

Matsushita Kotobuki
Electronics Industries, Ltd.

Visual Products Business Unit
Address: 247 Fukutake, Saijo, Ehime 793 - 8510 Japan
Tel: 0897 - 56 - 1216 / Fax: 0897 - 56 - 6720

Date: Jan. 24, 2003

REPORT OF MEASUREMENTS-(Part I)
REQUIRED IN (X) SUBPART B (TV INTERFACE DEVICE)

EXHIBIT # : 1
FCC ID : ACI927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 1 of 27 Sheets

Name of Manufacturer : Matsushita Kotobuki Electronics Industries, Ltd.

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

Device Under Measurement

FCC ID : ACI927139AHP
Model No. : NV-FJ6240PN
Trade Name : Panasonic
Applicant : Matsushita Electric Ind. Co., Ltd.

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
Coordinator

Matsushita Kotobuki Electronics Industries, Ltd.

Visual Products Business Unit
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EXHIBIT # : 1
FCC ID : ACI927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-EJ6240PN
Sheet 2 of 27 Sheets

Tuner: ENG56D01G1
Part 15 Subpart B, (TV Interface Device)- Part

2) 15.109 Radiated Emission(Including Tuner)

Freq. (MHz)	Limits (dBuV/m)	Emission (dBuV/m)	
		Horiz.	Vert.
39.37	40.0	22.1	26.3
42.95	40.0	22.8	31.9
57.27	40.0	21.0	27.9
365.00	46.0	38.2	32.4
371.00	46.0	38.4	34.5
377.00	46.0	37.2	33.1

(Refer to Sheet 5, 23, 24, 25, 26, 27 of 27 Sheets)

Note: Without Laurel Antenna
With accessories

3) 15.111 Antenna Power Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Conducted Voltage (dBuV)
1462.0	51.8	35.4
1466.0	51.8	36.2
1474.0	51.8	36.6
1478.0	51.8	36.2
1486.0	51.8	35.9
1490.0	51.8	34.8

(Refer to Sheet 6 of 27 Sheets)

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

Ch	Limits (dBuV)		Level (dBuV)	
	Visual	Aural	Visual	Aural
3	69.5	56.5	68.0	53.0
4	69.5	56.5	67.5	52.3

(Refer to Sheet 7 of 27 Sheets)

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

Ch	Freq. (MHz)	Limits (dBuV)	Interference (dBuV)
3	36.20	39.5	25.6
	43.40	39.5	29.7
	50.65	39.5	34.1
	72.00	39.5	29.1
	122.50	39.5	26.4
	183.75	39.5	31.1
4	42.25	39.5	24.9
	49.40	39.5	28.7
	56.60	39.5	34.1
	78.00	39.5	29.1
	134.50	39.5	25.6
	201.75	39.5	26.9

(Refer to Sheet 8, 9 of 27 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 27 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
Engineer

Matsushita Kotobuki Electronics Industries, Ltd.

Visual Products Business Unit
Address: 247 Fukutake, Saijo, Ehime 793 - 8510 Japan
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EXHIBIT # : 1
FCC ID : ACI927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 3 of 27 Sheets

Tuner: TMZH2-005

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

2) 15.109 Radiated Emission(Including Tuner)

Freq. (MHz)	Limits (dBuV/m)	Emission (dBuV/m)	
		Horiz.	Vert.
39.37	40.0	22.3	26.3
42.95	40.0	23.5	32.0
57.27	40.0	21.6	27.8
709.00	46.0	38.2	34.5
715.00	46.0	39.1	34.7
721.00	46.0	38.5	34.2

(Refer to Sheet 11, 23, 24, 25, 26, 27 of 27 Sheets)

Note: Without Laurel Antenna
With accessories

3) 15.111 Antenna Power Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Conducted Voltage (dBuV)
1006.0	51.8	42.4
1018.0	51.8	42.8
1030.0	51.8	43.1
1034.0	51.8	42.5
1042.0	51.8	41.3
1046.0	51.8	40.6

(Refer to Sheet 12 of 27 Sheets)

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

Ch	Limits (dBuV)		Level (dBuV)	
	Visual	Aural	Visual	Aural
3	69.5	56.5	67.2	51.3
4	69.5	56.5	66.7	50.6

(Refer to Sheet 13 of 27 Sheets)

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

Ch	Freq. (MHz)	Limits (dBuV)	Interference (dBuV)
3	36.20	39.5	22.3
	43.40	39.5	24.8
	50.60	39.5	31.2
	74.20	39.5	29.5
	79.30	39.5	25.7
	122.50	39.5	25.1
4	42.18	39.5	23.6
	49.50	39.5	25.3
	56.60	39.5	32.1
	78.00	39.5	30.7
	134.50	39.5	27.1
	157.10	39.5	30.5

(Refer to Sheet 14, 15 of 27 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 16 of 27 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
Engineer

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EXHIBIT # : 1
FCC ID : ACJ927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 4 of 27 Sheets

Tuner: 115-V-H015AK

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

2) 15.109 Radiated Emission(Including Tuner)

Freq. (MHz)	Limits (dBuV/m)	Emission (dBuV/m)	
		Horiz.	Vert.
39.37	40.0	21.6	26.5
42.95	40.0	22.7	31.8
57.27	40.0	21.8	28.4
709.00	46.0	36.2	33.1
715.00	46.0	37.2	33.4
713.00	46.0	36.5	33.3

(Refer to Sheet 17, 23, 24, 25, 26, 27 of 27 Sheets)

