

EMI TEST REPORT

Test Report No. : 23CE0026-YK-1

Applicant: Sony Corporation
Type of Equipment: Wireless Camera Transmitter
Model No.: WLL-CA50
FCC ID: AK8WLLCA50
Test standard: FCC Part15 Subpart C, Section 15.247
Test Result: Complied

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2. The results in this report apply only to the sample tested.

Date of test: November 6, 7, 13 and 15 2002

Tested by: 
Toyokazu Imamura
EMC section

Approved by: 
Osamu Watatani
Site Assistant Manager of Yamakita Lab.

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YAMAKITA LAB.

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1 GENERAL INFORMATION

Applicant

Company Name : Sony Corporation
Brand Name : SONY
Address : 6-7-35 Kitashinagawa, Shinagawa-ku, Tokyo-to, 141-0001 JAPAN
Telephone Number : +81 3 5795 5938
Facsimile Number : +81 3 5795 5955
Contact Person : Satoshi Yamamoto

Type of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Rating : DC9.0V (Battery: DC10.5-17V)/ AC Adaptor: AC100-240V
Receipt Date of Sample : November 6, 2002
Condition of EUT : Production prototype
Regulation(s) : FCC Part15 Subpart C, Section 15.247
Test Site : A-Pex Yamakita No.1 Open Test Site

1.1 Tested Methodology

The measurements were performed according to the procedures in ANSI C63.4 (2000).
These tests were also referred to FCC 97-114 "Guidance on Measurement for Direct Spread Spectrum Systems".

1.2 Test Facility

This site has been fully described in a report submitted to FCC office, and accepted on September 20, 2002
(Registration No.: 95486).
NVLAP Lab. code : 200441-0

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2 PRODUCT DESCRIPTION

Sony Corporation, Model: WLL-CA50 (referred to as the EUT in this report) is a Wireless Camera Transmitter.
The clock frequencies used in EUT : 18.285714MHz (Signal)

20MHz (CPU)
27MHz (Signal)
30MHz (CPU)

Frequency characteristics	:	2406MHz through 2470MHz
Number of channels/ channel spacing	:	65 channels/ 1MHz step and 12MHz spacing
Modulation	:	16QAM-OFDM, QPSK-OFDM
Antenna type	:	Dipole
Antenna Gain	:	4.0dBi
Operating Voltage	:	DC9.0V (Battery: DC10.5-17V)/ AC Adaptor: AC100-240V)

WLL-CA50 is a transmitter for MPEG wireless camera system which provides high quality picture and audio as well as stable RF link with MPEG-2 compression and advanced digital modulation technology using COFDM.

***FCC Part15.31 (e)**

The host device DNW-9WS (Digital camcorder) provides the Transmitter module with stable power supply (DC9.0V), and the power is not changed when voltage of the Digital camcorder (DC10.5-17V) is varied. Therefore, the Transmitter module complies power supply regulation.

***FCC Part15.203**

The antenna of WLL-CA50 doesn't use a standard antenna jack or electrical connector, therefore the Wireless camera transmitter complies FCC Part15.203 Antenna requirement.

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3 SYSTEM TEST CONFIGURATION

3.1 Justification

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

Test mode: 16QAM-OFDM

1. High power mode

Transmitting

Low channel : 2406MHz
Middle channel : 2442MHz
High channel : 2470MHz

2. Low power mode

Transmitting

Low channel : 2406MHz
Middle channel : 2442MHz
High channel : 2470MHz

3. Standby mode

The EUT was tested in all three orthogonal planes in order to determine worst case emissions. Channels at 2406 MHz, 2442 MHz and 2470 MHz were tested and investigated from 30 MHz to 26 GHz. Data for all three channels are presented in this report.

The COFDM system employed in the EUT has an ability to provide two different data rates by using QPSK and 16 QAM modulations. These two modulation schemes did not change spectrum envelopes of the EUT at conducted measurement at the antenna terminal.

As a result the 16 QAM-OFDM modulation with highest data rate was used for final measurements.

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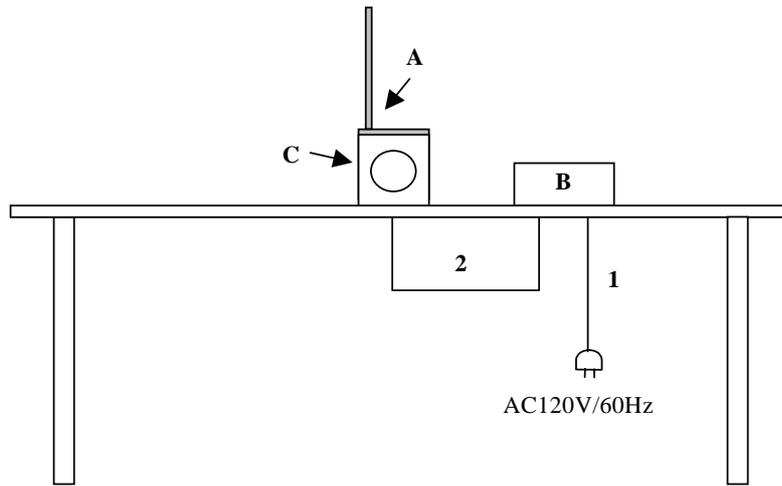
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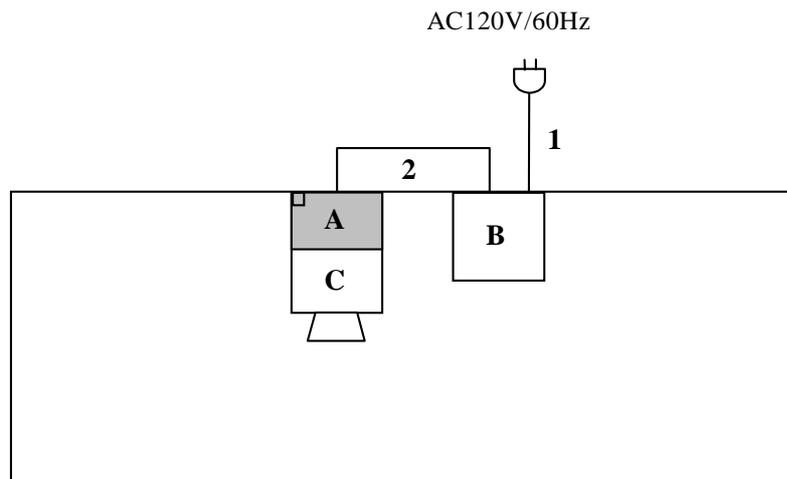
3.2 Configuration of Tested System

Front View



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

Top View



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

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID	Remarks
A	Transmitter	WLL-CA50	10001	Sony Corporation	AK8WLLCA50	EUT
B	AC Adaptor	AC-550	14562	Sony Corporation	-	-
C	Digital Camcorder	DNW-9WS	3002	Sony Corporation	-	-

List of cables used

No.	Name	Length (m)	Shield	Backshell material
1	AC Cable	2.0	Unshielded	Polyvinyl chloride
2	DC Cable	2.1	Unshielded	Polyvinyl chloride

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4 MEASUREMENT UNCERTAINTY

Conducted emission test

The measurement uncertainty (with a 95% confidence level) for this test was ± 1.3 dB.

The data listed in this test report has enough margin, more than site margin.

Radiated emission test

The measurement uncertainty (with 95% confidence level) for this test using Biconical antenna is ± 4.8 dB.

The measurement uncertainty (with 95% confidence level) for this test using Logperiodic antenna is ± 5.2 dB.

The measurement uncertainty (with 95% confidence level) for this test using Horn antenna is ± 6.6 dB.

The data listed in this test report may exceed the test limit because it does not have enough margin.

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5 SUMMARY OF TESTS

5.1 §15.207 Conducted Emissions (Limits by CISPR Pub.22 Class B)

Test Procedure

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 peripheral was aligned and flushed with rear of tabletop.

All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from LISN, and excess AC cable was bundled in center. It was folded back and forth forming a bundle 30cm to 40cm long. DC cable that was connected to the AC adapter was bundled in center. It was folded back and forth forming a bundle 30cm to 40cm long and was hanged at 40cm height to the ground plane.

Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN to the input power source.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT on a shielded room.

The EUT was connected to a Line Impedance Stabilization Network (LISN).

An overview sweep with peak detection has been performed.

The measurements have been performed with a CISPR quasi-peak detector (IF BW 9kHz).
(Measurement range: 150kHz to 30MHz)

Test data : APPENDIX Page 14 to 22
Photographs of test setup : Page 11
Test result : Pass
Test instruments : KCC-14/15/16/18/KPL-01, KLS-01, KSA-01, KTR-01

5.2 §15.247(a)(2) 6dB Bandwidth (Antenna Port Conducted)

Test Procedure

The minimum 6dB bandwidth was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX Page 23 to 24
Test result : Pass
Test instruments : KTR-01, KCC-D5

5.3 § 15.247(b)(3) Maximum Peak Out Put Power (Antenna Port Conducted)

Test Procedure

The Maximum Peak Output power was measured with a power meter connected to the antenna port.

* Antenna Gain dose not exceed 6dBi.

Test data : APPENDIX Page 25
Test result : Pass
Test instruments : KPM-05, KPSS-01, KAT10-S1

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5.4 § 15.247(c) Out of Band Emissions (Radiated)

Test Procedure

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting 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 Radiated Electric Field Strength intensity has been measured on an open test site with a ground plane and at a distance of 3m. The measuring antenna height was varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization. EUT emission levels were compared when the EUT antenna position was vertical polarization and horizontal polarization. The equipment was also previously checked at each position of two axes X and Y to find that X axis was worse under the vertical antenna polarization and that Y axis was worse under the horizontal antenna position. The position in which the maximum noise occurred was chosen to put into measurement. See the photographs in page 13.

Radiated Spurious emissions

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement. The result was also satisfied the general limits specified in Sec.15.209 (a).
Measurement range : 30MHz to 1000MHz CISPR QP Detector, IF BW 120kHz
: 1GHz to 26GHz PK and AV Detector

Test data : APPENDIX Page 26 to 32 (30 - 1000MHz)
: APPENDIX Page 33 to 46 (1 - 26GHz)
: APPENDIX Page 47 to 54
(Band Edges: 2390MHz/ 2483.5MHz, Restricted band Charts)
Photographs of test setup : Page 12
Test result : Pass
Test instruments : KAF-01, KAF-02, KAT10-S1, KAT6-1, KBA-01, KTR-01, KFL-01
KCC-10/11/12/13/18, KCC-D3, KHA-01, KHA-03, KLA-02, KOTS-1, KSA-01

5.5 § 15.247(c) Out of Band Emissions (Antenna Port Conducted)

Test Procedure

The Out of Band Emissions was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX Page 55 to 66
Test result : Pass
Test instruments : KTR-01, KCC-D5

5.6 § 15.247(d) Power Density (Antenna Port Conducted)

Test Procedure

The Power Density was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX Page 67 to 69
Test result : Pass
Test instruments : KTR-01, KCC-D5

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APPENDIX 1: Photographs of test setup

1. Page 11	:	Conducted emission
2. Page 12	:	Radiated emission
3. Page 13	:	Pre check of worse-case position

APPENDIX 2: Test Data

1. Page 14 – 22	:	Conducted emission
2. Page 23 – 24	:	6dB Bandwidth (Antenna Port Conducted)
3. Page 25	:	Maximum Peak Power (Antenna Port Conducted)
4. Page 26 – 54	:	Out Band of Emissions (Radiated)
26 – 28	:	30-1000MHz (High power mode)
29 – 31	:	30-1000MHz (Low power mode)
32	:	30-1000MHz (Standby mode)
33 – 38	:	1-26GHz (High power mode)
39 – 44	:	1-26GHz (Low power mode)
45 – 46	:	1-26GHz (Standby mode)
5. Page 55 – 66	:	Out Band of Emissions (Antenna Port Conducted)
6. Page 67 – 69	:	Power Density (Antenna Port Conducted)

APPENDIX 3: Test instruments

Page 70	:	Test instruments
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Conducted emission



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Radiated emission



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Pre check of worse-case position
X axis



Y axis



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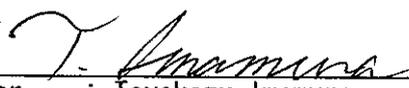
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DATA OF CONDUCTION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Shielded Room
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting(2406MHz)
Remarks : High Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation : CISPR Pub. 22 CLASS B


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dBuV]	AV	QP [dBuV]	AV				QP [dBuV]	AV	QP [dBuV]	AV	QP [dB]	AV
1.	0.1565	40.6	-	42.8	-	0.0	0.1	0.0	42.9	-	65.6	55.6	22.7	-
2.	0.2145	37.8	-	37.3	-	0.0	0.1	0.0	37.9	-	63.0	53.0	25.1	-
3.	0.3010	34.2	-	33.5	-	0.0	0.1	0.0	34.3	-	60.2	50.2	25.9	-
4.	0.6400	33.5	-	31.5	-	0.0	0.2	0.0	33.7	-	56.0	46.0	22.3	-
5.	0.8116	33.9	-	31.6	-	0.1	0.2	0.0	34.2	-	56.0	46.0	21.8	-
6.	0.9794	33.3	-	31.1	-	0.1	0.2	0.0	33.6	-	56.0	46.0	22.4	-
7.	14.7290	30.7	-	31.0	-	0.7	1.4	0.0	33.1	-	60.0	50.0	26.9	-
8.	29.9999	40.2	35.4	38.2	33.6	1.2	1.9	0.0	43.3	38.5	60.0	50.0	16.7	11.5

CALCULATION: READING[dBμV] + LISN FACTOR[dB] + CABLE LOSS[dB] + ATTEN[dB].

■ LISN : KLS-01 (NSLK8126) ■ COAXIAL CABLE : KCC-14/15/16/18
■ PULSE LIMITTER : KPL-01 (PL01) ■ EMI RECEIVER : KTR-01 (ES140)

DATA OF CONDUCTION TEST CHART

A-PEX INTERNATIONAL CO., LTD.

Yamakita No.1 Shielded Room

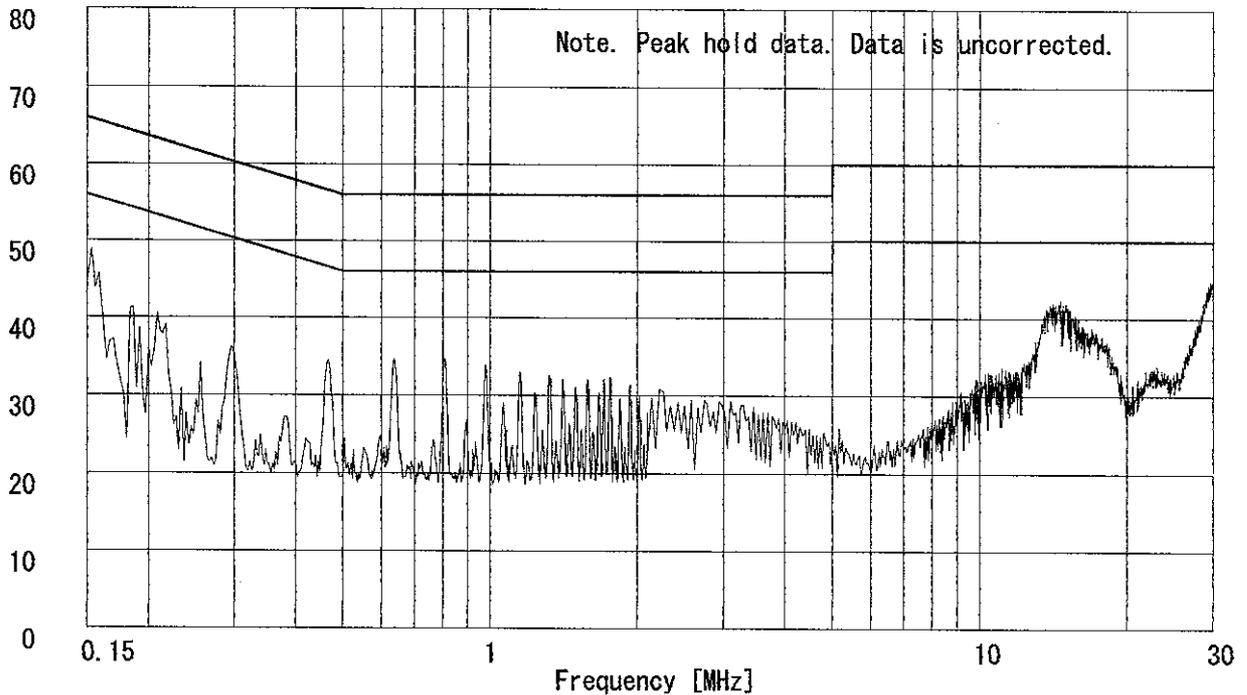
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2406MHz)
Remarks : High Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation 1 : CISPR Pub.22 CLASS B
Regulation 2 : None


Engineer : Toyokazu Imamura

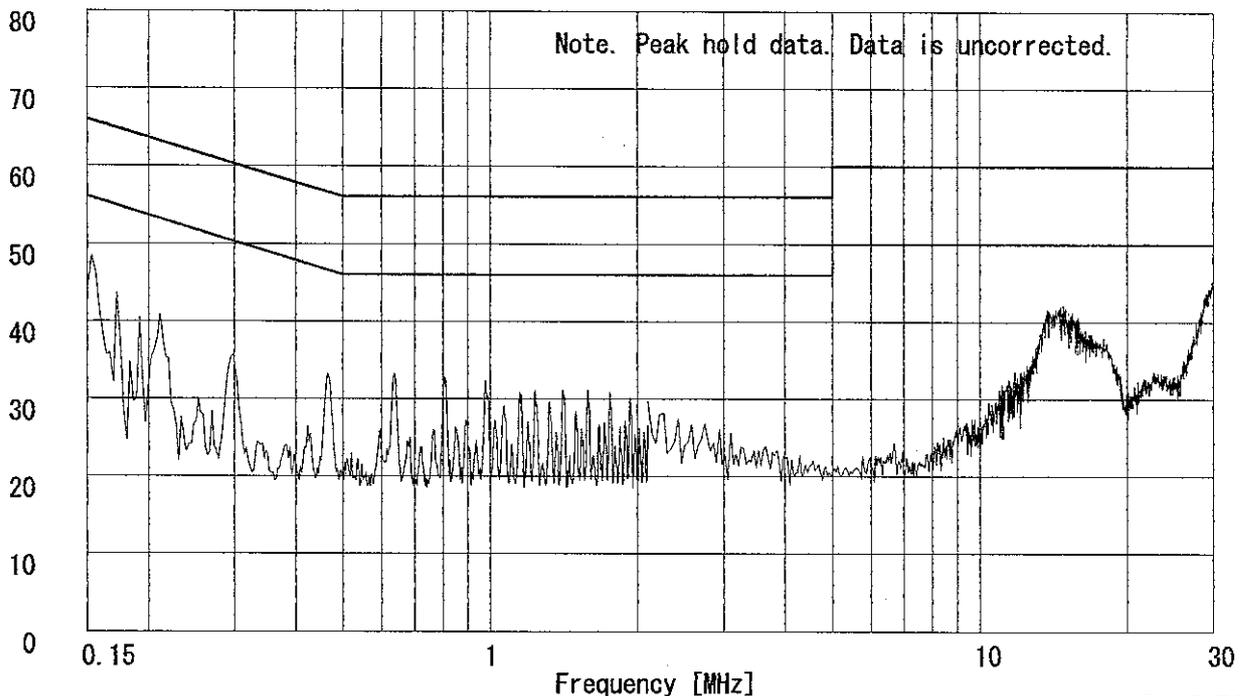
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST CHART

A-PEX INTERNATIONAL CO., LTD.

