

EMISSION TEST REPORT

Test Report No. : 17A0020-02I
Hitachi, LTD. Model: MP-EG10W
FCC Part 15 Subpart B

1. This test report shall not be reproduced except in full, without the written approval of A-Pex International Co., Ltd.
2. This test report does not constitute an endorsement by NIST/NVLAP or U.S. Government.
3. This equipment is in compliance with above regulation. We hereby certify that the data are contain a true representation of the emission profile.
4. The results in this report apply only to the sample tested.
5. This test report clearly shows that EUT, MP-EG10W, MPEG Digital Camera is in compliance with FCC Part 15 Subpart B Class B, specification.

Date of test: January 16, 17, 18, 1998

Issued date: March 12, 1998

Tested by: *K. Nakamura*

Koei Nakamura
Engineer, EMC Dept.

Approved by: *K. Nakanishi*

Kazutoyo Nakanishi
Group Leader EMC Dept.



This laboratory is registered by NIST/NVLAP, U.S.A. The tests report have been performed in accordance with its terms of registration.

Testing Laboratory

A-pex International Co., Ltd.

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

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Table of Contents	Page
3.1 GENERAL INFORMATION	3
3.1.1 Tested Methodology	4
3.1.2 Tested Facility	4
3.2 SYSTEM TEST CONFIGURATION	5
3.2.1 Justification	5
3.2.2 EUT exercise spftware	5
3.2.3 Test Procedure	6
Figure 3.2. Configuration of Tested System	7
3.3 CONDUCTED RADIATED MEASUREMENT PHOTOGRAPHS	8
Figure 3.3.1 Conducted Measurement Photographs (MODE 1, 2, 4)	8
Figure 3.3.2 Conducted Measurement Photographs (MODE 3)	9
Figure 3.3.3 Conducted Measurement Photographs (MODE 5)	10
Figure 3.3.4 Radiated Measurement Photographs (MODE 1, 2, 4)	11
Figure 3.3.5 Radiated Measurement Photographs (MODE 3)	12
Figure 3.3.6 Radiated Measurement Photographs (MODE 5)	13
3.3.7 Measurement Uncertainty	14
3.4 CONDUCTED EMISSION DATA	15
3.5 RADIATED EMISSION DATA	16
3.5.1 Field Strength Calculation	17
3.6 TEST EQUIPMENT	18
APPENDIX	19
Test Data	A1 - A25

FCC ID : ABL045
Our reference : 17A0020-02I
Page : 3 of 19
Issued date : 98/03/12

3.1 GENERAL INFORMATION

APPLICANT : Hitachi Ltd.

Regulation(S) : FCC Part 15 Subpart B, Class B

FCC ID : ABL 045

MODEL NUMBER : MP-EG10W

KIND OF EQUIPMENT : MPEG DIGITAL CAMERA

TESTED DATE : January 13, 19, 21, 1998

REPORT FILE NUMBER : 17A0020-02I

TEST SITE : A-PEX Yokowa NO.2 Open Test Site
: A-PEX Yokowa NO.3 Open Test Site

FCC ID : ABL045
Our reference : 17A0020-02I
Page : 4 of 19
Issued date : 98/03/12

3.1.1 Tested Methodology

Both conducted and radiated testing were performed according to the procedures in FCC/ANSI C63.4(1992). Radiated testing was performed by the distance of 3 meters from the antenna to EUT .

3.1.2 Test Facility

The open area site measurement facility used to collect the radiated data is located on 108, Yokowa-cho, Ise-shi, Mie-ken, 516-1106 Japan.

This site has been fully described in a report dated on May 27, 1997(No.2) / August 1, 1997(No. 3) submitted to FCC office, and accepted in a letter dated on August 18, 1997 (No.2) / September 16, 1997(No.3) (31040/SIT 1300F2).

3.2 SYSTEM TEST CONFIGURATION

3.2.1 Justification

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

3.2.2 EUTexercise software

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

The sequence used is:

(1) MODE 1

- Output digital data (MP-EG10W→MP-ADI1A).
- MP-ADI1A receives digital data and recording to HDD in PC.

(2) MODE 2

- Output digital data (MP-ADI1A → MP-EG10W).
- MP-EG10W receives digital data and recording to HDD in MP-EG10W.

(3) MODE 3

- Recording Motion Pictures.

(4) Mode 4

- Standby

(5) Mode 5

- Output digital data (VIHS → MP-EG10W)
MP-EG10W receives digital data and recording to HDD in MP-EG10W

3.2.3 Test Procedure

Tabletop Equipment Conducted Emissions

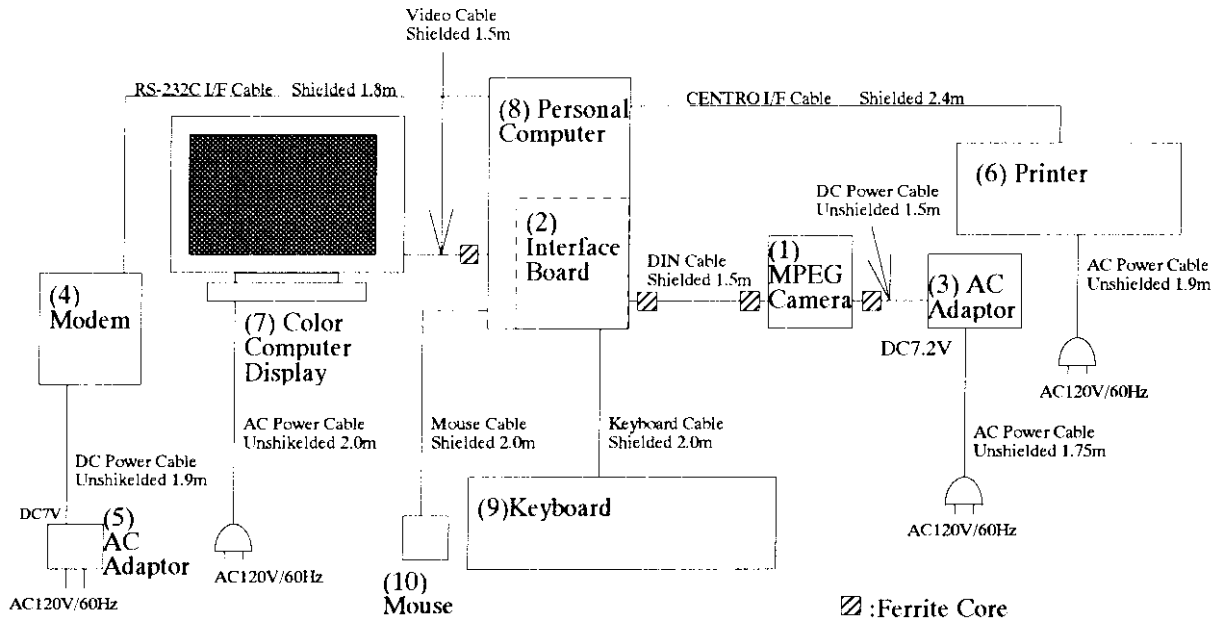
EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.
The rear of tabletop was located 40cm to the vertical conducting plane.
The rear of EUT, including peripherals aligned and flush with rear of tabletop.
All other surfaces of tabletop was at least 80cm from any other grounded conducting surface.
I/O cables and AC cables that were connected to the peripherals were bundled in center.
They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.
Each EUT current-carrying power lead, except the ground (safety) lead, were individually connected through a LISN to the input power source.
All unused 50 Ω connectors of the LISN were resistively terminated in 50 Ω when not connected to the measuring equipment.

Tabletop Equipment Radiated Emissions

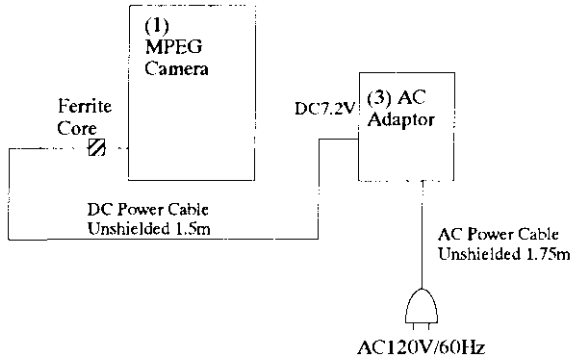
EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.
The rear of EUT, including peripherals was aligned and flush with rear of tabletop.
I/O cables and AC cables that were connected to the peripherals were bundled in center.
They were folded back and forth forming a bundle 30cm to 40cm long and were hanged 40cm height to the ground plane.
Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.
The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.
The measurement distance was 3m.

Figure 3.2. Configuration of Tested System

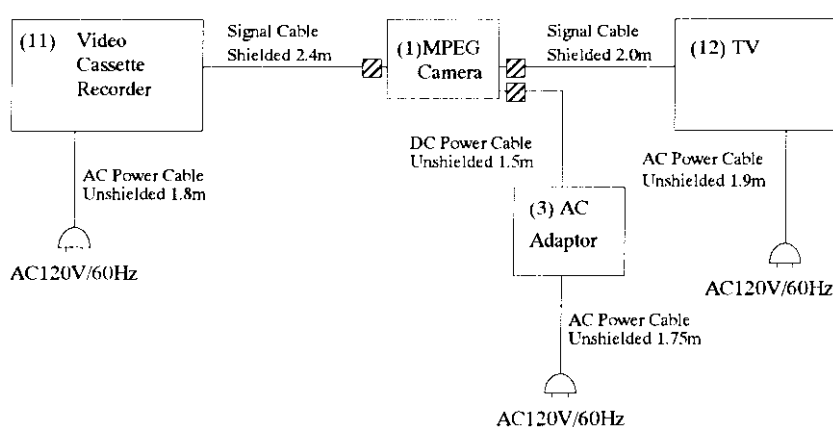
MODE 1, 2, 4



MODE 3



MODE 5



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

Testing Laboratory

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3.3.7 Measurement Uncertainty

Radiated Emission Test

The measurement uncertainty (with a 95% confidence level) for this test was $\pm 3.3\text{dB}$.

- ☐ The data listed in this test report may exceed the test limit because it does not have enough margin (more than 3.3dB).
- ☒ The data listed in this test report has enough margin, more than 3.3dB.

Conducted Emission Test

The measurement uncertainty (with a 95% confidence level) for this test was $\pm 2.0\text{dB}$.

- ☒ The data listed in this test report may exceed the test limit because it does not have enough margin (more than 2.0dB).
- ☐ The data listed in this test report has enough margin, more than 2.0dB.

3.4 CONDUCTED EMISSION DATA

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range(450KHz-30MHz).
The final data represents worst-case emissions. (MODE 1)
The minimum margin to the limit is as follows :

Frequency (MHz)	Line (N/L)	Measured (dB μ V)	LISN Factor (dB)	Result (dB μ V)	Limit (dB μ V)	Margin (dB μ V)
1.0467	N	45.9	0.5	46.4	48.0	1.6

* Result = Reading + LISN Factor (include cable loss)

* All readings are quasi-peak mode.

3.5 RADIATED EMISSION DATA

The initial step in collecting radiated data was a spectrum analyzer peak scan of the measurement range (30MHz-1,000MHz).

The final data was reported in the worst-case emissions. (MODE 5)

The minimum margin to the limit is as follows :

Frequency MHz)	Receiver Reading dB μ V)	Correction Factor (dB μ V)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB μ V)
47.16	45.4	-9.0	36.4	40.0	3.6

* All readings are quasi-peak mode.

