



Certification EMI TEST REPORT

Test Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Type of equipment : DVD Player with Video Cassette Recorder
Model number : SD-V393SU2
FCC ID : A7RM2F4B
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
SD-V393SC2	TOSHIBA	-	-
SD-V330SU2	TOSHIBA	-	-
SD-V330SC2	TOSHIBA	-	-
-	-	-	-
-	-	-	-

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 : June 29 to July 8, 2005

Tested by:

Tsubasa Takayama
Engineer of EMC Service

Tomoyuki Yamashita
Engineer of EMC Service

Approved by:

Hiroya Tabata
Leader of EMC Service

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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 : Yoshimasa Tanikawa

Section 2 : Equipment under test (E.U.T.)**2.1 Identification of E.U.T.**

Type of equipment : DVD Player with Video Cassette Recorder
Brand Name : TOSHIBA
Model number : SD-V393SU2
FCC ID : A7RM2F4B
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 : June 29, 2005
Condition of EUT : Production Prototype
(Not for Sale: This sample is equivalent to mass-produced items.)

2.2 Product description

Model: SD-V393SU2 (referred to as the EUT in this report) is a DVD Player with Video Cassette Recorder.
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

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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	CISPR 22	8.7 dB (0.1581 MHz, AV, L1, AV Input2 + Rec. 5Vp-p)	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	2.7 dB (945.03 MHz, Vertical, DVD Play)	Complied
Antenna terminal voltage	ANSI C63.4:2003	2 nW (at 75 ohm)	22.9 dB (624.85330 MHz, TV tuning / 627.71040 MHz, CATV tuning)	Complied
RF output level	ANSI C63.4:2003	Video signal: 3000 uV Aural signal: 671 uV	5.4 dB (61.25 MHz, 3ch, TV Reception + Rec. 0dBmV)	Complied
Spurious emission		94.8 uV	20.1 dB (810.0200 MHz, 3ch, AV Input1 + Rec. 5Vp-p)	Complied
Transfer switch	ANSI C63.4:2003	9.5 dB	3.3 dB (336.2500 MHz, 4ch, DVD Play)	Complied
Picture sensitivity	ANSI C63.4:2003	8 dB	3.9 dB	Complied
Noise figure	FCC/OET MP:2:1986	14 dB	6.4 dB (615.25 MHz, 38ch / 133.25 MHz, 16ch)	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.

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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 meets the limits unless the uncertainty is taken into consideration.

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

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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		

*NVLAP Lab. code : 200109-0

No.1 and No.3 sites have been fully described in a report submitted to FCC office, and listed on September 25, 2003.
(Registration number: 90412)

No.2 site has been fully described in a report submitted to FCC office, and listed on August 29, 2003.
(Registration number: 90411)

3.8 Test setup, Data of EMI & Test instruments

Please refer to Appendix 1 to 3.

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

4.1 Operating modes

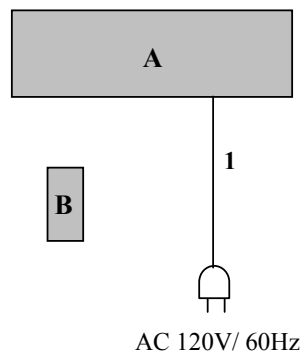
The EUT exercise program used during testing was designed exercise the various system components in a manner similar to typical use.

The sequence in used : * TV Reception + Rec. mode (0 dBmV input / 25 dBmV input)
 * AV Input 1 + Rec. mode / AV Input 2 + Rec. mode (1 Vp-p input / 5 Vp-p input)
 * VCR Playback 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 Player with Video Cassette Recorder	SD-V393SU2	—	Orion Electric Co., Ltd.	A7RM2F4B	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

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Section 5 : Conducted emission

5.1 Operation environment

The test was carried out No.3 shielded room.

Date : June 30, 2005

Temperature : See data

Humidity : See data

5.2 Test configuration

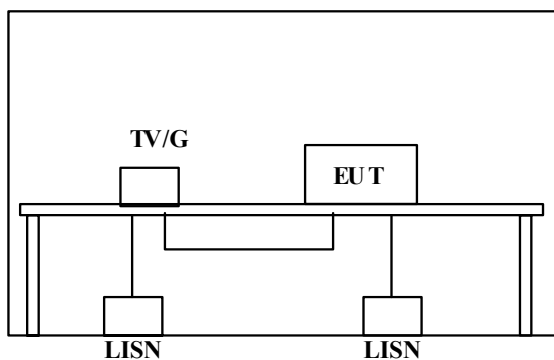
EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT was aligned and flushed with rear of tabletop. All other surfaces of tabletop was at least 80 cm from any 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
 Front video in: 75 ohm terminated
 Front audio in: 47 k ohm terminated
 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 output cable
 Component out (Y/P_B/P_R): 75 ohm terminated with component cable
 RF output: 75 ohm terminated with RF output cable
 Coaxial out: 75 ohm terminated with coaxial cable
 Rear video in: 75 ohm terminated
 Rear audio in: 47 k ohm terminated

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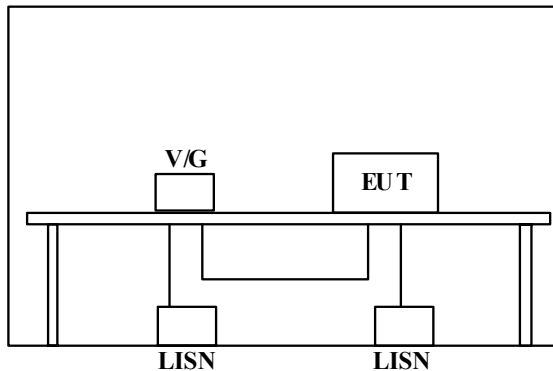
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AV Input 1 + Rec. mode/ AV Input 2 + Rec. mode (1 Vp-p input / 5 Vp-p input)

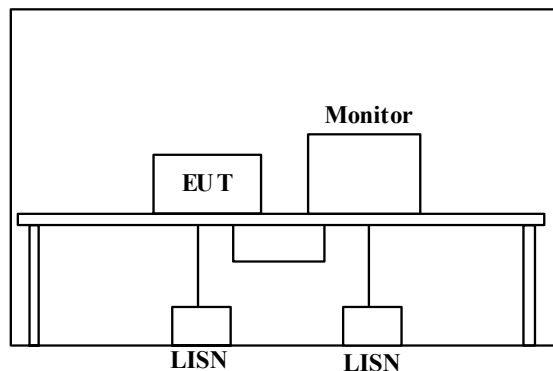
Shielded room



RF in: 75 ohm terminated
 Front video in: Video signal generator connected or 75 ohm terminated
 Front audio in: 47 k ohm terminated
 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 output cable
 Component out (Y/P_B/P_R): 75 ohm terminated with component cable
 RF output: 75 ohm terminated with RF output cable
 Coaxial out: 75 ohm terminated with coaxial cable
 Rear video in: video signal generator connected or 75 ohm terminated
 Rear audio in: 47 k ohm terminated

VCR Playback mode / DVD Play mode

Shielded room



RF in: 75 ohm terminated with RF input cable
 Front video in: 75 ohm terminated with video cable
 Front audio in: 47 k ohm terminated with audio cable
 Rear video out: monitor connected
 Rear audio out: monitor connected
 S-video out: 75 ohm terminated with S-video output cable
 Component out (Y/P_B/P_R): 75 ohm terminated with component cable
 RF output: 75 ohm terminated with RF output cable
 Coaxial out: 75 ohm terminated with coaxial cable
 Rear video in: 75 ohm terminated with video cable
 Rear audio in: 47 k ohm terminated with audio cable

5.3 Test conditions

Frequency range : 0.15 MHz – 30 MHz
EUT position : Table top
EUT operation mode : TV Reception + Rec., AV Input 1+ Rec., AV Input 2 + Rec.,
VCR Playback., 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.

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

Detector Type : QP / AV
IF Bandwidth : 10 kHz / 10 kHz

5.5 Test result

Passed

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

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Section 6 : Radiated emission

6.1 Operation environment

The test was carried out in No.1 and No.3 open site.

Date : June 29, 30 and July 8, 2005

Temperature : See data

Humidity : See data

6.2 Test configuration

EUT was placed on a platform of nominal size, 1 m by 1.8 m, 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.

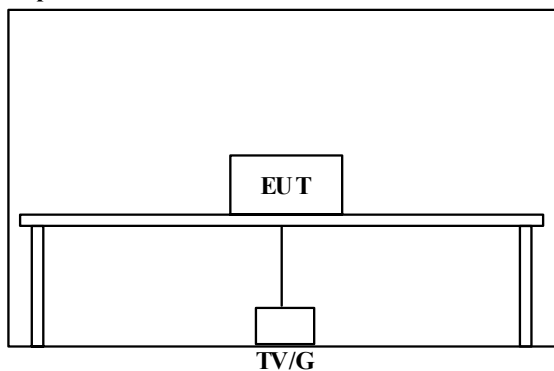
A drawing of the set up is shown in figure 2 and photographs in Appendix 1.

Figure 2. Radiated emission



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

Open test site



RF in: TV signal generator connected or 75 ohm terminated
 Front video in: 75 ohm terminated
 Front audio in: 47 k ohm terminated
 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 output cable
 Component (Y/P_B/P_R): 75 ohm terminated with component cable
 RF output: 75 ohm terminated with RF output cable
 Coaxial out: 75 ohm terminated with coaxial cable
 Rear video in: 75 ohm terminated
 Rear audio in: 47 k ohm terminated

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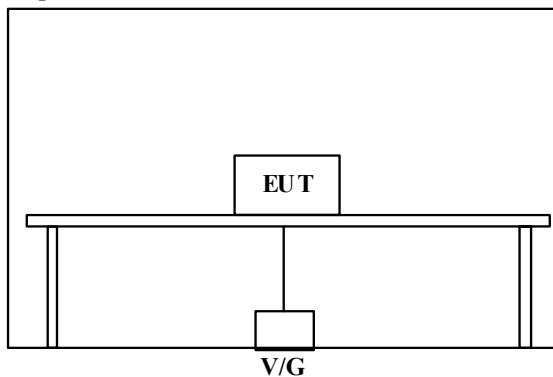
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AV Input 1 + Rec. mode/ AV Input 2 + Rec. mode (1 Vp-p input / 5 Vp-p input)

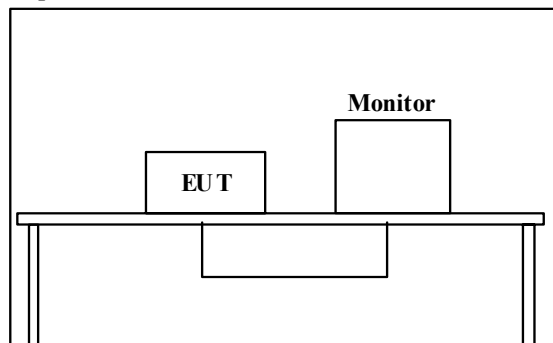
Open test site



RF in: 75 ohm terminated
 Front video in: Video signal generator connected or 75 ohm terminated
 Front audio in: 47 k ohm terminated
 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 output cable
 Component out (Y/P_B/P_R): 75 ohm terminated with component cable
 RF output: 75 ohm terminated with RF output cable
 Coaxial out: 75 ohm terminated with coaxial cable
 Rear video in: video signal generator connected or 75 ohm terminated
 Rear audio in: 47 k ohm terminated

VCR Playback mode / DVD Play mode

Open test site



RF in: 75 ohm terminated with RF input cable
 Front video in: 75 ohm terminated with video cable
 Front audio in: 47 k ohm terminated with audio cable
 Rear video out: monitor connected
 Rear audio out: monitor connected
 S-video out: 75 ohm terminated with S-video output cable
 Component out (Y/P_B/P_R): 75 ohm terminated with component cable
 RF output: 75 ohm terminated with RF output cable
 Coaxial out: 75 ohm terminated with coaxial cable
 Rear video in: 75 ohm terminated with video cable
 Rear audio in: 47 k ohm terminated with audio cable

6.3 Test conditions

Frequency range : 30 MHz – 5000 MHz
Test distance : 3 m
EUT position : Table top
EUT operation mode : TV Reception + Rec., AV Input 1+ Rec., AV Input 2 + Rec.,
VCR Playback., 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. 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>30-1000 MHz (Test receiver)</u>	<u>1000-5000 MHz (Spectrum analyzer)</u>
Detector Type	: QP	: PK : AV
IF Bandwidth	: 120kHz	: RBW 1MHz / VBW 1MHz : RBW 1MHz/ VBW 10Hz

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

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 : June 29, 2005

Temperature : See data

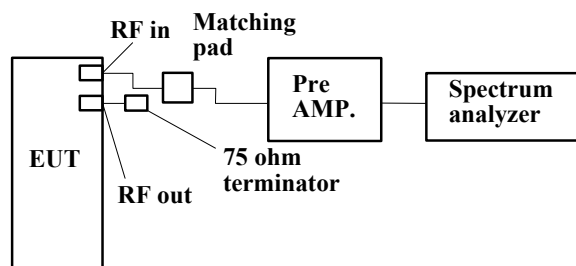
Humidity : See data

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 – 5000 MHz

EUT position : Table top

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

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 (30-5000 MHz)

At frequency between 2000 MHz and 5000 MHz, 75/50ohm conversion loss of impedance is used in speculation.

7.5 Test result

Passed

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

Test engineer: Tomoyuki Yamashita

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Section 8 : RF output level / spurious emission

8.1 Operation environment

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

Date : July 1, 2005

Temperature : See data

Humidity : See data

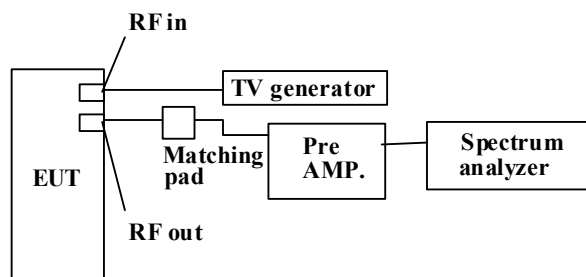
8.2 Test configuration

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

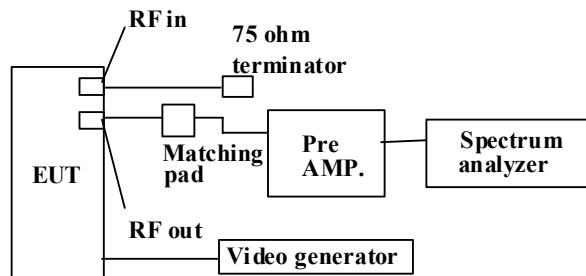
A drawing of the set up is shown in figure 4 and photographs in Appendix 1.

