EMC TEST REPORT

Test Report No. : 22LE0003-KT-1

Applicant : ORION ELECTRIC CO., LTD.

Type of equipment : DVD/VCR

Model number : SD-V280UA

Test standard : FCC Part 15 Subpart B

Test result : Complied

1. This test report shall n ot be reproduced except in full, without the written approval of A-PEX International 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 tru e representation of the EMC profile.
4. The test results in this test report are traceable to the national or international standards.

Date of test : July 06, 2002 to July 12, 2002

Tested by:

Ryo Kojima
Engineer

Tested by:

Sadahiko Tanaka
Engineer

Approved by:

Kazutoshi Hatta
Site assistant manager

A-pex International Co., Ltd. Kanto Office EMC Laboratory.
Newstage Yokohama Bldg.1F 1-1-32 Shin-Urashima-cho, Kanagawa-ku, Yokohama-shi, Kanagawa 221-0031, JAPAN
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Contents

Section 1 : Client information

Company name	:	ORION ELECTRIC CO., LTD.
Brand Name	:	TOSHIBA
Address	:	41-1 Iehisa-cho, Takefu-shi, Fukui 915-8555, JAPAN
Telephone number	:	+81-778-23-0019
Facsimile number	:	+81-778-23-7799
Contact person	:	Hiroshi Tsujimoto Section manager Engineering headquarters Administration section

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

2.1 Identification of E.U.T.

Type of equipment	:	DVD/VCR
Model number	:	SD-V280UA
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 Thombol Chokchai, Amphur Chokchai, Nakhonratchasima 30190, Thailand 3. ORION AMERICA, INC. Hwy 41 North, Orion Place, Princeton, Indiana 47670, U.S.A
Receipt Date of Sample	:	July 06, 2002
Condition of EUT	:	Production Prototype

2.2 Product description

ORION ELECTRIC CO., LTD., Model: SD-V280UA (referred to as the EUT in this report) is a DVD/VCR. The EUT specifications is as follows.

Tuner type	:	Quartz PLL frequency synthesized
I / F	:	45.75 MHz (Picture), 41.25 MHz (Sound)
Receiving channel	:	VHF 2 – 13 ch / UHF 14 – 69 ch / CATV 1 – 125 ch
Antenna input	:	75 ohm
Video signal	:	NTSC color
Power source	:	AC 120 V / 60 Hz / 20 W
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 50 k ohm, RCA out –8 dB 1 k ohm

2.3 Similar apparatus

There are similar apparatus for the EUT as follows.

- SD-V280CA
- SD-V280-S-TU
- SD-V280-S-TC
- SD-K200-K-TC

Section 3 : Test specification, methods & procedures

3.1 Test specification

Test specification : FCC Part 15 Subpart B

Title : FCC 47 CFR Part 15 Radio Frequency Device
Subpart B Unintentional Radiators (Subpart C Intentional Radiators)

3.2 Methods & procedures

No.	Item	Test procedure	Limits	Remarks
1	Conducted interference	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	250 uV	LISN
2	Radiated emission	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	30–88 MH: 100 uV/m 88–216 MHz: 150 uV/m 216–960 MHz: 200 uV/m above 960 MHz: 500 uV/m	3 m
3	Antenna terminal voltage	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	2 nW (at 75 ohm)	–
4	RF output level	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	Video signal: 3000 uV Aural signal: 671 uV	–
	Spurious emission		94.8 uV	–
5	Transfer switch	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	9.5 dB	–
6	Picture sensitivity	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	8 dB	–
7	Noise figure	FCC/OET MP:2:1986	14 dB	–

3.3 Additions or deviations to standard

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

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.

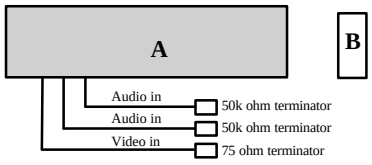
The sequence in used : * Receive mode (0 dBmV input / 25 dBmV input)
* AV input mode (1 Vp-p input / 5 Vp-p input) Line 1 / Line 2
* VCR playback mode
* DVD play mode

Operation : The EUT tested above operation mode
(Using a video tape with a typical TV signal recorded on it, if necessary.)

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

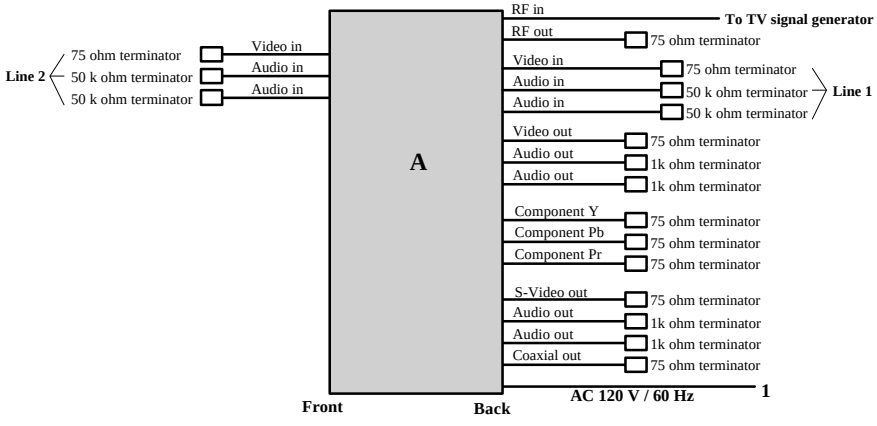
4.2 Configuration and peripherals

Front View



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

Top View



* 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
A	DVD/VCR	SD-V280UA	–	ORION ELECTRIC CO., LTD.
B	Remote Controller	–	–	ORION ELECTRIC CO., LTD.

Meshed column are represented

List of cable used

No.	Item	Length (m)	Shielding	Manufacturer
1	AC power cable	1.8	Unshielded	–

Section 5 : Summary of test results

5.1 Test results

No.	Item	Test procedure	Limits	Worst margin	Results
1	Conducted interference	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	250 uV	5.8 dB (0.45 MHz)	Passed
2	Radiated emission	ANSI C63.4:1992 IEEE 213:1987 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	4.7 dB (216.00 MHz) Vertical	Passed
3	Antenna terminal voltage	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	2 nW (at 75 ohm)	17.5 dB (1982.00 MHz)	Passed
4	RF output level	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	Video signal: 3000 uV Aural signal: 671 uV	3.5 dB (61.25 MHz)	Passed
	Spurious emission		94.8 uV	16.8 dB (54.127 MHz)	Passed
5	Transfer switch	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	9.5 dB	7.3 dB (61.25 MHz)	Passed
6	Picture sensitivity	ANSI C63.4:1992 IEEE 213:1987 IEEE 187:1990	8 dB	–	Passed
7	Noise figure	FCC/OET MP:2:1986	14 dB	7.9 dB (687.25 MHz)	Passed

A-PEX INTERNATIONAL hereby confirms that E.U.T., in the configuration tests, complies with the specifications FCC Part15 Subpart B.

5.2 Test instruments

Please refer to the list of test instruments in Section 6.

5.3 Test location

A-PEX International Co.,Ltd. Kanto office EMC Laboratory
Newstage Yokohama Bidg. 1F 1-1-32 Shin-Urashima-cho, Kanagawa-ku, Yokohama-shi, Kanagawa 221-0031, JAPAN
TEL : +81-45-450-1515
FAX : +81-45-450-1534

A-PEX International Co.,Ltd. Yokowa Laboratory
108 Yokowa-cho, Ise-shi, Mie 516-1106, JAPAN
TEL : +81-596-39-1485
FAX : +81-596-39-0232

5.4 Photographs of test set up

Please refer to Appendix 1.

5.5 Test data

Please refer to Appendix 2.

Section 6 : Test instruments

Instruments	Manufacturer	Model No.	Control No.	Test Item	Calibration date	Validity
LISN	Schwarzbeck	NSLK8127	APLSN05	CE	January 10, 2002	January 09, 2003
Test receiver	Rohde & Schwarz	ESS	APRCV05	CE	April 11, 2002	April 10, 2002
Coaxial cable	Fujikura	5D2W	APCBL02	CE	August 07, 2001	August 06, 2002
TV generator	Leader	408	APTVG04	CE, RF	Pre check	-
Spectrum analyzer	Advantest	R3265	APSPA04	CE, AT TS, RF	October 12, 2001	October 11, 2002
Pre amplifier	Hewlett Packard	8449B	APPRA05	AT	August 09, 2001	August 08, 2002
Matching pad	TME	ZT-130	APMAT05	AT, RF	December 26, 2001	December 25, 2002
Pre amplifier	Anritsu	MH648A	APPRA01	AT, RF	August 09, 2001	August 08, 2002
Coaxial cable	Fujikura	5D2W	APCBL06	TS, RF	August 07, 2001	August 06, 2002
Coaxial cable	Fujikura	5D2W	APCBL07	TS, RF	August 07, 2001	August 06, 2002
Signal generator	Rohde & Schwarz	SMY01	YTSSG02	PS	May 01, 2002	April 30, 2003
Oscillo scope	KIKUSUI	TDS410A	I-W-002	PS	Pre check	-
Band Pass Filter	Erika Fiedlar	BP	APBPF01	PS	Pre check	-
Matching pad	TME	ZT-204	APMAT04	PS, NF	December 26, 2001	December 25, 2002
Noise figure indicator	Elena	ENF-2005	APNFM01	NF	September 27, 2000	September 26, 2002
Noise source	Elena	MC1100	APNFS01	NF	September 27, 2000	September 26, 2002

Instruments	Manufacturer	Model No.	Control No.	Test Item	Calibration date	Validity
Attenuator	Anritsu	MP721B	AT-06	RE	April 04, 2002	April 03, 2003
Spectrum analyzer	Hewlett Packard	8567A	SA-04	RE	April 03, 2002	April 02, 2003
Test receiver	Rohde & Schwarz	ESVS10	TR-06	RE	November 22, 2001	November 21, 2002
Biconical antenna	Schwarzbeck	BBA9106	BA-06	RE	February 16, 2002	February 15, 2003
Logperiodic antenna	Schwarzbeck	UKLP9140-A	LA-07	RE	September 27, 2001	September 26, 2002
Pre amplifier	Hewlett Packard	8447D	AF-01	RE	April 01, 2002	March 31, 2003
Horn antenna	A.H.Systems	SAS-200/571	HA-01	RE	May 07, 2002	May 06, 2003
Microwave cable	Suhner	SUCOFLEX	CC-C15	RE	April 17, 2002	April 16, 2003
Microwave cable	Suhner	SUCOFLEX	CC-C17	RE	April 26, 2002	April 25, 2003
Pre amplifier	Hewlett Packard	8447D	AF-06	RE	December 21, 2001	December 20, 2002
Spectrum analyzer	Advantest	R3273	SA-06	RE	November 20, 2001	November 19, 2002
Yokowa No.3 open coaxial (0.01-1000 MHz)	A-PEX	CC-31,CC-32,CC-33,CC-34,CC-35,CC-36,CC-37,SW-31,SW-32	CC-3ORC	RE	March 30, 2002	March 29, 2003
Open test site	JSE	10m	YOATS-03	RE	May 02, 2002	May 01, 2003

* The abbreviation in the test item column stands for:
CE: Conducted emission, RE: Radiated emission, AT: Antenna terminal voltage,
RF: RF output level / spurious emission, PS: Picture sensitivity, TS :Antenna transfer switch ,
NF: Noise figure

Section 7 : Conducted interference

7.1 Operation environment

The test was carried out in a screened room the size of 6 x 7 x 2.4 m, at Kanto office EMC laboratory.

Date : July 09, 2002
Temperature : 20.0 °C
Humidity : 39 %

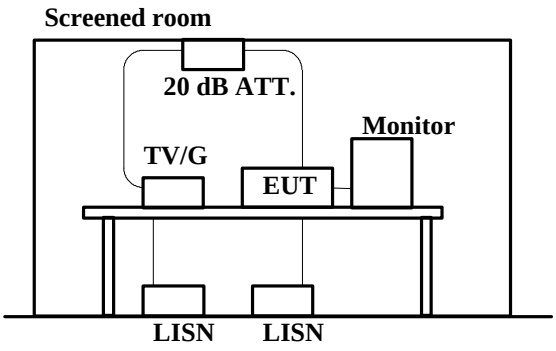
7.2 Test configuration

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, including peripherals aligned and flush 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 cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm 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.

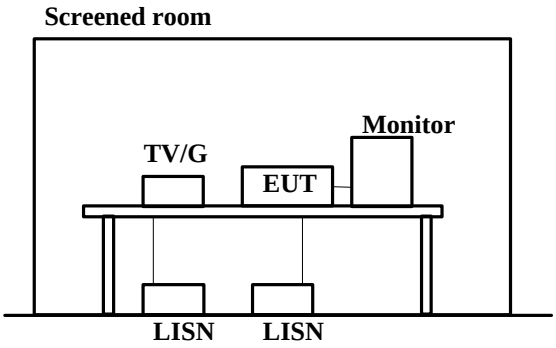
Figure 1. Conducted interference

Receive + Rec. mode (0 dBmV input / 25 dBmV input)



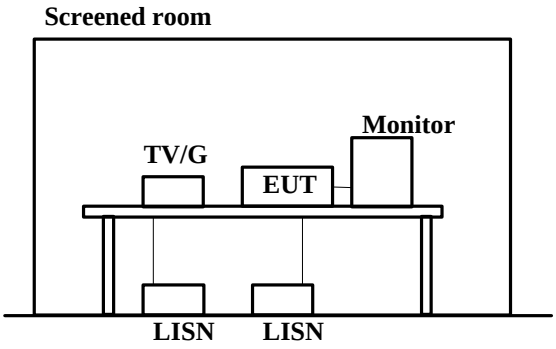
Note:
RF in: TV signal generator connected
Front video in: 75 ohm terminated
Front audio in: 50 k ohm terminated
Rear video in: 75 ohm terminated
Rear audio in: 50 k ohm terminated
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

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



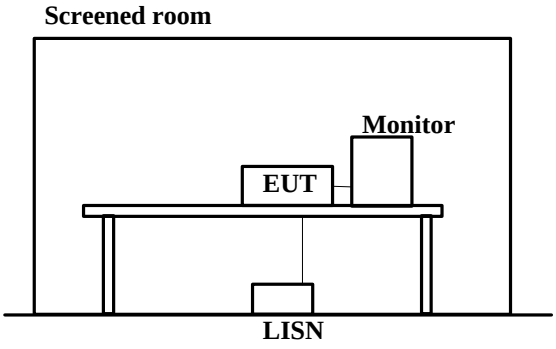
Note:
RF in: 75 ohm terminated
Front video in: 75 ohm terminated
Front audio in: 50 k ohm terminated
Rear video in: TV signal generator connected
Rear audio in: 50 k ohm terminated
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

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



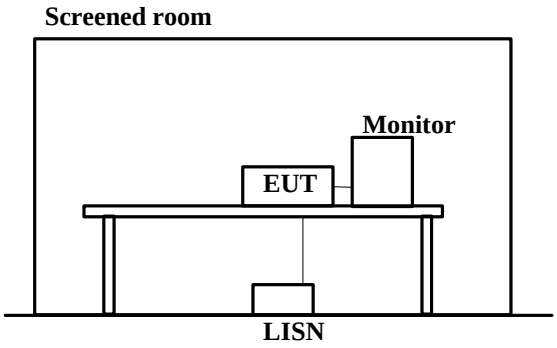
Note:
RF in: 75 ohm terminated
Front video in: TV signal generator connected
Front audio in: 50 k ohm terminated
Rear video in: 75 ohm terminated
Rear audio in: 50 k ohm terminated
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

VCR playback mode



Note:
RF in: 75 ohm terminated with RF output cable
Front video in: 75 ohm terminated with video cable
Front audio in: 50 k ohm terminated with audio cable
Rear video in: 75 ohm terminated with video cable
Rear audio in: 50 k ohm terminated with audio cable
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

DVD play mode



Note:
RF in: 75 ohm terminated with RF output cable
Front video in: 75 ohm terminated with video cable
Front audio in: 50 k ohm terminated with audio cable
Rear video in: 75 ohm terminated with video cable
Rear audio in: 50 k ohm terminated with audio cable
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

7.3 Test conditions

Frequency range : 0.45 MHz – 30 MHz
EUT position : Table top

7.4 Test procedure

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT within a screened 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 EUT was put into operation at receive mode, AV input mode, VCR playback mode and DVD play mode.
EUT and desired signal generator should connect through 20 dB attenuator.
The conducted emission measurements were made with the following detector function of the test receiver.
Detector Type : Quasi-Peak
IF Bandwidth : 10 kHz

7.5 Test result

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

Test engineer : Ryo Kojima

Section 8 : Radiated emission

8.1 Operation environment

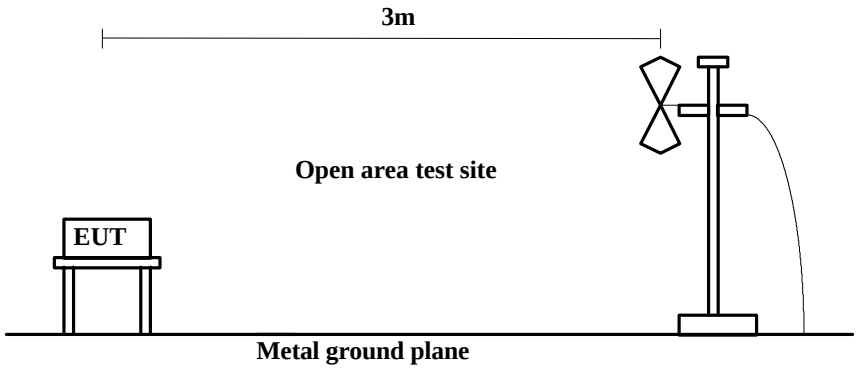
The test was carried out in a open area test site the size of 10 x 20 m, at Yokowa EMC laboratory.

Date :	July 06, 2002	Date :	July 07, 2002
Temperature :	22.0 °C	Temperature :	21.0 °C
Humidity :	58 %	Humidity :	65 %

8.2 Test configuration

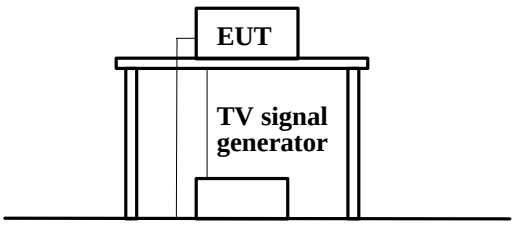
EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The rear of EUT, including peripherals was aligned and flush with rear of tabletop. I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and 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



Receive + Rec. mode (0 dBmV / 25 dBmV)

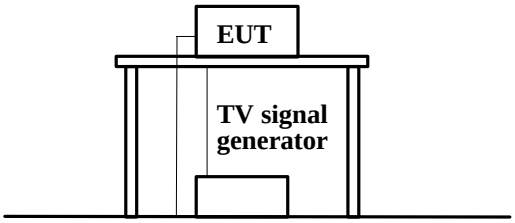
Open area test site



Note:
RF in: TV signal generator connected
Front video in: 75 ohm terminated
Front audio in: 50 k ohm terminated
Rear video in: 75 ohm terminated
Rear audio in: 50 k ohm terminated
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

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

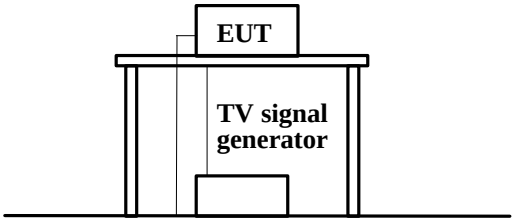
Open area test site



Note:
RF in: 75 ohm terminated
Front video in: 75 ohm terminated
Front audio in: 50 k ohm terminated
Rear video in: TV signal generator connected
Rear audio in: 50 k ohm terminated
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

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

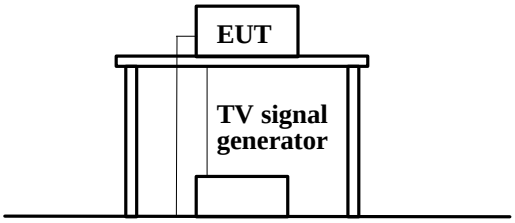
Open area test site



Note:
RF in: 75 ohm terminated
Front video in: TV signal generator connected
Front audio in: 50 k ohm terminated
Rear video in: 75 ohm terminated
Rear audio in: 50 k ohm terminated
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

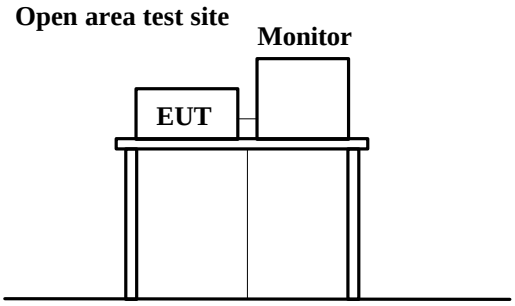
VCR playback mode

Open area test site



Note:
RF in: 75 ohm terminated with RF output cable
Front video in: 75 ohm terminated with video cable
Front audio in: 50 k ohm terminated with audio cable
Rear video in: 75 ohm terminated with video cable
Rear audio in: 50 k ohm terminated with audio cable
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

DVD play mode



Note:
RF in: 75 ohm terminated with RF output cable
Front video in: 75 ohm terminated with video cable
Front audio in: 50 k ohm terminated with audio cable
Rear video in: 75 ohm terminated with video cable
Rear audio in: 50 k ohm terminated with audio cable
Rear video out: 75 ohm terminated with video cable
Rear audio out: 1 k ohm terminated with audio cable
Rear S-video out: 75 ohm terminated with video cable
Rear component out: 75 ohm terminated with audio cable
Rear coaxial out: 75 ohm terminated with audio cable
RF output: 75 ohm terminated with RF output cable

8.3 Test conditions

Frequency range : 30 MHz – 2000 MHz
Test distance : 3 m
EUT position : Table top

8.4 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 screened room or used search coil for ambient noise at high-level, especially.
Measurements were performed with a quasi-peak detector.
The measuring antenna height was varied between 1 to 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 EUT was put into operation at receive mode, AV input mode, VCR playback mode and DVD play mode.
The radiated emission measurements were made with the following detector function of the test receiver.
Detector Type : QP (30-1000 MHz) / Ave. (1000-2000MHz)
IF Bandwidth : 120 kHz / 1 MHz

8.5 Test result

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

Test engineer : Sadahiko Tanaka

Section 9 : Antenna terminal voltage

9.1 Operation environment

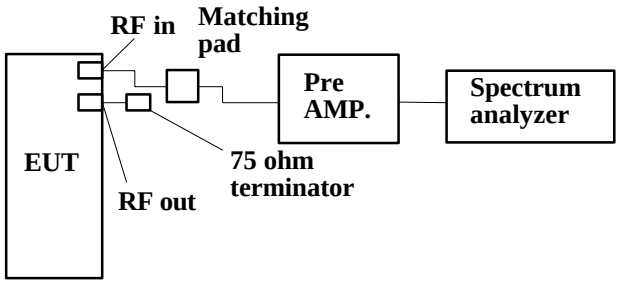
The test was carried out in a screened room the size of 6 x 7 x 2.4 m, at Kanto office EMC laboratory.

Date : July 08, 2002
Temperature : 21.0 °C
Humidity : 41 %

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 3 and photographs in Appendix 1.

Figure 3. Antenna terminal voltage



9.3 Test conditions

Frequency range : 30 MHz – 2000 MHz
EUT position : Table top

9.4 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. Measurement should be performed for TV receiver mode and CATV receiver mode.

Detector Type : Peak (30-1000 MHz)

9.5 Test result

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

Test engineer : Ryo Kojima

Section 10 : RF output level / spurious emission

10.1 Operation environment

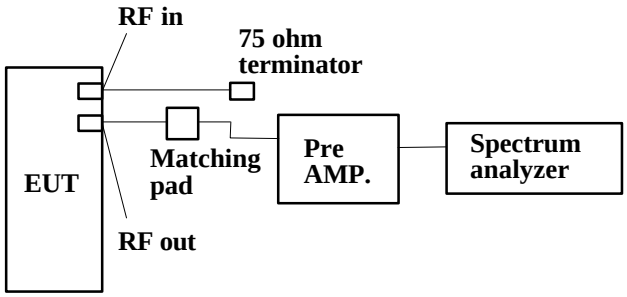
The test was carried out in a screened room the size of 6 x 7 x 2.4 m, at Kanto office EMC laboratory.

Date : July 08, 2002
Temperature : 21.0 °C
Humidity : 41 %

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 4 and photographs in Appendix 1.

Figure 4. RF output level



10.3 Test conditions

EUT position : Table top

10.4 Test procedure

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

10.5 Test result

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

Test engineer : Ryo Kojima

Section 11 : Antenna transfer switch

11.1 Operation environment

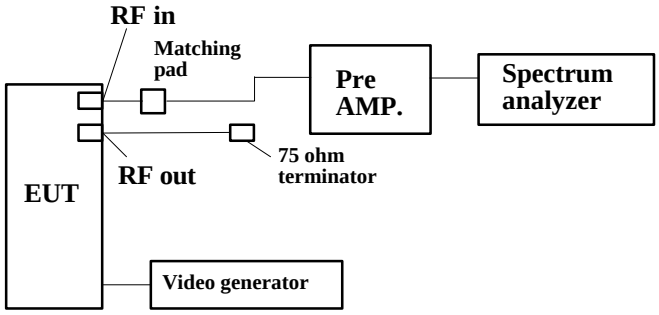
The test was carried out in a screened room the size of 6 x 7 x 2.4 m, at Kanto office EMC laboratory.

Date : July 08, 2002
Temperature : 21.0 °C
Humidity : 41 %

11.2 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



11.3 Test conditions

EUT position : Table top

11.4 Test procedure

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

Detector Type : Peak

11.5 Test result

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

Test engineer : Ryo Kojima

Section 12 : Picture sensitivity

12.1 Operation environment

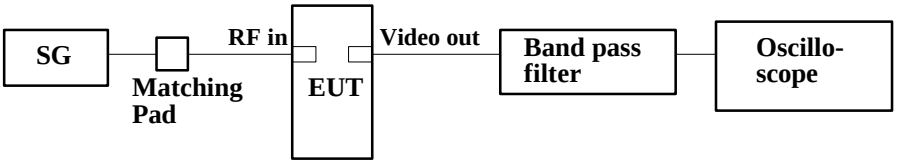
The test was carried out in a screened room the size of 6 x 7 x 2.4 m, at Kanto office EMC laboratory.

Date : July 12, 2002
Temperature : 22.0 °C
Humidity : 60 %

12.2 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



12.3 Test conditions

EUT position : Table top

12.4 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.

12.5 Test result

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

Test engineer : Ryo Kojima

Section 13 : Noise figure

13.1 Operating environment

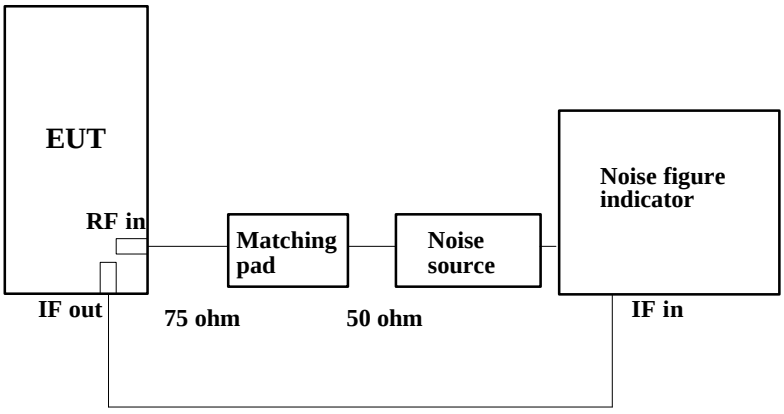
The test was carried out in a screened room the size of 6 x 7 x 2.4 m, at Kanto office EMC laboratory.