3.5.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor, Cable Factor and Antenna Pad, and subtracting the Amplifier Gain from the measured reading. The sample calculation is as follows :

$$FS = RA + AF + CF + AT - AG$$

where FS = Field Strength
RA = Receiver Amplitude
AF = Antenna Factor
CF = Cable Factor
AT = Antenna Pad
AG = Amplifier Gain

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna Factor of 5.35 dB, Cable Factor of 1.77 dB and Antenna Pad of 6.0 dB is added. The Amplifier Gain of 27.34 dB is subtracted, giving a field strength of 37.78 dB μ V/m.

$$FS = 52.0 + 5.35 + 1.77 + 6.0 - 27.34 = 37.78 \text{ dB}\mu\text{V/m}$$

3.6 TEST EQUIPMENT USED

INSTRUMENTS	Mfr.	MODEL	C/N	Calibrated Until
☒ Pre Amplifier	Hewlett Packard	8447D	AP1	July 6, 1998
☐ Pre Amplifier	Anritsu	MII648A	AP2	July 6, 1998
☐ Pre Amplifier	Anritsu	MII648A	AP3	July 6, 1998
☐ Pre Amplifier	Hewlett Packard	8449B	-	September 2, 1998
☒ Biconical Antenna	Schwarzbeck	BBA9106	BA1	April 23, 1998
☐ Biconical Antenna	Schwarzbeck	BBA9106	BA2	July 19, 1998
☐ Biconical Antenna	Schwarzbeck	BBA9106	BA3	May 10, 1998
☐ Logperiodic Antenna	Schwarzbeck	UHALP9108A	LA5	July 19, 1998
☐ Logperiodic Antenna	Schwarzbeck	UHALP9108A	LA6	July 19, 1998
☒ Logperiodic Antenna	Schwarzbeck	UKLP9104-A	LA7	May 3, 1998
☐ Double Ridge Guide Horn Antenna	A.H. SYSTEM	SAS-200/571	APANT4	July 24, 1998
☐ LISN	Rohde & Schwarz	ESH2-Z5	LS1	July 6, 1998
☒ LISN	Rohde & Schwarz	ESH3-Z5	LS2	July 6, 1998
☒ LISN	Schwarzbeck	NSLK8127	LS3	July 6, 1998
☐ LISN	Rohde & Schwarz	ESIB-Z5	LS4	July 6, 1998
☐ LISN	Schwarzbeck	NNLK8121	LS5	July 6, 1998
☐ LISN	Rolf Heine	NNB-4/200	LS6	October 24, 1998
☐ LISN	Schwarzbeck	NNLK8126	LS7	July 6, 1998
☒ Spectrum Analyzer	Hewlett Packard	8567A	SA4	July 6, 1998
☐ Spectrum Analyzer	Hewlett Packard	R3271	YTSA1	August 19, 1998
☐ Test Receiver	Rohde & Schwarz	ESHS-20	TR1	April 24, 1998
☐ Test Receiver	Rohde & Schwarz	ESVS-30	TR2	July 8, 1998
☒ Electro Magnetic Interference Receiver	Meb Messelektronik Berlin	SMV41	-	September 14, 1998

* ☒ indicates EMI Test Equipment used.

*All measurement equipment is traceable to national standard.

Testing Laboratory

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APPENDIX

Test Data

Conducted emissions:

MODE 1 : A 1 - A 3
MODE 2 : A 4 - A 6
MODE 3 : A 7 - A 9
MODE 4 : A 10 - A 12
MODE 5 : A 13 - A 15

Radiated emissions:

MODE 1 : A 16 - A 17
MODE 2 : A 18 - A 19
MODE 3 : A 20 - A 21
MODE 4 : A 22 - A 23
MODE 5 : A 24 - A 25

DATA OF CONDUCTION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY : Hitachi, Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : COMMUNICATION(MODE1)
REMARKS : SERIAL

REPORT NO. : 17A0020-02I
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 02/13/1998
LISN TYPE : LISN(C/N:LS-02)
FCC ID : ABL045


ENGINEER : KOEI, NAKAMURA

No	FREQ [MHz]	N		L		LISN FACTOR [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV		QP	AV	QP	AV	QP	AV
		[dB μ V]		[dB μ V]			[dB μ V]		[dB μ V]		[dB]	
1	0.5228	40.3	-	40.9	-	0.6	41.5	-	48.0	-	6.5	-
2	0.6539	41.1	-	41.6	-	0.5	42.1	-	48.0	-	5.9	-
3	0.9334	40.9	-	38.9	-	0.5	41.4	-	48.0	-	6.6	-
4	1.0467	45.9	-	45.4	-	0.5	46.4	-	48.0	-	1.6	-
5	1.1807	44.3	-	43.9	-	0.5	44.8	-	48.0	-	3.2	-
6	1.8388	42.2	-	36.6	-	0.4	42.6	-	48.0	-	5.4	-
7	5.5097	29.6	-	26.2	-	0.8	30.4	-	48.0	-	17.6	-
8	14.3111	55.3	40.1	51.1	36.3	1.6	43.9	-	48.0	-	4.1	-
9	28.6241	40.0	-	39.7	-	2.4	42.4	-	48.0	-	5.6	-

SAMPLE CALCULATION :

RESULT = READING(higher data of N/L) + LISN FACTOR(include cable loss)

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

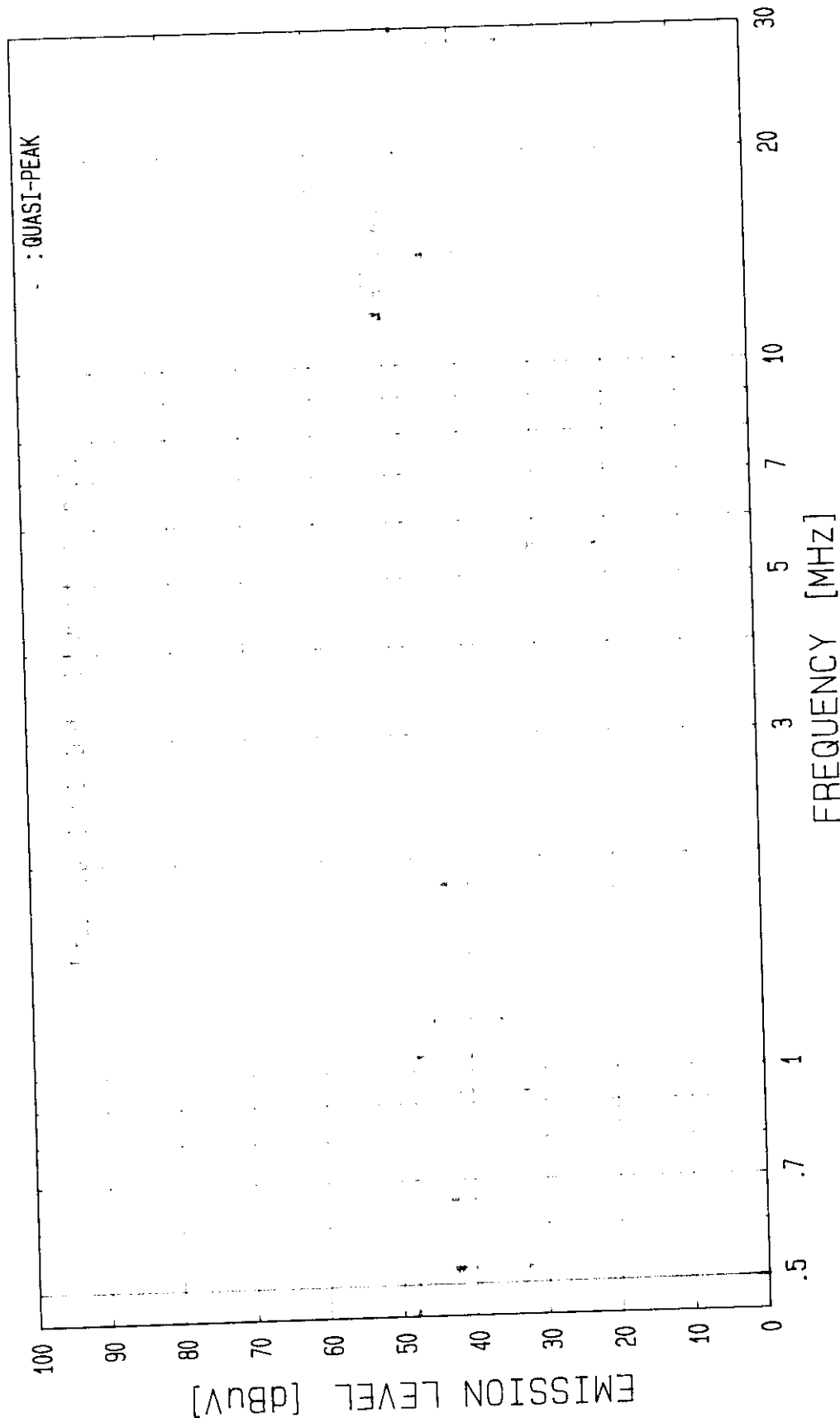
CONDUCTION TEST

COMPANY
TRADE NAME
EQUIPMENT
MODEL
POWER
DESCRIPTION
REMARKS

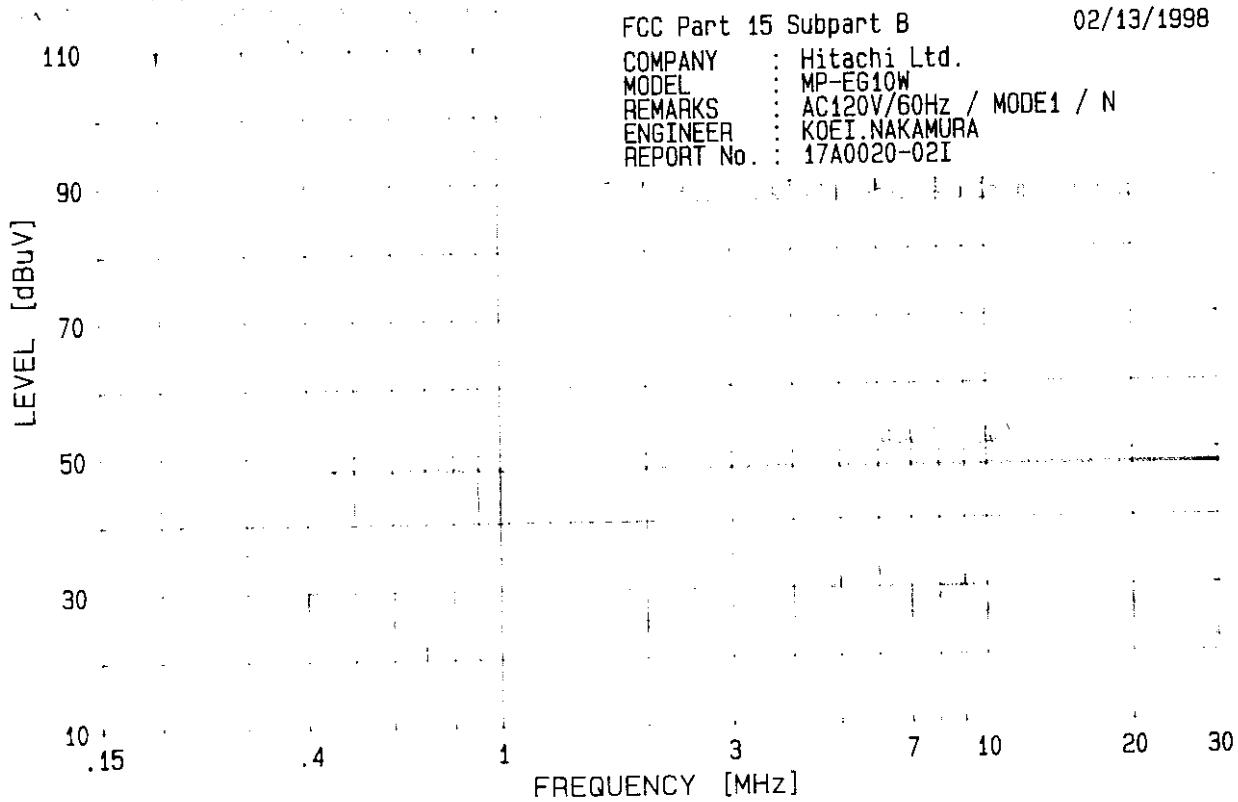
: Hitachi, Ltd.
: HITACHI
: MPEG Digital Camera
: MP-EG10W
: AC120V/60Hz
: COMMUNICATION (MODE1)
: SERIAL

REPORT No. : 17A0020-02I
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 02/13/1998
FCC ID : ABL045

