



Certification EMI TEST REPORT

Test Report No. : 25IE0134-YW-1

Applicant : Orion Electric Co., Ltd.

Type of equipment : DVD Player with Video Cassette Recorder

Model number : SD-V593SU

FCC ID : A7RM2F9A

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-V593SC	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.

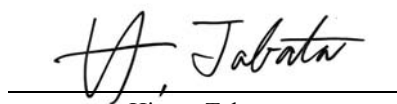
Date of test : March 31 to April 14, 2005

Tested by:


Tsubasa Takayama
Engineer of EMC Service


Tomoyuki Yamashita
Engineer of 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	27
Appendix 3: Test instruments	144

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-V593SU
FCC ID : A7RM2F9A
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 : March 31, 2005
Condition of EUT : Production Prototype
(Not for Sale: This sample is equivalent to mass-produced items.)

2.2 Product description

Model: SD-V593SU (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, 20W
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	CISPR 22	7.1 dB (0.1670 MHz, N, AV, Card)	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	1.0 dB (675.00 MHz, Vertical, VCR Play)	Complied
Antenna terminal voltage	ANSI C63.4:2003	2 nW (at 75 ohm)	24.6 dB (629.71550 MHz, TV tuning / 628.00130 MHz, CATV tuning)	Complied
RF output level	ANSI C63.4:2003	Video signal: 3000 uV Aural signal: 671 uV	3.8 dB (61.25 MHz, 3ch, AV Input 2 + Rec. 5Vp-p)	Complied
Spurious emission		94.8 uV	22.2 dB (593.4000 MHz, AV Input 2 + Rec. 1Vp-p / 122.0000 MHz, DVD Play (HDMI) ; 3ch)	Complied
Transfer switch	ANSI C63.4:2003	9.5 dB	6.0 dB (67.2500 MHz, AV Input 2 + Rec. 5Vp-p, 4ch)	Complied
Picture sensitivity	ANSI C63.4:2003	8 dB	5.5 dB	Complied
Noise figure	FCC/OET MP:2:1986	14 dB	7.1 dB (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.

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		

*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.

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

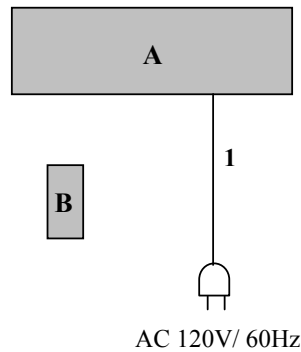
The EUT exercise program used during testing was designed exercise the various system components in a manner similar to typical use.

The sequence in used :
* TV Reception + Rec. mode (0 dBmV input / 25 dBmV input)
* AV Input 1 + Rec. mode / AV Input 2 + Rec. mode (1 Vp-p input / 5 Vp-p input)
* VCR Play mode
* DVD Play mode
* Card 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-V593SU	—	Orion Electric Co., Ltd.	A7RM2F9A	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 No.1 shielded room.

Date : March 30, 2005
Temperature : See data
Humidity : See data

5.2 Test configuration

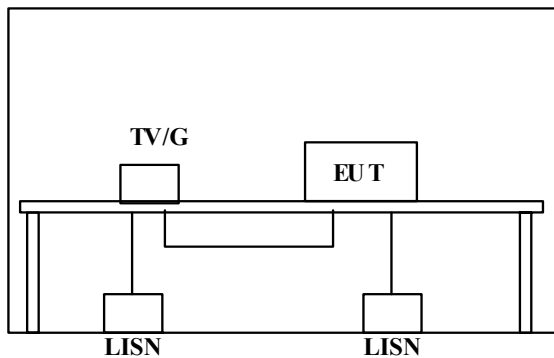
EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT was aligned and flushed with rear of tabletop. All other surfaces of tabletop was at least 80 cm from any 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.

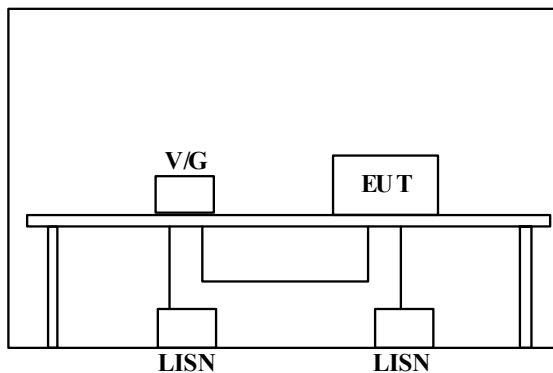
Figure 1. Conducted emission

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

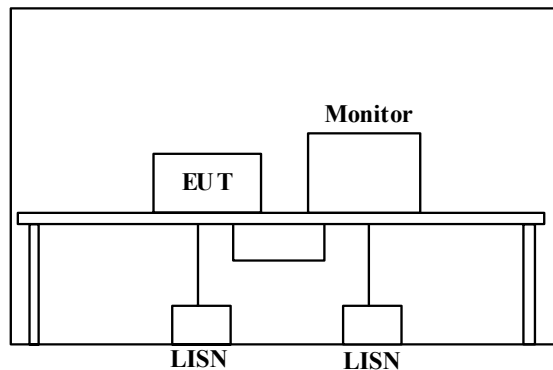
Shielded room



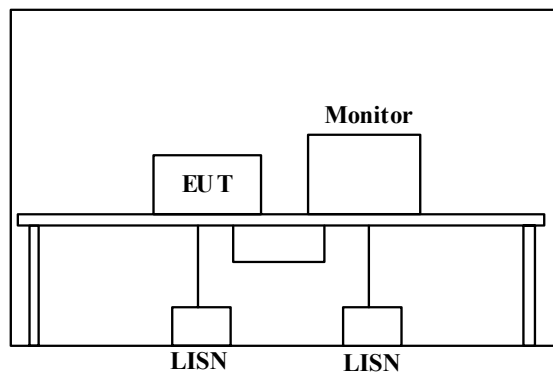
RF in: TV signal generator connected
Front video in: 75 ohm terminated
Front audio in: 47 k ohm terminated
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
S-Video out: 75 ohm terminated with S-Video cable
Component out (Y/P_B/P_R): 75 ohm terminated 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
HDMI out: HDMI cable connected

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 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
 HDMI out: HDMI cable connected

VCR Play 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: monitor connected
 Component out (Y/P_B/P_R): monitor connected
 RF output: monitor connected
 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
 HDMI out: monitor connected

Card 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: monitor connected
 Component out (Y/P_B/P_R): monitor connected
 RF output: monitor connected
 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
 HDMI out: monitor connected
 Card slot: SD card in, CF card in

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 Play, DVD Play, Card

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
IF Bandwidth : 10 kHz

5.5 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

Section 6 : Radiated emission

6.1 Operation environment

The test was carried out in No.2 and No.3 open site.

Date : March 31 and April 14, 2005

Temperature : See data

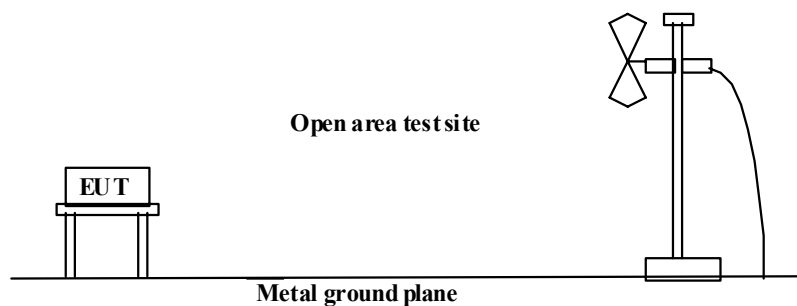
Humidity : See data

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.

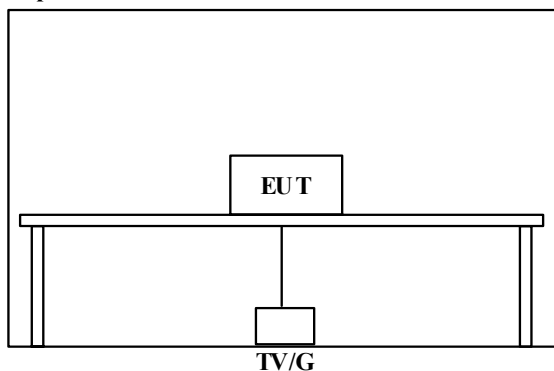
A drawing of the set up is shown in figure 2 and photographs in Appendix 1.

Figure 2. Radiated emission



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

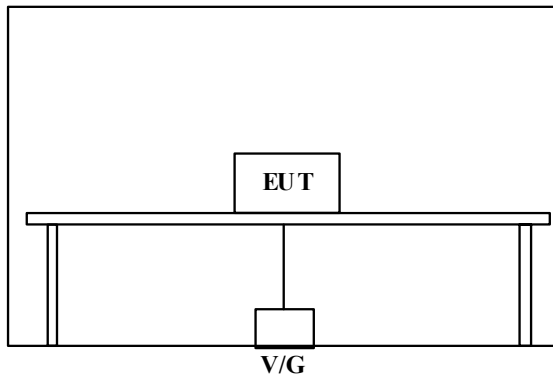
Open test site



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 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
 HDMI out: HDMI cable connected

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 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

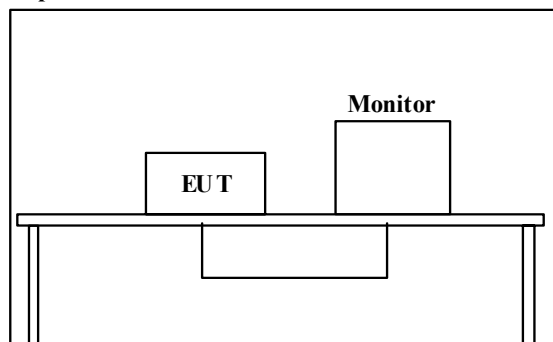
Rear video in: video signal generator connected or 75 ohm terminated

Rear audio in: 47 k ohm terminated

HDMI out: HDMI cable connected

VCR Play 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: monitor connected

Component out (Y/P_B/P_R): monitor connected

RF output: monitor connected

Coaxial out: 75 ohm terminated with coaxial cable

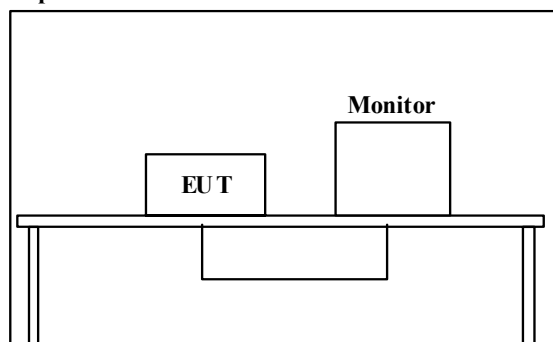
Rear video in: 75 ohm terminated with video cable

Rear audio in: 47 k ohm terminated with audio cable

HDMI out: monitor connected

Card 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: monitor connected

Component out (Y/P_B/P_R): monitor connected

RF output: monitor connected

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

HDMI out: monitor connected

Card slot: SD card in, CF card in

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

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 Play, DVD Play, Card

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 : March 31, 2005

Temperature : See data

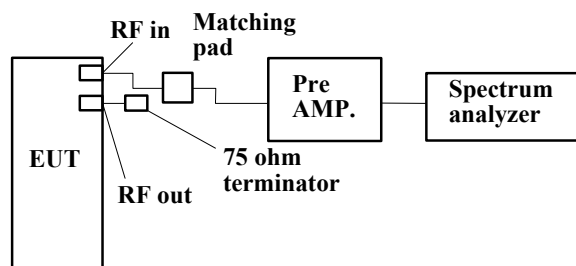
Humidity : See data

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 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 (30-5000 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: 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 8 : RF output level / spurious emission

8.1 Operation environment

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

Date : April 1, 2005

Temperature : See data

Humidity : See data

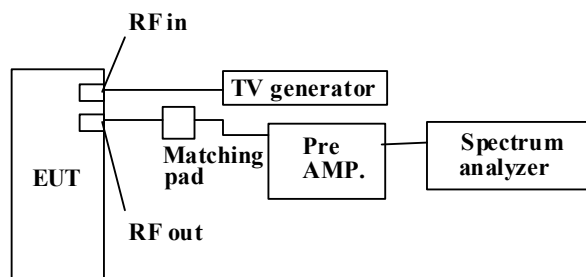
8.2 Test configuration

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

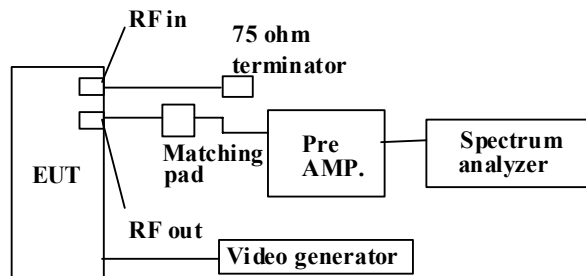
A drawing of the set up is shown in figure 4 and photographs in Appendix 1.

Figure 4. RF output level

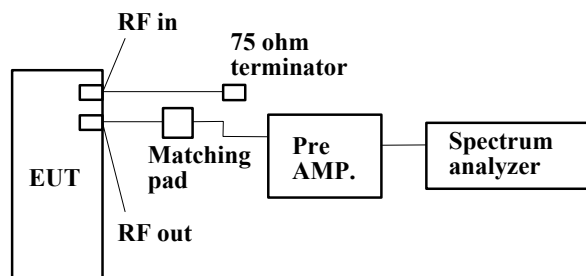
TV Reception + Rec. mode



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



VCR Play mode, DVD Play mode and Card mode



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

8.3 Test conditions

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

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

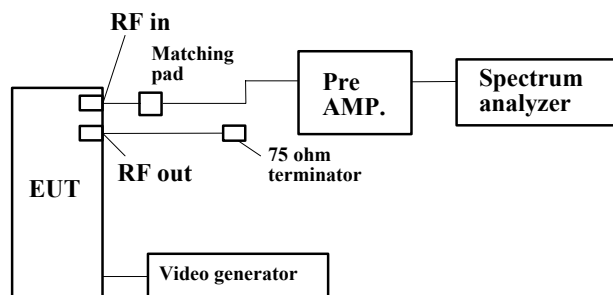
The test was carried out in No.7 shielded room.

Date : April 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 Play, DVD Play, Card

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 : March 31, 2005

Temperature : See data

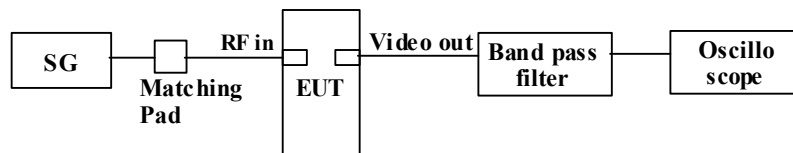
Humidity : See data

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: 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 : March 31, 2005

Temperature : See data

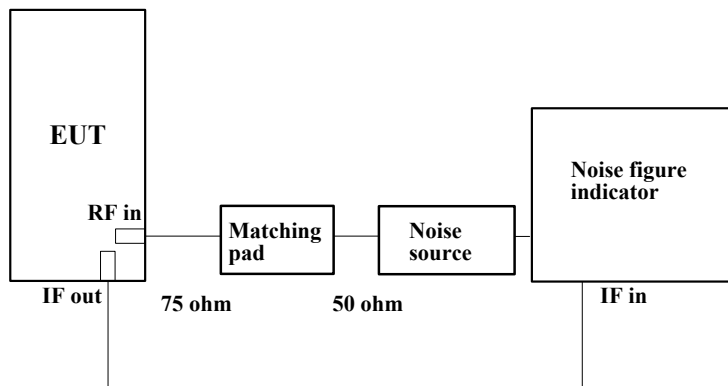
Humidity : See data

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: Tsubasa Takayama

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 - 48 :	Conducted emission
Page 49 - 101 :	Radiated emission
Page 102- 103 :	Antenna terminal voltage
Page 104 - 127 :	RF output level / spurious emission
Page 128 - 141 :	Antenna transfer switch
Page 142 :	Picture sensitivity
Page 143 :	Noise figure

Appendix 3 : Test instruments

Page 144 :	Test instruments
------------	------------------

Conducted emission



UL Apex Co., Ltd.

