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1-10-8-1999

EXHIBIT #2  
Fty control No. : KM698-F008  
FCC ID : ACJ5Z6KX-P3196

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-P3196
  
- **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. Rear Appearance  
#1-4.Internal View  
#1-5.Pattern View of PWBs  
#1-6.Parts View of PWBs

FCC/MELLON

JAN 0 8 1999

EXHIBIT #4  
Fty control No. : KM698-F008  
FCC ID : ACJ5Z6KX-P3196

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

EMI Test Report No.: TR98-0523I

**EMI TEST REPORT**

CLASS B  
INFORMATION TECHNOLOGY EQUIPMENT (ITE)

Model No. : KX-P3196

FCC I/D : ACJ5Z6KX-P3196

**KME**

KME EMC TESTING LABORATORY

Issue Date : December 22, 1998

Kyushu Matsushita Electric Co., Ltd. ( K M E )  
Corporate Quality Assurance Division ( C Q A D )

1471 , Murata-cho, Tosu-shi,  
Saga-ken 841-8501, Japan TEL 0942-81-2793

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KME EMC TESTING LABORATORY

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Kyushu Matsushita Electric Co., Ltd.  
 KME EMC TESTING LABORATORY  
 1471, Murata-cho, Tosu-shi,  
 Saga-ken, 841-8501 JAPAN  
 TEL 0942-81-2793  
 FAX 0942-81-2794

### EMI TEST REPORT ON ITE

1. Applicant : Kyushu Matsushita Electric Co., Ltd.  
 1-62, 4-Chome, Minoshima  
 Hakata-Ku, Fukuoka, 812-8531 Japan
- Manufacturer : Kyushu Matsushita Electric Co., Ltd.  
 Saga-Division  
 1471, Murata-cho, Tosu-shi,  
 Saga-ken, 841-8501 Japan
2. Description of Device : Dot Matrix Printer  
 a) Type of EUT : Desk-top Type  
 b) Category : **CLASS B**  
 c) FCC I/D : **ACJ5Z6KX-P3196**  
 d) Trade Name : **Panasonic**  
 e) Model No. : **KX-P3196**  
 f) Serial No. : 8KMEGA00007  
 g) Date of Manufacture : March, 1998  
 h) Power Supply : 120VAC 60Hz
3. Date of Receipt and Measurement : December 17 , 18 1998
4. Regulations Applied : FCC Rules and Regulations Part 15  
 Subpart B-Unitentional Radiators.
5. Measurement Procedure : ANSI C63.4-1992
6. Place of Measurement : Kyushu Matsushita Electric Co., Ltd.  
 KME EMC SAGA SITE
7. Facility Number : (FCC) 31040/SIT/KYUSHU
8. Measurement Results : The results obtained from the measuring of  
 the above-mentioned device are as shown in  
 the attached sheets.  
 This results in this report apply only  
 to the sample(s) tested.

December 22, 1998

Chikito Kuwano C. Kuwano  
 Quality Manager

**KME**

**[1] TEST RESULT**

\* TEST CONDITION OF EQUIPMENT UNDER TEST (EUT)

- 1) Configuration of EUT : Refer to the sheet No.8,9,10,11,12
- 2) Operating Condition : Serial Mode, Parallel Mode
- 3) EUT Grounding : Grounded at the plugged of the line cord
- 4) Power Rating : 120VAC 60Hz

**1-1 RADIATED EMISSION MEASUREMENTS [30M-1GHz][ FCC Part 15 ](CLASS B)**

[Test Site : Open Area Test Site]

\* TEST CONDITION OF INSTRUMENT

EUT Warm-up Time : 30 minutes

- 1) Resolution Bandwidth : 120kHz DATA : December 17, 1998
- 2) Detector Function : QP(30-1000MHz) Temp.: 09 °C Humi.: 80 %

**Serial Mode**

EMISSION FREQUENCY ( MHz )	ANTENNA POLARITY (H, V)	METER READING at 3 m ( dB μ V )	ANTENNA FACTOR AND PREAMP GAIN ( dB )	EMISSION	FCC
				LEVEL at 3m (dB μ V/m)	CLASS B LIMIT (dB μ V/m)
31.301	V	58.6	-25.4	33.2	40
82.941	V	43.6	-17.1	26.5	40
96.150	V	52.3	-16.2	36.1	43.5
144.262	H	40.1	-11.9	28.2	43.5
160.592	H	37.2	-10.9	26.3	43.5
198.292	H	41.0	-8.5	32.5	43.5
226.600	H	39.2	-7.7	31.5	46
256.971	H	31.1	-5.8	25.3	46
291.463	H	28.0	-5.7	22.3	46
308.509	H	28.0	-5.9	22.1	46
329.534	V	23.5	-4.7	18.8	46
523.941	V	26.6	1.1	27.7	46
533.955	V	26.0	1.3	27.3	46
750.000	H	20.1	6.8	26.9	46
850.000	V	21.2	8.9	30.1	46

