

EMISSION TEST REPORT

Test Report No. : 19H0024-02

Applicant: ORION Electric Co., Ltd.

Type of Equipment: DVD Player

Model No.: SDVD2000

Test standard: FCC Part 15 Subpart B

Type of Device: TV Interface Device

Test Result: Complies

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The results in this report apply only to the sample tested.

Date of test: August 22, 1999

Tested by: 

Seigo Kakehi

Approved by: 

Kazuhiro Kitahara

Group Leader of EMC section

Issued date: August 28, 1999

Testing Laboratory

A-pex International Co., Ltd.

108 Yokowa-cho, Ise-shi Mie-ken 516-1106 JAPAN

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

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1 GENERAL INFORMATION

APPLICANT : ORION Electric Co., Ltd.

ADDRESS : 41-1, Iehisa-Cho, Takefu-shi, Fukui
915-8555 Japan
Tel: +81-778-23-0019
Fax: +81-778-23-7799

REGULATION(S) : FCC Part 15 Subpart B

TYPE OF DEVICE : TV Interface Device

MODEL NUMBER : SDVD2000

SERIAL NUMBER : -

KIND OF EQUIPMENT : DVD Player

TESTED DATE : August 22, 1999

RECEIPT DATE OF SAMPLE : August 22, 1999

REPORT FILE NUMBER : 19H0024-02

TEST SITE : A-PEX Yokowa NO.1 Open Test Site
and NO.2 Open Test Site

1.1 Tested Methodology

Both conducted and radiated testing were performed according to the procedures in FCC/ANSI C63.4(1992). Radiated testing was performed at a distance of 3 meters from the antenna to EUT.

1.2 Test Facility

The open area site and conducted measurement facility used to collect the radiated data is located on 108, Yokowa-cho, Ise-shi, Mie-ken, 516-1106 Japan.

This site has been fully described in a report dated Aug.1,1997(No.1) and May 27, 1997(No.2) submitted to FCC office, and listed on Sep.16,1997(No.1) Aug 18, 1997(No.2)(31040/SIT 1300F2)

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2 PRODUCT DESCRIPTION

ORION Electric Co., Ltd., Model SDVD2000 (referred to as the EUT in this report)
is a DVD Player containing RF modulator

The specification is as following :

1)Operation clock

- (1)System control microcomputer IC clock : 15MHz
- (2)Video decoder IC control clock : 27MHz
- (3)MPEG decoder IC control clock : 75MHz

2)Provided terminals

- (1)Audio out (L/R) terminals : 1K ohm
- (2)Video out (1/2) terminals
- (3)S-VHS out terminal
- (4)Digital out terminal
- (5)RF input terminal
- (6)RF output terminal

3)RF modulator frequency

- (1)CH3 : Picture carrier 61.25MHz
Sound carrier 65.75MHz
- (2)CH4 : Picture carrier 67.25MHz
Sound carrier 71.75MHz

4)Type of antenna RF input and output connector

- (1)RF input connector : Type "F" connector 75 Ω (Unbalanced)
- (2)RF output connector : Type "F" connector 75 Ω (Unbalanced)

5)Rated power supply : AC120V/60Hz

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3 TESTED EQUIPMENT DETAILS

The FCC IDs for all equipment, plus description of all cables used in the tested system are:

Model	FCC ID	Description	Cable description	Backshell Material
(1) SANSUI M/N: SDVD2000 S/N: - (EUT)	A7RM298A	DVD Player	Unshielded AC power cable	P.V.C
			Shielded RF cable	P.V.C
			Shielded Video/Audio cable	P.V.C
			Shielded Video cable	P.V.C
			Shielded Audio cable	P.V.C
			Shielded S-VHS cable	P.V.C
(2) aiwa M/N: VX-S135U S/N: 671-9313106A		13'CTV/VCR Combination	Unshielded AC power cable	P.V.C

3.1 Tested Methodology

Following measurements were performed accordance with the FCC Part 15 Subpart B.

- ① AC POWER LINE CONDUCTED EMISSION MEASUREMENT
- ② RADIATED EMISSION MEASUREMENT
- ③ OUTPUT SIGNAL LEVEL MEASUREMENT
- ④ OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION MEASUREMENT
- ⑤ TRANSFER SWITCH MEASUREMENT

4 SYSTEM TEST CONFIGURATION

1) Measurement : Conduction/Output signal level

Output terminal

Temperature : 23°C

Humidity : 69%

Power supply : AC120V/60Hz

2) Measurement : Radiation

Temperature : 24°C

Humidity : 67%

Power supply : AC120V/60Hz

1) Measurement : Transfer switch

Temperature : 31°C

Humidity : 44%

Power supply : AC120V/60Hz

4.1 Justification

The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to typical use.

The sequence is used

Operation : DVD Playing mode

(1) Visual carrier 61.25MHz sending

Channel switch position : 3CH

Picture : 75% Color bars

: (2) Visual carrier 67.25MHz sending

Channel switch position : 4CH

Picture : 75% Color bars

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4.3 Test Procedure

4.3.1 Tabletop Equipment AC Power Line Conducted Emission

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.

The rear of tabletop was located 40cm to the vertical conducting plane.

The rear of EUT, including peripherals aligned and flush with rear of tabletop.

All other surfaces of tabletop was at least 80cm from any other grounded conducting surface.

I/O cables and AC cables that were connected to the peripherals were bundled in center.

They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

Each EUT current-carrying power lead, except the ground (safety) lead, were individually connected through a LISN to the input power source.

All unused 50 Ω connectors of the LISN were resistively terminated in 50 Ω when not connected to the measuring equipment.

The spectrums are scanned from 450KHz to 30MHz.

4.3.2 Tabletop Equipment Radiated Emission

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.

The rear of EUT, including peripherals was aligned and flush with rear of tabletop.

I/O cables that were connected to the peripherals were bundled in center.

They were folded back and forth forming a bundle 30cm to 40cm long and were hanged 40cm height to the ground plane.

Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.

The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

The measurement distance was 3m.

The spectrums are scanned from 30MHz to 1GHz.

4.3.3 Tabletop Equipment Output Signal Level and Output Terminal Conducted Spurious Emission

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.

The rear of EUT, including peripherals was aligned and flush with rear of tabletop.

I/O cables that were connected to the peripherals were bundled in center.

They were folded back and forth forming a bundle 30cm to 40cm long and were hanged 40cm height to the ground plane.

Support the cable between the EUT and the measuring instrument in a straight horizontal line so it has at least 75cm clearance from any conducting surface.

Unused terminals or connectors are terminated in the proper impedance.

The signal level measured visual carrier frequency and aural carrier frequency.

The spectrum was scanned from 30MHz to more than 4.6MHz below the visual carrier frequency, and from more than 7.4MHz above the visual carrier frequency to 1GHz.

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4.3.4 Transfer Switch

EUT and transfer switch was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.

The rear of EUT, including peripherals was aligned and flush with rear of tabletop.

I/O cables that were connected to the peripherals were bundled in center.

They were folded back and forth forming a bundle 30cm to 40cm long and were hanged 40cm height to the ground plane.

Support the cable between the switch and the measuring instrument in a straight horizontal line so it has at least 75cm clearance from any conducting surface.

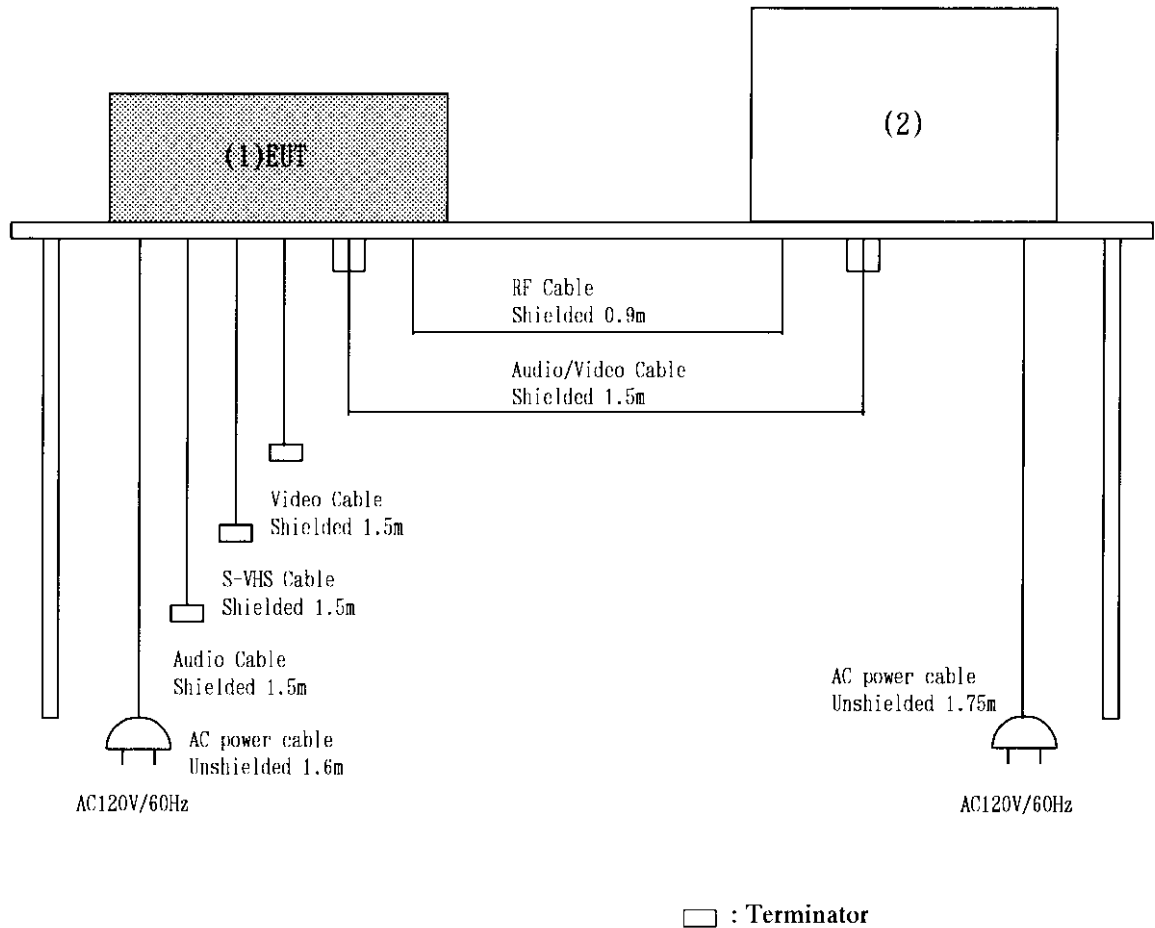
Unused terminals or connectors are terminated in the proper impedance.

The signal level measured visual carrier frequency.

