.8	150
300.145	V	26.3	-4.1	22.2	12.9	200
300.145	H	29.2	-4.1	25.1	18.0	200
348.172	V	30.3	-2.5	27.8	24.6	200
348.172	H	35.3	-2.5	32.8	43.7	200
504.196	V	33.9	2.6	36.5	66.9	200
504.196	H	30.4	2.6	33.0	44.7	200
547.971	V	28.9	3.5	32.4	41.7	200
547.971	H	26.3	3.5	29.8	31.0	200

NOTES: 1) The cable loss is included into the antenna factor and pre-amp gain.

2) Sample of calculation at 84.028 MHz

$$45.1 \text{ (dB } \mu \text{V)} - 18.3 \text{ (dB } \mu \text{V/m)} = 26.8 \text{ (dB } \mu \text{V/m)}$$

$$26.8 / 20 = 1.340$$

$$10 = 10 = 21.9 \text{ (} \mu \text{V/m)}$$

Certified by : Y. Matsuda

*Y. Matsuda*



KME APPLICATION No. SS98487

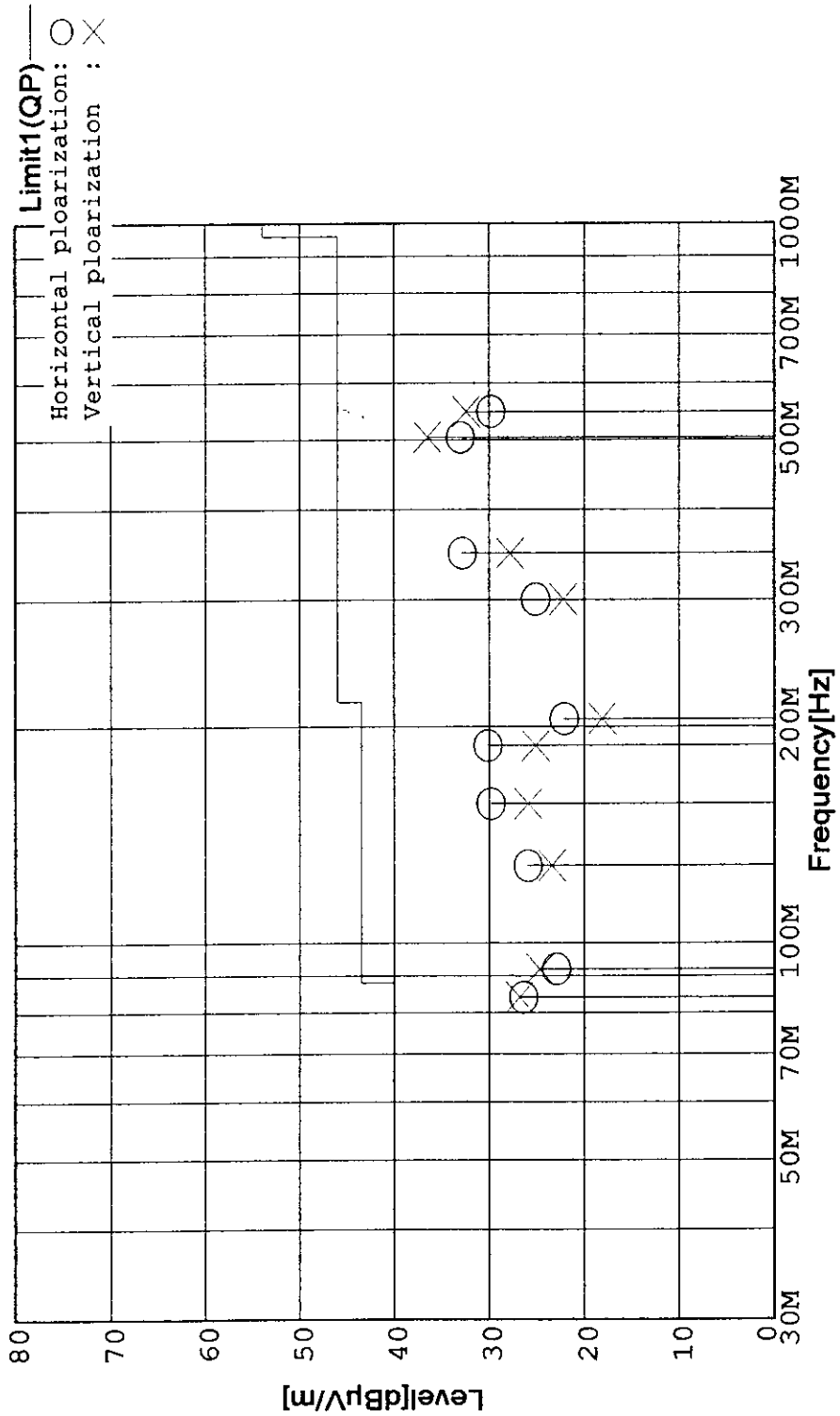
Model No. KX-P1131

Sheet 3 of 15 Sheets

### RADIATED EMISSION MEASUREMENTS

( 3 meter method )

