

CANON

EXHIBIT 4

MEASUREMENTS



CANON INC. HEADQUARTERS

30-2, SHIMOMARUKO 3-CHOME, OHTA-KU, TOKYO 146, JAPAN

PHONE: (03)3758-2111

REPORT OF MEASUREMENT OF FCC

Sheet 1 of 15 sheets

REF. NO. : F98-009

Tokyo : September 25, 1998

1. DESCRIPTION OF MODEL:

a. REGULATION & CATEGORY: FCC Part 15 Sub.B & ANSI C63.4-1992 Class B

b. MODEL NO.: Pan focus camera Model VIZCAM1000 α

(Maximum frequency generated in EUT: 28. 636MHz)

c. FCC ID (if any): AZDVIZCAM1000A

d. MANUFACTURER: Canon Inc. 3-30-2 Shimomaruko, Ohta-ku Tokyo 146, Japan

e. TRADE NAME: Canon

2. MEASUREMENT:

a. FCC Filing: April 30, 1996 (31040/ST 1300F2)

b. Test Location: Canon Anechoic Room (G-10)

(3-30-2 Shimomaruko, Ohta-ku Tokyo 146, Japan)

c. Measurement Date: September 18, 1998

d. Measurement Procedure & Data: See ATTACHMENT A / B/C

3. RESULT:

As shown in this report, the EMI Noise emitted from the model was within the limits applicable.

<Comment of Minimum margin>

	Condition	Level	Limit	Margin
Field Strength	333.263MHz /Horizontal /Communication mode	41.6 dBuV/m	46.0 dBuV/m	4.4 dB
Voltage	9.2339MHz /Stand by mode (Measuring port: : Computer Model XPS D233)	45.6 dBuV	48.0 dBuV	2.4 dB

Kenichi SannoManager

Products Safety Dept.2 / Canon Inc.

1. EQUIPMENT(S) UNDER TEST:

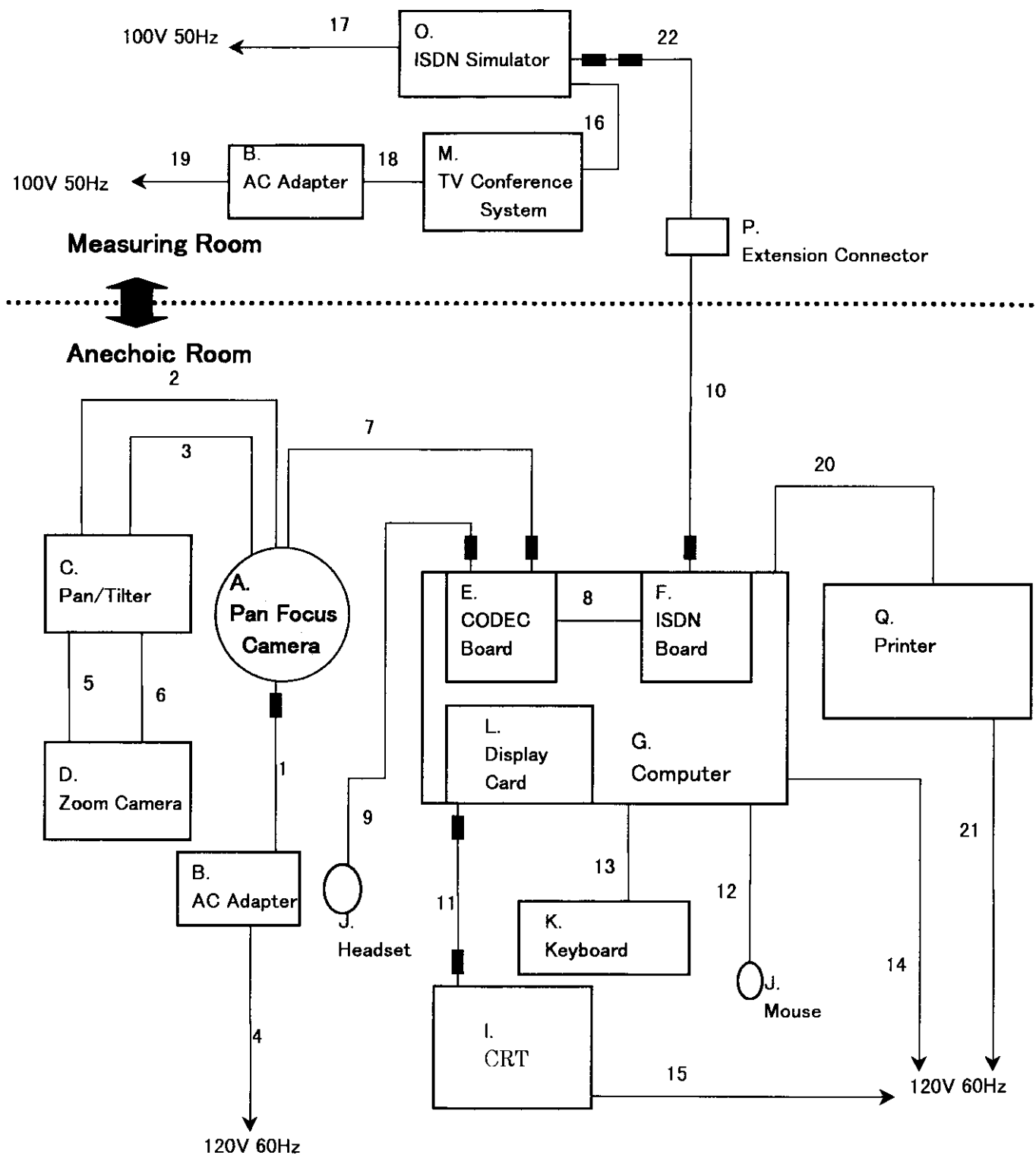
Subject EUT

No.	Symbol Item	Model No.	Manufacturer	FCC ID
A	Pan focus camera	VIZCAM1000 α	CANON.INC	AZDVIZCAM1000A

