

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.
- Photographs
See following Exhibits.
#1-1.Internal View
#1-2.Pattern View of PWBs
#1-3.Parts View of PWBs

EXHIBIT #3
Fty control No. : KM699-F004
FCC ID : ACJ5Z6KX-P3196

REPORT OF MEASUREMENT
ON COMPUTING DEVICE
ISSUED BY KME EMC SITE

EMI Test Report No.: TR99-S009I

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 : April 7, 1999

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
- Manufactuer : Kyushu Matsushita Electric Co., Ltd.
Printer-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. : 9CMFGA00150
g) Date of Manufacture : May, 1999
h) Power Supply : AC120V 60Hz
3. Date of Receipt and Measurement : April 5, 6 1999
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.

April 7, 1999

Hideo Hara
Quality Manager

H. Hara

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 : AC120V 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 : April 6, 1999
- 2) Detector Function : QP(30-1000MHz) Temp.: 16 °C Humi.: 65 %

Serial Mode

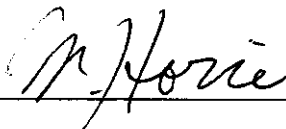
EMISSION FREQUENCY (MHz)	ANTENNA POLARITY (H, V)	METER READING at 3 m (dB μ V)	ANTENNA FACTOR AND PREAMPGAIN (dB/m)	EMISSION LEVEL at 3m	FCC CLASS B LIMIT
				(dB μ V/m)	(dB μ V/m)
88.293	V	51.7	-16.8	34.9	40
100.373	H	44.8	-15.8	29.0	43.5
140.204	H	42.1	-12.1	30.0	43.5
164.211	H	44.1	-10.6	33.4	43.5
200.280	H	38.4	-8.4	30.0	43.5
212.291	H	42.2	-8.1	34.1	43.5
220.308	H	40.8	-7.9	32.9	46
320.455	H	37.2	-5.2	32.0	46
593.997	H	31.7	3.5	35.2	46

Tested by : H. Sugiyama

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

2) Sample of calculation at 88.293 MHz
 51.7 (dB μ V) -16.8 (dB/m) =34.9 (dB μ V/m)

Reviewed by : M. Horie



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

Parallel Mode

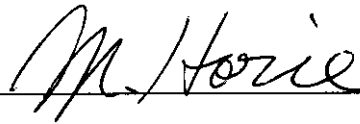
EMISSION FREQUENCY (MHz)	ANTENNA POLARITY (H,V)	METER READING at 3 m (dB μ V)	ANTENNA FACTOR AND PREAMPGAIN (dB/m)	EMISSION LEVEL at 3m	FCC CLASS B LIMIT
				(dB μ V/m)	(dB μ V/m)
88.293	V	44.2	-16.8	27.4	40
100.373	V	43.5	-15.8	27.7	43.5
140.204	H	42.4	-12.1	30.3	43.5
164.211	H	45.2	-10.6	34.6	43.5
200.280	H	42.1	-8.4	33.7	43.5
212.291	H	45.1	-8.1	37.0	43.5
220.308	H	40.7	-7.9	32.8	46
320.455	H	35.3	-5.2	30.1	46
593.997	H	33.2	3.5	36.7	46

Tested by : H. Sugiyama

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

2) Sample of calculation at 88.293 MHz
44.2 (dB μ V) -16.8 (dB/m) =27.4 (dB μ 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 : 10 kHz

DATE : April 05, 1999

2) Detector Function : QP

Temp.: 25 °C Humi.: 68 %

Serial Mode

	EMISSION FREQUENCY (MHz)	METER READING (dB μ V)	LISN FACTOR (dB)	EMISSION LEVEL	FCC CLASS B LIMIT
				(dB μ V)	(dB μ V)
Va	0.4750	35.1	-0.1	35.0	47.9
	0.5600	43.4	0.0	43.4	47.9
	0.6350	39.1	0.0	39.1	47.9
	1.8400	24.7	0.0	24.7	47.9
	2.0760	24.8	0.1	24.9	47.9
	5.9570	40.8	0.1	40.9	47.9
Vb	0.4750	38.5	-0.1	38.4	47.9
	0.5600	39.8	0.0	39.8	47.9
	0.6350	39.8	0.0	39.8	47.9
	1.8400	36.2	0.0	36.2	47.9
	2.0760	36.8	0.1	36.9	47.9
	5.9570	33.8	0.1	33.9	47.9

