

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: Nov. 10, 2004

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

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 1 of 23 Sheets

Name of Manufacturer : Matsushita Kotobuki Electronics Industries, Ltd.

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

Device Under Measurement

FCC ID : ACJ927149AHV

Model No. : PV-D4745S

Trade Name : Panasonic

Applicant : Matsushita Electric Ind. Co., Ltd.

This device is a representative model of KG-25WHGD chassis group.

Data Also Applied To

FCC ID Model No.(Trade Name)

Device Description

Name of Device : Video Cassette Recorder with DVD Player

Frequency : VHF 3 or 4 ch.

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

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

Component Video Cable (1.5 m), S-Video Cable (1.5 m)

Audio out Cable (1.5 m)

Certification

On the basis of the measurement data contained in Part II, all devices bearing the aforementioned 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
Senior Coordinator

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

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 2 of 23 Sheets

Tuner: ENG56D06G1
Part 15 Subpart B, (TV Interface Device)- Part

1) 15.107 Power Line Conducted Voltage

Freq. (MHz)	Mode	Limits (dBuV)	Interference (dBuV)	
			V _A	V _B
0.216	Average	53.0	35.1	40.0
0.326	Average	49.6	35.3	28.8
0.435	Average	47.1	31.1	34.5
0.540	Q-Peak	56.0	38.4	35.1
0.540	Average	46.0	35.0	31.9
0.650	Average	46.0	32.9	32.6
2.070	Q-Peak	56.0	33.9	35.0

Refer to Sheet 5, 6, 22, 23 of 23 Sheets)

2) 15.111(a) Antenna Power Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Conducted Voltage (dBuV)
1646.0	51.8	31.7
1654.0	51.8	32.5
1658.0	51.8	33.7
1666.0	51.8	32.9
1670.0	51.8	32.1
1678.0	51.8	31.2

(Refer to Sheet 7 of 23 Sheets)

3) 15.115(b)(1) Output Signal Level

Ch	Limits (dBuV)		Level (dBuV)	
	Visual	Aural	Visual	Aural
3	69.5	56.5	65.4	50.1
4	69.5	56.5	65.0	49.4

(Refer to Sheet 8 of 23 Sheets)

4) 15.115(b)(2) Output Terminal
Conducted Interference

Ch	Freq. (MHz)	Limits (dBuV)	Interference (dBuV)
3	43.34	39.5	23.7
	47.70	39.5	22.1
	50.50	39.5	28.3
	72.00	39.5	26.5
	245.0	39.5	24.3
	490.0	39.5	28.5
4	49.39	39.5	23.3
	53.72	39.5	22.4
	56.50	39.5	28.1
	78.00	39.5	27.0
	269.00	39.5	27.9
	538.00	39.5	27.5

(Refer to Sheet 9, 10 of 23 Sheets)

5) 15.115(c) Transfer SW Isolation

Ch	Limits (dBuV)	Level (dBuV)
3	9.5	<3.9
4	9.5	5.0

(Refer to Sheet 11 of 23 Sheets)

MEASUERMENT SITE : MKS Site
MEASUERMENT PROCEDURE : ANSI C63.4-2003

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
Tel: 0897 - 56 - 1216 / Fax: 0897 - 56 - 6720

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 3 of 23 Sheets

Tuner: TMZH2-035A
Part 15 Subpart B, (TV Interface Device)- Part

2) 15.111 Antenna Power Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Conducted Voltage (dBuV)
1018.0	51.8	39.2
1030.0	51.8	39.9
1034.0	51.8	41.2
1042.0	51.8	40.8
1046.0	51.8	39.2
1054.0	51.8	38.7

(Refer to Sheet 12 of 23 Sheets)

3) 15.115(b)(1) Output Signal Level

Ch	Limits (dBuV)		Level (dBuV)	
	Visual	Aural	Visual	Aural
3	69.5	56.5	65.3	50.2
4	69.5	56.5	64.8	49.2

(Refer to Sheet 13 of 23 Sheets)

4) 15.115(b)(2) Output Terminal
Conducted Interference

Ch	Freq. (MHz)	Limits (dBuV)	Interference (dBuV)
3	43.33	39.5	21.9
	47.72	39.5	21.7
	50.50	39.5	29.3
	72.00	39.5	27.2
	79.13	39.5	22.1
	122.50	39.5	31.0
4	42.17	39.5	22.3
	49.39	39.5	21.9
	56.50	39.5	28.8
	78.00	39.5	27.3
	85.14	39.5	23.5
	134.50	39.5	29.2