Figure4.1 Configuration of Tested System

AC POWER LINE CONDUCTED EMISSION MEASUREMENT AND RADIATED EMISSION MEASUREMENT

Front View



Unused connector and I/F cable

- Digital out : Audio cable 75 Ω terminated
- S-VHS out : S-VHS cable 75 Ω terminated
- Video out 2 : Video cable 75 Ω terminated
- RF in : Direct 75 Ω terminated

Test report

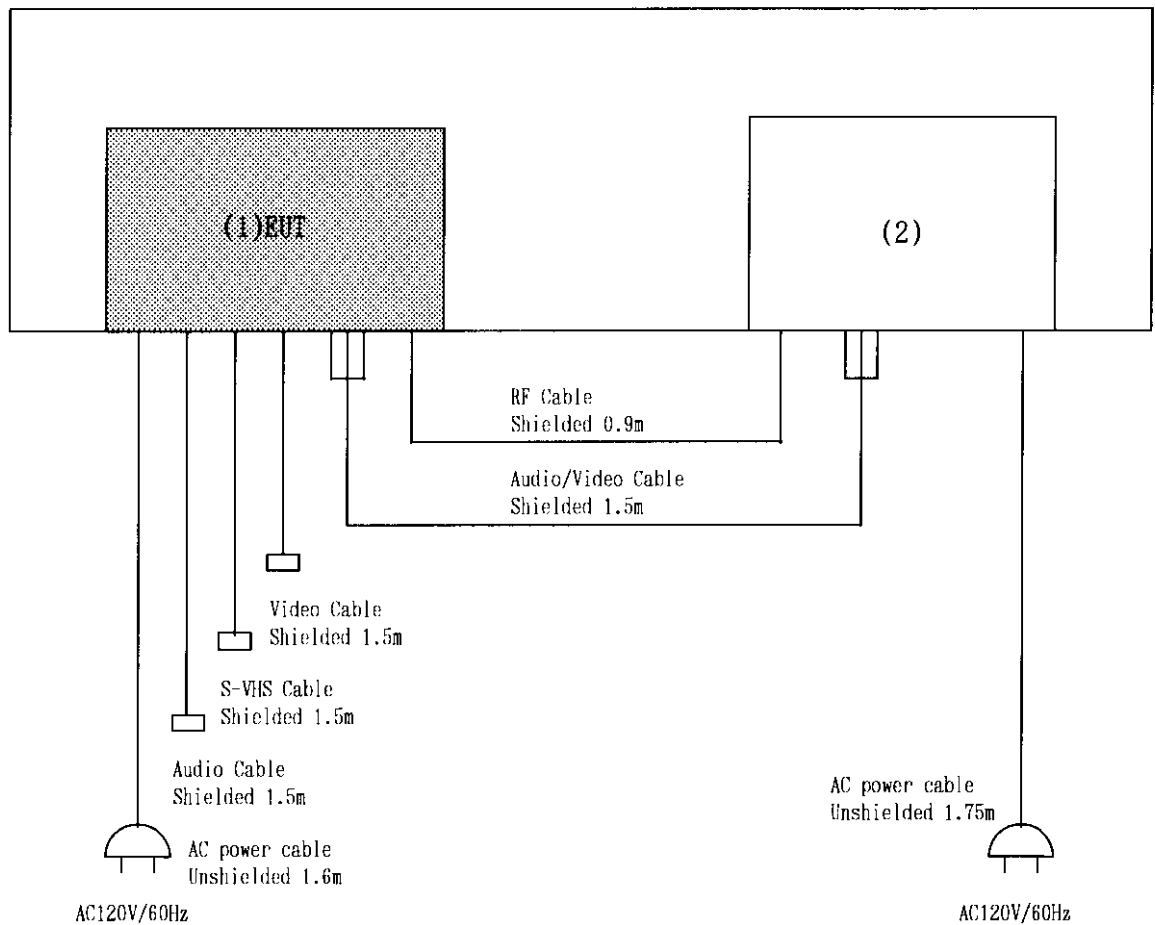
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Top View



□ : Terminator

Unused connector and I/F cable

- Digital out : Audio cable 75 Ω terminated
- S-VHS out : S-VHS cable 75 Ω terminated
- Video out 2 : Video cable 75 Ω terminated
- RF in : Direct 75 Ω terminated

Test report

FCC ID : A7RM298A

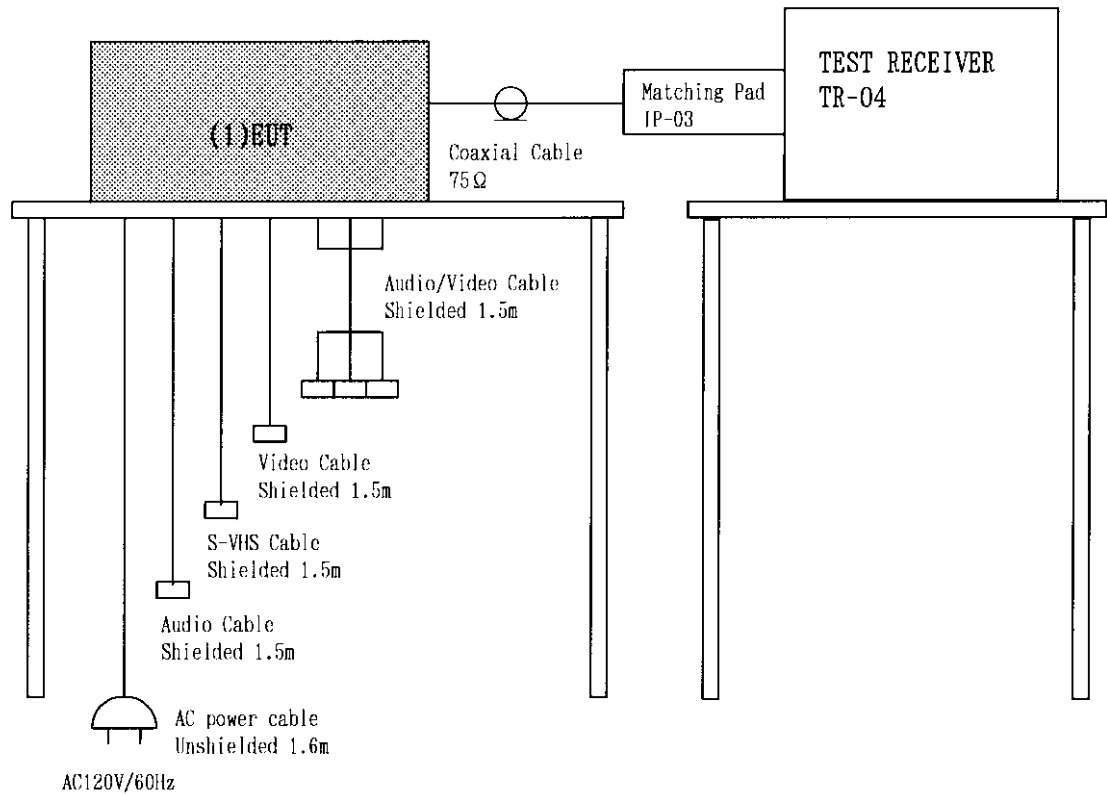
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OUTPUT SIGNAL LEVEL MEASUREMENT
AND OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION MEASUREMENT

Front View



□ : Terminator

Unused connector and I/F cable

- Digital out : Audio cable 75 Ω terminated
- S-VHS out : S-VHS cable 75 Ω terminated
- Video out 1 : Video cable 75 Ω terminated
- Video out 2 : Video cable 75 Ω terminated
- Audio out L/R : Audio cable 1K Ω terminated
- RF in : Direct 75 Ω terminated

Test report

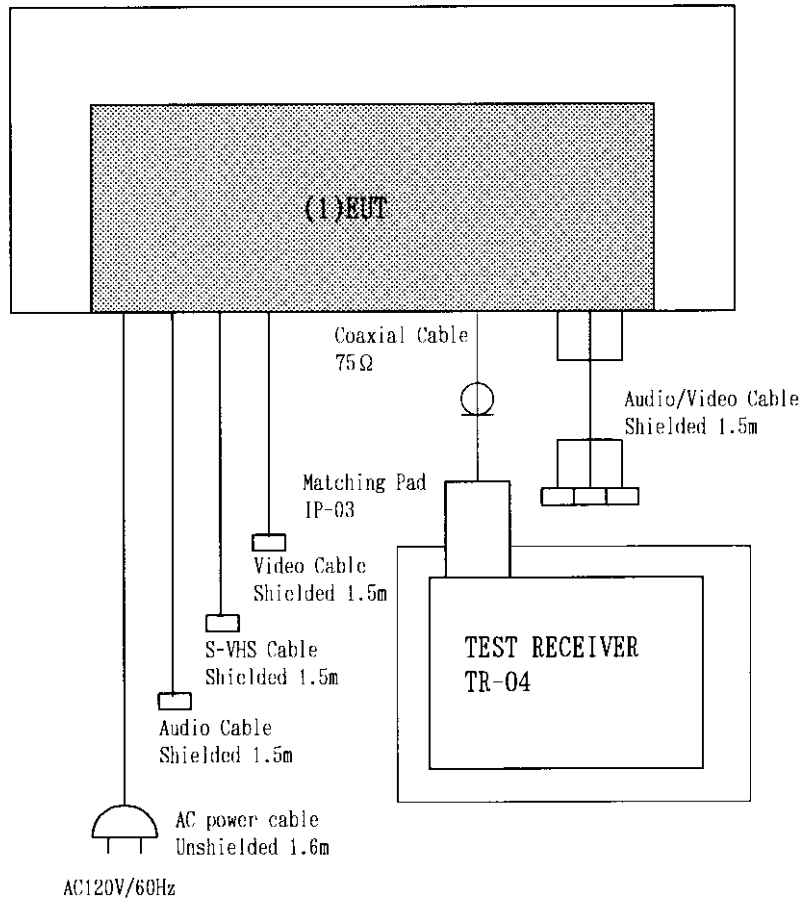
FCC ID : A7RM298A

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Top View



□ : Terminator

Unused connector and I/F cable

- Digital out : Audio cable $75\ \Omega$ terminated
- S-VHS out : S-VHS cable $75\ \Omega$ terminated
- Video out 1 : Video cable $75\ \Omega$ terminated
- Video out 2 : Video cable $75\ \Omega$ terminated
- Audio out L/R : Audio cable $1K\ \Omega$ terminated
- RF in : Direct $75\ \Omega$ terminated

Test report

FCC ID : A7RM298A

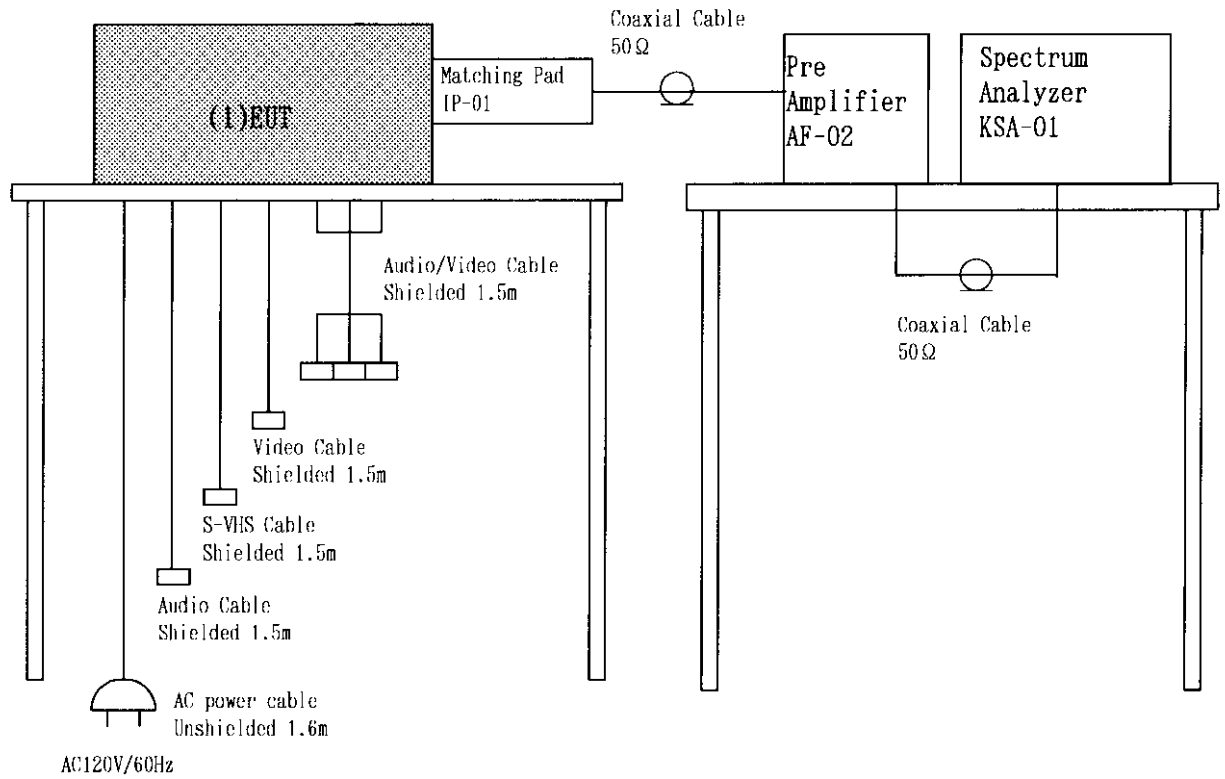
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TRANSFER SWITCH MEASUREMENT