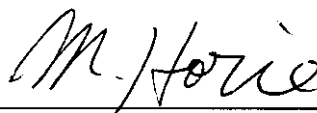
Tested by : H. Sugiyama

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

2) Sample of calculation at 0.4750 MHz

35.1 (dB μ V) -0.1 (dB)= 35.0 (dB μ V)

Reviewed by : M. Horie



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

Parallel Mode

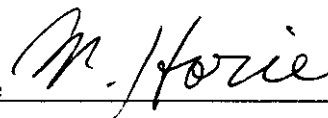
	EMISSION FREQUENCY (MHz)	METER READING (dB μ V)	LISN FACTOR (dB)	EMISSION LEVEL	FCC CLASS B LIMIT
				(dB μ V)	(dB μ V)
Va	0.4750	39.8	-0.1	39.7	47.9
	0.5600	44.1	0.0	44.1	47.9
	0.6350	39.6	0.0	39.6	47.9
	1.8400	25.7	0.0	25.7	47.9
	2.0760	24.4	0.1	24.5	47.9
	5.9570	40.0	0.1	40.1	47.9
Vb	0.4750	38.7	-0.1	38.6	47.9
	0.5600	42.5	0.0	42.5	47.9
	0.6350	40.1	0.0	40.1	47.9
	1.8400	37.7	0.0	37.7	47.9
	2.0760	37.1	0.1	37.2	47.9
	5.9570	35.3	0.1	35.4	47.9

Tested by : H. Sugiyama

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

2) Sample of calculation at 0.4750 MHz
 39.8 (dB μ V) -0.1 (dB)= 39.7 (dB μ V)