Yamakita No.1 Shielded Room

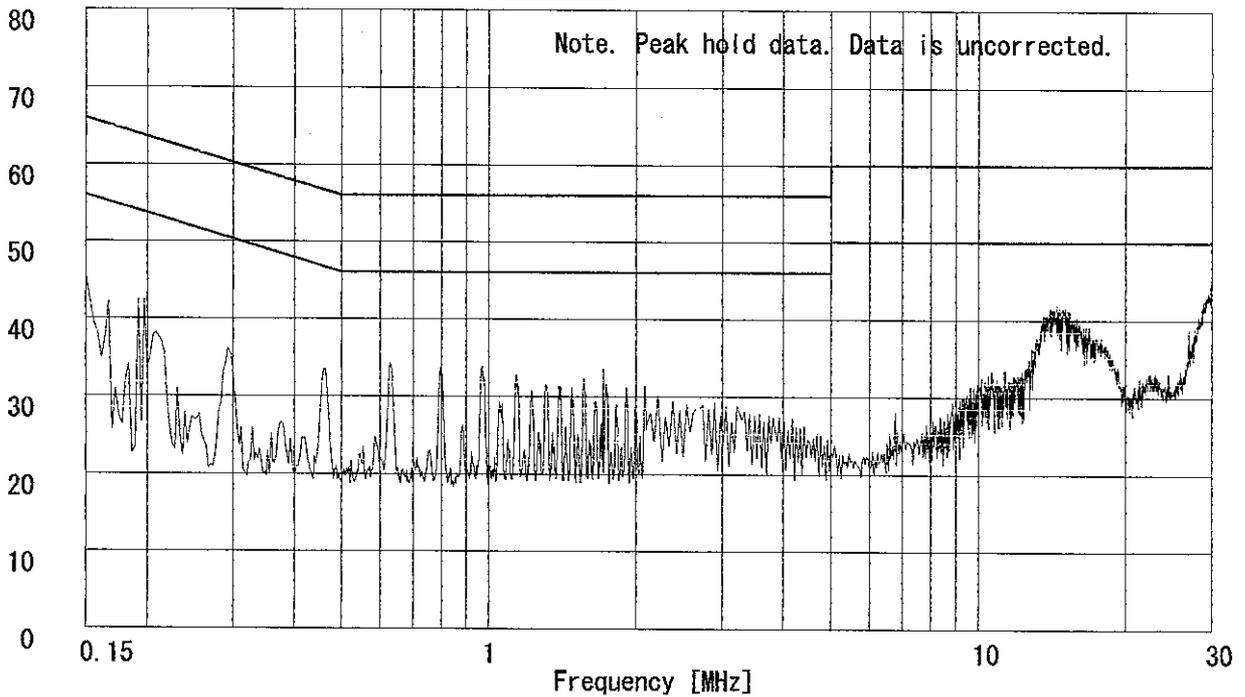
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Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2442MHz)
Remarks : High Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation 1 : CISPR Pub.22 CLASS B
Regulation 2 : None


Engineer : Toyokazu Imamura

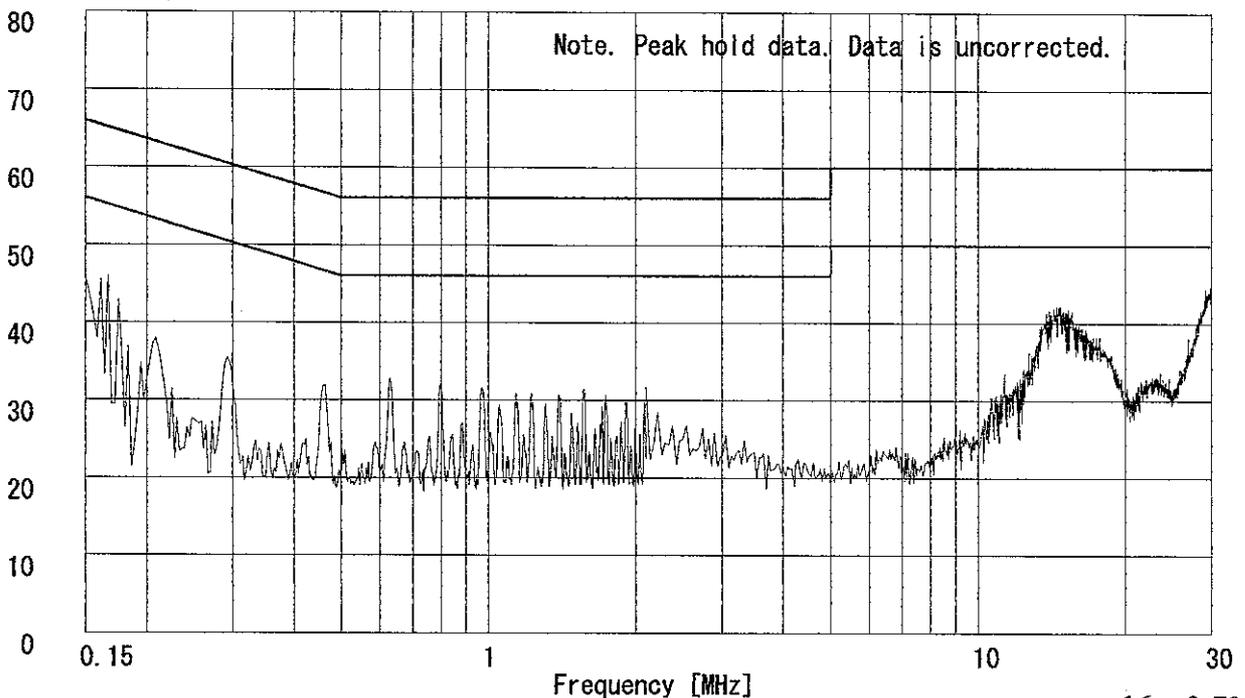
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



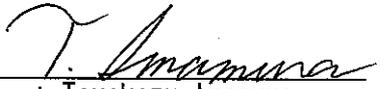
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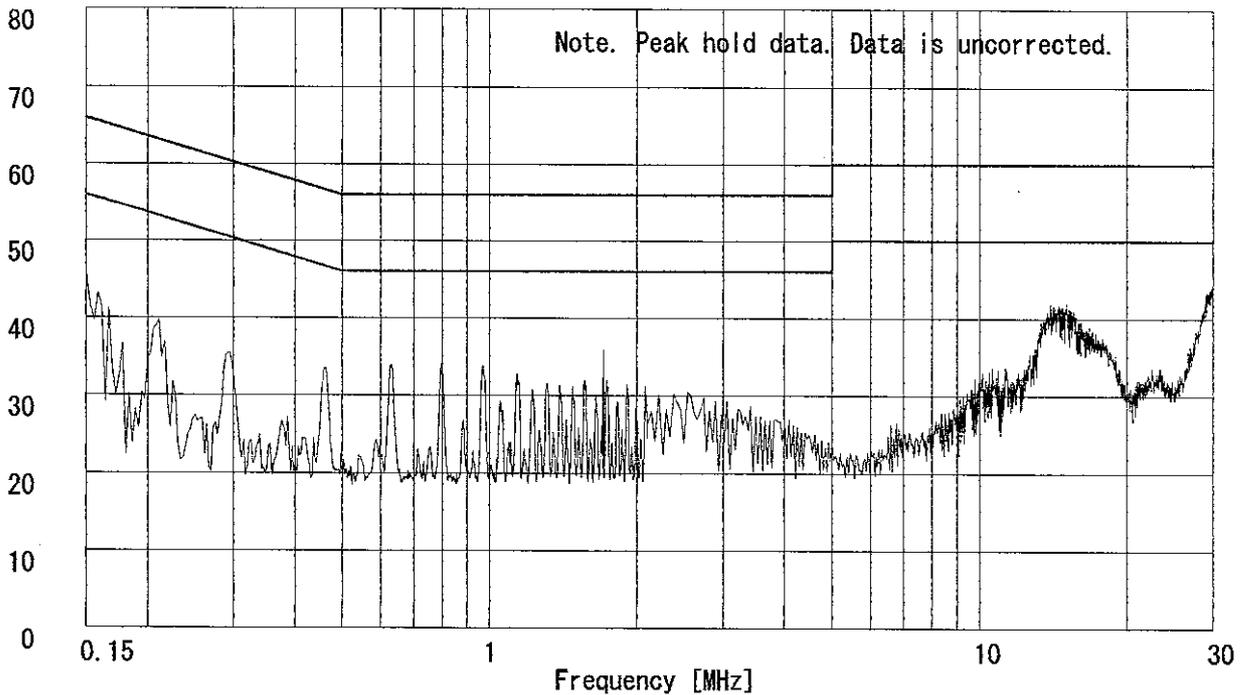
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2470MHz)
Remarks : High Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation 1 : CISPR Pub.22 CLASS B
Regulation 2 : None


Engineer : Toyokazu Imamura

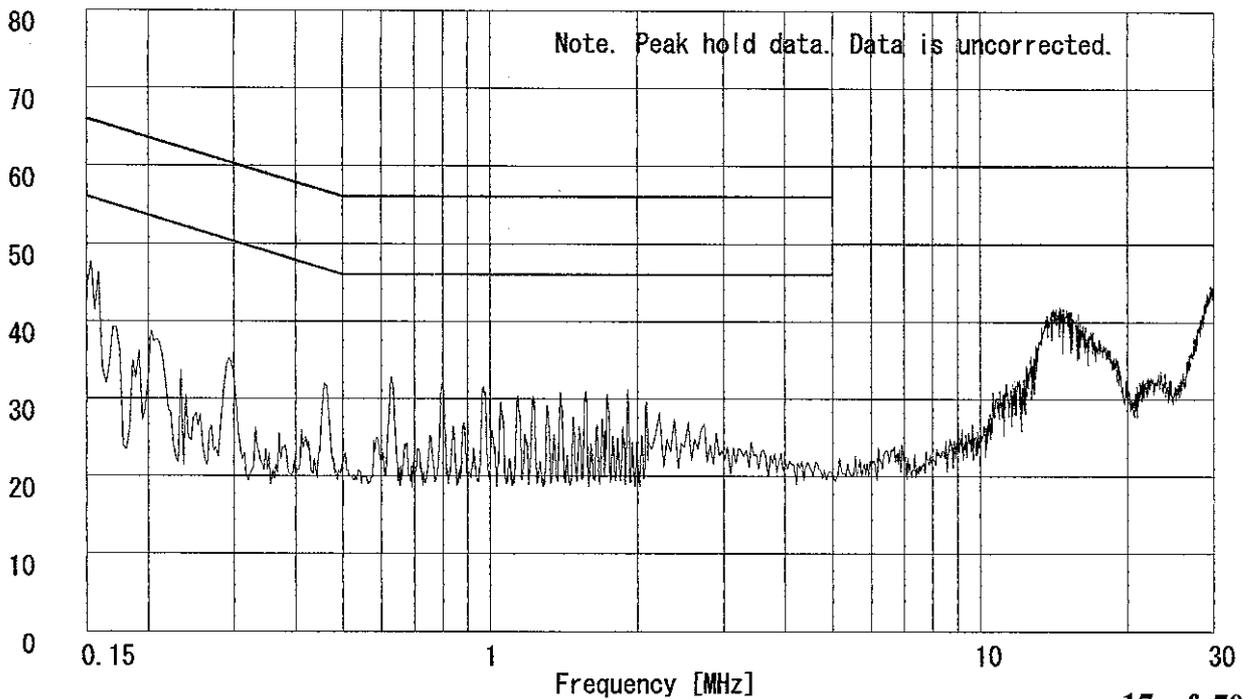
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST

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Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2406MHz)
Remarks : Low Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation : CISPR Pub. 22 CLASS B


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dBuV]	AV	QP [dBuV]	AV				QP [dBuV]	AV	QP [dBuV]	AV	QP [dB]	AV
1.	0.1565	42.8	-	38.4	-	0.0	0.1	0.0	42.9	-	65.6	55.6	22.7	-
2.	0.2145	37.2	-	36.6	-	0.0	0.1	0.0	37.3	-	63.0	53.0	25.7	-
3.	0.3010	32.6	-	31.9	-	0.0	0.1	0.0	32.7	-	60.2	50.2	27.5	-
4.	0.6400	33.1	-	31.0	-	0.0	0.2	0.0	33.3	-	56.0	46.0	22.7	-
5.	0.8116	31.2	-	28.8	-	0.1	0.2	0.0	31.5	-	56.0	46.0	24.5	-
6.	0.9794	33.2	-	30.9	-	0.1	0.2	0.0	33.5	-	56.0	46.0	22.5	-
7.	14.7290	34.1	-	33.2	-	0.7	1.4	0.0	36.2	-	60.0	50.0	23.8	-
8.	29.9999	37.9	32.7	38.4	33.2	1.2	1.9	0.0	41.5	36.3	60.0	50.0	18.5	13.7

CALCULATION: READING[dB μV] + LISN FACTOR[dB] + CABLE LOSS[dB] + ATTEN[dB].

■ LISN : KLS-01 (NSLK8126) ■ COAXIAL CABLE : KCC-14/15/16/18
■ PULSE LIMITTER : KPL-01 (PL01) ■ EMI RECEIVER : KTR-01 (ES140)

DATA OF CONDUCTION TEST CHART

A-PEX INTERNATIONAL CO., LTD.

Yamakita No.1 Shielded Room

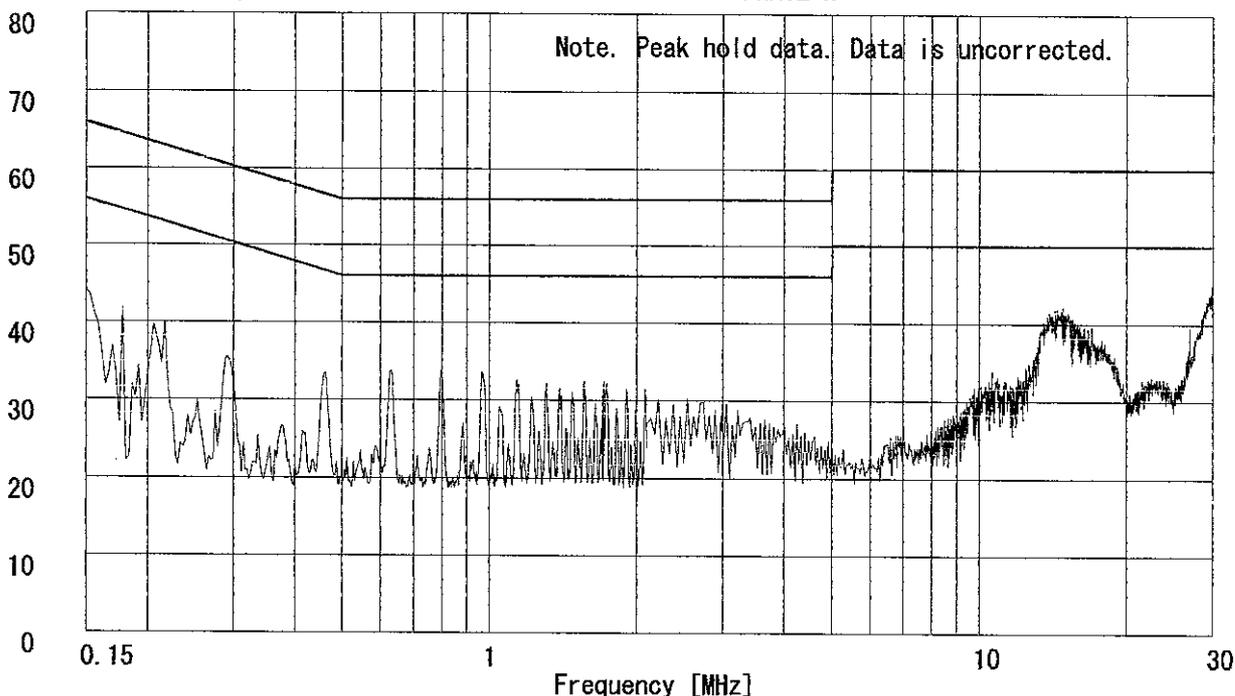
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Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2406MHz)
Remarks : Low Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation 1 : CISPR Pub.22 CLASS B
Regulation 2 : None


Engineer : Toyokazu Imamura

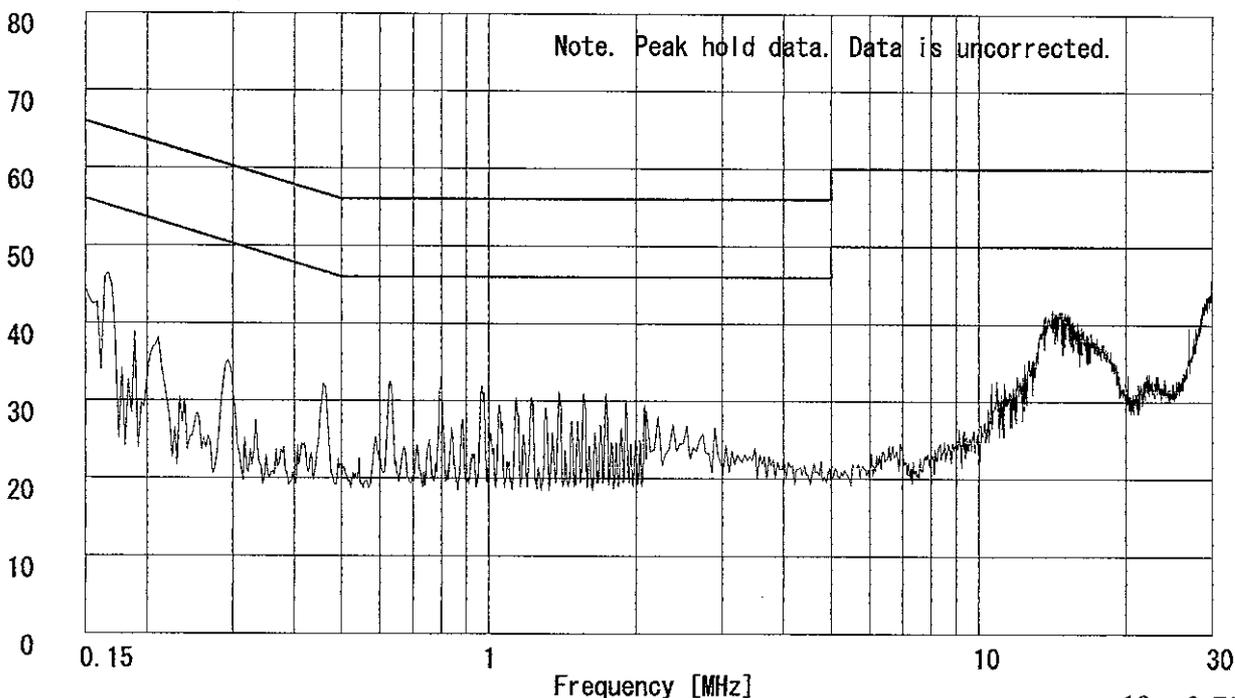
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST CHART