#### RADIATED EMISSION



( 1 - 2 ) Serial Mode

EMISSION FREQUENCY ( MHz )	ANTENNA POLARITY ( H, V )	METER READING at 3 m ( dB $\mu$ V )	ANTENNA FACTOR AND PREAMP GAIN ( dB )	EMISSION LEVEL at 3 m		F C C LIMIT at 3m ( $\mu$ V/m )
				( dB $\mu$ V/m )	( $\mu$ V/m )	
35.994	V	61.6	-25.9	35.7	61.0	100
35.994	H	56.1	-25.9	30.2	32.4	100
96.022	V	53.6	-17.1	36.5	66.9	100
96.022	H	49.4	-17.1	32.3	41.3	100
130.764	V	44.6	-14.2	30.4	33.2	150
130.764	H	46.1	-14.2	31.9	39.4	150
140.070	V	44.9	-13.5	31.4	37.2	150
140.070	H	39.3	-13.5	25.8	19.5	150
156.428	V	40.6	-12.1	28.5	26.7	150
156.428	H	43.6	-12.1	31.5	37.6	150
176.041	V	35.4	-10.7	24.7	17.2	150
176.041	H	41.5	-10.7	30.8	34.7	150
184.102	V	38.6	-10.2	28.4	26.4	150
184.102	H	40.2	-10.2	30.0	31.7	150
195.063	V	35.7	-9.5	26.2	20.5	150
195.063	H	37.9	-9.5	28.4	26.4	150
338.000	V	27.4	-2.8	24.6	17.0	200
338.000	H	30.5	-2.8	27.7	24.3	200
520.238	V	31.7	3.0	34.7	54.4	200
520.238	H	26.7	3.0	29.7	30.6	200
551.000	V	21.2	3.6	24.8	17.4	200
551.000	H	21.6	3.6	25.2	18.2	200

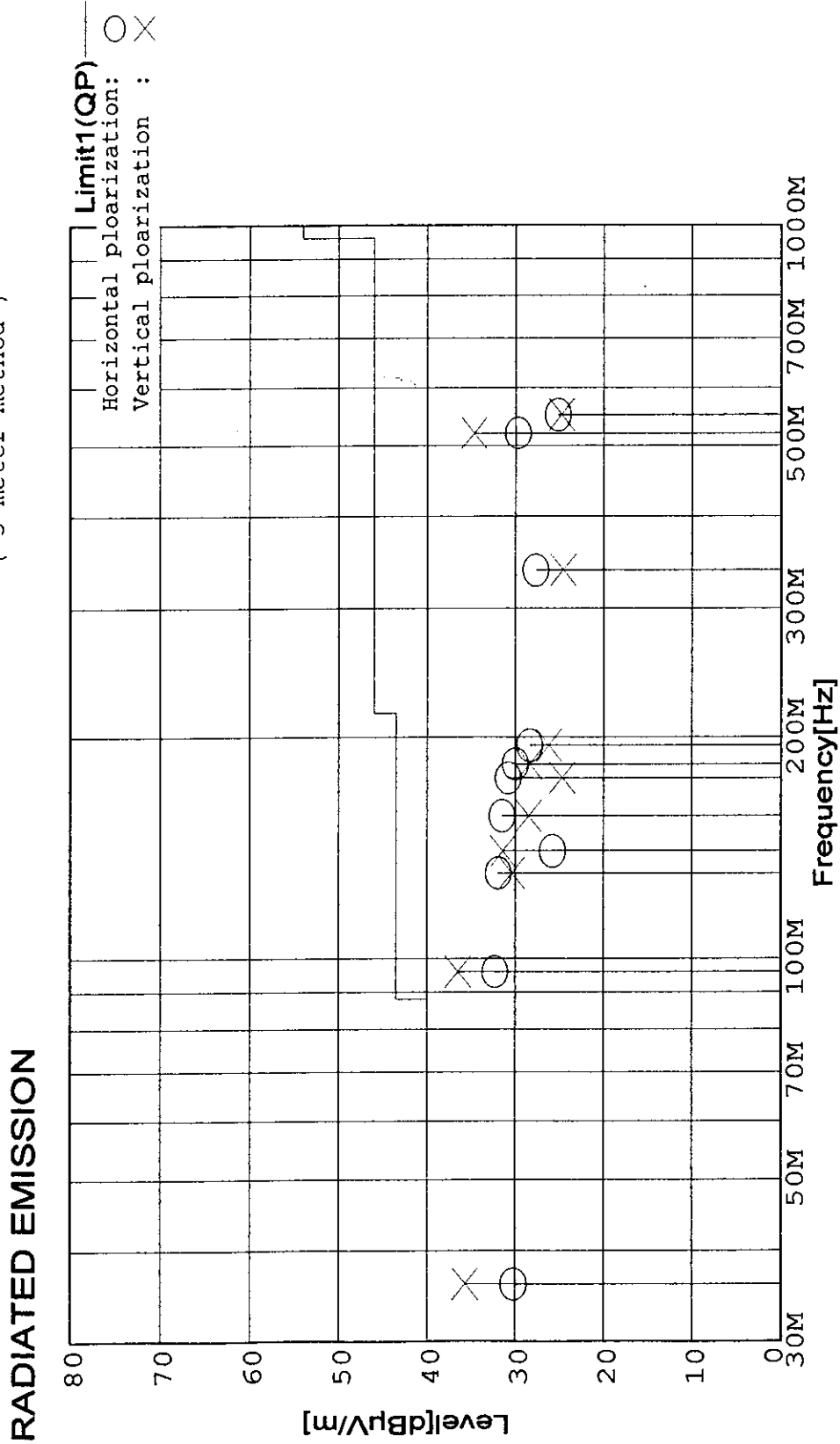
NOTES : 1) The cable loss is included into the antenna factor and pre-amp gain.

