

EMI Test Report No.: TR99-S0010I

**EMI TEST REPORT**

INTENTIONAL RADIATOR  
43/49MHZ CORDLESS TELEPHONE

INFORMATION TECHNOLOGY EQUIPMENT (ITE)  
Operation with in the bands 43-46MHZ

Model No. : **KX-TC1040B**  
[Cordless Telephone System Base Unit]

FCC I/D : **ACJ96NKX-TC1000**

**KME**

KME EMC TESTING LABORATORY

Issue Date : April 12, 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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Kyushu Matsushita Electric Co., Ltd.

KME EMC TESTING LABORATORY

1471, Murata-cho, Tosu-shi,

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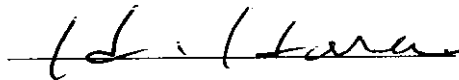
FAX 0942-81-2794

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.  
Fourth Division  
1-62, 4-Chome, Minoshima  
Hakata-Ku, Fukuoka, 812-8531 Japan
2. Description of Device : 43/49MHz Cordless Telephone (43-46MHz)Base Unit  
a)Type of EUT : Desk-top Type  
b)Category : **Intentional Radiator**  
c)FCC I/D : **ACJ96NKX-TC1000**  
d)Trade Name : **Panasonic**  
e)Model No. : **KX-TC1040B**  
f)Serial No. : ---  
g)Date of Manufacture : April, 1999  
h)Power Supply : AC120V 60Hz  
Ac Adaptor[PQLV1](DC 9V, 500mA)
3. Date of Receipt and Measurement : April 8,9 1999
4. Regulations Applied : FCC Rules and Regulations Part 15  
Subpart C-International Radiators(\$15,233(C)&(d))  
(\$15,207(a))
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 12, 1999

Hideo Hara  
Quality Manager




**[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 : TALK[20Ch]Mode, TALK[7Ch]Mode
- 3) EUT Grounding : Grounded at the plugged of the line cord
- 4) Power Rating : AC120V 60Hz (AC Adaptor = DC9V,500mA)

**1-1 RADIATED EMISSION MEASUREMENTS [30M-1GHz][ FCC Part 15 ](\$15,233(c)&(d))**

[Test Site : Open Area Test Site]

## \* TEST CONDITION OF INSTRUMENT

EUT Warm-up Time : 30 minutes

- 1) Resolution Bandwidth : 120kHz DATA : April 8, 1999
- 2) Detector Function : QP(30-1000MHz) Temp.: 23 °C Humi.: 52 %

**TALK[20Ch] Mode(46.730MHz)**

EMISSION FREQUENCY ( MHz )	ANTENNA POLARITY ( H, V )	METER READING at 3 m ( dB $\mu$ V )	ANTENNA FACTOR AND PREAMP GAIN ( dB/m )	EMISSION LEVEL at 3m	FCC CLASS B LIMIT
				(dB $\mu$ V/m)	(dB $\mu$ V/m)
[Fundamental emission]					
46.730	v [Average]	72.7	6.7	79.4	80.00
46.730	v [ Peak ]	73.3	6.7	80.0	100.00
46.730	H [Average]	63.0	6.7	69.7	80.00
46.730	H [ Peak ]	63.9	6.7	70.6	100.00
[Radiated emission]					
65.808	V	48.5	-18.0	30.5	40.0
93.482	V	32.0	-16.4	15.6	43.5
140.627	V	38.2	-12.1	26.1	43.5
185.681	H	38.0	-9.2	28.8	43.5
196.619	H	49.1	-8.6	40.5	43.5
233.687	H	37.7	-7.2	30.5	46.0
279.898	H	29.2	-4.9	24.3	46.0
327.701	H	36.9	-4.8	32.1	46.0
373.877	V	32.4	-2.7	29.7	46.0
420.531	H	35.5	-1.2	34.3	46.0
467.265	H	31.5	-0.2	31.3	46.0

Tested by : S. Mori

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

- 2) Sample of calculation at 65.808 MHz  
 $48.5 \text{ (dB}\mu\text{V)} - 18.0 \text{ (dB/m)} = 30.5 \text{ (dB}\mu\text{V/m)}$