(Refer to Sheet 14, 15 of 23 Sheets)

5) 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 23 Sheets)

MEASUERMENT SITE : MKS Site
MEASUERMENT PROCEDURE : ANSI C63.4-2003

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
Tel: 0897 - 56 - 1216 / Fax: 0897 - 56 - 6720

EXHIBIT # : 3-2
FCC ID : ACI927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 4 of 23 Sheets

Tuner: 115-V-HA35AK
Part 15 Subpart B, (TV Interface Device)- Part

2) 15.111 Antenna Power Conducted Voltage

Freq. (MHz)	Limits (dBuV)	Conducted Voltage (dBuV)
631.0	51.8	22.5
635.0	51.8	23.1
637.0	51.8	24.0
641.0	51.8	23.5
643.0	51.8	23.0
647.0	51.8	22.2

(Refer to Sheet 17 of 23 Sheets)

3) 15.115(b)(1) Output Signal Level

Ch	Limits (dBuV)		Level (dBuV)	
	Visual	Aural	Visual	Aural
3	69.5	56.5	66.6	50.7
4	69.5	56.5	66.2	50.1

(Refer to Sheet 18 of 23 Sheets)

4) 15.115(b)(2) Output Terminal

Conducted Interference

Ch	Freq. (MHz)	Limits (dBuV)	Interference (dBuV)
3	43.34	39.5	23.7
	47.73	39.5	22.0
	50.50	39.5	29.5
	72.00	39.5	27.8
	74.83	39.5	20.3
	79.13	39.5	22.3
4	49.34	39.5	23.9
	53.70	39.5	21.6
	56.50	39.5	28.9
	78.00	39.5	26.7
	85.14	39.5	22.4
	201.75	39.5	20.3

(Refer to Sheet 19, 20 of 23 Sheets)

5) 15.115© Transfer SW Isolation

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

(Refer to Sheet 21 of 23 Sheets)

MEASUERMENT SITE : MKS Site
MEASUERMENT PROCEDURE : ANSI C63.4-2003

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)

