Matsushita-Kotobuki Electronics Industries Ltd.

Saijo Division

Address: 247 Fukutake, Saijo, Ehime 793 – 8510 Japan

Tel: 0897 - 56 - 1111 / Fax: 0897 – 53 – 1392

REPORT OF MEASUREMENTS-(Part I) Date: Feb. 28, 2000

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

( ) ( )

EXHIBIT # : 3

FCC ID : ACJ927128AHP

OUR REF. : MKES00-F002

MODEL NO. : NV-FJ4620PX

Name of Manufacturer: Matsushita-Kotobuki Electronics Industries Ltd.

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

Device Under Measurement

FCC ID : ACJ927128AHP

Model No. : NV-FJ4620PX

Trade Name : Panasonic

Applicant : Matsushita Electric Ind. Co., Ltd.

This device is a representative model of KG-20PX chassis group.

Data Also Applied To

FCC ID	Model No.(Trade Name)

Device Description

Name of Device : (X)Video Cassette Recorder, ( )Tuner Adapter

Frequency : VHF 3 or 4 ch.

Video Line Terminals: (X)Provided, ( )Not Provided

Accessories : RF Out Cable (0.9 m),
Video/Audio out Cable (1.5 m)

Certification

On the basis of the measurement data contained in Part II, all devices bearing the afore mentioned 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

K. Ishikawa

Sr. Engineer

Matsushita-Kotobuki Electronics Industries Ltd.

Saijo Division
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EXHIBIT # : 3
FCC ID : ACJ927128AHP
OUR REF. : MKES00-F002
MODEL NO. : NV-FJ4620PX
Sheet 2 of 14 Sheets

Part 15 Subpart B, (TV Interface Device)- Part

1)15.107 Power Line Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Interference (dBuV)	
		1- end & Grounded	The other-end & Gro.
0.45	48	34.6	33.6
0.62	48	32.5	33.5
0.85	48	34.2	32.6
1.09	48	30.8	30.5
4.15	48	28.8	26.7
28.64	48	31.5	30.0

(Refer to Sheet 3,11,14 of 17 Sheets)

2)15.109 Radiated Emission(Including Tuner)

Freq. (MHz)	Limits (dBuV/m)	Emission (dBuV/m)	
		Horiz.	Vert.
71.27	40.0	25.1	27.4
143.18	40.0	30.2	29.3
150.34	43.5	31.4	28.2
171.82	43.5	35.0	27.1
898.00	46.0	41.5	40.6
1510.00	54.0	41.8	44.8

(Refer to Sheet 4,5,12,13,15,16,16,17 of 17 Sheets)
Note: Without Laurel Antenna
With accessories

3) 15.111 Antenna Power Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Conducted Voltage (dBuV)
413.0	51.8	42.2
419.0	51.8	42.3
1162.0	51.8	45.4
1166.0	51.8	46.2
1174.0	51.8	47.2
1178.0	51.8	46.1

(Refer to Sheet 6 of 17 Sheets)

4) 15.115(b)(1) Output Signal Level

Ch	Limits (dBuV)		Level (dBuV)	
	Visual	Aural	Visual	Aural
3	69.5	56.5	67.0	53.1
4	69.5	56.5	66.8	53.5

(Refer to Sheet 7 of 17 Sheets)

5) 15.115(b)(2) Output Terminal Conducted Interference

Ch	Freq. (MHz)	Limits (dBuV)	Interference (dBuV)
3	50.50	39.5	30.9
	51.02	39.5	23.5
	55.31	39.5	25.8
	72.00	39.5	31.2
	122.50	39.5	31.3
	183.75	39.5	32.5
4	56.54	39.5	32.6
	61.33	39.5	25.7
	74.67	39.5	28.8
	77.92	39.5	31.4
	134.50	39.5	31.0
	201.75	39.5	28.9

(Refer to Sheet 8,9 of 17 Sheets)

6) 15.115© Transfer SW Isolation

Ch	Limits (dBuV)	Level (dBuV)
3	9.5	<3.9
4	9.5	<3.9

(Refer to Sheet 10 of 17 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 Rules under normal use and maintenance.

T. Watanabe

T. Watanabe
Engineer

Part 15 Subpart B, (TV Interface Device)

