



Certification EMI TEST REPORT

Test Report No. : 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Type of equipment : DVD/VCR
Model number : DVD2100-CA
FCC ID : A7RM2E5C
Test standard : FCC Part 15 Subpart B
ICES-003 Issue No.4 Class B
Test result : Complied

Similar model :

Model No.	Brand name	Model No.	Brand name
DVD2100-PA	DISNEY	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

1. This test report shall not be reproduced except in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this test report are traceable to the national or international standards.
5. This test report does not constitute an endorsement by NIST/NVLAP or U.S. Government.

Date of test : September 29 to October 5, 2004

Tested by:


Tsubasa Takayama
EMC Service

Approved by:


Hiroya Tabata
Leader of EMC Service

UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Contents

	Page
Section 1 : Client information	3
Section 2 : Equipment under test (E.U.T.)	3
Section 3 : Test specification, procedures & results	4
Section 4 : Operation of E.U.T. during tests	6
Section 5 : Conducted emission	7
Section 6 : Radiated emission	10
Section 7 : Antenna terminal voltage	13
Section 8 : RF output level / spurious emission	14
Section 9 : Antenna transfer switch	16
Section 10 : Picture sensitivity	17
Section 11 : Noise figure	18
 <u>Contents of Appendixes</u>	 19
Appendix 1 : Photographs of test set up	20
Appendix 2 : Data of EMI tests	24
Appendix 3: Test instruments	79

Section 1 : Client information

Company name : Orion Electric Co., Ltd.
Address : 41-1 Iehisa-cho, Takefu-shi, Fukui-ken, 915-8555 JAPAN
Telephone number : +81 778 23 0019
Facsimile number : +81 778 23 7799
Contact person : Hiroshi Tsujimoto

Section 2 : Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of equipment : DVD/VCR
Brand Name : DISNEY
Model number : DVD2100-CA
FCC ID : A7RM2E5C
Rating : AC 120 V / 60 Hz
Manufacturer : 1. World Electric (Thailand) Ltd.
236 Moo 2 Nongchark, Banbung, Chonburi 20170, Thailand
2. Korat Denki Ltd.
149 Moo 10 Tambol Chokchai, Amphur Chokchai, Nakhonratchasima
30190, Thailand
228 Moo 3 Tambol Nongbuasala, Amphur Muang, Nakhonratchasima
30000, Thailand
3. Orion America, Inc.
Hwy 41 North, Orion Place, Princeton, Indiana 47670, U.S.A
Receipt Date of Sample : September 26, 2004
Condition of EUT : Production Prototype
(Not for Sale: This sample is equivalent to mass-produced items.)

2.2 Product description

Model: DVD2100-CA (referred to as the EUT in this report) is a DVD/VCR.

The EUT specifications is as follows.

Tuner type : Quartz PLL frequency synthesized
I / F : 45.75 MHz (Picture), 41.25 MHz (Sound)
Receiving channel : VHF 2 – 13 ch / UHF 14 – 69 ch / CATV 1 – 125 ch
Antenna input : 75 ohm
Video signal : NTSC color
Power source : AC 120 V / 60 Hz, 18W
I / O terminal (Video) : RCA in 1Vp-p 75 ohm, RCA out 1 Vp-p 75 ohm
I / O terminal (Audio) : RCA in –8 dB 47 k ohm, RCA out –8 dB 1 k ohm

UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Section 3 : Test specification, procedures and results

3.1 Test specification

Test specification: FCC Part 15 Subpart B
Title : FCC 47 CFR Part 15 Radio Frequency Device
Subpart B Unintentional Radiators

Test Specification : ICES-003 Issue No. 4
Title : Spectrum Management
Interference-Causing Equipment Standard
Digital Apparatus
*ICES-003 (Issue No. 4) is based on FCC Part 15.

3.2 Procedures & results

Item	Test procedure	Limits	Worst margin	Result
Conducted emission	ANSI C63.4:2003 IEEE 213:1987	CISPR 22	17.4 dB (0.1751 MHz, N, TV Reception + Rec. 25dBmV)	Complied
Radiated emission	ANSI C63.4:2003 IEEE 187:1990	30–88 MHz: 100 uV/m 88–216 MHz: 150 uV/m 216–960 MHz: 200 uV/m above 960 MHz: 500 uV/m	3.6 dB (472.53 MHz, Vertical, TV Reception + Rec. 25dBmV)	Complied
Antenna terminal voltage	ANSI C63.4:2003	2 nW (at 75 ohm)	23.3 dB (624.56760 MHz, TV tuning / 621.42490 MHz, CATV tuning)	Complied
RF output level	ANSI C63.4:2003	Video signal: 3000 uV Aural signal: 671 uV	4.5 dB (61.25 MHz, 3ch: VCR Play / DVD Play)	Complied
Spurious emission		94.8 uV	19.7 dB (122.4900 MHz, 3ch, TV Reception + Rec. 0dBmV)	Complied
Transfer switch	ANSI C63.4:2003	9.5 dB	15.3 dB (67.2500 MHz, 4ch, VCR Play)	Complied
Picture sensitivity	ANSI C63.4:2003	8 dB	3.6 dB	Complied
Noise figure	FCC/OET MP:2:1986	14 dB	6.5 dB (55.25 MHz, 2ch)	Complied

For ICES-003, only the tests, which relate to the digital device of conducted emission and radiated emission, were performed.

3.3 Additions or deviations to standard

No addition, deviation or exclusion has been made from standards.

3.4 Confirmation

UL Apex Co., Ltd. hereby confirms that E.U.T., in the configuration tests, complies with the specifications
FCC Part15 Subpart B and ICES-003 Issue No. 4.

UL Apex Co., Ltd.
Yokowa EMC Lab.

108 Yokowa-cho, Ise-shi, Mie-ken 516-1106 JAPAN
Telephone: +81 596 39 1485
Facsimile: +81 596 39 0232

3.5 Uncertainty**Conducted emission (150 kHz – 30 MHz)**

The measurement uncertainty (with a 95% confidence level) for this test was ± 1.74 dB.

The data listed in this test report has enough margin, more than site margin.

Radiated emission

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ± 4.4 dB.

The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ± 4.8 dB.

The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ± 5.8 dB.

The data listed in this test report meets the limits unless the uncertainty is taken into consideration.

Antenna terminal voltage

The measurement uncertainty (with a 95% confidence level) for this test was ± 3.48 dB.

The data listed in this test report has enough margin, more than site margin.

RF output level test / spurious emission test

The measurement uncertainty (with a 95% confidence level) for this test was ± 3.48 dB.

The data listed in this test report has enough margin, more than site margin.

Antenna transfer switch

The measurement uncertainty (with a 95% confidence level) for this test was ± 3.48 dB.

The data listed in this test report has enough margin, more than site margin.

Picture sensitivity test

The measurement uncertainty (with a 95% confidence level) for this test was ± 1.0 dB.

The data listed in this test report has enough margin, more than site margin.

Noise Figure Test

The measurement uncertainty (with a 95% confidence level) for this test was ± 1.2 dB.

The data listed in this test report has enough margin, more than site margin.

3.7 Test location

UL Apex Co., Ltd. Yokowa EMC Lab.

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

TEL : +81 596 39 1485

FAX : +81 596 39 0232

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 shielded room	5.5 x 6.4 x 2.7	No.7 shielded room	9.3 x 3.4 x 2.7
No.2 shielded room	4.5 x 3.6 x 2.7	No.1 EMS lab. (Full-anechoic chamber)	5.0 x 8.0 x 3.5
No.3 shielded room	3.6 x 7.2 x 2.4	No.2 EMS lab. (Full-anechoic chamber)	4.0 x 7.0 x 3.5
No.4 shielded room	5.5 x 5.0 x 2.4		
No.5 shielded room	5.5 x 4.3 x 2.5		
No.6 shielded room	5.2 x 3.2 x 2.9		

No.3 open site

This site has been fully described in a report submitted to FCC office, and listed on September 25, 2003.

(Registration number: 90412)

*NVLAP Lab. Code : 200109-0

3.8 Test setup, Data of EMI & Test instruments

Please refer to Appendix 1 to 3.

UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Section 4 : Operation of E.U.T. during tests

4.1 Operating modes

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

The sequence in used : * TV Reception + Rec. mode (0 dBmV input / 25 dBmV input)

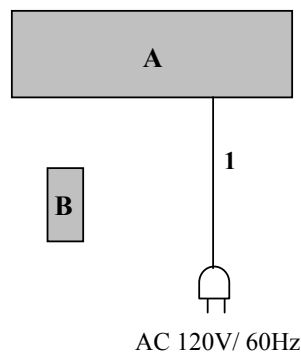
* VCR Play mode

* DVD Play mode

Operation : The EUT was tested at above operation mode.

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

4.2 Configuration and peripherals



* Cabling was taken into consideration and test data was taken under worse case conditions.

Description of EUT and support equipment

Sign	Item	Model number	Serial number	Manufacturer	FCC ID	Remark
A	DVD/VCR	DVD2100-CA	—	Orion Electric Co., Ltd.	A7RM2E5C	EUT
B	Remote Controller	—	—	Orion Electric Co., Ltd.	-	EUT

List of cable used

No.	Item	Length (m)	Shield	Backshell material
1	AC Power Cable	1.6	Unshielded	Polyvinyl chloride

UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Section 5 : Conducted emission

5.1 Operation environment

The test was carried out in No.2 shielded room.

Date : October 1, 2004
Temperature : See data
Humidity : See data

5.2 Test configuration

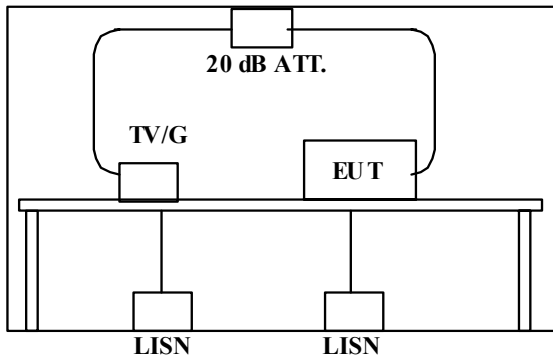
EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT was aligned and flushed with rear of tabletop. All other surfaces of tabletop was at least 80 cm from any other grounded conducting surface. I/O cables and AC cable were bundled in center. I/O cables 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 ohm connectors of the LISN were resistively terminated in 50 ohm when not connected to the measuring equipment.

A drawing of the set up is shown in figure 1 and photographs in Appendix 1.

Figure 1. Conducted emission

TV Reception + Rec. mode (0 dBmV input / 25 dBmV input)

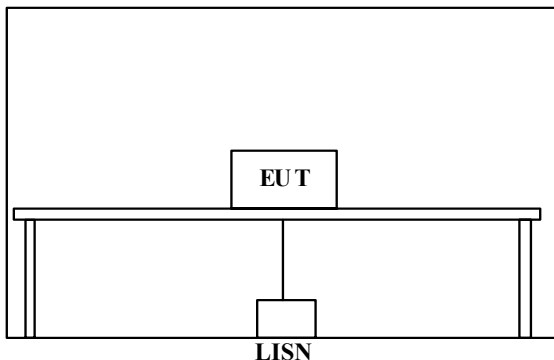
Shielded room



RF in: TV signal generator connected
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
S-Video out: 75 ohm terminated with S-Video cable
RF output: 75 ohm terminated with RF output cable
Coaxial out: 75 ohm terminated with coaxial cable

VCR Playback mode

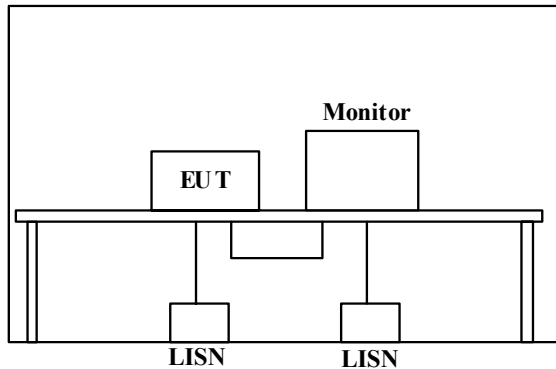
Shielded room



RF in: 75 ohm terminated with RF input cable
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
S-Video out: 75 ohm terminated with S-Video cable
RF output: 75 ohm terminated with RF output cable
Coaxial out: 75 ohm terminated with coaxial cable

UL Apex Co., Ltd.
Yokowa EMC Lab.

108 Yokowa-cho, Ise-shi, Mie-ken 516-1106 JAPAN
Telephone: +81 596 39 1485
Facsimile: +81 596 39 0232

DVD Play mode**Shielded room**

RF in: 75 ohm terminated with RF input cable
Rear video out: monitor connected
Rear audio out: monitor connected
S-Video out: 75 ohm terminated with S-Video cable
RF output: 75 ohm terminated with RF output cable
Coaxial out: 75 ohm terminated with coaxial cable

5.3 Test conditions

Frequency range : 0.15 MHz – 30 MHz
EUT position : Table top
EUT operation mode : TV Reception + Rec., VCR Play, DVD Play

5.4 Test procedure

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT within a shielded room. The EUT was connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection has been performed. The measurements have been performed with a quasi-peak detector and if required, with an average detector.

EUT and desired signal generator should connect through 20 dB attenuator.

The conducted emission measurements were made with the following detector function of the test receiver.

Detector Type : QP
IF Bandwidth : 10 kHz

5.5 Test result**Passed**

Please refer to summary of the test results in Appendix 2.

Test engineer: Tsubasa Takayama

UL Apex Co., Ltd.**Yokowa EMC Lab.**

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Section 6 : Radiated emission

6.1 Operation environment

The test was carried out in No.3 open site.

Date : October 1, 2004
Temperature : See data
Humidity : See data

6.2 Test configuration

EUT was placed on a platform of nominal size, 1 m by 1.5 m (No.1 open site) or 1m by 2.3m (No.3 open site), raised 80 cm above the conducting ground plane.

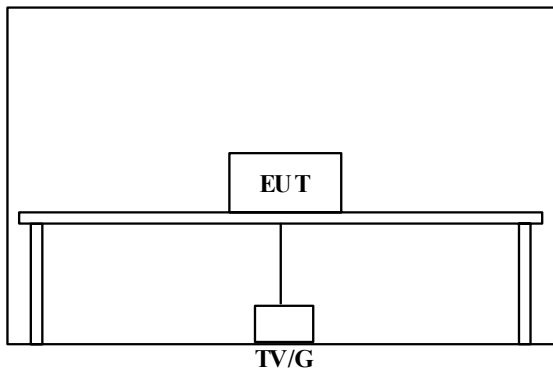
The rear of EUT was aligned and flushed with rear of tabletop. AC cable was bundled in center. I/O cables were hanged 40 cm height to the ground plane. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

A drawing of the set up is shown in figure 2 and photographs in Appendix 1.

Figure 2. Radiated emission

TV Reception + Rec. mode (0 dBmV / 25 dBmV)

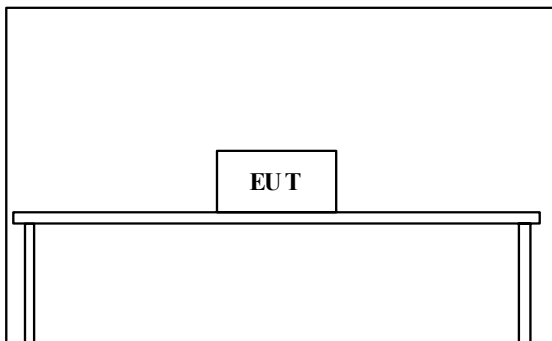
Open test site



RF in: TV signal generator connected
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
S-Video out: 75 ohm terminated with S-Video cable
RF output: 75 ohm terminated with RF output cable
Coaxial out: 75 ohm terminated with coaxial cable

VCR Playback mode

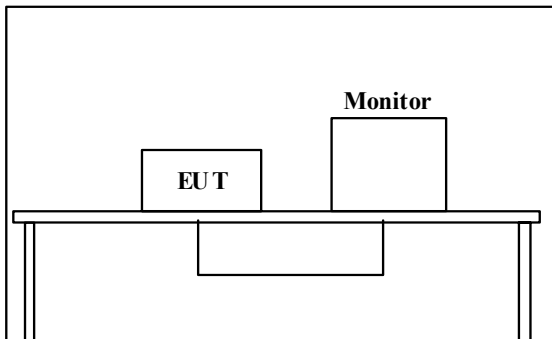
Open test site



RF in: 75 ohm terminated with RF input cable
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
S-Video out: 75 ohm terminated with S-Video cable
RF output: 75 ohm terminated with RF output cable
Coaxial out: 75 ohm terminated with coaxial cable

DVD Play mode

Open test site



RF in: 75 ohm terminated with RF input cable
Rear video out: monitor connected
Rear audio out: monitor connected
S-Video out: 75 ohm terminated with S-Video cable
RF output: 75 ohm terminated with RF output cable
Coaxial out: 75 ohm terminated with coaxial cable

6.3 Test conditions

Frequency range : 30 MHz – 2000 MHz
Test distance : 3 m
EUT position : Table top
EUT operation mode : TV Reception + Rec., VCR Play, DVD Play

6.4 Test procedure

The Radiated Electric Field Strength intensity has been measured on an open test site with a ground plane and at a distance of 3 m.

Pre check measurements were performed within a search coil at high level of 80MHz – 90MHz, 270MHz – 290MHz and 500MHz – 700MHz in a shielded room to distinguish disturbances of EUT from the ambient noise. Measurements were performed with quasi-peak detector, peak detector and average detector. The measuring antenna height was varied between 1 and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization.

The radiated emission measurements were made with the following detector function of the test receiver and spectrum analyzer.

	<u>30-1000MHz (Test receiver)</u>	<u>1000-2000MHz (Spectrum analyzer)</u>
Detector Type	: QP	: PK : AV
IF Bandwidth	: 120kHz	: RBW 1MHz / VBW 1MHz : RBW 1MHz/ VBW 10Hz

6.5 Test result

Passed

Please refer to summary of the test results in Appendix 2.

Test engineer: Tsubasa Takayama

Section 7 : Antenna terminal voltage

7.1 Operation environment

The test was carried out in No.7 shielded room.

Date : September 29, 2004

Temperature : See data

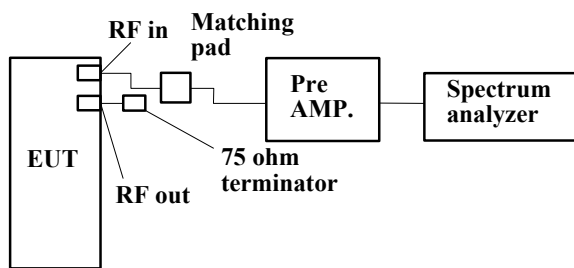
Humidity : See data

7.2 Test configuration

The EUT was placed on a non-metallic platform 0.8 m above a reference ground plane.

A drawing of the set up is shown in figure 3 and photographs in Appendix 1.

Figure 3. Antenna terminal voltage



7.3 Test conditions

Frequency range : 30 MHz – 2000 MHz

EUT position : Table top

EUT operation mode : Tuning (TV receiver / CATV receiver)

7.4 Test procedure

Connect EUT and spectrum analyzer through pre-amplifier. Set EUT to CH investigation mode then measure the voltage of local leakage from antenna terminal. Spectrum analyzer should be hold in maximum mode during the measurement.

Detector Type : Peak (30-2000 MHz)

7.5 Test result

Passed

Please refer to summary of the test results in Appendix 2.

Test engineer: Tsubasa Takayama

Section 8 : RF output level / spurious emission

8.1 Operation environment

The test was carried out in No.7 shielded room.

Date : October 3, 2004

Temperature : See data

Humidity : See data

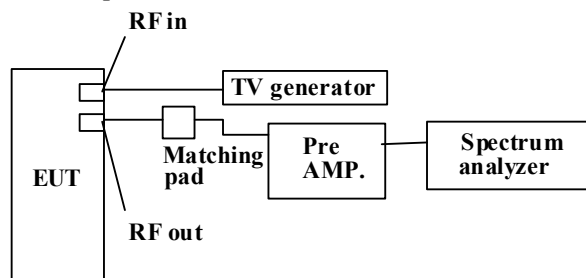
8.2 Test configuration

The EUT was placed on a non-metallic platform 0.8 m above a reference ground plane.

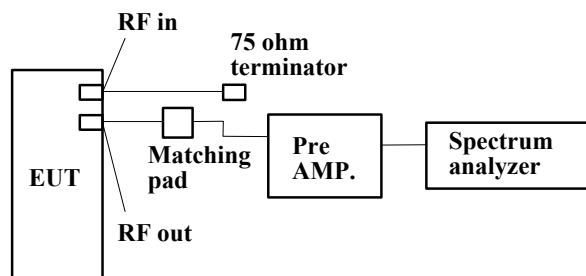
A drawing of the set up is shown in figure 4 and photographs in Appendix 1.

Figure 4. RF output level

TV Reception + Rec. mode



VCR Play mode and DVD Play mode



8.3 Test conditions

EUT position : Table top

EUT operation mode : TV Reception + Rec., VCR Play, DVD Play

8.4 Test procedure

EUT was connected spectrum analyzer through matching pad by accessory cable. RF channel selected 3ch or 4ch. Picture carrier, sound carrier and spurious levels are measured. Both sound carrier levels (upper and lower side bands) of modulator output are measured.

Detector Type : Peak

8.5 Test result

Passed

Please refer to summary of the test results in Appendix 2.

Test engineer: Tsubasa Takayama

UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Section 9 : Antenna transfer switch

9.1 Operation environment

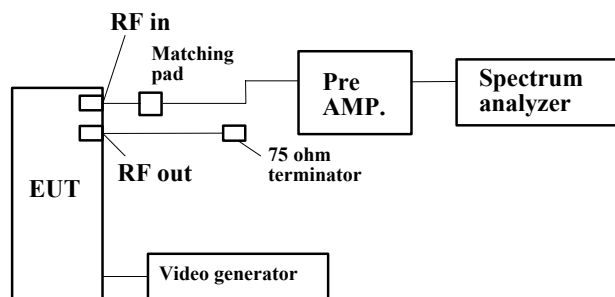
The test was carried out in No.7 shielded room.