Support equipment

No.	Symbol Item	Model No.	Manufacturer	FCC ID
B	AC Adapter	PA-V12	CANON.INC	N/A
C	Pan/Tilter	PT-V3	CANON.INC	N/A (FCC/DOC)
D	Zoom Camera	VIZCAM600	CANON.INC	N/A
E	CODEC Board	IL-V1	CANON.INC	N/A (FCC/DOC)
F	ISDN Board	EXPRESSO	SCII TeLecom	LJ912352
G	Computer	XPS D233	DELL Computer Corporation.	N/A(FCC/DOC)
H	Headset	HBH0039-010160	Hosiden	N/A
I	CRT Display	D3858A	Hewlett Packard	N/A (FCC/DOC)
J	Mouse	Mouse Port Compatible Mouse 2.1A	Microsoft Corp.	C3KKMP3
K	Keyboard	SK-100M	DELL Computer Corporation.	GYUR93SK
L	Display card	NUMBER9	NUMBER NINE VISUAL TECHNOLOGY	JF9-S3968PCI
M	TV Conference System	TV-TEL	NTT	N/A
N	AC Adapter	TV-TEL AC Adapter	NTT	N/A
O	ISDN Simulator	AE-7300	ANDO ELECTRIC Co.,Ltd	N/A
P	ISDN Extension connector	----	----	-----
Q	Printer	C3941A	Hewlett Packard	B94C3941A