Figure 4. RF output level

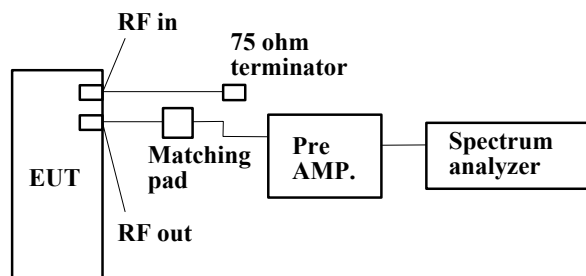
TV Reception + Rec. mode (0dBmV / 25dBmV)



AV Input 1 + Rec. mode / AV Input 2 + Rec. mode (1 Vp-p input / 5 Vp-p input)



VCR Playback mode and DVD Play mode



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8.3 Test conditions

EUT position : Table top
EUT operation mode : TV Reception + Rec., AV Input 1+ Rec., AV Input 2 + Rec.,
VCR Playback., 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

Section 9 : Antenna transfer switch

9.1 Operation environment

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

Date : July 1, 2005

Temperature : See data

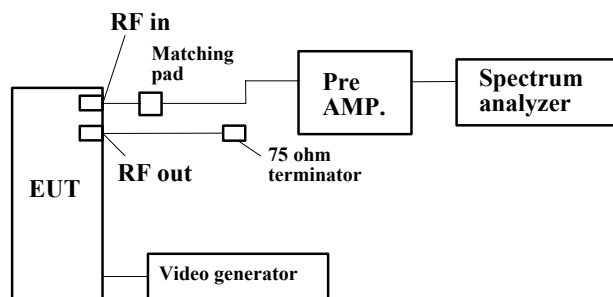
Humidity : See data

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 : AV Input 1+ Rec., AV Input 2 + Rec., VCR Playback., DVD Play

9.4 Test procedure

EUT was connected spectrum analyzer through matching pad by accessory cable. RF channel selected 3ch or 4ch. 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

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Section 10 : Picture sensitivity

10.1 Operation environment

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

Date : June 29, 2005

Temperature : See data

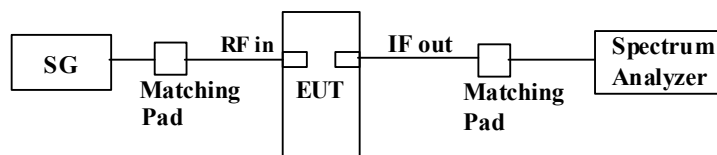
Humidity : See data

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: Tomoyuki Yamashita

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Section 11 : Noise figure

11.1 Operating environment

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

Date : June 29, 2005

Temperature : See data

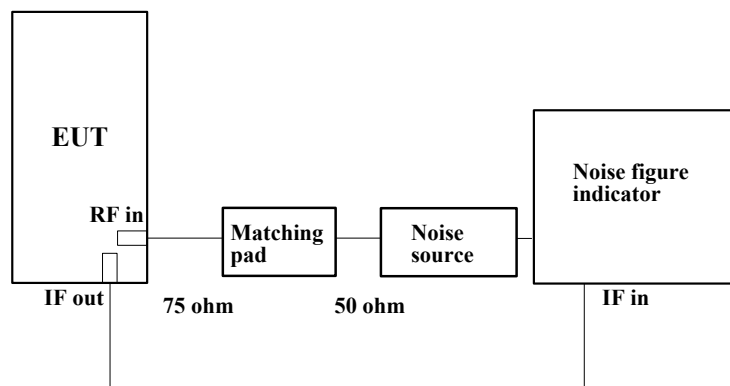
Humidity : See data

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. 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: Tomoyuki Yamashita

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 20 :	Test set up of conducted emission
Page 21 :	Test set up of radiated emission
Page 22 :	Test set up of antenna terminal voltage
Page 23 :	Test set up of RF output level / spurious emission
Page 24 :	Test set up of antenna transfer switch
Page 25 :	Test set up of picture sensitivity
Page 26 :	Test set up of noise figure

Appendix 2 : Data of EMI tests

Page 27 - 44 :	Conducted emission
Page 45 - 91 :	Radiated emission
Page 92- 93 :	Antenna terminal voltage
Page 94 - 114 :	RF output level / spurious emission
Page 115 - 126 :	Antenna transfer switch
Page 127 :	Picture sensitivity
Page 128 :	Noise figure

Appendix 3 : Test instruments

Page 129 :	Test instruments
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UL Apex Co., Ltd.

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Facsimile: +81 596 39 0232

Conducted emission



UL Apex Co., Ltd.

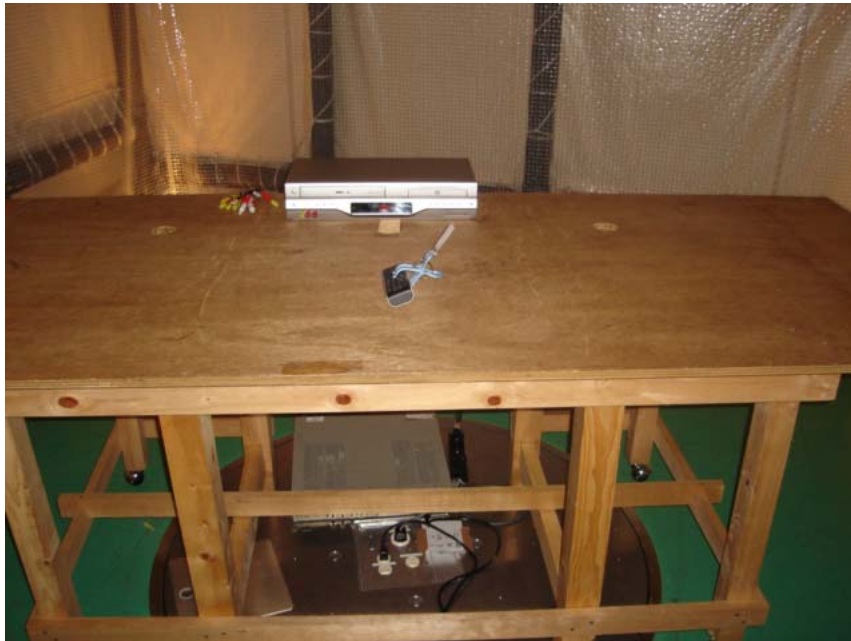
Yokowa EMC Lab.

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.

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Telephone: +81 596 39 1485

Facsimile: +81 596 39 0232

Antenna terminal voltage



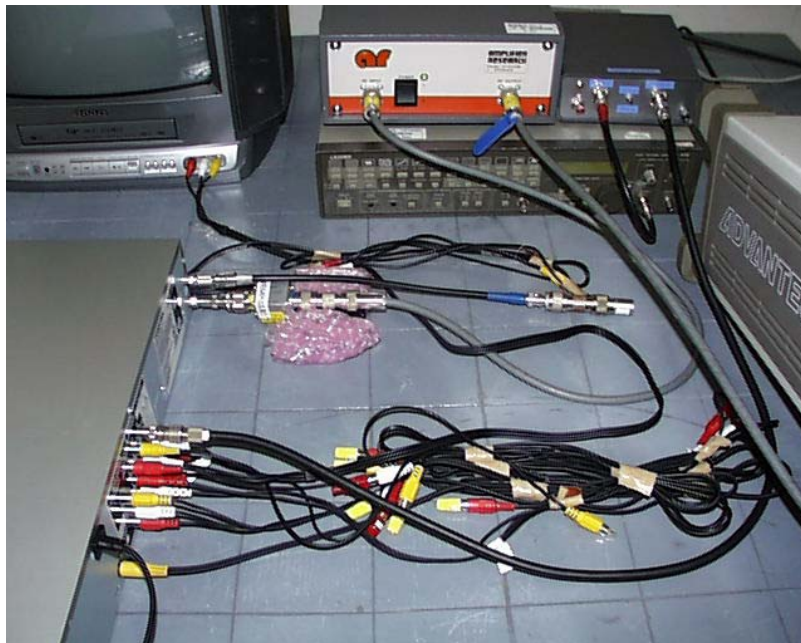
UL Apex Co., Ltd.
Yokowa EMC Lab.

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.

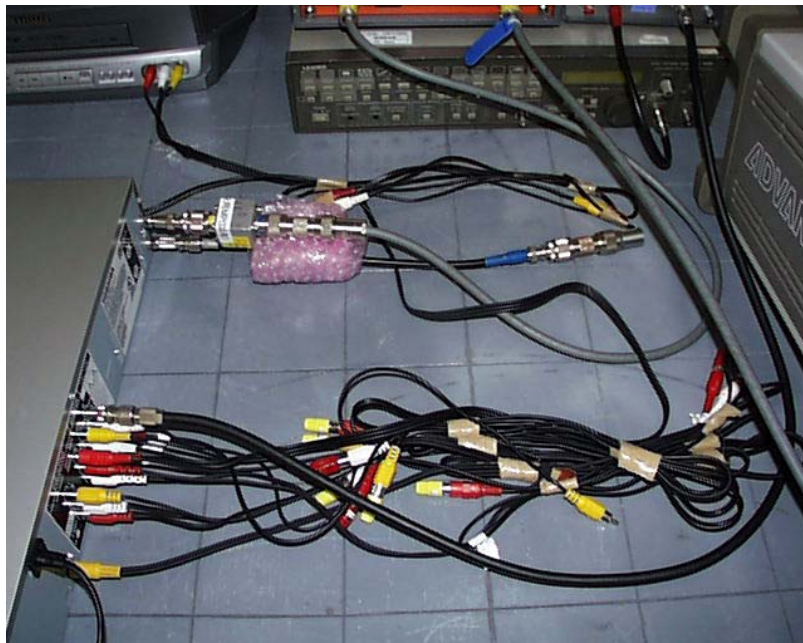
Yokowa EMC Lab.

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

Telephone: +81 596 39 1485

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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.

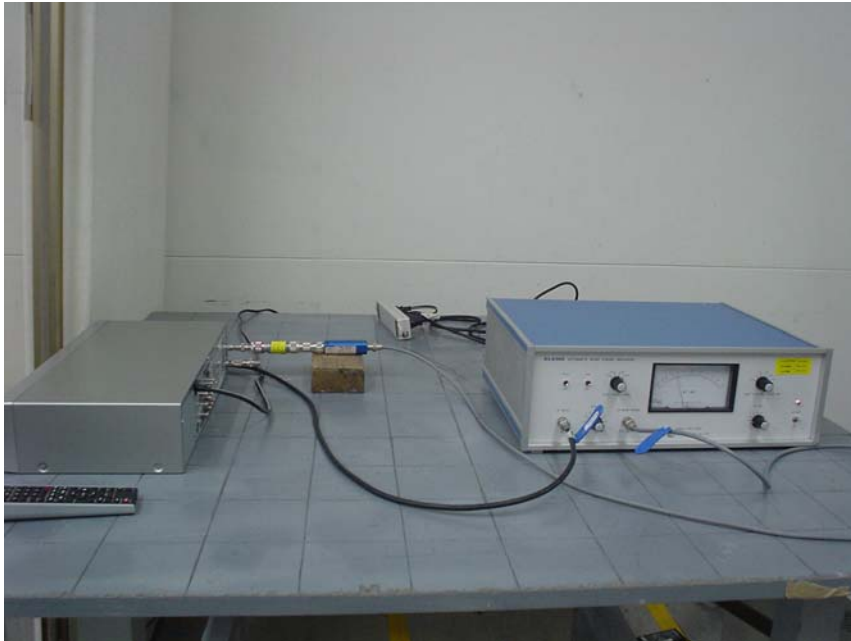
Yokowa EMC Lab.

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.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec
Remarks : 25dBmV
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C Engineer : Tsubasa Takayama
Humidity : 53 %
Regulation : FCC Part15B CLASS B(2003)

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB]
1.	0.1591	49.4	45.3	49.7	45.2	0.0	0.2	0.0	49.9	45.5	65.5	55.5	15.6	10.0
2.	0.9590	29.3	-	28.5	-	0.1	0.3	0.0	29.7	-	56.0	46.0	26.3	-
3.	1.2895	27.4	-	22.1	-	0.1	0.3	0.0	27.8	-	56.0	46.0	28.2	-
4.	10.4008	16.4	-	18.5	-	0.5	0.5	0.0	19.5	-	60.0	50.0	40.5	-
5.	14.3177	26.6	-	25.3	-	0.7	0.5	0.0	27.8	-	60.0	50.0	32.2	-
6.	28.6346	27.8	-	26.2	-	1.0	0.7	0.0	29.5	-	60.0	50.0	30.5	-