Tested by : S. Mori

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

2) Sample of calculation at 31.301 MHz  
 58.6 (dB μ V) -25.4 (dB) =33.2 (dB μ V/m)

Reviewed by : M. Horie *M. Horie*



## 1-2 RADIATED EMISSION MEASUREMENTS [30M-1GHz][ FCC Part 15 ](CLASS B)

## Parallel Mode

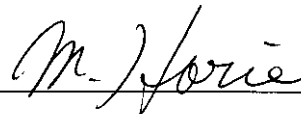
EMISSION FREQUENCY ( MHz )	ANTENNA POLARITY ( H, V )	METER READING at 3 m ( dB $\mu$ V )	ANTENNA FACTOR AND PREAMPGAIN ( dB )	EMISSION LEVEL at 3m	FCC CLASS B LIMIT
				(dB $\mu$ V/m)	(dB $\mu$ V/m)
31.301	V	51.8	-25.4	26.4	40
82.941	V	43.9	-17.1	26.8	40
96.150	V	48.8	-16.2	32.6	43.5
144.262	H	41.5	-11.9	29.6	43.5
160.592	H	37.5	-10.9	26.6	43.5
198.292	H	40.5	-8.5	32.0	43.5
226.600	H	37.2	-7.7	29.5	46
256.971	H	31.0	-5.8	25.2	46
291.463	H	26.8	-5.7	21.1	46
308.509	H	28.5	-5.9	22.6	46
329.534	H	27.6	-4.7	22.9	46
523.941	V	26.7	1.1	27.8	46
533.955	V	26.1	1.3	27.4	46
750.000	H	20.2	6.8	27.0	46
850.000	V	21.1	8.9	30.0	46

Tested by : S. Mori

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

2) Sample of calculation at 31.301 MHz  
51.8 (dB  $\mu$  V) -25.4 (dB) =26.4 (dB  $\mu$  V/m)

Reviewed by : M. Horie



## 1-3 AC POWERLINE CONDUCTED MEASUREMENTS (0.45M-30MHz) [FCC Part15] (CLASS B)

[ Test Site : Shielded Room ]

## \* TEST CONDITION OF INSTRUMENT

EUT Warm-up Time : 30 minutes

1) Resolution Bandwidth : 9 kHz

DATE : December 18, 1998

2) Detector Function : QP

Temp.: 24 °C Humi.: 45 %

## Serial Mode

	EMISSION FREQUENCY ( MHz )	METER READING ( dB $\mu$ V )	LISN FACTOR ( dB )	EMISSION LEVEL	FCC CLASS B LIMIT
				(dB $\mu$ V)	(dB $\mu$ V)
Va	0.4839	37.7	-0.1	37.6	47.9
	0.6432	41.7	0.0	41.7	47.9
	0.7262	41.7	0.0	41.7	47.9
	1.8510	35.0	0.0	35.0	47.9
	7.7330	38.8	0.2	39.0	47.9
	21.4260	34.0	0.8	34.8	47.9
	28.9200	37.8	1.1	38.9	47.9
	30.0000	34.9	1.1	36.0	47.9
Vb	0.4839	40.3	-0.1	40.2	47.9
	0.6432	43.1	0.0	43.1	47.9
	0.7262	43.3	0.0	43.3	47.9
	1.8510	39.3	0.0	39.3	47.9
	7.7330	38.8	0.2	39.0	47.9
	21.4260	36.7	0.8	37.5	47.9
	28.9200	38.9	1.1	40.0	47.9
	30.0000	36.0	1.1	37.1	47.9

Tested by : S. Mori

NOTES:1) LISN factor includes the cable loss for 5 meter.

2) Sample of calculation at 0.4839 MHz  
 37.7 (dB $\mu$ V) -0.1 (dB)= 37.6 (dB $\mu$ V)

Reviewed by : M. Horie

*M. Horie*

KME

## 1-4 AC POWERLINE CONDUCTED MEASUREMENTS (0.45M-30MHz) [FCC Part15] (CLASS B)

## Psrallel Mode

	EMISSION FREQUENCY ( MHz )	METER READING ( dB $\mu$ V )	LISN FACTOR ( dB )	EMISSION LEVEL	FCC CLASS B LIMIT
				(dB $\mu$ V)	(dB $\mu$ V)
Va	0.4839	35.1	-0.1	35.0	47.9
	0.6432	42.0	0.0	42.0	47.9
	0.7262	43.4	0.0	43.4	47.9
	1.8510	31.3	0.0	31.3	47.9
	7.7330	38.5	0.2	38.7	47.9
	21.4260	33.8	0.8	34.6	47.9
	28.9200	37.1	1.1	38.2	47.9
	30.0000	34.8	1.1	35.9	47.9
Vb	0.4839	40.0	-0.1	39.9	47.9
	0.6432	43.1	0.0	43.1	47.9
	0.7262	43.1	0.0	43.1	47.9
	1.8510	38.8	0.0	38.8	47.9
	7.7330	37.8	0.2	38.0	47.9
	21.4260	37.3	0.8	38.1	47.9
	28.9200	39.0	1.1	40.1	47.9
	30.0000	36.7	1.1	37.8	47.9

Tested by : S. Mori

NOTES:1) LISN factor includes the cable loss for 5 meter.