2) Sample of calculation at 35.994 MHz  
 $61.6 \text{ (dB } \mu \text{ V)} - 25.9 \text{ (dB } \mu \text{ V/m)} = 35.7 \text{ (dB } \mu \text{ V/m)}$   
 $35.7 / 20 = 1.785$   
 $10 = 10 = 61.0 \text{ (} \mu \text{ V/m)}$

Certified by : Y. Matsuda Y. Matsuda

### RADIATED EMISSION MEASUREMENTS

( 3 meter method )



**2. AC POWERLINE CONDUCTED MEASUREMENTS**

[ Test Site : Shielded Room ]

**\* TEST CONDITION OF INSTRUMENT**

EUT Warm-up Time : 30 minutes

- 1) Resolution Bandwidth : 9 kHz
- 2) Detector Function : QP  
 ( 2 - 1 ) Parallel Mode

DATE : June 24, 1998  
 Temp.: 24 °C Humi.: 64 %

	EMISSION FREQUENCY ( MHz )	METER READING ( dB μ V )	LISN FACTOR ( dB )	EMISSION LEVEL		F C C LIMIT ( μ V )
				(dB μ V)	( μ V )	
Va	0.50	34.5	0.0	34.5	53.1	250
	1.92	22.3	0.0	22.3	13.1	250
	6.81	28.3	0.2	28.5	26.7	250
	16.04	35.7	0.6	36.3	65.4	250
	20.61	26.6	0.7	27.3	23.2	250
	27.07	13.5	1.1	14.6	5.4	250
Vb	0.50	33.8	0.0	33.8	49.0	250
	1.92	22.6	0.0	22.6	13.5	250
	6.81	30.6	0.2	30.8	34.7	250
	16.04	36.1	0.6	36.7	68.4	250
	20.61	31.3	0.7	32.0	39.9	250
	27.07	29.4	1.1	30.5	33.5	250

NOTES : 1) LISN factor Includes the cable loss for 2 meter.

2) Sample of calculation at 0.50 MHz

$$34.5 \text{ (dB } \mu \text{ V)} + 0.0 \text{ (dB } \mu \text{ V)} = 34.5 \text{ (dB } \mu \text{ V)}$$

