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**

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

Date of test: August 22, 1999

Tested by: 

Seigo Kakehi

Approved by: 

Issued date: August 28, 1999

Kazuhiro Kitahara

Group Leader of EMC section

Testing Laboratory
A-pex International Co., Ltd.
108 Yokowa-cho, Ise-shi Mie-ken 516-1106 JAPAN
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Facsimile: +81 596 39 0232

Table of Contents

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)

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 decorder IC control clock : 27MHz
- (3)MPEG decorder 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 anttena 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

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 Shielded RF cable Shielded Video/Audio cable Shielded Video cable Shielded Audio cable Shielded S-VHS cable	P.V.C P.V.C P.V.C P.V.C P.V.C 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℃
Humidity : 69%
Power supply : AC120V/60Hz

2) Measurement : Radiation
Temperature : 24℃
Humidity : 67%
Power supply : AC120V/60Hz

1) Measurement : Transfer switch
Temperature : 31℃
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

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 50Ω connectors of the LISN were resistively terminated in 50Ω 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.

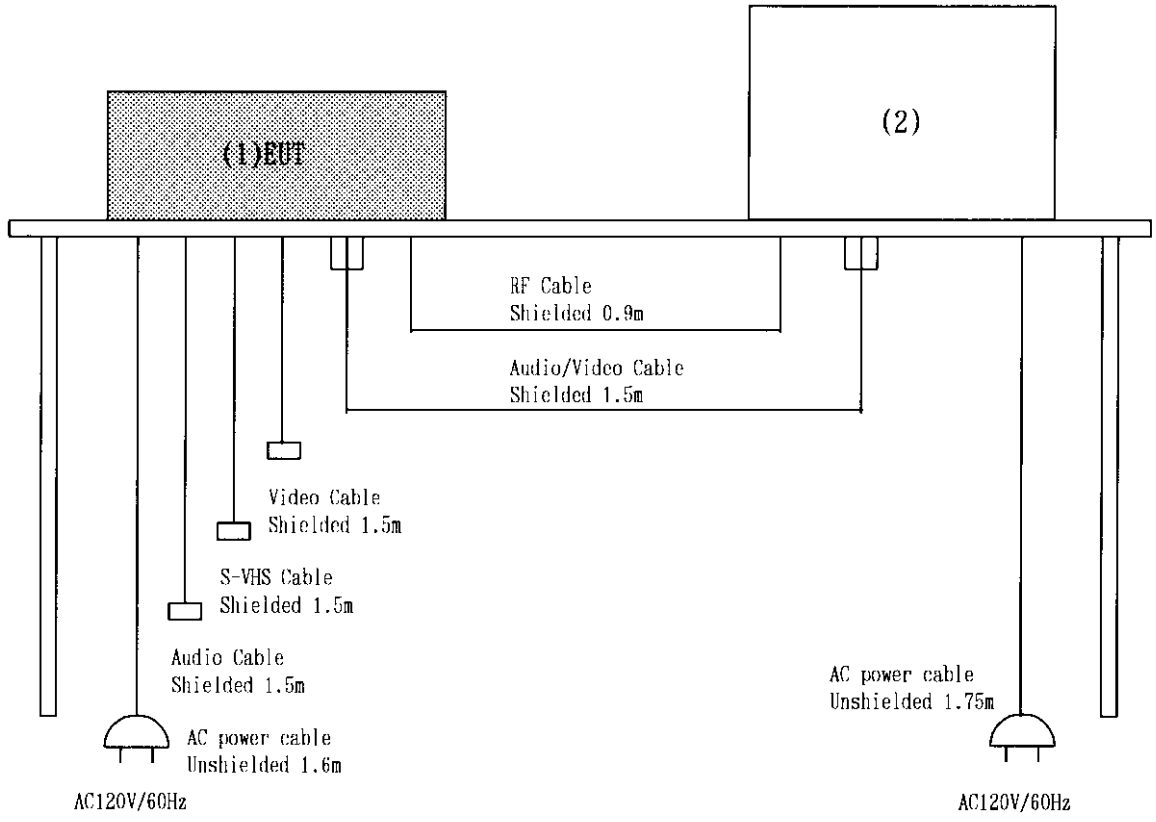
4.3.4 Transfer Switch

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

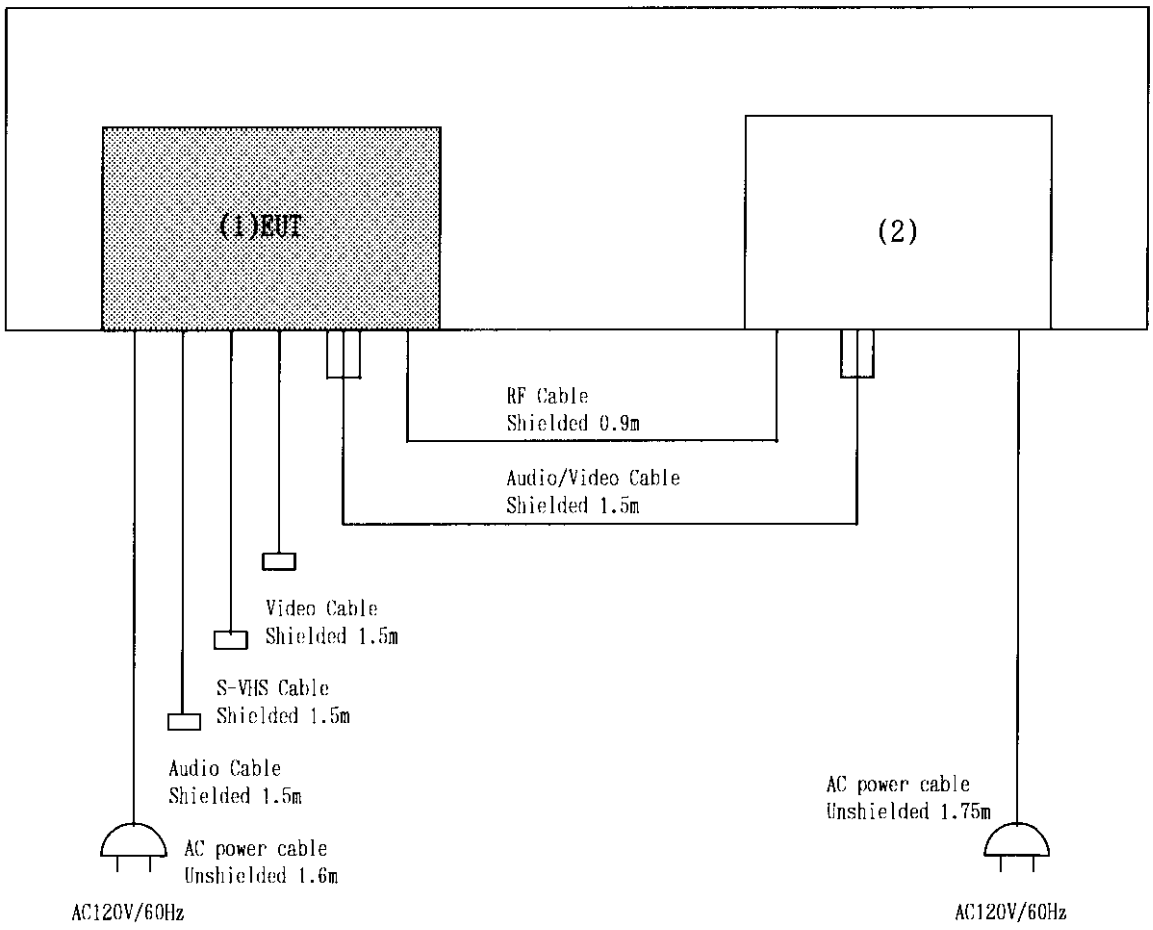


□ : Terminator

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

Top View



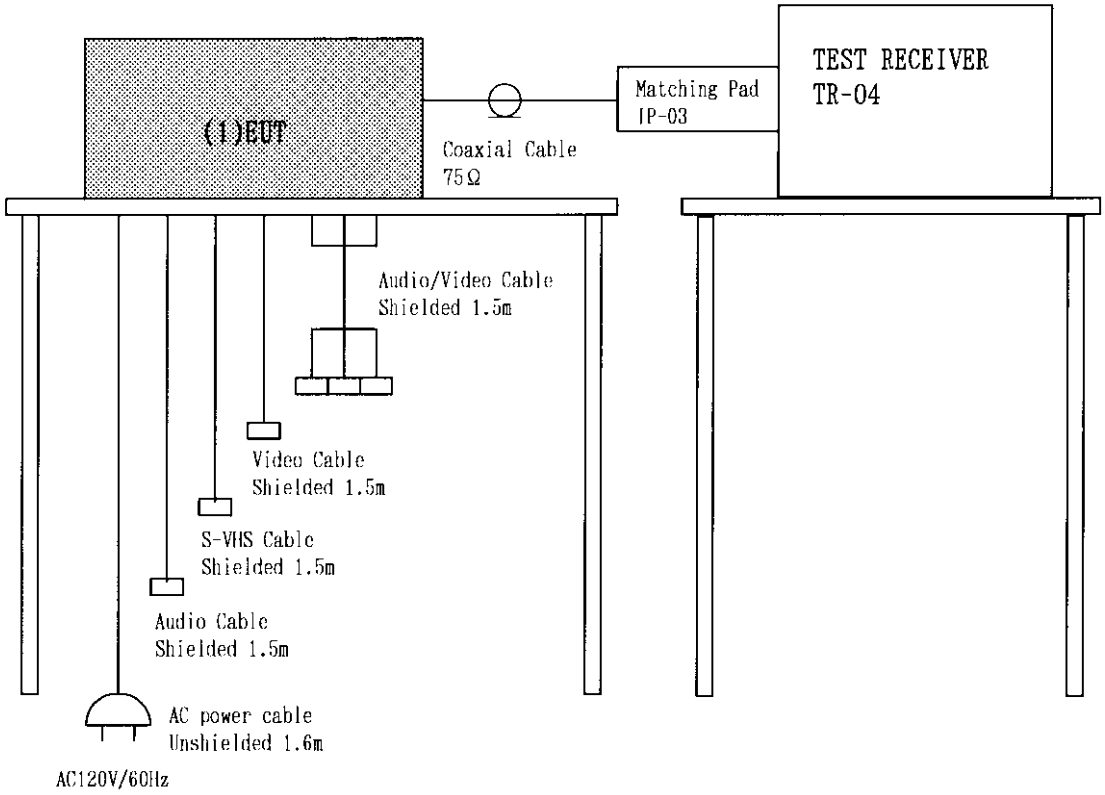
▭ : Terminator

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

OUTPUT SIGNAL LEVEL MEASUREMENT
AND OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION MEASUREMENT

Front View

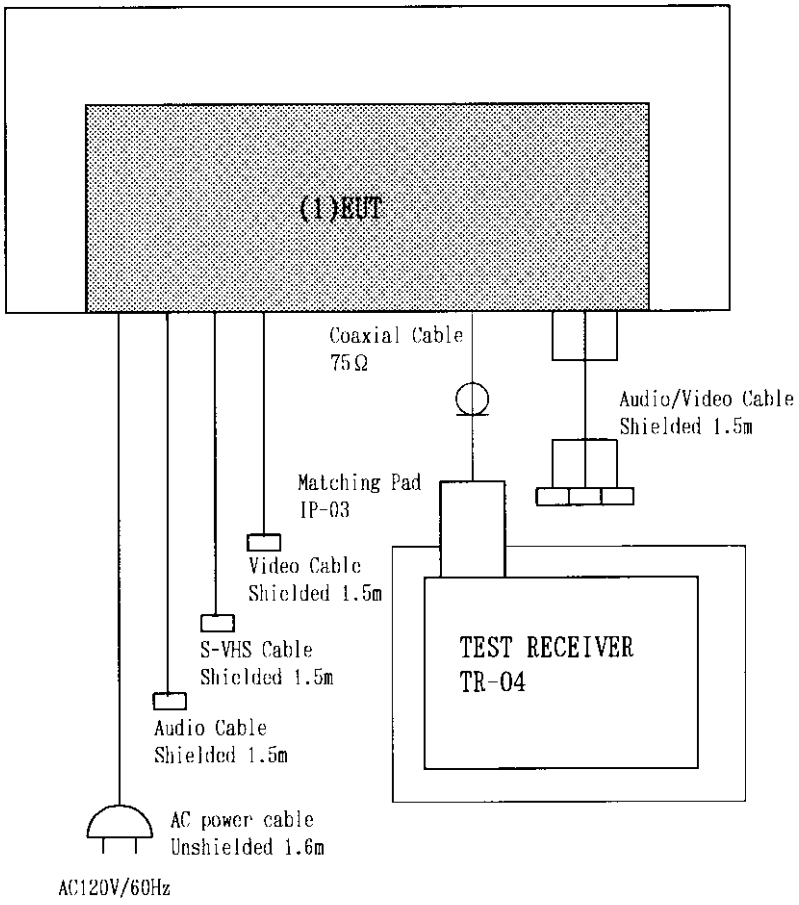


▭ : Terminator

Unused connector and I/F cable

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

Top View



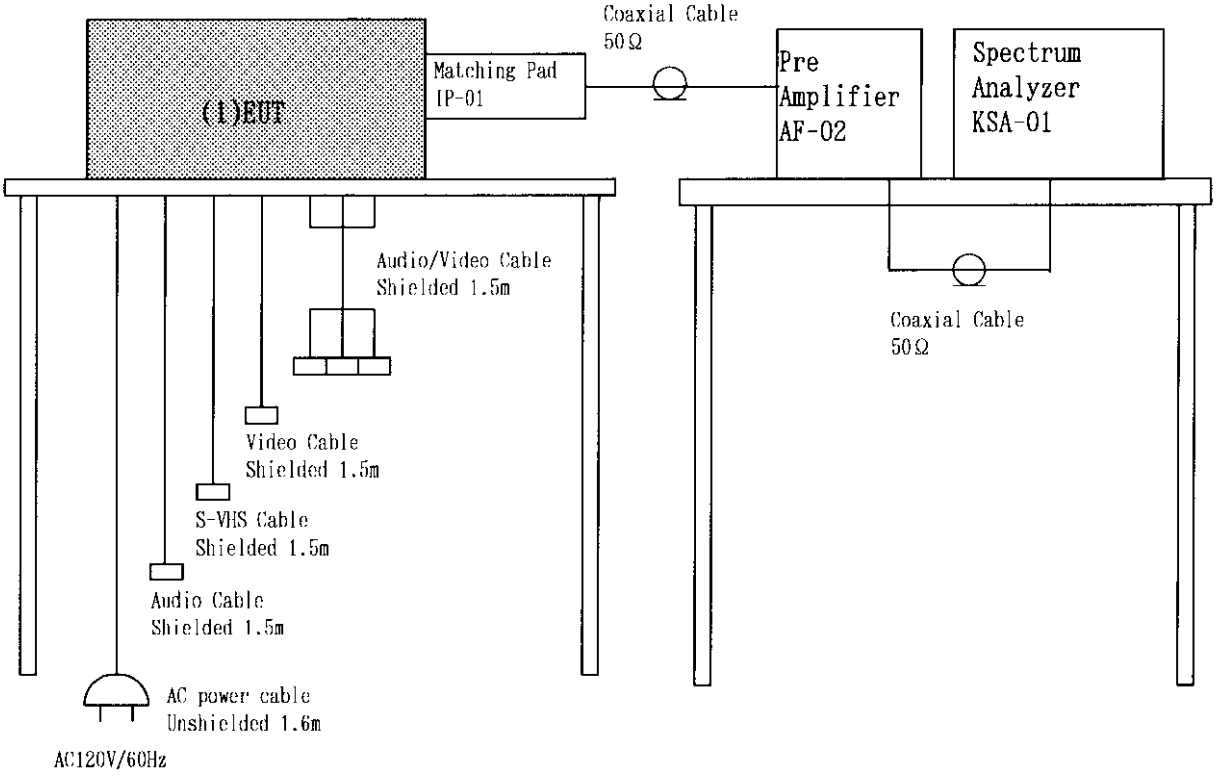
▭ : Terminator

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 in : Direct 75 Ω terminated