Note: Without Laurel Antenna
With accessories

3) 15.111 Antenna Power Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Conducted Voltage (dBuV)
1610.0	51.8	32.8
1618.0	51.8	34.7
1622.0	51.8	35.8
1630.0	51.8	35.1
1634.0	51.8	34.7
1642.0	51.8	34.1

(Refer to Sheet 18 of 27 Sheets)

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

Ch	Limits (dBuV)		Level (dBuV)	
	Visual	Aural	Visual	Aural
3	69.5	56.5	66.5	51.3
4	69.5	56.5	65.4	50.5

(Refer to Sheet 19 of 27 Sheets)

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

Ch	Freq. (MHz)	Limits (dBuV)	Interference (dBuV)
3	36.30	39.5	23.5
	43.40	39.5	27.3
	50.60	39.5	32.6
	72.30	39.5	30.5
	79.40	39.5	25.1
	610.00	39.5	29.2
4	42.30	39.5	23.1
	48.30	39.5	26.7
	56.60	39.5	31.5
	78.20	39.5	29.3
	85.13	39.5	25.6
	608.60	39.5	29.1

(Refer to Sheet 20, 21 of 27 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 22 of 27 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
Engineer

Part 15 Subpart B. (TV Interface Device)

2) 15.109 Radiated Emission (Including Tuner)

Video Signal	Frequency (MHz)	Meter Reading Open Volt. (dBuV)		Correction Factor (dB) Open Vol.	Emission & 3 meters(dBuV)	
		Horiz.	Vert.		Horiz.	Vert.
Multi Burst 1 V p-p	39.37	5.6	10.5	16.4	22.0	26.9
	42.95	7.4	16.6	15.2	22.6	31.8
	57.27	10.3	17.1	10.8	21.1	27.9
	365.00	19.5	13.7	18.7	38.2	32.4
	371.00	19.5	15.6	18.9	38.4	34.5
	377.00	18.0	13.9	19.2	37.2	33.1
Multi Burst 5 V p-p	39.37	5.7	9.9	16.4	22.1	26.3
	42.95	7.6	16.7	15.2	22.8	31.9
	57.27	10.2	17.1	10.8	21.0	27.9
	365.00	19.5	13.7	18.7	38.2	32.4
	371.00	19.5	15.6	18.9	38.4	34.5
	377.00	18.0	13.9	19.2	37.2	33.1
Internal Signal	39.37	5.8	9.9	16.4	22.2	26.3
	42.95	7.5	16.2	15.2	22.7	31.4
	57.27	10.5	17.1	10.8	21.3	27.9
	365.00	19.5	13.7	18.7	38.2	32.4
	371.00	19.5	15.6	18.9	38.4	34.5
	377.00	18.0	13.9	19.2	37.2	33.1
RF/CATV Signal Input	39.37	5.6	10.2	16.4	22.0	26.6
	42.95	7.3	16.0	15.2	22.5	31.2
	57.27	11.2	16.7	10.8	22.0	27.5
	365.00	19.5	13.7	18.7	38.2	32.4
	371.00	19.5	15.6	18.9	38.4	34.5
	377.00	18.0	13.9	19.2	37.2	33.1

Note: 1. Sample calculation at
M.B., 1 V p-p, Horiz. 39.37 MHz ; 5.6 + 16.4 = 22.0 (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: UHALP9108A 300 - 1000 MHz
 - The Electro-Mechanics Company
 Model: 3115 1 - 18 GHz

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.

Tuner: ENG56D01G1

EXHIBIT # : 3
FCC ID : ACJ927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 6 of 27 Sheets

Part 15 Subpart B. (TV Interface Device)

3) 15.111 (a) Antenna Power Conducted Voltage

Frequency (MHz)	Meter Reading (dBuV)	Matc. Pad Loss (dB)	Interference (dBuV)
1462.0	26.6	8.8	35.4
1466.0	27.4	8.8	36.2
1474.0	27.8	8.8	36.6
1478.0	27.4	8.8	36.2
1486.0	27.1	8.8	35.9
1490.0	26.0	8.8	34.8

Antenna Input Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at 1462.0 MHz ; 26.6 + 8.8 = 35.4 (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- ADVANTEST Co., Ltd.

Model : R3261A

(1) Detector function : Peak

(2) Band width : 100 kHz

b) Matching Pad

- Anritsu Electric Co., Ltd.

Model : MB-009

(1) Frequency range : DC – 2 GHz

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	65.7	50.7	2.3	68.0	53.0
	4	67.25	71.75	65.2	50.0	2.3	67.5	52.3
Multi Burst 5 V p-p	3	61.25	65.75	65.7	50.7	2.3	68.0	53.0
	4	67.25	71.75	65.2	50.0	2.3	67.5	52.3
Internal Signal	3	61.25	65.75	65.7	50.7	2.3	68.0	53.0
	4	67.25	71.75	65.2	50.0	2.3	67.5	52.3
RF/CATV Signal	3	61.25	65.75	65.7	50.7	2.3	68.0	53.0
	4	67.25	71.75	65.2	50.0	2.3	67.5	52.3

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, Visual, 3 Ch ; 65.7 + 2.3 = 68.0 (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- Anritsu Electric Co., Ltd.