Front View



Unused connector and I/F cable

- Digital out : Audio cable 75 Ω terminated
- S-VHS out : S-VHS cable 75 Ω terminated
- Video out 1 : Video cable 75 Ω terminated
- Video out 2 : Video cable 75 Ω terminated
- Audio out L/R : Audio cable 1K Ω terminated
- RF out : Direct 75 Ω terminated

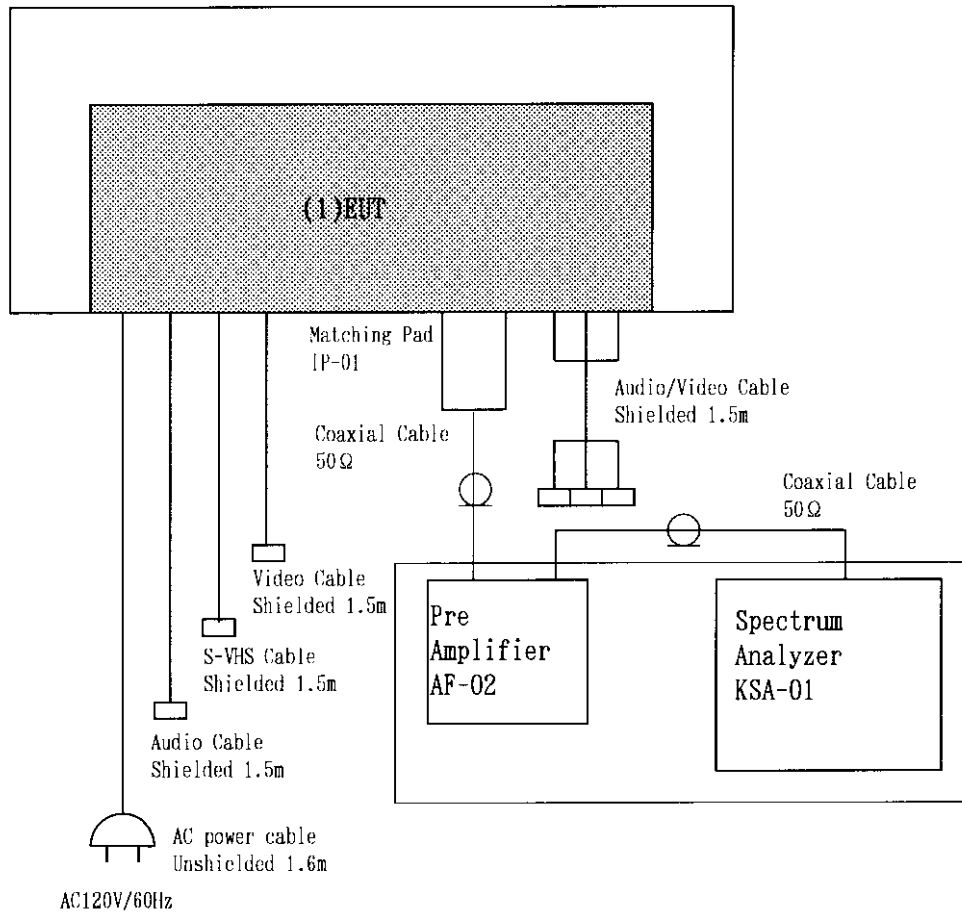
Test report

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Top View

□ : Terminator

Unused connector and I/F cable

- Digital out : Audio cable 75 Ω terminated
- S-VHS out : S-VHS cable 75 Ω terminated
- Video out 1 : Video cable 75 Ω terminated
- Video out 2 : Video cable 75 Ω terminated
- Audio out L/R : Audio cable 1K Ω terminated
- RF out : Direct 75 Ω terminated

Test report

FCC ID : A7RM298A

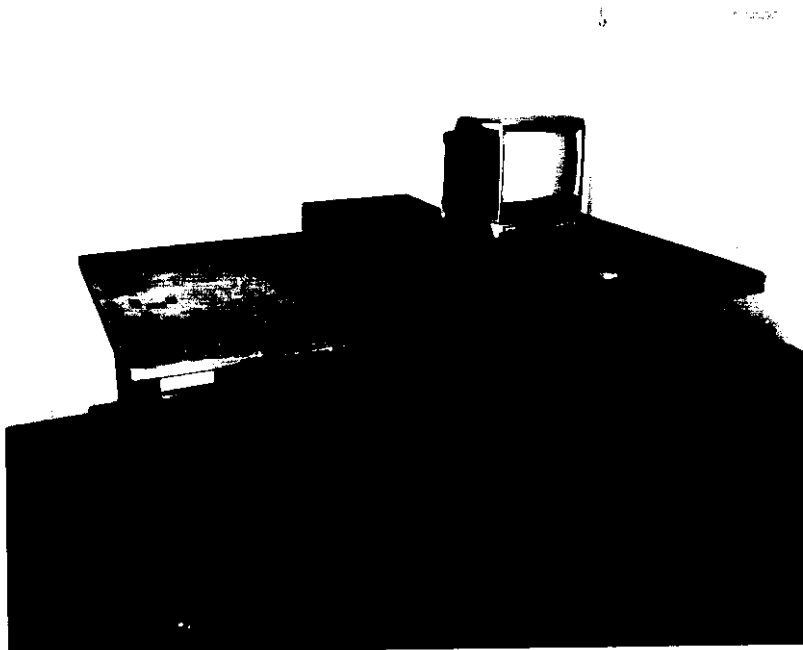
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5 MEASUREMENT PHOTOS

Figure 5.1 AC Power Line Conducted Emission Measurement Photos



Test report

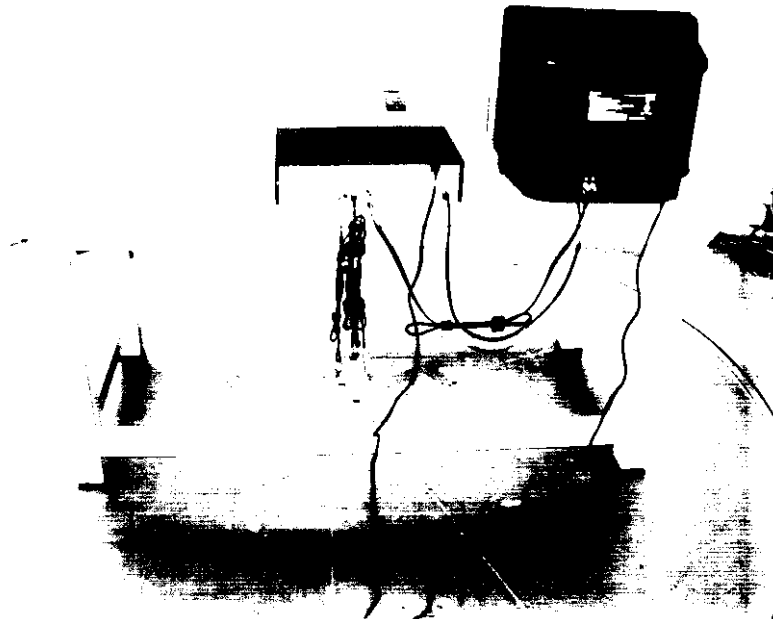
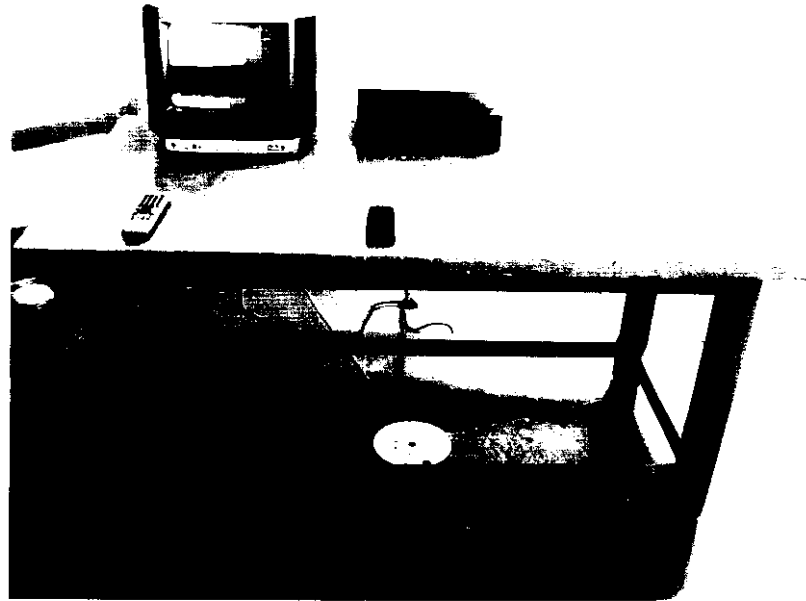
FCC ID : A7RM298A