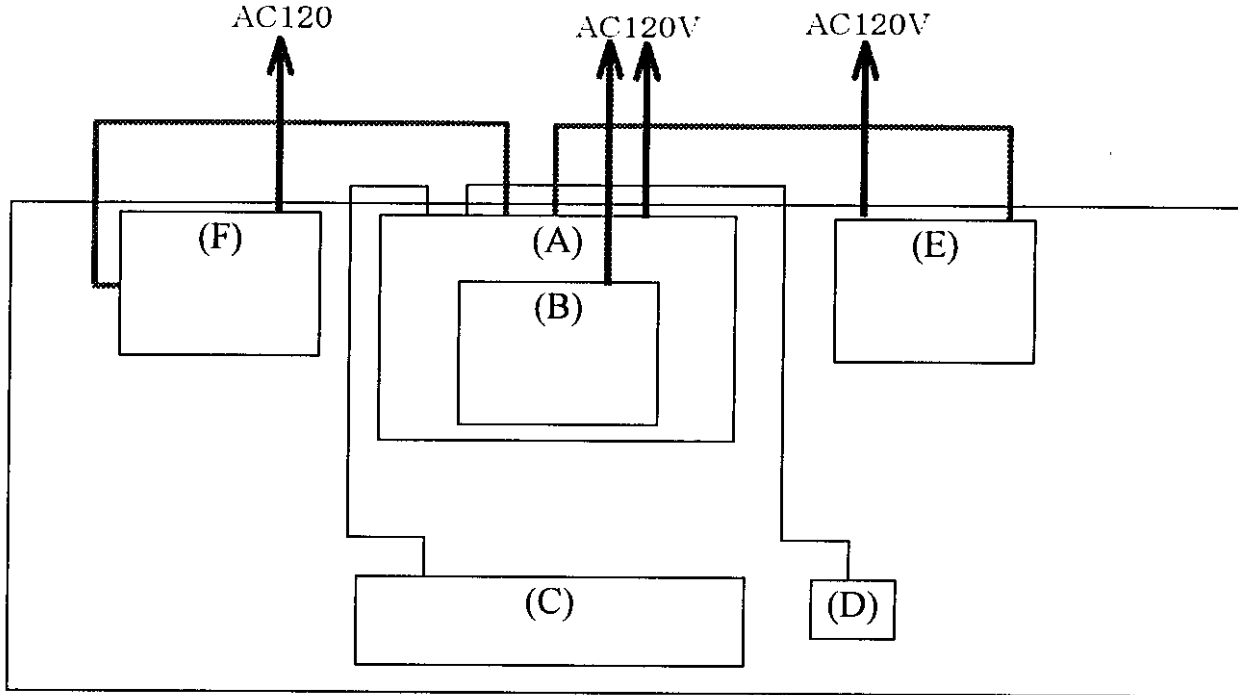
2) Sample of calculation at 0.4839 MHz  
 35.1 (dB $\mu$ V) - 0.1 (dB) = 35.0 (dB $\mu$ V)