$$34.5 / 20 = 1.725$$

$$10 \times 1.725 = 17.25$$

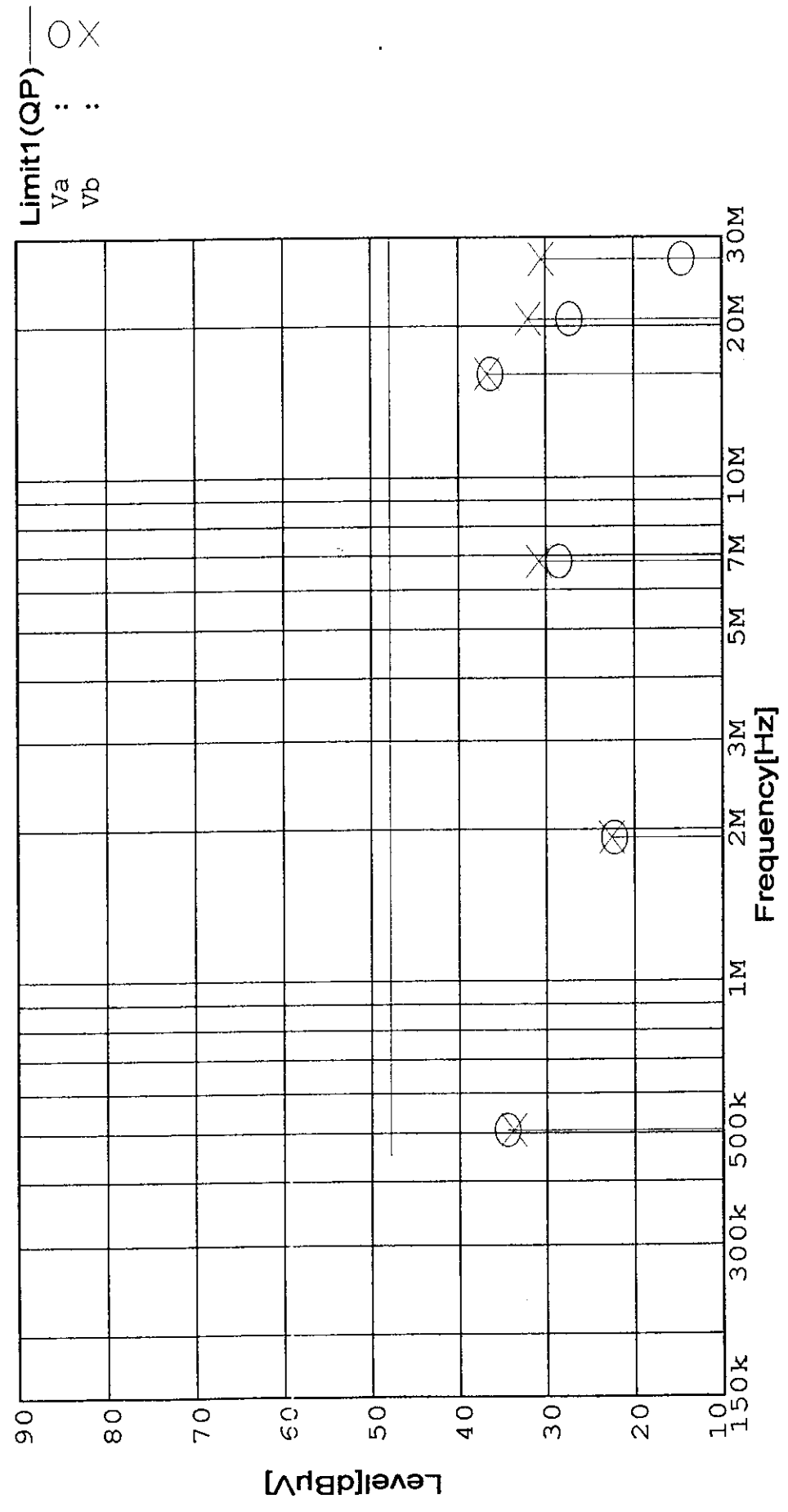
$$17.25 + 37.3 = 54.55 \approx 53.1 \text{ (} \mu \text{ V)}$$

Certified by : Y. Matsuda Y. Matsuda



### AC POWERLINE CONDUCTED MEASUREMENTS

#### LINE CONDUCTION



( 2 - 2 ) Serial Mode

	EMISSION FREQUENCY ( MHz )	METER READING ( dB μ V )	LISN FACTOR ( dB )	EMISSION LEVEL		F C C LIMIT ( μ V )
				(dB μ V)	( μ V )	
Va	0.51	35.1	0.0	35.1	56.9	250
	1.78	25.6	0.0	25.6	19.1	250
	2.12	26.4	0.1	26.5	21.2	250
	7.24	23.2	0.2	23.4	14.8	250
	16.20	23.9	0.6	24.5	16.8	250
	19.94	26.2	0.7	26.9	22.2	250
	25.79	31.4	0.9	32.3	41.3	250
Vb	0.51	34.1	0.0	34.1	50.7	250
	1.78	23.3	0.0	23.3	14.7	250
	2.12	25.5	0.1	25.6	19.1	250
	7.24	26.7	0.2	26.9	22.2	250
	16.20	26.6	0.6	27.2	23.0	250
	19.94	30.6	0.7	31.3	36.8	250
	25.79	29.9	0.9	30.8	34.7	250

NOTES : 1) LISN factor Includes the cable loss for 2 meter.