Our reference : 19H0024-02

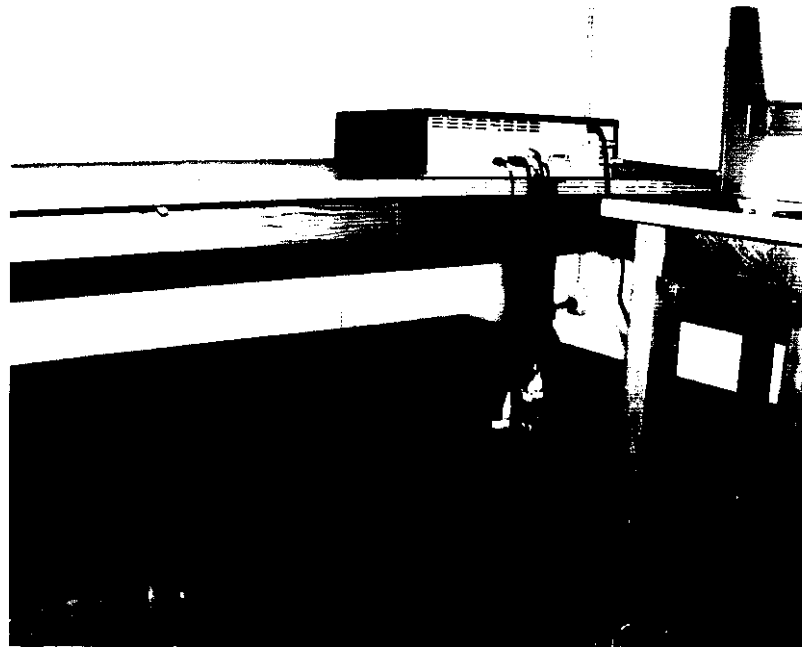
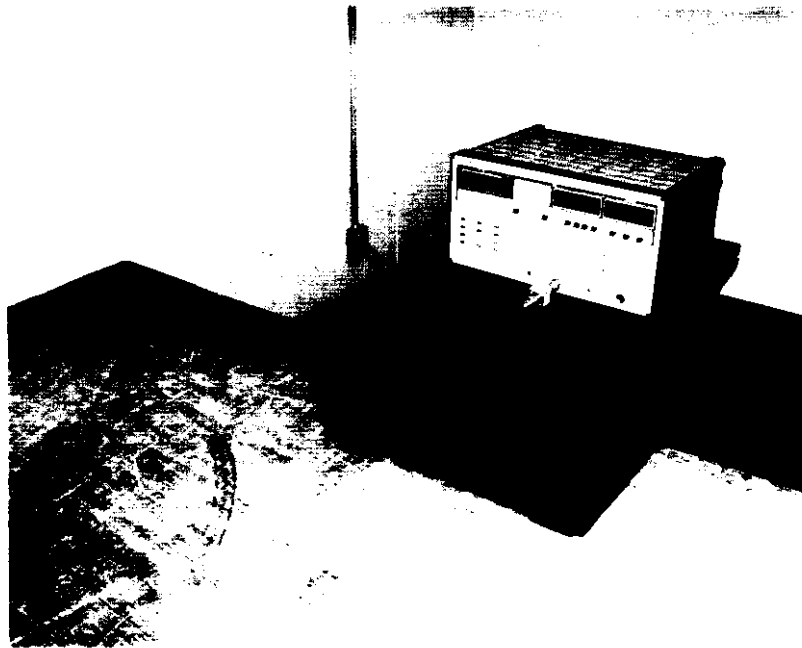
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Figure 5.2 Radiated Measurement Photos



**Figure 5.3 Output Signal Level Measurement
and Output Terminal Conducted Spurious Emission Measurement Photos**



Test report

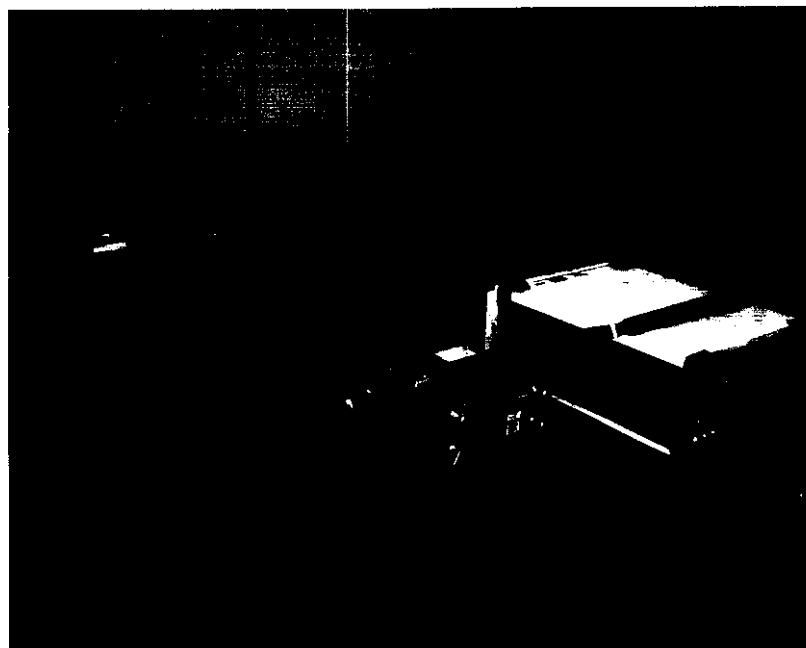
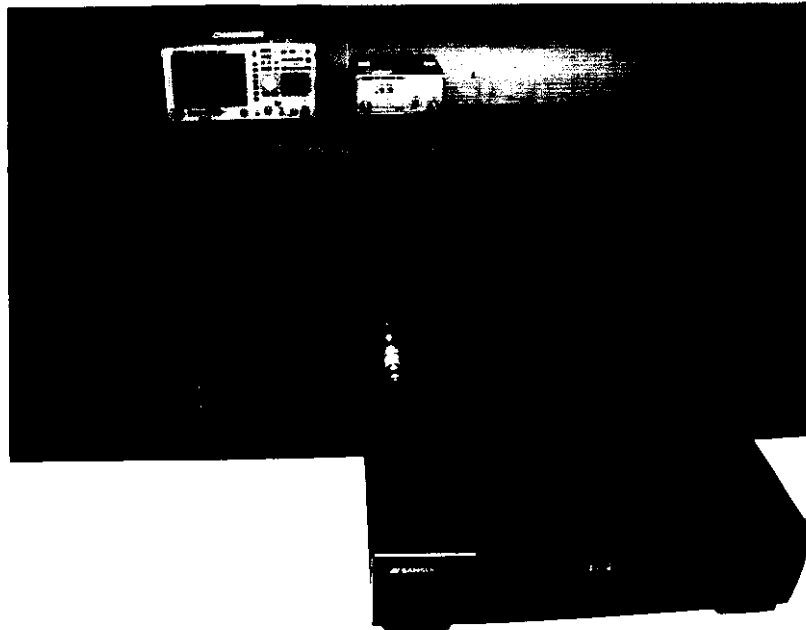
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Figure 5.4 Transfer Switch Measurement Photos



5.1 Measurement Uncertainty

AC Power Line Conducted Emission Measurement

The measurement uncertainty (with a 95% confidence level) for this test was $\pm 2.0\text{dB}$.

- ☐ The data listed in this test report may exceed the test limit because it does not have enough margin (more than 3.3dB).
- ☒ The data listed in this test report has enough margin, more than 2.0dB.

Radiated Emission Measurement

The measurement uncertainty (with a 95% confidence level) for this test was $\pm 3.3\text{dB}$.

- ☐ The data listed in this test report may exceed the test limit because it does not have enough margin (more than 3.3dB).
- ☒ The data listed in this test report has enough margin, more than 3.3dB.

Test report

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6 AC POWER LINE CONDUCTED EMISSION MEASUREMENT DATA

The initial step in collecting radiated data was a spectrum analyzer peak scan of the measurement range.

The final data was reported in the worst-case emissions. (DVD Playing mode , Visual carrier 61.25MHz sending)

The minimum margin to the limit is as follows :

Frequency (MHz)	Line (N/L)	Receiver Reading (dB μ V)	Correction Factor (dB)	Result (dB μ V)	Limit (dB μ V)	Margin (dB)
26.9996	N	29.7	1.5	32.9	48.0	15.1

* 30MHz-1000MHz : All readings are quasi-peak mode.

$$TV = RA + AF + CF + LF$$

where TV = Terminal Voltage

RA = Receiver Amplitude

CF = Cable Factor

LF= LISN Factor

7 RADIATED EMISSION MEASUREMENT DATA

The initial step in collecting radiated data was a spectrum analyzer peak scan of the measurement range.

The final data was reported in the worst-case emissions. (DVD Playing mode , Visual carrier 61.25MHz sending)

The minimum margin to the limit is as follows :

Frequency (MHz)	Receiver Reading (dB μ V)	Correction Factor (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB μ V)
750.08	31.8	9.3	41.1	46.0	4.9

* 30MHz-1000MHz : All readings are quasi-peak mode.

$$FS = RA + AF + CF + AT - AG$$

where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Factor

AT = Antenna Pad

AG = Amplifier Gain

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8 OUTPUT SIGNAL LEVEL MEASUREMENT DATA

The final data was reported in the worst-case emissions.

(DVD Playing mode , Visual carrier 61.25MHz sending and Visual carrier 67.25MHz sending)

The minimum margin to the limit is as follows :

Visual carrier 61.25MHz sending

Frequency (MHz)	Receiver Reading (dB μ V)	Correction Factor (dB)	Result (dB μ V)	Limit (dB μ V) 75 ohm	Margin (dB)
61.25	58.8	6.0	64.8	69.5	4.7

* Detector function : peak mode.

Visual carrier 67.25MHz sending

Frequency (MHz)	Receiver Reading (dB μ V)	Correction Factor (dB)	Result (dB μ V)	Limit (dB μ V) 75 ohm	Margin (dB)
67.25	58.8	6.0	64.8	69.5	4.7

* Detector function : peak mode.

$$SL = RA + CF$$

where SL = Signal Level

RA = Receiver Amplitude

CF = Correction Factor

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9 OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION MEASUREMENT DATA

The initial step in collecting radiated data was a spectrum analyzer peak scan of the measurement range

The final data was reported in the worst-case emissions. (DVD Playing mode , Visual carrier 61.25MHz sending)

The minimum margin to the limit is as follows :

Frequency (MHz)	Reading (dB μ V)	Correction Factor (dB μ V)	Result (dB μ V/m)	Limit (dB μ V/m) 75 ohm	Margin (dB μ V)
122.53	18.3	6.0	24.3	39.5	15.2

* 30MHz-1000MHz : All readings are peak mode.

$$SL = RA + CF$$

where SL = Signal Level

RA = Receiver Amplitude

CF = Correction Factor

10 TRANSFER SWITCH MEASUREMENT

The final data was reported in the worst-case emissions.

(DVD Playing mode , Visual carrier 67.25MHz sending)

The minimum margin to the limit is as follows :

Frequency (MHz)	Receiver Reading (dB μ V)	Correction Factor (dB)	Result (dB μ V)	Limit (dB μ V) 75 ohm	Margin (dB)
67.25	35.5	-29.4	6.1	9.5	3.4

* Detector function : peak mode.

$$SL = RA + CF - AG$$

where SL = Signal Level

RA = Receiver Amplitude

CF = Correction Factor

AG = Amplifier Gain

Test report**FCC ID** : A7RM298A**Our reference** : 19H0024-02**Page** : 24 of 25**Issued date** : 99-08-28**11 TEST EQUIPMENT USED**

INSTRUMENTS	Mfr.	MODEL	C/N	Calibrated Until
Pre Amplifier	Anritsu	MH648A	AF2	November 30, 1999
Pre Amplifier	Anritsu	MH648A	AF3	November 30, 1999
Biconical Antenna	Schwarzbeck	BBA9106	BA2	April 30, 2000
Logperiodic Antenna	Schwarzbeck	UKLP9140-A	LA8	May 26, 2000
LISN	Rohde & Schwarz	ESH3-Z5	LS2	November 24, 1999
LISN	Schwarzbeck	NSLK8127	LS3	November 24, 1999
Spectrum Analyzer	Hewlett Packard	8567A	SA4	November 30, 1999
Spectrum Analyzer	Advantest	R3365	KSA1	July 24, 2000
Test Receiver	Rohde & Schwarz	ESHS-30	TR3	July 13, 2000
Test Receiver	Rohde & Schwarz	ESVS-10	TR4	July 13, 2000
Impedance Transformer	Anritsu	MP614A	IP1	April 19, 2000
Impedance Transformer	Tamagawa	ZT-130	IP3	April 19, 2000

*All measurement equipment is traceable to national standard.