Reviewed by : M. Horie *M. Horie*

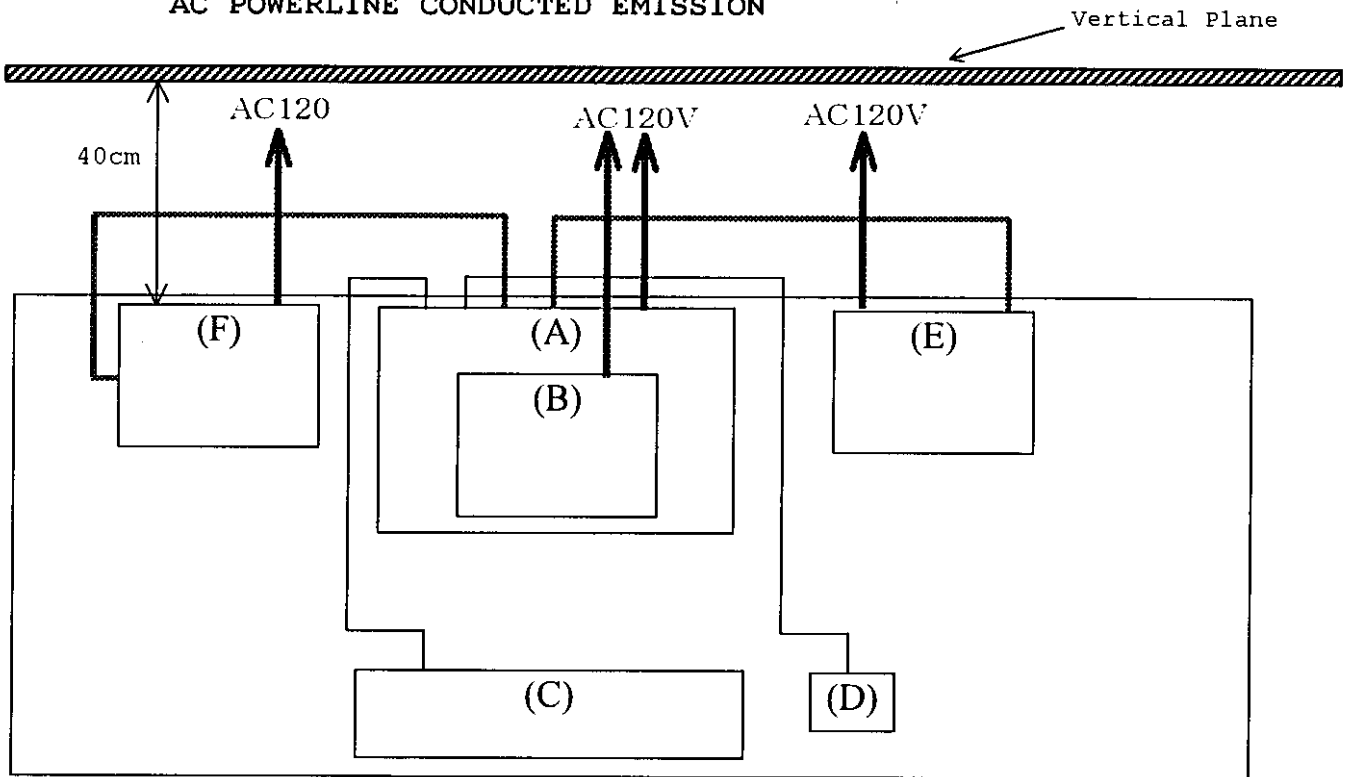
[2]DESCRIPTION OF THE TEST EQUIPMENT

2-1 The equipment under test (EUT)

Configuration of EUT  
RADIATED EMISSION



		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-P3196 [Kyushu Matsushita Electric Co., Ltd]	8KMFGA00007	ACJ526KX-P3196

**[2]DESCRIPTION OF THE TEST EQUIPMENT****2-2 The equipment under test (EUT)****AC POWERLINE CONDUCTED EMISSION**

		Model No. [Manufacture]	Serial No.	FCC ID
<b>A</b>	Personal Computer	Type 9576 [IBM Australia Ltd.]	900A7089576	AN09576
<b>B</b>	CRT Display	C1381i [Matsushita Electric Ind.Co., Ltd]	KH22333114	ACJ928KMX-F413
<b>C</b>	Keyboard	1391401 [IBM by Lexmark Int'l.inc.]	---	NONE
<b>D</b>	Mouse	33G5430 [ IBM ]	---	DZ33G5430
<b>E</b>	Dot Matrix Printer	KX-P3200 [Kyushu Matsushita Electric Co., Ltd]	5LMDMA01050	ACJ526KX-P3200
<b>F</b>	Dot Matrix Printer [ EUT ]	KX-P3196 [Kyushu Matsushita Electric Co., Ltd]	8KMFGA00007	ACJ526KX-P3196