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

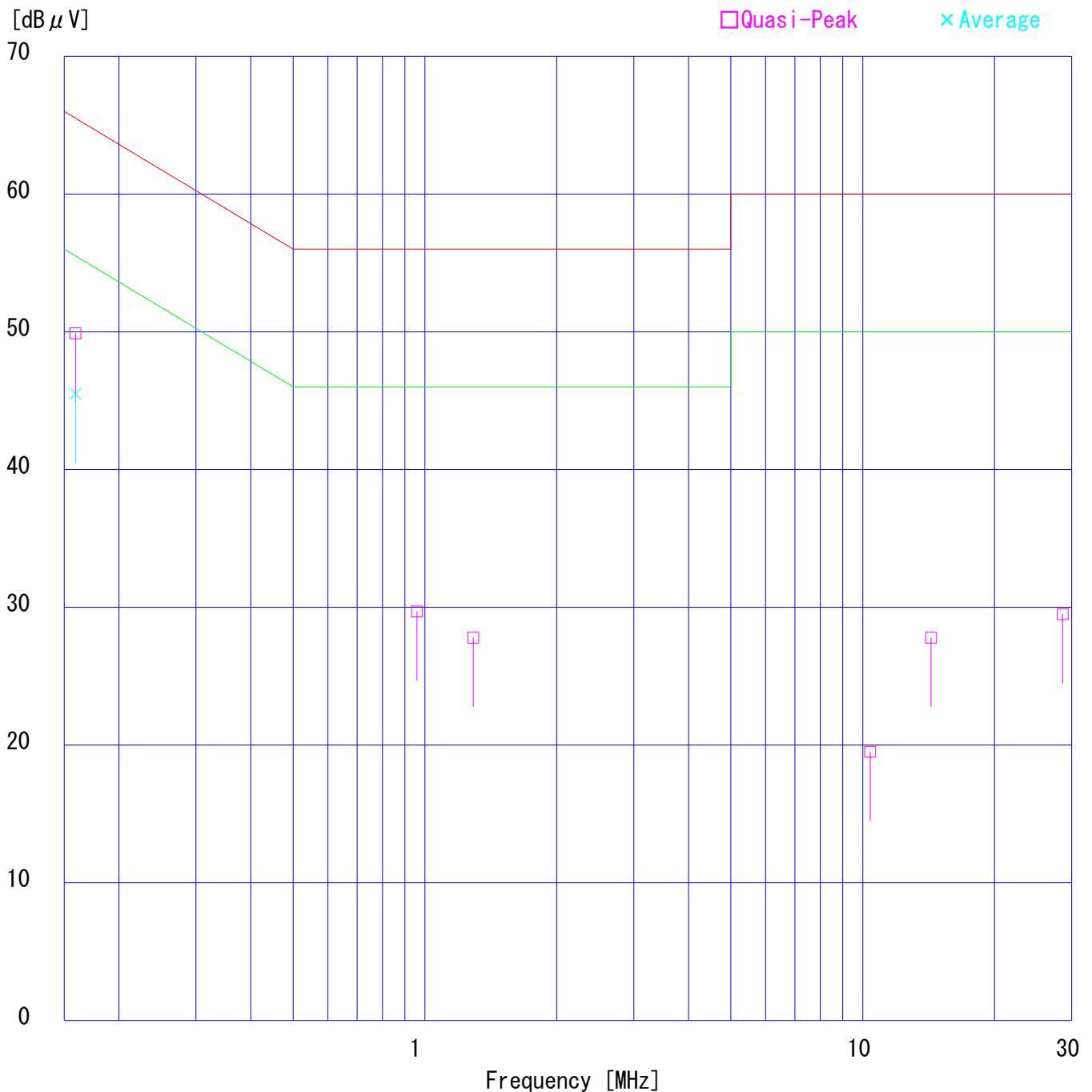
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.3 SHIELD TEST ROOM
Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec
Remarks : 25dBmV
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

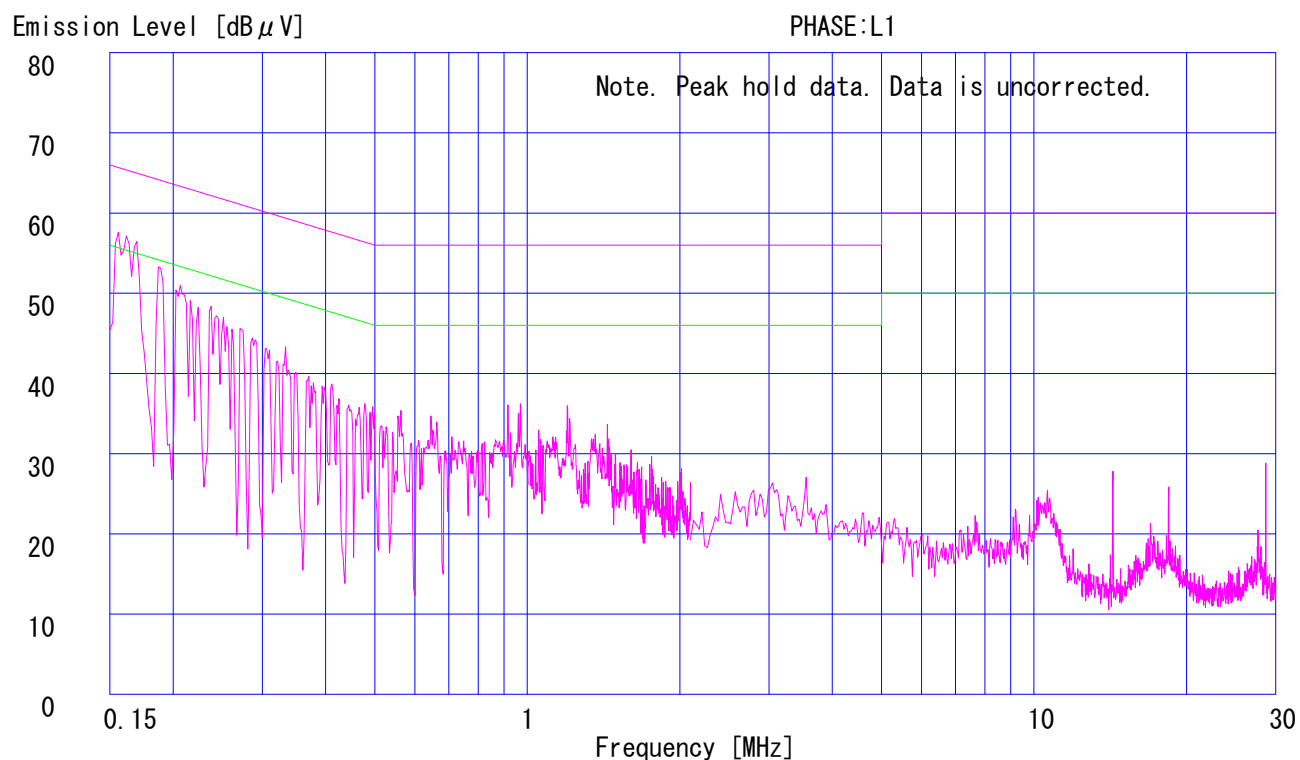
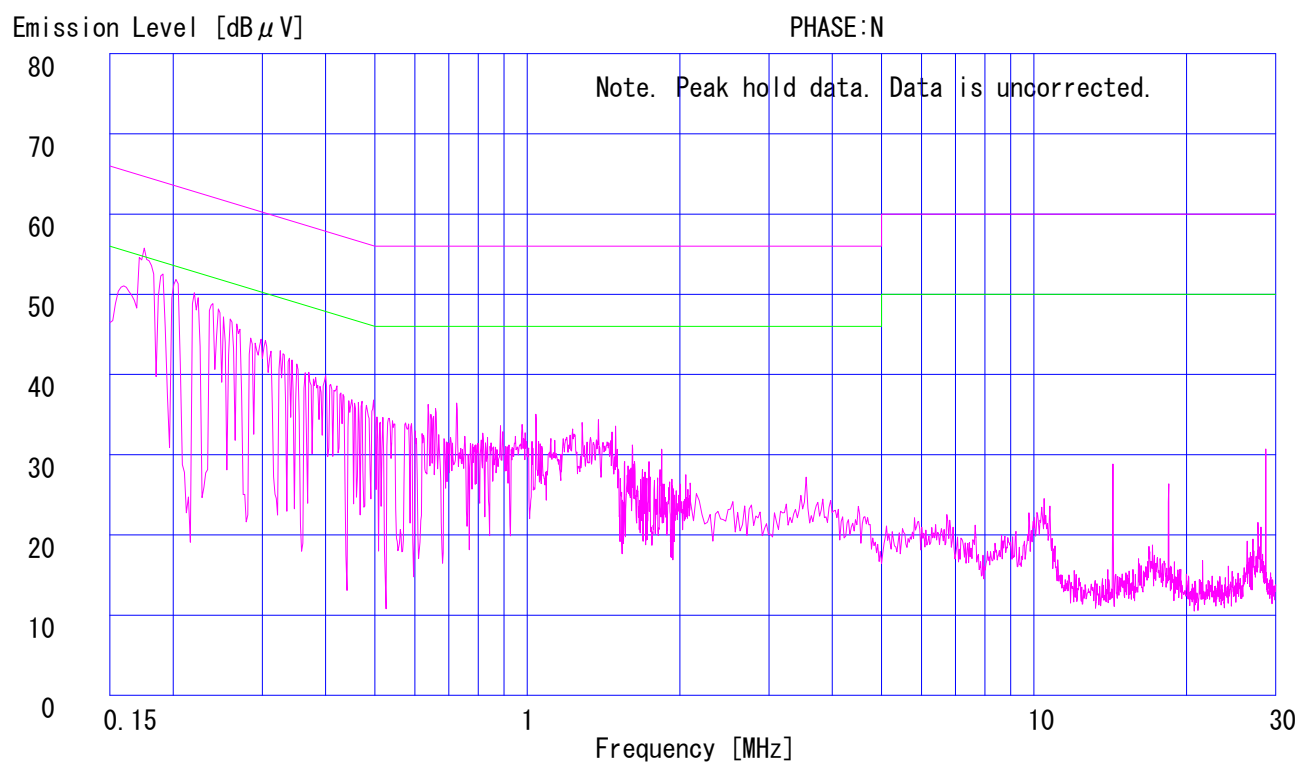
UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec
Remarks : 25dBmV
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

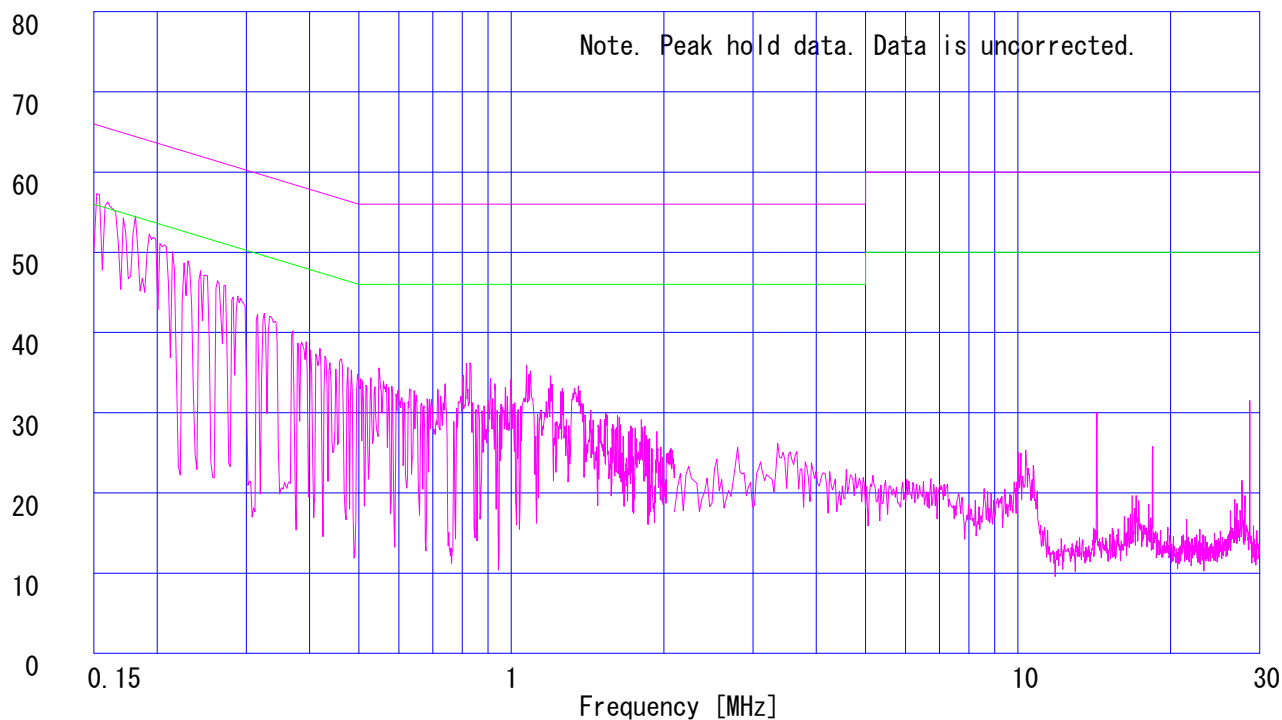
Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec
Remarks : 0dBmV
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tsubasa Takayama

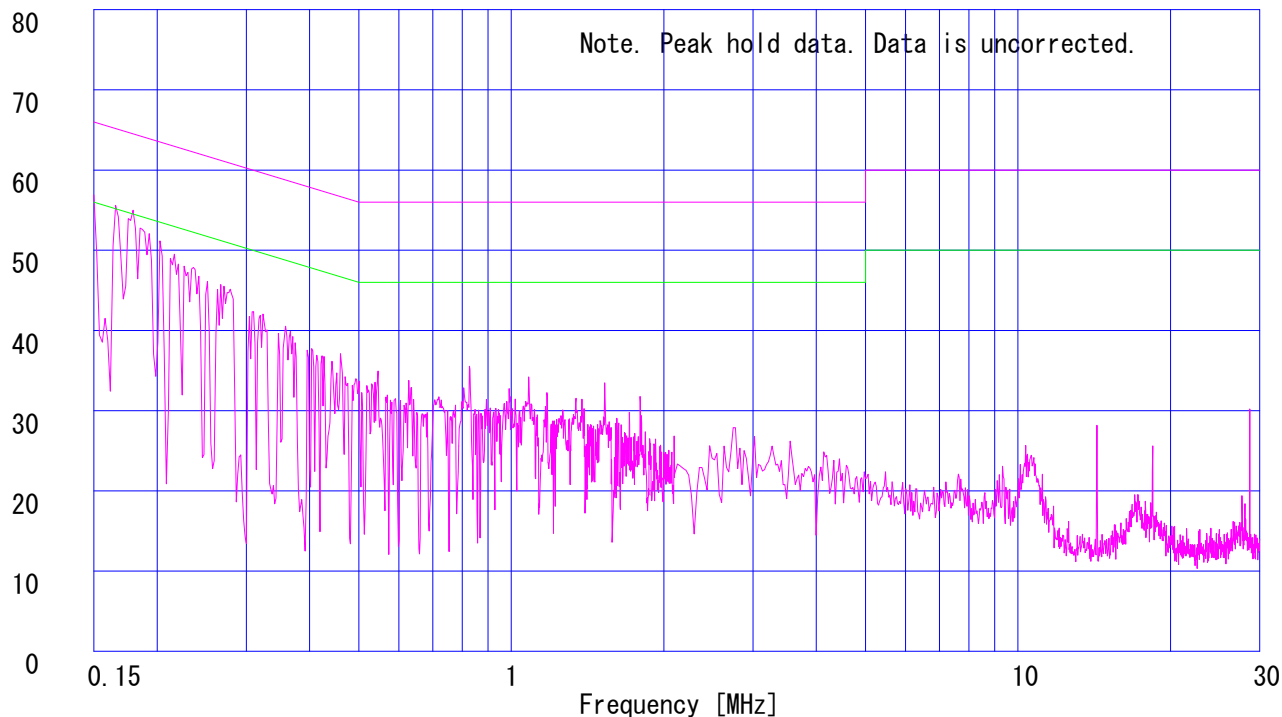
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input1 + Rec
Remarks : 5Vp-p
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C Engineer : Tsubasa Takayama
Humidity : 53 %
Regulation : FCC Part15B CLASS B(2003)