Date : July 12, 2002
Temperature : 22.0 °C
Humidity : 60 %

13.2 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



13.3 Test procedure

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

13.4 Test result

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

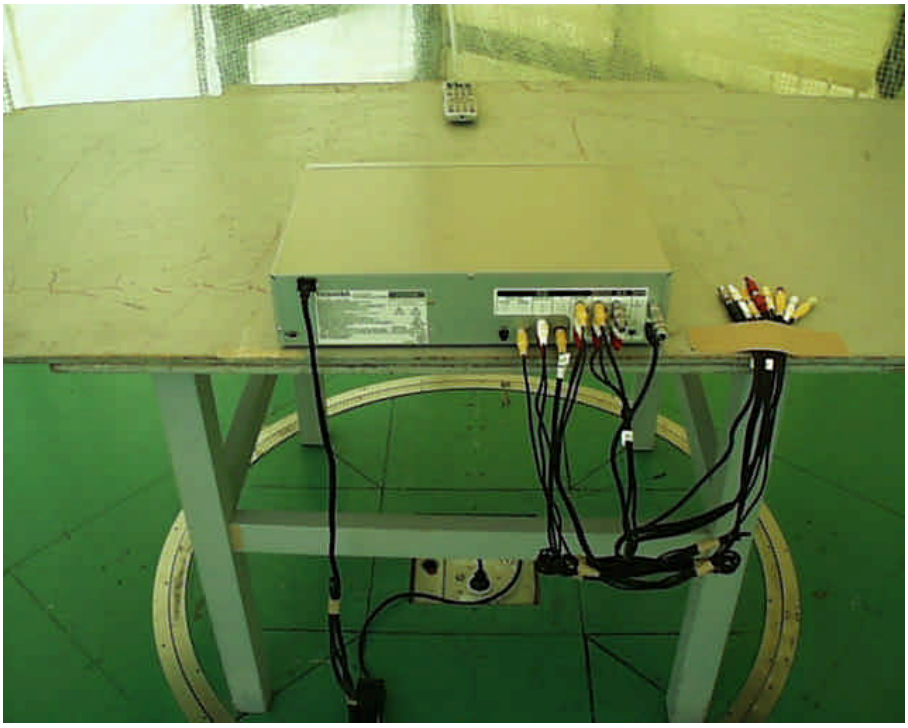
Test engineer : Ryo Kojima

Appendix 1 : Photographs of test set up

This section contains the following photographs.

Conducted interference

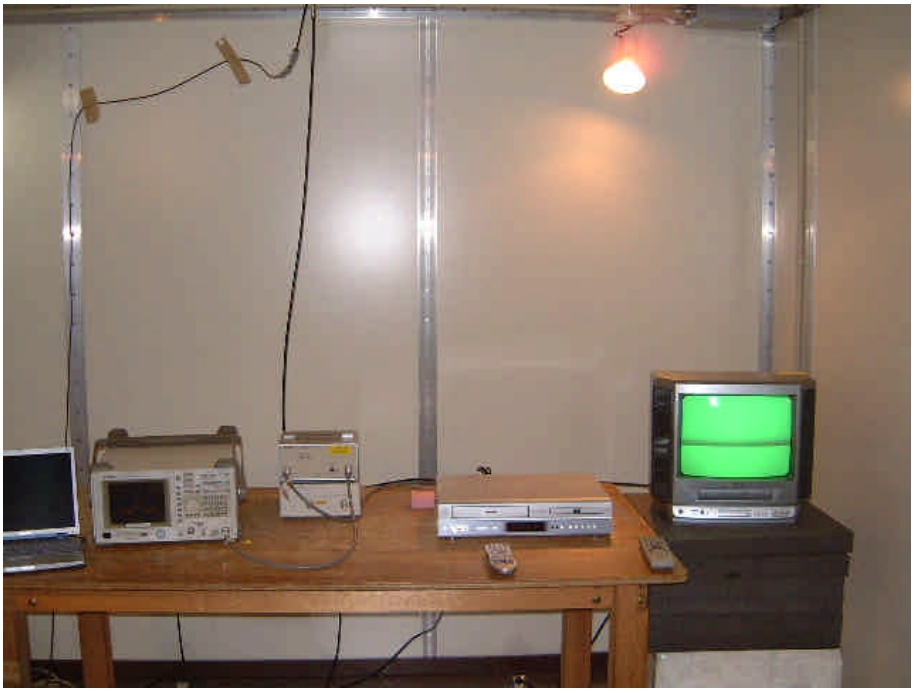
Radiated emission



Antenna terminal voltage

RF output level / spurious emission

Antenna transfer switch



Picture sensitivity

Noise figure

Appendix 2 : Data of EMI tests

This section contains the following data.

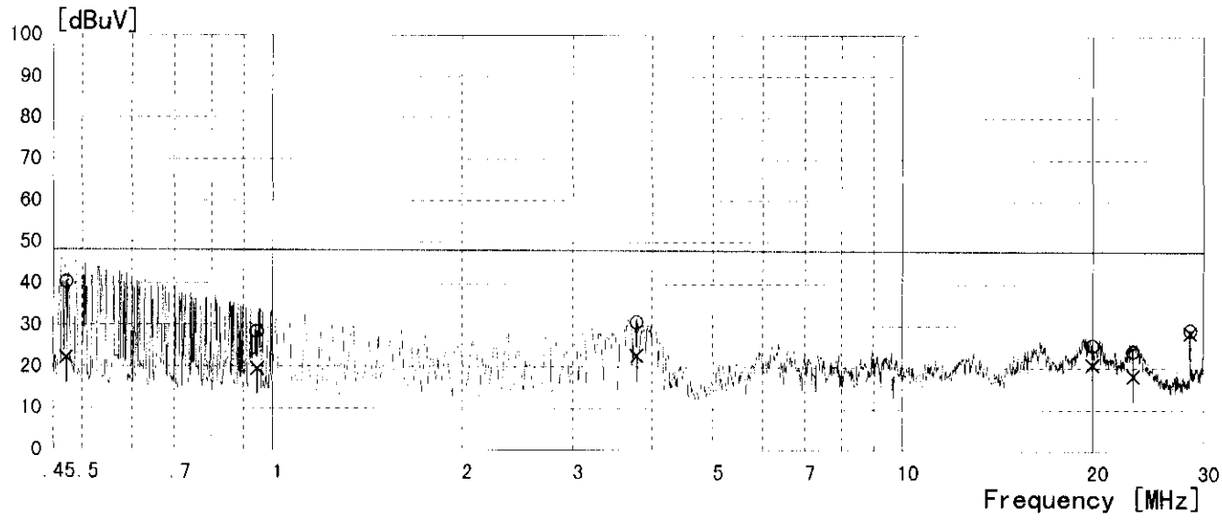
DATA OF CONDUCTION

A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: TV Reception + REC	TEST NO.	: 1
POWER	: AC120V/60Hz		:
LINE	: N		
REMARKS	: 0dBmV input	TEST ENGINEER: RYO KOUTMA	
	:		

No.	FREQ	READING		C.FACTOR	RESULT		LIMIT		MARGIN	
		QP	AV		QP	AV	QP	AV	QP	AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.472	39.8	21.6	0.5	40.3	22.1	48.0	48.0	7.7	25.9
2	0.947	28.0	19.1	0.4	28.4	19.5	48.0	48.0	19.6	28.5
3	3.790	30.3	22.2	0.5	30.8	22.7	48.0	48.0	17.2	25.3
4	20.001	24.6	19.9	0.9	25.5	20.8	48.0	48.0	22.5	27.2
5	23.216	23.1	17.2	0.9	24.0	18.1	48.0	48.0	24.0	29.9
6	28.635	28.1	27.4	1.1	29.2	28.5	48.0	48.0	18.8	19.5

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

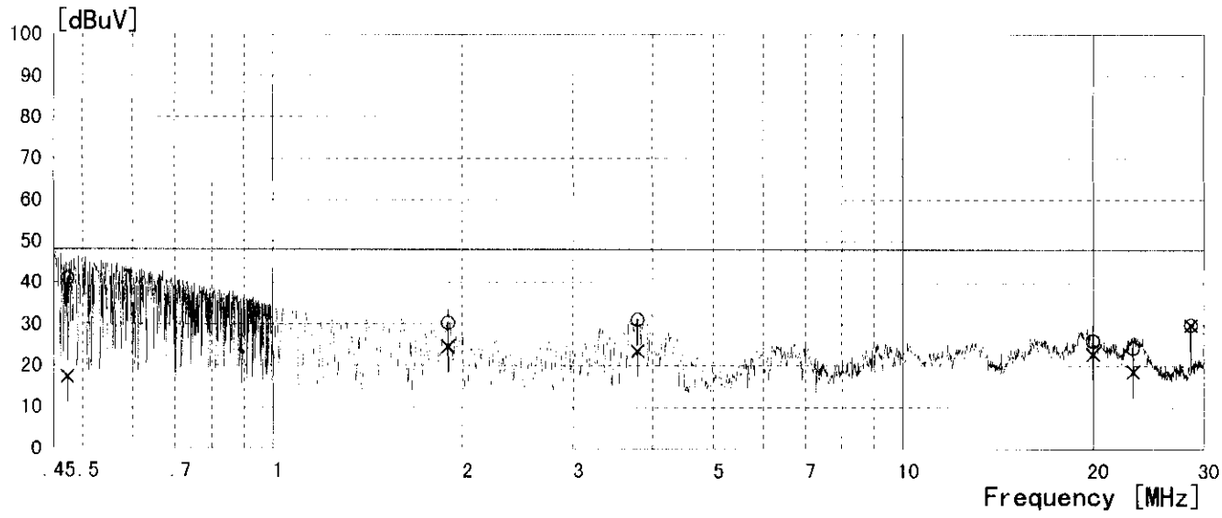
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: TV Reception + REC	TEST NO.	: 2
POWER	: AC120V/60Hz		
LINE	: L		
REMARKS	: 0dBmV input		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.473	40.5	16.8	0.5	41.0	17.3	48.0	48.0	7.0	30.7
2	1.900	29.9	24.1	0.4	30.3	24.5	48.0	48.0	17.7	23.5
3	3.798	30.6	23.0	0.5	31.1	23.5	48.0	48.0	16.9	24.5
4	20.000	25.2	22.0	0.9	26.1	22.9	48.0	48.0	21.9	25.1
5	23.164	23.5	17.7	0.9	24.4	18.6	48.0	48.0	23.6	29.4
6	28.636	29.0	28.9	1.1	30.1	30.0	48.0	48.0	17.9	18.0

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

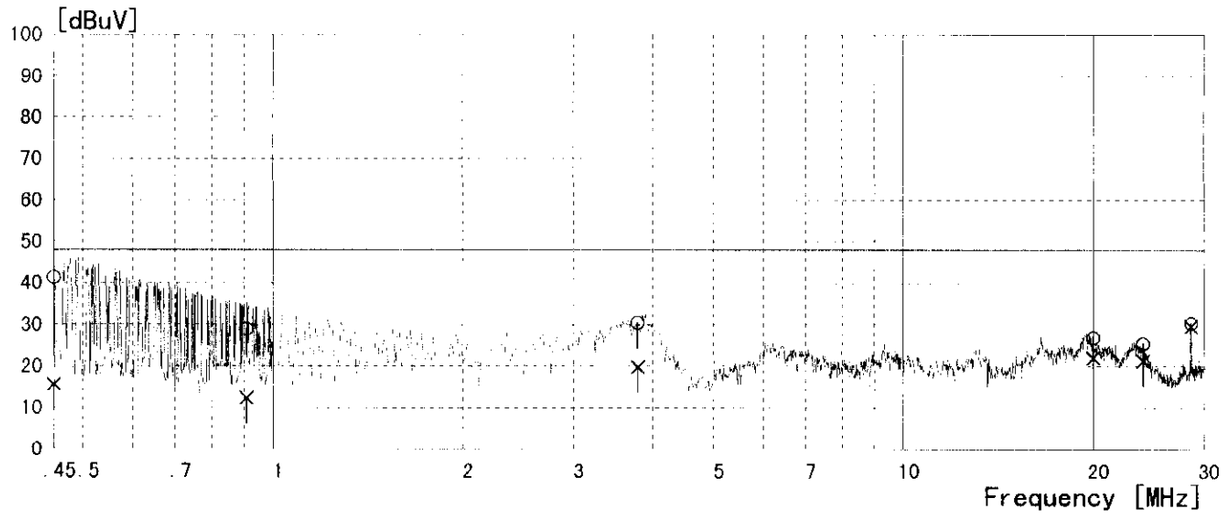
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: TV Reception + REC	TEST NO.	: 3
POWER	: AC120V/60Hz		
LINE	: N		
REMARKS	: 25dBmV input		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	40.9	15.0	0.5	41.4	15.5	48.0	48.0	6.6	32.5
2	0.909	28.5	11.9	0.4	28.9	12.3	48.0	48.0	19.1	35.7
3	3.796	29.9	19.3	0.5	30.4	19.8	48.0	48.0	17.6	28.2
4	20.000	26.0	21.2	0.9	26.9	22.1	48.0	48.0	21.1	25.9
5	24.000	24.5	20.4	1.0	25.5	21.4	48.0	48.0	22.5	26.6
6	28.637	29.3	28.5	1.1	30.4	29.6	48.0	48.0	17.6	18.4

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

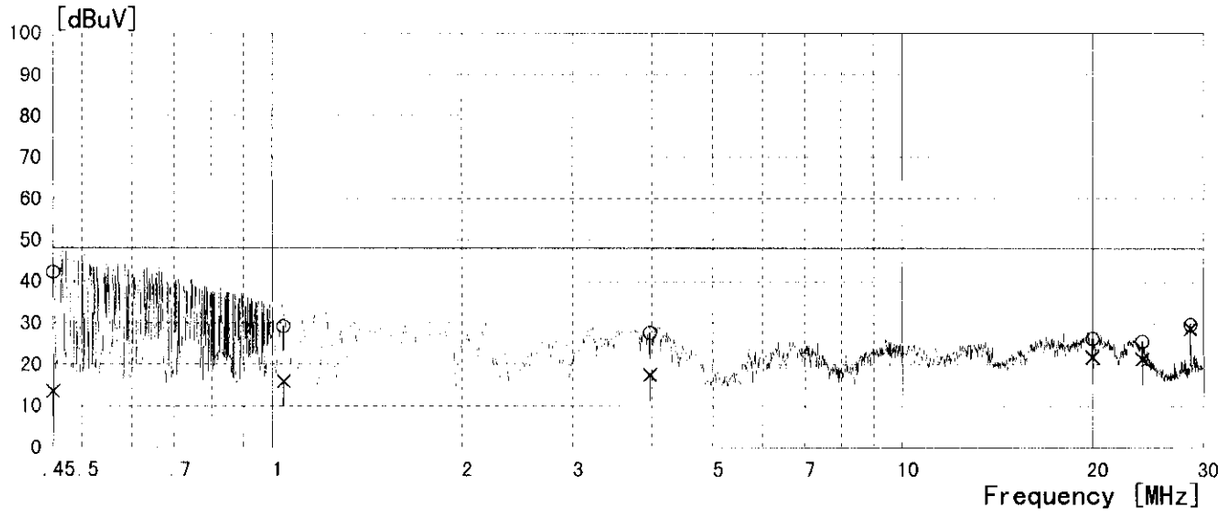
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: TV Reception + REC	TEST NO.	: 4
POWER	: AC120V/60Hz		
LINE	: L		
REMARKS	: 25dBmV input		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.7	13.0	0.5	42.2	13.5	48.0	48.0	5.8	34.5
2	1.043	28.8	15.5	0.4	29.2	15.9	48.0	48.0	18.8	32.1
3	3.977	27.1	17.0	0.5	27.6	17.5	48.0	48.0	20.4	30.5
4	20.000	25.5	21.0	0.9	26.4	21.9	48.0	48.0	21.6	26.1
5	24.000	24.7	20.5	1.0	25.7	21.5	48.0	48.0	22.3	26.5
6	28.635	28.7	27.7	1.1	29.8	28.8	48.0	48.0	18.2	19.2

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

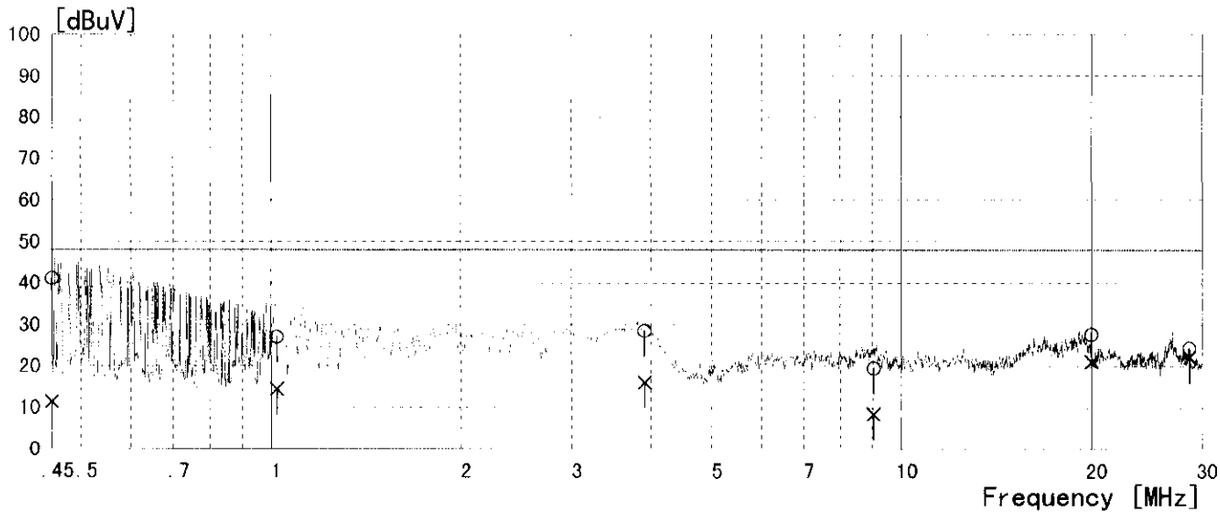
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC	TEST NO.	: 5
POWER	: AC120V/60Hz		
LINE	: N		
REMARKS	: 1Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	40.6	10.9	0.5	41.1	11.4	48.0	48.0	6.9	36.6
2	1.022	26.6	14.0	0.4	27.0	14.4	48.0	48.0	21.0	33.6
3	3.920	28.0	15.5	0.5	28.5	16.0	48.0	48.0	19.5	32.0
4	9.036	18.8	7.7	0.7	19.5	8.4	48.0	48.0	28.5	39.6
5	20.000	26.8	20.2	0.9	27.7	21.1	48.0	48.0	20.3	26.9
6	28.635	23.4	21.1	1.1	24.5	22.2	48.0	48.0	23.5	25.8

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

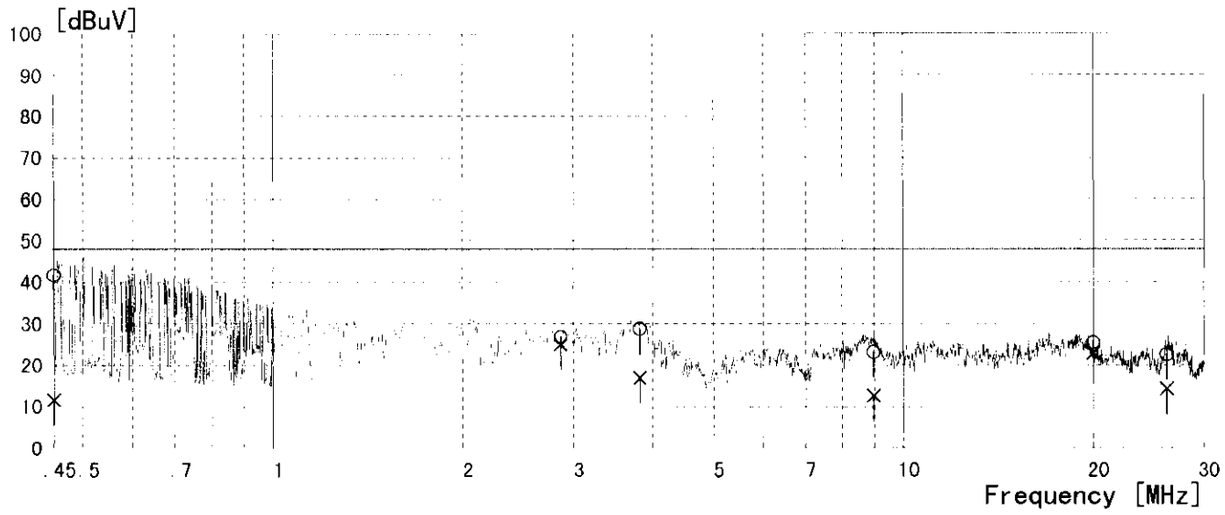
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC	TEST NO.	: 6
POWER	: AC120V/60Hz		
LINE	: L		
REMARKS	: 1Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.2	11.2	0.5	41.7	11.7	48.0	48.0	6.3	36.3
2	2.863	26.3	24.6	0.5	26.8	25.1	48.0	48.0	21.2	22.9
3	3.824	28.2	16.5	0.5	28.7	17.0	48.0	48.0	19.3	31.0
4	8.972	22.5	11.9	0.7	23.2	12.6	48.0	48.0	24.8	35.4
5	20.000	24.6	22.0	0.9	25.5	22.9	48.0	48.0	22.5	25.1
6	26.163	21.6	13.3	1.0	22.6	14.3	48.0	48.0	25.4	33.7

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

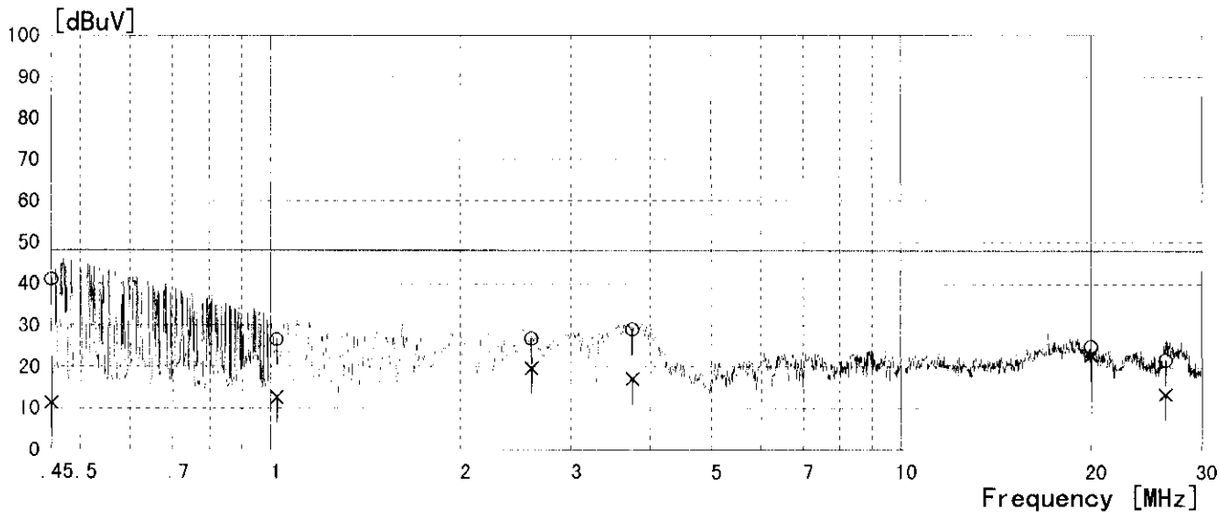
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC	TEST NO.	: 7
POWER	: AC120V/60Hz		
LINE	: N		
REMARKS	: 5Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	40.5	10.8	0.5	41.0	11.3	48.0	48.0	7.0	36.7
2	1.024	26.2	12.2	0.4	26.6	12.6	48.0	48.0	21.4	35.4
3	2.596	26.3	19.2	0.5	26.8	19.7	48.0	48.0	21.2	28.3
4	3.756	28.5	16.6	0.5	29.0	17.1	48.0	48.0	19.0	30.9
5	20.000	24.2	22.0	0.9	25.1	22.9	48.0	48.0	22.9	25.1
6	26.255	20.7	12.4	1.0	21.7	13.4	48.0	48.0	26.3	34.6

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

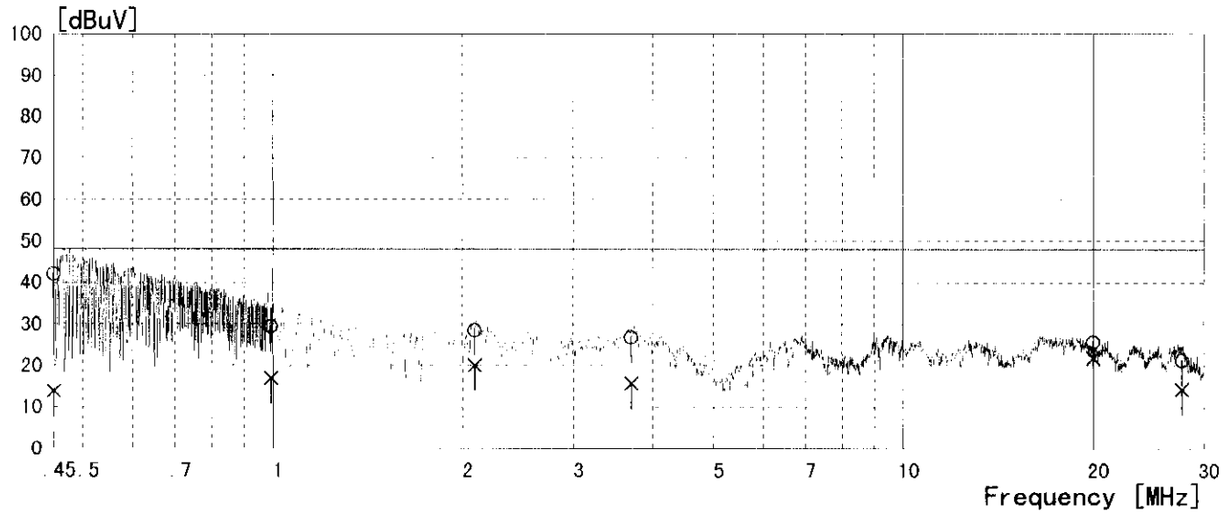
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC	TEST NO.	: 8
POWER	: AC120V/60Hz		
LINE	: L		
REMARKS	: 5Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.6	13.3	0.5	42.1	13.8	48.0	48.0	5.9	34.2
2	0.995	29.0	16.6	0.4	29.4	17.0	48.0	48.0	18.6	31.0
3	2.091	28.1	19.6	0.4	28.5	20.0	48.0	48.0	19.5	28.0
4	3.706	26.3	15.2	0.5	26.8	15.7	48.0	48.0	21.2	32.3
5	20.000	24.9	21.0	0.9	25.8	21.9	48.0	48.0	22.2	26.1
6	27.666	20.3	13.3	1.0	21.3	14.3	48.0	48.0	26.7	33.7