TRANSFER SWITCH MEASUREMENT

Front View

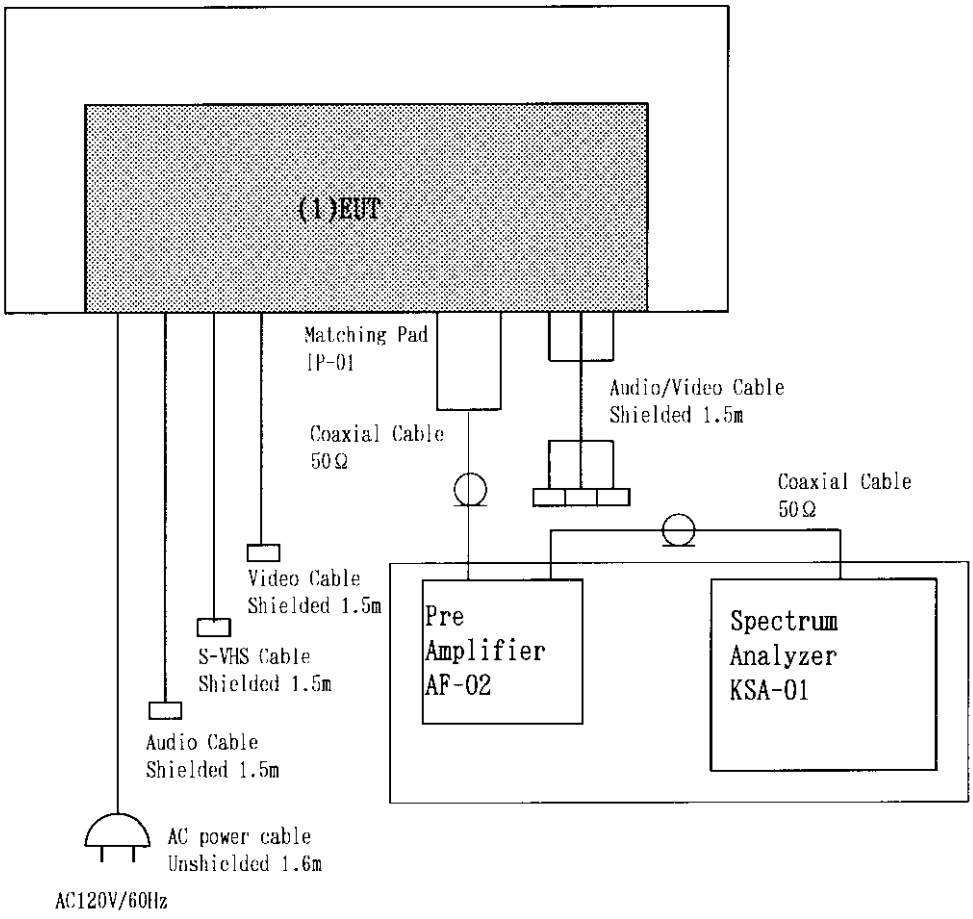


▭ : Terminator

Unused connector and I/F cable

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

Top View



▭ : Terminator

Unused connector and I/F cable

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

5 MEASUREMENT PHOTOS

Figure 5.1 AC Power Line Conducted Emission Measurement Photos

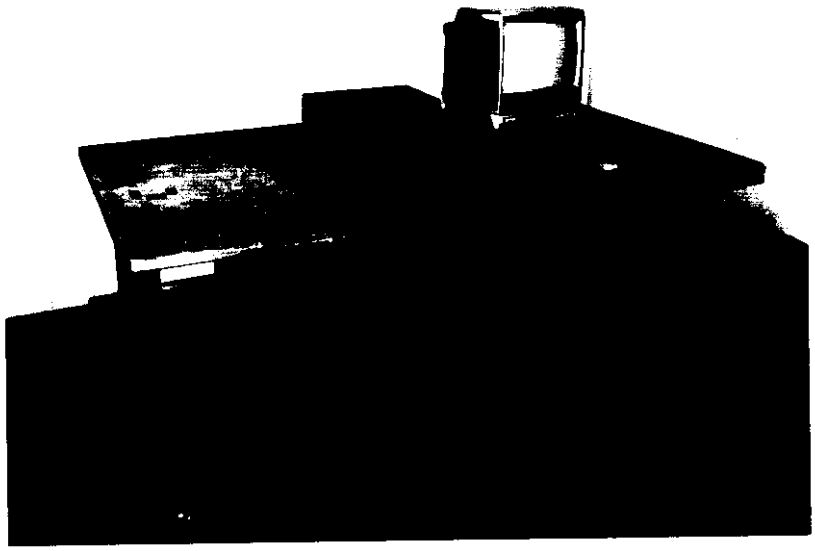
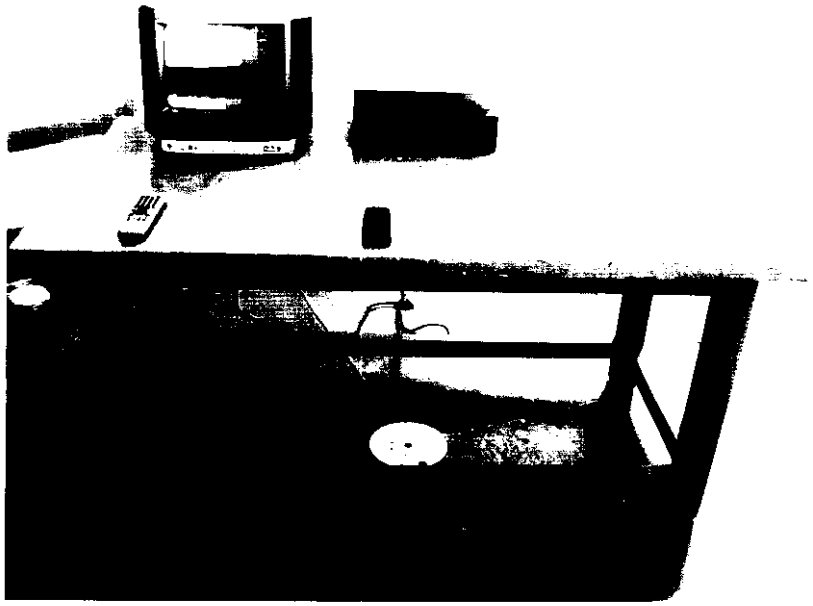


Figure 5.2 Radiated Measurement Photos



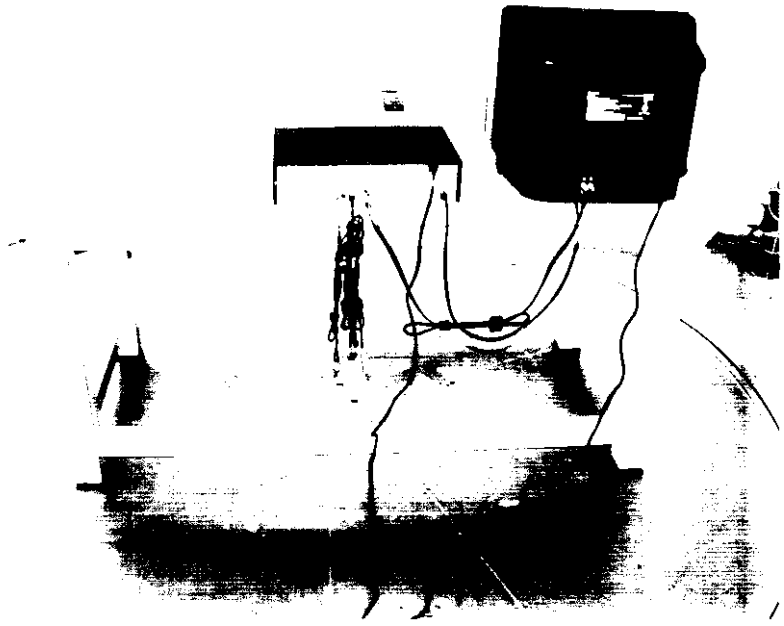
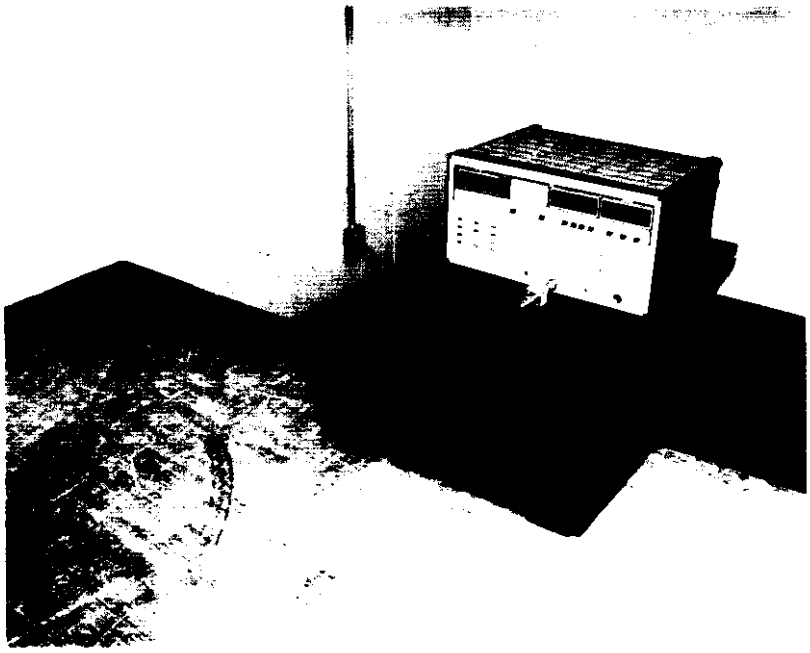


Figure 5.3 Output Signal Level Measurement and Output Terminal Conducted Spurious Emission Measurement Photos