1) 15.107 Power Line Conducted Voltage

Video Signal	Freq. (MHz)	Meter Read. (dBuV)		LISN Factor (dB)	Matching Pad Loss (dB)	Interference (dBuV)	
		1-end & Gro.	The other-End&Gro.			1-end & Gro.	The other-End &Gro.
Multi Burst 1 V p-p	0.45	27.7	26.5	0.1	6.2	34.0	32.8
	0.62	25.2	26.6	0.1	6.2	31.5	32.9
	0.85	26.1	26.2	0.1	6.2	32.4	32.5
	1.09	23.5	24.0	0.1	6.2	29.8	30.3
	4.15	18.5	18.4	0.3	6.2	25.0	24.9
	28.64	23.8	22.8	1.0	6.2	31.0	30.0
Multi Burst 5 V p-p	0.45	28.3	27.3	0.1	6.2	34.6	33.6
	0.62	26.2	27.2	0.1	6.2	32.5	33.5
	0.85	27.9	26.3	0.1	6.2	34.2	32.6
	1.09	24.5	24.2	0.1	6.2	30.8	30.5
	4.15	22.3	20.2	0.3	6.2	28.8	26.7
	28.64	24.3	22.8	1.0	6.2	31.5	30.0
Internal Signal	0.45	27.2	26.5	0.1	6.2	33.5	32.8
	0.62	24.9	26.3	0.1	6.2	31.2	32.6
	0.85	23.7	23.8	0.1	6.2	30.0	30.1
	1.09	22.2	22.3	0.1	6.2	28.5	28.6
	4.15	18.0	17.7	0.3	6.2	24.5	24.2
	28.64	23.3	23.0	1.0	6.2	30.5	30.2
RF/CATV Signal Input	0.45	27.5	26.0	0.1	6.2	33.8	32.3
	0.62	25.2	25.9	0.1	6.2	31.5	32.2
	0.85	23.3	23.0	0.1	6.2	29.6	29.3
	1.09	18.4	18.6	0.1	6.2	24.7	24.9
	4.15	19.0	18.7	0.3	6.2	25.5	25.2
	28.64	23.4	22.8	1.0	6.2	30.6	30.0

Note:

1. Sample calculation at
   M.B., 1 V p-p, 1-end & Gro. 0.45 MHz ; 27.7 + 0.1 + 6.2 = 34.0 (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
   50 ohms / 50 uH network
   c) Test Signal Generator (Multi Burst) - Shibasoku Co., Ltd.
   Model : 205
   d) 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.

2) 15.109 Radiated Emission(Including Tuner, Without Accessories)

Video Signal	Frequency (MHz)	Meter Reading Open Volt. (dBuV)		Correction Factor (dB)	Emission & 3 meters(dBuV)	
		Horiz.	Vert.	Open Vol.	Horiz.	Vert.
Multi Burst 1 V p-p	71.27	10.2	11.5	7.8	18.0	19.3
	143.18	9.7	10.4	17.2	26.9	27.6
	150.34	8.4	8.0	17.7	26.1	25.7
	171.82	15.3	8.2	18.6	33.9	26.8
	898.00	7.0	5.1	31.2	38.2	36.3
	1510.00	5.4	7.6	35.2	40.6	42.8
Multi Burst 5 V p-p	71.27	10.6	13.0	7.8	18.4	20.8
	143.18	10.6	10.4	17.2	27.8	27.6
	150.34	8.9	8.2	17.7	26.6	25.9
	171.82	15.2	8.3	18.6	33.8	26.9
	898.00	7.0	5.1	31.2	38.2	36.3
	1510.00	5.4	7.6	35.2	40.6	42.8
Internal Signal	71.27	9.6	11.3	7.8	17.4	19.1
	143.18	9.0	9.1	17.2	26.2	26.3
	150.34	5.3	5.1	17.7	23.0	22.8
	171.82	13.2	7.4	18.6	31.8	26.0
	898.00	7.0	5.1	31.2	38.2	36.3
	1510.00	5.4	7.6	35.2	40.6	42.8
RF/CATV Signal Input	71.27	9.9	11.5	7.8	17.7	19.3
	143.18	9.0	9.4	17.2	26.2	26.6
	150.34	5.3	6.1	17.7	23.0	23.8
	171.82	13.2	7.3	18.6	31.8	25.9
	898.00	7.0	5.1	31.2	38.2	36.3
	1510.00	5.4	7.6	35.2	40.6	42.8

Note: 1. Sample calculation at
M.B., 1 V p-p, Horiz. 71.27 MHz ; 10.2 + 7.8 = 18.0 (dBuV/m)

2. Measuring Instruments:

a) Field strength meter - Hewlett Packard company
Model: HP 8546A
(1) Frequency range : 9 kHz to 6.5 GHz
(2) RF Input : 50 ohm
(3) IF band width : 200 Hz/ 9 kHz/ 120 kHz/ 1MHz
(4) Detector function : Average/CISPR Q-Peak/Peak

b) Test Signal Generator (Multi Burst) - Shibasoku Co., Ltd.
Model: TG-5, 2U2

c) Receiving antenna - Schwarzbeck
Model: VHA9103 30 - 300 MHz
Model: UHALP9107 300 - 1000 MHz
- The Electro-Mechanics Company
Model: 3115 1 - 18G Hz

3. The spectrum was checked from 30 MHz to 1694 MHz and the six highest emissions relative to the appropriate limit were measured and reported.

2) 15.109 Radiated Emission(Including Tuner, With Accessories)