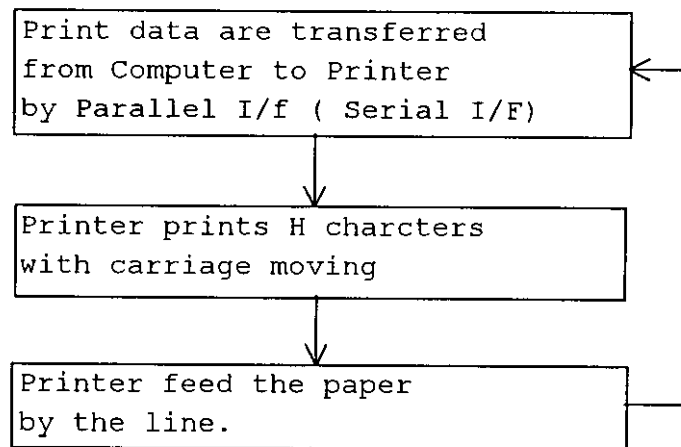
**2-3 Type of Interface Cables**

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

**2-3.1 Arrangement of the Interface Cables**

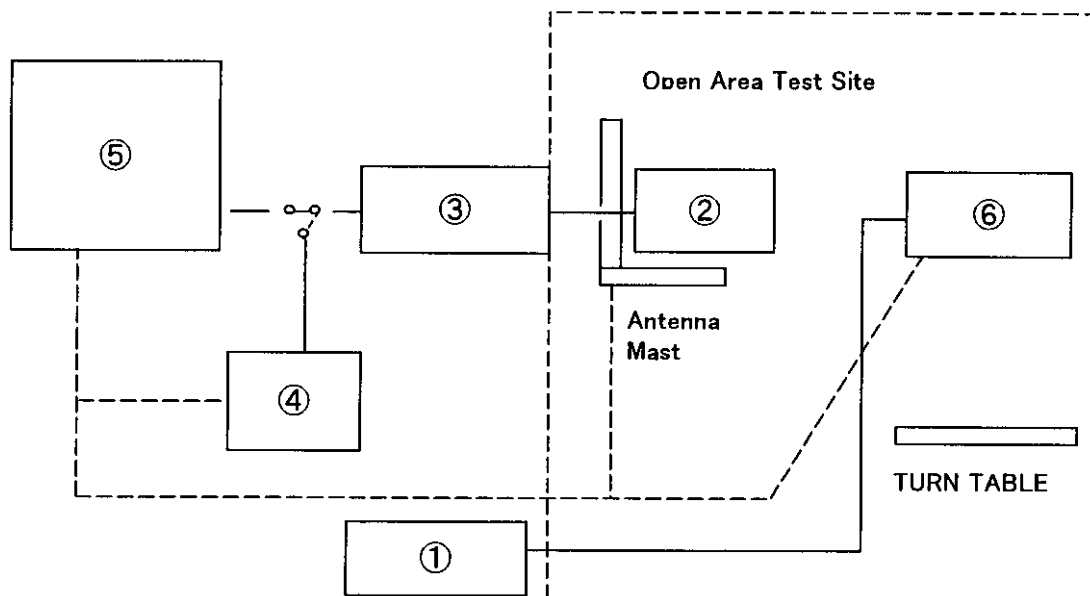
Refer to the photographs.

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.

**2-3.2 TEST OPERATION CONDITION OF KX-P3196**

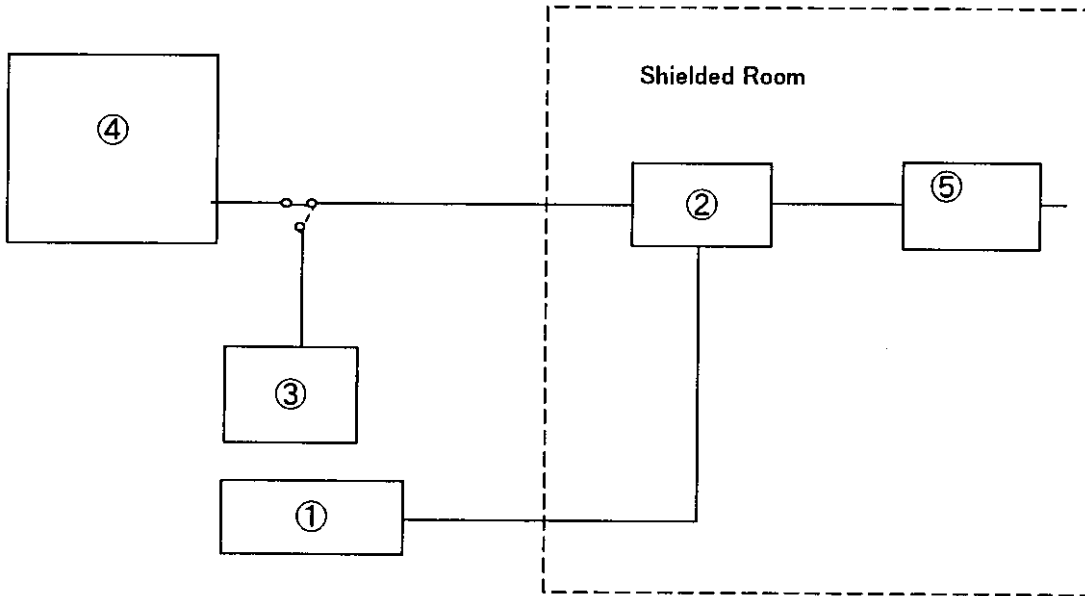
## [4] TEST ARRANGEMENT AND LIST OF INSTRUMENTS

## 4.1 TEST EQUIPMENTS OF RADIATED EMISSION MEASUREMENTS



	Apparatus	Model No. (Manufacture)	Spec.	Calibrated Untill	Serial No.
①	3 or 1 phase AC SUPPLY	ACF-N F-Class (YAHATA DENKI)	50Hz/60Hz MAX 1Φ 264V	---	---
②	Antenna	KBA-511A (KYORITSU) KBA-611 (KYORITSU) KBA522 (KYORITSU)	30 - 500MHz(Dipole) 500 - 1000MHz(Dipole) 25 - 80MHz(Dipole)	Jan.1999 Jan.1999 Oct.1999	--- --- ---
③	Pre-Amplifier	8447D (hp)	0.1-1300MHz	Feb.1999	2443A04523
④	Spectrum Analyzer	TR4135 (Advantest)	0.01~3600MHz	Feb.1999	51730129
⑤	EMI Receiver	ESVS10 (R & S)	20-1300MHz	Feb.1999	844106/014
⑥	Main Unit EUT	KX-P3196 (ACJ5Z6KX-P3196)	---	---	8KMFGA00007

