

DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : TV Reception+Rec Mode
Remarks : OdBmV
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
1.	0.5822	23.9	-	17.9	-	0.2	0.3	0.0	24.4	-	48.0	0.0	23.6	-
2.	0.6868	24.1	-	21.0	-	0.2	0.4	0.0	24.7	-	48.0	0.0	23.3	-
3.	0.8829	24.4	-	17.3	-	0.2	0.4	0.0	25.0	-	48.0	0.0	23.0	-
4.	2.3548	24.1	-	20.8	-	0.2	0.4	0.0	24.7	-	48.0	0.0	23.3	-
5.	11.5686	22.0	-	17.4	-	0.6	0.6	0.0	23.2	-	48.0	0.0	24.8	-
6.	15.1140	29.7	-	30.7	-	0.8	0.8	0.0	32.3	-	48.0	0.0	15.7	-

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

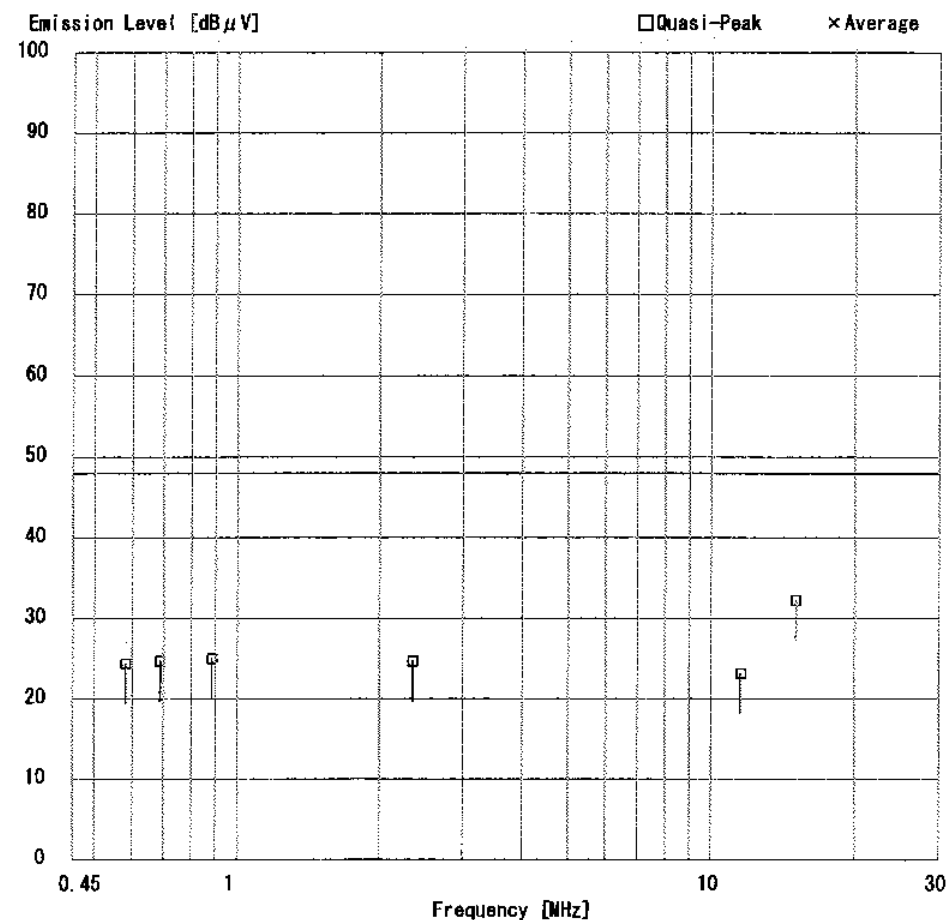
Except for the above table : adequate margin data below the limits.

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A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : TV Reception+Rec Mode
Remarks : OdBmV
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

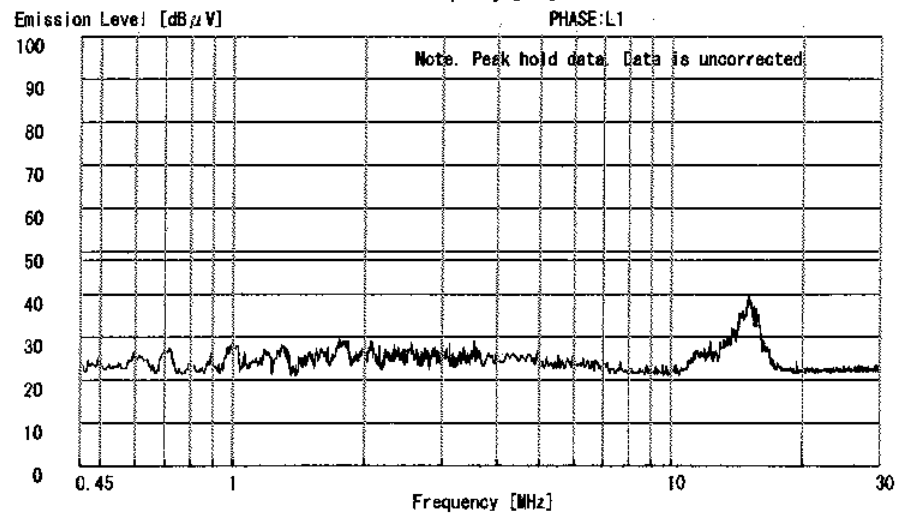
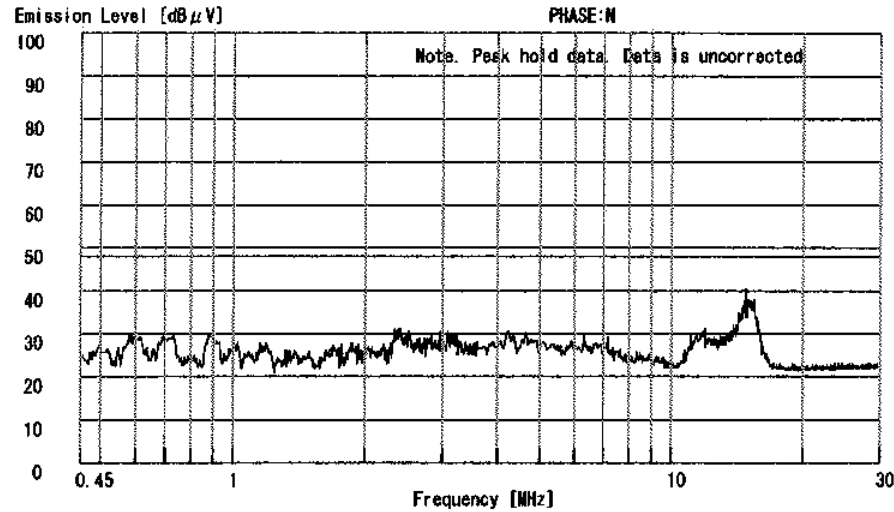


DATA OF CONDUCTION TEST CHART

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : TV Reception+Rec Mode
Remarks : 0dBmV
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Hisayuki Kioka



DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : TV Reception+Rec Mode
Remarks : 25dBmV
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
1.	0.5824	23.9	-	18.0	-	0.2	0.3	0.0	24.4	-	48.0	0.0	23.6	-
2.	0.6926	24.0	-	21.0	-	0.2	0.4	0.0	24.6	-	48.0	0.0	23.4	-
3.	0.8746	24.0	-	17.8	-	0.2	0.3	0.0	24.5	-	48.0	0.0	23.5	-
4.	2.3512	24.0	-	24.3	-	0.2	0.4	0.0	24.9	-	48.0	0.0	23.1	-
5.	11.6056	20.7	-	17.5	-	0.6	0.6	0.0	21.9	-	48.0	0.0	26.1	-
6.	15.0176	29.9	-	30.7	-	0.8	0.8	0.0	32.3	-	48.0	0.0	15.7	-

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

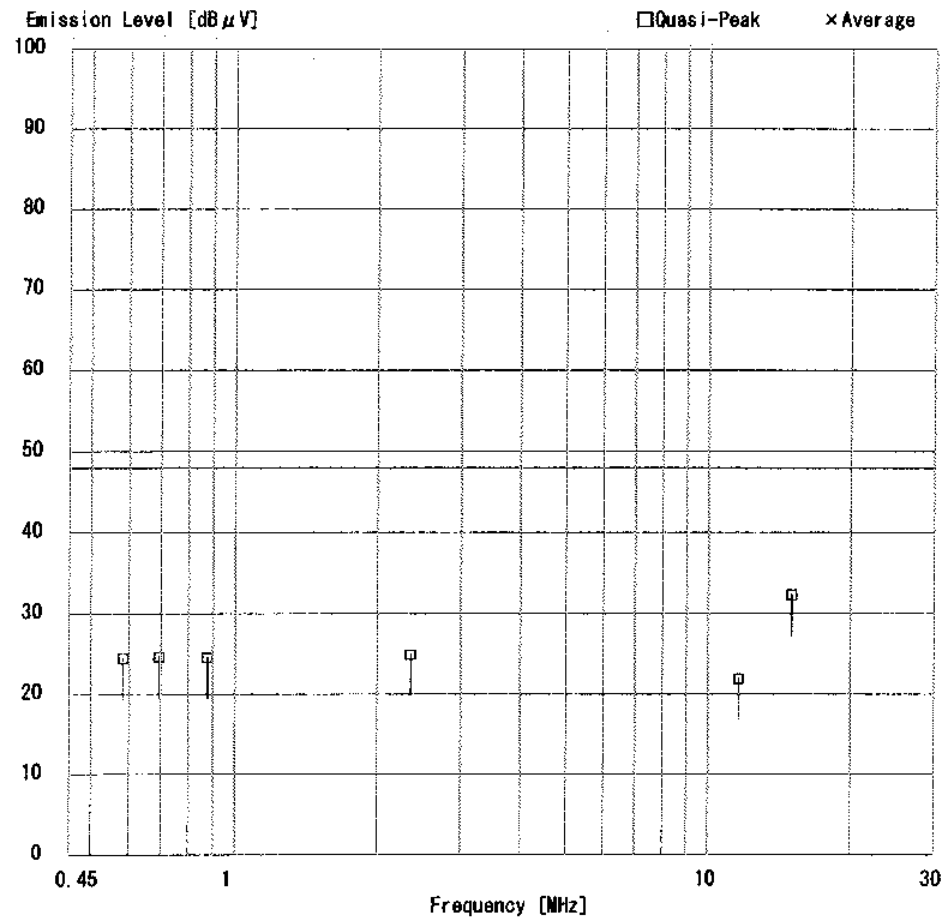
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Report No.: 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec Mode
Remarks : 25dBmV
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

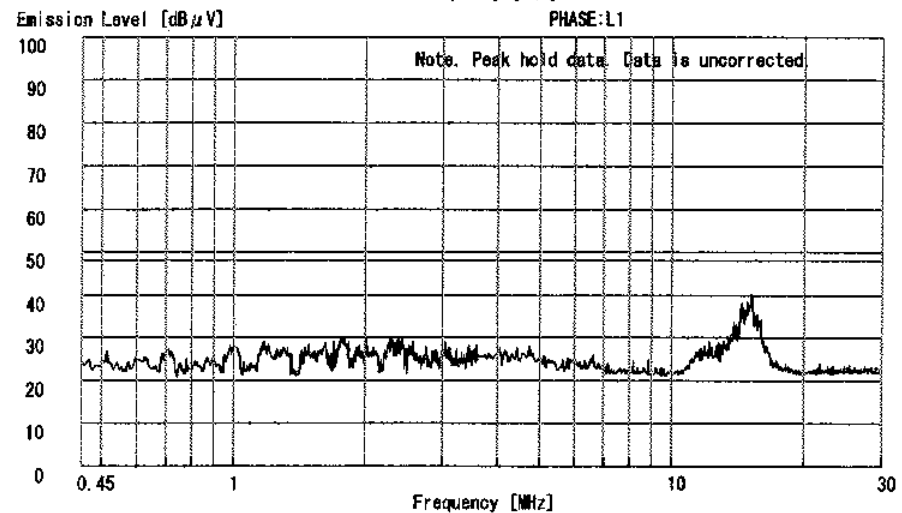
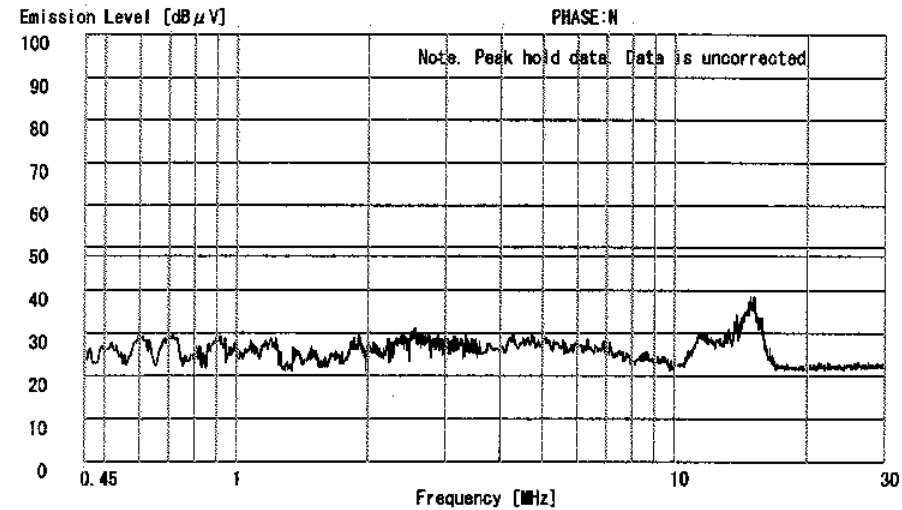


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Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception+Rec Mode
Remarks : 25dBmV
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Hisayuki Kioka



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A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 1+Rec Mode
Remarks : 1V p-p
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
1.	0.5808	23.9	-	18.0	-	0.2	0.3	0.0	24.4	-	48.0	0.0	23.6	-
2.	0.6862	24.2	-	20.6	-	0.2	0.4	0.0	24.8	-	48.0	0.0	23.2	-
3.	0.8759	24.3	-	22.7	-	0.2	0.3	0.0	24.8	-	48.0	0.0	23.2	-
4.	1.8845	21.8	-	19.9	-	0.2	0.4	0.0	22.4	-	48.0	0.0	25.6	-
5.	4.5752	25.0	-	24.7	-	0.3	0.5	0.0	25.8	-	48.0	0.0	22.2	-
6.	13.6382	33.5	-	33.2	-	0.7	0.7	0.0	34.9	-	48.0	0.0	13.1	-

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

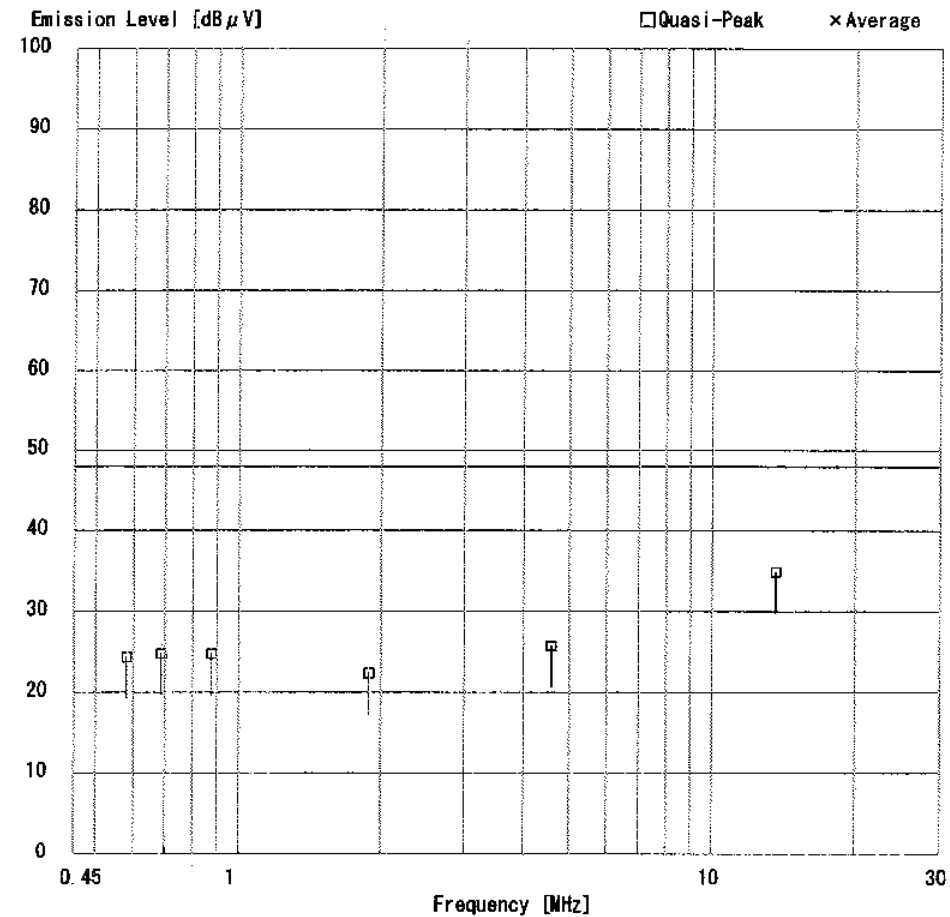
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Remarks : 1V p-p
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

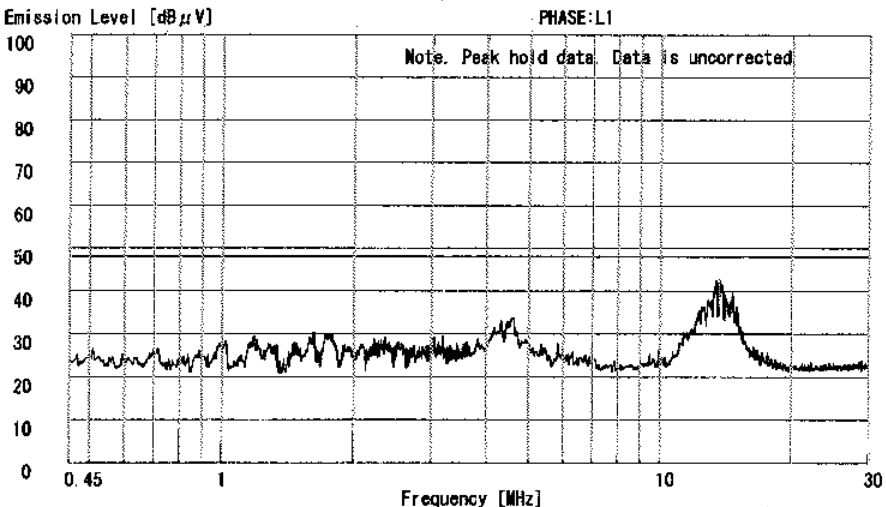
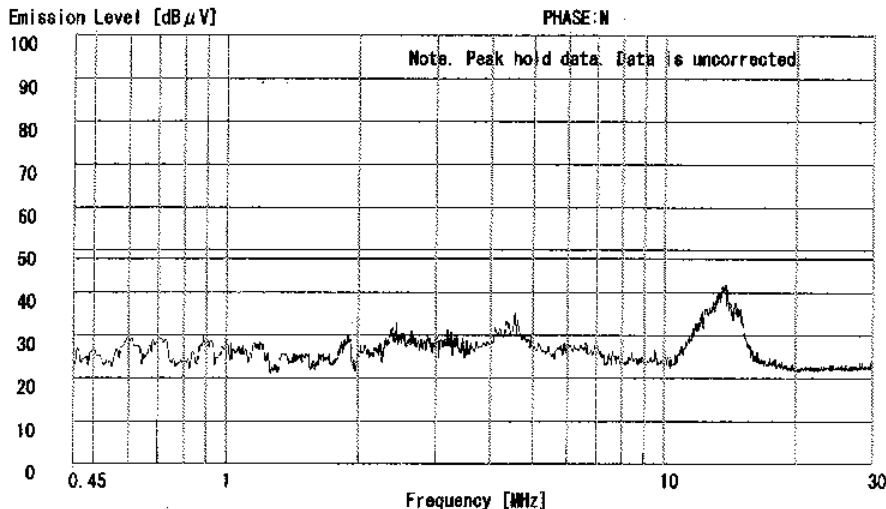


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Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 1+Rec Mode
Remarks : 1V p-p
Date : 11/21/2002
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Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

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Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 1+Rec Mode
Remarks : 5V p-p
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
1.	0.5819	23.7	-	17.6	-	0.2	0.3	0.0	24.2	-	48.0	0.0	23.8	-
2.	0.6888	24.0	-	20.8	-	0.2	0.4	0.0	24.6	-	48.0	0.0	23.4	-
3.	0.8883	24.3	-	17.6	-	0.2	0.4	0.0	24.9	-	48.0	0.0	23.1	-
4.	1.0036	20.9	-	22.9	-	0.2	0.4	0.0	23.5	-	48.0	0.0	24.5	-
5.	4.3052	24.2	-	23.8	-	0.3	0.5	0.0	25.0	-	48.0	0.0	23.0	-
6.	13.7016	33.1	-	33.0	-	0.7	0.7	0.0	34.5	-	48.0	0.0	13.5	-