Video Signal	Frequency (MHz)	Meter Reading Open Volt. (dBuV)		Correction Factor (dB)	Emission & 3 meters(dBuV)	
		Horiz.	Vert.	Open Vol.	Horiz.	Vert.
Multi Burst 1 V p-p	71.27	18.1	19.5	7.8	25.9	27.3
	143.18	13.9	13.2	17.2	31.1	30.4
	150.34	12.7	11.1	17.7	30.4	28.8
	171.82	15.8	8.2	18.6	34.4	26.8
	898.00	10.3	9.4	31.2	41.5	40.6
	1510.00	6.6	9.6	35.2	41.8	44.8
Multi Burst 5 V p-p	71.27	17.0	19.7	7.8	24.8	27.5
	143.18	13.2	13.0	17.2	30.4	30.2
	150.34	12.1	10.9	17.7	29.8	28.6
	171.82	16.0	9.2	18.6	34.6	27.8
	898.00	10.3	9.4	31.2	41.5	40.6
	1510.00	6.6	9.6	35.2	41.8	44.8
Internal Signal	71.27	17.4	19.0	7.8	25.2	26.8
	143.18	12.7	12.6	17.2	29.9	29.8
	150.34	13.1	10.4	17.7	30.8	28.1
	171.82	16.0	8.4	18.6	34.6	27.0
	898.00	10.3	9.4	31.2	41.5	40.6
	1510.00	6.6	9.6	35.2	41.8	44.8
RF/CATV Signal Input	71.27	17.3	19.6	7.8	25.1	27.4
	143.18	13.0	12.1	17.2	30.2	29.3
	150.34	13.7	10.5	17.7	31.4	28.2
	171.82	16.4	8.5	18.6	35.0	27.1
	898.00	10.3	9.4	31.2	41.5	40.6
	1510.00	6.6	9.6	35.2	41.8	44.8

Note: 1. Sample calculation at
M.B., 1 V p-p, Horiz. 71.27 MHz ; 18.1 + 7.8 = 25.9 (dBuV/m)

2. Measuring Instruments:

a) Field strength meter - Hewlett Packard company
Model: HP 8546A
(1) Frequency range : 9 kHz to 6.5 GHz
(2) RF Input : 50 ohm
(3) IF band width : 200 Hz/ 9 kHz/ 120 kHz/ 1MHz
(4) Detector function : Average/CISPR Q-Peak/Peak

b) Test Signal Generator (Multi Burst) - Shibasoku Co., Ltd.
Model: TG-5, 2U2

c) Receiving antenna - Schwarzbeck
Model: VHA9103 30 - 300 MHz
Model: UHALP9107 300 - 1000 MHz
- The Electro-Mechanics Company
Model: 3115 1 - 18G Hz

3. The spectrum was checked from 30 MHz to 1694 MHz and the six highest emissions relative to the appropriate limit were measured and reported.

3) 15.111 (a) Antenna Power Conducted Voltage

Frequency (MHz)	Meter Reading (dBuV)	Matc. Pad Loss (dB)	Interference (dBuV)
413.0	33.4	8.8	42.2
419.0	33.5	8.8	42.3
1162.0	36.6	8.8	45.4
1166.0	37.4	8.8	46.2
1174.0	38.4	8.8	47.2
1178.0	37.3	8.8	46.1

Antenna Input Impedance: 75 ohms (Unbalanced)

Note:
1. Sample calculation at 413.0 MHz ; 33.4 + 8.8 = 42.2 (dBuV)

2. Measuring Instrument:
a) Spectrum Analyzer - ADVANTEST Co., Ltd.
Model : R3261A
(1) Detector function : Peak
(2) Band width : 300 kHz
b) Matching Pad - Anritsu Electric Co., Ltd.
Model : MB-009
(1) Frequency range : DC - 2G Hz

3. The spectrum was checked from 30 MHz to 1694 MHz and the six highest emissions relative to the appropriate limit were measured and reported.

4) 15.115 (b) (1) Output Signal Level

Video Signal	Ch	Measured Frequency(MHz)		Meter Reading (dBuV)		Pad Loss (dB)	Output Signal Level (dBuV)	
		Visual	Aural	Visual	Aural		Visual	Aural
Multi Burst 1 V p-p	3	61.25	65.75	64.7	50.8	2.3	67.0	53.1
	4	67.25	71.75	64.5	51.2	2.3	66.8	53.5
Multi Burst 5 V p-p	3	61.25	65.75	64.7	50.8	2.3	67.0	53.1
	4	67.25	71.75	64.5	51.2	2.3	66.8	53.5
Internal Signal	3	61.25	65.75	64.7	50.8	2.3	67.0	53.1
	4	67.25	71.75	64.5	51.2	2.3	66.8	53.5
RF/CATV Signal	3	61.25	65.75	64.7	50.8	2.3	67.1	53.6
	4	67.25	71.75	64.5	51.2	2.3	67.5	53.3

RF Output Impedance: 75 ohms (Unbalanced)

Note:
1. Sample calculation at
M.B., 1 V p-p, Visual, 3 Ch ; 64.7 + 2.3 = 67.0 (dBuV)

2. Measuring Instrument:
a) Spectrum Analyzer - Anritsu Electric Co., Ltd.
Model : MS62B
(1) Detector function : Peak
(2) Band width : 300 kHz
b) Matching Pad - Anritsu Electric Co., Ltd.
Model : MP614A
(1) Frequency range : 10 - 1200 MHz
c) Test Signal Generator (Multi Burst) - Shibasoku Co., Ltd.
Model : 205