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

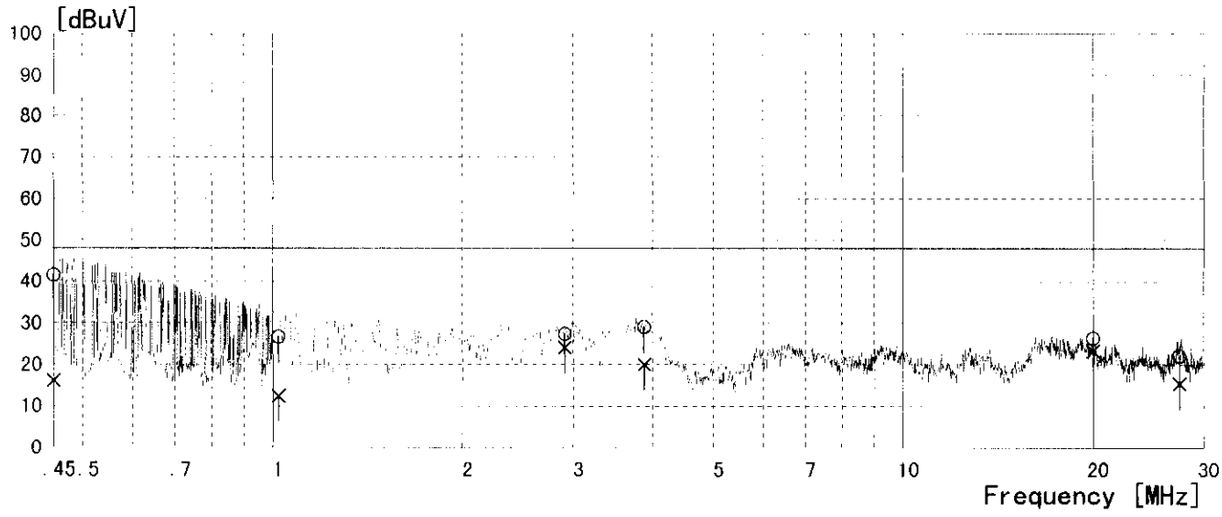
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC	TEST NO.	: 9
POWER	: AC120V/60Hz		
LINE	: N		
REMARKS	: 1Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.0	15.6	0.5	41.5	16.1	48.0	48.0	6.5	31.9
2	1.022	26.2	12.0	0.4	26.6	12.4	48.0	48.0	21.4	35.6
3	2.911	26.9	23.6	0.5	27.4	24.1	48.0	48.0	20.6	23.9
4	3.887	28.5	19.5	0.5	29.0	20.0	48.0	48.0	19.0	28.0
5	20.000	25.5	22.4	0.9	26.4	23.3	48.0	48.0	21.6	24.7
6	27.414	21.1	14.4	1.0	22.1	15.4	48.0	48.0	25.9	32.6

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

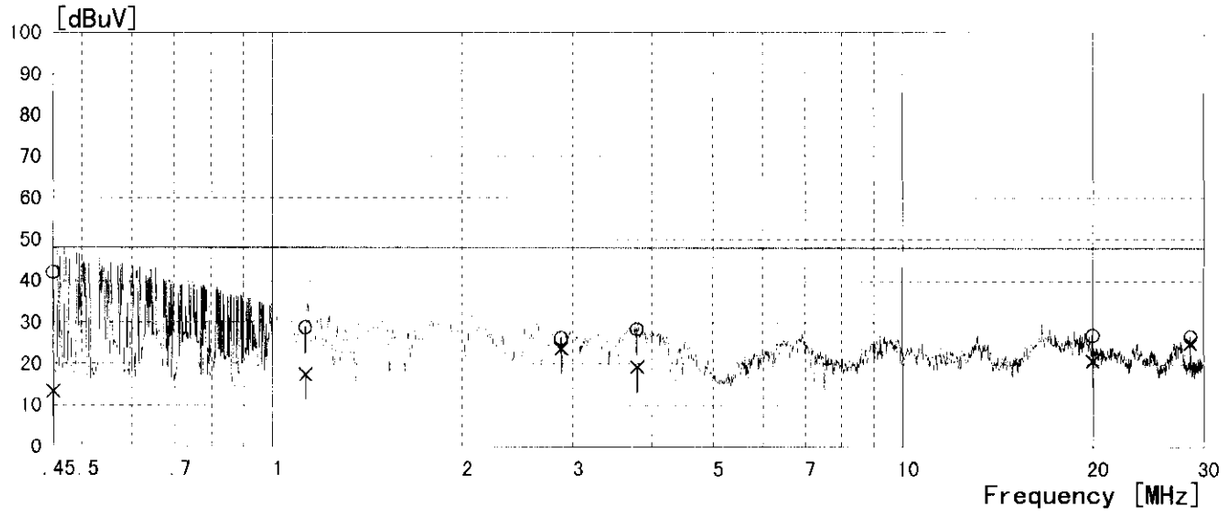
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC	TEST NO.	: 10
POWER	: AC120V/60Hz		
LINE	: L		
REMARKS	: 1Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER: RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.6	12.8	0.5	42.1	13.3	48.0	48.0	5.9	34.7
2	1.130	28.3	17.0	0.4	28.7	17.4	48.0	48.0	19.3	30.6
3	2.879	25.8	23.3	0.5	26.3	23.8	48.0	48.0	21.7	24.2
4	3.794	27.9	18.8	0.5	28.4	19.3	48.0	48.0	19.6	28.7
5	20.000	26.1	19.9	0.9	27.0	20.8	48.0	48.0	21.0	27.2
6	28.635	25.6	24.0	1.1	26.7	25.1	48.0	48.0	21.3	22.9

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

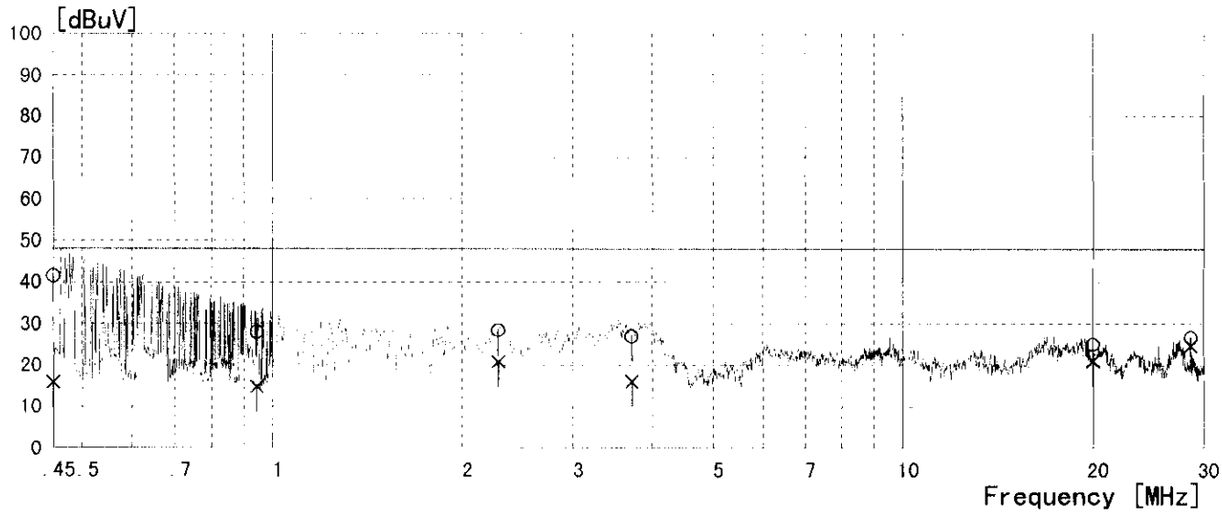
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC	TEST NO.	: 11
POWER	: AC120V/60Hz		
LINE	: N		
REMARKS	: 5Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER: RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.0	15.3	0.5	41.5	15.8	48.0	48.0	6.5	32.2
2	0.945	27.6	14.4	0.4	28.0	14.8	48.0	48.0	20.0	33.2
3	2.282	28.0	20.4	0.4	28.4	20.8	48.0	48.0	19.6	27.2
4	3.720	26.4	15.5	0.5	26.9	16.0	48.0	48.0	21.1	32.0
5	20.000	24.2	20.2	0.9	25.1	21.1	48.0	48.0	22.9	26.9
6	28.636	25.6	23.6	1.1	26.7	24.7	48.0	48.0	21.3	23.3

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

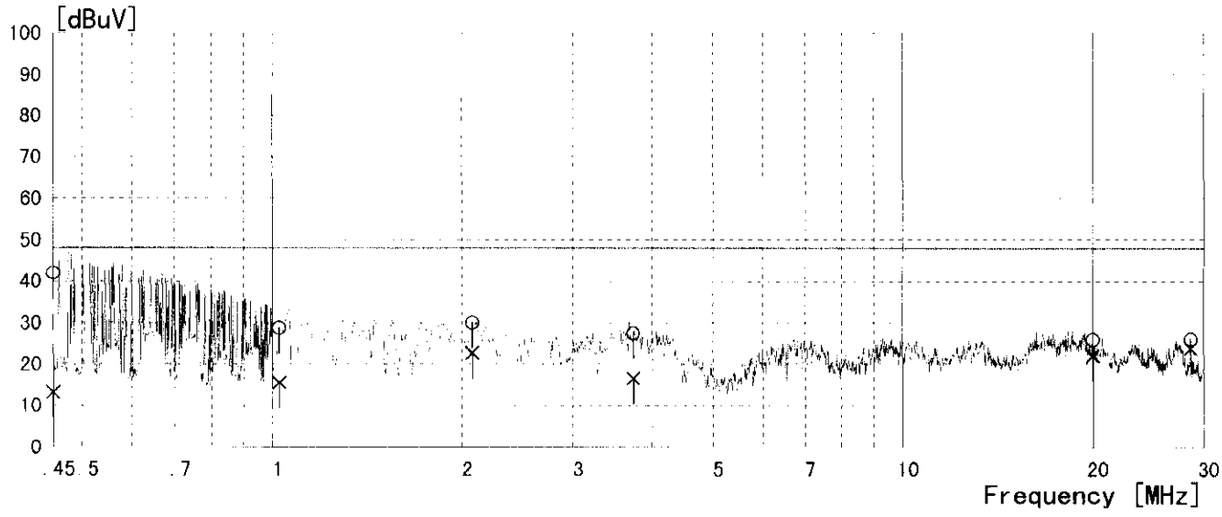
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC	TEST NO.	: 12
POWER	: AC120V/60Hz		
LINE	: L		
REMARKS	: 5Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.5	12.7	0.5	42.0	13.2	48.0	48.0	6.0	34.8
2	1.027	28.3	15.1	0.4	28.7	15.5	48.0	48.0	19.3	32.5
3	2.077	29.6	22.3	0.4	30.0	22.7	48.0	48.0	18.0	25.3
4	3.741	27.0	16.1	0.5	27.5	16.6	48.0	48.0	20.5	31.4
5	20.000	25.1	21.2	0.9	26.0	22.1	48.0	48.0	22.0	25.9
6	28.636	25.0	22.8	1.1	26.1	23.9	48.0	48.0	21.9	24.1

RESULT=READING+CABLE LOSS+CLAMP FACTOR



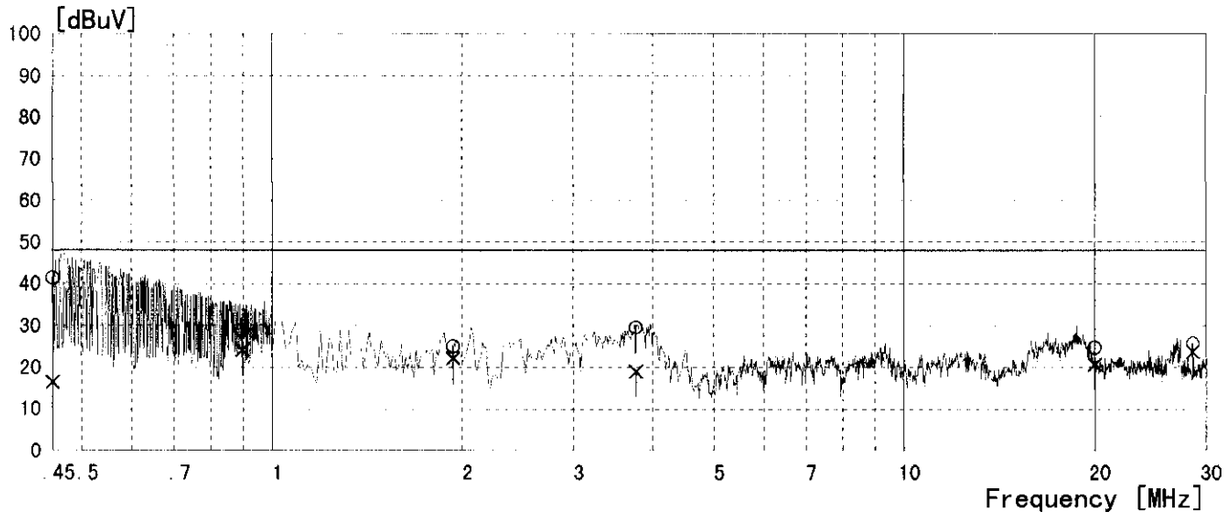
DATA OF CONDUCTION

A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: VCR PLAYBACK	TEST NO.	: 13
POWER	: AC120V/60Hz		:
LINE	: N		
REMARKS	: -		
	:	TEST ENGINEER: RYO KOJIMA	

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	40.9	15.9	0.5	41.4	16.4	48.0	48.0	6.6	31.6
2	0.899	28.5	23.7	0.4	28.9	24.1	48.0	48.0	19.1	23.9
3	1.936	24.6	21.7	0.4	25.0	22.1	48.0	48.0	23.0	25.9
4	3.770	29.0	18.5	0.5	29.5	19.0	48.0	48.0	18.5	29.0
5	20.000	23.8	19.8	0.9	24.7	20.7	48.0	48.0	23.3	27.3
6	28.634	24.7	22.7	1.1	25.8	23.8	48.0	48.0	22.2	24.2

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

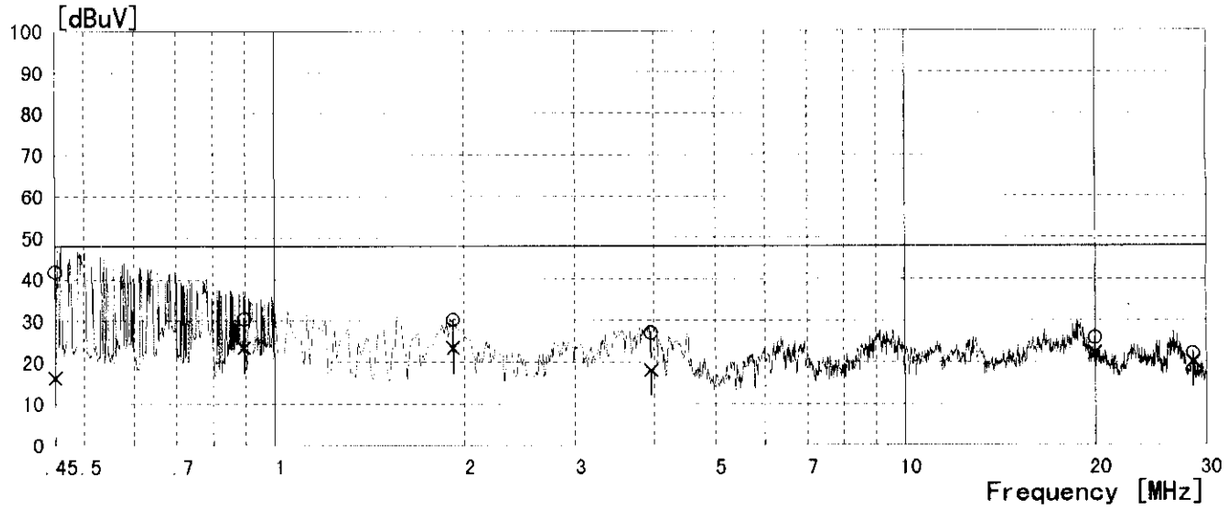
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: VCR PLAYBACK	TEST NO.	: 14
POWER	: AC120V/60Hz		:
LINE	: L		:
REMARKS	: -		:

TEST ENGINEER: RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.3	15.7	0.5	41.8	16.2	48.0	48.0	6.2	31.8
2	0.896	30.0	23.1	0.4	30.4	23.5	48.0	48.0	17.6	24.5
3	1.921	29.8	23.0	0.4	30.2	23.4	48.0	48.0	17.8	24.6
4	3.963	26.6	17.5	0.5	27.1	18.0	48.0	48.0	20.9	30.0
5	20.000	25.0	21.3	0.9	25.9	22.2	48.0	48.0	22.1	25.8
6	28.630	21.0	19.1	1.1	22.1	20.2	48.0	48.0	25.9	27.8

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF CONDUCTION

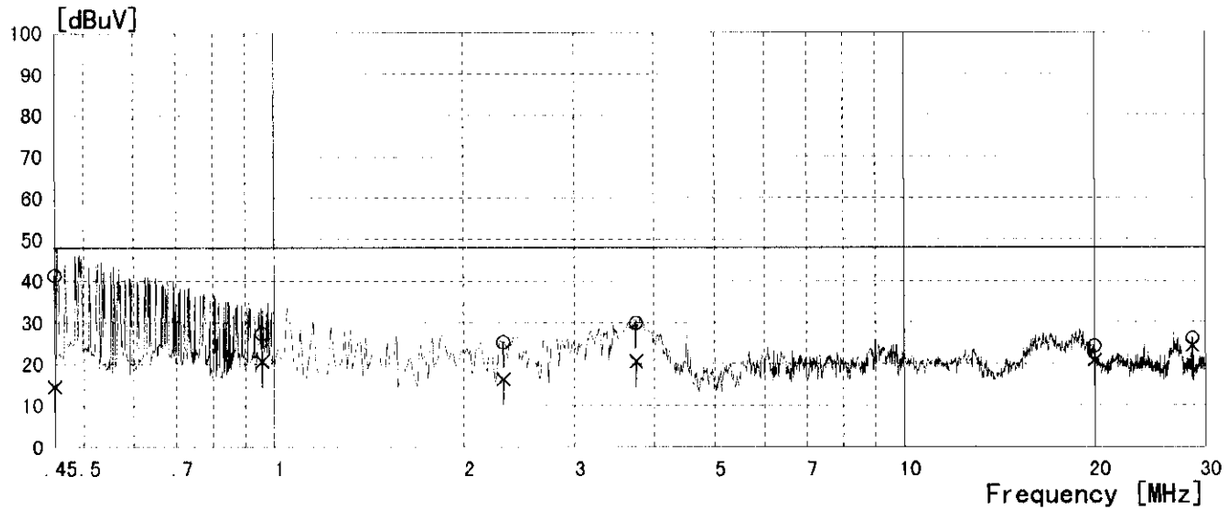
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: DVD PLAY	TEST NO.	: 15
POWER	: AC120V/60Hz		:
LINE	: N		:
REMARKS	: -		:

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	40.8	14.0	0.5	41.3	14.5	48.0	48.0	6.7	33.5
2	0.959	26.9	20.2	0.4	27.3	20.6	48.0	48.0	20.7	27.4
3	2.312	24.8	15.9	0.4	25.2	16.3	48.0	48.0	22.8	31.7
4	3.757	29.4	20.1	0.5	29.9	20.6	48.0	48.0	18.1	27.4
5	20.000	23.4	20.0	0.9	24.3	20.9	48.0	48.0	23.7	27.1
6	28.636	25.1	23.3	1.1	26.2	24.4	48.0	48.0	21.8	23.6

RESULT=READING+CABLE LOSS+CLAMP FACTOR



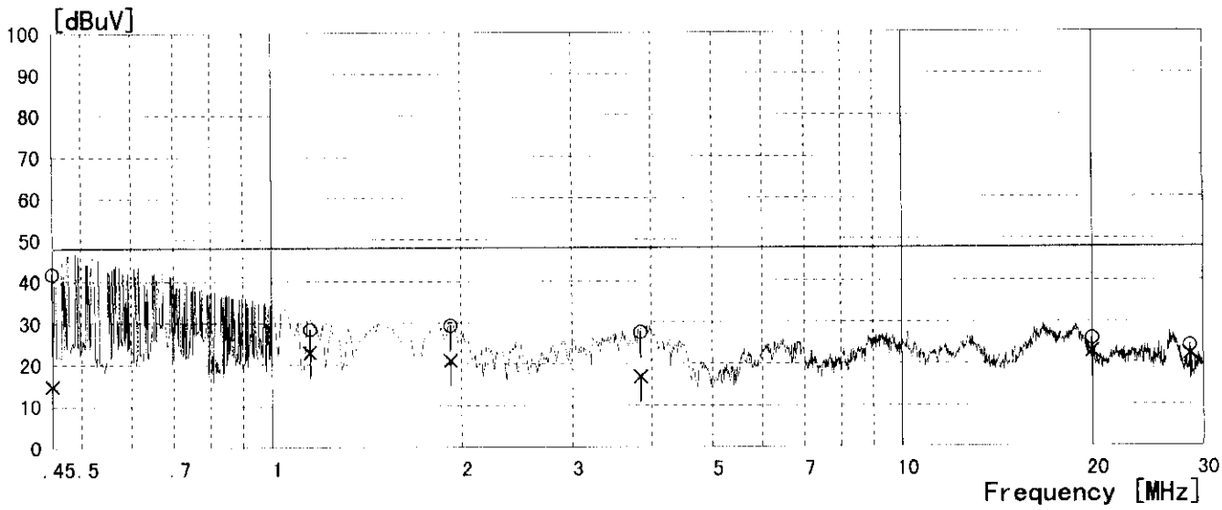
DATA OF CONDUCTION

A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD/VCR	DATE	: JULY 09, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: DVD PLAY	TEST NO.	: 16
POWER	: AC120V/60Hz		:
LINE	: L	TEST ENGINEER:RYO KOJIMA	
REMARKS	: -		
	:		

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	0.450	41.3	14.3	0.5	41.8	14.8	48.0	48.0	6.2	33.2
2	1.152	28.0	22.5	0.4	28.4	22.9	48.0	48.0	19.6	25.1
3	1.924	28.9	20.5	0.4	29.3	20.9	48.0	48.0	18.7	27.1
4	3.854	27.1	16.5	0.5	27.6	17.0	48.0	48.0	20.4	31.0
5	20.000	25.1	22.0	0.9	26.0	22.9	48.0	48.0	22.0	25.1
6	28.630	23.1	21.2	1.1	24.2	22.3	48.0	48.0	23.8	25.7

RESULT=READING+CABLE LOSS+CLAMP FACTOR



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.3 OPEN TEST SITE

COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
MODEL No. : SD-V280UA
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 22LE0003-KT-1
REGULATION : FCC PART15B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : July 06,2002

S. Tanaka
ENGINEER : Sadahiko Tanaka

CH.	FREQ [MHz]	READINNG HOR. [dBuV]	READINNG VER. [dBuV]	ANT TYPE	ANT. FAC. [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULTS HOR. [dBuV/m]	RESULTS VER. [dBuV/m]	LIMIT [dBuV/m]	MARGIN HOR. [dB]	MARGIN VER. [dB]
VHF Fundamental												
2	101	22.9	23.1	BC	10.0	2.1	27.8	13.2	13.4	43.5	30.3	30.1
3	107	25.9	24.9	BC	10.9	2.2	27.9	17.1	16.1	43.5	26.4	27.4
4	113	22.7	23.6	BC	11.9	2.3	27.9	15.0	15.9	43.5	28.5	27.6
5	123	22.6	24.9	BC	13.2	2.3	27.9	16.2	18.5	43.5	27.3	25.0
6	129	25.3	25.9	BC	13.7	2.5	27.9	19.6	20.2	43.5	23.9	23.3
7	221	24.6	22.5	BC	16.6	3.2	27.8	22.6	20.5	46.0	23.4	25.5
8	227	23.9	22.3	BC	16.6	3.2	27.8	21.9	20.3	46.0	24.1	25.7
9	233	23.2	22.2	BC	16.7	3.2	27.7	21.4	20.4	46.0	24.6	25.6
10	239	22.6	22.2	BC	16.8	3.1	27.5	21.0	20.6	46.0	25.0	25.4
11	245	22.2	22.4	BC	16.8	3.1	27.4	20.7	20.9	46.0	25.3	25.1
12	251	22.4	22.0	BC	17.0	3.0	27.3	21.1	20.7	46.0	24.9	25.3
13	257	24.1	24.3	BC	17.3	3.2	27.4	23.2	23.4	46.0	22.8	22.6
VHF 2nd Harmonic												
2	202	22.6	22.6	BC	16.3	3.1	27.8	20.2	20.2	43.5	23.3	23.3
3	214	23.0	22.5	BC	16.5	3.2	27.8	20.9	20.4	43.5	22.6	23.1
4	226	22.5	22.2	BC	16.6	3.2	27.8	20.5	20.2	46.0	25.5	25.8
5	246	26.2	22.2	BC	16.9	3.0	27.3	24.8	20.8	46.0	21.2	25.2
6	258	25.0	22.3	BC	17.4	3.2	27.4	24.2	21.5	46.0	21.8	24.5
7	442	22.1	22.1	LP	18.6	4.8	27.9	23.6	23.6	46.0	22.4	22.4
8	454	21.7	21.9	LP	18.7	4.8	27.9	23.3	23.5	46.0	22.7	22.5
9	466	21.9	22.1	LP	18.8	4.9	27.8	23.8	24.0	46.0	22.2	22.0
10	478	21.8	21.9	LP	18.9	4.9	27.8	23.8	23.9	46.0	22.2	22.1
11	490	22.9	22.2	LP	19.0	5.1	27.9	25.1	24.4	46.0	20.9	21.6
12	502	21.7	21.8	LP	19.1	5.2	27.9	24.1	24.2	46.0	21.9	21.8
13	514	21.9	22.0	LP	19.2	5.3	27.9	24.5	24.6	46.0	21.5	21.4

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.3 OPEN TEST SITE

COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
MODEL No. : SD-V280UA
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 22LE0003-KT-1
REGULATION : FCC PART15B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : July 06,2002