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

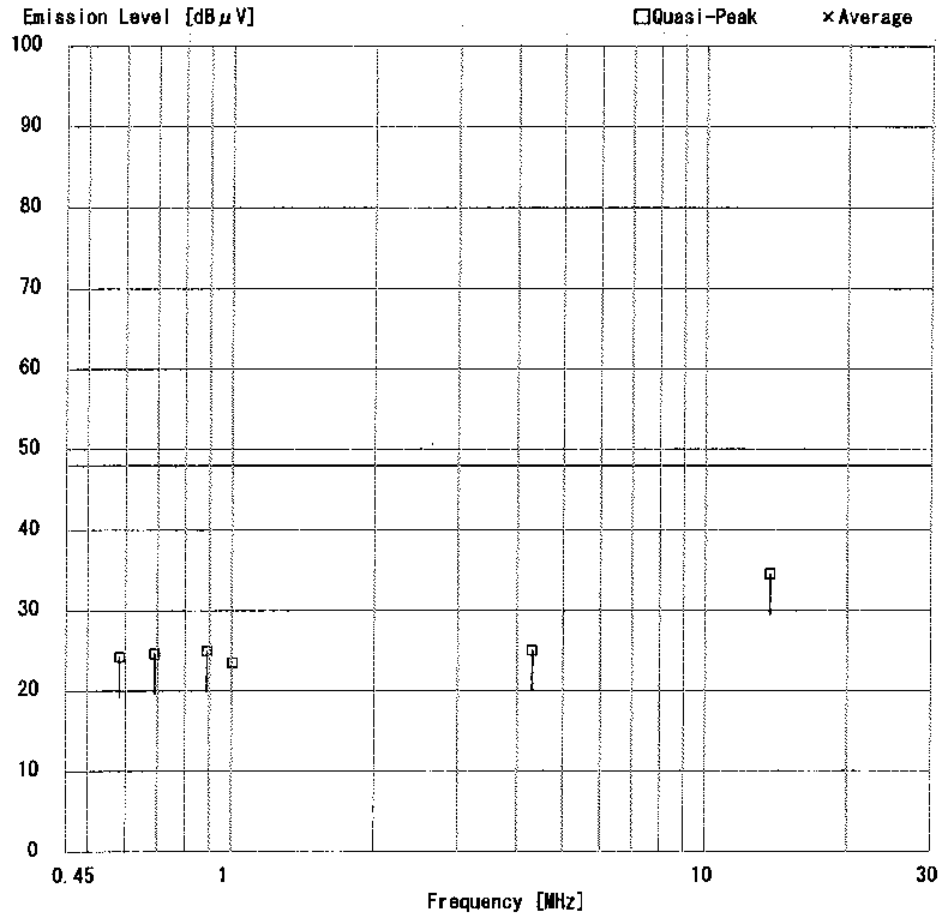
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Remarks : 5V p-p
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Temperature : 23 °C
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Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

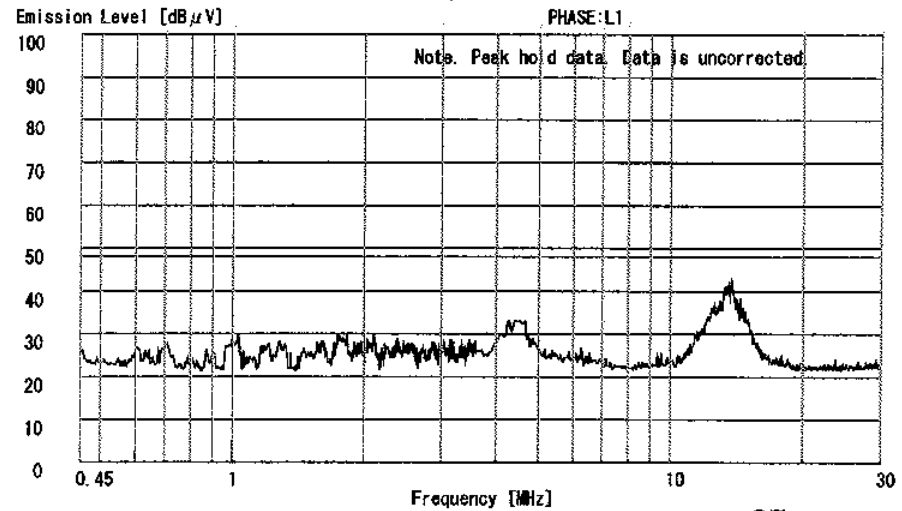
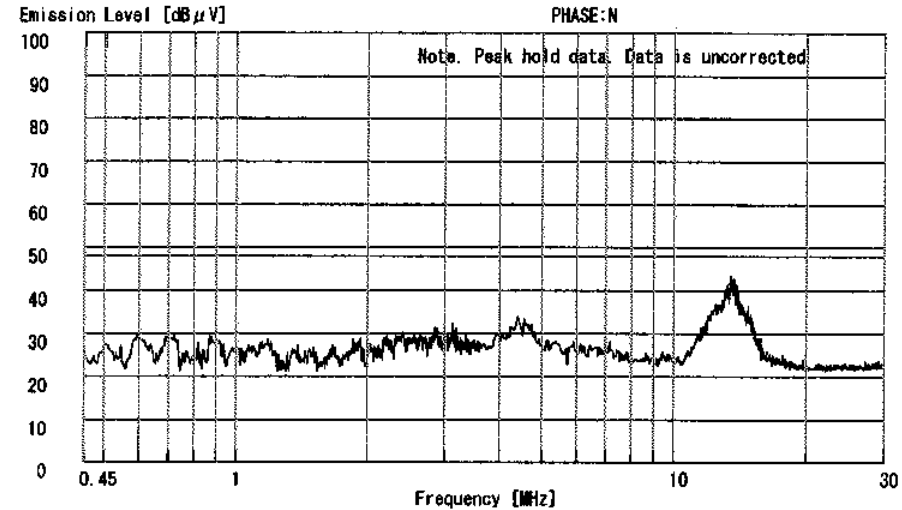


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Kind of Equipment : DVD/VCR
Model No. : SD-K220U
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Power : AC120V/60Hz
Mode : AV Input 2+Rec Mode
Remarks : 1V p-p
Date : 11/22/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
1.	0.5922	23.5	-	20.8	-	0.2	0.4	0.0	24.1	-	48.0	0.0	23.9	-
2.	0.6940	24.1	-	20.8	-	0.2	0.4	0.0	24.7	-	48.0	0.0	23.3	-
3.	0.8849	24.6	-	22.2	-	0.2	0.4	0.0	25.2	-	48.0	0.0	22.8	-
4.	1.8858	22.1	-	20.6	-	0.2	0.4	0.0	22.7	-	48.0	0.0	25.3	-
5.	4.6294	23.7	-	24.0	-	0.3	0.5	0.0	24.8	-	48.0	0.0	23.2	-
6.	13.5246	27.7	-	28.1	-	0.7	0.7	0.0	29.5	-	48.0	0.0	18.5	-

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

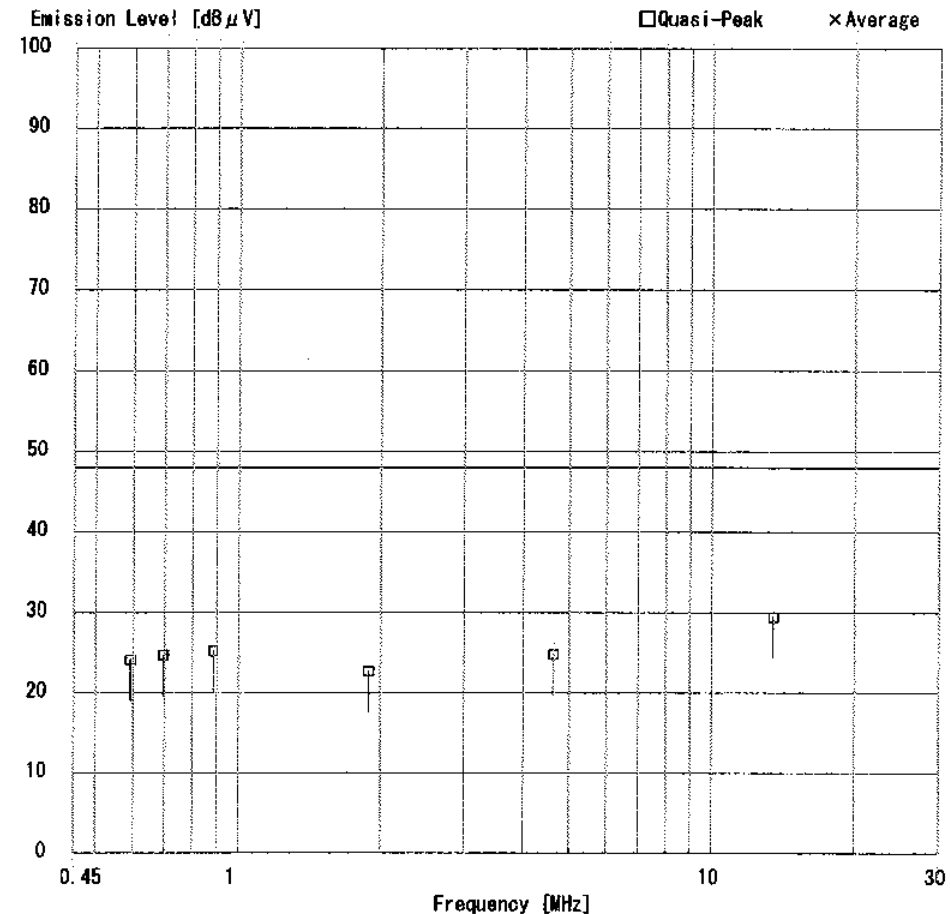
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Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 2+Rec Mode
Remarks : 1V p-p
Date : 11/22/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

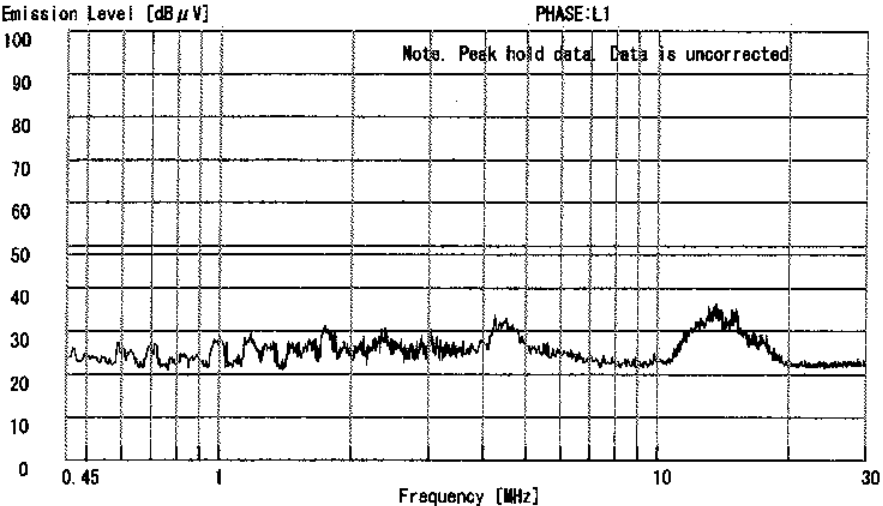
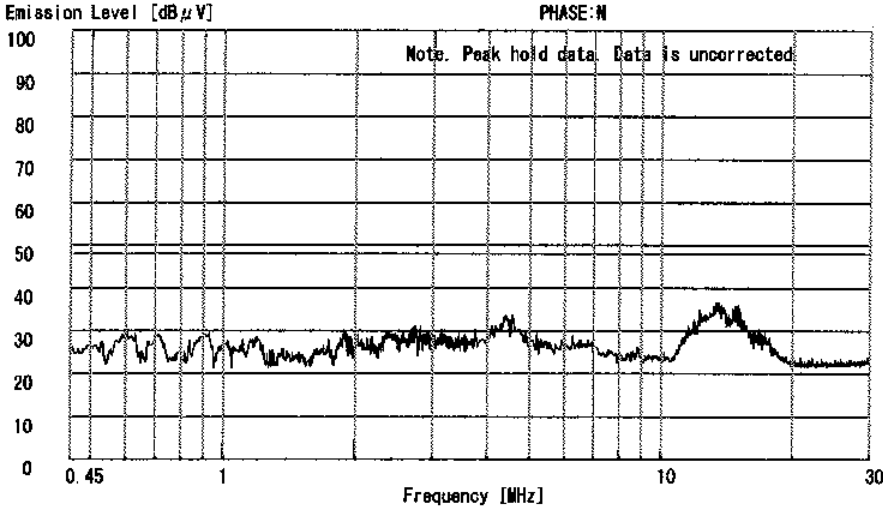


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Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : AV Input 2+Rec Mode
Remarks : 1V p-p
Date : 11/22/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

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YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : AV Input 2+Rec Mode
Remarks : 5V p-p
Date : 11/22/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dBμV]	AV	QP [dBμV]	AV				QP [dBμV]	AV	QP [dBμV]	AV	QP [dB]	AV
1.	0.5786	23.8	-	17.6	-	0.2	0.3	0.0	24.3	-	48.0	0.0	23.7	-
2.	0.6892	24.2	-	20.9	-	0.2	0.4	0.0	24.8	-	48.0	0.0	23.2	-
3.	0.8772	24.2	-	22.1	-	0.2	0.3	0.0	24.7	-	48.0	0.0	23.3	-
4.	1.1646	21.8	-	21.5	-	0.2	0.4	0.0	22.4	-	48.0	0.0	25.6	-
5.	4.5436	24.9	-	24.5	-	0.3	0.5	0.0	25.7	-	48.0	0.0	22.3	-
6.	13.6190	27.9	-	27.0	-	0.7	0.7	0.0	29.3	-	48.0	0.0	18.7	-

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

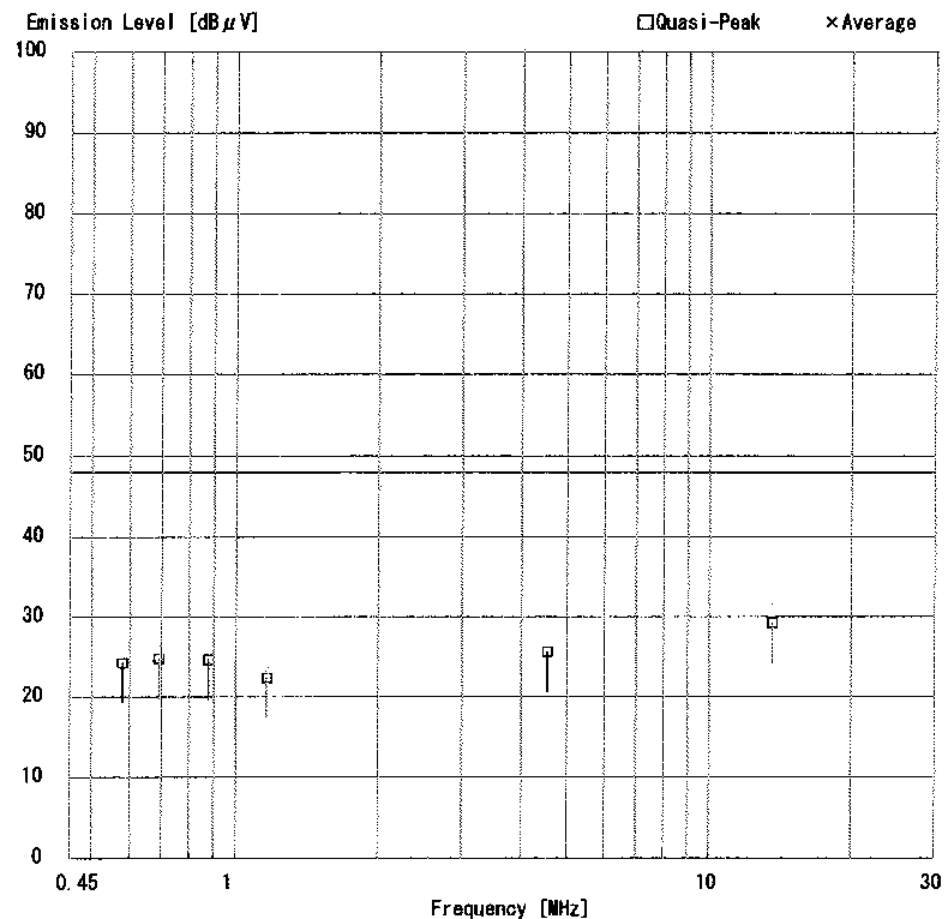
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Model No. : SD-K220U
Serial No. : -
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Remarks : 5V p-p
Date : 11/22/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

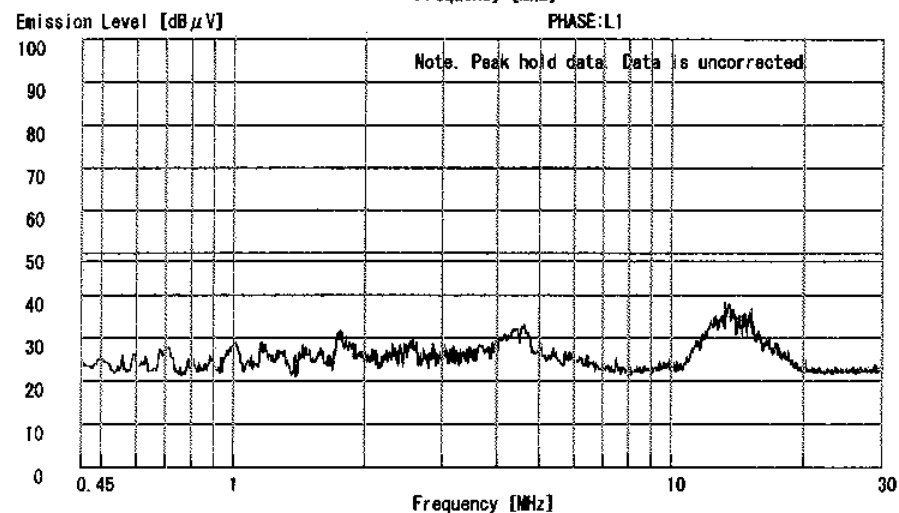
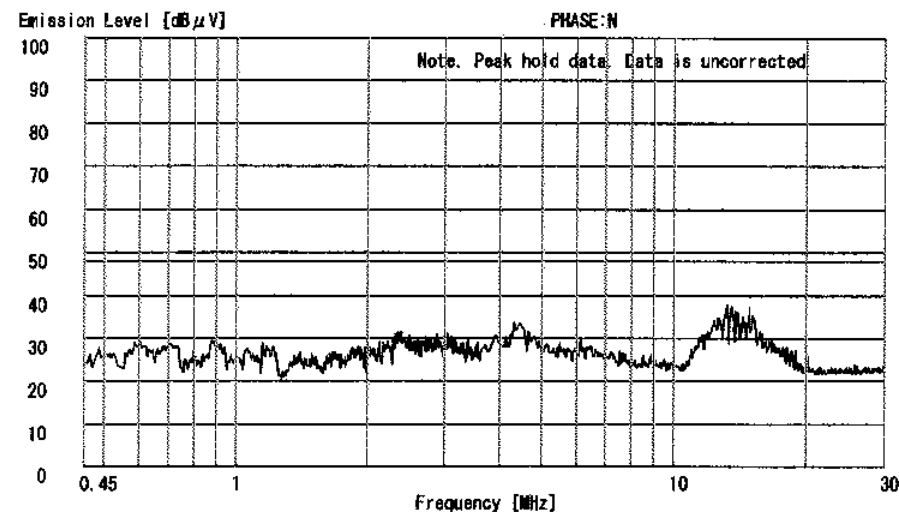


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Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 2+Rec Mode
Remarks : 5V p-p
Date : 11/22/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Hisayuki Kioka



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YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : VCR Playback Mode
Remarks :
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
1.	0.6069	20.8	-	10.6	-	0.2	0.4	0.0	21.4	-	48.0	0.0	26.6	-
2.	0.7221	20.8	-	17.0	-	0.2	0.3	0.0	21.3	-	48.0	0.0	26.7	-
3.	0.9276	21.3	-	12.1	-	0.2	0.4	0.0	21.9	-	48.0	0.0	26.1	-
4.	2.2884	22.4	-	20.0	-	0.2	0.4	0.0	23.0	-	48.0	0.0	25.0	-
5.	4.2390	21.3	-	19.1	-	0.3	0.5	0.0	22.1	-	48.0	0.0	25.9	-
6.	11.5526	19.6	-	15.1	-	0.6	0.6	0.0	20.8	-	48.0	0.0	27.2	-

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

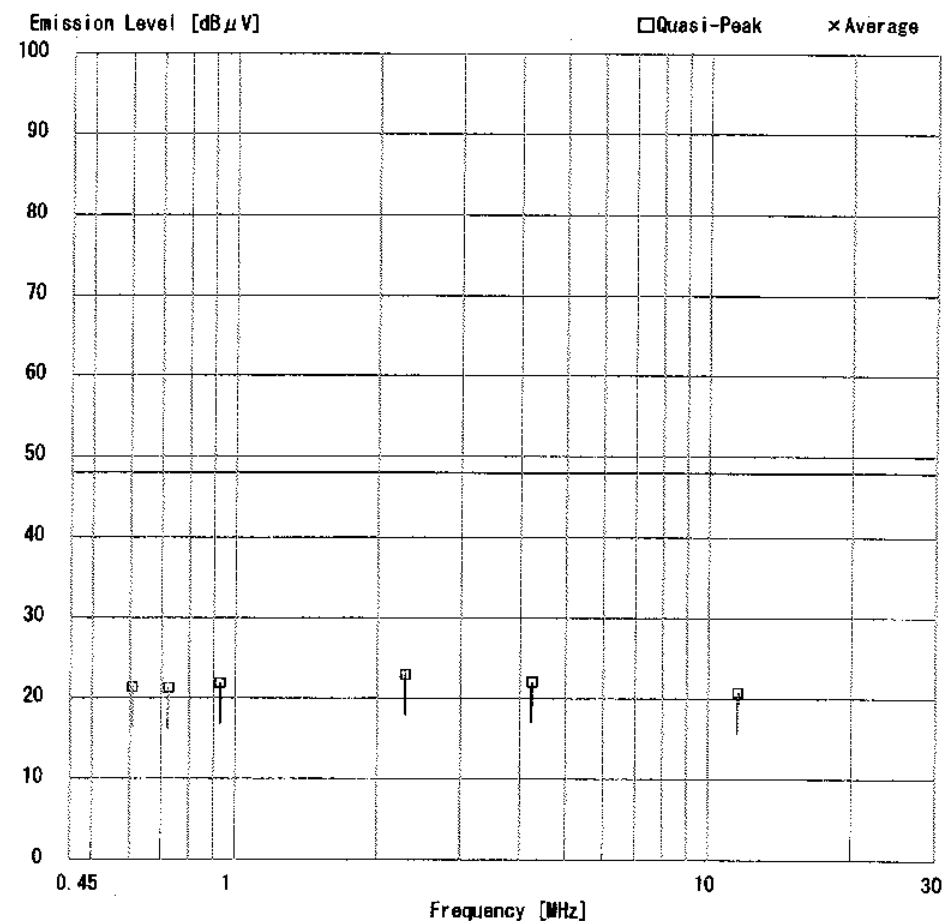
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YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : VCR Playback Mode
Remarks :
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