Reviewed by : M. Horie

*M. Horie*

## 1-2 RADIATED EMISSION MEASUREMENTS [30M-1GHz] [ FCC Part 15 ] (\$15,233(c)&amp;(d))

## TALK[7Ch] Mode(44.120MHz)

EMISSION FREQUENCY ( MHz )	ANTENNA POLARITY ( H, V )	METER READING at 3 m ( dB $\mu$ V )	ANTENNA FACTOR AND PREAMPGAIN ( dB/m )	EMISSION LEVEL at 3m	FCC CLASS B LIMIT
				(dB $\mu$ V/m)	(dB $\mu$ V/m)
[Fundamental emission]					
44.120	v [Average]	72.9	6.2	79.1	80.00
44.120	v [ Peak ]	73.3	6.2	79.5	100.00
44.120	H [Average]	65.5	6.2	71.7	80.00
44.120	H [ Peak ]	65.8	6.2	72.0	100.00
[Radiated emission]					
65.808	V	48.5	-18.0	30.5	40.0
88.245	H	34.1	-16.8	17.3	43.5
131.087	H	53.6	-12.5	41.1	43.5
176.526	H	34.7	-9.8	24.9	43.5
196.619	H	49.1	-8.6	40.5	43.5
221.905	H	37.0	-7.9	29.1	43.5
264.768	H	33.2	-5.3	27.9	46.0
308.887	H	29.5	-5.9	23.6	46.0
350.894	H	33.3	-3.7	29.6	46.0
397.144	H	37.2	-1.7	35.5	46.0
441.284	H	32.5	-0.8	31.7	46.0

Tested by : S. Mori

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

2) Sample of calculation at 65.808 MHz  
48.5 (dB $\mu$ V) -18.0 (dB/m) =30.5 (dB $\mu$ V/m)

Reviewed by : M. Horie

*M. Horie*

1-3 AC POWERLINE CONDUCTED MEASUREMENTS (0.45M-30MHz) [FCC Part15] (\$15,207(a))

[ Test Site : Shielded Room ]

\* TEST CONDITION OF INSTRUMENT

EUT Warm-up Time : 30 minutes

1) Resolution Bandwidth : 10 kHz

DATE : April 09, 1999

2) Detector Function : QP

Temp.: 24 °C Humi.: 45 %

TALK[20Ch] Mode(46.730MHz)

	EMISSION FREQUENCY ( MHz )	METER READING ( dB $\mu$ V )	LISN FACTOR ( dB )	EMISSION LEVEL	FCC CLASS B LIMIT
				(dB $\mu$ V)	(dB $\mu$ V)
Va	0.4500	-4.2	-0.1	-4.3	47.9
	0.4890	-4.6	-0.1	-4.7	47.9
	1.0900	-16.1	0.0	-16.1	47.9
	1.7490	2.8	0.0	2.8	47.9
	2.0610	18.5	0.1	18.6	47.9
	2.4720	20.0	0.1	20.1	47.9
	6.1440	9.3	0.2	9.5	47.9
	9.9920	-5.0	0.3	-4.7	47.9
	19.9850	-5.1	0.7	-4.4	47.9
29.9810	20.2	1.1	21.3	47.9	
Vb	0.4500	-1.2	-0.1	-1.3	47.9
	0.4890	-2.9	-0.1	-3.0	47.9
	1.0900	-10.5	0.0	-10.5	47.9
	1.7490	7.3	0.0	7.3	47.9
	2.0610	20.3	0.1	20.4	47.9
	2.4720	21.6	0.1	21.7	47.9
	6.1440	12.6	0.2	12.8	47.9
	9.9920	-0.6	0.3	-0.3	47.9
	19.9850	3.0	0.7	3.7	47.9
29.9810	22.3	1.1	23.4	47.9	

Tested by : S. Mori

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

2) Sample of calculation at 0.4500 MHz  
 -4.2 (dB $\mu$ V) -0.1 (dB) = -4.3 (dB $\mu$ V)

Reviewed by : M. Horie *M. Horie*



1-4 AC POWERLINE CONDUCTED MEASUREMENTS (0.45M-30MHz) [FCC Part15] (\$15,207(a))

TALK[7Ch] Mode (44.120MHz)

	EMISSION FREQUENCY ( MHz )	METER READING ( dB $\mu$ V )	LISN FACTOR ( dB )	EMISSION	FCC
				LEVEL (dB $\mu$ V)	CLASS B LIMIT (dB $\mu$ V)
Va	0.4500	1.0	-0.1	0.9	47.9
	0.5890	-9.9	0.0	-9.9	47.9
	1.0900	-15.8	0.0	-15.8	47.9
	1.7490	3.3	0.0	3.3	47.9
	2.0960	5.9	0.1	6.0	47.9
	2.6760	15.5	0.1	15.6	47.9
	12.0000	-8.1	0.4	-7.7	47.9
	21.0000	-7.4	0.8	-6.6	47.9
	29.9900	7.5	1.1	8.6	47.9
Vb	0.4500	-1.4	-0.1	-1.5	47.9
	0.5890	-8.3	0.0	-8.3	47.9
	1.0900	-14.4	0.0	-14.4	47.9
	1.7490	4.6	0.0	4.6	47.9
	2.0960	5.2	0.1	5.3	47.9
	2.6760	9.4	0.1	9.5	47.9
	12.0000	-13.0	0.4	-12.6	47.9
	21.0000	-16.2	0.8	-15.4	47.9
	29.9900	9.7	1.1	10.8	47.9