Model : MS62B

(1) Detector function : Peak

(2) Band width : 100 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

Part 15 Subpart B, (TV Interface Device)

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	36.20	47.6	2.3	N/A	24.3	25.6		
		43.40	51.7	2.3	N/A	24.3	29.7		
		50.65	56.1	2.3	N/A	24.3	34.1		
		72.00	51.2	2.3	N/A	24.4	29.1		
		122.50	48.4	2.3	N/A	24.3	26.4		
		183.75	53.1	2.3	N/A	24.3	31.1		
	4	42.25	46.9	2.3	N/A	24.3	24.9		
		49.40	50.7	2.3	N/A	24.3	28.7		
		56.60	56.1	2.3	N/A	24.3	34.1		
		78.00	51.2	2.3	N/A	24.4	29.1		
		134.50	47.6	2.3	N/A	24.3	25.6		
		201.75	48.9	2.3	N/A	24.3	26.9		
		Multi Burst 5 V p-p	3	36.20	47.6	2.3	N/A	24.3	25.6
				43.40	51.7	2.3	N/A	24.3	29.7
50.65	56.1			2.3	N/A	24.3	34.1		
72.00	51.2			2.3	N/A	24.4	29.1		
122.50	48.4			2.3	N/A	24.3	26.4		
183.75	53.1			2.3	N/A	24.3	31.1		
4	42.25		46.9	2.3	N/A	24.3	24.9		
	49.40		50.7	2.3	N/A	24.3	28.7		
	56.60		56.1	2.3	N/A	24.3	34.1		
	78.00		51.2	2.3	N/A	24.4	29.1		
	134.50		47.6	2.3	N/A	24.3	25.6		
	201.75		48.9	2.3	N/A	24.3	26.9		
	Internal Signal		3	36.20	47.6	2.3	N/A	24.3	25.6
				43.40	51.7	2.3	N/A	24.3	29.7
50.65		56.1		2.3	N/A	24.3	34.1		
72.00		51.2		2.3	N/A	24.4	29.1		
122.50		48.4		2.3	N/A	24.3	26.4		
183.75		53.1		2.3	N/A	24.3	31.1		
4		42.25	46.9	2.3	N/A	24.3	24.9		
		49.40	50.7	2.3	N/A	24.3	28.7		
		56.60	56.1	2.3	N/A	24.3	34.1		
		78.00	51.2	2.3	N/A	24.4	29.1		
		134.50	47.6	2.3	N/A	24.3	25.6		
		201.75	48.9	2.3	N/A	24.3	26.9		
		RF/CATV Signal Input	3	36.20	47.6	2.3	N/A	24.3	25.6
				43.40	51.7	2.3	N/A	24.3	29.7
50.65	56.1			2.3	N/A	24.3	34.1		
72.00	51.2			2.3	N/A	24.4	29.1		
122.50	48.4			2.3	N/A	24.3	26.4		
183.75	53.1			2.3	N/A	24.3	31.1		
4	42.25		46.9	2.3	N/A	24.3	24.9		
	49.40		50.7	2.3	N/A	24.3	28.7		
	56.60		56.1	2.3	N/A	24.3	34.1		
	78.00		51.2	2.3	N/A	24.4	29.1		
	134.50		47.6	2.3	N/A	24.3	25.6		
	201.75		48.9	2.3	N/A	24.3	26.9		

Tuner: ENG56D01G1

EXHIBIT # : 3
FCC ID : ACJ927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 9 of 27 Sheets

Part 15 Subpart B, (TV Interface Device)

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, 3 Ch., 36.20 MHz ; $47.6 + 2.3 - 24.3 = 25.6$ (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- Anritsu Electric Co., Ltd.

Model : MS62B

(1) Detector function : Peak

(2) Band width : 100 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.

Part 15 Subpart B. (TV Interface Device)

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 ; $\lt;26.0 + 2.3 - 24.4 = \lt;3.9 \text{ (dBuV)}$

2. Measuring Instrument:

a) Spectrum Analyzer

- Anritsu Electric Co., Ltd.

Model : MS62B

(1) Detector function : Peak

(2) Band width : 100 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

Part 15 Subpart B. (TV Interface Device)

2) 15.109 Radiated Emission (Including Tuner)

Video Signal	Frequency (MHz)	Meter Reading Open Volt. (dBuV)		Correction Factor (dB) Open Vol.	Emission & 3 meters(dBuV)	
		Horiz.	Vert.		Horiz.	Vert.
Multi Burst 1 V p-p	39.37	6.2	10.2	16.4	22.6	26.6
	42.95	8.2	16.0	15.2	23.4	31.2
	57.27	10.9	17.6	10.8	21.7	28.4
	709.00	12.2	8.5	26.0	38.2	34.5
	715.00	13.0	8.6	26.1	39.1	34.7
	721.00	12.3	8.0	26.2	38.5	34.2
Multi Burst 5 V p-p	39.37	5.9	9.9	16.4	22.3	26.3
	42.95	8.3	16.8	15.2	23.5	32.0
	57.27	10.8	17.0	10.8	21.6	27.8
	709.00	12.2	8.5	26.0	38.2	34.5
	715.00	13.0	8.6	26.1	39.1	34.7
	721.00	12.3	8.0	26.2	38.5	34.2
Internal Signal	39.37	6.3	9.8	16.4	22.7	26.2
	42.95	8.1	16.5	15.2	23.3	31.7
	57.27	10.9	17.9	10.8	21.7	28.7
	709.00	12.2	8.5	26.0	38.2	34.5
	715.00	13.0	8.6	26.1	39.1	34.7
	721.00	12.3	8.0	26.2	38.5	34.2
RF/CATV Signal Input	39.37	6.1	10.1	16.4	22.5	26.5
	42.95	7.6	16.5	15.2	22.8	31.7
	57.27	10.9	18.0	10.8	21.7	28.8
	709.00	12.2	8.5	26.0	38.2	34.5
	715.00	13.0	8.6	26.1	39.1	34.7
	721.00	12.3	8.0	26.2	38.5	34.2

Note: 1. Sample calculation at
M.B., 1 V p-p, Horiz. 39.37 MHz ; 6.2 + 16.4 = 22.6 (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: UHALP9108A 300 - 1000 MHz
 - The Electro-Mechanics Company
 Model: 3115 1 - 18 GHz

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.