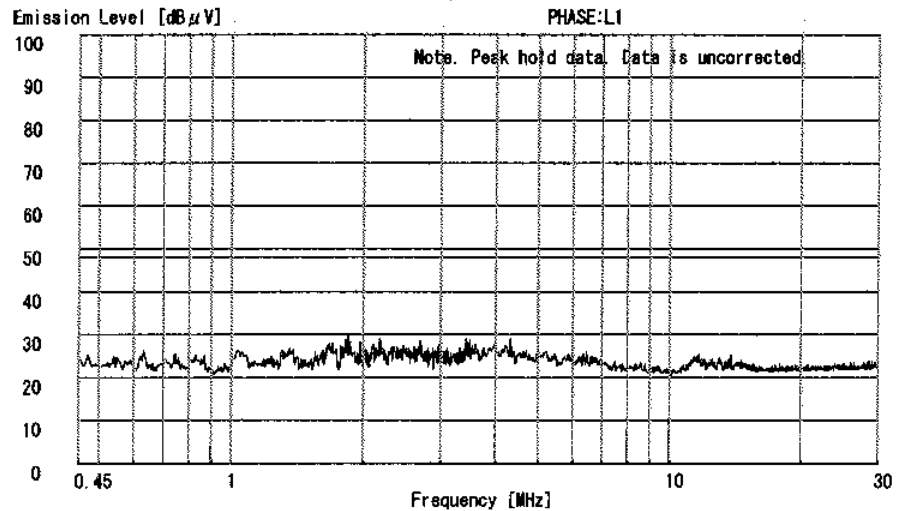
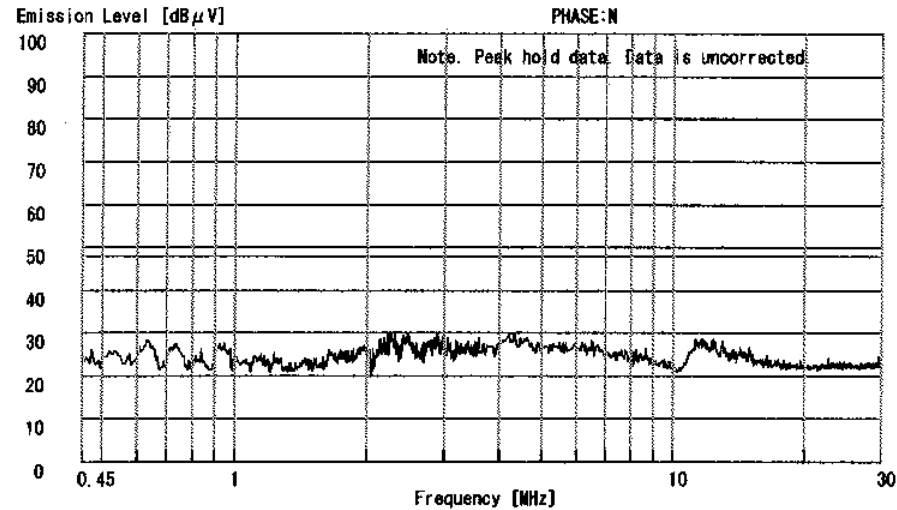


DATA OF CONDUCTION TEST CHART

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : VCR Playback Mode
Remarks :
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Hisayuki Kioka



DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks :
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
		[dBuV]		[dBuV]					[dBuV]		[dBuV]		[dB]	
1.	0.6486	24.7	-	22.8	-	0.2	0.4	0.0	25.3	-	48.0	0.0	22.7	-
2.	0.7555	25.1	-	23.8	-	0.2	0.3	0.0	25.6	-	48.0	0.0	22.4	-
3.	5.7678	21.0	-	17.5	-	0.4	0.5	0.0	21.9	-	48.0	0.0	26.1	-
4.	11.6090	21.0	-	15.6	-	0.6	0.6	0.0	22.2	-	48.0	0.0	25.8	-
5.	20.3600	24.0	-	24.7	-	1.0	0.9	0.0	26.6	-	48.0	0.0	21.4	-
6.	28.6363	32.2	-	31.3	-	1.3	0.9	0.0	34.4	-	48.0	0.0	13.6	-

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

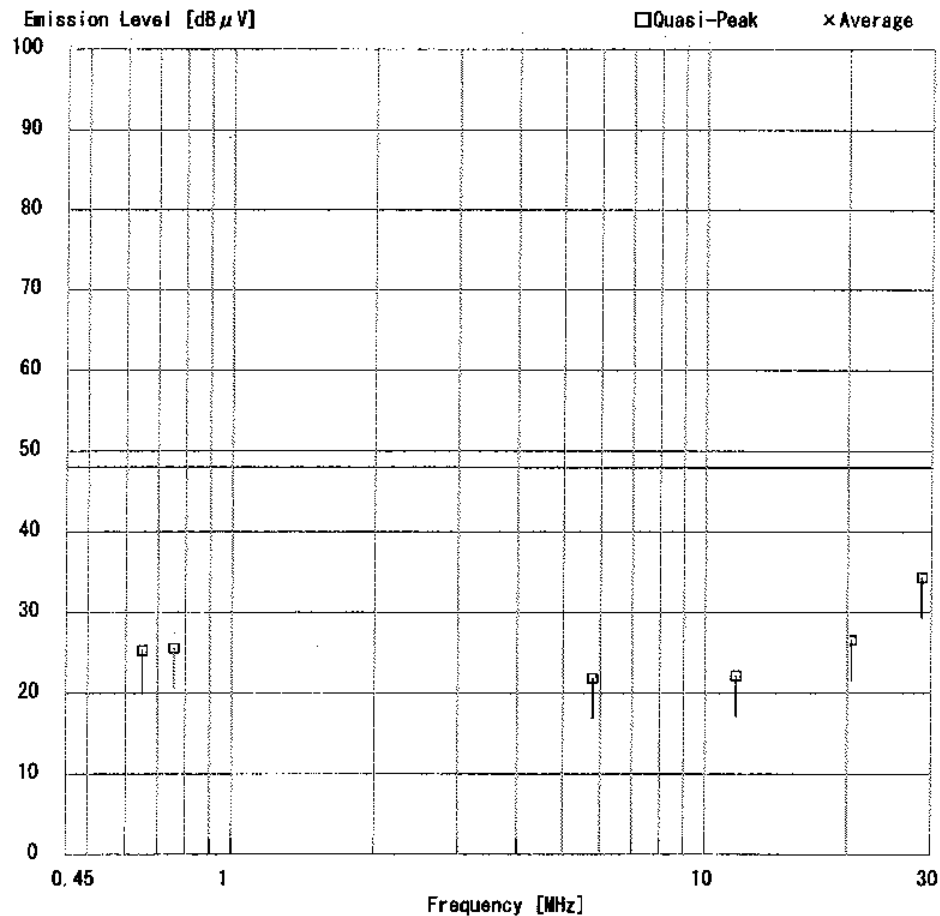
Except for the above table : adequate margin data below the limits.

DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks : -
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

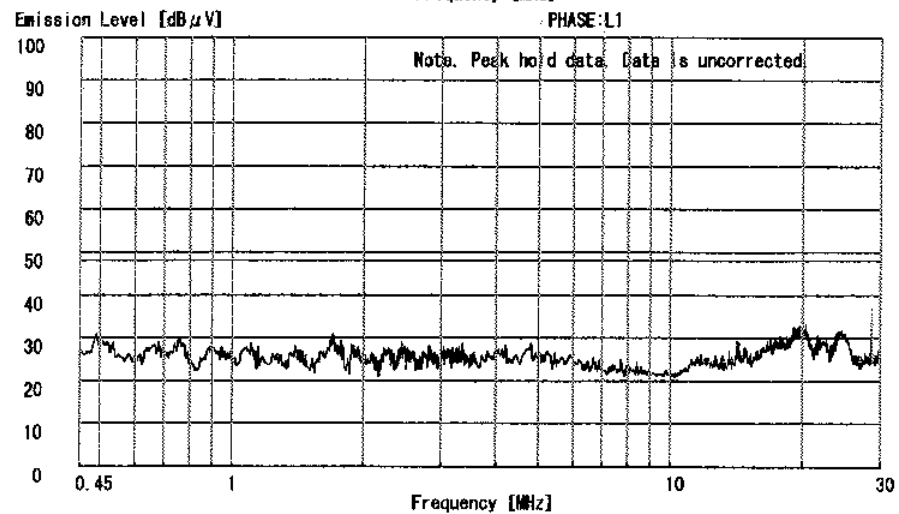
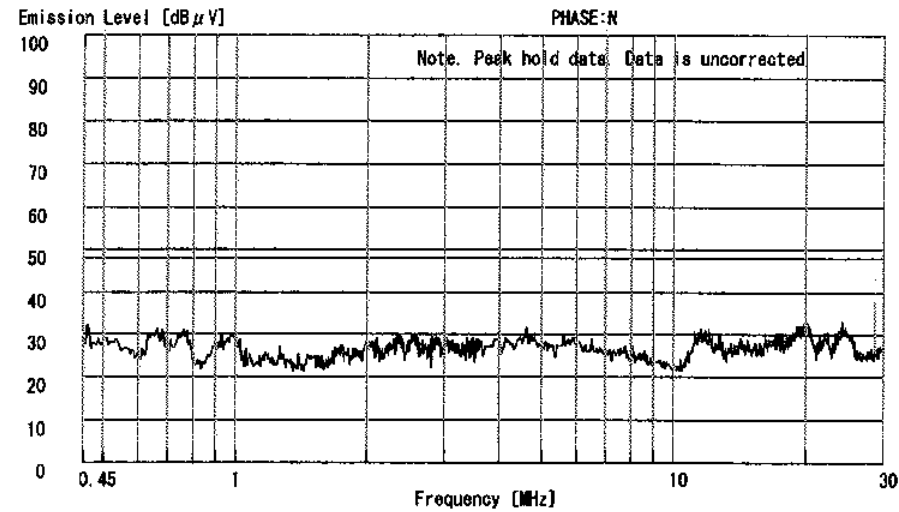


DATA OF CONDUCTION TEST CHART

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : ORION ELECTRIC CO., LTD.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks : -
Date : 11/21/2002
Phase : Single Phase
Temperature : 23 °C
Humidity : 49 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Hisayuki Kioka



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-K220U
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 23DE0092-YW-1
REGULATION : FCC PART 15B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : November 22, 2002

ENGINEER : Hisayuki Kioka

CH	FREQ [MHz]	READING HOR. VER. [dBuV]	ANT TYPE	ANT. FAC. [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULTS HOR. VER. [dBuV/m]	LIMIT [dBuV/m]	MARGIN HOR. VER. [dB]
VHF Fundamental									
2	101	24.1	29.3	BC	10.0	2.1	27.8	14.4	19.6
3	107	24.4	25.4	BC	10.9	2.2	27.9	15.6	16.6
4	113	23.6	24.9	BC	11.9	2.3	27.9	15.9	17.2
5	123	23.5	25.1	BC	13.2	2.3	27.9	17.1	18.7
6	129	25.9	28.4	BC	13.7	2.5	27.9	20.2	22.7
7	221	24.5	25.3	BC	16.6	3.2	27.8	22.5	23.3
8	227	24.9	25.3	BC	16.6	3.2	27.8	22.9	23.3
9	233	23.9	25.1	BC	16.7	3.2	27.7	22.1	23.3
10	239	22.2	23.5	BC	16.8	3.1	27.5	20.6	21.9
11	245	22.9	23.0	BC	16.8	3.1	27.4	21.4	21.5
12	251	23.0	23.9	BC	17.0	3.0	27.3	21.7	22.6
13	257	22.6	24.3	BC	17.3	3.2	27.4	21.7	23.4
VHF 2nd Harmonic									
2	202	22.3	23.6	BC	16.3	3.1	27.8	19.9	21.2
3	214	22.2	23.1	BC	16.5	3.2	27.8	20.1	21.0
4	226	22.1	22.3	BC	16.6	3.2	27.8	20.1	20.3
5	246	22.6	23.0	BC	16.9	3.0	27.3	21.2	21.6
6	258	22.3	22.8	BC	17.4	3.2	27.4	21.5	22.0
7	442	22.1	22.3	LP	19.0	4.8	27.9	24.0	24.2
8	454	21.3	21.6	LP	19.1	4.8	27.9	23.3	23.6
9	466	22.9	23.6	LP	19.3	4.9	27.8	25.3	26.0
10	478	23.1	23.9	LP	19.4	4.9	27.8	25.6	26.4
11	490	24.3	25.9	LP	19.5	5.1	27.9	27.0	28.6
12	502	23.6	24.1	LP	19.6	5.2	27.9	26.5	27.0
13	514	22.4	23.9	LP	19.7	5.3	27.9	25.5	27.0

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-K220U
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 23DE0092-YW-1
REGULATION : FCC PART 15B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : November 22, 2002

ENGINEER : Hisayuki Kioka

CH	FREQ [MHz]	READING HOR. VER. [dBuV]	ANT TYPE	ANT. FAC. [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULTS HOR. VER. [dBuV/m]	LIMIT [dBuV/m]	MARGIN HOR. VER. [dB]
CATV Fundamental									
1	119	23.6	22.5	BC	12.8	2.3	27.9	16.8	15.7
95	137	22.6	22.4	BC	14.4	2.5	27.9	17.6	17.4
97	149	22.7	24.2	BC	14.8	2.6	27.7	18.4	19.9
99	161	22.6	23.1	BC	15.0	2.8	27.8	18.6	19.1
14	167	22.3	22.6	BC	15.2	2.8	27.8	18.5	18.8
18	191	22.9	23.1	BC	16.0	3.0	27.8	20.1	20.3
22	215	21.9	22.4	BC	16.5	3.2	27.8	19.8	20.3
23	263	23.0	22.8	BC	17.7	3.3	27.5	22.5	22.3
29	299	23.5	24.0	BC	20.0	3.8	27.8	25.5	26.0
36	341	24.6	25.3	LP	17.4	4.5	27.9	24.6	25.3
37	347	23.9	24.3	LP	17.5	4.7	27.9	24.2	24.6
65	515	22.3	24.1	LP	19.7	5.3	27.9	25.4	27.2
94	689	22.4	23.5	LP	22.3	6.3	27.2	29.8	30.9
100	695	22.1	23.6	LP	22.4	6.3	27.1	29.7	31.2
113	773	23.9	24.1	LP	23.2	6.7	27.0	32.8	33.0
125	845	22.3	22.1	LP	24.1	7.1	27.0	32.5	32.3
CATV 2nd Harmonic									
1	238	21.6	22.5	BC	16.8	3.1	27.5	20.0	20.9
95	274	21.3	22.1	BC	18.4	3.6	27.8	21.5	22.3
97	298	21.3	22.0	BC	20.0	3.8	27.8	23.3	24.0
99	322	20.0	21.3	LP	17.0	4.0	28.0	19.0	20.3
14	334	21.6	22.3	LP	17.3	4.3	28.0	21.2	21.9
18	382	21.3	21.5	LP	18.2	4.5	27.9	22.1	22.3
22	430	21.6	21.8	LP	18.9	4.8	27.8	23.5	23.7
23	526	21.6	21.9	LP	19.8	5.4	27.8	25.0	25.3
29	598	21.5	21.6	LP	20.5	5.7	27.5	26.2	26.3
36	682	21.0	20.9	LP	22.1	6.3	27.3	28.1	28.0
37	694	20.5	20.6	LP	22.4	6.3	27.1	28.1	28.2
65	1030	49.0	49.3	HO	24.9	1.6	39.0	36.5	36.8
94	1378	47.2	47.4	HO	26.5	2.0	38.6	37.1	37.3
100	1390	46.6	46.9	HO	26.5	2.0	38.6	36.5	36.8
113	1546	45.4	45.9	HO	27.1	2.1	38.5	36.1	36.6
125	1690	46.5	46.3	HO	27.4	2.3	38.3	37.9	37.7

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-K220U
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 23DE0092-YW-1
REGULATION : FCC PART 15B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : November 22, 2002

ENGINEER : Hisayuki Kioka

CH	FREQ [MHz]	READING HOR VER [dBuV]	ANT TYPE	ANT. FAC. [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULTS HOR VER [dBuV/m]	LIMIT [dBuV/m]	MARGIN HOR VER [dB]
UHF Fundamental									
14	517	26.7 31.4	LP	19.8	5.3	27.9	29.9 34.6	46.0	16.1 11.4
19	547	26.0 29.2	LP	20.0	5.6	27.7	29.9 33.1	46.0	16.1 12.9
28	601	28.4 32.5	LP	20.5	5.8	27.5	33.2 37.3	46.0	12.8 8.7
36	649	26.2 27.5	LP	21.5	6.1	27.5	32.3 33.6	46.0	13.7 12.4
44	697	25.0 27.3	LP	22.4	6.3	27.1	32.6 34.9	46.0	13.4 11.1
53	751	26.3 26.9	LP	23.0	6.7	27.2	34.8 35.4	46.0	11.2 10.6
61	799	24.2 24.2	LP	23.5	6.9	27.1	33.5 33.5	46.0	12.5 12.5
69	847	24.3 29.3	LP	24.2	7.1	27.0	34.6 39.6	46.0	11.4 6.4
UHF 2nd Harmonic									
14	1034	49.4 49.2	HO	24.9	1.6	39.0	36.9 36.7	54.0	17.1 17.3
19	1094	46.3 48.7	HO	25.2	1.7	39.0	34.2 36.6	54.0	19.8 17.4
28	1202	46.1 46.1	HO	25.7	1.8	38.8	34.8 34.8	54.0	19.2 19.2
36	1298	47.6 45.8	HO	26.1	1.9	38.7	36.9 35.1	54.0	17.1 18.9
44	1394	47.6 47.0	HO	26.5	2.0	38.6	37.5 36.9	54.0	16.5 17.1
53	1502	47.4 47.1	HO	27.0	2.1	38.5	38.0 37.7	54.0	16.0 16.3
61	1598	45.2 46.8	HO	27.2	2.2	38.4	36.2 37.8	54.0	17.8 16.2
69	1694	46.3 45.8	HO	27.4	2.3	38.3	37.7 37.2	54.0	16.3 16.8

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : TV Reception + Rec Mode
Remarks : 25dBmV
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING HOR VER [dBuV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR VER [dBuV/m]	LIMITS [dBuV/m]	MARGIN HOR VER [dB]
1.	80.00	BB	31.5 35.0	6.1	27.9	1.8	6.1	17.6 21.1	40.0	22.4 18.9
2.	92.16	BB	33.7 32.4	8.4	27.9	2.0	5.9	22.1 20.8	43.5	21.4 22.7
3.	135.00	BB	36.8 36.0	14.2	27.9	2.5	6.0	31.6 30.8	43.5	11.9 12.7
4.	188.99	BB	31.2 28.6	15.9	27.8	3.0	6.0	28.3 25.7	43.5	15.2 17.8
5.	214.78	BB	30.6 31.2	16.5	27.8	3.2	6.0	28.5 29.1	43.5	15.0 14.4
6.	281.59	BB	32.1 23.9	18.9	27.8	3.7	6.1	33.0 24.8	46.0	13.0 21.2
7.	324.01	BB	35.5 30.3	17.1	28.0	4.0	6.1	34.7 29.5	46.0	11.3 16.5
8.	431.99	BB	35.6 31.1	18.9	27.8	4.8	6.0	37.5 33.0	46.0	8.5 13.0
9.	844.60	BB	28.1 27.4	24.1	27.0	7.1	6.1	38.4 37.7	46.0	7.6 8.3
10.	972.01	BB	26.7 36.3	26.3	27.0	7.7	6.1	39.8 49.4	54.0	14.2 4.6