Tested by : S. Mori

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

2) Sample of calculation at 0.4500 MHz  
 1.0 (dB $\mu$ V) -0.1 (dB)= 0.9 (dB $\mu$ V)

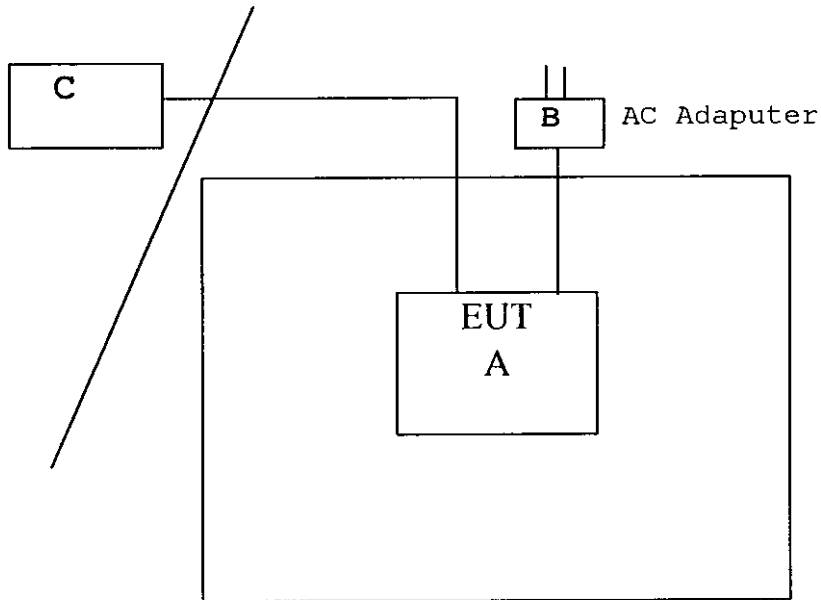
Reviewed by : M. Horie M. Horie



[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	Cordless Telephone	KX-TC1040B	---	ACJ96NKX-TC1000
B	AC Adaptor	PQLV1	---	---

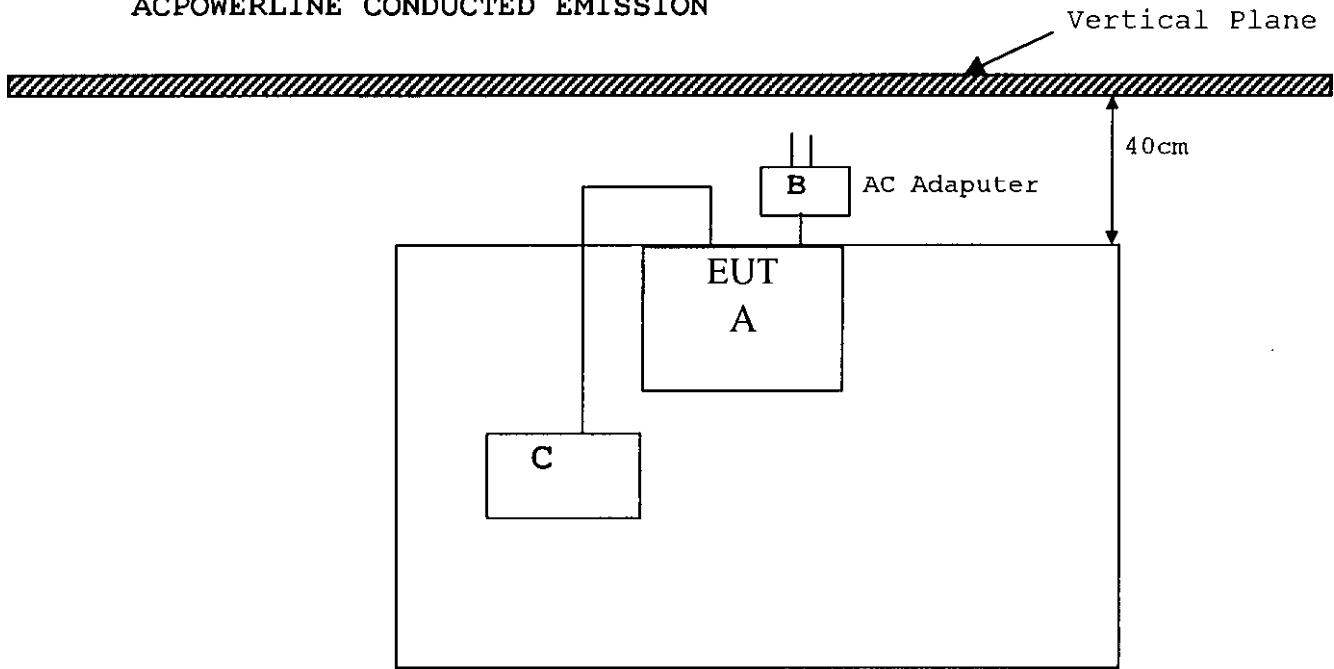
[Remotely Located Devices]