APPENDIX

A : Test Data

AC Power Line Conducted Emission Measurement

DVD Play, Visual carrier 61.25MHz sending A1 – A3
DVD Play, Visual carrier 67.25MHz sending A4 – A6

Radiated emissions

DVD Play, Visual carrier 61.25MHz sending A7 – A8
DVD Play, Visual carrier 67.25MHz sending A9 – A10

Output Signal Level Measurement

DVD Play, Visual carrier 61.25MHz sending A11
DVD Play, Visual carrier 67.25MHz sending A12

Output Terminal Conducted Spurious Emission Measurement

DVD Play, Visual carrier 61.25MHz sending A13
DVD Play, Visual carrier 67.25MHz sending A14

Transfer Switch Measurement

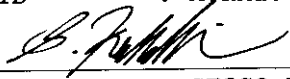
DVD Play, Visual carrier 61.25MHz sending A15
DVD Play, Visual carrier 67.25MHz sending A16

DATA OF CONDUCTION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY : ORION ELECTRIC CO.,LTD.
TRADE NAME : SANSUI
EQUIPMENT : DVD PLAYER
MODEL : SDVD2000
POWER : AC120V/60Hz
DESCRIPTION : DVD PLAYING
REMARKS : 3CH,75% COLOR BARS

REPORT NO. : 19H0024-02
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 8/22/1999
LISN TYPE : LISN(C/N:LS-03)
FCC ID : A7RM298A


ENGINEER : SEIGO KAKEHI

No	FREQ [MHz]	N		L		ALL FACTOR [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV		QP	AV	QP	AV	QP	AV
		[dB μ V]		[dB μ V]			[dB μ V]		[dB μ V]		[dB]	
1	0.4867	30.3	-	31.1	-	0.6	31.7	-	48.0	-	16.3	-
2	0.6443	29.9	-	31.6	-	0.5	32.1	-	48.0	-	15.9	-
3	0.8973	30.2	-	31.6	-	0.4	32.0	-	48.0	-	16.0	-
4	1.1632	28.6	-	29.5	-	0.4	29.9	-	48.0	-	18.1	-
5	2.0594	29.6	-	30.9	-	0.2	31.1	-	48.0	-	16.9	-
6	5.0856	20.7	-	18.8	-	0.6	21.3	-	48.0	-	26.7	-
7	17.0144	21.8	-	21.1	-	1.1	22.9	-	48.0	-	25.1	-
8	26.9996	29.7	-	31.4	-	1.5	32.9	-	48.0	-	15.1	-

SAMPLE CALCULATION :

RESULT = READING(higher data of N/L) + FACTOR(include LISN.F+C.loss)

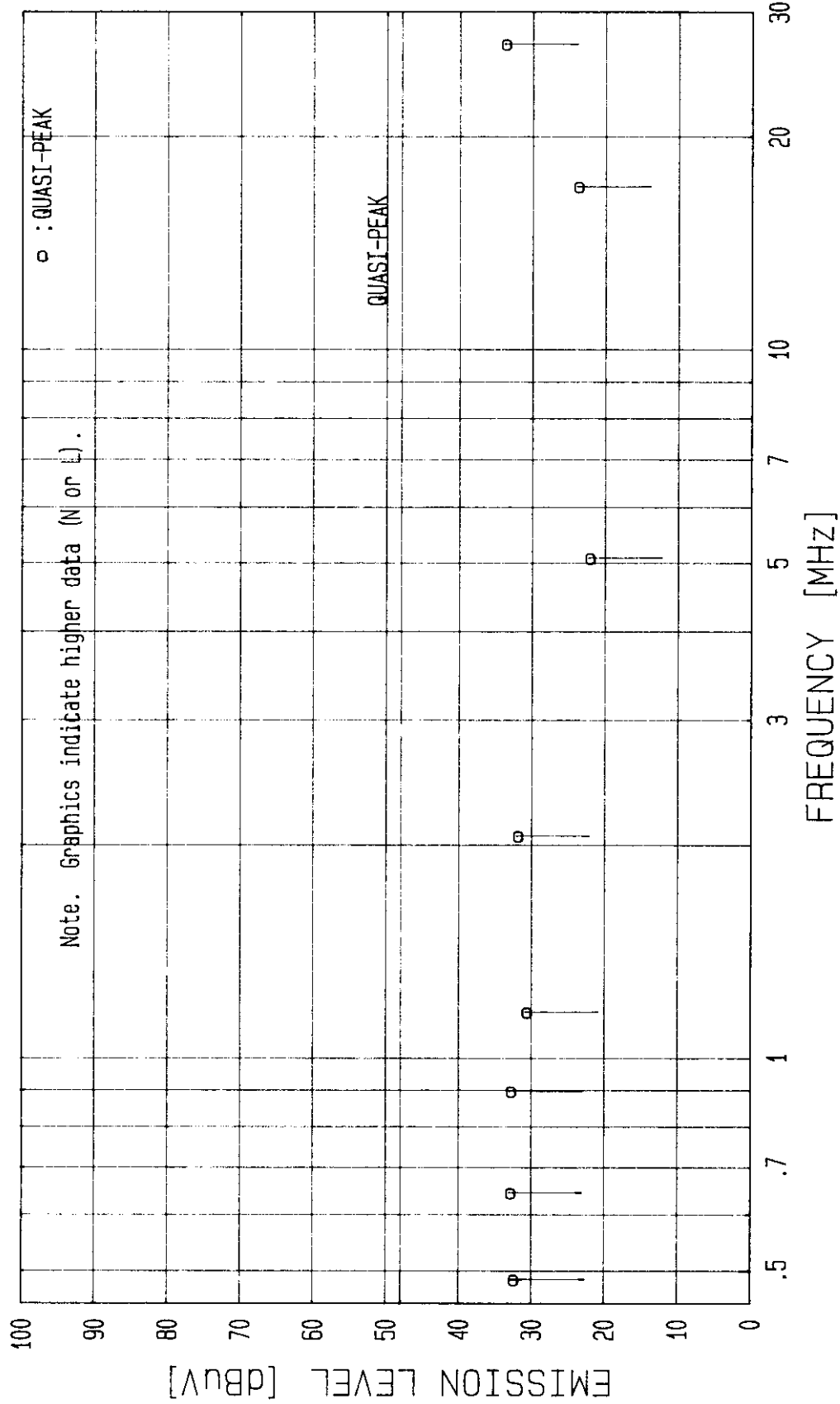
Except for the above table : adequate margin data below the limits.

CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY : ORION ELECTRIC CO., LTD.
TRADE NAME : SANSUI
EQUIPMENT : DVD PLAYER
MODEL : SDVD2000
POWER : AC120V/60Hz
DESCRIPTION : DVD PLAYING
REMARKS : 3CH, 75% COLOR BARS

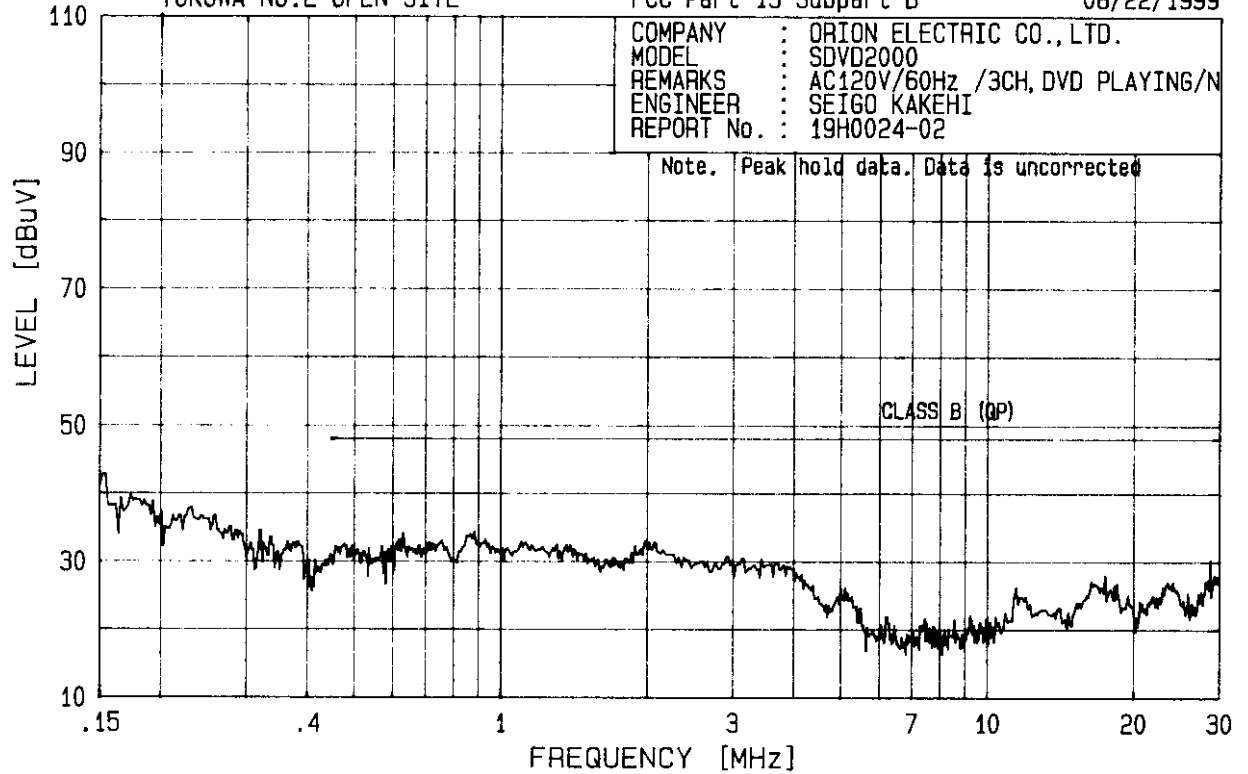
REPORT No. : 19H0024-02
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 8/22/1999
FCC ID : A7RM298A
ENGINEER : SETGO KAKEHI