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

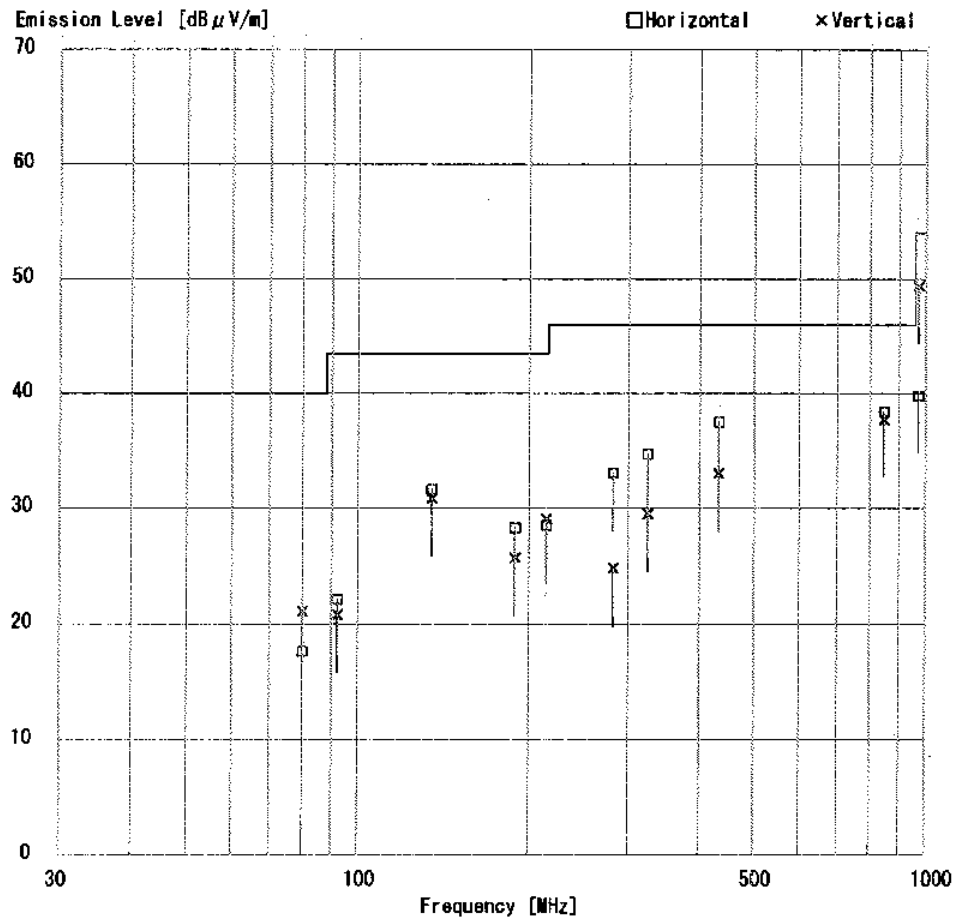
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : TV Reception + Rec Mode
Remarks : 25dBmV
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : TV Reception + Rec Mode
Remarks : 0dBmV
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]	HOR [dB]	VER [dB]		
1.	844.60	BB	28.0	26.9	24.1	27.0	7.1	6.1	38.3	37.2	46.0	7.7	8.8	

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

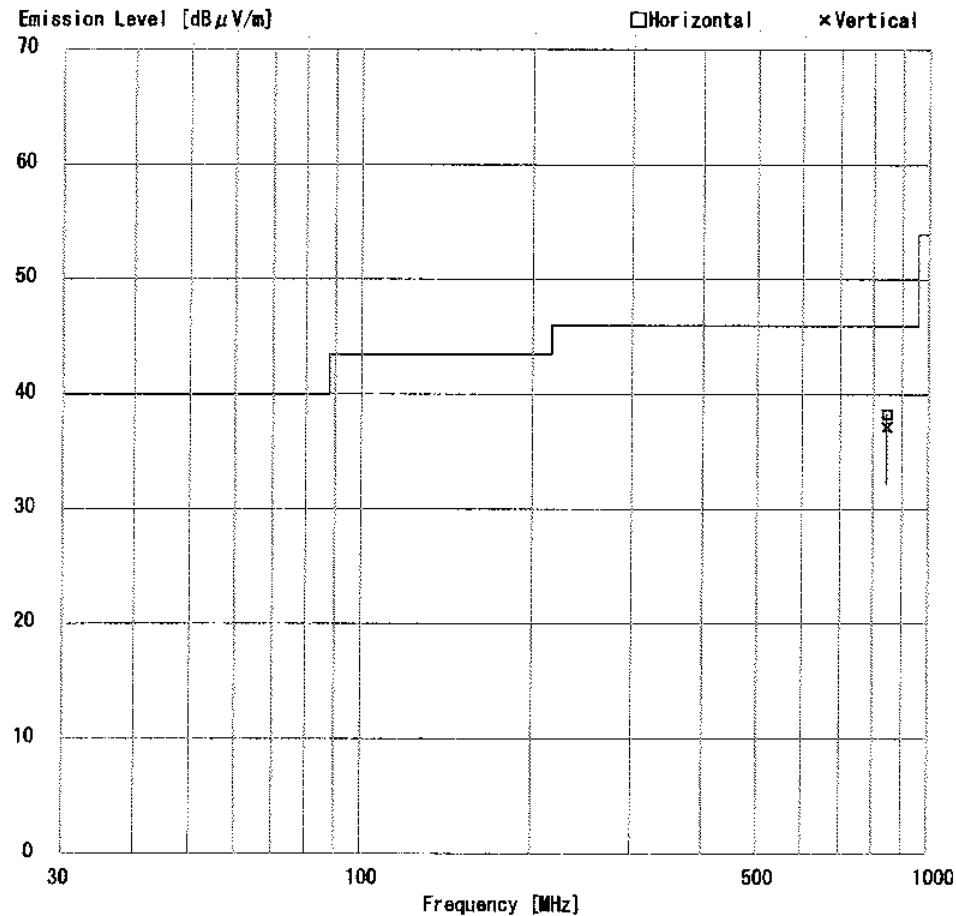
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : TV Reception + Rec Mode
Remarks : 0dBmV
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 1 + Rec Mode
Remarks : 5V p-p
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dBμV]	VER [dBμV]					HOR [dBμV/m]	VER [dBμV/m]	HOR [dBμV/m]	VER [dBμV/m]	HOR [dB]	VER [dB]
1.	80.00	BB	32.4	35.9	6.1	27.9	1.8	6.1	18.5	22.0	40.0	21.6	18.0	
2.	92.18	BB	35.4	38.3	8.4	27.9	2.0	5.9	23.8	26.7	43.5	19.7	16.8	
3.	135.01	BB	34.9	34.4	14.2	27.9	2.5	6.0	29.7	29.2	43.5	13.8	14.3	
4.	188.99	BB	34.4	26.0	15.9	27.8	3.0	6.0	31.5	23.1	43.5	12.0	20.4	
5.	202.77	BB	32.0	27.9	16.3	27.8	3.1	6.0	29.6	25.5	43.5	13.9	18.0	
6.	282.03	BB	34.3	25.5	18.9	27.8	3.7	6.1	35.2	26.4	46.0	10.8	19.6	
7.	323.99	BB	36.3	31.3	17.1	28.0	4.0	6.1	35.5	30.5	46.0	10.5	15.5	
8.	431.99	BB	33.6	32.4	18.9	27.8	4.8	6.0	35.5	34.3	46.0	10.5	11.7	
9.	571.42	BB	27.3	30.4	20.2	27.7	5.7	6.0	31.5	34.6	46.0	14.5	11.4	
10.	844.61	BB	28.3	28.0	24.1	27.0	7.1	6.1	38.6	38.3	46.0	7.4	7.7	
11.	971.98	BB	27.8	27.2	26.3	27.0	7.7	6.1	40.9	40.3	54.0	13.1	13.7	

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

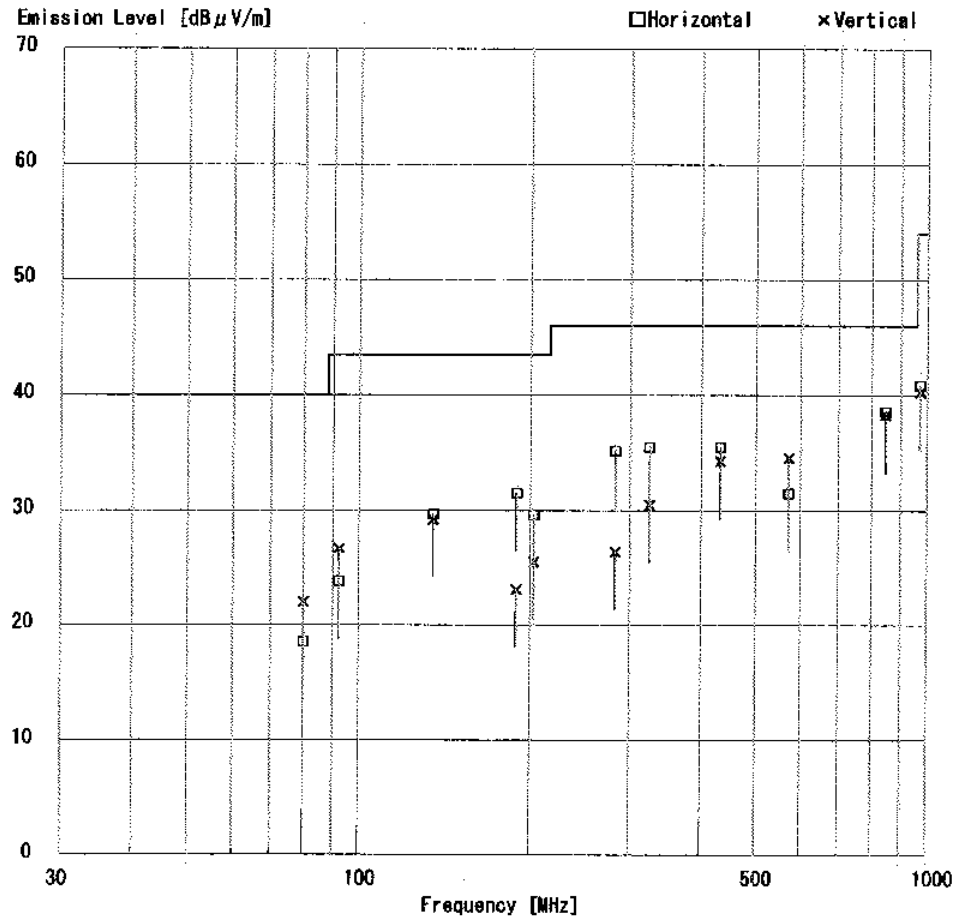
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logpridic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : AV Input 1 + Rec Mode
Remarks : 5V p-p
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : AV Input 1 + Rec Mode
Remarks : 1V p-p
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dBμV/m]	MARGIN	
			HOR [dBμV]	VER [dBμV]					HOR [dBμV/m]	VER [dBμV/m]		HOR [dB]	VER [dB]
1.	844.61	BB	28.3	27.8	24.1	27.0	7.1	6.1	38.6	38.1	46.0	7.4	7.9

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

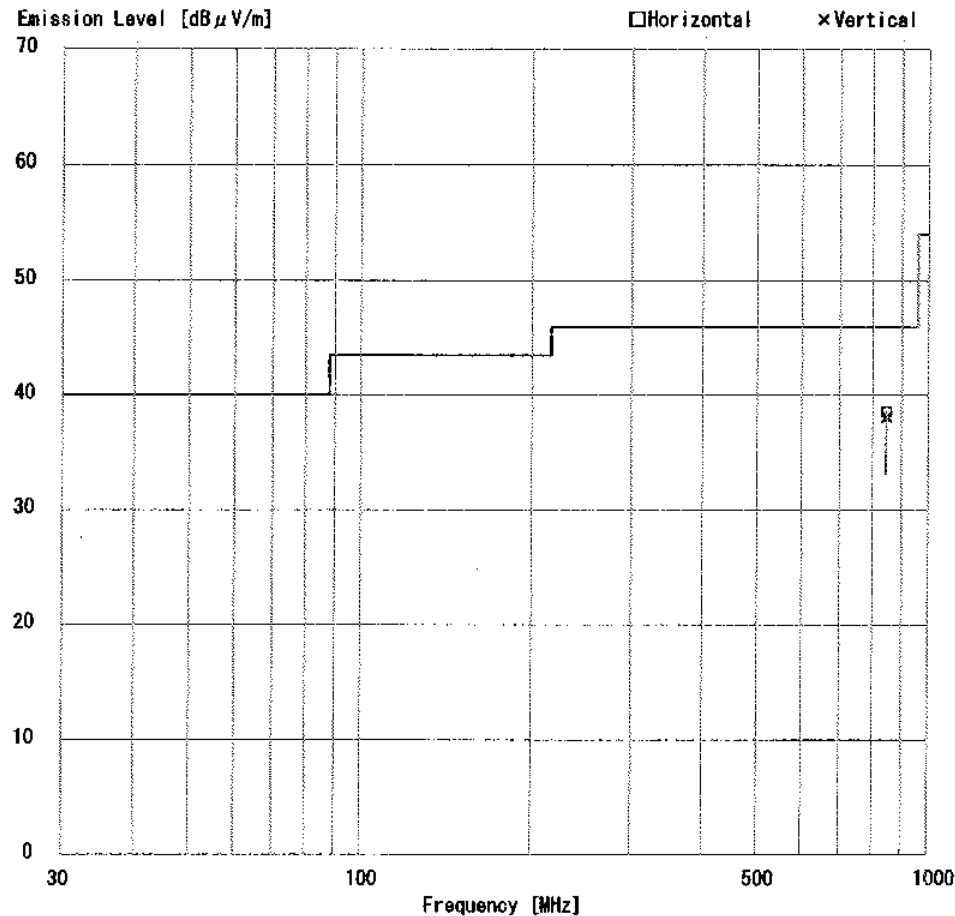
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 1 + Rec Mode
Remarks : 1V p-p
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 2 + Rec Mode
Remarks : 5V p-p
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dBμV]	VER [dBμV]					HOR [dBμV/m]	VER [dBμV/m]	HOR [dBμV/m]	VER [dBμV/m]	HOR [dB]	VER [dB]
1.	81.01	BB	35.5	35.0	6.2	27.9	1.8	6.1	21.7	21.2	40.0	18.3	18.8	
2.	92.18	BB	37.1	42.5	8.4	27.9	2.0	5.9	25.5	30.9	43.5	18.0	12.6	
3.	135.01	BB	32.1	32.0	14.2	27.9	2.5	6.0	26.9	26.8	43.5	16.6	16.7	
4.	188.99	BB	33.7	29.0	15.9	27.8	3.0	6.0	30.8	26.1	43.5	12.7	17.4	
5.	202.76	BB	30.6	30.3	16.3	27.8	3.1	6.0	28.2	27.9	43.5	15.3	15.6	
6.	282.03	BB	29.1	22.7	18.9	27.8	3.7	6.1	30.0	23.6	46.0	16.0	22.4	
7.	324.00	BB	32.9	32.8	17.1	28.0	4.0	6.1	32.1	32.0	46.0	13.9	14.0	
8.	431.09	BB	33.0	34.0	18.9	27.8	4.8	6.0	34.9	35.9	46.0	11.1	10.1	
9.	571.41	BB	29.0	28.5	20.2	27.7	5.7	6.0	33.2	32.7	46.0	12.8	13.3	
10.	844.60	BB	28.6	27.9	24.1	27.0	7.1	6.1	38.9	38.2	46.0	7.1	7.8	
11.	971.99	BB	25.0	25.9	26.3	27.0	7.7	6.1	38.1	39.0	54.0	15.9	15.0	

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

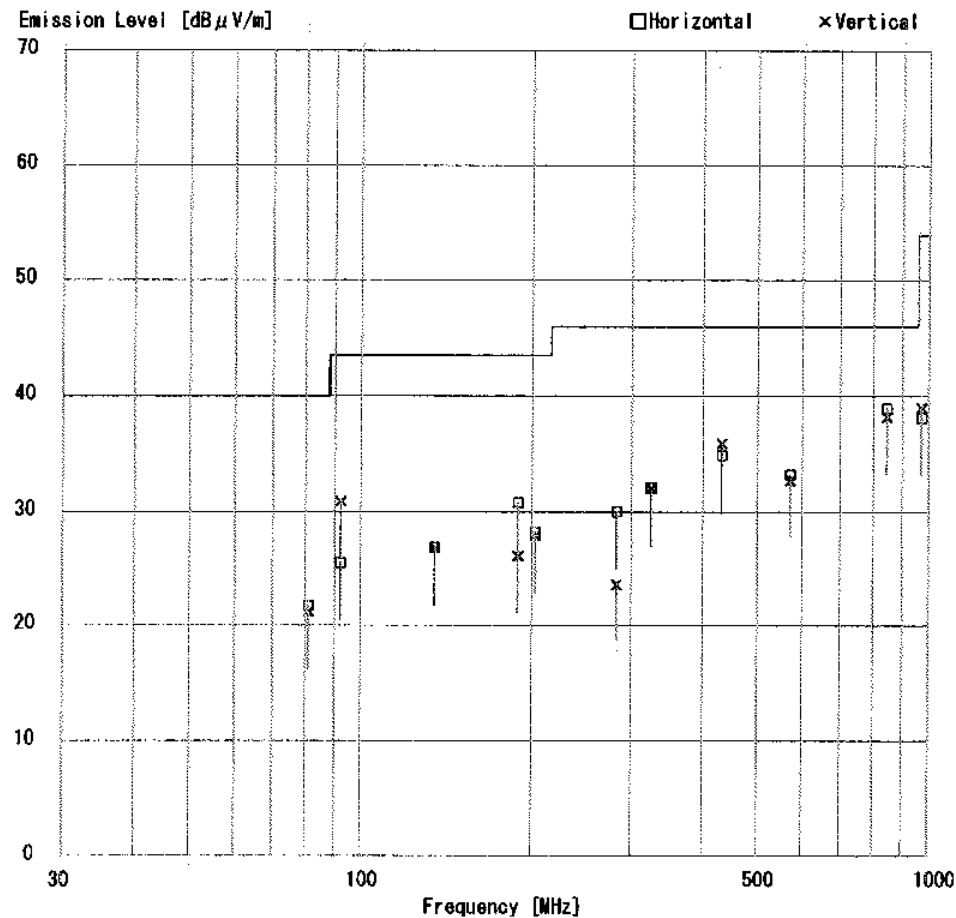
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : AV Input 2 + Rec Mode
Remarks : 5V p-p
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : AV Input 2 + Rec Mode
Remarks : 1V p-p
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR	AMP GAIN	CABLE LOSS	ATTEN.	RESULT		LIMITS	MARGIN	
			HOR [dBμV]	VER [dBμV]					HOR [dBμV/m]	VER [dBμV/m]		HOR [dB]	VER [dB]
1.	844.60	BB	28.5	27.6	24.1	27.0	7.1	6.1	38.8	37.9	46.0	7.2	8.1

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

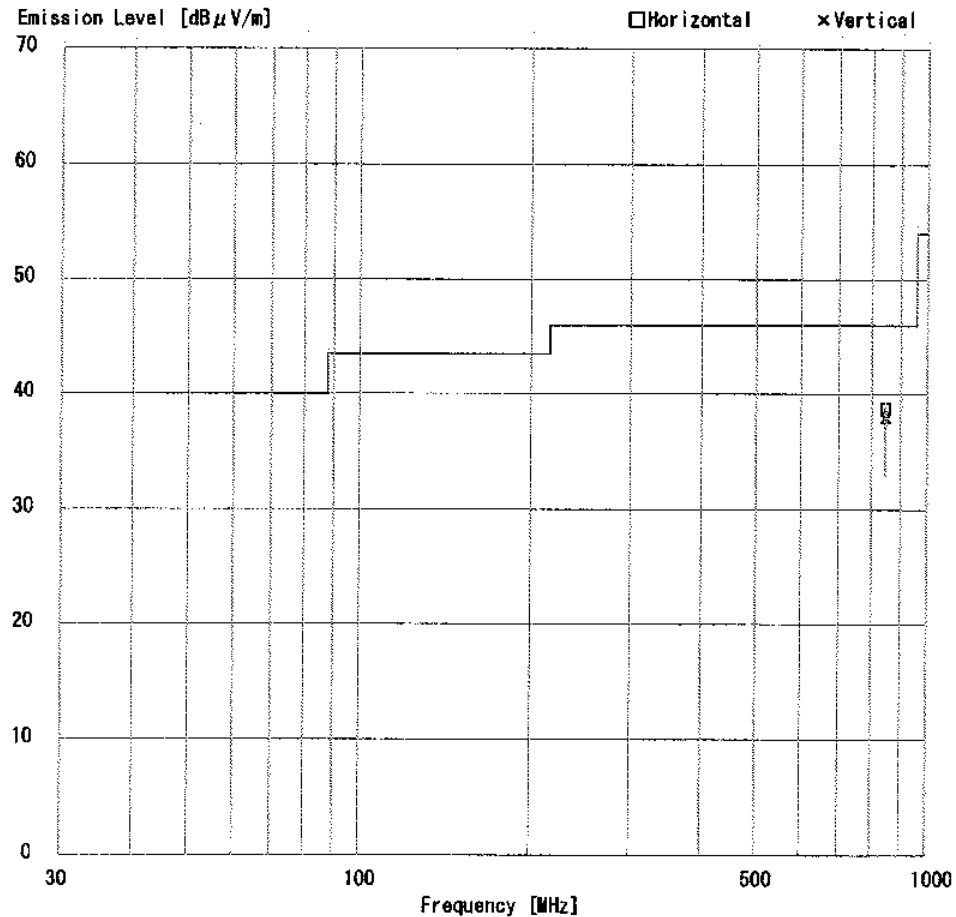
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : AV Input 2 + Rec Mode
Remarks : 1V p-p
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : VCR Playback Mode
Remarks : -
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dBμV]	VER [dBμV]					HOR [dBμV/m]	VER [dBμV/m]	HOR [dBμV/m]	VER [dBμV/m]	HOR [dB]	VER [dB]
1.	92.17	BB	35.0	33.1	8.4	27.9	2.0	5.9	23.4	21.5	43.5	20.1	22.0	
2.	134.99	BB	33.0	33.7	14.2	27.9	2.5	6.0	27.8	28.5	43.5	15.7	15.0	
3.	165.89	BB	33.0	29.8	15.2	27.8	2.8	6.0	29.2	26.0	43.5	14.3	17.5	
4.	188.99	BB	32.9	27.6	15.9	27.8	3.0	6.0	30.0	24.7	43.5	13.5	18.8	
5.	202.76	BB	32.3	27.0	16.3	27.8	3.1	6.0	29.9	24.6	43.5	13.6	18.9	
6.	324.01	BB	39.5	27.8	17.1	28.0	4.0	6.1	38.7	27.0	46.0	7.3	19.0	
7.	843.78	BB	28.4	30.8	24.1	27.0	7.1	6.1	38.7	41.1	46.0	7.3	4.9	
8.	972.00	BB	25.3	25.9	26.3	27.0	7.7	6.1	38.4	39.0	54.0	15.6	15.0	