S. Tanaka
ENGINEER : Sadahiko Tanaka

CH.	FREQ	READINNG		ANT	ANT.	CABLE	AMP	RESULTS		LIMIT	MARGIN	
		HOR.	VER.	TYPE	FAC.	LOSS	GAIN	HOR.	VER.		HOR.	VER.
	[MHz]	[dBuV]			[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
CATV Fundamental												
1	119	22.9	23.8	BC	12.8	2.3	27.9	16.1	17.0	43.5	27.4	26.5
95	137	22.5	23.3	BC	14.4	2.5	27.9	17.5	18.3	43.5	26.0	25.2
97	149	22.4	22.5	BC	14.8	2.6	27.7	18.1	18.2	43.5	25.4	25.3
99	161	23.0	22.8	BC	15.0	2.8	27.8	19.0	18.8	43.5	24.5	24.7
14	167	22.5	22.5	BC	15.2	2.8	27.8	18.7	18.7	43.5	24.8	24.8
18	191	22.9	22.7	BC	16.0	3.0	27.8	20.1	19.9	43.5	23.4	23.6
22	215	28.8	24.0	BC	16.5	3.2	27.8	26.7	21.9	43.5	16.8	21.6
23	263	22.2	22.2	BC	17.7	3.3	27.5	21.7	21.7	46.0	24.3	24.3
29	299	22.1	22.0	BC	20.0	3.8	27.8	24.1	24.0	46.0	21.9	22.0
36	341	25.0	22.9	LP	17.1	4.5	27.9	24.7	22.6	46.0	21.3	23.4
37	347	24.5	22.2	LP	17.2	4.7	27.9	24.5	22.2	46.0	21.5	23.8
65	515	23.1	25.1	LP	19.2	5.3	27.9	25.7	27.7	46.0	20.3	18.3
94	689	23.5	25.8	LP	21.4	6.3	27.2	30.0	32.3	46.0	16.0	13.7
100	695	23.1	25.6	LP	21.5	6.3	27.1	29.8	32.3	46.0	16.2	13.7
113	773	23.3	22.3	LP	22.9	6.7	27.0	31.9	30.9	46.0	14.1	15.1
125	845	22.7	22.8	LP	23.9	7.1	27.0	32.7	32.8	46.0	13.3	13.2
CATV 2nd Harmonic												
1	238	22.5	22.2	BC	16.8	3.1	27.5	20.9	20.6	46.0	25.1	25.4
95	274	22.2	22.2	BC	18.4	3.6	27.8	22.4	22.4	46.0	23.6	23.6
97	298	22.2	22.3	BC	20.0	3.8	27.8	24.2	24.3	46.0	21.8	21.7
99	322	23.1	22.1	LP	16.8	4.0	28.0	21.9	20.9	46.0	24.1	25.1
14	334	22.7	22.4	LP	17.0	4.3	28.0	22.0	21.7	46.0	24.0	24.3
18	382	22.3	22.2	LP	17.9	4.5	27.9	22.8	22.7	46.0	23.2	23.3
22	430	23.5	23.1	LP	18.5	4.8	27.8	25.0	24.6	46.0	21.0	21.4
23	526	21.6	21.7	LP	19.3	5.4	27.8	24.5	24.6	46.0	21.5	21.4
29	598	21.5	21.6	LP	19.8	5.7	27.5	25.5	25.6	46.0	20.5	20.4
36	682	21.2	21.3	LP	21.3	6.3	27.3	27.5	27.6	46.0	18.5	18.4
37	694	20.7	20.6	LP	21.5	6.3	27.1	27.4	27.3	46.0	18.6	18.7
65	1030	38.7	41.1	HO	24.9	1.6	39.0	26.2	28.6	54.0	27.8	25.4
94	1378	40.7	43.2	HO	26.7	2.0	38.6	30.8	33.3	54.0	23.2	20.7
100	1390	40.9	44.0	HO	26.8	2.0	38.6	31.1	34.2	54.0	22.9	19.8
113	1546	41.6	45.3	HO	27.7	2.1	38.5	32.9	36.6	54.0	21.1	17.4
125	1690	40.4	41.5	HO	28.5	2.3	38.3	32.9	34.0	54.0	21.1	20.0

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.3 OPEN TEST SITE

COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
MODEL No. : SD-V280UA
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 22LE0003-KT-1
REGULATION : FCC PART15B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : July 06,2002

S. Tanaka
ENGINEER : Sadahiko Tanaka

CH.	FREQ	READINNG		ANT	ANT.	CABLE	AMP	RESULTS		LIMIT	MARGIN	
		HOR.	VER.	TYPE	FAC.	LOSS	GAIN	HOR.	VER.		HOR.	VER.
	[MHz]	[dBuV]			[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
UHF Fundamental												
14	517	23.3	24.7	LP	19.2	5.3	27.9	25.9	27.3	46.0	20.1	18.7
19	547	23.6	29.4	LP	19.4	5.6	27.7	26.9	32.7	46.0	19.1	13.3
28	601	27.4	30.3	LP	19.8	5.8	27.5	31.5	34.4	46.0	14.5	11.6
36	649	23.8	27.5	LP	20.7	6.1	27.5	29.1	32.8	46.0	16.9	13.2
44	697	23.7	26.7	LP	21.5	6.3	27.1	30.4	33.4	46.0	15.6	12.6
53	751	23.6	26.2	LP	22.5	6.7	27.2	31.6	34.2	46.0	14.4	11.8
61	799	22.9	22.9	LP	23.4	6.9	27.1	32.1	32.1	46.0	13.9	13.9
69	847	22.4	23.4	LP	24.0	7.1	27.0	32.5	33.5	46.0	13.5	12.5
UHF 2nd Harmonic												
14	1034	38.3	41.6	HO	24.9	1.6	39.0	25.8	29.1	54.0	28.2	24.9
19	1094	39.2	41.8	HO	25.2	1.7	39.0	27.1	29.7	54.0	26.9	24.4
28	1202	35.3	38.0	HO	25.8	1.8	38.8	24.1	26.8	54.0	29.9	27.3
36	1298	36.3	37.1	HO	26.3	1.9	38.7	25.8	26.6	54.0	28.2	27.5
44	1394	41.4	42.2	HO	26.8	2.0	38.6	31.6	32.4	54.0	22.4	21.6
53	1502	39.9	44.3	HO	27.4	2.1	38.5	30.9	35.3	54.0	23.1	18.7
61	1598	39.6	42.3	HO	28.0	2.2	38.4	31.4	34.1	54.0	22.6	19.9
69	1694	37.9	41.6	HO	28.5	2.3	38.3	30.4	34.1	54.0	23.6	19.9

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 22LE0003-KT-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-V280UA
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC(25dBmV)
Remarks : OTHER
Date : 7/6/2002
Test Distance : 3 m
Temperature : 22 ℃
Humidity : 58 %
Regulation : FCC Part15B CLASS B

Engineer : Sadahiko Tanaka

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	40.86	BB	23.6	31.9	14.1	28.0	1.3	6.0	17.0	25.3	40.0	23.0	14.7
2.	100.01	BB	28.5	37.7	9.8	27.8	2.1	6.0	18.6	27.8	43.5	24.9	15.7
3.	108.32	BB	33.4	31.4	11.1	27.9	2.2	6.0	24.8	22.8	43.5	18.7	20.7
4.	189.00	BB	34.2	25.4	15.9	27.8	3.0	6.0	31.3	22.5	43.5	12.2	21.0
5.	200.01	BB	30.5	26.9	16.3	27.8	3.1	6.0	28.1	24.5	43.5	15.4	19.0
6.	216.00	BB	40.8	33.1	16.5	27.8	3.2	6.0	38.7	31.0	43.5	4.8	12.5
7.	324.01	BB	32.0	29.9	16.8	28.0	4.0	6.1	30.9	28.8	46.0	15.1	17.2

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

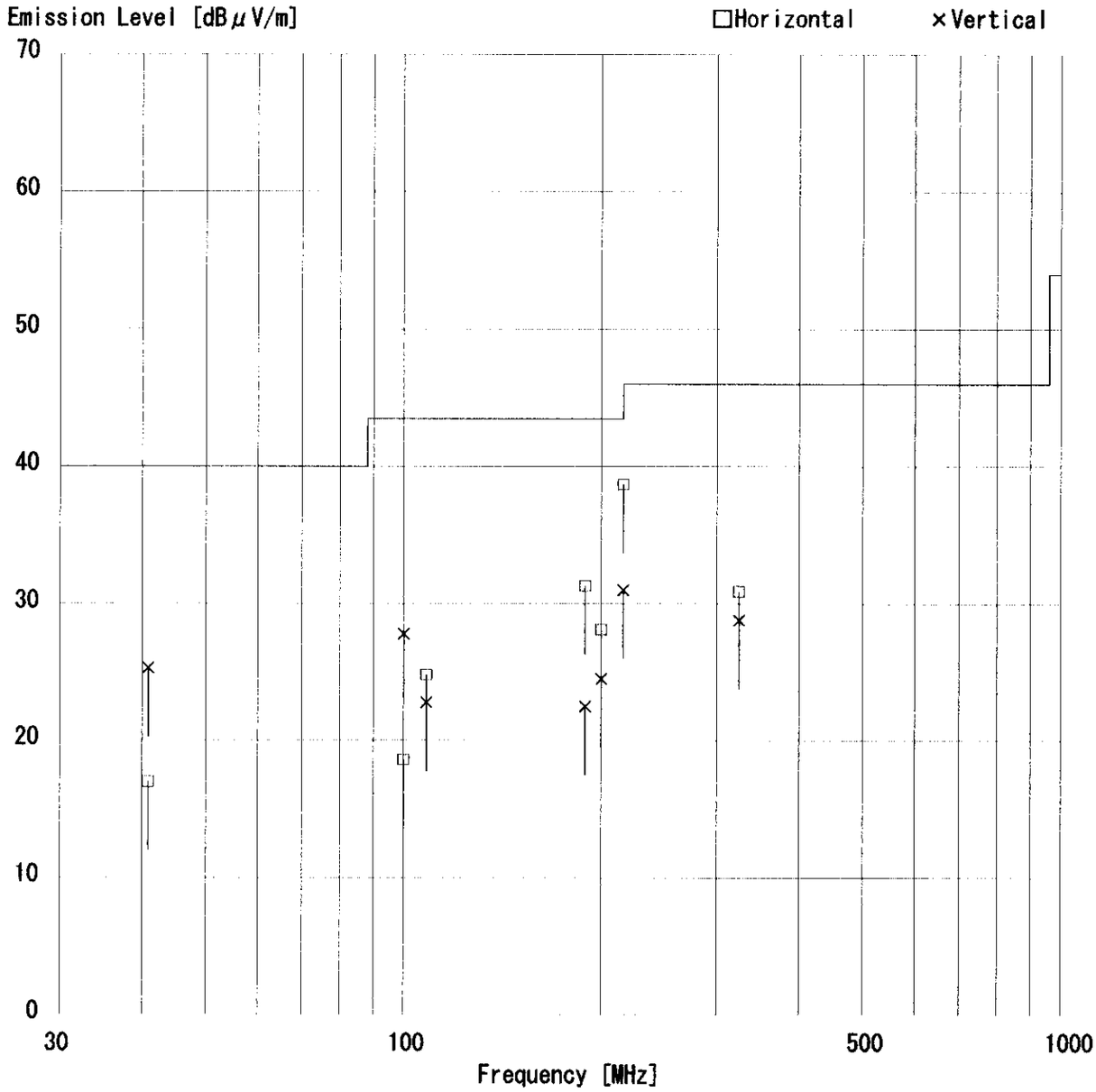
Except for the above table : adequate margin data below the limits.
ANT.TYPE: 30-300MHz:Biconical, 300-1000MHz:Logperiodic.

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22LE0003-KT-1

Applicant	: ORION ELECTRIC CO., LTD.
Kind of Equipment	: DVD/VCR
Model No.	: SD-V280UA
Serial No.	:
Power	: AC120V/60Hz
Mode	: TV RECEPTION+REC(25dBmV)
Remarks	: OTHER
Date	: 7/6/2002
Test Distance	: 3 m
Temperature	: 22 ℃
Humidity	: 58 %
Regulation	: FCC Part15B CLASS B

Engineer : Sadahiko Tanaka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22LE0003-KT-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-V280UA
Serial No. :
Power : AC120V/60Hz
Mode : VCR PLAYBACK
Remarks : OTHER
Date : 7/7/2002
Test Distance : 3 m
Temperature : 21 ℃
Humidity : 65 %
Regulation : FCC Part15B CLASS B

Engineer : Sadahiko Tanaka

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	42.91	BB	24.2	31.7	13.4	27.9	1.3	6.0	17.0	24.5	40.0	23.0	15.5
2.	100.01	BB	33.3	32.6	9.8	27.8	2.1	6.0	23.4	22.7	43.5	20.1	20.8
3.	108.35	BB	36.8	32.9	11.1	27.9	2.2	6.0	28.2	24.3	43.5	15.3	19.2
4.	189.00	BB	33.7	28.6	15.9	27.8	3.0	6.0	30.8	25.7	43.5	12.7	17.8
5.	200.01	BB	32.5	26.6	16.3	27.8	3.1	6.0	30.1	24.2	43.5	13.4	19.3
6.	216.00	BB	39.5	30.2	16.5	27.8	3.2	6.0	37.4	28.1	43.5	6.1	15.4
7.	324.01	BB	28.2	24.4	16.8	28.0	4.0	6.1	27.1	23.3	46.0	18.9	22.7

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

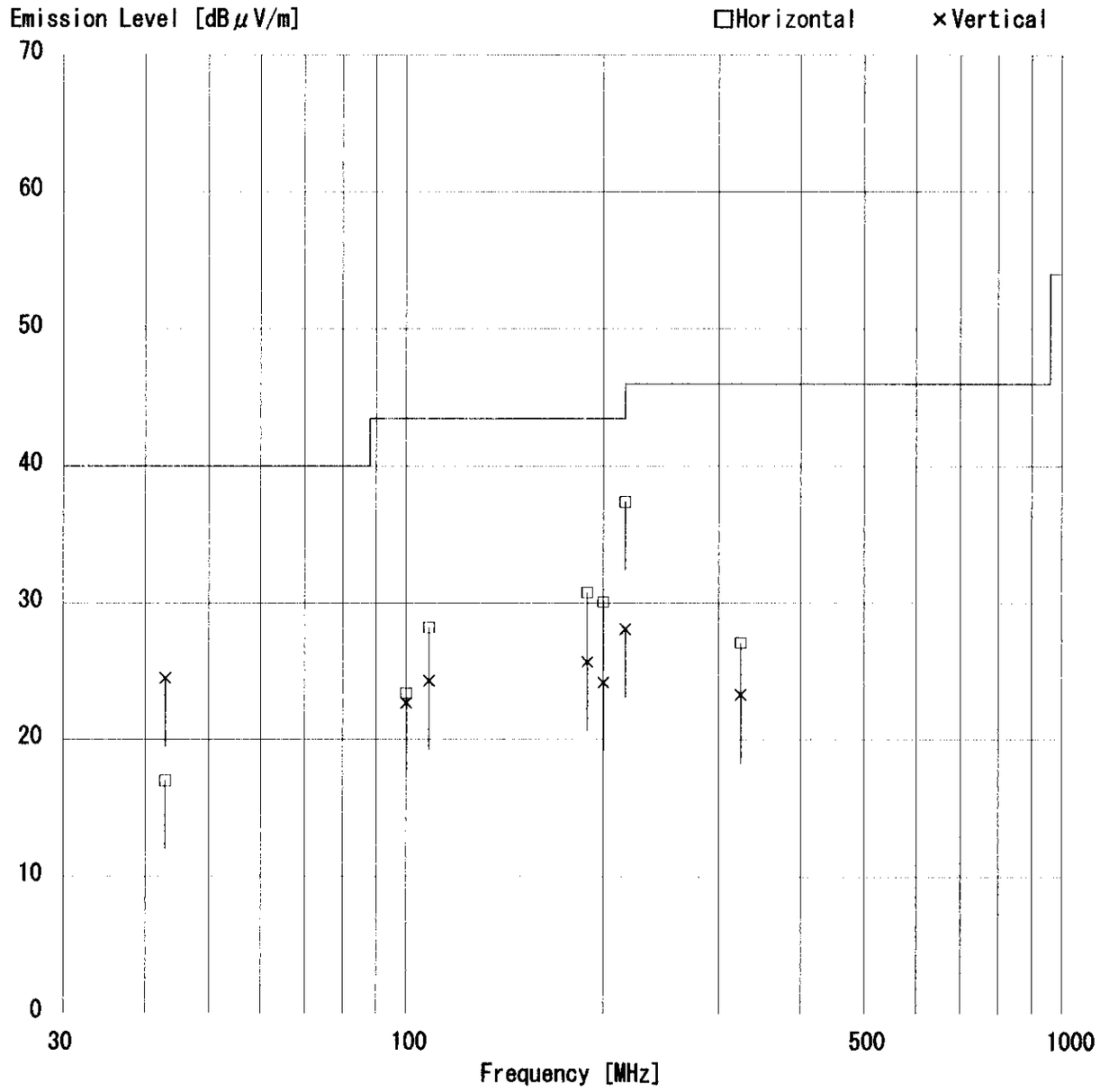
Except for the above table : adequate margin data below the limits.
ANT.TYPE: 30-300MHz:Biconical, 300-1000MHz:Logperiodic.

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22LE0003-KT-1

Applicant	: ORION ELECTRIC CO., LTD.
Kind of Equipment	: DVD/VCR
Model No.	: SD-V280UA
Serial No.	:
Power	: AC120V/60Hz
Mode	: VCR PLAYBACK
Remarks	: OTHER
Date	: 7/7/2002
Test Distance	: 3 m
Temperature	: 21 ℃
Humidity	: 65 %
Regulation	: FCC Part15B CLASS B

Engineer : Sadahiko Tanaka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 22LE0003-KT-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-V280UA
Serial No. :
Power : AC120V/60Hz
Mode : DVD PLAY
Remarks : OTHER
Date : 7/6/2002
Test Distance : 3 m
Temperature : 22 ℃
Humidity : 58 %
Regulation : FCC Part15B CLASS B

Engineer : Sadahiko Tanaka

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	32.53	BB	22.9	31.1	16.9	28.0	1.4	6.1	19.3	27.5	40.0	20.7	12.5
2.	85.91	BB	34.7	42.7	7.2	27.8	1.9	6.0	22.0	30.0	40.0	18.0	10.0
3.	108.35	BB	39.2	34.2	11.1	27.9	2.2	6.0	30.6	25.6	43.5	12.9	17.9
4.	189.01	BB	37.1	27.3	15.9	27.8	3.0	6.0	34.2	24.4	43.5	9.3	19.1
5.	200.01	BB	31.8	25.1	16.3	27.8	3.1	6.0	29.4	22.7	43.5	14.1	20.8
6.	215.99	BB	38.3	31.0	16.5	27.8	3.2	6.0	36.2	28.9	43.5	7.3	14.6
7.	313.37	BB	33.6	27.0	16.6	27.9	3.9	6.1	32.3	25.7	46.0	13.7	20.3
8.	432.01	BB	32.1	32.7	18.5	27.8	4.8	6.0	33.6	34.2	46.0	12.4	11.8
9.	1080.06	BB	39.2	48.2	24.9	39.0	1.7	0.0	26.8	35.8	54.0	27.2	18.2
10.	1167.24	BB	59.9	59.7	25.2	38.9	1.8	0.0	48.0	47.8	54.0	6.0	6.2
11.	1511.92	BB	37.6	43.0	26.5	38.5	2.1	0.0	27.7	33.1	54.0	26.3	20.9
12.	1558.40	BB	41.0	48.2	26.9	38.4	2.1	0.0	31.6	38.8	54.0	22.4	15.2
13.	1946.84	BB	43.8	42.3	30.0	38.1	2.5	0.0	38.2	36.7	54.0	15.8	17.3

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

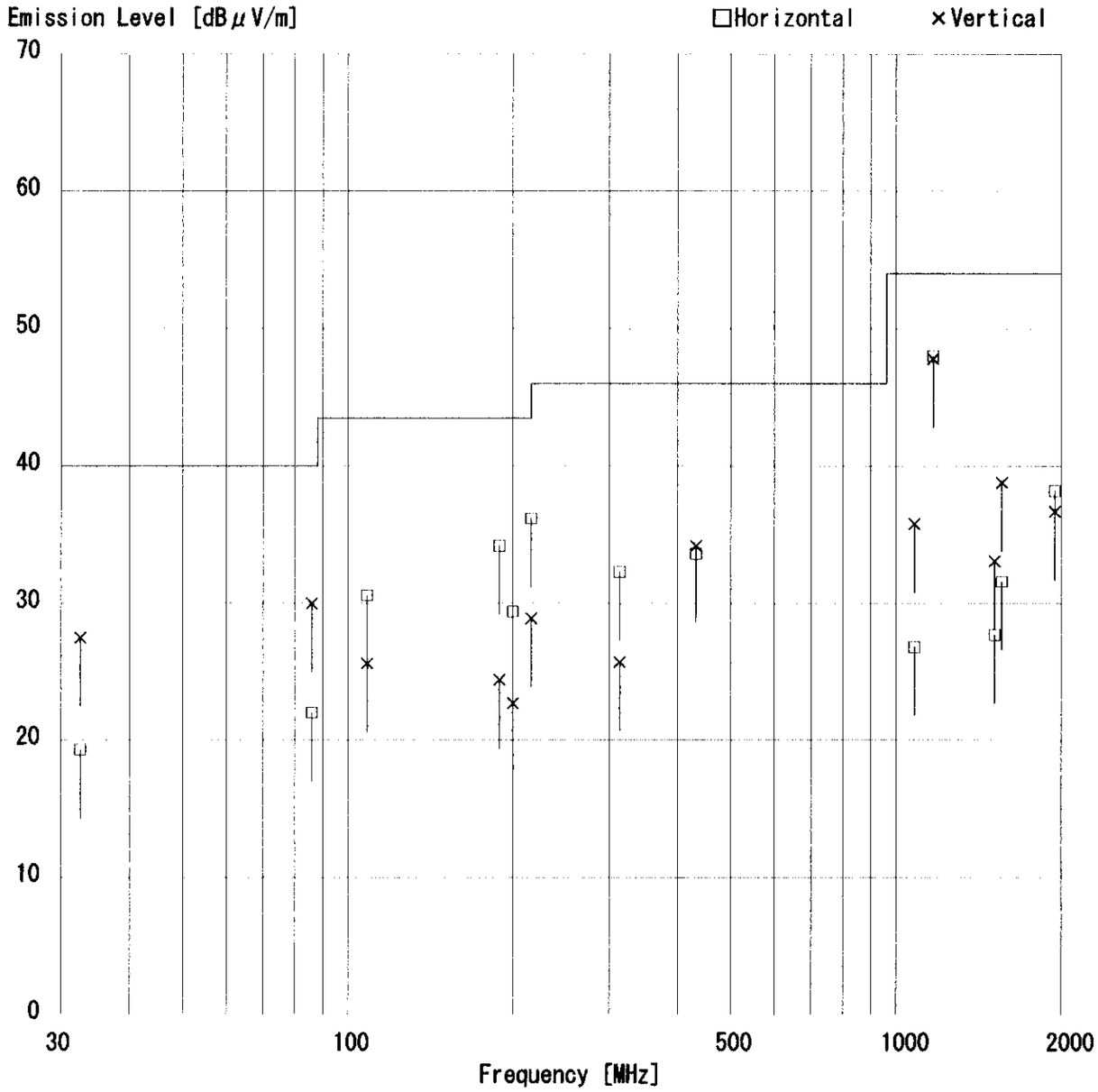
Except for the above table : adequate margin data below the limits.
ANT.TYPE: 30-300MHz:Biconical, 300-1000MHz:Logperiodic, 1G-2GHz DRG Horn.

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22LE0003-KT-1

Applicant	: ORION ELECTRIC CO., LTD.
Kind of Equipment	: DVD/VCR
Model No.	: SD-V280UA
Serial No.	:
Power	: AC120V/60Hz
Mode	: DVD PLAY
Remarks	: OTHER
Date	: 7/6/2002
Test Distance	: 3 m
Temperature	: 22 ℃
Humidity	: 58 %
Regulation	: FCC Part15B CLASS B

Engineer : Sadahiko Tanaka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22LE0003-KT-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-V280UA
Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT(Front)+REC (5Vp-p)
Remarks : OTHER
Date : 7/6/2002
Test Distance : 3 m
Temperature : 22 ℃
Humidity : 58 %
Regulation : FCC Part15B CLASS B

Engineer : Sadahiko Tanaka

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	40.99	BB	23.0	31.6	14.1	28.0	1.3	6.0	16.4	25.0	40.0	23.6	15.0
2.	100.01	BB	34.6	34.9	9.8	27.8	2.1	6.0	24.7	25.0	43.5	18.8	18.5
3.	108.33	BB	37.9	31.7	11.1	27.9	2.2	6.0	29.3	23.1	43.5	14.2	20.4
4.	189.02	BB	36.7	30.1	15.9	27.8	3.0	6.0	33.8	27.2	43.5	9.7	16.3
5.	200.00	BB	32.0	27.0	16.3	27.8	3.1	6.0	29.6	24.6	43.5	13.9	18.9
6.	216.00	BB	39.3	32.3	16.5	27.8	3.2	6.0	37.2	30.2	43.5	6.3	13.3
7.	324.01	BB	27.7	27.8	16.8	28.0	4.0	6.1	26.6	26.7	46.0	19.4	19.3

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

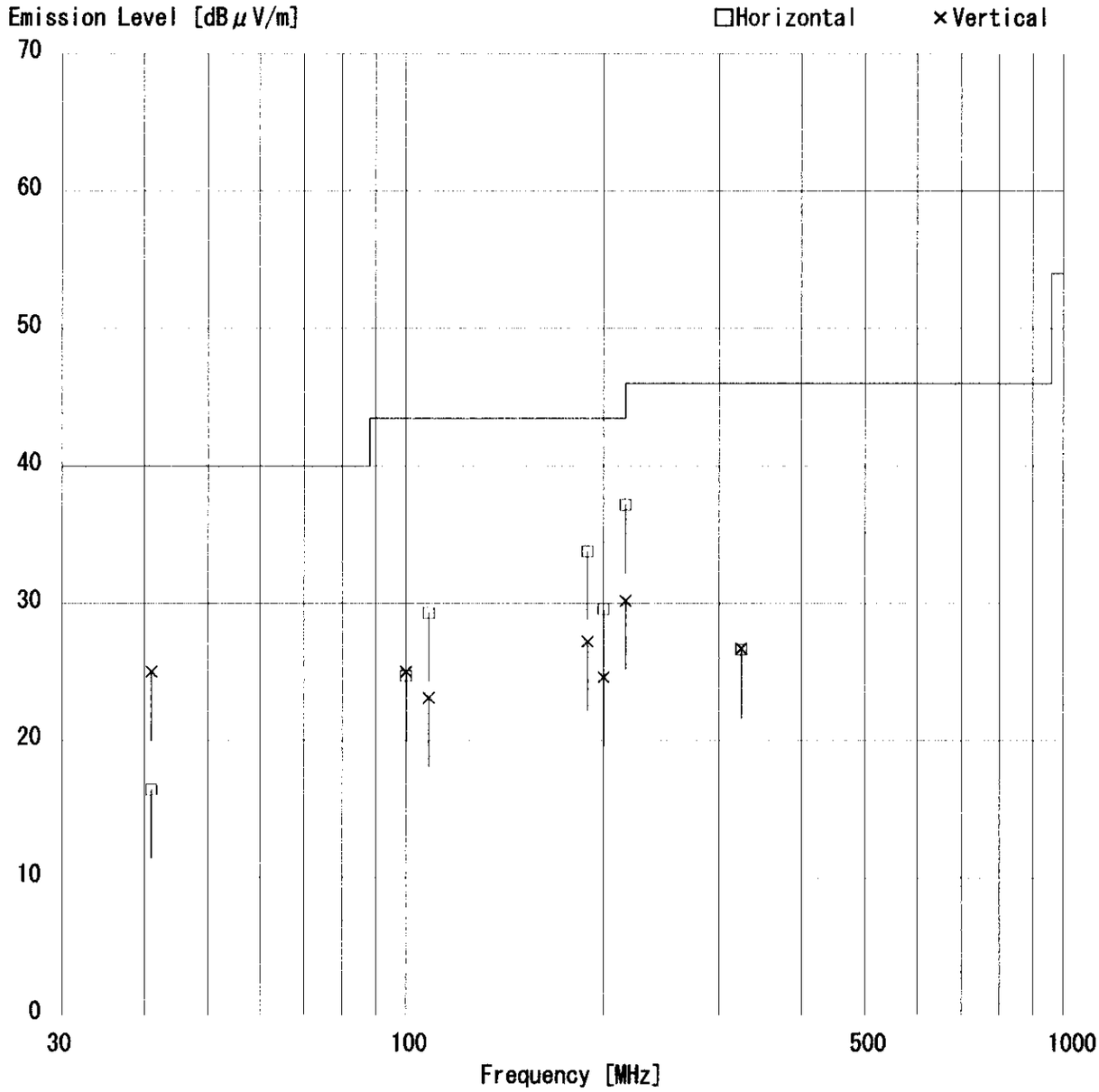
Except for the above table : adequate margin data below the limits.
ANT.TYPE: 30-300MHz:Biconical, 300-1000MHz:Logperiodic.