## 4.2 TEST EQUIPMENTS OF CONDUCTED MEASUREMENTS



	Apparatus	Model No. (Manufacture)	Spec.	Calibrated Untill	Serial No.
①	3 or 1 phase AC SUPPLY	FUK-23749-2 (NF)	50Hz/60Hz MAX 1Φ 264 V	---	---
②	LISN	KNW-407	1Φ 250 V 15A	Feb.1999	---
③	Spectrum Analyzer	TR4135 (Advantest)	10KHz~3.6GHz	Feb.1999	67800024
④	EMI Receiver	ESHS10 (R&S)	9KHz~30MHz	Feb.1999	845635/003
⑤	Main Unit EUT	KX-P3196 (ACJ5Z6KX-P3196)	---	---	8KMFGA00007

**[5] ATTACHMENT**

**5.1 RADIATED EMISSION MEASUREMENTS**

[Attachment Sheet No.]

* QP Data ----- Serial mode (Horizontal/Vertical, 30-300MHz)	Sheet 1 of 4 Sheets
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* QP Data ----- Parallel mode (Horizontal/Vertical, 30-300MHz)	Sheet 2 of 4 Sheets
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**5.2 AC POWERLINE CONDUCTED MEASUREMENTS**

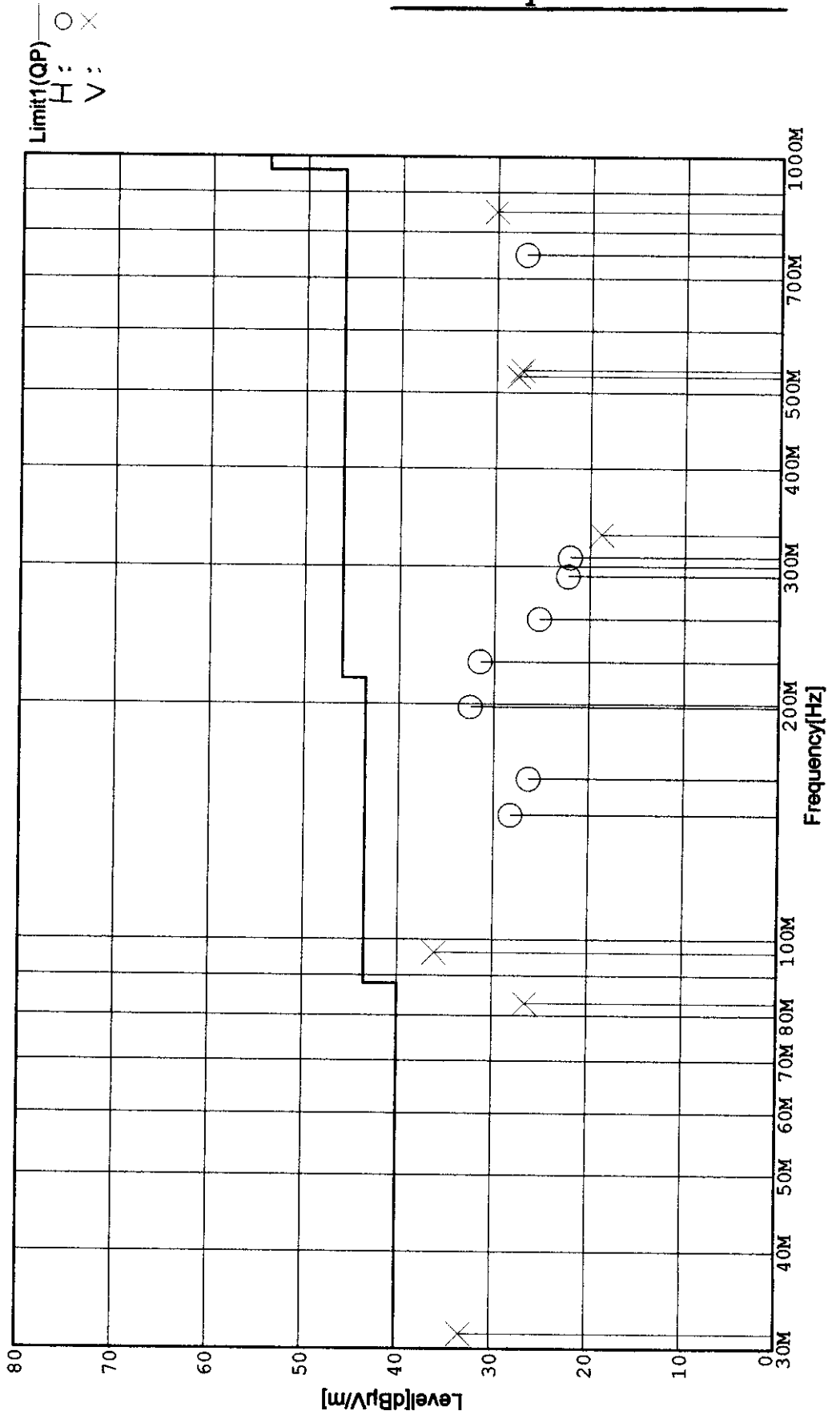
* QP Data ----- Serial mode (Va/Vb, 0.45-30MHz)	Sheet 3 of 4 Sheets
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* QP Data ----- Parallel mode (Va/Vb, 0.45-30MHz)	Sheet 4 of 4 Sheets
---	---------------------