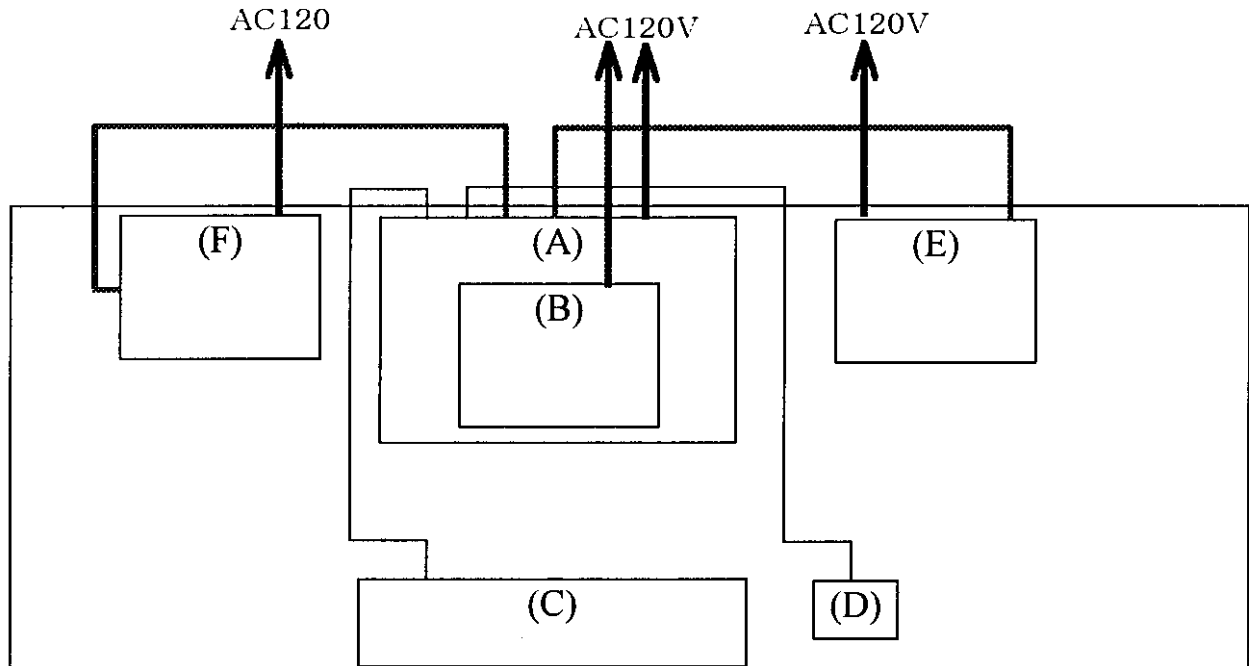
Reviewed by : M. Horie

**KME**

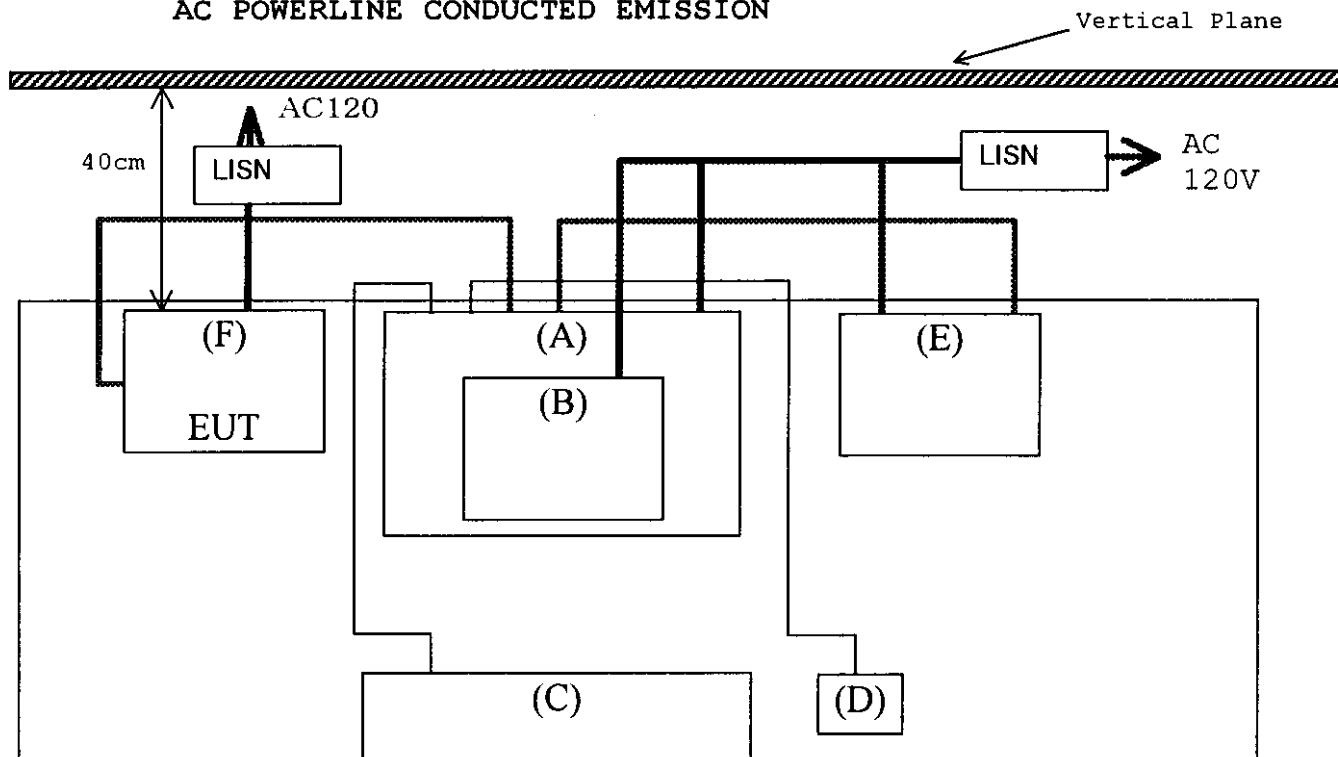
[2]DESCRIPTION OF THE TEST EQUIPMENT**2-1 The equipment under test (EUT)**