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB]
1.	0.1564	49.7	45.8	49.9	46.1	0.0	0.2	0.0	50.1	46.3	65.7	55.7	15.6	9.4
2.	0.9786	29.1	-	29.5	-	0.1	0.3	0.0	29.9	-	56.0	46.0	26.1	-
3.	1.2008	30.3	-	29.0	-	0.1	0.3	0.0	30.7	-	56.0	46.0	25.3	-
4.	8.2590	30.4	-	29.2	-	0.4	0.4	0.0	31.2	-	60.0	50.0	28.8	-
5.	16.7096	32.5	-	30.3	-	0.8	0.5	0.0	33.8	-	60.0	50.0	26.2	-
6.	28.6346	21.4	-	20.0	-	1.0	0.7	0.0	23.1	-	60.0	50.0	36.9	-

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

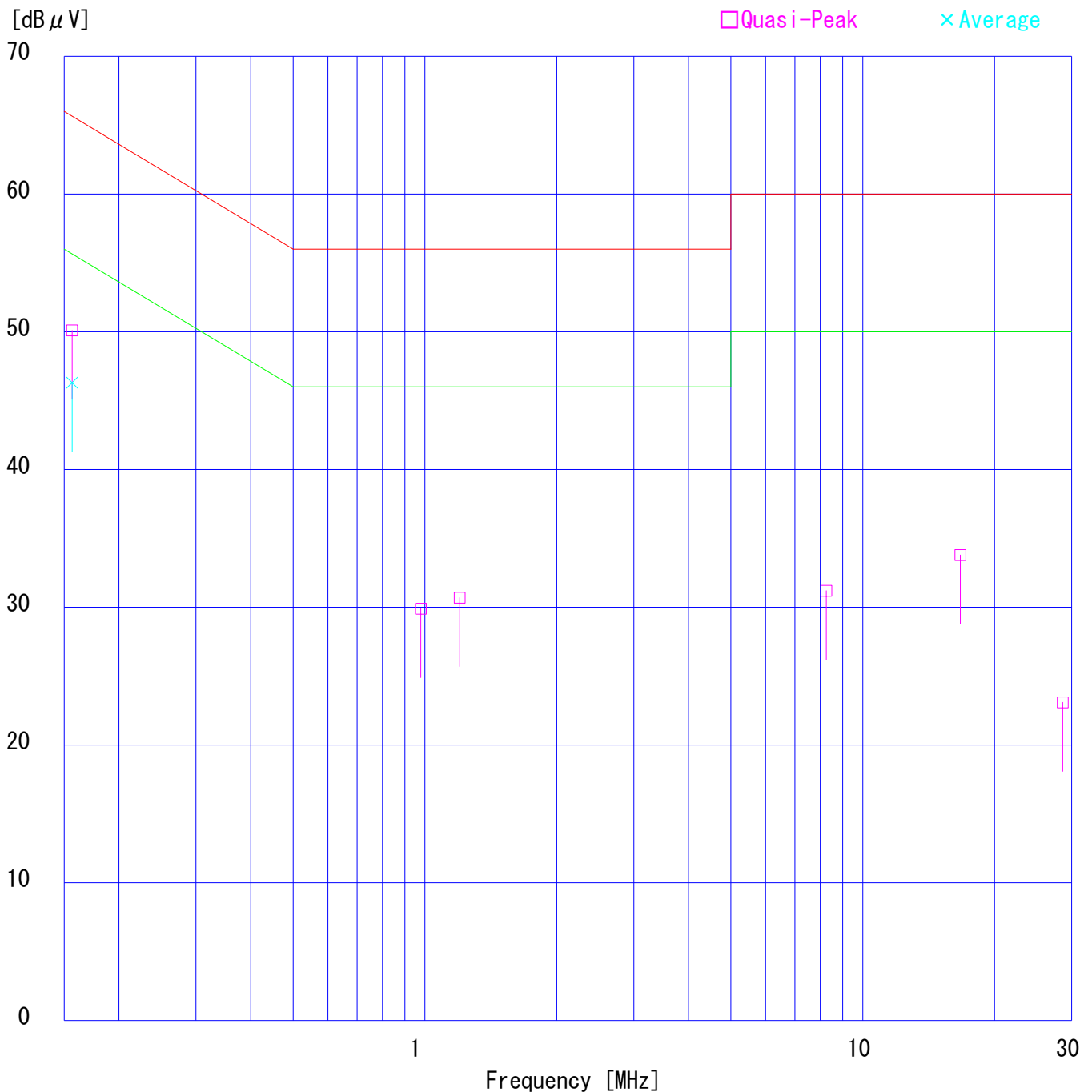
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.3 SHIELD TEST ROOM
Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input1 + Rec
Remarks : 5Vp-p
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

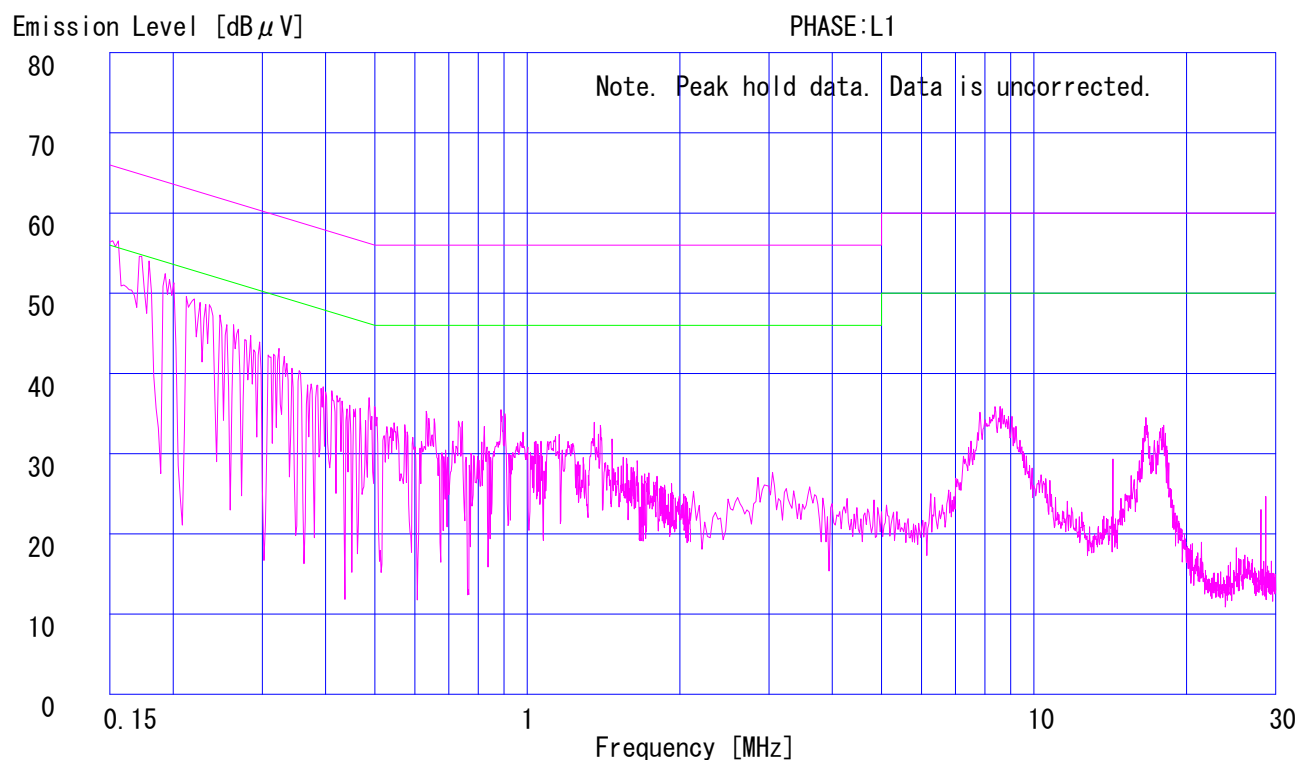
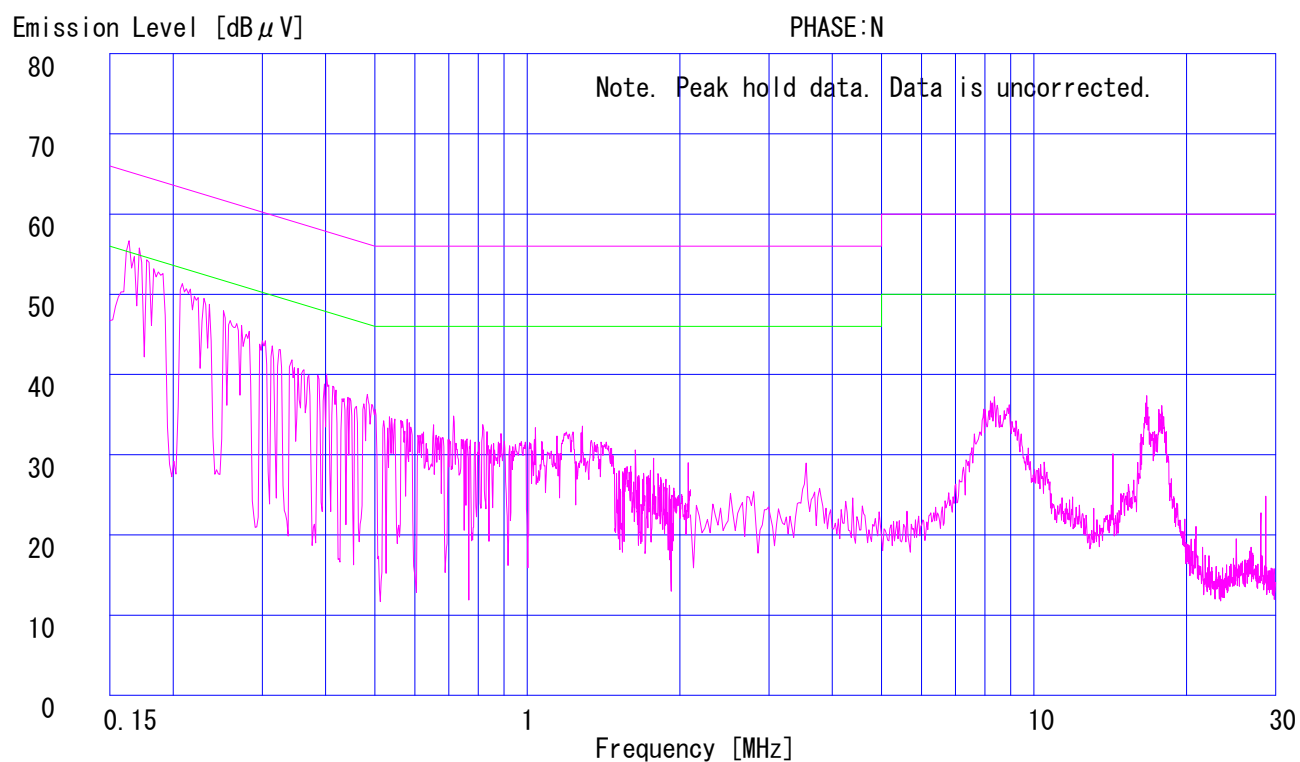
UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input1 + Rec
Remarks : 5Vp-p
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

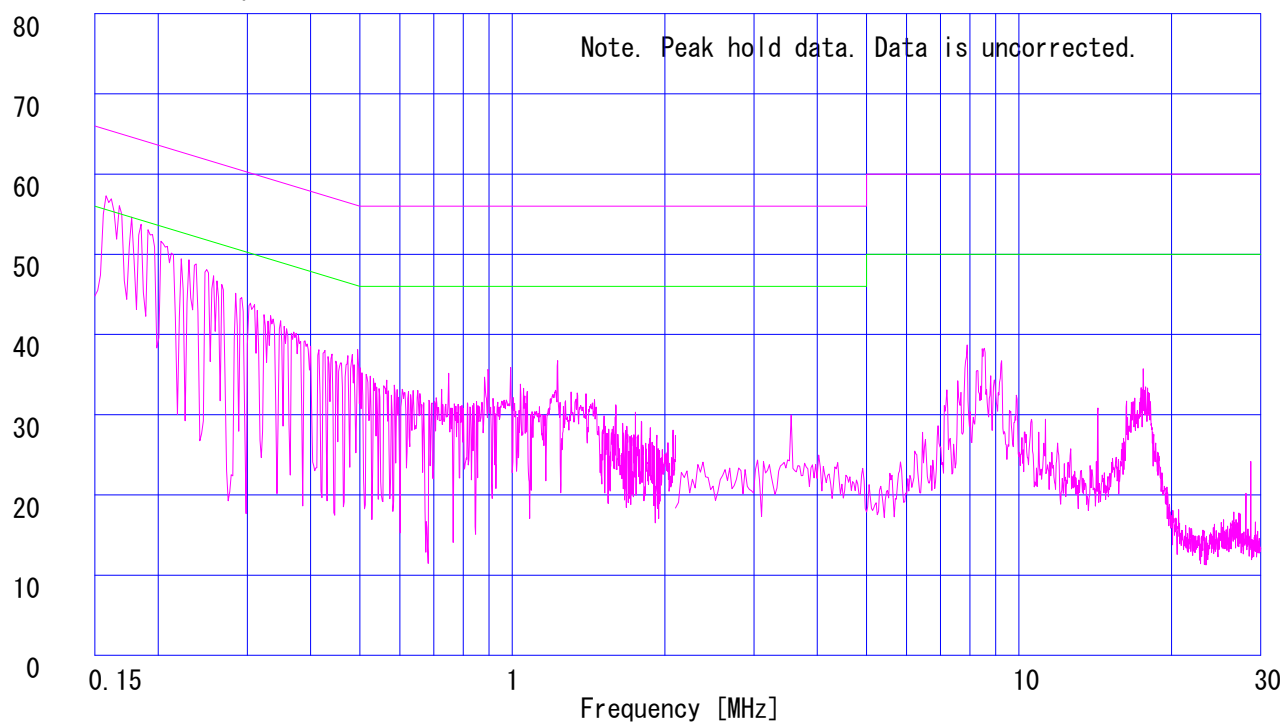
Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input1 + Rec
Remarks : 1Vp-p
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tsubasa Takayama