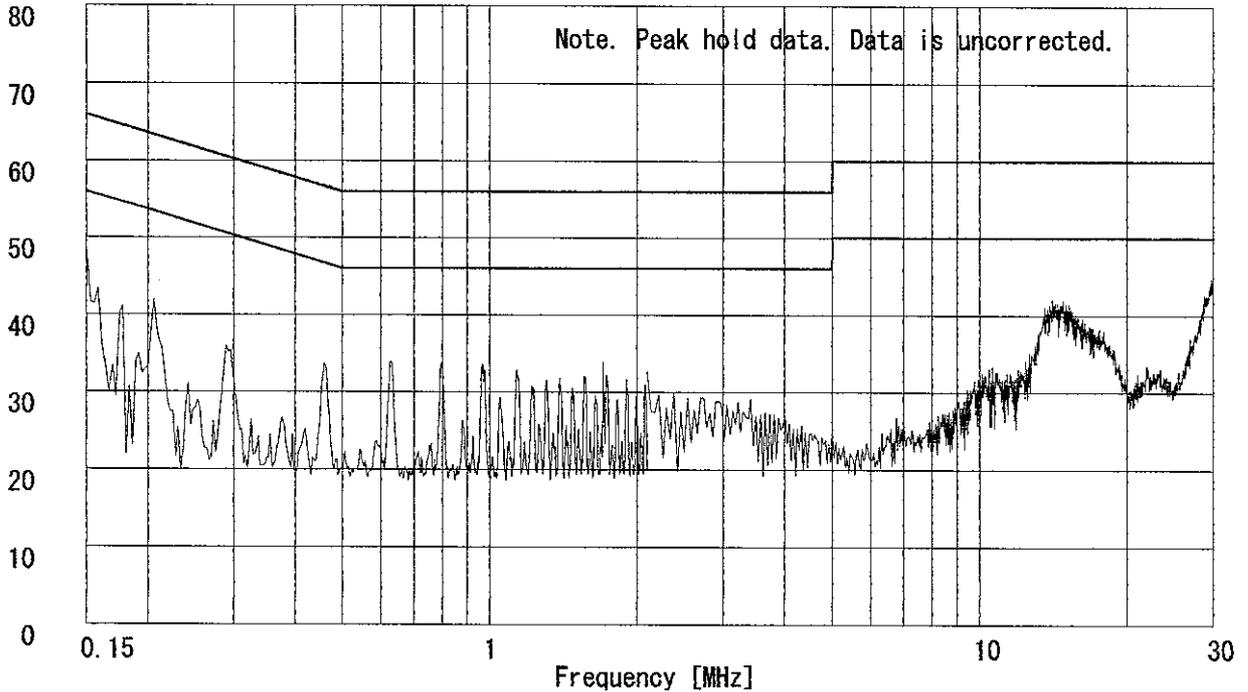
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Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2442MHz)
Remarks : Low Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation 1 : CISPR Pub.22 CLASS B
Regulation 2 : None


Engineer : Toyokazu Imamura

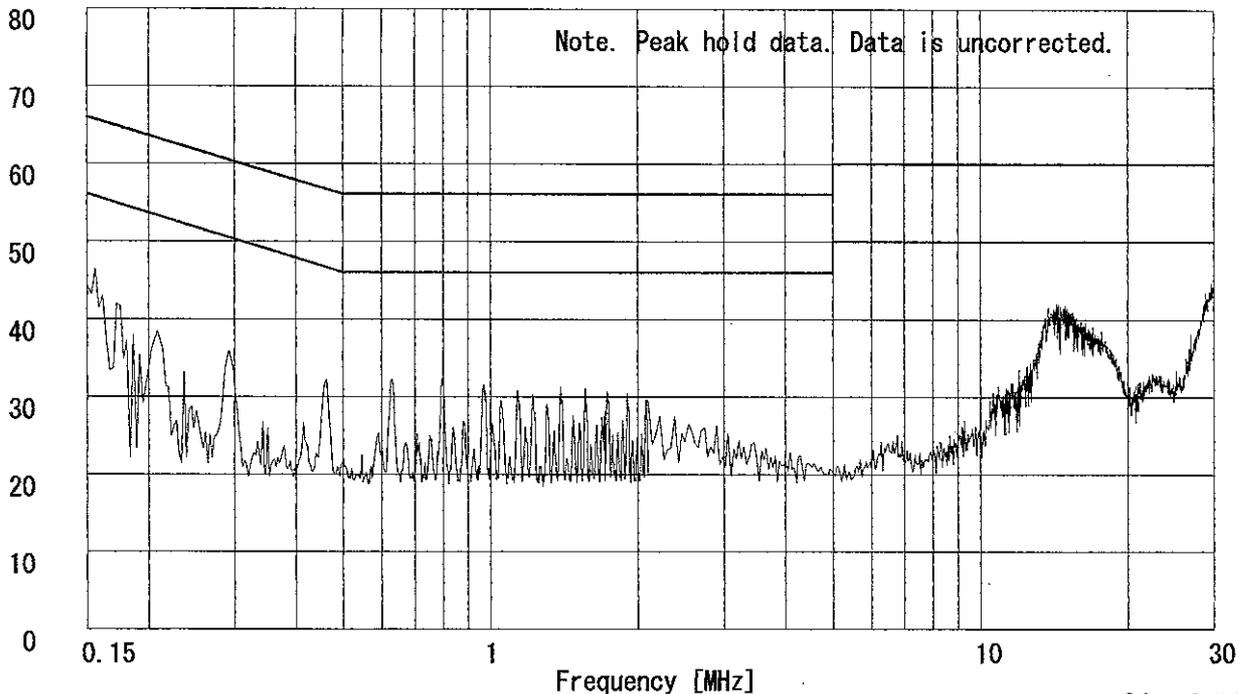
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST CHART

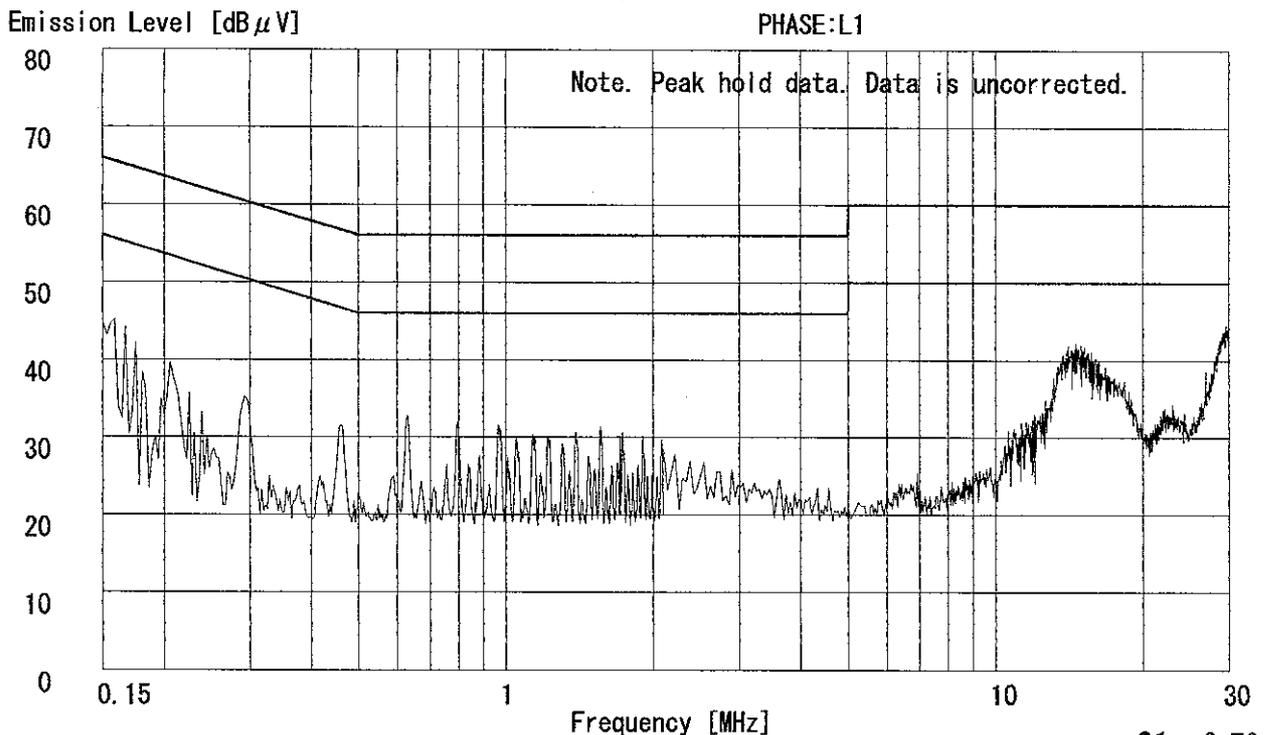
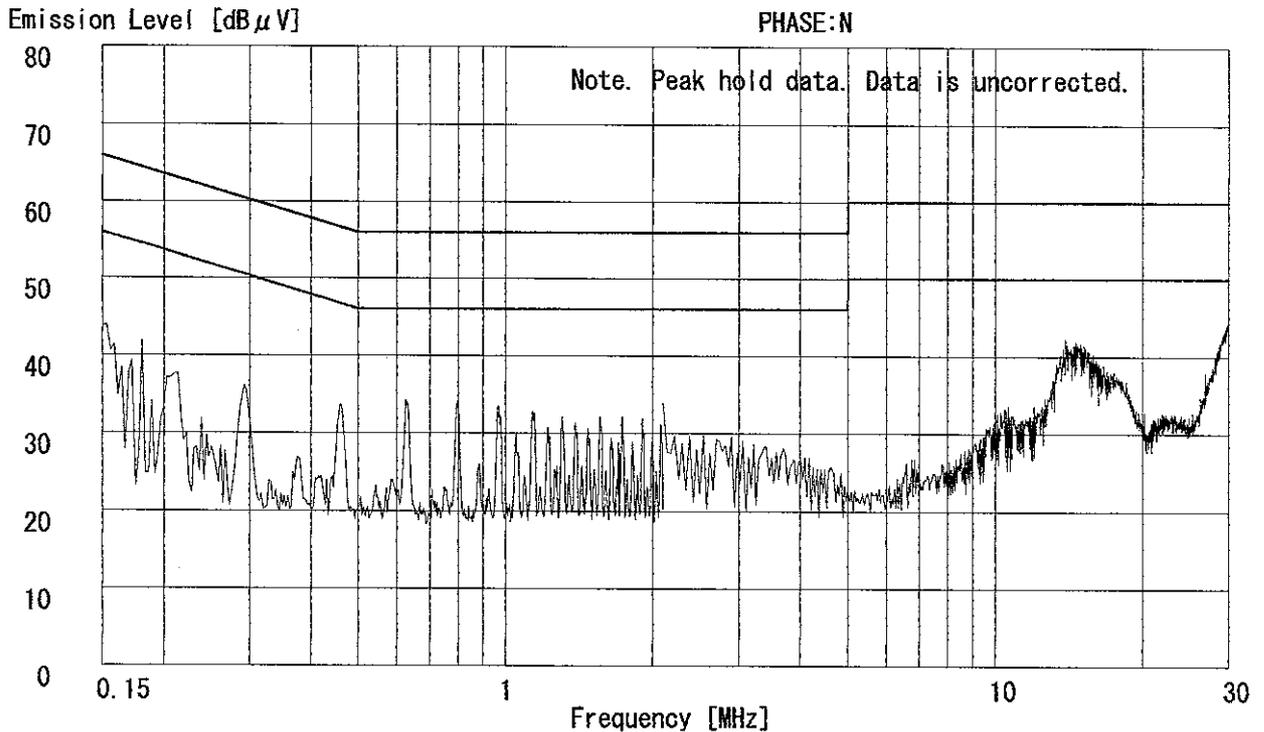
A-PEX INTERNATIONAL CO., LTD.

Yamakita No.1 Shielded Room

Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2470MHz)
Remarks : Low Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation 1 : CISPR Pub.22 CLASS B
Regulation 2 : None


Engineer : Toyokazu Imamura



DATA OF CONDUCTION TEST CHART

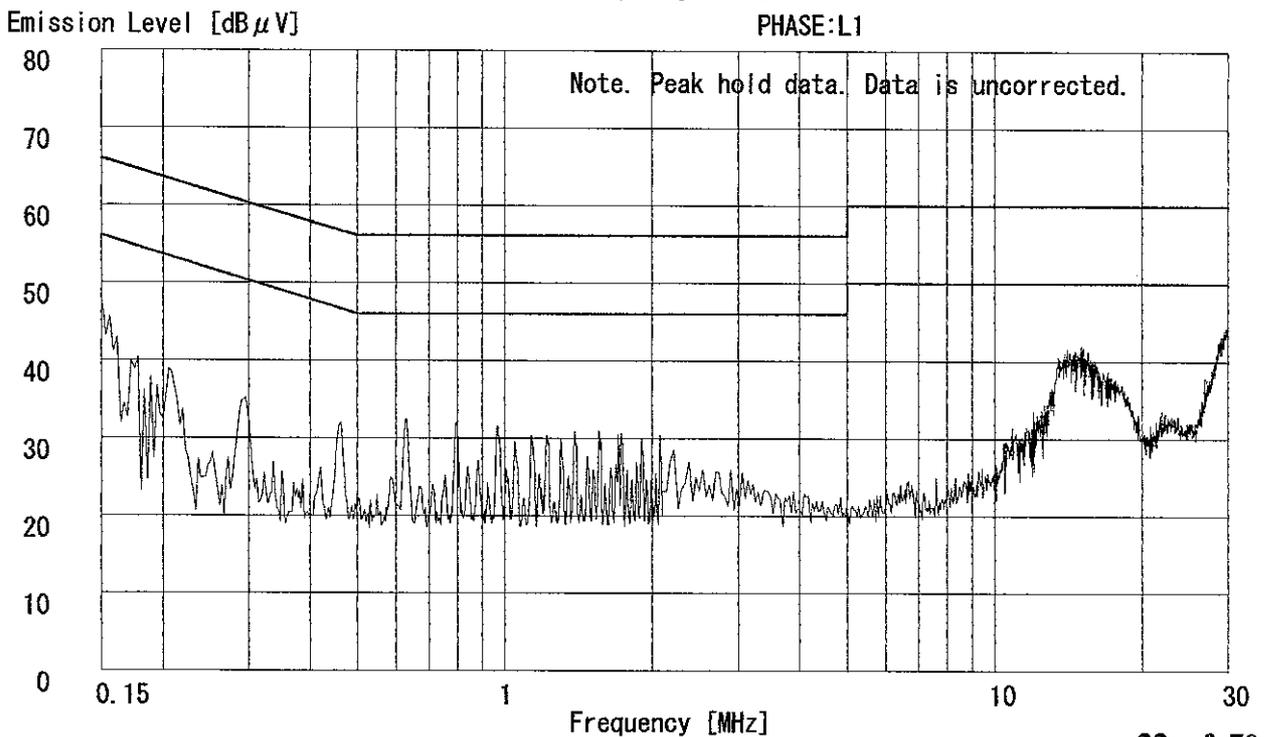
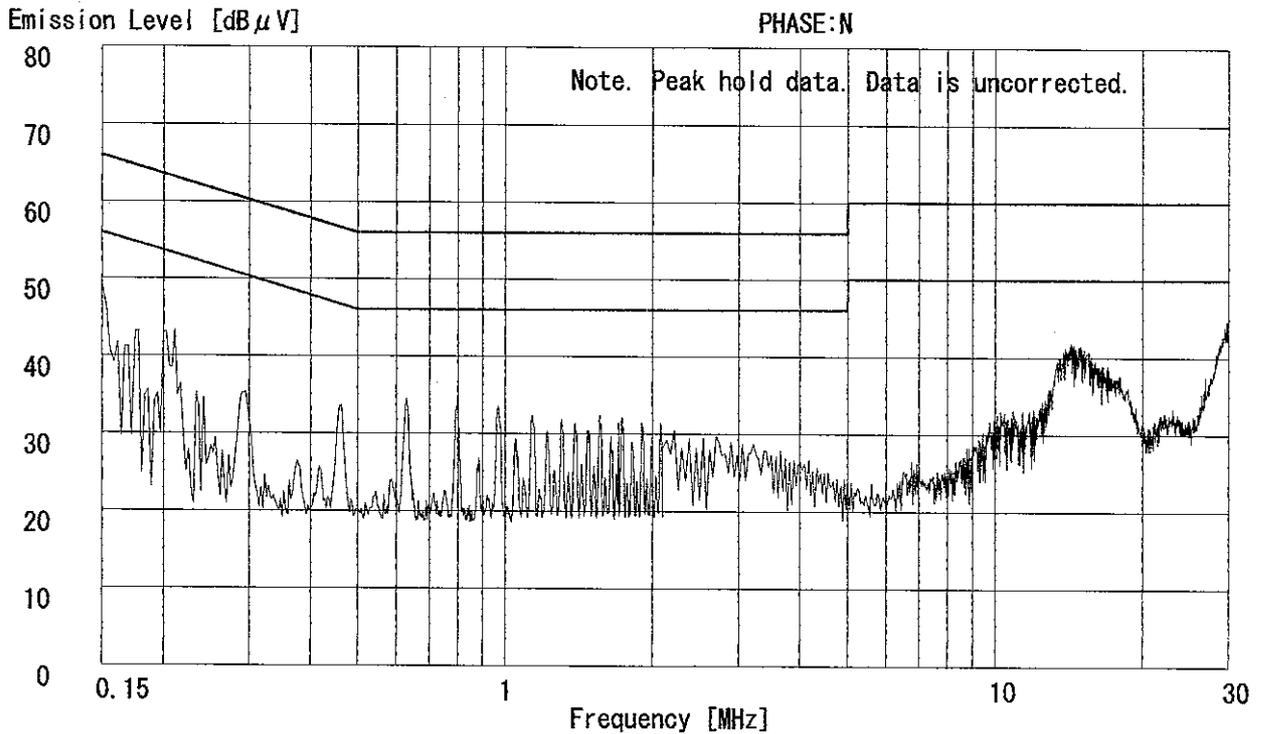
A-PEX INTERNATIONAL CO., LTD.

