

DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC.
Remarks : OdBm INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

No.	FREQ. [MHz]	READING (V)		READING (L1)		LISN FACTOR		CABLE LOSS		ATTEN.		RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
1.	0.4500	39.1	-	38.9	-	0.2	0.3	0.0	0.0	39.6	-	48.0	0.0	8.4	-	-	-
2.	0.6018	36.0	-	35.8	-	0.2	0.4	0.0	0.0	36.6	-	48.0	0.0	11.4	-	-	-
3.	0.8012	32.3	-	31.8	-	0.2	0.3	0.0	0.0	32.8	-	48.0	0.0	15.2	-	-	-
4.	1.8122	28.5	-	30.7	-	0.2	0.4	0.0	0.0	31.3	-	48.0	0.0	16.7	-	-	-
5.	8.8493	26.0	-	20.7	-	0.3	0.6	0.0	0.0	26.9	-	48.0	0.0	21.1	-	-	-
6.	14.3183	30.6	-	30.4	-	0.6	0.7	0.0	0.0	31.9	-	48.0	0.0	16.1	-	-	-
7.	29.7184	11.0	-	12.8	-	1.2	0.9	0.0	0.0	14.9	-	48.0	0.0	33.1	-	-	-

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

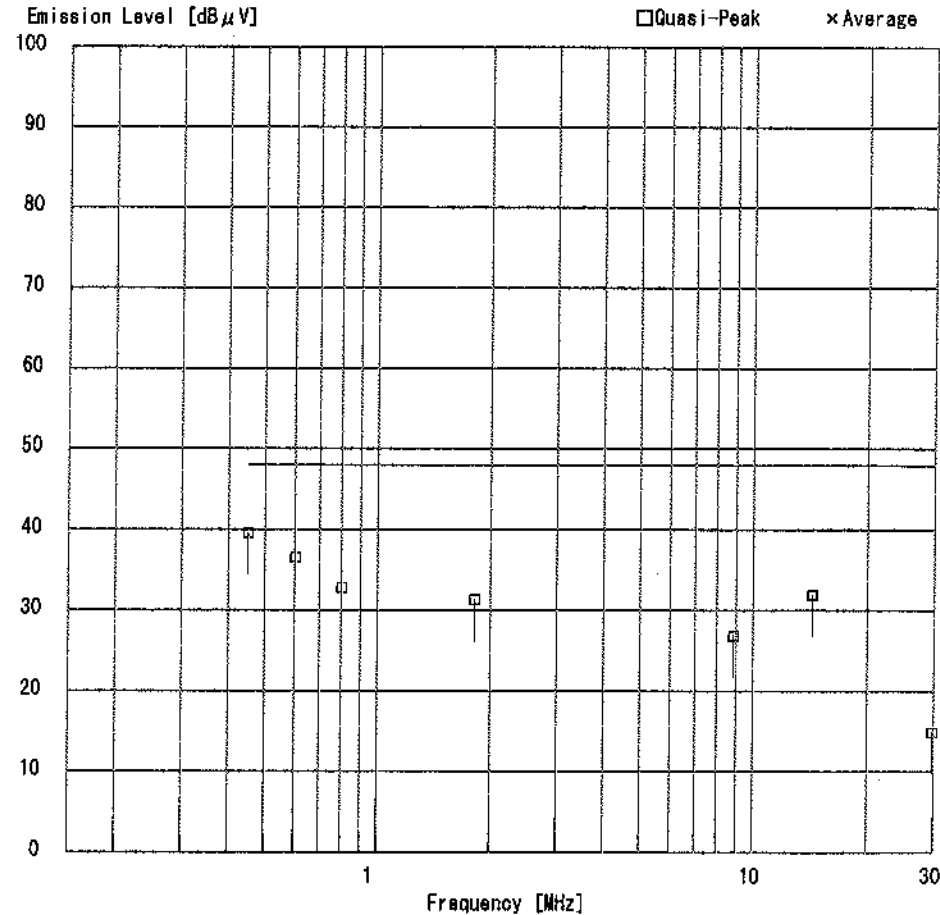
Except for the above table: adequate margin data below the limits.

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Engineer : Seigo Kakehi

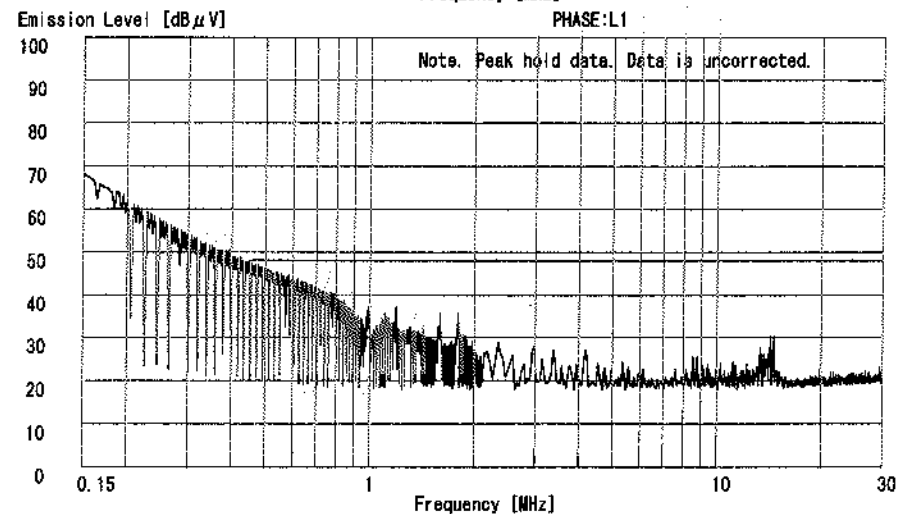
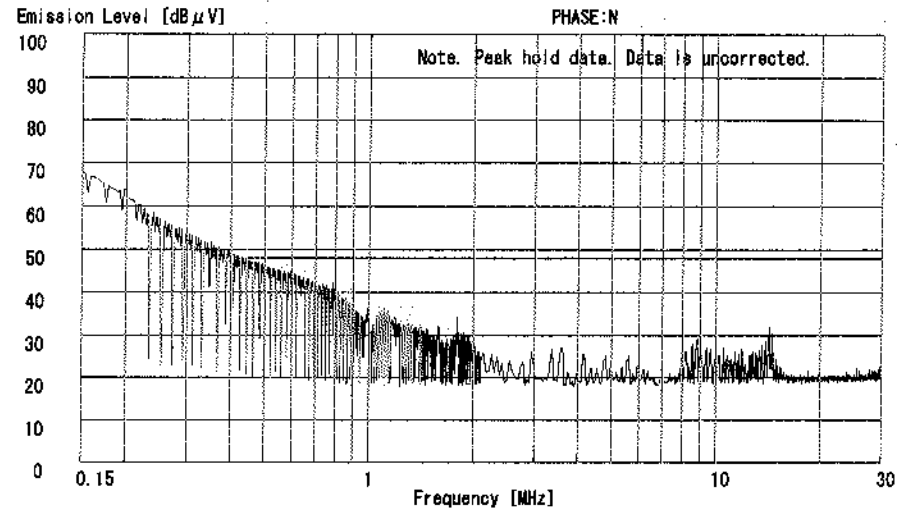


DATA OF CONDUCTION TEST CHART

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC.
Remarks : 0dBm INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Seigo Kakehi



DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC.
Remarks : 25dBm INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dBuV]	CABLE LOSS [dBuV]	ATTEN. [dBuV]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
1.	0.4500	39.1	-	38.9	-	0.2	0.3	0.0	39.6	-	48.0	0.0	8.4	-
2.	0.6012	35.8	-	35.6	-	0.2	0.4	0.0	36.4	-	48.0	0.0	11.6	-
3.	0.7975	32.1	-	32.1	-	0.2	0.3	0.0	32.6	-	48.0	0.0	15.4	-
4.	1.8115	28.6	-	30.5	-	0.2	0.4	0.0	31.1	-	48.0	0.0	16.9	-
5.	8.8500	26.6	-	21.3	-	0.3	0.6	0.0	27.5	-	48.0	0.0	20.5	-
6.	14.3183	30.4	-	28.2	-	0.6	0.7	0.0	31.7	-	48.0	0.0	16.3	-
7.	29.7182	12.1	-	14.0	-	1.2	0.9	0.0	16.1	-	48.0	0.0	31.9	-

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

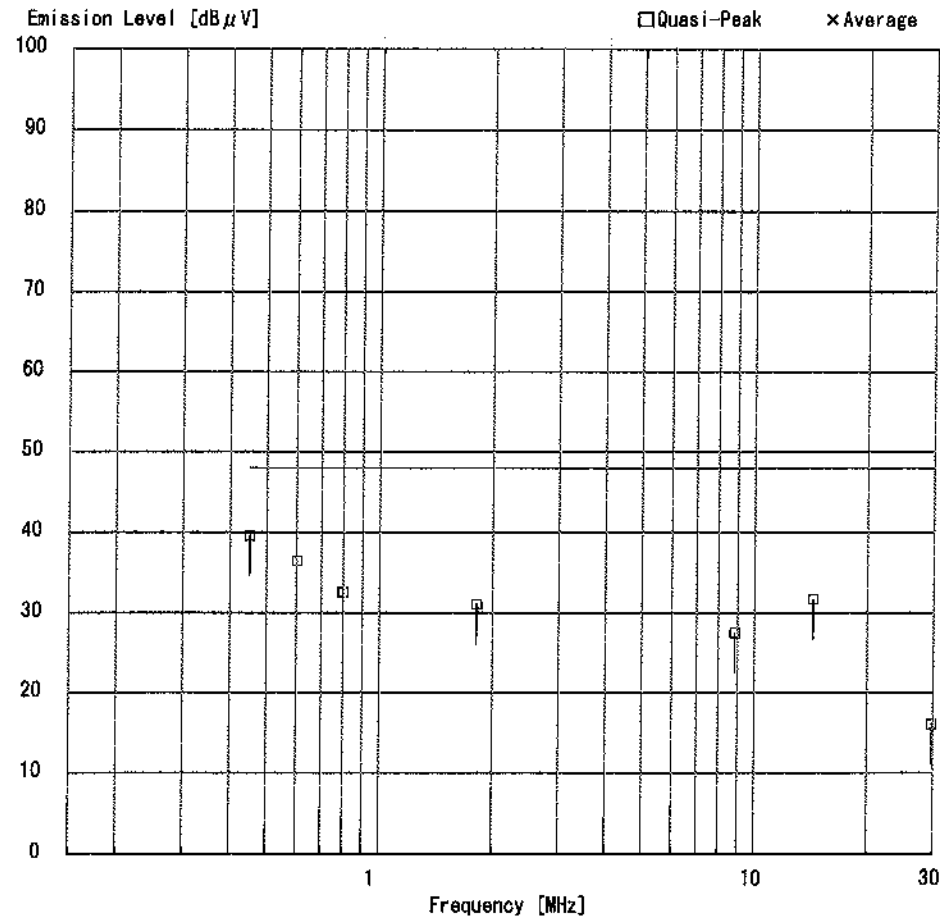
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Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC.
Remarks : 25dBm INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakahi

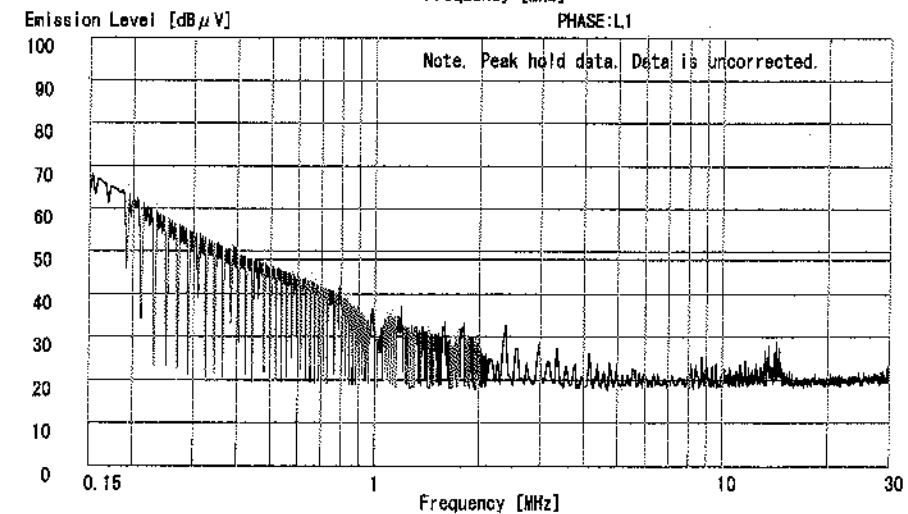
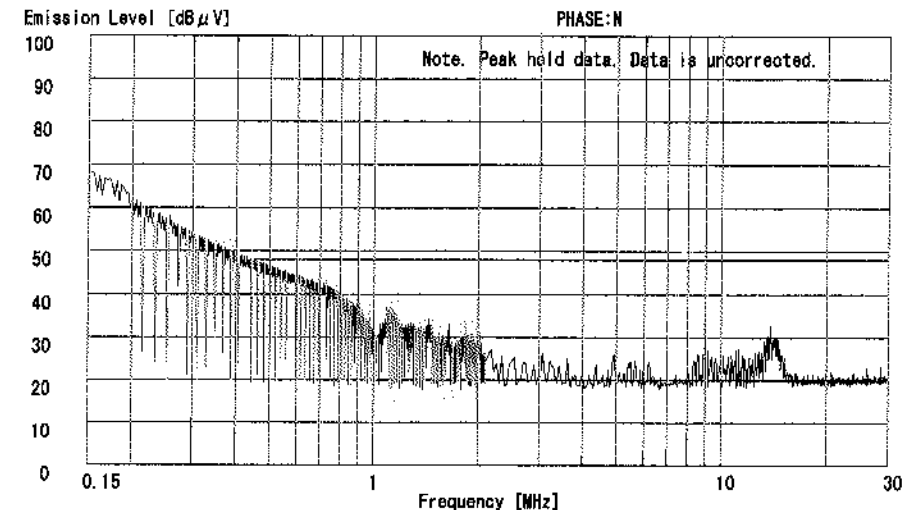