1) 15.107 Power Line Conducted Voltage

Video Signal	Freq. (MHz)	Mode	Meter Reading (dBuV)		LISN Factor (dB)		Interference (dBuV)		Limits (dBuV)	Margin (dB)	
			V _A	V _B	V _A	V _B	V _A	V _B		V _A	V _B
Multi Burst 1 V p-p	0.234	Average	34.0	<u>38.2</u>	0.2	0.2	34.2	<u>38.4</u>	52.3	18.1	<u>13.9</u>
	0.354	Average	<u>33.1</u>	28.6	0.1	0.1	<u>33.2</u>	28.7	48.9	<u>15.7</u>	20.2
	0.468	Q-Peak	35.3	<u>38.1</u>	0.0	0.0	35.3	<u>38.1</u>	56.5	21.2	<u>18.4</u>
	0.468	Average	32.9	<u>33.3</u>	0.0	0.0	32.9	<u>33.3</u>	46.5	13.6	<u>13.2</u>
	0.590	Q-Peak	37.4	35.1	0.0	0.0	37.4	35.1	56.0	18.6	20.9
	0.590	Average	29.1	<u>32.9</u>	0.0	0.0	29.1	<u>32.9</u>	46.0	16.9	<u>13.1</u>
	0.660	Q-Peak	28.7	<u>34.4</u>	0.0	0.0	28.7	<u>34.4</u>	56.0	27.3	<u>21.6</u>
	0.700	Q-Peak	36.2	32.1	0.0	0.0	36.2	32.1	56.0	19.8	23.9
	0.700	Average	<u>30.1</u>	27.9	0.0	0.0	<u>30.1</u>	27.9	46.0	<u>15.9</u>	18.1
Multi Burst 5 V p-p	0.234	Average	34.6	<u>38.7</u>	0.2	0.2	34.8	<u>38.9</u>	52.3	17.5	<u>13.4</u>
	0.354	Average	<u>32.1</u>	28.0	0.1	0.1	<u>32.2</u>	28.1	48.9	<u>16.7</u>	20.8
	0.468	Q-Peak	36.0	37.8	0.0	0.0	36.0	37.8	56.5	20.5	18.7
	0.468	Average	33.2	<u>33.5</u>	0.0	0.0	33.2	<u>33.5</u>	46.5	13.3	<u>13.0</u>
	0.590	Q-Peak	<u>38.3</u>	34.9	0.0	0.0	<u>38.3</u>	34.9	56.0	<u>17.7</u>	21.1
	0.590	Average	28.8	<u>33.6</u>	0.0	0.0	28.8	<u>33.6</u>	46.0	17.2	<u>12.4</u>
	0.660	Q-Peak	29.0	<u>35.0</u>	0.0	0.0	29.0	<u>35.0</u>	56.0	27.0	<u>21.0</u>
	0.700	Q-Peak	35.9	33.6	0.0	0.0	35.9	33.6	56.0	20.1	22.4
	0.700	Average	<u>29.8</u>	27.7	0.0	0.0	<u>29.8</u>	27.7	46.0	<u>16.2</u>	18.3
Internal Signal (DVD Playback)	0.216	Average	34.9	<u>39.8</u>	0.2	0.2	35.1	<u>40.0</u>	53.0	17.9	<u>13.0</u>
	0.326	Average	<u>35.2</u>	28.7	0.1	0.1	<u>35.3</u>	28.8	49.6	<u>14.3</u>	20.8
	0.435	Q-Peak	34.6	37.5	0.0	0.0	34.6	37.5	57.1	22.5	19.6
	0.435	Average	31.1	<u>34.5</u>	0.0	0.0	31.1	<u>34.5</u>	47.1	16.0	<u>12.6</u>
	0.540	Q-Peak	<u>38.4</u>	35.1	0.0	0.0	<u>38.4</u>	35.1	56.0	<u>17.6</u>	20.9
	0.540	Average	<u>35.0</u>	31.9	0.0	0.0	<u>35.0</u>	31.9	46.0	<u>11.0</u>	14.1
	0.650	Q-Peak	37.3	37.0	0.0	0.0	37.3	37.0	56.0	18.7	19.0
	0.650	Average	<u>32.9</u>	32.6	0.0	0.0	<u>32.9</u>	32.6	46.0	<u>13.1</u>	13.4
	2.070	Q-Peak	33.9	<u>34.9</u>	0.0	0.1	33.9	<u>35.0</u>	56.0	22.1	<u>21.0</u>
RF/CATV Signal Input	0.234	Average	35.2	<u>38.9</u>	0.2	0.2	35.4	<u>39.1</u>	52.3	16.9	<u>13.2</u>
	0.354	Average	<u>33.3</u>	28.3	0.1	0.1	<u>33.4</u>	28.4	48.9	<u>15.5</u>	20.5
	0.468	Q-Peak	35.9	37.1	0.0	0.0	35.9	37.1	56.5	20.6	19.4
	0.468	Average	32.9	<u>33.1</u>	0.0	0.0	32.9	<u>33.1</u>	46.5	13.6	<u>13.4</u>
	0.590	Q-Peak	<u>39.2</u>	35.7	0.0	0.0	<u>39.2</u>	35.7	56.0	<u>16.8</u>	20.3
	0.590	Average	27.9	<u>33.2</u>	0.0	0.0	27.9	<u>33.2</u>	46.0	18.1	<u>12.8</u>
	0.660	Q-Peak	29.2	34.7	0.0	0.0	29.2	34.7	56.0	26.8	21.3
	0.700	Q-Peak	33.9	33.1	0.0	0.0	33.9	33.1	56.0	22.1	22.9
	0.700	Average	<u>30.5</u>	28.1	0.0	0.0	<u>30.5</u>	28.1	46.0	<u>15.5</u>	17.9

Tuner: ENG56D06G1

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 6 of 23 Sheets
Page 2/2

Part 15 Subpart B, (TV Interface Device)

1) 15.107 Power Line Conducted Voltage

Note:

1. Sample calculation at

M.B., 1 V p-p, V_A 0.234 MHz Q-Peak; $34.0 + 0.2 = 34.2$ (dBuV)

2. Measuring Instruments:

a) Field strength meter

- Kyoritsu Electric Work Co., Ltd.

Model : KNM-2403

(1) Detector function : CISPR Q-Peak, Average

(2) IF band width : 9 kHz

(3) Input impedance : 50 ohms

b) Line impedance stabilized network (LISN)

- Kyoritsu Electric Work Co., Ltd.

Model : KNW-406

50 ohms / 50 uH network

c) Test Signal Generator

- Shibasoku Co., Ltd.