5) 15.115 (b) (2) Output Terminal Conducted Interference

Video Signal	Ch	Freq. (MHz)	Meter Read. (dBuV)	Matc. Pad Loss (dB)	Att. Pad Loss(dB)	Gain of Amp.(dB)	Interference (dBuV)
Multi Burst 1 V p-p	3	50.50	52.9	2.3	N/A	24.3	30.9
		51.02	45.5	2.3	N/A	24.3	23.5
		55.31	47.8	2.3	N/A	24.3	25.8
		72.00	53.3	2.3	N/A	24.4	31.2
		122.50	53.3	2.3	N/A	24.3	31.3
		183.75	54.5	2.3	N/A	24.3	32.5
	4	56.54	54.6	2.3	N/A	24.3	32.6
		61.33	47.7	2.3	N/A	24.3	25.7
		74.67	50.9	2.3	N/A	24.4	28.8
		77.92	53.5	2.3	N/A	24.4	31.4
		134.50	53.0	2.3	N/A	24.3	31.0
		201.75	50.9	2.3	N/A	24.3	28.9
Multi Burst 5 V p-p	3	50.50	52.9	2.3	N/A	24.3	30.9
		51.02	45.5	2.3	N/A	24.3	23.5
		55.31	47.8	2.3	N/A	24.3	25.8
		72.00	53.3	2.3	N/A	24.4	31.2
		122.50	53.3	2.3	N/A	24.3	31.3
		183.75	54.5	2.3	N/A	24.3	32.5
	4	56.54	54.6	2.3	N/A	24.3	32.6
		61.33	47.7	2.3	N/A	24.3	25.7
		74.67	50.9	2.3	N/A	24.4	28.8
		77.92	53.5	2.3	N/A	24.4	31.4
		134.50	53.0	2.3	N/A	24.3	31.0
		201.75	50.9	2.3	N/A	24.3	28.9
Internal Signal	3	50.50	52.9	2.3	N/A	24.3	30.9
		51.02	45.5	2.3	N/A	24.3	23.5
		55.31	47.8	2.3	N/A	24.3	25.8
		72.00	53.3	2.3	N/A	24.4	31.2
		122.50	53.3	2.3	N/A	24.3	31.3
		183.75	54.5	2.3	N/A	24.3	32.5
	4	56.54	54.6	2.3	N/A	24.3	32.6
		61.33	47.7	2.3	N/A	24.3	25.7
		74.67	50.9	2.3	N/A	24.4	28.8
		77.92	53.5	2.3	N/A	24.4	31.4
		134.50	53.0	2.3	N/A	24.3	31.0
		201.75	50.9	2.3	N/A	24.3	28.9
RF/CATV Signal Input	3	50.50	52.9	2.3	N/A	24.3	30.9
		51.02	45.5	2.3	N/A	24.3	23.5
		55.31	47.8	2.3	N/A	24.3	25.8
		72.00	53.3	2.3	N/A	24.4	31.2
		122.50	53.3	2.3	N/A	24.3	31.3
		183.75	54.5	2.3	N/A	24.3	32.5
	4	56.54	54.6	2.3	N/A	24.3	32.6
		61.33	47.7	2.3	N/A	24.3	25.7
		74.67	50.9	2.3	N/A	24.4	28.8
		77.92	53.5	2.3	N/A	24.4	31.4
		134.50	53.0	2.3	N/A	24.3	31.0
		201.75	50.9	2.3	N/A	24.3	28.9

RF Output Impedance: 75 ohms (Unbalanced)

Note:
1. Sample calculation at
M.B., 1 V p-p, 3 Ch., 50.50 MHz ; 52.9 + 2.3 - 24.3 = 30.9 (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer	- Anritsu Electric Co., Ltd.	
	Model : MS62B	
	(1) Detector function	: Peak
	(2) Band width	: 300 kHz
b) Matching Pad	- Anritsu Electric Co., Ltd.	
	Model : MP614A	
	(1) Frequency range	: 10 - 1200 MHz
c) Test Signal Generator (Multi Burst)	- Shibasoku Co., Ltd. Model : 205	
d) Amplifier	- Hewlett Packard Model : 8447F	

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.

6) 15.115 (c) Transfer Switch Isolation

Video Signal	Ch	Meter Read.(DbuV)	Matching Pad Loss(dB)	Gain of Amp.(dB)	Pad Loss (dB)	Level (dBuV)
Multi Burst 1 V p-p	3	<26.0	2.3	24.4	N/A	<3.9
	4	<26.0	2.3	24.4	N/A	<3.9
Multi Burst 5 V p-p	3	<26.0	2.3	24.4	N/A	<3.9
	4	<26.0	2.3	24.4	N/A	<3.9
Internal Signal	3	<26.0	2.3	24.4	N/A	<3.9
	4	<26.0	2.3	24.4	N/A	<3.9

RF Output Impedance: 75 ohms (Unbalanced)

Note:
1. Sample calculation at
M.B., 1 V p-p, Visual, 3 Ch ; <26.0 + 2.3 - 24.4 = <3.9 (dBuV)

2. Measuring Instrument:
a) Spectrum Analyzer - Anritsu Electric Co., Ltd.
Model : MS62B
(1) Detector function : Peak
(2) Band width : 300 kHz
b) Matching Pad - Anritsu Electric Co., Ltd.
Model : MP614A
(1) Frequency range : 10 - 1200 MHz
c) Test Signal Generator (Multi Burst) - Shibasoku Co., Ltd.
Model : 205
d) Amplifier - Hewlett Packard
Model : 8447F