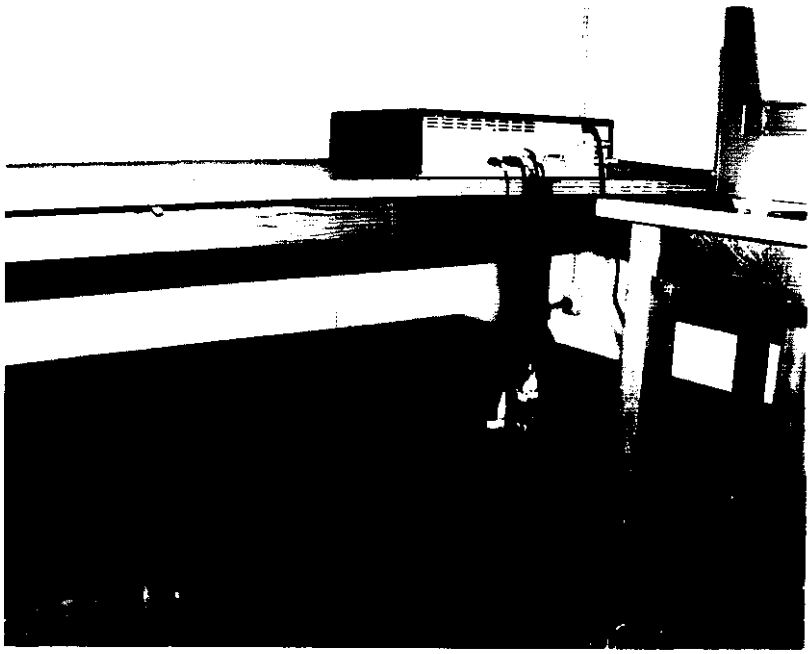
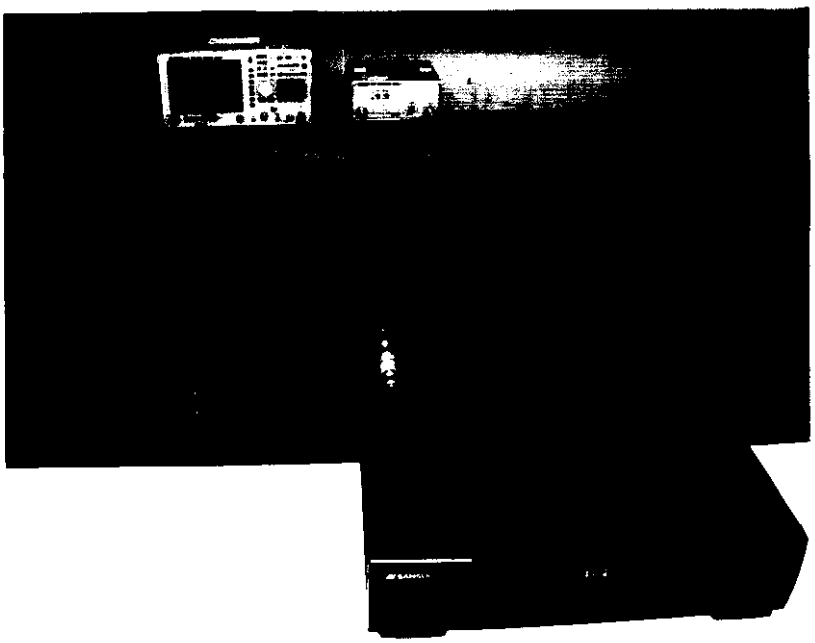
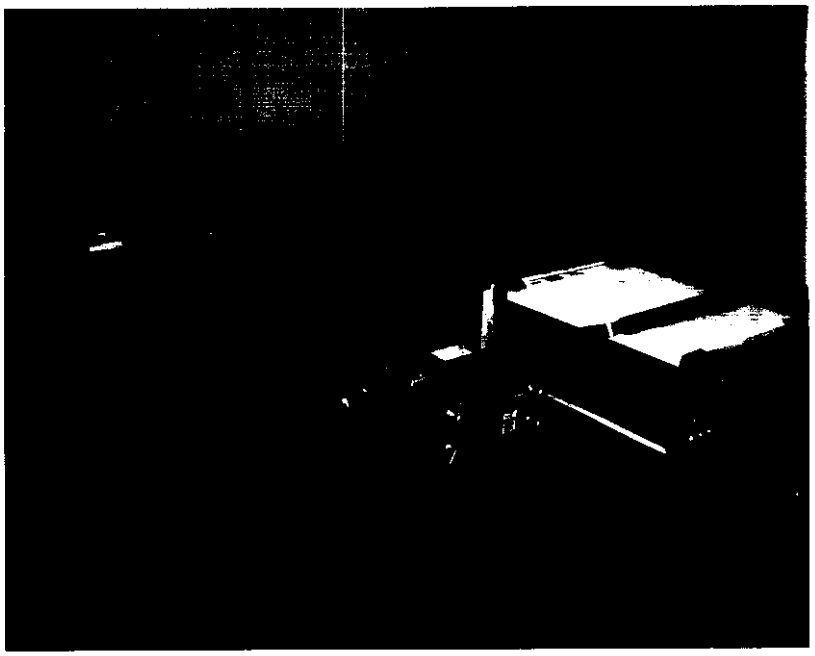


Figure 5.4 Transfer Switch Measurement Photos





5.1 Measurement Uncertainty

AC Power Line Conducted Emission Measurement

The measurement uncertainty (with a 95% confidence level) for this test was ±2.0dB.

☐ 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 ±3.3dB.

☐ 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.

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 (dBμV)	Correction Factor (dB)	Result (dBμV)	Limit (dBμV)	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 Voltege
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 (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dBμV)
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

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 (dBμV)	Correction Factor (dB)	Result (dBμV)	Limit (dBμV) 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 (dBμV)	Correction Factor (dB)	Result (dBμV)	Limit (dBμV) 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

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 (dBμV)	Correction Factor (dBμV)	Result (dBμV/m)	Limit (dBμV/m) 75 ohm	Margin (dBμV)
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 (dBμV)	Correction Factor (dB)	Result (dBμV)	Limit (dBμV) 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

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.	REPORT NO.	: 19H0024-02
TRADE NAME	: SANSUI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: DVD PLAYER	CLASS	: CLASS B
MODEL	: SDVD2000	DATE	: 8/22/1999
POWER	: AC120V/60Hz	LISN TYPE	: LISN(C/N:LS-03)
DESCRIPTION	: DVD PLAYING	FCC ID	: A7RM298A
REMARKS	: 3CH,75% COLOR BARS		

ENGINEER : SEIGO KAKEHI

No	FREQ	N		L		ALL	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV	FACTOR	QP	AV	QP	AV	QP	AV
	[MHz]	[dBμV]		[dBμV]		[dB]	[dBμV]		[dBμV]		[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	-

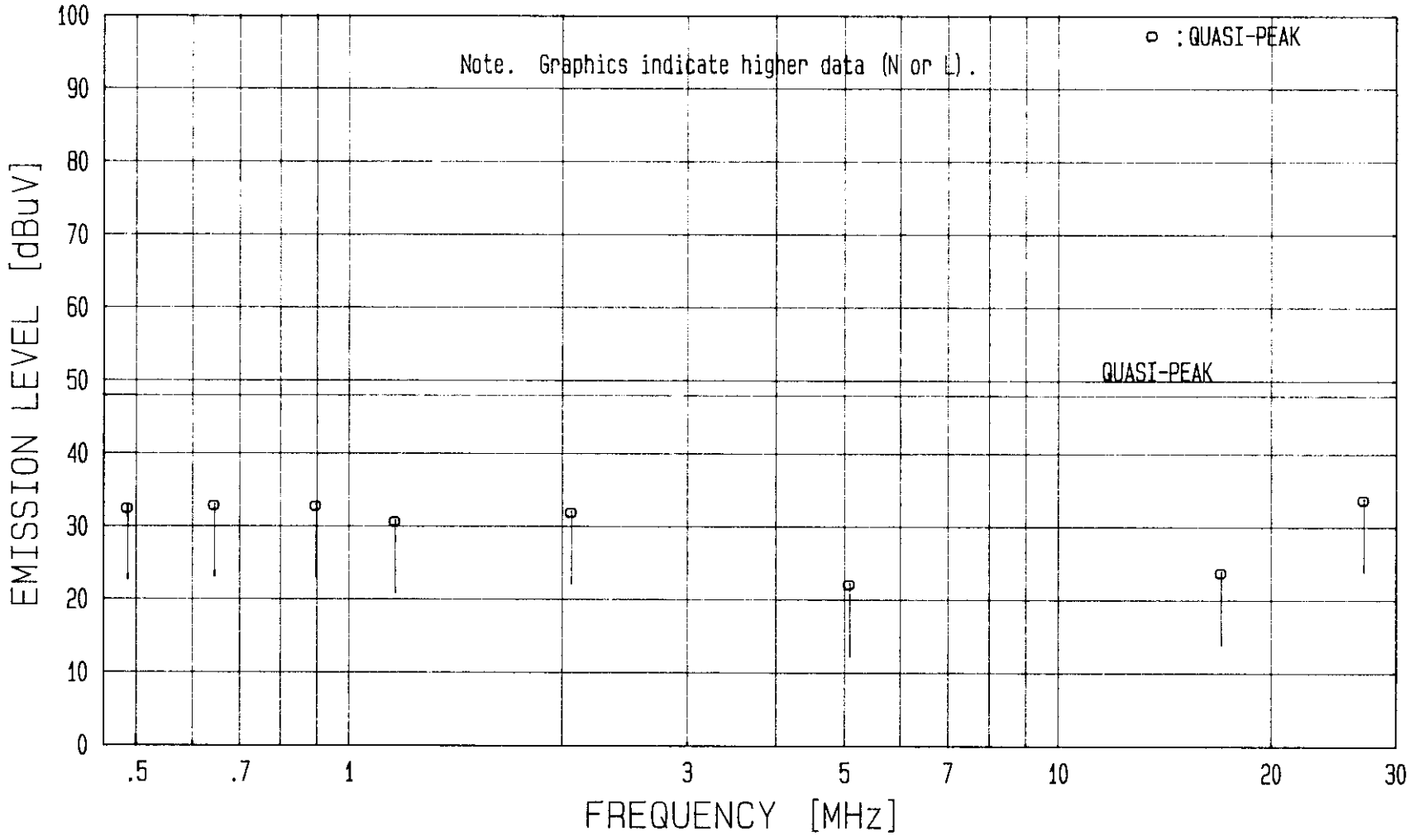
SAMPLE CALCULATION :
RESULT = READING(higher data of N/L) + FACTOR(include LISN.F+C.loss)