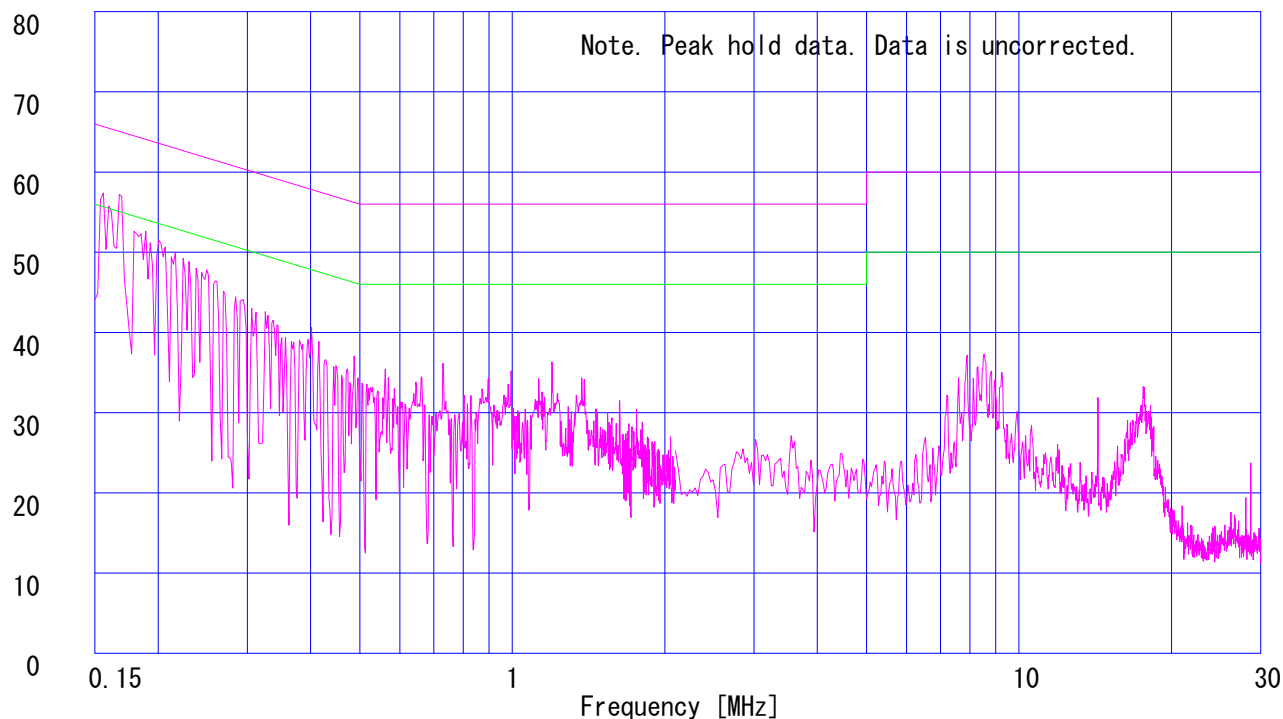
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input2 + Rec
Remarks : 5Vp-p
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C Engineer : Tsubasa Takayama
Humidity : 53 %
Regulation : FCC Part15B CLASS B(2003)

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB]	AV [dB]
1.	0.1581	49.7	46.2	49.9	46.7	0.0	0.2	0.0	50.1	46.9	65.6	55.6	15.5	8.7
2.	0.7226	28.2	-	28.5	-	0.1	0.3	0.0	28.9	-	56.0	46.0	27.1	-
3.	1.2011	30.3	-	29.2	-	0.1	0.3	0.0	30.7	-	56.0	46.0	25.3	-
4.	8.8147	31.0	-	29.8	-	0.4	0.4	0.0	31.8	-	60.0	50.0	28.2	-
5.	17.9197	28.6	-	26.3	-	0.8	0.5	0.0	29.9	-	60.0	50.0	30.1	-
6.	28.6351	20.8	-	19.2	-	1.0	0.7	0.0	22.5	-	60.0	50.0	37.5	-

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

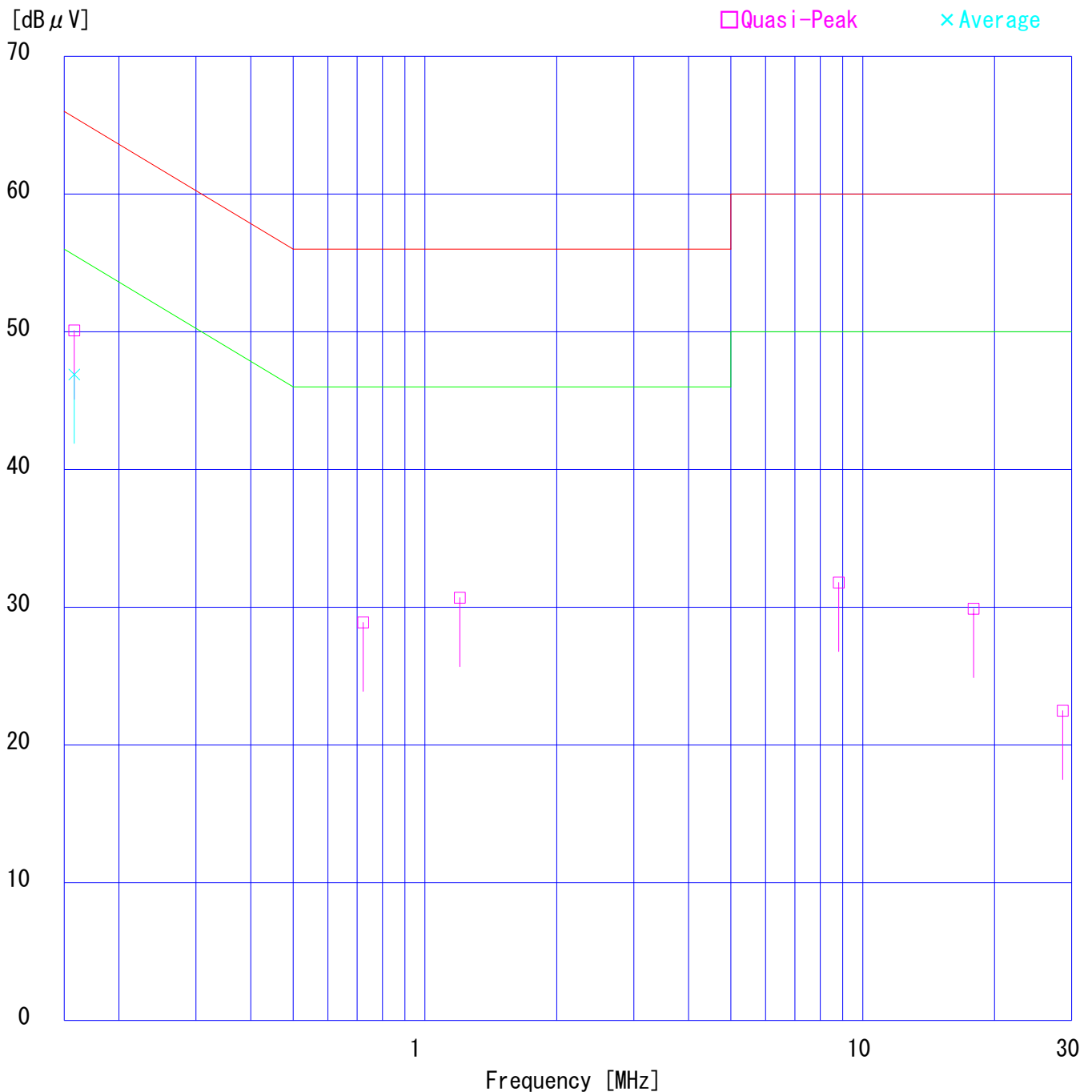
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.3 SHIELD TEST ROOM
Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input2 + Rec
Remarks : 5Vp-p
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

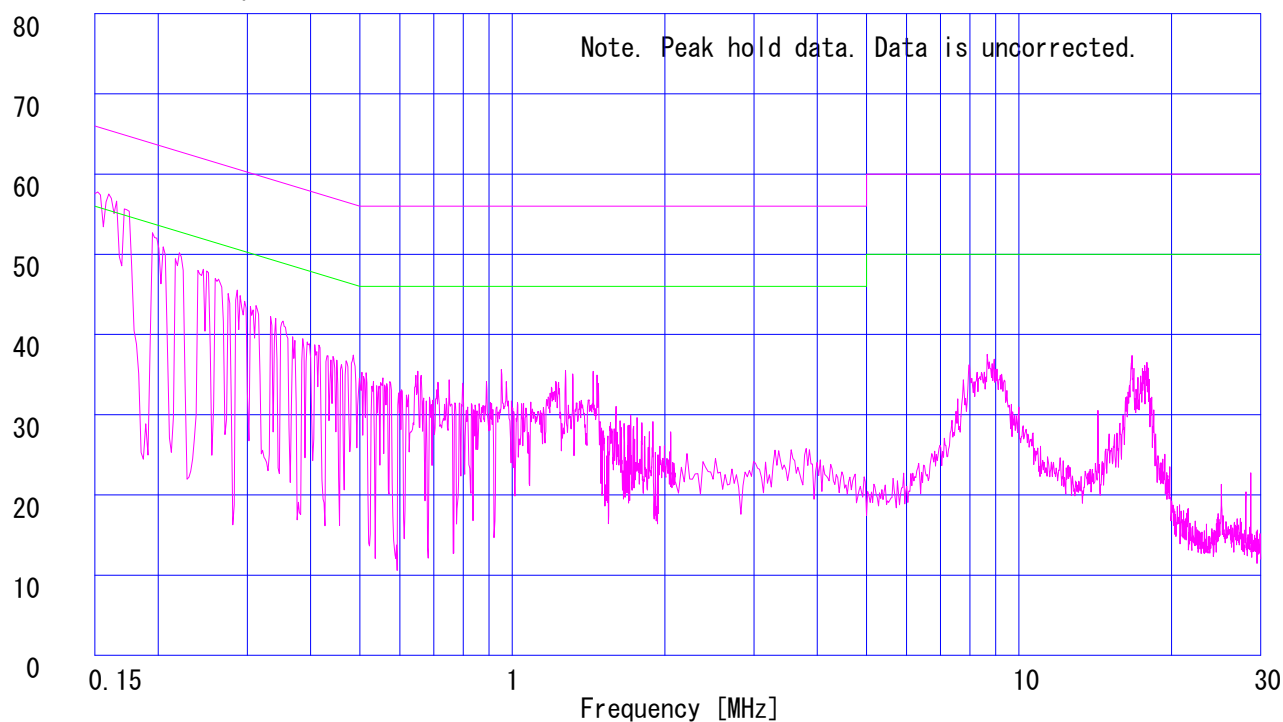
Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input2 + Rec
Remarks : 5Vp-p
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tsubasa Takayama

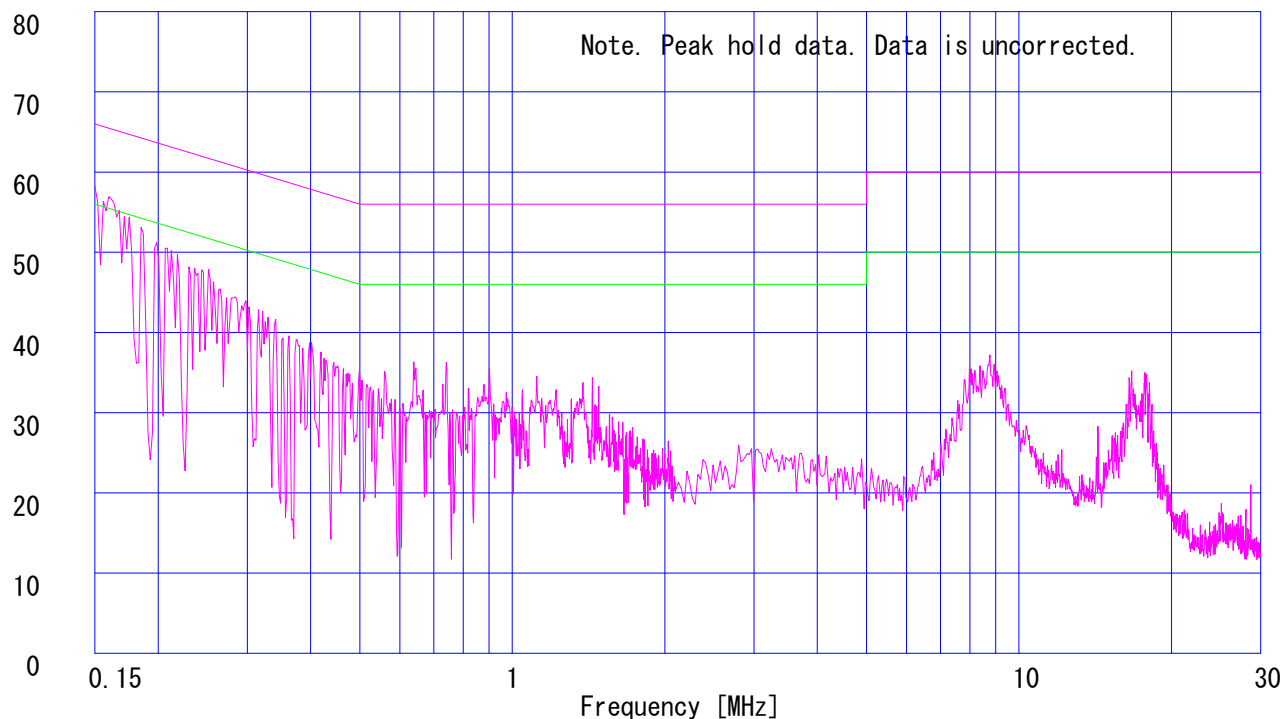
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST CHART

UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

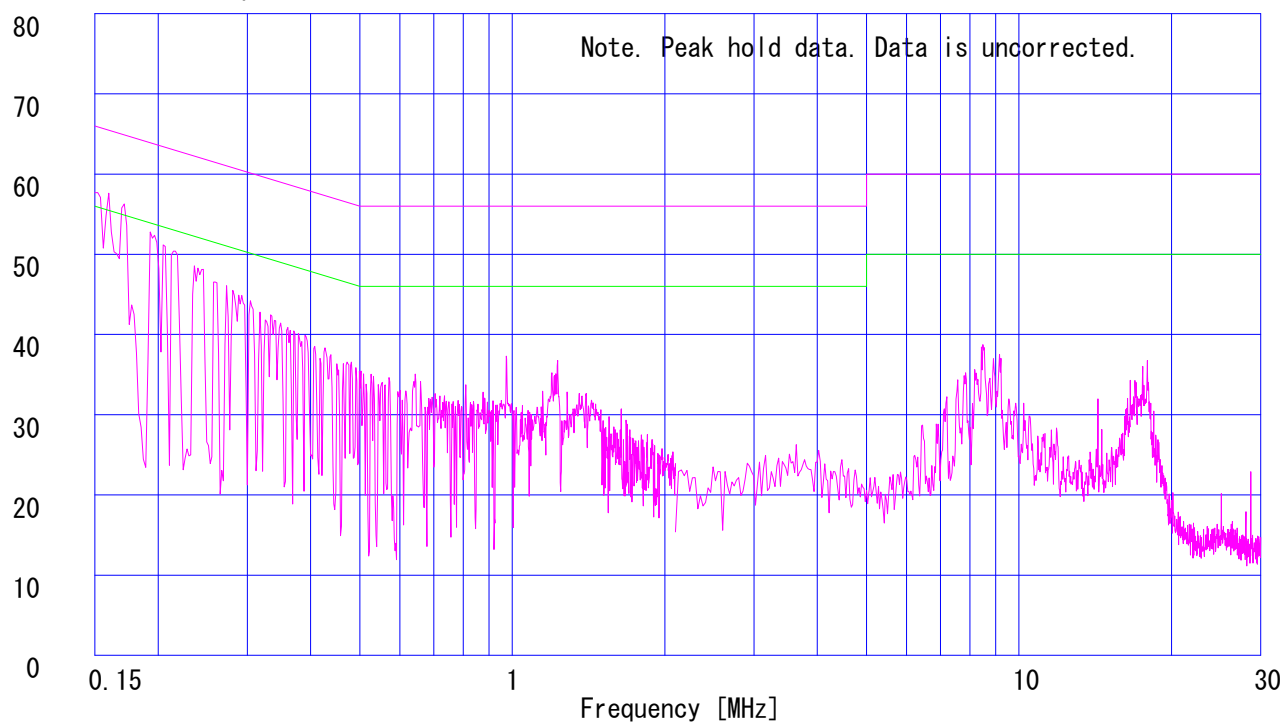
Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input2 + Rec
Remarks : 1Vp-p
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tsubasa Takayama

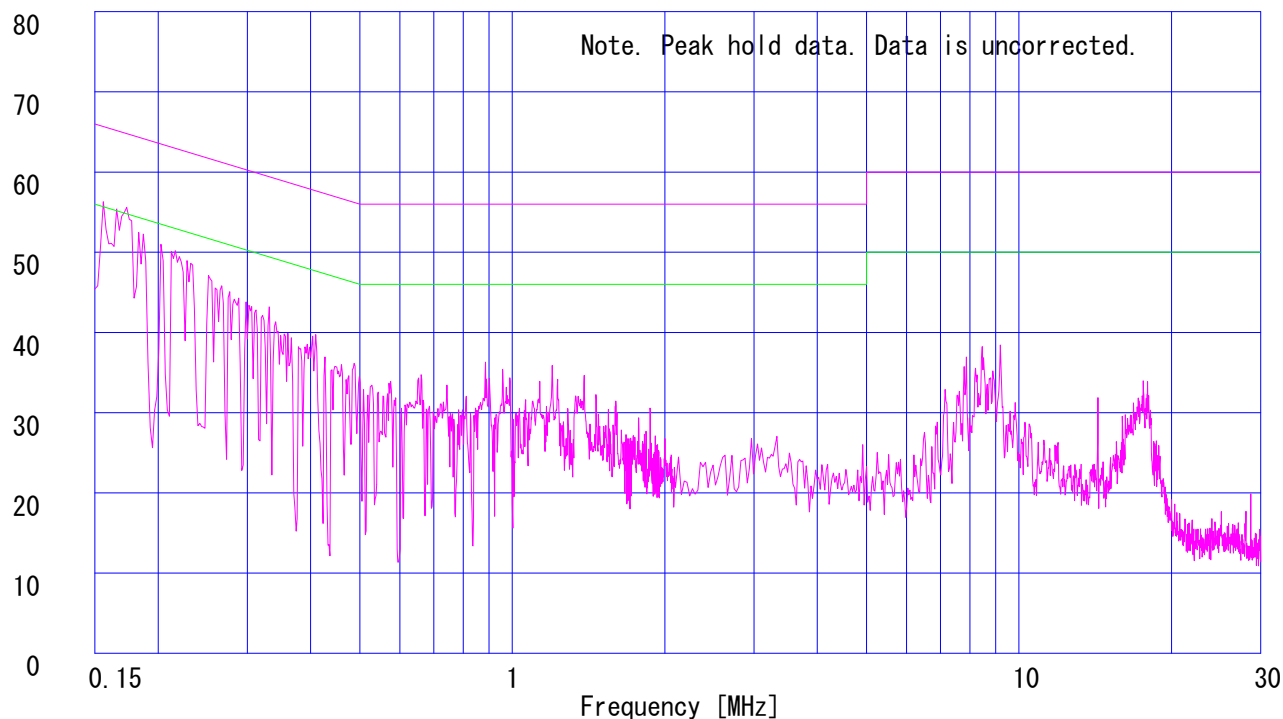
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks :
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
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 μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB]
1.	0.1507	48.2	-	47.7	-	0.0	0.2	0.0	48.4	-	66.0	56.0	17.6	-
2.	0.5182	26.8	-	27.9	-	0.1	0.3	0.0	28.3	-	56.0	46.0	27.7	-
3.	1.0379	28.5	-	29.1	-	0.1	0.3	0.0	29.5	-	56.0	46.0	26.5	-
4.	5.9279	15.4	-	13.4	-	0.3	0.4	0.0	16.1	-	60.0	50.0	43.9	-
5.	18.4318	30.7	-	29.5	-	0.9	0.5	0.0	32.1	-	60.0	50.0	27.9	-
6.	28.6358	27.0	-	25.7	-	1.0	0.7	0.0	28.7	-	60.0	50.0	31.3	-

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

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

DATA OF CONDUCTION TEST

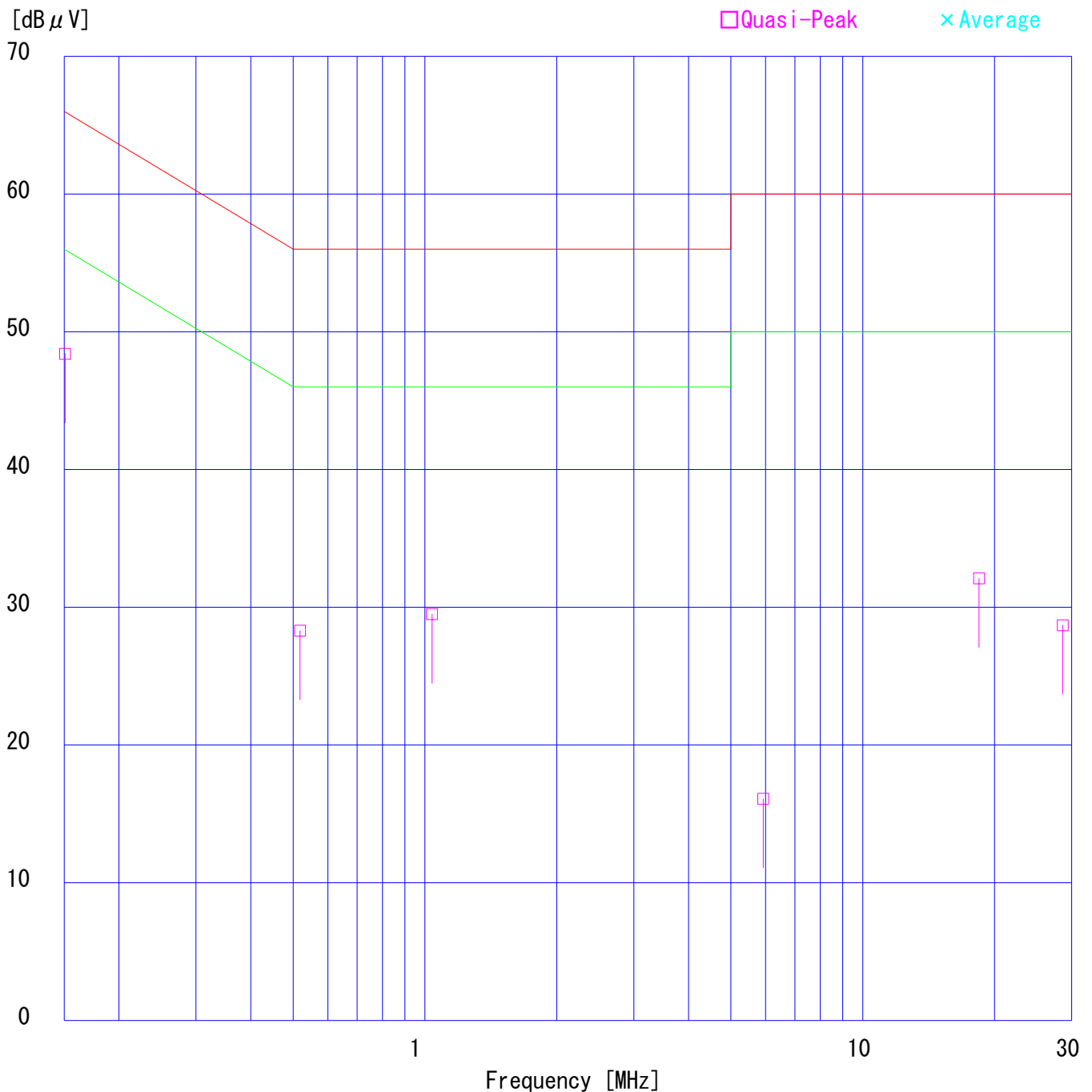
UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks :
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

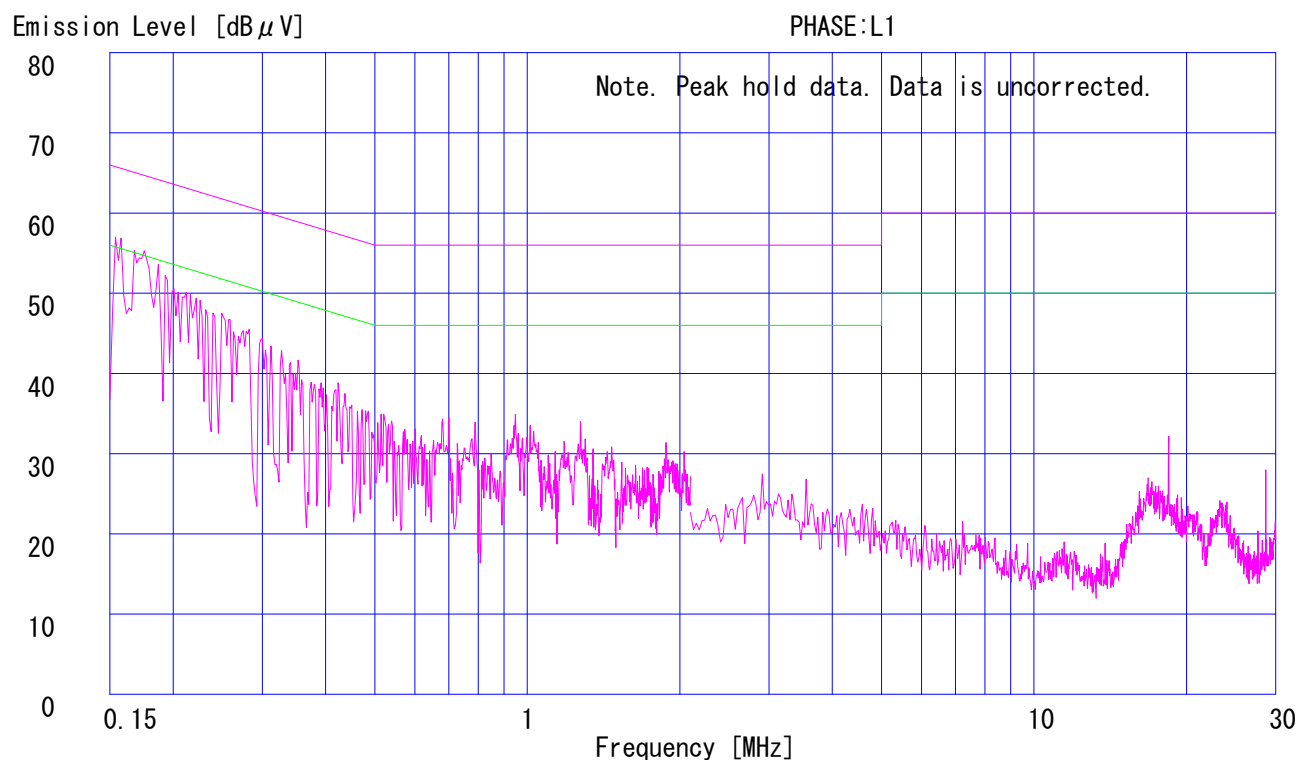
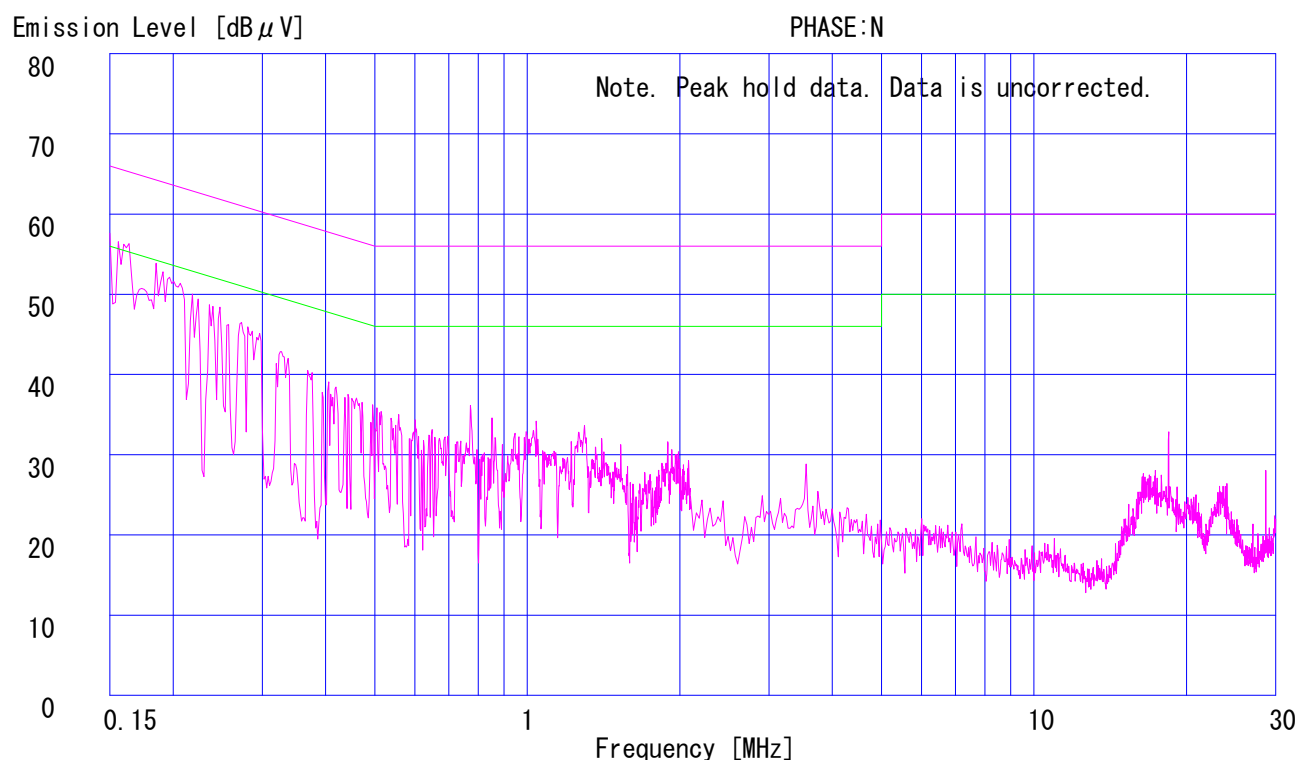
UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks :
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks :
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
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 μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB]
1.	0.1524	49.8	43.8	50.3	44.3	0.0	0.2	0.0	50.5	44.5	65.9	55.9	15.4	11.4
2.	0.5467	24.6	-	25.1	-	0.1	0.3	0.0	25.5	-	56.0	46.0	30.5	-
3.	0.9483	27.7	-	26.6	-	0.1	0.3	0.0	28.1	-	56.0	46.0	27.9	-
4.	1.1665	28.8	-	27.2	-	0.1	0.3	0.0	29.2	-	56.0	46.0	26.8	-
5.	5.1286	14.2	-	15.1	-	0.2	0.4	0.0	15.7	-	60.0	50.0	44.3	-
6.	18.4326	30.8	-	29.8	-	0.9	0.5	0.0	32.2	-	60.0	50.0	27.8	-
7.	28.6348	28.1	-	26.6	-	1.0	0.7	0.0	29.8	-	60.0	50.0	30.2	-