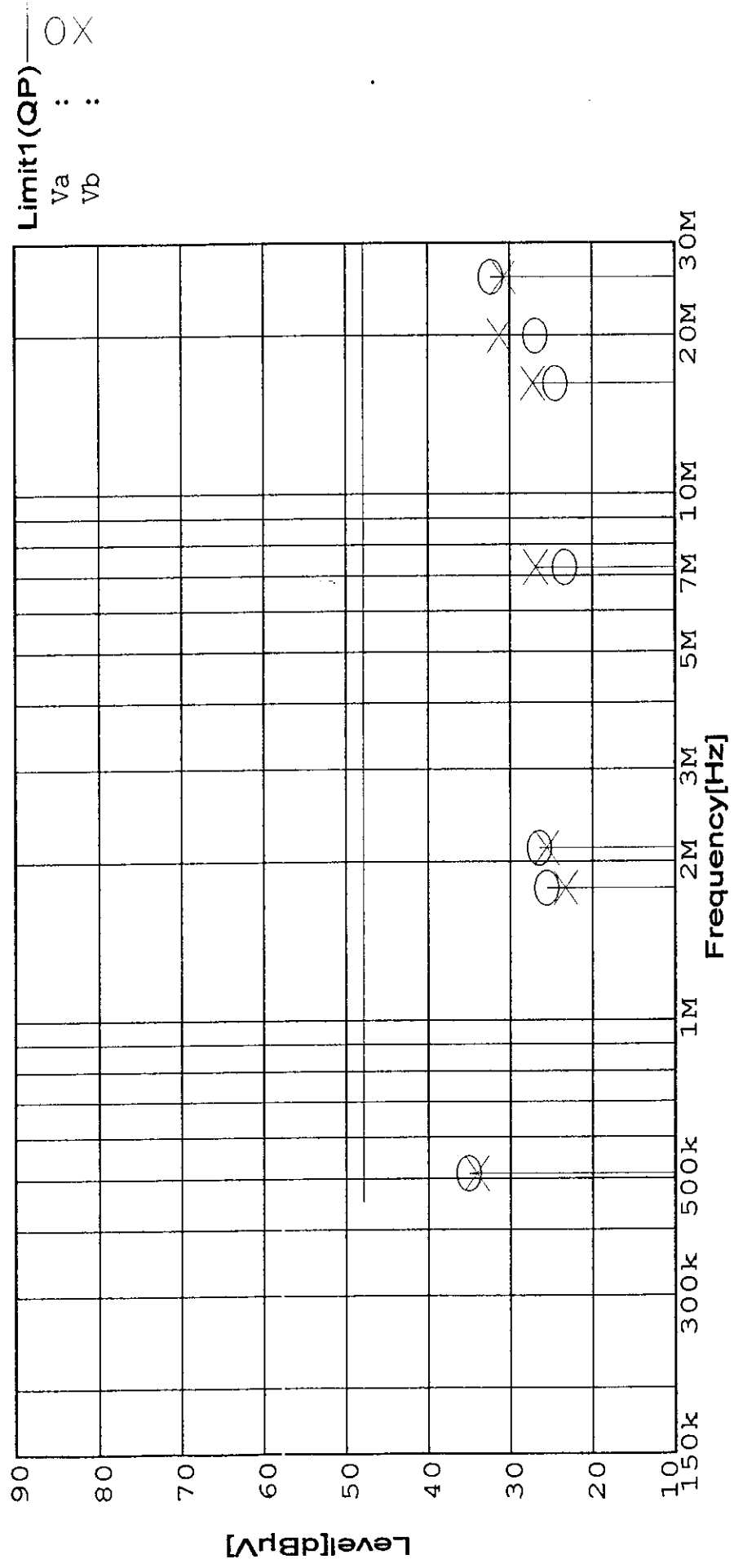
2) Sample of calculation at 0.51 MHz  
 $35.1 \text{ (dB } \mu \text{ V)} + 0.0 \text{ (dB } \mu \text{ V)} = 35.1 \text{ (dB } \mu \text{ V)}$   
 $35.1 / 20 = 1.755$   
 $10 \times 1.755 = 17.55$   
 $17.55 + 38.4 = 55.95 \approx 56.9 \text{ (} \mu \text{ V)}$