DATA OF CONDUCTION TEST CHART

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Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC.
Remarks : 25dBm INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Seigo Kakahi



DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT+REC.
Remarks : 1Vp-p INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN CABLE ATTN.		RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV	FACTOR	LOSS	QP	AV	QP	AV	QP	AV
1.	0.4500	39.5	-	39.3	-	0.2	0.3	0.0	40.0	48.0	0.0	8.0	-
2.	0.5030	38.2	-	37.9	-	0.2	0.3	0.0	38.7	48.0	0.0	9.3	-
3.	0.6775	35.3	-	35.7	-	0.2	0.4	0.0	36.3	48.0	0.0	11.7	-
4.	1.1654	27.2	-	29.6	-	0.2	0.4	0.0	30.2	48.0	0.0	17.8	-
5.	7.2198	43.1	-	43.0	-	0.3	0.6	0.0	44.0	48.0	0.0	4.0	-
6.	13.8129	27.4	-	27.2	-	0.5	0.7	0.0	28.6	48.0	0.0	19.4	-
7.	15.3591	34.2	-	33.5	-	0.6	0.8	0.0	35.6	48.0	0.0	12.4	-

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

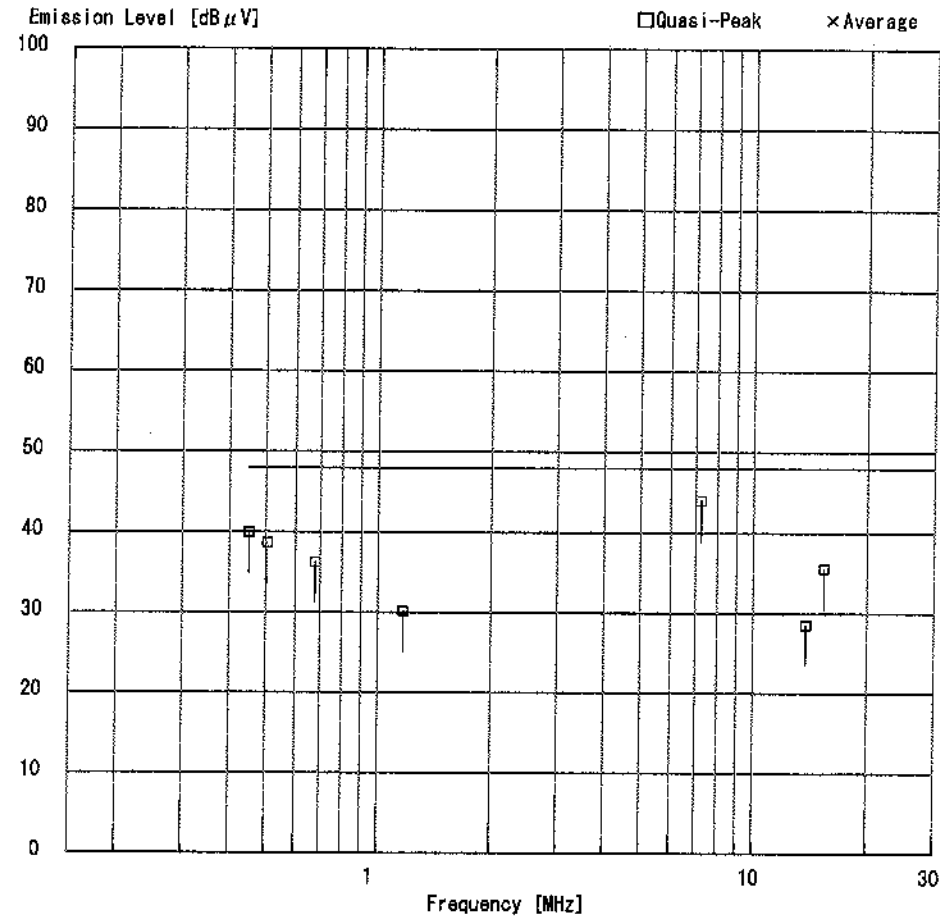
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Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT+REC.
Remarks : 1Vp-p INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

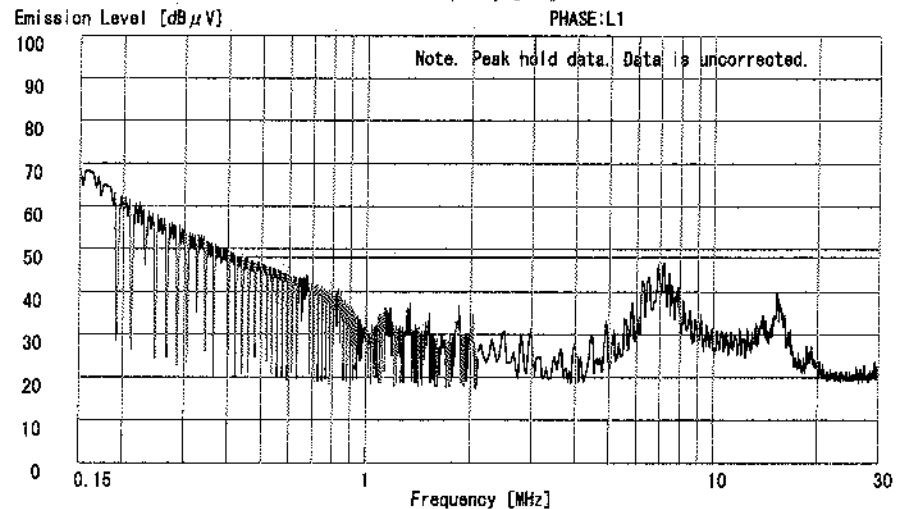
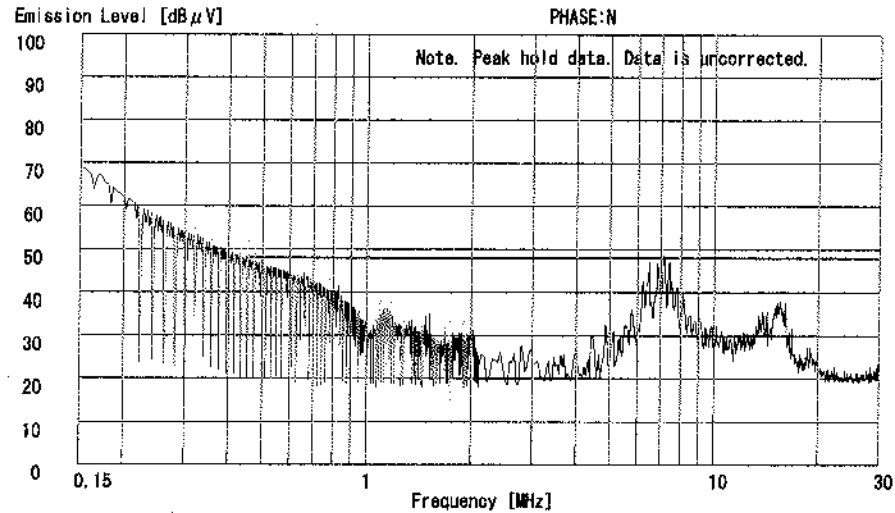


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Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT+REC.
Remarks : 1Vp-p INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None


Engineer : Seigo Kakehi



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Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT+REC.
Remarks : 5Vp-p INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B


Engineer : Seigo Kakehi

No.	FREQ. [MHz]	READING(N)		READING(L1)		LISN FACTOR [dBuV]	CABLE LOSS [dBuV]	ATTEN. [dBuV]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV				QP	AV	QP	AV	QP	AV
1.	0.4500	39.5	-	39.4	-	0.2	0.3	0.0	40.0	-	48.0	0.0	8.0	-
2.	0.6043	38.1	-	38.2	-	0.2	0.3	0.0	38.7	-	48.0	0.0	9.3	-
3.	0.6745	35.2	-	35.9	-	0.2	0.4	0.0	36.5	-	48.0	0.0	11.5	-
4.	1.1692	26.7	-	27.0	-	0.2	0.4	0.0	27.6	-	48.0	0.0	20.4	-
5.	6.8765	39.1	-	38.8	-	0.3	0.6	0.0	40.0	-	48.0	0.0	8.0	-
6.	13.8232	30.4	-	29.8	-	0.5	0.7	0.0	31.6	-	48.0	0.0	16.4	-
7.	15.5108	33.5	-	33.1	-	0.6	0.8	0.0	34.9	-	48.0	0.0	13.1	-

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

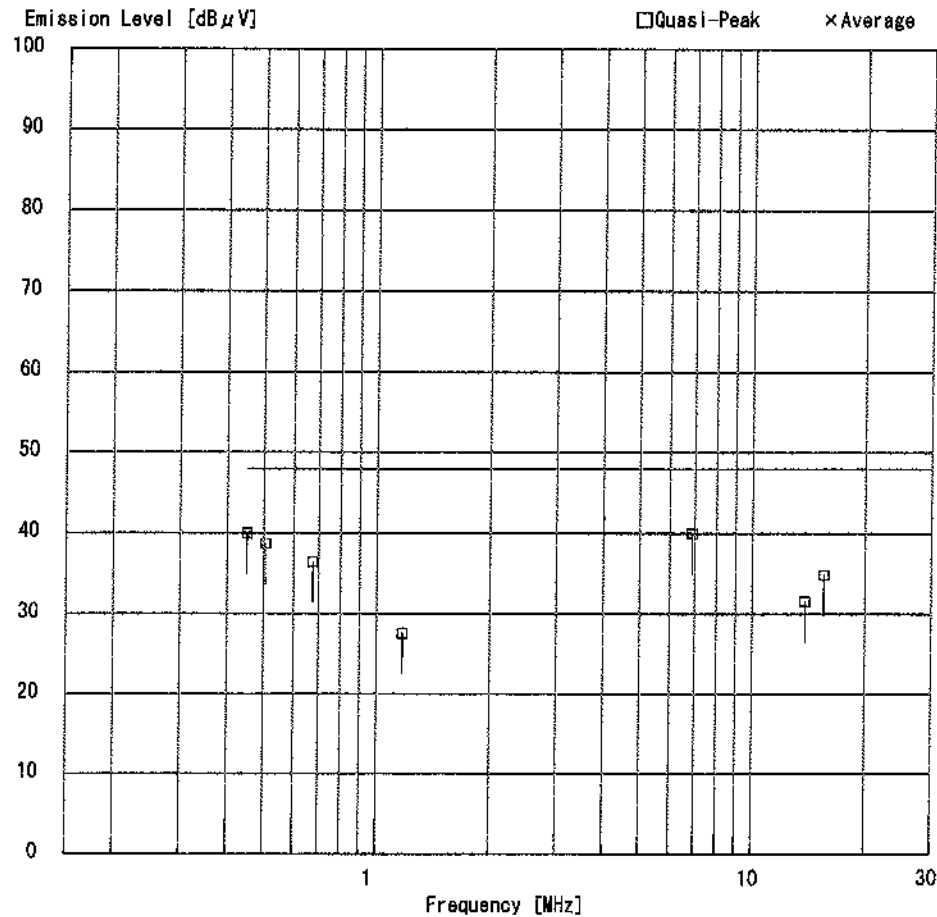
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Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Saigo Kakehi

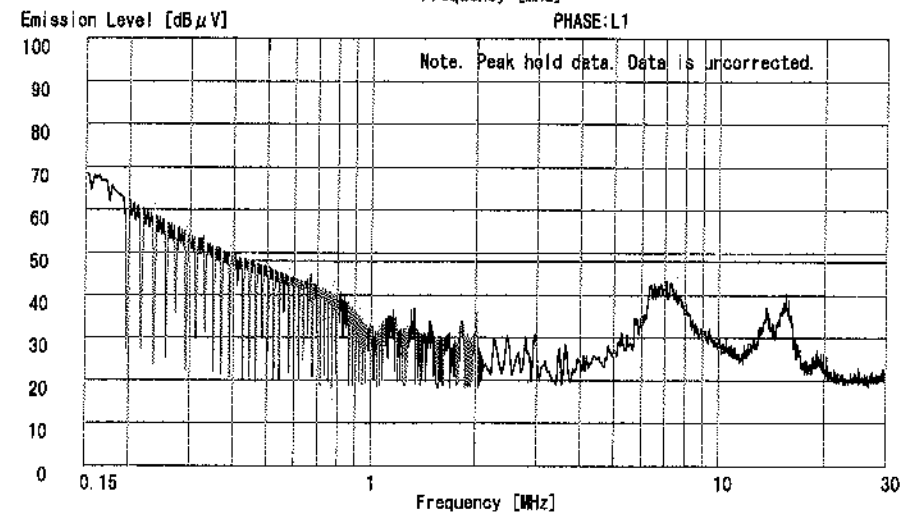
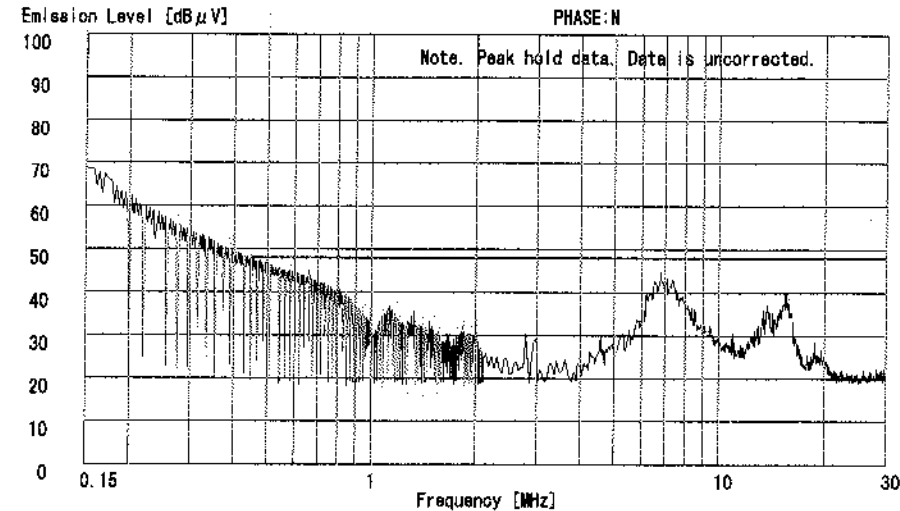