**RADIATED EMISSION**

Model Name : Dot Matrix Printer  
 Parts No. : KX-P3196  
 Serial No. : 8KMFGA00007  
 Detector : QP  
 Points : 15  
 Limit1: [FCC Part 15] Class B<3m>

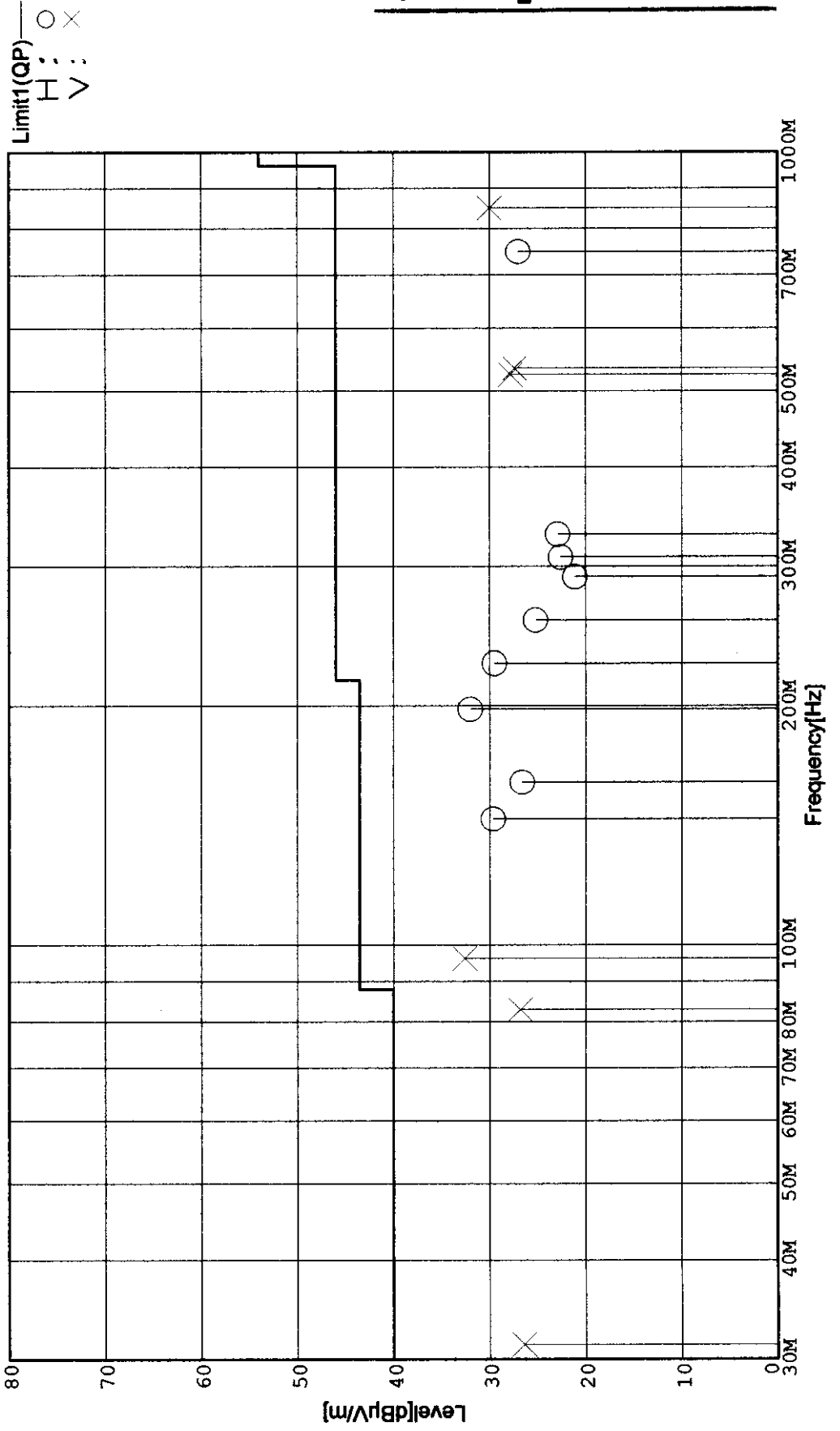
Temp. : 9  
 Humi.% : 80%  
 Comment : Serial mode  
 Date : 1998.12.17  
 EMI Receiver(s) :



**RADIATED EMISSION**

Model Name : Dot Matrix Printer  
 Parts No. : KX-P3196  
 Serial No. : 8KMFGA00007  
 Detector : QP  
 Points : 15  
 Limit1: [FCC Part 15] Class B<3m>