2. INTERFACE CABLE(S):

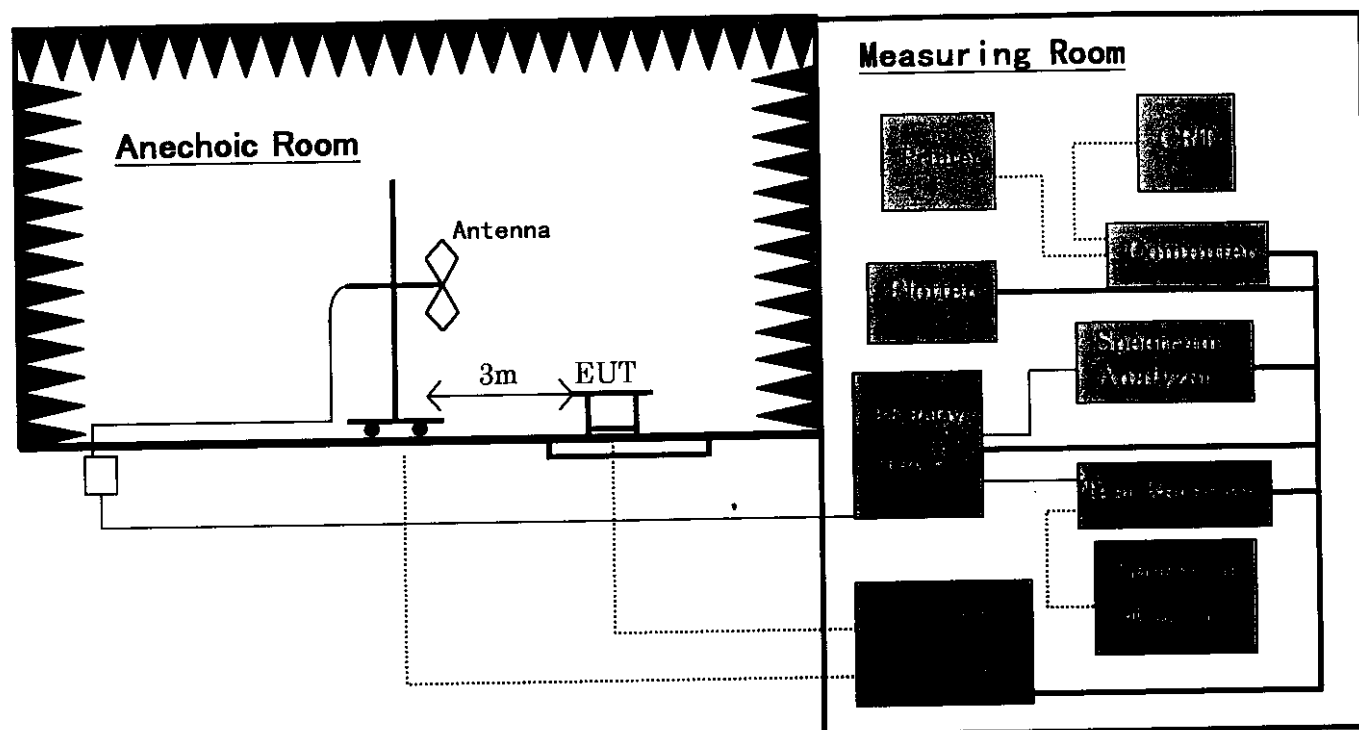




Cable Description

No.	Description	Length	Shield	Core	Remark
1	AC Power Cable	1.45m	None	Yes	Part of AC Adapter
2	CCU cable(Multi)	2.00m	Yes		Packing with the subject EUT.
3	CCU cable(DC)	2.00m	None		Packing with the subject EUT.
4	Adapter cable	1.50m	None		
5	Camera cable	0.07m	Yes		Exclusive cable.
6	PAN-TILT cable	0.06m	Yes		
7	Camera Head cable	2.00m	Yes	Yes	Exclusive cable.
8	MVIP cable	0.15m	None		
9	Headset cable	2.00m	None	Yes	Core is part of Headset
10	RJ45 Modular cable	2.90m	None	Yes	
11	Monitor cable	1.40m	Yes	Yes	Core is packed with Display Card
12	Mouse cable	1.90m	Yes		
13	Keyboard cable	1.85m	Yes		
14	Power cord for PC (AC)	1.90m	Yes		
15	Power cord for CRT display (AC)	2.17m	Yes		
16	RJ45 Modular cable	10.0m	None		
17	Power cord for ISDN simulator (AC)	1.85m	Yes		
18	Power cord for TV Conference system (DC)	1.80m	None		
19	Power cord for TV Conference system (AC)	1.77m	None		
20	Printer Cable	2.90m	Yes		
21	AC Power Cable	1.70m	Yes		
22	RJ45 Modular cable	15.0m	None	Yes	

1. Illustration



Measuring Equipments: Marked equipments were used.

Marked	Equipment Name	Manufacturer	Type	Specification	Last Cal.
✓	Biconical Antenna	Schwarzbeck	BBA9106	30~300MHz	Jan.23,1998
✓	Log-Periodic Antenna	Schwarzbeck	UHALP 9107	300~1000MHz	Jan.22,1998
✓	Test Receiver	Rohde & Schwarz	ESVP	20~1300MHz	Apr. 10,1998
✓	Spectrum Analyzer	Rohde & Schwarz	FSAC	100Hz~1.8GHz	May 8,1998
✓	Spectrum Monitor	Rohde & Schwarz	EZM	9kHz~30Mhz 20~1300MHz	-----
✓	RF Relays Matrix	Rohde & Schwarz	PSU	0-6~GHz 0~500MHz	-----
✓	Pre Amplifier	Hewlett Packard	8447F	9kHz-1.3GHz	-----
✓	Wooden Test Stand	-----	-----	1×1.5 ×0.8m	-----

* Measuring room: Canon Anechoic room G10

Interference Field Strenght Mesurement

Sheet 9 of 15 sheets
Our file No. : F98-009

Standard : FCC Class B (ANSI C63.4)
 Model : Pan focus camera Model VIZCAM1000A
 Manufacturer : Canon Inc.
 Serial No. : -----
 Date : Sept. 18, 1998
 Temperature : 24.5°C
 Humidity : 35%RH
 Measured by : T. Kohno
 Remark :

Distance : 3 m

[Sample of Calculation]

Calculating example is following. For Correction Factor, see attached Correction Factor List.

Condition : Stand by mode
 Frequency : 30.682 (MHz)

$$\begin{aligned} \text{Emission Level (dBuV/m)} &= \text{Meter Reading (dBuV)} + \text{Correction Factor (dB)} \\ &= 31.3 + (-.2) \\ &= 31.1 \end{aligned}$$