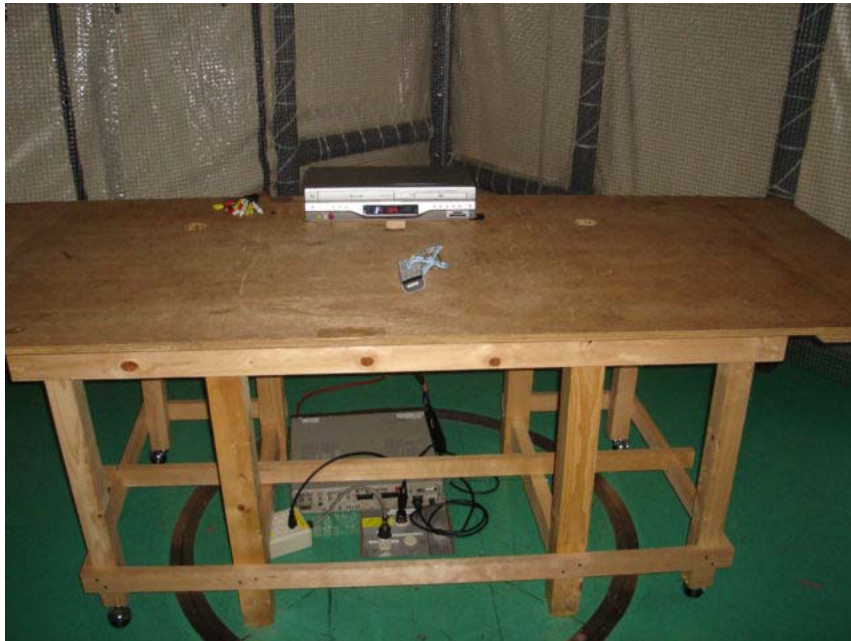
Yokowa EMC Lab.

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.

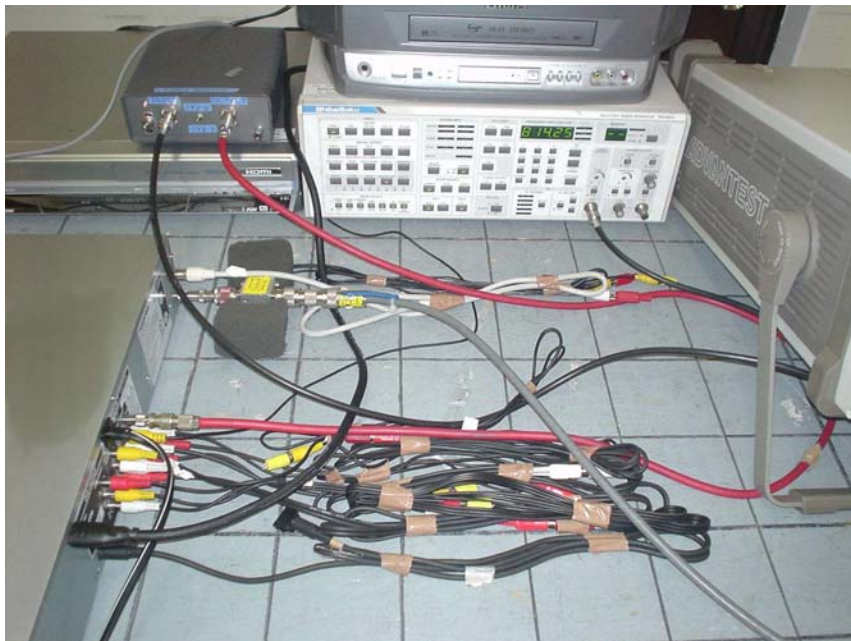
Yokowa EMC Lab.

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.

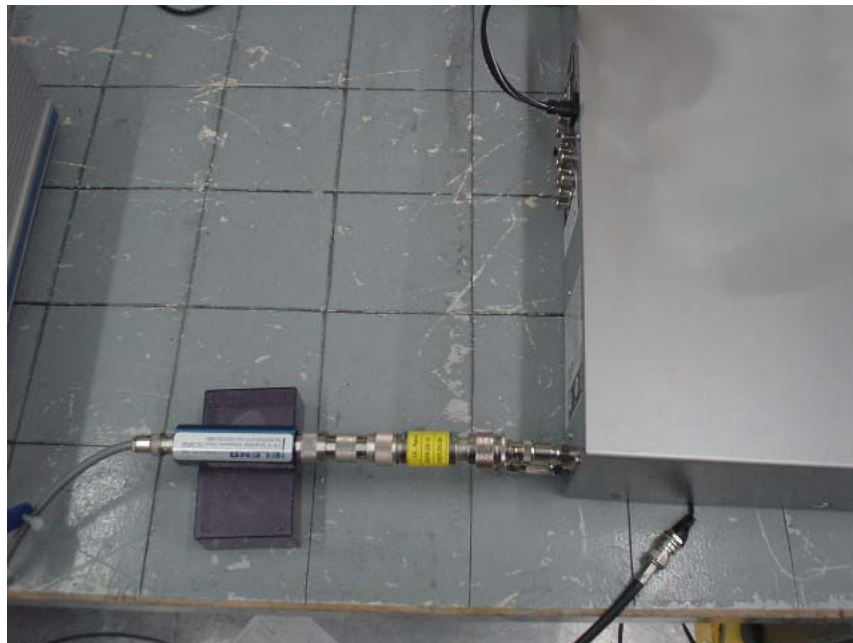
Yokowa EMC Lab.

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.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec (25dBmV)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tomoyuki Yamashita

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μ V]	AV	QP [dB μ V]	AV				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB]	AV [dB]
1.	0.1500	47.0	-	47.1	-	0.0	0.4	0.0	47.5	-	66.0	56.0	18.5	-
2.	0.2000	41.1	-	41.1	-	0.1	0.4	0.0	41.6	-	63.6	53.6	22.0	-
3.	0.3000	33.2	-	33.2	-	0.1	0.4	0.0	33.7	-	60.2	50.2	26.5	-
4.	0.9236	25.2	-	25.8	-	0.1	0.5	0.0	26.4	-	56.0	46.0	29.6	-
5.	1.3991	27.0	-	29.0	-	0.1	0.5	0.0	29.6	-	56.0	46.0	26.4	-
6.	12.2874	26.7	-	26.0	-	0.6	0.9	0.0	28.2	-	60.0	50.0	31.8	-
7.	24.5760	25.6	-	24.2	-	1.0	1.2	0.0	27.8	-	60.0	50.0	32.2	-

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

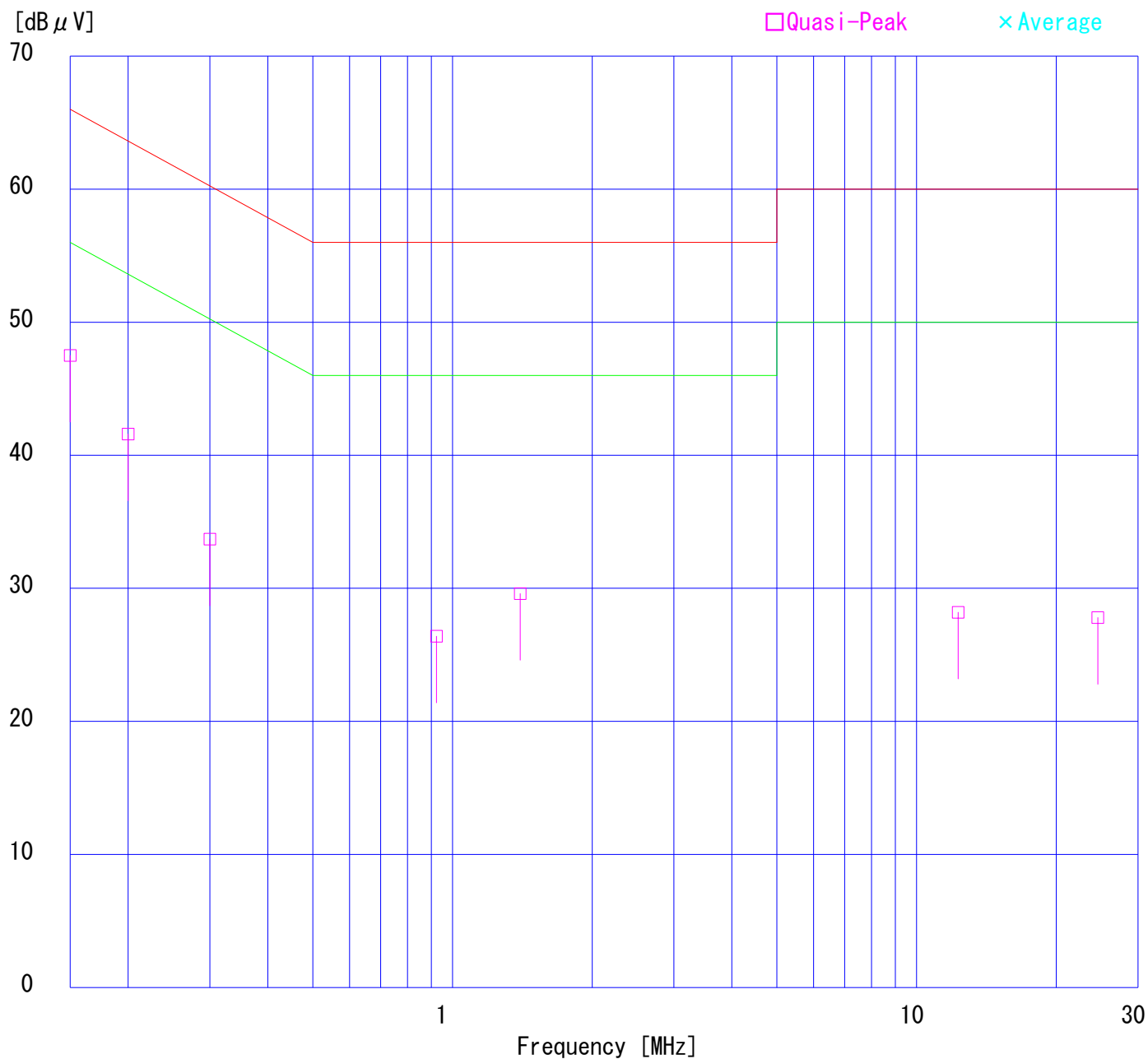
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 25IE0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec (25dBmV)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

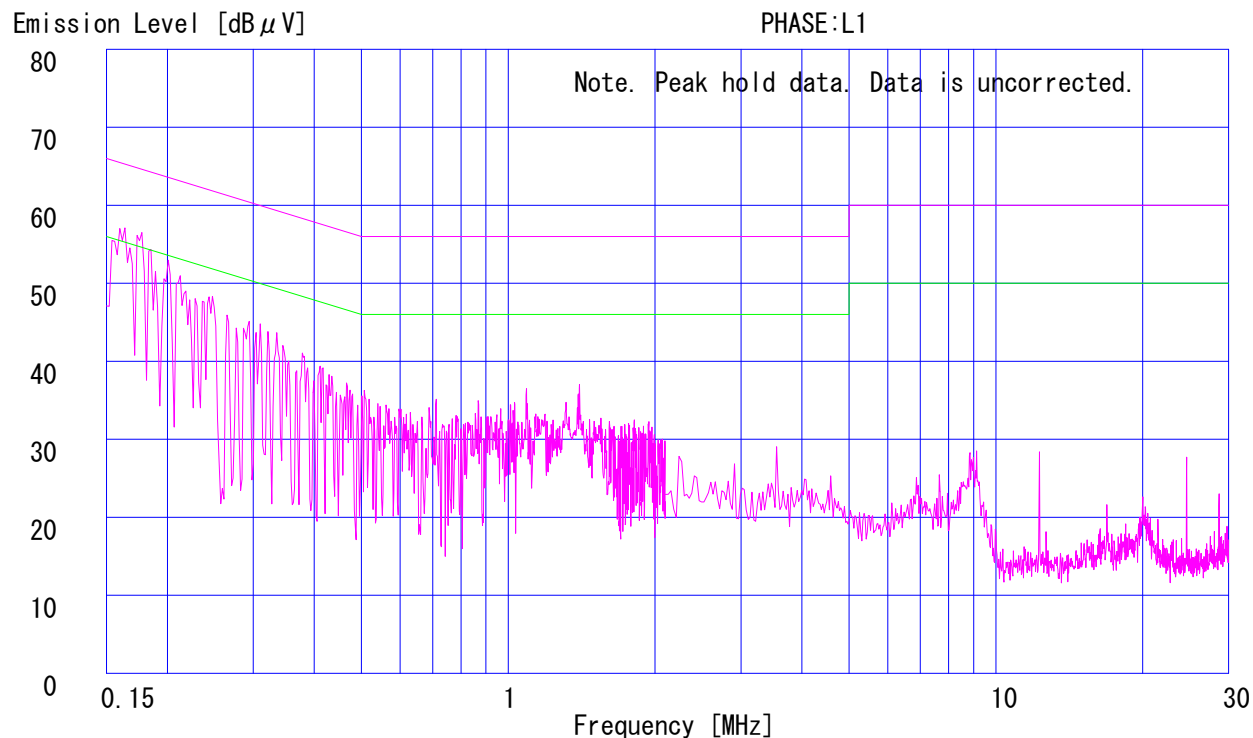
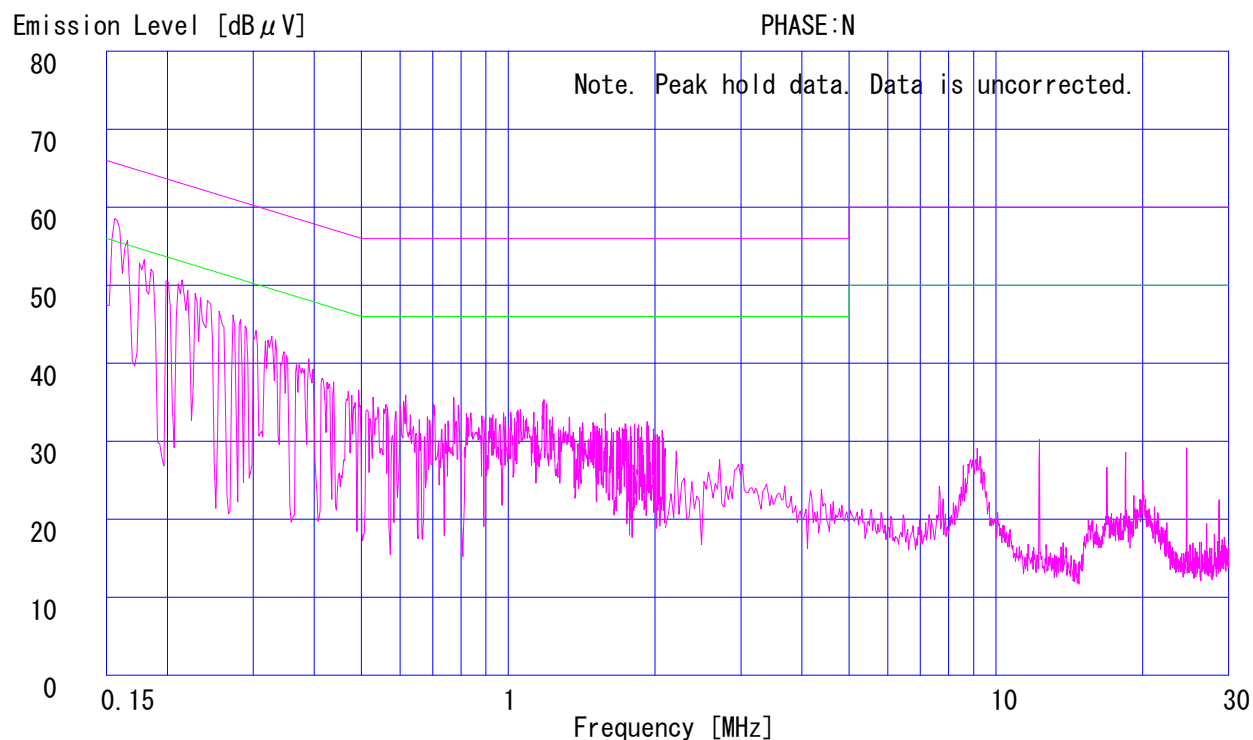
UL Apex Co., Ltd.