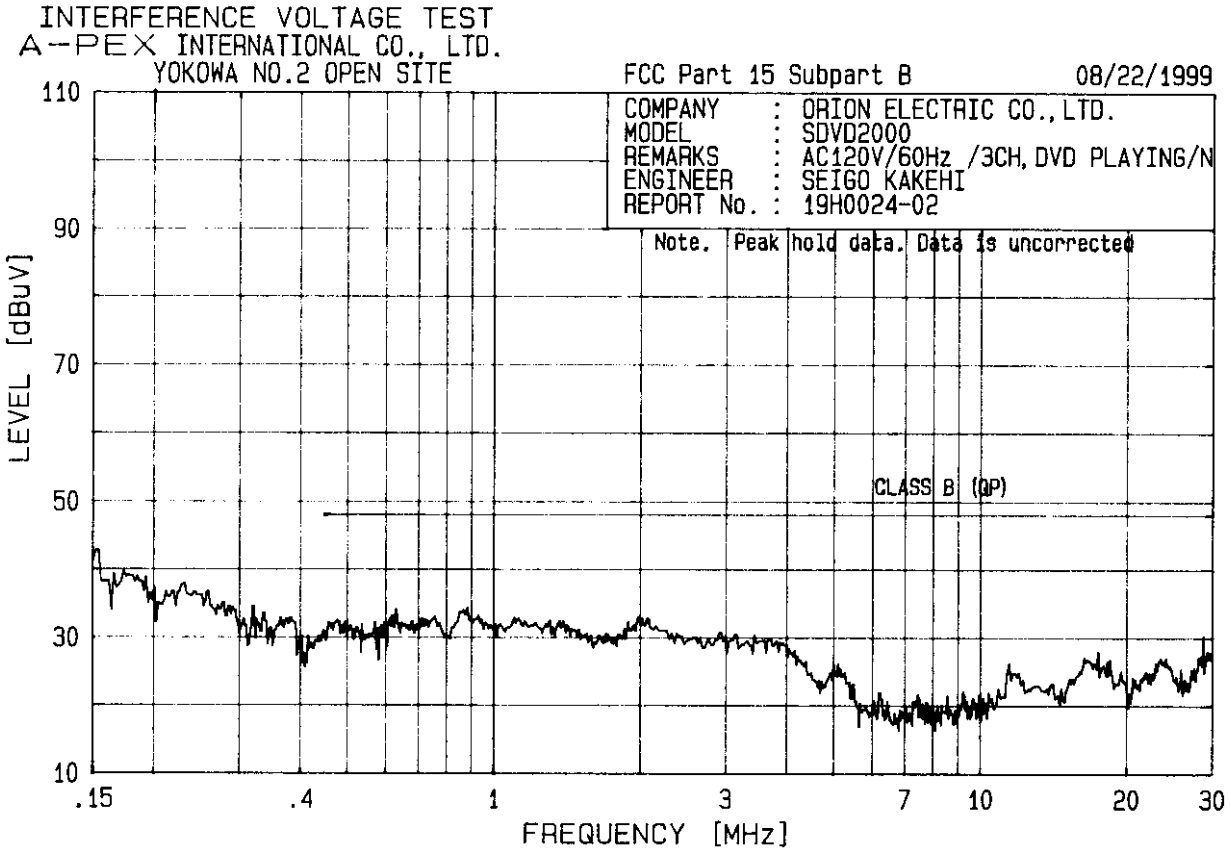
Except for the above table : adequate margin data below the limits.

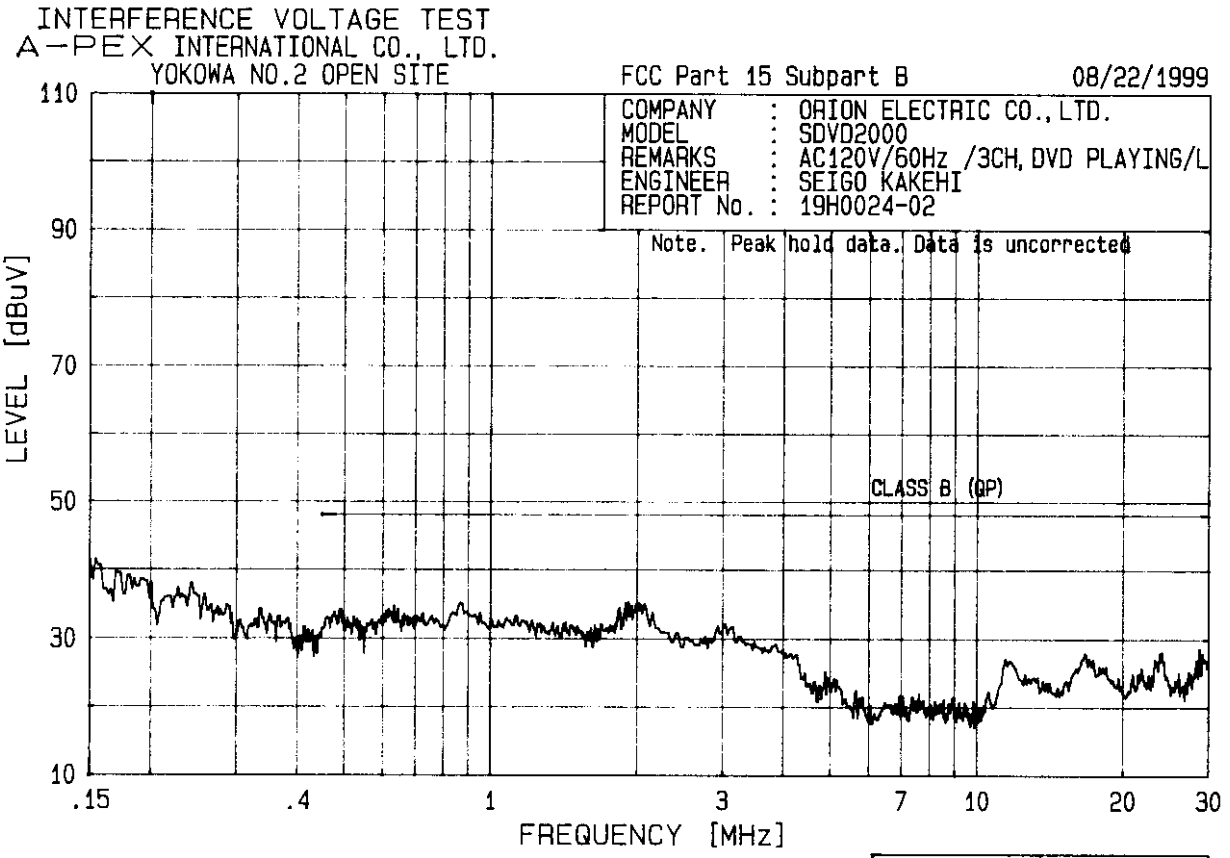
CONDUCTION TEST

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

COMPANY	: ORION ELECTRIC CO.,LTD.	REPORT No.	: 19H0024-02
TRADE NAME	: SANSUI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: DVD PLAYER	CLASS	: CLASS B
MODEL	: SDVD2000	DATE	: 8/22/1999
POWER	: AC120V/60Hz	FCC ID	: A7RM298A
DESCRIPTION	: DVD PLAYING		
REMARKS	: 3CH, 75% COLOR BARS	ENGINEER	: SEIGO KAKEHI