Yamakita No.1 Shielded Room

Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-GA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Standby
Remarks : Low Power Mode
Date : 11/15/2002
Phase : Single Phase
Temperature : 22 °C
Humidity : 31 %
Regulation 1 : CISPR Pub.22 CLASS B
Regulation 2 : None

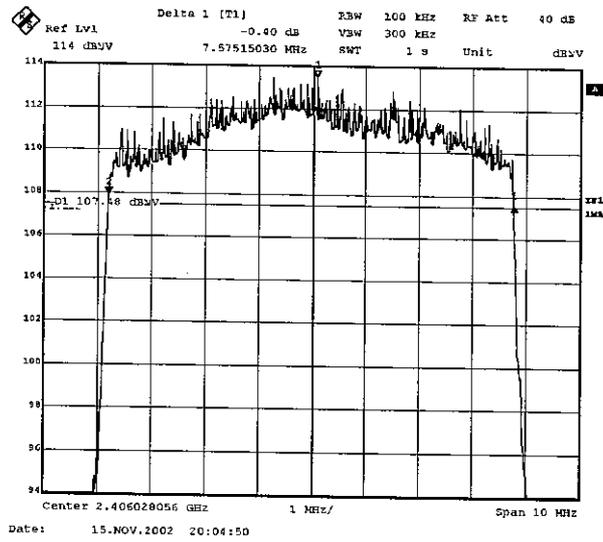
T. Imamura
Engineer : Toyokazu Imamura



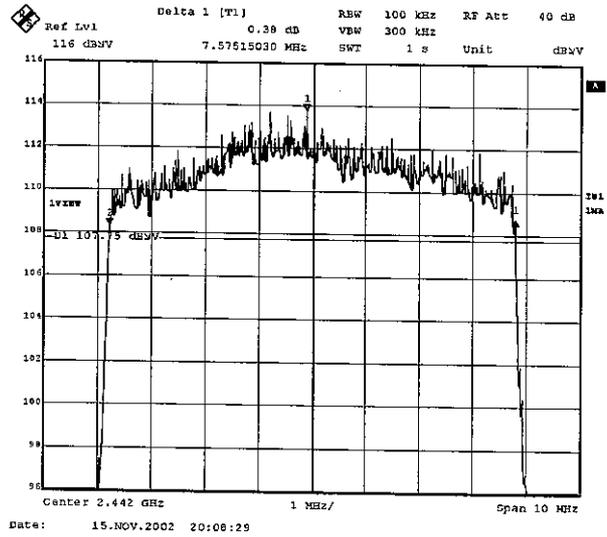
1.High Power Mode

T. Imamura

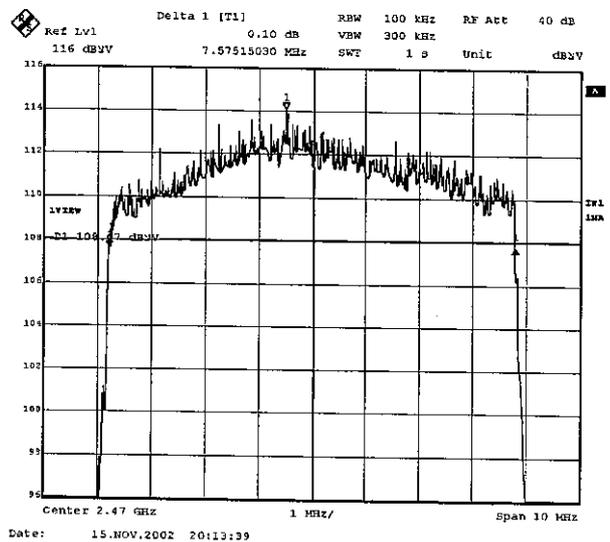
(1) Ch Low:2406MHz



(2) Ch Mid:2442MHz



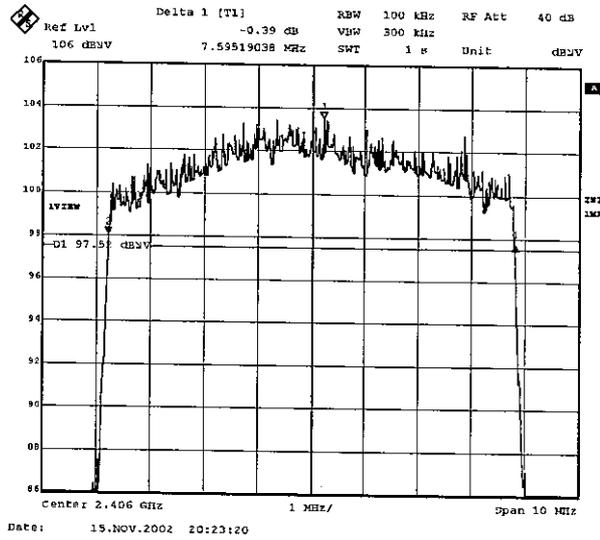
(3) Ch High:2470MHz



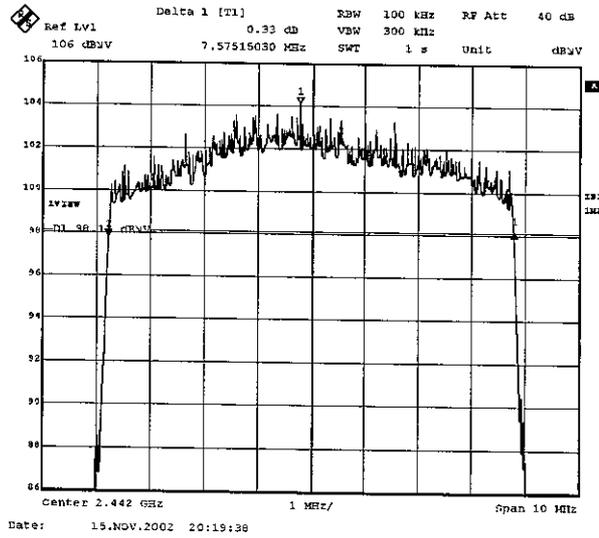
2.LowPower Mode

(1) Ch Low:2406MHz

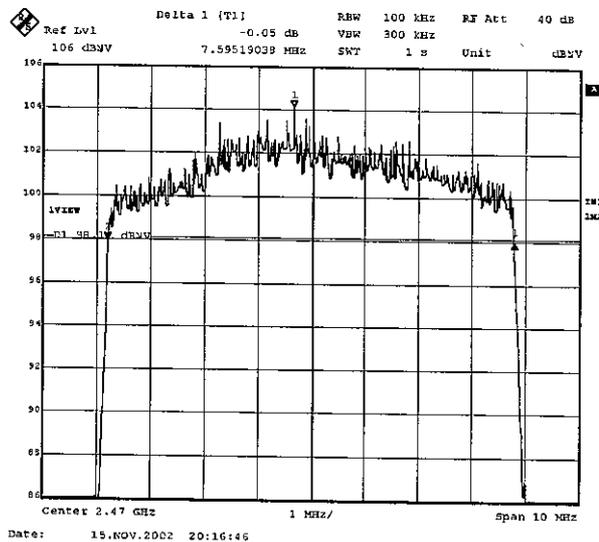
T. Imamura



(2) Ch Mid:2442MHz



(3) Ch High:2470MHz



Peak Out Put Power (Conducted)

A-PEX INTERNATIONAL CO., LTD.
YAMAKITA NO. 1 OPEN SITE

COMPANY : SONY Corp.
EQUIPMENT : Wireless Camera Transmitter
MODEL : WLL-CA50
FCC ID : AK8LLCA50
POWER : AC120V/60Hz
Mode : Transmitting

REPORT NO : 23CE0026-YK-1
REGULATION : Fcc Part15SubpartC 247 (b) (3)
DATE : 2002/ 11/15
Temp./Humi. : 25°C/30%


ENGINEER : Toyokazu Imamura

1.High Power Mode

CH	FREQ [GHz]	PM Reading [dBm]	Limit (1W) [dBm]	MARGIN [dB]
Low	2406.00	23.8	30.0	6.2
Mid	2442.00	23.9	30.0	6.1
High	2470.00	23.9	30.0	6.2

2.Low Power Mode

CH	FREQ [GHz]	PM Reading [dBm]	Limit (1W) [dBm]	MARGIN [dB]
Low	2406.00	14.7	30.0	15.3
Mid	2442.00	15.3	30.0	14.8
High	2470.00	15.3	30.0	14.7

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
 Kind of Equipment : Wireless Camera Transmitter
 Model No. : WLL-CA50
 Serial No. : 10001
 Power : AC120V/60Hz
 Mode : Transmitting (2406MHz)
 Remarks : High Power Mode
 Date : 11/6/2002
 Test Distance : 3 m
 Temperature : 26 °C
 Humidity : 32 %
 Regulation : FCC Part15C §15.209


 Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	30.21	BB	27.2	39.8	17.8	28.3	1.4	6.1	24.2	36.8	40.0	15.8	3.2	
2.	90.00	BB	51.4	46.6	7.8	28.5	2.4	6.1	39.2	34.4	43.5	4.3	9.1	
3.	180.00	BB	37.8	30.9	15.9	28.1	3.5	6.1	35.2	28.3	43.5	8.3	15.2	
4.	252.00	BB	37.4	32.8	16.9	27.8	4.2	6.1	36.8	32.2	46.0	9.2	13.8	
5.	324.00	BB	44.7	40.4	15.6	27.9	4.9	6.1	43.4	39.1	46.0	2.6	6.9	
6.	468.00	BB	34.8	35.6	18.5	29.1	6.0	6.1	36.3	37.1	46.0	9.7	8.9	
7.	558.00	BB	36.6	37.4	19.4	29.2	6.6	6.1	39.5	40.3	46.0	6.5	5.7	

CALCULATION: $READING [dB \mu V] + ANT. FACTOR [dB/m] + CABLE LOSS [dB] - AMP. GAIN [dB] + ATTEN [dB]$.

■ ANTENNA: KBA-01 (BBA9106) 30-299.99MHz/KLA-01 (USLP9143) 300-1000MHz
 ■ CABLE: KCC-10/11/12/13/18 ■ PREAMP: KAF-01 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2442MHz)
Remarks : High Power Mode
Date : 11/6/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 32 %
Regulation : FCC Part15C § 15.209


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB μ V/m]	VER	HOR [dB]	VER
1.	30.21	BB	29.2	38.1	17.8	28.3	1.4	6.1	26.2	35.1	40.0	13.8	4.9	
2.	90.00	BB	51.4	48.1	7.8	28.5	2.4	6.1	39.2	35.9	43.5	4.3	7.6	
3.	180.00	BB	37.5	32.0	15.9	28.1	3.5	6.1	34.9	29.4	43.5	8.6	14.1	
4.	252.00	BB	37.8	32.8	16.9	27.8	4.2	6.1	37.2	32.2	46.0	8.8	13.8	
5.	324.00	BB	44.4	41.6	15.6	27.9	4.9	6.1	43.1	40.3	46.0	2.9	5.7	
6.	468.00	BB	33.5	34.9	18.5	29.1	6.0	6.1	35.0	36.4	46.0	11.0	9.6	
7.	558.00	BB	36.4	37.6	19.4	29.2	6.6	6.1	39.3	40.5	46.0	6.7	5.5	

CALCULATION: $READING [dB \mu V] + ANT. FACTOR [dB/m] + CABLE LOSS [dB] - AMP. GAIN [dB] + ATTEN [dB]$.

■ ANTENNA: KBA-01 (BBA9106) 30-299.99MHz/KLA-01 (USLP9143) 300-1000MHz

■ CABLE: KCC-10/11/12/13/18 ■ PREAMP: KAF-01 (8447D) ■ EMI RECEIVER: KTR-01 (ESI40)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2470MHz)
Remarks : High Power Mode
Date : 11/6/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 32 %
Regulation : FCC Part15C §15.209


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	30.12	BB	29.5	37.6	17.9	28.3	1.4	6.1	26.6	34.7	40.0	13.4	5.3	
2.	90.00	BB	51.4	47.8	7.8	28.5	2.4	6.1	39.2	35.6	43.5	4.3	7.9	
3.	180.00	BB	38.2	32.3	15.9	28.1	3.5	6.1	35.6	29.7	43.5	7.9	13.8	
4.	252.00	BB	36.8	32.7	16.9	27.8	4.2	6.1	36.2	32.1	46.0	9.8	13.9	
5.	324.00	BB	44.1	41.4	15.6	27.9	4.9	6.1	42.8	40.1	46.0	3.2	5.9	
6.	468.00	BB	34.8	36.2	18.5	29.1	6.0	6.1	36.3	37.7	46.0	9.7	8.3	
7.	558.00	BB	36.6	37.6	19.4	29.2	6.6	6.1	39.5	40.5	46.0	6.5	5.5	

CALCULATION: $READING [dB \mu V] + ANT. FACTOR [dB/m] + CABLE LOSS [dB] - AMP. GAIN [dB] + ATTEN [dB]$.

■ ANTENNA: KBA-01 (BBA9106) 30-299.99MHz/KLA-01 (USLP9143) 300-1000MHz

■ CABLE: KCC-10/11/12/13/18 ■ PREAMP: KAF-01 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting(2406MHz)
Remarks : Low Power Mode
Date : 11/7/2002
Test Distance : 3 m
Temperature : 18 °C
Humidity : 32 %
Regulation : FCC Part15C §15.209


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	30.12	BB	31.5	39.5	17.9	28.3	1.4	6.1	28.6	36.6	40.0	11.4	3.4	
2.	90.00	BB	51.2	48.5	7.8	28.5	2.4	6.1	39.0	36.3	43.5	4.5	7.2	
3.	180.00	BB	39.1	33.4	15.9	28.1	3.5	6.1	36.5	30.8	43.5	7.0	12.7	
4.	252.00	BB	36.8	32.9	16.9	27.8	4.2	6.1	36.2	32.3	46.0	9.8	13.7	
5.	324.00	BB	43.6	42.6	15.6	27.9	4.9	6.1	42.3	41.3	46.0	3.7	4.7	
6.	468.00	BB	35.9	37.5	18.5	29.1	6.0	6.1	37.4	39.0	46.0	8.6	7.0	
7.	558.00	BB	36.3	38.5	19.4	29.2	6.6	6.1	39.2	41.4	46.0	6.8	4.6	

CALCULATION: $READING [dB \mu V] + ANT. FACTOR [dB/m] + CABLE LOSS [dB] - AMP. GAIN [dB] + ATTEN [dB]$.

■ ANTENNA: KBA-01 (BBA9106) 30-299.99MHz/KLA-01 (USLP9143) 300-1000MHz
■ CABLE: KCC-10/11/12/13/18 ■ PREAMP: KAF-01 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2442MHz)
Remarks : Low Power Mode
Date : 11/6/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 32 %
Regulation : FCC Part15C § 15.209


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	30.12	BB	29.7	37.8	17.9	28.3	1.4	6.1	26.8	34.9	40.0	13.2	5.1	
2.	90.00	BB	51.5	47.1	7.8	28.5	2.4	6.1	39.3	34.9	43.5	4.2	8.6	
3.	180.00	BB	38.0	32.5	15.9	28.1	3.5	6.1	35.4	29.9	43.5	8.1	13.6	
4.	252.00	BB	36.7	32.6	16.9	27.8	4.2	6.1	36.1	32.0	46.0	9.9	14.0	
5.	324.00	BB	44.3	42.8	15.6	27.9	4.9	6.1	43.0	41.5	46.0	3.0	4.5	
6.	468.00	BB	36.4	37.9	18.5	29.1	6.0	6.1	37.9	39.4	46.0	8.1	6.6	
7.	558.00	BB	36.2	37.2	19.4	29.2	6.6	6.1	39.1	40.1	46.0	6.9	5.9	

CALCULATION: $READING [dB \mu V] + ANT. FACTOR [dB/m] + CABLE LOSS [dB] - AMP. GAIN [dB] + ATTEN [dB]$.

■ ANTENNA: KBA-01 (BBA9106) 30-299.99MHz/KLA-01 (USLP9143) 300-1000MHz
■ CABLE: KCC-10/11/12/13/18 ■ PREAMP: KAF-01 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23GE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2470MHz)
Remarks : Low Power Mode
Date : 11/6/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 32 %
Regulation : FCC Part15C § 15. 209


Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	30.12	BB	29.5	37.8	17.9	28.3	1.4	6.1	26.6	34.9	40.0	13.4	5.1
2.	90.00	BB	51.3	47.4	7.8	28.5	2.4	6.1	39.1	35.2	43.5	4.4	8.3
3.	180.00	BB	37.5	32.4	15.9	28.1	3.5	6.1	34.9	29.8	43.5	8.6	13.7
4.	252.00	BB	37.0	32.0	16.9	27.8	4.2	6.1	36.4	31.4	46.0	9.6	14.6
5.	324.00	BB	44.4	41.4	15.6	27.9	4.9	6.1	43.1	40.1	46.0	2.9	5.9
6.	468.00	BB	35.7	38.4	18.5	29.1	6.0	6.1	37.2	39.9	46.0	8.8	6.1
7.	558.00	BB	36.5	37.1	19.4	29.2	6.6	6.1	39.4	40.0	46.0	6.6	6.0

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ ANTENNA: KBA-01 (BBA9106) 30-299.99MHz/KLA-01 (USLP9143) 300-1000MHz

■ CABLE: KCC-10/11/12/13/18 ■ PREAMP: KAF-01 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Standby
Remarks : Low Power Mode
Date : 11/6/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 32 %
Regulation : FCC Part15C §15.209


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	30.12	BB	28.9	37.5	17.9	28.3	1.4	6.1	26.0	34.6	40.0	14.0	5.4	
2.	90.00	BB	51.4	47.8	7.8	28.5	2.4	6.1	39.2	35.6	43.5	4.3	7.9	
3.	180.00	BB	38.0	32.3	15.9	28.1	3.5	6.1	35.4	29.7	43.5	8.1	13.8	
4.	252.00	BB	35.4	31.9	16.9	27.8	4.2	6.1	34.8	31.3	46.0	11.2	14.7	
5.	324.00	BB	44.2	41.7	15.6	27.9	4.9	6.1	42.9	40.4	46.0	3.1	5.6	
6.	468.00	BB	35.9	38.2	18.5	29.1	6.0	6.1	37.4	39.7	46.0	8.6	6.3	
7.	558.00	BB	36.7	36.8	19.4	29.2	6.6	6.1	39.6	39.7	46.0	6.4	6.3	

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ ANTENNA: KBA-01 (BBA9106) 30-299.99MHz/KLA-01 (USLP9143) 300-1000MHz

■ CABLE: KCC-10/11/12/13/18 ■ PREAMP: KAF-01 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
 Kind of Equipment : Wireless Camera Transmitter
 Model No. : WLL-CA50
 Serial No. : 10001
 Power : AC120V/60Hz
 Mode : Transmitting(2406MHz)
 Remarks : High Power Mode
 Date : 11/7/2002
 Test Distance : 3 m
 Temperature : 26 °C
 Humidity : 32 %
 Regulation : FCC Part15C §15.209(AV Detection)


 Engineer : Toyokazu Imamura

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.	2390.00	BB	35.0	34.3	30.6	36.7	2.4	10.0	41.3	40.6	54.0	12.7	13.4
2.	4024.04	BB	49.9	46.5	33.0	37.9	3.2	0.6	48.8	45.4	54.0	5.2	8.6
3.	4812.00	BB	28.4	28.0	34.7	37.1	3.5	0.9	30.4	30.0	54.0	23.6	24.0
4.	7218.00	BB	32.2	32.2	37.6	37.0	4.2	0.6	37.6	37.6	54.0	16.4	16.4
5.	9624.00	BB	32.3	32.2	39.0	37.0	5.2	1.0	40.5	40.4	54.0	13.5	13.6
6.	12030.00	BB	32.3	32.3	42.0	36.1	5.6	0.5	44.3	44.3	54.0	9.7	9.7
7.	14436.00	BB	31.5	31.4	41.1	35.1	6.4	0.9	44.8	44.7	54.0	9.2	9.3
8.	16842.00	BB	31.9	31.9	41.6	34.9	6.5	1.2	46.3	46.3	54.0	7.7	7.7
9.	19248.00	BB	31.9	32.1	41.3	34.9	7.2	0.0	45.5	45.7	54.0	8.5	8.3
10.	21654.00	BB	32.4	32.6	41.3	34.9	7.5	0.0	46.3	46.5	54.0	7.7	7.5
11.	24060.00	BB	32.9	33.0	40.5	34.6	8.1	0.0	46.9	47.0	54.0	7.1	7.0

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■CABLE: KCC-D3 ■PREAMP: KAF-02 (8449B) ■EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23GE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting(2442MHz)
Remarks : High Power Mode
Date : 11/7/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 32 %
Regulation : FCC Part15C § 15.209(AV Detection)



Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	4096.00	BB	44.8	42.1	33.0	37.9	3.3	0.6	43.8	41.1	54.0	10.2	12.9
2.	4884.00	BB	31.4	31.4	35.1	36.9	3.5	1.0	34.1	34.1	54.0	19.9	19.9
3.	7326.00	BB	31.5	31.5	37.8	36.9	4.2	0.5	37.1	37.1	54.0	16.9	16.9
4.	9768.00	BB	32.9	32.9	39.0	36.9	5.3	1.0	41.3	41.3	54.0	12.7	12.7
5.	12210.00	BB	32.6	32.5	42.3	35.9	5.7	0.5	45.2	45.1	54.0	8.8	8.9
6.	14652.00	BB	32.2	32.0	41.8	35.3	6.5	0.9	46.1	45.9	54.0	7.9	8.1
7.	17094.00	BB	32.3	32.4	41.8	34.8	6.5	1.3	47.1	47.2	54.0	6.9	6.8
8.	19536.00	BB	31.9	32.0	41.2	35.0	7.2	0.0	45.3	45.4	54.0	8.7	8.6
9.	21978.00	BB	33.4	33.3	41.3	35.2	7.1	0.0	46.6	46.5	54.0	7.4	7.5
10.	24420.00	BB	32.5	32.5	40.8	34.7	8.1	0.0	46.7	46.7	54.0	7.3	7.3

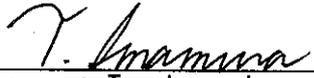
CALCULATION: $READING [dB \mu V] + ANT. FACTOR [dB/m] + CABLE LOSS [dB] - AMP. GAIN [dB] + ATTEN [dB]$.

■ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
■CABLE:KCC-D3 ■PREAMP:KAF-02 (8449B) ■EMI RECEIVER:KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23GE0026-YK-1

Applicant : Sony Corporation
 Kind of Equipment : Wireless Camera Transmitter
 Model No. : WLL-CA50
 Serial No. : 10001
 Power : AC120V/60Hz
 Mode : Transmitting (2470MHz)
 Remarks : High Power Mode
 Date : 11/7/2002
 Test Distance : 3 m
 Temperature : 26 °C
 Humidity : 32 %
 Regulation : FCC Part15C §15.209(AV Detection)


 Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	2483.50	BB	33.8	34.0	30.6	36.7	2.4	10.0	40.1	40.3	54.0	13.9	13.7
2.	4151.90	BB	46.1	41.6	32.9	37.8	3.3	0.7	45.2	40.7	54.0	8.8	13.3
3.	4940.00	BB	31.5	31.4	35.4	36.8	3.5	1.0	34.6	34.5	54.0	19.4	19.5
4.	7410.00	BB	31.6	31.5	38.0	36.9	4.3	0.5	37.5	37.4	54.0	16.5	16.6
5.	9880.00	BB	32.9	32.8	39.0	36.9	5.3	1.0	41.3	41.2	54.0	12.7	12.8
6.	12350.00	BB	31.5	31.8	42.6	35.7	5.7	0.6	44.7	45.0	54.0	9.3	9.0
7.	14820.00	BB	32.3	32.4	42.4	35.4	6.5	0.9	46.7	46.8	54.0	7.3	7.2
8.	17290.00	BB	32.3	32.2	42.5	34.9	6.6	1.0	47.5	47.4	54.0	6.5	6.6
9.	19760.00	BB	31.8	31.8	41.0	35.2	7.5	0.0	45.1	45.1	54.0	8.9	8.9
10.	22230.00	BB	33.4	33.4	41.5	35.3	7.2	0.0	46.8	46.8	54.0	7.2	7.2
11.	24700.00	BB	33.3	33.3	40.8	34.3	8.3	0.0	48.1	48.1	54.0	5.9	5.9

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23GE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2406MHz)
Remarks : High Power Mode
Date : 11/7/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 32 %
Regulation : FCC Part15C § 15. 209 (PK Detection)



Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	2390.00	BB	63.7	60.9	30.6	36.7	2.4	10.0	70.0	67.2	74.0	4.0	6.8
2.	4024.04	BB	52.7	51.2	33.0	37.9	3.2	0.6	51.6	50.1	74.0	22.4	23.9
3.	4812.00	BB	41.6	40.5	34.7	37.1	3.5	0.9	43.6	42.5	74.0	30.4	31.5
4.	7218.00	BB	45.2	44.7	37.6	37.0	4.2	0.6	50.6	50.1	74.0	23.4	23.9
5.	9624.00	BB	45.4	44.8	39.0	37.0	5.2	1.0	53.6	53.0	74.0	20.4	21.0
6.	12030.00	BB	44.7	45.2	42.0	36.1	5.6	0.5	56.7	57.2	74.0	17.3	16.8
7.	14436.00	BB	44.6	44.0	41.1	35.1	6.4	0.9	57.9	57.3	74.0	16.1	16.7
8.	16842.00	BB	45.0	44.8	41.6	34.9	6.5	1.2	59.4	59.2	74.0	14.6	14.8
9.	19248.00	BB	44.8	44.7	41.3	34.9	7.2	0.0	58.4	58.3	74.0	15.6	15.7
10.	21654.00	BB	45.2	45.2	41.3	34.9	7.5	0.0	59.1	59.1	74.0	14.9	14.9
11.	24060.00	BB	45.5	45.5	40.5	34.6	8.1	0.0	59.5	59.5	74.0	14.5	14.5

CALCULATION: $READING [dB \mu V] + ANT. FACTOR [dB/m] + CABLE LOSS [dB] - AMP. GAIN [dB] + ATTEN [dB]$.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
■ CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
 Kind of Equipment : Wireless Camera Transmitter
 Model No. : WLL-CA50
 Serial No. : 10001
 Power : AC120V/60Hz
 Mode : Transmitting(2442MHz)
 Remarks : High Power Mode
 Date : 11/7/2002
 Test Distance : 3 m
 Temperature : 26 °C
 Humidity : 32 %
 Regulation : FCC Part15C § 15. 209(PK Detection)


 Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	4096.00	BB	50.2	49.0	33.0	37.9	3.3	0.6	49.2	48.0	74.0	24.8	26.0
2.	4884.00	BB	44.2	44.0	35.1	36.9	3.5	1.0	46.9	46.7	74.0	27.1	27.3
3.	7326.00	BB	44.0	44.4	37.8	36.9	4.2	0.5	49.6	50.0	74.0	24.4	24.0
4.	9768.00	BB	45.4	45.4	39.0	36.9	5.3	1.0	53.8	53.8	74.0	20.2	20.2
5.	12210.00	BB	45.2	45.1	42.3	35.9	5.7	0.5	57.8	57.7	74.0	16.2	16.3
6.	14652.00	BB	45.1	45.0	41.8	35.3	6.5	0.9	59.0	58.9	74.0	15.0	15.1
7.	17094.00	BB	45.0	45.1	41.8	34.8	6.5	1.3	59.8	59.9	74.0	14.2	14.1
8.	19536.00	BB	44.6	44.7	41.2	35.0	7.2	0.0	58.0	58.1	74.0	16.0	15.9
9.	21978.00	BB	46.1	46.3	41.3	35.2	7.1	0.0	59.3	59.5	74.0	14.7	14.5
10.	24420.00	BB	45.2	45.2	40.8	34.7	8.1	0.0	59.4	59.4	74.0	14.6	14.6

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

- ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
- CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23GE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting (2470MHz)
Remarks : High Power Mode
Date : 11/7/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 32 %
Regulation : FCC Part15C § 15.209(PK Detection)


Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	2483.50	BB	62.1	64.8	30.6	36.7	2.4	10.0	68.4	71.1	74.0	5.6	2.9
2.	4151.90	BB	50.7	48.7	32.9	37.8	3.3	0.7	49.8	47.8	74.0	24.2	26.2
3.	4940.00	BB	44.0	44.3	35.4	36.8	3.5	1.0	47.1	47.4	74.0	26.9	26.6
4.	7410.00	BB	44.6	44.0	38.0	36.9	4.3	0.5	50.5	49.9	74.0	23.5	24.1
5.	9880.00	BB	45.7	45.8	39.0	36.9	5.3	1.0	54.1	54.2	74.0	19.9	19.8
6.	12350.00	BB	44.3	44.7	42.6	35.7	5.7	0.6	57.5	57.9	74.0	16.5	16.1
7.	14820.00	BB	44.8	44.7	42.4	35.4	6.5	0.9	59.2	59.1	74.0	14.8	14.9
8.	17290.00	BB	45.0	45.1	42.5	34.9	6.6	1.0	60.2	60.3	74.0	13.8	13.7
9.	19760.00	BB	44.7	44.4	41.0	35.2	7.5	0.0	58.0	57.7	74.0	16.0	16.3
10.	22230.00	BB	45.9	46.3	41.5	35.3	7.2	0.0	59.3	59.7	74.0	14.7	14.3
11.	24700.00	BB	46.5	45.7	40.8	34.3	8.3	0.0	61.3	60.5	74.0	12.7	13.5

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
■ CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
 Kind of Equipment : Wireless Camera Transmitter
 Model No. : WLL-CA50
 Serial No. : 10001
 Power : AC120V/60Hz
 Mode : Transmitting(2406MHz)
 Remarks : Low Power Mode
 Date : 11/13/2002
 Test Distance : 3 m
 Temperature : 26 °C
 Humidity : 48 %
 Regulation : FCC Part15C § 15.209 (AV Detection)


 Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	2390.00	BB	30.6	31.0	30.6	36.7	2.4	10.0	36.9	37.3	54.0	17.1	16.7
2.	4024.04	BB	51.1	44.8	33.0	37.9	3.2	0.6	50.0	43.7	54.0	4.0	10.3
3.	4812.00	BB	27.9	27.9	34.7	37.1	3.5	0.9	29.9	29.9	54.0	24.1	24.1
4.	7218.00	BB	32.2	32.1	37.6	37.0	4.2	0.6	37.6	37.5	54.0	16.4	16.5
5.	9624.00	BB	32.2	32.2	39.0	37.0	5.2	1.0	40.4	40.4	54.0	13.6	13.6
6.	12030.00	BB	31.5	32.3	42.0	36.1	5.6	0.5	43.5	44.3	54.0	10.5	9.7
7.	14436.00	BB	31.4	31.4	41.1	35.1	6.4	0.9	44.7	44.7	54.0	9.3	9.3
8.	16842.00	BB	31.9	31.9	41.6	34.9	6.5	1.2	46.3	46.3	54.0	7.7	7.7
9.	19248.00	BB	32.2	32.2	41.3	34.9	7.2	0.0	45.8	45.8	54.0	8.2	8.2
10.	21654.00	BB	32.6	32.6	41.3	34.9	7.5	0.0	46.5	46.5	54.0	7.5	7.5
11.	24060.00	BB	33.0	33.1	40.5	34.6	8.1	0.0	47.0	47.1	54.0	7.0	6.9

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting(2442MHz)
Remarks : Low Power Mode
Date : 11/13/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 48 %
Regulation : FCC Part15C § 15.209(AV Detection)


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]	HOR [dB]	VER [dB]		
1.	4096.02	BB	48.2	45.1	33.0	37.9	3.3	0.6	47.2	44.1	54.0	6.8	9.9	
2.	4884.00	BB	28.1	27.8	35.1	36.9	3.5	1.0	30.8	30.5	54.0	23.2	23.5	
3.	7326.00	BB	32.0	31.8	37.8	36.9	4.2	0.5	37.6	37.4	54.0	16.4	16.6	
4.	9768.00	BB	32.7	32.5	39.0	36.9	5.3	1.0	41.1	40.9	54.0	12.9	13.1	
5.	12210.00	BB	32.0	31.8	42.3	35.9	5.7	0.5	44.6	44.4	54.0	9.4	9.6	
6.	14652.00	BB	31.7	31.4	41.8	35.3	6.5	0.9	45.6	45.3	54.0	8.4	8.7	
7.	17094.00	BB	32.5	32.4	41.8	34.8	6.5	1.3	47.3	47.2	54.0	6.7	6.8	
8.	19536.00	BB	32.0	32.1	41.2	35.0	7.2	0.0	45.4	45.5	54.0	8.6	8.5	
9.	21978.00	BB	33.4	33.4	41.3	35.2	7.1	0.0	46.6	46.6	54.0	7.4	7.4	
10.	24420.00	BB	32.5	32.6	40.8	34.7	8.1	0.0	46.7	46.8	54.0	7.3	7.2	

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ANTENNA:KHA-01(SAS-200 571)1-18GHz/KHA-03(3160-09)18-26GHz
■CABLE:KCC-D3■PREAMP:KAF-02(8449B)■EMI RECEIVER:KTR-01(ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting(2470MHz)
Remarks : Low Power Mode
Date : 11/13/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 48 %
Regulation : FCC Part15C § 15.209(AV Detection)


Engineer : Toyokazu Imamura

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.	2483.50	BB	32.6	32.5	30.6	36.7	2.4	10.0	38.9	38.8	54.0	15.1	15.2
2.	4151.96	BB	47.4	45.0	32.9	37.8	3.3	0.7	46.5	44.1	54.0	7.5	9.9
3.	4940.00	BB	30.1	29.0	35.4	36.8	3.5	1.0	33.2	32.1	54.0	20.8	21.9
4.	7410.00	BB	32.0	31.8	38.0	36.9	4.3	0.5	37.9	37.7	54.0	16.1	16.3
5.	9880.00	BB	32.6	32.3	39.0	36.9	5.3	1.0	41.0	40.7	54.0	13.0	13.3
6.	12350.00	BB	31.3	31.1	42.6	35.7	5.7	0.6	44.5	44.3	54.0	9.5	9.7
7.	14820.00	BB	32.4	32.2	42.4	35.4	6.5	0.9	46.8	46.6	54.0	7.2	7.4
8.	17290.00	BB	32.6	32.4	42.5	34.9	6.6	1.0	47.8	47.6	54.0	6.2	6.4
9.	19760.00	BB	31.9	31.8	41.0	35.2	7.5	0.0	45.2	45.1	54.0	8.8	8.9
10.	22230.00	BB	33.6	33.6	41.5	35.3	7.2	0.0	47.0	47.0	54.0	7.0	7.0
11.	24700.00	BB	33.4	32.4	40.8	34.3	8.3	0.0	48.2	47.2	54.0	5.8	6.8

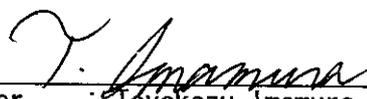
CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
■ CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Transmitting(2406MHz)
Remarks : Low Power Mode
Date : 11/13/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 48 %
Regulation : FCC Part15C § 15.209 (PK Detection)


Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	2390.00	BB	41.8	42.2	30.6	36.7	2.4	10.0	48.1	48.5	74.0	25.9	25.5
2.	4024.04	BB	54.1	46.8	33.0	37.9	3.2	0.6	53.0	45.7	74.0	21.0	28.3
3.	4812.00	BB	40.7	40.6	34.7	37.1	3.5	0.9	42.7	42.6	74.0	31.3	31.4
4.	7218.00	BB	45.1	44.8	37.6	37.0	4.2	0.6	50.5	50.2	74.0	23.5	23.8
5.	9624.00	BB	45.4	44.8	39.0	37.0	5.2	1.0	53.6	53.0	74.0	20.4	21.0
6.	12030.00	BB	45.5	44.7	42.0	36.1	5.6	0.5	57.5	56.7	74.0	16.5	17.3
7.	14436.00	BB	44.4	43.7	41.1	35.1	6.4	0.9	57.7	57.0	74.0	16.3	17.0
8.	16842.00	BB	44.7	44.4	41.6	34.9	6.5	1.2	59.1	58.8	74.0	14.9	15.2
9.	19248.00	BB	44.8	44.7	41.3	34.9	7.2	0.0	58.4	58.3	74.0	15.6	15.7
10.	21654.00	BB	45.1	45.4	41.3	34.9	7.5	0.0	59.0	59.3	74.0	15.0	14.7
11.	24060.00	BB	45.7	45.2	40.5	34.6	8.1	0.0	59.7	59.2	74.0	14.3	14.8

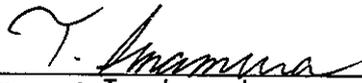
CALCULATION: READING[dB μ V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
■ CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMF RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
 Kind of Equipment : Wireless Camera Transmitter
 Model No. : WLL-CA50
 Serial No. : 10001
 Power : AC120V/60Hz
 Mode : Transmitting(2442MHz)
 Remarks : Low Power Mode
 Date : 11/13/2002
 Test Distance : 3 m
 Temperature : 26 °C
 Humidity : 48 %
 Regulation : FCC Part15C §15.209(PK Detection)


 Engineer : Toyokazu Imamura

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					HOR [dB μV/m]	VER		HOR [dB]	VER
1.	4096.02	BB	51.9	50.1	33.0	37.9	3.3	0.6	50.9	49.1	74.0	23.1	24.9
2.	4884.00	BB	41.4	40.6	35.1	36.9	3.5	1.0	44.1	43.3	74.0	29.9	30.7
3.	7326.00	BB	45.5	44.6	37.8	36.9	4.2	0.5	51.1	50.2	74.0	22.9	23.8
4.	9768.00	BB	45.5	45.4	39.0	36.9	5.3	1.0	53.9	53.8	74.0	20.1	20.2
5.	12210.00	BB	44.7	43.9	42.3	35.9	5.7	0.5	57.3	56.5	74.0	16.7	17.5
6.	14652.00	BB	44.7	44.4	41.8	35.3	6.5	0.9	58.6	58.3	74.0	15.4	15.7
7.	17094.00	BB	45.5	45.4	41.8	34.8	6.5	1.3	60.3	60.2	74.0	13.7	13.8
8.	19536.00	BB	45.0	44.8	41.2	35.0	7.2	0.0	58.4	58.2	74.0	15.6	15.8
9.	21978.00	BB	45.8	46.2	41.3	35.2	7.1	0.0	59.0	59.4	74.0	15.0	14.6
10.	24420.00	BB	45.2	45.8	40.8	34.7	8.1	0.0	59.4	60.0	74.0	14.6	14.0

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
 Kind of Equipment : Wireless Camera Transmitter
 Model No. : WLL-CA50
 Serial No. : 10001
 Power : AC120V/60Hz
 Mode : Transmitting(2470MHz)
 Remarks : Low Power Mode
 Date : 11/13/2002
 Test Distance : 3 m
 Temperature : 26 °C
 Humidity : 48 %
 Regulation : FCC Part15C §15.209(PK Detection)


 Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	2483.50	BB	44.8	44.5	30.6	36.7	2.4	10.0	51.1	50.8	74.0	22.9	23.2
2.	4151.96	BB	51.3	50.1	32.9	37.8	3.3	0.7	50.4	49.2	74.0	23.6	24.8
3.	4940.00	BB	43.1	42.0	35.4	36.8	3.5	1.0	46.2	45.1	74.0	27.8	28.9
4.	7410.00	BB	44.8	44.7	38.0	36.9	4.3	0.5	50.7	50.6	74.0	23.3	23.4
5.	9880.00	BB	45.8	44.6	39.0	36.9	5.3	1.0	54.2	53.0	74.0	19.8	21.0
6.	12350.00	BB	44.4	43.7	42.6	35.7	5.7	0.6	57.6	56.9	74.0	16.4	17.1
7.	14820.00	BB	45.1	45.0	42.4	35.4	6.5	0.9	59.5	59.4	74.0	14.5	14.6
8.	17290.00	BB	45.4	45.1	42.5	34.9	6.6	1.0	60.6	60.3	74.0	13.4	13.7
9.	19760.00	BB	44.7	44.4	41.0	35.2	7.5	0.0	58.0	57.7	74.0	16.0	16.3
10.	22230.00	BB	46.3	46.2	41.5	35.3	7.2	0.0	59.7	59.6	74.0	14.3	14.4
11.	24700.00	BB	46.5	45.8	40.8	34.3	8.3	0.0	61.3	60.6	74.0	12.7	13.4

CALCULATION: READING[dB μ V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

- ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
- CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
 Kind of Equipment : Wireless Camera Transmitter
 Model No. : WLL-CA50
 Serial No. : 10001
 Power : AC120V/60Hz
 Mode : Standby
 Remarks : Low Power Mode
 Date : 11/13/2002
 Test Distance : 3 m
 Temperature : 26 °C
 Humidity : 48 %
 Regulation : FCC Part15C § 15.209(AV Detection)



 Engineer : Toyokazu Imamura

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	4024.02	BB	50.6	45.3	33.0	37.9	3.2	0.6	49.5	44.2	54.0	4.5	9.8

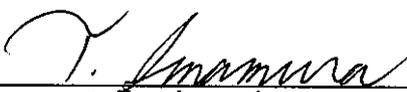
CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

- ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
- CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
Yamakita No.1 Open Test Site
Report No. : 23CE0026-YK-1

Applicant : Sony Corporation
Kind of Equipment : Wireless Camera Transmitter
Model No. : WLL-CA50
Serial No. : 10001
Power : AC120V/60Hz
Mode : Standby
Remarks : Low Power Mode
Date : 11/13/2002
Test Distance : 3 m
Temperature : 26 °C
Humidity : 48 %
Regulation : FCC Part15C § 15.209(PK Detection)


Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]	HOR [dB]	VER [dB]		
1.	4024.02	BB	53.6	50.2	33.0	37.9	3.2	0.6	52.5	49.1	74.0	21.5	24.9	

CALCULATION: $READING[dB \mu V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB]$.