Tuner: TMZH2-005

EXHIBIT # : 3
FCC ID : ACJ927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 12 of 27 Sheets

Part 15 Subpart B. (TV Interface Device)

3) 15.111 (a) Antenna Power Conducted Voltage

Frequency (MHz)	Meter Reading (dBuV)	Matc. Pad Loss (dB)	Interference (dBuV)
1006.0	33.6	8.8	42.4
1018.0	34.0	8.8	42.8
1030.0	34.3	8.8	43.1
1034.0	33.7	8.8	42.5
1042.0	32.5	8.8	41.3
1046.0	31.8	8.8	40.6

Antenna Input Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at 1006.0 MHz ; $33.6 + 8.8 = 42.4$ (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- ADVANTEST Co., Ltd.

Model : R3261A

(1) Detector function : Peak

(2) Band width : 100 kHz

b) Matching Pad

- Anritsu Electric Co., Ltd.

Model : MB-009

(1) Frequency range : DC – 2 GHz

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.

Part 15 Subpart B. (TV Interface Device)

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	64.9	49.0	2.3	67.2	51.3
	4	67.25	71.75	64.4	48.3	2.3	66.7	50.6
Multi Burst 5 V p-p	3	61.25	65.75	64.9	49.0	2.3	67.2	51.3
	4	67.25	71.75	64.4	48.3	2.3	66.7	50.6
Internal Signal	3	61.25	65.75	64.9	49.0	2.3	67.2	51.3
	4	67.25	71.75	64.4	48.3	2.3	66.7	50.6
RF/CATV Signal	3	61.25	65.75	64.9	49.0	2.3	67.2	51.3
	4	67.25	71.75	64.4	48.3	2.3	66.7	50.6

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, Visual, 3 Ch ; $64.9 + 2.3 = 67.2$ (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- Anritsu Electric Co., Ltd.

Model : MS62B

(1) Detector function : Peak

(2) Band width : 100 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

Part 15 Subpart B. (TV Interface Device)

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	36.20	44.3	2.3	N/A	24.3	22.3
		43.40	46.8	2.3	N/A	24.3	24.8
		50.60	53.2	2.3	N/A	24.3	31.2
		74.20	51.6	2.3	N/A	24.4	29.5
		79.30	47.8	2.3	N/A	24.4	25.7
		122.50	47.1	2.3	N/A	24.3	25.1
	4	42.18	45.6	2.3	N/A	24.3	23.6
		49.50	47.3	2.3	N/A	24.3	25.3
		56.60	54.1	2.3	N/A	24.3	32.1
		78.00	52.8	2.3	N/A	24.4	30.7
		134.50	49.1	2.3	N/A	24.3	27.1
		157.10	52.5	2.3	N/A	24.3	30.5
Multi Burst 5 V p-p	3	36.20	44.3	2.3	N/A	24.3	22.3
		43.40	46.8	2.3	N/A	24.3	24.8
		50.60	53.2	2.3	N/A	24.3	31.2
		74.20	51.6	2.3	N/A	24.4	29.5
		79.30	47.8	2.3	N/A	24.4	25.7
		122.50	47.1	2.3	N/A	24.3	25.1
	4	42.18	45.6	2.3	N/A	24.3	23.6
		49.50	47.3	2.3	N/A	24.3	25.3
		56.60	54.1	2.3	N/A	24.3	32.1
		78.00	52.8	2.3	N/A	24.4	30.7
		134.50	49.1	2.3	N/A	24.3	27.1
		157.10	52.5	2.3	N/A	24.3	30.5
Internal Signal	3	36.20	44.3	2.3	N/A	24.3	22.3
		43.40	46.8	2.3	N/A	24.3	24.8
		50.60	53.2	2.3	N/A	24.3	31.2
		74.20	51.6	2.3	N/A	24.4	29.5
		79.30	47.8	2.3	N/A	24.4	25.7
		122.50	47.1	2.3	N/A	24.3	25.1
	4	42.18	45.6	2.3	N/A	24.3	23.6
		49.50	47.3	2.3	N/A	24.3	25.3
		56.60	54.1	2.3	N/A	24.3	32.1
		78.00	52.8	2.3	N/A	24.4	30.7
		134.50	49.1	2.3	N/A	24.3	27.1
		157.10	52.5	2.3	N/A	24.3	30.5
RF/CATV Signal Input	3	36.20	44.3	2.3	N/A	24.3	22.3
		43.40	46.8	2.3	N/A	24.3	24.8
		50.60	53.2	2.3	N/A	24.3	31.2
		74.20	51.6	2.3	N/A	24.4	29.5
		79.30	47.8	2.3	N/A	24.4	25.7
		122.50	47.1	2.3	N/A	24.3	25.1
	4	42.18	45.6	2.3	N/A	24.3	23.6
		49.50	47.3	2.3	N/A	24.3	25.3
		56.60	54.1	2.3	N/A	24.3	32.1
		78.00	52.8	2.3	N/A	24.4	30.7
		134.50	49.1	2.3	N/A	24.3	27.1
		157.10	52.5	2.3	N/A	24.3	30.5

Tuner: TMZH2-005

EXHIBIT # : 3
FCC ID : ACJ927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 15 of 27 Sheets

Part 15 Subpart B. (TV Interface Device)

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, 3 Ch., 36.20 MHz ; $44.3 + 2.3 - 24.3 = 22.3$ (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- Anritsu Electric Co., Ltd.