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	ACJ5Z6KX-P3200
F	Dot Matrix Printer [EUT]	KX-P3196 [Kyushu Matsushita Electric Co., Ltd]	9CMFGA00150	ACJ5Z6KX-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
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]	9CMFGA00150	ACJ526KX-P3196

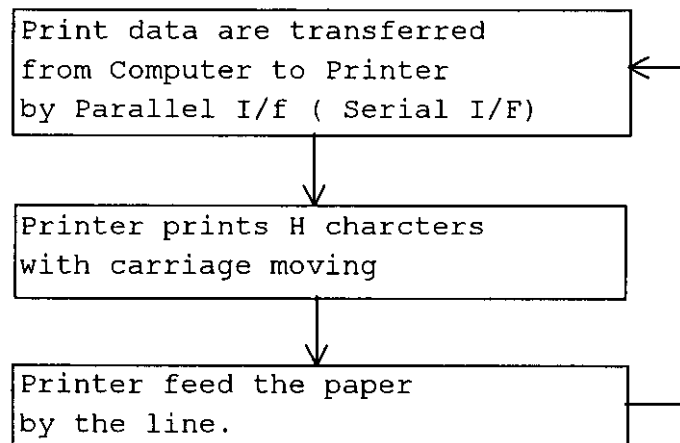
2-3 Type of Interface Cables

[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

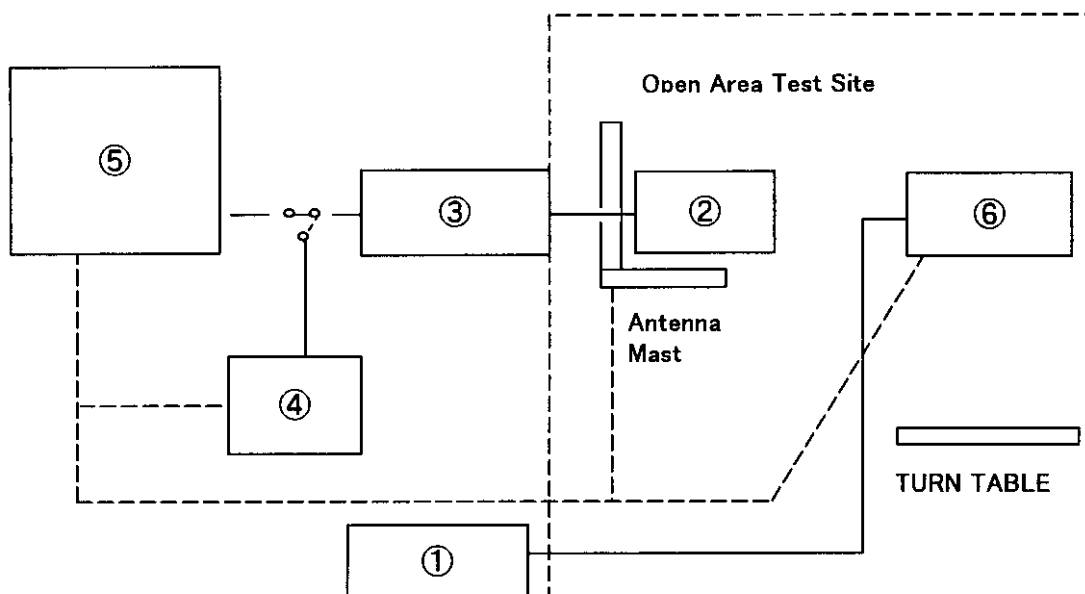
Refer to the photographs.