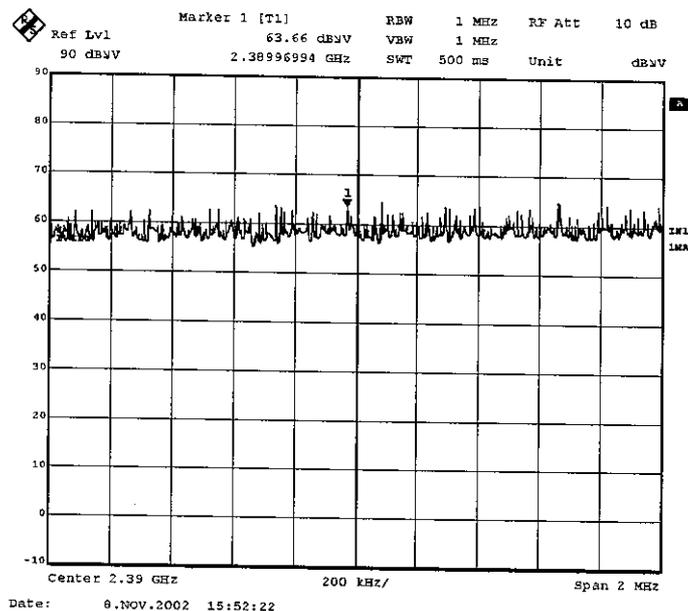
■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
■ CABLE: KCC-D3 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

T. Imamura

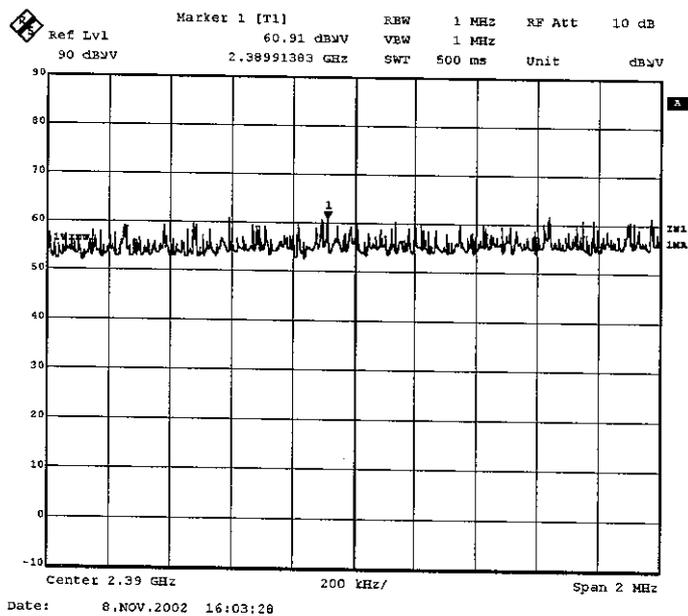
1.High Power Mode

2.39GHz (Ch Low:2406MHz)

(1) Horizontal/PK

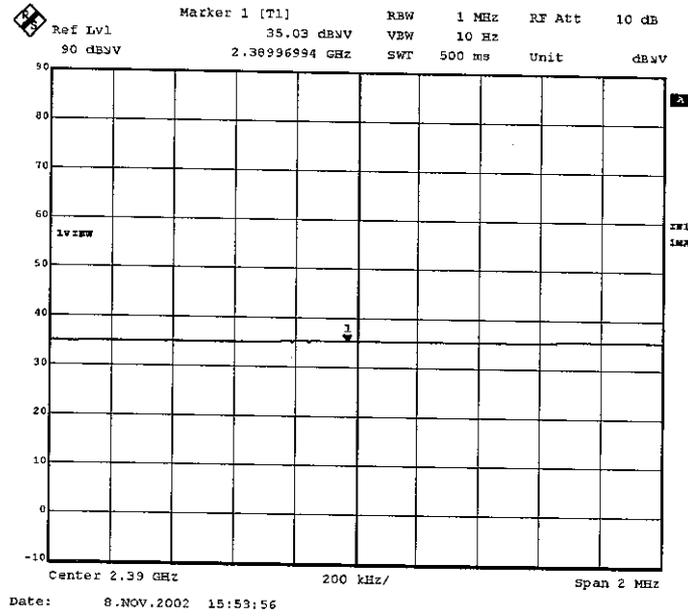


(2) Vertical/PK

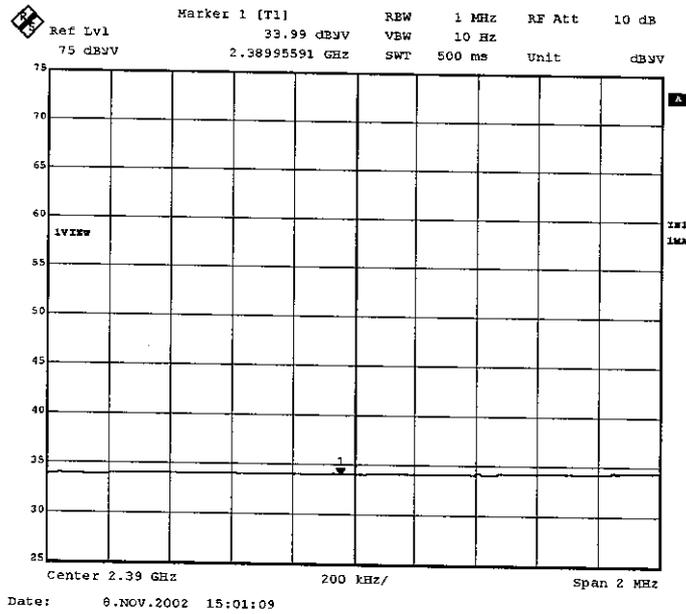


T. Amomina

(3) Horizontal/AV



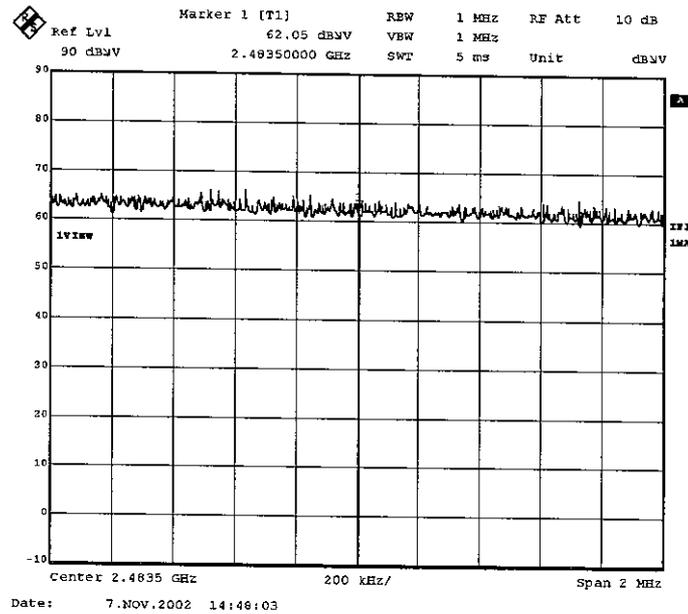
(4) Vertical/AV



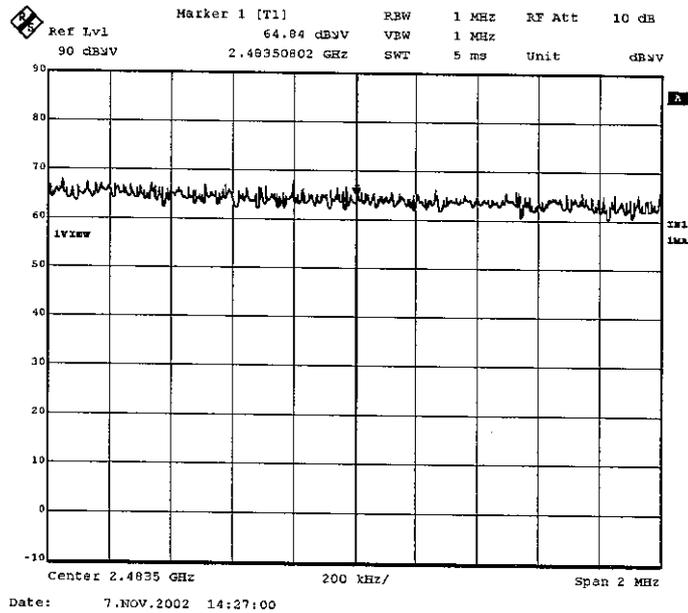
2.4835GHz (Ch High:2470MHz)

(1) Horizontal/PK

T. Imamura

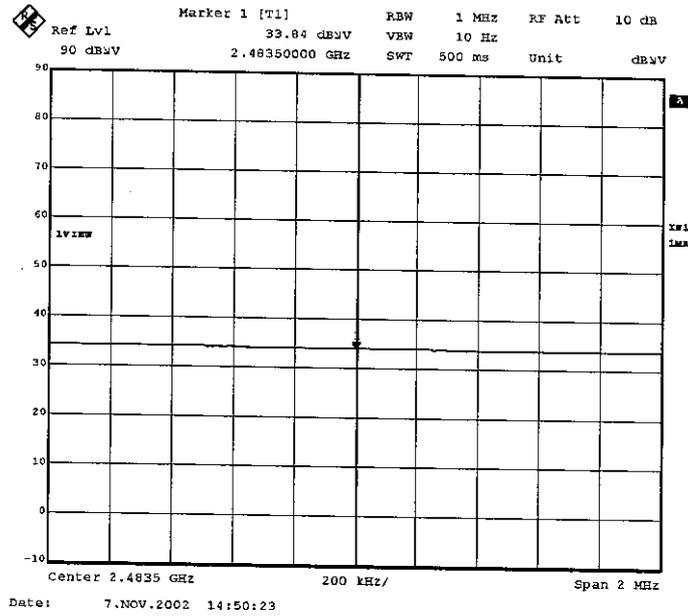


(2) Vertical/PK

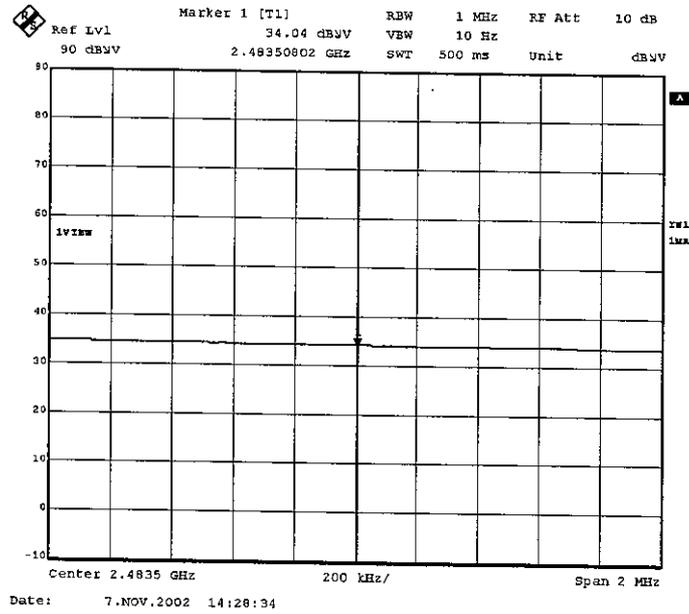


(3) Horizontal/AV

T. Imamura



(4) Vertical/AV

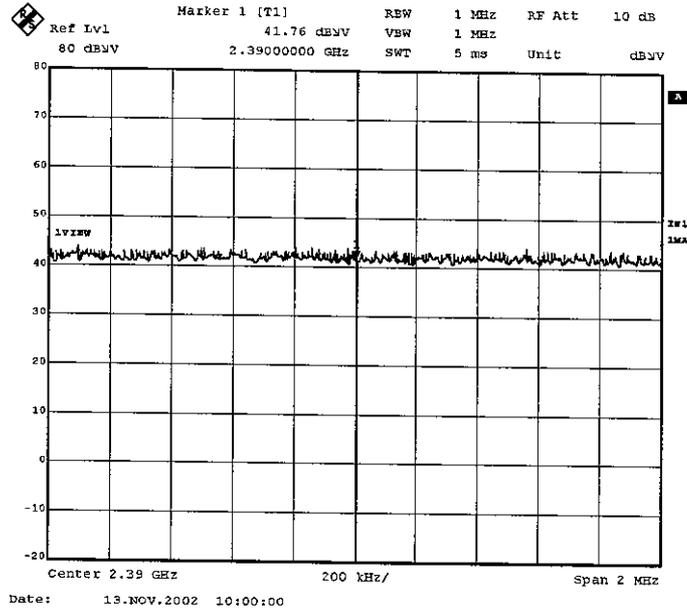


2.Low Power Mode

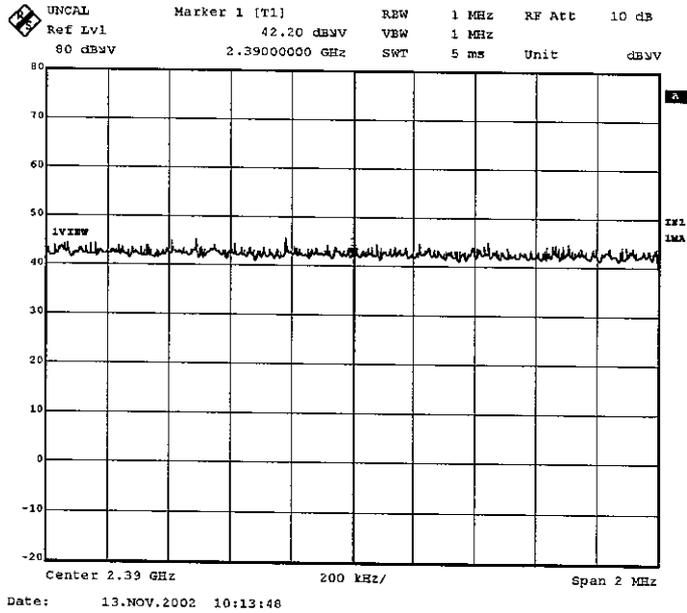
T. Amamura

2.39GHz (Ch Low:2406MHz)

(1) Horizontal/PK

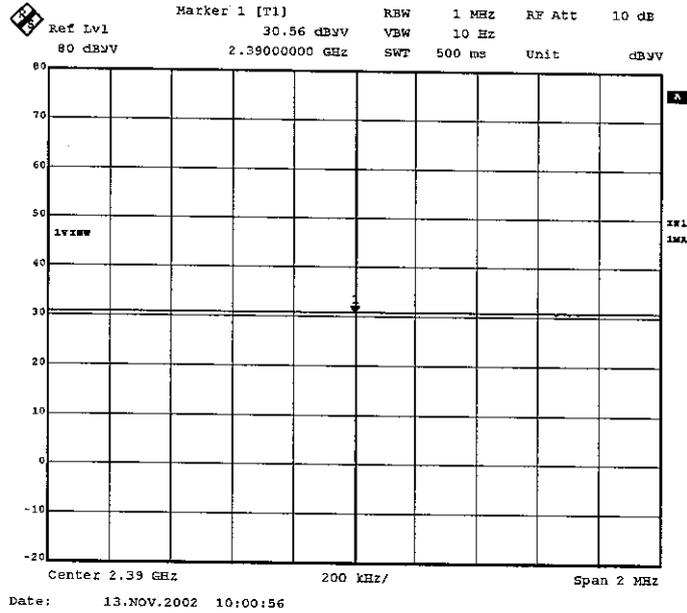


(2) Vertical/PK

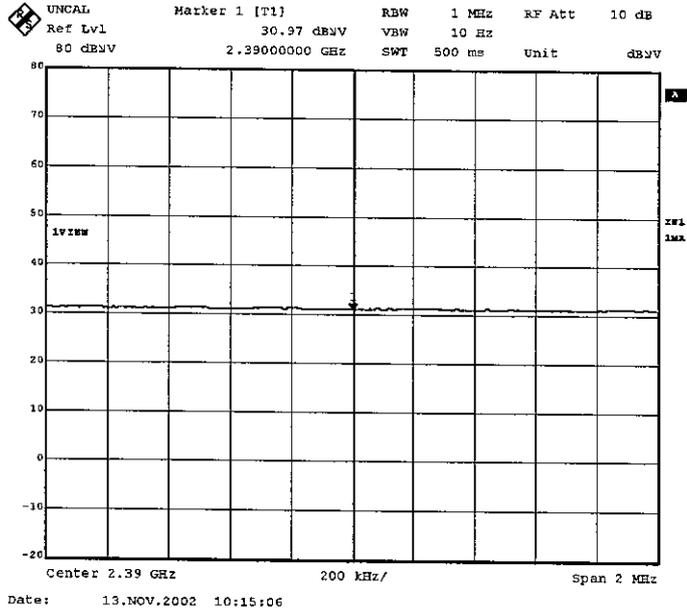


T. Imamura

(3) Horizontal/ AV

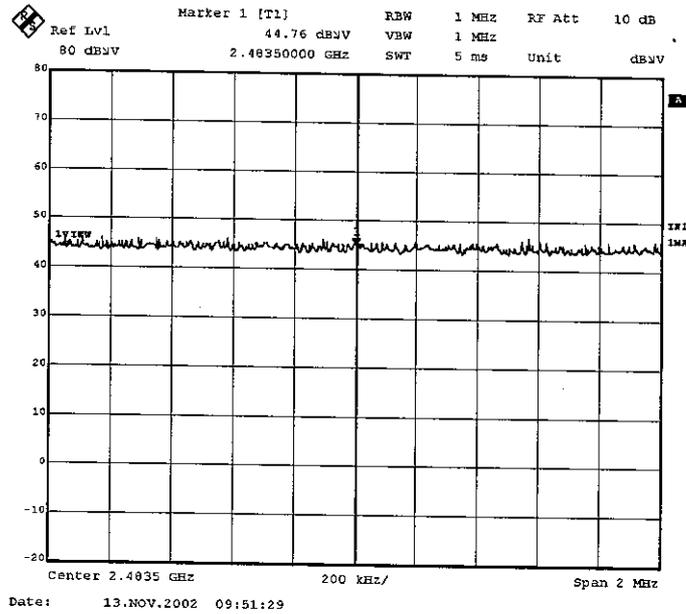


(4) Vertical/ AV



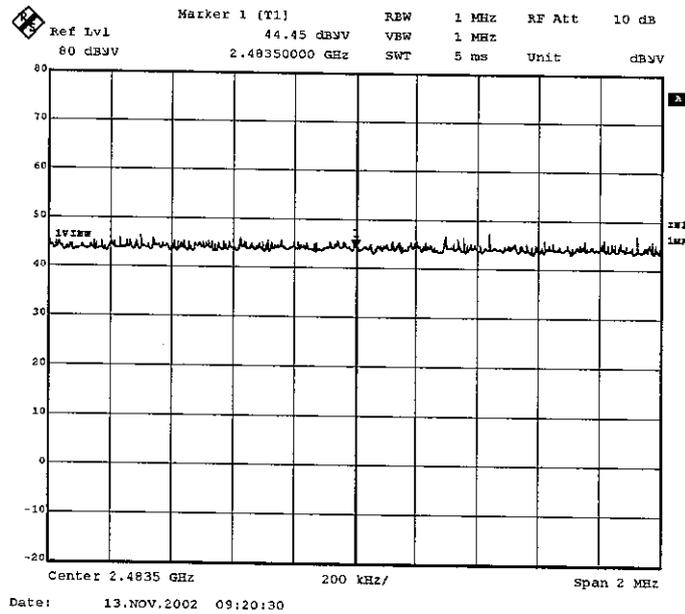
2.4835GHz (Ch High:2470MHz)