YOKOWA No.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec (25dBmV)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

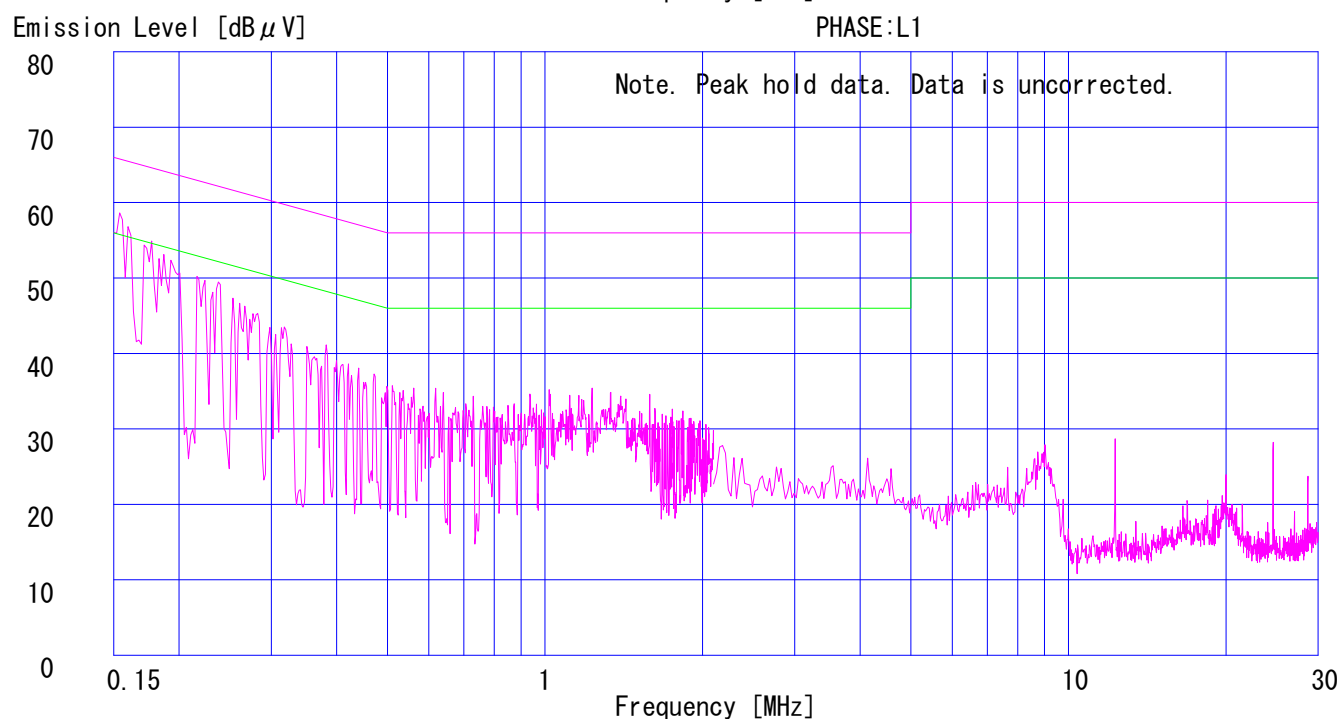
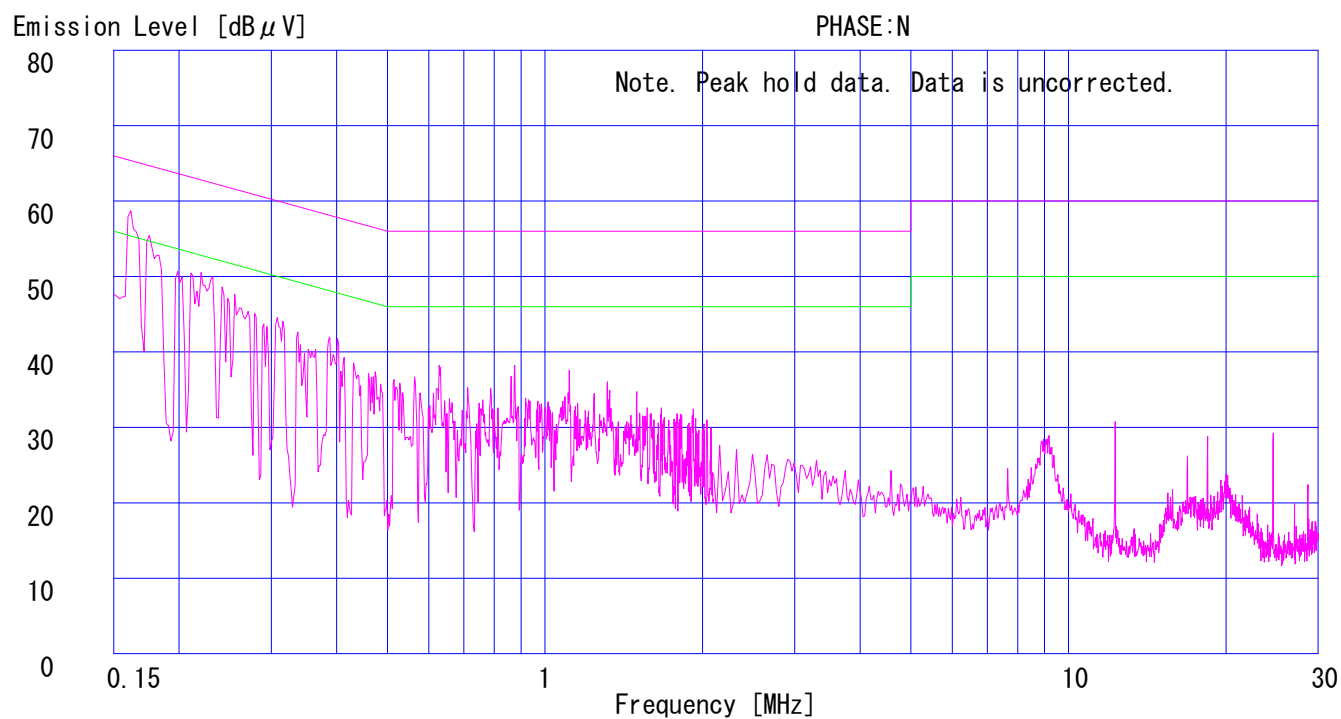
UL Apex Co., Ltd.

YOKOWA No.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec (0dBmV)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 251E0134-YW-1

Applicant	: Orion Electric Co., Ltd.		
Kind of Equipment	: DVD/VCR		
Model No.	: SD-V593SU		
Serial No.	: -		
Power	: AC120V/60Hz		
Mode	: AV Input1+Rec (5Vp-p)		
Remarks	:		
Date	: 3/30/2005		
Phase	: Single Phase		
Temperature	: 24 °C	Engineer	: Tomoyuki Yamashita
Humidity	: 43 %		
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	QP [dB μ V]	AV				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB]	AV [dB]
1.	0.1500	47.5	-	47.4	-	0.0	0.4	0.0	47.9	-	66.0	56.0	18.1	-
2.	0.2000	41.7	-	41.7	-	0.1	0.4	0.0	42.2	-	63.6	53.6	21.4	-
3.	0.3000	33.5	-	33.6	-	0.1	0.4	0.0	34.1	-	60.2	50.2	26.1	-
4.	0.8538	28.2	-	25.0	-	0.1	0.5	0.0	28.8	-	56.0	46.0	27.2	-
5.	1.0879	28.2	-	27.0	-	0.1	0.5	0.0	28.8	-	56.0	46.0	27.2	-
6.	8.0152	36.0	-	35.5	-	0.4	0.8	0.0	37.2	-	60.0	50.0	22.8	-
7.	15.5000	25.0	-	24.2	-	0.7	1.0	0.0	26.7	-	60.0	50.0	33.3	-
8.	24.5700	27.5	-	22.7	-	1.0	1.2	0.0	29.7	-	60.0	50.0	30.3	-

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

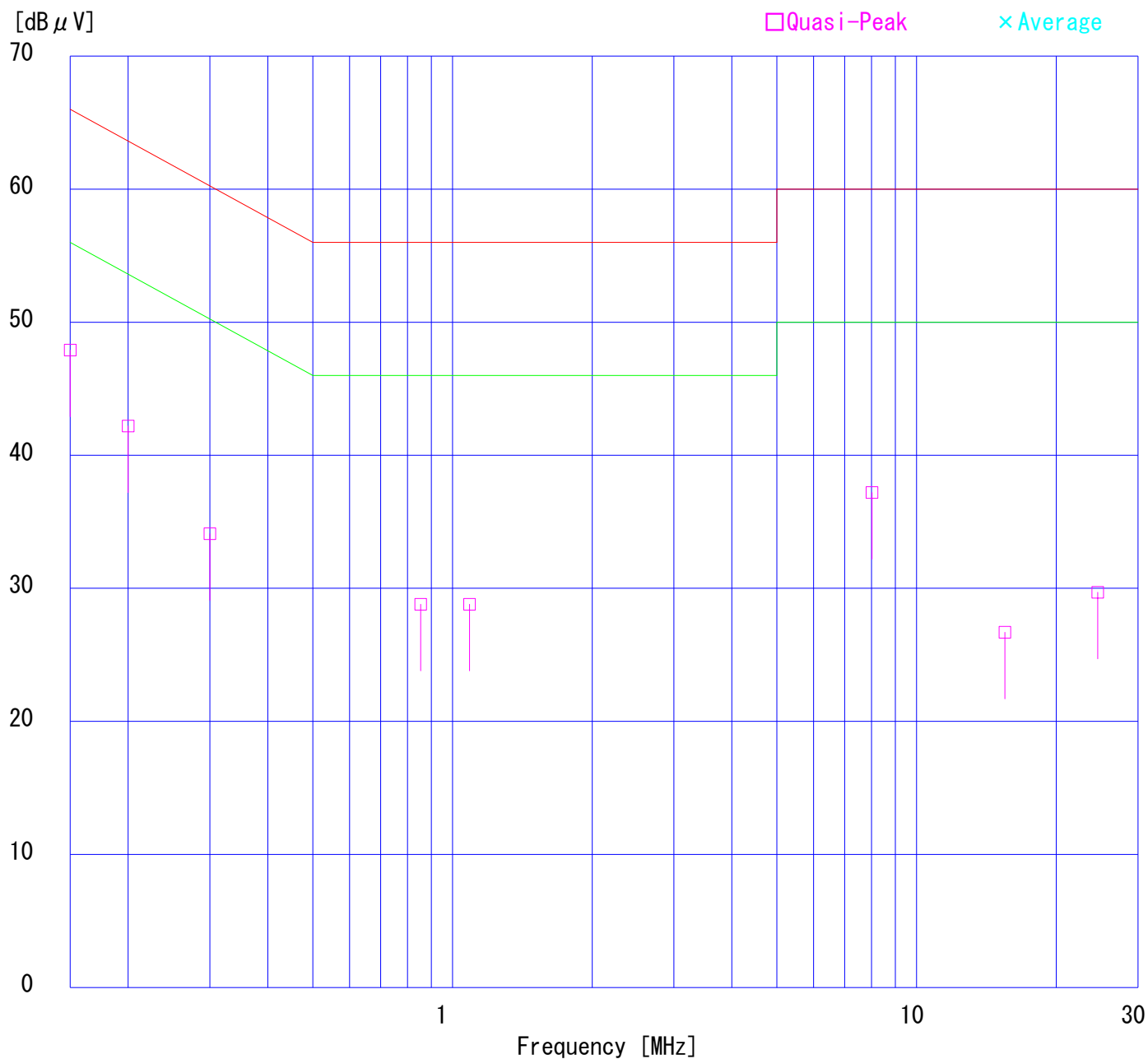
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 25IE0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input1+Rec (5Vp-p)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