(Multi Burst)

Model : 205

3. The spectrum was checked from 0.15 MHz to 30 MHz.

Higher six points are underlined.

Tuner: ENG56D06G1

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 7 of 23 Sheets

Part 15 Subpart B, (TV Interface Device)

2) 15.111 (a) Antenna Power Conducted Voltage

Frequency (MHz)	Meter Reading (dBuV)	Matc. Pad Loss (dB)	Interference (dBuV)
1646.0	22.9	8.8	31.7
1654.0	23.7	8.8	32.5
1658.0	24.9	8.8	33.7
1666.0	24.1	8.8	32.9
1670.0	23.3	8.8	32.1
1678.0	22.4	8.8	31.2

Antenna Input Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at 1646.0 MHz; 22.9 + 8.8 = 31.7 (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: ENG56D06G1

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 8 of 23 Sheets

Part 15 Subpart B, (TV Interface Device)

3) 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	63.1	47.8	2.3	65.4	50.1
	4	67.25	71.75	62.7	47.1	2.3	65.0	49.4
Multi Burst 5 V p-p	3	61.25	65.75	63.1	47.8	2.3	65.4	50.1
	4	67.25	71.75	62.7	47.1	2.3	65.0	49.4
Internal Signal	3	61.25	65.75	63.1	47.8	2.3	65.4	50.1
	4	67.25	71.75	62.7	47.1	2.3	65.0	49.4
RF/CATV Signal	3	61.25	65.75	63.1	47.8	2.3	65.4	50.1
	4	67.25	71.75	62.7	47.1	2.3	65.0	49.4

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, Visual, 3 Ch ; 63.1 + 2.3 = 65.4 (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)

4) 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	43.34	45.7	2.3	N/A	24.3	23.7		
		47.70	44.1	2.3	N/A	24.3	22.1		
		50.50	50.3	2.3	N/A	24.3	28.3		
		72.00	48.6	2.3	N/A	24.4	26.5		
		245.0	46.2	2.4	N/A	24.3	24.3		
		490.0	49.5	2.8	N/A	23.8	28.5		
	4	49.39	45.3	2.3	N/A	24.3	23.3		
		53.72	44.4	2.3	N/A	24.3	22.4		
		56.50	50.1	2.3	N/A	24.3	28.1		
		78.00	49.1	2.3	N/A	24.4	27.0		
		269.00	49.8	2.4	N/A	24.3	27.9		
		538.00	47.9	2.9	N/A	23.3	27.5		
		Multi Burst 5 V p-p	3	43.34	45.7	2.3	N/A	24.3	23.7
				47.70	44.1	2.3	N/A	24.3	22.1
50.50	50.3			2.3	N/A	24.3	28.3		
72.00	48.6			2.3	N/A	24.4	26.5		
245.0	46.2			2.4	N/A	24.3	24.3		
490.0	49.5			2.8	N/A	23.8	28.5		
4	49.39		45.3	2.3	N/A	24.3	23.3		
	53.72		44.4	2.3	N/A	24.3	22.4		
	56.50		50.1	2.3	N/A	24.3	28.1		
	78.00		49.1	2.3	N/A	24.4	27.0		
	269.00		49.8	2.4	N/A	24.3	27.9		
	538.00		47.9	2.9	N/A	23.3	27.5		
	Internal Signal		3	43.34	45.7	2.3	N/A	24.3	23.7
				47.70	44.1	2.3	N/A	24.3	22.1
50.50		50.3		2.3	N/A	24.3	28.3		
72.00		48.6		2.3	N/A	24.4	26.5		
245.0		46.2		2.4	N/A	24.3	24.3		
490.0		49.5		2.8	N/A	23.8	28.5		
4		49.39	45.3	2.3	N/A	24.3	23.3		
		53.72	44.4	2.3	N/A	24.3	22.4		
		56.50	50.1	2.3	N/A	24.3	28.1		
		78.00	49.1	2.3	N/A	24.4	27.0		
		269.00	49.8	2.4	N/A	24.3	27.9		
		538.00	47.9	2.9	N/A	23.3	27.5		
		RF/CATV Signal Input	3	43.34	45.7	2.3	N/A	24.3	23.7
				47.70	44.1	2.3	N/A	24.3	22.1
50.50	50.3			2.3	N/A	24.3	28.3		
72.00	48.6			2.3	N/A	24.4	26.5		
245.0	46.2			2.4	N/A	24.3	24.3		
490.0	49.5			2.8	N/A	23.8	28.5		
4	49.39		45.3	2.3	N/A	24.3	23.3		
	53.72		44.4	2.3	N/A	24.3	22.4		
	56.50		50.1	2.3	N/A	24.3	28.1		
	78.00		49.1	2.3	N/A	24.4	27.0		
	269.00		49.8	2.4	N/A	24.3	27.9		
	538.00		47.9	2.9	N/A	23.3	27.5		