Model : MS62B

(1) Detector function : Peak

(2) Band width : 100 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.

Part 15 Subpart B. (TV Interface Device)

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 ; <math> <26.0 + 2.3 - 24.4 = <3.9 \text{ (dBuV)} </math>

2. Measuring Instrument:

a) Spectrum Analyzer

- Anritsu Electric Co., Ltd.

Model : MS62B

(1) Detector function : Peak

(2) Band width : 100 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

Part 15 Subpart B. (TV Interface Device)

2) 15.109 Radiated Emission (Including Tuner)

Video Signal	Frequency (MHz)	Meter Reading Open Volt. (dBuV)		Correction Factor (dB) Open Vol.	Emission & 3 meters(dBuV)	
		Horiz.	Vert.		Horiz.	Vert.
Multi Burst 1 V p-p	39.37	5.4	10.3	16.4	21.8	26.7
	42.95	7.3	16.2	15.2	22.5	31.4
	57.27	11.2	17.7	10.8	22.0	28.5
	709.00	10.2	7.1	26.0	36.2	33.1
	715.00	11.1	7.3	26.1	37.2	33.4
	713.00	10.4	7.2	26.1	36.5	33.3
Multi Burst 5 V p-p	39.37	5.2	10.1	16.4	21.6	26.5
	42.95	7.5	16.6	15.2	22.7	31.8
	57.27	11.0	17.6	10.8	21.8	28.4
	709.00	10.2	7.1	26.0	36.2	33.1
	715.00	11.1	7.3	26.1	37.2	33.4
	713.00	10.4	7.2	26.1	36.5	33.3
Internal Signal	39.37	5.4	10.0	16.4	21.8	26.4
	42.95	7.5	16.4	15.2	22.7	31.6
	57.27	11.5	16.5	10.8	22.3	27.3
	709.00	10.2	7.1	26.0	36.2	33.1
	715.00	11.1	7.3	26.1	37.2	33.4
	713.00	10.4	7.2	26.1	36.5	33.3
RF/CATV Signal Input	39.37	5.3	9.7	16.4	21.7	26.1
	42.95	7.1	15.9	15.2	22.3	31.1
	57.27	10.9	16.2	10.8	21.7	27.0
	709.00	10.2	7.1	26.0	36.2	33.1
	715.00	11.1	7.3	26.1	37.2	33.4
	713.00	10.4	7.2	26.1	36.5	33.3

Note: 1. Sample calculation at
M.B., 1 V p-p, Horiz. 39.37 MHz ; 5.4 + 16.4 = 21.8 (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: UHALP9108A 300 - 1000 MHz
 - The Electro-Mechanics Company
 Model: 3115 1 - 18 GHz

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.

Tuner: 115-V-H015AK

EXHIBIT # : 3
FCC ID : ACJ927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 18 of 27 Sheets

Part 15 Subpart B. (TV Interface Device)

3) 15.111 (a) Antenna Power Conducted Voltage

Frequency (MHz)	Meter Reading (dBuV)	Matc. Pad Loss (dB)	Interference (dBuV)
1610.0	24.0	8.8	32.8
1618.0	25.9	8.8	34.7
1622.0	27.0	8.8	35.8
1630.0	26.3	8.8	35.1
1634.0	25.9	8.8	34.7
1642.0	25.3	8.8	34.1

Antenna Input Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at 1610.0 MHz ; 24.0 + 8.8 = 32.8 (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- ADVANTEST Co., Ltd.

Model : R3261A

(1) Detector function : Peak

(2) Band width : 100 kHz

b) Matching Pad

- Anritsu Electric Co., Ltd.

Model : MB-009

(1) Frequency range : DC – 2 GHz

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.

Tuner: 115-V-H015AK

EXHIBIT # : 3
FCC ID : ACJ927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 19 of 27 Sheets

Part 15 Subpart B. (TV Interface Device)

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	64.2	49.0	2.3	66.5	51.3
	4	67.25	71.75	63.1	48.2	2.3	65.4	50.5
Multi Burst 5 V p-p	3	61.25	65.75	64.2	49.0	2.3	66.5	51.3
	4	67.25	71.75	63.1	48.2	2.3	65.4	50.5
Internal Signal	3	61.25	65.75	64.2	49.0	2.3	66.5	51.3
	4	67.25	71.75	63.1	48.2	2.3	65.4	50.5
RF/CATV Signal	3	61.25	65.75	64.2	49.0	2.3	66.5	51.3
	4	67.25	71.75	63.1	48.2	2.3	65.4	50.5

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, Visual, 3 Ch ; 64.2 + 2.3 = 66.5 (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- Anritsu Electric Co., Ltd.

Model : MS62B

(1) Detector function : Peak

(2) Band width : 100 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

Part 15 Subpart B. (TV Interface Device)