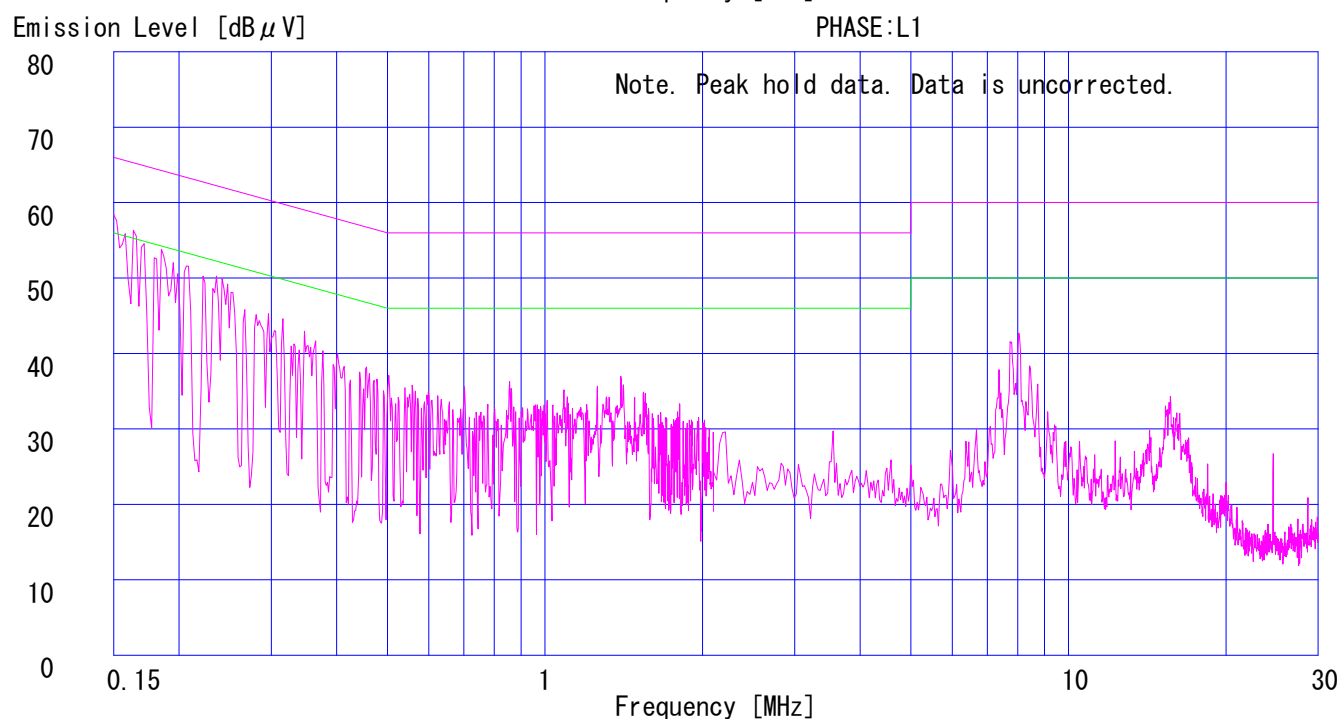
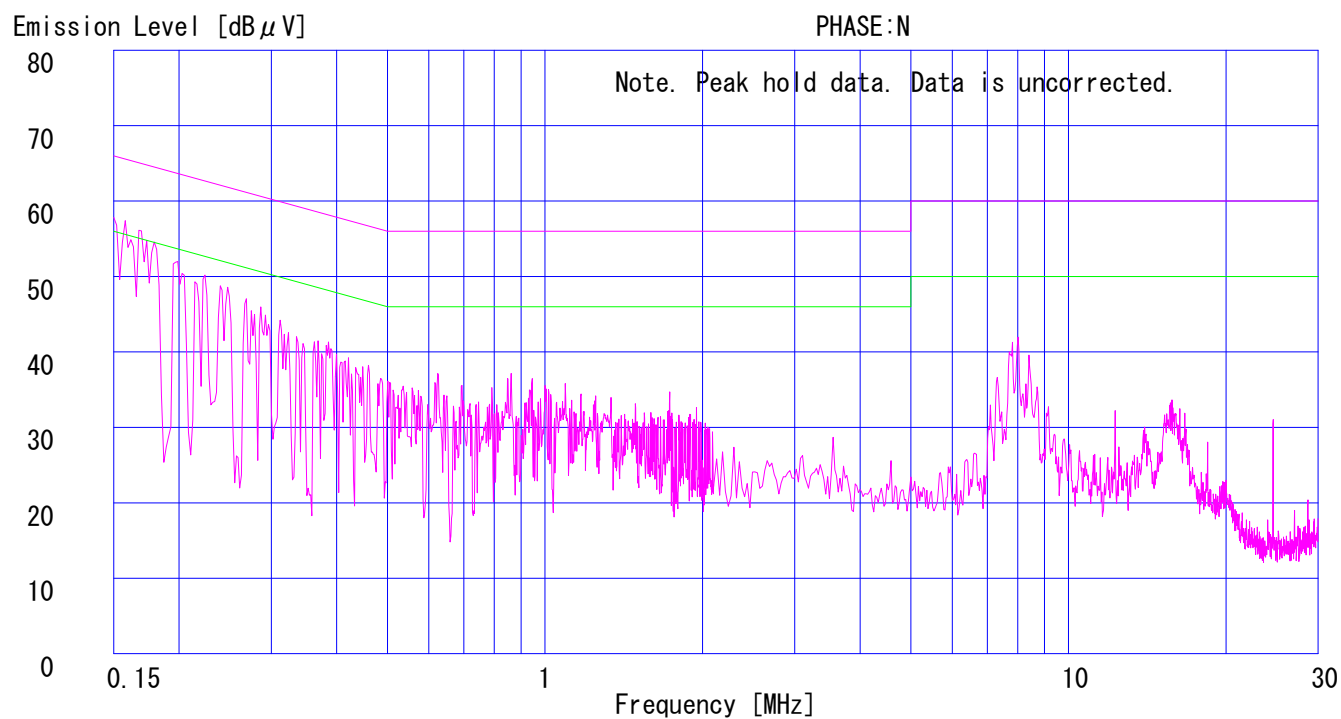
UL Apex Co., Ltd.

YOKOWA No.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input1+Rec (5Vp-p)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

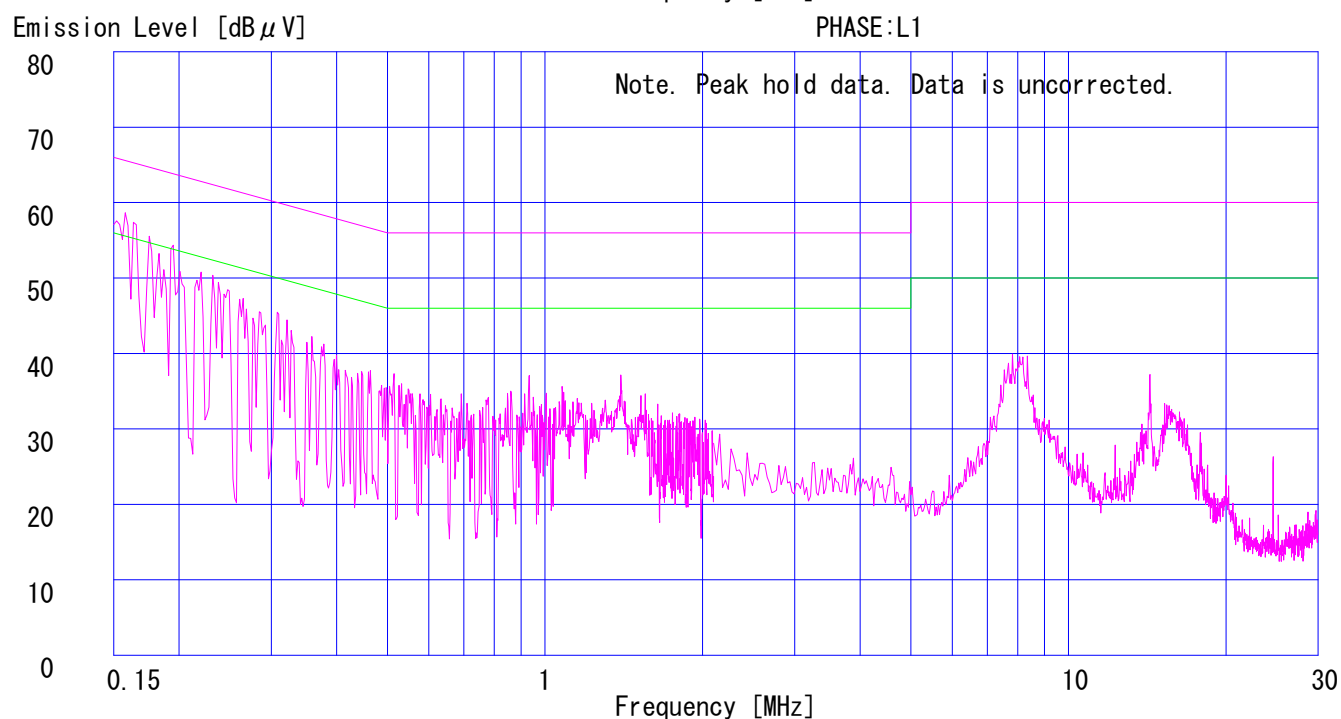
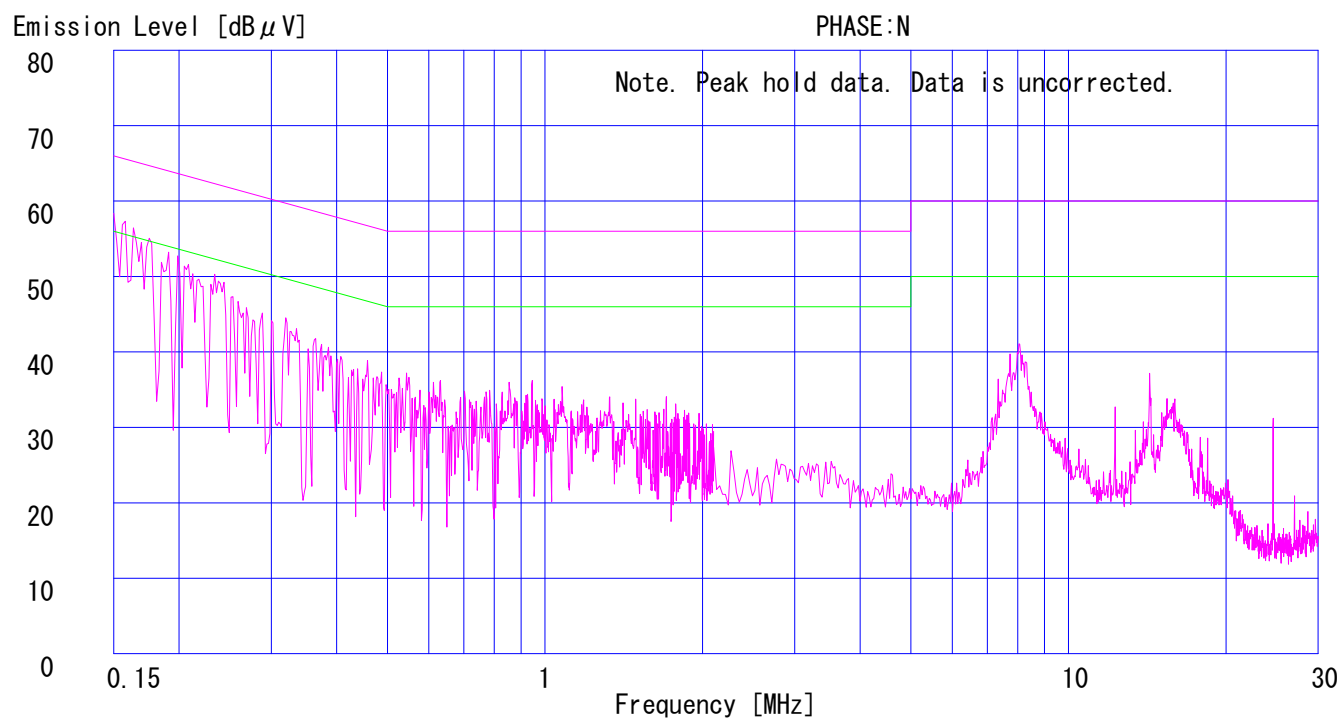
UL Apex Co., Ltd.

YOKOWA No.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input1+Rec (1Vp-p)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 251E0134-YW-1

Applicant	: Orion Electric Co., Ltd.		
Kind of Equipment	: DVD/VCR		
Model No.	: SD-V593SU		
Serial No.	: -		
Power	: AC120V/60Hz		
Mode	: AV Input2+Rec (5Vp-p)		
Remarks	:		
Date	: 3/30/2005		
Phase	: Single Phase		
Temperature	: 24 °C	Engineer	: Tomoyuki Yamashita
Humidity	: 43 %		
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	QP [dB μ V]	AV				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV	QP [dB μ V]	AV [dB]
1.	0.1500	47.5	-	47.3	-	0.0	0.4	0.0	47.9	-	66.0	56.0	18.1	-
2.	0.2000	41.4	-	41.3	-	0.1	0.4	0.0	41.9	-	63.6	53.6	21.7	-
3.	0.3000	33.5	-	33.5	-	0.1	0.4	0.0	34.0	-	60.2	50.2	26.2	-
4.	0.9366	26.6	-	27.2	-	0.1	0.5	0.0	27.8	-	56.0	46.0	28.2	-
5.	1.1600	28.0	-	28.0	-	0.1	0.5	0.0	28.6	-	56.0	46.0	27.4	-
6.	7.8600	30.4	-	30.1	-	0.4	0.8	0.0	31.6	-	60.0	50.0	28.4	-
7.	15.2800	25.2	-	24.6	-	0.7	1.0	0.0	26.9	-	60.0	50.0	33.1	-
8.	24.5761	29.0	-	20.4	-	1.0	1.2	0.0	31.2	-	60.0	50.0	28.8	-

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

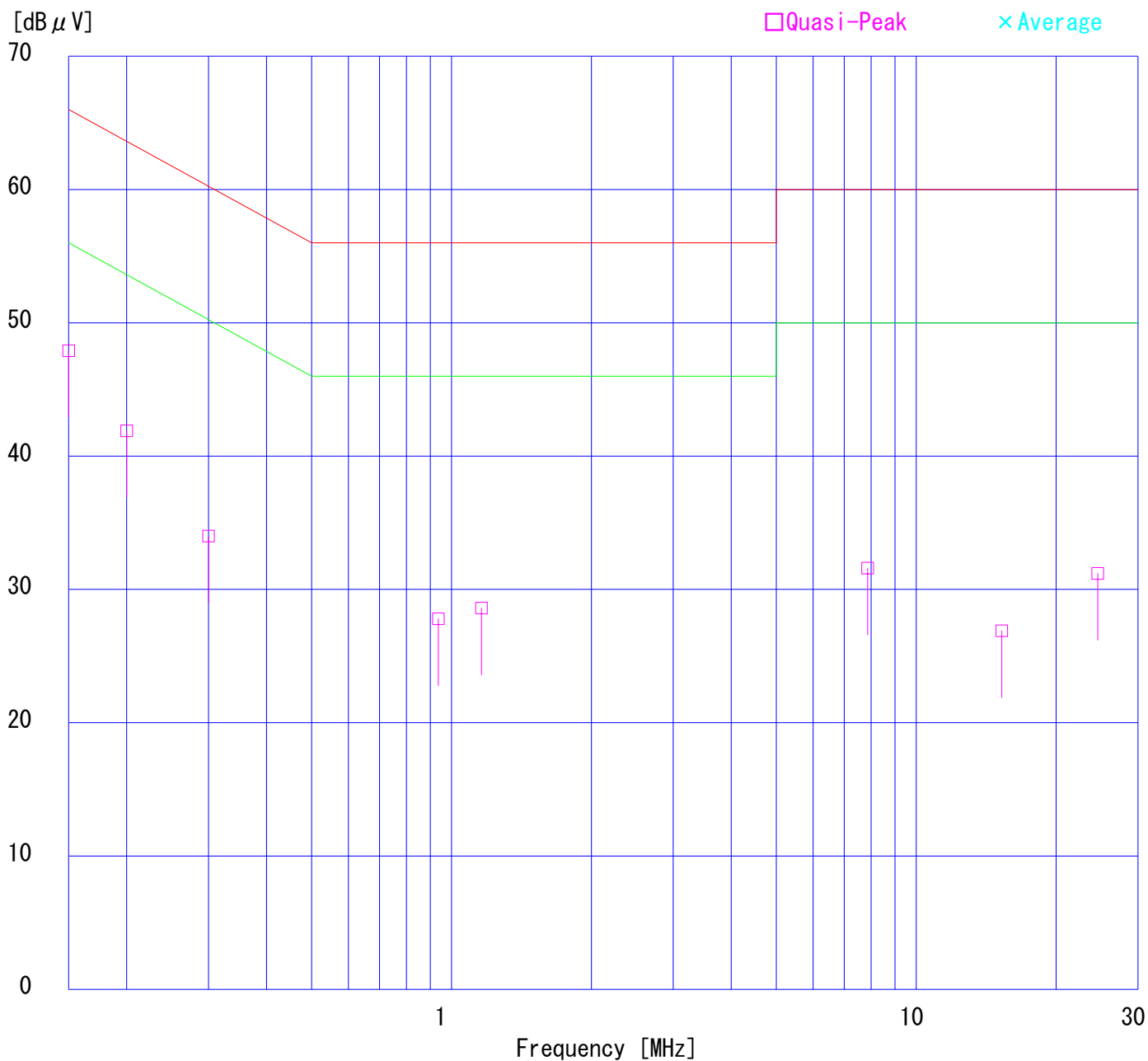
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input2+Rec (5Vp-p)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation : FCC Part15B CLASS B (2003)