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

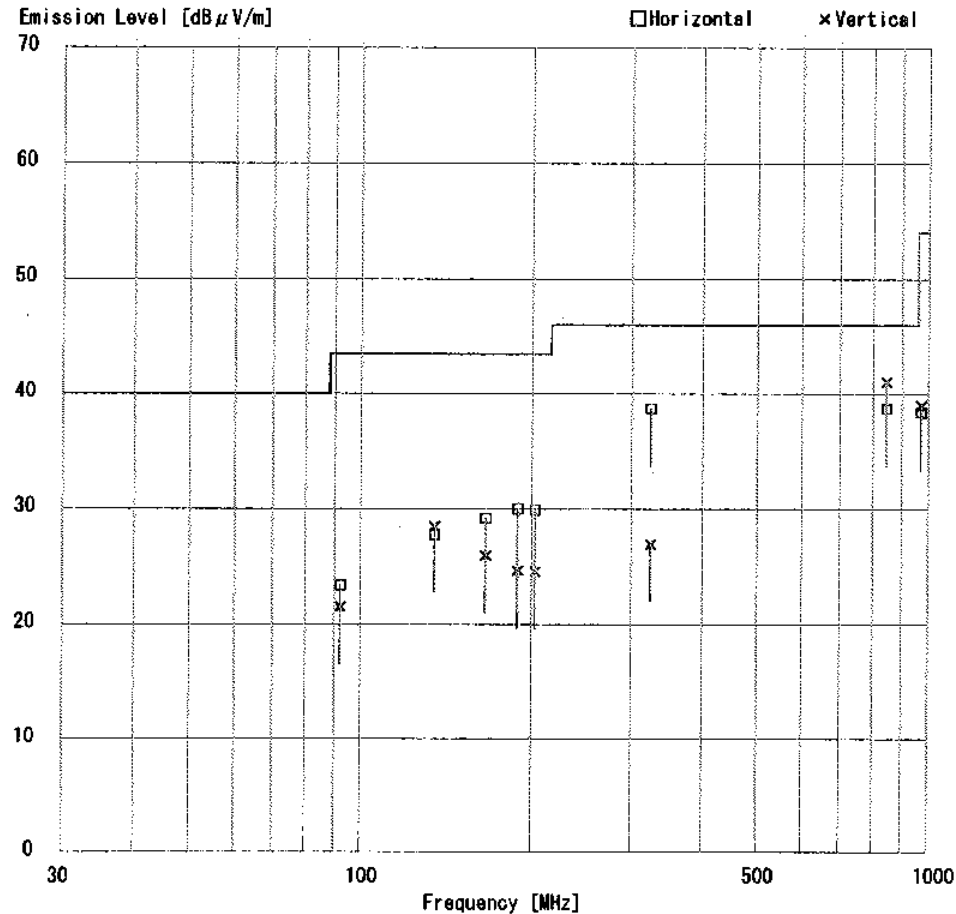
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : VCR Playback Mode
Remarks :
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks :
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μV]	VER [dB μV]					HOR [dB μV/m]	VER [dB μV/m]	HOR [dB μV/m]	VER [dB μV/m]	HOR [dB]	VER [dB]
1.	108.00	BB	38.1	41.2	11.2	29.8	2.7	6.0	28.2	31.3	43.5	15.3	12.2	
2.	125.46	BB	33.5	30.0	13.6	29.8	2.6	6.0	25.9	22.4	43.5	17.6	21.1	
3.	135.48	BB	42.8	35.5	14.4	29.7	2.7	6.0	36.2	28.9	43.5	7.3	14.6	
4.	144.47	BB	40.5	36.0	14.9	29.8	5.0	6.0	36.8	32.1	43.5	6.9	11.4	
5.	153.56	BB	37.6	34.2	15.1	29.7	2.8	6.0	31.8	28.4	43.5	11.7	15.1	
6.	180.65	BB	45.6	33.6	16.0	29.8	3.0	6.0	40.8	28.8	43.5	2.7	14.7	
7.	323.99	BB	46.0	37.1	14.8	30.1	4.3	6.1	41.1	32.2	46.0	4.9	13.8	
8.	756.01	BB	25.0	32.9	20.8	30.3	7.2	6.1	28.8	36.7	46.0	17.2	9.3	
9.	844.60	BB	22.2	22.4	21.1	29.6	7.7	6.1	27.5	27.7	46.0	18.5	18.3	
10.	1080.02	BB	50.0	51.5	24.9	38.6	1.7	0.0	38.0	39.5	54.0	16.0	14.5	
11.	1188.00	BB	49.0	58.2	25.4	38.5	1.7	0.0	37.6	46.8	54.0	16.4	7.2	
12.	1413.32	BB	58.7	58.5	26.4	38.2	1.8	0.0	48.7	48.5	54.0	5.3	5.5	
13.	1693.80	BB	48.7	48.0	28.2	38.0	1.9	0.0	40.8	40.1	54.0	13.2	13.9	
14.	1976.53	BB	48.5	49.2	30.1	37.8	2.0	0.0	42.8	43.5	54.0	11.2	10.5	

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

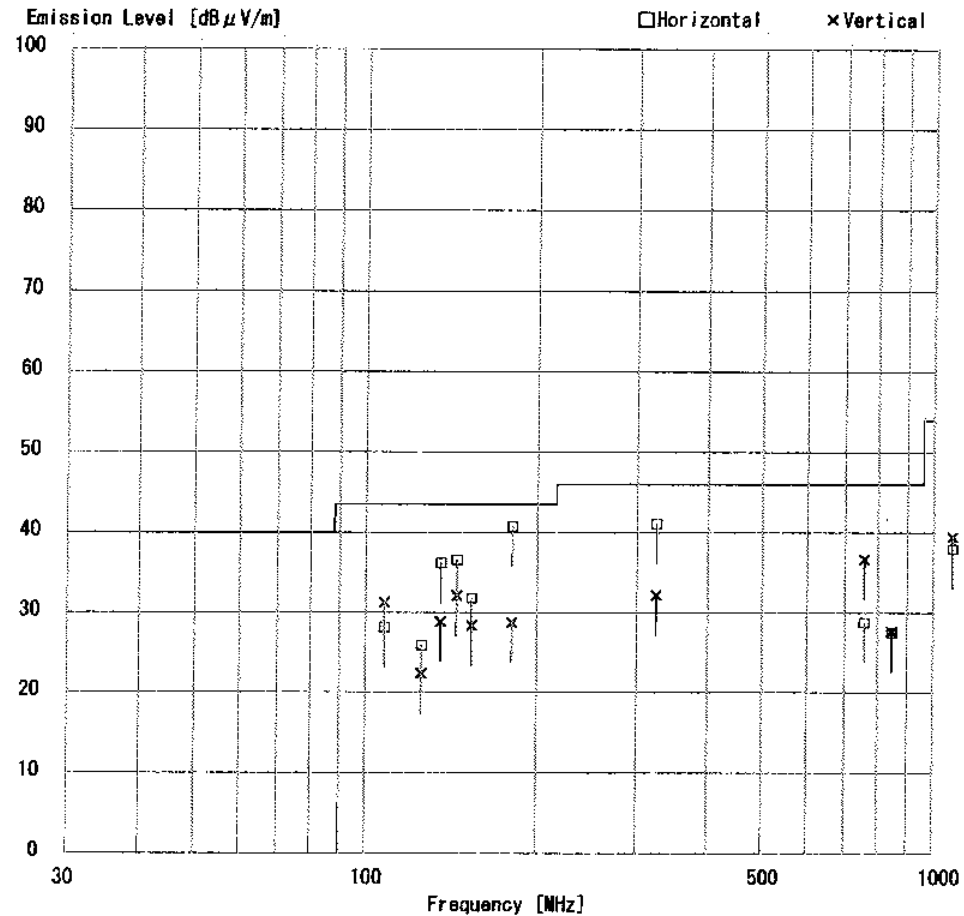
Except for the above table : adequate margin data below the limits.
ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks : -
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks : Test Channel #3
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dBμV]	VER [dBμV]					HOR [dBμV/m]	VER [dBμV/m]	HOR [dBμV/m]	VER [dBμV/m]	HOR [dB]	VER [dB]
1.	61.25	BB	24.0	24.9	7.8	27.9	1.6	5.9	11.4	12.3	40.0	28.6	27.7	
2.	65.75	BB	24.9	27.3	7.1	27.8	1.7	6.0	11.9	14.3	40.0	28.1	25.7	
3.	122.50	BB	22.5	23.6	13.2	27.9	2.3	6.0	16.1	17.2	43.5	27.4	26.3	
4.	245.00	BB	24.6	22.6	16.8	27.4	3.1	6.0	23.1	21.1	46.0	22.9	24.9	

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

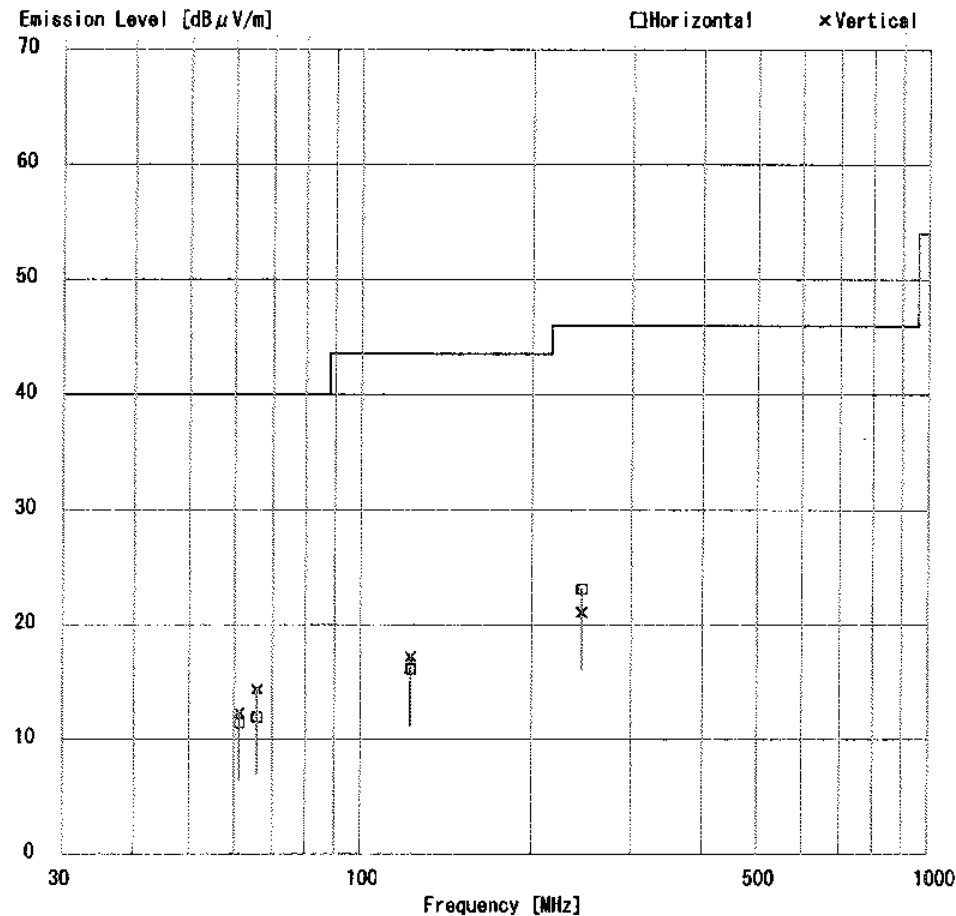
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logpridic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks : Test Channel #3
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. :
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks : Test Channel #4
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka

No.	FREQ. [MHz]	ANT. TYPE	READING [dBμV]		ANT. FACTOR [dB/m]	AMP. GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT [dBμV/m]		LIMITS [dBμV/m]		MARGIN [dB]	
			HOR	VER					HOR	VER	HOR	VER	HOR	VER
1.	67.25	BB	25.6	26.9	6.9	27.9	1.7	6.0	12.3	13.6	40.0	27.7	26.4	
2.	71.75	BB	26.3	27.0	6.4	27.9	1.8	6.0	12.6	13.3	40.0	27.4	26.7	
3.	134.50	BB	24.6	22.6	14.2	27.9	2.5	6.0	19.4	17.4	43.5	24.1	26.1	
4.	201.75	BB	23.1	22.2	16.3	27.8	3.1	6.0	20.7	19.8	43.5	22.8	23.7	

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

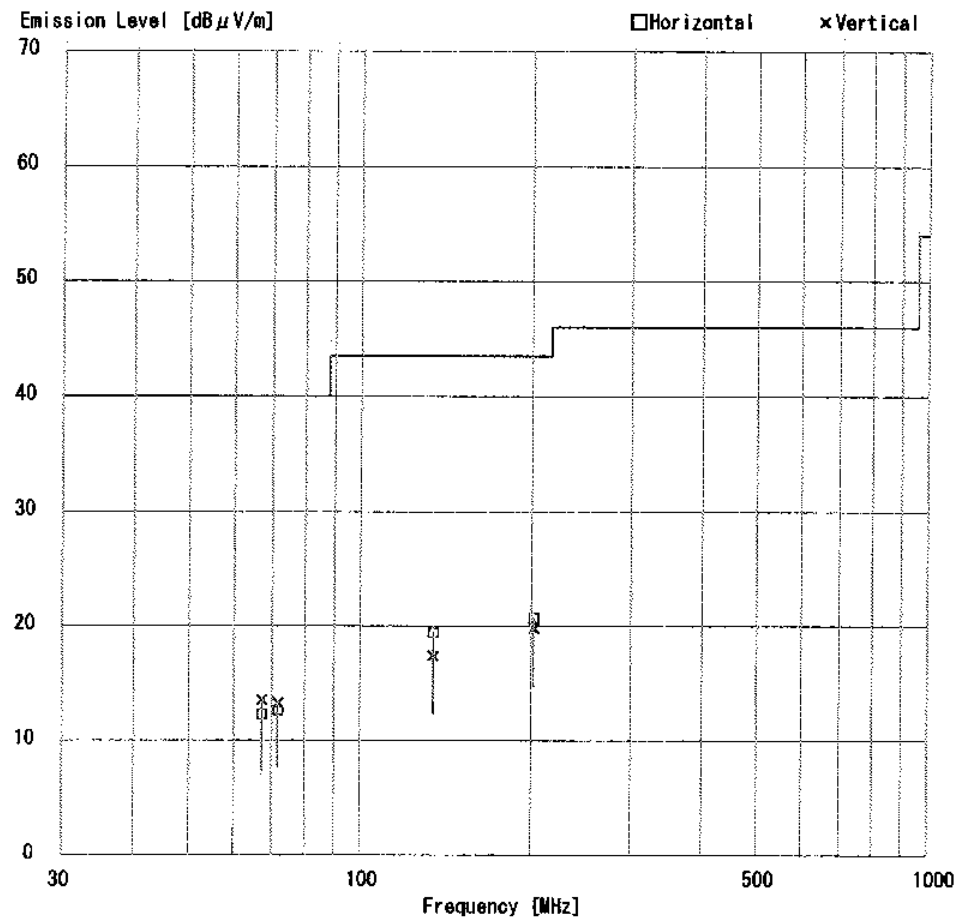
Except for the above table: adequate margin data below the limits.
ANT. TYPE : 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0092-YW-1

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : DVD/VCR
Model No. : SD-K220U
Serial No. : -
Power : AC120V/60Hz
Mode : DVD Playback Mode
Remarks : Test Channel #4
Date : 11/23/2002
Test Distance : 3 m
Temperature : 22 °C
Humidity : 49 %
Regulation : FCC Part15B CLASS B

Engineer : Hisayuki Kioka



DATA OF ANTENNA TERMINAL TEST

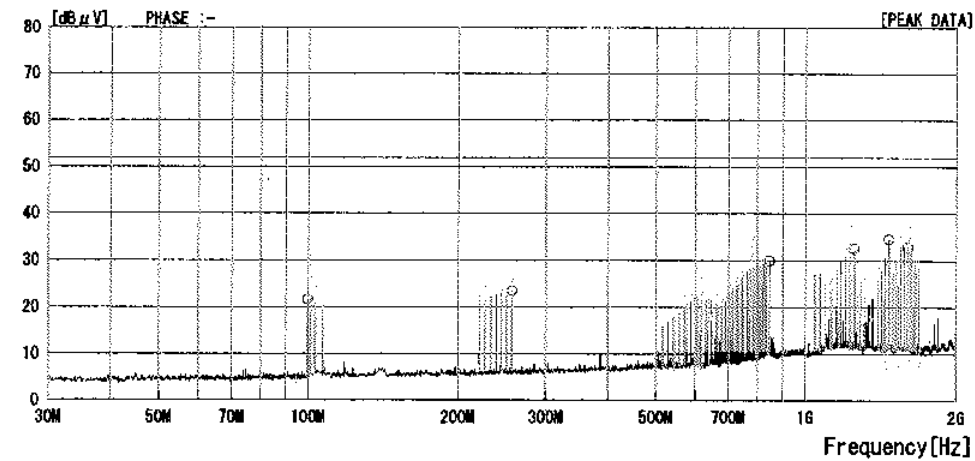
A-PEX INTERNATIONAL CO., LTD.
Date : 2002/11/26 21:22:06

COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
MODEL : SD-K220U
OPERATION MODE : TUNING

REPORT NO : 23DE0092-YW-1
DATE : November 25, 2002
REGULATION : FCC PART 15B
TEST ENGINEER : Hisayuki Kioka

REMARKS : TV MODE

LIMIT : FCC 15B ANTENNA TERMINAL



NO	FREQ [MHz]	READING (PK) [dBμV]	C. F [dB]	RESULT [dBμV]	LIMIT		MARGIN		PHASE
					QP [dBμV]	AV [dBμV]	QP [dB]	AV [dB]	
1	98.59900	51.4	-29.8	21.6	52.0	---	30.4	---	-
2	256.85999	52.2	-28.7	23.5	52.0	---	28.5	---	-
3	846.57703	54.8	-24.9	29.9	52.0	---	22.1	---	-
4	1249.98401	62.4	-29.8	32.6	52.0	---	19.4	---	-
5	1465.68201	63.6	-29.1	34.5	52.0	---	17.5	---	-
6	1597.84998	61.6	-28.9	32.7	52.0	---	19.3	---	-

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

DATA OF ANTENNA TERMINAL TEST

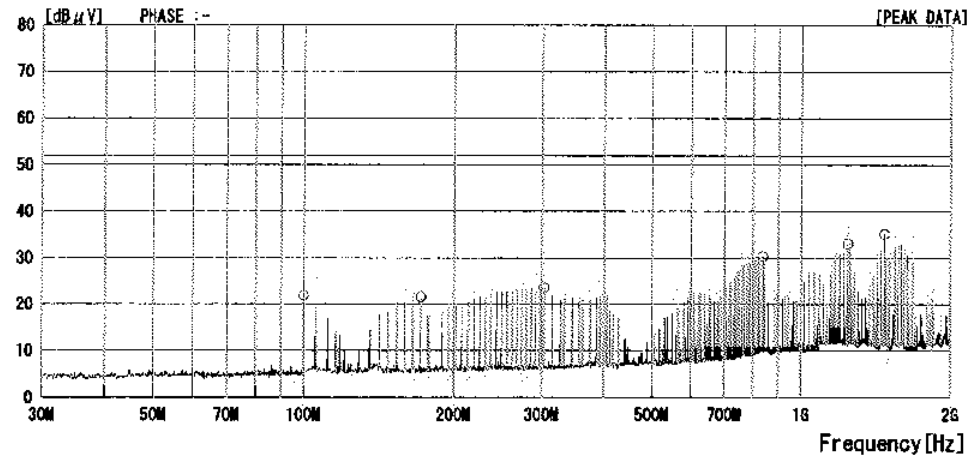
A-PEX INTERNATIONAL CO., LTD.
Date : 2002/11/26 21:29:46

COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
MODEL : SD-K220U
OPERATION MODE : TUNNING

REPORT NO : 23DE0092-YW-1
DATE : November 25, 2002
REGULATION : FCC PART 15B
TEST ENGINEER : Hisayuki Kioka

REMARKS : CATV MODE
LIMIT : FCC 15B ANTENNA TERMINAL

Hisayuki Kioka



NO	FREQ [MHz]	READING(PK) [dBμV]	C.F [dB]	RESULT [dBμV]	LIMIT OP [dBμV]	AV [dBμV]	MARGIN OP [dB]	AV [dB]	PHASE
1	99.89900	51.6	-29.8	21.8	52.0	---	30.2	---	-
2	171.71500	50.8	-29.3	21.5	52.0	---	30.6	---	-
3	303.42899	52.2	-28.7	23.5	52.0	---	28.5	---	-
4	837.57703	55.4	-25.1	30.3	52.0	---	21.7	---	-
5	1243.55603	62.8	-29.8	33.0	52.0	---	19.0	---	-
6	1472.10999	64.2	-29.1	35.1	52.0	---	16.9	---	-

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



RF output level

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LAB.