Date : October 5, 2004
Temperature : See data
Humidity : See data

9.2 Test configuration

The EUT was placed on a non-metallic platform 0.8 m above a reference ground plane.
A drawing of the set up is shown in figure 5 and photographs in Appendix 1.

Figure 5. Transfer switch



9.3 Test conditions

EUT position : Table top
EUT operation mode : VCR Play, DVD Play

9.4 Test procedure

EUT was connected spectrum analyzer through matching pad by accessory cable. RF channel selected 3ch or 4ch. The EUT exercised AV input + Rec. mode and Playback mode during the test, and interference signals were measured from RF input terminal.

Detector Type : Peak

9.5 Test result

Passed

Please refer to summary of the test results in Appendix 2.

Test engineer: Tsubasa Takayama

Section 10 : Picture sensitivity

10.1 Operation environment

The test was carried out in No.7 shielded room.

Date : September 30, 2004

Temperature : See data

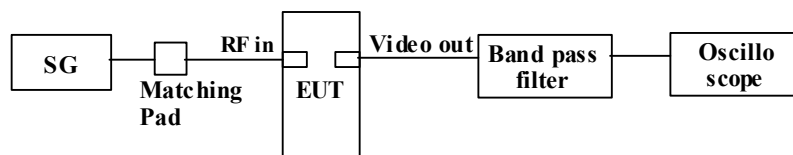
Humidity : See data

10.2 Test configuration

The EUT was placed on a non-metallic platform 0.8 m above a reference ground plane.

A drawing of the set up is shown in figure 6 and photographs in Appendix 1.

Figure 6. Picture sensitivity



10.3 Test conditions

EUT position : Table top

EUT operation mode : TV Reception

10.4 Test procedure

Signal generator setup is as follows, (Example: 2ch – 55.25 MHz, AM, 1 kHz, 30 %)

The EUT was tuned to appropriate channel.

Output level of signal generator was adjusted to near the frequency output level of EUT output.

EUT output level was adjusted to maximum output level by frequency adjustment of signal generator.

Signal generator output level was adjusted to reference output level of EUT and output level had read.

10.5 Test result

Passed

Please refer to summary of the test results in Appendix 2.

Test engineer: Tsubasa Takayama

UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Section 11 : Noise figure

11.1 Operating environment

The test was carried out in No.7 shielded room.

Date : September 30, 2004

Temperature : See data

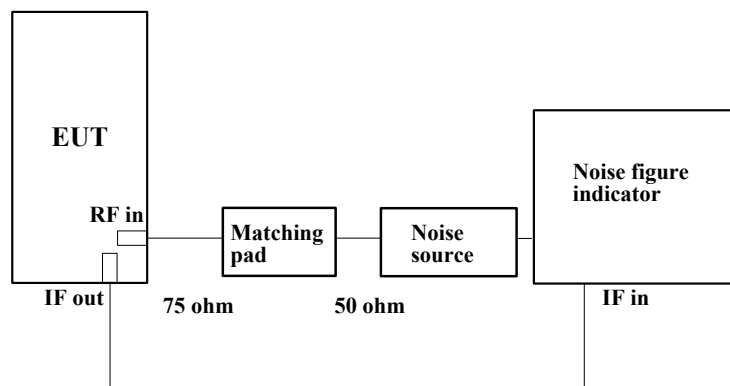
Humidity : See data

11.2 Test configuration

The EUT was placed on a non-metallic table.

A drawing of the set up is shown in figure 7 and photographs in Appendix 1.

Figure 7. Noise figure



11.3 Test condition

EUT position : Table top

EUT operation mode : TV Reception

11.4 Test procedure

This test should be performed in a shielded room or an low noise environment. Connect solid state noise source to antenna input terminal of EUT. Connect IF output terminal of EUT to noise meter through ceramic condenser. Measurement has been performed for VHF,UHF, Mid-band and Super-band receiver range.

11.5 Test result

Passed

Please refer to summary of the test results in Appendix 2.

Test engineer: Tsubasa Takayama

UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Appendix 1 : Photographs of test set up

Page 17 :	Test set up of conducted emission
Page 18 :	Test set up of radiated emission
Page 19 :	Test set up of antenna terminal voltage
Page 20 :	Test set up of RF output level / spurious emission
Page 21 :	Test set up of antenna transfer switch
Page 22 :	Test set up of picture sensitivity
Page 23 :	Test set up of noise figure

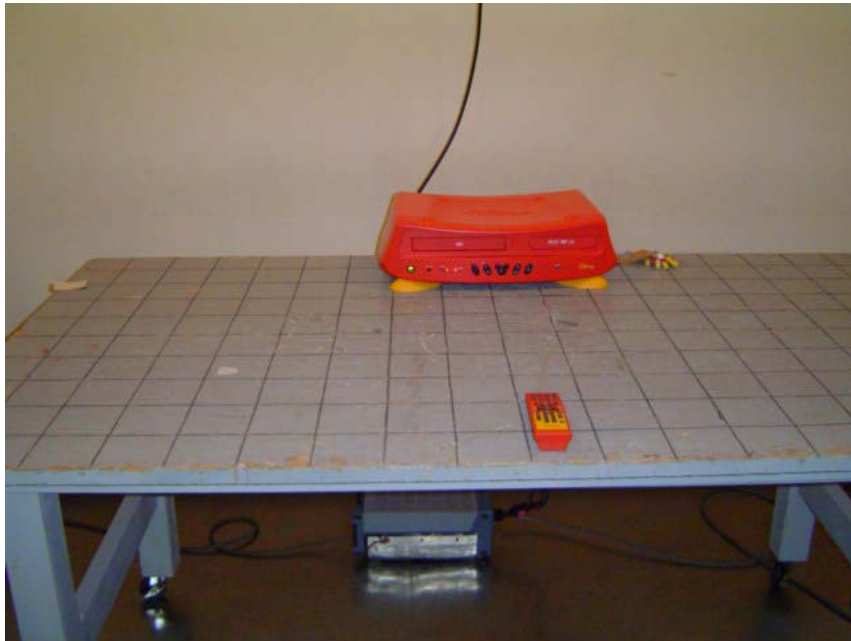
Appendix 2 : Data of EMI tests

Page 24 - 35 :	Conducted emission
Page 36 - 58 :	Radiated emission
Page 59 - 60 :	Antenna terminal voltage
Page 61 - 72 :	RF output level / spurious emission
Page 73 - 76 :	Antenna transfer switch
Page 77 :	Picture sensitivity
Page 78 :	Noise figure

Appendix 3 : Test instruments

Page 79 :	Test instruments
-----------	------------------

Conducted emission



UL Apex Co., Ltd.

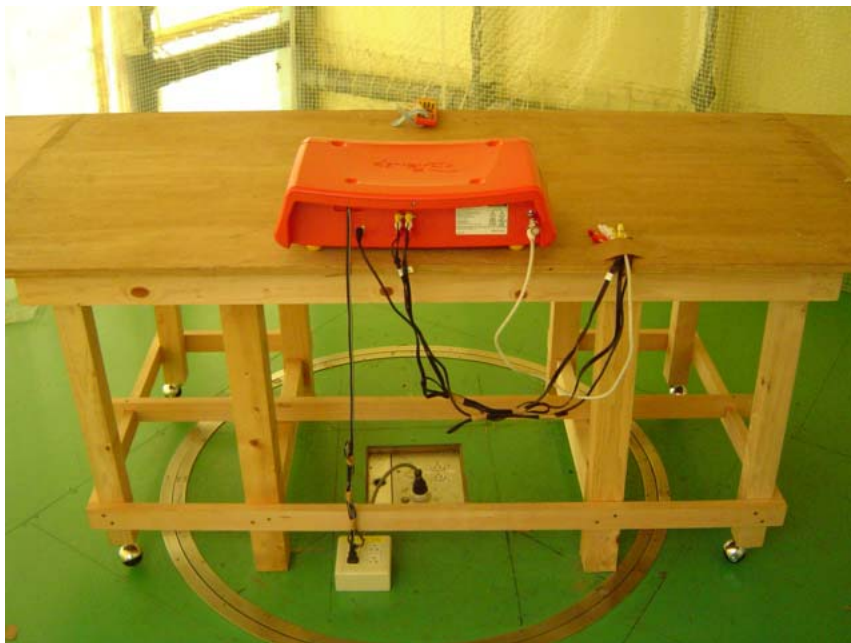
Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Radiated emission



UL Apex Co., Ltd.

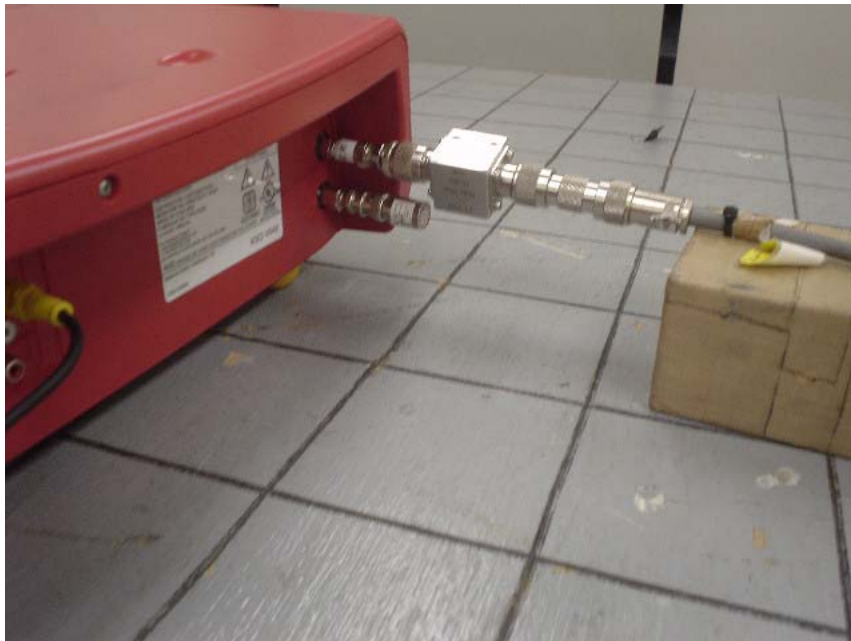
Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Antenna terminal voltage



UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

RF output level / spurious emission



UL Apex Co., Ltd.

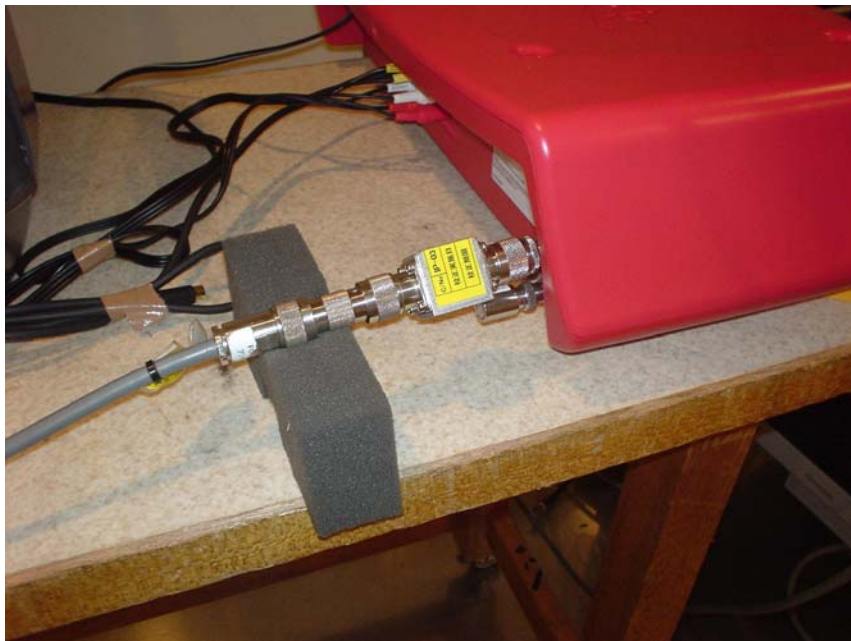
Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Antenna transfer switch



UL Apex Co., Ltd.

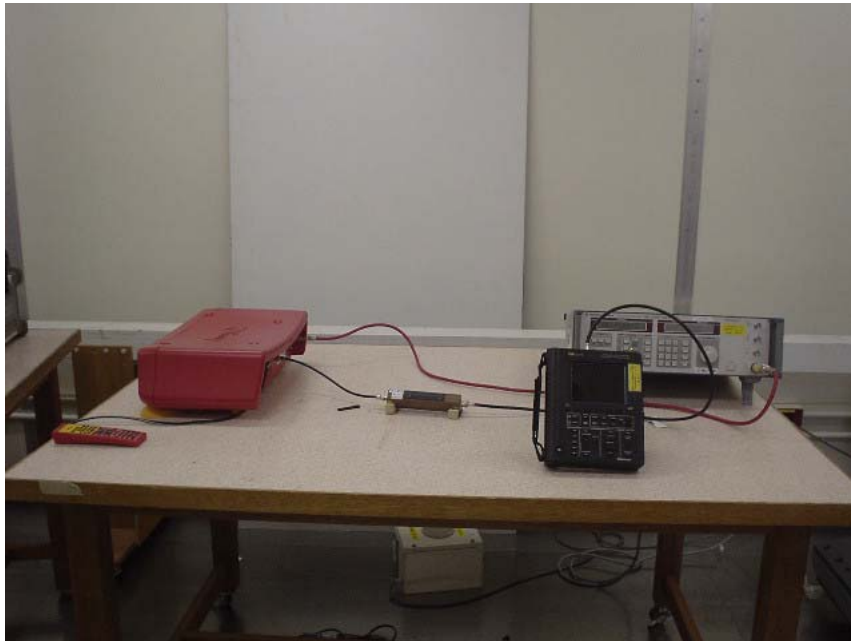
Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Picture sensitivity



UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Noise figure



UL Apex Co., Ltd.

Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.

YOKOWA No.2 SHIELD TEST ROOM

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec(0dBmV)
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μV]	AV [dB μV]	QP [dB μV]	AV [dB μV]				QP [dB]	AV [dB μV]	QP [dB μV]	AV [dB μV]	QP [dB μV]	AV [dB]
1.	0.1776	46.4	-	46.5	-	0.1	0.2	0.0	46.8	-	64.6	54.6	17.8	-
2.	0.4426	27.2	-	28.1	-	0.1	0.2	0.0	28.4	-	57.0	47.0	28.6	-
3.	0.7987	28.6	-	28.6	-	0.1	0.2	0.0	28.9	-	56.0	46.0	27.1	-
4.	1.3324	29.8	-	28.9	-	0.1	0.3	0.0	30.2	-	56.0	46.0	25.8	-
5.	3.5800	36.6	-	36.7	-	0.1	0.3	0.0	37.1	-	56.0	46.0	18.9	-
6.	14.7000	32.3	-	31.8	-	0.7	0.6	0.0	33.6	-	60.0	50.0	26.4	-

CALCULATION: READING + LISN FACTOR + CABLE LOSS + ATTEN.

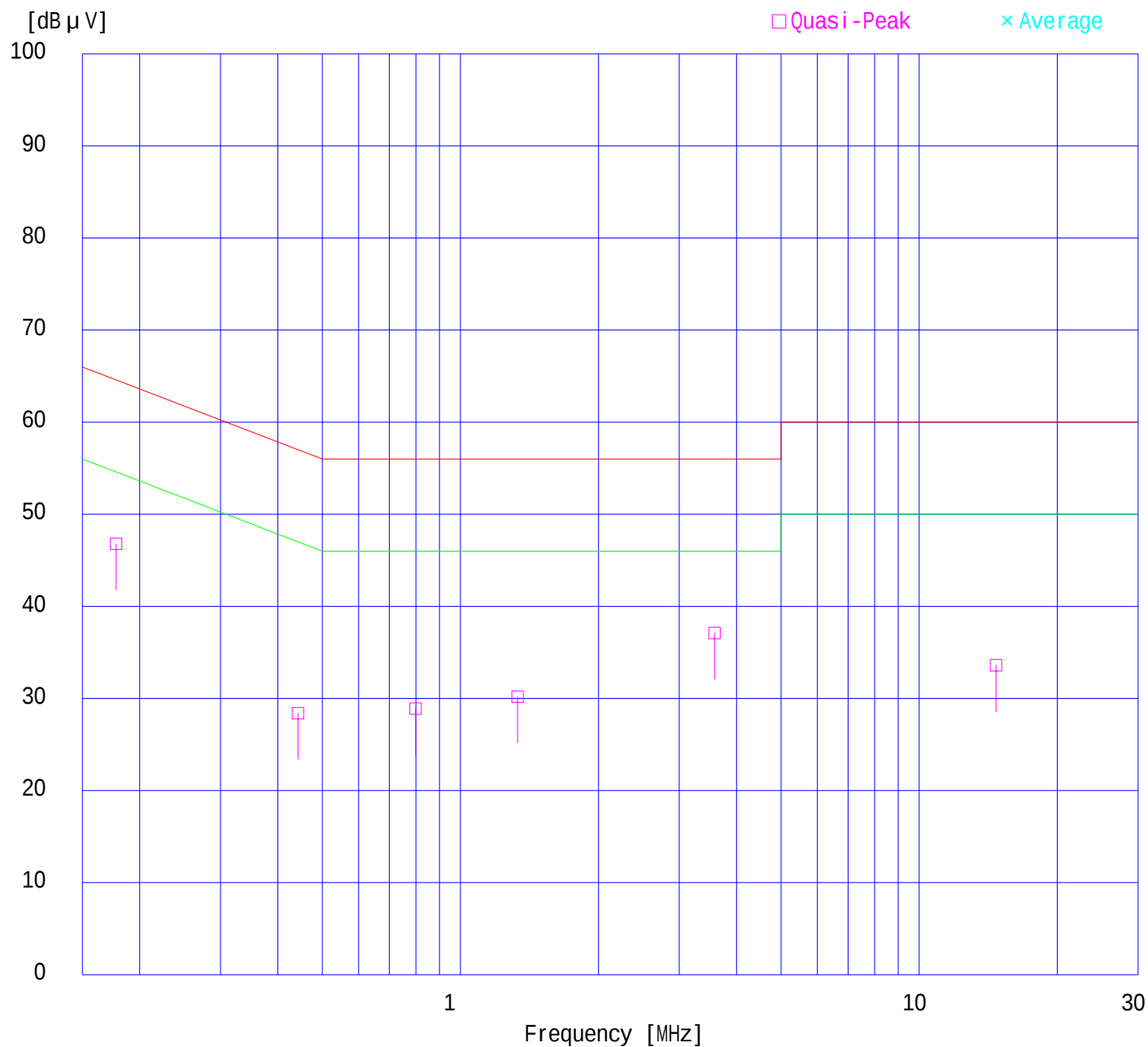
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.2 SHIELD TEST ROOM
Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec(0dBmV)
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

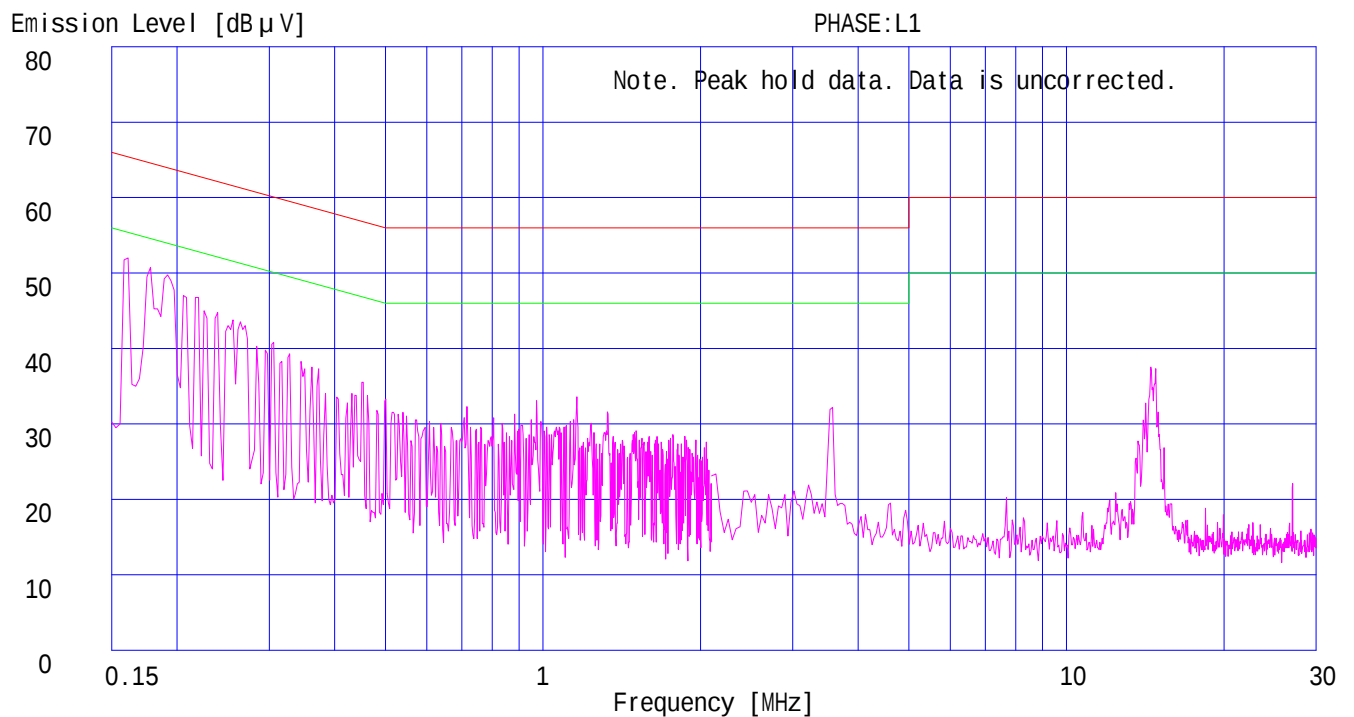
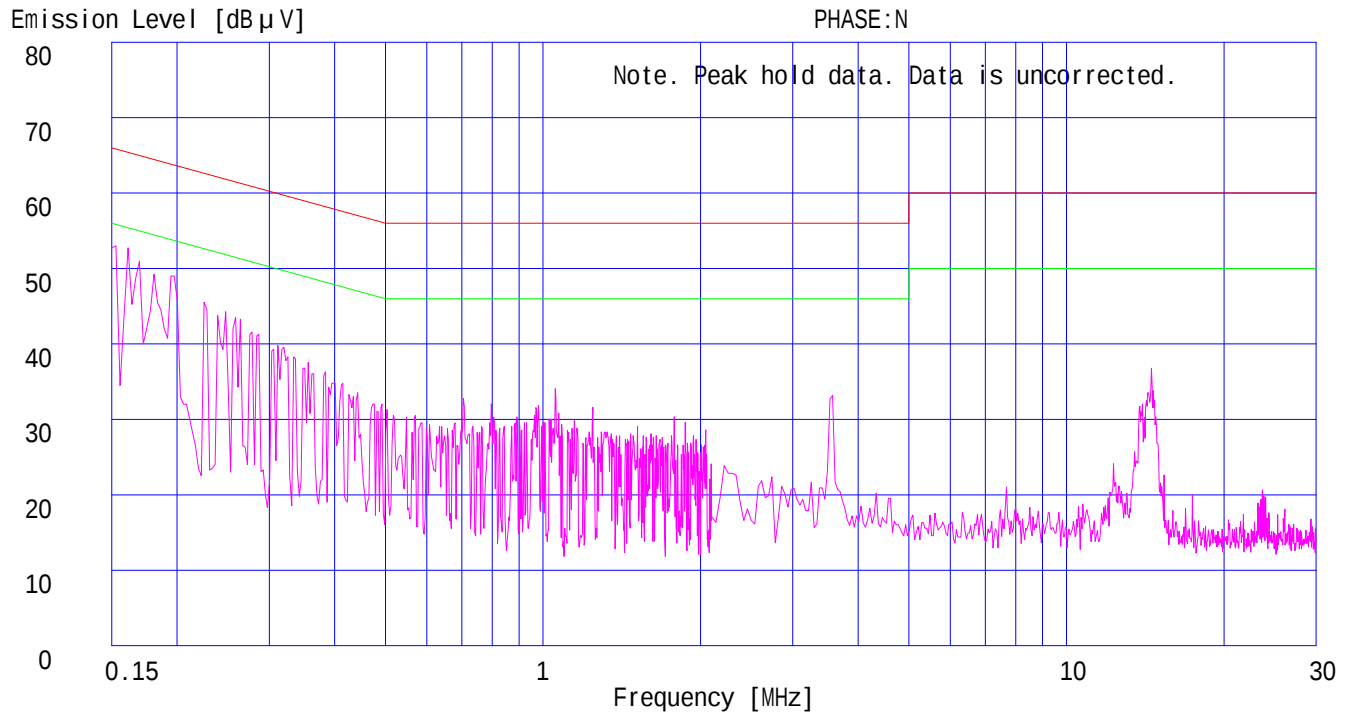
UL Apex Co., Ltd.