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

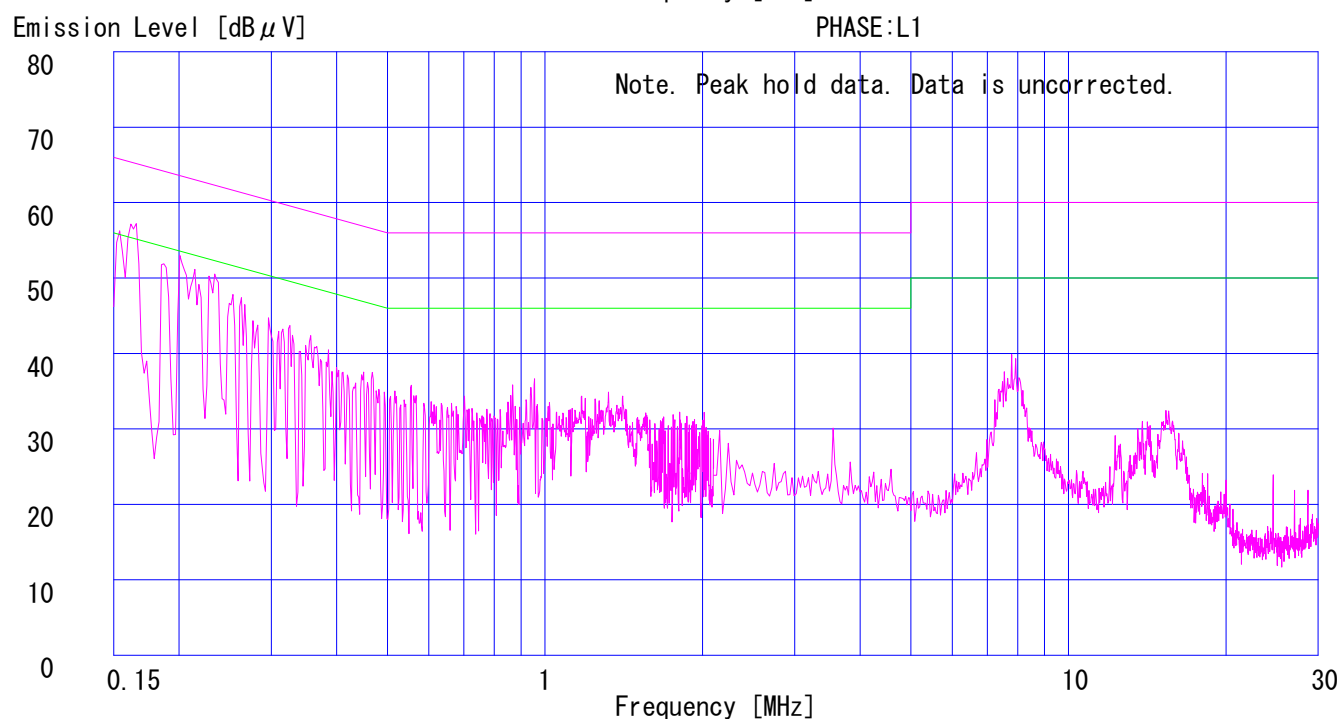
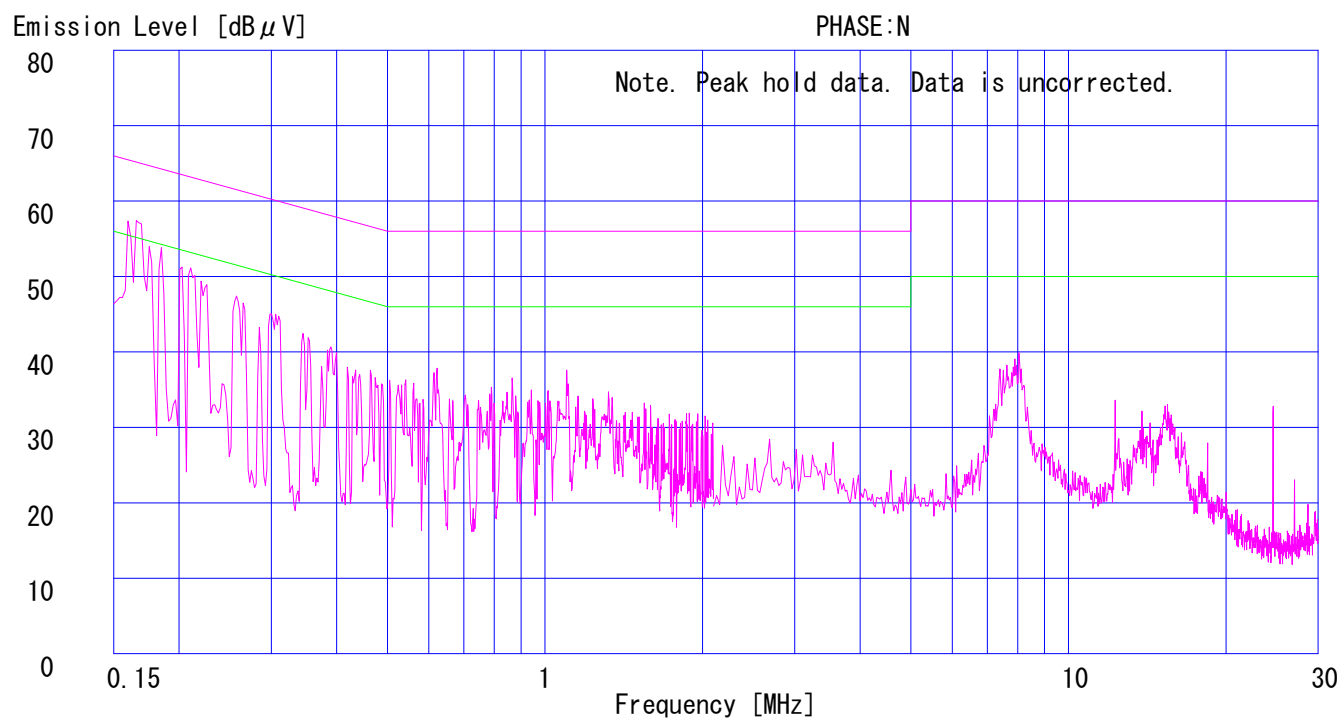
UL Apex Co., Ltd.

YOKOWA No.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input2+Rec (5Vp-p)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

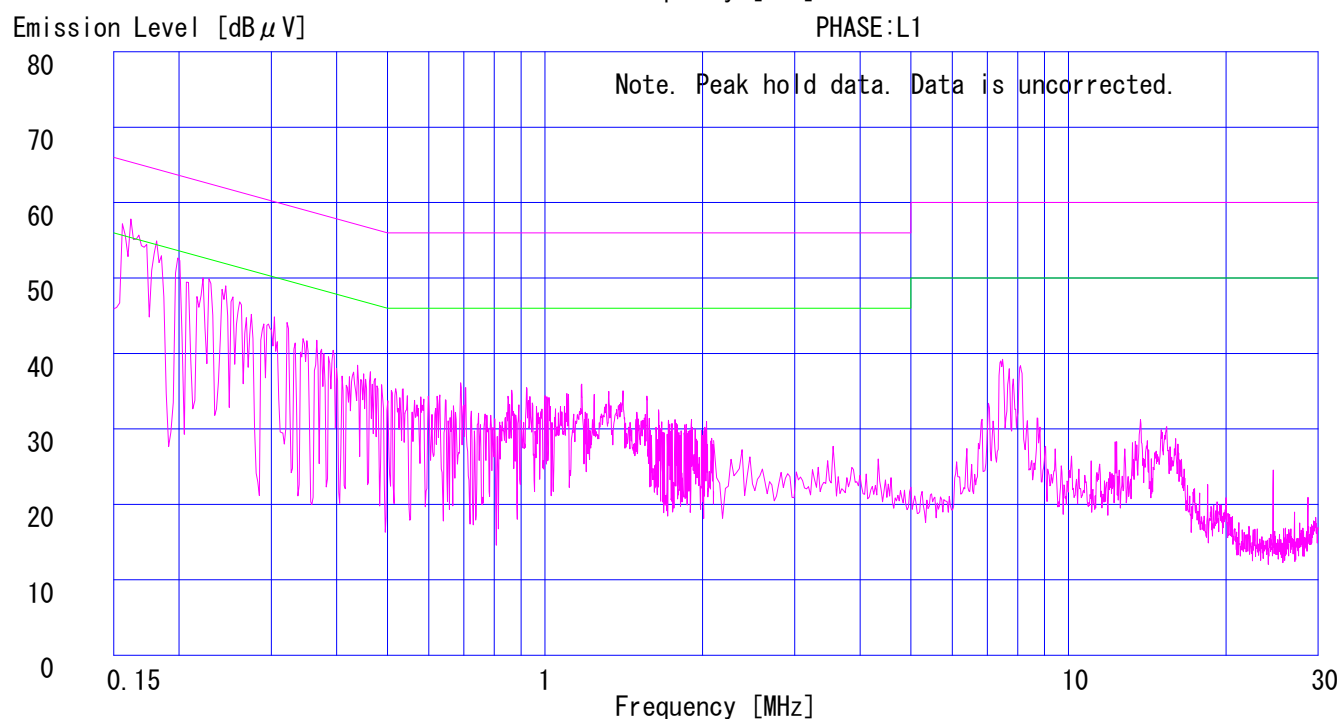
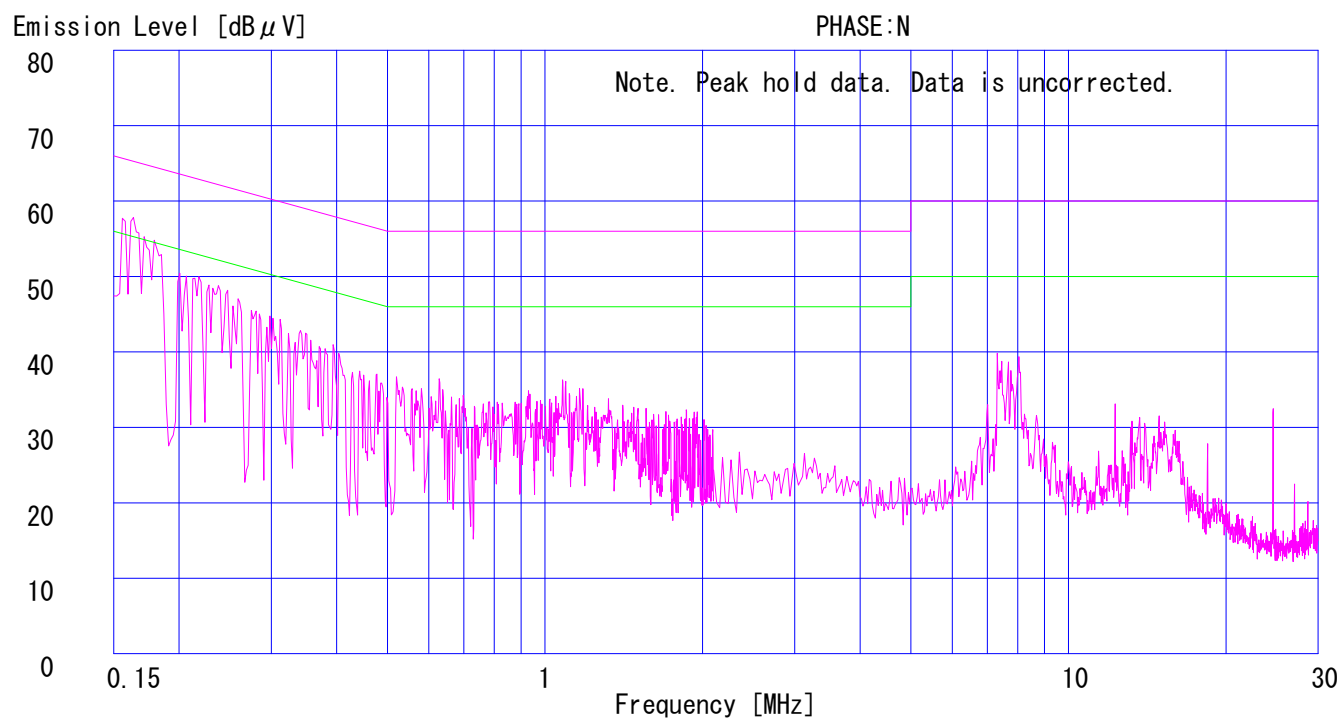
UL Apex Co., Ltd.

YOKOWA No.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input2+Rec (1Vp-p)
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 251E0134-YW-1

Applicant	: Orion Electric Co., Ltd.		
Kind of Equipment	: DVD/VCR		
Model No.	: SD-V593SU		
Serial No.	: -		
Power	: AC120V/60Hz		
Mode	: VCR Playback		
Remarks	:		
Date	: 3/30/2005		
Phase	: Single Phase		
Temperature	: 24 °C	Engineer	: Tomoyuki Yamashita
Humidity	: 43 %		
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	QP [dB μ V]	AV				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB]	AV [dB]
1.	0.1679	50.3	44.9	50.1	45.7	0.0	0.4	0.0	50.7	46.1	65.1	55.1	14.4	9.0
2.	0.2000	43.6	-	44.5	-	0.1	0.4	0.0	45.0	-	63.6	53.6	18.6	-
3.	0.3704	35.0	-	35.1	-	0.1	0.4	0.0	35.6	-	58.5	48.5	22.9	-
4.	0.7747	33.7	-	34.7	-	0.1	0.5	0.0	35.3	-	56.0	46.0	20.7	-
5.	1.8206	31.4	-	31.5	-	0.1	0.5	0.0	32.1	-	56.0	46.0	23.9	-
6.	6.4406	32.2	-	32.0	-	0.3	0.7	0.0	33.2	-	60.0	50.0	26.8	-
7.	19.8928	37.0	-	36.1	-	0.9	1.1	0.0	39.0	-	60.0	50.0	21.0	-
8.	29.9738	41.3	-	41.2	-	1.0	1.4	0.0	43.7	-	60.0	50.0	16.3	-

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

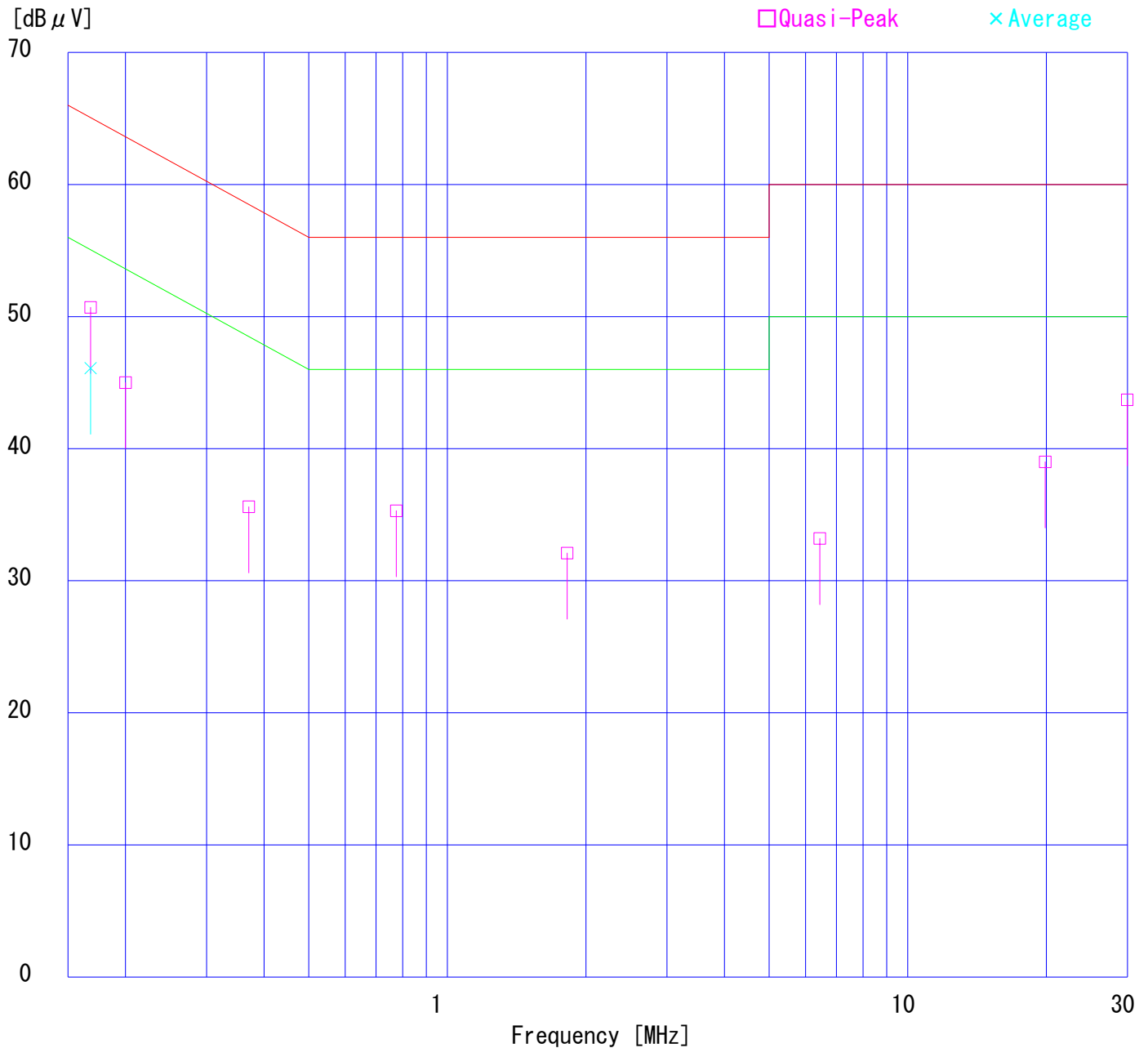
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