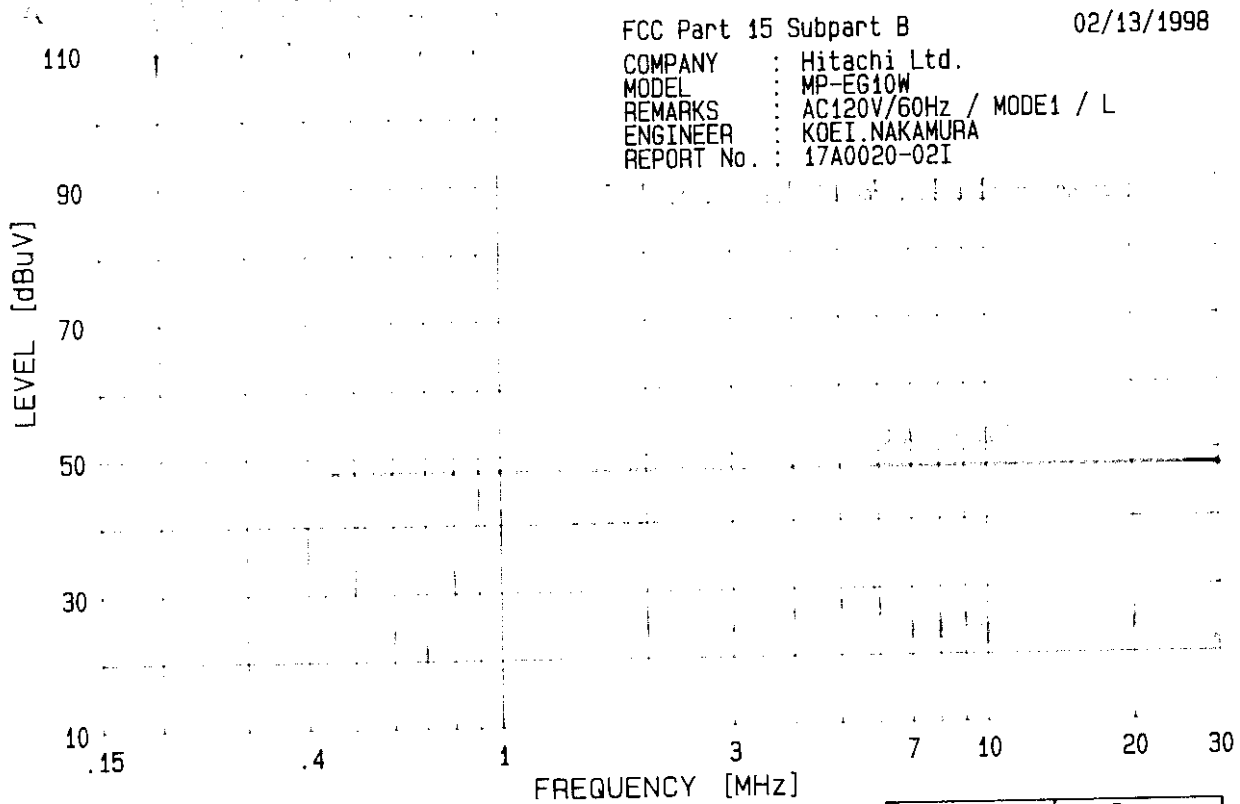
ENGINEER : KOEI.NAKAMURA



INTERFERENCE VOLTAGE TEST



INTERFERENCE VOLTAGE TEST



DATA OF CONDUCTION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.2 OPEN SITE

COMPANY : Hitachi, Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : COMMUNICATION(MODE2)
REMARKS : SERIAL

REPORT NO. : 17A0020-02I
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 02/13/1998
LISN TYPE : LISN(C/N:LS-02)
FCC ID : ABL045


ENGINEER : KOEI.NAKAMURA

No	FREQ [MHz]	N		L		LISN FACTOR [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV		QP	AV	QP	AV	QP	AV
		[dB μ V]		[dB μ V]			[dB μ V]		[dB μ V]		[dB]	
1	0.5253	40.3	-	40.2	-	0.6	40.9	-	48.0	-	7.1	-
2	0.9246	36.9	-	32.5	-	0.5	37.4	-	48.0	-	10.6	-
3	1.0512	45.8	-	45.7	-	0.5	46.3	-	48.0	-	1.7	-
4	1.7138	43.2	-	42.5	-	0.4	43.6	-	48.0	-	4.4	-
5	2.8963	29.1	-	26.6	-	0.5	29.6	-	48.0	-	18.4	-
6	5.6579	29.4	-	23.7	-	0.8	30.2	-	48.0	-	17.8	-
7	8.8397	23.8	-	20.0	-	1.0	24.8	-	48.0	-	23.2	-
8	13.5000	49.9	35.1	45.0	31.5	1.5	38.4	-	48.0	-	9.6	-
9	27.0000	39.0	-	39.1	-	2.4	41.5	-	48.0	-	6.5	-

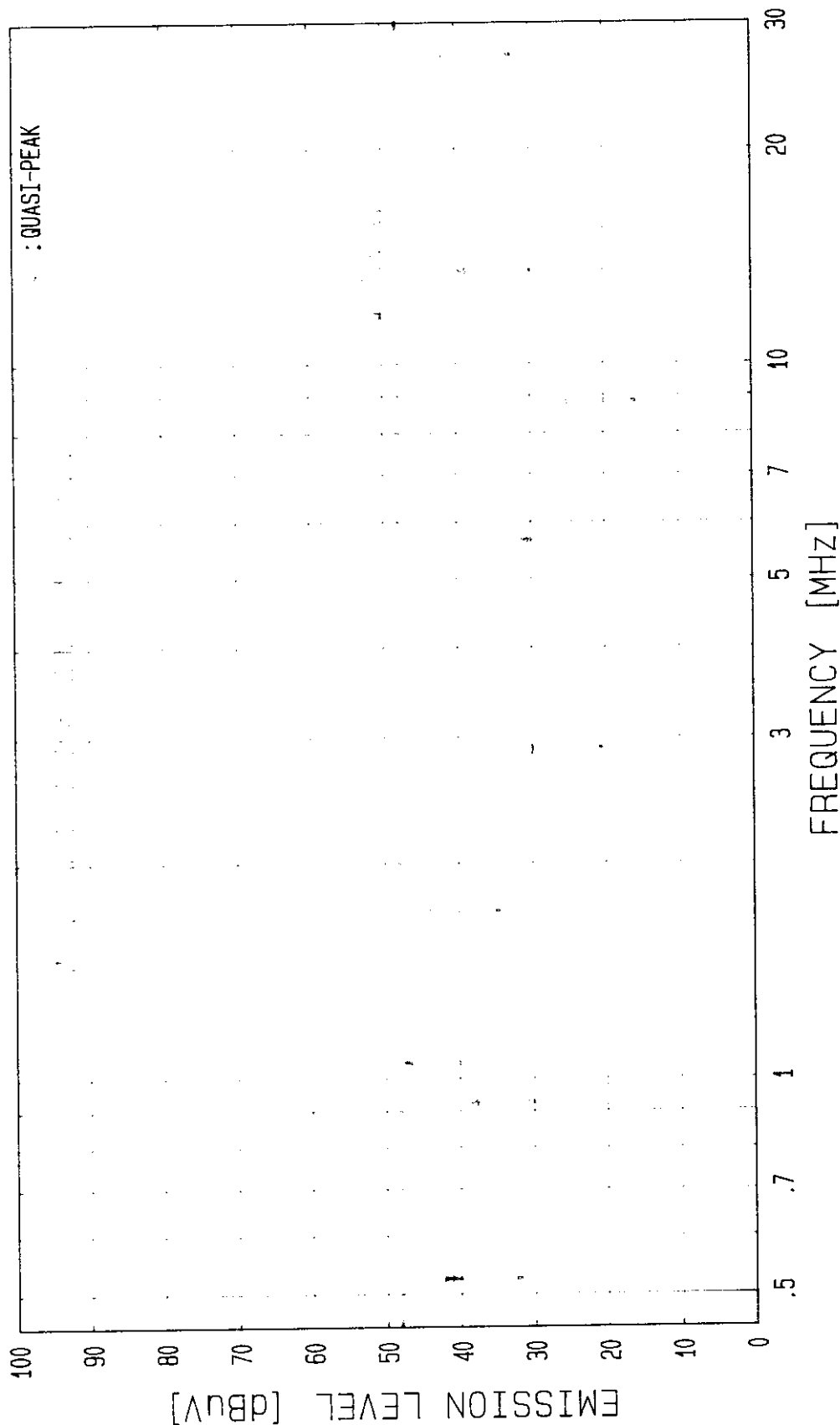
SAMPLE CALCULATION :

RESULT = READING(higher data of N/L) + LISN FACTOR(include cable loss)

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

CONDUCTION TEST

COMPANY	: Hitachi, Ltd.	REPORT No.	: 17A0020-02I
TRADE NAME	: HITACHI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: MPEG Digital Camera	CLASS	: CLASS B
MODEL	: MP-EG10W	DATE	: 02/13/1998
POWER	: AC120V/60Hz	FCC ID	: ABL045
DESCRIPTION	: COMMUNICATION (MODE2)		
REMARKS	: SERIAL	ENGINEER	: KOEI.NAKAMURA



INTERFERENCE VOLTAGE TEST

FCC Part 15 Subpart B

02/13/1998

COMPANY : Hitachi Ltd.
MODEL : MP-EG10W
REMARKS : AC120V/60Hz / MODE2 / N
ENGINEER : KOEI.NAKAMURA
REPORT No. : 17A0020-02I

LEVEL [dBuV]

110

90

70

50

30

10

.15

.4

1

3

7

10

20

30

FREQUENCY [MHz]

INTERFERENCE VOLTAGE TEST

FCC Part 15 Subpart B

02/13/1998

COMPANY : Hitachi Ltd.
MODEL : MP-EG10W
REMARKS : AC120V/60Hz / MODE2 / L
ENGINEER : KOEI.NAKAMURA
REPORT No. : 17A0020-02I

LEVEL [dBuV]

110

90

70

50

30

10

.15

.4

1

3

7

10

20

30

FREQUENCY [MHz]

K. Nakamura A6

DATA OF CONDUCTIVE TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.3 SITE

COMPANY : Hitachi, Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : RUNNING(MODE3)
REMARKS : Motion Pictures

REPORT NO. : 17A0020-021
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 02/19/1998
LISN TYPE : LISN(C/N:LS-02)
FCC ID : ABL045

ENGINEER : KOEI.NAKAMURA

No	FREQ [MHz]	N		L		LISN FACTOR [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV		QP	AV	QP	AV	QP	AV
		[dB μ V]		[dB μ V]			[dB μ V]		[dB μ V]		[dB]	
1	0.5254	42.4	-	41.1	-	-3.5	38.9	-	48.0	-	9.1	-
2	0.6565	40.8	-	41.1	-	-3.5	37.6	-	48.0	-	10.4	-
3	1.0454	45.2	-	46.4	-	-3.2	43.2	-	48.0	-	4.8	-
4	1.1812	41.8	-	40.6	-	-3.2	38.6	-	48.0	-	9.4	-
5	2.6265	36.5	-	37.2	-	-3.4	33.8	-	48.0	-	14.2	-
6	5.5192	28.3	-	33.7	-	-3.1	30.6	-	48.0	-	17.4	-
7	8.4084	25.3	-	27.5	-	-2.6	24.9	-	48.0	-	23.1	-
8	25.1677	19.1	-	19.9	-	-1.4	18.5	-	48.0	-	29.5	-

SAMPLE CALCULATION :

RESULT = READING(higher data of N/L) + LISN FACTOR(include cable loss)