15.107 POWER LINE CONDUCTED VOLTAGE

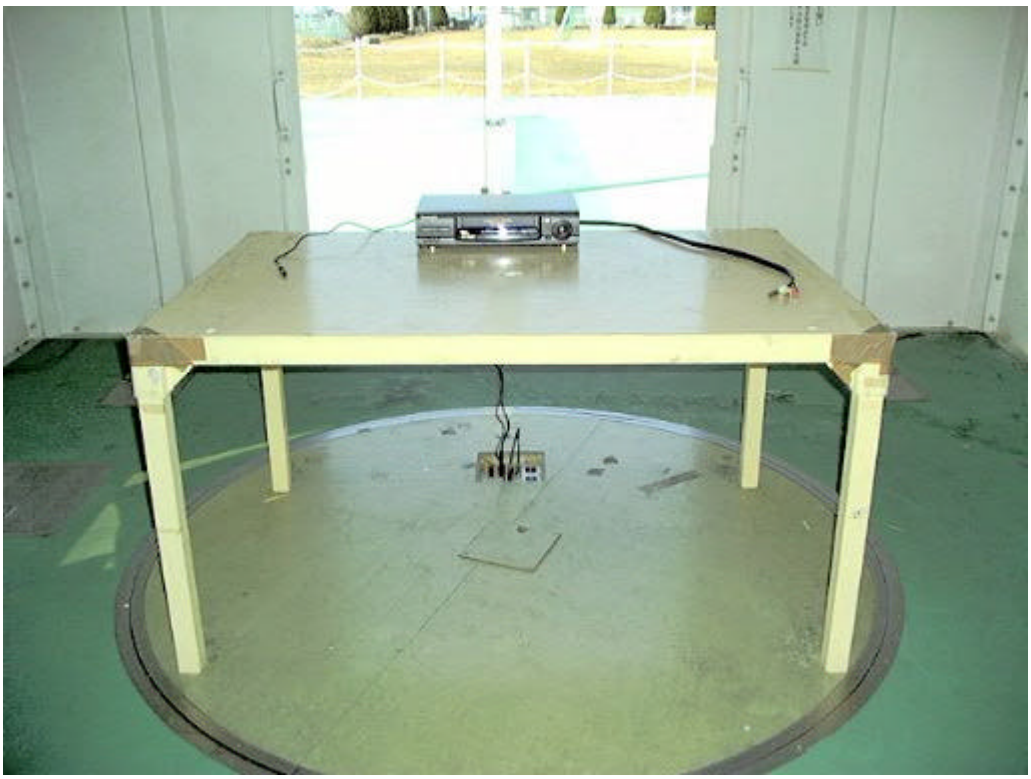
- CONFIGURATION OF THE EQUIPMENT UNDER TEST -

(Arrangement of interface cable on the test table)

15.109 RADIATED EMISSION

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -

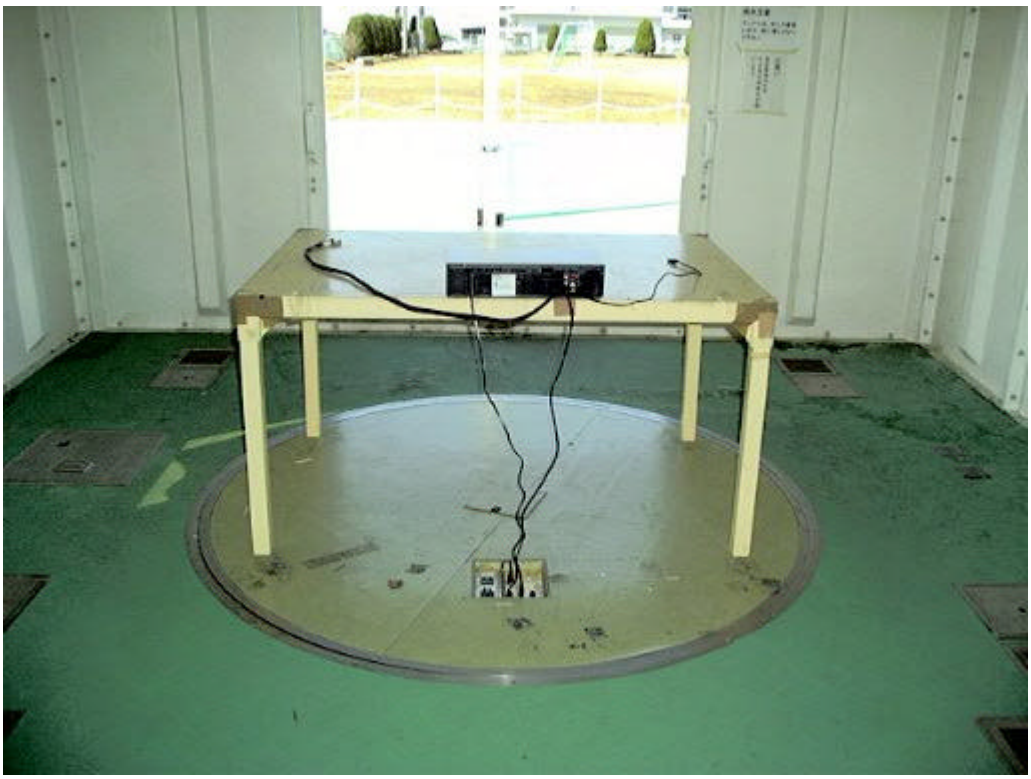
(Arrangement of interface cable on the test table)