Tuner: ENG56D06G1

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 10 of 23 Sheets
Page 2/2

Part 15 Subpart B, (TV Interface Device)

4) 15.115 (b) (2) Output Terminal Conducted Interference

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, 3 Ch., 43.34 MHz ; $45.7 + 2.3 - 24.3 = 23.7$ (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)

5) 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	27.1	2.3	24.4	N/A	5.0
Multi Burst 5 V p-p	3	<26.0	2.3	24.4	N/A	<3.9
	4	27.1	2.3	24.4	N/A	5.0
Internal Signal	3	<26.0	2.3	24.4	N/A	<3.9
	4	27.1	2.3	24.4	N/A	5.0

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

Tuner: TMZH2-035A

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 12 of 23 Sheets

Part 15 Subpart B, (TV Interface Device)

2) 15.111 (a) Antenna Power Conducted Voltage

Frequency (MHz)	Meter Reading (dBuV)	Matc. Pad Loss (dB)	Interference (dBuV)
1018.0	30.4	8.8	39.2
1030.0	31.1	8.8	39.9
1034.0	32.4	8.8	41.2
1042.0	32.0	8.8	40.8
1046.0	30.4	8.8	39.2
1054.0	29.9	8.8	38.7

Antenna Input Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at 1018.0 MHz ; $30.4 + 8.8 = 39.2$ (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: TMZH2-035A

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 13 of 23 Sheets

Part 15 Subpart B, (TV Interface Device)

3) 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	63.0	47.9	2.3	65.3	50.2
	4	67.25	71.75	62.5	46.9	2.3	64.8	49.2
Multi Burst 5 V p-p	3	61.25	65.75	63.0	47.9	2.3	65.3	50.2
	4	67.25	71.75	62.5	46.9	2.3	64.8	49.2
Internal Signal	3	61.25	65.75	63.0	47.9	2.3	65.3	50.2
	4	67.25	71.75	62.5	46.9	2.3	64.8	49.2
RF/CATV Signal	3	61.25	65.75	63.0	47.9	2.3	65.3	50.2
	4	67.25	71.75	62.5	46.9	2.3	64.8	49.2

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, Visual, 3 Ch ; 63.0 + 2.3 = 65.3 (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

Part 15 Subpart B. (TV Interface Device)

4) 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	43.33	43.9	2.3	N/A	24.3	21.9		
		47.72	43.7	2.3	N/A	24.3	21.7		
		50.50	51.3	2.3	N/A	24.3	29.3		
		72.00	49.3	2.3	N/A	24.4	27.2		
		79.13	44.2	2.3	N/A	24.4	22.1		
		122.50	53.0	2.3	N/A	24.3	31.0		
	4	42.17	44.3	2.3	N/A	24.3	22.3		
		49.39	43.9	2.3	N/A	24.3	21.9		
		56.50	50.8	2.3	N/A	24.3	28.8		
		78.00	49.4	2.3	N/A	24.4	27.3		
		85.14	45.6	2.3	N/A	24.4	23.5		
		134.50	51.2	2.3	N/A	24.3	29.2		
		Multi Burst 5 V p-p	3	43.33	43.9	2.3	N/A	24.3	21.9
				47.72	43.7	2.3	N/A	24.3	21.7
50.50	51.3			2.3	N/A	24.3	29.3		
72.00	49.3			2.3	N/A	24.4	27.2		
79.13	44.2			2.3	N/A	24.4	22.1		
122.50	53.0			2.3	N/A	24.3	31.0		
4	42.17		44.3	2.3	N/A	24.3	22.3		
	49.39		43.9	2.3	N/A	24.3	21.9		
	56.50		50.8	2.3	N/A	24.3	28.8		
	78.00		49.4	2.3	N/A	24.4	27.3		
	85.14		45.6	2.3	N/A	24.4	23.5		
	134.50		51.2	2.3	N/A	24.3	29.2		
	Internal Signal		3	43.33	43.9	2.3	N/A	24.3	21.9
				47.72	43.7	2.3	N/A	24.3	21.7
50.50		51.3		2.3	N/A	24.3	29.3		
72.00		49.3		2.3	N/A	24.4	27.2		
79.13		44.2		2.3	N/A	24.4	22.1		
122.50		53.0		2.3	N/A	24.3	31.0		
4		42.17	44.3	2.3	N/A	24.3	22.3		
		49.39	43.9	2.3	N/A	24.3	21.9		
		56.50	50.8	2.3	N/A	24.3	28.8		
		78.00	49.4	2.3	N/A	24.4	27.3		
		85.14	45.6	2.3	N/A	24.4	23.5		
		134.50	51.2	2.3	N/A	24.3	29.2		
		RF/CATV Signal Input	3	43.33	43.9	2.3	N/A	24.3	21.9
				47.72	43.7	2.3	N/A	24.3	21.7
50.50	51.3			2.3	N/A	24.3	29.3		
72.00	49.3			2.3	N/A	24.4	27.2		
79.13	44.2			2.3	N/A	24.4	22.1		
122.50	53.0			2.3	N/A	24.3	31.0		
4	42.17		44.3	2.3	N/A	24.3	22.3		
	49.39		43.9	2.3	N/A	24.3	21.9		
	56.50		50.8	2.3	N/A	24.3	28.8		
	78.00		49.4	2.3	N/A	24.4	27.3		
	85.14		45.6	2.3	N/A	24.4	23.5		
	134.50		51.2	2.3	N/A	24.3	29.2		