Company : Orion Electric Co., Ltd.
Equipment : DVD/VCR
Model number : SD-K220U
Power : AC 120 V / 60 Hz
Description : TV reception + REC (0 dBmV)

Report Number : 23DE0092-YW-1
Regulation : FCC Part 15 Subpart B
Date : November 21, 2002

Engineer

Hisayuki Kioka
Hisayuki Kioka

Video signal

Ch.	Frequency [MHz]	Meter reading [dBμV]	Correction factor [dB]	Result [dB]	Limits [dBμV]	Margin [dB]
3	61.25	87.4	20.4	67.0	69.5	2.5
4	67.25	87.5	20.4	67.1	69.5	2.4

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBμV]	Correction factor [dB]	Result [dB]	Limits [dBμV]	Margin [dB]
3	56.75	73.1	20.4	52.7	56.5	3.8
	65.75	72.0	20.4	51.6	56.5	4.9
4	62.75	72.6	20.4	52.2	56.5	4.3
	71.75	71.7	20.4	51.3	56.5	5.2



RF output level

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LAB.

Company : Orion Electric Co., Ltd. Report Number : 23DE0092-YW-1
Equipment : DVD/VCR Regulation : FCC Part 15 Subpart B
Model number : SD-K220U Date : November 21, 2002
Power : AC 120 V / 60 Hz
Description : TV reception + REC (25 dBmV)

Engineer : Hisayuki Kioka

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	87.3	20.4	66.9	69.5	2.6
4	67.25	87.3	20.4	66.9	69.5	2.6

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	73.2	20.4	52.8	56.5	3.7
	65.75	72.1	20.4	51.7	56.5	4.8
4	62.75	71.5	20.4	51.1	56.5	5.4
	71.75	70.6	20.4	50.2	56.5	6.3



RF output level

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LAB.

Company : Orion Electric Co., Ltd. Report Number : 23DE0092-YW-1
Equipment : DVD/VCR Regulation : FCC Part 15 Subpart B
Model number : SD-K220U Date : November 21, 2002
Power : AC 120 V / 60 Hz
Description : AV Input 1 + REC (1V p-p)

Engineer : Hisayuki Kioka

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	86.1	20.4	65.7	69.5	3.8
4	67.25	86.5	20.4	66.1	69.5	3.4

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	73.9	20.4	53.5	56.5	3.0
	65.75	72.3	20.4	51.9	56.5	4.6
4	62.75	71.9	20.4	51.5	56.5	5.0
	71.75	73.5	20.4	53.1	56.5	3.4



RF output level

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LAB.

Company : Orion Electric Co., Ltd.
Equipment : DVD/VCR
Model number : SD-K220U
Power : AC 120 V / 60 Hz
Description : AV Input 1 + REC (5V p-p)

Report Number : 23DE0092-YW-1
Regulation : FCC Part 15 Subpart B
Date : November 21, 2002

Engineer : Hisayuki Kioka

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	86.4	20.4	66.0	69.5	3.5

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	73.3	20.4	52.9	56.5	3.6
	65.75	72.6	20.4	52.2	56.5	4.3
4	62.75	72.8	20.4	52.4	56.5	4.1
	71.75	71.7	20.4	51.3	56.5	5.2



RF output level

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LAB.

Company : Orion Electric Co., Ltd.
Equipment : DVD/VCR
Model number : SD-K220U
Power : AC 120 V / 60 Hz
Description : AV Input 2 + REC (1V p-p)

Report Number : 23DE0092-YW-1
Regulation : FCC Part 15 Subpart B
Date : November 21, 2002

Engineer : Hisayuki Kioka

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	86.0	20.4	65.6	69.5	3.9
4	67.25	86.2	20.4	65.8	69.5	3.7

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	73.4	20.4	53.0	56.5	3.5
	65.75	72.3	20.4	51.9	56.5	4.6
4	62.75	73.2	20.4	52.8	56.5	3.7
	71.75	71.6	20.4	51.2	56.5	5.3



RF output level

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LAB.

Company : Orion Electric Co., Ltd.
Equipment : DVD/VCR
Model number : SD-K220U
Power : AC 120 V / 60 Hz
Description : AV Input 2 + REC (5V p-p)

Report Number : 23DE0092-YW-1
Regulation : FCC Part 15 Subpart B
Date : November 21, 2002

Engineer : Hisayuki Kioka

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	87.0	20.4	66.6	69.5	2.9
4	67.25	86.8	20.4	66.4	69.5	3.1

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	73.3	20.4	52.9	56.5	3.6
	65.75	72.2	20.4	51.8	56.5	4.7
	62.75	72.3	20.4	51.9	56.5	4.6
4	71.75	70.8	20.4	50.4	56.5	6.1



RF output level

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LAB.

Company : Orion Electric Co., Ltd.
Equipment : DVD/VCR
Model number : SD-K220U
Power : AC 120 V / 60 Hz
Description : VCR Playback

Report Number : 23DE0092-YW-1
Regulation : FCC Part 15 Subpart B
Date : November 21, 2002

Engineer : Hisayuki Kioka

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	86.6	20.4	66.2	69.5	3.3
4	67.25	86.1	20.4	65.7	69.5	3.8

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	73.1	20.4	52.7	56.5	3.8
	65.75	72.1	20.4	51.7	56.5	4.8
	62.75	72.6	20.4	52.2	56.5	4.3
4	71.75	71.7	20.4	51.3	56.5	5.2



RF output level

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LAB.

Company : Orion Electric Co., Ltd.
Equipment : DVD/VCR
Model number : SD-K220U
Power : AC 120 V / 60 Hz
Description : DVD Playback

Report Number : 23DE0092-YW-1
Regulation : FCC Part 15 Subpart B
Date : November 21, 2002

Engineer : Hisayuki Kioka

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	87.6	20.4	67.2	69.5	2.3
4	67.25	87.5	20.4	67.1	69.5	2.4

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	73.4	20.4	53.0	56.5	3.5
	65.75	72.2	20.4	51.8	56.5	4.7
4	62.75	72.5	20.4	52.1	56.5	4.4
	71.75	71.5	20.4	51.1	56.5	5.4

DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LABORATORY

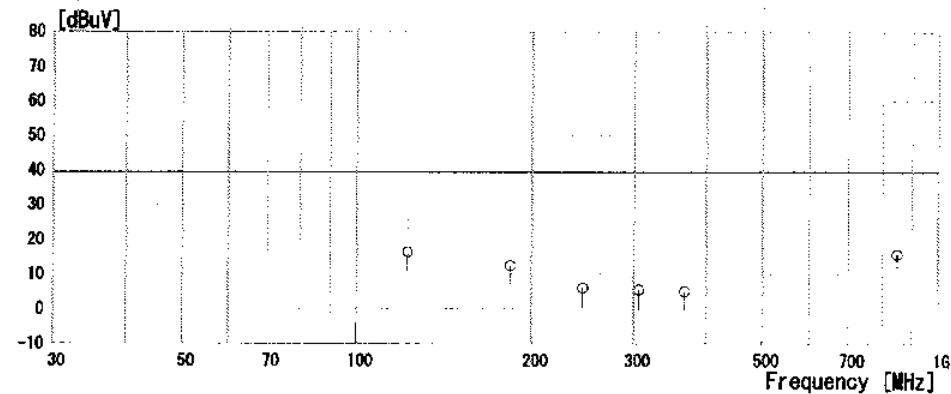
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : TV Reception + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 25dBmV Input
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer : Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV	C. FACTOR [dB]	RESULT QP [dBuV]	AV	LIMIT QP [dBuV]	AV	MARGIN QP [dB]	AV
1	122.500	38.3	---	-21.9	16.4	---	39.5	---	23.1	---
2	183.750	34.5	---	-22.0	12.5	---	39.5	---	27.0	---
3	245.000	28.0	---	-22.0	6.0	---	39.5	---	33.5	---
4	306.250	27.5	---	-22.0	5.5	---	39.5	---	34.0	---
5	367.500	27.3	---	-22.3	5.0	---	39.5	---	34.5	---
6	849.000	37.1	---	-21.4	15.7	---	39.5	---	23.8	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dB μ V]
+ CABLE LOSS[dB μ V] - AMPLIFIER GAIN[dB μ V]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA ENG. LABORATORY

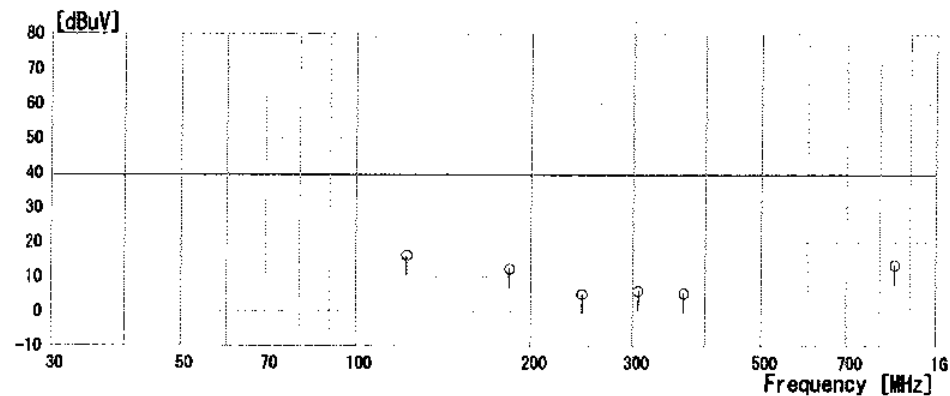
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : TV Reception + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 0dBm Input
REMARKS 2 : 3GHz Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	C. FACTOR AV [dB]	RESULT QP [dBuV]	LIMIT QP [dBuV]	MARGIN AV [dB]
1	122.500	38.0	-21.9	16.1	39.5	23.4
2	183.750	34.4	-22.0	12.4	39.5	27.1
3	245.000	27.0	-22.0	5.0	39.5	34.5
4	306.250	27.9	-22.0	5.9	39.5	33.6
5	367.500	27.5	-22.3	5.2	39.5	34.3
6	849.000	34.9	-21.4	13.5	39.5	26.0

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA ENG. LABORATORY

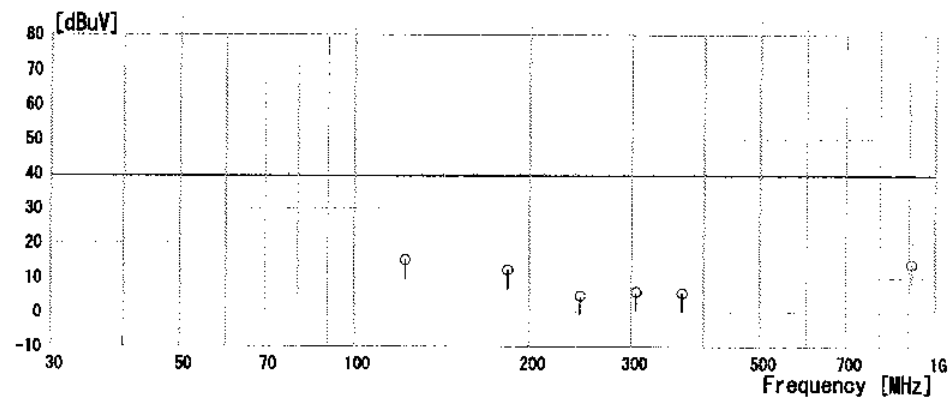
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 2 + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 3GHz Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	C. FACTOR AV [dB]	RESULT QP [dBuV]	LIMIT QP [dBuV]	MARGIN AV [dB]
1	122.500	37.0	-21.9	15.1	39.5	24.4
2	183.750	34.3	-22.0	12.3	39.5	27.2
3	245.000	26.8	-22.0	4.8	39.5	34.7
4	306.250	27.9	-22.0	5.9	39.5	33.6
5	367.500	27.8	-22.3	5.5	39.5	34.0
6	909.250	34.9	-21.1	13.8	39.5	25.7

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

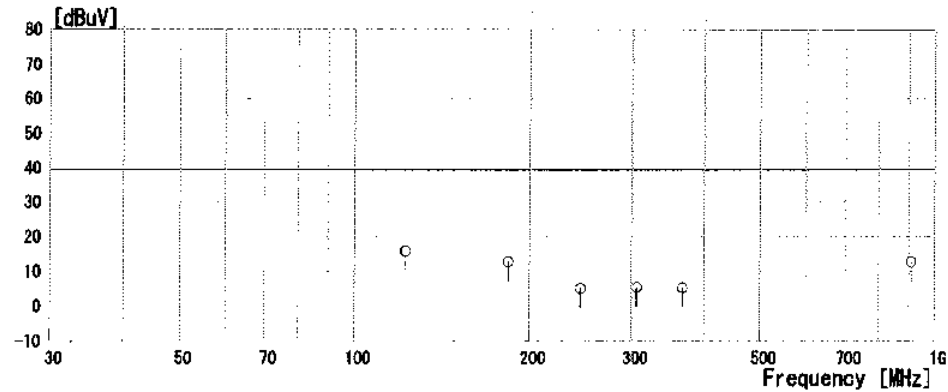
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 2 + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	122.500	37.7	—	-21.9	15.8	—	39.5	—	23.7	—
2	183.750	34.8	—	-22.0	12.8	—	39.5	—	26.7	—
3	245.000	27.1	—	-22.0	5.1	—	39.5	—	34.4	—
4	306.250	27.4	—	-22.0	5.4	—	39.5	—	34.1	—
5	367.500	27.5	—	-22.3	5.2	—	39.5	—	34.3	—
6	909.250	33.9	—	-21.1	12.8	—	39.5	—	26.7	—

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

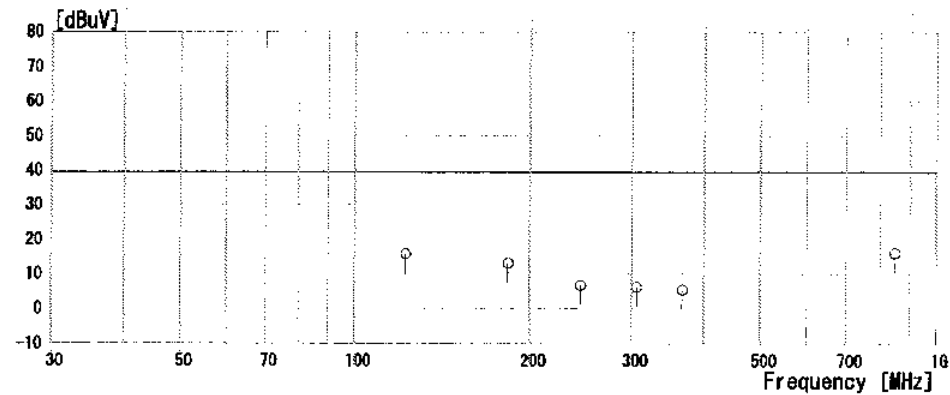
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 1 + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	122.500	37.6	—	-21.9	15.7	—	39.5	—	23.8	—
2	183.750	35.1	—	-22.0	13.1	—	39.5	—	26.4	—
3	245.000	28.7	—	-22.0	6.7	—	39.5	—	32.8	—
4	306.250	28.2	—	-22.0	6.2	—	39.5	—	33.3	—
5	367.500	27.7	—	-22.3	5.4	—	39.5	—	34.1	—
6	849.000	37.5	—	-21.4	16.1	—	39.5	—	23.4	—

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOMA EMC LABORATORY

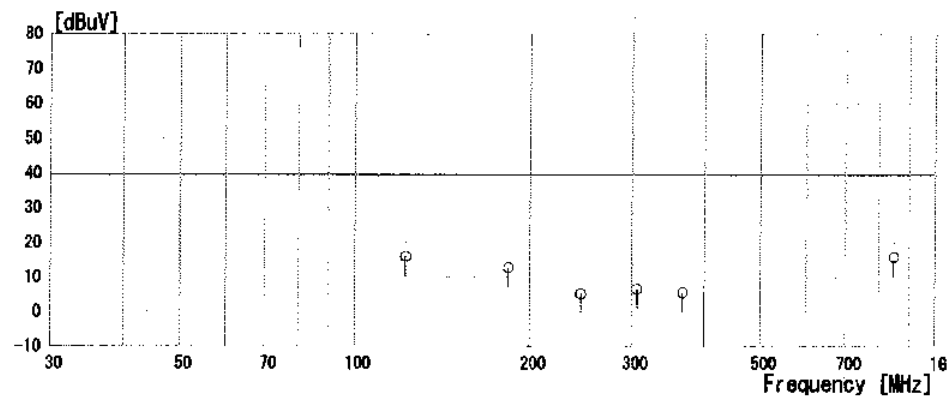
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 1 + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	C. FACTOR [dB]	RESULT QP [dBuV]	LIMIT QP [dBuV]	MARGIN QP [dB]
1	122.500	37.8	-21.9	15.9	39.5	23.6
2	183.750	34.8	-22.0	12.8	39.5	26.7
3	245.000	27.2	-22.0	5.2	39.5	34.3
4	306.250	28.5	-22.0	6.5	39.5	33.0
5	367.500	27.8	-22.3	5.5	39.5	34.0
6	849.000	37.2	-21.4	15.8	39.5	23.7

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dB μV]
+ CABLE LOSS[dB μV] - AMPLIFIER GAIN[dB μV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOMA EMC LABORATORY

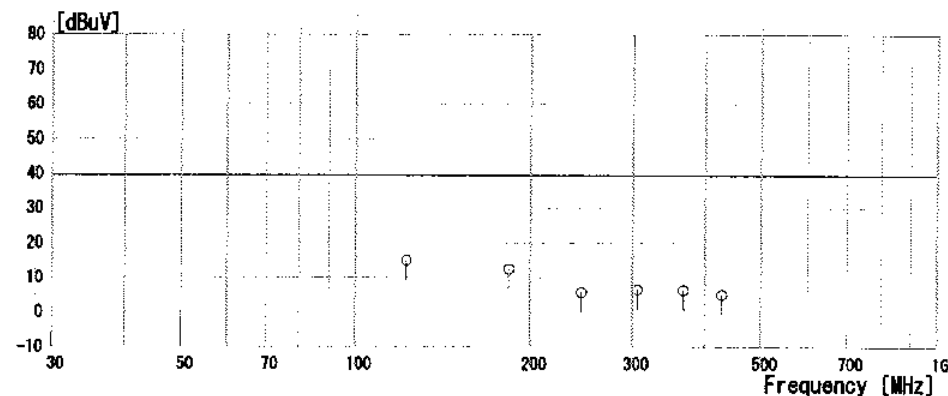
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : VCR Playback
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : -
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	C. FACTOR [dB]	RESULT QP [dBuV]	LIMIT QP [dBuV]	MARGIN QP [dB]
1	122.500	36.9	-21.9	15.0	39.5	24.5
2	183.750	34.6	-22.0	12.6	39.5	26.9
3	245.000	27.7	-22.0	5.7	39.5	33.8
4	306.250	28.5	-22.0	6.5	39.5	33.0
5	367.500	28.6	-22.3	6.3	39.5	33.2
6	428.250	26.8	-21.7	5.1	39.5	34.4

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dB μV]
+ CABLE LOSS[dB μV] - AMPLIFIER GAIN[dB μV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

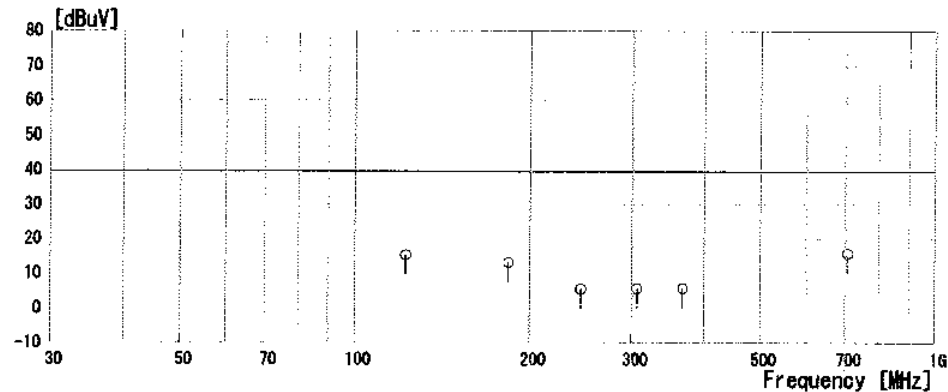
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : DVD Playback
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 :
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV	C. FACTOR [dB]	RESULT QP [dBuV]	AV	LIMIT QP [dBuV]	AV	MARGIN QP [dB]	AV
1	122.500	37.1	---	-21.9	15.2	---	39.5	---	24.3	---
2	183.750	35.1	---	-22.0	13.1	---	39.5	---	26.4	---
3	245.000	27.5	---	-22.0	5.5	---	39.5	---	34.0	---
4	306.250	27.6	---	-22.0	5.6	---	39.5	---	33.9	---
5	367.500	27.9	---	-22.3	5.6	---	39.5	---	33.9	---
6	707.100	37.4	---	-21.7	15.7	---	39.5	---	23.8	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

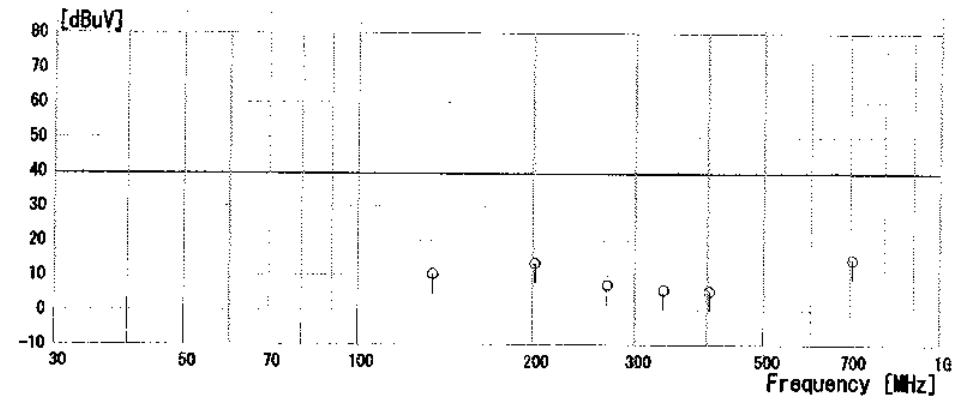
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : TV Reception + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 0dBm Input
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV	C. FACTOR [dB]	RESULT QP [dBuV]	AV	LIMIT QP [dBuV]	AV	MARGIN QP [dB]	AV
1	134.500	32.2	---	-21.8	10.4	---	39.5	---	29.1	---
2	201.750	35.3	---	-21.8	13.5	---	39.5	---	26.0	---
3	269.000	29.2	---	-22.0	7.2	---	39.5	---	32.3	---
4	336.250	27.9	---	-22.1	5.8	---	39.5	---	33.7	---
5	403.480	27.6	---	-22.2	5.4	---	39.5	---	34.1	---
6	707.100	36.1	---	-21.7	14.4	---	39.5	---	25.1	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOMA EMC LABORATORY