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Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT+REC.
Remarks : 5Vp-p INPUT
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Saigo Kakehi



DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks :
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Saigo Kakehi

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR		CABLE LOSS		ATTEN.		RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
1.	0.4500	39.4	-	39.2	-	0.2	0.3	0.0	0.3	0.0	0.0	39.9	-	48.0	0.0	8.1	-
2.	0.5141	37.7	-	37.7	-	0.2	0.3	0.0	0.3	0.0	0.0	38.2	-	48.0	0.0	9.8	-
3.	0.6826	33.9	-	34.6	-	0.2	0.4	0.0	0.0	0.0	0.0	35.2	-	48.0	0.0	12.8	-
4.	0.8535	29.6	-	31.0	-	0.2	0.3	0.0	0.3	0.0	0.0	31.5	-	48.0	0.0	16.5	-
5.	1.3679	27.8	-	30.0	-	0.2	0.4	0.0	0.0	0.0	0.0	30.6	-	48.0	0.0	17.4	-
6.	5.4482	10.2	-	13.2	-	0.2	0.5	0.0	0.0	0.0	0.0	13.9	-	48.0	0.0	34.1	-
7.	29.4154	11.7	-	12.4	-	1.2	0.9	0.0	0.0	0.0	0.0	14.5	-	48.0	0.0	33.5	-

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

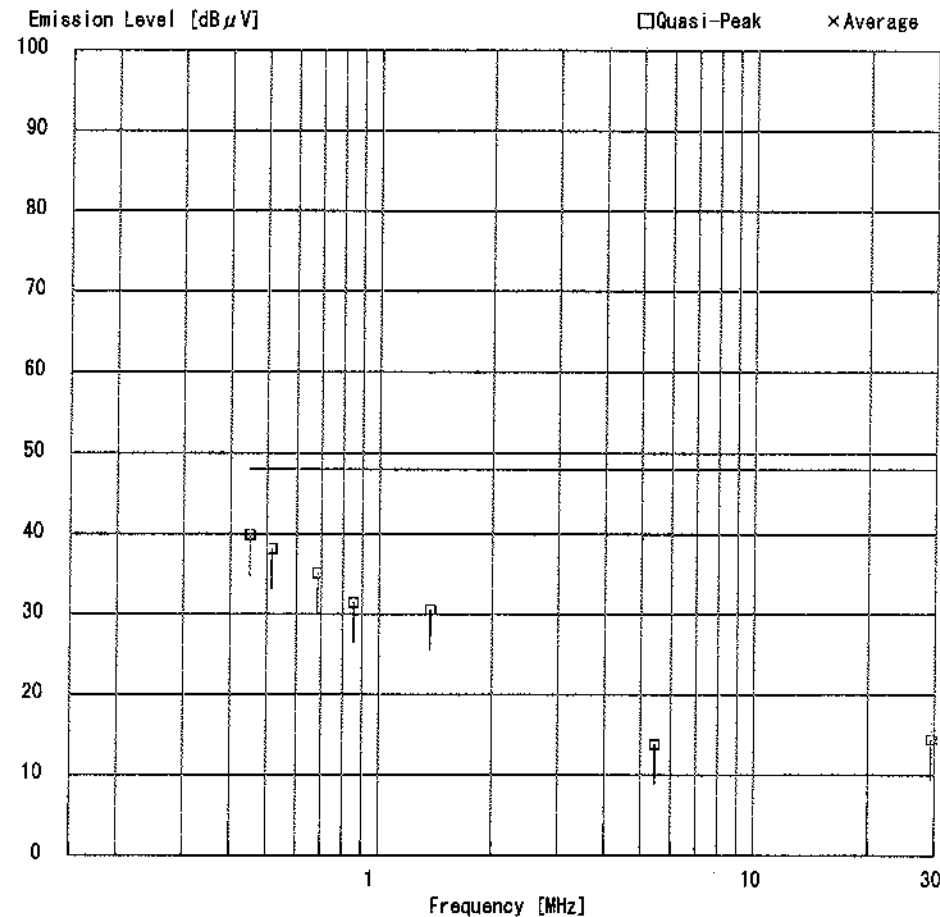
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Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks :
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Saigo Kakehi

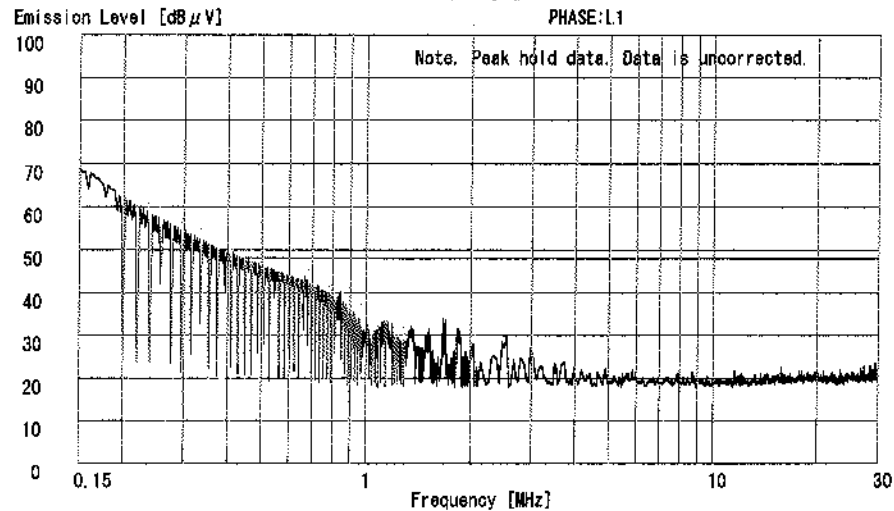
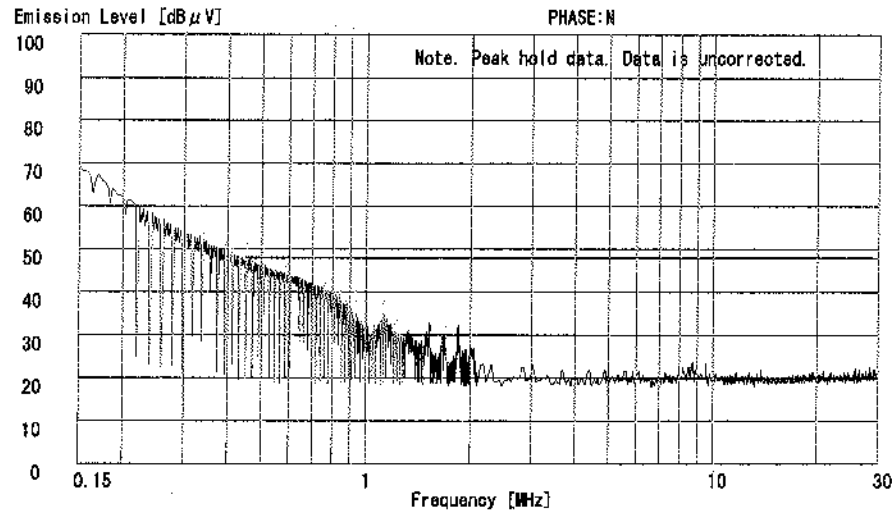


DATA OF CONDUCTION TEST CHART

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.2 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks :
Date : 11/18/2002
Phase : Single Phase
Temperature : 21 °C
Humidity : 30 %
Regulation 1 : FCC Part15B CLASS B
Regulation 2 : None

Engineer : Saigo Kakehi



DATA OF RADIATION TEST

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

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : VIDEO CASSETTE RECORDER
MODEL No. : VCR4512
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 23DE0048-YW
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : November 14,2002

ENGINEER : Sadahiko Tanaka

CH.	FREQ	READINGG		ANT	ANT.	CABLE	AMP	RESULTS		LIMIT	MARGIN	
	[MHz]	HOR.	VER.	TYPE	FAC.	LOSS	GAIN	HOR.	VER.	[dBuV/m]	HOR.	VER.
		[dBuV]			[dB]	[dB]	[dB]	[dBuV/m]			[dB]	[dB]
VHF Fundamental												
2	101	24.2	27.4	BC	10.0	2.1	27.8	14.5	17.7	43.5	29.0	25.8
3	107	23.6	30.6	BC	10.9	2.2	27.9	14.8	21.8	43.5	28.7	21.7
4	113	25.9	32.9	BC	11.9	2.3	27.9	18.2	25.2	43.5	25.3	18.3
5	123	25.6	31.1	BC	13.2	2.3	27.9	19.2	24.7	43.5	24.3	18.8
6	129	28.0	30.1	BC	13.7	2.5	27.9	22.3	24.4	43.5	21.2	19.1
7	221	25.4	29.9	BC	16.6	3.2	27.8	23.4	27.9	46.0	22.6	18.1
8	227	25.2	27.9	BC	16.6	3.2	27.8	23.2	25.9	46.0	22.8	20.1
9	233	25.2	26.9	BC	16.7	3.2	27.7	23.4	25.1	46.0	22.6	20.9
10	239	25.9	29.4	BC	16.8	3.1	27.5	24.3	27.8	46.0	21.7	18.2
11	245	25.5	26.3	BC	16.8	3.1	27.4	24.0	24.8	46.0	22.0	21.2
12	251	25.7	25.6	BC	17.0	3.0	27.3	24.4	24.3	46.0	21.6	21.7
13	257	26.4	23.9	BC	17.3	3.2	27.4	25.5	23.0	46.0	20.5	23.0
VHF 2nd Harmonic												
2	202	22.5	22.7	BC	16.3	3.1	27.8	20.1	20.3	43.5	23.4	23.2
3	214	22.0	22.4	BC	16.5	3.2	27.8	19.9	20.3	43.5	23.6	23.2
4	226	21.9	21.7	BC	16.6	3.2	27.8	19.9	19.7	46.0	26.1	26.3
5	246	21.7	21.9	BC	16.9	3.0	27.3	20.3	20.5	46.0	25.7	25.5
6	258	22.1	22.6	BC	17.4	3.2	27.4	21.3	21.8	46.0	24.7	24.2
7	442	22.5	22.2	LP	19.0	4.8	27.9	24.4	24.1	46.0	21.6	21.9
8	454	22.7	22.3	LP	19.1	4.8	27.9	24.7	24.3	46.0	21.3	21.7
9	466	22.2	22.4	LP	19.3	4.9	27.8	24.6	24.8	46.0	21.4	21.2
10	478	21.9	22.2	LP	19.4	4.9	27.8	24.4	24.7	46.0	21.6	21.3
11	490	22.2	22.8	LP	19.5	5.1	27.9	24.9	25.5	46.0	21.1	20.5
12	502	21.9	21.8	LP	19.6	5.2	27.9	24.8	24.7	46.0	21.2	21.3
13	514	21.9	22.5	LP	19.7	5.3	27.9	25.0	25.6	46.0	21.0	20.4

DATA OF RADIATION TEST

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

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : VIDEO CASSETTE RECORDER
MODEL No. : VCR4512
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 23DE0048-YW
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : November 14,2002

ENGINEER : Sadahiko Tanaka

CH.	FREQ	READING	ANT	ANT.	CABLE	AMP	RESULTS	LIMIT	MARGIN
	[MHz]	HOR. VER. [dBuV]	TYPE	FAC. [dB]	LOSS [dB]	GAIN [dB]	HOR. VER. [dBuV/m]	[dBuV/m]	HOR. VER. [dB] [dB]
UHF Fundamental									
14	517	31.0 29.6	LP	19.8	5.3	27.9	34.2 32.8	46.0	11.8 13.2
19	547	28.3 30.6	LP	20.0	5.6	27.7	32.2 34.5	46.0	13.8 11.5
28	601	33.2 33.4	LP	20.5	5.8	27.5	38.0 38.2	46.0	8.0 7.8
36	649	27.7 30.4	LP	21.5	6.1	27.5	33.8 36.5	46.0	12.2 9.5
44	697	29.1 27.1	LP	22.4	6.3	27.1	36.7 34.7	46.0	9.3 11.3
53	751	32.4 31.9	LP	23.0	6.7	27.2	40.9 40.4	46.0	5.1 5.6
61	799	30.3 31.7	LP	23.5	6.9	27.1	39.6 41.0	46.0	6.4 5.0
69	847	25.0 28.4	LP	24.2	7.1	27.0	35.3 38.7	46.0	10.7 7.3
UHF 2nd Harmonic									
14	1034	50.5 56.5	HO	24.9	1.6	39.0	38.0 44.0	54.0	16.0 10.0
19	1094	50.2 54.5	HO	25.2	1.7	39.0	38.1 42.4	54.0	15.9 11.6
28	1202	47.0 48.7	HO	25.7	1.8	38.8	35.7 37.4	54.0	18.3 16.6
36	1298	48.9 50.5	HO	26.1	1.9	38.7	38.2 39.8	54.0	15.8 14.2
44	1394	46.9 49.7	HO	26.5	2.0	38.6	36.8 39.6	54.0	17.2 14.4
53	1502	47.7 48.5	HO	27.0	2.1	38.5	38.3 39.1	54.0	15.7 14.9
61	1598	46.3 46.5	HO	27.2	2.2	38.4	37.3 37.5	54.0	16.7 16.5
69	1694	46.6 47.4	HO	27.4	2.3	38.3	38.0 38.8	54.0	16.0 15.2

DATA OF RADIATION TEST

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

COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : VIDEO CASSETTE RECORDER
MODEL No. : VCR4512
POWER : AC120V/60Hz
DESCRIPTION : TV RECEPTION+REC

REPORT No. : 23DE0048-YW
REGULATION : FCC PART15 B
TEST DISTANCE : 3m
ATTENUATION : 101-847MHz 6dB
1030-1694MHz 0dB
DATE : November 14,2002