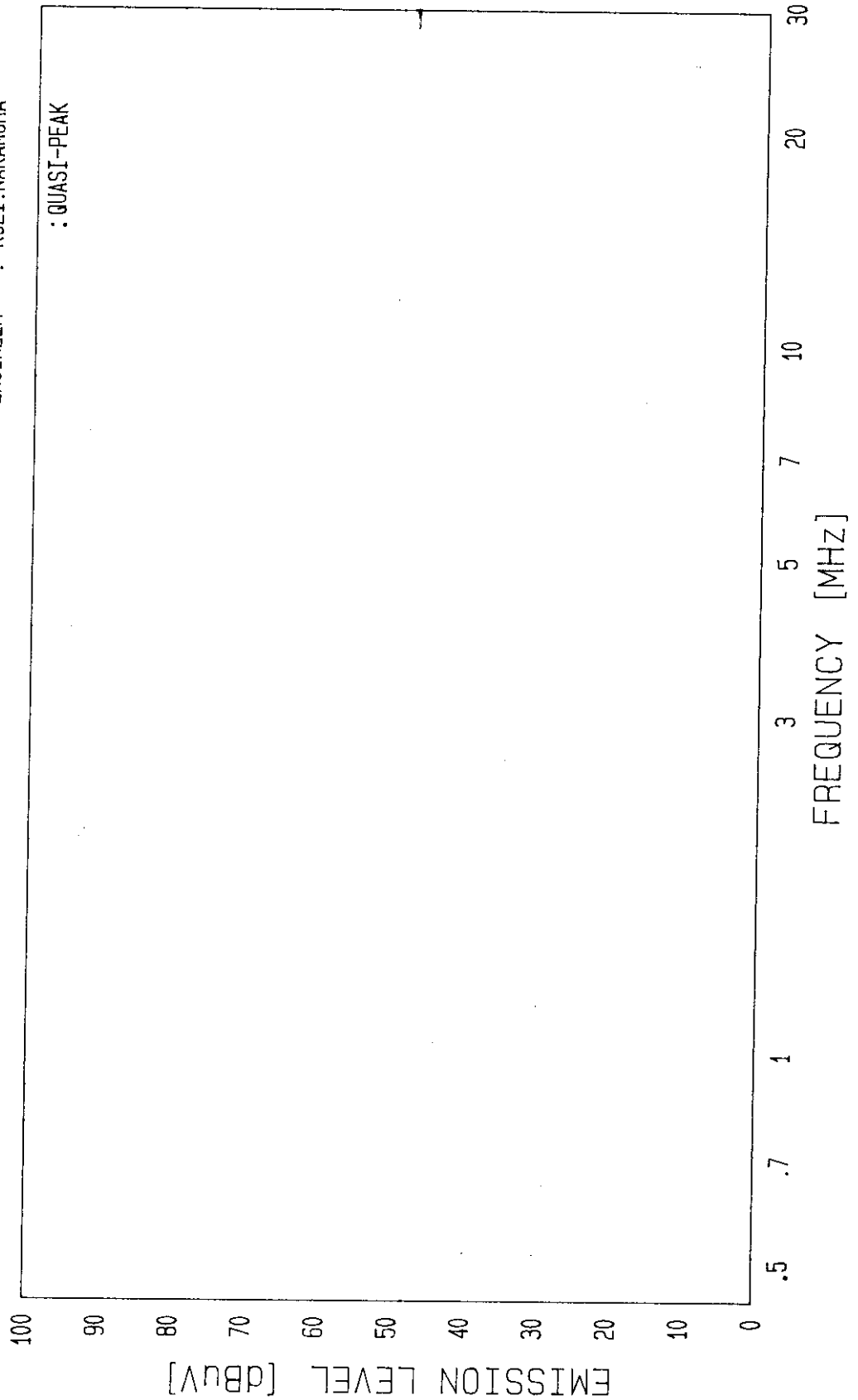
Except for the above table : adequate margin data below the limits.

CONDUCTION TEST

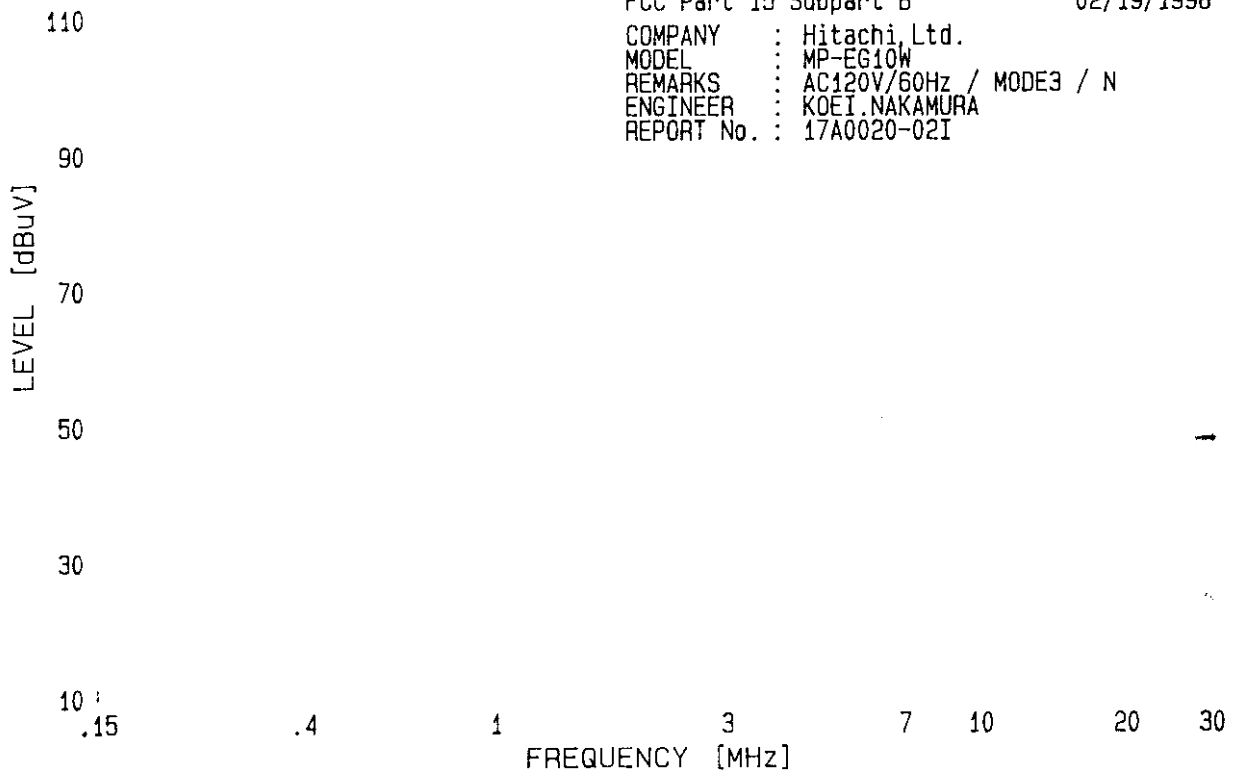
COMPANY : Hitachi, Ltd.
 TRADE NAME : HITACHI
 EQUIPMENT : MPEG Digital Camera
 MODEL : MP-EG10W
 POWER : AC120V/60Hz
 DESCRIPTION : RUNNING (MODE3)
 REMARKS : Motion Pictures

REPORT No. : 17A0020-02I
 REGULATION : FCC Part 15 Subpart B
 CLASS : CLASS B
 DATE : 02/19/1998
 FCC ID : ABL045

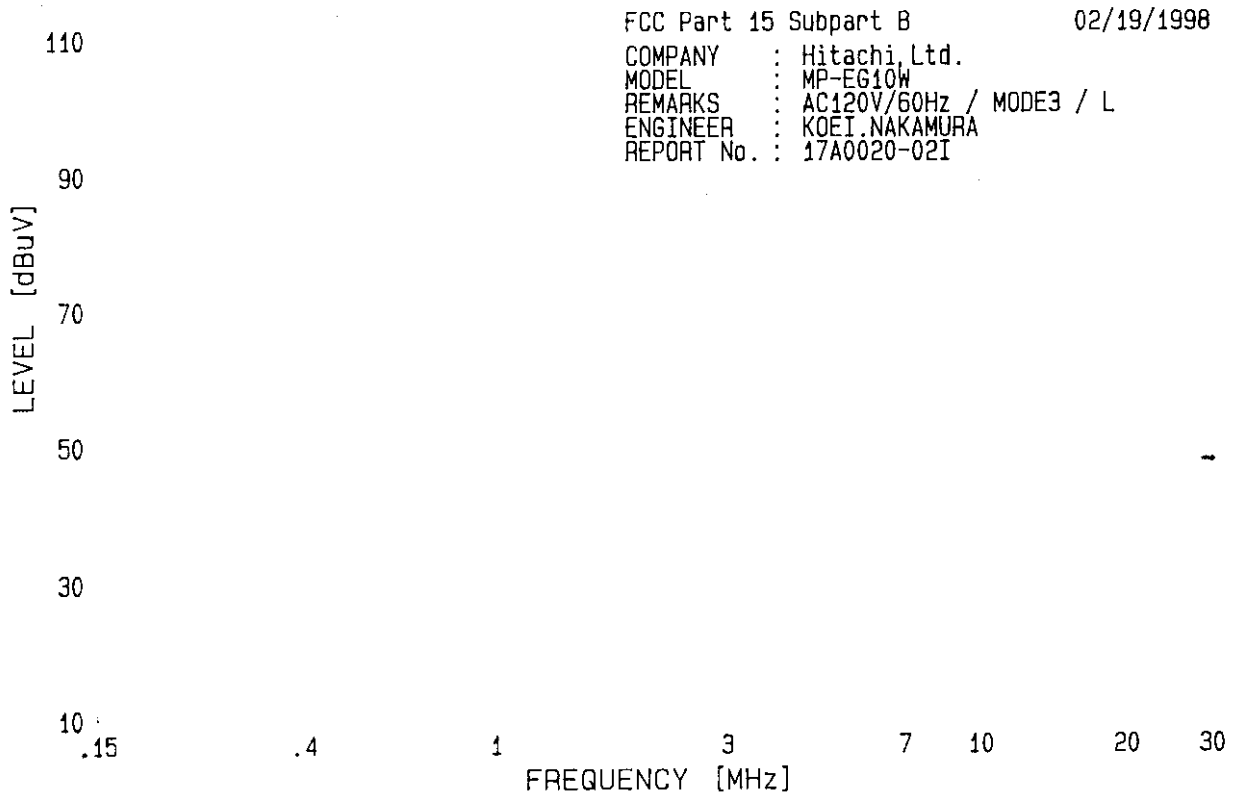
ENGINEER : *H. Nakamura*
 : KOEI.NAKAMURA



INTERFERENCE VOLTAGE TEST



INTERFERENCE VOLTAGE TEST



DATA OF CONDUCTIVITY TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.3 SITE

COMPANY : Hitachi, Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : STANDBY
REMARKS :

REPORT NO. : 17A0020-021
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DATE : 02/19/1998
LISN TYPE : LISN(C/N:LS-02)
FCC ID : ABL045

ENGINEER :  KOEI.NAKAMURA

No	FREQ [MHz]	N		L		LISN FACTOR [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV		QP	AV	QP	AV	QP	AV
		[dB μ V]		[dB μ V]			[dB μ V]		[dB μ V]		[dB]	
1	0.5238	42.6	-	42.0	-	-3.5	39.1	-	48.0	-	8.9	-
2	0.6551	43.3	-	42.9	-	-3.5	39.8	-	48.0	-	8.2	-
3	1.0452	49.1	-	49.0	-	-3.2	45.9	-	48.0	-	2.1	-
4	1.1780	44.4	-	44.3	-	-3.2	41.2	-	48.0	-	6.8	-
5	2.6170	30.2	-	31.3	-	-3.4	27.9	-	48.0	-	20.1	-
6	5.5118	28.2	-	31.4	-	-3.1	28.2	-	48.0	-	19.8	-
7	8.3822	22.6	-	27.9	-	-2.6	25.3	-	48.0	-	22.7	-
8	25.1765	20.5	-	24.1	-	-1.4	22.7	-	48.0	-	25.3	-