INTERFERENCE VOLTAGE TEST
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

FCC Part 15 Subpart B

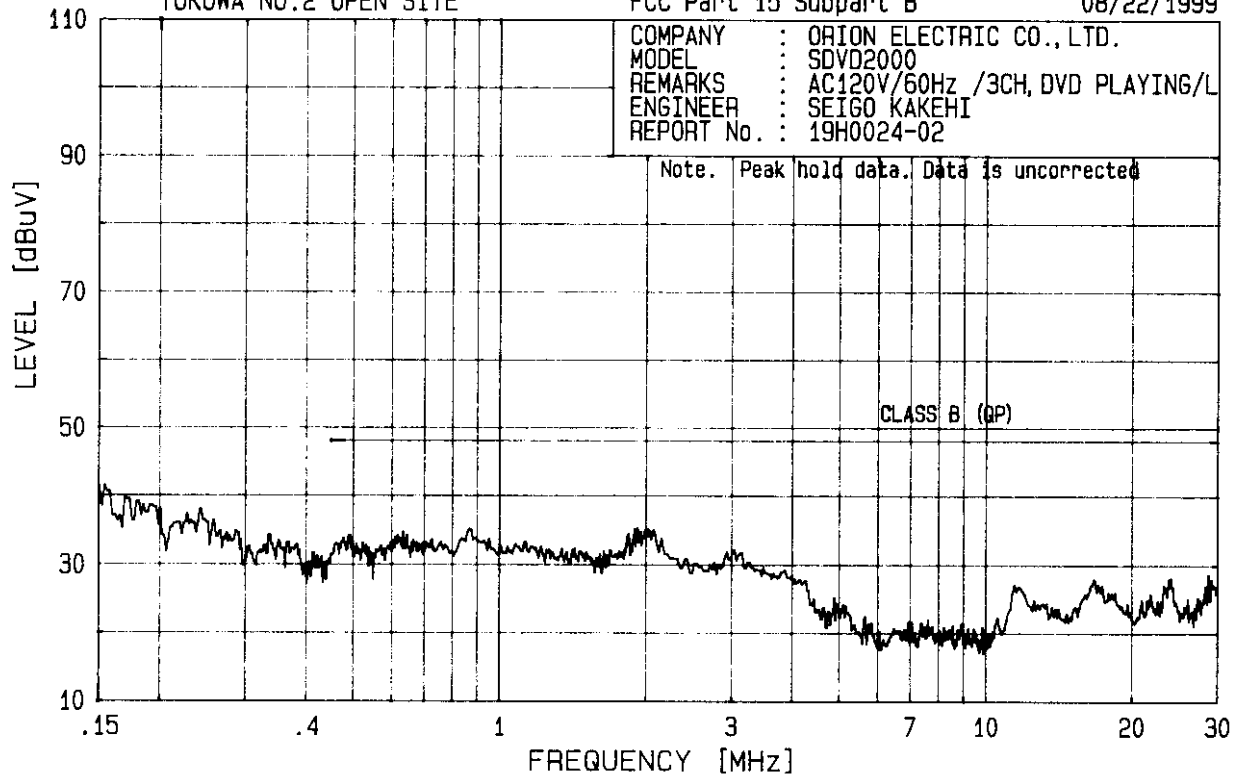
08/22/1999



INTERFERENCE VOLTAGE TEST
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

FCC Part 15 Subpart B

08/22/1999

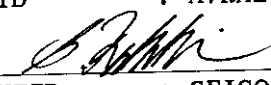


DATA OF CONDUCTION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY : ORION ELECTRIC CO.,LTD.
TRADE NAME : SANSUI
EQUIPMENT : DVD PLAYER
MODEL : SDVD2000
POWER : AC120V/60Hz
DESCRIPTION : DVD PLAYING
REMARKS : 4CH,75% COLOR BARS

REPORT NO. : 19H0024-02
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 8/22/1999
LISN TYPE : LISN(C/N:LS-03)
FCC ID : A7RM298A


ENGINEER : SEIGO KAKEHI

No	FREQ [MHz]	N		L		ALL FACTOR [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV		QP	AV	QP	AV	QP	AV
		[dB μ V]		[dB μ V]			[dB μ V]		[dB μ V]		[dB]	
1	0.4850	30.1	-	29.1	-	0.6	30.7	-	48.0	-	17.3	-
2	0.6438	30.3	-	31.3	-	0.5	31.8	-	48.0	-	16.2	-
3	0.8986	31.0	-	31.0	-	0.4	31.4	-	48.0	-	16.6	-
4	1.1653	28.8	-	29.5	-	0.4	29.9	-	48.0	-	18.1	-
5	2.0594	29.4	-	30.8	-	0.2	31.0	-	48.0	-	17.0	-
6	5.0867	20.4	-	18.1	-	0.6	21.0	-	48.0	-	27.0	-
7	17.0170	21.1	-	20.7	-	1.1	22.2	-	48.0	-	25.8	-
8	27.0003	29.7	-	30.1	-	1.5	31.6	-	48.0	-	16.4	-

SAMPLE CALCULATION :

RESULT = READING(higher data of N/L) + FACTOR(include LISN.F+C.loss)

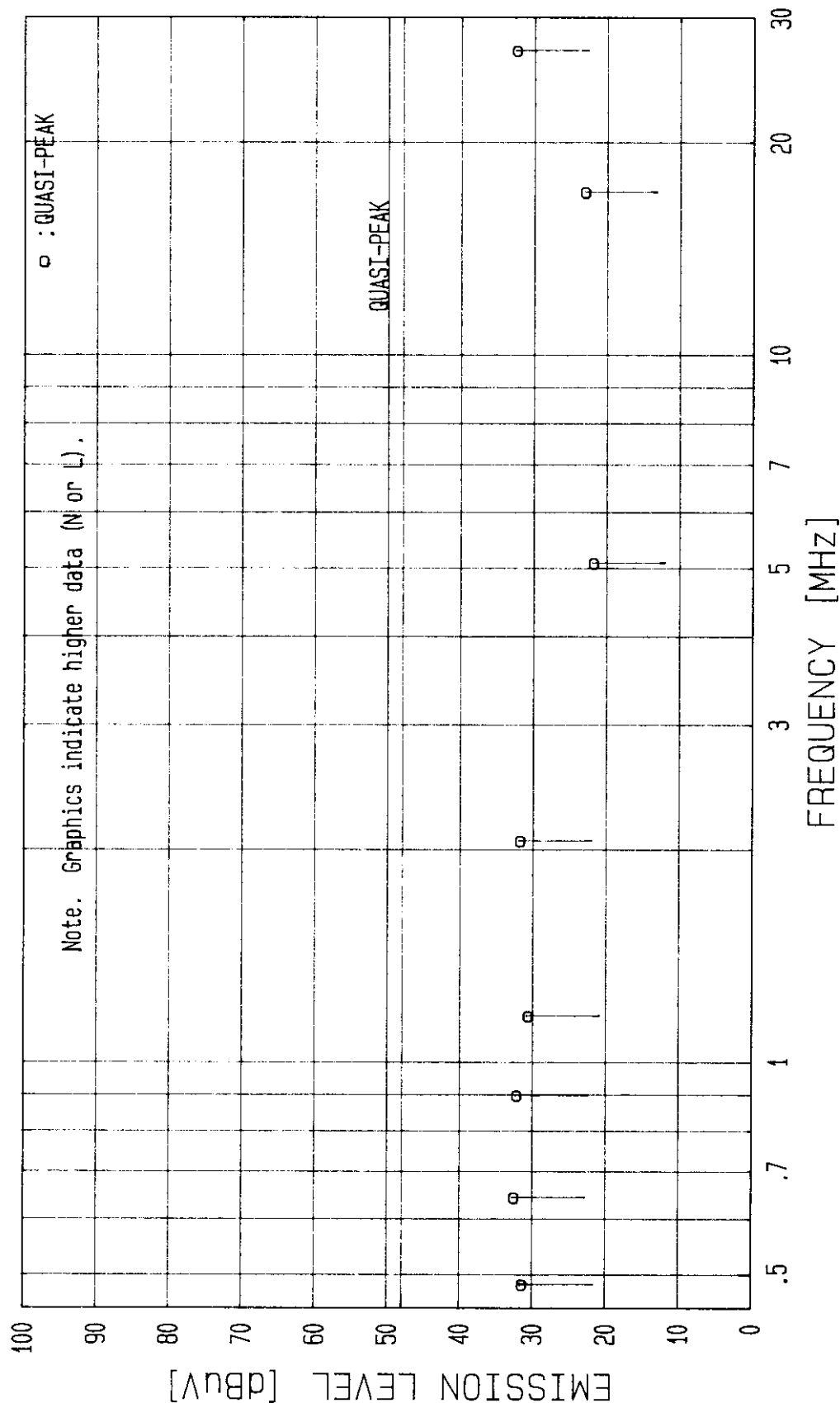
Except for the above table : adequate margin data below the limits.

CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY : ORION ELECTRIC CO., LTD.
TRADE NAME : SANSUI
EQUIPMENT : DVD PLAYER
MODEL : SDVD2000
POWER : AC120V/60Hz
DESCRIPTION : DVD PLAYING
REMARKS : 4CH, 75% COLOR BARS

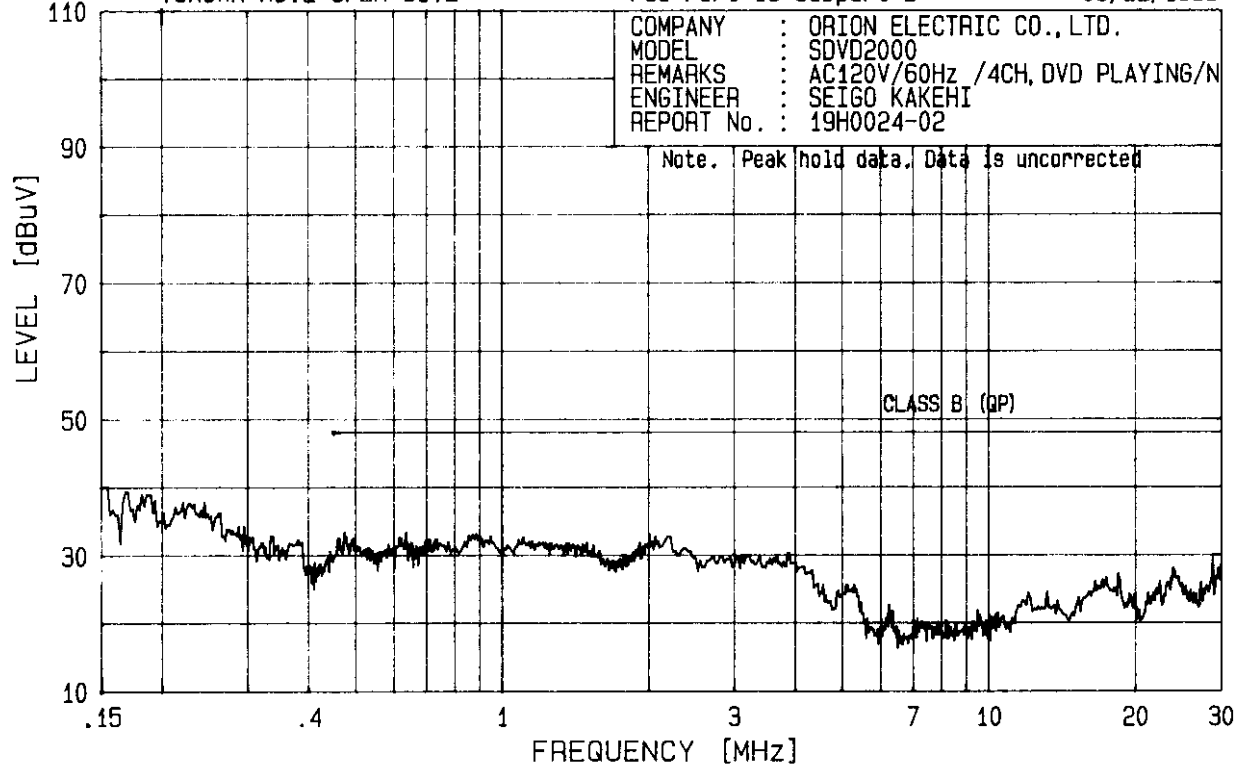
REPORT No. : 19H0024-02
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 8/22/1999
FCC ID : A7RM298A
ENGINEER : SEIGO KAKEHI