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

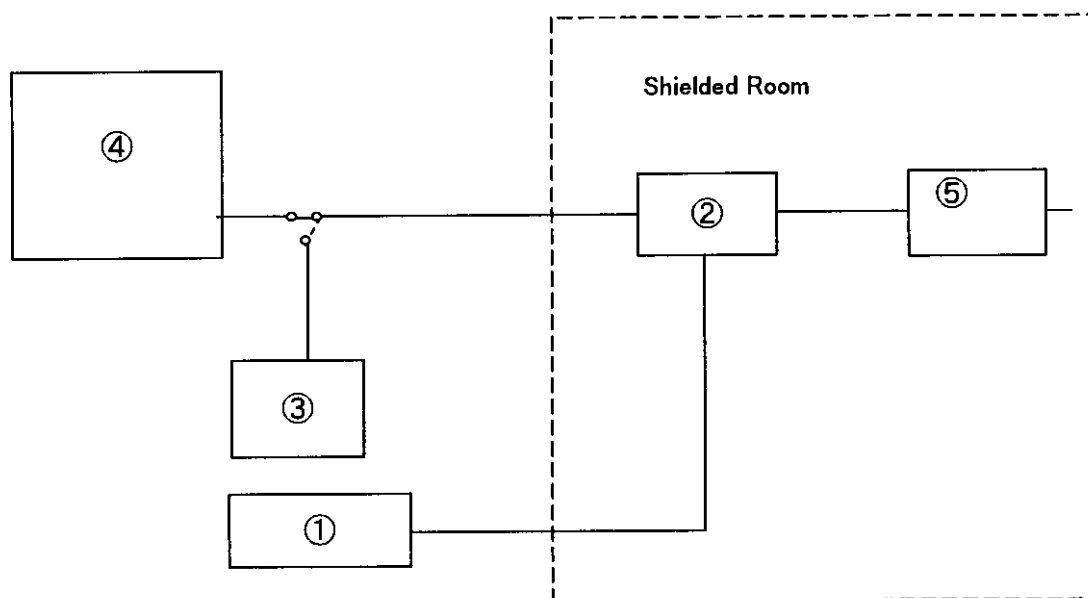
[4] TEST ARRANGEMENT AND LIST OF INSTRUMENTS

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.2000 Jan.2000 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)	---	---	9CMFGA00150

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)	---	---	9CMFGA00150

[5] ATTACHMENT**5.1 RADIATED EMISSION MEASUREMENTS**

[Attachment Sheet No.]