ENGINEER : Sadahiko Tanaka

CH.	FREQ	READING	ANT	ANT.	CABLE	AMP	RESULTS	LIMIT	MARGIN
	[MHz]	HOR. VER. [dBuV]	TYPE	FAC. [dB]	LOSS [dB]	GAIN [dB]	HOR. VER. [dBuV/m]	[dBuV/m]	HOR. VER. [dB] [dB]
CATV Fundamental									
1	119	26.5 33.6	BC	12.8	2.3	27.9	19.7 26.8	43.5	23.8 16.7
95	137	24.0 26.5	BC	14.4	2.5	27.9	19.0 21.5	43.5	24.5 22.0
97	149	22.2 23.7	BC	14.8	2.6	27.7	17.9 19.4	43.5	25.6 24.1
99	161	22.3 23.8	BC	15.0	2.8	27.8	18.3 19.8	43.5	25.2 23.7
14	167	22.3 23.3	BC	15.2	2.8	27.8	18.5 19.5	43.5	25.0 24.0
18	191	26.1 28.6	BC	16.0	3.0	27.8	23.3 25.8	43.5	20.2 17.7
22	215	27.7 30.3	BC	16.5	3.2	27.8	25.6 28.2	43.5	17.9 15.3
23	263	26.1 24.2	BC	17.7	3.3	27.5	25.6 23.7	46.0	20.4 22.3
29	299	25.4 24.4	BC	20.0	3.8	27.8	27.4 26.4	46.0	18.6 19.6
36	341	32.7 29.3	LP	17.4	4.5	27.9	32.7 29.3	46.0	13.3 16.7
37	347	33.5 29.3	LP	17.5	4.7	27.9	33.8 29.6	46.0	12.2 16.4
65	515	29.7 32.6	LP	19.7	5.3	27.9	32.8 35.7	46.0	13.2 10.3
94	689	28.2 25.7	LP	22.3	6.3	27.2	35.6 33.1	46.0	10.4 12.9
100	695	28.4 27.7	LP	22.4	6.3	27.1	36.0 35.3	46.0	10.0 10.7
113	773	32.9 31.8	LP	23.2	6.7	27.0	41.8 40.7	46.0	4.2 5.3
125	845	27.4 27.4	LP	24.1	7.1	27.0	37.6 37.6	46.0	8.4 8.4
CATV 2nd Harmonic									
1	238	22.0 22.1	BC	16.8	3.1	27.5	20.4 20.5	46.0	25.6 25.5
95	274	22.3 29.9	BC	18.4	3.6	27.8	22.5 30.1	46.0	23.5 15.9
97	298	21.9 21.8	BC	20.0	3.8	27.8	23.9 23.8	46.0	22.1 22.2
99	322	22.5 22.6	LP	17.0	4.0	28.0	21.5 21.6	46.0	24.5 24.4
14	334	22.3 22.7	LP	17.3	4.3	28.0	21.9 22.3	46.0	24.1 23.7
18	382	21.8 22.1	LP	18.2	4.5	27.9	22.6 22.9	46.0	23.4 23.1
22	430	23.1 22.5	LP	18.9	4.8	27.8	25.0 24.4	46.0	21.0 21.6
23	526	21.3 22.0	LP	19.8	5.4	27.8	24.7 25.4	46.0	21.3 20.6
29	598	21.4 22.0	LP	20.5	5.7	27.5	26.1 26.7	46.0	19.9 19.3
36	682	20.6 20.8	LP	22.1	6.3	27.3	27.7 27.9	46.0	18.3 18.1
37	694	20.3 20.6	LP	22.4	6.3	27.1	27.9 28.2	46.0	18.1 17.8
65	1030	51.9 56.5	HO	24.9	1.6	39.0	39.4 44.0	54.0	14.6 10.0
94	1378	48.3 49.2	HO	26.5	2.0	38.6	38.2 39.1	54.0	15.8 14.9
100	1390	47.7 49.6	HO	26.5	2.0	38.6	37.6 39.5	54.0	16.4 14.5
113	1546	46.6 46.6	HO	27.1	2.1	38.5	37.3 37.3	54.0	16.7 16.7
125	1690	46.7 47.9	HO	27.4	2.3	38.3	38.1 39.3	54.0	15.9 14.7

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC.
Remarks : 0dBm INPUT
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B


Engineer : Seigo Kakahi

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	119.99	BB	34.2	42.1	13.0	27.9	2.3	6.0	27.6	36.6	43.5	15.9	8.0

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, 1-13GHz Horn

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No.: 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC.
Remarks : 25dBm INPUT
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B


Engineer : Seigo Kakahi

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	42.85	BB	28.2	36.9	13.4	27.9	1.3	6.0	21.0	29.7	40.0	19.0	10.3
2.	45.57	BB	24.0	34.6	12.5	27.9	1.3	6.0	15.9	26.4	40.0	24.1	13.6
3.	100.01	BB	33.5	37.1	9.8	27.8	2.1	6.0	23.6	27.2	43.5	19.9	16.3
4.	120.02	BB	33.6	42.3	13.0	27.9	2.3	6.0	26.9	35.7	43.5	16.6	7.8
5.	140.00	BB	33.1	37.1	14.6	27.9	2.6	6.0	28.4	32.4	43.5	15.1	11.1
6.	150.00	BB	25.1	27.9	14.8	27.7	2.6	6.0	20.8	23.6	43.5	22.7	19.9
7.	380.01	BB	31.2	32.0	18.2	27.9	4.6	6.0	32.0	32.8	46.0	14.0	13.2

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

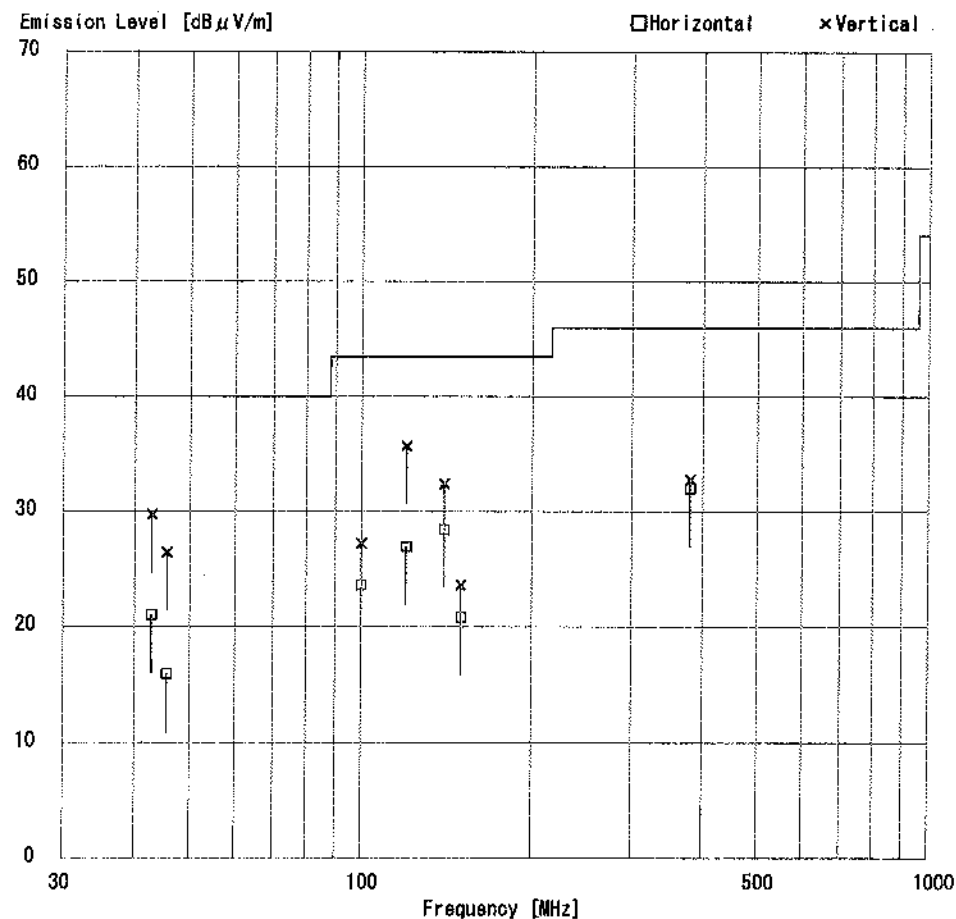
Except for the above table: adequate margin data below the limits.
ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic, 1-13GHz Horn

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : TV RECEPTION+REC.
Remarks : 25dBm INPUT
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT+REC.
Remarks : 1Vp-p INPUT
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

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.	120.00	BB	38.1	40.1	13.0	27.9	2.4	6.0	31.6	33.6	43.5	45.5	11.9	9.9

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, 1-13GHz Horn

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT+REC.
Remarks : 5Vp-p INPUT
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

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]	VER [dB]
1.	42.85	BB	26.9	34.2	13.4	27.9	1.3	6.0	19.7	27.0	40.0	20.3	13.0
2.	45.68	BB	23.4	37.5	12.5	27.9	1.3	6.0	15.3	29.4	40.0	24.7	10.6
3.	100.01	BB	38.7	34.4	9.8	27.8	2.1	6.0	28.8	24.5	43.5	14.7	19.0
4.	120.02	BB	39.9	41.3	13.0	27.9	2.3	6.0	33.3	34.7	43.5	10.2	8.8
5.	140.02	BB	37.1	37.5	14.6	27.9	2.6	6.0	32.4	32.8	43.5	11.1	10.7
6.	160.01	BB	28.7	28.8	14.8	27.7	2.6	6.0	24.4	24.6	43.5	19.1	19.0
7.	380.02	BB	31.8	29.4	18.2	27.9	4.5	6.0	32.6	30.2	46.0	13.4	15.8

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

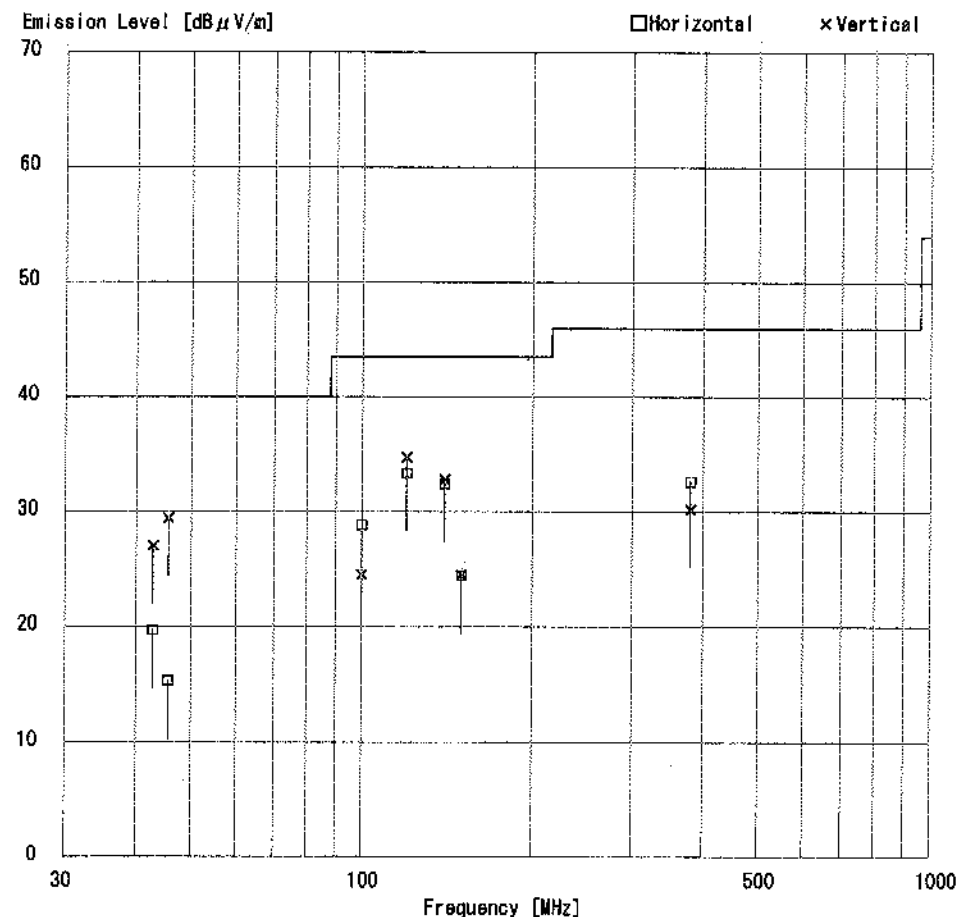
Except for the above table: adequate margin data below the limits.
ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic, 1-13GHz Horn

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : AV INPUT+REC.
Remarks : 5Vp-p INPUT
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks :
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/μV]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μV/m]	MARGIN	
			HOR [dB μV]	VER [dB μV]					HOR [dB μV/m]	VER [dB μV/m]		HOR [dB]	VER [dB]
1.	42.87	BB	24.1	32.5	13.4	27.9	1.3	6.0	16.9	25.3	40.0	23.1	14.7
2.	45.58	BB	23.7	38.2	12.5	27.9	1.3	6.0	15.6	30.1	40.0	24.4	9.9
3.	100.00	BB	34.2	33.8	9.8	27.8	2.1	6.0	24.3	23.9	43.5	19.2	19.6
4.	120.01	BB	35.2	42.4	13.0	27.9	2.3	6.0	28.6	35.8	43.5	14.9	7.7
5.	140.00	BB	31.7	37.6	14.6	27.9	2.6	6.0	27.0	32.9	43.5	16.5	10.6
6.	150.00	BB	24.8	27.2	14.8	27.7	2.6	6.0	20.5	22.9	43.5	23.0	20.6
7.	380.02	BB	30.9	24.4	18.2	27.9	4.5	6.0	31.7	25.2	46.0	14.3	20.8