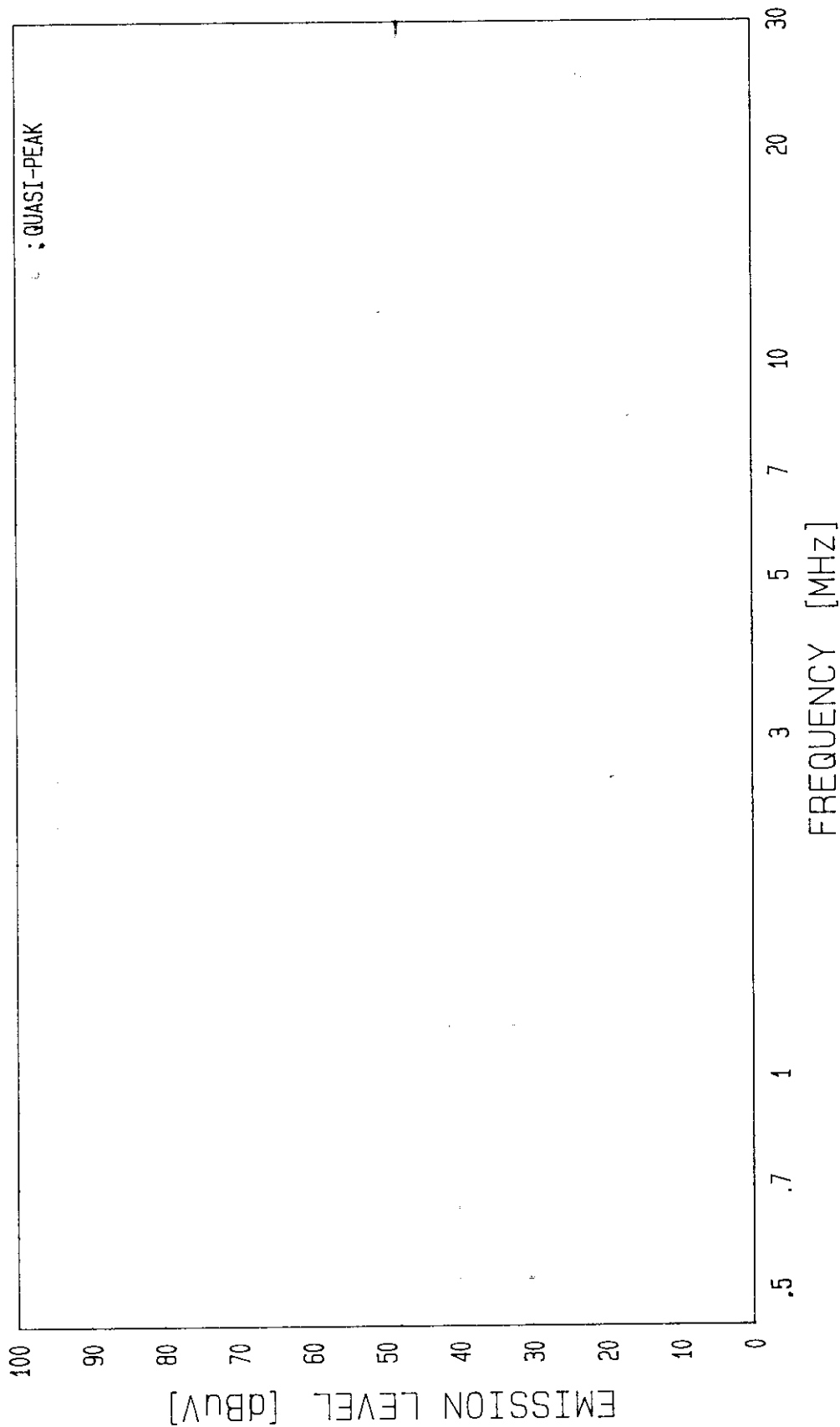
SAMPLE CALCULATION :

RESULT = READING(higher data of N/L) + LISN FACTOR(include cable loss)

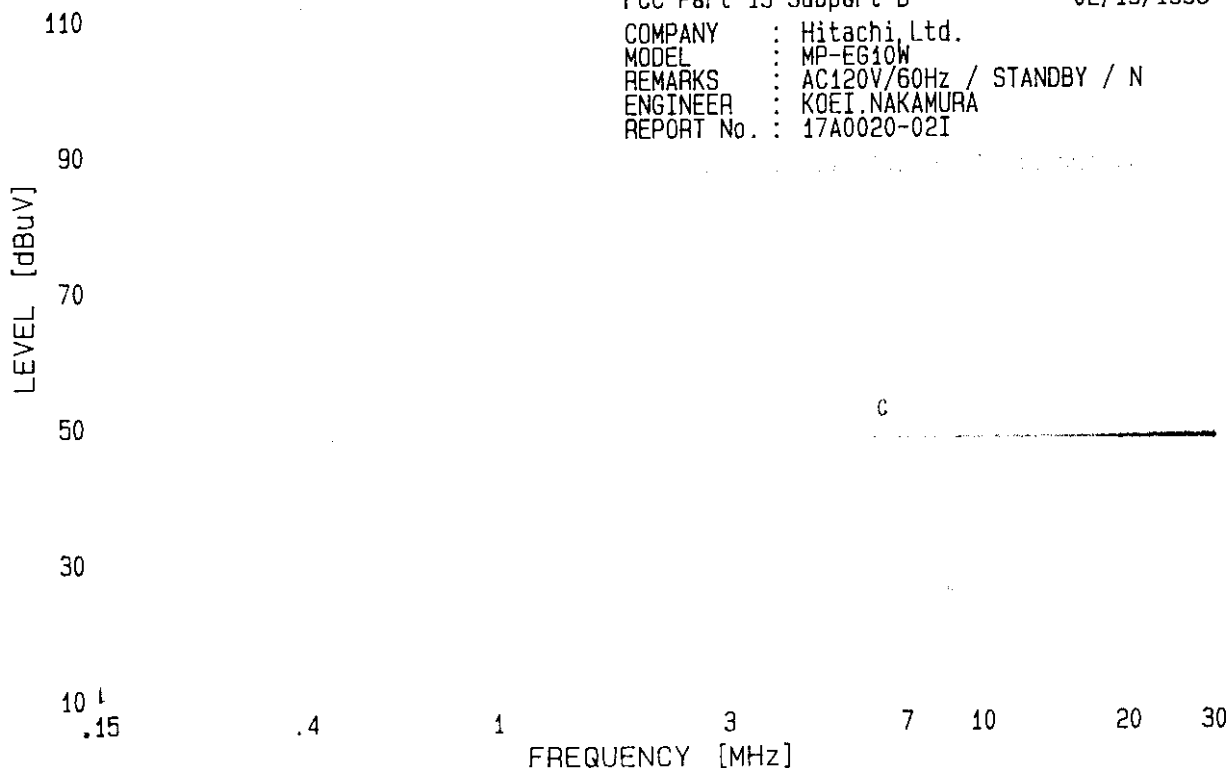
Except for the above table : adequate margin data below the limits.

CONDUCTION TEST

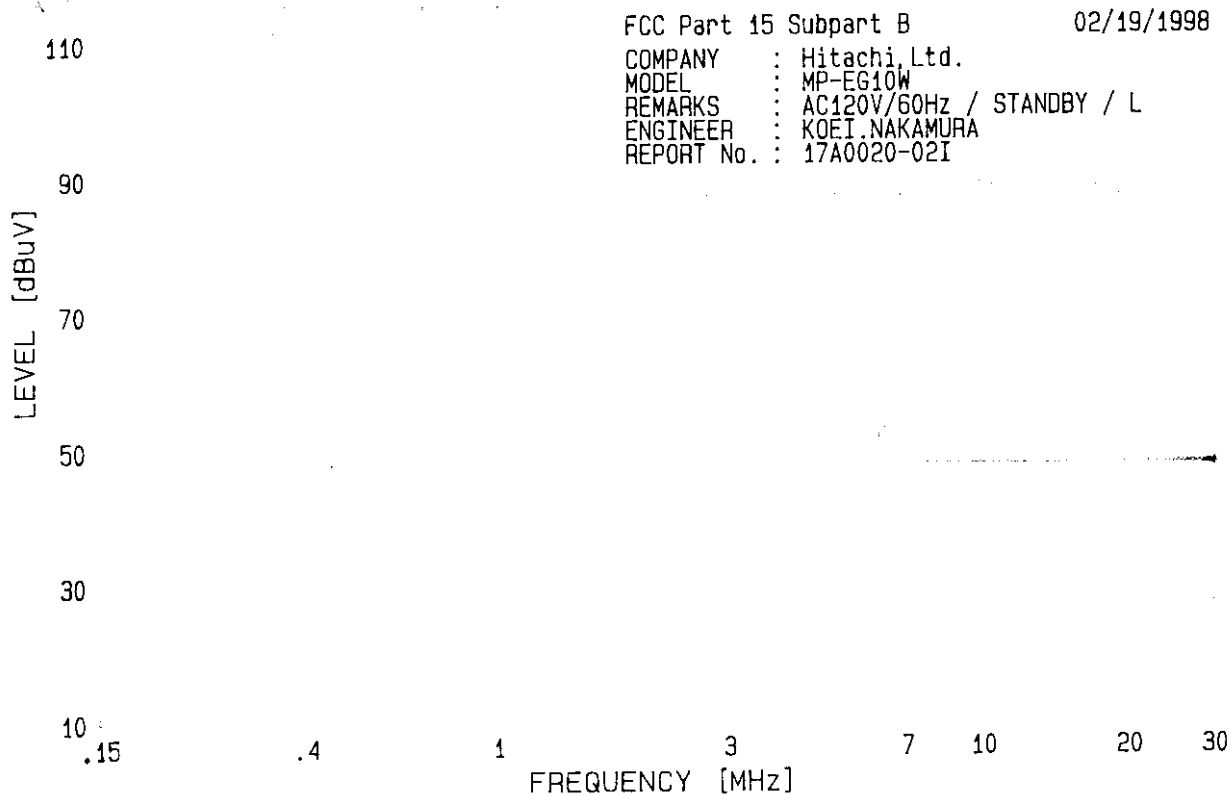
COMPANY	: Hitachi, Ltd.	REPORT No.	: 17A0020-02I
TRADE NAME	: HITACHI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: MPEG Digital Camera	CLASS	: CLASS B
MODEL	: MP-EG10W	DATE	: 02/19/1998
POWER	: AC120V/60Hz	FCC ID	: ABL045
DESCRIPTION	: STANDBY		
REMARKS	:	ENGINEER	: KOEI.NAKAMURA



INTERFERENCE VOLTAGE TEST



INTERFERENCE VOLTAGE TEST



Name

Page

K. Nakamura A12

A -- P E X INTERNATIONAL CO., LTD.
YOKOWA NO.3 SITE

COMPANY : Hitachi, Ltd.
 TRADE NAME : HITACHI
 EQUIPMENT : MPEG Digital Camera
 MODEL : MP-EG10W
 POWER : AC120V/60Hz
 DESCRIPTION : COMMUNICATION(MODE5)
 REMARKS : LINE IN RECORDING

REPORT NO. : 17A0020-02I
 REGULATION : FCC Part 15 Subpart B
 CLASS : CLASS B
 DATE : 02/19/1998
 LISN TYPE : LISN(C/N:LS-02)
 FCC ID : ABL045

ENGINEER :  KOEI.NAKAMURA

No	FREQ [MHz]	N		L		LISN FACTOR [dB]	RESULT		LIMITS		MARGIN	
		QP	AV	QP	AV		QP	AV	QP	AV	QP	AV
		[dB μ V]		[dB μ V]			[dB μ V]		[dB μ V]		[dB]	
1	0.5240	45.0	-	44.3	-	-3.5	41.5	-	48.0	-	6.5	-
2	0.6571	44.2	-	43.7	-	-3.5	40.7	-	48.0	-	7.3	-
3	1.0442	47.7	-	47.3	-	-3.2	44.5	-	48.0	-	3.5	-
4	1.1818	45.4	-	45.1	-	-3.2	42.2	-	48.0	-	5.8	-
5	2.6393	40.1	-	43.6	-	-3.4	40.2	-	48.0	-	7.8	-
6	5.5070	38.7	-	42.5	-	-3.1	39.4	-	48.0	-	8.7	-
7	8.3880	29.1	-	31.1	-	-2.6	28.5	-	48.0	-	19.5	-
8	20.9714	27.3	-	31.2	-	-1.6	29.6	-	48.0	-	18.4	-
9	25.1661	25.8	-	28.5	-	-1.4	27.1	-	48.0	-	20.9	-