INTERFERENCE VOLTAGE TEST
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE
FCC Part 15 Subpart B
08/22/1999
COMPANY : ORION ELECTRIC CO.,LTD.
MODEL : SDVD2000
REMARKS : AC120V/60Hz /3CH, DVD PLAYING/N
ENGINEER : SEIGO KAKEHI
REPORT No. : 19H0024-02
Note. Peak hold data. Data is uncorrected
CLASS B (QP)
LEVEL [dBuV]
110
90
70
50
30
10
.15
.4
1
3
7
10
20
30
FREQUENCY [MHz]

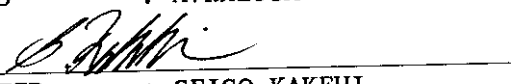

INTERFERENCE VOLTAGE TEST
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE
FCC Part 15 Subpart B
08/22/1999
COMPANY : ORION ELECTRIC CO.,LTD.
MODEL : SDVD2000
REMARKS : AC120V/60Hz /3CH, DVD PLAYING/L
ENGINEER : SEIGO KAKEHI
REPORT No. : 19H0024-02
Note. Peak hold data. Data is uncorrected
CLASS B (QP)
LEVEL [dBuV]
110
90
70
50
30
10
.15
.4
1
3
7
10
20
30
FREQUENCY [MHz]

Name	Page
	A3

DATA OF CONDUCTION TEST

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

COMPANY	: ORION ELECTRIC CO.,LTD.	REPORT NO.	: 19H0024-02
TRADE NAME	: SANSUI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: DVD PLAYER	CLASS	: CLASS B
MODEL	: SDVD2000	DATE	: 8/22/1999
POWER	: AC120V/60Hz	LISN TYPE	: LISN(C/N:LS-03)
DESCRIPTION	: DVD PLAYING	FCC ID	: A7RM298A
REMARKS	: 4CH,75% COLOR BARS		



ENGINEER : SEIGO KAKEHI

No	FREQ	N		L		ALL	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV	FACTOR	QP	AV	QP	AV	QP	AV
	[MHz]	[dBμV]		[dBμV]		[dB]	[dBμV]		[dBμV]		[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	-

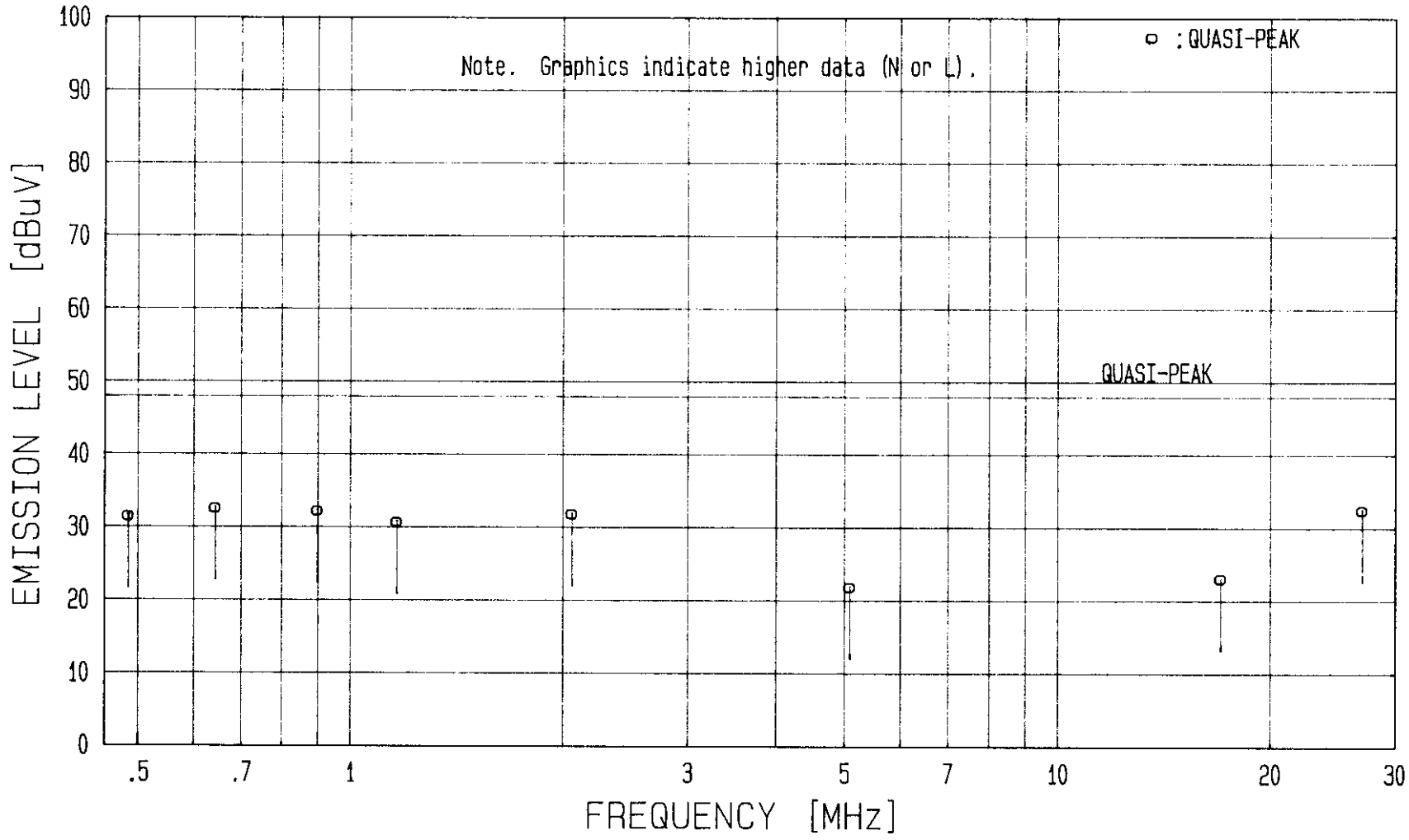
SAMPLE CALCULATION :
RESULT = READING(higher data of N/L) + FACTOR(include LISN.F+C.loss)

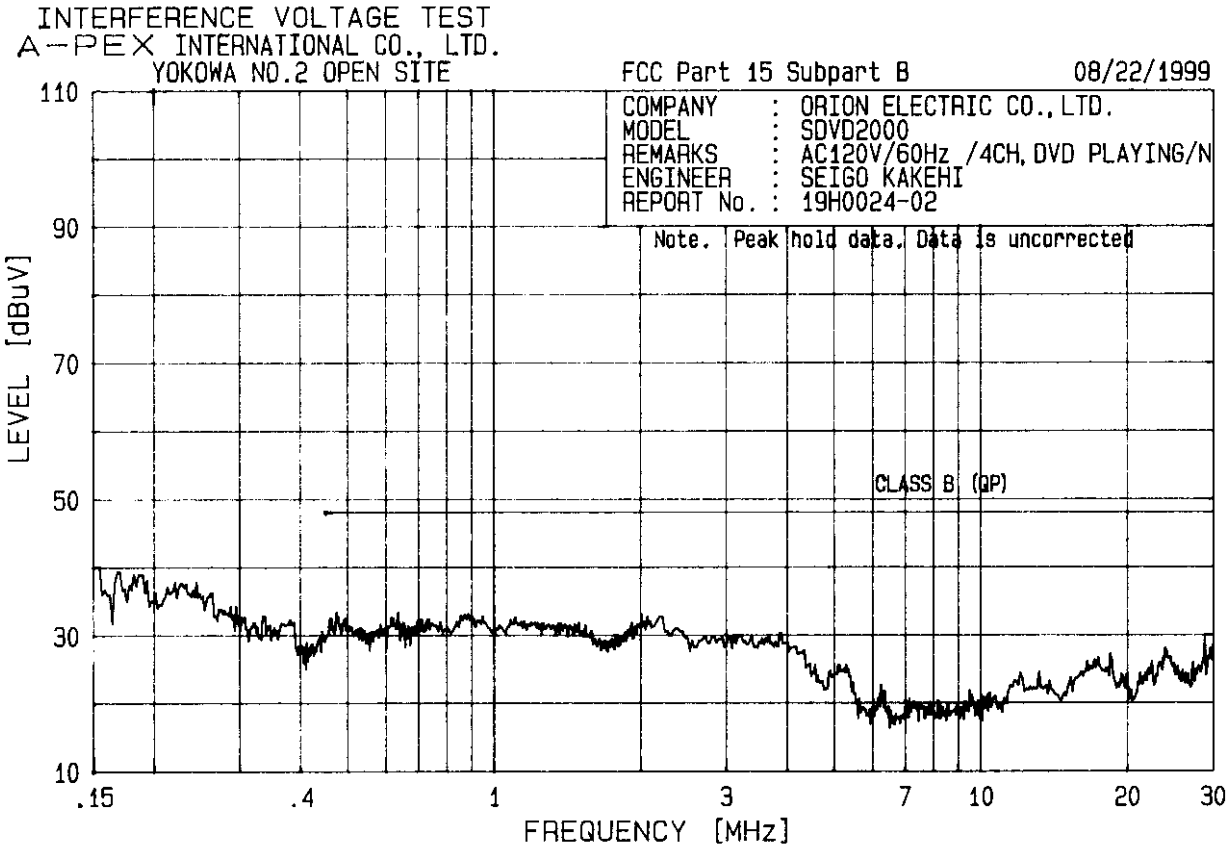
Except for the above table : adequate margin data below the limits.