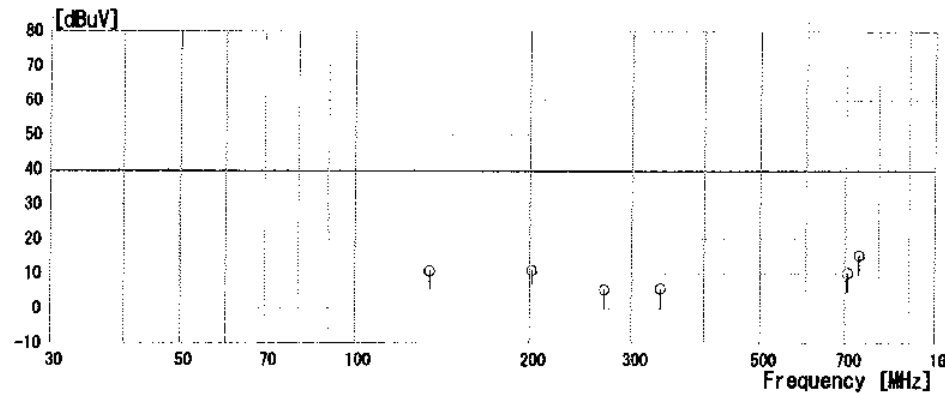
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : TV Reception + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 25dBuV Input
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	134.500	32.5	---	-21.8	10.7	---	39.5	---	28.8	---
2	201.750	32.7	---	-21.8	10.9	---	39.5	---	28.6	---
3	269.000	27.4	---	-22.0	5.4	---	39.5	---	34.1	---
4	336.250	27.8	---	-22.1	5.7	---	39.5	---	33.8	---
5	707.100	31.9	---	-21.7	10.2	---	39.5	---	29.3	---
6	739.350	37.2	---	-21.9	15.3	---	39.5	---	24.2	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dB μ V]
+ CABLE LOSS[dB μ V] - AMPLIFIER GAIN[dB μ V]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOMA EMC LABORATORY

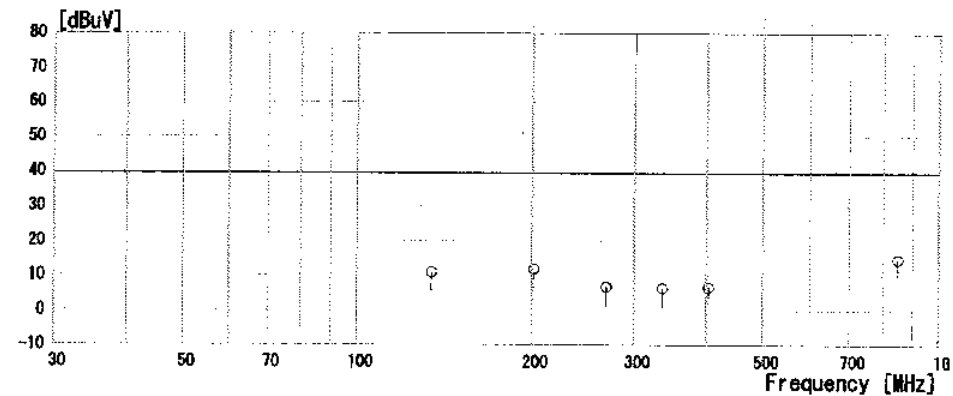
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 1+ Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	134.500	32.7	---	-21.8	10.9	---	39.5	---	28.6	---
2	201.750	33.6	---	-21.8	11.8	---	39.5	---	27.7	---
3	269.000	28.7	---	-22.0	6.7	---	39.5	---	32.8	---
4	336.250	28.5	---	-22.1	6.4	---	39.5	---	33.1	---
5	403.500	28.8	---	-22.2	6.6	---	39.5	---	32.9	---
6	849.000	36.0	---	-21.4	14.7	---	39.5	---	24.8	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dB μ V]
+ CABLE LOSS[dB μ V] - AMPLIFIER GAIN[dB μ V]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA ENG. LABORATORY

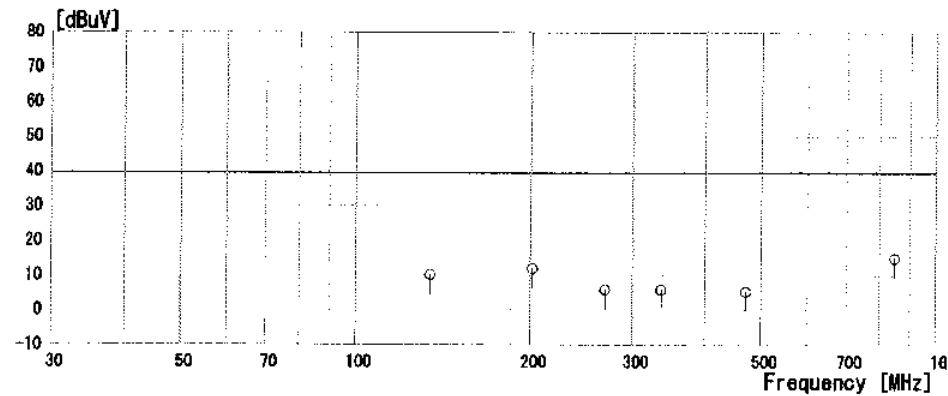
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 1 + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	C. FACTOR [dB]	RESULT QP [dBuV]	LIMIT QP [dBuV]	MARGIN QP [dB]
1	134.500	31.9	-21.8	10.1	39.5	29.4
2	201.750	33.7	-21.8	11.9	39.5	27.6
3	269.000	27.8	-22.0	5.8	39.5	33.7
4	336.250	27.9	-22.1	5.8	39.5	33.7
5	470.750	27.4	-22.1	5.3	39.5	34.2
6	849.000	36.3	-21.4	14.9	39.5	24.6

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA ENG. LABORATORY

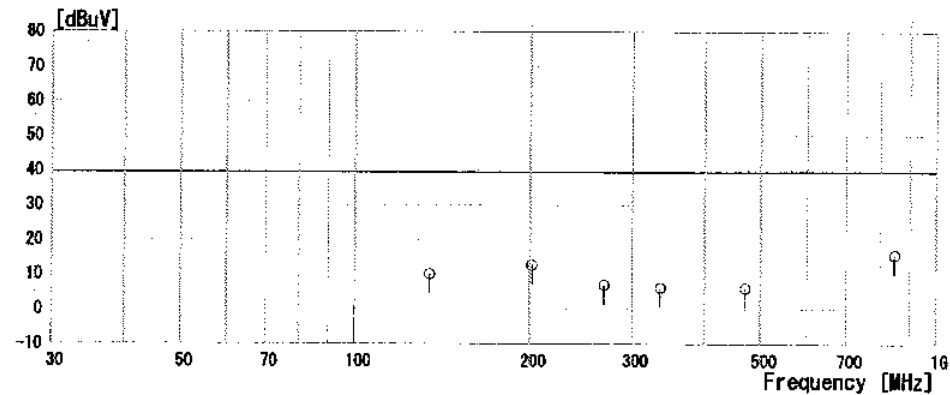
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 2 + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	C. FACTOR [dB]	RESULT QP [dBuV]	LIMIT QP [dBuV]	MARGIN QP [dB]
1	134.500	31.9	-21.8	10.1	39.5	29.4
2	201.750	34.5	-21.8	12.7	39.5	26.8
3	269.000	28.9	-22.0	6.9	39.5	32.6
4	336.250	28.2	-22.1	6.1	39.5	33.4
5	470.750	28.2	-22.1	6.1	39.5	33.4
6	848.190	37.0	-21.4	15.6	39.5	23.9

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOMA EMC LABORATORY

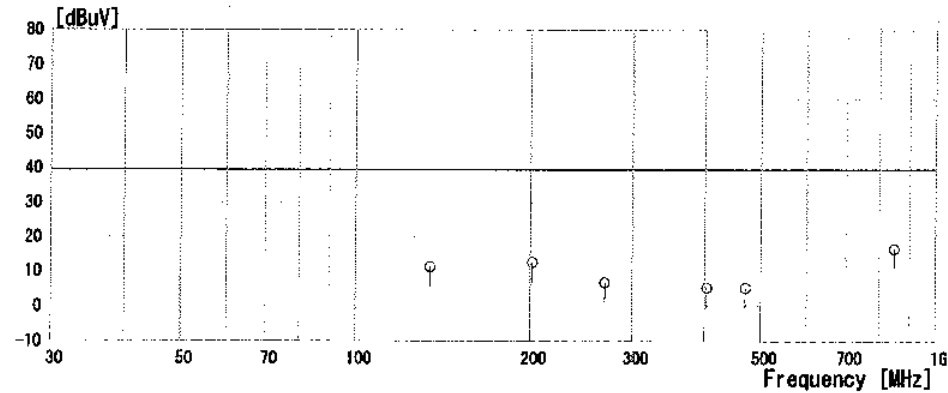
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 2 + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	134.500	32.9	---	-21.8	11.1	---	39.5	---	28.4	---
2	201.750	34.2	---	-21.8	12.4	---	39.5	---	27.1	---
3	269.000	28.6	---	-22.0	6.6	---	39.5	---	32.9	---
4	403.500	27.4	---	-22.2	5.2	---	39.5	---	34.3	---
5	470.750	27.3	---	-22.1	5.2	---	39.5	---	34.3	---
6	848.000	37.8	---	-21.4	16.4	---	39.5	---	23.1	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOMA EMC LABORATORY

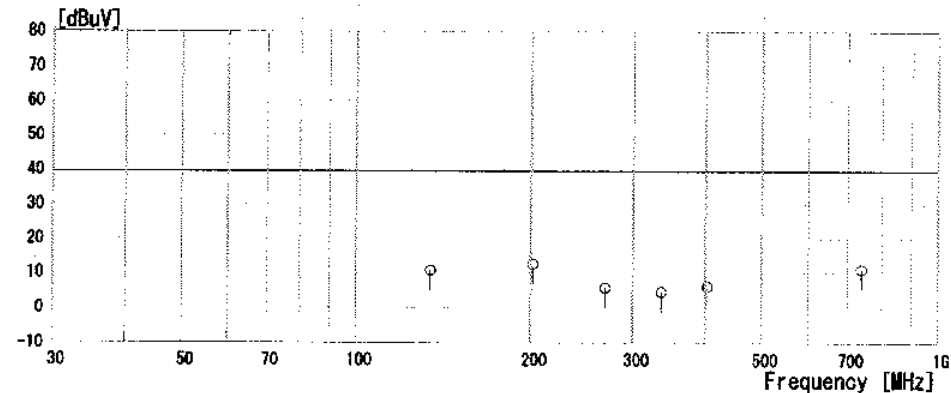
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : VCR Playback
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : -
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	134.500	32.4	---	-21.8	10.6	---	39.5	---	28.9	---
2	201.750	34.2	---	-21.8	12.4	---	39.5	---	27.1	---
3	269.000	27.6	---	-22.0	5.6	---	39.5	---	33.9	---
4	338.250	26.6	---	-22.1	4.5	---	39.5	---	35.0	---
5	403.480	28.2	---	-22.2	6.0	---	39.5	---	33.5	---
6	739.750	32.9	---	-21.9	11.0	---	39.5	---	28.5	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF RF SPURIOUS

A-PEX INTERNATIONAL CO., LTD.
YOKOMA EMC LABORATORY

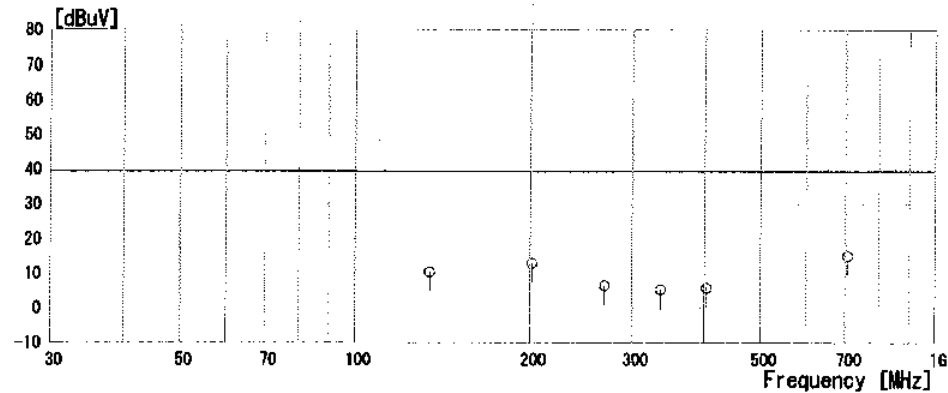
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EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : DVD Playback
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 :
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	C. FACTOR [dB]	RESULT QP [dBuV]	LIMIT QP [dBuV]	MARGIN QP [dB]
1	134.500	32.2	-21.8	10.4	39.5	29.1
2	201.750	34.8	-21.8	13.0	39.5	26.5
3	269.000	28.4	-22.0	6.4	39.5	33.1
4	336.250	27.4	-22.1	5.3	39.5	34.2
5	403.480	27.9	-22.2	5.7	39.5	33.8
6	707.100	36.7	-21.7	15.0	39.5	24.5

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOMA EMC LABORATORY

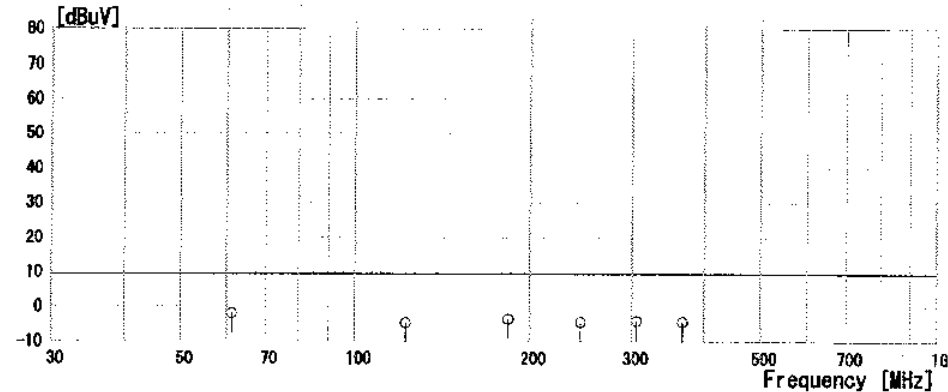
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV INPUT 1 + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p INPUT
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	C. FACTOR [dB]	RESULT QP [dBuV]	LIMIT QP [dBuV]	MARGIN QP [dB]
1	61.250	19.8	-21.7	-1.9	9.5	11.4
2	122.500	17.2	-21.9	-4.7	9.5	14.2
3	183.750	18.5	-22.0	-3.5	9.5	13.0
4	245.000	17.6	-22.0	-4.4	9.5	13.9
5	306.250	17.9	-22.0	-4.1	9.5	13.6
6	367.500	17.9	-22.3	-4.4	9.5	13.9

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA ENG. LABORATORY

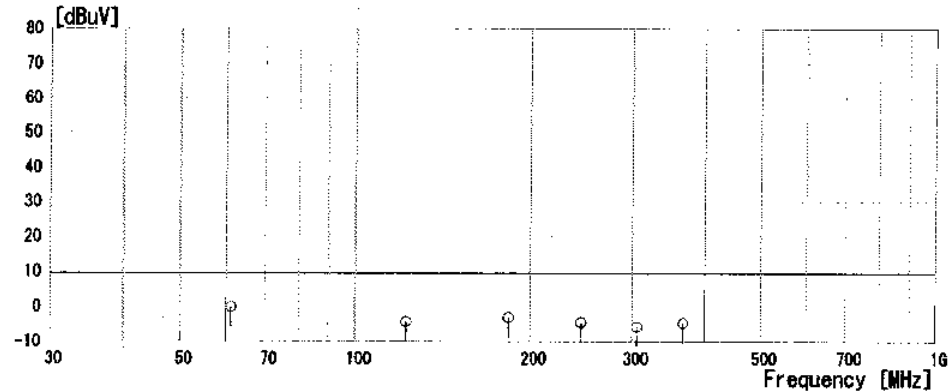
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV INPUT 1 + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p INPUT
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	61.250	21.6	—	-21.7	-0.1	—	9.5	—	9.6	—
2	122.500	17.5	—	-21.9	-4.4	—	9.5	—	13.9	—
3	183.750	18.9	—	-22.0	-3.1	—	9.5	—	12.6	—
4	245.000	17.5	—	-22.0	-4.5	—	9.5	—	14.0	—
5	306.250	16.2	—	-22.0	-5.8	—	9.5	—	15.3	—
6	367.500	17.6	—	-22.3	-4.7	—	9.5	—	14.2	—

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA ENG. LABORATORY

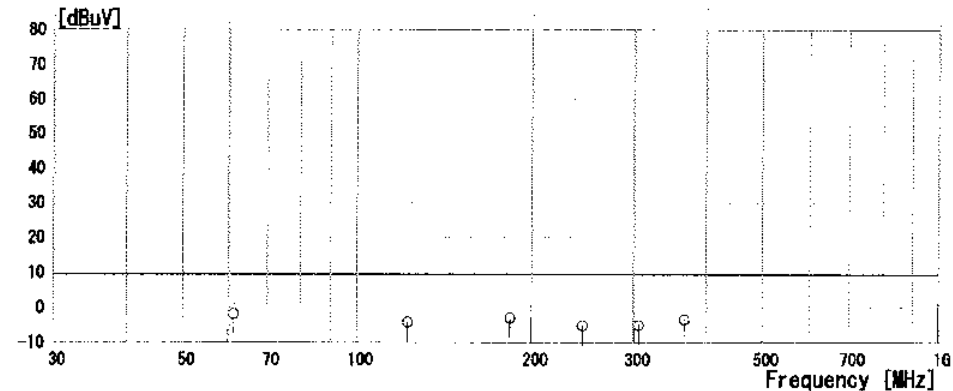
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV INPUT 2 + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p INPUT
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	61.250	19.9	—	-21.7	-1.8	—	9.5	—	11.3	—
2	122.500	17.7	—	-21.9	-4.2	—	9.5	—	13.7	—
3	183.750	19.1	—	-22.0	-2.9	—	9.5	—	12.4	—
4	245.000	16.9	—	-22.0	-5.1	—	9.5	—	14.6	—
5	306.250	17.0	—	-22.0	-5.0	—	9.5	—	14.5	—
6	367.500	18.9	—	-22.3	-3.4	—	9.5	—	12.9	—

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA ENG. LABORATORY

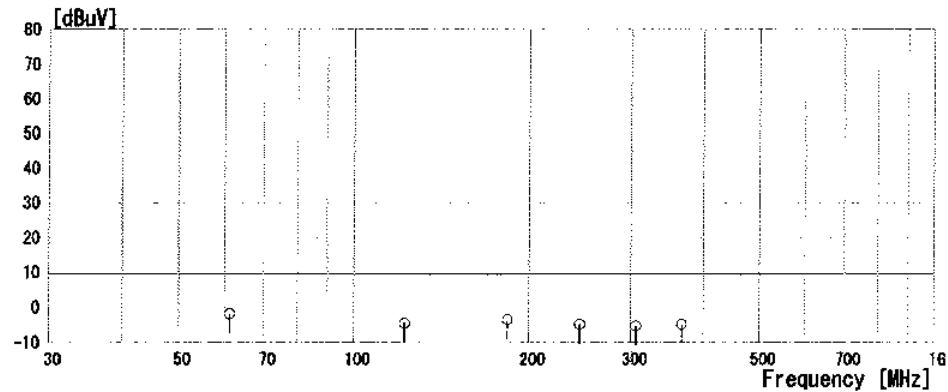
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV INPUT 2 + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p INPUT
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	61.250	19.9	---	-21.7	-1.8	---	9.5	---	11.3	---
2	122.500	17.4	---	-21.9	-4.5	---	9.5	---	14.0	---
3	183.750	18.6	---	-22.0	-3.4	---	9.5	---	12.9	---
4	245.000	17.3	---	-22.0	-4.7	---	9.5	---	14.2	---
5	306.250	16.7	---	-22.0	-5.3	---	9.5	---	14.8	---
6	367.500	17.5	---	-22.3	-4.8	---	9.5	---	14.3	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA ENG. LABORATORY