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	36.30	45.5	2.3	N/A	24.3	23.5
		43.40	49.3	2.3	N/A	24.3	27.3
		50.60	54.6	2.3	N/A	24.3	32.6
		72.30	52.6	2.3	N/A	24.4	30.5
		79.40	47.2	2.3	N/A	24.4	25.1
		610.00	49.8	2.3	N/A	22.9	29.2
	4	42.30	45.1	2.3	N/A	24.3	23.1
		48.30	48.7	2.3	N/A	24.3	26.7
		56.60	53.5	2.3	N/A	24.3	31.5
		78.20	51.4	2.3	N/A	24.4	29.3
		85.13	47.7	2.3	N/A	24.4	25.6
		608.60	49.7	2.3	N/A	22.9	29.1
Multi Burst 5 V p-p	3	36.30	45.5	2.3	N/A	24.3	23.5
		43.40	49.3	2.3	N/A	24.3	27.3
		50.60	54.6	2.3	N/A	24.3	32.6
		72.30	52.6	2.3	N/A	24.4	30.5
		79.40	47.2	2.3	N/A	24.4	25.1
		610.00	49.8	2.3	N/A	22.9	29.2
	4	42.30	45.1	2.3	N/A	24.3	23.1
		48.30	48.7	2.3	N/A	24.3	26.7
		56.60	53.5	2.3	N/A	24.3	31.5
		78.20	51.4	2.3	N/A	24.4	29.3
		85.13	47.7	2.3	N/A	24.4	25.6
		608.60	49.7	2.3	N/A	22.9	29.1
Internal Signal	3	36.30	45.5	2.3	N/A	24.3	23.5
		43.40	49.3	2.3	N/A	24.3	27.3
		50.60	54.6	2.3	N/A	24.3	32.6
		72.30	52.6	2.3	N/A	24.4	30.5
		79.40	47.2	2.3	N/A	24.4	25.1
		610.00	49.8	2.3	N/A	22.9	29.2
	4	42.30	45.1	2.3	N/A	24.3	23.1
		48.30	48.7	2.3	N/A	24.3	26.7
		56.60	53.5	2.3	N/A	24.3	31.5
		78.20	51.4	2.3	N/A	24.4	29.3
		85.13	47.7	2.3	N/A	24.4	25.6
		608.60	49.7	2.3	N/A	22.9	29.1
RF/CATV Signal Input	3	36.30	45.5	2.3	N/A	24.3	23.5
		43.40	49.3	2.3	N/A	24.3	27.3
		50.60	54.6	2.3	N/A	24.3	32.6
		72.30	52.6	2.3	N/A	24.4	30.5
		79.40	47.2	2.3	N/A	24.4	25.1
		610.00	49.8	2.3	N/A	22.9	29.2
	4	42.30	45.1	2.3	N/A	24.3	23.1
		48.30	48.7	2.3	N/A	24.3	26.7
		56.60	53.5	2.3	N/A	24.3	31.5
		78.20	51.4	2.3	N/A	24.4	29.3
		85.13	47.7	2.3	N/A	24.4	25.6
		608.60	49.7	2.3	N/A	22.9	29.1

Tuner: 115-V-H015AK

EXHIBIT # : 3
FCC ID : ACJ927139AHP
OUR REF. : MKES03-F001
MODEL NO. : NV-FJ6240PN
Sheet 21 of 27 Sheets

Part 15 Subpart B. (TV Interface Device)

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, 3 Ch., 36.30 MHz ; $45.5 + 2.3 - 24.3 = 23.5$ (dBuV)

2. Measuring Instrument:

a) Spectrum Analyzer

- Anritsu Electric Co., Ltd.

Model : MS62B

(1) Detector function : Peak

(2) Band width : 100 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.

Part 15 Subpart B. (TV Interface Device)

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 : 100 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

Part 15 Subpart B. (TV Interface Device)

15.109 RADIATED EMISSION

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -

(Arrangement of interface cable on the test table)

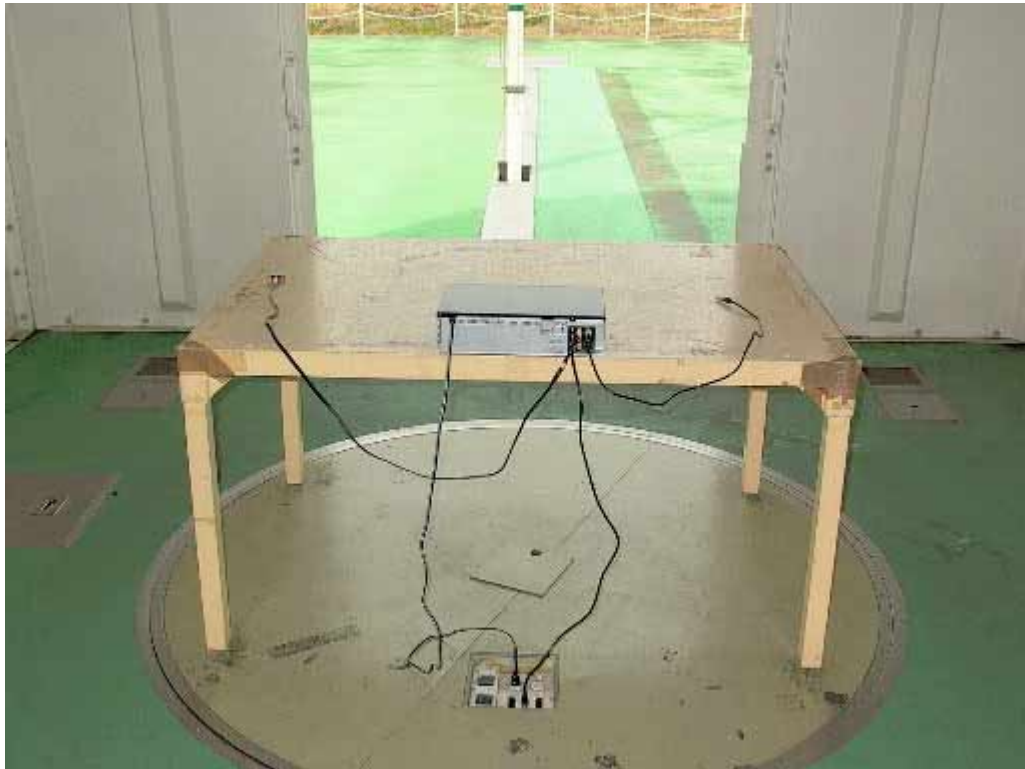


Part 15 Subpart B. (TV Interface Device)