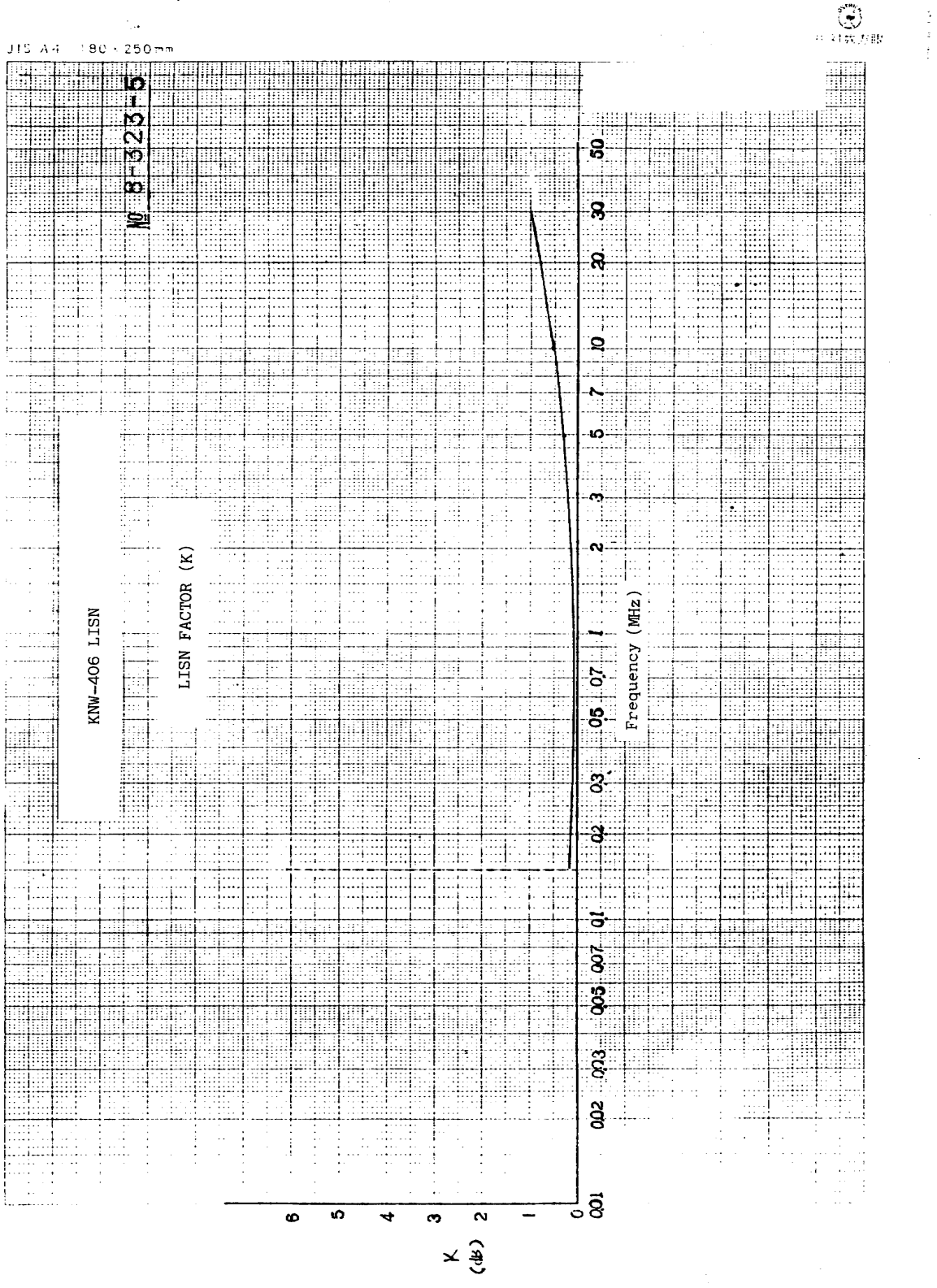


15.109 RADIATED EMISSION

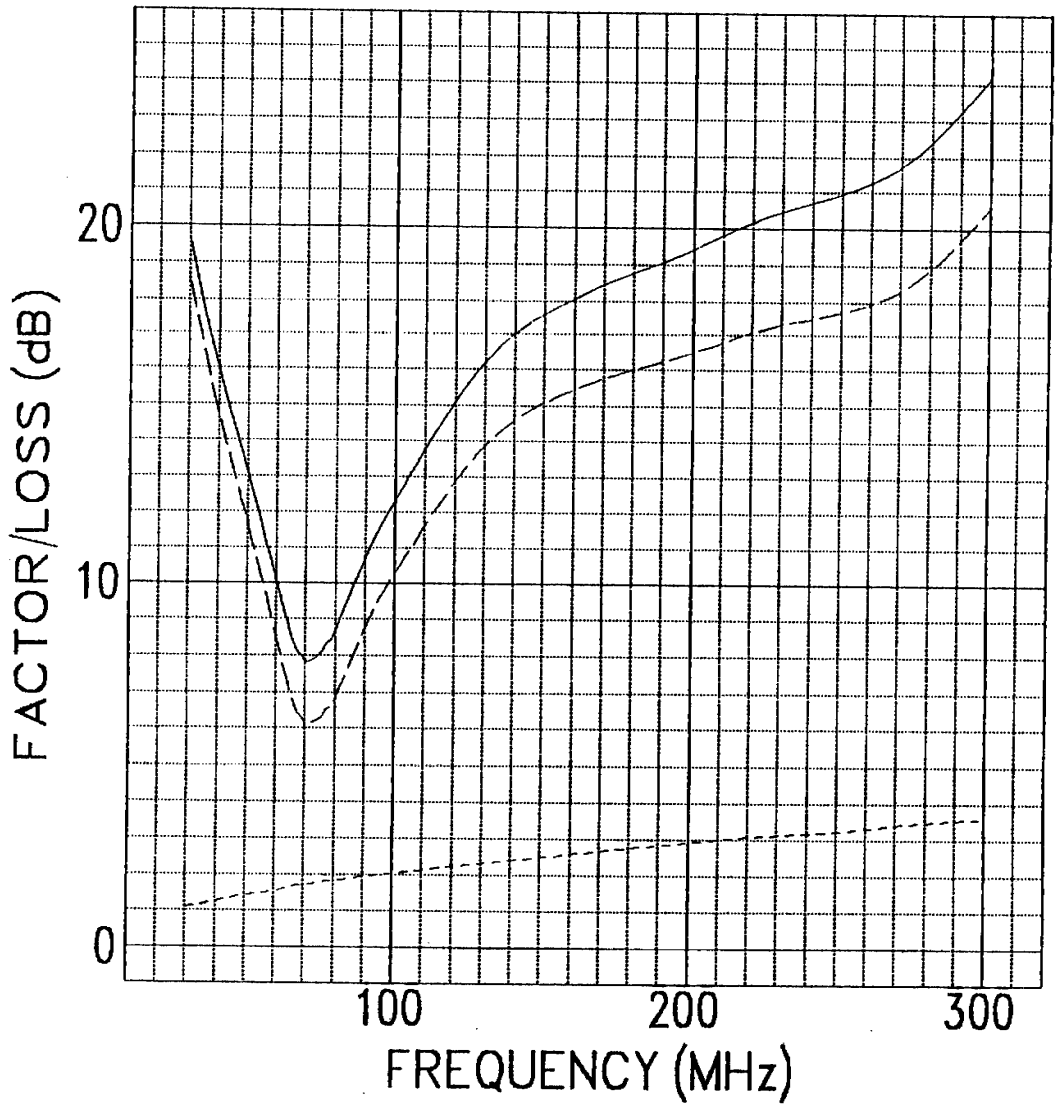
- CONFIGURATION OF THE EQUIPMENT UNDER TEST -

(Arrangement of interface cable on the test table)