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

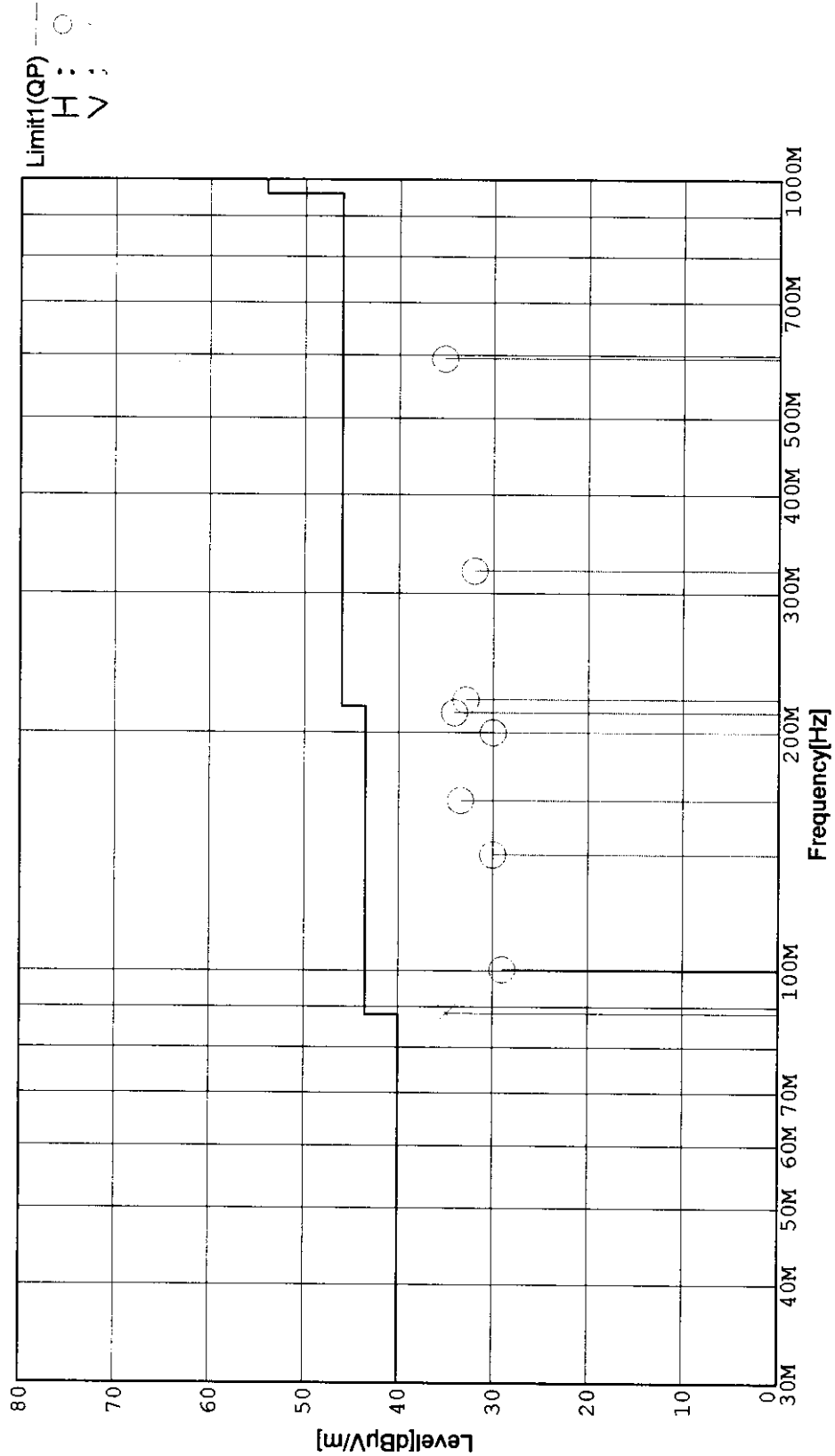
5.2 AC POWERLINE CONDUCTED MEASUREMENTS

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

RADIATED EMISSION

Model Name : Dot Matrix Printer
 Parts No. : KX-P3196
 Serial No. : 9CMFGA00150
 Detector : QP
 Points : 9
 Limit1: [FCC Part 15] Class B<3m>

Temp. : 16
 Humi.% : 65%
 Comment : Serial Mode
 Date : 1999.4.6
 EMI Receiver(s) :