(1) Horizontal/PK



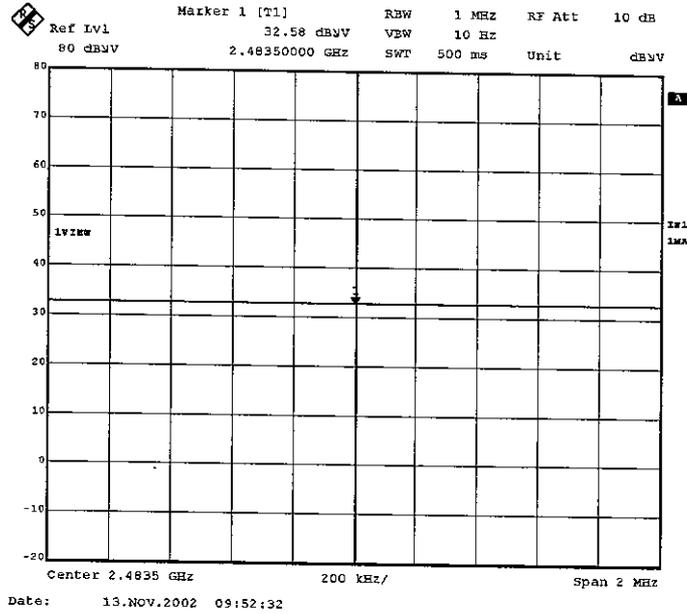
T. Amamiwa

(2) Vertical/PK

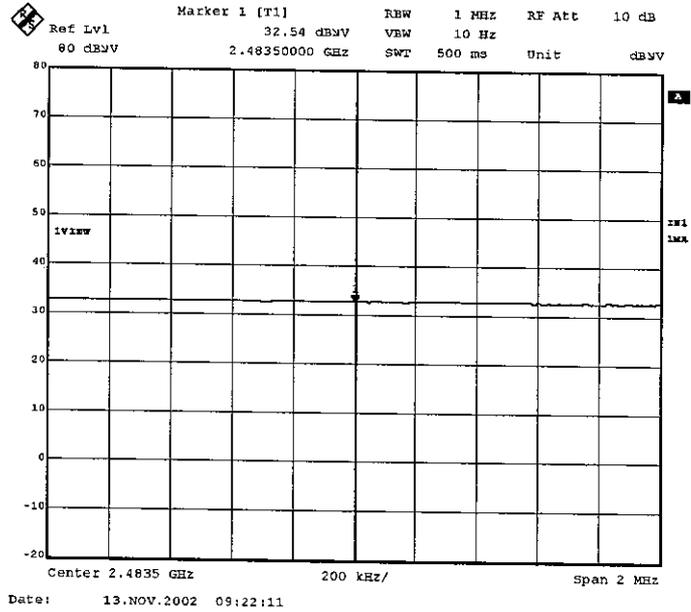




(3) Horizontal/ AV



(4) Vertical/ AV

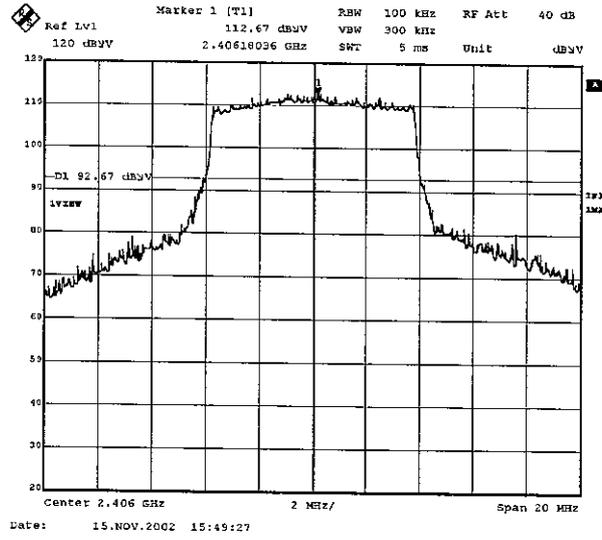


1.High Power Mode

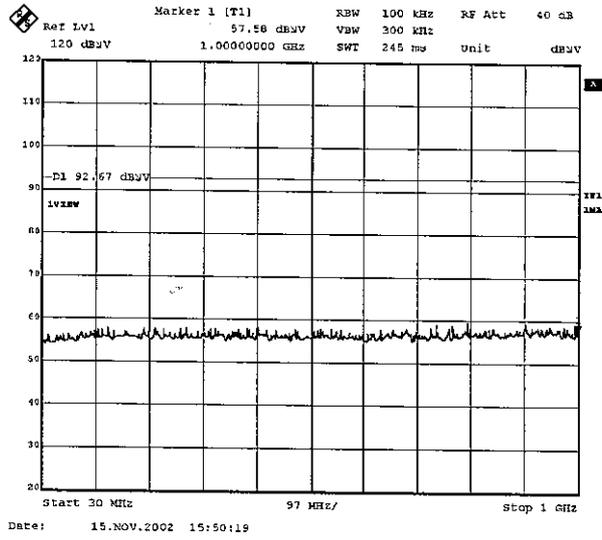
Ch Low:2406MHz

(1)

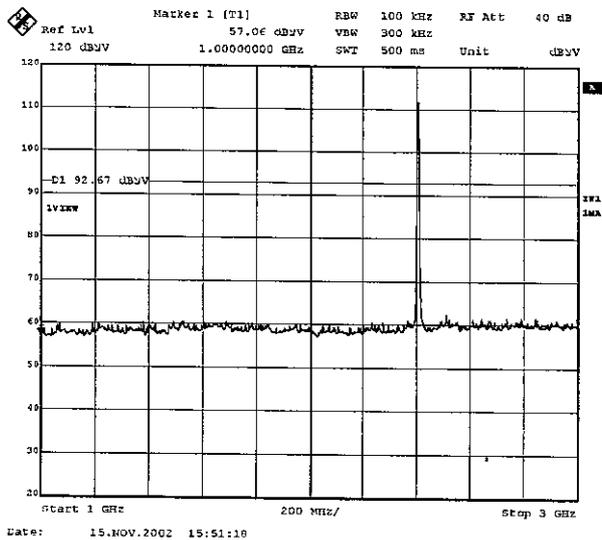
T. Amamura



(2)

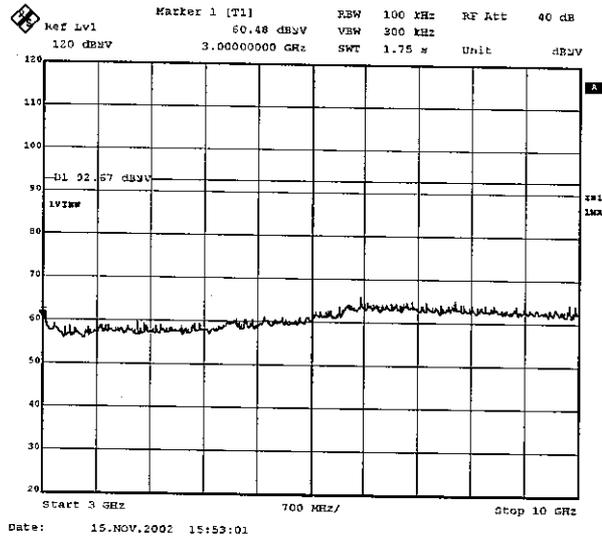


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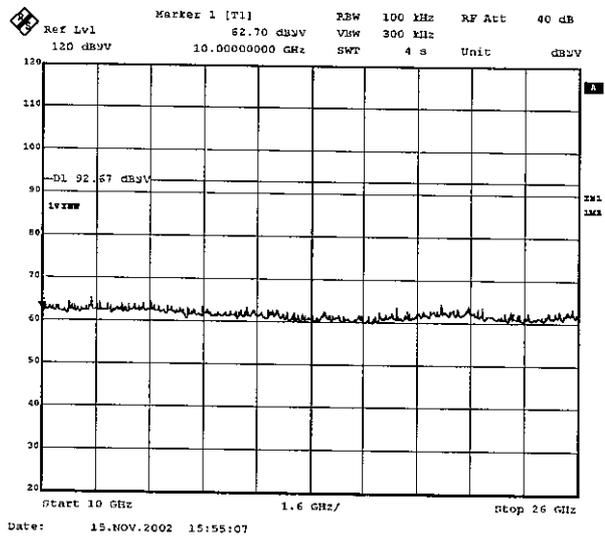


T. Imamura

(4)



(5)



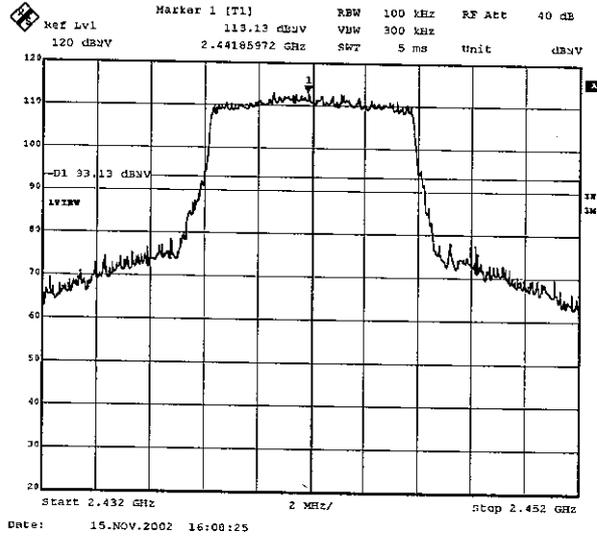
Out of Band Emissions (Conducted): FCC 15.247(c)

FCC ID: AK8LLCA50
Job No: 23CE0026-YK-1

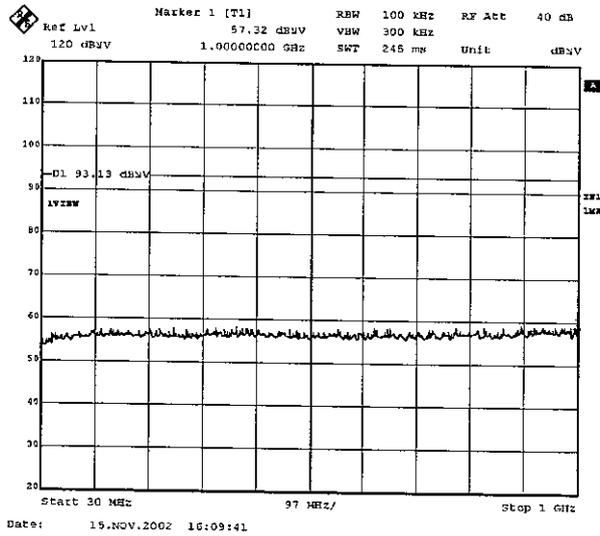
Ch Mid: 2442 MHz

(1)

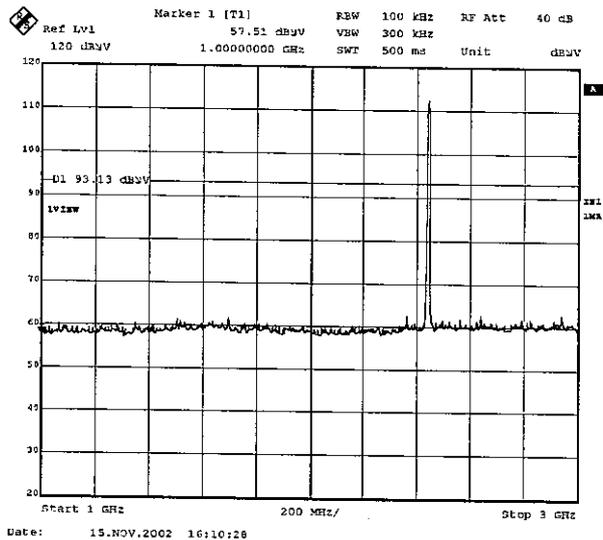
T. Inamura



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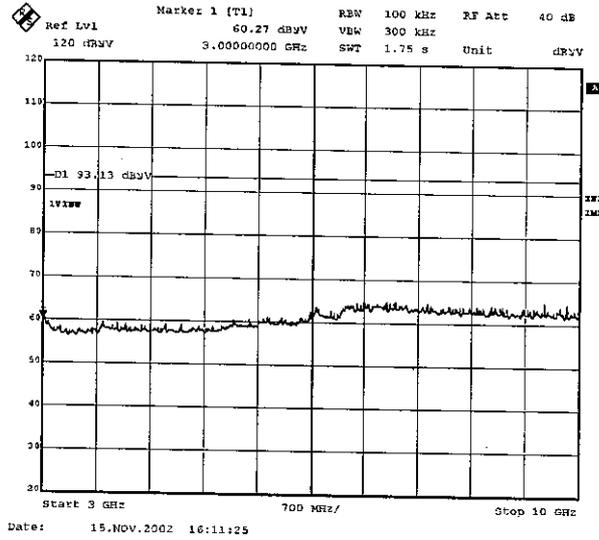


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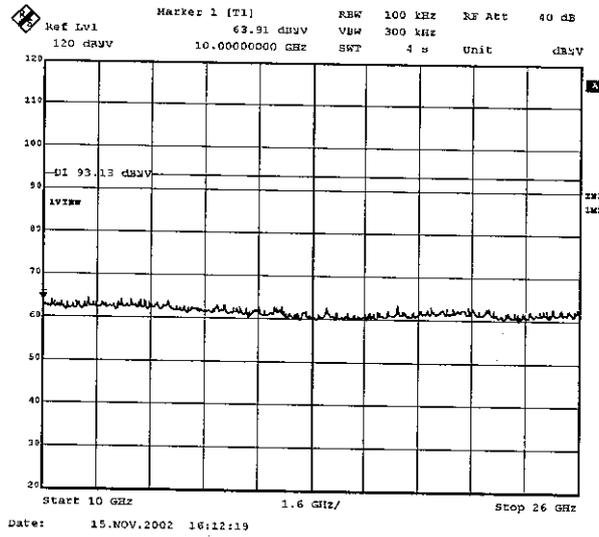


T. Amamura

(4)



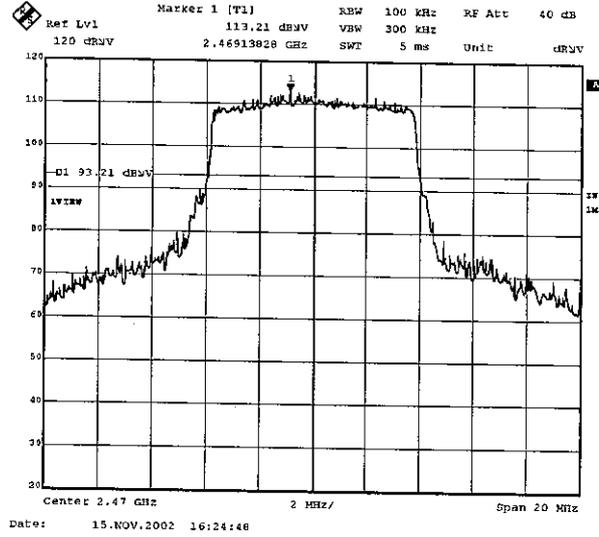
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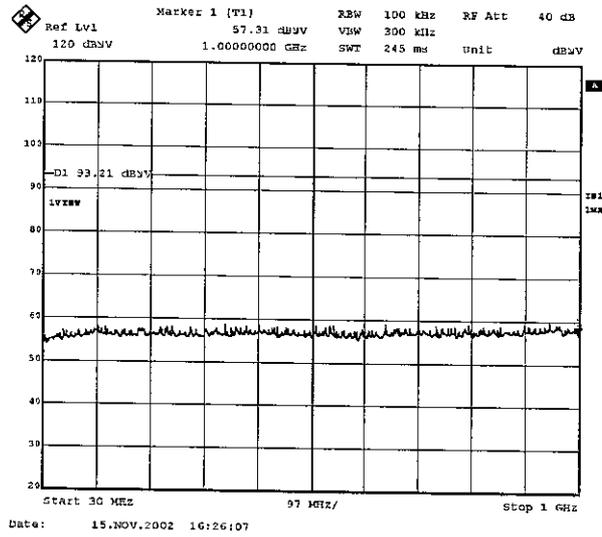
Ch High: 2470MHz

(1)

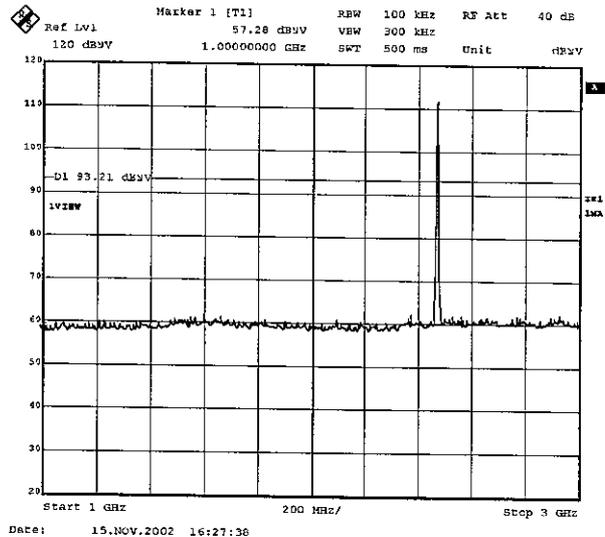
T. Imamura



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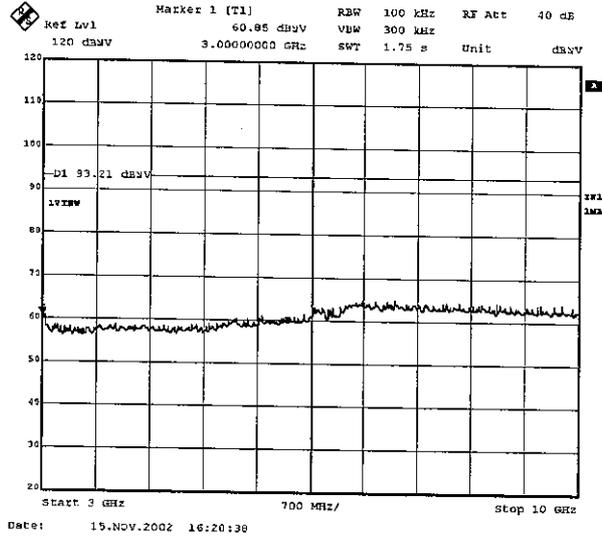


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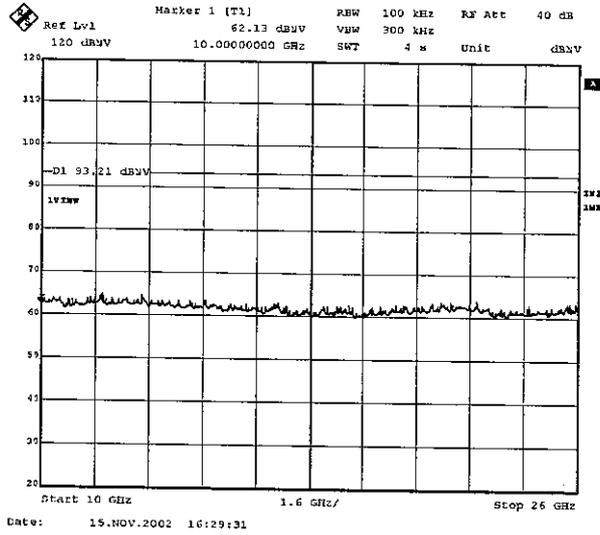


T. Imamura

(4)



(5)