Frequency MHz	Factor dB	Reading Horizontal dBuV	Reading Vertical dBuV	Result Horizontal dBuV/m	Result Vertical dBuV/m	Limit dBuV/m	Margin dB
Condition : Stand by mode							
30.682	-.2	----	31.3	----	31.1	40.0	8.9
48.793	-5.8	----	37.1	----	31.3	40.0	8.7
59.496	-9.2	----	40.4	----	31.2	40.0	8.8
86.444	-9.5	----	37.8	----	28.3	40.0	11.7
110.041	-4.5	----	35.0	----	30.5	43.5	13.0
114.550	-3.7	----	37.2	----	33.5	43.5	10.0
133.306	-1.9	36.1	----	34.2	----	43.5	9.3
151.575	-.8	33.8	----	33.0	----	43.5	10.5
162.150	-.4	31.1	----	30.7	----	43.5	12.8
180.004	.8	31.9	----	32.7	----	43.5	10.8
195.449	1.7	30.5	----	32.2	----	43.5	11.3
219.755	2.2	26.7	----	28.9	----	46.0	17.1
333.264	-3.3	40.7	----	37.4	----	46.0	8.6
333.266	-3.3	----	37.3	----	34.0	46.0	12.0
336.050	-3.2	38.4	----	35.2	----	46.0	10.8
366.594	-2.9	34.3	----	31.4	----	46.0	14.6
399.916	-2.5	38.8	----	36.3	----	46.0	9.7
433.245	-1.7	36.9	----	35.2	----	46.0	10.8
433.247	-1.7	----	38.3	----	36.6	46.0	9.4
458.194	-1.1	----	36.3	----	35.2	46.0	10.8
515.465	.1	----	36.5	----	36.6	46.0	9.4
566.544	1.1	----	30.3	----	31.4	46.0	14.6
566.548	1.1	35.1	----	36.2	----	46.0	9.8
572.741	1.2	----	36.1	----	37.3	46.0	8.7
601.376	1.7	31.8	----	33.5	----	46.0	12.5
630.010	2.4	----	35.7	----	38.1	46.0	7.9
658.648	3.1	31.0	----	34.1	----	46.0	11.9
733.182	4.5	----	32.2	----	36.7	46.0	9.3
816.151	5.8	31.8	32.8	37.6	38.6	46.0	7.4
Condition : Communication mode							
30.532	-.2	----	32.2	----	32.0	40.0	8.0
55.778	-8.1	----	37.9	----	29.8	40.0	10.2
59.499	-9.2	----	41.0	----	31.8	40.0	8.2
66.656	-10.4	----	43.7	----	33.3	40.0	6.7
99.983	-6.4	----	40.3	----	33.9	43.5	9.6
108.668	-4.8	----	35.1	----	30.3	43.5	13.2
114.550	-3.7	----	37.8	----	34.1	43.5	9.4
133.307	-1.9	38.1	----	36.2	----	43.5	7.3
152.333	-.8	33.7	----	32.9	----	43.5	10.6
162.853	-.3	30.9	----	30.6	----	43.5	12.9
166.633	0.0	32.1	----	32.1	----	43.5	11.4
180.004	.8	32.1	----	32.9	----	43.5	10.6
199.961	1.9	32.0	----	33.9	----	43.5	9.6
266.615	4.0	33.3	----	37.3	----	46.0	8.7
333.263	-3.3	44.9	----	41.6	----	46.0	4.4
333.266	-3.3	----	41.2	----	37.9	46.0	8.1
399.916	-2.5	35.9	----	33.4	----	46.0	12.6
400.920	-2.5	----	35.0	----	32.5	46.0	13.5
433.245	-1.7	----	38.3	----	36.6	46.0	9.4
433.247	-1.7	36.0	----	34.3	----	46.0	11.7
566.548	1.1	37.0	----	38.1	----	46.0	7.9
572.741	1.2	----	36.0	----	37.2	46.0	8.8
601.372	1.7	34.0	----	35.7	----	46.0	10.3
630.010	2.4	----	35.5	----	37.9	46.0	8.1
658.648	3.1	31.8	----	34.9	----	46.0	11.1
733.182	4.5	----	29.9	----	34.4	46.0	11.6
816.151	5.8	32.1	32.6	37.9	38.4	46.0	7.6

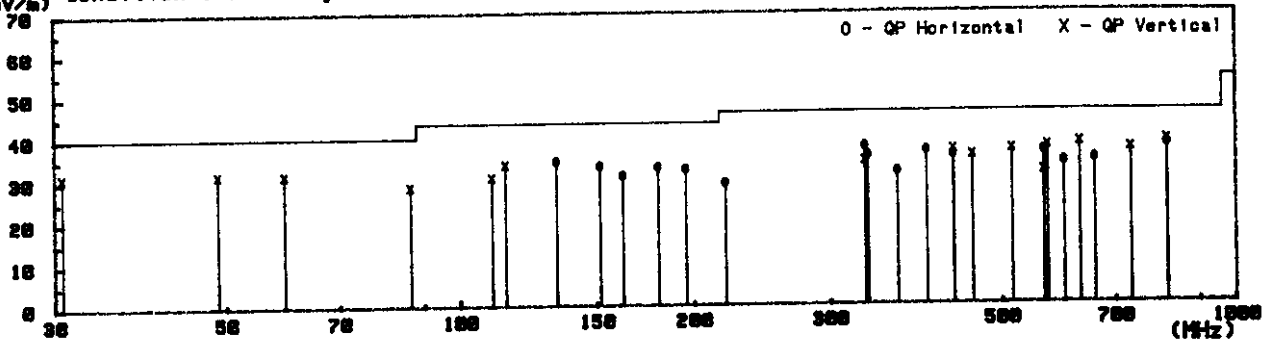
Interference Field Strength Measurement

Standard : FCC Class B (FNSI C63.4)
Model : Pan focus camera Model VIZCPH1000
Manufacturer : Canon Inc.
Measured by : T. Kohno
Date : Sept. 18, 1998
Remark :

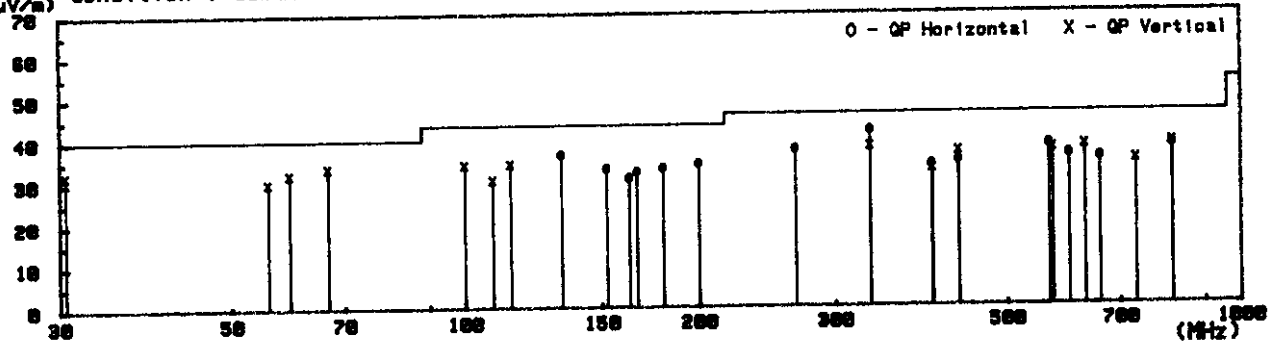
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Our file No.: F98-009