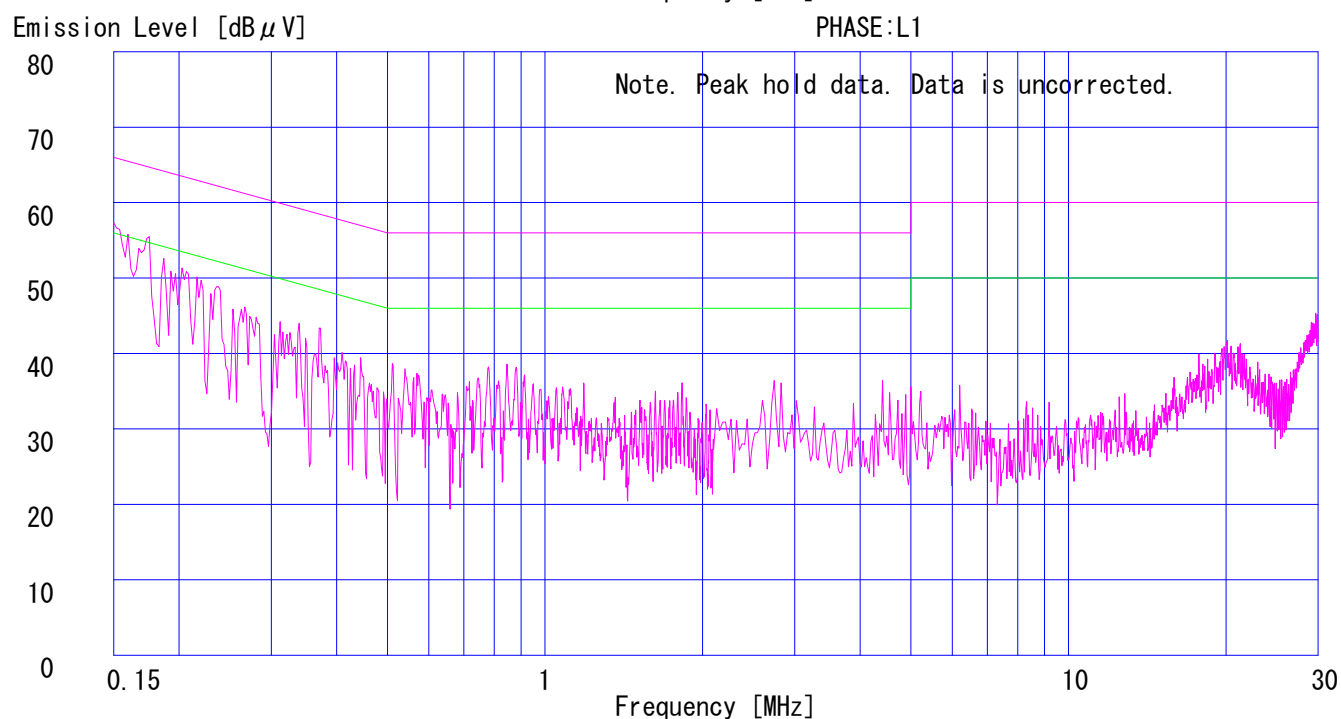
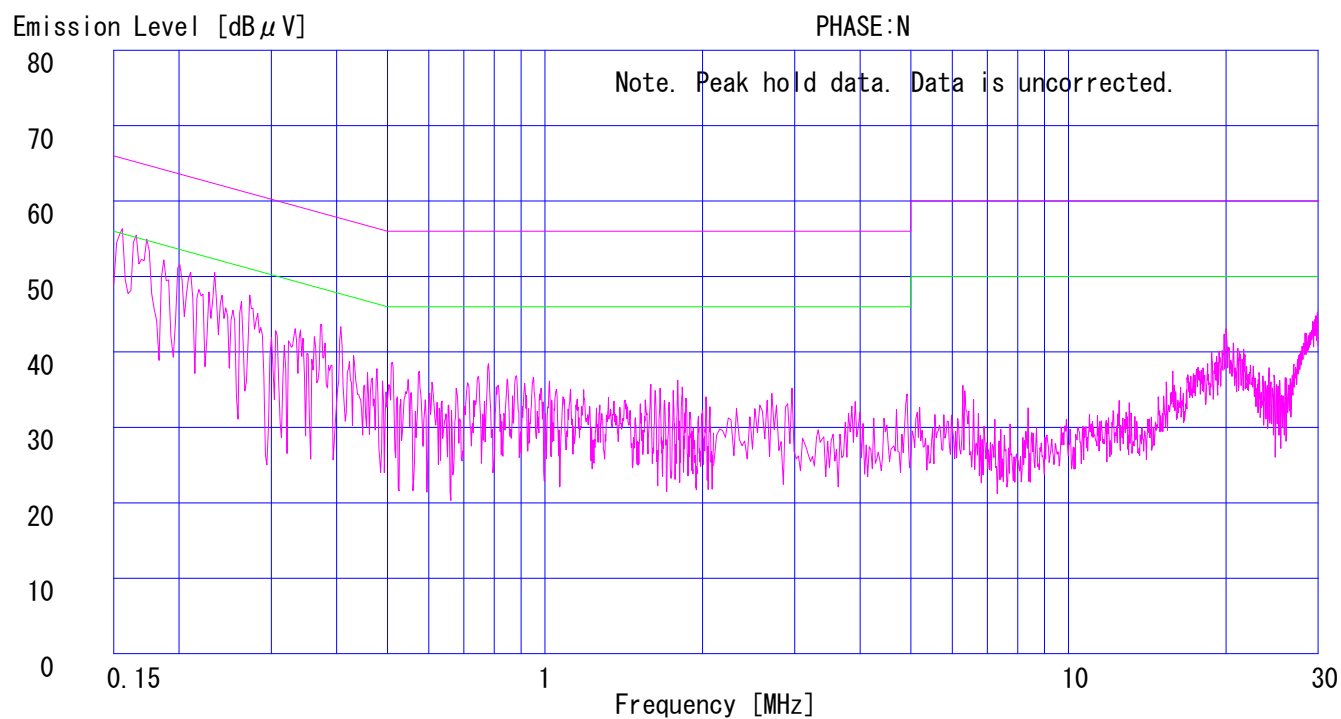
UL Apex Co., Ltd.

YOKOWA No.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 251E0134-YW-1

Applicant	: Orion Electric Co., Ltd.		
Kind of Equipment	: DVD/VCR		
Model No.	: SD-V593SU		
Serial No.	: -		
Power	: AC120V/60Hz		
Mode	: DVD Play		
Remarks	:		
Date	: 3/30/2005		
Phase	: Single Phase		
Temperature	: 24 °C	Engineer	: Tomoyuki Yamashita
Humidity	: 43 %		
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	QP [dB μ V]	AV				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB]	AV [dB]
1.	0.1663	50.1	46.5	50.4	46.0	0.0	0.4	0.0	50.8	46.9	65.1	55.1	14.3	8.2
2.	0.2013	45.6	-	45.0	-	0.1	0.4	0.0	46.1	-	63.6	53.6	17.5	-
3.	0.3694	35.1	-	36.7	-	0.1	0.4	0.0	37.2	-	58.5	48.5	21.3	-
4.	0.7402	35.7	-	36.5	-	0.1	0.5	0.0	37.1	-	56.0	46.0	18.9	-
5.	1.7188	33.5	-	33.4	-	0.1	0.5	0.0	34.1	-	56.0	46.0	21.9	-
6.	3.6084	28.0	-	27.0	-	0.2	0.6	0.0	28.8	-	56.0	46.0	27.2	-
7.	19.6911	26.9	-	37.3	-	0.9	1.1	0.0	39.3	-	60.0	50.0	20.7	-
8.	29.9730	41.4	-	41.3	-	1.0	1.4	0.0	43.8	-	60.0	50.0	16.2	-

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

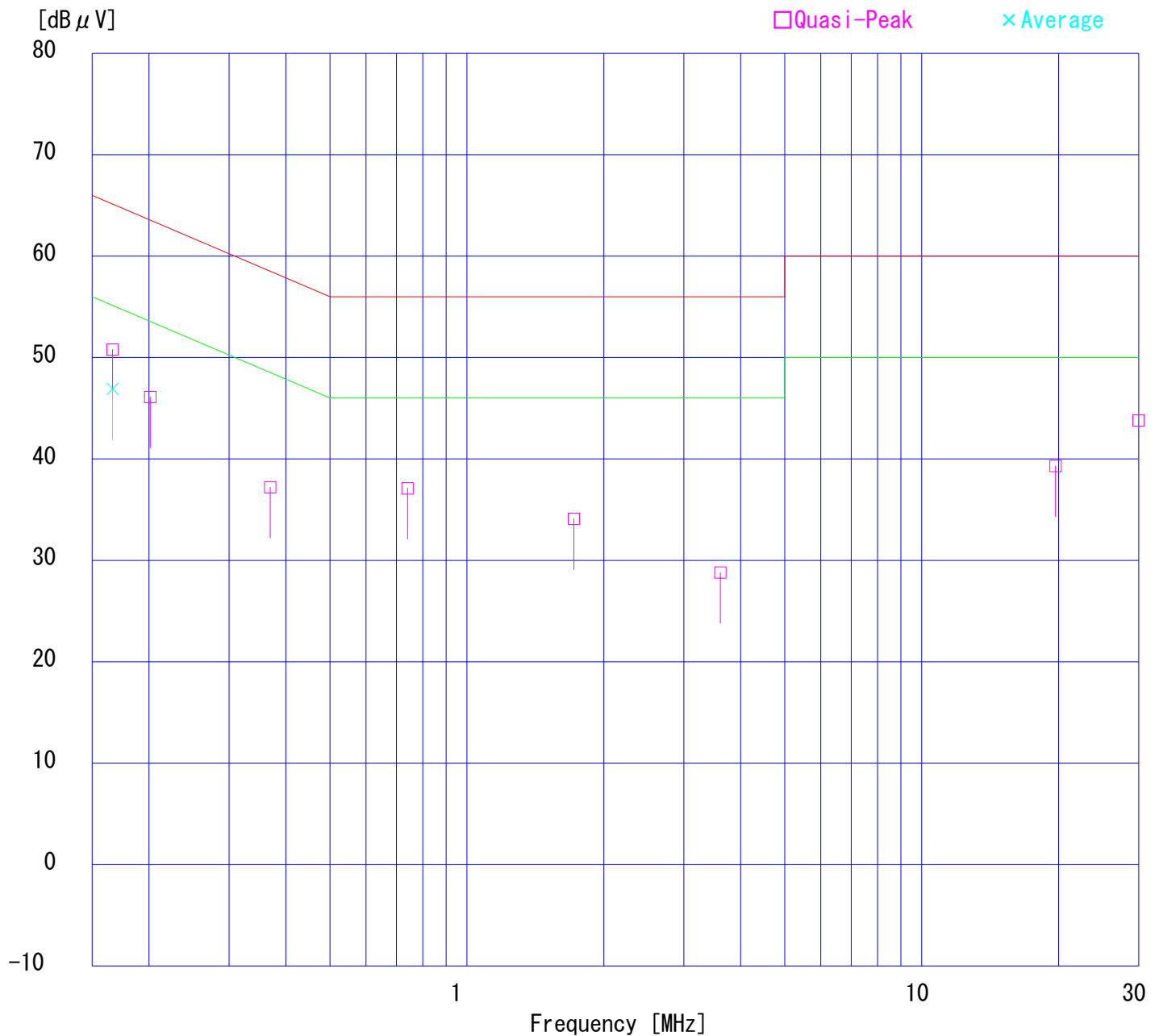
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 SHIELD TEST ROOM
Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