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 22LE0003-KT-1

Applicant	: ORION ELECTRIC CO., LTD.
Kind of Equipment	: DVD/VCR
Model No.	: SD-V280UA
Serial No.	:
Power	: AC120V/60Hz
Mode	: AV INPUT(Front)+REC (5Vp-p)
Remarks	: OTHER
Date	: 7/6/2002
Test Distance	: 3 m
Temperature	: 22 ℃
Humidity	: 58 %
Regulation	: FCC Part15B CLASS B

S. Tanaka
Engineer : Sadahiko Tanaka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 22LE0003-KT-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-V280UA
Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT(Rear)+REC (5Vp-p)
Remarks : OTHER
Date : 7/6/2002
Test Distance : 3 m
Temperature : 22 ℃
Humidity : 58 %
Regulation : FCC Part15B CLASS B

Engineer : Sadahiko Tanaka

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	40.99	BB	23.7	31.2	14.1	28.0	1.3	6.0	17.1	24.6	40.0	22.9	15.4
2.	100.01	BB	31.9	38.8	9.8	27.8	2.1	6.0	22.0	28.9	43.5	21.5	14.6
3.	108.34	BB	33.6	31.4	11.1	27.9	2.2	6.0	25.0	22.8	43.5	18.5	20.7
4.	189.01	BB	33.0	25.9	15.9	27.8	3.0	6.0	30.1	23.0	43.5	13.4	20.5
5.	200.00	BB	30.7	26.2	16.3	27.8	3.1	6.0	28.3	23.8	43.5	15.2	19.7
6.	216.00	BB	40.9	34.1	16.5	27.8	3.2	6.0	38.8	32.0	43.5	4.7	11.5
7.	324.01	BB	28.4	28.6	16.8	28.0	4.0	6.1	27.3	27.5	46.0	18.7	18.5

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

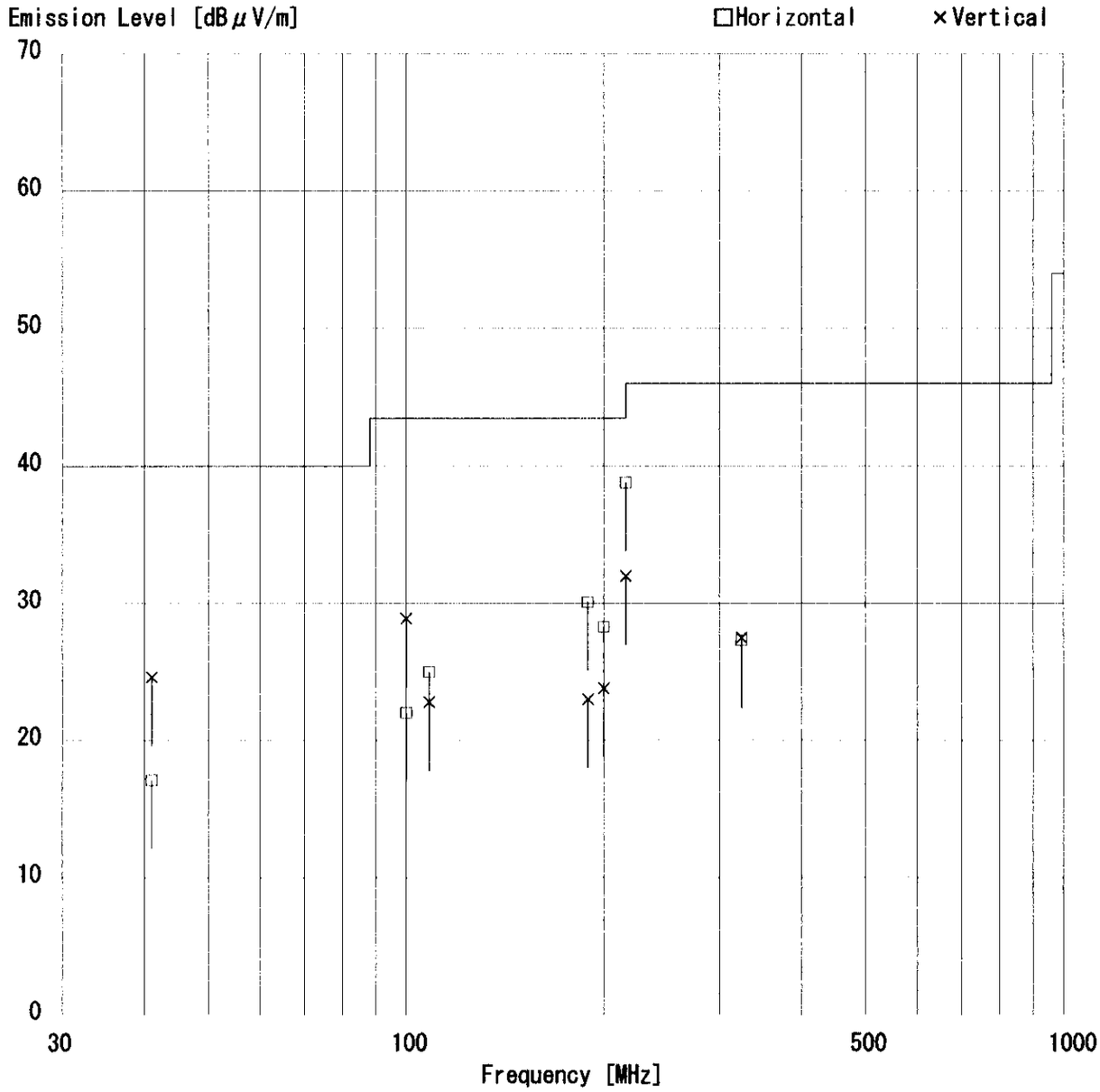
Except for the above table : adequate margin data below the limits.
ANT.TYPE: 30-300MHz:Biconical, 300-1000MHz:Logperiodic.

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 22LE0003-KT-1

Applicant	: ORION ELECTRIC CO., LTD.
Kind of Equipment	: DVD/VCR
Model No.	: SD-V280UA
Serial No.	:
Power	: AC120V/60Hz
Mode	: AV INPUT(Rear)+REC (5Vp-p)
Remarks	: OTHER
Date	: 7/6/2002
Test Distance	: 3 m
Temperature	: 22 ℃
Humidity	: 58 %
Regulation	: FCC Part15B CLASS B

Engineer : Sadahiko Tanaka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 22LE0003-KT-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-V280UA
Serial No. :
Power : AC120V/60Hz
Mode : Maximum Operation
Remarks : Test Channel #3
Date : 7/7/2002
Test Distance : 3 m
Temperature : 21 ℃
Humidity : 65 %
Regulation : FCC Part15B CLASS B

Engineer : Sadahiko Tanaka

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	61.25	BB	23.7	25.2	7.8	27.9	1.6	5.9	11.1	12.6	40.0	28.9	27.4
2.	65.75	BB	25.2	31.9	7.1	27.8	1.7	6.0	12.2	18.9	40.0	27.8	21.1
3.	122.50	BB	22.7	23.2	13.2	27.9	2.3	6.0	16.3	16.8	43.5	27.2	26.7
4.	245.00	BB	22.6	22.1	16.8	27.4	3.1	6.0	21.1	20.6	46.0	24.9	25.4

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

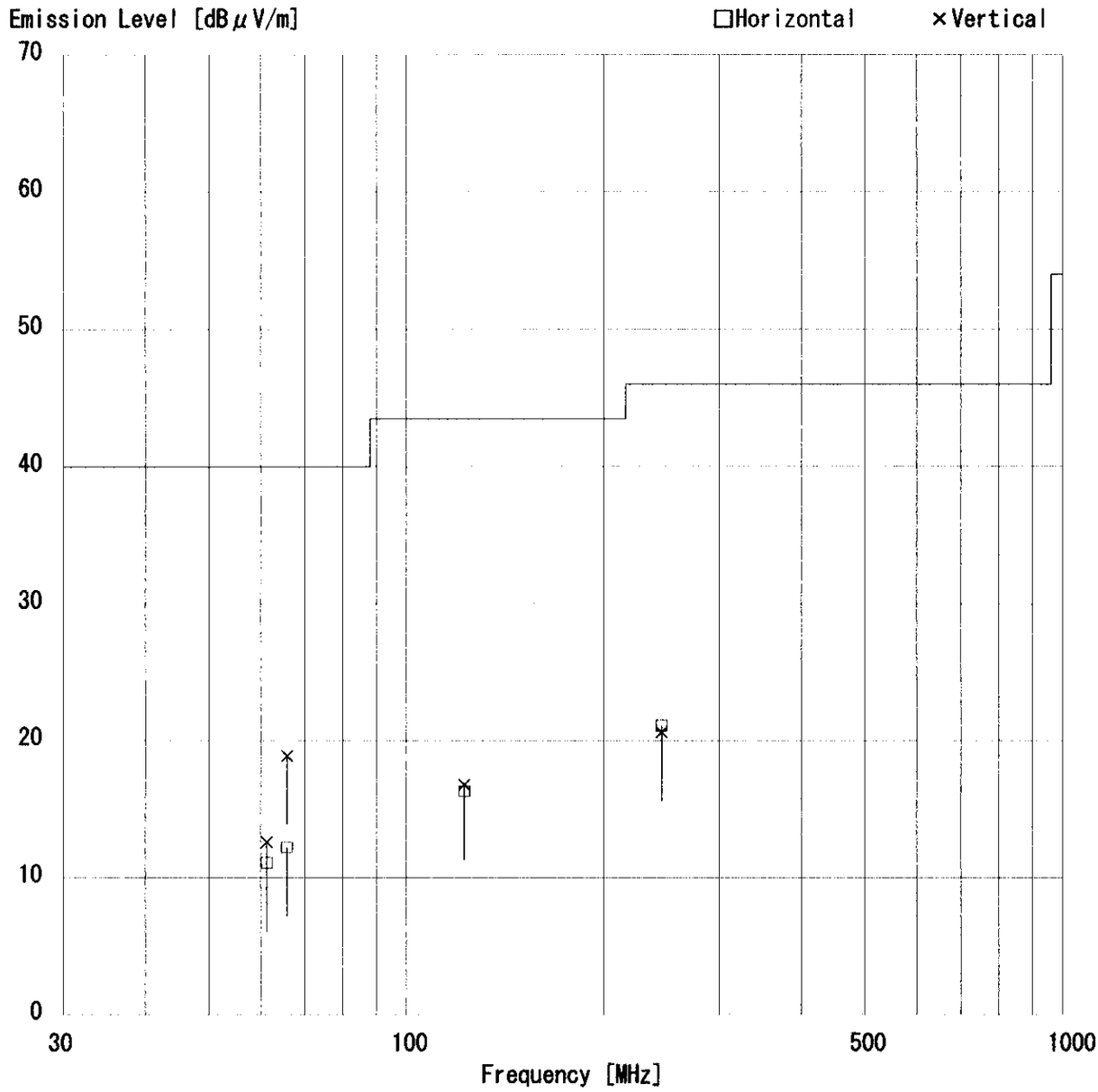
Except for the above table : adequate margin data below the limits.
ANT.TYPE: 30-300MHz:Biconical, 300-1000MHz:Logperiodic.

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 22LE0003-KT-1

Applicant	: ORION ELECTRIC CO., LTD.
Kind of Equipment	: DVD/VCR
Model No.	: SD-V280UA
Serial No.	:
Power	: AC120V/60Hz
Mode	: Maximum Operation
Remarks	: Test Channel #3
Date	: 7/7/2002
Test Distance	: 3 m
Temperature	: 21 ℃
Humidity	: 65 %
Regulation	: FCC Part15B CLASS B

Engineer : Sadahiko Tanaka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 22LE0003-KT-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-V280UA
Serial No. :
Power : AC120V/60Hz
Mode : Maximum Operation
Remarks : Test Channel #4
Date : 7/7/2002
Test Distance : 3 m
Temperature : 21 ℃
Humidity : 65 %
Regulation : FCC Part15B CLASS B

Engineer : Sadahiko Tanaka

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	67.25	BB	35.1	27.1	6.9	27.9	1.7	6.0	21.8	13.8	40.0	18.2	26.2
2.	71.75	BB	32.6	32.8	6.4	27.9	1.8	6.0	18.9	19.1	40.0	21.1	20.9
3.	134.50	BB	22.9	22.8	14.2	27.9	2.5	6.0	17.7	17.6	43.5	25.8	25.9
4.	201.75	BB	23.9	22.5	16.3	27.8	3.1	6.0	21.5	20.1	43.5	22.0	23.4

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

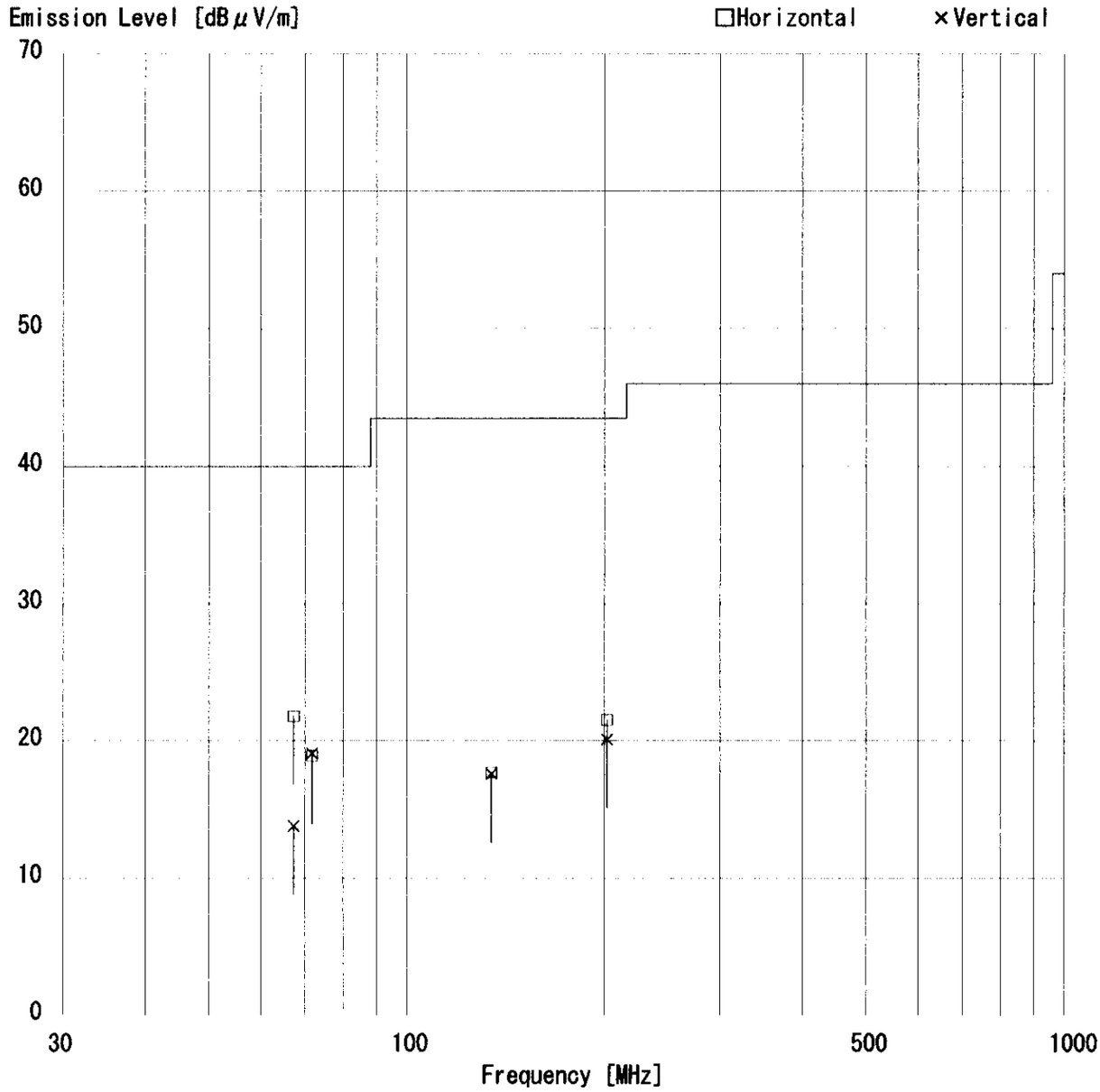
Except for the above table : adequate margin data below the limits.
ANT.TYPE: 30-300MHz:Biconical, 300-1000MHz:Logperiodic.

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22LE0003-KT-1

Applicant	: ORION ELECTRIC CO., LTD.
Kind of Equipment	: DVD/VCR
Model No.	: SD-V280UA
Serial No.	:
Power	: AC120V/60Hz
Mode	: Maximum Operation
Remarks	: Test Channel #4
Date	: 7/7/2002
Test Distance	: 3 m
Temperature	: 21 ℃
Humidity	: 65 %
Regulation	: FCC Part15B CLASS B

Engineer : Sadahiko Tanaka



DATA OF ANTENNA TERMINAL TEST

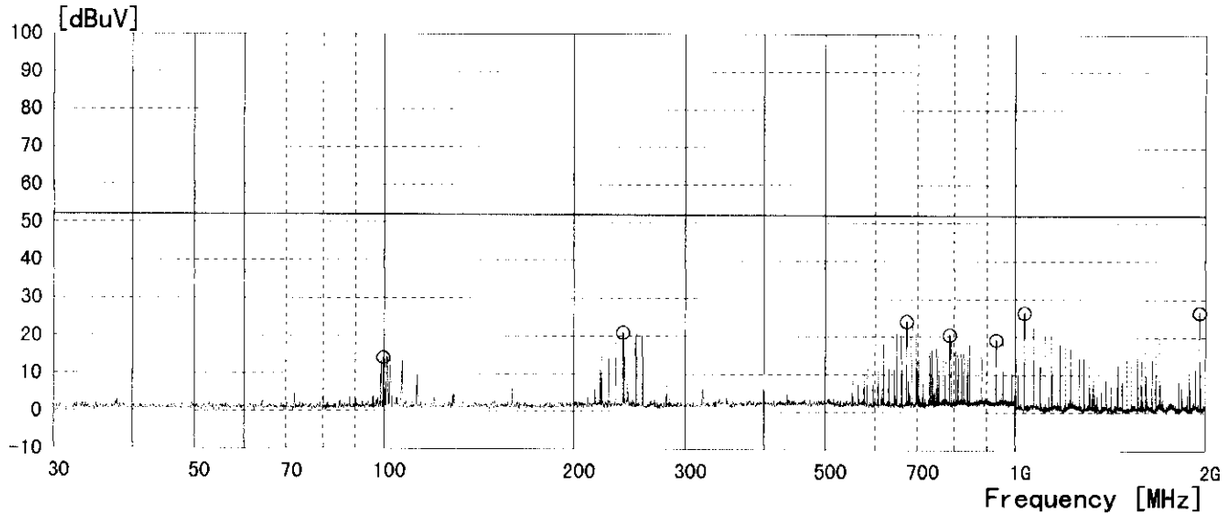
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: TUNING	TEST NO.	: 1
PORT	: ANTENNA TERMINAL		:
POWER	: AC120V/60Hz		:
REMARKS	: TV MODE		:

TEST ENGINEER:RYO KODAMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	99.800	35.3	-----	-21.2	14.1	-----	52.0	-----	37.9	-----
2	239.100	42.0	-----	-21.1	20.9	-----	52.0	-----	31.1	-----
3	673.700	45.0	-----	-21.0	24.0	-----	52.0	-----	28.0	-----
4	787.000	41.1	-----	-20.7	20.4	-----	52.0	-----	31.6	-----
5	932.700	39.2	-----	-20.1	19.1	-----	52.0	-----	32.9	-----
6	1033.600	55.7	-----	-29.4	26.3	-----	52.0	-----	25.7	-----
7	1958.600	54.4	-----	-28.1	26.4	-----	52.0	-----	25.6	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



DATA OF ANTENNA TERMINAL TEST

A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

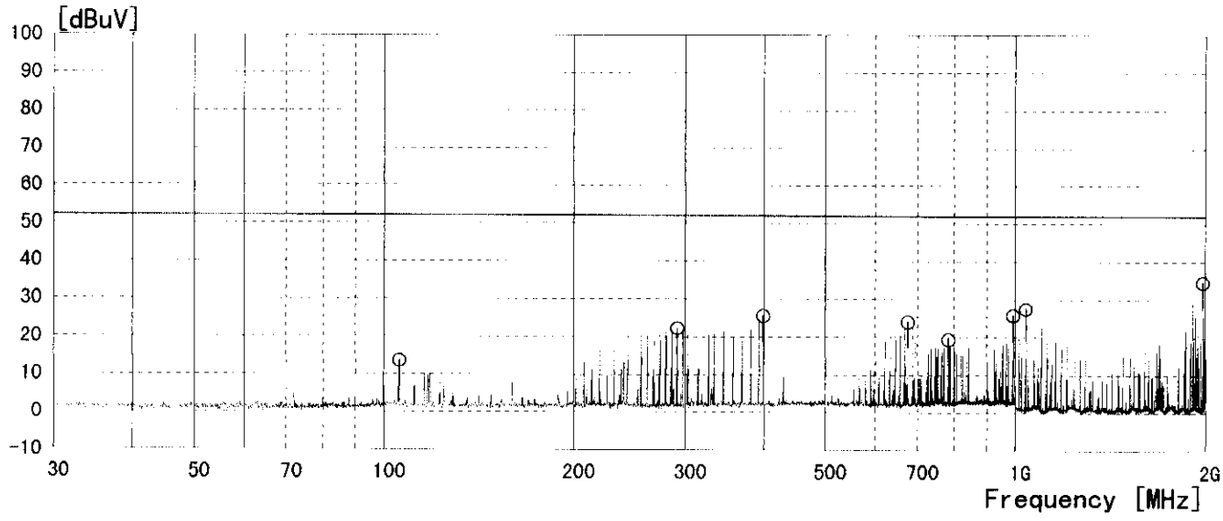
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPEMENT : DVD / VCR
MODEL NAME : SD-V280UA
OPERATION MODE : TUNING
PORT : ANTENNA TERMINAL
POWER : AC120V/60Hz
REMARKS : CATV MODE

REPORT No. : 22LE0003-KT-1
DATE : JULY 08, 2002
REGULATION : FCC PART15 SUBPART B
TEST NO. : 2

TEST ENGINEER:RYO KOJIMA

No.	FREQ [MHz]	READING QP [dBuV]	READING AV [dBuV]	C.FACTOR [dB]	RESULT QP [dBuV]	RESULT AV [dBuV]	LIMIT QP [dBuV]	LIMIT AV [dBuV]	MARGIN QP [dB]	MARGIN AV [dB]
1	105.700	34.7	----	-21.2	13.5	----	52.0	----	38.5	----
2	292.000	43.3	----	-21.1	22.2	----	52.0	----	29.8	----
3	399.400	46.4	----	-20.9	25.4	----	52.0	----	26.6	----
4	676.600	45.0	----	-21.0	24.0	----	52.0	----	28.0	----
5	784.000	40.0	----	-20.7	19.3	----	52.0	----	32.7	----
6	992.300	45.6	----	-19.9	25.7	----	52.0	----	26.3	----
7	1039.300	56.8	----	-29.4	27.4	----	52.0	----	24.6	----
8	1982.100	62.6	----	-28.1	34.5	----	52.0	----	17.5	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



RF output level

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Lab.

Company	:	ORION ELECTRIC Co., Ltd.	Report Number	:	22LE0003-KT-1
Equipment	:	DVD / VCR	Regulation	:	FCC Prat15B Subpart B
Model number	:	SD-V280UA	Date	:	July 8, 2002
Power	:	AC 120 V / 60 Hz			
Description	:	Receive + Rec. mode (0 dBmV)			

Engineer : Ryo Kojima

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	86.3	20.4	65.9	69.5	3.6
4	67.25	85.4	20.4	65.0	69.5	4.5

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	71.6	20.4	51.2	56.5	5.3
	65.75	70.4	20.4	50.0	56.5	6.5
4	62.75	70.9	20.4	50.5	56.5	6.0
	71.75	69.7	20.4	49.3	56.5	7.2

RF output level

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Lab.

Company	:	ORION ELECTRIC Co., Ltd.	Report Number	:	22LE0003-KT-1
Equipment	:	DVD / VCR	Regulation	:	FCC Prat15B Subpart B
Model number	:	SD-V280UA	Date	:	July 8, 2002
Power	:	AC 120 V / 60 Hz			
Description	:	Receive + Rec. mode (25 dBmV)			

Engineer : Ryo Kojima

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	85.1	20.4	64.7	69.5	4.8
4	67.25	85.6	20.4	65.2	69.5	4.3

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	71.6	20.4	51.2	56.5	5.3
	65.75	70.4	20.4	50.0	56.5	6.5
4	62.75	71.0	20.4	50.6	56.5	5.9
	71.75	69.7	20.4	49.3	56.5	7.2

RF output level

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Lab.

Company	:	ORION ELECTRIC Co., Ltd.	Report Number	:	22LE0003-KT-1
Equipment	:	DVD / VCR	Regulation	:	FCC Prat15B Subpart B
Model number	:	SD-V280UA	Date	:	July 8, 2002
Power	:	AC 120 V / 60 Hz			
Description	:	Line Input + Rec. mode (1 Vp-p)			
Remarks	:	Line in (FRONT)			

Engineer : Ryo Kojima

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	86.4	20.4	66.0	69.5	3.5
4	67.25	85.8	20.4	65.4	69.5	4.1

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	71.9	20.4	51.5	56.5	5.0
	65.75	70.8	20.4	50.4	56.5	6.1
4	62.75	71.3	20.4	50.9	56.5	5.6
	71.75	70.1	20.4	49.7	56.5	6.8

RF output level

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Lab.

Company	:	ORION ELECTRIC Co., Ltd.	Report Number	:	22LE0003-KT-1
Equipment	:	DVD / VCR	Regulation	:	FCC Prat15B Subpart B
Model number	:	SD-V280UA	Date	:	July 8, 2002
Power	:	AC 120 V / 60 Hz			
Description	:	Line Input + Rec. mode (5 Vp-p)			
Remarks	:	Line in (FRONT)			

Engineer : Ryo Kojima

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	85.3	20.4	64.9	69.5	4.6
4	67.25	84.9	20.4	64.5	69.5	5.0

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	71.7	20.4	51.3	56.5	5.2
	65.75	70.6	20.4	50.2	56.5	6.3
4	62.75	71.2	20.4	50.8	56.5	5.7
	71.75	70.0	20.4	49.6	56.5	6.9

RF output level

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Lab.

Company	:	ORION ELECTRIC Co., Ltd.	Report Number	:	22LE0003-KT-1
Equipment	:	DVD / VCR	Regulation	:	FCC Prat15B Subpart B
Model number	:	SD-V280UA	Date	:	July 8, 2002
Power	:	AC 120 V / 60 Hz			
Description	:	Line Input + Rec. mode (1 Vp-p)			
Remarks	:	Line in (REAR)			

Engineer : Ryo Kojima

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	85.2	20.4	64.8	69.5	4.7
4	67.25	85.8	20.4	65.4	69.5	4.1

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	71.8	20.4	51.4	56.5	5.1
	65.75	70.6	20.4	50.2	56.5	6.3
4	62.75	71.3	20.4	50.9	56.5	5.6
	71.75	70.1	20.4	49.7	56.5	6.8

RF output level

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Lab.