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

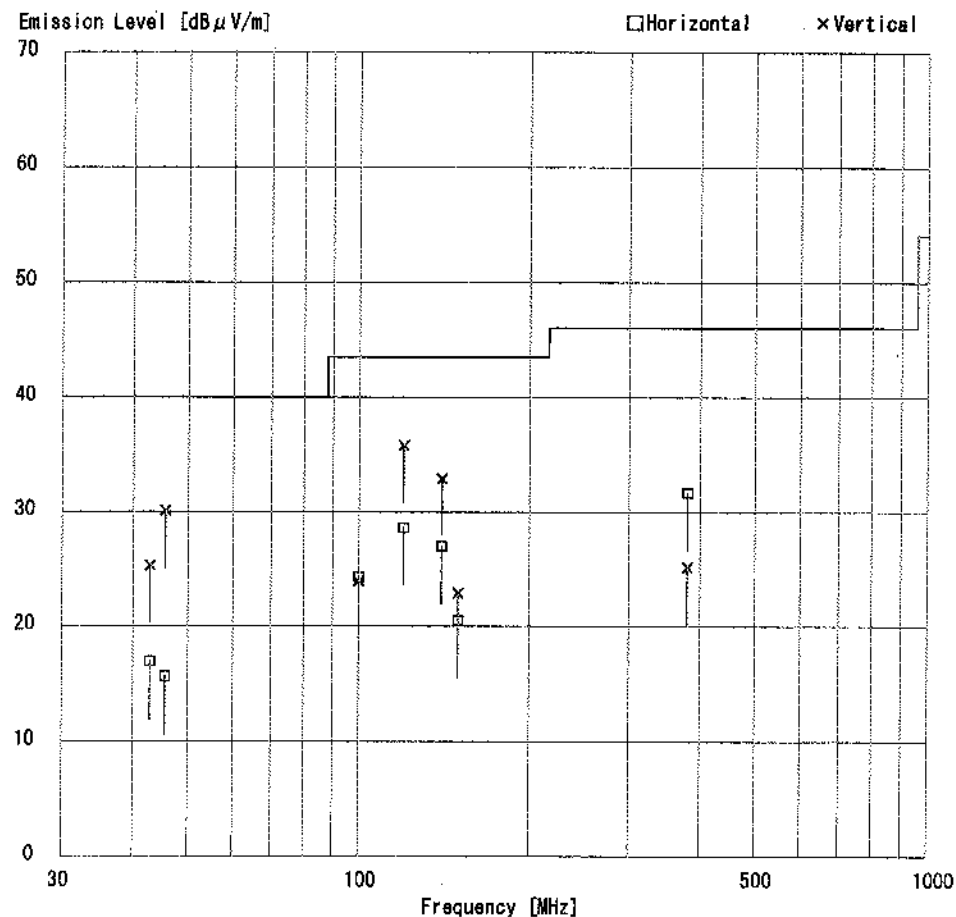
Except for the above table: adequate margin data below the limits.
ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic, 1-13GHz Horn

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks :
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks : TEST CHANNEL #3
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μV/m]	MARGIN	
			HOR [dB μV]	VER [dB μV]					HOR [dB μV/m]	VER [dB μV/m]		HOR [dB]	VER [dB]
1.	61.25	BB	23.3	24.6	7.8	27.9	1.6	5.9	10.7	12.0	40.0	29.3	28.0
2.	65.75	BB	23.4	24.7	7.1	27.8	1.7	6.0	10.4	11.7	40.0	29.6	28.3
3.	122.60	BB	22.6	29.3	13.2	27.9	2.3	6.0	16.2	22.9	43.5	27.3	20.6
4.	245.00	BB	21.7	21.8	16.8	27.4	3.1	6.0	20.2	20.3	46.0	25.8	25.7

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

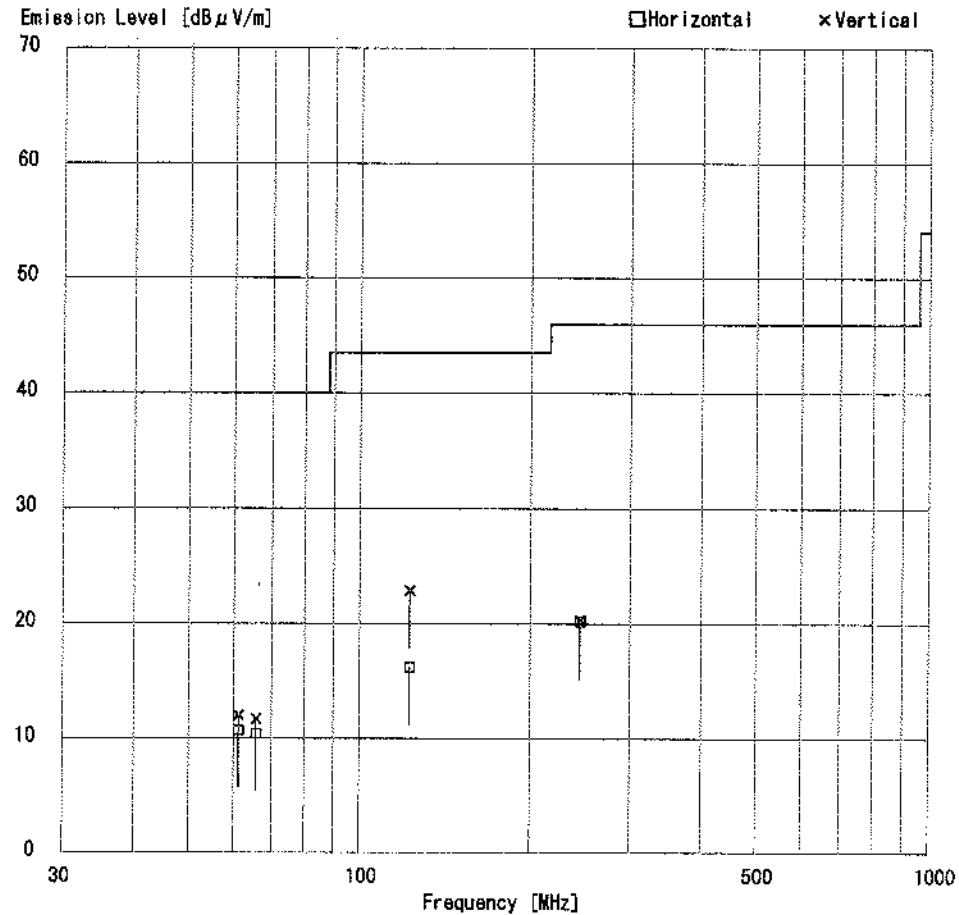
Except for the above table: adequate margin data below the limits.
ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic, 1-13GHz Horn

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks : TEST CHANNEL #3
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi



DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks : TEST CHANNEL #4
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi

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]	VER [dB]
1.	67.25	BB	23.9	24.9	6.9	27.9	1.7	6.0	10.6	11.6	40.0	29.4	28.4
2.	71.75	BB	24.1	25.0	6.4	27.9	1.8	6.0	10.4	11.3	40.0	29.6	28.7
3.	134.50	BB	21.9	22.2	14.2	27.9	2.6	6.0	16.7	17.0	43.5	26.8	26.5
4.	201.75	BB	22.1	22.3	16.3	27.8	3.1	6.0	19.7	19.9	43.5	23.8	23.6

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

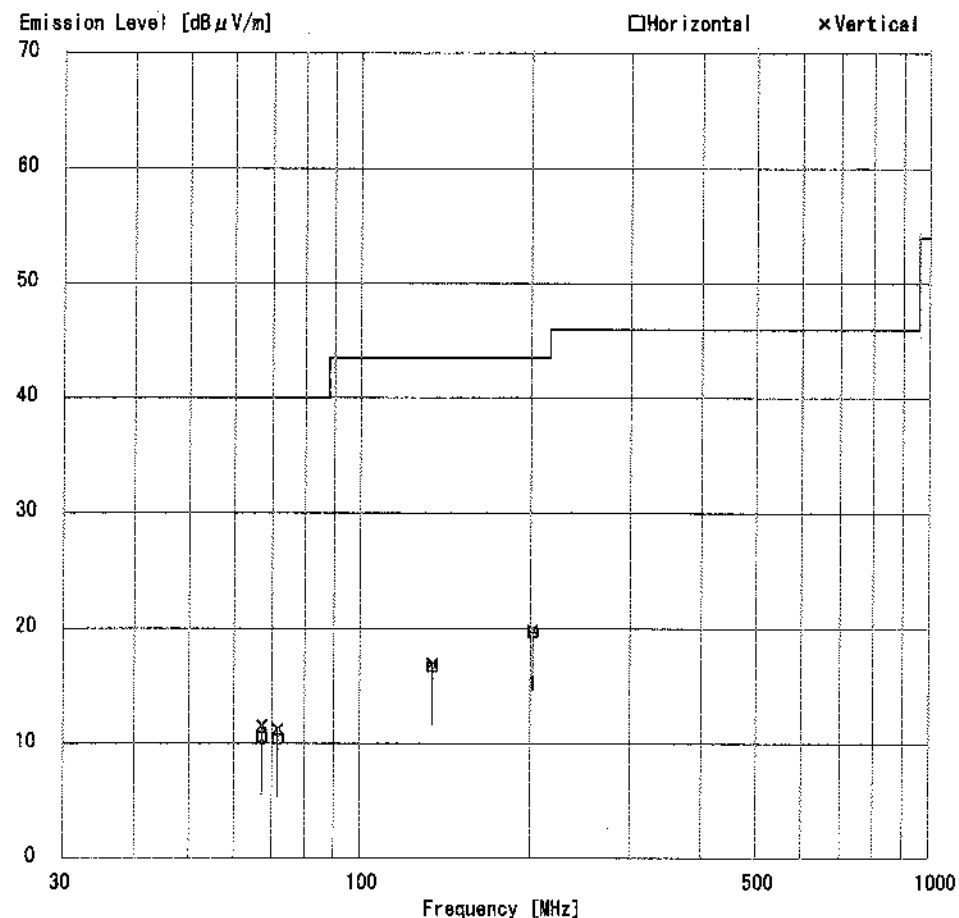
Except for the above table: adequate margin data below the limits.
ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic, 1-13GHz Horn

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 23DE0048-YW

Applicant : Orion Electric Co., Ltd.
Kind of Equipment : VIDEO CASSETTE RECORDER
Model No. : VCR4512
Serial No. :
Power : AC120V/60Hz
Mode : PLAYBACK
Remarks : TEST CHANNEL #4
Date : 11/18/2002
Test Distance : 3 m
Temperature : 23 °C
Humidity : 30 %
Regulation : FCC Part15B CLASS B

Engineer : Seigo Kakehi



DATA OF ANTENNA TERMINAL TEST

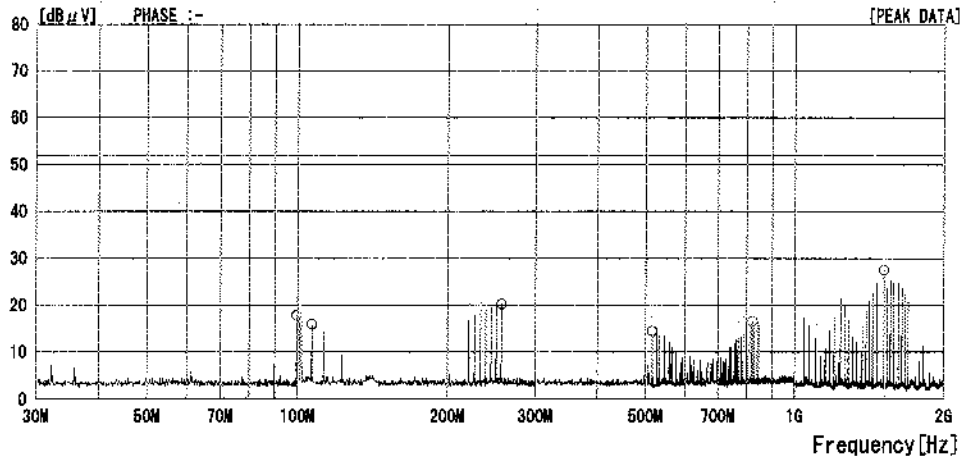
A-PEX INTERNATIONAL CO.,LTD.
Date : 2002/11/27 09:55:18

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : Video Cassette Recorder
MODEL : VCR4512
OPERATION MODE : TUNING

REPORT NO : 23DE0048-YW
DATE : November 19, 2002
REGULATION : FCC PART15 SUBPART B
TEST ENGINEER : Hisayuki Kikuchi

REMARKS : TV MODE

LIMIT : FCC 15B ANTENNA TERMINAL



NO	FREQ [MHz]	READING (PK) [dB μV]	C. F [dB]	RESULT [dB μV]	LIMIT QP [dB μV]	AV [dB μV]	MARGIN QP [dB]	AV [dB]	PHASE
1	99.59900	49.2	-31.4	17.8	52.0	---	34.2	---	-
2	106.85700	46.8	-30.9	15.9	52.0	---	36.1	---	-
3	256.85999	51.4	-31.2	20.2	52.0	---	31.8	---	-
4	516.57599	46.4	-31.9	14.5	52.0	---	37.5	---	-
5	823.00500	48.0	-31.5	16.5	52.0	---	35.5	---	-
6	1513.56995	65.0	-37.5	27.5	52.0	---	24.5	---	-

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

DATA OF ANTENNA TERMINAL TEST

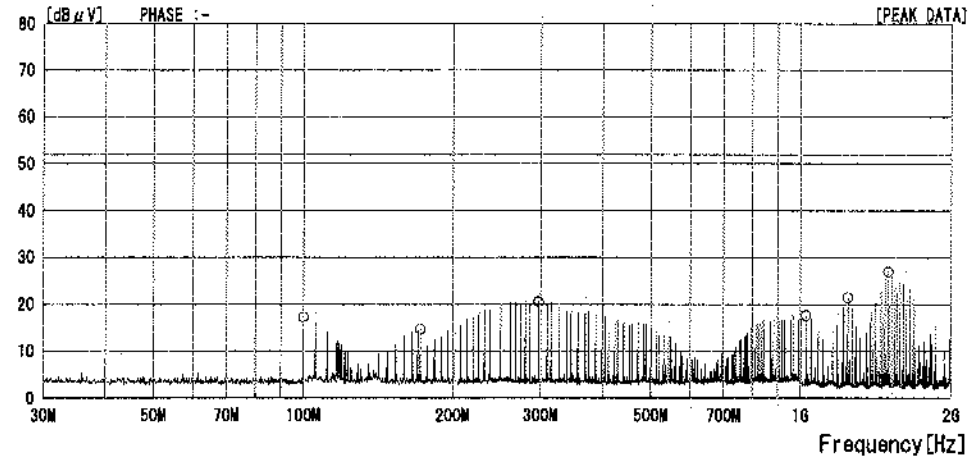
A-PEX INTERNATIONAL CO.,LTD.
Date : 2002/11/27 09:57:53

COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : Video Cassette Recorder
MODEL : VCR4512
OPERATION MODE : TUNING

REPORT NO : 23DE0048-YW
DATE : November 19, 2002
REGULATION : FCC PART15 SUBPART B
TEST ENGINEER : Hisayuki Kikuchi

REMARKS : CATV Mode

LIMIT : FCC 15B ANTENNA TERMINAL



NO	FREQ [MHz]	READING (PK) [dB μV]	C. F [dB]	RESULT [dB μV]	LIMIT QP [dB μV]	AV [dB μV]	MARGIN QP [dB]	AV [dB]	PHASE
1	99.89900	48.6	-31.4	17.2	52.0	---	34.8	---	-
2	172.28700	46.0	-31.4	14.6	52.0	---	37.4	---	-
3	297.71600	52.0	-31.5	20.5	52.0	---	31.5	---	-
4	1027.14294	55.6	-38.0	17.6	52.0	---	34.4	---	-
5	1243.55803	59.2	-37.8	21.4	52.0	---	30.6	---	-
6	1495.68005	64.4	-37.5	26.9	52.0	---	25.1	---	-

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. Report Number : 23DE0048-YW
Equipment : Video Cassette Recorder Regulation : FCC Part 15 Subpart B
Model number : VCR4512 Date : November 20, 2002
Power : AC 120 V / 60 Hz
Description : TV reception + REC. Mode (0 dBmV)

Engineer : Hisayuki Kioka

Video signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	86.5	20.4	66.1	69.5	3.4
4	67.25	86.0	20.4	65.6	69.5	3.9

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	72.7	20.4	52.3	56.5	4.2
	65.75	71.1	20.4	50.7	56.5	5.8
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 : 23DE0048-YW
Equipment : Video Cassette Recorder Regulation : FCC Part 15 Subpart B
Model number : VCR4512 Date : November 20, 2002
Power : AC 120 V / 60 Hz
Description : TV reception + REC. Mode (25 dBmV)

Engineer : Hisayuki Kioka

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	86.0	20.4	65.6	69.5	3.9

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	72.8	20.4	52.4	56.5	4.1
	65.75	71.5	20.4	51.1	56.5	5.4
4	62.75	71.8	20.4	51.4	56.5	5.1
	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 : 23DE0048-YW
Equipment : Video Cassette Recorder Regulation : FCC Part 15 Subpart B
Model number : VCR4512 Date : November 20, 2002
Power : AC 120 V / 60 Hz
Description : AV Input + REC. Mode (1V p-p)

Engineer : Hisayuki Kioka

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	61.25	86.4	20.4	66.0	69.5	3.5
4	67.25	85.2	20.4	64.8	69.5	4.7

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	69.1	20.4	48.7	56.5	7.8
	65.75	68.2	20.4	47.8	56.5	8.7
4	62.75	68.9	20.4	48.5	56.5	8.0
	71.75	67.9	20.4	47.5	56.5	9.0



RF output level

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

Company : Orion Electric Co., Ltd. Report Number : 23DE0048-YW
Equipment : Video Cassette Recorder Regulation : FCC Part 15 Subpart B
Model number : VCR4512 Date : November 20, 2002
Power : AC 120 V / 60 Hz
Description : AV Input + REC. Mode (5V p-p)

Engineer : Hisayuki Kioka

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	69.8	20.4	49.4	56.5	7.1
	65.75	68.3	20.4	47.9	56.5	8.6
4	62.75	68.7	20.4	48.3	56.5	8.2
	71.75	67.9	20.4	47.5	56.5	9.0



RF output level

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

Company : Orion Electric Co., Ltd.
Equipment : Video Cassette Recorder
Model number : VCR4512
Power : AC 120 V / 60 Hz
Description : VCR Playback Mode

Report Number : 23DE0048-YW
Regulation : FCC Part 15 Subpart B
Date : November 20, 2002

Engineer

Hisayuki Kioka

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	85.7	20.4	65.3	69.5	4.2

Audio signal

Ch.	Frequency [MHz]	Meter reading [dBuV]	Correction factor [dB]	Result [dB]	Limits [dBuV]	Margin [dB]
3	56.75	72.7	20.4	52.3	56.5	4.2
	65.75	72.8	20.4	52.4	56.5	4.1
4	62.75	71.2	20.4	50.8	56.5	5.7
	71.75	72.1	20.4	51.7	56.5	4.8

DATA OF RF SPURIOUS

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

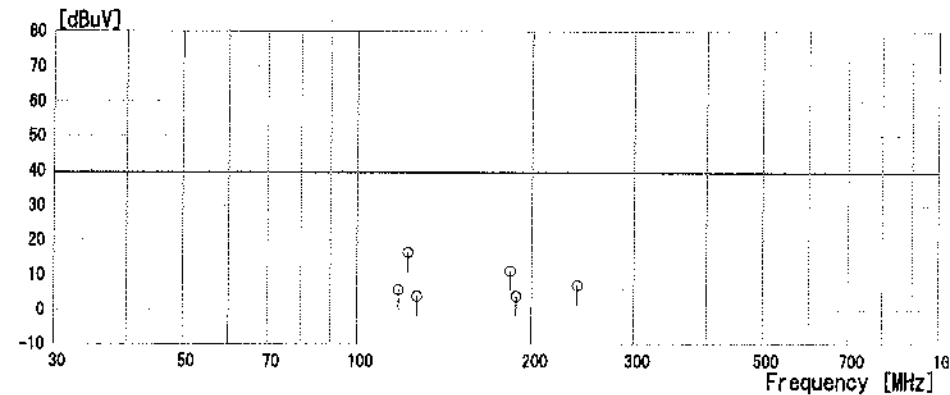
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : TV reception + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 0dBmV Input
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	118.000	27.6	---	-21.9	5.8	---	39.5	---	33.7	---
2	122.500	38.3	---	-21.9	16.4	---	39.5	---	23.1	---
3	127.000	25.9	---	-21.9	4.0	---	39.5	---	35.5	---
4	183.750	33.2	---	-22.0	11.1	---	39.5	---	28.4	---
5	188.250	25.9	---	-22.0	3.9	---	39.5	---	35.6	---
6	240.060	29.0	---	-22.0	7.0	---	39.5	---	32.6	---

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.
YOKOWA EMC LABORATORY

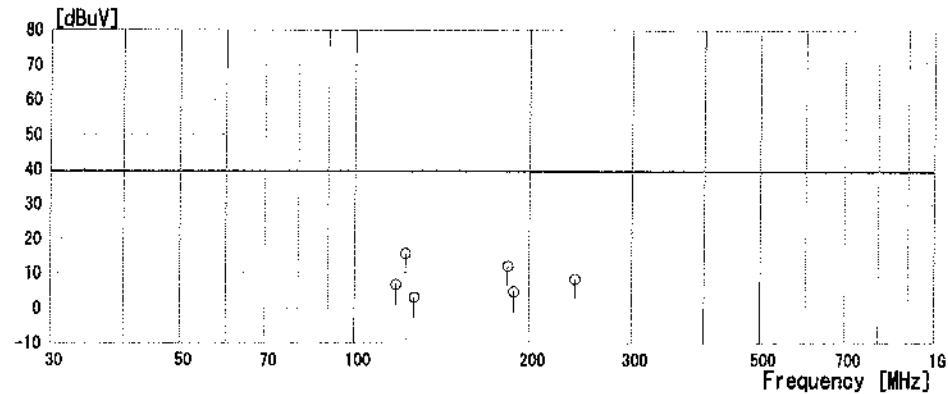
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EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : TV reception + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 25dBmV Input
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	118.000	28.6	-21.9	6.8	39.5	32.7
2	122.600	37.6	-21.9	15.7	39.5	23.8
3	127.000	25.0	-21.9	3.1	39.5	36.4
4	183.750	34.0	-22.0	12.0	39.5	27.5
5	188.310	26.7	-22.0	4.7	39.5	34.8
6	240.090	30.3	-22.0	8.3	39.5	31.2

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.
YOKOWA EMC LABORATORY

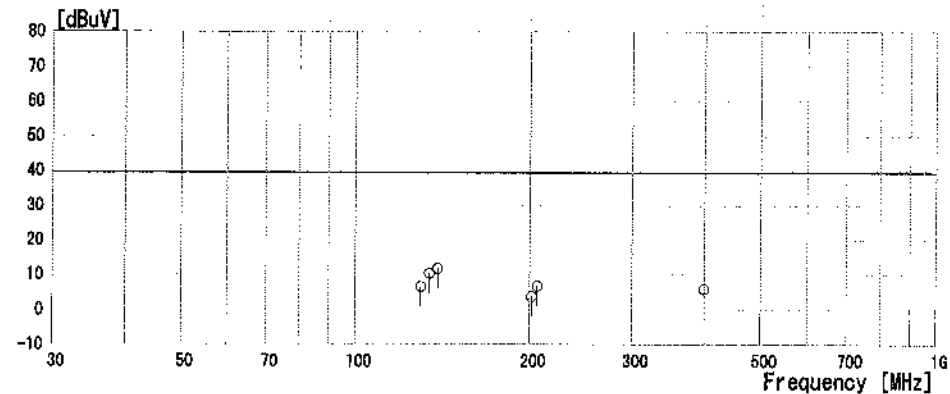
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : TV Reception + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 0dBmV
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	130.000	28.4	-21.9	6.5	39.5	33.0
2	134.500	32.1	-21.8	10.3	39.5	29.2
3	139.000	33.4	-21.8	11.7	39.5	27.8
4	201.750	25.5	-21.8	3.7	39.5	35.8
5	206.250	28.4	-21.8	6.6	39.5	32.9
6	400.000	28.1	-22.3	5.8	39.5	33.7

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.
YOKOWA EMC LABORATORY

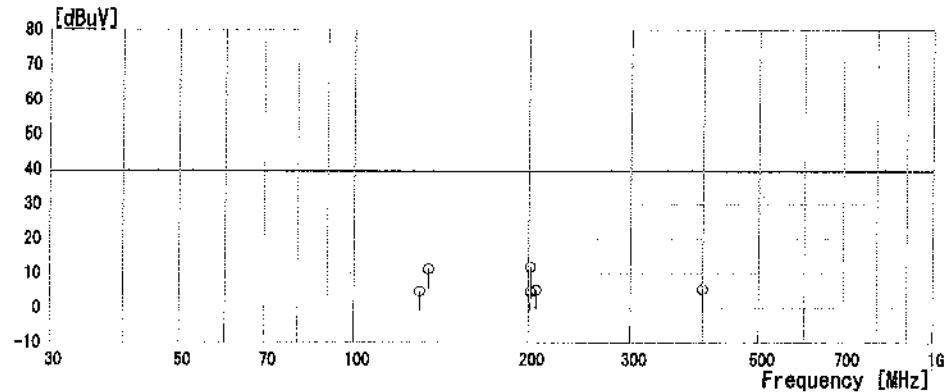
COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : TV Reception + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 25dBmV
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	130.000	26.7	---	-21.9	4.8	---	39.5	---	34.7	---
2	134.500	33.0	---	-21.8	11.2	---	39.5	---	28.3	---
3	201.750	26.5	---	-21.8	4.7	---	39.5	---	34.8	---
4	201.750	33.6	---	-21.8	11.9	---	39.5	---	27.6	---
5	206.250	27.0	---	-21.8	5.2	---	39.5	---	34.3	---
6	400.070	27.8	---	-22.3	5.5	---	39.5	---	34.0	---

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.
YOKOWA EMC LABORATORY

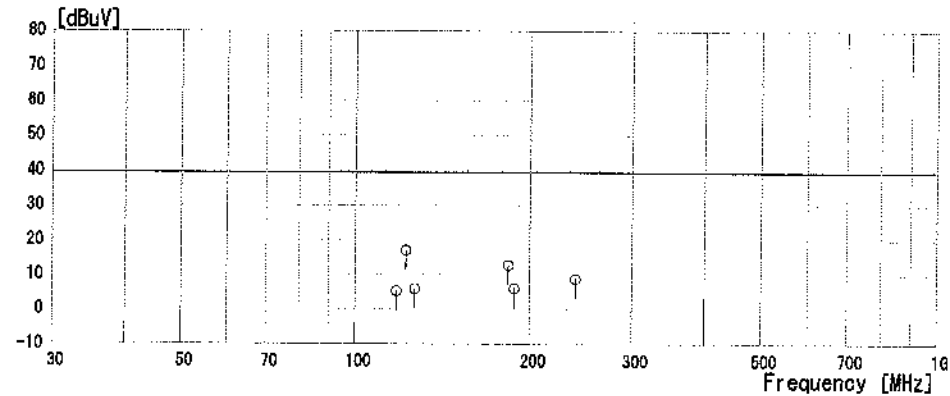
COMPANY : Orion Electric Co.,Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : AV Input + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	118.000	27.1	---	-21.9	5.2	---	39.5	---	34.3	---
2	122.500	38.9	---	-21.9	17.1	---	39.5	---	22.4	---
3	127.000	27.8	---	-21.9	5.9	---	39.5	---	33.6	---
4	183.750	34.8	---	-22.0	12.7	---	39.5	---	26.8	---
5	188.250	27.9	---	-22.0	5.9	---	39.5	---	33.6	---
6	240.070	30.8	---	-22.0	8.8	---	39.5	---	30.7	---