		Model No. [Manufacture]	Serial No.	FCC ID
C	TEL Line Simulator	Loop Simulator [Mfr'd by Kyushu Matsushita Electric Co., Ltd.]	---	---

[2]DESCRIPTION OF THE TEST EQUIPMENT

2-2 The equipment under test (EUT)

ACPOWERLINE CONDUCTED EMISSION



		Model No. [Manufacture]	Serial No.	FCC ID
A	Cordless Telephone	KX-TC1040B	---	ACJ96NKX-TC1000
B	AC Adaputor	PQLV1	---	---

[Remotely Located Devices]

		Model No. [Manufacture]	Serial No.	FCC ID
C	TEL Line Simulator	Loop Simulator [Mfr'd by Kyushu Matsushita Electric Co., Ltd.]	---	---

**2-3 Type of Interface Cables**

[ Main Frame ] [ Peripheral ] [Length]Number

TEL Cord(A) ---- Unshielded Cable 2.1 m 1

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

Refer to the photographs.

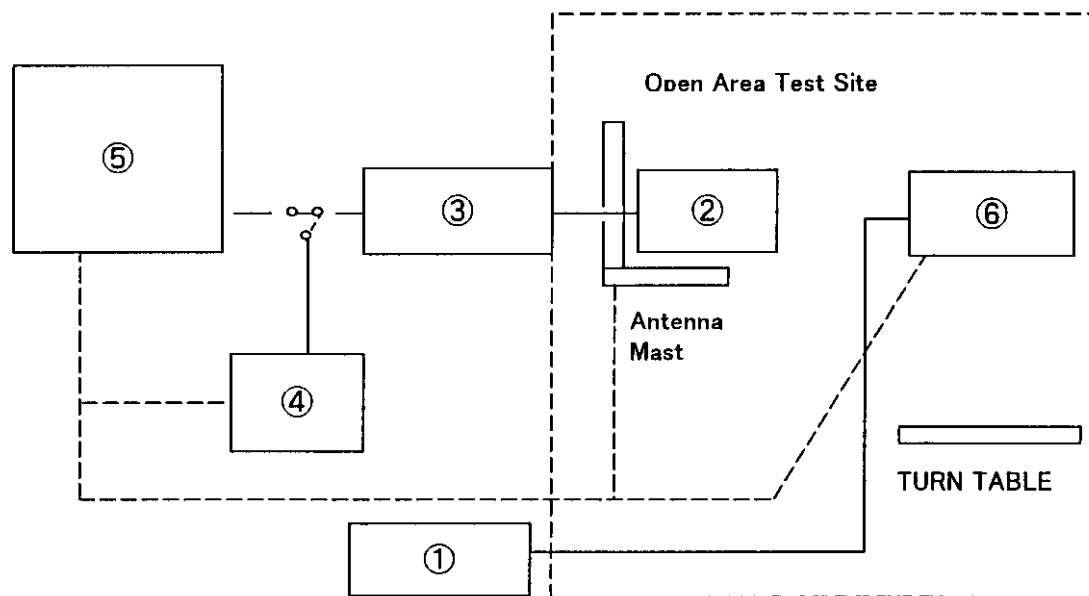
These interface cables were positioned so as to produce the highest maximum at every frequency between 30 MHz and 1000 MHz, being within the manner assumed to be a typical operating condition.

**2-3.2 Test Operation Condition of KX-TC1040B**

TALK mode ----- Both the Transmitter and the Receiver are working.

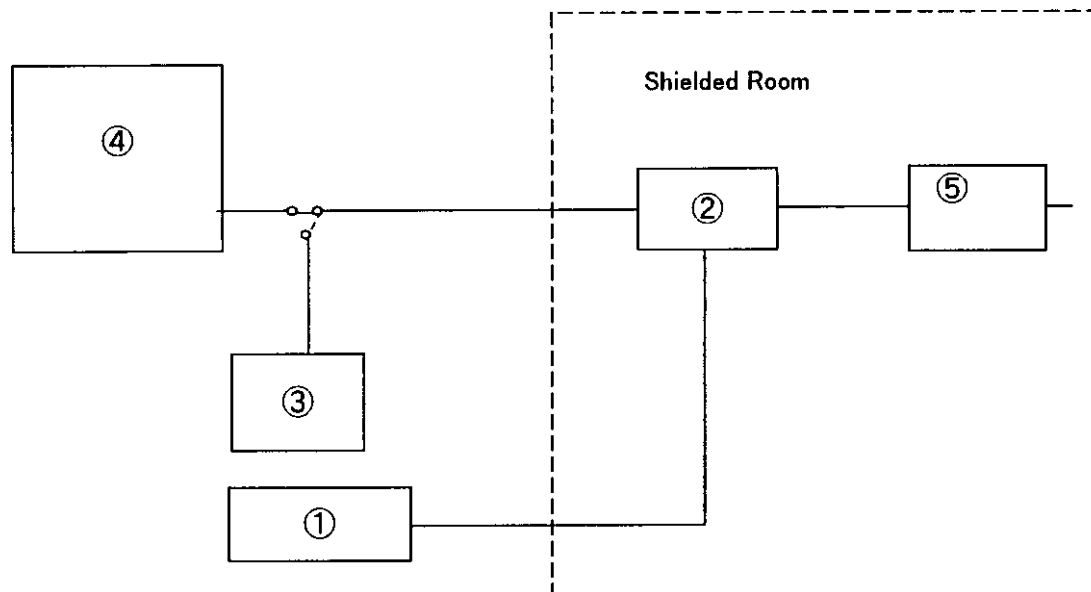
## [4] TEST ARRANGEMENT AND LIST OF INSTRUMENTS