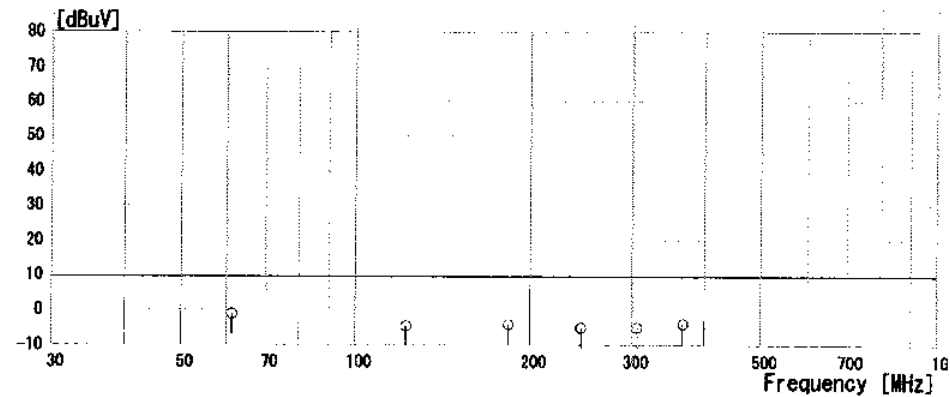
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : VCR Playback
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : -
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	61.250	20.5	---	-21.7	-1.2	---	9.5	---	10.7	---
2	122.500	17.3	---	-21.9	-4.6	---	9.5	---	14.1	---
3	183.750	17.9	---	-22.0	-4.1	---	9.5	---	13.6	---
4	245.000	16.9	---	-22.0	-5.1	---	9.5	---	14.6	---
5	306.250	17.0	---	-22.0	-5.0	---	9.5	---	14.5	---
6	367.500	18.4	---	-22.3	-3.9	---	9.5	---	13.4	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

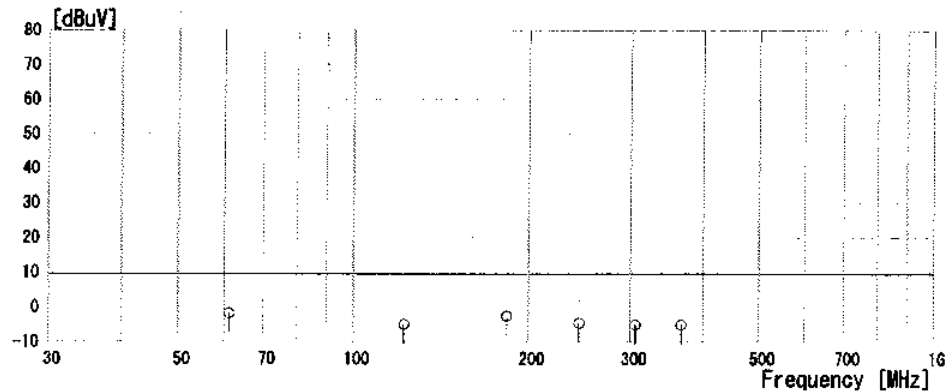
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EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : DVD Playback
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 :
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kikuchi

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	61.250	19.9	---	-21.7	-1.8	---	9.5	---	11.3	---
2	122.500	16.9	---	-21.9	-5.0	---	9.5	---	14.5	---
3	183.750	19.5	---	-22.0	-2.5	---	9.5	---	12.0	---
4	245.000	17.4	---	-22.0	-4.6	---	9.5	---	14.1	---
5	306.250	16.9	---	-22.0	-5.1	---	9.5	---	14.6	---
6	367.500	17.2	---	-22.3	-5.1	---	9.5	---	14.6	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

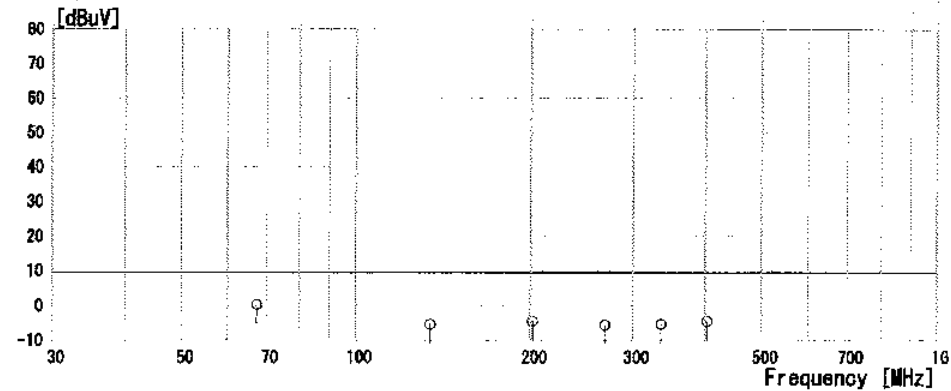
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 1 + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kikuchi

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	67.500	21.9	---	-21.7	0.2	---	9.5	---	9.3	---
2	134.500	16.4	---	-21.8	-5.4	---	9.5	---	14.8	---
3	201.750	17.3	---	-21.8	-4.5	---	9.5	---	14.0	---
4	269.000	16.4	---	-22.0	-5.6	---	9.5	---	15.1	---
5	336.250	16.8	---	-22.1	-5.3	---	9.5	---	14.8	---
6	403.500	17.7	---	-22.2	-4.5	---	9.5	---	14.0	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

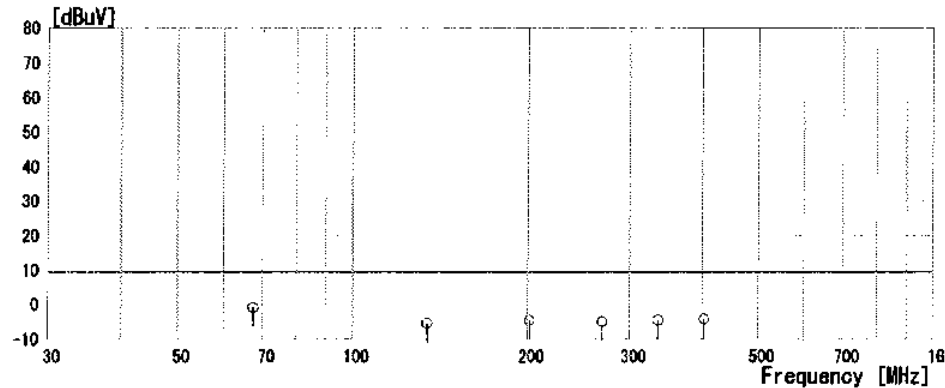
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 1 + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	67.500	20.9	---	-21.7	-0.8	---	9.5	---	10.3	---
2	134.500	16.5	---	-21.8	-5.3	---	9.5	---	14.8	---
3	201.750	17.3	---	-21.8	-4.5	---	9.5	---	14.0	---
4	269.000	17.1	---	-22.0	-4.9	---	9.5	---	14.4	---
5	336.250	17.7	---	-22.1	-4.4	---	9.5	---	13.9	---
6	403.500	18.1	---	-22.2	-4.1	---	9.5	---	13.6	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

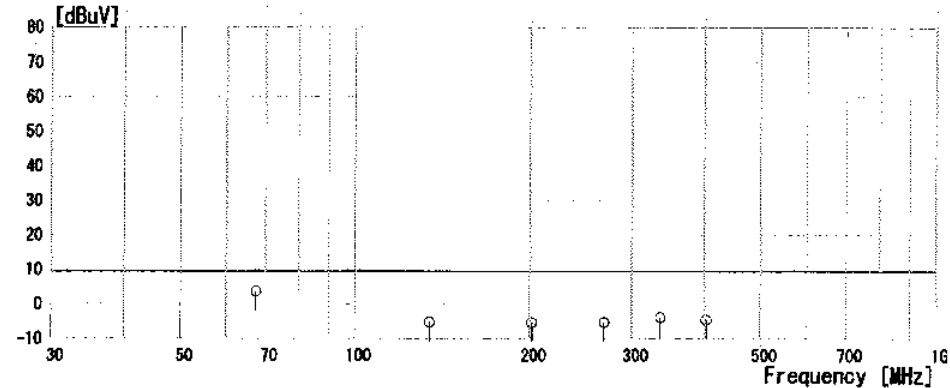
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 2 + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	67.500	25.3	---	-21.7	3.6	---	9.5	---	5.9	---
2	134.500	16.5	---	-21.8	-5.3	---	9.5	---	14.8	---
3	201.750	16.4	---	-21.8	-5.4	---	9.5	---	14.9	---
4	269.000	16.6	---	-22.0	-5.4	---	9.5	---	14.9	---
5	336.250	18.2	---	-22.1	-3.9	---	9.5	---	13.4	---
6	403.500	17.6	---	-22.2	-4.6	---	9.5	---	14.1	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

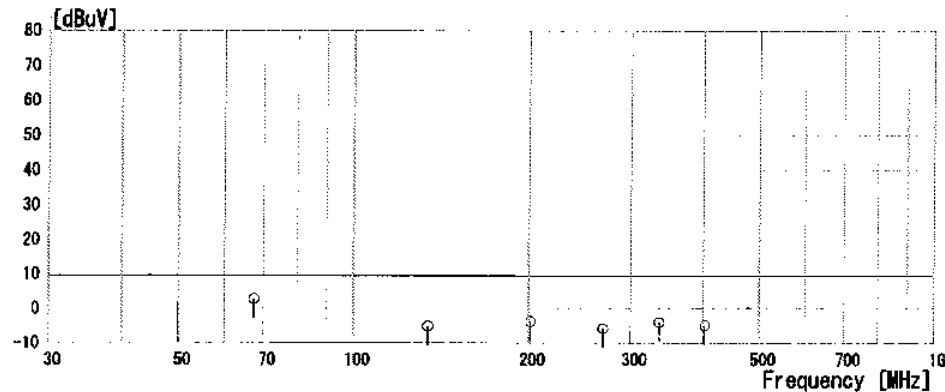
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : AV Input 2 + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	67.500	24.4	---	-21.7	2.7	---	9.5	---	6.8	---
2	134.500	16.7	---	-21.8	-5.1	---	9.5	---	14.6	---
3	201.750	18.0	---	-21.8	-3.8	---	9.5	---	13.3	---
4	269.000	16.2	---	-22.0	-5.8	---	9.5	---	15.3	---
5	336.250	18.1	---	-22.1	-4.0	---	9.5	---	13.5	---
6	403.500	17.3	---	-22.2	-4.9	---	9.5	---	14.4	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOHAMA EMC LABORATORY

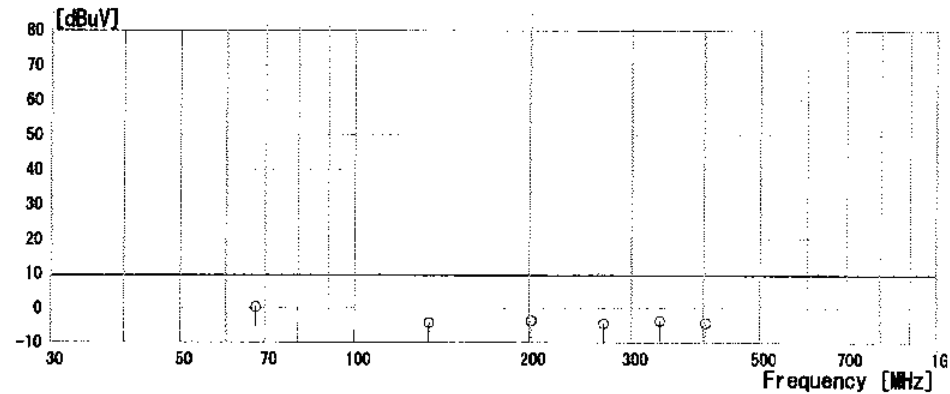
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : VCR Playback
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : -
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING QP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT QP [dBuV]	AV [dB]	LIMIT QP [dBuV]	AV [dB]	MARGIN QP [dB]	AV [dB]
1	67.500	22.0	---	-21.7	0.3	---	9.5	---	9.2	---
2	134.500	17.6	---	-21.8	-4.2	---	9.5	---	13.7	---
3	201.750	18.1	---	-21.8	-3.7	---	9.5	---	13.2	---
4	269.000	17.5	---	-22.0	-4.5	---	9.5	---	14.0	---
5	336.250	18.4	---	-22.1	-3.7	---	9.5	---	13.2	---
6	403.500	17.9	---	-22.2	-4.3	---	9.5	---	13.8	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



DATA OF ANTENNA TRANSFER SWITCH

A-PEX INTERNATIONAL CO., LTD.
YOKOWA EMC LABORATORY

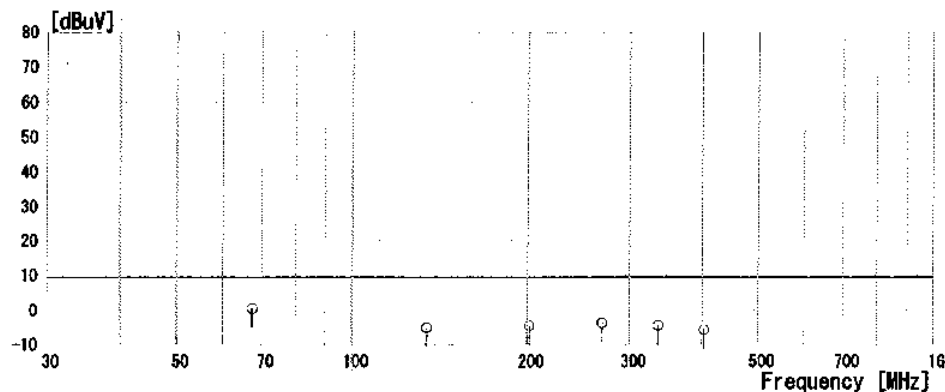
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : DVD/VCR
Model Name : SD-K220U
OPERATION MODE : DVD Playback
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 :
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23BE0092-YW-1
DATE : November 21, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING OP [dBuV]	AV [dB]	C. FACTOR [dB]	RESULT OP [dBuV]	AV [dB]	LIMIT OP [dBuV]	AV [dB]	MARGIN OP [dB]	AV [dB]
1	67.500	22.1	---	-21.7	0.4	---	9.5	---	9.1	---
2	134.500	16.6	---	-21.8	-5.2	---	9.5	---	14.7	---
3	201.750	17.2	---	-21.8	-4.6	---	9.5	---	14.1	---
4	269.000	18.2	---	-22.0	-3.8	---	9.5	---	13.3	---
5	336.250	17.6	---	-22.1	-4.5	---	9.5	---	14.0	---
6	403.500	16.4	---	-22.2	-5.8	---	9.5	---	15.3	---

CALCULATION: READING + CORRECTION FACTOR
CORRECTION FACTOR = MATCHING PAD LOSS 7.8[dBμV]
+ CABLE LOSS[dBμV] - AMPLIFIER GAIN[dBμV]



Picture sensitivity test

A-PEX INTERNATIONAL CO., LTD.
Yokowa EMC Laboratory

Company : Orion Electric Co., Ltd.
Equipment : DVD/VCR
Model number : SD-K220U
Power : AC 120 V / 60 Hz
Description : TV RECEPTION

Report Number : 23DE0092-YW-1
Regulation : FCC Part15B Subpart B
Date : November 25, 2002

Engineer : Hisayuki Kioka

Ch.	Frequency	Sensitivity		Ch.	Frequency	Sensitivity	
[VHF]	[MHz]	[dBuV]	[uV]	[UHF]	[MHz]	[dBuV]	[uV]
2	55.25	20.0	10.0	14	471.25	22.6	13.5
3	61.25	20.1	10.1	20	507.25	23.5	15.0
4	67.25	17.9	7.9	26	543.25	23.7	15.3
5	77.25	20.5	10.6	32	579.25	24.7	17.2
6	83.25	20.5	10.6	38	615.25	25.1	18.0
7	175.25	22.4	13.2	44	651.25	26.2	20.4
8	181.25	22.4	13.2	50	687.25	26.5	21.1
9	187.25	21.9	12.4	56	723.25	26.5	21.1
10	193.25	21.3	11.6	62	759.25	26.0	20.0
11	199.25	21.9	12.4	69	801.25	26.0	20.0
12	205.25	21.2	11.5	-	-	-	-
13	211.25	21.2	11.5	-	-	-	-
Average VHF		11.2		Average UHF		18.2	
Average UHF/VHF : 20 log UHF[uV]/VHF[uV] =				4.2	dB		
[Limit : 8.0 dB]							

Noise figure test

A-PEX INTERNATIONAL CO., LTD.
Yokowa EMC Laboratory

Report Number : 23DE0092-YW-1
Regulation : FCC Part15B SubpartB
Date : November 26, 2002

Company : Orion Electric Co., Ltd.
Equipment : DVD/VCR
Model number : SD-K220U
Power : AC 120 V / 60 Hz
Description : TV Reception

Engineer : Sadahiko Tanaka

Ch.	Frequency [MHz]	Meter reading [dB]	Correction factor [dB]	Noise figure [dB]	Limits [dB]	Margin [dB]
TV VHF Fundamental						
2	55.25	4.9	0.2	4.7	14.0	9.3
3	61.25	4.2	0.2	4.0	14.0	10.0
4	67.25	3.8	0.2	3.6	14.0	10.4
5	77.25	3.3	0.2	3.1	14.0	10.9
6	83.25	3.1	0.2	2.9	14.0	11.1
7	175.25	5.3	0.2	5.1	14.0	8.9
8	181.25	5.3	0.2	5.1	14.0	8.9
9	187.25	5.1	0.2	4.9	14.0	9.1
10	193.25	5.0	0.2	4.8	14.0	9.2
11	199.25	4.9	0.2	4.7	14.0	9.3
12	205.25	4.8	0.2	4.6	14.0	9.4
13	211.25	4.9	0.2	4.7	14.0	9.3
TV UHF Fundamental						
14	471.25	7.3	0.3	7.0	14.0	7.0
20	507.25	7.9	0.3	7.6	14.0	6.4
26	543.25	8.1	0.3	7.8	14.0	6.2
32	579.25	7.8	0.3	7.5	14.0	6.5
38	615.25	7.6	0.3	7.3	14.0	6.7
44	651.25	7.2	0.3	6.9	14.0	7.1
50	687.25	6.8	0.3	6.5	14.0	7.5
56	723.25	6.4	0.4	6.0	14.0	8.0
62	759.25	6.5	0.4	6.1	14.0	7.9
69	801.25	6.8	0.4	6.4	14.0	7.6
Mid-band						
14	121.25	4.8	0.2	4.6	14.0	9.4
16	133.25	7.1	0.2	6.9	14.0	7.1
18	145.25	6.3	0.2	6.1	14.0	7.9
20	157.25	5.7	0.2	5.5	14.0	8.5
22	169.25	5.3	0.2	5.1	14.0	8.9
Super-band						
23	217.25	5.0	0.2	4.8	14.0	9.2
26	235.25	4.8	0.2	4.6	14.0	9.4
29	253.25	4.8	0.2	4.6	14.0	9.4
32	271.25	4.9	0.2	4.7	14.0	9.3
36	295.25	5.9	0.2	5.7	14.0	8.3

Test Report No : 23DE0092-YW-1

APPENDIX 3 Test Instruments

Item No.	Instrument	Manufacturer	Model No.	Calibration Date
AF-03	Pre Amplifier	Anritsu	M1648A	RE/AT
AF-04	Pre Amplifier	Hewlett Packard	84495E	AT
AT-04	Attenuator	Anritsu	MP721B	RE
BA-04	Biconical Antenna	Schwarzbeck	9BA8106	RE
LA-05	Logperiodic Antenna	Schwarzbeck	UHLP8108-A	RE
SA-08	Spectrum Analyzer	Advantest	R3272	CE/RE/AT
TR-03	Test Receiver	Rohde & Schwarz	ES-HS30	CE
TR-04	Test Receiver	Rohde & Schwarz	ESVS10	RE
OS-10	Digital Humidity Indicator	SATO	PC-5000TRH	RE
OS-15	Digital Humidity Indicator	SATO	PC-5000TRH	CE/AT/NFP S.TS.RF
CC-20RC	Yokowa No.2 open coaxial(0.01-1000MHz)	A-PEX	CC-21,CC-22,C C-23,CC-24,CC-25,CC-26,CC-27,SW-21,SW-22	RE
CC-2S	Yokowa No.2 shield coaxial(0.01MHz-1000MHz)	A-PEX	CC-24,CC-25,C C-26,CC-28,CC-29,SW-21,SW-22	CE
YOATS-02	Open Test Site	JSE	3m, 10m	RE
AF-01	Pre Amplifier	Hewlett Packard	8447D	RE
AF-06	Pre Amplifier	Agilent	HP8449B	RE
AT-06	Attenuator	Anritsu	MP721B	RE
BA-06	Biconical Antenna	Schwarzbeck	9BA8106	RE
LA-07	Logperiodic Antenna	Schwarzbeck	UHLP8108-A	RE
SA-08	Spectrum Analyzer	Advantest	R3272	RE
TR-06	Test Receiver	Rohde & Schwarz	ESVS10	RE
OS-16	Digital Humidity Indicator	SATO	PC-5000TRH	RE
CC-30RC	Yokowa No.3 open coaxial(0.01-1000MHz)	A-PEX	CC-31,CC-32,C C-33,CC-34,CC-35,CC-36,CC-37,SW-31,SW-32	RE
CC-015	Microwave Cable	Suhner	SUCOFLEX	RE
YOATS-03	Open Test Site	JSE	3m, 10m	RE
HA-01	Horn Antenna	A.H.Systems	SAS-200/571	RE
CC-017	Microwave Cable	Suhner	SUCOFLEX	RE
LS-05	LISN	Schwarzbeck	NSLK8121	CE
LS-07	LISN	Schwarzbeck	NSLK8125	CE (EUT)
SP-04	Matching Pad	TME	ZT-189	AT
SP-04	50Ω Coax Cable/Antenna Terminal	A-PEX	50-N-N-SP	AT
SP-05	50Ω Coax Cable/Antenna Terminal	A-PEX	50-N-N-SP	AT
SS-05	Digitizing Oscilloscope	Sony Tektronix	2221	PS
APNFM11	Noise Figure Indicator	Burns	ENF-2005	NF
APSSG04	Signal Generator	Rohde & Schwarz	SMY01	PS
APBPF01	Band pass filter	Erka Fieder	8P	PS
AV17-01	Pattern Generator	Leader	408NPS	CE,RE,TS,R

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

Test Item:

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