Distance : 3 m

(dBuV/m) Condition : Stand by mode



(dBuV/m) Condition : Communication mode





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REF. NO. : F98-009

Tokyo : September 25, 1998

Correction Factor for Field Strength Measurement (30-1000 MHz)

Test site : Canon anechoic room G-10

Antenna : Biconical BBA9106, ref. B941 (30-300 MHz)

Log-per UHALP9107, s/n 9107862, ref. LOGP-3 (300-1000 MHz)

Pre-amp : 8447F, s/n 2805A03467

Correction factor list

Frequency (MHz)	Antenna factor (dB/m)	6 dB attenuator loss (dB)	Gain of measuring line (dB)	Correction factor (dB/m)
30	18.61	5.98	24.54	0.0
35	16.90	5.98	24.38	-1.5
40	14.89	5.99	24.23	-3.3
45	13.50	6.00	24.10	-4.6
50	11.78	6.00	23.98	-6.2
60	8.42	6.00	23.73	-9.3
70	6.63	5.99	23.48	-10.9
80	7.01	6.01	23.27	-10.3
90	7.92	6.01	23.07	-9.1
100	10.46	5.99	22.86	-6.4
120	13.69	5.99	22.44	-2.8
125	13.96	6.01	22.34	-2.4
140	14.48	6.00	22.06	-1.6
150	15.00	6.01	21.85	-0.8
160	15.02	6.03	21.66	-0.6
175	16.07	6.01	21.38	0.7
180	16.11	6.01	21.30	0.8
200	16.82	6.01	20.92	1.9
250	16.73	6.02	20.04	2.7
300	19.88	6.03	19.53	6.4
300	15.87	-----	19.53	-3.7
400	16.84	-----	19.35	-2.5
500	18.80	-----	19.02	-0.2
600	20.10	-----	18.44	1.7
700	21.61	-----	17.62	4.0
800	22.22	-----	16.72	5.5
900	22.97	-----	15.68	7.3
1000	24.30	-----	14.88	9.4

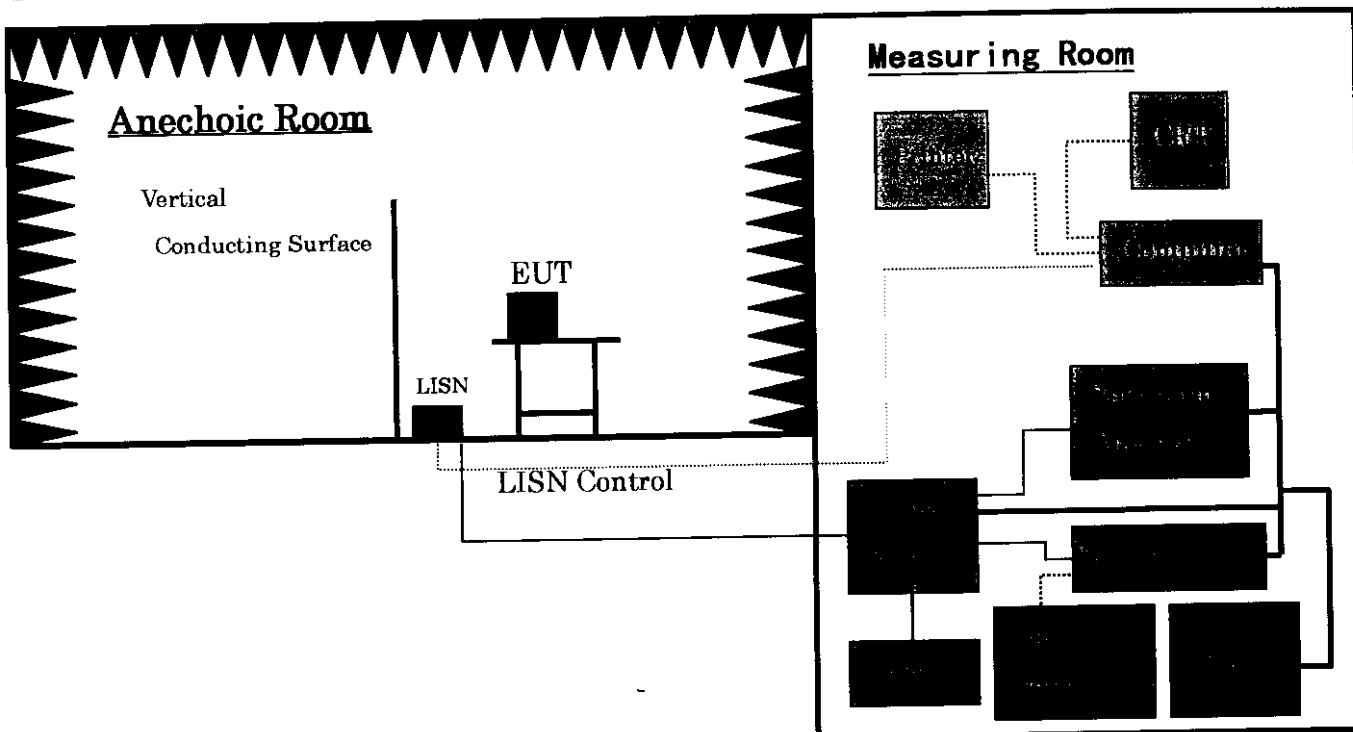
Note: Gain of measuring line = Amp gain - Cable loss

Correction factor = Antenna factor + 6 dB attenuator loss - Gain of measuring line

Field strength = Receiving voltage + Correction factor

Antenna factor, 6dB attenuator loss and gain of measuring line were calibrated in Jan. 1998.