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.
YOKOWA EMC LABORATORY

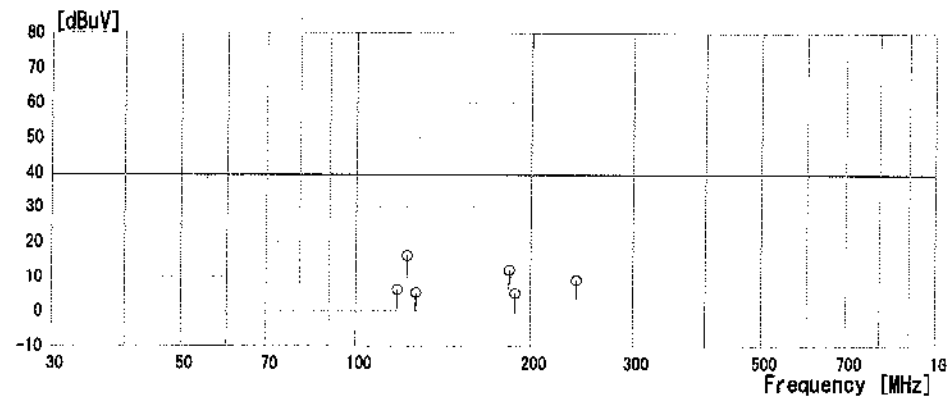
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : AV Input + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN	
		QP	AV		QP	AV	QP	AV	QP	AV
		[dBuV]			[dBuV]		[dBuV]		[dB]	
1	118.000	28.2	---	-21.9	6.3	---	39.5	---	33.2	---
2	122.500	38.1	---	-21.9	16.2	---	39.5	---	23.3	---
3	127.000	27.3	---	-21.9	5.4	---	39.5	---	34.1	---
4	183.750	34.1	---	-22.0	12.0	---	39.5	---	27.5	---
5	188.250	27.1	---	-22.0	5.1	---	39.5	---	34.4	---
6	240.070	31.1	---	-22.0	9.1	---	39.5	---	30.4	---

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.
YOKOWA EMC LABORATORY

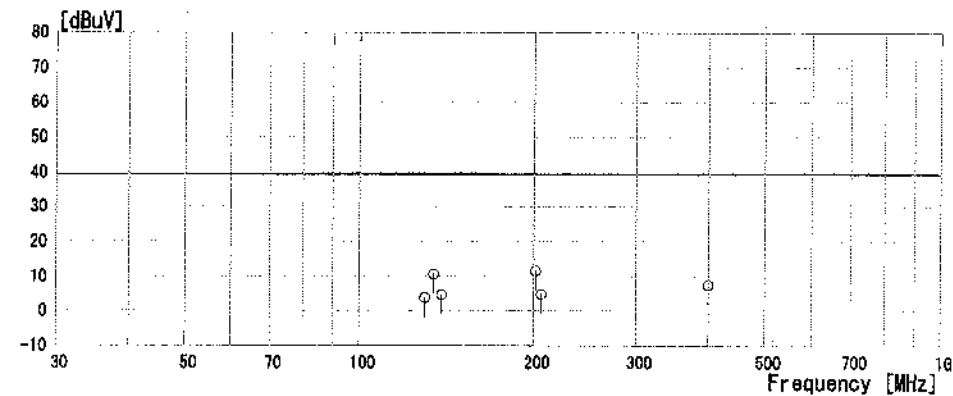
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : AV Input + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 2002
REGULATION : FCC PART15 SUBPART B

Engineer: Hisayuki Kioka

No.	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN	
		QP	AV		QP	AV	QP	AV	QP	AV
		[dBuV]			[dBuV]		[dBuV]		[dB]	
1	130.000	25.6	---	-21.9	3.7	---	39.5	---	35.8	---
2	134.500	32.5	---	-21.8	10.7	---	39.5	---	28.8	---
3	139.000	26.4	---	-21.8	4.6	---	39.5	---	34.9	---
4	201.750	33.4	---	-21.8	11.7	---	39.5	---	27.8	---
5	206.250	26.5	---	-21.8	4.7	---	39.5	---	34.8	---
6	400.000	29.8	---	-22.3	7.5	---	39.5	---	32.0	---

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.
YOKOHA EMC LABORATORY

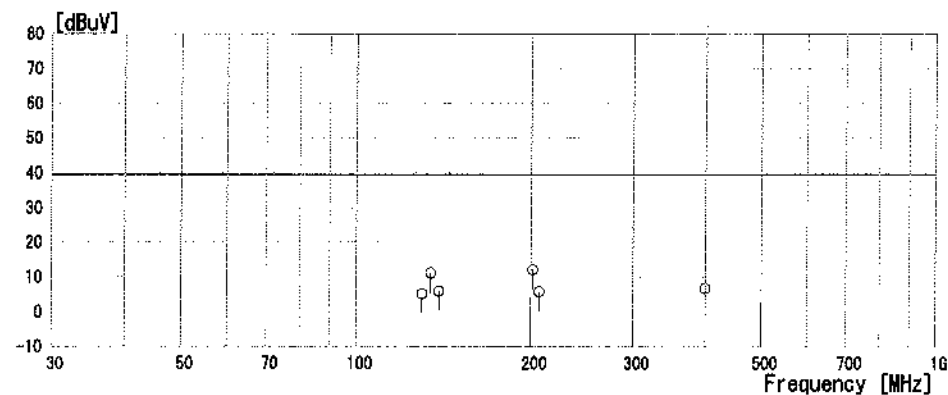
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : AV Input + Rec
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	130.000	27.1	---	-21.9	5.3	---	39.5	---	34.3	---
2	134.500	32.9	---	-21.8	11.1	---	39.5	---	28.4	---
3	139.000	27.8	---	-21.8	6.0	---	39.5	---	33.5	---
4	201.750	33.8	---	-21.8	12.1	---	39.5	---	27.4	---
5	206.750	27.6	---	-21.8	5.8	---	39.5	---	33.7	---
6	400.000	29.1	---	-22.3	6.8	---	39.5	---	32.7	---

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.
YOKOHA EMC LABORATORY

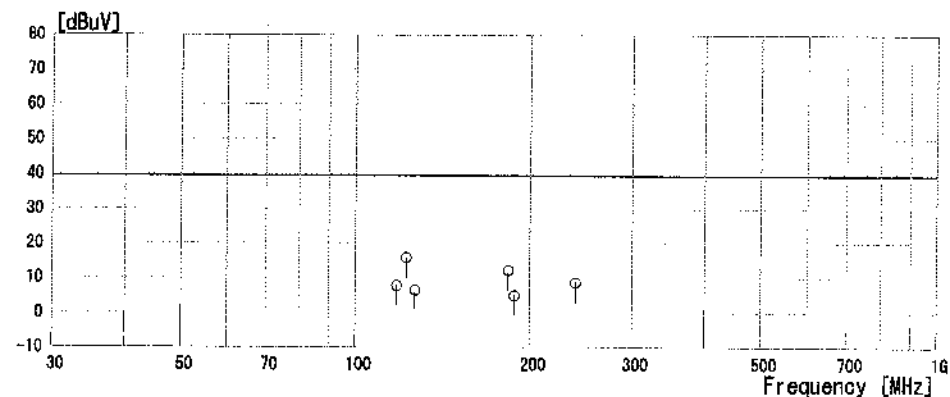
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : VCR Playback
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 : -
REMARKS 2 : 3CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	118.000	29.6	---	-21.9	7.8	---	39.5	---	31.7	---
2	122.500	37.6	---	-21.9	15.7	---	39.5	---	23.8	---
3	127.000	28.4	---	-21.9	6.5	---	39.5	---	33.0	---
4	183.750	34.2	---	-22.0	12.1	---	39.5	---	27.4	---
5	188.250	27.0	---	-22.0	5.0	---	39.5	---	34.5	---
6	240.070	30.7	---	-22.0	8.7	---	39.5	---	30.8	---

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.
YOKOWA EMC LABORATORY

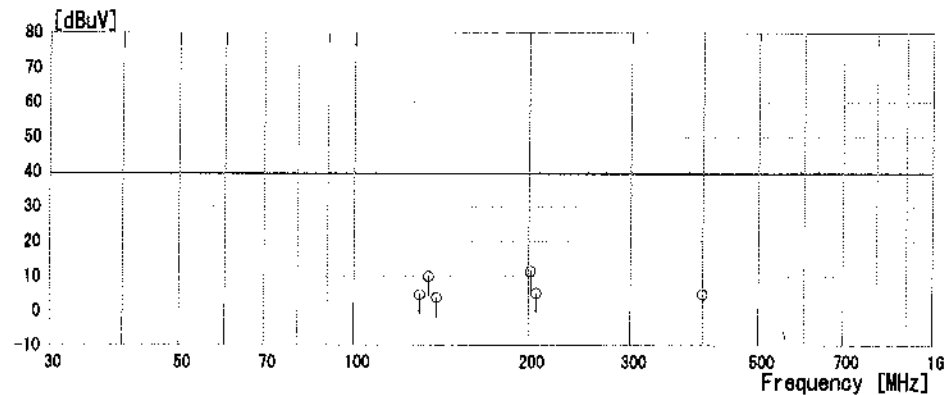
COMPANY : Orion Electric Co., Ltd.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : VCR Playback
PORT : RF Output Terminal
POWER : AC120V/60Hz
REMARKS 1 :
REMARKS 2 : 4CH Output

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	130.000	26.6	----	-21.9	4.7	----	39.5	----	34.8	----
2	134.500	31.7	----	-21.8	9.9	----	39.5	----	29.6	----
3	139.000	26.6	----	-21.8	3.9	----	39.5	----	35.6	----
4	201.750	33.2	----	-21.8	11.4	----	39.5	----	28.1	----
5	206.250	27.0	----	-21.8	5.2	----	39.5	----	34.3	----
6	400.000	27.1	----	-22.3	4.8	----	39.5	----	34.7	----

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



DATA OF ANTENNA TRANSFER SWITCH

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

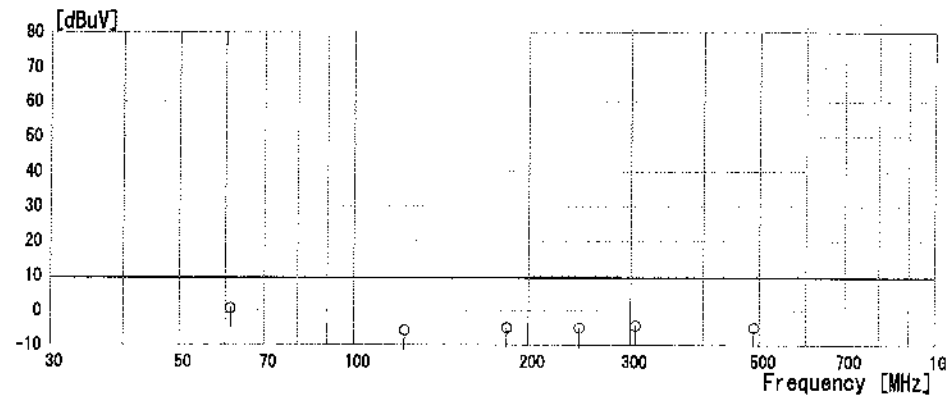
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : AV Input + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	61.250	22.4	----	-21.7	0.6	----	9.5	----	8.9	----
2	183.750	17.1	----	-22.0	-4.9	----	9.5	----	14.4	----
3	122.500	16.2	----	-21.9	-5.7	----	9.5	----	15.2	----
4	245.000	17.0	----	-22.0	-5.0	----	9.5	----	14.5	----
5	306.250	17.6	----	-22.0	-4.4	----	9.5	----	13.9	----
6	490.000	18.9	----	-21.8	-4.9	----	9.5	----	14.4	----

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



DATA OF ANTENNA TRANSFER SWITCH

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

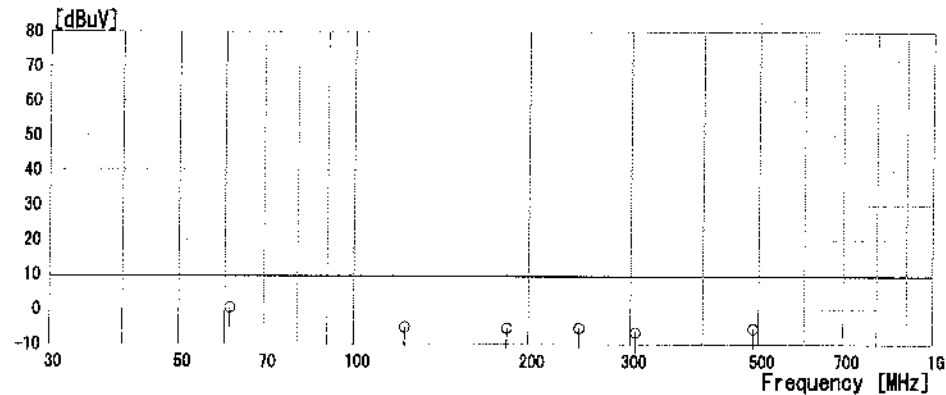
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : AV Input + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	22.2	-21.7	0.4	9.5	9.1
2	183.750	16.7	-22.0	-5.3	9.5	14.8
3	122.500	16.8	-21.9	-5.1	9.5	14.6
4	245.000	16.6	-22.0	-5.4	9.5	14.9
5	306.250	15.4	-22.0	-6.6	9.5	16.1
6	490.000	16.3	-21.8	-5.5	9.5	15.0