YOKOWA No.2 SHIELD TEST ROOM

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec(0dBmV)
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation 1 : FCC Part15B CLASS B(2003)
Regulation 2 : None

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.

YOKOWA No.2 SHIELD TEST ROOM

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec(25dBmV)
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μV]	AV [dB μV]	QP [dB μV]	AV [dB μV]				QP [dB]	AV [dB μV]	QP [dB μV]	AV [dB μV]	QP [dB μV]	AV [dB]
1.	0.1751	47.0	-	46.7	-	0.1	0.2	0.0	47.3	-	64.7	54.7	17.4	-
2.	0.3440	30.3	-	30.3	-	0.1	0.2	0.0	30.6	-	59.1	49.1	28.5	-
3.	0.7997	28.7	-	28.7	-	0.1	0.2	0.0	29.0	-	56.0	46.0	27.0	-
4.	1.3322	28.4	-	28.4	-	0.1	0.3	0.0	28.8	-	56.0	46.0	27.2	-
5.	3.5783	36.6	-	36.5	-	0.1	0.3	0.0	37.0	-	56.0	46.0	19.0	-
6.	14.5200	31.5	-	31.8	-	0.7	0.6	0.0	33.1	-	60.0	50.0	26.9	-

CALCULATION: READING + LISN FACTOR + CABLE LOSS + ATTEN.

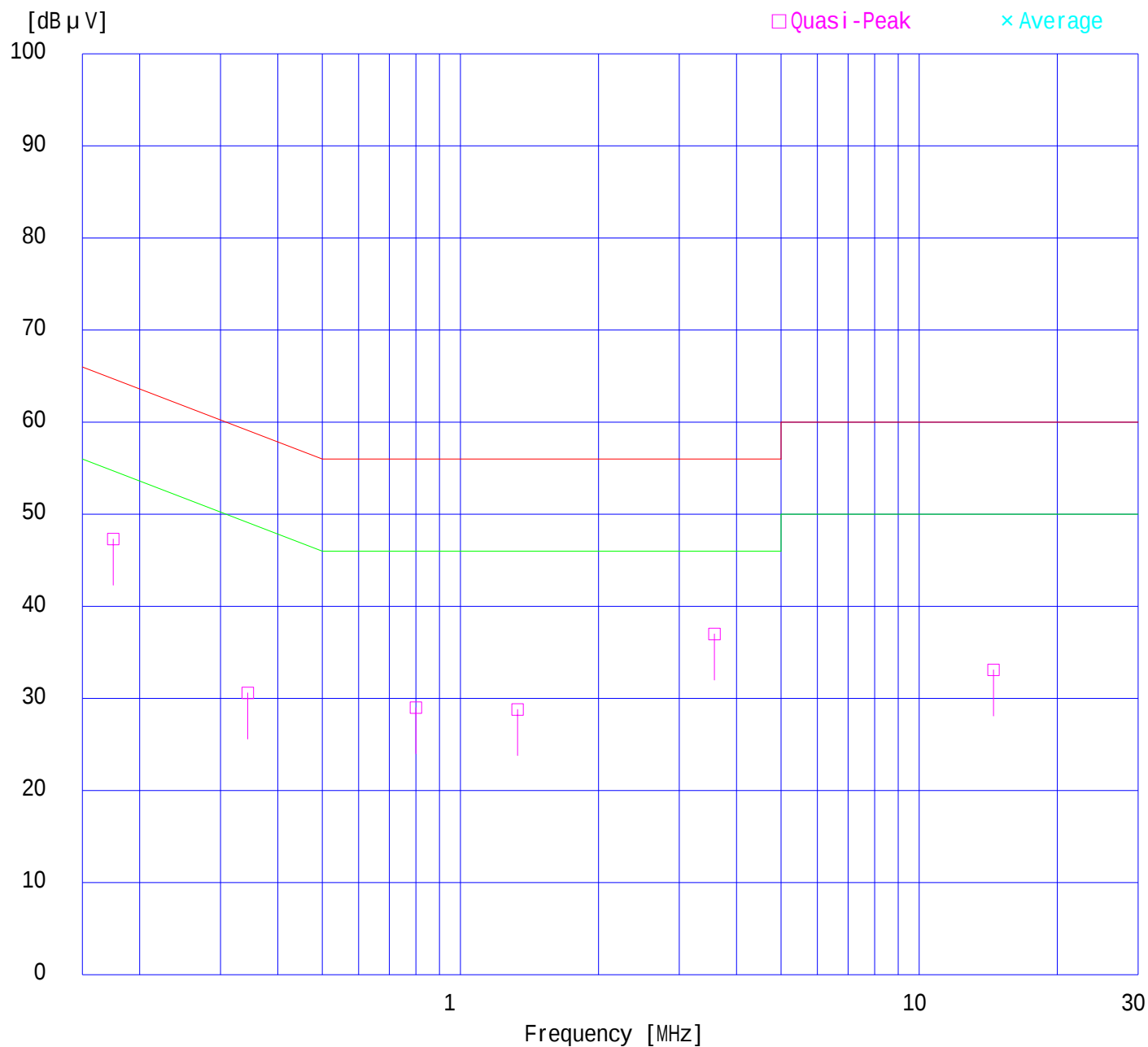
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.2 SHIELD TEST ROOM
Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec(25dBmV)
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

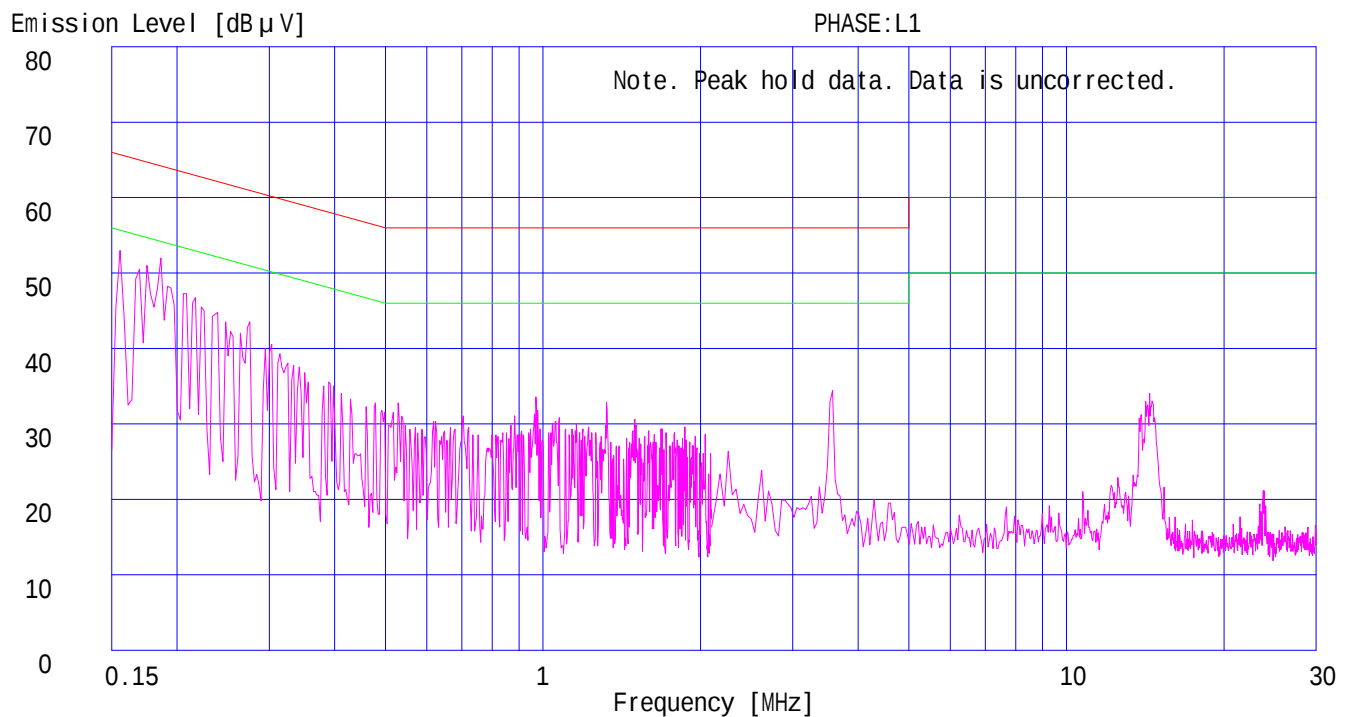
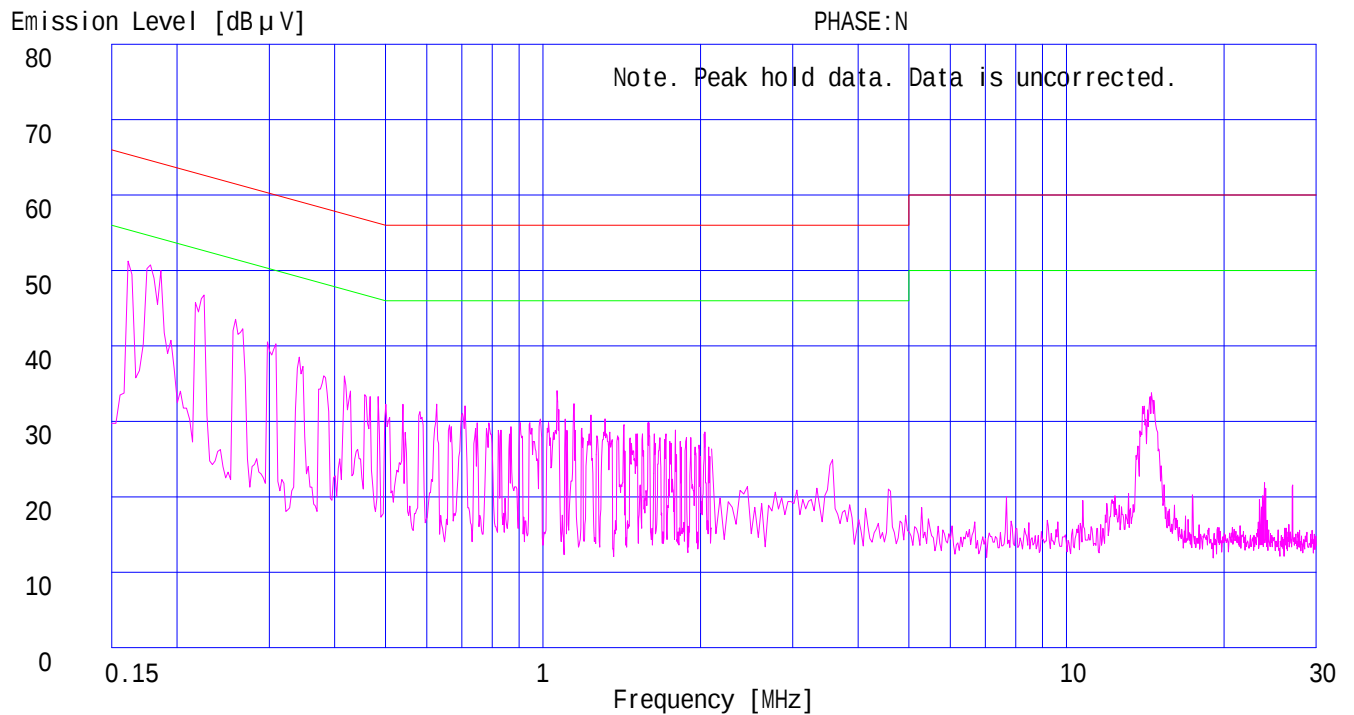
UL Apex Co., Ltd.

YOKOWA No.2 SHIELD TEST ROOM

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec(25dBmV)
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation 1 : FCC Part15B CLASS B(2003)
Regulation 2 : None

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.

YOKOWA No.2 SHIELD TEST ROOM

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μV]	AV	QP [dB μV]	AV				QP [dB]	AV [dB μV]	QP [dB μV]	AV [dB μV]	QP [dB μV]	AV [dB]
1.	0.1500	46.3	-	46.3	-	0.1	0.2	0.0	46.6	-	66.0	56.0	19.4	-
2.	0.3554	29.4	-	29.2	-	0.1	0.2	0.0	29.7	-	58.8	48.8	29.1	-
3.	0.8431	24.3	-	23.5	-	0.1	0.2	0.0	24.6	-	56.0	46.0	31.4	-
4.	1.4010	24.0	-	23.0	-	0.1	0.3	0.0	24.4	-	56.0	46.0	31.6	-
5.	3.5820	32.4	-	34.0	-	0.1	0.3	0.0	34.4	-	56.0	46.0	21.6	-
6.	18.4300	23.1	-	23.8	-	0.9	0.7	0.0	25.4	-	60.0	50.0	34.6	-

CALCULATION: READING + LISN FACTOR + CABLE LOSS + ATTEN.

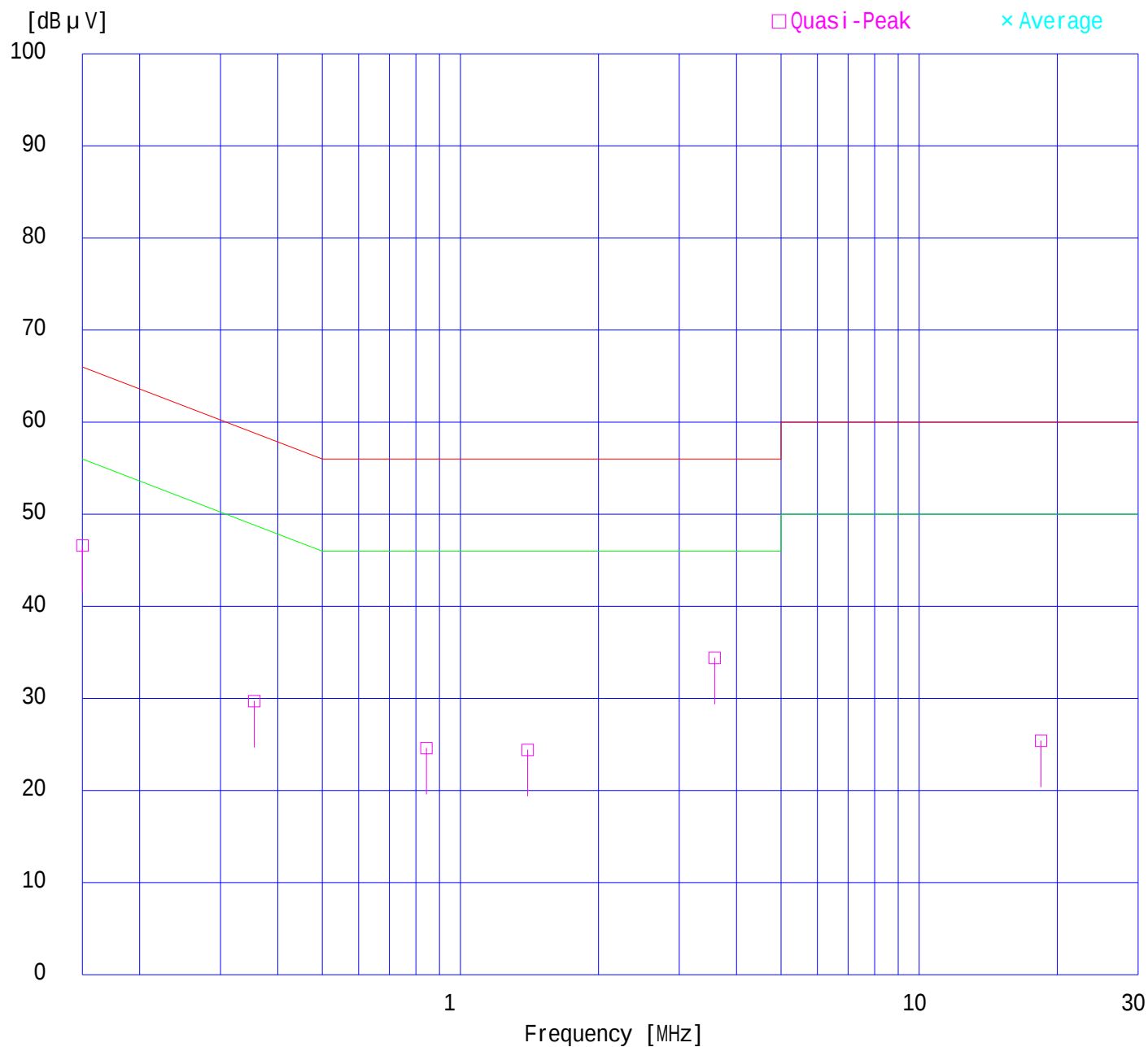
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.2 SHIELD TEST ROOM
Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