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

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

DATA OF CONDUCTION TEST

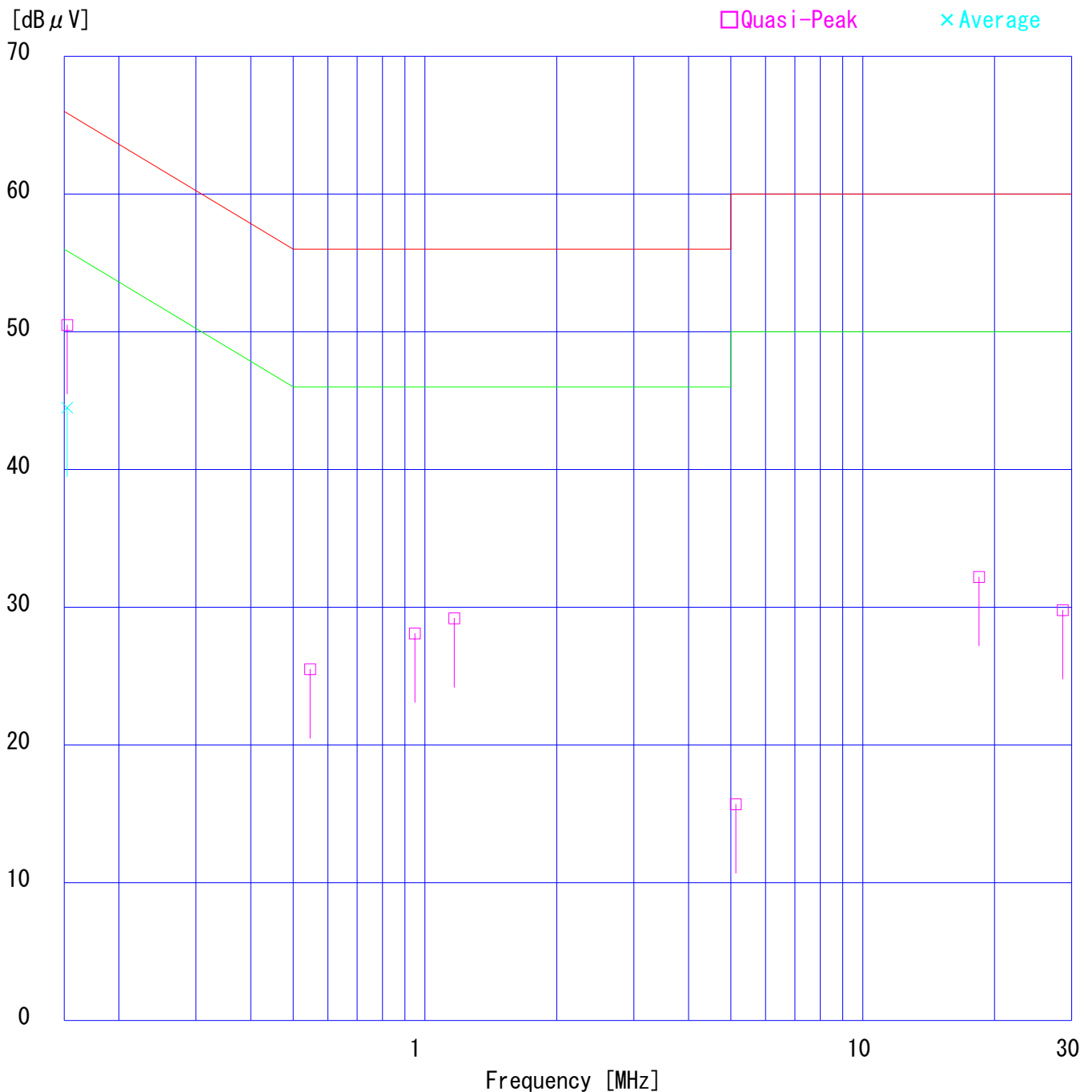
UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks :
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tsubasa Takayama



DATA OF CONDUCTION TEST CHART

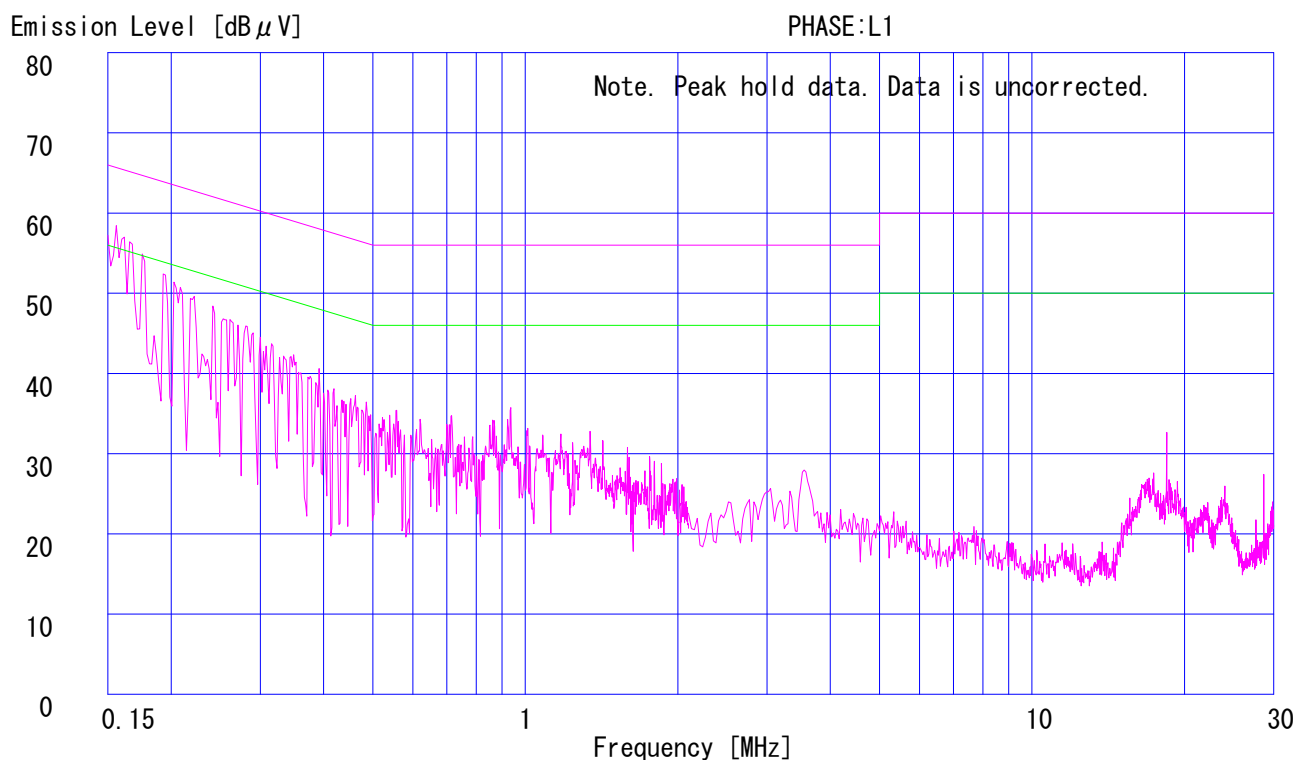
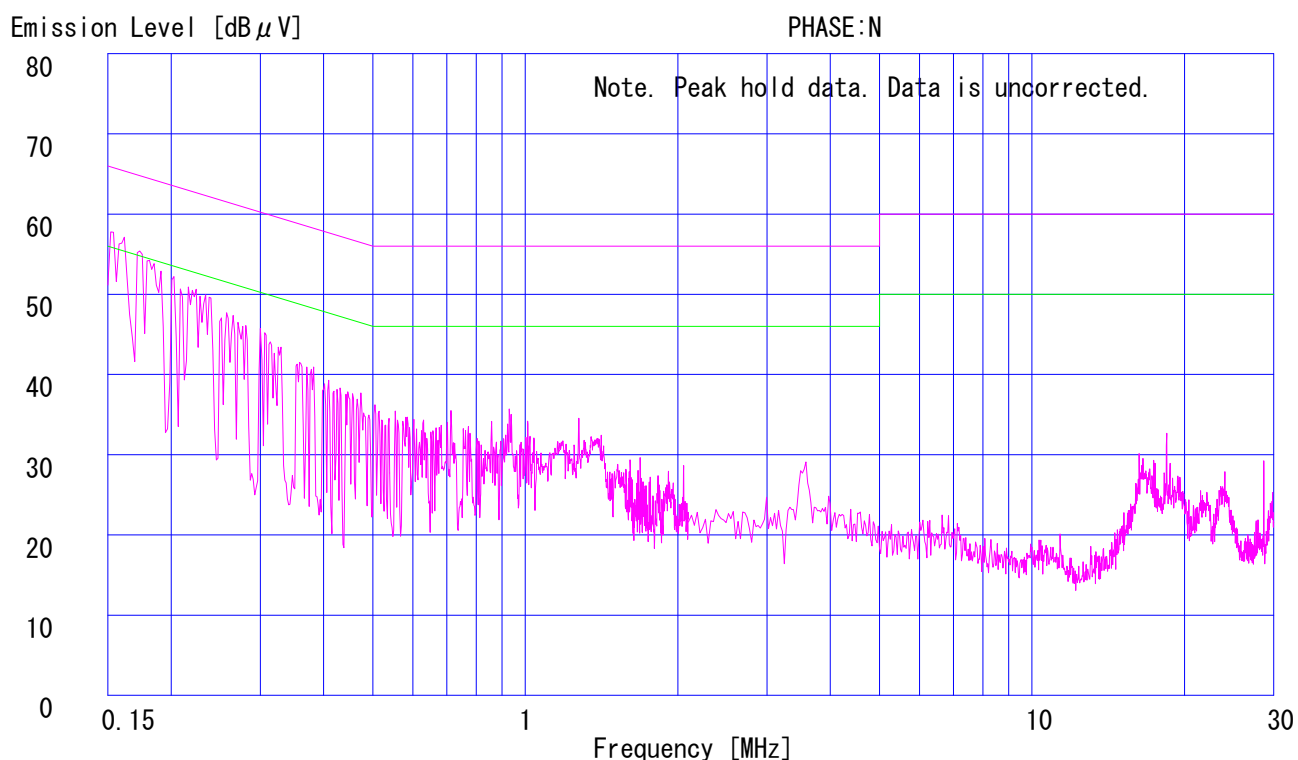
UL Apex Co., Ltd.