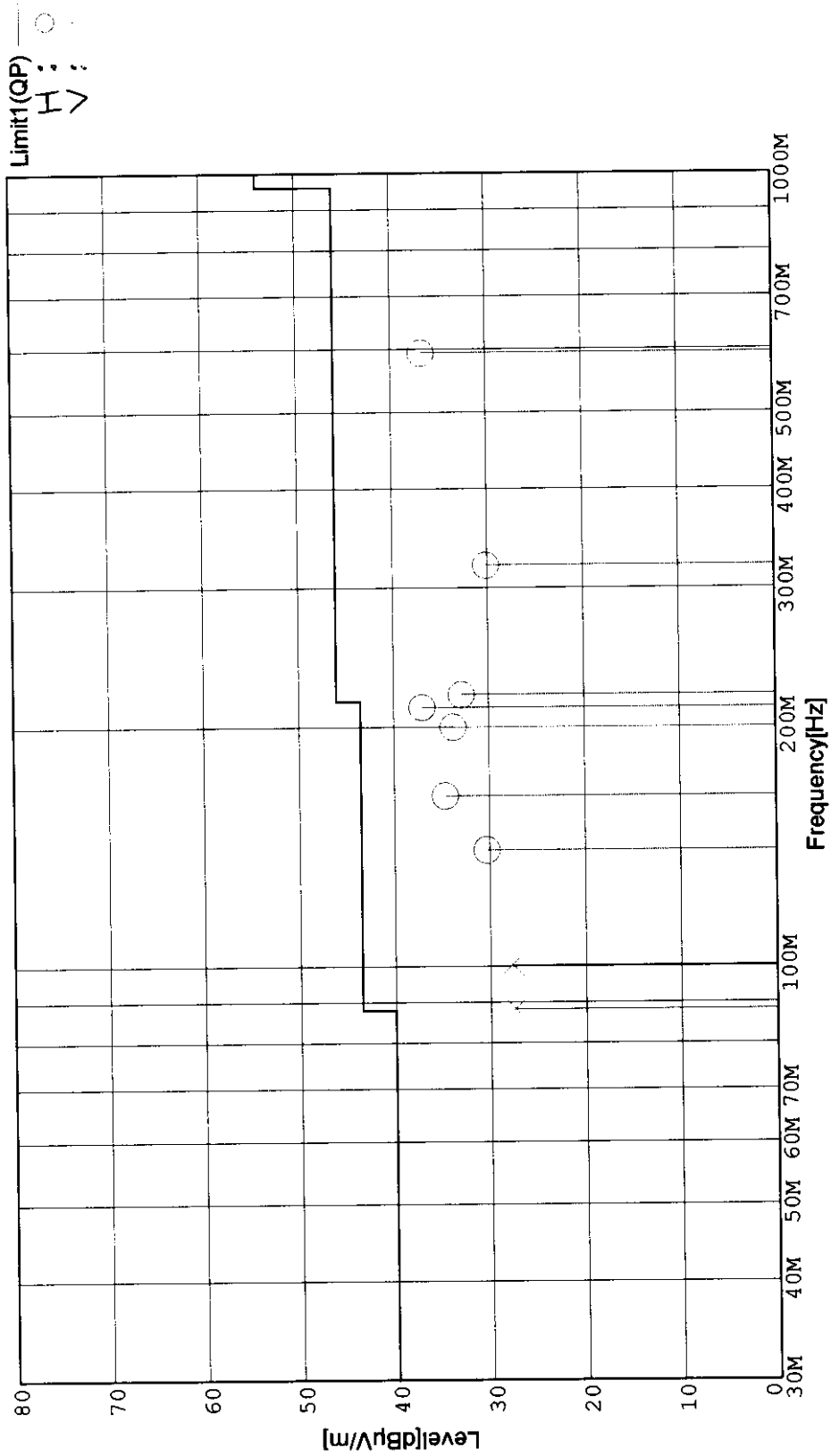


Limit1(QP)
 H : : :
 > : : :
 ○ : : :

RADIATED EMISSION

Model Name : Dot Matrix Printer
 Parts No. : KX-P3196
 Serial No. : 9CMFGA00150
 Detector : QP
 Points : 9
 Limit1: [FCC Part 15] Class B<3m>