INTERFERENCE VOLTAGE TEST
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

FCC Part 15 Subpart B

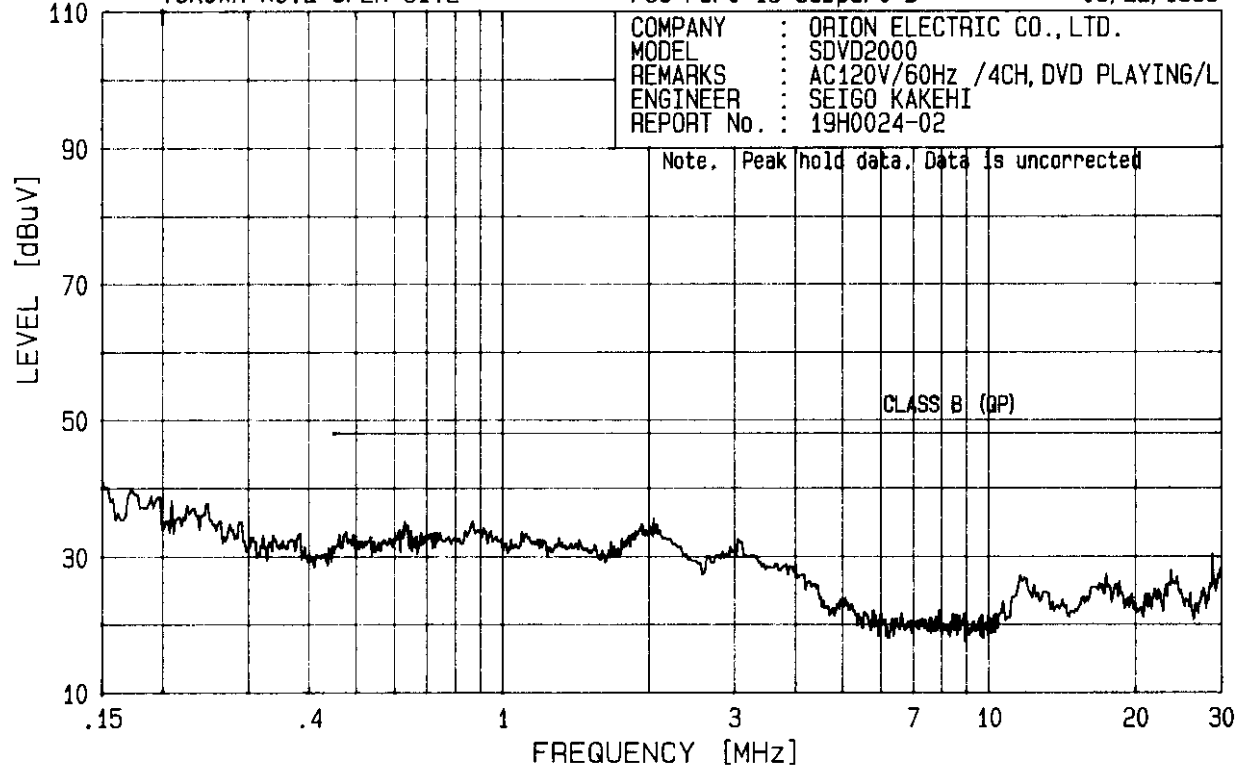
08/22/1999



INTERFERENCE VOLTAGE TEST
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

FCC Part 15 Subpart B

08/22/1999

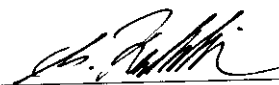


DATA OF RADIATION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY : ORION ELECTRIC CO., LTD.
TRADE NAME : SANSUI
EQUIPMENT : DVD PLAYER
MODEL : SDVD2000
POWER : AC120V/60Hz
DESCRIPTION : DVD PLAYING
REMARKS : 3CH, 75% COLOR BARS
DATE : 8/22/1999

REPORT NO. : 19H0024-02
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
TEST DISTANCE : 3m
ATTENUATOR : 6dB
FCC ID : A7RM298A


ENGINEER : SEIGO KAKEHI

No	FREQ [MHz]	ANT TYPE	READING		ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT		FCC LIMITS [dB μ V/m] 3m	MARGIN	
			HOR [dB μ V] 3m	VER [dB μ V] 3m				HOR [dB μ V/m] 3m	VER [dB μ V/m] 3m		HOR [dB]	VER [dB]
1	30.69	BC	26.3	35.7	18.2	1.3	30.0	21.8	31.2	40.0	18.2	8.8
2	85.91	BC	30.1	40.5	7.6	2.5	29.8	16.4	26.8	40.0	23.6	13.2
3	162.01	BC	32.3	34.8	15.6	3.7	29.8	27.8	30.3	43.5	15.7	13.2
4	467.39	LP	31.5	38.3	19.1	7.2	30.2	33.6	40.4	46.0	12.4	5.6
5	525.04	LP	29.3	32.2	20.0	7.7	30.3	32.7	35.6	46.0	13.3	10.4
6	600.06	LP	27.0	27.2	21.0	8.4	30.1	32.3	32.5	46.0	13.7	13.5
7	690.06	LP	25.9	29.0	22.2	9.0	29.9	33.2	36.3	46.0	12.8	9.7
8	720.07	LP	26.5	32.0	22.8	9.2	30.2	34.3	39.8	46.0	11.7	6.2
9	750.08	LP	26.4	31.8	23.4	9.6	29.7	35.7	41.1	46.0	10.3	4.9
10	975.09	LP	28.3	28.7	25.7	10.5	28.6	41.9	42.3	53.9	12.0	11.6

SAMPLE CALCULATION :

RESULT = READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

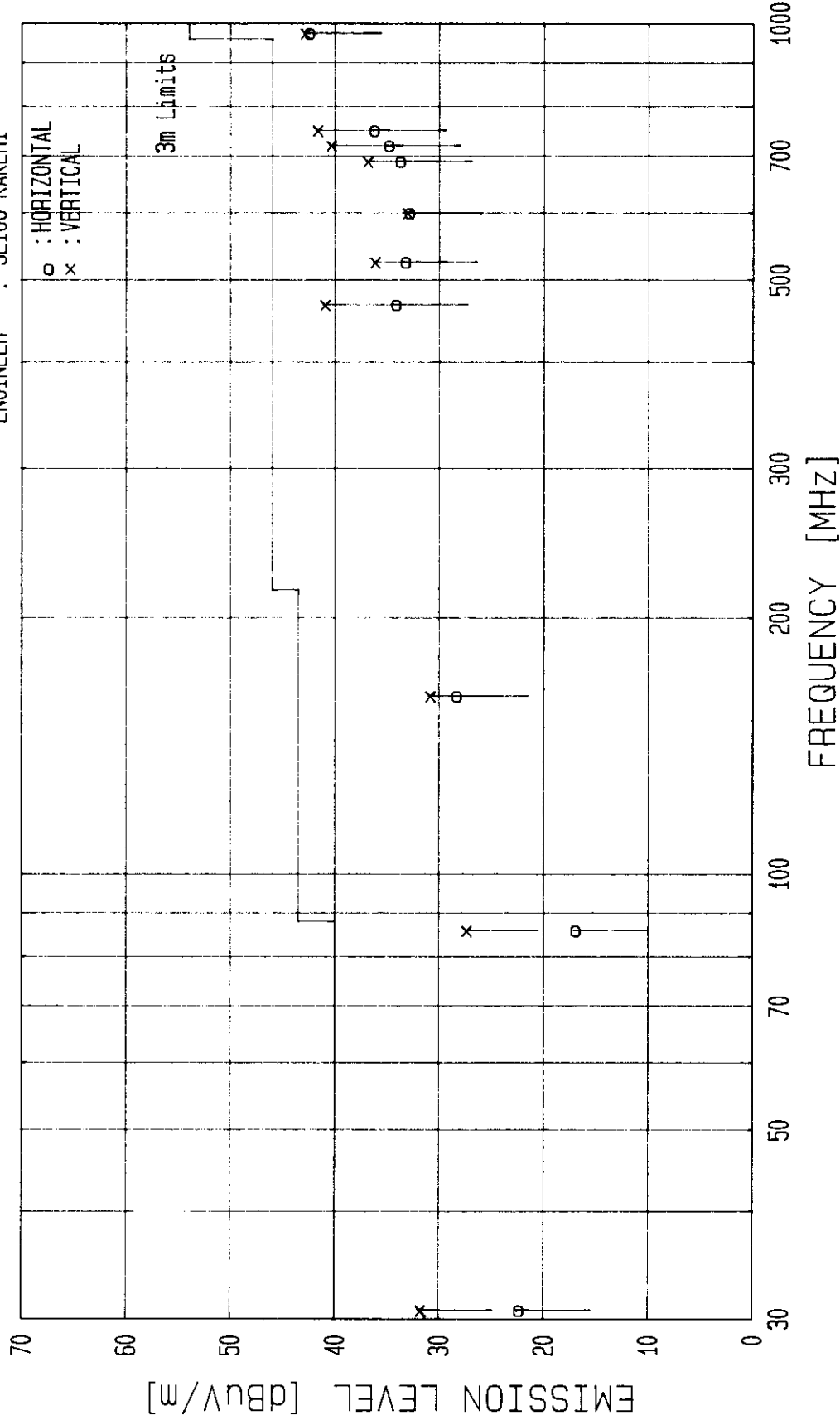
Except for the above table : adequate margin data below the limits.

RADIATION TEST

COMPANY : ORION ELECTRIC CO., LTD.
 TRADE NAME : SANSUI
 EQUIPMENT : DVD PLAYER
 MODEL : SDVD2000
 POWER : AC120V/60Hz
 DESCRIPTION : DVD PLAYING
 REMARKS : 3CH, 75% COLOR BARS

REPORT No. : 19H0024-02
 DATE : 8/22/1999
 REGULATION : FCC Part 15 Subpart B
 CLASS : CLASS B
 DISTANCE : 3m
 FCC ID : A79M298A

ENGINEER : SEIGO KAKEHI



DATA OF RADIATION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY : ORION ELECTRIC CO., LTD.
TRADE NAME : SANSUI
EQUIPMENT : DVD PLAYER
MODEL : SDVD2000
POWER : AC120V/60Hz
DESCRIPTION : DVD PLAYING
REMARKS : 4CH, 75% COLOR BARS
DATE : 8/22/1999

REPORT NO. : 19H0024-02
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
TEST DISTANCE : 3m
ATTENUATOR : 6dB
FCC ID : A7RM298A


ENGINEER : SEIGO KAKEHI

No	FREQ [MHz]	ANT TYPE	READING		ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT		FCC LIMITS [dB μ V/m] 3m	MARGIN	
			HOR	VER				HOR	VER		HOR	VER
			[dB μ V] 3m					[dB μ V/m] 3m			[dB]	
1	30.69	BC	25.5	35.7	18.2	1.3	30.0	21.0	31.2	40.0	19.0	8.8
2	85.91	BC	31.2	40.7	7.6	2.5	29.8	17.5	27.0	40.0	22.5	13.0
3	161.99	BC	32.3	34.8	15.6	3.7	29.8	27.8	30.3	43.5	15.7	13.2
4	467.39	LP	33.0	38.8	19.1	7.2	30.2	35.1	40.9	46.0	10.9	5.1
5	525.05	LP	26.5	30.8	20.0	7.7	30.3	29.9	34.2	46.0	16.1	11.8
6	600.06	LP	26.5	29.9	21.0	8.4	30.1	31.8	35.2	46.0	14.2	10.8
7	690.08	LP	23.9	30.5	22.2	9.0	29.9	31.2	37.8	46.0	14.8	8.2
8	720.08	LP	25.7	31.8	22.8	9.2	30.2	33.5	39.6	46.0	12.5	6.4
9	750.07	LP	26.8	31.3	23.4	9.6	29.7	36.1	40.6	46.0	9.9	5.4
10	975.10	LP	28.0	28.3	25.7	10.5	28.6	41.6	41.9	53.9	12.3	12.0

SAMPLE CALCULATION :

RESULT = READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

Except for the above table : adequate margin data below the limits.