Certified by : Y. Matsuda Y. Matsuda



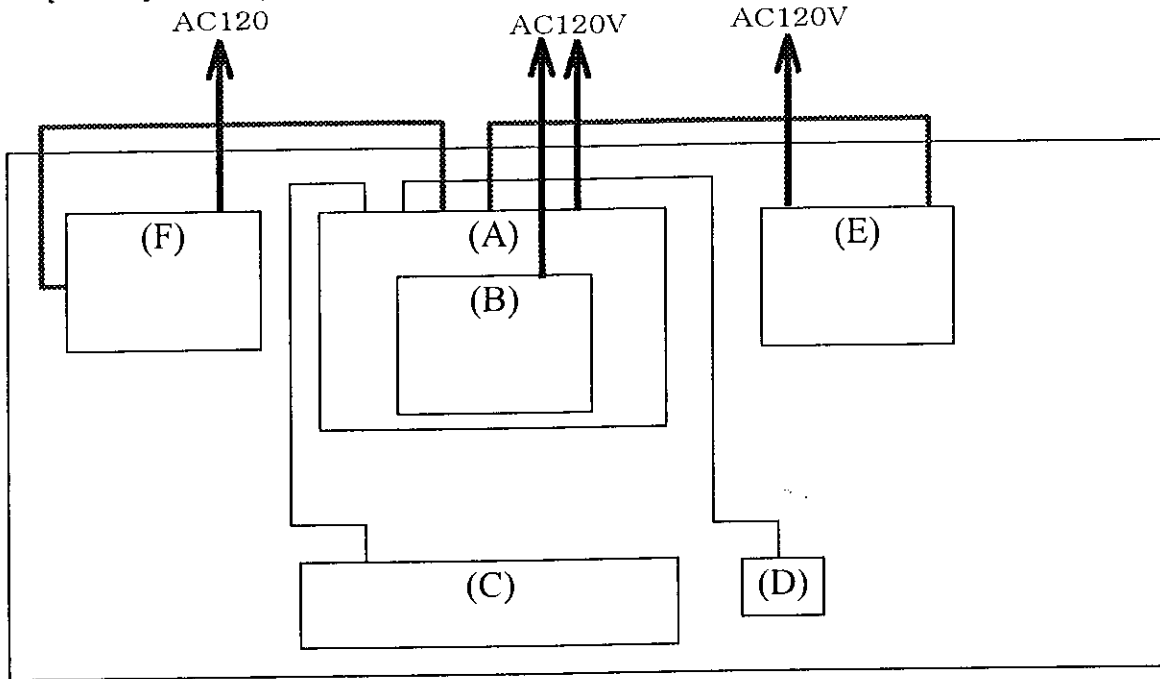
### AC POWERLINE CONDUCTED MEASUREMENTS

#### LINE CONDUCTION



## [ 2 ] TEST CONDITIONS AND CONFIGURATION OF EUT

[ 2-1 ] The equipment under test ( EUT )



■ : Ferrite core

		Model No. [Manufacture]	Serial No.	FCC ID
A	Personal Computer	Type 9576 [IBM Australia Ltd.]	900A7089576	AN09576
B	CRT Display	C1381i [Matsushita Electric Ind.Co., Ltd]	KH22333114	ACJ928KMX-F413
C	Keyboard	1391401 [IBM by Lexmark Int'l.inc.]	---	NONE
D	Mouse	33G5430 [ IBM ]	---	DZ33G5430
E	Dot Matrix Printer	KX-P3200 [Kyushu Matsushita Electric Co., Ltd]	5LMDMA01050	ACJ526KX-P3200
F	Dot Matrix Printer [ EUT ]	KX-P1131 [Kyushu Matsushita Electric Co., Ltd]	8EMEUA00035	ACJ526KX-P1131

**[ 2-2 ] TYPE OF INTERFACE CABLES**

[ Main Frame ]	[ Peripheral ]	(Length)	Number
Personal (A)	----- CRT Display (B)	1.8 m	1
Computer	Metalic Hoods, Shielded Circular Cable		
Personal (A)	----- Keyboard (C)	2.6 m	1
Computer	Metalic Hoods, Shielded Curl Cable		
Personal (A)	----- Mouse (D)	2.7 m	1
Computer	Metalic Hoods, Shielded Circular Cable		
Personal (A)	----- Dot Matrix Printer (E)	2.0 m	1
Computer	Metalic Hoods, Shielded Circular Cable		
Personal (A)	----- Dot Matrix Printer[EUT] (F)	2.0 m	1
Computer	Metalic Hoods, Shielded Circular Cable		

**[ 2-3 ] Arrangement of the Interface Cables**

Refer to the photographs.