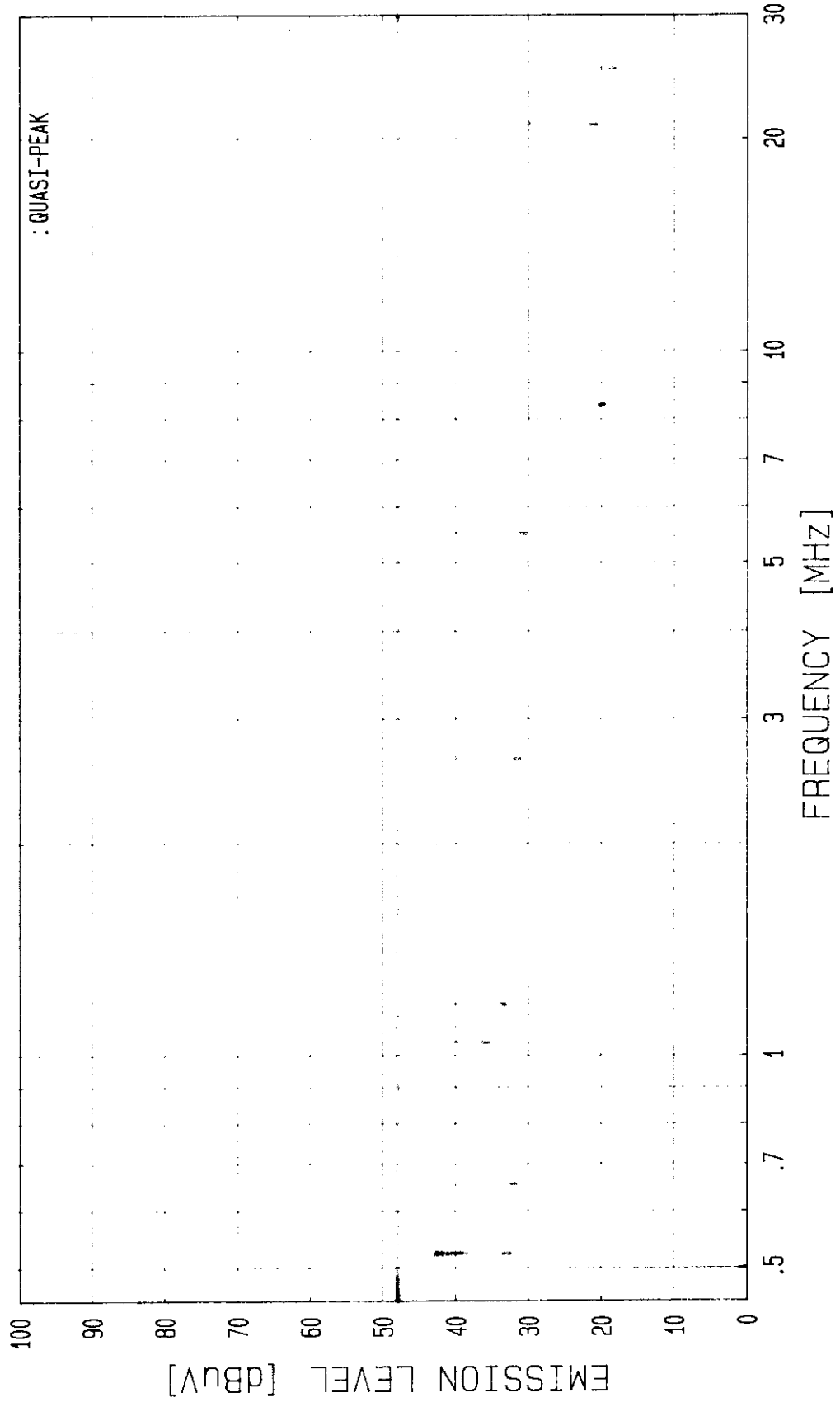
SAMPLE CALCULATION :

RESULT = READING(higher data of N/L) + LISN FACTOR(include cable loss)

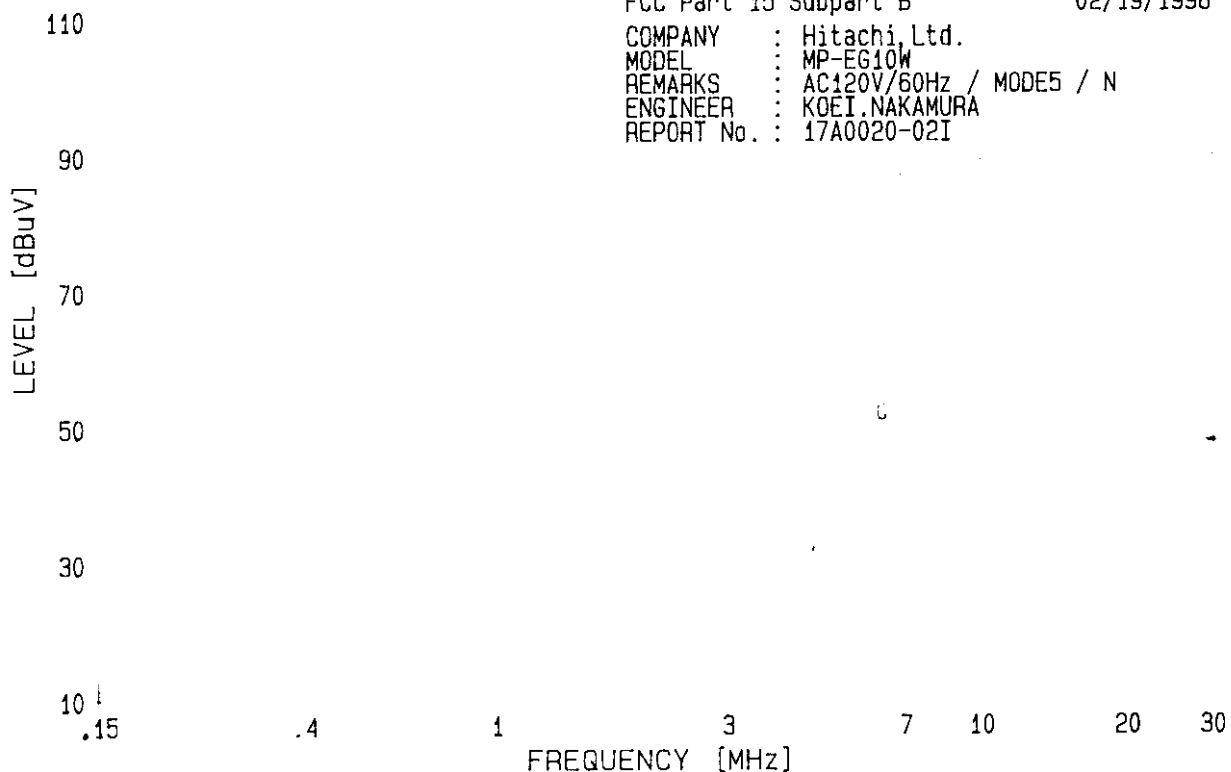
Except for the above table : adequate margin data below the limits.

CONDUCTION TEST

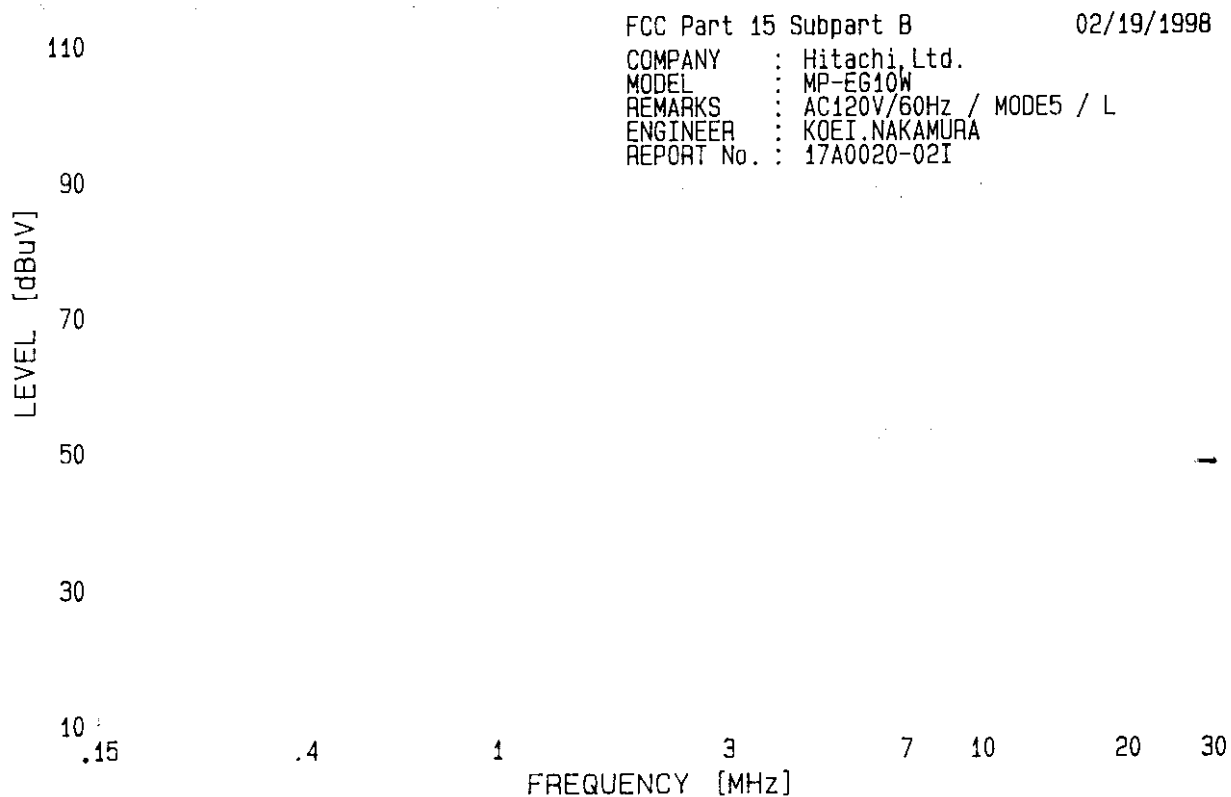
COMPANY	: Hitachi, Ltd.	REPORT No.	: 17A0020-02I
TRADE NAME	: HITACHI	REGULATION	: FCC Part 15 Subpart B
EQUIPMENT	: MPEG Digital Camera	CLASS	: CLASS B
MODEL	: MP-EG10W	DATE	: 02/19/1998
POWER	: AC120V/60Hz	FCC ID	: ABL045
DESCRIPTION	: COMMUNICATION (MODE5)		
REMARKS	: LINE IN RECORDING	ENGINEER	: KOEI.NAKAMURA



INTERFERENCE VOLTAGE TEST



INTERFERENCE VOLTAGE TEST



DATA OF RADIATION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.3 SITE

COMPANY : Hitachi, Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : COMMUNICATION(MODE1)
REMARKS : SERIAL
DATE : 02/21/1998

REPORT NO. : 17A0020-021
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
TEST DISTANCE : 3m
ATTENUATOR : 6dB
FCC ID : ABL045


ENGINEER : KOEI, NAKAMURA

No	FREQ [MHz]	ANT TYPE	READING		ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT		FCC LIMITS [dB μ V/m] 3m	MARGIN	
			HOR	VER				HOR	VER		HOR	VER
			[dB μ V] 3m					[dB μ V/m] 3m			[dB]	
1	46.38	BC	27.2	38.1	11.8	1.5	28.1	18.4	29.3	40.0	21.6	10.7
2	76.37	BC	37.2	41.2	5.6	1.8	28.1	22.5	26.5	40.0	17.5	13.5
3	92.97	BC	37.0	40.9	8.3	2.0	28.1	25.2	29.1	43.5	18.3	14.4
4	135.95	BC	39.1	36.8	13.3	2.4	28.0	32.8	30.5	43.5	10.7	13.0
5	157.44	BC	30.4	29.9	15.0	2.6	28.0	26.0	25.5	43.5	17.5	18.0
6	215.12	BC	39.6	29.1	17.3	3.1	27.8	38.2	27.7	43.5	5.3	15.8
7	324.01	LP	34.4	29.7	16.3	3.8	27.8	32.7	28.0	46.0	13.3	18.0
8	486.00	LP	38.1	36.2	18.8	4.8	27.7	40.0	38.1	46.0	6.0	7.9
9	702.01	LP	25.9	33.5	21.6	6.0	27.3	32.2	39.8	46.0	13.8	6.2

SAMPLE CALCULATION :