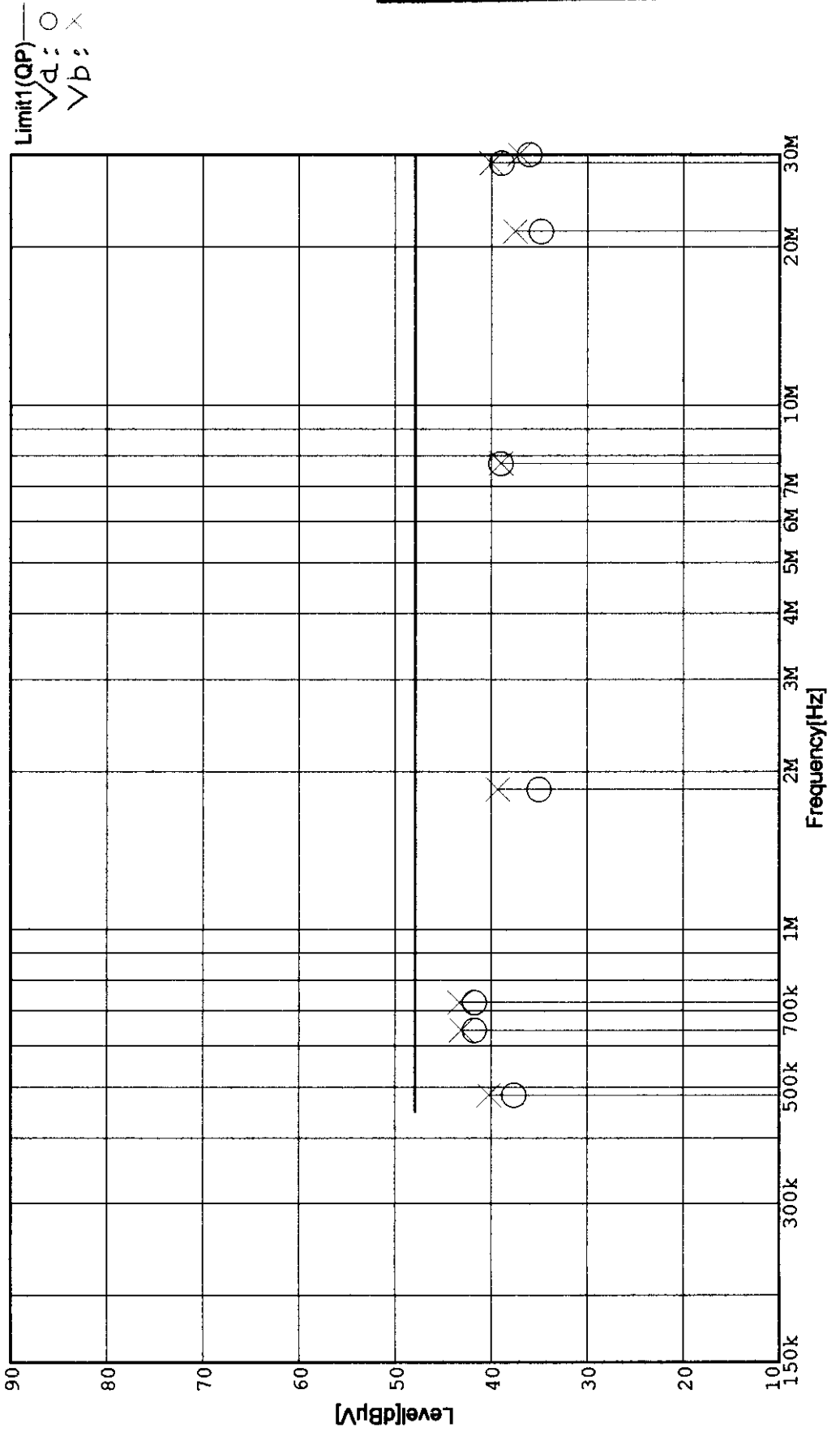
Temp. : 9  
 Humi.% : 80%  
 Comment : Parallel mode  
 Date : 1998.12.17  
 EMI Receiver(s) :



**LINE CONDUCTION**

Model Name : Dot Matrix Printer  
 Parts No. : KX-P3196  
 Serial No. : 8KMFGA00007  
 Detector : QP  
 Points : 16  
 Limit1: [FCC Part15] Class B

Temp. : 24  
 Humi.% : 45%  
 Comment : Serial mode  
 Date : 1998.12.18  
 EMI Receiver(s):



Limit1 (QP) —  
 √d: o  
 √b: x

**LINE CONDUCTION**

Model Name : Dot Matrix Printer  
 Parts No. : KX-P3196  
 Serial No. : 8KMFGA00007  
 Detector : QP  
 Points : 16  
 Limit1: [FCC Part15] Class B

Temp. : 24  
 Humi.% : 45%  
 Comment : Parallel mode  
 Date : 1998.12.18  
 EMI Receiver(s):