1. Illustration



2. Measuring Equipments: Marked equipments were used.

Check Used	Equipment Name	Manufacturer	Type	Specification	Last Cal. No.
✓	LISN	Rohde & Schwarz	ESH3-Z5	450kHz~30MHz	Sept. 2,1998
✓	LISN	Kyoritu	KNW-407S	450kHz~30MHz	Sept. 1,1998
✓	Test Receiver	Rohde & Schwarz	ESH3	9kHz~30MHz	Mar. 26,1998
✓	Spectrum Analyzer	Rohde & Schwarz	FSAC	100Hz~1.8GHz	May 8,1998
✓	Spectrum Monitor	Rohde & Schwarz	EZM	9kHz~30MHz 20~1300MHz	-----
✓	RF Relays Matrix	Rohde & Schwarz	PSU	0~6~GHz / 0~500MHz	-----
✓	Wooden Test Stand	-----	-----	1 × 1.5 × 0.4m	-----
✓	Plus Limiter	Rohde & Schwarz	ESH3-Z5	9kHz~30MHz	-----
✓	Vertical Conducting Surface	-----	-----	2.0 × 2.0m	-----

* Measuring room: Canon Anechoic room G10

Interference Voltage at Mains Terminal Mesurement

Sheet 13 of 15 sheets
Our file No. : F98-009

Standard : FCC Class B (ANSI C63.4)
 Model : Pan focus camera Model VIZCAM1000A
 Manufacturer : Canon Inc.
 Serial No. : -----
 Date : Sept. 18, 1998
 Temperature : 24.5°C
 Humidity : 35%RH
 Measured by : T. Kohnno
 Remark :

Input 120V 60Hz

[Sample of Calculation]

Calculating example is following. For Correction Factor, see attached Correction Factor List.

Condition : Stand by mode(Measuring port: AC Adapter Model PA-V12)
 Frequency : .5123 (MHz)

Emission Level (dBuV) = Meter Reading (dBuV) + Correction Factor (dB)
 = 27.9 + (10.5)
 = 38.4

Frequency	Factor	Reading	Reading	Result	Limit	Margin
MHz	dB	QP 1 dBuV	QP 2 dBuV	dBuV	dBuV	dB
Condition : Stand by mode(Measuring port: AC Adapter Model PA-V12)						
.5123	10.5	24.2	27.9	38.4	48.0	9.6
.6413	10.5	25.6	33.5	44.0	48.0	4.0
.7708	10.5	20.8	23.0	33.5	48.0	14.5
.8975	10.5	19.9	26.5	37.0	48.0	11.0
1.7949	10.6	18.5	24.1	34.7	48.0	13.3
3.0781	10.7	19.9	23.3	34.0	48.0	14.0
8.0799	11.4	31.3	30.7	42.7	48.0	5.3
9.4905	11.5	29.7	30.0	41.5	48.0	6.5
Condition : Communication mode(Measuring port : AC Adapter Model PA-V12)						
.5131	10.5	24.2	28.0	38.5	48.0	9.5
.6408	10.5	26.2	34.1	44.6	48.0	3.4
.7697	10.5	20.6	29.2	39.7	48.0	8.3
.8992	10.5	20.0	26.3	36.8	48.0	11.2
1.9237	10.6	21.5	25.3	35.9	48.0	12.1
3.4628	10.8	24.3	24.2	35.1	48.0	12.9
7.9512	11.4	32.8	32.4	44.2	48.0	3.8
9.2337	11.5	32.3	32.3	43.8	48.0	4.2
Condition : Stand by mode(Measuring port:Computer Model XPS D233)						
.5705	10.5	12.9	12.6	23.4	48.0	24.6
.6418	10.5	15.8	15.1	26.3	48.0	21.7
.7137	10.5	11.5	14.3	24.8	48.0	23.2
.8565	10.5	13.9	13.9	24.4	48.0	23.6
.9282	10.5	14.9	14.9	25.4	48.0	22.6
9.2339	11.5	34.1	33.5	45.6	48.0	2.4
10.0018	11.5	32.5	31.9	44.0	48.0	4.0
Condition : Communication mode(Measuring port:Computer Model XPS D233)						
.5705	10.5	13.1	12.7	23.6	48.0	24.4
.6418	10.5	15.6	15.1	26.1	48.0	21.9
.7137	10.5	11.4	11.4	21.9	48.0	26.1
.8565	10.5	14.0	14.0	24.5	48.0	23.5
.9282	10.5	14.9	14.9	25.4	48.0	22.6
9.2339	11.5	32.7	32.0	44.2	48.0	3.8
10.0018	11.5	31.5	31.5	43.0	48.0	5.0