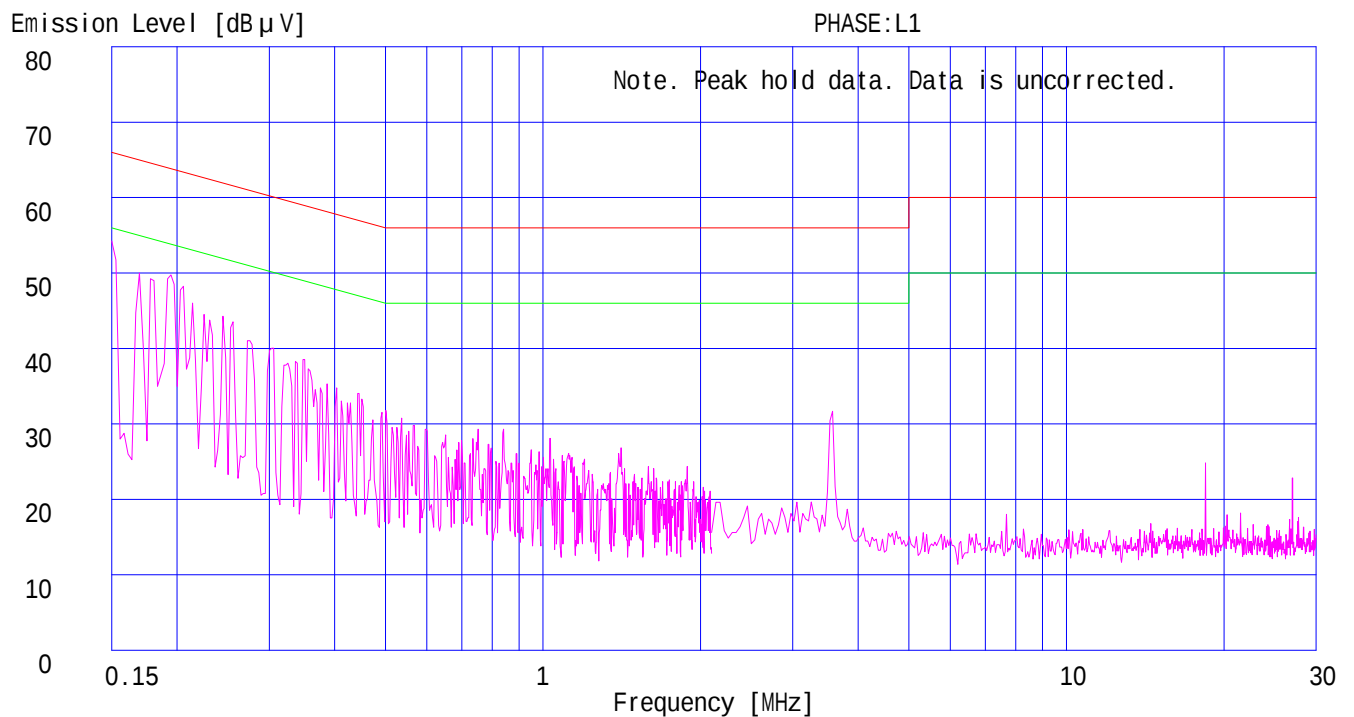
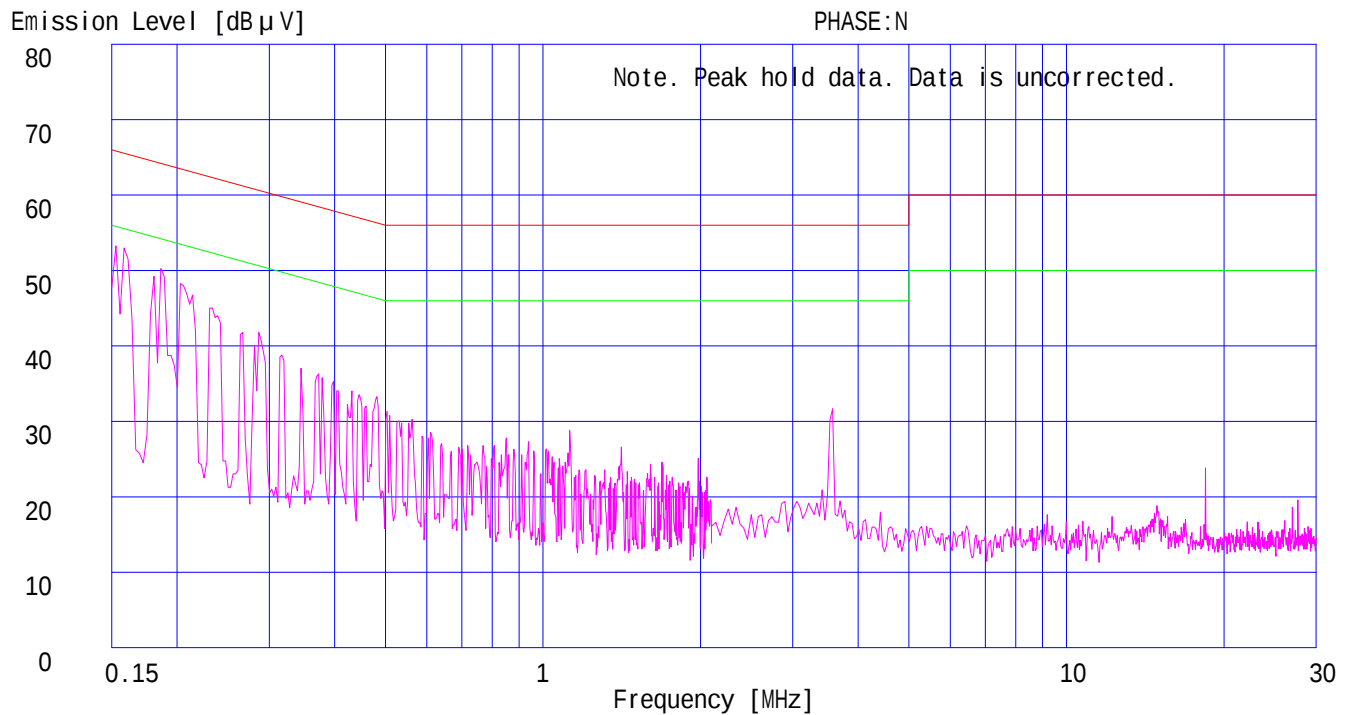
UL Apex Co., Ltd.

YOKOWA No.2 SHIELD TEST ROOM

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation 1 : FCC Part15B CLASS B(2003)
Regulation 2 : None

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.

YOKOWA No.2 SHIELD TEST ROOM

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μV]	AV	QP [dB μV]	AV				QP [dB]	AV [dB μV]	QP [dB μV]	AV [dB μV]	QP [dB]	AV [dB]
1.	0.1500	46.4	-	46.8	-	0.1	0.2	0.0	47.1	-	66.0	56.0	18.9	-
2.	0.4448	26.1	-	25.9	-	0.1	0.2	0.0	26.4	-	57.0	47.0	30.6	-
3.	0.7979	26.1	-	25.8	-	0.1	0.2	0.0	26.4	-	56.0	46.0	29.6	-
4.	1.0621	26.7	-	26.1	-	0.1	0.3	0.0	27.1	-	56.0	46.0	28.9	-
5.	3.5493	33.7	-	34.2	-	0.1	0.3	0.0	34.6	-	56.0	46.0	21.4	-
6.	18.4300	29.3	-	29.4	-	0.9	0.7	0.0	31.0	-	60.0	50.0	29.0	-
7.	24.5782	28.9	-	28.3	-	0.8	0.8	0.0	30.5	-	60.0	50.0	29.5	-

CALCULATION: READING + LISN FACTOR + CABLE LOSS + ATTEN.

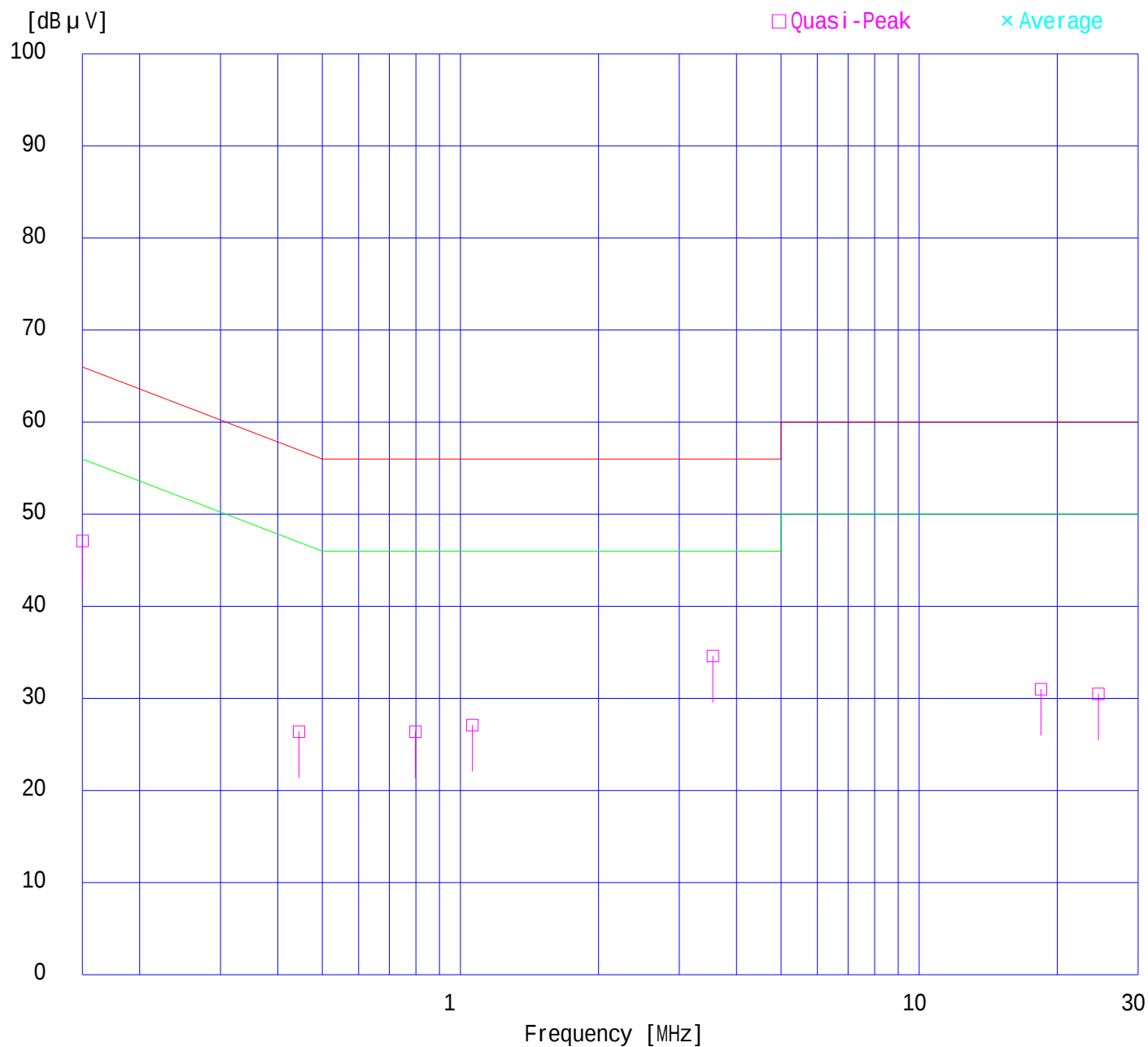
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.2 SHIELD TEST ROOM
Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

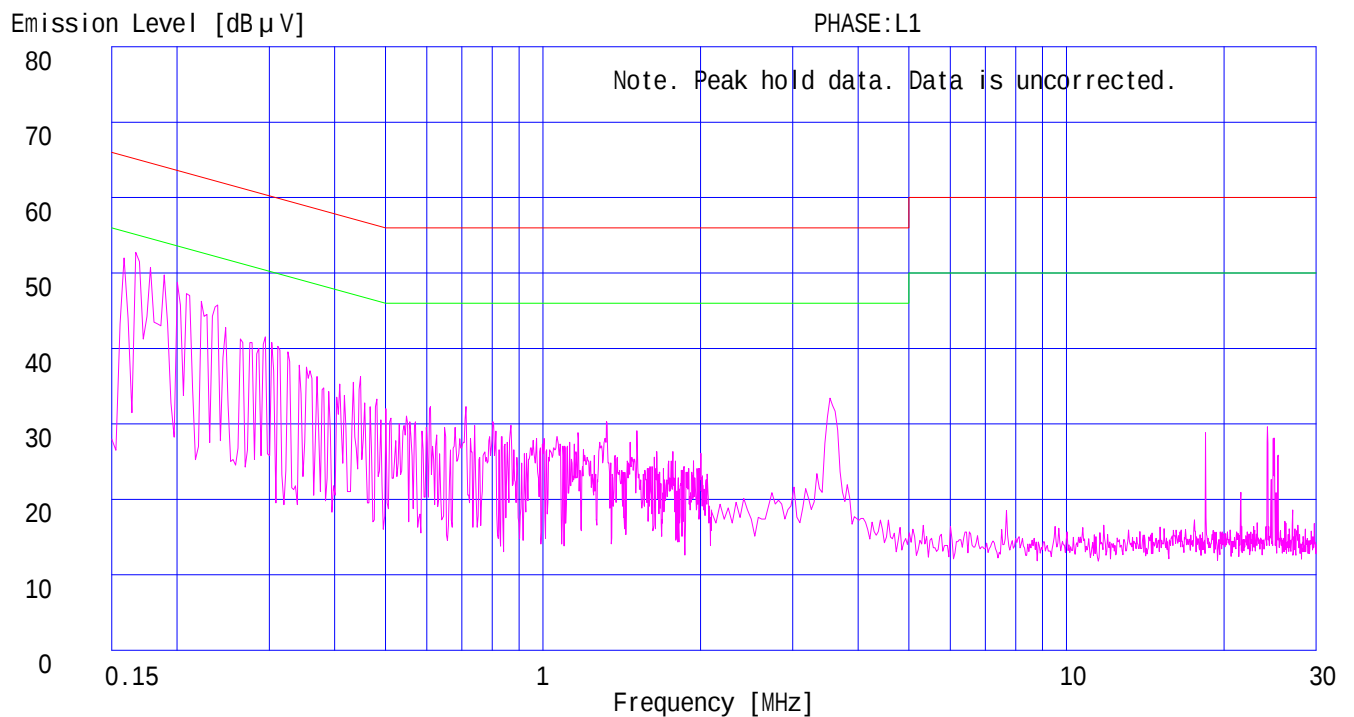
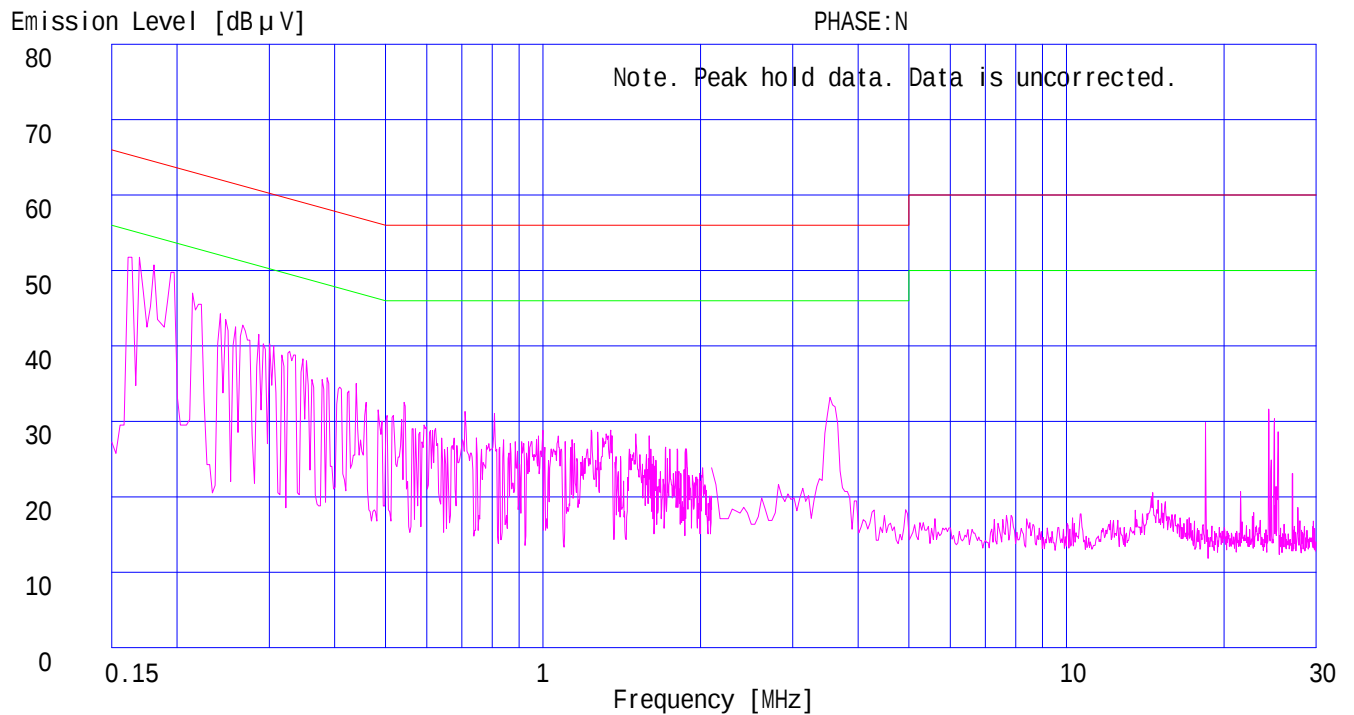
UL Apex Co., Ltd.

YOKOWA No.2 SHIELD TEST ROOM

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks :
Date : 10/1/2004
Phase : Single Phase
Temperature : 25
Humidity : 56 %
Regulation 1 : FCC Part15B CLASS B(2003)
Regulation 2 : None

Engineer : Tsubasa Takayama



DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.3 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : DVD2100-CA
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25BE0324-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2004/10/01
TEMP./HUMID. : 23deg.C / 50%
ENGINEER : Tsubasa Takayama

*C.Factor[dB]=ANT Factor + Cable Loss - Amp Gain

For the measurement above 1GHz, measurement of AV detector is performed only when the result of PK detector exceed the limit of AV.

CH.	FREQ	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT		MARGIN(QP)			
	[MHz]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]		[dB]			
VHF																	
2	101	23.7	24.5			BC	-9.8	13.9	14.7			43.5		29.6	28.8		
	202					BC						43.5		>15.0			
	303					LO						46.0					
	404					LO						46.0					
	505					LO						46.0					
	606					LO						46.0					
	707					LO						46.0					
	808					LO						46.0					
	909					LO						46.0					
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)						
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.	[dB]	[dB]	[dB]			
	1010			HO				74.0	54.0	>27.0	>10.0						
	1111			HO				74.0	54.0								
	1212			HO				74.0	54.0								
	1313			HO				74.0	54.0								
	1414			HO				74.0	54.0								
	1515			HO				74.0	54.0								
	1616	HO	74.0	54.0													
CH.	FREQ	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT		MARGIN(QP)			
	[MHz]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]		[dB]			
3	107	23.6	24.5			BC	-8.9	14.7	15.6			43.5		28.8	27.9		
	214					BC						43.5		> 15.0			
	321					LO						46.0					
	428					LO						46.0					
	535					LO						46.0					
	642					LO						46.0					
	749					LO						46.0					
	856					LO						46.0					
	963					LO						54.0					
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)						
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.	[dB]	[dB]	[dB]			
	1070			HO				74.0	54.0	>27.0	>10.0						
	1177			HO				74.0	54.0								
	1284			HO				74.0	54.0								
	1391			HO				74.0	54.0								
	1498			HO				74.0	54.0								
	1605			HO				74.0	54.0								
	CH.	FREQ	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT		MARGIN(QP)		
	[MHz]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]		[dB]			
4	113	22.7	25.0			BC	-7.9	14.8	17.1			43.5		28.7	26.4		
	226					BC						46.0		> 15.0			
	339					LO						46.0					
	452					LO						46.0					
	565					LO						46.0					
	678					LO						46.0					
	791					LO						46.0					
	904					LO						46.0					
						READING(PK)						READING(AV)					
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.	[dB]	[dB]	[dB]			
	1017			HO				74.0	54.0	>27.0	>10.0						
	1130			HO				74.0	54.0								
	1243			HO				74.0	54.0								
	1356			HO				74.0	54.0								
	1469			HO				74.0	54.0								
	1582			HO				74.0	54.0								

DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.3 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : DVD2100-CA
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25BE0324-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2004/10/01
TEMP./HUMID. : 23deg.C / 50%
ENGINEER : Tsubasa Takayama

*C.Factor[dB]=ANT Factor + Cable Loss - Amp Gain

For the measurement above 1GHz, measurement of AV detector is performed only when the result of PK detector exceed the limit of AV.

CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
VHF											
5	123	23.6	24.8		BC	-6.5	17.1	18.3		43.5	
	246				BC					46.0	
	369				LO					46.0	
	492				LO					46.0	
	615				LO					46.0	
	738				LO					46.0	
	861				LO					46.0	
	984				LO					54.0	
		READING(PK) HOR. VER. [dBuV]	READING(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1107			HO				74.0	54.0	>27.0	>10.0
	1230			HO				74.0	54.0		
	1353			HO				74.0	54.0		
	1476			HO				74.0	54.0		
	1599			HO				74.0	54.0		
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
6	129	23.4	25.0		BC	-6.2	17.2	18.8		43.5	
	258				BC					46.0	
	387				LO					46.0	
	516				LO					46.0	
	645				LO					46.0	
	774				LO					46.0	
	903				LO					46.0	
		READING(PK) HOR. VER. [dBuV]	READING(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1032			HO				74.0	54.0	>27.0	>10.0
	1161			HO				74.0	54.0		
	1290			HO				74.0	54.0		
	1419			HO				74.0	54.0		
	1548			HO				74.0	54.0		
	1677			HO				74.0	54.0		
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
7	221	22.9	22.7		BC	-2.1	20.8	20.6		46.0	
	442				LO					46.0	
	663				LO					46.0	
	884				LO					46.0	
		READING(PK) HOR. VER. [dBuV]	READING(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1105			HO				74.0	54.0	>27.0	>10.0
	1326			HO				74.0	54.0		
	1547			HO				74.0	54.0		
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
8	227	23.5	22.6		BC	-2.1	21.4	20.5		46.0	
	454				LO					46.0	
	681				LO					46.0	
	908				LO					46.0	
		READING(PK) HOR. VER. [dBuV]	READING(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1135			HO				74.0	54.0	>27.0	>10.0
	1362			HO				74.0	54.0		
	1589			HO				74.0	54.0		

DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.3 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : DVD2100-CA
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25BE0324-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2004/10/01
TEMP./HUMID. : 23deg.C / 50%
ENGINEER : Tsubasa Takayama

*C.Factor[dB]=ANT Factor + Cable Loss - Amp Gain

For the measurement above 1GHz, measurement of AV detector is performed only when the result of PK detector exceed the limit of AV.

CH.	FREQ	READING(QP)	VER.	ANT	C.Factor	RESULT(QP)	VER.	LIMIT	MARGIN(QP)	VER.	
	[MHz]	[dBuV]		TYPE	[dBuV]	[dBuV/m]		[QP]	[dB]	[dB]	
VHF											
9	233	23.6	23.9	BC	-1.9	21.7	22.0	46.0	24.3	24.0	
	466			LO				46.0			
	699			LO				46.0			
	932			LO				46.0			
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1165			HO				74.0	54.0		
	1398			HO				74.0	54.0		
	1631			HO				74.0	54.0		
10	239	23.7	23.3	BC	-1.7	22.0	21.6	46.0	24.0	24.4	
	478			LO				46.0			
	717			LO				46.0			
	956			LO				46.0			
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1195			HO				74.0	54.0		
	1434			HO				74.0	54.0		
	1673			HO				74.0	54.0		
11	245	23.4	23.2	BC	-1.6	21.8	21.6	46.0	24.2	24.4	
	490			LO				46.0			
	735			LO				46.0			
	980			LO				54.0			
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1225			HO				74.0	54.0		
	1470			HO				74.0	54.0		
12	251	23.0	23.4	BC	-1.4	21.6	22.0	46.0	24.4	24.0	
	502			LO				46.0			
	753			LO				46.0			
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1004			HO				74.0	54.0		
	1255			HO				74.0	54.0		
	1506			HO				74.0	54.0		
13	257	22.9	23.4	BC	-1.0	21.9	22.4	46.0	24.1	23.6	
	514			LO				46.0			
	771			LO				46.0			
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1028			HO				74.0	54.0		
	1285			HO				74.0	54.0		
	1542			HO				74.0	54.0		

DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.3 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : DVD2100-CA
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25BE0324-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2004/10/01
TEMP/HUMID. : 23deg.C / 50%
ENGINEER : Tsubasa Takayama

*C.Factor[dB]=ANT Factor + Cable Loss - Amp Gain

For the measurement above 1GHz, measurement of AV detector is performed only when the result of PK detector exceed the limit of AV.

CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
UHF											
14	517	23.5 25.4		LO	3.2	26.7 28.6		46.0		19.3 17.4	
		READING(PK) HOR. VER. [dBuV]	READINNG(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1034 1551			HO HO	-11.7 -7.5			74.0 74.0	54.0 54.0	>27.0	>10.0
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
19	547	22.7 25.2		LO	3.5	26.2 28.7		46.0		19.8 17.3	
		READING(PK) HOR. VER. [dBuV]	READINNG(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1094 1641			HO HO	-11.3 -5.8			74.0 74.0	54.0 54.0	>27.0	>10.0
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
28	601	22.4 25.5		LO	4.4	26.8 29.9		46.0	-	19.2 16.1	
		READING(PK) HOR. VER. [dBuV]	READINNG(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1202			HO	-10.6			74.0	54.0	>27.0	>10.0
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
36	649	23.0 24.5		LO	5.2	28.2 29.7		46.0	-	17.8 16.3	
		READING(PK) HOR. VER. [dBuV]	READINNG(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1298			HO	-9.8			74.0	54.0	>27.0	>10.0
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
44	697	23.1 23.8		LO	5.9	29.0 29.7		46.0	-	17.0 16.3	
		READING(PK) HOR. VER. [dBuV]	READINNG(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1394			HO	-9.1			74.0	54.0	>27.0	>10.0
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
53	751	23.5 24.9		LO	7.6	31.1 32.5		46.0	-	14.9 13.5	
		READING(PK) HOR. VER. [dBuV]	READINNG(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1502			HO	-8.4			74.0	54.0	>27.0	>10.0
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
61	799	23.6 25.0		LO	9.2	32.8 34.2		46.0	-	13.2 11.8	
		READING(PK) HOR. VER. [dBuV]	READINNG(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1598			HO	-6.6			74.0	54.0	>27.0	>10.0
CH.	FREQ [MHz]	READING(QP) HOR. VER. [dBuV]		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER. [dB]	
69	847	23.5 25.7		LO	9.6	33.1 35.3		46.0	-	12.9 10.7	
		READING(PK) HOR. VER. [dBuV]	READINNG(AV) HOR. VER. [dBuV]	ANT TYPE	C.Factor [dBuV]	RESULT(PK) HOR. VER. [dBuV/m]	RESULT(AV) HOR. VER. [dBuV/m]	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER. [dB]	MARGIN(AV) HOR. VER. [dB]
	1694			HO	-4.9			74.0	54.0	>27.0	>10.0

DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.3 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : DVD2100-CA
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25BE0324-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2004/10/01
TEMP./HUMID. : 23deg.C / 50%
ENGINEER : Tsubasa Takayama

*C.Factor[dB]=ANT Factor + Cable Loss - Amp Gain

For the measurement above 1GHz, measurement of AV detector is performed only when the result of PK detector exceed the limit of AV.

CH.	FREQ	READING(QP)			ANT	C.Factor	RESULT(QP)			LIMIT		MARGIN(QP)		
	[MHz]	HOR.	VER.		TYPE	[dBuV]	HOR.	VER.		[QP]		HOR.	VER.	
		[dBuV]					[dBuV/m]			[dBuV/m]		[dB]	[dB]	
CATV														
1	119	24.1	25.3		BC	-7.0	17.1	18.3		43.5		26.4	25.2	
	238				BC					46.0		>15.0		
	357			LO					46.0					
	476			LO					46.0					
	595			LO					46.0					
	714			LO					46.0					
	833			LO					46.0					
	952	LO		46.0										
		READING(PK)	READING(NG)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)			
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.			
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	
	1071			HO				74.0	54.0	>27.0	>10.0			
1190	HO			74.0				54.0						
1309	HO			74.0				54.0						
1428	HO			74.0				54.0						
1547	HO			74.0				54.0						
1666	HO			74.0				54.0						
CH.	FREQ	READING(QP)			ANT	C.Factor	RESULT(QP)			LIMIT		MARGIN(QP)		
	[MHz]	HOR.	VER.		TYPE	[dBuV]	HOR.	VER.		[QP]		HOR.	VER.	
		[dBuV]				[dBuV]	[dBuV/m]			[dBuV/m]		[dB]	[dB]	
95	137	22.7	23.0		BC	-5.5	17.2	17.5		43.5		26.3	26.0	
	274				BC					46.0		>15.0		
	411			LO					46.0					
	548			LO					46.0					
	685			LO					46.0					
	822			LO					46.0					
	959			LO					46.0					
		READING(PK)	READING(NG)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)			
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.			
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	
	1096			HO				74.0	54.0	>27.0	>10.0			
	1233			HO				74.0	54.0					
1370	HO			74.0				54.0						
1507	HO			74.0				54.0						
1644	HO			74.0				54.0						
CH.	FREQ	READING(QP)			ANT	C.Factor	RESULT(QP)			LIMIT		MARGIN(QP)		
	[MHz]	HOR.	VER.		TYPE	[dBuV]	HOR.	VER.		[QP]		HOR.	VER.	
		[dBuV]				[dBuV]	[dBuV/m]			[dBuV/m]		[dB]	[dB]	
97	149	21.9	22.5		BC	-4.8	17.1	17.7		43.5		26.4	25.8	
	298				BC					46.0		>15.0		
	447			LO					46.0					
	596			LO					46.0					
	745			LO					46.0					
	894			LO					46.0					
		READING(PK)	READING(NG)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)			
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.			
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	
	1043			HO				-	-	74.0	54.0	>27.0	>10.0	
	1192			HO				-	-	74.0	54.0			
1341	HO			-				-	74.0	54.0				
1490	HO			-				-	74.0	54.0				
1639	HO			-				-	74.0	54.0				
CH.	FREQ	READING(QP)			ANT	C.Factor	RESULT(QP)			LIMIT		MARGIN(QP)		
	[MHz]	HOR.	VER.		TYPE	[dBuV]	HOR.	VER.		[QP]		HOR.	VER.	
		[dBuV]				[dBuV]	[dBuV/m]			[dBuV/m]		[dB]	[dB]	
99	161	22.1	22.3		BC	-4.2	17.9	18.1		43.5		25.6	25.4	
	322				LO					46.0		>15.0		
	483			LO					46.0					
	644			LO					46.0					
	805			LO					46.0					
	966			LO					46.0					
		READING(PK)	READING(NG)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)			
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.			
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	
	1127			HO				74.0	54.0	>27.0	>10.0			
	1288			HO				74.0	54.0					
1449	HO			74.0				54.0						
1610	HO			74.0				54.0						

DATA OF RADIATION TEST

UL Apex Co., Ltd.

Yokowa EMC No.3 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : DVD2100-CA
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25BE0324-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2004/10/01
TEMP./HUMID. : 23deg.C / 50%
ENGINEER : Tsubasa Takayama

*C.Factor[dB]=ANT Factor + Cable Loss - Amp Gain

For the measurement above 1GHz, measurement of AV detector is performed only when the result of PK detector exceed the limit of AV.

For the measurement above 1GHz, measurement of TV detector is performed only when the result of FR detector exceeds the limit of TV.																		
CH.	FREQ	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT	MARGIN(QP)					
	[MHz]	HOR.	VER.			TYPE	[dBuV]	HOR.	VER.			[QP]	HOR.	VER.				
		[dBuV]						[dBuV/m]				[dBuV/m]	[dB]	[dB]				
CATV																		
14	167	22.3	22.3			BC	-3.8	18.5	18.5			43.5	25.0	25.0				
	334					LO						46.0	>15.0					
	501					LO						46.0						
	668					LO						46.0						
	835					LO						46.0						
		READING(PK)		READINNG(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		HOR.	VER.	HOR.	VER.	TYPE	[dBuV]	HOR.	VER.	HOR.	VER.	[PK]	[AV]	HOR.	VER.	HOR.	VER.	
		[dBuV]		[dBuV]			[dBuV]	[dBuV/m]		[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]		[dB]	[dB]	[dB]
	1002					HO						74.0	54.0	>27.0	>10.0			
	1169					HO						74.0	54.0					
	1336					HO						74.0	54.0					
	1503					HO						74.0	54.0					
	1670					HO						74.0	54.0					
CH.	FREQ	READINNG(QP)				ANT	C.Factor	RESULT(QP)				LIMIT	MARGIN(QP)					
	[MHz]	HOR.	VER.			TYPE	[dBuV]	HOR.	VER.			[QP]	HOR.	VER.				
		[dBuV]						[dBuV/m]				[dBuV/m]	[dB]	[dB]				
18	191	22.4	22.8			BC	-2.8	19.6	20.0			43.5	23.9	23.5				
	382					LO						46.0	>15.0					
	573					LO						46.0						
	764					LO						46.0						
	955					LO						46.0						
		READING(PK)		READINNG(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		HOR.	VER.	HOR.	VER.	TYPE	[dBuV]	HOR.	VER.	HOR.	VER.	[PK]	[AV]	HOR.	VER.	HOR.	VER.	
		[dBuV]		[dBuV]			[dBuV]	[dBuV/m]		[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]		[dB]	[dB]	[dB]
	1146					HO						74.0	54.0	>27.0	>10.0			
	1337					HO						74.0	54.0					
	1528					HO						74.0	54.0					
CH.	FREQ	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT	MARGIN(QP)					
	[MHz]	HOR.	VER.			TYPE	[dBuV]	HOR.	VER.			[QP]	HOR.	VER.				
		[dBuV]						[dBuV/m]				[dBuV/m]	[dB]	[dB]				
22	215	23.7	23.7			BC	-2.4	21.3	21.3			43.5	22.2	22.2				
	430					LO						46.0	>15.0					
	645					LO						46.0						
	860					LO						46.0						
		READING(PK)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		HOR.	VER.	HOR.	VER.	TYPE	[dBuV]	HOR.	VER.	HOR.	VER.	[PK]	[AV]	HOR.	VER.	HOR.	VER.	
		[dBuV]		[dBuV]			[dBuV]	[dBuV/m]		[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]		[dB]	[dB]	[dB]
	1075					HO						74.0	54.0	>27.0	>10.0			
	1290					HO						74.0	54.0					
	1505					HO						74.0	54.0					
CH.	FREQ	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT	MARGIN(QP)					
	[MHz]	HOR.	VER.			TYPE	[dBuV]	HOR.	VER.			[QP]	HOR.	VER.				
		[dBuV]						[dBuV/m]				[dBuV/m]	[dB]	[dB]				
23	263	22.8	22.4			BC	-0.6	22.2	21.8			46.0	46.0	23.8	24.2			
	526					LO						46.0	46.0	>15.0				
	789					LO						46.0	46.0					
		READING(PK)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		HOR.	VER.	HOR.	VER.	TYPE	[dBuV]	HOR.	VER.	HOR.	VER.	[PK]	[AV]	HOR.	VER.	HOR.	VER.	
		[dBuV]		[dBuV]			[dBuV]	[dBuV/m]		[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]		[dB]	[dB]	[dB]
	1052					HO						74.0	54.0	>27.0	>10.0			
	1315					HO						74.0	54.0					
	1578					HO						74.0	54.0					
CH.	FREQ	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT	MARGIN(QP)					
	[MHz]	HOR.	VER.			TYPE	[dBuV]	HOR.	VER.			[QP]	HOR.	VER.				
		[dBuV]						[dBuV/m]				[dBuV/m]	[dB]	[dB]				
29	299	23.2	22.2			BC	1.9	25.1	24.1			46.0	46.0	20.9	21.9			
	598					LO						46.0	46.0	>15.0				
	897					LO						46.0	46.0					
		READING(PK)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		HOR.	VER.	HOR.	VER.	TYPE	[dBuV]	HOR.	VER.	HOR.	VER.	[PK]	[AV]	HOR.	VER.	HOR.	VER.	
		[dBuV]		[dBuV]			[dBuV]	[dBuV/m]		[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]		[dB]	[dB]	[dB]
	1196					HO						74.0	54.0	>27.0	>10.0			
	1495					HO						74.0	54.0					

DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.3 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : DVD2100-CA
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25BE0324-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2004/10/01
TEMP./HUMID. : 23deg.C / 50%
ENGINEER : Tsubasa Takayama

*C.Factor[dB]=ANT Factor + Cable Loss - Amp Gain

For the measurement above 1GHz, measurement of AV detector is performed only when the result of PK detector exceed the limit of AV.

CH.	FREQ	READING(QP)		ANT	C.Factor	RESULT(QP)		LIMIT		MARGIN(QP)	
	[MHz]	HOR. VER.		TYPE	[dBuV]	HOR. VER.		[QP]		HOR. VER.	
		[dBuV]				[dBuV/m]		[dBuV/m]		[dB]	
CATV											
36	341	22.1	22.3		LO	-0.2	21.9	22.1		46.0	46.0
	682				LO					46.0	46.0
										>15.0	
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1023			HO	-11.8			74.0	54.0	>27.0	>10.0
	1364			HO	-9.4			74.0	54.0		
CH.	FREQ	READING(QP)		ANT	C.Factor	RESULT(QP)		LIMIT		MARGIN(QP)	
	[MHz]	HOR. VER.		TYPE	[dBuV]	HOR. VER.		[QP]		HOR. VER.	
		[dBuV]				[dBuV/m]		[dBuV/m]		[dB]	
37	347	22.9	23.9		LO	-0.1	22.8	23.8		46.0	46.0
	694				LO					46.0	46.0
										>15.0	
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1041			HO	-11.7			74.0	54.0	>27.0	>10.0
	1388			HO	-9.2			74.0	54.0		
CH.	FREQ	READING(QP)		ANT	C.Factor	RESULT(QP)		LIMIT		MARGIN(QP)	
	[MHz]	HOR. VER.		TYPE	[dBuV]	HOR. VER.		[QP]		HOR. VER.	
		[dBuV]				[dBuV/m]		[dBuV/m]		[dB]	
65	515	23.7	24.0		LO	3.1	26.8	27.1		46.0	46.0
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1030			HO	-11.7			74.0	54.0	>27.0	>10.0
	1545			HO	-7.6			74.0	54.0		
CH.	FREQ	READING(QP)		ANT	C.Factor	RESULT(QP)		LIMIT		MARGIN(QP)	
	[MHz]	HOR. VER.		TYPE	[dBuV]	HOR. VER.		[QP]		HOR. VER.	
		[dBuV]				[dBuV/m]		[dBuV/m]		[dB]	
94	689	24.4	23.8		LO	5.8	30.2	29.6		46.0	46.0
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1378			HO	-9.2			74.0	54.0	>27.0	>10.0
CH.	FREQ	READING(QP)		ANT	C.Factor	RESULT(QP)		LIMIT		MARGIN(QP)	
	[MHz]	HOR. VER.		TYPE	[dBuV]	HOR. VER.		[QP]		HOR. VER.	
		[dBuV]				[dBuV/m]		[dBuV/m]		[dB]	
100	695	24.5	23.5		LO	5.9	30.4	29.4		46.0	46.0
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1390			HO	-9.1			74.0	54.0	>27.0	>10.0
CH.	FREQ	READING(QP)		ANT	C.Factor	RESULT(QP)		LIMIT		MARGIN(QP)	
	[MHz]	HOR. VER.		TYPE	[dBuV]	HOR. VER.		[QP]		HOR. VER.	
		[dBuV]				[dBuV/m]		[dBuV/m]		[dB]	
113	773	23.3	25.1		LO	8.3	31.6	33.4		46.0	46.0
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1546			HO	-7.6			74.0	54.0	>27.0	>10.0
CH.	FREQ	READING(QP)		ANT	C.Factor	RESULT(QP)		LIMIT		MARGIN(QP)	
	[MHz]	HOR. VER.		TYPE	[dBuV]	HOR. VER.		[QP]		HOR. VER.	
		[dBuV]				[dBuV/m]		[dBuV/m]		[dB]	
125	845	22.5	25.8		LO	9.6	32.1	35.4		46.0	46.0
		READING(PK)	READING(AV)	ANT	C.Factor	RESULT(PK)	RESULT(AV)	LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)
		HOR. VER.	HOR. VER.	TYPE	[dBuV]	HOR. VER.	HOR. VER.	[PK]	[AV]	HOR. VER.	HOR. VER.
		[dBuV]	[dBuV]			[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1690			HO	-4.9			74.0	54.0	>27.0	>10.0

DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec
Remarks : 0dBmV
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24
Humidity : 60 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	472.53	BB	39.4	39.6	19.4	27.9	5.0	6.0	41.9	42.1	46.0	4.1	3.9

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

Except for the above table: adequate margin data below the limits.
ANT.TYPE:30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

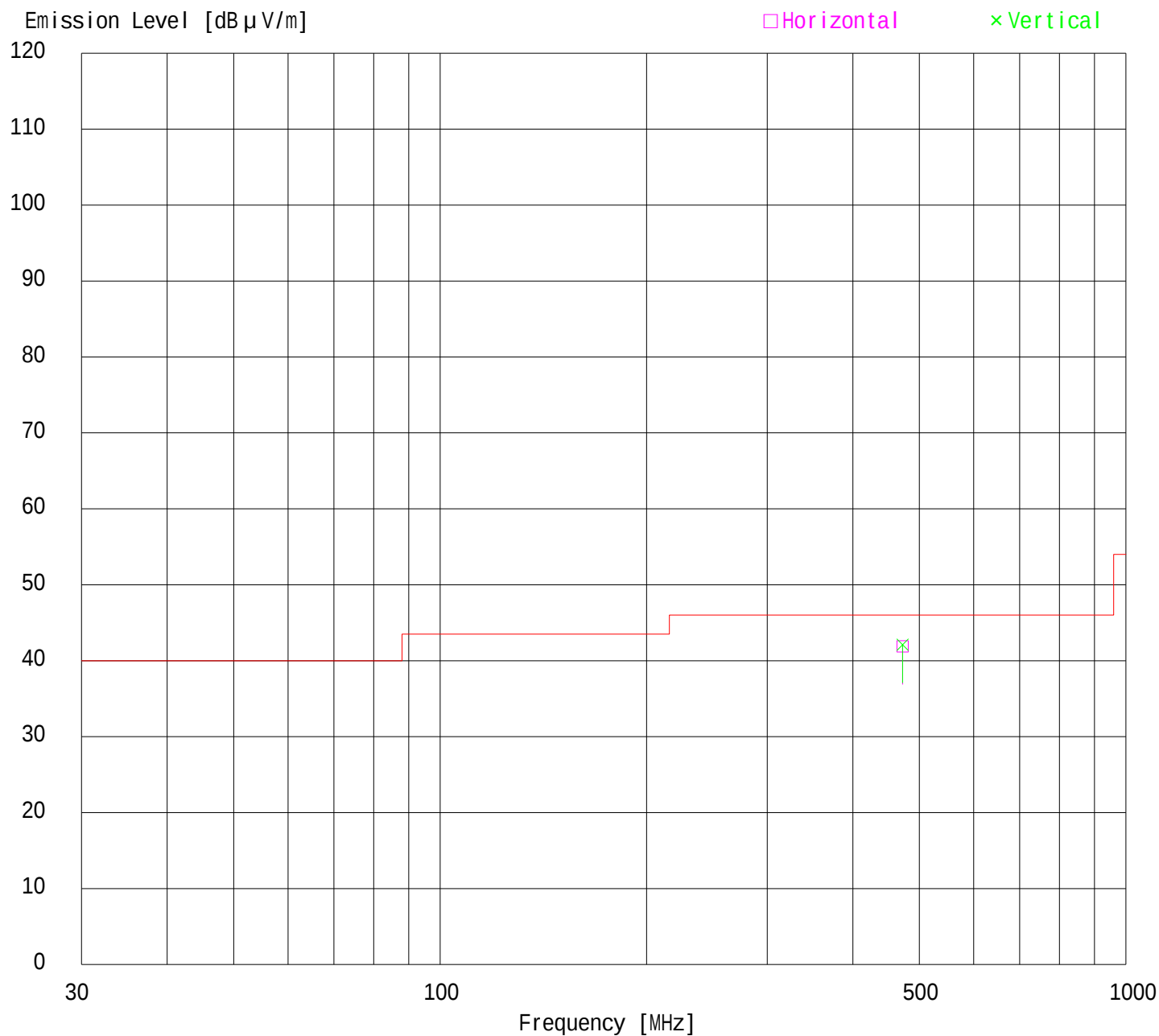
UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No.: 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec
Remarks : 0dBmV
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24
Humidity : 60 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama



DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120/60Hz
Mode : TV Reception+Rec(0dbmV)
Remarks : Test Channel #3
Date : 10/1/2004
Test Distance : 3 m
Temperature : 23
Humidity : 58 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	61.25	BB	26.5	25.9	7.4	28.4	1.5	5.9	12.9	12.3	40.0	27.1	27.7
2.	65.75	BB	27.6	25.6	7.0	28.3	1.5	5.9	13.7	11.7	40.0	26.3	28.3
3.	122.50	BB	23.8	23.6	13.6	28.2	2.2	5.9	17.3	17.1	43.5	26.2	26.4
4.	245.00	BB	23.3	23.0	17.0	27.9	3.3	6.0	21.7	21.4	46.0	24.3	24.6

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

Except for the above table: adequate margin data below the limits.
ANT.TYPE:30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