YOKOWA No.3 SHIELD TEST ROOM

Report No. : 25KE0116-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD Player with Video Cassette Recorder
Model No. : SD-V393SU2
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks :
Date : 6/30/2005
Phase : Single Phase
Temperature : 23 °C
Humidity : 53 %
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. : SD-V393SU2
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25KE0116-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/06/30
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																	
2	101	24.4	25.2		BC	-9.8	14.6	15.4		43.5		28.9	28.1				
	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) 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]	
	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 [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]				
3	107	23.0	24.7		BC	-8.9	14.1	15.8		43.5		29.4	27.7				
	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) 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]	
	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 [MHz]		READING(QP) HOR. VER. [dBuV]				ANT TYPE		C.Factor [dBuV]	RESULT(QP) HOR. VER. [dBuV/m]					LIMIT [QP] [dBuV/m]	
4	113	25.9		23.5		BC		-7.9		18.0	15.6		43.5		25.5	27.9	
	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) 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]	
	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. : SD-V393SU2
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25KE0116-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/06/30
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]	[dB]		
VHF																		
5	123	22.2	22.8			BC	-6.5	15.7	16.3			43.5			27.8	27.2		
	246					BC						46.0		>15.0				
	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)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[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	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT			MARGIN(QP)			
	[MHz]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]			[dB]	[dB]		
6	129	22.4	24.6			BC	-6.2	16.2	18.4			43.5			27.3	25.1		
	258					BC						46.0		>15.0				
	387					LO						46.0						
	516					LO						46.0						
	645					LO						46.0						
	774					LO						46.0						
	903					LO						46.0						
		READING(PK)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[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	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT			MARGIN(QP)			
	[MHz]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]			[dB]	[dB]		
7	221	25.4	24.1			BC	-2.1	23.3	22.0			46.0			22.7	24.0		
	442					LO						46.0		>15.0				
	663					LO						46.0						
	884					LO						46.0						
		READING(PK)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[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	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT			MARGIN(QP)			
	[MHz]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]			[dB]	[dB]		
8	227	24.1	23.6			BC	-2.1	22.0	21.5			46.0			24.0	24.5		
	454					LO						46.0		>15.0				
	681					LO						46.0						
	908					LO						46.0						
		READING(PK)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)		
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[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. : SD-V393SU2
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25KE0116-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/06/30
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																	
9	233	23.4	22.5			BC	-1.9	21.5	20.6			46.0		24.5	25.4		
	466					LO						46.0		>15.0			
	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)	
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[dB]	
	1165					HO						74.0	54.0	>27.0		>10.0	
1398	HO						74.0					54.0					
1631	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]				
10	239	22.7	22.0			BC	-1.7	21.0	20.3			46.0		25.0	25.7		
	478					LO						46.0		>15.0			
	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)	
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[dB]	
	1195					HO						74.0	54.0	>27.0		>10.0	
1434	HO						74.0					54.0					
1673	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]				
11	245	21.8	22.0			BC	-1.6	20.2	20.4			46.0		25.8	25.6		
	490					LO						46.0		>15.0			
	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)	
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[dB]	
	1225					HO						74.0	54.0	>27.0		>10.0	
1470	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]				
12	251	21.6	21.9			BC	-1.4	20.2	20.5			46.0		25.8	25.5		
	502					LO						46.0		>15.0			
	753					LO						46.0					
		READING(PK)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)	
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[dB]	
	1004					HO						74.0	54.0	>27.0		>10.0	
	1255					HO						74.0	54.0				
1506	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]				
13	257	23.5	23.6			BC	-1.0	22.5	22.6			46.0		23.5	23.4		
	514					LO						46.0		>15.0			
	771					LO						46.0					
		READING(PK)		READING(AV)		ANT	C.Factor	RESULT(PK)		RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)		MARGIN(AV)	
		[dBuV]		[dBuV]		TYPE	[dBuV]	[dBuV/m]		[dBuV/m]		[PK]	[AV]	[dB]		[dB]	
	1028					HO						74.0	54.0	>27.0		>10.0	
	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. : SD-V393SU2
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25KE0116-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/06/30
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) HOR. VER.		ANT TYPE	C.Factor [dBuV]	RESULT(QP) HOR. VER.		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER.	
	[MHz]	[dBuV]				[dBuV/m]		[dB]		[dB]	
UHF											
14	517	27.5 23.6		LO	3.2	30.7 26.8		46.0		15.3 19.2	
		READING(PK) HOR. VER.	READING(AV) HOR. VER.	ANT TYPE	C.Factor	RESULT(PK) HOR. VER.	RESULT(AV) HOR. VER.	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER.	MARGIN(AV) HOR. VER.
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1034 1551			HO HO				74.0 74.0	54.0 54.0	>27.0	>10.0
CH.	FREQ	READING(QP) HOR. VER.		ANT TYPE	C.Factor	RESULT(QP) HOR. VER.		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER.	
	[MHz]	[dBuV]			[dBuV]	[dBuV/m]		[dB]		[dB]	
19	547	27.7 30.7		LO	3.5	31.2 34.2		46.0		14.8 11.8	
		READING(PK) HOR. VER.	READING(AV) HOR. VER.	ANT TYPE	C.Factor	RESULT(PK) HOR. VER.	RESULT(AV) HOR. VER.	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER.	MARGIN(AV) HOR. VER.
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1094 1641			HO HO				74.0 74.0	54.0 54.0	>27.0	>10.0
CH.	FREQ	READING(QP) HOR. VER.		ANT TYPE	C.Factor	RESULT(QP) HOR. VER.		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER.	
	[MHz]	[dBuV]			[dBuV]	[dBuV/m]		[dB]		[dB]	
28	601	26.2 34.5		LO	4.4	30.6 38.9		46.0		15.4 7.1	
		READING(PK) HOR. VER.	READING(AV) HOR. VER.	ANT TYPE	C.Factor	RESULT(PK) HOR. VER.	RESULT(AV) HOR. VER.	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER.	MARGIN(AV) HOR. VER.
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1202			HO				74.0	54.0	>27.0	>10.0
CH.	FREQ	READING(QP) HOR. VER.		ANT TYPE	C.Factor	RESULT(QP) HOR. VER.		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER.	
	[MHz]	[dBuV]			[dBuV]	[dBuV/m]		[dB]		[dB]	
36	649	24.9 31.7		LO	5.2	30.1 36.9		46.0		15.9 9.1	
		READING(PK) HOR. VER.	READING(AV) HOR. VER.	ANT TYPE	C.Factor	RESULT(PK) HOR. VER.	RESULT(AV) HOR. VER.	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER.	MARGIN(AV) HOR. VER.
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1298			HO				74.0	54.0	>27.0	>10.0
CH.	FREQ	READING(QP) HOR. VER.		ANT TYPE	C.Factor	RESULT(QP) HOR. VER.		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER.	
	[MHz]	[dBuV]			[dBuV]	[dBuV/m]		[dB]		[dB]	
44	697	22.6 26.4		LO	5.9	28.5 32.3		46.0		17.5 13.7	
		READING(PK) HOR. VER.	READING(AV) HOR. VER.	ANT TYPE	C.Factor	RESULT(PK) HOR. VER.	RESULT(AV) HOR. VER.	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER.	MARGIN(AV) HOR. VER.
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1394			HO				74.0	54.0	>27.0	>10.0
CH.	FREQ	READING(QP) HOR. VER.		ANT TYPE	C.Factor	RESULT(QP) HOR. VER.		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER.	
	[MHz]	[dBuV]			[dBuV]	[dBuV/m]		[dB]		[dB]	
53	751	26.4 26.7		LO	7.6	34.0 34.3		46.0		12.0 11.7	
		READING(PK) HOR. VER.	READING(AV) HOR. VER.	ANT TYPE	C.Factor	RESULT(PK) HOR. VER.	RESULT(AV) HOR. VER.	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER.	MARGIN(AV) HOR. VER.
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1502			HO				74.0	54.0	>27.0	>10.0
CH.	FREQ	READING(QP) HOR. VER.		ANT TYPE	C.Factor	RESULT(QP) HOR. VER.		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER.	
	[MHz]	[dBuV]			[dBuV]	[dBuV/m]		[dB]		[dB]	
61	799	23.8 26.2		LO	9.2	33.0 35.4		46.0		13.0 10.6	
		READING(PK) HOR. VER.	READING(AV) HOR. VER.	ANT TYPE	C.Factor	RESULT(PK) HOR. VER.	RESULT(AV) HOR. VER.	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER.	MARGIN(AV) HOR. VER.
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1598			HO				74.0	54.0	>27.0	>10.0
CH.	FREQ	READING(QP) HOR. VER.		ANT TYPE	C.Factor	RESULT(QP) HOR. VER.		LIMIT [QP] [dBuV/m]		MARGIN(QP) HOR. VER.	
	[MHz]	[dBuV]			[dBuV]	[dBuV/m]		[dB]		[dB]	
69	847	23.5 25.2		LO	9.6	33.1 34.8		46.0		12.9 11.2	
		READING(PK) HOR. VER.	READING(AV) HOR. VER.	ANT TYPE	C.Factor	RESULT(PK) HOR. VER.	RESULT(AV) HOR. VER.	LIMIT [PK] [dBuV/m]	LIMIT [AV] [dBuV/m]	MARGIN(PK) HOR. VER.	MARGIN(AV) HOR. VER.
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
	1694			HO				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. : SD-V393SU2
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25KE0116-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/06/30
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	22.3	22.8			BC	-7.0	15.3	15.8			43.5		28.2	27.7		
	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(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]						
	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]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[dBuV/m]	[dB]		[dB]		
95	137	29.9	30.0			BC	-5.5	24.4	24.5			43.5		19.1	19.0		
	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(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]						
	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								
				HO				74.0	54.0								
	CH.	FREQ	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT	MARGIN(QP)			
	[MHz]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[dBuV/m]	[dB]		[dB]		
97	149	29.0	23.2			BC	-4.8	24.2	18.4			43.5		19.3	25.1		
	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(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]						
	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]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[dBuV/m]	[dB]		[dB]	
	99	161	25.0	27.2			BC	-4.2	20.8	23.0			43.5		22.7	20.5	
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(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]						
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. : SD-V393SU2
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25KE0116-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/06/30
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																		
14	167	22.0	22.0			BC	-3.8	18.2	18.2			43.5		25.3	25.3			
	334					LO						46.0		>15.0				
	501					LO						46.0						
	668					LO						46.0						
	835					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]	[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	READING(QP)				ANT	C.Factor	RESULT(QP)				LIMIT	MARGIN(QP)					
	[MHz]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]	[dB]					
18	191	22.0	22.3			BC	-2.8	19.2	19.5			43.5		24.3	24.0			
	382					LO						46.0		>15.0				
	573					LO						46.0						
	764					LO						46.0						
	955					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]	[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]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]	[dB]					
22	215	25.6	23.9			BC	-2.4	23.2	21.5			43.5		20.3	22.0			
	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/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]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]	[dB]					
23	263	23.2	22.9			BC	-0.6	22.6	22.3			46.0	46.0	23.4	23.7			
	526					LO						46.0	46.0					
	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/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]	[dBuV]				TYPE	[dBuV]	[dBuV/m]				[QP]	[dB]					
29	299	21.5	22.0			BC	1.9	23.4	23.9			46.0	46.0	22.6	22.1			
	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/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. : SD-V393SU2
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25KE0116-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
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DATE : 2005/06/30
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	28.9	30.0		LO	-0.2	28.7	29.8		46.0	46.0	17.3	16.2	
	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		HOR. VER.	HOR. VER.		[PK]	[AV]	HOR. VER.	HOR. VER.	
		[dBuV]	[dBuV]			[dBuV]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]
	1023				HO					74.0	54.0	>27.0		>10.0
	1364				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]		
37	347	21.6	21.7		LO	-0.1	21.5	21.6		46.0	46.0	24.5	24.4	
	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		HOR. VER.	HOR. VER.		[PK]	[AV]	HOR. VER.	HOR. VER.	
		[dBuV]	[dBuV]			[dBuV]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]
	1041				HO					74.0	54.0	>27.0		>10.0
	1388				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]		
65	515	26.5	27.3		LO	3.1	29.6	30.4		46.0	46.0	16.4	15.6	
		READING(PK)	READING(AV)		ANT	C.Factor	RESULT(PK)	RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)	
		HOR. VER.	HOR. VER.		TYPE		HOR. VER.	HOR. VER.		[PK]	[AV]	HOR. VER.	HOR. VER.	
		[dBuV]	[dBuV]			[dBuV]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]
	1030				HO					74.0	54.0	>27.0		>10.0
	1545				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]		
94	689	22.7	27.6		LO	5.8	28.5	33.4		46.0	46.0	17.5	12.6	
		READING(PK)	READING(AV)		ANT	C.Factor	RESULT(PK)	RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)	
		HOR. VER.	HOR. VER.		TYPE		HOR. VER.	HOR. VER.		[PK]	[AV]	HOR. VER.	HOR. VER.	
		[dBuV]	[dBuV]			[dBuV]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]
	1378				HO					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]	[dBuV/m]			[dBuV/m]		[dB]		
100	695	24.2	27.2		LO	5.9	30.1	33.1		46.0	46.0	15.9	12.9	
		READING(PK)	READING(AV)		ANT	C.Factor	RESULT(PK)	RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)	
		HOR. VER.	HOR. VER.		TYPE		HOR. VER.	HOR. VER.		[PK]	[AV]	HOR. VER.	HOR. VER.	
		[dBuV]	[dBuV]			[dBuV]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]
	1390				HO					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]	[dBuV/m]			[dBuV/m]		[dB]		
113	773	25.5	26.2		LO	8.3	33.8	34.5		46.0	46.0	12.2	11.5	
		READING(PK)	READING(AV)		ANT	C.Factor	RESULT(PK)	RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)	
		HOR. VER.	HOR. VER.		TYPE		HOR. VER.	HOR. VER.		[PK]	[AV]	HOR. VER.	HOR. VER.	
		[dBuV]	[dBuV]			[dBuV]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]
	1546				HO					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]	[dBuV/m]			[dBuV/m]		[dB]		
125	845	23.2	25.1		LO	9.6	32.8	34.7		46.0	46.0	13.2	11.3	
		READING(PK)	READING(AV)		ANT	C.Factor	RESULT(PK)	RESULT(AV)		LIMIT	LIMIT	MARGIN(PK)	MARGIN(AV)	
		HOR. VER.	HOR. VER.		TYPE		HOR. VER.	HOR. VER.		[PK]	[AV]	HOR. VER.	HOR. VER.	
		[dBuV]	[dBuV]			[dBuV]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]
	1690				HO					74.0	54.0	>27.0		>10.0