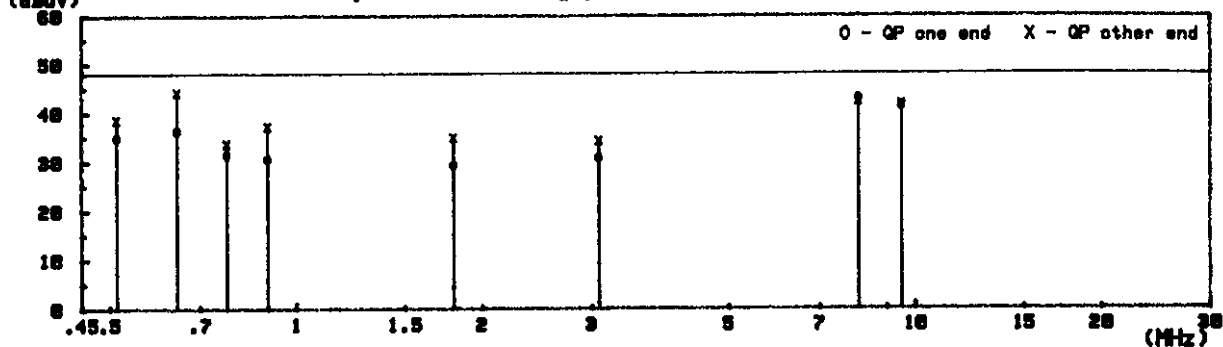
Interference Voltage at Mains Terminal Measurement

Standard : FCC Class B (ANSI C83.4)
 Model : Pan focus camera Model VIZCAM1000X
 Manufacturer : Canon Inc.
 Measured by : T. Kohno
 Date : Sept. 18, 1998
 Remark :

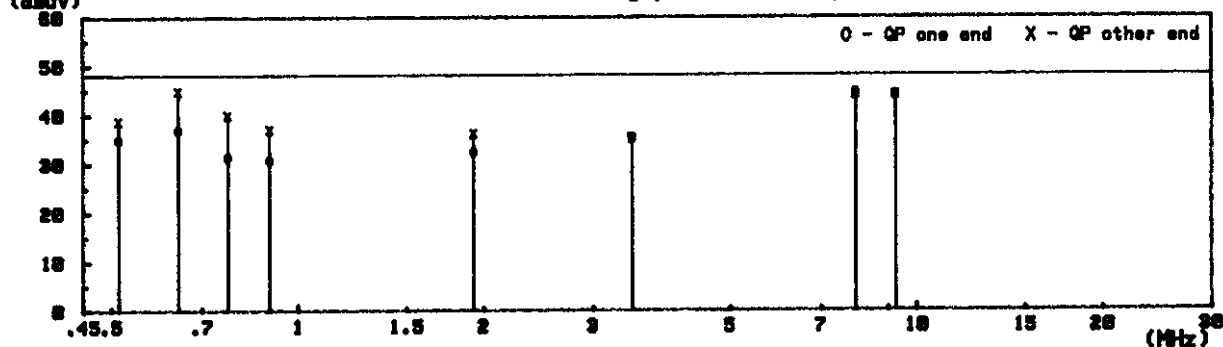
Sheet 14 of 15 sheets
 Our file No.: F98-009

Input 120V 60Hz

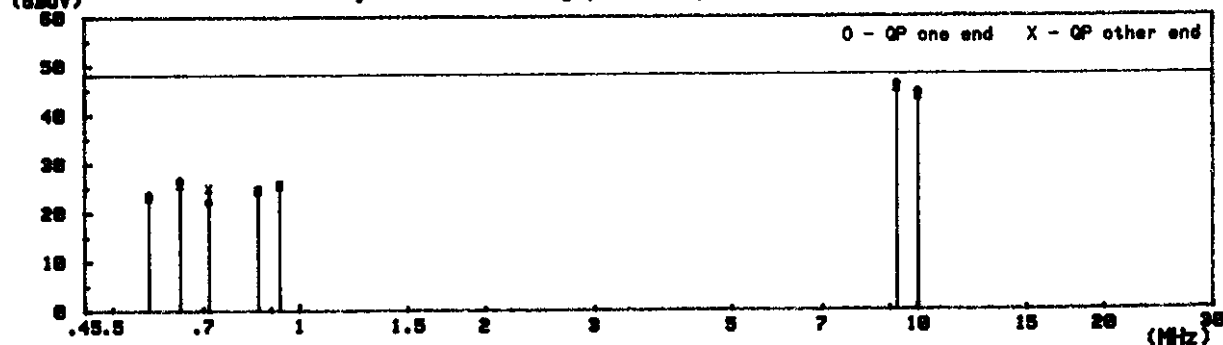
Condition : Stand by mode(Measuring port: AC Adapter Model PA-V12)