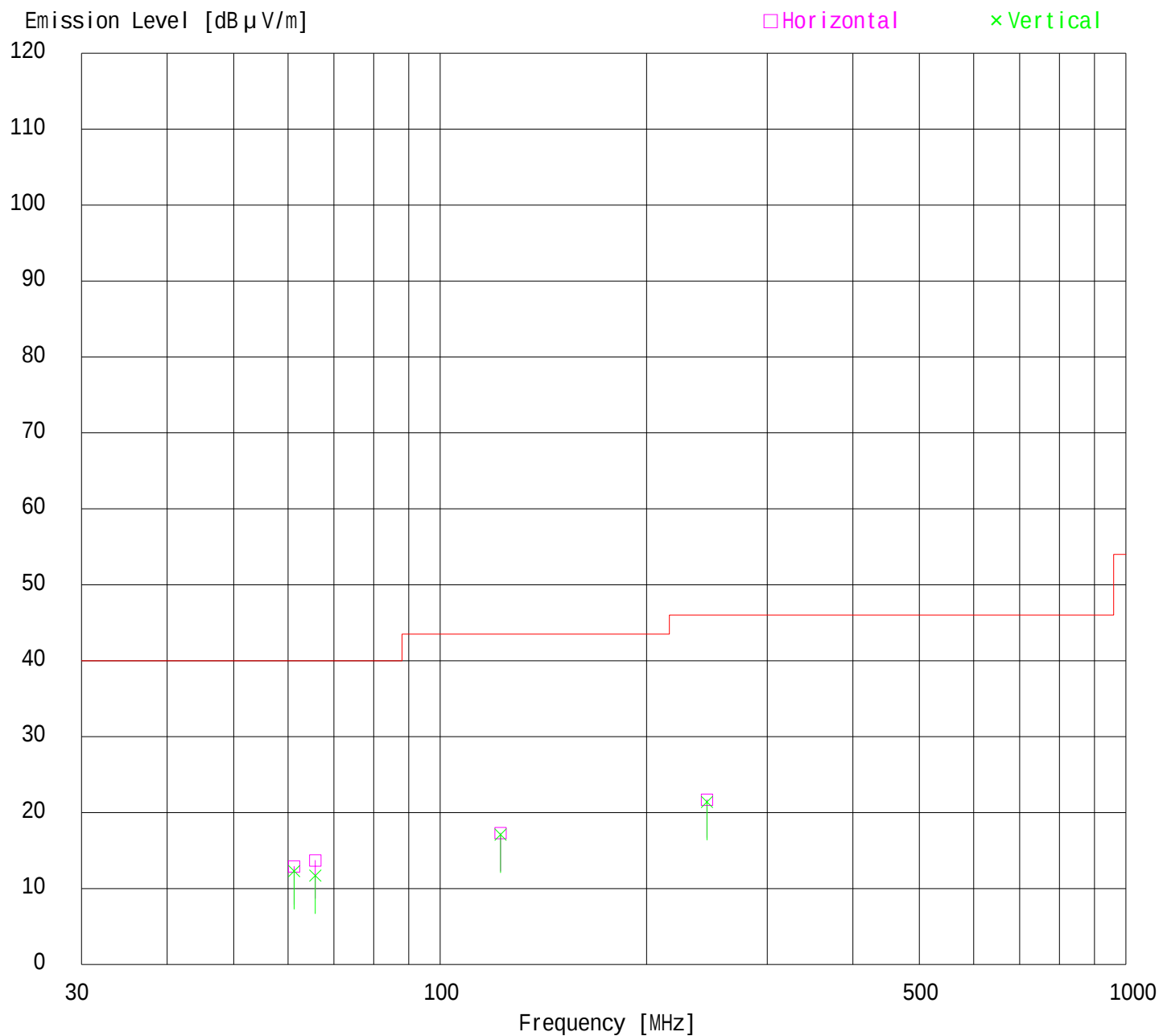
UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120/60Hz
Mode : TV Reception+Rec(0dbmV)
Remarks : Test Channel #3
Date : 10/1/2004
Test Distance : 3 m
Temperature : 23
Humidity : 58 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama



DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No.: 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120/60Hz
Mode : TV Reception+Rec(0dbmV)
Remarks : Test Channel #4
Date : 10/1/2004
Test Distance : 3 m
Temperature : 23
Humidity : 58 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	67.25	BB	26.0	25.8	6.8	28.3	1.6	5.9	12.0	11.8	40.0	28.0	28.2
2.	71.75	BB	25.8	25.2	6.6	28.3	1.6	5.9	11.6	11.0	40.0	28.4	29.0
3.	134.50	BB	23.6	23.4	14.3	28.2	2.3	5.9	17.9	17.7	43.5	25.6	25.8
4.	201.75	BB	23.0	23.1	16.5	28.0	2.9	5.9	20.3	20.4	43.5	23.2	23.1

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

Except for the above table: adequate margin data below the limits.
ANT.TYPE:30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

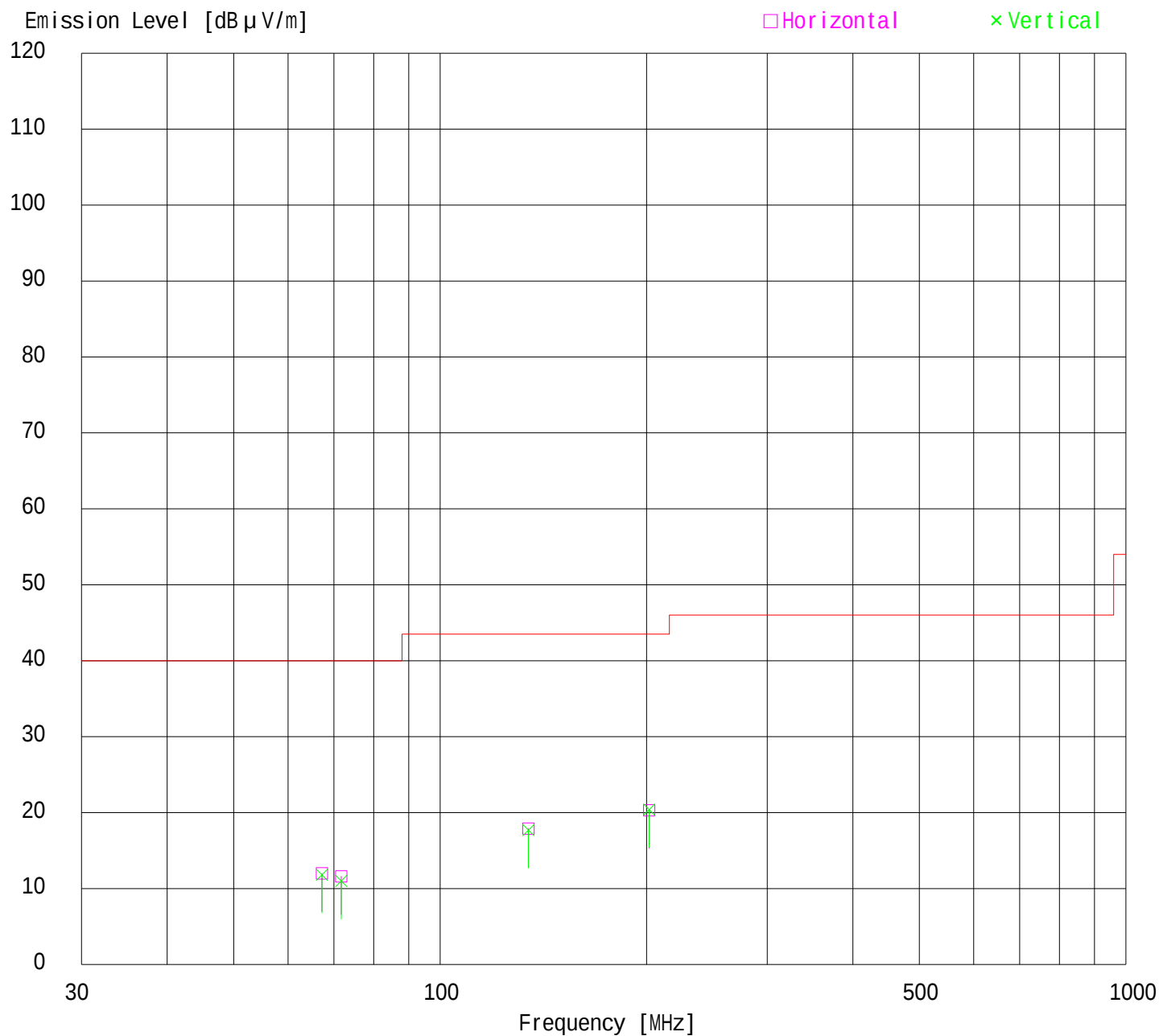
UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 24BE0324-YW-1

Applicant : Orion Electric Co.,Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120/60Hz
Mode : TV Reception+Rec(0dbmV)
Remarks : Test Channel #4
Date : 10/1/2004
Test Distance : 3 m
Temperature : 23
Humidity : 58 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama



DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec
Remarks : 25dBmV
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24
Humidity : 60 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]	[dB μ V/m]	[dB μ V/m]	HOR [dB]	VER [dB]
1.	38.70	BB	25.5	29.8	14.2	28.5	1.2	6.0	18.4	22.7	40.0	21.6	17.3	
2.	108.00	BB	38.9	41.0	11.5	28.2	2.0	5.9	30.1	32.2	43.5	13.4	11.3	
3.	135.00	BB	41.0	45.5	14.3	28.2	2.3	5.9	35.3	39.8	43.5	8.2	3.7	
4.	189.02	BB	34.0	35.3	16.4	28.0	2.8	5.9	31.1	32.4	43.5	12.4	11.1	
5.	202.49	BB	32.7	31.8	16.5	28.0	2.9	5.9	30.0	29.1	43.5	13.5	14.4	
6.	215.99	BB	38.1	37.0	16.7	28.0	3.0	5.9	35.7	34.6	43.5	7.8	8.9	
7.	286.88	BB	31.3	34.1	19.4	27.9	3.6	6.0	32.4	35.2	46.0	13.6	10.8	
8.	324.00	BB	36.2	36.2	17.4	27.9	3.9	6.0	35.6	35.6	46.0	10.4	10.4	
9.	405.02	BB	31.9	33.6	18.7	27.9	4.5	6.0	33.2	34.9	46.0	12.8	11.1	
10.	472.53	BB	39.1	39.9	19.4	27.9	5.0	6.0	41.6	42.4	46.0	4.4	3.6	
11.	540.00	BB	27.0	31.8	19.9	27.8	5.4	6.0	30.5	35.3	46.0	15.5	10.7	
12.	675.00	BB	27.1	27.9	20.9	27.4	6.1	6.0	32.7	33.5	46.0	13.3	12.5	
13.	945.02	BB	27.2	26.1	22.5	29.3	10.2	5.9	36.5	35.4	46.0	9.5	10.6	

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

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

ANT.TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

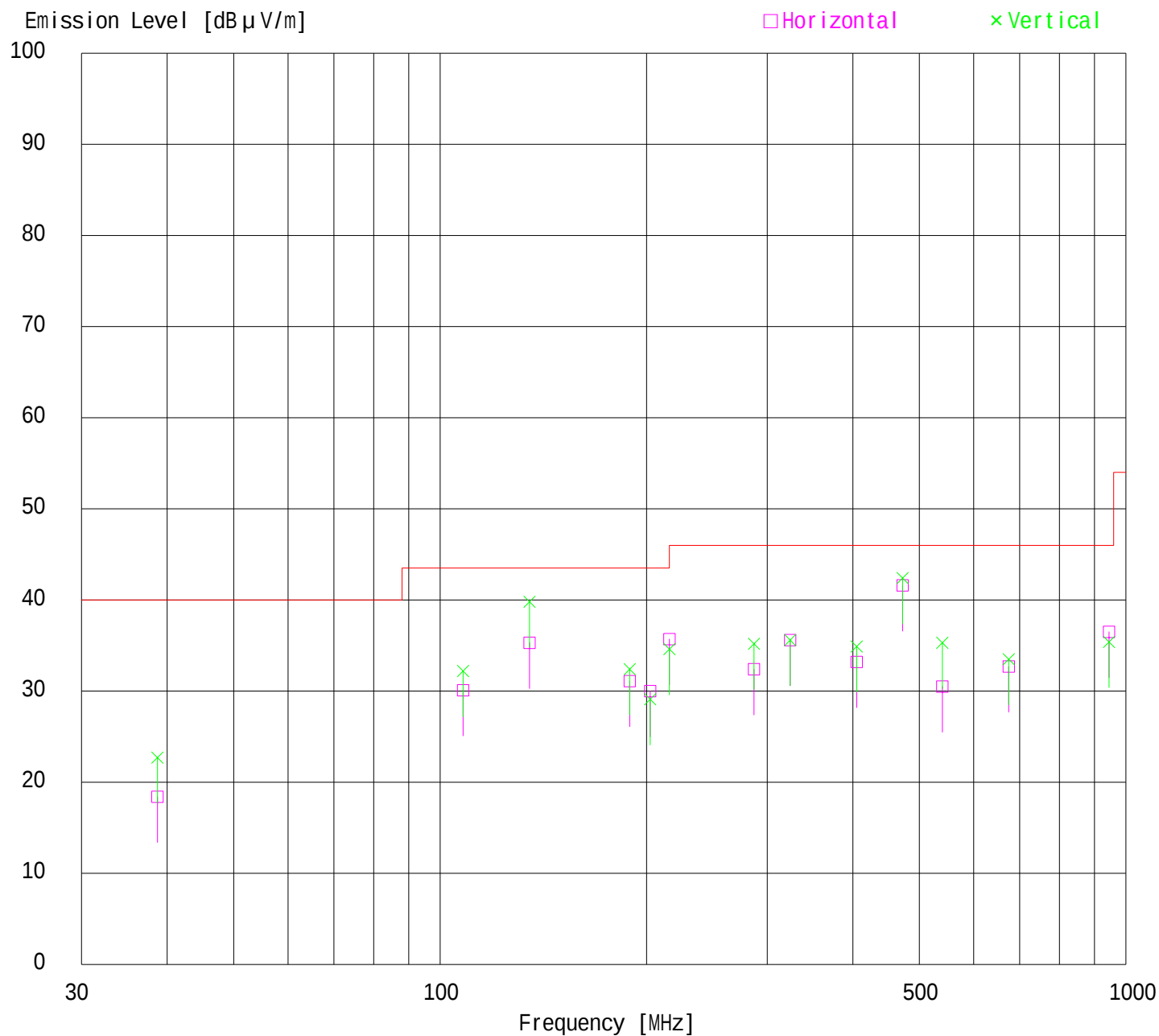
UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec
Remarks : 25dBmV
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24
Humidity : 60 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama



DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-YW-1

Applicant : Orion Electric Co., Ltd.
 Kind of Equipment : DVD/VCR
 Model No. : DVD2100-CA
 Serial No. : -
 Power : AC120V/60Hz
 Mode : VCR Playback
 Remarks : -
 Date : 10/1/2004
 Test Distance : 3 m
 Temperature : 24
 Humidity : 39 %
 Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	38.45	BB	26.5	28.8	14.3	28.5	1.2	6.0	19.5	21.8	40.0	20.5	18.2
2.	108.00	BB	28.9	36.0	11.5	28.2	2.0	5.9	20.1	27.2	43.5	23.4	16.3
3.	135.00	BB	38.3	43.0	14.3	28.2	2.3	5.9	32.6	37.3	43.5	10.9	6.2
4.	189.02	BB	32.7	30.4	16.4	28.0	2.8	5.9	29.8	27.5	43.5	13.7	16.0
5.	202.49	BB	31.1	27.7	16.5	28.0	2.9	5.9	28.4	25.0	43.5	15.1	18.5
6.	215.99	BB	37.0	33.3	16.7	28.0	3.0	5.9	34.6	30.9	43.5	8.9	12.6
7.	270.00	BB	34.9	33.3	18.3	27.9	3.5	6.0	34.8	33.2	46.0	11.2	12.8
8.	286.88	BB	26.7	26.0	19.4	27.9	3.6	6.0	27.8	27.1	46.0	18.2	18.9
9.	324.00	BB	34.0	35.5	17.4	27.9	3.9	6.0	33.4	34.9	46.0	12.6	11.1
10.	405.02	BB	30.9	34.6	18.7	27.9	4.5	6.0	32.2	35.9	46.0	13.8	10.1
11.	472.53	BB	33.9	35.0	19.4	27.9	5.0	6.0	36.4	37.5	46.0	9.6	8.5
12.	540.00	BB	27.1	32.0	19.9	27.8	5.4	6.0	30.6	35.5	46.0	15.4	10.5
13.	675.00	BB	27.8	30.0	20.9	27.4	6.1	6.0	33.4	35.6	46.0	12.6	10.4
14.	945.05	BB	27.1	25.9	22.5	29.3	10.2	5.9	36.4	35.2	46.0	9.6	10.8

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

Except for the above table: adequate margin data below the limits.
 ANT.TYPE:30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

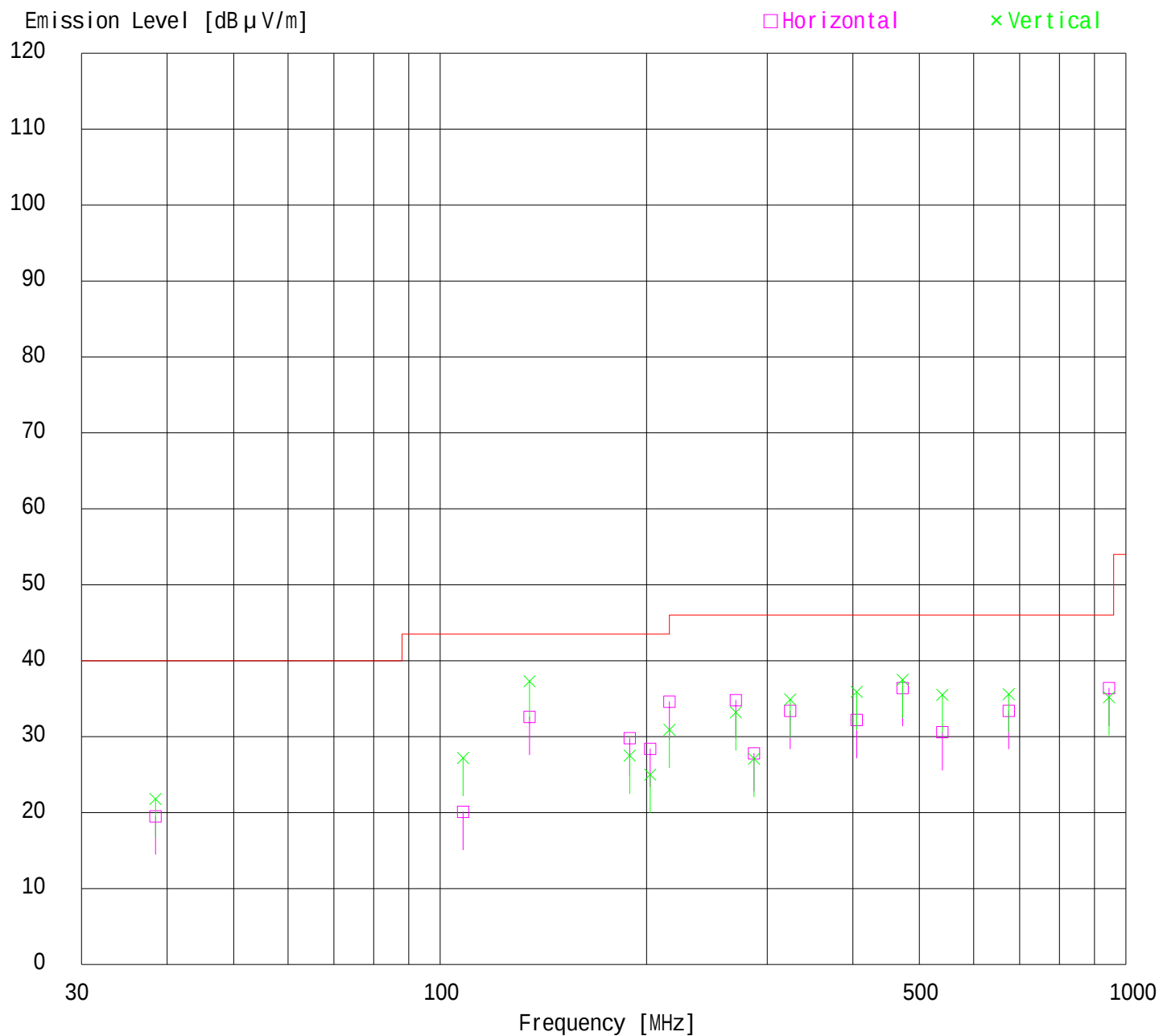
UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks : -
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24
Humidity : 39 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama



DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks : -
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24
Humidity : 60 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	38.08	BB	27.9	29.3	14.5	28.5	1.2	6.0	21.1	22.5	40.0	18.9	17.5
2.	135.00	BB	41.5	40.0	14.3	28.2	2.3	5.9	35.8	34.3	43.5	7.7	9.2
3.	189.02	BB	34.0	31.5	16.4	28.0	2.8	5.9	31.1	28.6	43.5	12.4	14.9
4.	202.49	BB	34.9	28.2	16.5	28.0	2.9	5.9	32.2	25.5	43.5	11.3	18.0
5.	215.99	BB	37.3	32.4	16.7	28.0	3.0	5.9	34.9	30.0	43.5	8.6	13.5
6.	270.00	BB	37.8	37.8	18.3	27.9	3.5	6.0	37.7	37.7	46.0	8.3	8.3
7.	324.01	BB	32.6	33.2	17.4	27.9	3.9	6.0	32.0	32.6	46.0	14.0	13.4
8.	405.02	BB	34.8	34.9	18.7	27.9	4.5	6.0	36.1	36.2	46.0	9.9	9.8
9.	472.52	BB	33.2	36.3	19.4	27.9	5.0	6.0	35.7	38.8	46.0	10.3	7.2
10.	540.02	BB	27.0	31.6	19.9	27.8	5.4	6.0	30.5	35.1	46.0	15.5	10.9
11.	675.03	BB	26.7	30.7	20.9	27.4	6.1	6.0	32.3	36.3	46.0	13.7	9.7
12.	945.07	BB	26.8	25.8	22.5	29.3	10.2	5.9	36.1	35.1	46.0	9.9	10.9