RESULT = READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

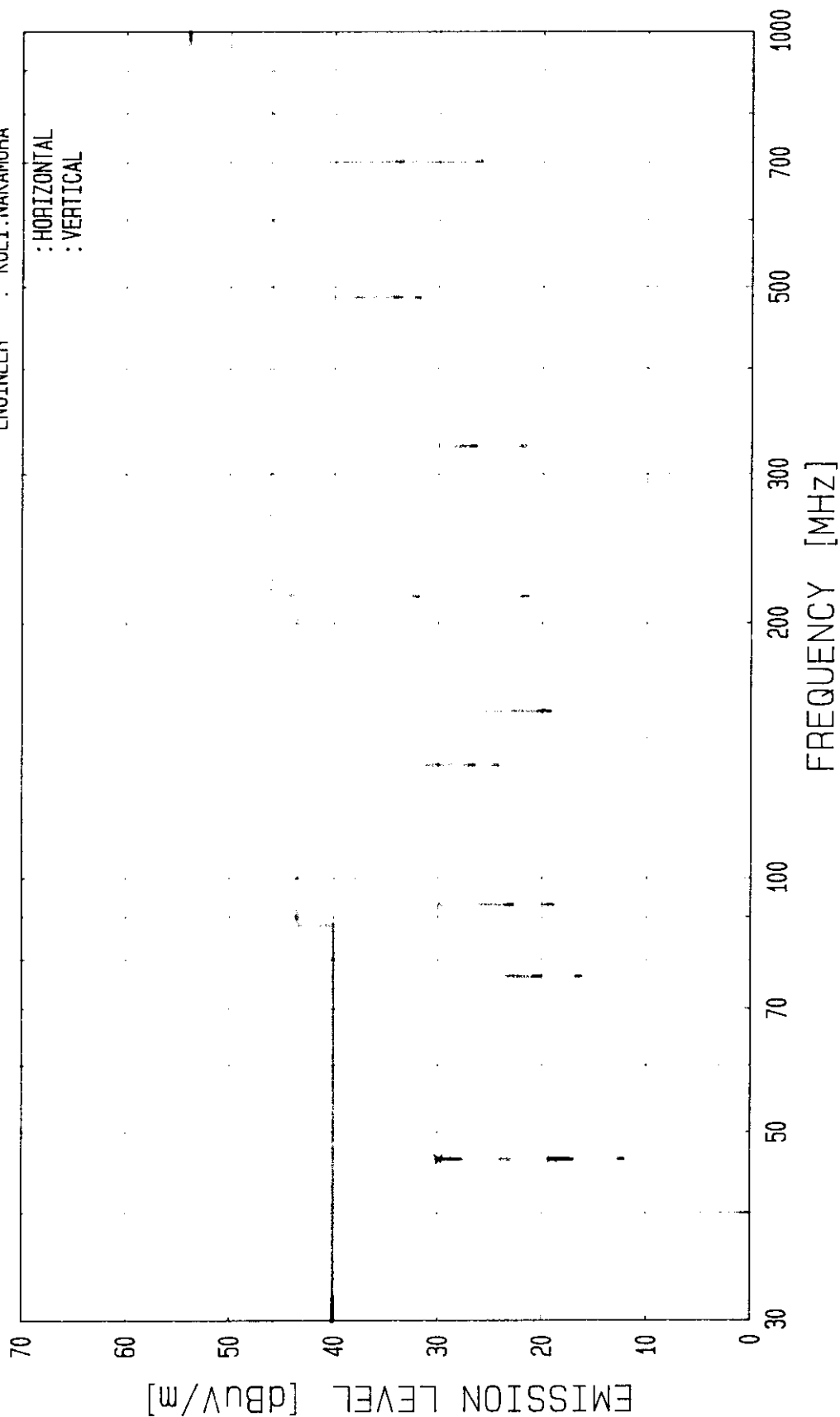
Except for the above table : adequate margin data below the limits.

RADIATION TEST

COMPANY : Hitachi, Ltd.
 TRADE NAME : HITACHI
 EQUIPMENT : MPEG Digital Camera
 MODEL : MP-EG10W
 POWER : AC120V/60Hz
 DESCRIPTION : COMMUNICATION (MODE1)
 REMARKS : SERIAL

REPORT No. : 17A0020-02I
 DATE : 02/21/1998
 REGULATION : FCC Part 15 Subpart B
 CLASS : CLASS B
 DISTANCE : 3m
 FCC ID : ABL045

ENGINEER : KOEI.NAKAMURA



DATA OF RADIATION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.3 SITE

COMPANY : Hitachi, Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : COMMUNICATION(MODE2)
REMARKS : SERIAL
DATE : 02/21/1998

REPORT NO. : 17A0020-02I
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
TEST DISTANCE : 3m
ATTENUATOR : 6dB
FCC ID : ABL045


ENGINEER : KOEI.NAKAMURA

No	FREQ [MHz]	ANT TYPE	READING		ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT		FCC LIMITS [dB μ V/m] 3m	MARGIN	
			HOR	VER				HOR	VER		HOR	VER
			[dB μ V] 3m					[dB μ V/m] 3m			[dB]	
1	47.47	BC	26.7	34.7	11.5	1.5	28.1	17.6	25.6	40.0	22.4	14.4
2	80.30	BC	36.8	40.5	6.2	1.8	28.1	22.7	26.4	40.0	17.3	13.6
3	94.51	BC	36.3	38.6	8.5	2.0	28.1	24.7	27.0	43.5	18.8	16.5
4	135.91	BC	38.5	36.8	13.3	2.4	28.0	32.2	30.5	43.5	11.3	13.0
5	161.43	BC	28.4	24.9	15.2	2.7	28.0	24.3	20.8	43.5	19.2	22.7
6	216.00	BC	30.5	31.0	17.3	3.1	27.8	29.1	29.6	43.5	14.4	13.9
7	324.01	LP	34.5	29.2	16.3	3.8	27.8	32.8	27.5	46.0	13.2	18.5
8	486.01	LP	36.8	37.6	18.8	4.8	27.7	38.7	39.5	46.0	7.3	6.5
9	702.00	LP	26.8	33.0	21.6	6.0	27.3	33.1	39.3	46.0	12.9	6.7

SAMPLE CALCULATION :

RESULT = READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

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

RADIATION TEST

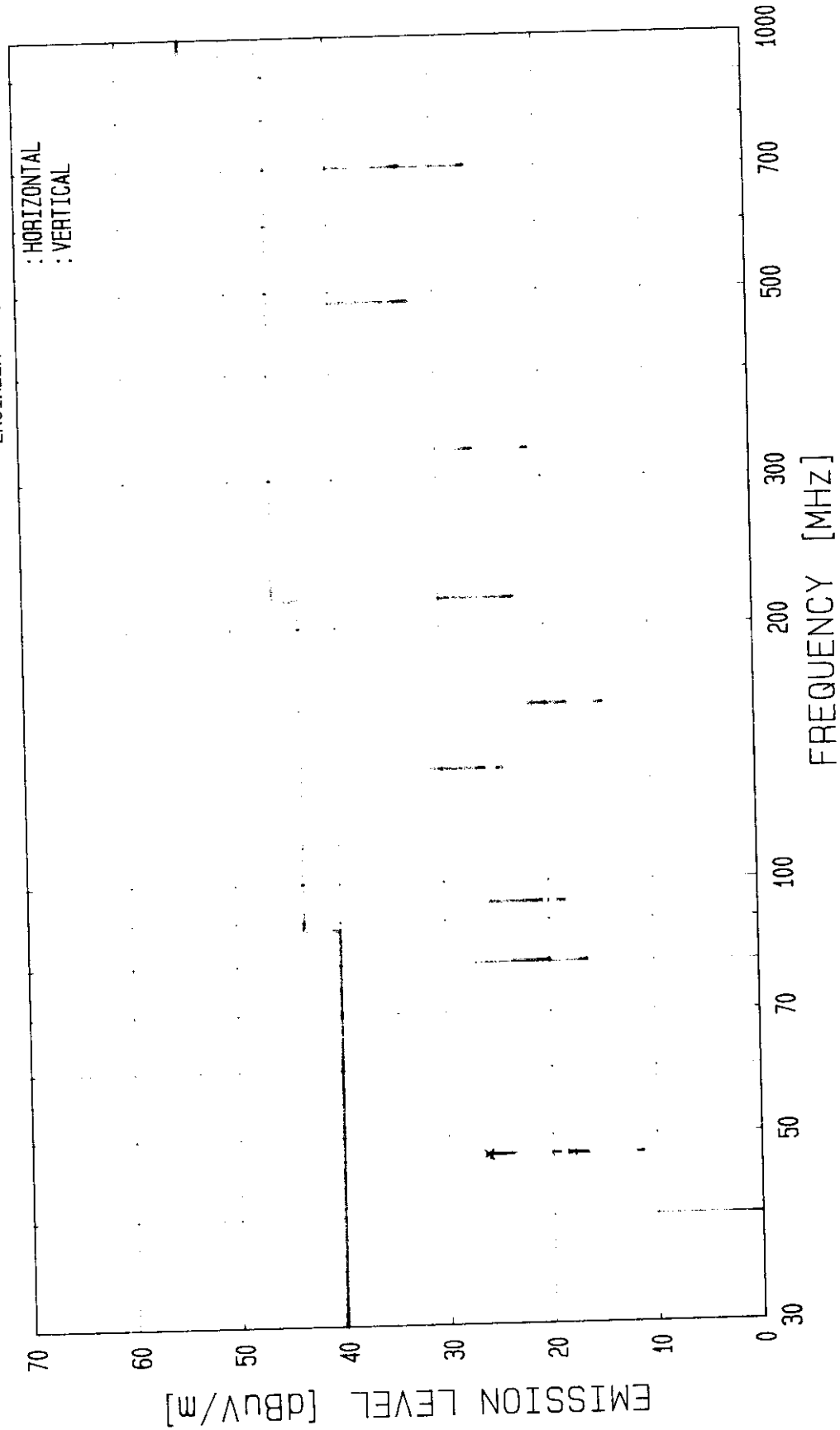
COMPANY
TRADE NAME
EQUIPMENT
MODEL
POWER
DESCRIPTION
REMARKS

: Hitachi, Ltd.
: HITACHI
: MPEG Digital Camera
: MP-EG10W
: AC120V/60Hz
: COMMUNICATION (MODE2)
: SERIAL

REPORT No. : 17A0020-02I
DATE : 02/21/1998
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
DISTANCE : 3m
FCC ID : ABL045

ENGINEER : KOEI.NAKAMURA

K. Nakamura



A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.3 SITE

COMPANY : Hitachi,Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : RUNNING (MODE3)
REMARKS : Motion Pictures
DATE : 02/21/1998

REPORT NO. : 17A0020-021
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
TEST DISTANCE : 3m
ATTENUATOR : 6dB
FCC ID : ABL045


ENGINEER : KOEI.NAKAMURA

No	FREQ [MHz]	ANT TYPE	READING		ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT		FCC LIMITS [dB μV/m] 3m	MARGIN	
			HOR [dB μV] 3m	VER [dB μV] 3m				HOR [dB μV/m] 3m	VER [dB μV/m] 3m		HOR [dB]	VER [dB]
1	47.74	BC	31.7	41.0	11.4	1.5	28.1	22.5	31.8	40.0	17.5	8.2
2	53.85	BC	25.4	32.8	9.6	1.5	28.1	14.4	21.8	40.0	25.6	18.2
3	80.19	BC	37.0	38.2	6.2	1.8	28.1	22.9	24.1	40.0	17.1	15.9
4	94.53	BC	36.3	39.8	8.5	2.0	28.1	24.7	28.2	43.5	18.8	15.3
5	136.00	BC	28.2	29.1	13.3	2.4	28.0	21.9	22.8	43.5	21.6	20.7
6	161.40	BC	33.2	27.7	15.2	2.7	28.0	29.1	23.6	43.5	14.4	19.9
7	216.00	BC	33.2	26.3	17.3	3.1	27.8	31.8	24.9	43.5	11.7	18.6
8	324.00	LP	29.4	25.8	16.3	3.8	27.8	27.7	24.1	46.0	18.3	21.9
9	486.01	LP	26.8	29.5	18.8	4.8	27.7	28.7	31.4	46.0	17.3	14.6
10	648.01	LP	22.6	34.4	20.7	5.6	27.3	27.6	39.4	46.0	18.4	6.6

SAMPLE CALCULATION :