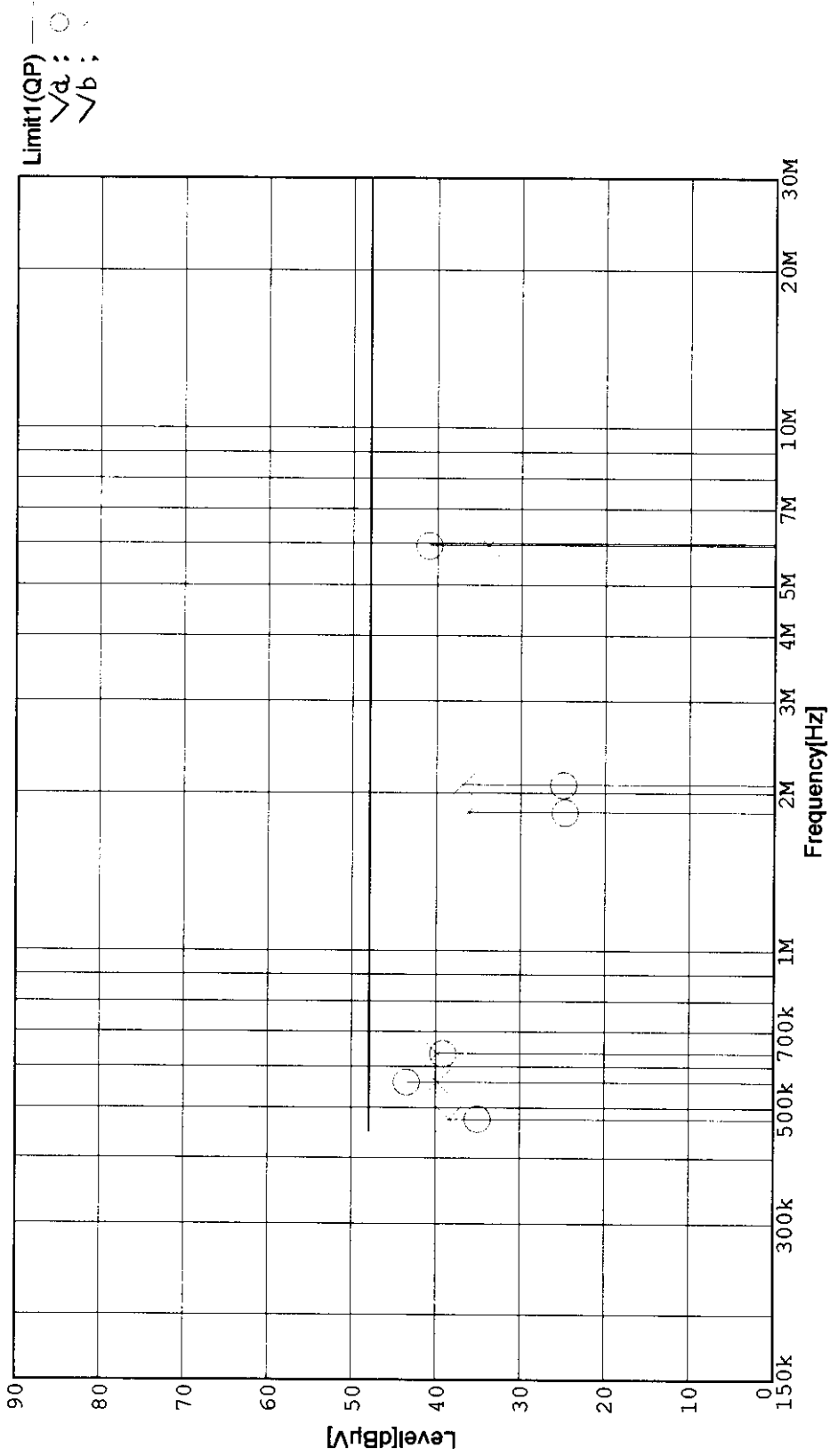
Temp. : 16
 Humi.% : 65%
 Comment : Parallel Mode
 Date : 1999.4.6
 EMI Receiver(s) :



LINE CONDUCTION

Model Name : Dot Matrix Printer
 Parts No. : KX-P3196
 Serial No. : 9CMFGA00150
 Detector : QP
 Points : 12
 Limit1: [FCC Part15] Class B

Temp. : 25
 Humi.% : 68%
 Comment : Serial Mode
 Date : 1999.4.5
 EMI Receiver(s) :



LINE CONDUCTION

Model Name : Dot Matrix Printer
 Parts No. : KX-P3196
 Serial No. : 9CMFGA00150
 Detector : QP
 Points : 12
 Limit1: [FCC Part15] Class B

Temp. : 25
 Humi.% : 68%
 Comment : Parallel Mode
 Date : 1999.4.5
 EMI Receiver(s) :