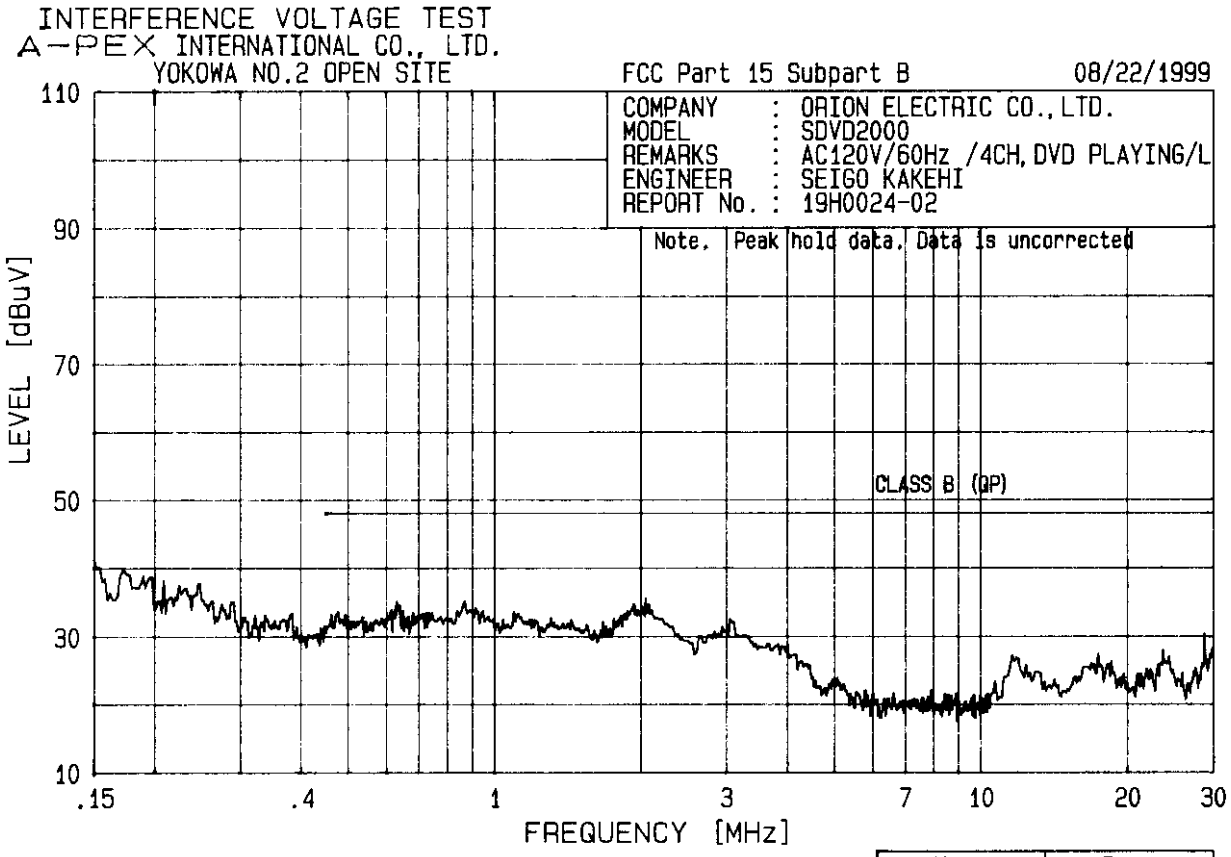
CONDUCTION TEST

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

COMPANY	: ORION ELECTRIC CO.,LTD.	REPORT No.	: 19H0024-02
TRADE NAME	: SANSUI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: DVD PLAYER	CLASS	: CLASS B
MODEL	: SDVD2000	DATE	: 8/22/1999
POWER	: AC120V/60Hz	FCC ID	: A7RM298A
DESCRIPTION	: DVD PLAYING		
REMARKS	: 4CH, 75% COLOR BARS	ENGINEER	: SEIGO KAKEHI




INTERFERENCE VOLTAGE TEST
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE
FCC Part 15 Subpart B
08/22/1999
COMPANY : ORION ELECTRIC CO., LTD.
MODEL : SDVD2000
REMARKS : AC120V/60Hz /4CH, DVD PLAYING/N
ENGINEER : SEIGO KAKEHI
REPORT No. : 19H0024-02
Note. Peak hold data. Data is uncorrected
CLASS B (QP)
LEVEL [dBuV]
110
90
70
50
30
10
.15
.4
1
3
7
10
20
30
FREQUENCY [MHz]


INTERFERENCE VOLTAGE TEST
A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE
FCC Part 15 Subpart B
08/22/1999
COMPANY : ORION ELECTRIC CO., LTD.
MODEL : SDVD2000
REMARKS : AC120V/60Hz /4CH, DVD PLAYING/L
ENGINEER : SEIGO KAKEHI
REPORT No. : 19H0024-02
Note. Peak hold data. Data is uncorrected
CLASS B (QP)
LEVEL [dBuV]
110
90
70
50
30
10
.15
.4
1
3
7
10
20
30
FREQUENCY [MHz]

Name	Page
	A6

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 HOR [dBμV] 3m	READING VER [dBμV] 3m	ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT HOR [dBμV/m] 3m	RESULT VER [dBμV/m] 3m	FCC LIMITS [dBμV/m] 3m	MARGIN HOR [dB]	MARGIN 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.

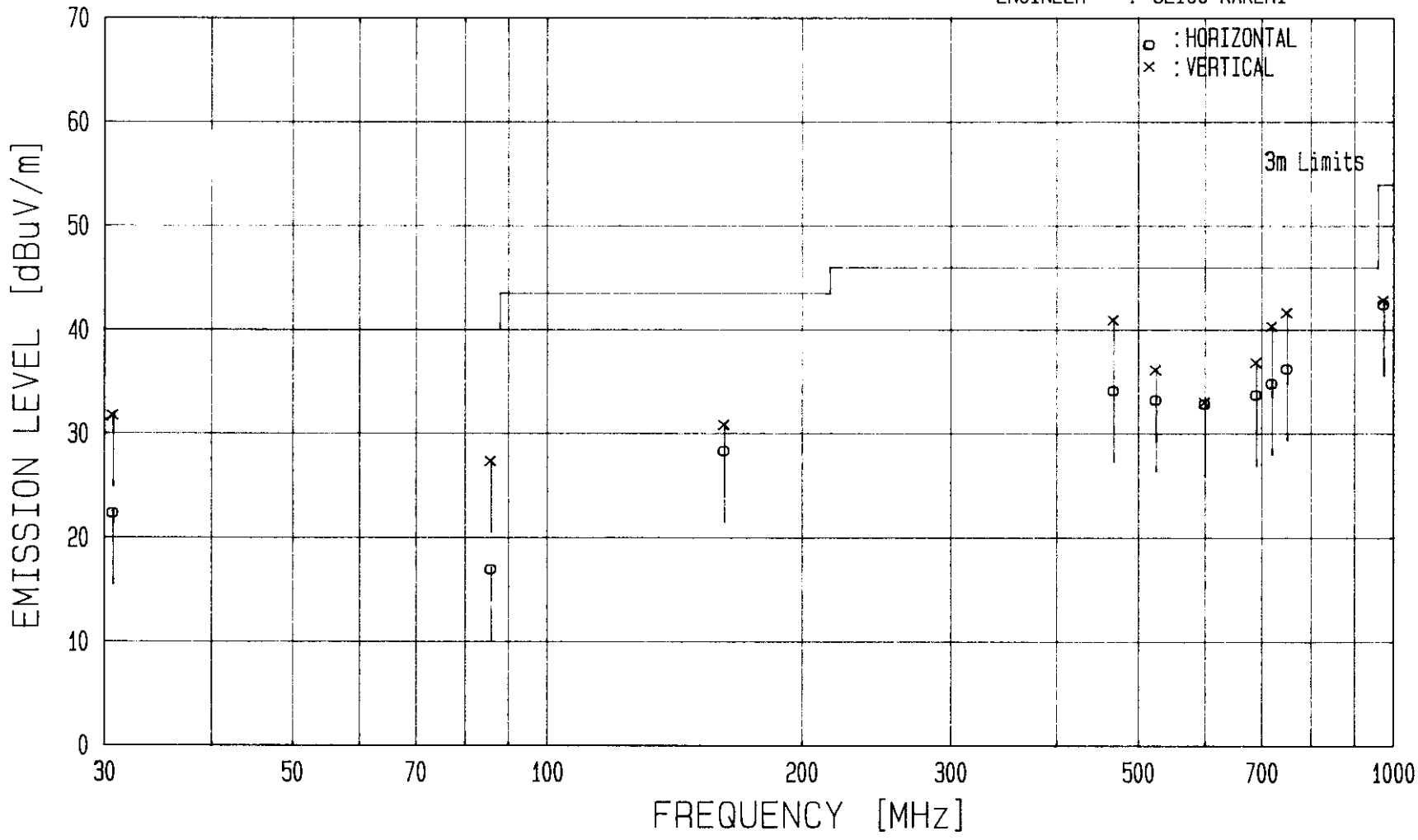
Except for the above table : adequate margin data below the limits.