RADIATION TEST

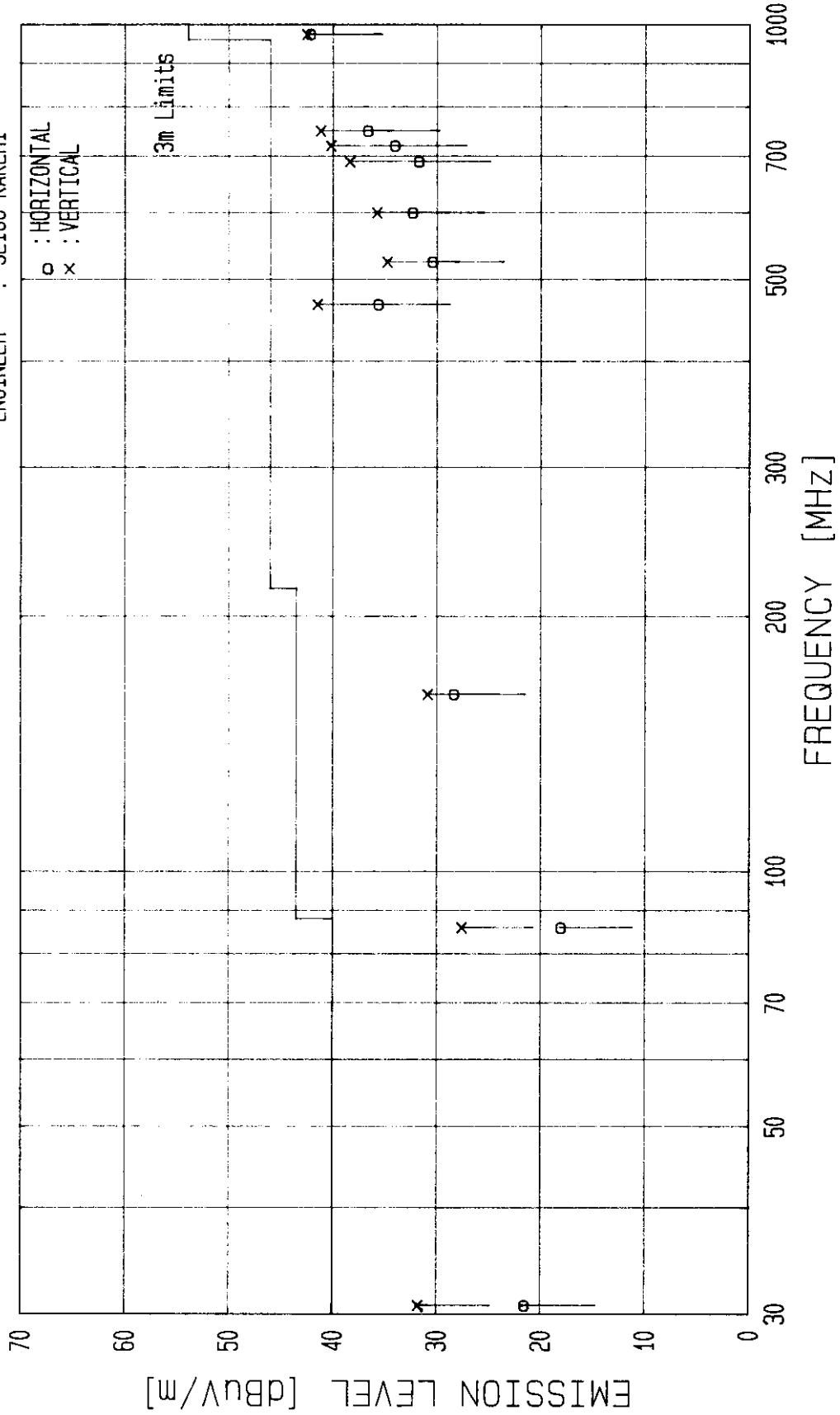
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY
TRADE NAME
EQUIPMENT
MODEL
POWER
DESCRIPTION
REMARKS

: ORION ELECTRIC CO., LTD.
: SANSUI
: DVD PLAYER
: SDVD2000
: AC120V/60Hz
: DVD PLAYING
: 4CH, 75% COLOR BARS

REPORT No. : 19H0024-02
DATE : 8/22/1999
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DISTANCE : 3m
FCC ID : A7RM298A

ENGINEER : SEIGO KAKEHI



DATA OF OUTPUT SIGNAL LEVEL TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 SITE

COMPANY : ORION ELECTRIC CO.,LTD.	REPORT No. : 19H0024-02
TRADE NAME : SANSUI	REGULATION : FCC Part 15 Subpart B
EQUIPMENT : DVD PLAYER	TYPE OF DEVICE : TV Interface Device
MODEL No. : SDVD2000	DATE : 1999/08/22
POWER : AC120V/60Hz	FCC ID : A7RM298A
DESCRIPTION : DVD PLAYING	
REMARKS : 3CH,75% COLOR BARS	


 ENGINEER : Seigo.Kakehi

DETECTOR : PEAK [dB μ V]

NO.	FREQ. [MHz]	READING [dB μ V]	ATT. [dB]	RESULT [dB μ V]	FCC LIMIT [dB μ V]	MARGIN [dB]	REMARKS
1	56.75	43.5	6	49.5	56.5	7.0	SOUND
2	61.25	58.8	6	64.8	69.5	4.7	PICTURE
3	65.75	43.2	6	49.2	56.5	7.3	SOUND

SAMPLE CALCULATION :

RESULT = READING + ATTEN.

DATA OF OUTPUT SIGNAL LEVEL TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 SITE

COMPANY : ORION ELECTRIC CO.,LTD.	REPORT No. : 19H0024-02
TRADE NAME : SANSUI	REGULATION : FCC Part 15 Subpart B
EQUIPMENT : DVD PLAYER	TYPE OF DEVICE : TV Interface Device
MODEL No. : SDVD2000	DATE : 1999/08/22
POWER : AC120V/60Hz	FCC ID : A7RM298A
DESCRIPTION : DVD PLAYING	
REMARKS : 4CH,75% COLOR BARS	


 ENGINEER : Seigo.Kakehi

DETECTOR : PEAK [dB μ V]

NO.	FREQ. [MHz]	READING [dB μ V]	ATT. [dB]	RESULT [dB μ V]	FCC LIMIT [dB μ V]	MARGIN [dB]	REMARKS
1	62.75	43.3	6	49.3	56.5	7.2	SOUND
2	67.25	58.8	6	64.8	69.5	4.7	PICTURE
3	71.75	42.9	6	48.9	56.5	7.6	SOUND

SAMPLE CALCULATION :

RESULT = READING + ATTEN.

DATA OF OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 SITE

COMPANY : ORION ELECTRIC CO.,LTD.	REPORT No. : 19H0024-02
TRADE NAME : SANSUI	REGULATION : FCC Part 15 Subpart B
EQUIPMENT : DVD PLAYER	TYPE OF DEVICE : TV Interface Device
MODEL No. : SDVD2000	DATE : 1999/08/22
POWER : AC120V/60Hz	FCC ID : A7RM298A
DESCRIPTION : DVD PLAYING	
REMARKS : 3CH,75% COLOR BARS	


 ENGINEER : Seigo.Kakehi

DETECTOR : PEAK [dB μ V]

NO.	FREQ. [MHz]	READING [dB μ V]	ATT. [dB]	RESULT [dB μ V]	FCC LIMIT [dB μ V]	MARGIN [dB]	REMARKS
1	40.55	10.8	6	16.8	39.5	22.7	-
2	47.79	12.7	6	18.7	39.5	20.8	-
3	50.50	6.7	6	12.7	39.5	26.8	-
4	52.27	13.4	6	19.4	39.5	20.1	-
5	70.26	12.8	6	18.8	39.5	20.7	-
6	74.76	13.4	6	19.4	39.5	20.1	-
7	122.53	18.3	6	24.3	39.5	15.2	-
8	467.42	14.0	6	20.0	39.5	19.5	-

SAMPLE CALCULATION :

RESULT = READING + ATTEN.

DATA OF OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 SITE

COMPANY : ORION ELECTRIC CO.,LTD.	REPORT No. : 19H0024-02
TRADE NAME : SANSUI	REGULATION : FCC Part 15 Subpart B
EQUIPMENT : DVD PLAYER	TYPE OF DEVICE : TV Interface Device
MODEL No. : SDVD2000	DATE : 1999/08/22
POWER : AC120V/60Hz	FCC ID : A7RM298A
DESCRIPTION : DVD PLAYING	
REMARKS : 4CH,75% COLOR BARS	


 ENGINEER : Seigo.Kakehi

DETECTOR : PEAK [dB μ V]

NO.	FREQ. [MHz]	READING [dB μ V]	ATT. [dB]	RESULT [dB μ V]	FCC LIMIT [dB μ V]	MARGIN [dB]	REMARKS
1	40.26	6.4	6	12.4	39.5	27.1	-
2	53.79	15.0	6	21.0	39.5	18.5	-
3	58.29	9.7	6	15.7	39.5	23.8	-
4	62.24	15.4	6	21.4	39.5	18.1	-
5	76.28	9.4	6	15.4	39.5	24.1	-
6	80.77	11.7	6	17.7	39.5	21.8	-
7	134.56	13.4	6	19.4	39.5	20.1	-
8	467.44	11.1	6	17.1	39.5	22.4	-

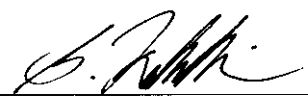
SAMPLE CALCULATION :

RESULT = READING + ATTEN.

DATA OF TRANSFER SWITCH TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.1 SITE

COMPANY	: ORION ELECTRIC CO.,LTD.	REPORT No.	: 19H0024-02
TRADE NAME	: SANSUI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: DVD PLAYER	TYPE OF DEVICE	: TV Interface Device
MODEL No.	: SDVD2000	DATE	: 1999/08/22
POWER	: AC120V/60Hz	FCC ID	: A7RM298A
DESCRIPTION	: DVD PLAYING		
REMARKS	: 3CH,75% COLOR BARS		


 ENGINEER : Seigo.Kakehi

DETECTOR : PEAK [dB μ V]

NO.	FREQ. [MHz]	READING [dB μ V]	ATT. [dB]	AMP.GAIN [dB]	RESULT [dB μ V]	FCC LIMIT [dB μ V]	MARGIN [dB]	REMARKS
1	61.25	34.7	0.4	29.7	5.4	9.5	4.1	ANT. SIDE

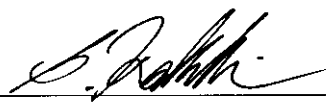
SAMPLE CALCULATION :

RESULT = READING + ATTEN. – AMP.GAIN

DATA OF TRANSFER SWITCH TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.1 SITE

COMPANY : ORION ELECTRIC CO.,LTD.	REPORT No. : 19H0024-02
TRADE NAME : SANSUI	REGULATION : FCC Part 15 Subpart B
EQUIPMENT : DVD PLAYER	TYPE OF DEVICE : TV Interface Device
MODEL No. : SDVD2000	DATE : 1999/08/22
POWER : AC120V/60Hz	FCC ID : A7RM298A
DESCRIPTION : DVD PLAYING	
REMARKS : 4CH,75% COLOR BARS	


 ENGINEER : Seigo.Kakehi

DETECTOR : PEAK [dB μ V]

NO.	FREQ. [MHz]	READING [dB μ V]	ATT. [dB]	AMP.GAIN [dB]	RESULT [dB μ V]	FCC LIMIT [dB μ V]	MARGIN [dB]	REMARKS
1	67.25	35.5	0.4	29.8	6.1	9.5	3.4	ANT. SIDE

SAMPLE CALCULATION :

RESULT = READING + ATTEN. - AMP.GAIN