Tuner: TMZH2-035A

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 15 of 23 Sheets
Page 2/2

Part 15 Subpart B, (TV Interface Device)

4) 15.115 (b) (2) Output Terminal Conducted Interference

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, 3 Ch., 43.33 MHz ; $43.9 + 2.3 - 24.3 = 21.9$ (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 | |

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.

Tuner: TMZH2-035A

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 16 of 23 Sheets

Part 15 Subpart B, (TV Interface Device)

5) 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

Tuner: 115-V-HA35AK

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 17 of 23 Sheets

Part 15 Subpart B, (TV Interface Device)

2) 15.111 (a) Antenna Power Conducted Voltage

Frequency (MHz)	Meter Reading (dBuV)	Matc. Pad Loss (dB)	Interference (dBuV)
631.0	13.7	8.8	22.5
635.0	14.3	8.8	23.1
637.0	15.2	8.8	24.0
641.0	14.7	8.8	23.5
643.0	14.2	8.8	23.0
647.0	13.4	8.8	22.2

Antenna Input Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at 631.0 MHz ; 13.7 + 8.8 = 22.5 (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-HA35AK

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 18 of 23 Sheets

Part 15 Subpart B, (TV Interface Device)

3) 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	64.3	48.4	2.3	66.6	50.7
	4	67.25	71.75	63.9	47.8	2.3	66.2	50.1
Multi Burst 5 V p-p	3	61.25	65.75	64.3	48.4	2.3	66.6	50.7
	4	67.25	71.75	63.9	47.8	2.3	66.2	50.1
Internal Signal	3	61.25	65.75	64.3	48.4	2.3	66.6	50.7
	4	67.25	71.75	63.9	47.8	2.3	66.2	50.1
RF/CATV Signal	3	61.25	65.75	64.3	48.4	2.3	66.6	50.7
	4	67.25	71.75	63.9	47.8	2.3	66.2	50.1

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, Visual, 3 Ch ; 64.3 + 2.3 = 66.6 (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

Part 15 Subpart B, (TV Interface Device)