Company	:	ORION ELECTRIC Co., Ltd.	Report Number	:	22LE0003-KT-1
Equipment	:	DVD / VCR	Regulation	:	FCC Prat15B Subpart B
Model number	:	SD-V280UA	Date	:	July 8, 2002
Power	:	AC 120 V / 60 Hz			
Description	:	Line Input + Rec. mode (5 Vp-p)			
Remarks	:	Line in (REAR)			

Engineer : Ryo Kojima

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	85.7	20.4	65.3	69.5	4.2
4	67.25	84.7	20.4	64.3	69.5	5.2

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	71.8	20.4	51.4	56.5	5.1
	65.75	70.5	20.4	50.1	56.5	6.4
4	62.75	71.1	20.4	50.7	56.5	5.8
	71.75	70.0	20.4	49.6	56.5	6.9

RF output level

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Lab.

Company	:	ORION ELECTRIC Co., Ltd.	Report Number	:	22LE0003-KT-1
Equipment	:	DVD / VCR	Regulation	:	FCC Prat15B Subpart B
Model number	:	SD-V280UA	Date	:	July 8, 2002
Power	:	AC 120 V / 60 Hz			
Description	:	VCR Playback mode			

Engineer : Ryo Kojima

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	85.3	20.4	64.9	69.5	4.6
4	67.25	84.6	20.4	64.2	69.5	5.3

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	71.7	20.4	51.3	56.5	5.2
	65.75	70.6	20.4	50.2	56.5	6.3
4	62.75	71.0	20.4	50.6	56.5	5.9
	71.75	69.8	20.4	49.4	56.5	7.1

RF output level

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Lab.

Company	:	ORION ELECTRIC Co., Ltd.	Report Number	:	22LE0003-KT-1
Equipment	:	DVD / VCR	Regulation	:	FCC Prat15B Subpart B
Model number	:	SD-V280UA	Date	:	July 8, 2002
Power	:	AC 120 V / 60 Hz			
Description	:	DVD PLAY			

Engineer : Ryo Kojima

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	85.8	20.4	65.4	69.5	4.2
4	67.25	84.8	20.4	64.4	69.5	5.1

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	71.7	20.4	51.3	56.5	5.2
	65.75	70.5	20.4	50.1	56.5	6.4
4	62.75	71.1	20.4	50.7	56.5	5.8
	71.75	70.2	20.4	49.8	56.5	6.7

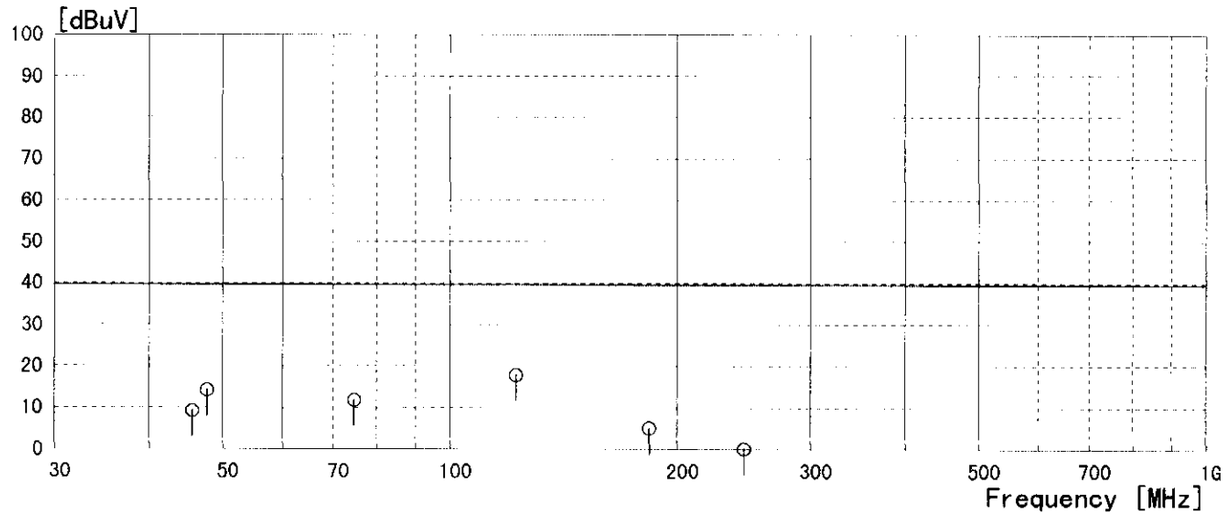
SPURIOUS FROM RF OUTPUT TERMINAL

A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: RECEIVE+REC (3CH OUTPUT)	TEST NO.	: 1
PORT	: RF OUTPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 0dBmV INPUT	TEST ENGINEER: RYO KODAMA	
	:		

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	45.707	30.8	-----	-21.6	9.2	-----	39.5	-----	30.3	-----
2	47.750	35.8	-----	-21.6	14.1	-----	39.5	-----	25.4	-----
3	74.746	33.3	-----	-21.5	11.8	-----	39.5	-----	27.7	-----
4	122.500	39.2	-----	-21.4	17.8	-----	39.5	-----	21.7	-----
5	183.750	26.4	-----	-21.4	5.0	-----	39.5	-----	34.5	-----
6	245.000	21.5	-----	-21.4	0.1	-----	39.5	-----	39.4	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP. GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

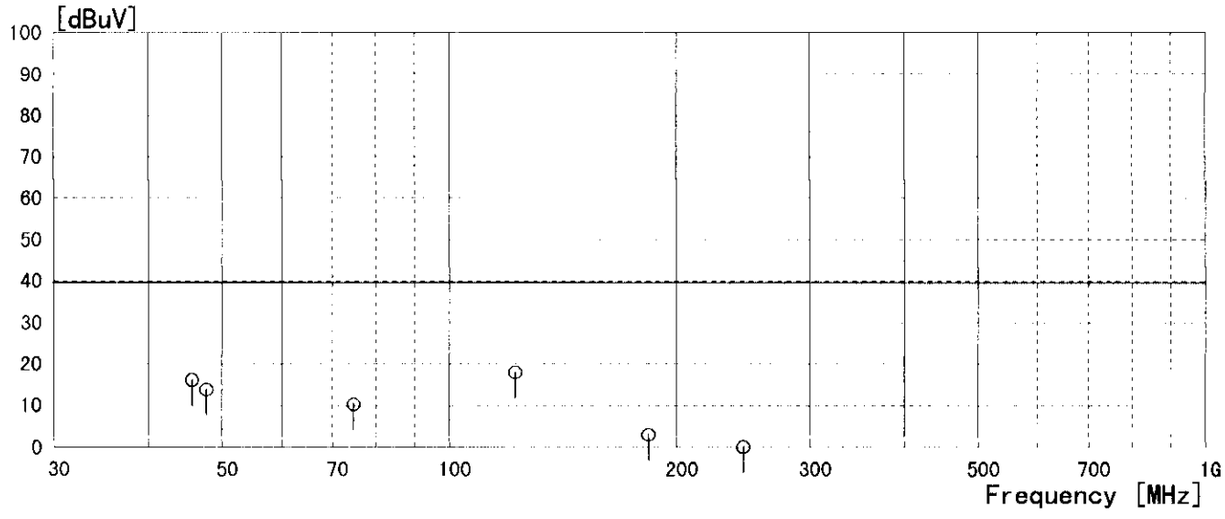
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: RECEIVE+REC (3CH OUTPUT)	TEST NO.	: 2
PORT	: RF OUTPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: 25dBmV INPUT		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	45.741	37.8	-----	-21.6	16.1	-----	39.5	-----	23.4	-----
2	47.743	35.4	-----	-21.6	13.8	-----	39.5	-----	25.7	-----
3	74.746	31.8	-----	-21.5	10.3	-----	39.5	-----	29.2	-----
4	122.500	39.4	-----	-21.4	18.1	-----	39.5	-----	21.4	-----
5	183.750	24.4	-----	-21.4	3.0	-----	39.5	-----	36.5	-----
6	245.000	21.5	-----	-21.4	0.1	-----	39.5	-----	39.4	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

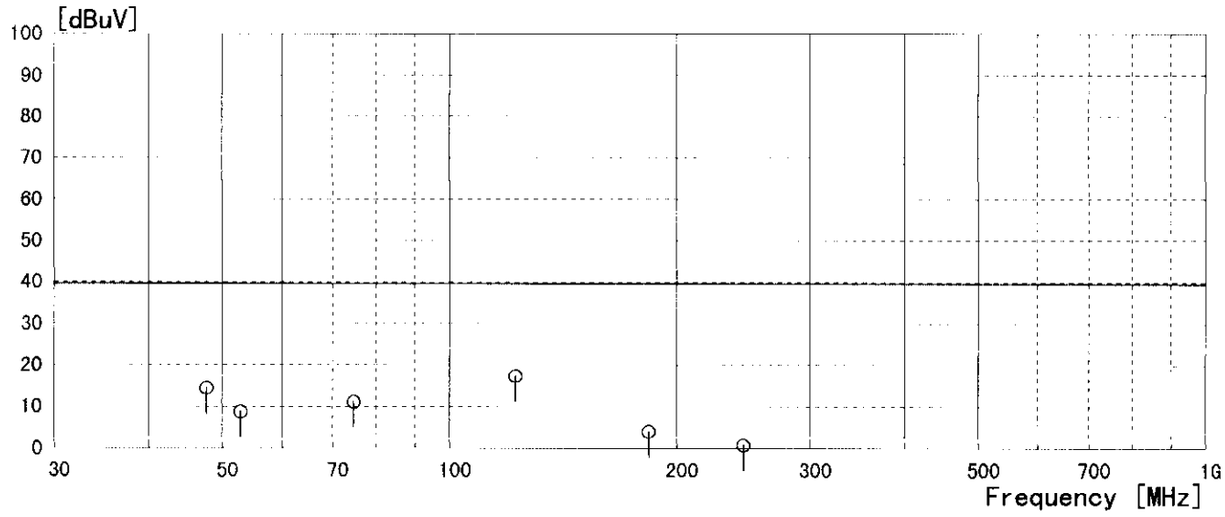
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(3CH OUTPUT)	TEST NO.	: 3
PORT	: RF OUTPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: 1Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	47.743	36.0	----	-21.6	14.4	----	39.5	----	25.1	----
2	52.967	30.3	----	-21.6	8.7	----	39.5	----	30.8	----
3	74.747	32.6	----	-21.5	11.1	----	39.5	----	28.4	----
4	122.500	38.7	----	-21.4	17.3	----	39.5	----	22.2	----
5	183.750	25.4	----	-21.4	4.0	----	39.5	----	35.5	----
6	245.000	22.2	----	-21.4	0.8	----	39.5	----	38.7	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

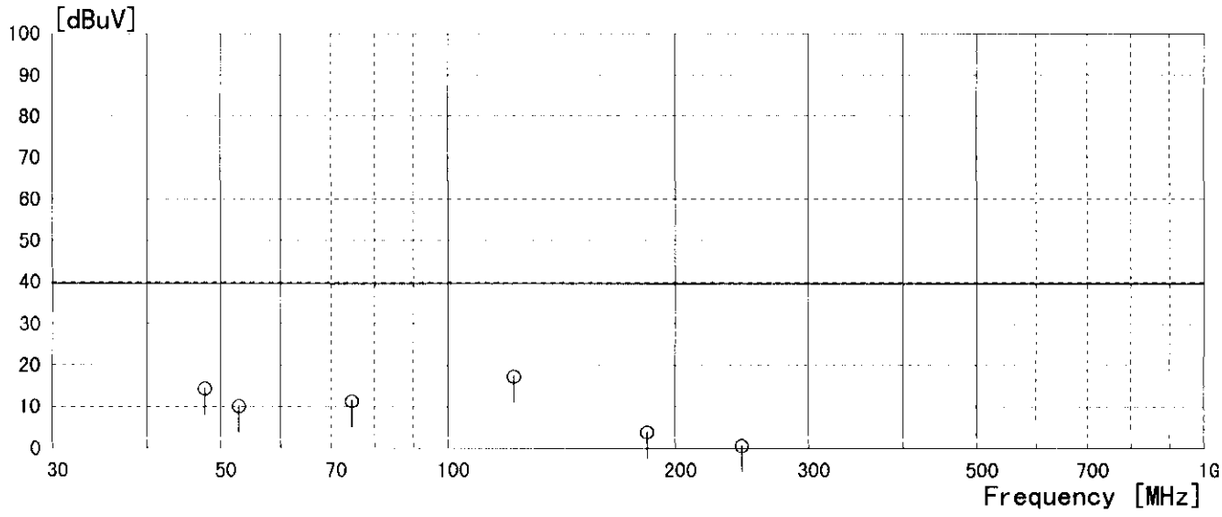
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(3CH OUTPUT)	TEST NO.	: 4
PORT	: RF OUTPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: 5Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	47.749	35.9	-----	-21.6	14.3	-----	39.5	-----	25.2	-----
2	53.000	31.7	-----	-21.6	10.1	-----	39.5	-----	29.4	-----
3	74.744	32.8	-----	-21.5	11.3	-----	39.5	-----	28.2	-----
4	122.500	38.7	-----	-21.4	17.3	-----	39.5	-----	22.2	-----
5	183.750	25.3	-----	-21.4	3.9	-----	39.5	-----	35.6	-----
6	245.000	22.0	-----	-21.4	0.6	-----	39.5	-----	38.9	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

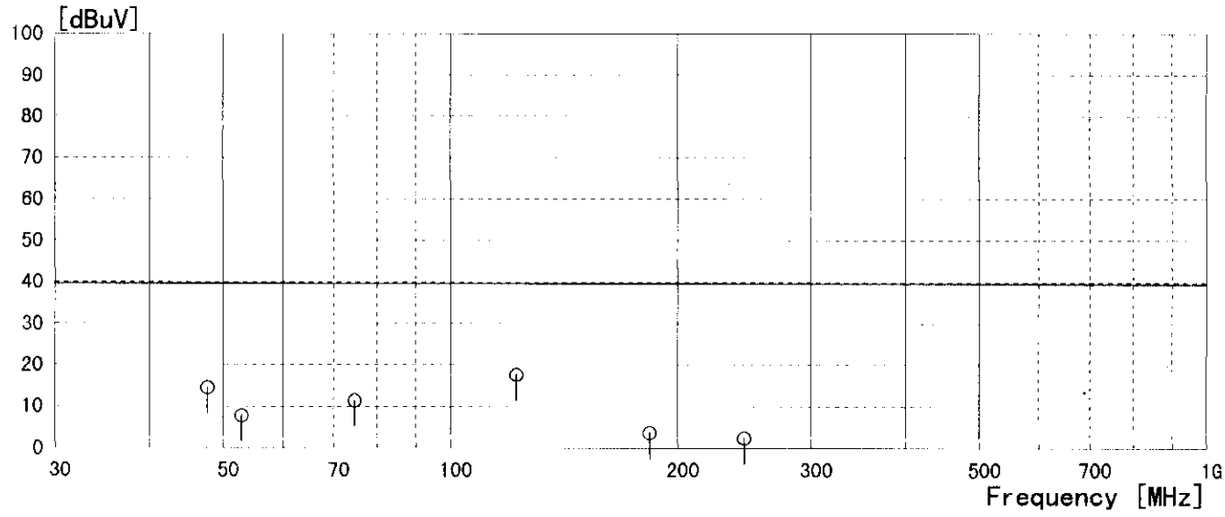
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(3CH OUTPUT)	TEST NO.	: 5
PORT	: RF OUTPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: 1Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	47.747	36.1	-----	-21.6	14.5	-----	39.5	-----	25.0	-----
2	52.977	29.3	-----	-21.6	7.7	-----	39.5	-----	31.8	-----
3	74.749	32.9	-----	-21.5	11.4	-----	39.5	-----	28.1	-----
4	122.500	39.0	-----	-21.4	17.6	-----	39.5	-----	21.9	-----
5	183.750	25.1	-----	-21.4	3.6	-----	39.5	-----	35.9	-----
6	245.000	23.8	-----	-21.4	2.4	-----	39.5	-----	37.1	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

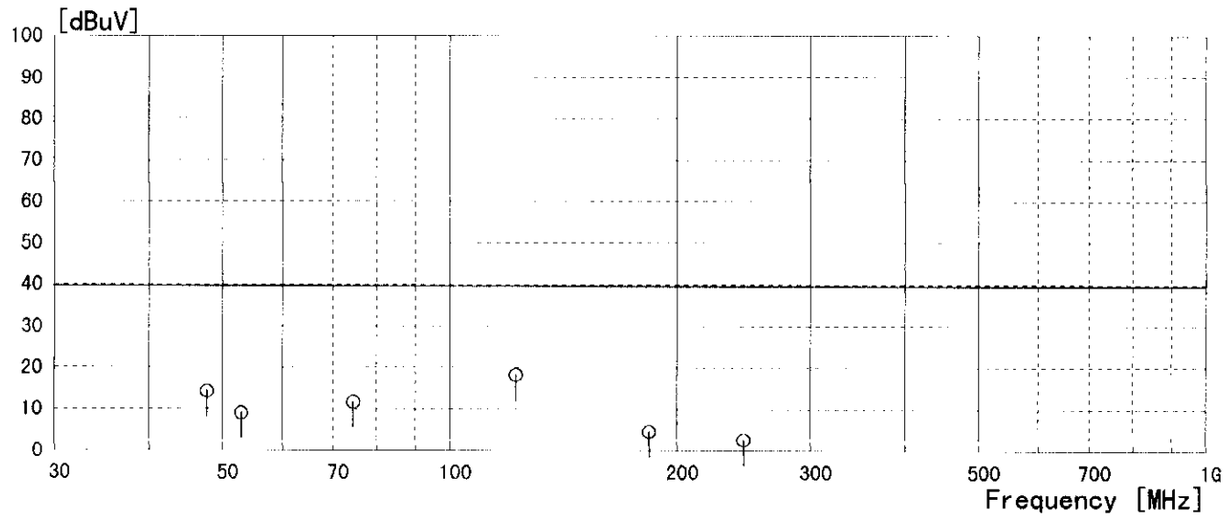
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(3CH OUTPUT)	TEST NO.	: 6
PORT	: RF OUTPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 5Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	47.746	35.9	-----	-21.6	14.3	-----	39.5	-----	25.2	-----
2	53.037	30.6	-----	-21.6	9.0	-----	39.5	-----	30.5	-----
3	74.571	33.1	-----	-21.5	11.7	-----	39.5	-----	27.8	-----
4	122.500	39.6	-----	-21.4	18.2	-----	39.5	-----	21.3	-----
5	183.750	26.0	-----	-21.4	4.6	-----	39.5	-----	34.9	-----
6	245.000	24.1	-----	-21.4	2.6	-----	39.5	-----	36.9	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

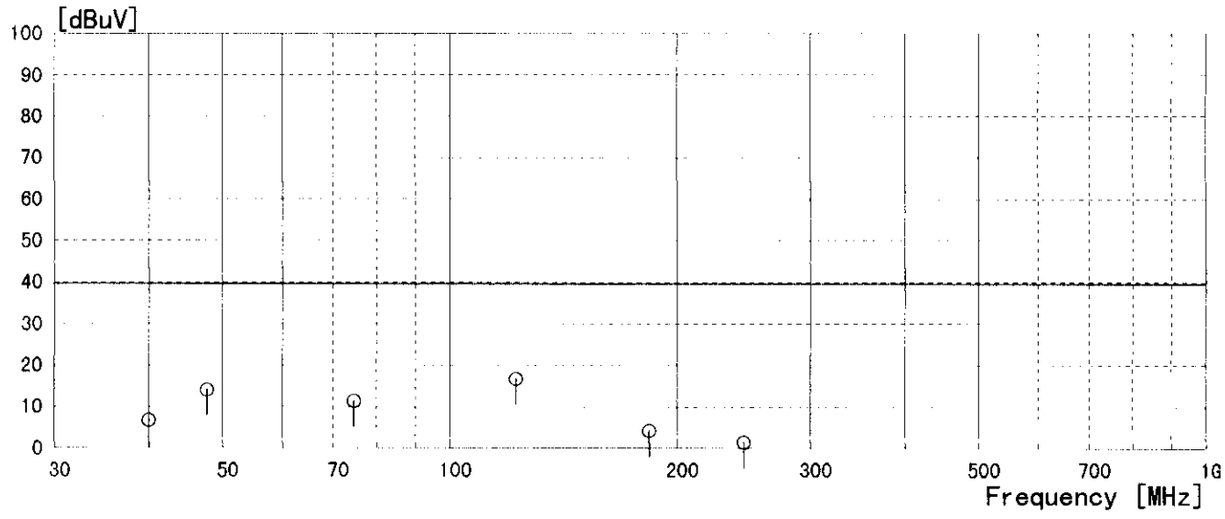
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: VCR PLAYBACK (3CH OUTPUT)	TEST NO.	: 7
PORT	: RF OUTPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: -		

TEST ENGINEER:RYO KOJTMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	39.999	28.4	-----	-21.6	6.7	-----	39.5	-----	32.8	-----
2	47.747	35.7	-----	-21.6	14.1	-----	39.5	-----	25.4	-----
3	74.740	32.8	-----	-21.5	11.4	-----	39.5	-----	28.1	-----
4	122.500	38.1	-----	-21.4	16.7	-----	39.5	-----	22.8	-----
5	183.750	25.6	-----	-21.4	4.2	-----	39.5	-----	35.3	-----
6	245.000	22.9	-----	-21.4	1.4	-----	39.5	-----	38.1	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

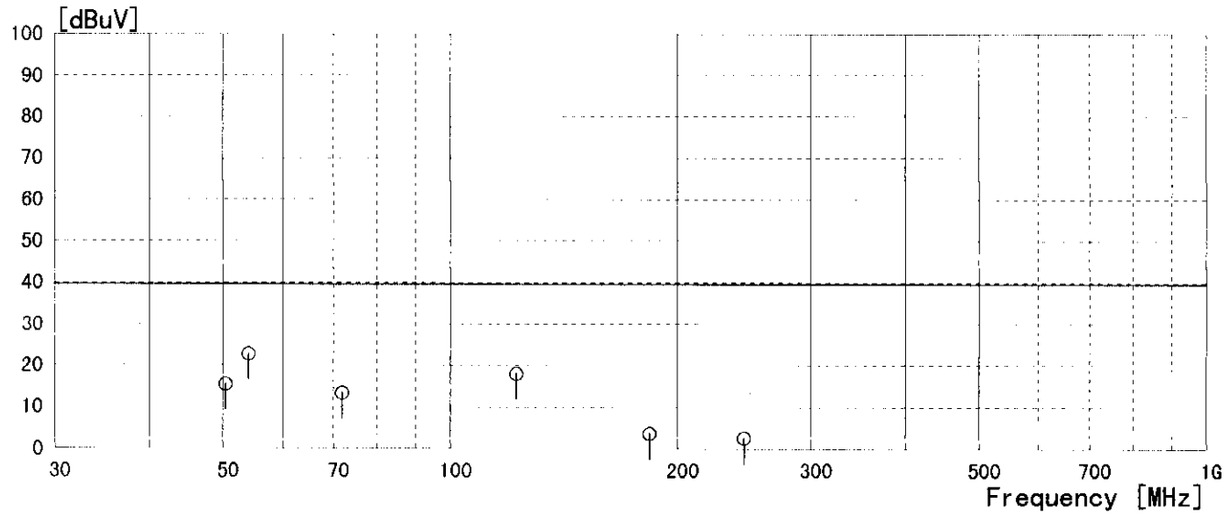
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPEMENT : DVD / VCR
MODEL NAME : SD-V280UA
OPERATION MODE: DVD PLAY (3CH OUTPUT)
PORT : RF OUTPUT TERMINAL
POWER : AC120V/60Hz
REMARKS : -

REPORT No. : 2LE0003-KT-1
DATE : JULY 08, 2002
REGULATION : FCC PART15 SUBPART B
TEST NO. : 8

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	50.516	37.0	----	-21.6	15.4	----	39.5	----	24.1	----
2	54.127	44.3	----	-21.6	22.7	----	39.5	----	16.8	----
3	71.982	34.8	----	-21.5	13.3	----	39.5	----	26.2	----
4	122.500	39.3	----	-21.4	17.9	----	39.5	----	21.6	----
5	183.750	25.0	----	-21.4	3.6	----	39.5	----	35.9	----
6	245.000	23.9	----	-21.4	2.5	----	39.5	----	37.0	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

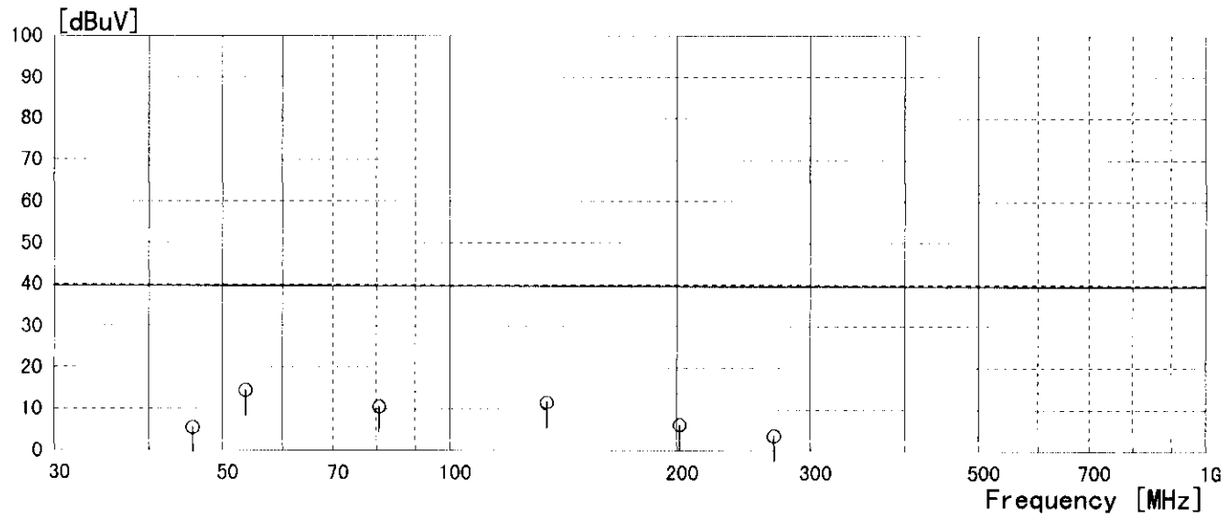
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: RECEIVE+REC (4CH OUTPUT)	TEST NO.	: 9
PORT	: RF OUTPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: 0dBmV INPUT		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	45.744	27.1	-----	-21.6	5.5	-----	39.5	-----	34.0	-----
2	53.749	36.0	-----	-21.6	14.4	-----	39.5	-----	25.1	-----
3	80.750	32.0	-----	-21.4	10.6	-----	39.5	-----	28.9	-----
4	134.500	33.0	-----	-21.4	11.6	-----	39.5	-----	27.9	-----
5	201.750	27.7	-----	-21.4	6.2	-----	39.5	-----	33.3	-----
6	269.000	25.1	-----	-21.4	3.6	-----	39.5	-----	35.9	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