RESULT = READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

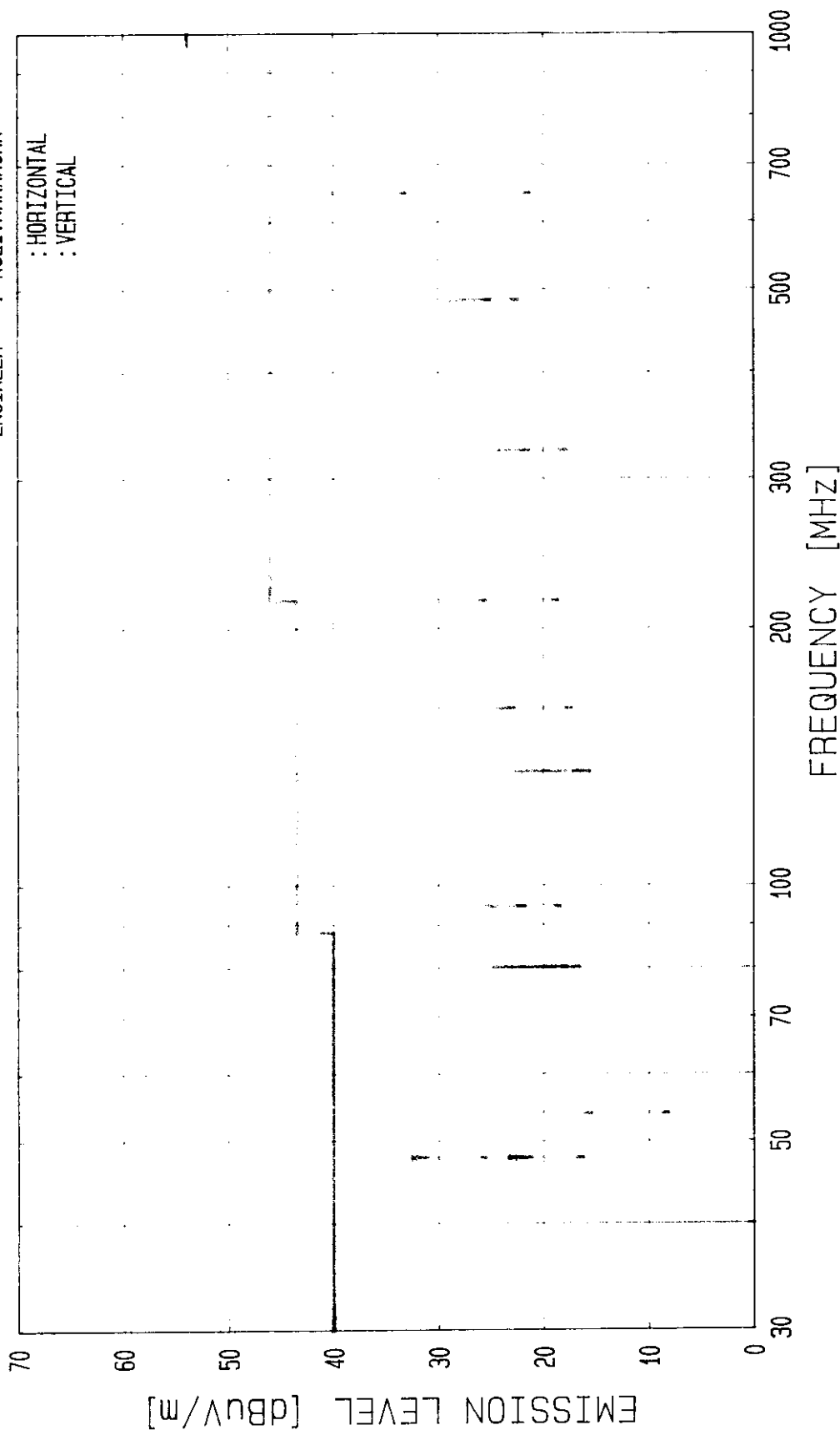
Except for the above table : adequate margin data below the limits.

RADIATION TEST

COMPANY	: Hitachi, Ltd.	REPORT No.	: 17A0020-02I
TRADE NAME	: HITACHI	DATE	: 02/21/1998
EQUIPMENT	: MPEG Digital Camera	REGULATION	: FCC Part 15 Subpart B
MODEL	: MP-EG10W	CLASS	: CLASS B
POWER	: AC120V/60Hz	DISTANCE	: 3m
DESCRIPTION	: RUNNING (MODE3)	FCC ID	: ABL045
REMARKS	: Motion Pictures		

ENGINEER : KOEI NAKAMURA

K. Nakamura



DATA OF RADIATION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.3 SITE

COMPANY : Hitachi, Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : STANDBY
REMARKS :
DATE : 02/21/1998

REPORT NO. : 17A0020-02I
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
TEST DISTANCE : 3m
ATTENUATOR : 6dB
FCC ID : ABL045

ENGINEER :  KOEI. NAKAMURA

No	FREQ [MHz]	ANT TYPE	READING		ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT		FCC LIMITS [dB μ V/m] 3m	MARGIN	
			HOR [dB μ V] 3m	VER [dB μ V] 3m				HOR [dB μ V/m] 3m	VER [dB μ V/m] 3m		HOR [dB]	VER [dB]
1	46.11	BC	26.6	36.0	11.9	1.5	28.1	17.9	27.3	40.0	22.1	12.7
2	52.98	BC	26.7	31.7	9.8	1.5	28.1	15.9	20.9	40.0	24.1	19.1
3	78.56	BC	35.4	40.1	6.0	1.8	28.1	21.1	25.8	40.0	18.9	14.2
4	94.46	BC	40.6	36.6	8.5	2.0	28.1	29.0	25.0	43.5	14.5	18.5
5	135.99	BC	28.9	27.5	13.3	2.4	28.0	22.6	21.2	43.5	20.9	22.3
6	162.00	BC	30.0	28.8	15.3	2.7	28.0	26.0	24.8	43.5	17.5	18.7
7	229.50	BC	29.5	29.2	17.4	3.3	27.9	28.3	28.0	46.0	17.7	18.0
8	324.00	LP	36.4	29.9	16.3	3.8	27.8	34.7	28.2	46.0	11.3	17.8
9	486.00	LP	35.6	35.8	18.8	4.8	27.7	37.5	37.7	46.0	8.5	8.3
10	702.01	LP	26.6	32.5	21.6	6.0	27.3	32.9	38.8	46.0	13.1	7.2

SAMPLE CALCULATION :

RESULT = READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

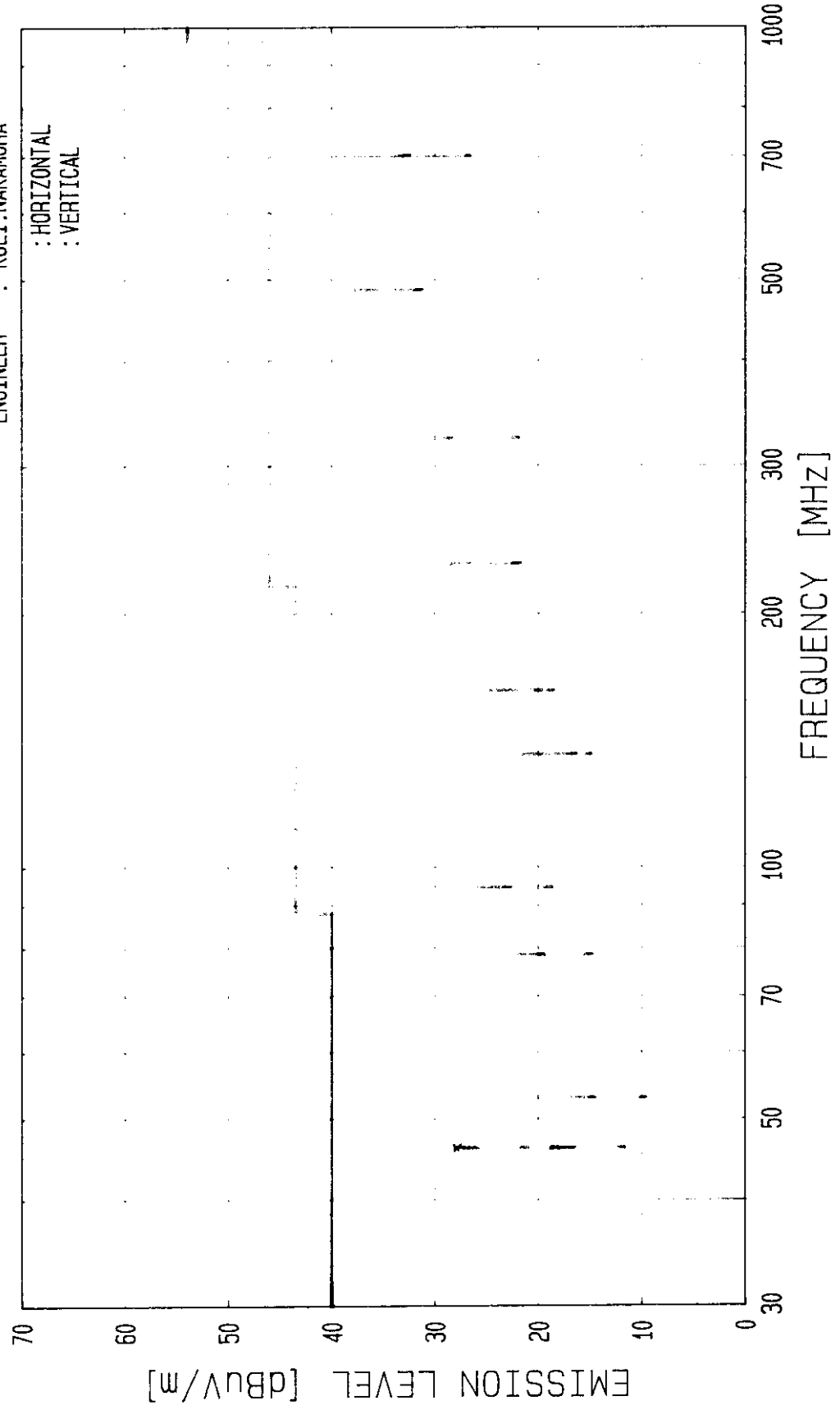
Except for the above table : adequate margin data below the limits.

RADIATION TEST

COMPANY	: Hitachi, Ltd.	REPORT No.	: 17A0020-02I
TRADE NAME	: HITACHI	DATE	: 02/21/1998
EQUIPMENT	: MPEG Digital Camera	REGULATION	: FCC Part 15 Subpart B
MODEL	: MP-EG10W	CLASS	: CLASS B
POWER	: AC120V/60Hz	DISTANCE	: 3m
DESCRIPTION	: STANDBY	FCC ID	: ABL045
REMARKS	:		

ENGINEER : KOEI.NAKAMURA

K. Nakamura



DATA OF RADIATION TEST

A - P E X INTERNATIONAL CO., LTD.
YOKOWA NO.3 SITE

COMPANY : Hitachi, Ltd.
TRADE NAME : HITACHI
EQUIPMENT : MPEG Digital Camera
MODEL : MP-EG10W
POWER : AC120V/60Hz
DESCRIPTION : COMMUNICATION(MODE5)
REMARKS : LINE IN RECORDING
DATE : 02/21/1998

REPORT NO. : 17A0020-021
REGULATION : FCC Part 15 Subpart B
CLASS : CLASS B
TEST DISTANCE : 3m
ATTENUATOR : 6dB
FCC ID : ABL045


ENGINEER : KOEI.NAKAMURA

No	FREQ [MHz]	ANT TYPE	READING		ANT FACTOR [dB]	CABLE LOSS [dB]	AMP GAIN [dB]	RESULT		FCC LIMITS [dB μ V/m] 3m	MARGIN	
			HOR	VER				HOR	VER		HOR	VER
			[dB μ V] 3m					[dB μ V/m] 3m			[dB]	
1	47.16	BC	35.6	45.4	11.6	1.5	28.1	26.6	36.4	40.0	13.4	3.6
2	55.67	BC	26.3	35.0	9.0	1.5	28.1	14.7	23.4	40.0	25.3	16.6
3	83.61	BC	36.7	38.9	6.7	1.8	28.1	23.1	25.3	40.0	16.9	14.7
4	99.87	BC	37.1	43.4	9.1	2.0	28.1	26.1	32.4	43.5	17.4	11.1
5	121.49	BC	30.8	31.2	12.0	2.3	28.0	23.1	23.5	43.5	20.4	20.0
6	168.62	BC	30.4	29.4	15.6	2.7	28.0	26.7	25.7	43.5	16.8	17.8
7	189.01	BC	31.3	27.6	16.7	2.8	28.0	28.8	25.1	43.5	14.7	18.4
8	229.51	BC	31.1	26.6	17.4	3.3	27.9	29.9	25.4	46.0	16.1	20.6
9	323.98	LP	29.1	29.1	16.3	3.8	27.8	27.4	27.4	46.0	18.6	18.6
10	443.85	LP	31.3	29.6	17.9	4.5	27.8	31.9	30.2	46.0	14.1	15.8
11	702.01	LP	28.7	33.7	21.6	6.0	27.3	35.0	40.0	46.0	11.0	6.0

SAMPLE CALCULATION :

RESULT = READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

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

RADIATION TEST

COMPANY	: Hitachi, Ltd.	REPORT No.	: 17A0020-02I
TRADE NAME	: HITACHI	DATE	: 02/21/1998
EQUIPMENT	: MPEG Digital Camera	REGULATION	: FCC Part 15 Subpart B
MODEL	: MP-EG10W	CLASS	: CLASS B
POWER	: AC120V/60Hz	DISTANCE	: 3m
DESCRIPTION	: COMMUNICATION (MODE5)	FCC ID	: ABL045
REMARKS	: LINE IN RECORDING	ENGINEER	: KOEI, NAKAMURA

K. Nakamura