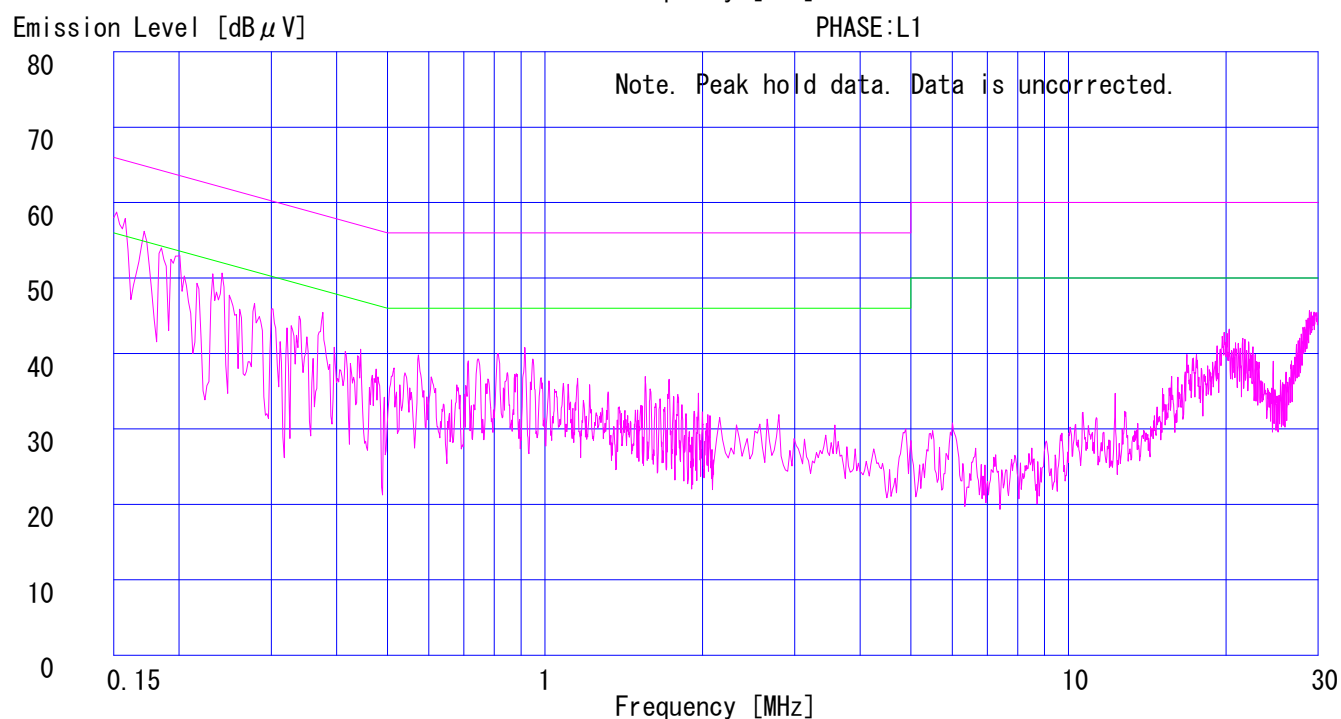
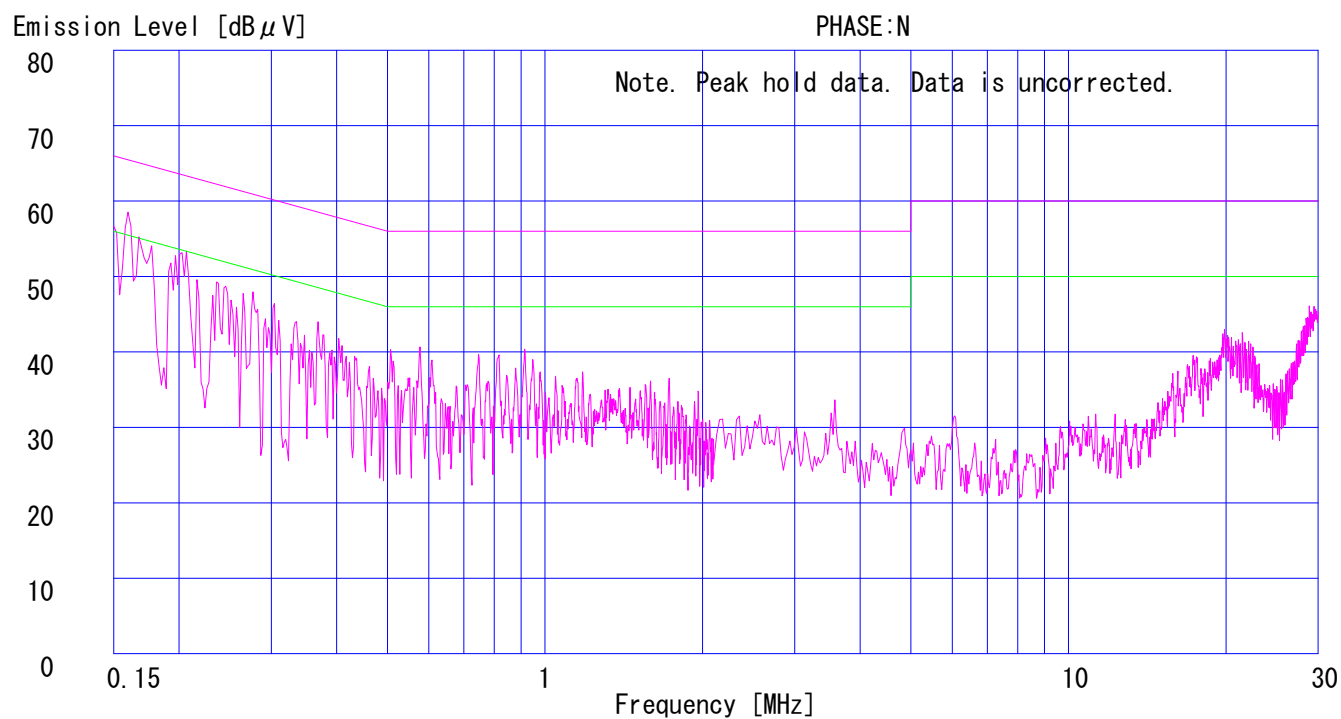
UL Apex Co., Ltd.

YOKOWA No.1 SHIELD TEST ROOM

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Play
Remarks :
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 OPEN TEST SITE
Report No. : 251E0134-YW-1

Applicant	: Orion Electric Co., Ltd.		
Kind of Equipment	: DVD/VCR		
Model No.	: SD-V593SU		
Serial No.	: -		
Power	: AC120V/60Hz		
Mode	: Card		
Remarks	: Compact Flash		
Date	: 3/30/2005		
Phase	: Single Phase		
Temperature	: 24 °C	Engineer	: Tomoyuki Yamashita
Humidity	: 43 %		
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	QP [dB μ V]	AV				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB]	AV [dB]
1.	0.1670	52.1	47.6	52.1	47.1	0.0	0.4	0.0	52.5	48.0	65.1	55.1	12.6	7.1
2.	0.2022	45.0	-	44.6	-	0.1	0.4	0.0	45.5	-	63.5	53.5	18.0	-
3.	0.4026	37.8	-	37.8	-	0.1	0.4	0.0	38.3	-	57.8	47.8	19.5	-
4.	0.5703	37.5	-	37.3	-	0.1	0.4	0.0	38.0	-	56.0	46.0	18.0	-
5.	1.6480	35.5	-	35.5	-	0.1	0.5	0.0	36.1	-	56.0	46.0	19.9	-
6.	1.9661	37.6	-	37.6	-	0.1	0.5	0.0	38.2	-	56.0	46.0	17.8	-
7.	30.0000	40.9	-	41.2	-	1.0	1.4	0.0	43.6	-	60.0	50.0	16.4	-

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

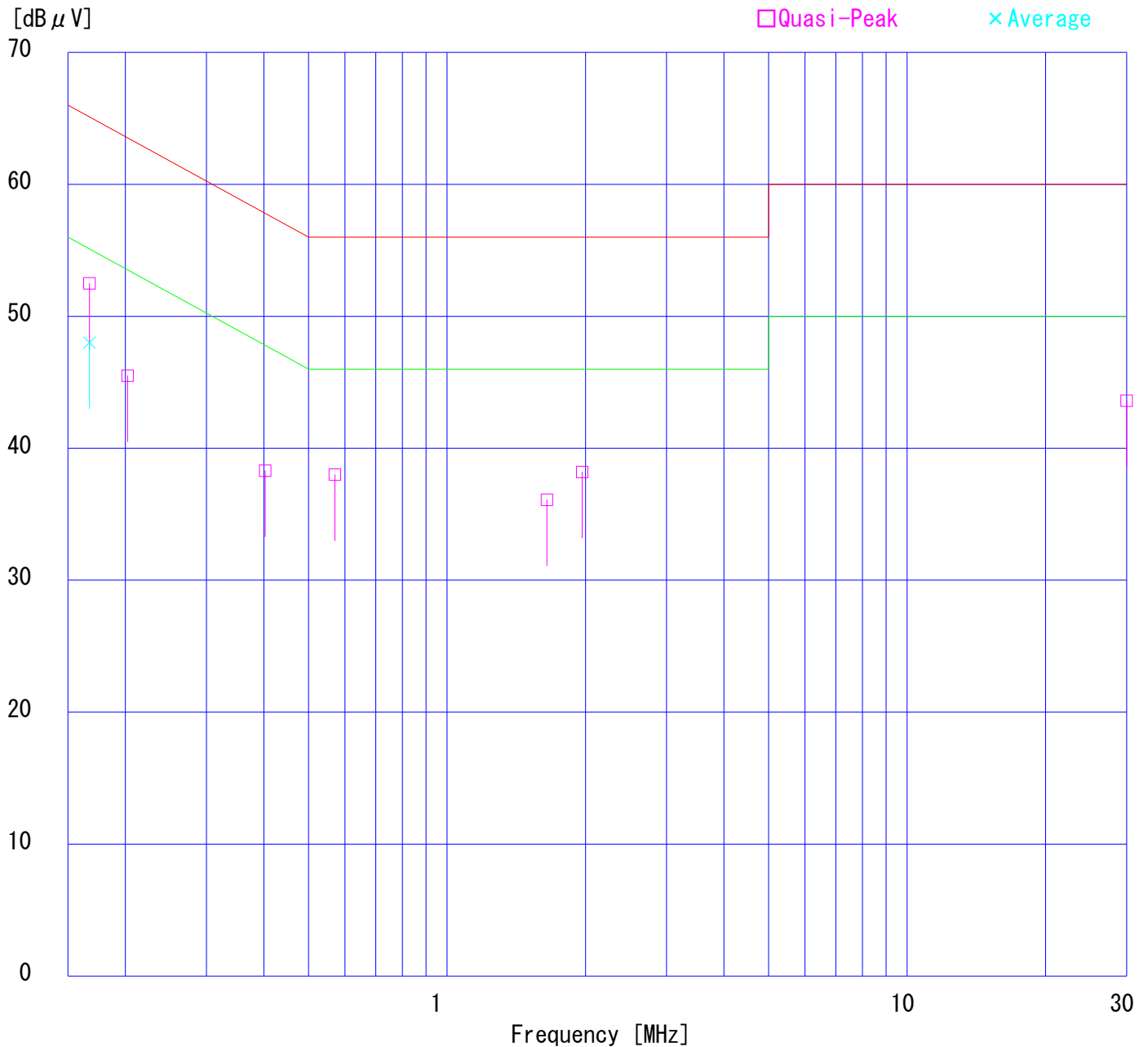
Except for the above table: adequate margin data below the limits.

DATA OF CONDUCTION TEST

UL Apex Co., Ltd.
YOKOWA No.1 OPEN TEST SITE
Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : Card
Remarks : Compact Flash
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation : FCC Part15B CLASS B(2003)

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

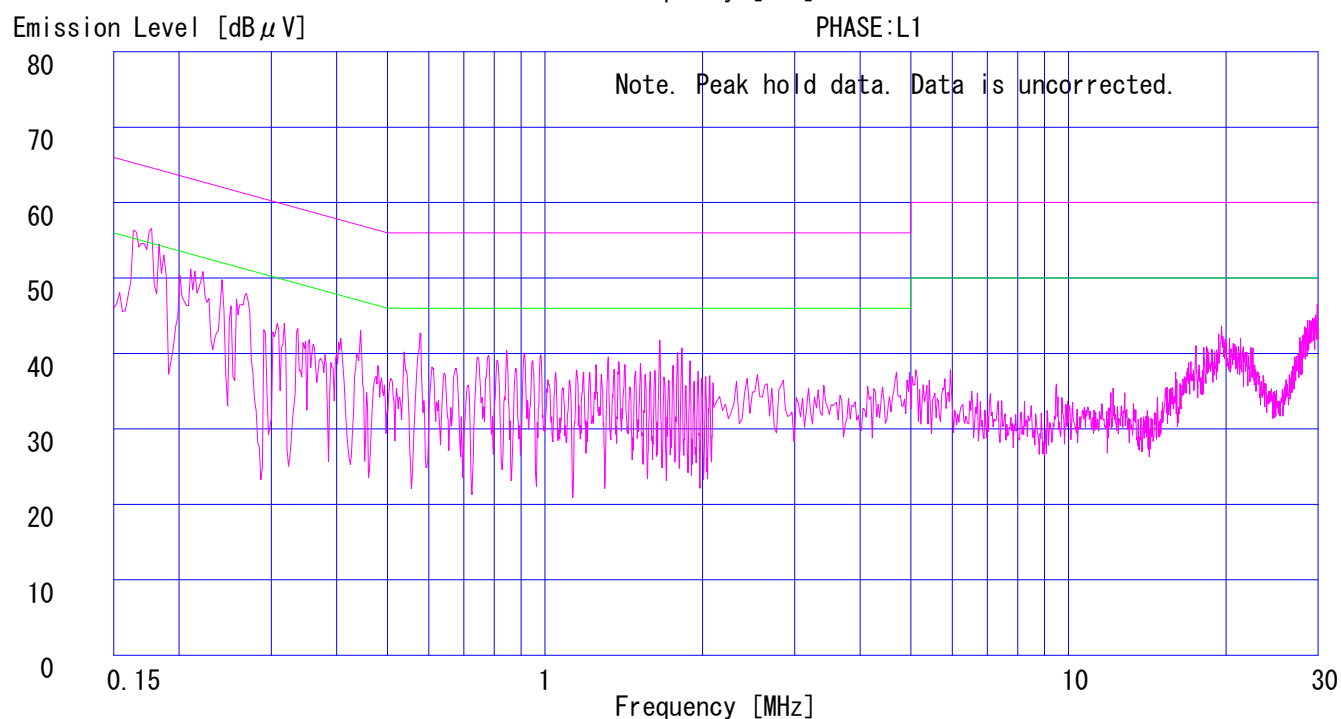
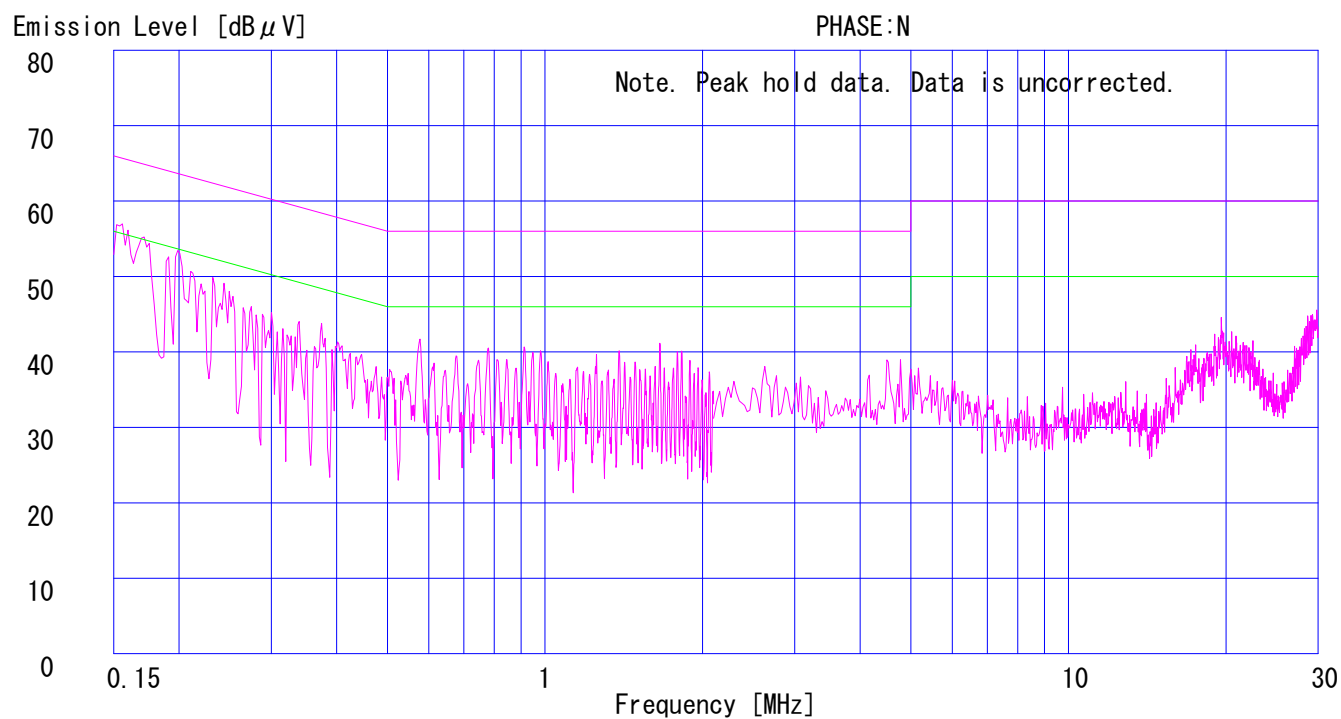
UL Apex Co., Ltd.