4) 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	43.34	45.7	2.3	N/A	24.3	23.7	
		47.73	44.0	2.3	N/A	24.3	22.0	
		50.50	51.5	2.3	N/A	24.3	29.5	
		72.00	49.9	2.3	N/A	24.4	27.8	
		74.83	42.4	2.3	N/A	24.4	20.3	
		79.13	44.4	2.3	N/A	24.4	22.3	
	4	49.34	45.9	2.3	N/A	24.3	23.9	
		53.70	43.6	2.3	N/A	24.3	21.6	
		56.50	50.9	2.3	N/A	24.3	28.9	
		78.00	48.8	2.3	N/A	24.4	26.7	
		85.14	44.5	2.3	N/A	24.4	22.4	
		201.75	42.3	2.3	N/A	24.3	20.3	
	Multi Burst 5 V p-p	3	43.34	45.7	2.3	N/A	24.3	23.7
			47.73	44.0	2.3	N/A	24.3	22.0
50.50			51.5	2.3	N/A	24.3	29.5	
72.00			49.9	2.3	N/A	24.4	27.8	
74.83			42.4	2.3	N/A	24.4	20.3	
79.13			44.4	2.3	N/A	24.4	22.3	
4		49.34	45.9	2.3	N/A	24.3	23.9	
		53.70	43.6	2.3	N/A	24.3	21.6	
		56.50	50.9	2.3	N/A	24.3	28.9	
		78.00	48.8	2.3	N/A	24.4	26.7	
		85.14	44.5	2.3	N/A	24.4	22.4	
		201.75	42.3	2.3	N/A	24.3	20.3	
Internal Signal		3	43.34	45.7	2.3	N/A	24.3	23.7
			47.73	44.0	2.3	N/A	24.3	22.0
	50.50		51.5	2.3	N/A	24.3	29.5	
	72.00		49.9	2.3	N/A	24.4	27.8	
	74.83		42.4	2.3	N/A	24.4	20.3	
	79.13		44.4	2.3	N/A	24.4	22.3	
	4	49.34	45.9	2.3	N/A	24.3	23.9	
		53.70	43.6	2.3	N/A	24.3	21.6	
		56.50	50.9	2.3	N/A	24.3	28.9	
		78.00	48.8	2.3	N/A	24.4	26.7	
		85.14	44.5	2.3	N/A	24.4	22.4	
		201.75	42.3	2.3	N/A	24.3	20.3	
	RF/CATV Signal Input	3	43.34	45.7	2.3	N/A	24.3	23.7
			47.73	44.0	2.3	N/A	24.3	22.0
50.50			51.5	2.3	N/A	24.3	29.5	
72.00			49.9	2.3	N/A	24.4	27.8	
74.83			42.4	2.3	N/A	24.4	20.3	
79.13			44.4	2.3	N/A	24.4	22.3	
4		49.34	45.9	2.3	N/A	24.3	23.9	
		53.70	43.6	2.3	N/A	24.3	21.6	
		56.50	50.9	2.3	N/A	24.3	28.9	
		78.00	48.8	2.3	N/A	24.4	26.7	
		85.14	44.5	2.3	N/A	24.4	22.4	
		201.75	42.3	2.3	N/A	24.3	20.3	

Tuner: 115-V-HA35AK

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 20 of 23 Sheets
Page 2/2

Part 15 Subpart B, (TV Interface Device)

4) 15.115 (b) (2) Output Terminal Conducted Interference

RF Output Impedance: 75 ohms (Unbalanced)

Note:

1. Sample calculation at

M.B., 1 V p-p, 3 Ch., 43.34 MHz ; $45.7 + 2.3 - 24.3 = 23.7$ (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.

Tuner: 115-V-HA35AK

EXHIBIT # : 3-2
FCC ID : ACJ927149AHV
OUR REF. : MKES04-F005
MODEL NO. : PV-D4745S
Sheet 21 of 23 Sheets

Part 15 Subpart B, (TV Interface Device)

5) 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)

15.107 POWER LINE CONDUCTED VOLTAGE

- CONFIGURATION OF THE EQUIPMENT UNDER TEST -

(Arrangement of interface cable on the test table)



EXHIBIT # : 3-2
 FCC ID : ACJ927149AHV
 OUR REF. : MKES04-F005
 MODEL NO. : PV-D4745S
 Sheet 23 of 23 Sheets

Object: LISN
 Model: KNW-406
 Serial No. 8-323-5
 Manufacturer: Kyoritsu Electric Work Co.,
 Calibration Facility: JQA

Frequency (MHz)	LISN Factor (dB)	
	VA	VB
0.15	0.26	0.25
0.40	0.05	0.06
0.50	0.04	0.05
0.60	0.03	0.04
0.80	0.03	0.03
1.00	0.02	0.03
2.00	0.04	0.05
4.00	0.09	0.12
5.00	0.13	0.16
6.00	0.17	0.21
8.00	0.26	0.34
10.00	0.38	0.48
12.00	0.50	0.64
14.00	0.64	0.81
15.00	0.71	0.89
16.00	0.77	0.98
18.00	0.91	1.16
20.00	1.05	1.33
25.00	1.37	1.75
30.00	1.68	2.16