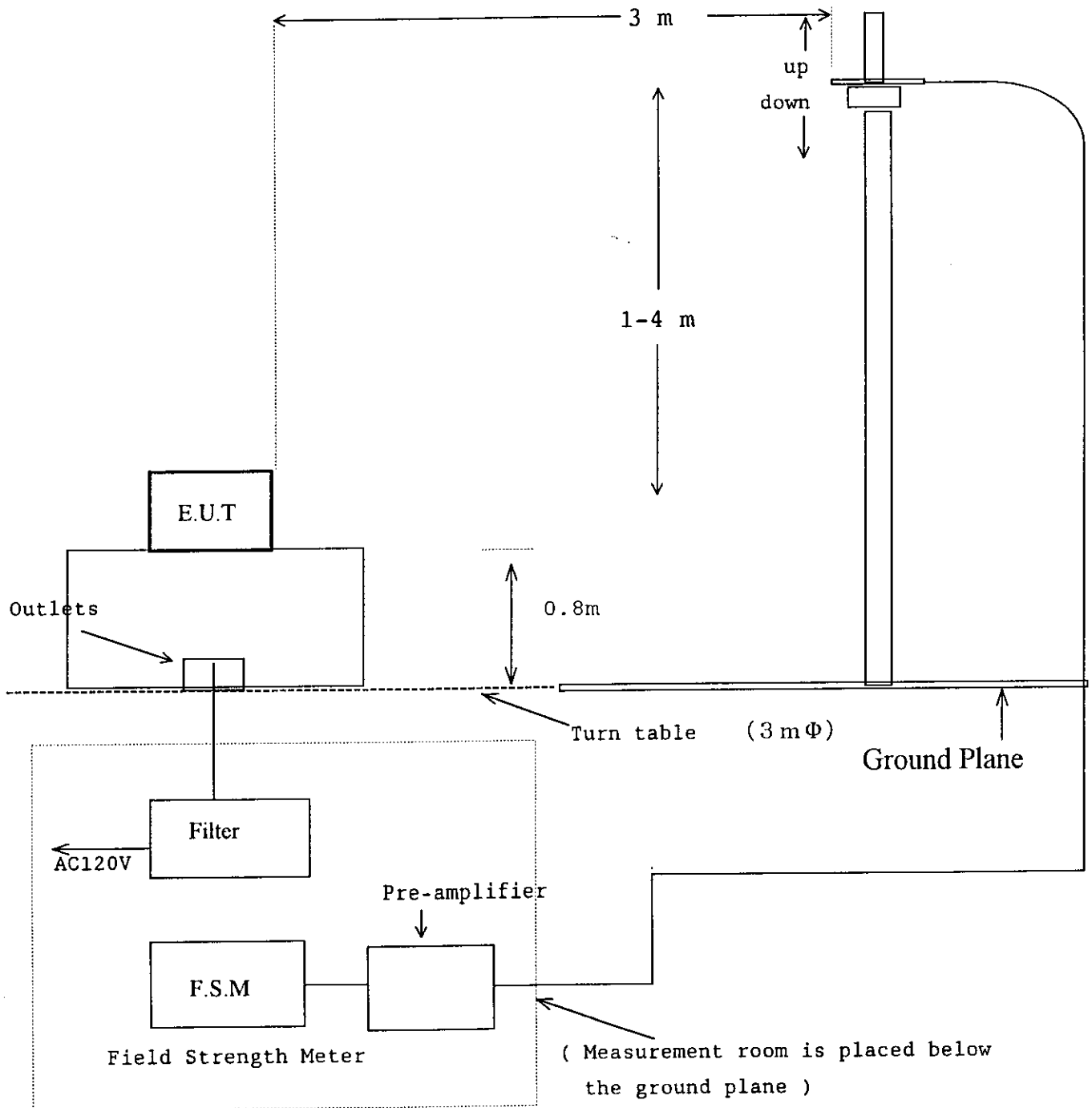
These interface cables were positioned so as to produce the highest maximum at every frequency between 30 MHz and 1000 MHz, being within the manner assumed to be a typical operating condition.