RADIATION TEST

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

COMPANY	: ORION ELECTRIC CO.,LTD.	REPORT No.	: 19H0024-02
TRADE NAME	: SANSUI	DATE	: 8/22/1999
EQUIPMENT	: DVD PLAYER	REGULATION	: FCC Part 15 Subpart B
MODEL	: SDVD2000	CLASS	: CLASS B
POWER	: AC120V/60Hz	DISTANCE	: 3m
DESCRIPTION	: DVD PLAYING	FCC ID	: A7RM298A
REMARKS	: 3CH, 75% COLOR BARS		

ENGINEER : SEIGO KAKEHI



DATA OF RADIATION TEST

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

COMPANY	: ORION ELECTRIC CO.,LTD.	REPORT NO.	: 19H0024-02
TRADE NAME	: SANSUI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: DVD PLAYER	CLASS	: CLASS B
MODEL	: SDVD2000	TEST DISTANCE	: 3m
POWER	: AC120V/60Hz	ATTENUATOR	: 6dB
DESCRIPTION	: DVD PLAYING	FCC ID	: A7RM298A
REMARKS	: 4CH,75% COLOR BARS		
DATE	: 8/22/1999		

ENGINEER : SEIGO KAKEHI

No	FREQ [MHz]	ANT TYPE	READING HOR [dBμV] 3m	READING VER [dBμV] 3m	ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT HOR [dBμV/m] 3m	RESULT VER [dBμV/m] 3m	FCC LIMITS [dBμV/m] 3m	MARGIN HOR [dB]	MARGIN VER [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

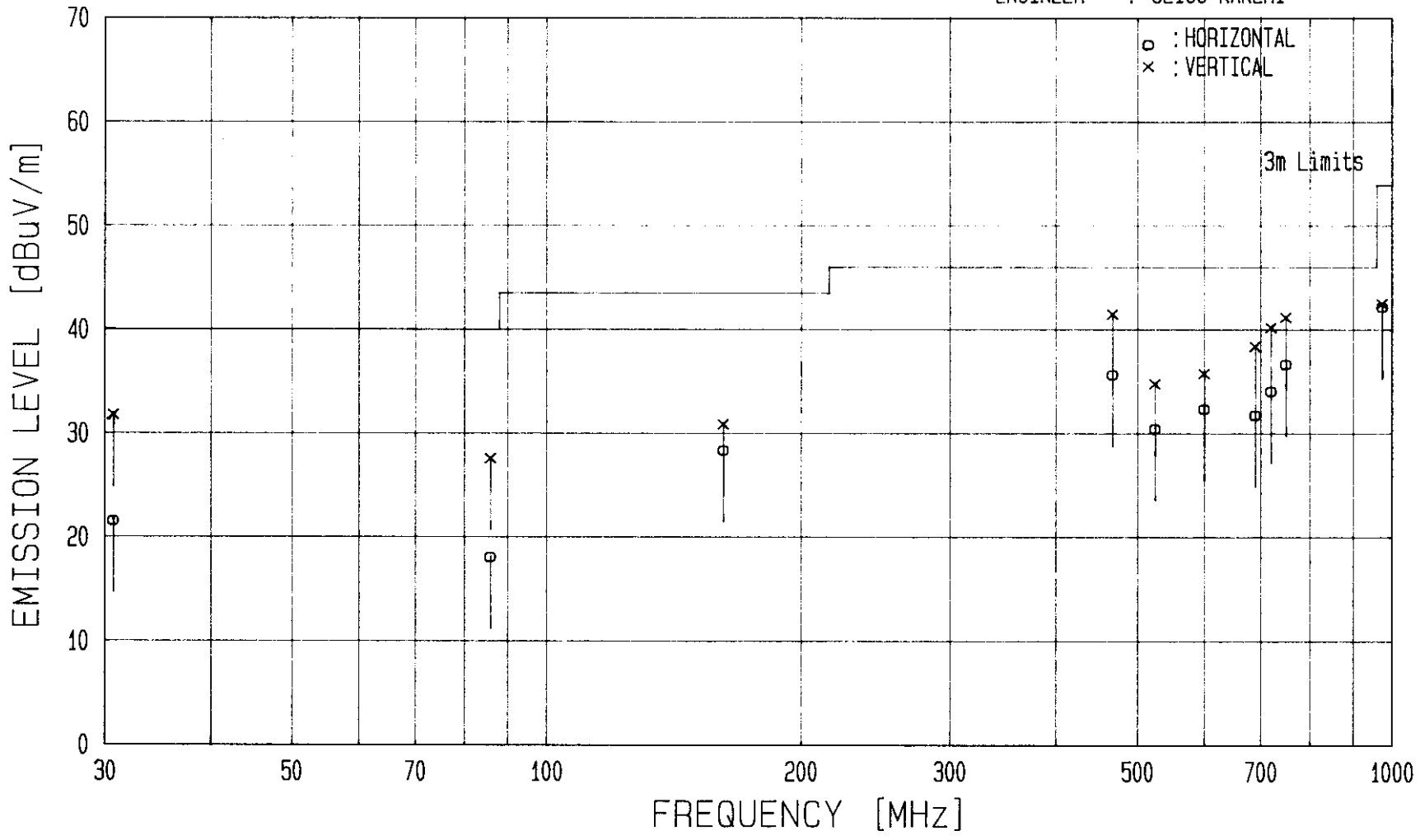
SAMPLE CALCULATION :
RESULT = READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

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

RADIATION TEST

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

COMPANY	: ORION ELECTRIC CO.,LTD.	REPORT No.	: 19H0024-02
TRADE NAME	: SANSUI	DATE	: 8/22/1999
EQUIPMENT	: DVD PLAYER	REGULATION	: FCC Part 15 Subpart B
MODEL	: SDVD2000	CLASS	: CLASS B
POWER	: AC120V/60Hz	DISTANCE	: 3m
DESCRIPTION	: DVD PLAYING	FCC ID	: A7RM298A
REMARKS	: 4CH, 75% COLOR BARS	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 [dBμV]

NO.	FREQ. [MHz]	READING [dBμV]	ATT. [dB]	RESULT [dBμV]	FCC LIMIT [dBμV]	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 [dBμV]

NO.	FREQ. [MHz]	READING [dBμV]	ATT. [dB]	RESULT [dBμV]	FCC LIMIT [dBμV]	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 [dBμV]

NO.	FREQ. [MHz]	READING [dBμV]	ATT. [dB]	RESULT [dBμV]	FCC LIMIT [dBμV]	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 [dBμV]

NO.	FREQ. [MHz]	READING [dBμV]	ATT. [dB]	RESULT [dBμV]	FCC LIMIT [dBμV]	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 [dBμV]

NO.	FREQ. [MHz]	READING [dBμV]	ATT. [dB]	AMP.GAIN [dB]	RESULT [dBμV]	FCC LIMIT [dBμV]	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 [dBμV]

NO.	FREQ. [MHz]	READING [dBμV]	ATT. [dB]	AMP.GAIN [dB]	RESULT [dBμV]	FCC LIMIT [dBμV]	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