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

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

ANT.TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

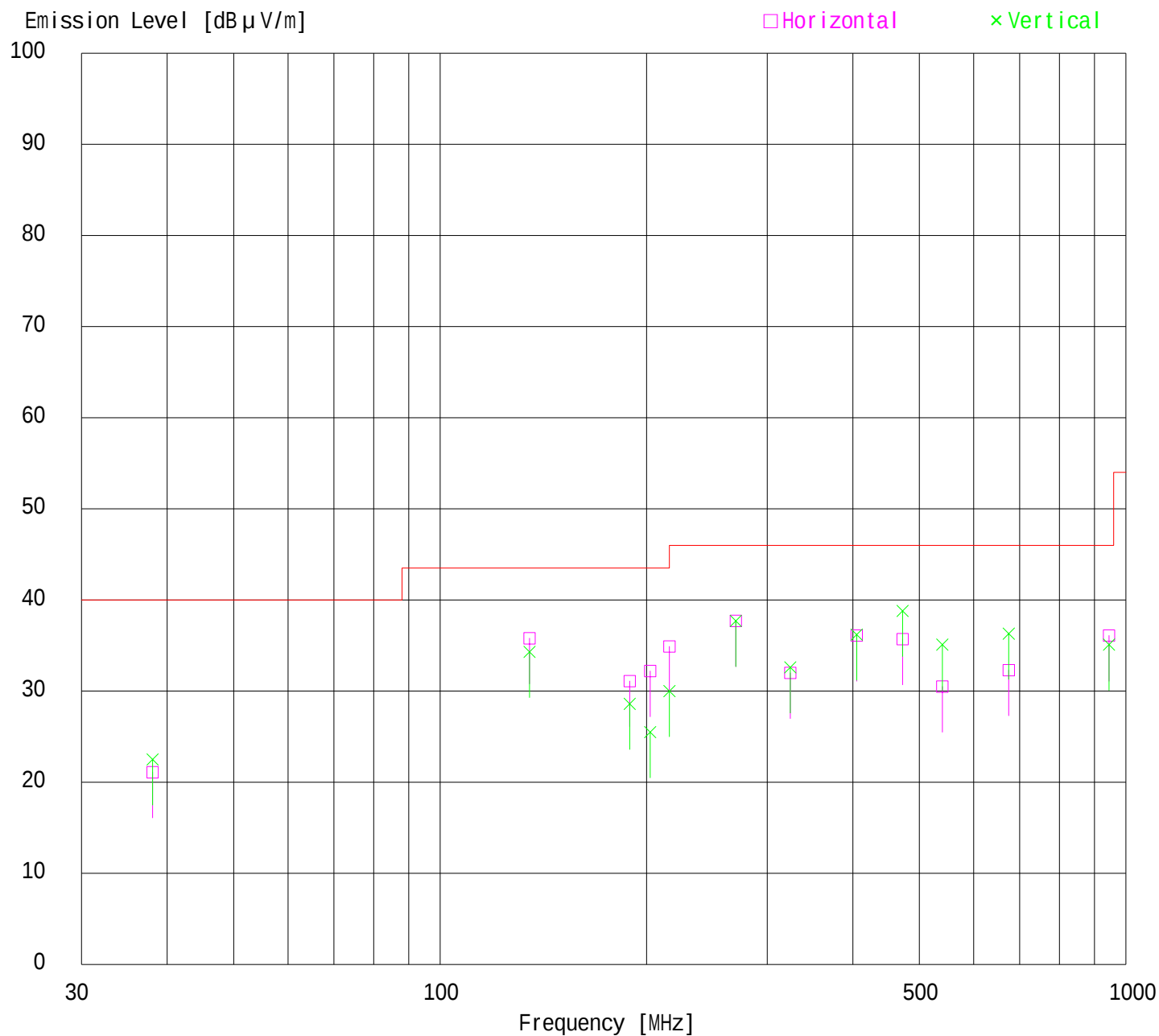
UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks : -
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24
Humidity : 60 %
Regulation : FCC Part15B CLASS B

Engineer : Tsubasa Takayama



DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks : -
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24 Engineer : Tsubasa Takayama
Humidity : 39 %
Regulation : FCC Part15B CLASS B(Peak Limit / Upper1GHz)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1215.12	BB	55.9	55.3	26.0	35.2	2.2	0.0	48.9	48.3	74.0	25.1	25.7
2.	1350.05	BB	53.9	55.5	26.7	35.0	2.3	0.0	47.9	49.5	74.0	26.1	24.5
3.	1620.04	BB	50.7	50.0	28.2	34.7	2.5	0.0	46.7	46.0	74.0	27.3	28.0

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

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

DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No.: 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.

Kind of Equipment : DVD/VCR

Model No. : DVD2100-CA

Serial No. : -

Power : AC120V/60Hz

Mode : DVD Play

Remarks : -

Date : 10/1/2004

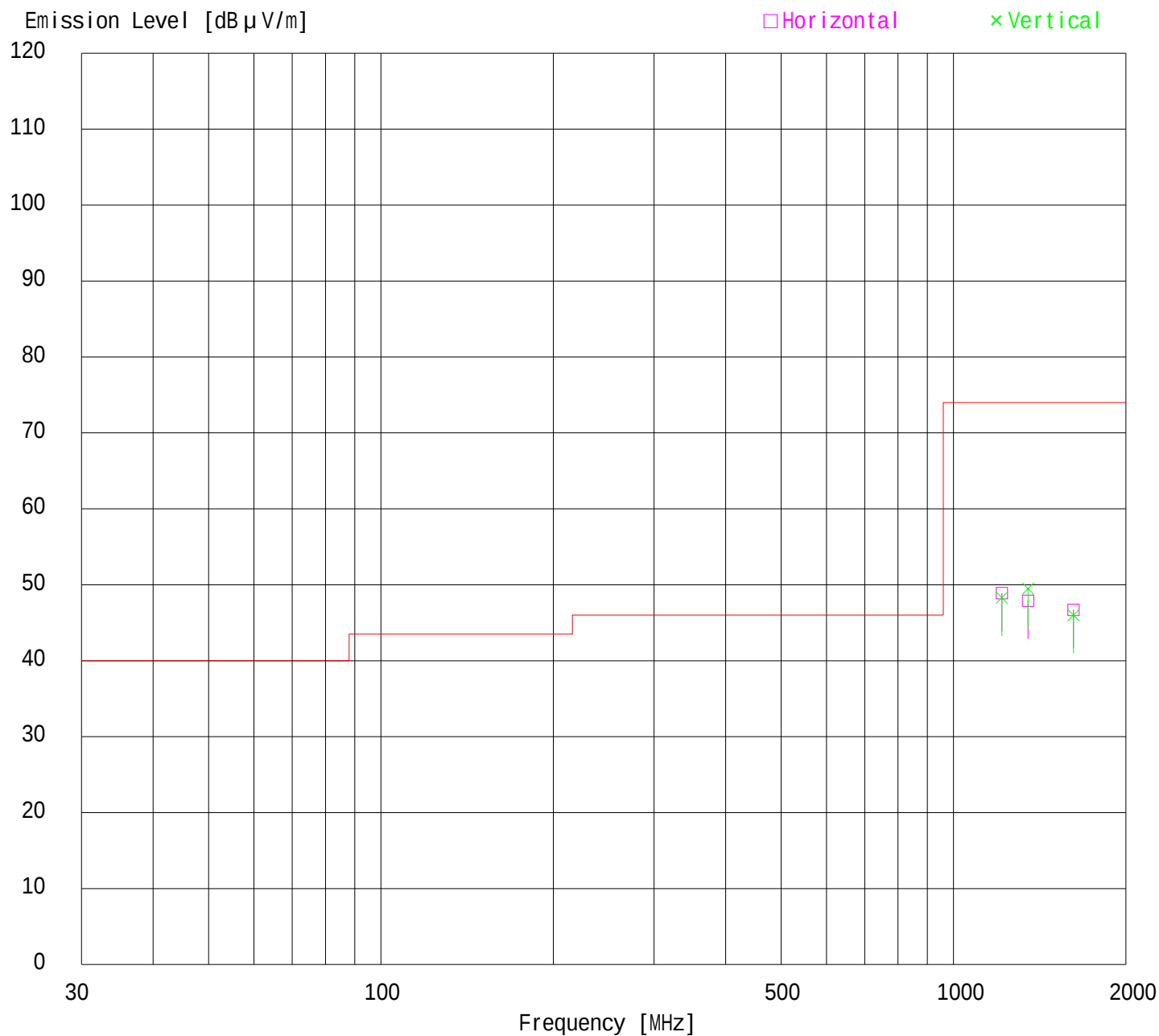
Test Distance : 3 m

Temperature : 24

Engineer : Tsubasa Takayama

Humidity : 39 %

Regulation : FCC Part15B CLASS B(Peak Limit / Upper1GHz)



DATA OF RADIATION TEST

UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks : -
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24 Engineer : Tsubasa Takayama
Humidity : 39 %
Regulation : FCC Part15B CLASS B(Average Limit / Upper1GHz)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1215.12	BB	49.8	48.6	26.0	35.2	2.2	0.0	42.8	41.6	54.0	11.2	12.4
2.	1350.05	BB	46.3	48.4	26.7	35.0	2.3	0.0	40.3	42.4	54.0	13.7	11.6
3.	1620.04	BB	41.2	39.4	28.2	34.7	2.5	0.0	37.2	35.4	54.0	16.8	18.6

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

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

DATA OF RADIATION TEST

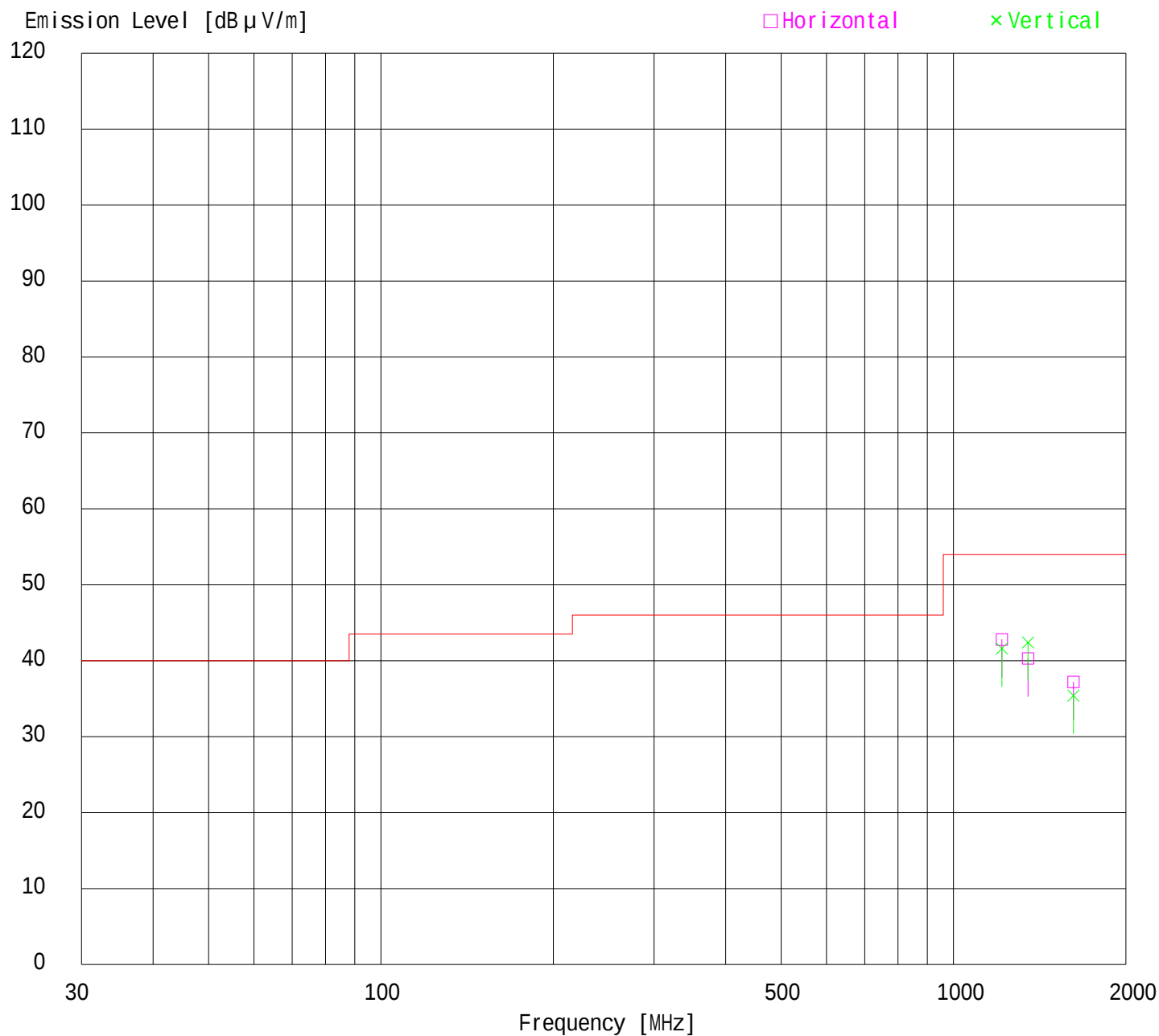
UL Apex Co., Ltd.

YOKOWA No.3 OPEN TEST SITE

Report No. : 25BE0324-YW-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : DVD2100-CA
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks : -
Date : 10/1/2004
Test Distance : 3 m
Temperature : 24
Humidity : 39 %
Regulation : FCC Part15B CLASS B(Average Limit / Upper1GHz)

Engineer : Tsubasa Takayama



DATA OF ANTENNA TERMINAL TEST

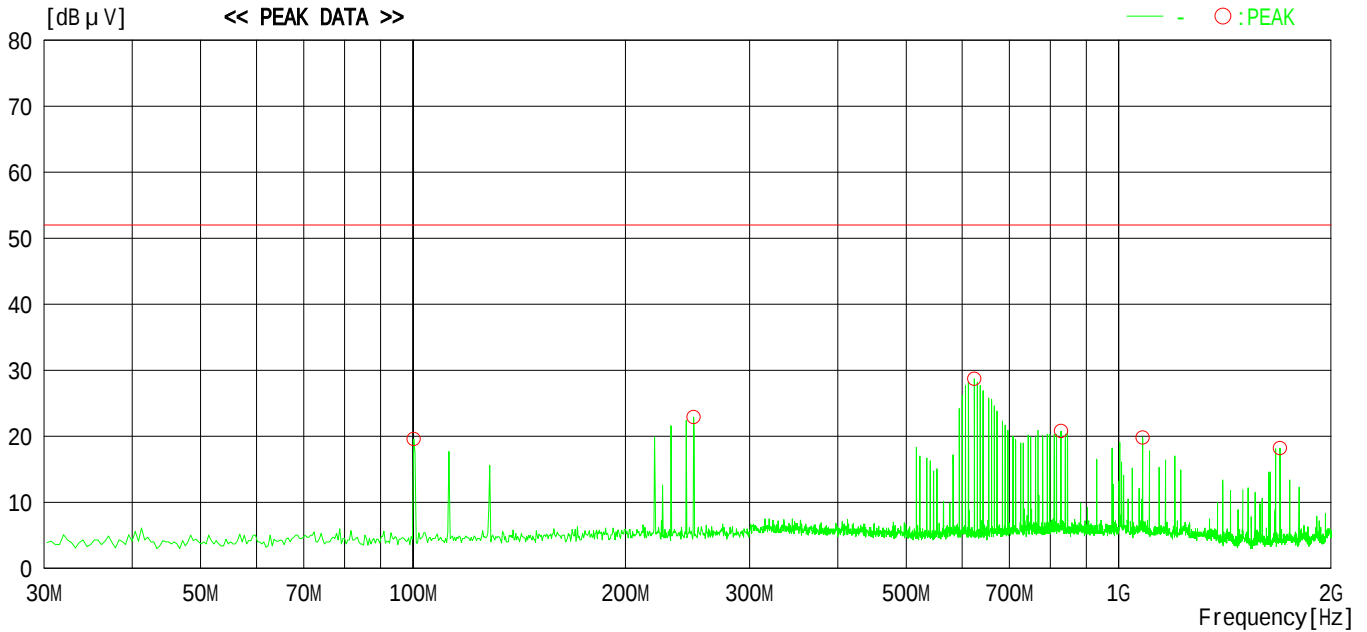
UL Apex Co.,Ltd.

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
OPERATION MODE : TV Tuning mode

REPORT NO : 25BE0324-YW-1
DATE : September 29, 2004
REGULATION : FCC 15B
TEST ENGINEER : Tsubasa Takayama

TEMP./HUMID. : 26 /68%

LIMIT : FCC 15B ANTENNA TERMINAL



NO	FREQ [MHz]	READING Peak [dB μ V]	C.F [dB]	RESULT Peak [dB μ V]	LIMIT Peak [dB μ V]	MARGIN - [dB μ V]	MARGIN [dB]	PHASE
1	100.24260	40.0	-20.4	19.6	52.0	----	32.4	----
2	249.85060	42.5	-19.6	22.9	52.0	----	29.1	----
3	624.56760	49.0	-20.3	28.7	52.0	----	23.3	----
4	828.57670	40.5	-19.7	20.8	52.0	----	31.2	----
5	1081.42500	45.5	-25.7	19.8	52.0	----	32.2	----
6	1693.14600	43.8	-25.6	18.2	52.0	----	33.8	----

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF ANTENNA TERMINAL TEST

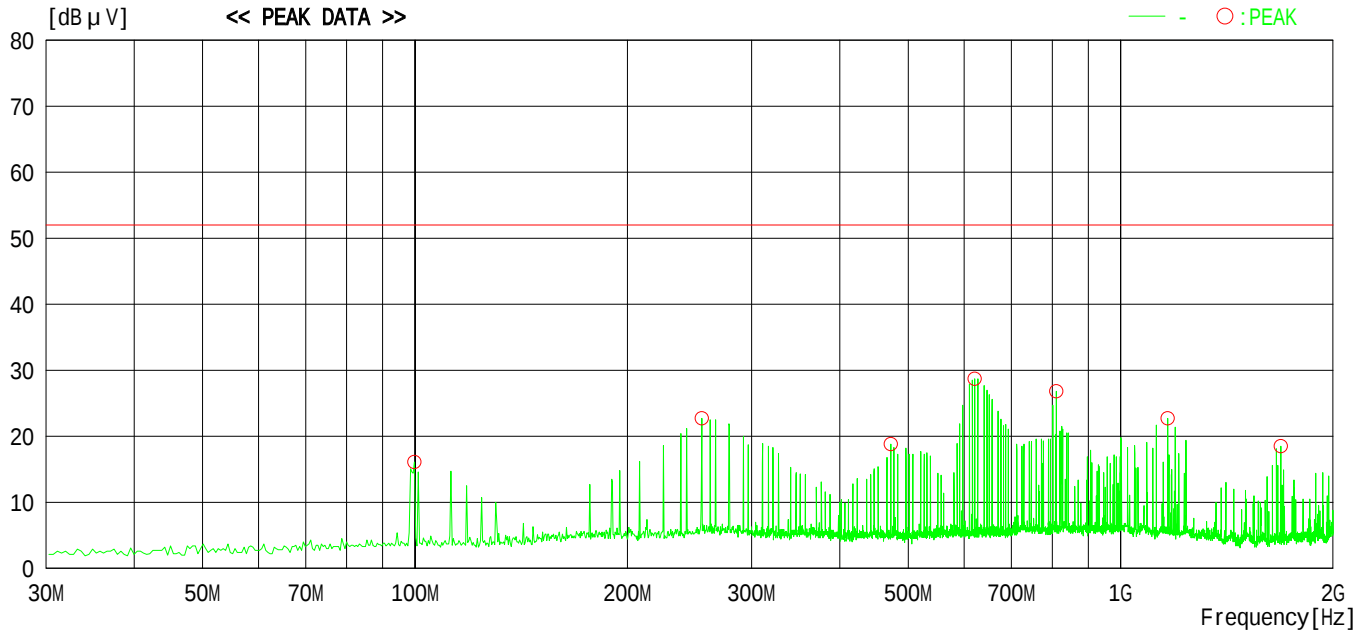
UL Apex Co.,Ltd.

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
OPERATION MODE : CATV Tuning mode

REPORT NO : 25BE0324-YW-1
DATE : September 29, 2004
REGULATION : FCC 15B
TEST ENGINEER : Tsubasa Takayama

TEMP./HUMID. : 26 /68%

LIMIT : FCC 15B ANTENNA TERMINAL



NO	FREQ [MHz]	READING Peak [dB μ V]	C.F [dB]	RESULT Peak [dB μ V]	LIMIT Peak [dB μ V]	MARGIN - [dB μ V]	MARGIN [dB]	PHASE
1	99.82113	36.5	-20.4	16.1	52.0	----	35.9	----
2	254.90780	42.2	-19.5	22.7	52.0	----	29.3	----
3	472.56620	39.2	-20.4	18.8	52.0	----	33.2	----
4	621.42490	49.0	-20.3	28.7	52.0	----	23.3	----
5	811.00450	46.5	-19.7	26.8	52.0	----	25.2	----
6	1166.41800	48.5	-25.8	22.7	52.0	----	29.3	----
7	1686.41500	44.2	-25.7	18.5	52.0	----	33.5	----

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

RF output level

UL Apex Co., LTD.
YOKOWA EMC LAB.

Company	: Orion Electric Co.,Ltd.	Report Number	: 24BE0324-YW-1
Equipment	: DVD/VCR	Regulation	: FCC Prat15B Subpart B
Model number	: DVD2100-CA	Date	: October 3, 2004
Power	: AC 120 V / 60 Hz	Temp./Humid	: 22 /51%
Description	: TV Reception + Rec(0dBmV)	Engineer	: Tsubasa Takayama

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	84.8	20.0	64.8	69.5	4.7
4	67.25	84.4	19.9	64.5	69.5	5.0

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	69.3	20.0	49.3	56.5	7.2
	65.75	68.2	20.0	48.2	56.5	8.3
4	62.75	68.7	20.0	48.7	56.5	7.8
	71.75	67.4	20.0	47.4	56.5	9.1

RF output level

UL Apex Co., LTD.
YOKOWA EMC LAB.