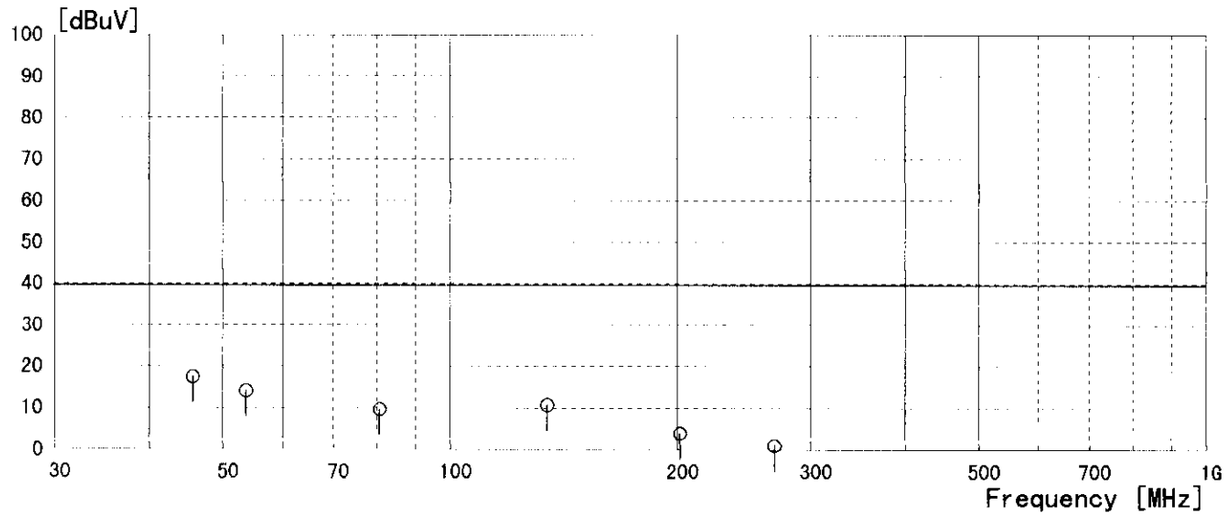
SPURIOUS FROM RF OUTPUT TERMINAL

A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: RECEIVE+REC (4CH OUTPUT)	TEST NO.	: 10
PORT	: RF OUTPUT TERMINAL		:
POWER	: AC120V/60Hz		:
REMARKS	: 25dBmV INPUT		:
	:	TEST ENGINEER	: RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	45.741	39.1	----	-21.6	17.5	----	39.5	----	22.0	----
2	53.747	35.6	----	-21.6	14.0	----	39.5	----	25.5	----
3	80.748	31.0	----	-21.4	9.6	----	39.5	----	29.9	----
4	134.500	32.1	----	-21.4	10.7	----	39.5	----	28.8	----
5	201.750	25.3	----	-21.4	3.9	----	39.5	----	35.6	----
6	269.000	22.4	----	-21.4	0.9	----	39.5	----	38.6	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

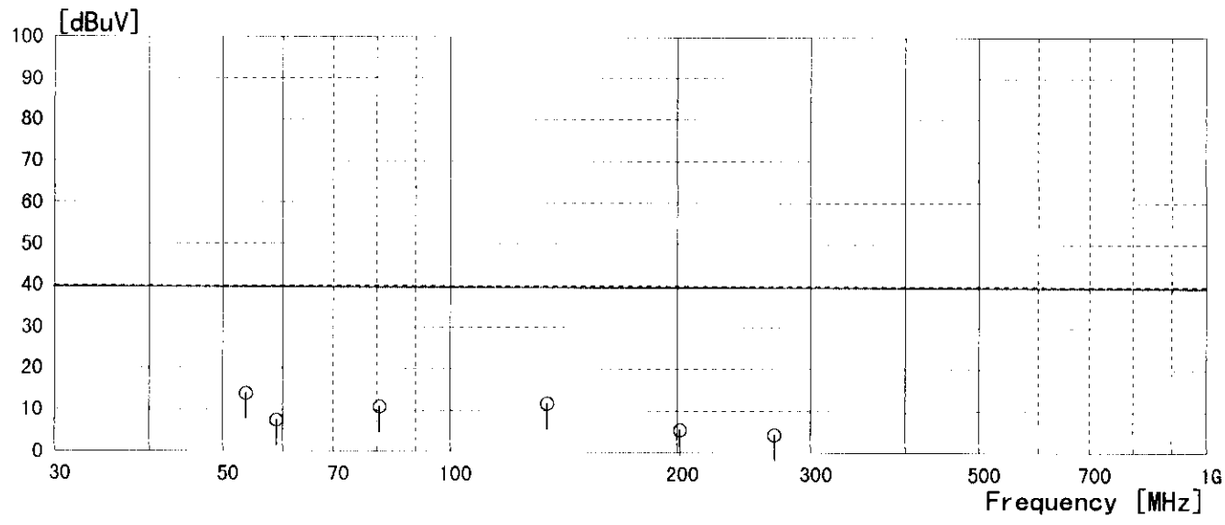
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(4CH OUTPUT)	TEST NO.	: 11
PORT	: RF OUTPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 1Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	53.750	35.5	-----	-21.6	13.9	-----	39.5	-----	25.6	-----
2	58.959	29.1	-----	-21.5	7.5	-----	39.5	-----	32.0	-----
3	80.744	32.3	-----	-21.4	10.8	-----	39.5	-----	28.7	-----
4	134.500	33.0	-----	-21.4	11.6	-----	39.5	-----	27.9	-----
5	201.750	26.8	-----	-21.4	5.4	-----	39.5	-----	34.1	-----
6	269.000	25.7	-----	-21.4	4.2	-----	39.5	-----	35.3	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

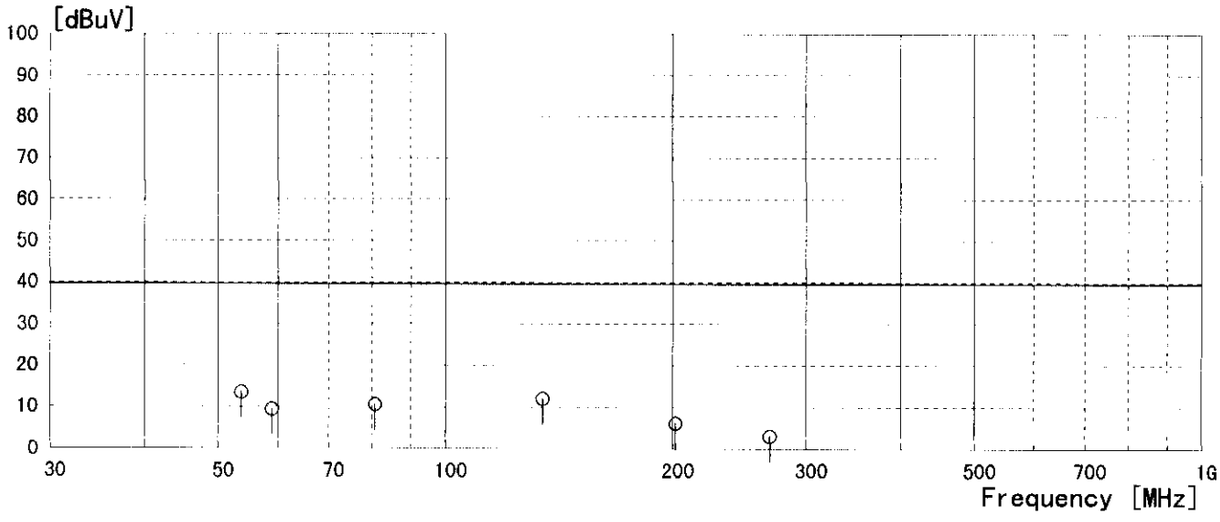
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPEMENT : DVD / VCR
MODEL NAME : SD-V280UA
OPERATION MODE: LINE IN + REC(4CH OUTPUT)
PORT : RF OUTPUT TERMINAL
POWER : AC120V/60Hz
REMARKS : 5Vp-p INPUT
REMARKS : REAR LINE IN

REPORT No. : 2LE0003-KT-1
DATE : JULY 08, 2002
REGULATION : FCC PART15 SUBPART B
TEST NO. : 12
:

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	53.746	35.1	-----	-21.6	13.5	-----	39.5	-----	26.0	-----
2	59.013	31.0	-----	-21.5	9.5	-----	39.5	-----	30.0	-----
3	80.747	31.9	-----	-21.4	10.5	-----	39.5	-----	29.0	-----
4	134.500	33.4	-----	-21.4	12.0	-----	39.5	-----	27.5	-----
5	201.750	27.5	-----	-21.4	6.0	-----	39.5	-----	33.5	-----
6	269.000	24.4	-----	-21.4	3.0	-----	39.5	-----	36.5	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP. GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

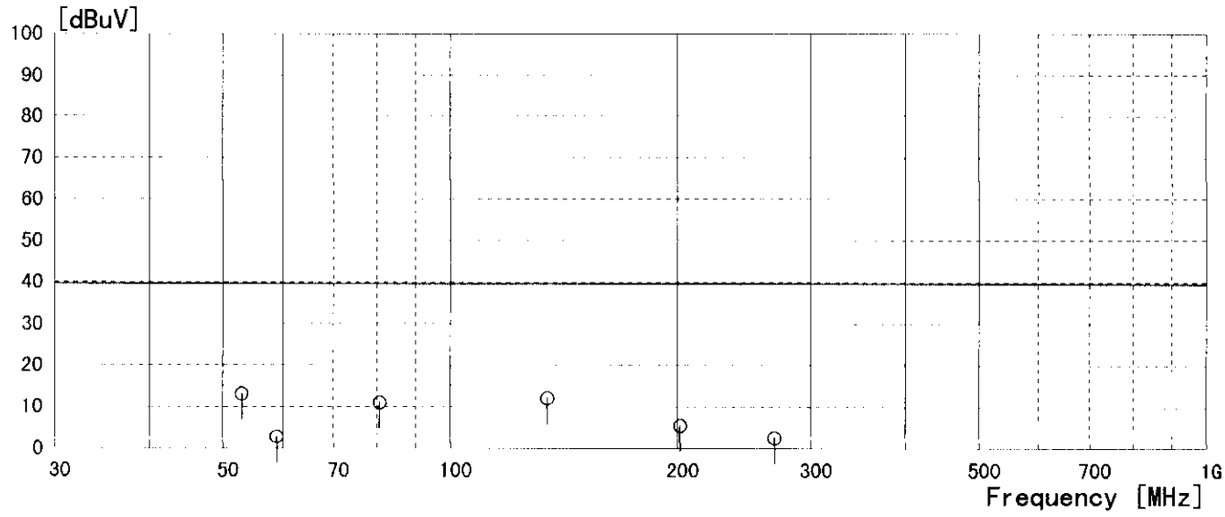
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(4CH OUTPUT)	TEST NO.	: 13
PORT	: RF OUTPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 1Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	53.037	34.6	-----	-21.6	13.0	-----	39.5	-----	26.5	-----
2	58.987	24.3	-----	-21.5	2.7	-----	39.5	-----	36.8	-----
3	80.743	32.3	-----	-21.4	10.9	-----	39.5	-----	28.6	-----
4	134.500	33.4	-----	-21.4	12.0	-----	39.5	-----	27.5	-----
5	201.750	26.9	-----	-21.4	5.5	-----	39.5	-----	34.0	-----
6	269.000	24.0	-----	-21.4	2.6	-----	39.5	-----	36.9	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



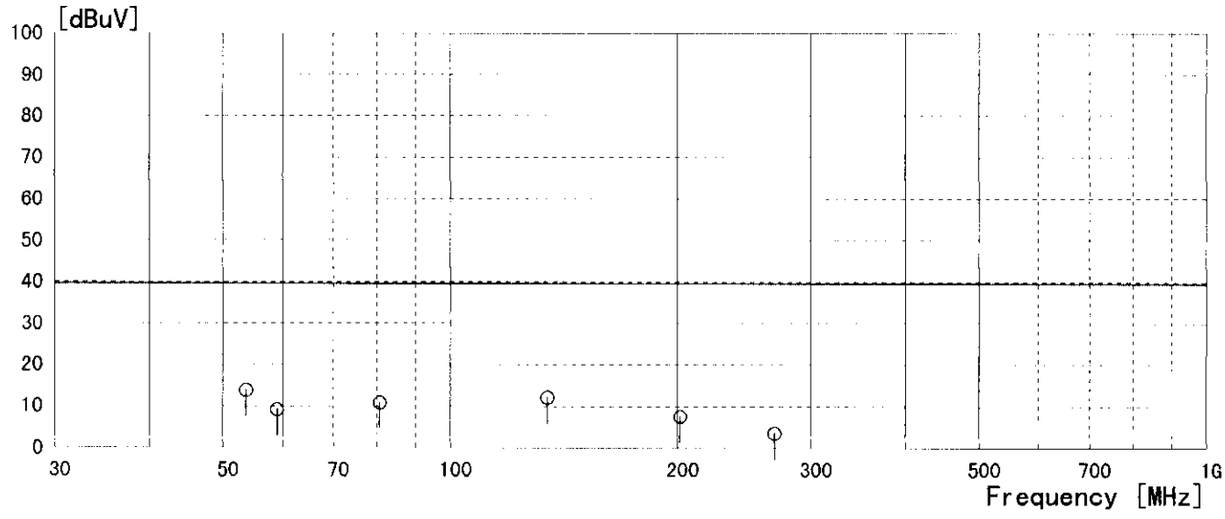
SPURIOUS FROM RF OUTPUT TERMINAL

A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(4CH OUTPUT)	TEST NO.	: 14
PORT	: RF OUTPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 5Vp-p INPUT	TEST ENGINEER:RYO KOJIMA	
REMARKS	: FRONT LINE IN		

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	53.750	35.3	-----	-21.6	13.7	----	39.5	-----	25.8	----
2	59.053	30.7	-----	-21.5	9.1	----	39.5	-----	30.4	----
3	80.743	32.3	-----	-21.4	10.8	----	39.5	-----	28.7	----
4	134.500	33.4	-----	-21.4	12.0	----	39.5	-----	27.5	----
5	201.750	28.9	-----	-21.4	7.5	----	39.5	-----	32.0	----
6	269.000	24.9	-----	-21.4	3.5	----	39.5	-----	36.0	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

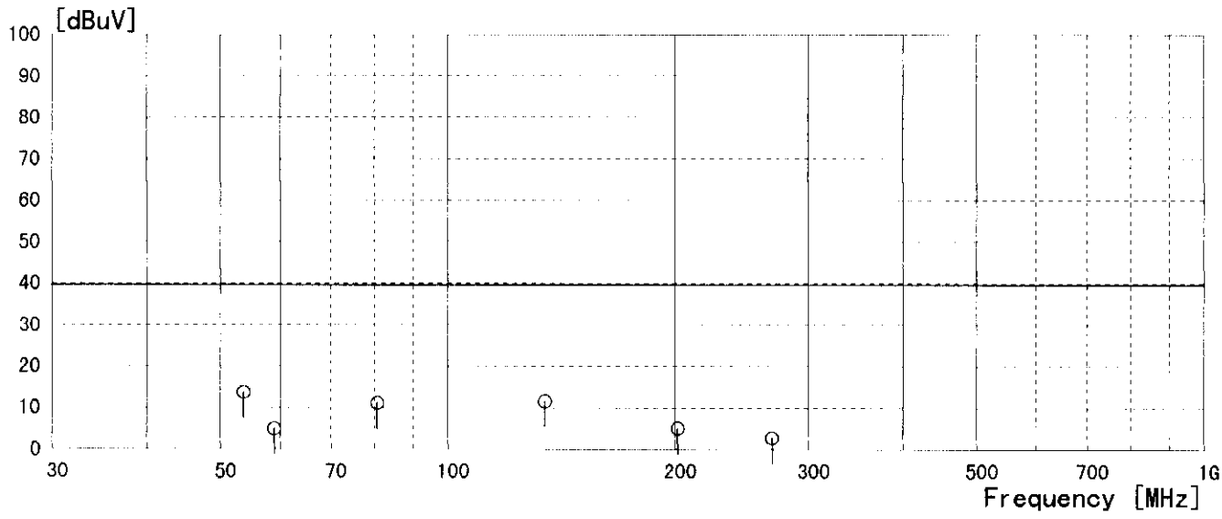
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: VCR PLAYBACK (4CH OUTPUT)	TEST NO.	: 15
PORT	: RF OUTPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: -		
	:		

TEST ENGINEER: RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	53.744	35.2	-----	-21.6	13.7	-----	39.5	-----	25.8	-----
2	59.013	26.5	-----	-21.5	5.0	-----	39.5	-----	34.5	-----
3	80.740	32.5	-----	-21.4	11.1	-----	39.5	-----	28.4	-----
4	134.500	32.9	-----	-21.4	11.5	-----	39.5	-----	28.0	-----
5	201.750	26.4	-----	-21.4	5.0	-----	39.5	-----	34.5	-----
6	269.000	24.2	-----	-21.4	2.7	-----	39.5	-----	36.8	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP. GAIN



SPURIOUS FROM RF OUTPUT TERMINAL

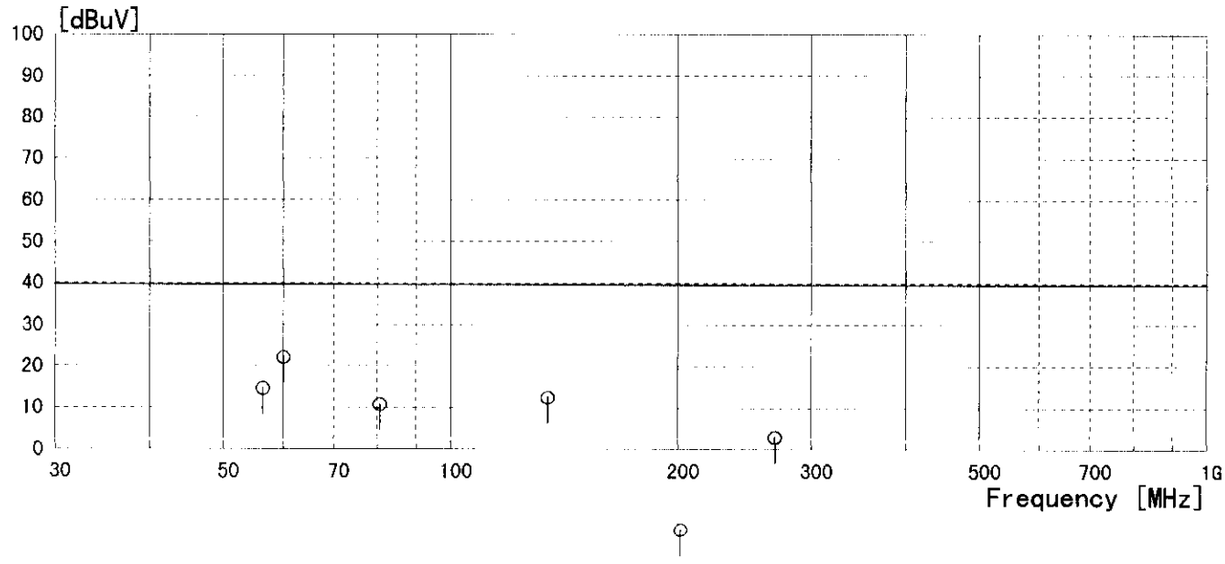
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 2LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: DVD PLAY (4CH OUTPUT)	TEST NO.	: 16
PORT	: RF OUTPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: -		
	:		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	56.527	36.1	-----	-21.6	14.6	-----	39.5	-----	24.9	-----
2	60.129	43.7	-----	-21.5	22.1	-----	39.5	-----	17.4	-----
3	80.669	32.2	-----	-21.4	10.7	-----	39.5	-----	28.8	-----
4	134.500	33.8	-----	-21.4	12.4	-----	39.5	-----	27.1	-----
5	201.750	2.0	-----	-21.4	-19.4	-----	39.5	-----	58.9	-----
6	269.000	24.3	-----	-21.4	2.9	-----	39.5	-----	36.6	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

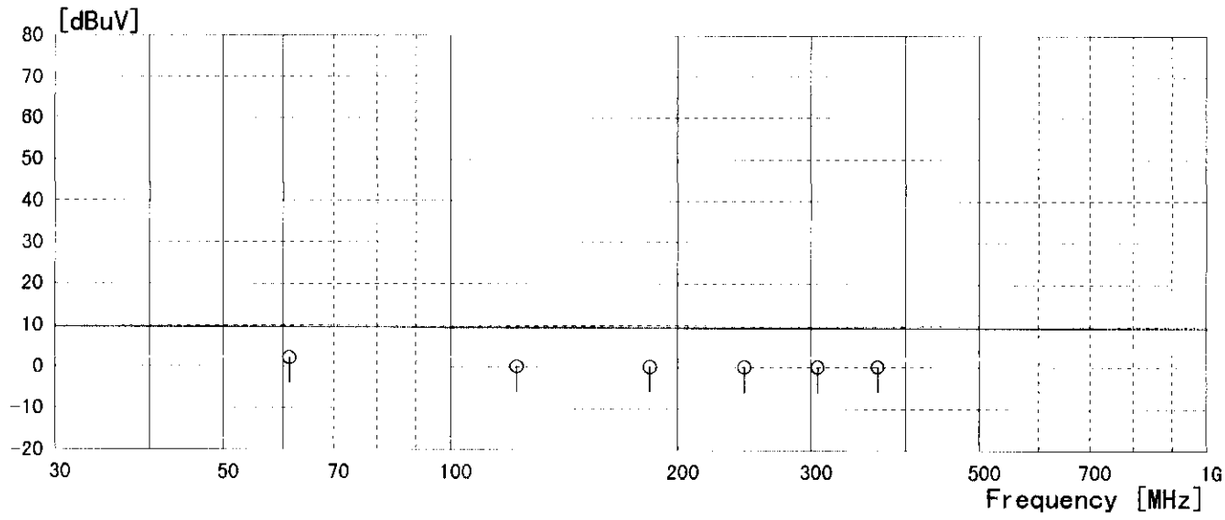
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(3CH OUTPUT)	TEST NO.	: 1
PORT	: RF INPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 1Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	61.250	23.7	-----	-21.5	2.2	----	9.5	----	7.3	----
2	122.500	21.5	-----	-21.4	0.1	----	9.5	----	9.4	----
3	183.750	21.5	-----	-21.4	0.1	----	9.5	----	9.4	----
4	245.000	21.5	-----	-21.4	0.1	----	9.5	----	9.4	----
5	306.250	21.5	-----	-21.4	0.1	----	9.5	----	9.4	----
6	367.500	21.5	-----	-21.4	0.1	----	9.5	----	9.4	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



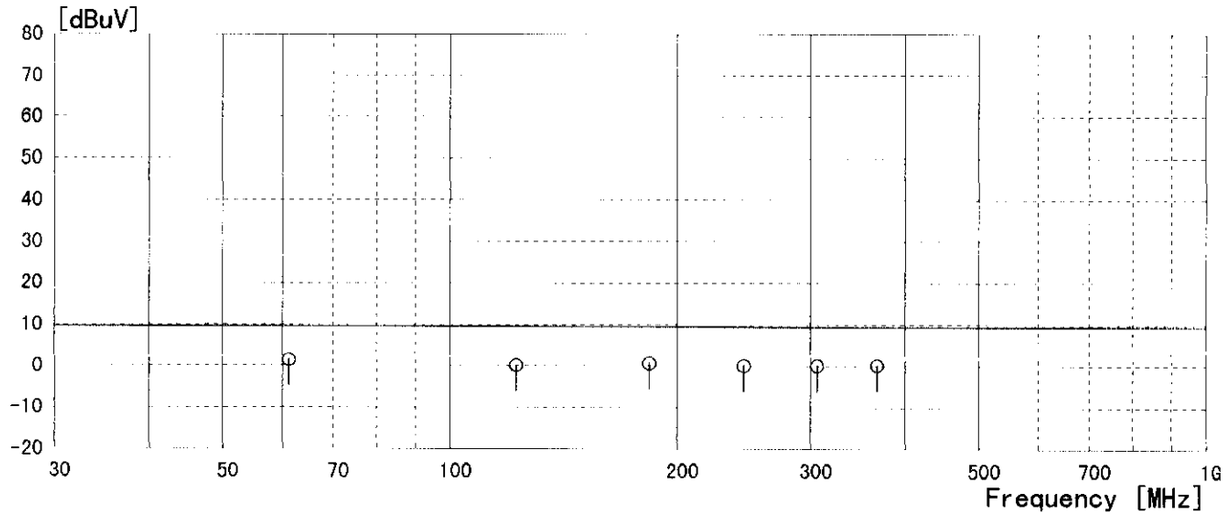
Antenna transfer switch

A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(3CH OUTPUT)	TEST NO.	: 2
PORT	: RF INPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 5Vp-p INPUT	TEST ENGINEER:RYO KOJIMA	
REMARKS	: REAR LINE IN		

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	61.250	22.9	----	-21.5	1.4	----	9.5	----	8.1	----
2	122.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	183.750	22.0	----	-21.4	0.6	----	9.5	----	8.9	----
4	245.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	306.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	367.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

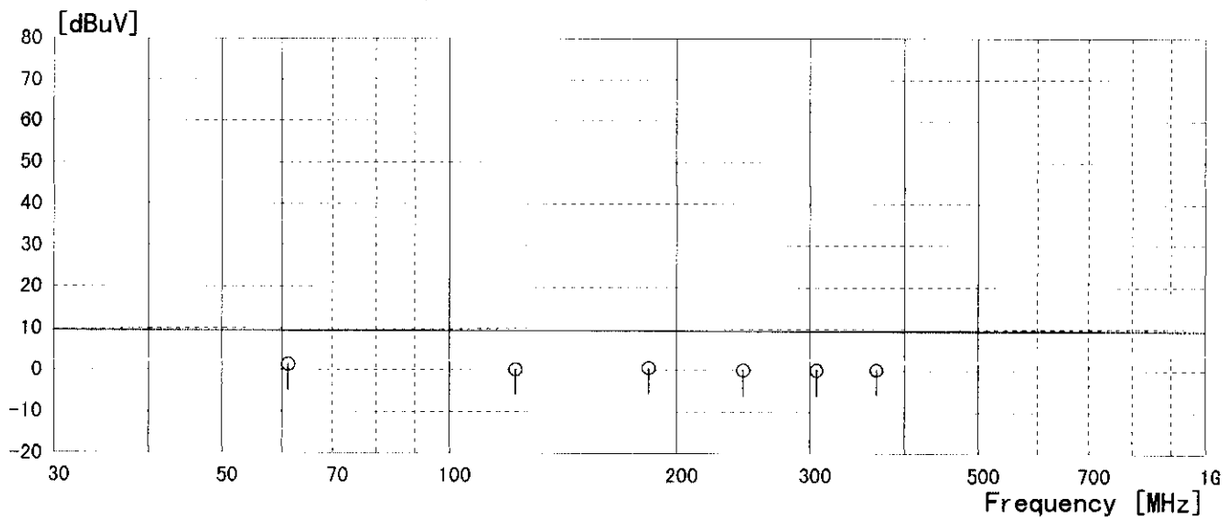
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(3CH OUTPUT)	TEST NO.	: 3
PORT	: RF INPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: 1Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	61.250	22.8	-----	-21.5	1.3	-----	9.5	-----	8.2	-----
2	122.500	21.5	-----	-21.4	0.1	-----	9.5	-----	9.4	-----
3	183.750	21.9	-----	-21.4	0.5	-----	9.5	-----	9.0	-----
4	245.000	21.5	-----	-21.4	0.1	-----	9.5	-----	9.4	-----
5	306.250	21.5	-----	-21.4	0.1	-----	9.5	-----	9.4	-----
6	367.500	21.5	-----	-21.4	0.1	-----	9.5	-----	9.4	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