## 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-TC1040B	---	---	---

## 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-TC1040B	---	---	---

[5] ATTACHMENT

5.1 RADIATED EMISSION MEASUREMENTS

[Attachment Sheet No.]

\* QP Data ----- Sheet 1 of 4 Sheets  
 TALK[20Ch] mode(46.730MHz)  
 (Horizontal/Vertical, 30-300MHz)

\* QP Data ----- Sheet 2 of 4 Sheets  
 TALK[7Ch] mode(44.120MHz)  
 (Horizontal/Vertical, 30-300MHz)

5.2 AC POWERLINE CONDUCTED MEASUREMENTS

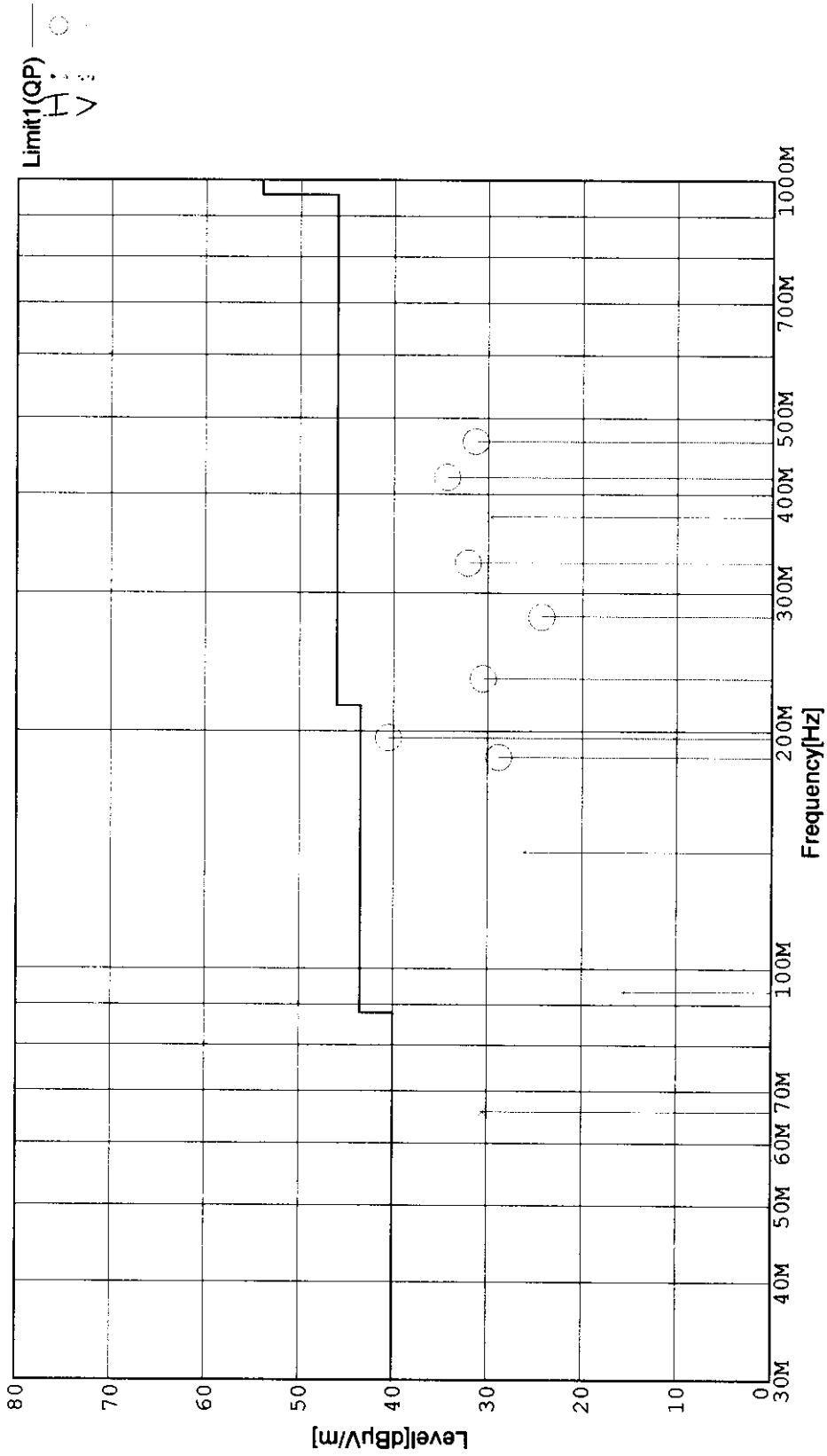
\* QP Data ----- Sheet 3 of 4 Sheets  
 TALK[20Ch] mode(46.730MHz)  
 (Va/Vb, 0.45-30MHz)