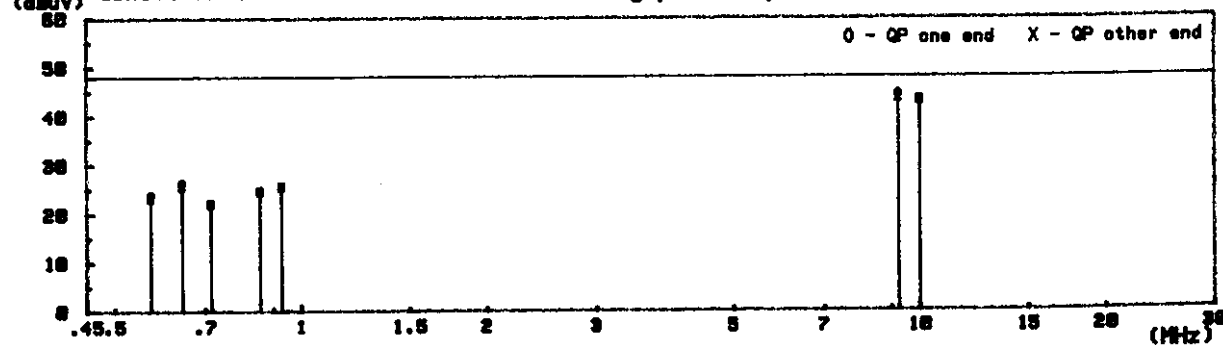
Condition : Communication mode(Measuring port : AC Adapter Model PA-V12)



Condition : Stand by mode(Measuring port:Computer Model XPS D233)



Condition : Communication mode(Measuring port:Computer Model XPS D233)



Correction Factor for Mains Terminal Voltage Measurement(0.45-30 MHz) acc. to ANSI C63.4-1992

Test site : Canon anechoic room G-10

LISN : ESH2-Z5(s.n. 860014/010) or ESH3-Z5(s.n. 892785/013)

Limiter : ESH3-Z2

Correction factor list :

Frequency(MHz)	LISN loss(dB)		Limiter loss(dB)	Cable loss(dB)	Correction factor(dB)	
	ESH2-Z5	ESH3-Z5			ESH2-Z5	ESH3-Z5
0.45	0.51	0.47	9.86	0.20	10.6	10.5
0.5	0.47	0.43	9.86	0.21	10.5	10.5
0.7	0.38	0.35	9.86	0.24	10.5	10.5
1	0.34	0.31	9.86	0.29	10.5	10.5
2	0.31	0.29	9.87	0.42	10.6	10.6
4	0.33	0.30	9.88	0.66	10.9	10.8
6	0.35	0.31	9.90	0.80	11.1	11.0
8	0.38	0.36	9.91	1.10	11.4	11.4
10	0.41	0.37	9.93	1.17	11.5	11.5
12	0.47	0.45	9.94	1.48	11.9	11.9
14	0.56	0.51	9.96	1.46	12.0	11.9
16	0.56	0.45	9.97	1.73	12.3	12.2
18	0.64	0.42	9.98	1.79	12.4	12.2
20	0.58	0.42	9.99	2.01	12.6	12.4
22	0.56	0.58	10.00	2.12	12.7	12.7
24	0.59	0.47	10.02	2.11	12.7	12.6
26	0.62	0.52	10.03	2.23	12.9	12.8
28	0.67	0.59	10.05	2.16	12.9	12.8
30	0.76	0.66	10.07	2.20	13.0	12.9

Note : Correction factor(dBuV) = LISN loss(dB) + Limiter loss(dB) + Cable loss(dB)

Mains terminal Voltage(dBuV) = Receiving voltage(dBuV) + Correction factor(dB)

LISN loss, Limiter loss and cable loss were calibrated in Sept.1&2 98.

Canon

CANON INC. HEADQUARTERS

30-2, SHIMOMARUKO 3-CHOME, OHTA-KU, TOKYO 146-8501, JAPAN

PHONE (03)3758-2111

**FEDERAL COMMUNICATION COMMISSION
EQUIPMENT APPROVAL SERVICES**

P.O. BOX 358315
Pittsburgh, PA 15251-5315
USA

99L-2011

January 19, 1999

FCC Part 15 Sub. B Certification

Pan Focus Camera, model VIZCAM1000 α : FCC ID: AZDVIZCAM1000A

Ladies and Gentlemen:

This is to propose application of Pan focus camera which is to be assigned the FCC ID: AZDVIZCAM1000A.

The application form 731 and other documents are enclosed with this letter.

The product is an optional model of video conference system CANOMEDIA. CANOMEDIA consists of some products; camera head, pan/tilter, coded board, AC adapter and ISDN board. These models have already complied with FCC regulations as follows.

Camera head and AC adapter are in conformity to FCC part 15 sub. B Verification. Pan/tilter and coded board are confirmed with FCC part 15 sub. B Declaration of conformity. ISDN board is granted Certification of FCC part 15 sub. B.

If you need additional information, please contact us or Kenneth Shadoff, Senior Product Safety Engineer of Quality management dept., Canon USA Inc.

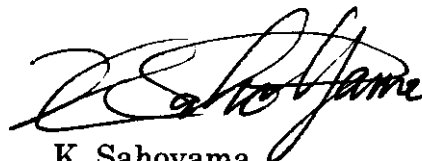
We greatly appreciate it if you could take a necessary process for our request.

Sincerely,



Y. Ichinose
Engineer
Products Safety Dept.1
Canon Inc.

Reviewed by



K. Sahoyama
Engineer
Products Safety Dept.1
Canon Inc.

CC: Mr. Kenneth Shadoff, Q.M. Dept., Canon USA Inc.