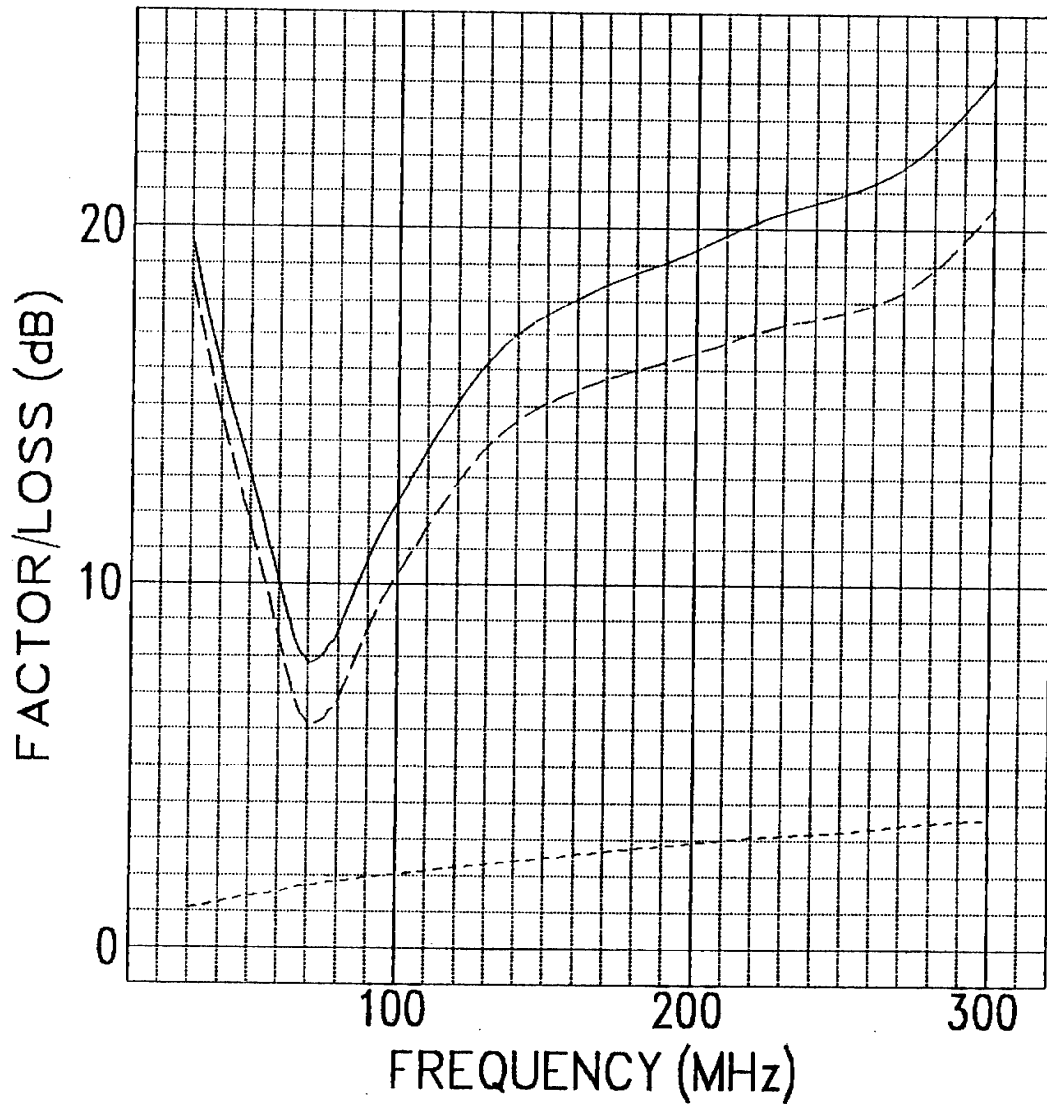
15.109 RADIATED EMISSION

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -

(Arrangement of interface cable on the test table)