\* QP Data ----- Sheet 4 of 4 Sheets  
 TALK[7Ch] mode(44.120MHz)  
 (Va/Vb, 0.45-30MHz)

**RADIATED EMISSION**

Model Name : 43/49MHz Cordless Telephone  
 Parts No. : KX-TC1040B  
 Serial No. : ---  
 Detector : QP  
 Points : 11  
 Limit1: [FCC Part 15] Class B<3m>

Temp. : 23  
 Humi.% : 52%  
 Comment : TALK[20Ch]Mode(46.730MHz)  
 Date : 1999.4.8  
 EMI Receiver(s) :



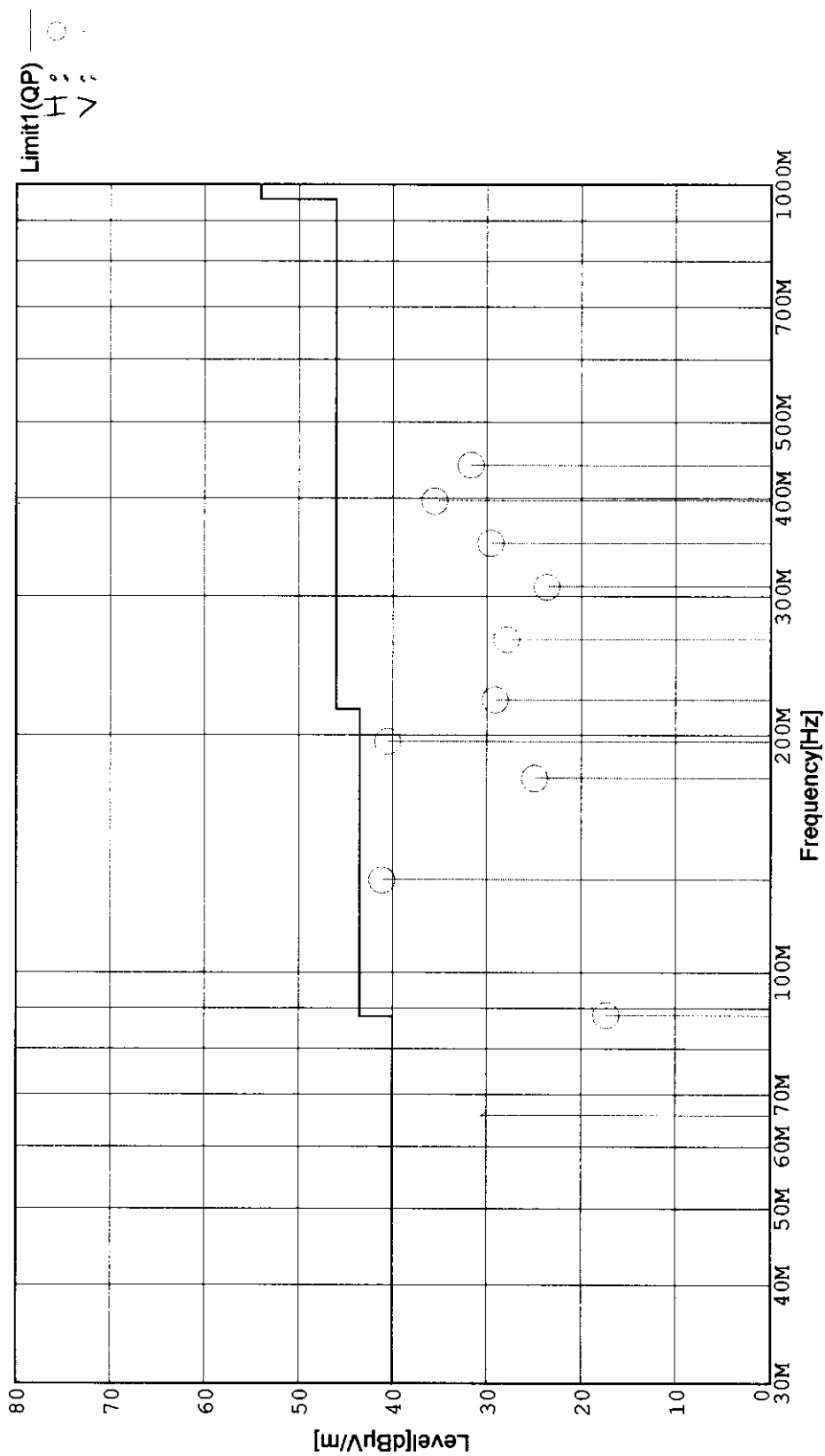
Limit1(QP)