YOKOWA No.1 OPEN TEST SITE

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : Card
Remarks : Compact Flash
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF CONDUCTION TEST CHART

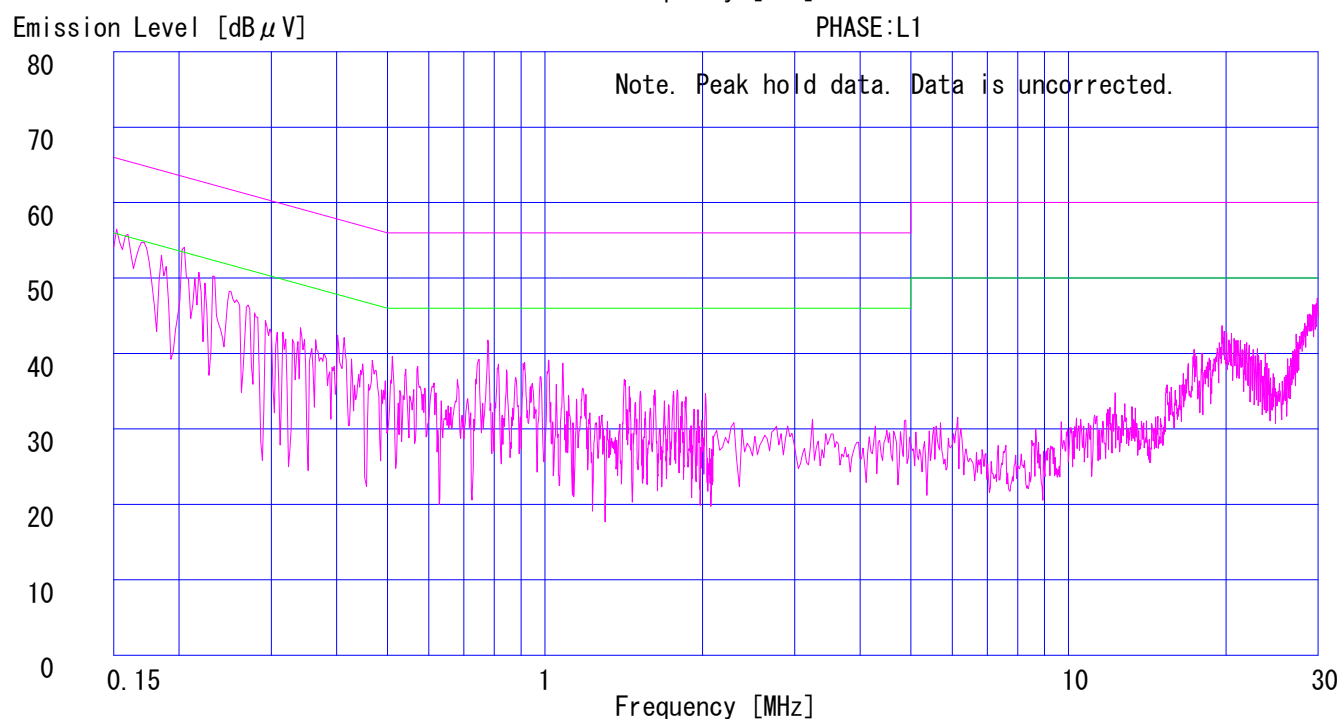
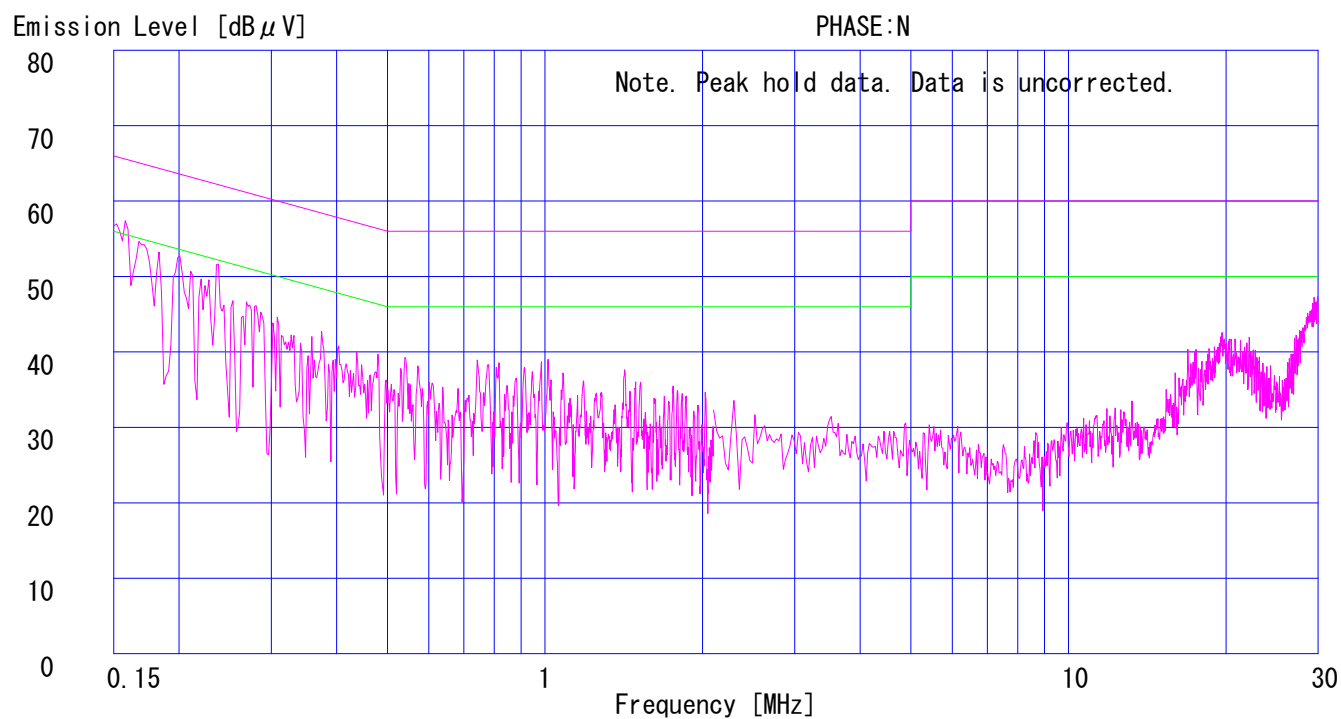
UL Apex Co., Ltd.

YOKOWA No.1 OPEN TEST SITE

Report No. : 251E0134-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-V593SU
Serial No. : -
Power : AC120V/60Hz
Mode : Card
Remarks : SD Card
Date : 3/30/2005
Phase : Single Phase
Temperature : 24 °C
Humidity : 43 %
Regulation 1 : FCC Part15B CLASS B (2003)
Regulation 2 : None

Engineer : Tomoyuki Yamashita



DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.2 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : SU-V593SU
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25IE0134-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/03/31
TEMP./HUMID. : 23deg.C / 40%
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]			
VHF																		
2	101	25.0	27.7			BC	-10.8	14.2	16.9			43.5			29.3	26.6		
	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(QP)	READING(AV)	ANT	C.Factor	RESULT(QP)	RESULT(AV)	LIMIT	LIMIT	MARGIN(QP)	MARGIN(AV)							
		HOR.	VER.	TYPE		HOR.	VER.	[PK]	[AV]	HOR.	VER.	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	[dB]
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]											
	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)	READING(AV)	ANT	C.Factor	RESULT(QP)	RESULT(AV)	LIMIT	LIMIT	MARGIN(QP)	MARGIN(AV)							
	[MHz]	HOR.	VER.	TYPE		HOR.	VER.	[QP]	[AV]	HOR.	VER.	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	[dB]
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]											
3	107	25.5	27.1			BC	-9.8	15.7	17.3			43.5			27.8	26.2		
	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(QP)	READING(AV)	ANT	C.Factor	RESULT(QP)	RESULT(AV)	LIMIT	LIMIT	MARGIN(QP)	MARGIN(AV)							
		HOR.	VER.	TYPE		HOR.	VER.	[PK]	[AV]	HOR.	VER.	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	[dB]
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]											
	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)	READING(AV)	ANT	C.Factor	RESULT(QP)	RESULT(AV)	LIMIT	LIMIT	MARGIN(QP)	MARGIN(AV)							
	[MHz]	HOR.	VER.	TYPE		HOR.	VER.	[QP]	[AV]	HOR.	VER.	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	[dB]
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]											
4	113	25.5	26.4			BC	-9.0	16.5	17.4			43.5			27.0	26.1		
	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(QP)	READING(AV)	ANT	C.Factor	RESULT(QP)	RESULT(AV)	LIMIT	LIMIT	MARGIN(QP)	MARGIN(AV)							
		HOR.	VER.	TYPE		HOR.	VER.	[PK]	[AV]	HOR.	VER.	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]	[dB]	[dB]
		[dBuV]	[dBuV]		[dBuV]	[dBuV/m]	[dBuV/m]											
	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.2 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : SU-V593SU
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25IE0134-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/03/31
TEMP./HUMID. : 23deg.C / 40%
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] [dB]			
VHF																	
5	123	25.1	27.1			BC	-7.7	17.4	19.4			43.5		26.1	24.1		
	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) 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] [dB]		MARGIN(AV) HOR. VER. [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 [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] [dB]			
6	129	33.7	24.3			BC	-7.2	26.5	17.1			43.5		17.0	26.4		
	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) 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] [dB]		MARGIN(AV) HOR. VER. [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 [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] [dB]			
7	221	30.3	22.7			BC	-3.5	26.8	19.2			46.0		19.2	26.8		
	442					LO						46.0		>15.0			
	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] [dB]		MARGIN(AV) HOR. VER. [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 [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] [dB]			
8	227	22.7	23.1			BC	-3.3	19.4	19.8			46.0		26.6	26.2		
	454					LO						46.0		>15.0			
	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] [dB]		MARGIN(AV) HOR. VER. [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.2 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : SU-V593SU
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25IE0134-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/03/31
TEMP./HUMID. : 23deg.C / 40%
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											
9	233	27.5	22.7			BC	-3.3	24.2	19.4		
	466					LO					
	699					LO					
	932					LO					
		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]
	1165			HO				74.0	54.0		
	1398			HO				74.0	54.0		
	1631			HO				74.0	54.0		
										>15.0	
10	239	22.4	23.0			BC	-3.2	19.2	19.8		
	478					LO					
	717					LO					
	956					LO					
		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]
	1195			HO				74.0	54.0		
	1434			HO				74.0	54.0		
	1673			HO				74.0	54.0		
										>15.0	
11	245	22.4	22.9			BC	-3.2	19.2	19.7		
	490					LO					
	735					LO					
	980					LO					
		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]
	1225			HO				74.0	54.0		
	1470			HO				74.0	54.0		
										>15.0	
12	251	27.4	22.6			BC	-3.0	24.4	19.6		
	502					LO					
	753					LO					
		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]
	1004			HO				74.0	54.0		
	1255			HO				74.0	54.0		
	1506			HO				74.0	54.0		
										>15.0	
13	257	35.1	31.7			BC	-2.7	32.4	29.0		
	514					LO					
	771					LO					
		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]
	1028			HO				74.0	54.0		
	1285			HO				74.0	54.0		
	1542			HO				74.0	54.0		
										>15.0	

DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.2 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : SU-V593SU
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25IE0134-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/03/31
TEMP/HUMID. : 23deg.C / 40%
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	28.5 33.9		LO	-0.5	28.0 33.4		46.0		18.0 12.6	
		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]
	1034 1551			HO HO				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	27.2 32.0		LO	0.3	27.5 32.3		46.0		18.5 13.7	
		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]
	1094 1641			HO HO				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	24.0 31.4		LO	1.8	25.8 33.2		46.0		20.2 12.8	
		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]
	1202			HO				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	26.1 32.6		LO	3.0	29.1 35.6		46.0		16.9 10.4	
		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]
	1298			HO				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	25.8 29.8		LO	4.1	29.9 33.9		46.0		16.1 12.1	
		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]
	1394			HO				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	23.8 25.6		LO	4.8	28.6 30.4		46.0		17.4 15.6	
		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]
	1502			HO				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	25.0 24.5		LO	5.1	30.1 29.6		46.0		15.9 16.4	
		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]
	1598			HO				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	25.6 28.5		LO	5.8	31.4 34.3		46.0		14.6 11.7	
		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]
	1694			HO				74.0	54.0	>27.0	>10.0

DATA OF RADIATION TEST

UL Apex Co., Ltd.
Yokowa EMC No.2 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : SU-V593SU
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25IE0134-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/03/31
TEMP./HUMID. : 23deg.C / 40%
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.	[dBuV]		TYPE	[dBuV]	HOR.	VER.	[dBuV/m]		[QP]		HOR.	VER.	[dB]	[dB]
CATV																	
1	119	24.3	27.6			BC	-8.0	16.3	19.6			43.5		27.2	23.9		
	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		HOR. VER.		HOR. VER.		[PK]	[AV]	HOR. VER.		HOR. VER.	
		[dBuV]		[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]				[QP]		[dB]		[dB]	
95	137	22.9	24.0			BC	-6.5	16.4	17.5			43.5		27.1	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(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]	
	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]				[QP]		[dB]		[dB]	
97	149	23.0	22.9			BC	-5.7	17.3	17.2			43.5		26.2	26.3		
	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		HOR. VER.		HOR. VER.		[PK]	[AV]	HOR. VER.		HOR. VER.	
		[dBuV]		[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]				[QP]		[dB]		[dB]	
99	161	23.1	22.9			BC	-5.0	18.1	17.9			43.5		25.4	25.6		
	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		HOR. VER.		HOR. VER.		[PK]	[AV]	HOR. VER.		HOR. VER.	
		[dBuV]		[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.2 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : SU-V593SU
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25IE0134-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/03/31
TEMP./HUMID. : 23deg.C / 40%
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	23.2	24.8			BC	-4.6	18.6	20.2			43.5		24.9	23.3		
	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]	
	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]	HOR. VER.				TYPE	[dBuV]	HOR. VER.				[QP]		HOR. VER.			
		[dBuV]						[dBuV/m]				[dBuV/m]		[dB]		[dB]	
18	191	23.3	22.6			BC	-3.9	19.4	18.7			43.5		24.1	24.8		
	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]	
	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]			
22	215	25.6	22.9			BC	-3.6	22.0	19.3			43.5		21.5	24.2		
	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/m]		[dBuV/m]		[dBuV/m]	[dBuV/m]	[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]			
23	263	22.2	22.4			BC	-2.3	19.9	20.1			46.0	46.0	26.1	25.9		
	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]	
	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]			
29	299	22.9	22.6			BC	-0.1	22.8	22.5			46.0	46.0	23.2	23.5		
	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]	
	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.2 Open Test Site

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : DVD/VCR
MODEL No. : SU-V593SU
POWER : AC120V/60Hz
DESCRIPTION : TV Reception + Rec

REPORT No. : 25IE0134-YW-1
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : 2005/03/31
TEMP/HUMID. : 23deg.C / 40%
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]	
CATV											
36	341	26.5	22.5		LO	-4.3	22.2	18.2	46.0	46.0	23.8 27.8
	682				LO				46.0	46.0	>15.0
		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] [dB]
	1023			HO				74.0	54.0	>27.0	>10.0
	1364			HO				74.0	54.0		
37	347	25.0	22.4		LO	-4.3	20.7	18.1	46.0	46.0	25.3 27.9
	694				LO				46.0	46.0	>15.0
		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] [dB]
	1041			HO				74.0	54.0	>27.0	>10.0
	1388			HO				74.0	54.0		
65	515	26.0	25.1		LO	-0.5	25.5	24.6	46.0	46.0	20.5 21.4
		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] [dB]
	1030			HO				74.0	54.0	>27.0	>10.0
	1545			HO				74.0	54.0		
94	689	22.4	22.6		LO	3.9	26.3	26.5	46.0	46.0	19.7 19.5
		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] [dB]
	1378			HO				74.0	54.0	>27.0	>10.0
100	695	25.0	29.5		LO	4.1	29.1	33.6	46.0	46.0	16.9 12.4
		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] [dB]
	1390			HO				74.0	54.0	>27.0	>10.0
113	773	23.4	22.6		LO	5.0	28.4	27.6	46.0	46.0	17.6 18.4
		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] [dB]
	1546			HO				74.0	54.0	>27.0	>10.0
125	845	22.7	27.9		LO	5.7	28.4	33.6	46.0	46.0	17.6 12.4
		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] [dB]
	1690			HO				74.0	54.0	>27.0	>10.0