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.
YOKOHA EMC LABORATORY

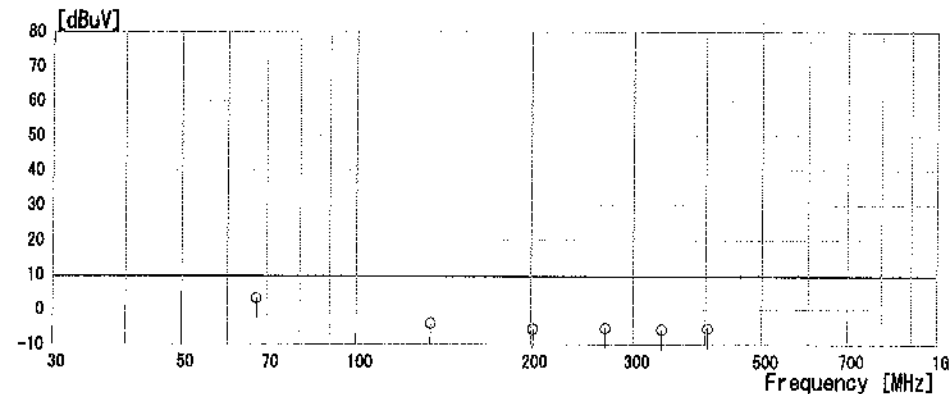
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : AV Input + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 1Vp-p Input
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	67.250	24.8	-21.7	3.1	9.5	6.4
2	134.500	17.8	-21.8	-4.0	9.5	13.5
3	201.750	16.2	-21.8	-5.6	9.5	15.1
4	269.000	16.6	-22.0	-5.4	9.5	14.9
5	336.250	16.4	-22.1	-5.7	9.5	15.2
6	403.500	16.8	-22.2	-5.4	9.5	14.9

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.
YOKOHA EMC LABORATORY

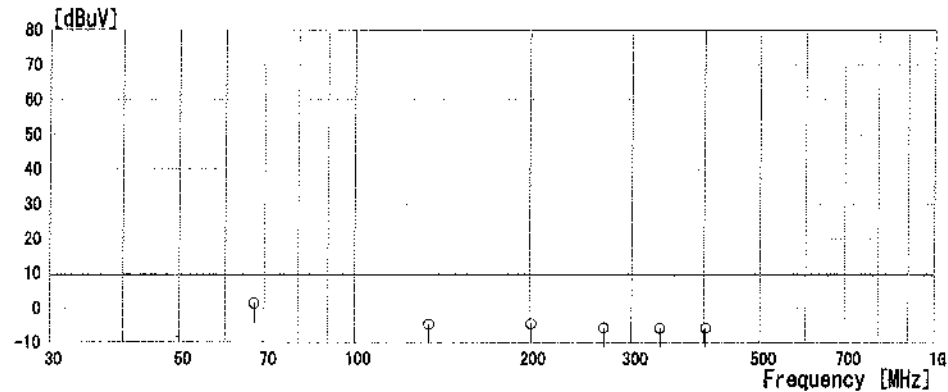
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : AV Input + Rec
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : 5Vp-p Input
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	67.250	23.1	---	-21.7	1.4	---	9.5	---	8.1	---
2	134.500	17.1	---	-21.8	-4.7	---	9.5	---	14.2	---
3	201.750	17.3	---	-21.8	-4.5	---	9.5	---	14.0	---
4	269.000	16.3	---	-22.0	-5.7	---	9.5	---	15.2	---
5	336.250	16.3	---	-22.1	-5.8	---	9.5	---	15.3	---
6	403.500	16.5	---	-22.2	-5.7	---	9.5	---	15.2	---

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.
YOKOHA EMC LABORATORY

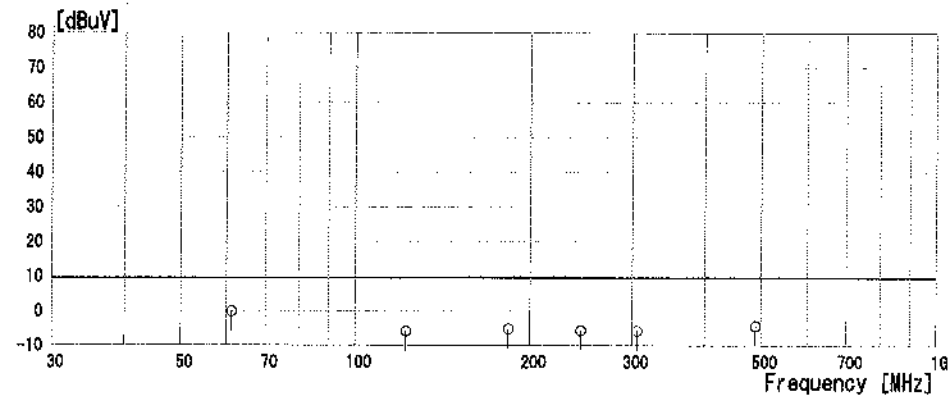
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : VCR Playback
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 : -
REMARKS 2 : 3CH OUTPUT

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	16.0	---	-21.9	-5.8	---	9.5	---	15.3	---
3	183.750	16.9	---	-22.0	-5.2	---	9.5	---	14.7	---
4	245.000	16.4	---	-22.0	-5.6	---	9.5	---	15.1	---
5	306.250	16.3	---	-22.0	-5.7	---	9.5	---	15.2	---
6	490.000	17.6	---	-21.8	-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

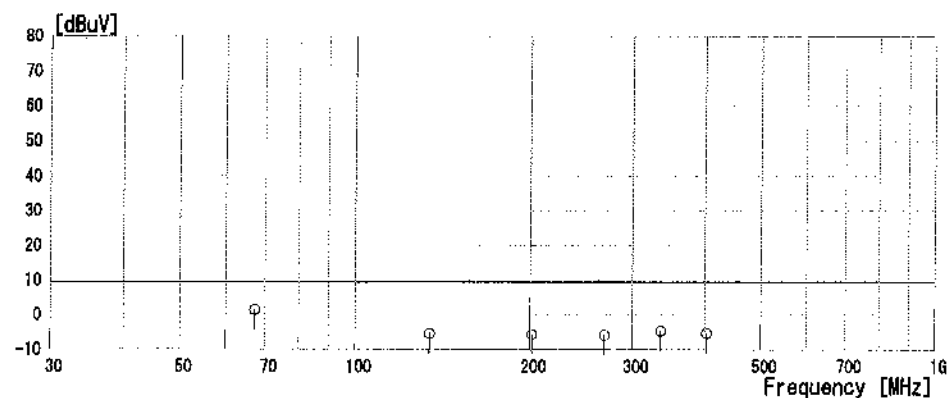
COMPANY : ORION ELECTRIC CO., LTD.
EQUIPMENT : Video Cassette Recorder
Model Name : VCR4512
OPERATION MODE : VCR Playback
PORT : RF INPUT TERMINAL
POWER : AC120V/60Hz
REMARKS 1 :
REMARKS 2 : 4CH OUTPUT

REPORT NO. : 23DE0048-YW
DATE : November 19, 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	67.250	23.0	----	-21.7	1.4	----	9.5	----	8.1	----
2	134.500	16.3	----	-21.8	-5.6	----	9.5	----	15.0	----
3	201.750	16.1	----	-21.8	-5.7	----	9.5	----	15.2	----
4	269.000	16.1	----	-22.0	-5.9	----	9.5	----	15.4	----
5	336.250	17.4	----	-22.1	-4.7	----	9.5	----	14.2	----
6	403.500	16.8	----	-22.2	-5.4	----	9.5	----	14.9	----

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 : Video Cassette Recorder
Model number : VCR4512
Power : AC 120 V / 60 Hz
Description : TV RECEPTION Mode

Report Number : 23DE0048-YW
Regulation : FCC Part15B Subpart B
Date : November 20, 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	22.9 14.0
3	61.25	16.9 7.0	20	507.25	22.9 14.0
4	67.25	19.4 9.3	26	543.25	24.2 16.2
5	77.25	19.5 9.4	32	579.25	24.0 15.8
6	83.25	19.5 9.4	38	615.25	25.3 18.4
7	175.25	21.7 12.2	44	651.25	24.9 17.6
8	181.25	21.9 12.4	50	687.25	27.2 22.9
9	187.25	21.5 11.9	56	723.25	25.6 19.1
10	193.25	21.4 11.7	62	759.25	26.8 21.9
11	199.25	21.5 11.9	69	801.25	25.3 18.4
12	205.25	18.6 8.5	-	-	- -
13	211.25	21.4 11.7	-	-	- -
Average VHF		10.5	Average UHF		17.8
Average UHF/VHF : 20 log UHF[uV]/VHF[uV] =		4.6	dB		[Limit : 8.0 dB]

Noise figure test

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

Company : ORION ELECTRIC CO., LTD.
Equipment : Video Cassette Recorder
Model number : VCR4512
Power : AC 120 V / 60 Hz
Description : TV RECEPTION Mode

Report Number : 23DE0048-YW
Regulation : FCC Part 15B Subpart B
Date : November 19, 2002

Engineer : Hisayuki Kioka

Ch.	Frequency [MHz]	Meter reading [dB]	Correction factor [dB]	Noise figure [dB]	Limits [dB]	Margin [dB]
TV VHF Fundamental						
2	55.25	5.5	0.2	5.3	14.0	8.7
3	61.25	4.6	0.2	4.4	14.0	9.6
4	67.25	4.1	0.2	3.9	14.0	10.1
5	77.25	3.7	0.2	3.5	14.0	10.5
6	83.25	3.5	0.2	3.3	14.0	10.7
7	175.25	6.2	0.2	6.0	14.0	8.0
8	181.25	6.4	0.2	6.2	14.0	7.8
9	187.25	6.2	0.2	6.0	14.0	8.0
10	193.25	6.1	0.2	5.9	14.0	8.1
11	199.25	6.1	0.2	5.9	14.0	8.1
12	205.25	6.0	0.2	5.8	14.0	8.2
13	211.25	5.9	0.2	5.7	14.0	8.3
TV UHF Fundamental						
14	471.25	7.6	0.3	7.3	14.0	6.7
20	507.25	8.2	0.3	7.9	14.0	6.1
26	543.25	8.4	0.3	8.1	14.0	5.9
32	579.25	8.2	0.3	7.9	14.0	6.1
38	615.25	7.7	0.3	7.4	14.0	6.6
44	651.25	7.4	0.3	7.1	14.0	6.9
50	687.25	7.3	0.3	7.0	14.0	7.0
56	723.25	6.8	0.4	6.4	14.0	7.6
62	759.25	6.9	0.4	6.5	14.0	7.5
69	801.25	7.3	0.4	6.9	14.0	7.1
Mid-band						
14	121.25	5.4	0.2	5.2	14.0	8.8
16	133.25	8.3	0.2	8.1	14.0	5.9
18	145.25	7.4	0.2	7.2	14.0	6.8
20	157.25	6.9	0.2	6.7	14.0	7.3
22	169.25	6.6	0.2	6.4	14.0	7.6
Super-band						
23	217.25	6.1	0.2	5.9	14.0	8.1
26	235.25	6.0	0.2	5.8	14.0	8.2
29	253.25	6.1	0.2	5.9	14.0	8.1
32	271.25	6.2	0.2	6.0	14.0	8.0
36	295.25	6.2	0.2	6.0	14.0	8.0

Test Report No : 23DE0048-YW

APPENDIX 3 Test Instruments

Control No.	Instrument Name	Manufacturer	Model No.	Calibration Date
AF-01	Pre Amplifier	Agilent	4470	2002/04/01 * 12
AF-08	Pre Amplifier	Agilent	HP8449B	2001/12/21 * 12
AT-06	Attenuator	Anritsu	MP721B	2002/04/04 * 12
BA-05	Biconical Antenna	Schwarzbeck	BA10108	2002/02/16 * 12
LA-07	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	2002/09/09 * 12
SA-08	Spectrum Analyzer	Advantest	R3273	2002/11/19 * 12
TR-06	Test Receiver	Rohde & Schwarz	ESVS10	2002/11/22 * 12
OS-16	Digital Humidity Indicator	SATO	PC-5000TRH	2002/05/16 * 12
OS-16	Digital Humidity Indicator	SATO	PC-5000TRH	2002/05/16 * 12
CC-30RC	Yokowa No.3 open coaxial(0.01-1000MHz)	A-PEX	CC-31,CC-32,CC-33,CC-34,CC-35,CC-36,CC-37,SW-31,SW-32	2002/03/30 * 12
YOATS-03	Open Test Site	JSE	3m, 10m	2002/05/01 * 12
AF-03	Pre Amplifier	Anritsu	MH648A	2002/04/01 * 12
LS-07	LISN	Schwarzbeck	NSLK8126	2002/11/01 * 12
AF-07	Pre Amplifier	Agilent	HP8449B	2001/12/21 * 12
SA-08	Spectrum Analyzer	Advantest	R3272	2002/04/11 * 12
TR-03	Test Receiver	Rohde & Schwarz	ESHS30	2002/05/22 * 12
LS-03	LISN	Schwarzbeck	NSLK8127	2002/11/01 * 12
CC-2S	Yokowa No.2 shield coaxial(0.01MHz-1000MHz)	A-PEX	CC-24,CC-25,CC-26,CC-28,CC-29,SW-21,SW-22	2002/03/30 * 12
CC-C15	Microwave Cable	Suhner	SUQOFLEX	2002/04/17 * 12
CC-C17	Microwave Cable	Suhner	SUQOFLEX	2002/04/26 * 12
HA-02	Horn Antenna	A.H.Systems	SAS-200/571	2002/05/07 * 12
SS-05	Digitizing Oscilloscope	Sony Tektronix	2221	2002/01/10 * 12
AV17-01	Pattern Generator	Leader	408NPS	2002/07/26 * 12
APNFM01	Noise Figure Indicator	Elana	ENF-2005	2002/05/27 * 24
SP-01	75Ω Coaxial Cable(TV Type)	A-PEX	75-F-N-SP	2002/04/28 * 12
SP-04	50Ω Coaxial Cable(Antenna Terminal)	A-PEX	50-N-N-SP	2002/04/28 * 12
AV14-02	Matching Pad	TME	ZT-102	2002/06/06 * 12
APSSG04	Signal Generator	Rohde & Schwarz	SMY01	2002/06/07 * 12
APBPF01	Band pass filter	Erika Fiedler	BP	Pre Check
IP-03	Matching Pad	TME	ZT-130	2002/09/06 * 12

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

Test Item:

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