JIS A4 210 × 250mm
No 8-323-5
KNW-406 LISN
LISN FACTOR (K)
Frequency (MHz)
K (dB)

CORRECTION FACTOR OF BBA9106



E = V + K

E : Field Strength

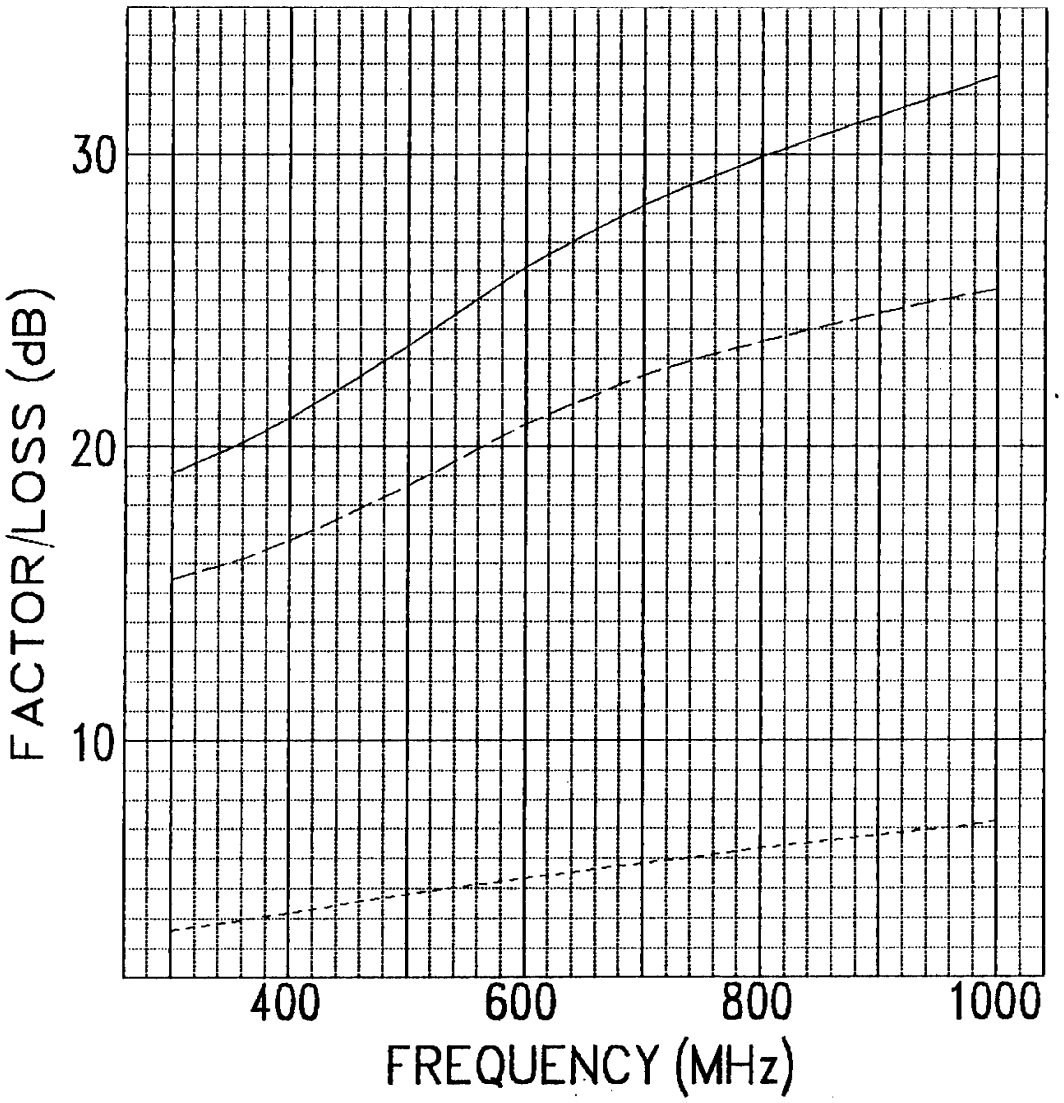
V : Correction Factor (dB)