### [ 4 ] TEST ARRANGEMENT

-- Test setup --

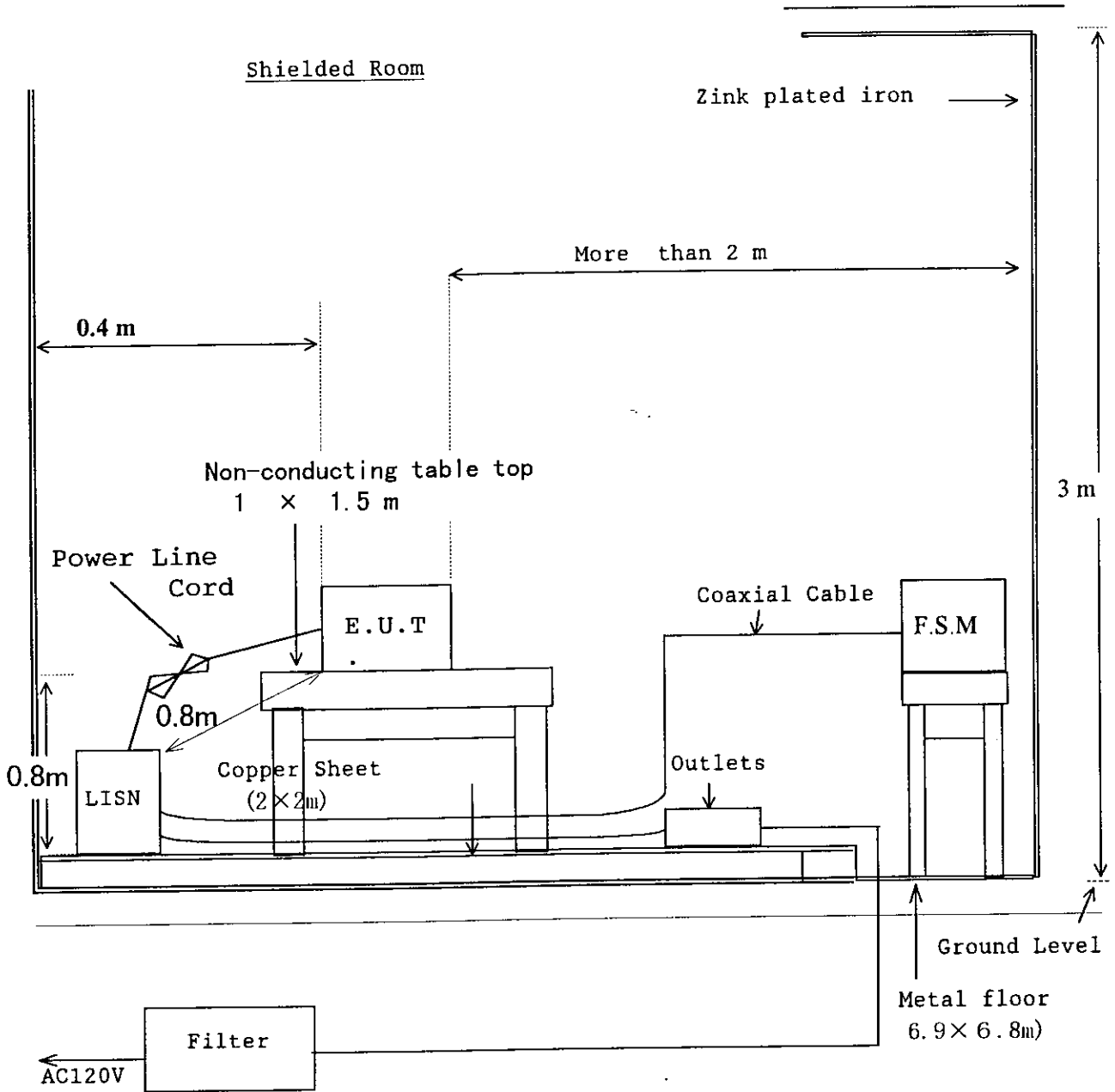
#### [ 4-1 ] RADIATED EMISSION MEASUREMENTS

Open Test Site



-- Test setup --

[ 4-2 ] AC POWERLINE CONDUCTED MEASUREMENTS



**[ 5 ] LIST OF TEST EQUIPMENT**

[ Measuring Apparatus ]	[ Model ]	[ Calibrated Untill ]
* <b>Field Strength Meter</b> Rohde & Schwarz Frequency Range : 9 KHz - 30 MHz Detector Function : CISPR Quasi Peak and Average IF Bandwidth : 200 Hz( 9 -150 KHz ), 9 KHz( 0.15 -30 MHz)	<b>ESH3</b>	Feb. 1999
* <b>Field Strength Meter</b> Rohde & Schwarz Frequency Range : 20 - 1300 MHz Detector Function : CISPR Quasi Peak IF Bandwidth : 120 KHz ( 20 - 1300 MHz )	<b>ESVS-10</b>	Nov. 1998
* <b>Pre-amplifier</b> Hewlett Packard Frequency Range : 0.1 - 1300 MHz Gain : 27 ±1 dB	<b>8447D</b>	Feb. 1999
* <b>Spectrum Analyzer</b> ADVANTEST Frequency Range : 0.01 - 3600 MHz	<b>TR4135</b>	Feb. 1999
* <b>Line Impedance</b> Kyoritsu Electrical Stabilization Network          Works, Ltd. (LISN) (50 μ H/50 Ω)	<b>KNW-407</b>	Feb. 1999
* <b>Dipole Antenna</b> Kyoritsu Electrical Works, Ltd.		
Tuning Range : 30 - 500 MHz	<b>KBA-511A</b>	Jan. 1999
Tuning Range : 500 - 1000 MHz	<b>KBA-611</b>	Jan. 1999