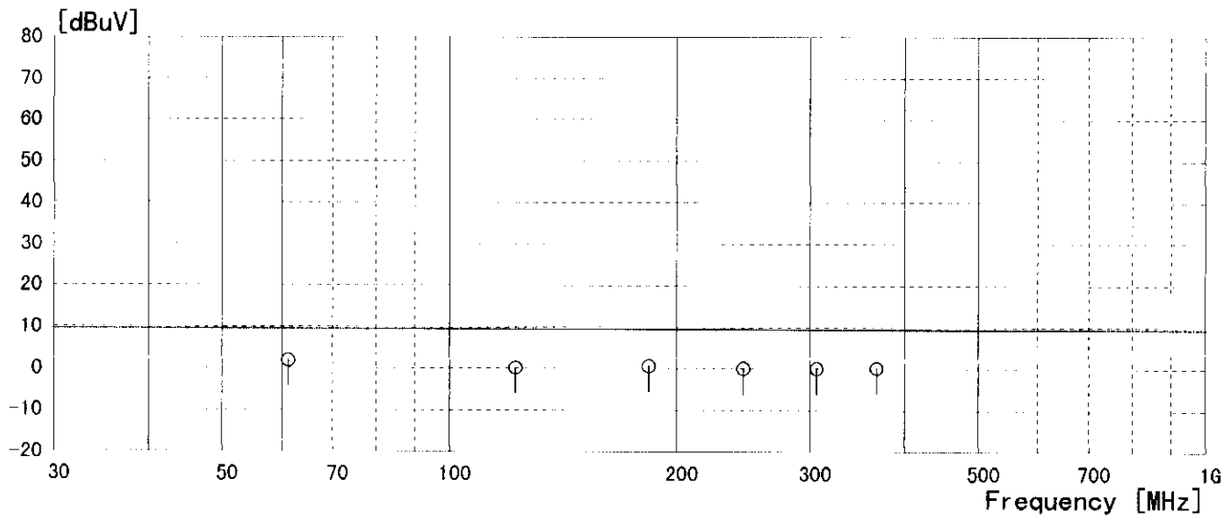
A-PEX INTERNATIONAL CO., LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(3CH OUTPUT)	TEST NO.	: 4
PORT	: RF INPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 5Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	61.250	23.4	----	-21.5	1.9	----	9.5	----	7.6	----
2	122.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	183.750	22.0	----	-21.4	0.6	----	9.5	----	8.9	----
4	245.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	306.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	367.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



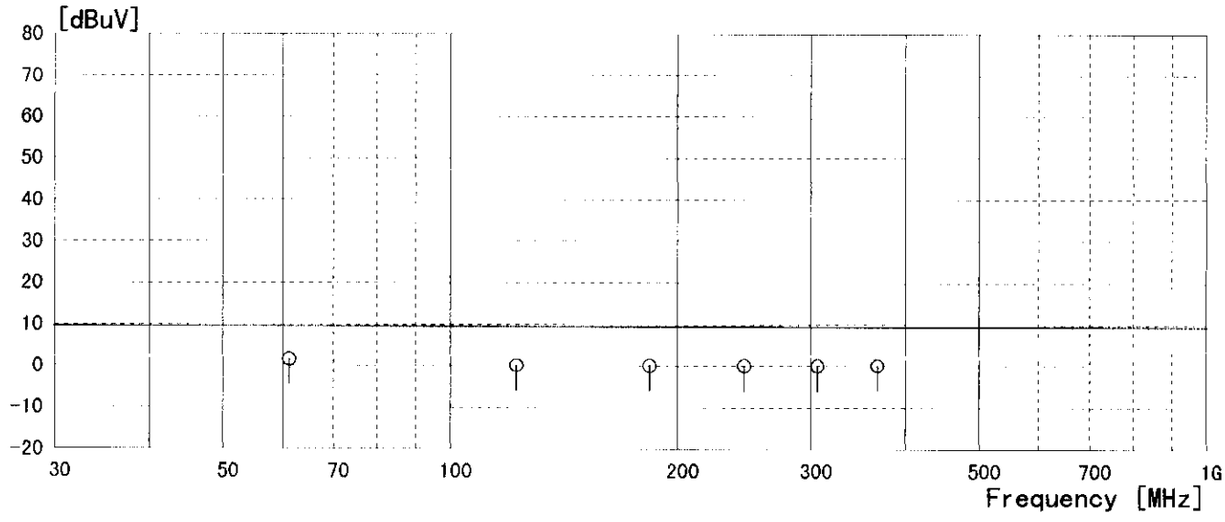
Antenna transfer switch

A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: VCR PLAYBACK (3CH OUTPUT)	TEST NO.	: 5
PORT	: RF INPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: -		
	:	TEST ENGINEER:RYO KOJIMA	

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	61.250	23.2	----	-21.5	1.6	----	9.5	----	7.9	----
2	122.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	183.750	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
4	245.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	306.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	367.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

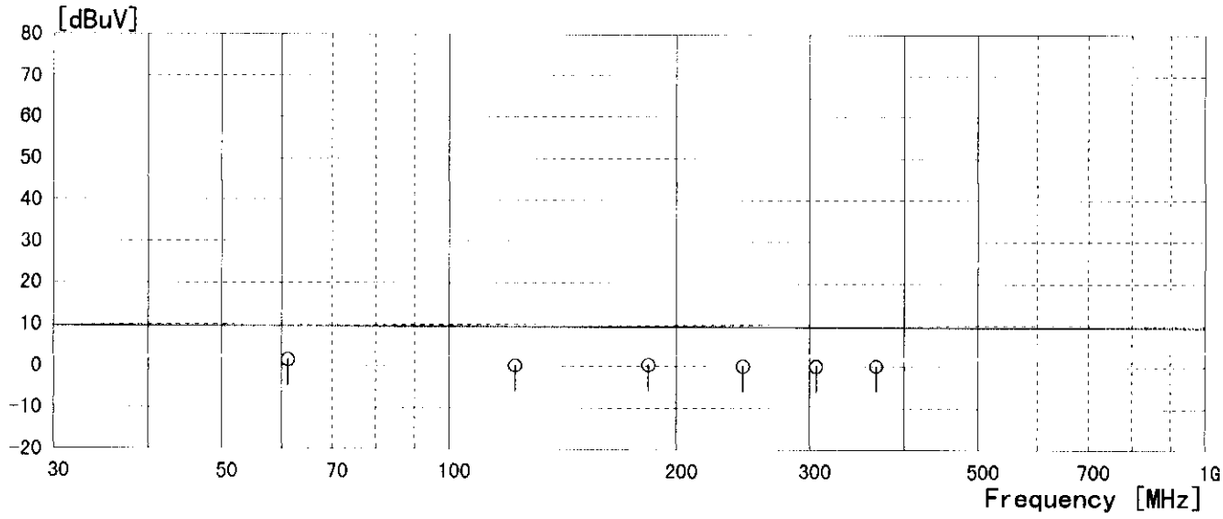
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPEMENT : DVD / VCR
MODEL NAME : SD-V280UA
OPERATION MODE: DVD PLAY (3CH OUTPUT)
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS : -

REPORT No. : 22LE0003-KT-1
DATE : JULY 08, 2002
REGULATION : FCC PART15 SUBPART B
TEST NO. : 6

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	61.250	23.0	----	-21.5	1.4	----	9.5	----	8.1	----
2	122.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	183.750	21.7	----	-21.4	0.3	----	9.5	----	9.2	----
4	245.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	306.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	367.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

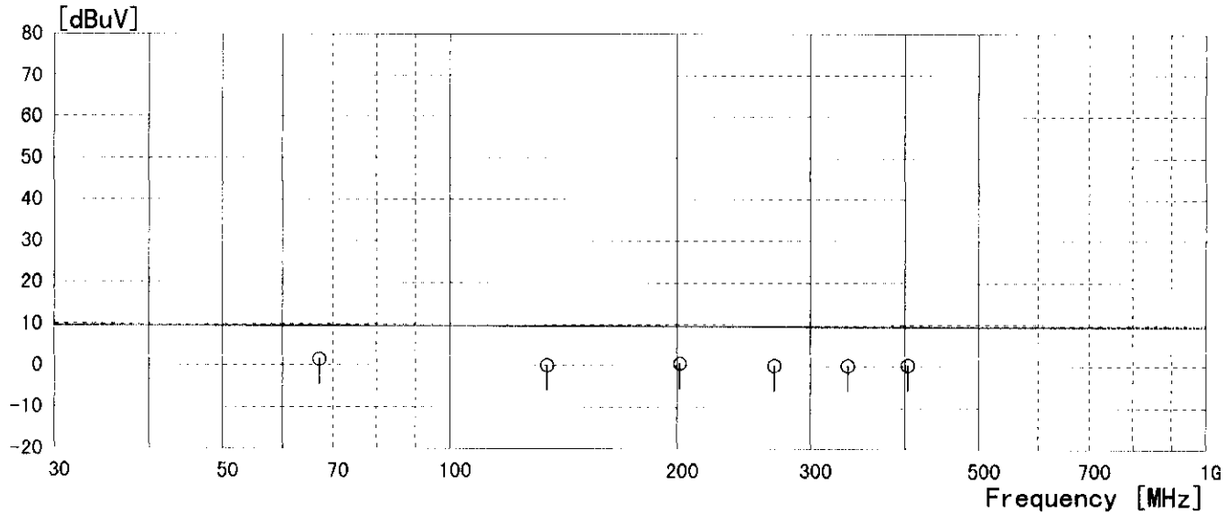
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(4CH OUTPUT)	TEST NO.	: 7
PORT	: RF INPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: 1Vp-p INPUT		
REMARKS	: REAR LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	67.250	23.0	----	-21.5	1.5	----	9.5	----	8.0	----
2	134.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	201.750	22.0	----	-21.4	0.6	----	9.5	----	8.9	----
4	269.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	336.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	403.500	21.5	----	-21.3	0.2	----	9.5	----	9.3	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



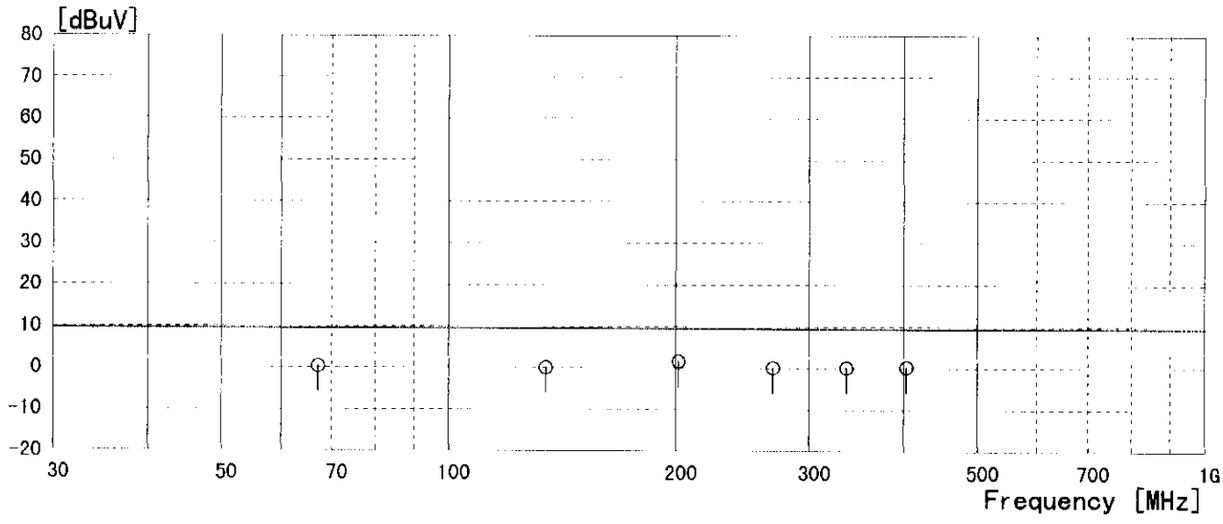
Antenna transfer switch

A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(4CH OUTPUT)	TEST NO.	: 8
PORT	: RF INPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 5Vp-p INPUT		
REMARKS	: REAR LINE IN	TEST ENGINEER:RYO KOJIMA	

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	67.250	21.9	----	-21.5	0.4	----	9.5	----	9.1	----
2	134.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	201.750	23.0	----	-21.4	1.6	----	9.5	----	7.9	----
4	269.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	336.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	403.500	21.5	----	-21.3	0.2	----	9.5	----	9.3	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

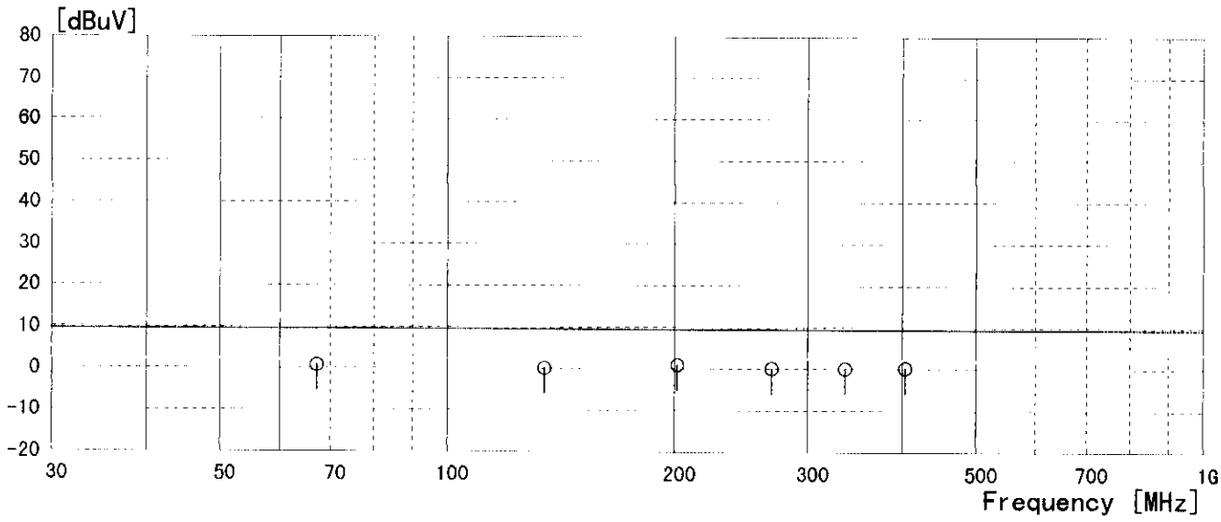
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPEMENT : DVD / VCR
MODEL NAME : SD-V280UA
OPERATION MODE: LINE IN + REC(4CH OUTPUT)
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS : 1Vp-p INPUT
REMARKS : FRONT LINE IN

REPORT No. : 22LE0003-KT-1
DATE : JULY 08, 2002
REGULATION : FCC PART15 SUBPART B
TEST NO. : 9
:

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	67.250	22.3	-----	-21.5	0.8	-----	9.5	-----	8.7	-----
2	134.500	21.5	-----	-21.4	0.1	-----	9.5	-----	9.4	-----
3	201.750	22.3	-----	-21.4	0.9	-----	9.5	-----	8.6	-----
4	269.000	21.5	-----	-21.4	0.1	-----	9.5	-----	9.4	-----
5	336.250	21.5	-----	-21.4	0.1	-----	9.5	-----	9.4	-----
6	403.500	21.5	-----	-21.3	0.2	-----	9.5	-----	9.3	-----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

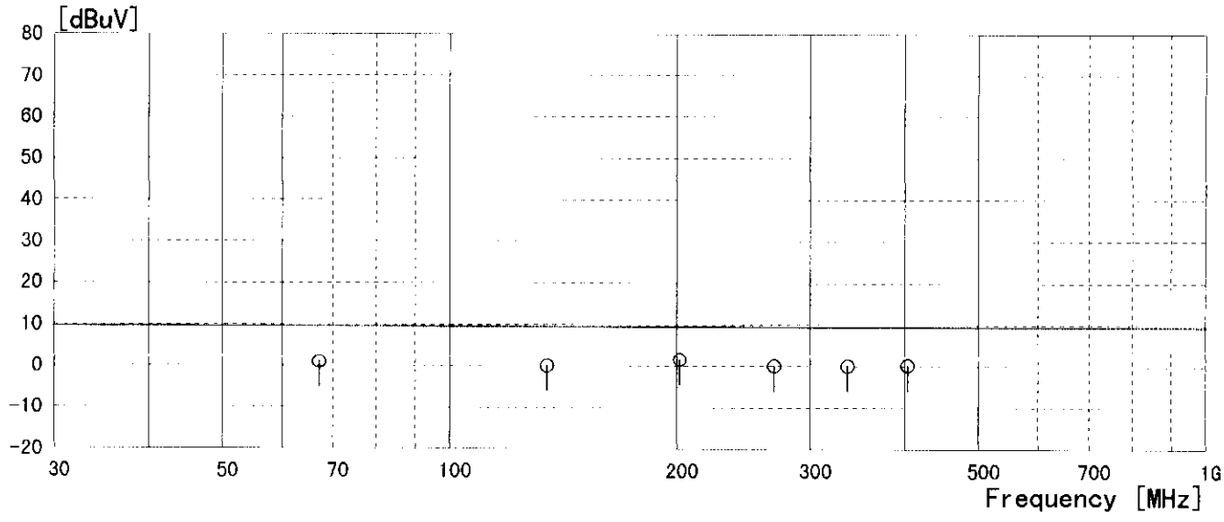
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: LINE IN + REC(4CH OUTPUT)	TEST NO.	: 10
PORT	: RF INPUT TERMINAL		:
POWER	: AC120V/60Hz		
REMARKS	: 5Vp-p INPUT		
REMARKS	: FRONT LINE IN		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	67.250	22.5	----	-21.5	1.0	----	9.5	----	8.5	----
2	134.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	201.750	22.9	----	-21.4	1.5	----	9.5	----	8.0	----
4	269.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	336.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	403.500	21.5	----	-21.3	0.2	----	9.5	----	9.3	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

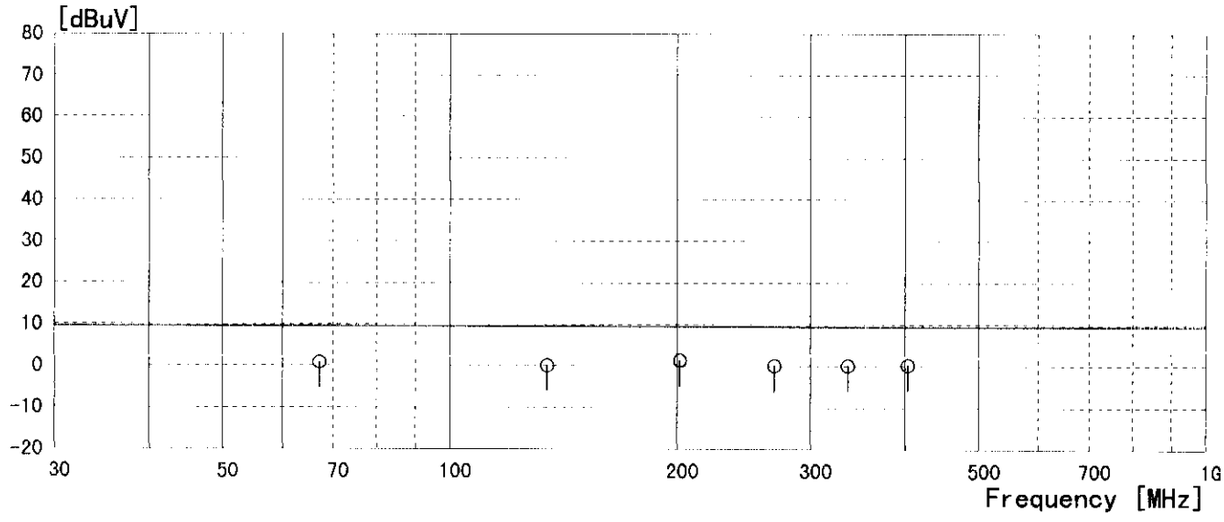
A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

COMPANY	: ORION ELECTRIC CO., LTD.	REPORT No.	: 22LE0003-KT-1
EQUIPEMENT	: DVD / VCR	DATE	: JULY 08, 2002
MODEL NAME	: SD-V280UA	REGULATION	: FCC PART15 SUBPART B
OPERATION MODE	: VCR PLAYBACK (4CH OUTPUT)	TEST NO.	: 11
PORT	: RF INPUT TERMINAL		
POWER	: AC120V/60Hz		
REMARKS	: -		

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	67.250	22.3	----	-21.5	0.8	----	9.5	----	8.7	----
2	134.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	201.750	22.8	----	-21.4	1.3	----	9.5	----	8.2	----
4	269.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	336.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	403.500	21.5	----	-21.3	0.2	----	9.5	----	9.3	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP.GAIN



Antenna transfer switch

A-PEX INTERNATIONAL CO.,LTD.
KANTO OFFICE EMC LAB.

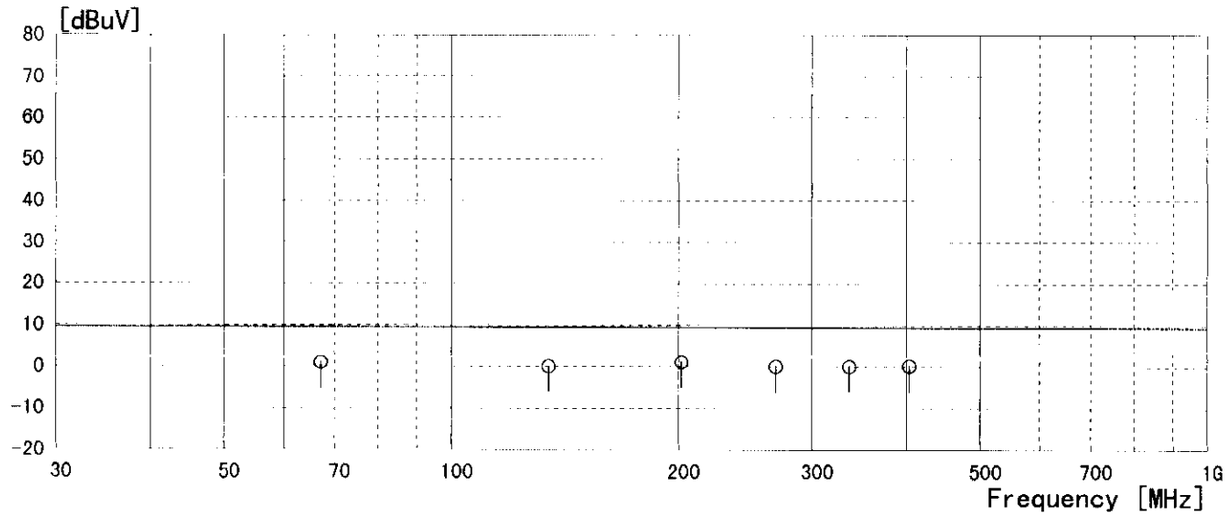
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPEMENT : DVD / VCR
MODEL NAME : SD-V280UA
OPERATION MODE : DVD PLAY (4CH OUTPUT)
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS : -

REPORT No. : 22LE0003-KT-1
DATE : JULY 08, 2002
REGULATION : FCC PART15 SUBPART B
TEST NO. : 12

TEST ENGINEER:RYO KOJIMA

No.	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV
	[MHz]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
1	67.250	22.5	----	-21.5	1.0	----	9.5	----	8.5	----
2	134.500	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
3	201.750	22.6	----	-21.4	1.1	----	9.5	----	8.4	----
4	269.000	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
5	336.250	21.5	----	-21.4	0.1	----	9.5	----	9.4	----
6	403.500	21.5	----	-21.3	0.2	----	9.5	----	9.3	----

RESULT=READING+CABLE LOSS+PAD LOSS-AMP. GAIN



Picture sensitivity test

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Laboratory

Company : ORION ELECTRIC Co., Ltd.
Equipment : DVD / VCR
Model number : SD-V280UA
Power : AC 120 V / 60 Hz
Description : Receive mode

Report Number : 22LE0003-KT-1
Regulation : FCC Prat15B Subpart B
Date : July 12, 2002

Engineer : Ryo Kojima

Ch. [VHF]	Frequency [MHz]	Sensitivity [dBuV]	[uV]	Ch. [UHF]	Frequency [MHz]	Sensitivity [dBuV]	[uV]
2	55.25	20.0	10.0	14	471.25	23.7	15.3
3	61.25	20.9	11.1	20	507.25	22.3	13.0
4	67.25	19.8	9.8	26	543.25	25.2	18.2
5	77.25	20.5	10.6	32	579.25	22.8	13.8
6	83.25	20.9	11.1	38	615.25	22.1	12.7
7	175.25	22.6	13.5	44	651.25	24.8	17.4
8	181.25	21.9	12.4	50	687.25	24.6	17.0
9	187.25	21.4	11.7	56	723.25	25.1	18.0
10	193.25	20.9	11.1	62	759.25	23.8	15.5
11	199.25	21.0	11.2	69	801.25	24.0	15.8
12	205.25	21.7	12.2	-	-	-	-
13	211.25	22.0	12.6	-	-	-	-
Average VHF			11.4	Average UHF			15.7
Average UHF/VHF : 20 log UHF[uV]/VHF[uV] = 2.7 dB [Limit : 8.0 dB]							

Noise figure test

A-PEX INTERNATIONAL CO., LTD.
Kanto office EMC Laboratory

Company : ORION ELECTRIC Co., Ltd.
Equipment : DVD / VCR
Model number : SD-V280UA
Power : AC 120 V / 60 Hz
Description : Receive mode

Report Number : 22LE0003-KT-1
Regulation : FCC Prat15B Subpart B
Date : July 12, 2002

Engineer : Ryo Kojima

Ch.	Frequency [MHz]	Meter reading [dB]	Correction factor [dB]	Noise figure [dB]	Limits [dB]	Margin [dB]
TV VHF Fundamental						
2	55.25	4.0	0.2	3.8	14.0	10.2
3	61.25	2.6	0.2	2.4	14.0	11.6
4	67.25	2.4	0.2	2.2	14.0	11.8
5	77.25	2.4	0.2	2.2	14.0	11.8
6	83.25	2.5	0.2	2.3	14.0	11.7
7	175.25	4.0	0.2	3.8	14.0	10.2
8	181.25	3.9	0.2	3.7	14.0	10.3
9	187.25	3.9	0.2	3.7	14.0	10.3
10	193.25	3.7	0.2	3.5	14.0	10.5
11	199.25	3.7	0.2	3.5	14.0	10.5
12	205.25	3.6	0.2	3.4	14.0	10.6
13	211.25	3.6	0.2	3.4	14.0	10.6
TV UHF Fundamental						
14	471.25	6.0	0.3	5.7	14.0	8.3
20	507.25	6.3	0.3	6.0	14.0	8.0
26	543.25	6.3	0.3	6.0	14.0	8.0
32	579.25	6.1	0.3	5.8	14.0	8.2
38	615.25	5.5	0.3	5.2	14.0	8.8
44	651.25	5.3	0.3	5.0	14.0	9.0
50	687.25	6.4	0.3	6.1	14.0	7.9
56	723.25	5.9	0.4	5.5	14.0	8.5
62	759.25	5.2	0.4	4.8	14.0	9.2
69	801.25	5.7	0.4	5.3	14.0	8.7
Mid-band						
14	121.25	3.6	0.2	3.4	14.0	10.6
16	133.25	5.5	0.2	5.3	14.0	8.7
18	145.25	5.0	0.2	4.8	14.0	9.2
20	157.25	4.5	0.2	4.3	14.0	9.7
22	169.25	4.2	0.2	4.0	14.0	10.0
Super-band						
23	217.25	3.6	0.2	3.4	14.0	10.6
26	235.25	3.4	0.2	3.2	14.0	10.8
29	253.25	3.5	0.2	3.3	14.0	10.7
32	271.25	3.7	0.2	3.5	14.0	10.5
36	295.25	3.9	0.2	3.7	14.0	10.3