——— : Correction Factor

– – – – : Antenna Factor

-------- : Cable Loss

CORRECTION FACTOR OF UHALP9107



E = V + K

E : Field Strength

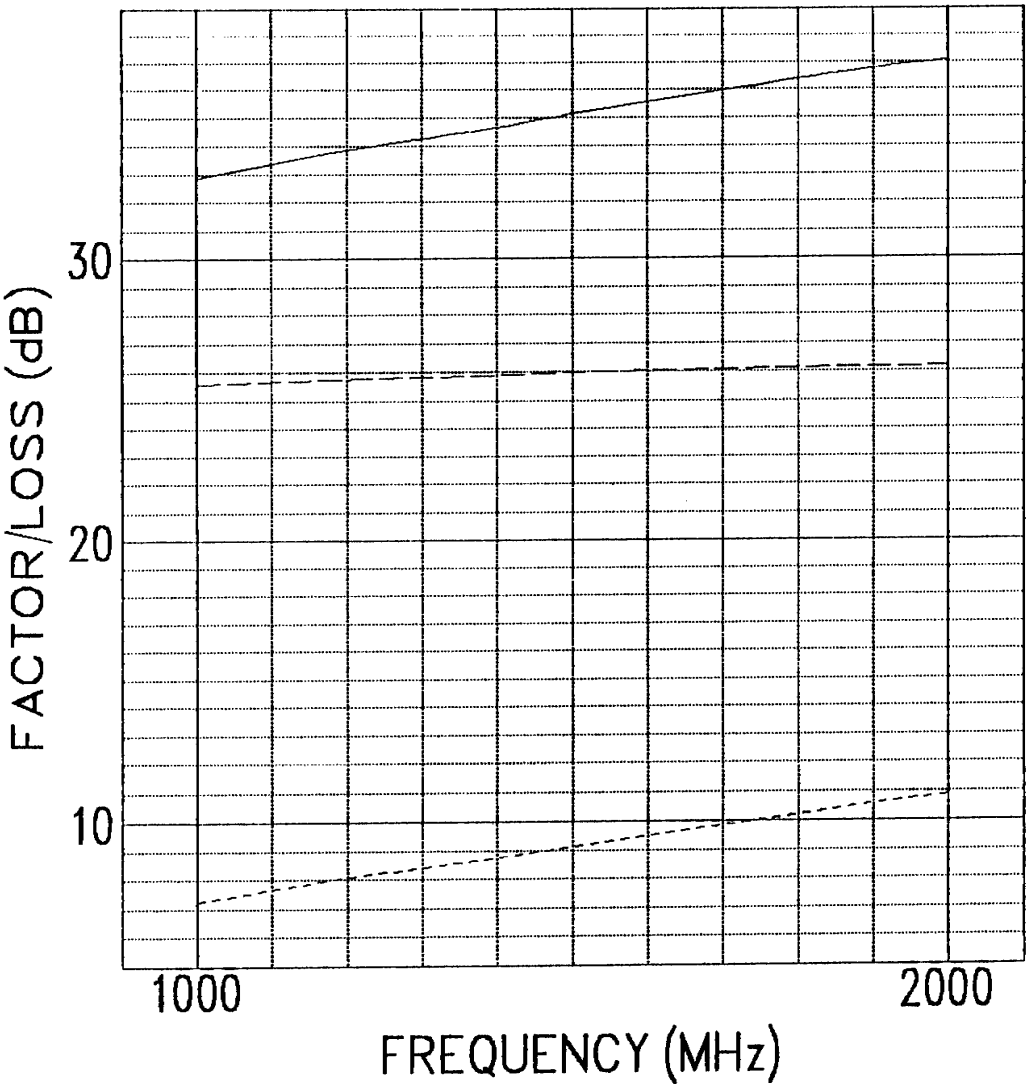
V : Correction Factor (dB)

——— : Correction Factor

– – – – : Antenna Factor

-------- : Cable Loss

CORRECTION FACTOR OF 3115



E = V + K

E : Field Strength

V : Correction Factor (dB)

——— : Correction Factor

– – – – : Antenna Factor

-------- : Cable Loss