CORRECTION FACTOR OF BBA9106



$E = V + K$

E : Field Strength

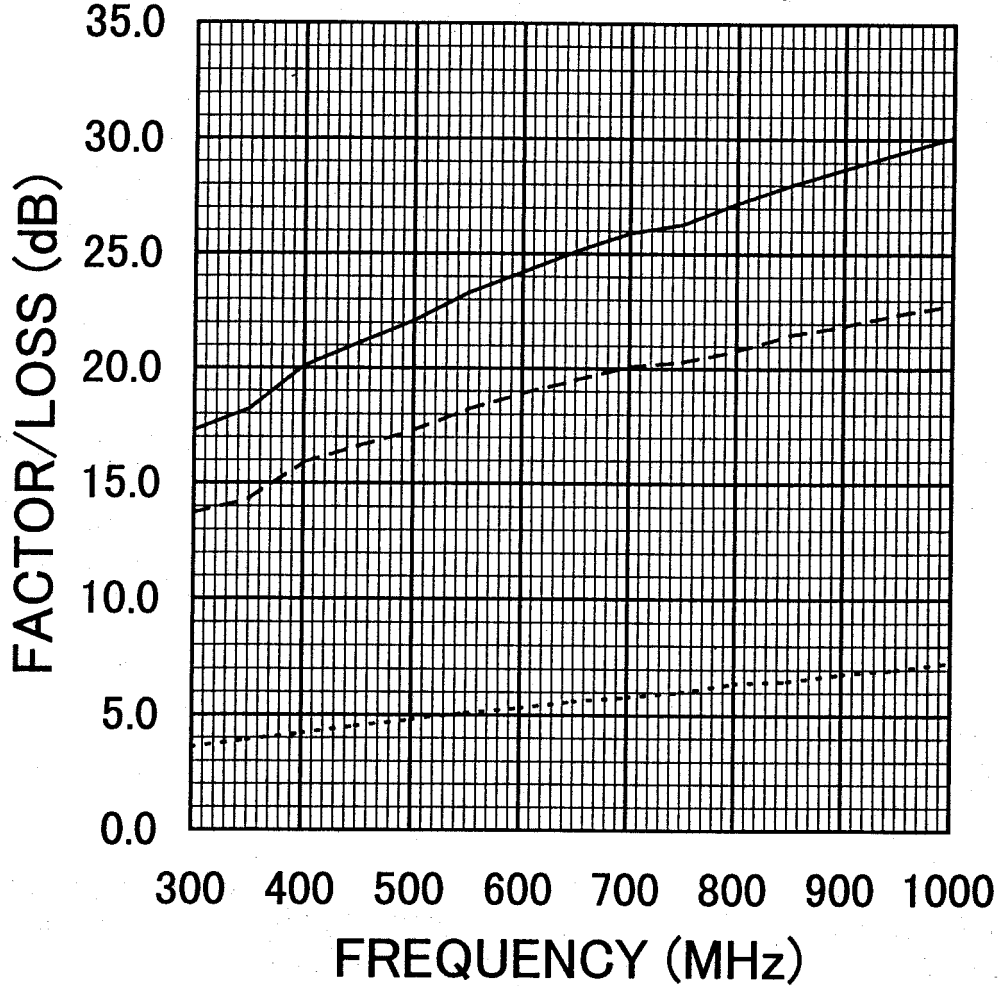
V : Correction Factor (dB)

———— : Correction Factor

----- : Antenna Factor

..... : Cable Loss

CORRECTION FACTOR OF UHALP9108A



$E = V + K$

E : Field Strength

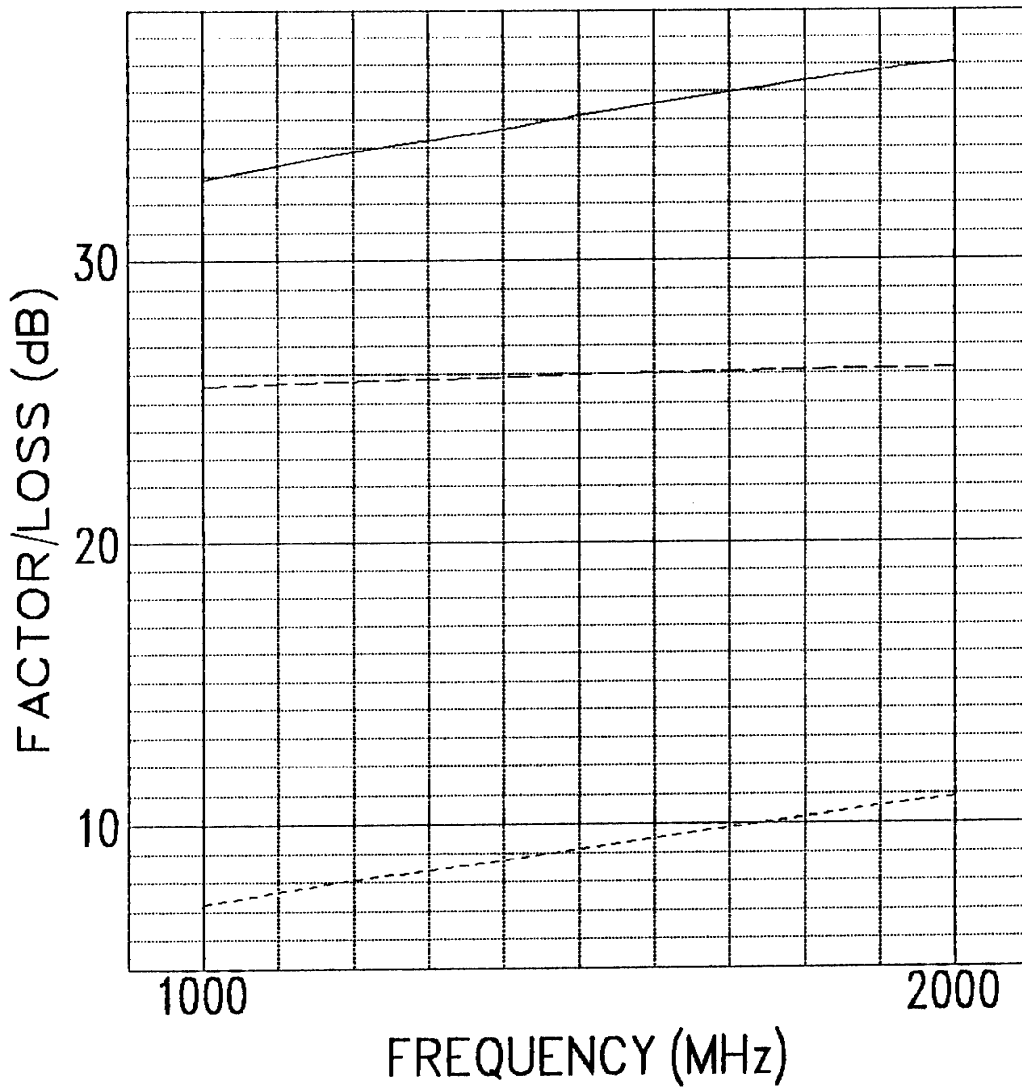
V : Correction Factor (dB)

———— : 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