Company	: Orion Electric Co.,Ltd.	Report Number	: 24BE0324-YW-1
Equipment	: DVD/VCR	Regulation	: FCC Part15B Subpart B
Model number	: DVD2100-CA	Date	: October 3, 2004
Power	: AC 120 V / 60 Hz	Temp./Humid	: 22 /51%
Description	: TV Reception + Rec(25dBmV)	Engineer	: Tsubasa Takayama

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	84.6	20.0	64.6	69.5	4.9
4	67.25	84.2	19.9	64.3	69.5	5.2

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	69.3	20.0	49.3	56.5	7.2
	65.75	68.2	20.0	48.2	56.5	8.3
4	62.75	68.7	20.0	48.7	56.5	7.8
	71.75	67.4	20.0	47.4	56.5	9.1

RF output level

UL Apex Co., LTD.
YOKOWA EMC LAB.

Company	: Orion Electric Co.,Ltd.	Report Number	: 24BE0324-YW-1
Equipment	: DVD/VCR	Regulation	: FCC Part15B Subpart B
Model number	: DVD2100-CA	Date	: October 3, 2004
Power	: AC 120 V / 60 Hz	Temp./Humid	: 22 /51%
Description	: VCR Playback	Engineer	: Tsubasa Takayama

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	85.0	20.0	65.0	69.5	4.5
4	67.25	84.3	19.9	64.4	69.5	5.1

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	69.3	20.0	49.3	56.5	7.2
	65.75	68.2	20.0	48.2	56.5	8.3
4	62.75	68.6	20.0	48.6	56.5	7.9
	71.75	67.4	20.0	47.4	56.5	9.1

RF output level

UL Apex Co., LTD.
YOKOWA EMC LAB.

Company	: Orion Electric Co.,Ltd.	Report Number	: 24BE0324-YW-1
Equipment	: DVD/VCR	Regulation	: FCC Part15B Subpart B
Model number	: DVD2100-CA	Date	: October 3, 2004
Power	: AC 120 V / 60 Hz	Temp./Humid	: 22 /51%
Description	: DVD Play	Engineer	: Tsubasa Takayama

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	85.0	20.0	65.0	69.5	4.5
4	67.25	84.3	19.9	64.4	69.5	5.1

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	69.4	20.0	49.4	56.5	7.1
	65.75	68.1	20.0	48.1	56.5	8.4
4	62.75	68.6	20.0	48.6	56.5	7.9
	71.75	67.5	20.0	47.5	56.5	9.0

DATA OF RF SUPRIIOUS TEST

UL Apex Co.,Ltd.
Date : 2004/10/03 21:17:49

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 22 /51%

REPORT NO : 25BE0324-YW-1
DATE : October 3, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tubasa Takayama

OPERATION MODE : TV Receotion+Rec.(0dBmV) : 3ch

LIMIT : FCC 15B RF OUT SPURIOUS

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	47.7100	35.3	----	-21.0	14.3	----	39.5	----	25.2	----	-
2	74.7700	33.0	----	-21.0	12.0	----	39.5	----	27.5	----	-
3	122.4900	40.6	----	-20.8	19.8	----	39.5	----	19.7	----	-
4	171.8000	31.7	----	-20.7	11.0	----	39.5	----	28.5	----	-
5	244.9900	32.5	----	-20.9	11.6	----	39.5	----	27.9	----	-
6	945.0100	39.4	----	-20.5	18.9	----	39.5	----	20.6	----	-

CALCULATION:READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF RF SUPRIIOUS TEST

UL Apex Co.,Ltd.
Date : 2004/10/03 21:17:49

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 22 /51%

REPORT NO : 25BE0324-YW-1
DATE : October 3, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tubasa Takayama

OPERATION MODE : TV Receotion+Rec.(25dBmV) : 3ch

LIMIT : FCC 15B RF OUT SPURIOUS

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	47.7100	35.3	----	-21.0	14.3	----	39.5	----	25.2	----	-
2	74.7500	33.0	----	-21.0	12.0	----	39.5	----	27.5	----	-
3	122.5000	40.0	----	-20.8	19.2	----	39.5	----	20.3	----	-
4	171.7900	31.2	----	-20.7	10.5	----	39.5	----	29.0	----	-
5	244.9900	32.2	----	-20.9	11.3	----	39.5	----	28.2	----	-
6	945.0000	39.2	----	-20.5	18.7	----	39.5	----	20.8	----	-

CALCULATION:READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF RF SUPRIIOUS TEST

UL Apex Co.,Ltd.
Date : 2004/10/03 21:17:49

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 22 /51%

REPORT NO : 25BE0324-YW-1
DATE : October 3, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tubasa Takayama

OPERATION MODE : VCR Playback : 3ch

LIMIT : FCC 15B RF OUT SPURIOUS

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	47.7400	35.3	----	-21.0	14.3	----	39.5	----	25.2	----	-
2	74.7200	32.6	----	-21.0	11.6	----	39.5	----	27.9	----	-
3	122.4800	40.4	----	-20.8	19.6	----	39.5	----	19.9	----	-
4	171.8100	31.7	----	-20.7	11.0	----	39.5	----	28.5	----	-
5	244.9900	32.7	----	-20.9	11.8	----	39.5	----	27.7	----	-
6	945.0000	39.9	----	-20.5	19.4	----	39.5	----	20.1	----	-

CALCULATION:READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF RF SUPRIIOUS TEST

UL Apex Co.,Ltd.
Date : 2004/10/03 21:17:49

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 22 /51%

REPORT NO : 25BE0324-YW-1
DATE : October 3, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tubasa Takayama

OPERATION MODE : DVD Play : 3ch

LIMIT : FCC 15B RF OUT SPURIOUS

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	47.6700	35.3	----	-21.0	14.3	----	39.5	----	25.2	----	-
2	74.7100	32.5	----	-21.0	11.5	----	39.5	----	28.0	----	-
3	122.5000	40.4	----	-20.8	19.6	----	39.5	----	19.9	----	-
4	171.8000	31.7	----	-20.7	11.0	----	39.5	----	28.5	----	-
5	244.9900	32.7	----	-20.9	11.8	----	39.5	----	27.7	----	-
6	612.5000	34.3	----	-20.6	13.7	----	39.5	----	25.8	----	-

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF RF SUPRIIOUS TEST

UL Apex Co.,Ltd.
Date : 2004/10/03 21:17:49

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 22 /51%

REPORT NO : 25BE0324-YW-1
DATE : October 3, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tubasa Takayama

OPERATION MODE : TV Reception+Rec.(0dBmV) : 4ch

LIMIT : FCC 15B RF OUT SPURIOUS

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	53.7300	35.2	----	-20.9	14.3	----	39.5	----	25.2	----	-
2	80.7600	31.9	----	-21.2	10.7	----	39.5	----	28.8	----	-
3	134.4500	38.0	----	-20.7	17.3	----	39.5	----	22.2	----	-
4	171.8000	30.8	----	-20.7	10.1	----	39.5	----	29.4	----	-
5	268.9600	31.7	----	-20.9	10.8	----	39.5	----	28.7	----	-
6	945.0000	39.8	----	-20.5	19.3	----	39.5	----	20.2	----	-

CALCULATION:READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF RF SUPRIIOUS TEST

UL Apex Co.,Ltd.
Date : 2004/10/03 21:17:49

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 22 /51%

REPORT NO : 25BE0324-YW-1
DATE : October 3, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tubasa Takayama

OPERATION MODE : TV Reception+Rec.(25dBmV) : 4ch

LIMIT : FCC 15B RF OUT SPURIOUS

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	53.7200	35.3	----	-20.9	14.4	----	39.5	----	25.1	----	-
2	80.7500	31.7	----	-21.2	10.5	----	39.5	----	29.0	----	-
3	134.4400	38.0	----	-20.7	17.3	----	39.5	----	22.2	----	-
4	171.8000	30.5	----	-20.7	9.8	----	39.5	----	29.7	----	-
5	268.9600	31.5	----	-20.9	10.6	----	39.5	----	28.9	----	-
6	945.0100	39.8	----	-20.5	19.3	----	39.5	----	20.2	----	-

CALCULATION:READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF RF SUPRIIOUS TEST

UL Apex Co.,Ltd.
Date : 2004/10/03 21:17:49

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 22 /51%

REPORT NO : 25BE0324-YW-1
DATE : October 3, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tubasa Takayama

OPERATION MODE : VCR Playback : 4ch

LIMIT : FCC 15B RF OUT SPURIOUS

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	53.7400	35.0	----	-20.9	14.1	----	39.5	----	25.4	----	-
2	80.7100	32.2	----	-21.2	11.0	----	39.5	----	28.5	----	-
3	134.4500	38.2	----	-20.7	17.5	----	39.5	----	22.0	----	-
4	171.8200	30.7	----	-20.7	10.0	----	39.5	----	29.5	----	-
5	268.9500	32.0	----	-20.9	11.1	----	39.5	----	28.4	----	-
6	945.0000	39.2	----	-20.5	18.7	----	39.5	----	20.8	----	-

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF RF SUPRIIOUS TEST

UL Apex Co.,Ltd.
Date : 2004/10/03 21:17:49

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 22 /51%

REPORT NO : 25BE0324-YW-1
DATE : October 3, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tubasa Takayama

OPERATION MODE : DVD Play : 4ch

LIMIT : FCC 15B RF OUT SPURIOUS

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	53.7400	34.8	----	-20.9	13.9	----	39.5	----	25.6	----	-
2	80.7600	31.7	----	-21.2	10.5	----	39.5	----	29.0	----	-
3	134.4600	37.9	----	-20.7	17.2	----	39.5	----	22.3	----	-
4	171.8000	30.4	----	-20.7	9.7	----	39.5	----	29.8	----	-
5	268.9200	31.4	----	-20.9	10.5	----	39.5	----	29.0	----	-
6	945.0100	37.7	----	-20.5	17.2	----	39.5	----	22.3	----	-

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF ANTENNA TRANSFER SWITCH TEST

UL Apex Co.,Ltd.

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 23 /43%

REPORT NO : 25BE0324-YW-1
DATE : October 05, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tsubasa Takayama

OPERATION MODE : VCR Playback : 3ch

LIMIT : FCC15B ANTENNA TRANSFER SWITCH

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	61.2500	24.6	----	-20.8	3.8	----	9.5	----	5.7	----	-
2	122.5000	24.0	----	-20.3	3.7	----	9.5	----	5.8	----	-
3	183.7500	22.0	----	-19.7	2.3	----	9.5	----	7.2	----	-
4	245.0000	23.0	----	-19.6	3.4	----	9.5	----	6.1	----	-
5	306.2500	23.3	----	-19.5	3.8	----	9.5	----	5.7	----	-
6	367.5000	23.7	----	-19.8	3.9	----	9.5	----	5.6	----	-

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF ANTENNA TRANSFER SWITCH TEST

UL Apex Co.,Ltd.

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 23 /43%

REPORT NO : 25BE0324-YW-1
DATE : October 05, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tsubasa Takayama

OPERATION MODE : DVD Play : 3ch

LIMIT : FCC15B ANTENNA TRANSFER SWITCH

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	61.2500	24.2	----	-20.8	3.4	----	9.5	----	6.1	----	-
2	122.5000	24.2	----	-20.3	3.9	----	9.5	----	5.6	----	-
3	183.7500	23.1	----	-19.7	3.4	----	9.5	----	6.1	----	-
4	245.0000	23.9	----	-19.6	4.3	----	9.5	----	5.2	----	-
5	306.2500	23.4	----	-19.5	3.9	----	9.5	----	5.6	----	-
6	367.5000	23.6	----	-19.8	3.8	----	9.5	----	5.7	----	-

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF ANTENNA TRANSFER SWITCH TEST

UL Apex Co.,Ltd.

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 23 /43%

REPORT NO : 25BE0324-YW-1
DATE : October 05, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tsubasa Takayama

OPERATION MODE : VCR Playback : 4ch

LIMIT : FCC15B ANTENNA TRANSFER SWITCH

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	67.2500	25.8	----	-20.5	5.3	----	9.5	----	4.2	----	-
2	134.5000	24.0	----	-20.2	3.8	----	9.5	----	5.7	----	-
3	201.7500	23.5	----	-19.6	3.9	----	9.5	----	5.6	----	-
4	269.0000	23.4	----	-19.5	3.9	----	9.5	----	5.6	----	-
5	336.2500	23.4	----	-19.6	3.8	----	9.5	----	5.7	----	-
6	403.5000	23.7	----	-20.1	3.6	----	9.5	----	5.9	----	-

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

DATA OF ANTENNA TRANSFER SWITCH TEST

UL Apex Co.,Ltd.

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
MODEL : DVD2100-CA
TEMP./HUMID. : 23 /43%

REPORT NO : 25BE0324-YW-1
DATE : October 05, 2004
REGULATION : FCC Part15 Subpart B
TEST ENGINEER : Tsubasa Takayama

OPERATION MODE : DVD Play : 4ch

LIMIT : FCC15B ANTENNA TRANSFER SWITCH

NO	FREQ [MHz]	READING		C.F [dB]	RESULT		LIMIT		MARGIN		PHASE
		Peak [dB μ V]	- [dB μ V]		Peak [dB μ V]	- [dB μ V]	Peak [dB μ V]	- [dB μ V]	[dB]	[dB]	
1	67.2500	25.5	----	-20.5	5.0	----	9.5	----	4.5	----	-
2	134.5000	24.4	----	-20.2	4.2	----	9.5	----	5.3	----	-
3	201.7500	23.6	----	-19.6	4.0	----	9.5	----	5.5	----	-
4	269.0000	23.7	----	-19.5	4.2	----	9.5	----	5.3	----	-
5	336.2500	23.5	----	-19.6	3.9	----	9.5	----	5.6	----	-
6	403.5000	23.9	----	-20.1	3.8	----	9.5	----	5.7	----	-

CALCULATION: READING+MATCHING PAD LOSS+CABLE LOSS-AMP.GAIN

Picture Sensitivity Test

UL Apex Co.,Ltd.
Yokowa EMC Laboratory

Company	: Orion Electric Co.,Ltd.	Report Number	: 25BE0324-YW-1
Equipment	: DVD/VCR	Regulation	: FCC Part15 SubpartB
Model Number	: DVD2100-CA	Date	: 9/30/2004
Power	: AC120 V / 60Hz	Temp / Humid	: deg.C/ %
Description	: TV Reception	Engineer	: Tsubasa Takayama
Remarks	: -		

Ch [VHF]	Frequency [MHz]	Sensitivity [MHz]		Ch [UHF]	Frequency [MHz]	Sensitivity [MHz]	
		[dBμV]	[μV]			[dB μ V]	[μ V]
2	55.25	20.0	10.0	14	471.25	18.2	8.1
3	61.25	15.0	5.6	20	507.25	19.1	9.0
4	67.25	14.5	5.3	26	543.25	20.6	10.7
5	77.25	15.0	5.6	32	579.25	20.8	11.0
6	83.25	15.0	5.6	38	615.25	23.7	15.3
7	175.25	17.0	7.1	44	651.25	22.7	13.6
8	181.25	16.9	7.0	50	687.25	22.7	13.6
9	187.25	17.0	7.1	56	723.25	21.3	11.6
10	193.25	17.0	7.1	62	759.25	21.3	11.6
11	199.25	17.1	7.2	69	801.25	19.5	9.4
12	205.25	17.7	7.7	-	-	-	
13	211.25	17.6	7.6	-	-	-	-
Average VHF			6.9	Average UHF			11.4
Average UHF/VHF : 20 log UHF[μV] / VHF[μV]=				4.4	[Limit : 8.0dB]		

Noise Figure Test

UL Apex Co.,Ltd.
Yokowa EMC Laboratory

Company : Orion Electric Co.,Ltd.	Report Number : 25BE0324-YW-1
Equipment : DVD/VCR	Regulation : FCC 15B SubpartB
Model Number : DVD2100-CA	Date : 9/30/2004
Power : 120V/60Hz	Temp / Humid : deg.C/%
Description : TV Reception	Engineer : Tsubasa Takayama
Remarks : -	

Ch	Frequency [MHz]	Meter Reading [dB]	Correction Factor [dB]	Noise Figure [dB]	Limits [dB]	Margin [dB]
TV VHF Fundamental						
2	55.25	7.7	0.2	7.5	14.0	6.5
3	61.25	3.0	0.2	2.8	14.0	11.2
4	67.25	2.2	0.2	2.0	14.0	12.0
5	77.25	1.7	0.2	1.5	14.0	12.5
6	83.25	1.9	0.2	1.7	14.0	12.3
7	175.25	4.5	0.2	4.3	14.0	9.7
8	181.25	4.2	0.2	4.0	14.0	10.0
9	187.25	4.0	0.2	3.8	14.0	10.2
10	193.25	4.0	0.2	3.8	14.0	10.2
11	199.25	4.1	0.2	3.9	14.0	10.1
12	205.25	4.0	0.2	3.8	14.0	10.2
13	211.25	4.0	0.2	3.8	14.0	10.2
TV UHF Fundamental						
14	471.25	2.1	0.3	1.8	14.0	12.2
20	507.25	5.5	0.3	5.2	14.0	8.8
26	543.25	5.4	0.3	5.1	14.0	8.9
32	579.25	5.5	0.3	5.2	14.0	8.8
38	615.25	5.7	0.3	5.4	14.0	8.6
44	651.25	4.6	0.3	4.3	14.0	9.7
50	687.25	4.0	0.3	3.7	14.0	10.3
56	723.25	3.9	0.4	3.5	14.0	10.5
62	759.25	4.1	0.4	3.7	14.0	10.3
69	801.25	4.4	0.4	4.0	14.0	10.0
Mid band						
14	121.25	1.9	0.2	1.7	14.0	12.3
16	133.25	7.5	0.2	7.3	14.0	6.7
18	145.25	6.0	0.2	5.8	14.0	8.2
20	157.25	5.2	0.2	5.0	14.0	9.0
22	169.25	5.1	0.2	4.9	14.0	9.1
Super band						
23	217.25	4.1	0.2	3.9	14.0	10.1
26	235.25	4.1	0.2	3.9	14.0	10.1
29	253.25	4.2	0.2	4.0	14.0	10.0
32	271.25	4.2	0.2	4.0	14.0	10.0
36	295.25	4.1	0.2	3.9	14.0	10.1

Test Report No : 25BE0324-YW-1

APPENDIX 3

Test Instruments

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
APVBT01	VIDEO BOOSTER	UL Apex	-	RF, ATS	-
APTVG01	TV Generator	Leader	408NPS	RF, ATS	Pre Check
APSPA04	Spectrum Analyzer	Advantest	R3265	AT, RF, ATS	2004/05/14 * 12
IP-06	Matching Pad	TME	ZT-301	PS, NF	2004/05/06 * 12
APMAT05	Matching Pad	TME	ZT-130	AT, RF, ATS	2003/12/16 * 12
APNFM01	Noise Figure Indicator	Elena	ENF-2005	NF	2004/10/04 * 12
APNFS01	Noise Source	Elena	MC1100	NF	-
AV01-01	Signal Generator	Rohde & Schwarz	SMY01	PS	2004/02/19 * 12
SS-05	Digitizing Oscilloscope	Sony Tektronix	2221	PS	2004/01/22 * 12
APBPF01	Band pass filter	Erika Fiedler	BP	PS	Pre Check
APPRA01	Pre Amplifier	Anritsu	MH648A	AT, RF, ATS	2004/09/24 * 12
APPRA05	Pre Amplifier	Hewlett Packard	8449B	AT	2003/12/10 * 12
APCBL-01	Coaxial Cable	Fujikura	5D-2W	AT, RF, ATS	2004/01/08 * 12
APCBL-02	Coaxial Cable	Fujikura	5D-2W	AT, RF, ATS	2004/01/08 * 12
OS-09	Digital Humidity Indicator	SATO	PC-5000TRH	AT, RF, ATS, PS, NF	2004/05/10 * 12
HA-01	Horn Antenna	A.H.Systems	SAS-200/571	RE	2004/04/10 * 12
LS-03	LISN(AMN)	Schwarzbeck	NSLK8127	CE	2003/10/31 * 12
SA-05	Spectrum Analyzer	Advantest	R3271	RE	2003/12/21 * 12
TR-03	Test Receiver	Rohde & Schwarz	ESHS30	CE	2004/05/21 * 12
CC-2S	Yokowa No.2 shield coaxial(0.01MHz-1000M Hz)	UL Apex	CC-24,CC-25,CC-26, CC-28,CC-29,SW-21, SW-22	CE	2004/03/28 * 12
AF-01	Pre Amplifier	Hewlett Packard	8447D	RE	2004/03/28 * 12
AF-06	Pre Amplifier	Agilent	HP8449B	RE	2003/12/17 * 12
AT-06	Attenuator	Anritsu	MP721B	RE	2004/03/27 * 12
BA-06	Biconical Antenna	Schwarzbeck	BBA9106	RE	2004/01/31 * 12
LA-07	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	RE	2004/01/31 * 12
SA-06	Spectrum Analyzer	Advantest	R3273	RE	2003/11/13 * 12
TR-06	Test Receiver	Rohde & Schwarz	ESVS10	RE	2003/10/28 * 12
CC-3ORC	Yokowa No.3 open coaxial(0.01-1000MHz)	UL Apex	CC-31,CC-32,CC-33, CC-34,CC-35,CC-36, CC-37,SW-31,SW-32	RE	2004/03/28 * 12
CC-C15	Microwave Cable	Suhner	SUCOFLEX	RE	2004/05/02 * 12
CC-C17	Microwave Cable	Suhner	SUCOFLEX	RE	2004/05/02 * 12
YOATS-03	Open Test Site	JSE	3m, 10m	RE	2004/08/15 * 12
OS-16	Digital Humidity Indicator	SATO	PC-5000TRH	RE	2004/05/07 * 12
OS-15	Digital Humidity Indicator	SATO	PC-5000TRH	CE	2004/05/06 * 12

All equipment is calibrated with traceable calibrations . Each calibration is traceable to the national or international standards .

Test Item :

CE: Conducted emission
 RE: Radiated emission
 AT: Antenna terminal disturbance voltage
 RF: RF output level & spurious
 ATS: Antenna transfer switch
 PS: Picture sensitivity
 NF: Noise figure