H: ○  
V: ○

**RADIATED EMISSION**

Model Name : 43/49MHz Cordless Telephone  
 Parts No. : KX-TC1040B  
 Serial No. : —  
 Detector : QP  
 Points : 11  
 Limit1: [FCC Part 15] Class B<3m>

Temp. : 23  
 Humi.% : 52%  
 Comment : TALK[7Ch]Mode(44.120MHz)  
 Date : 1999.4.8  
 EMI Receiver(s) :

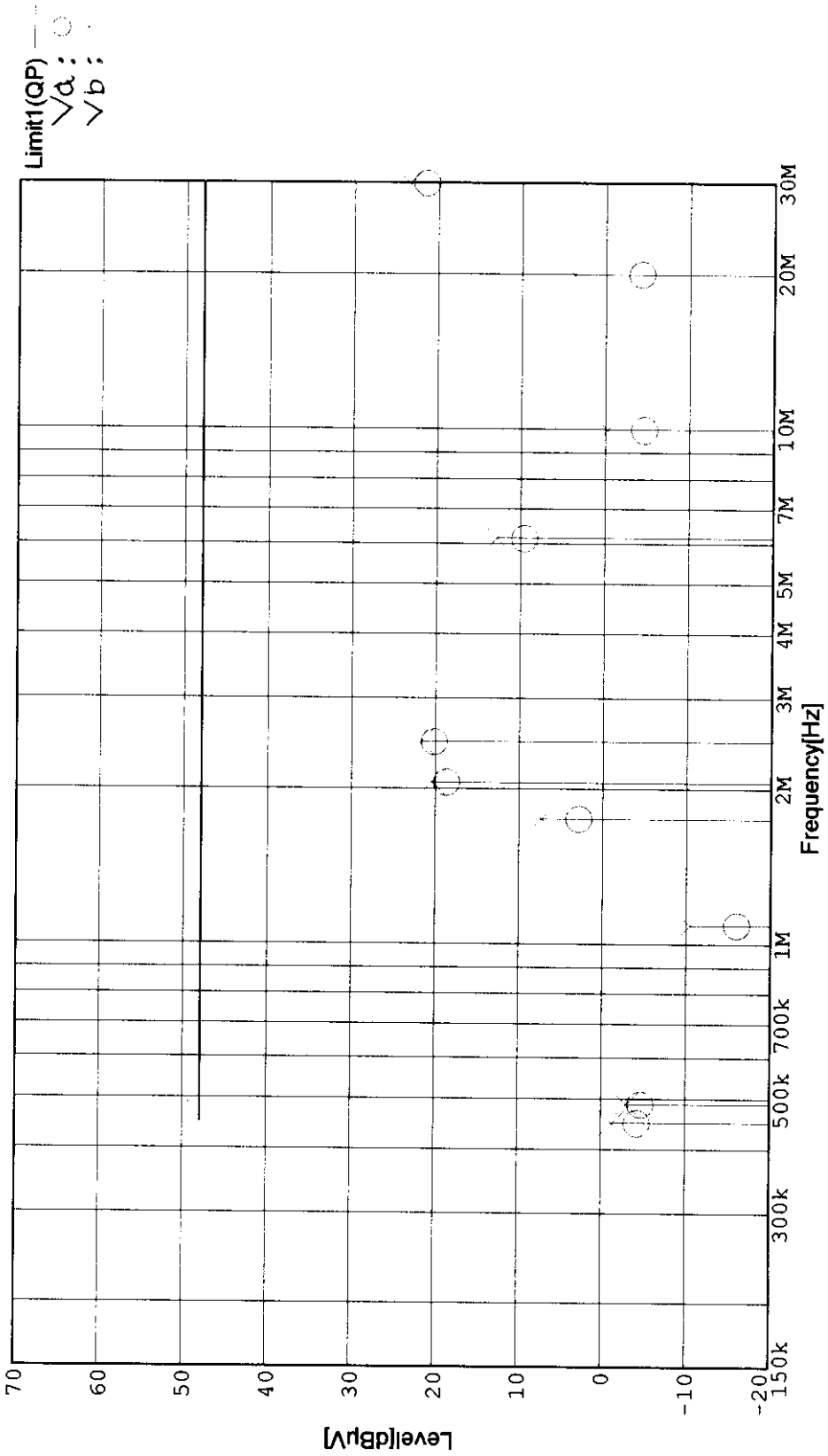


Limit1(QP)  
 H : ○  
 V : |

LINE CONDUCTION

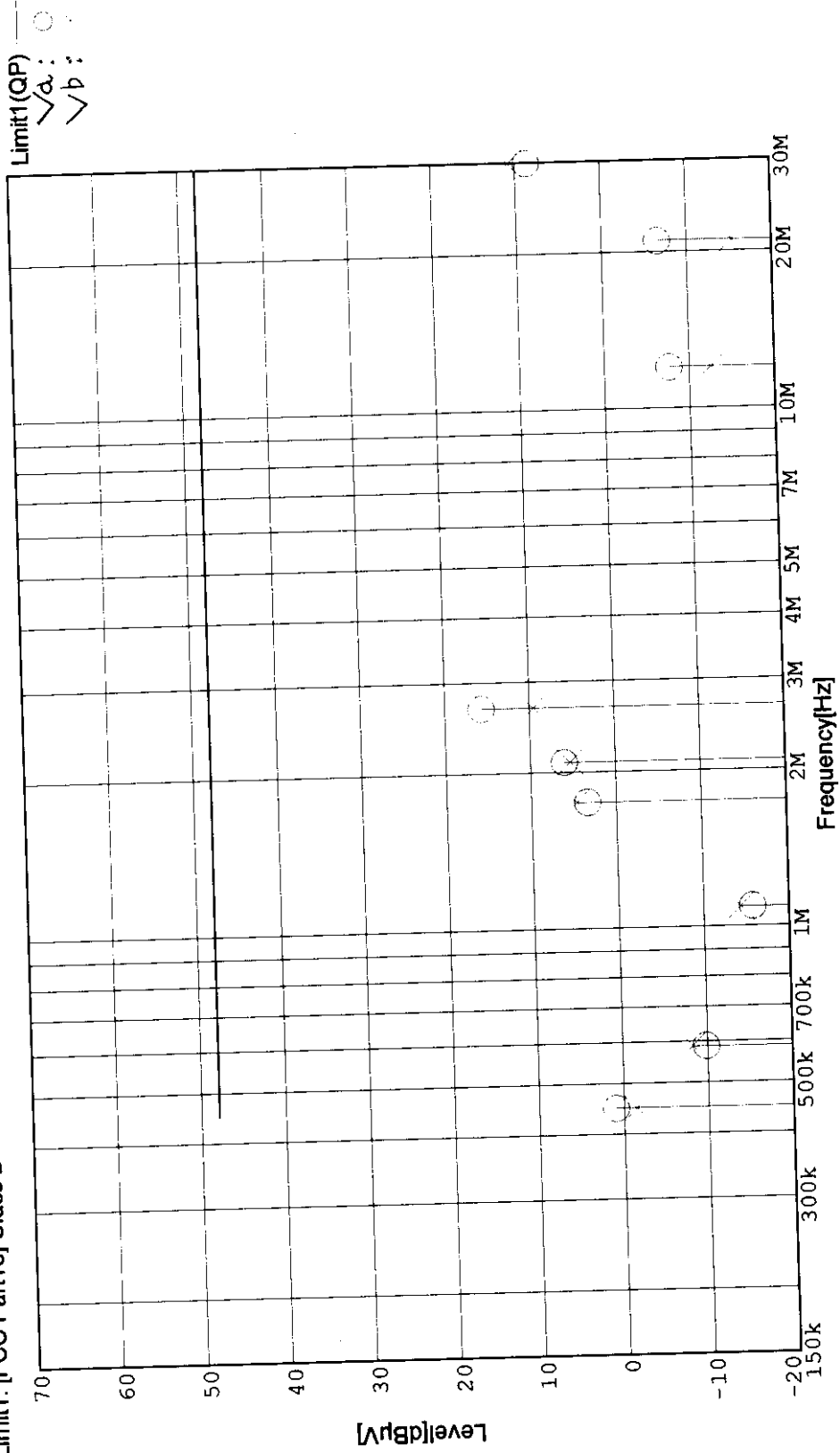
Model Name : 43/49MHz Cordless Telephone  
 Parts No. : KX-TC1040B  
 Serial No. : --  
 Detector : QP  
 Points : 20  
 Limit1: [FCC Part15] Class B

Temp. : 24  
 Humi.% : 45%  
 Comment : TALK[20Ch]Mode(46.730MHz)  
 Date : 1999.4.9  
 EMI Receiver(s) :



**LINE CONDUCTION**  
 Model Name : 43/49MHz Cordless Telephone  
 Parts No. : KX-TC1040B  
 Serial No. : ---  
 Detector : QP  
 Points : 18  
 Limit1: [FCC Part15] Class B

Temp. : 24  
 Humi.% : 45%  
 Comment : TALK[7Ch]Mode(44.120MHz)  
 Date : 1999.4.9  
 EMI Receiver(s) :



Limit1(QP) —  
 √a: ○  
 √b: ○