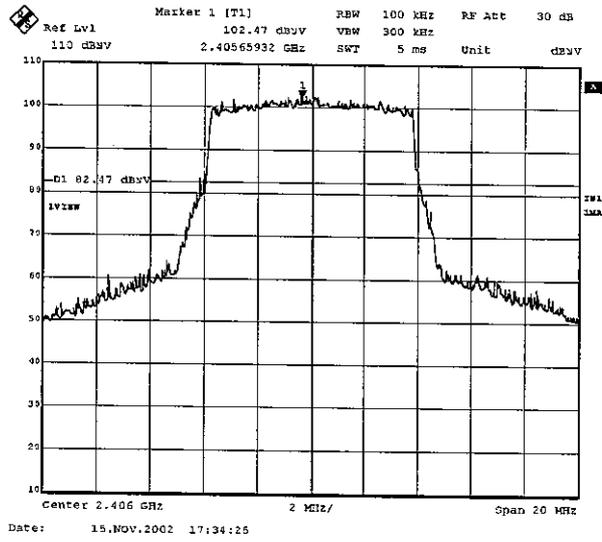


2.Low Power Mode

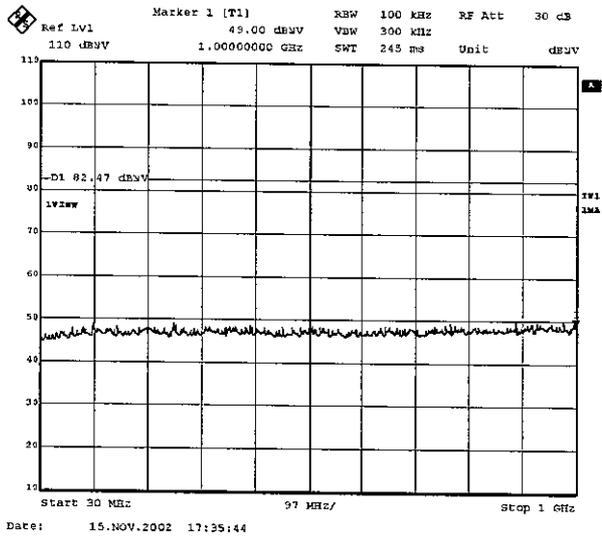
Ch Low:2406MHz

(1)

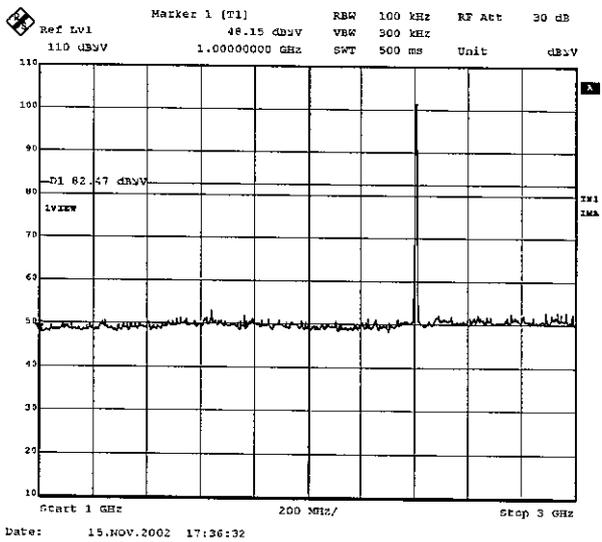
T. Imamura



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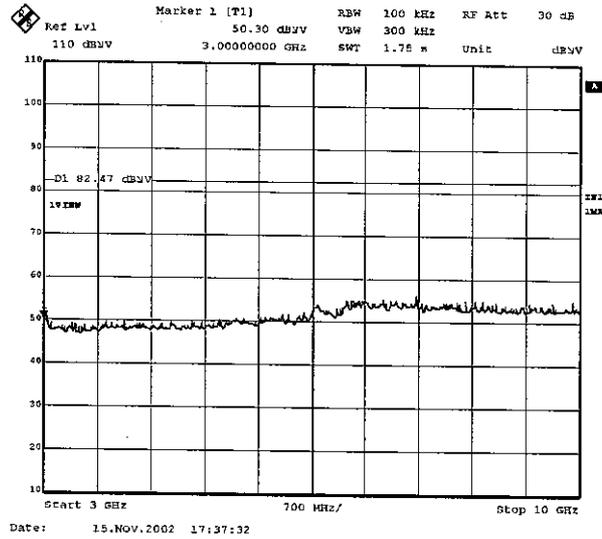


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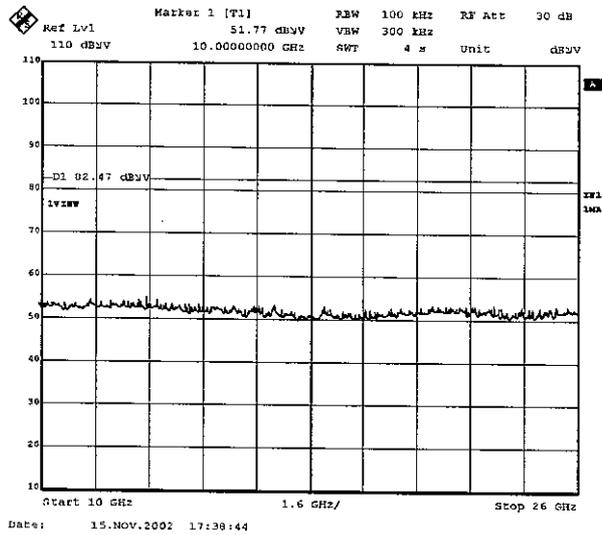


T. Amamura

(4)

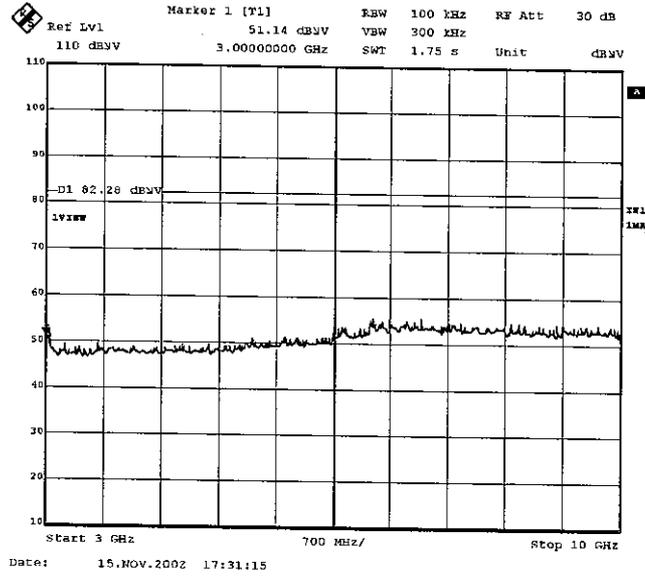


(5)

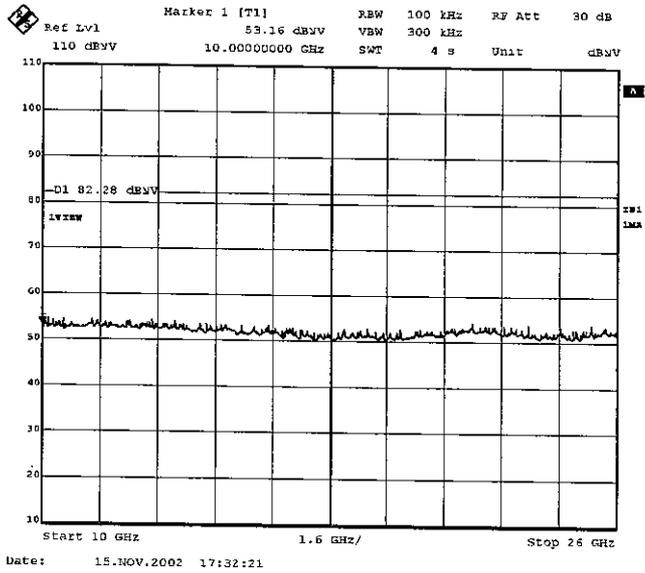


T. Imamura

(4)



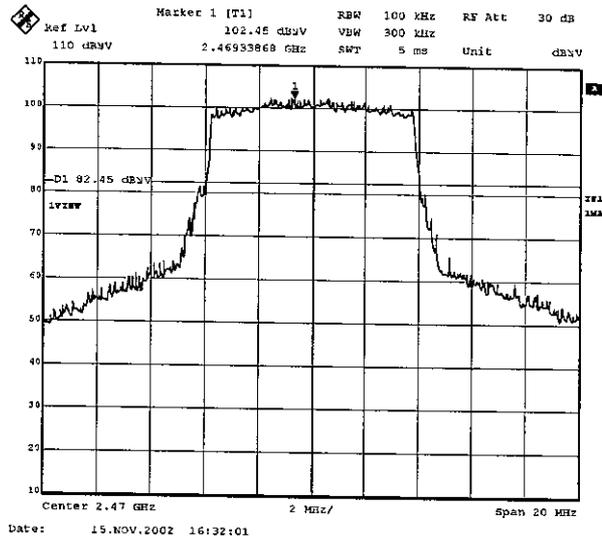
(5)



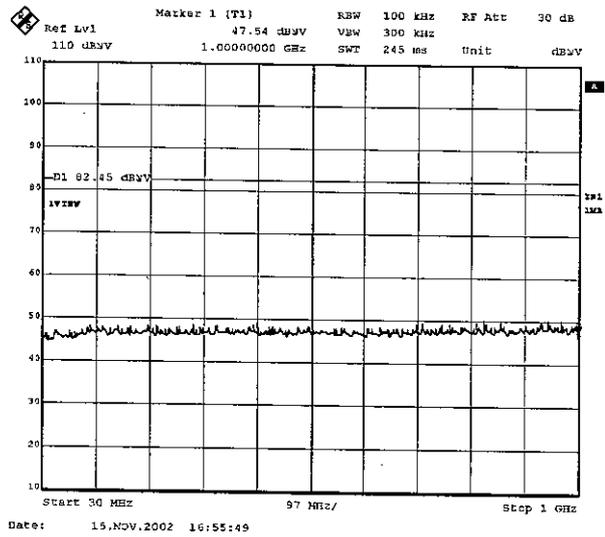
Ch High:2470MHz

(1)

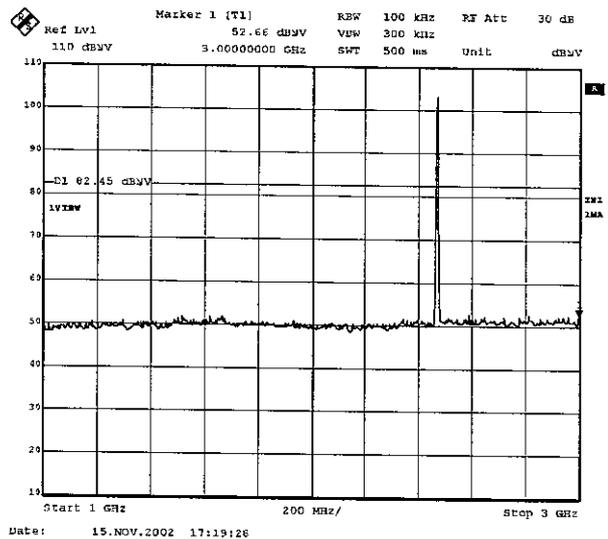
T. Imamura



(2)

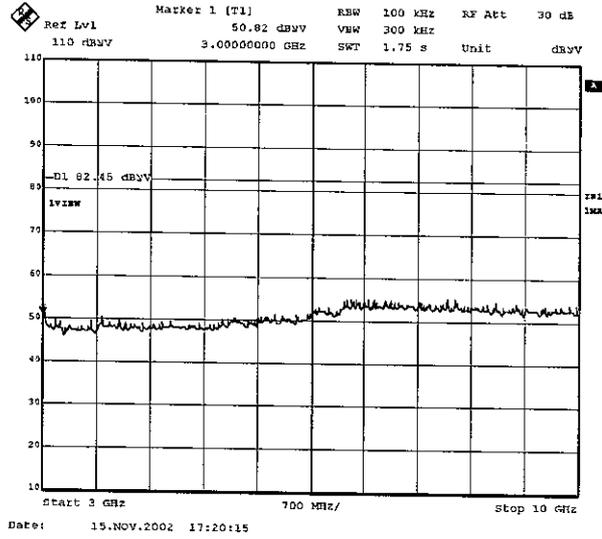


(3)

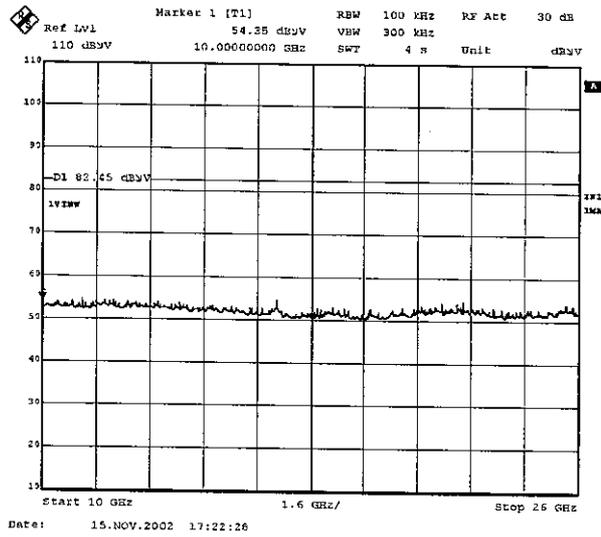


T. Amamura

(4)



(5)



Power Density (Conducted)

A-PEX INTERNATIONAL CO., LTD.
YAMAKITA NO. 1 OPEN SITE

COMPANY : SONY Corporation.
EQUIPMENT : Wireless Camera Transmitter
MODEL : WLL-CA50
FCC ID : AK8LLCA50
POWER : AC120V/60Hz
Mode : Transmitting

REPORT NO : 23CE0026-YK-1
REGULATION : Fcc Part15SubpartC 247 (d)
DATE : 2002/ 11/15
Temp. /Humi. : 25°C/30%


ENGINEER : Toyokazu Imamura

1.High Power Mode

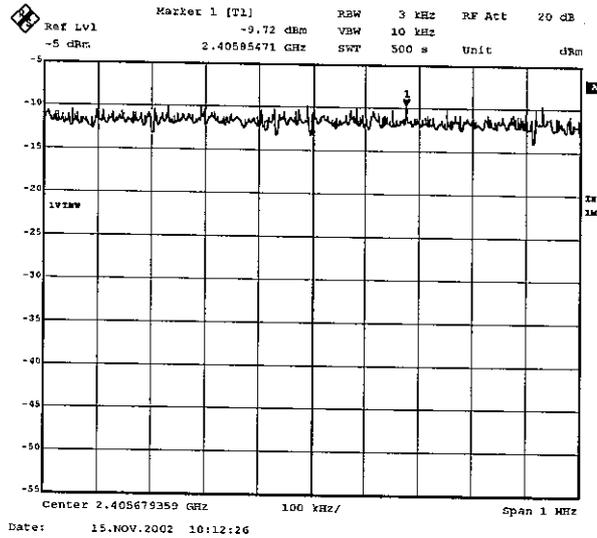
CH	FREQ [GHz]	S/A Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit [dBm]	MARGIN [dB]
Low	2.405854	-9.72	1.7	-8.02	8.0	16.0
Mid	2.441862	-10.10	1.7	-8.4	8.0	16.4
High	2.469930	-10.16	1.7	-8.46	8.0	16.5

2.Low Power Mode

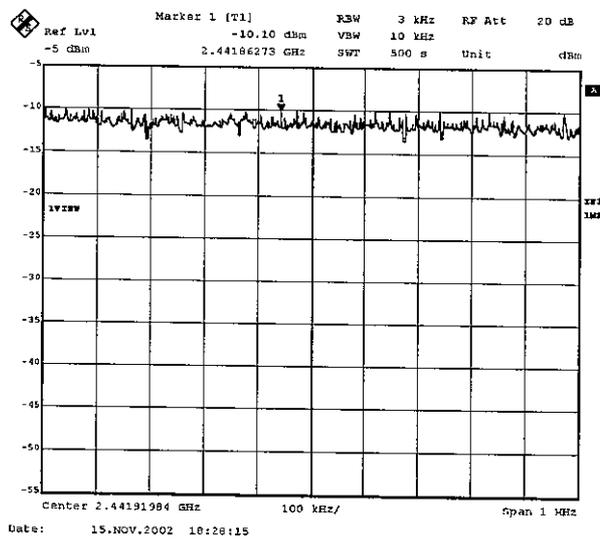
CH	FREQ [GHz]	S/A Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit [dBm]	MARGIN [dB]
Low	2.406261	-19.90	1.7	-18.2	8.0	26.2
Mid	2.441333	-19.79	1.7	-18.09	8.0	26.1
High	2.469898	-20.15	1.7	-18.45	8.0	26.5

1.High Power Mode

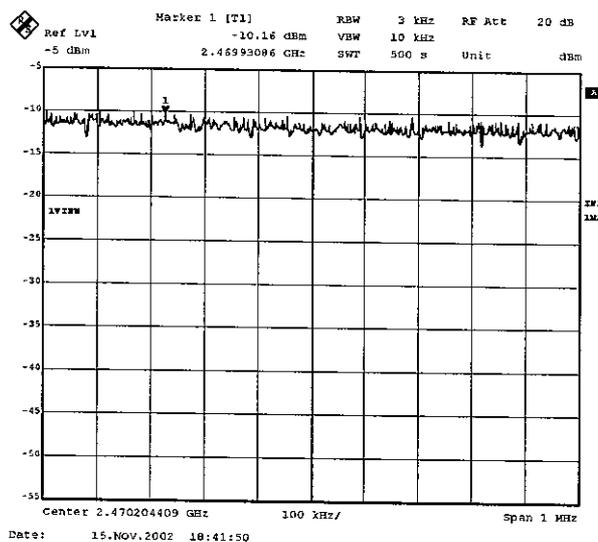
(1) Ch Low:2406MHz



(2) Ch Mid:2442MHz



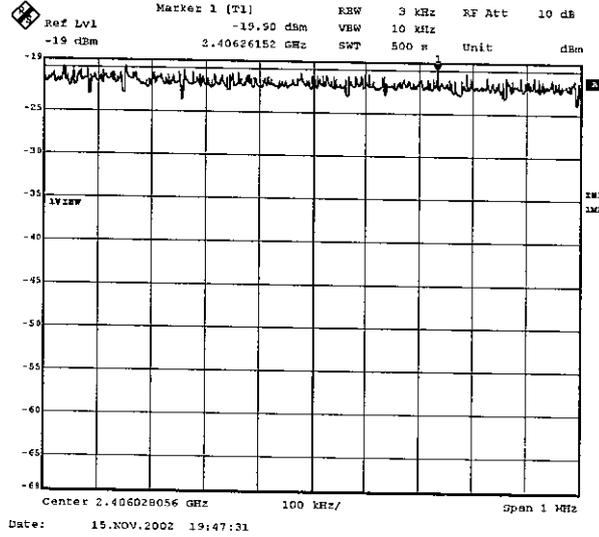
(3) Ch High:2470MHz



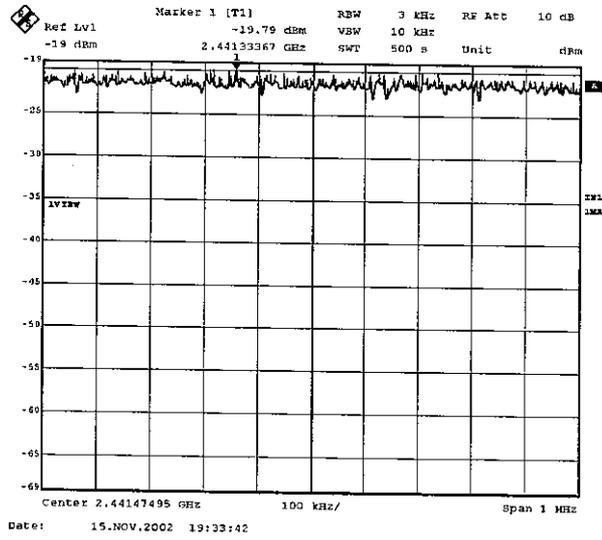
T. Imamura

2.Low Power Mode

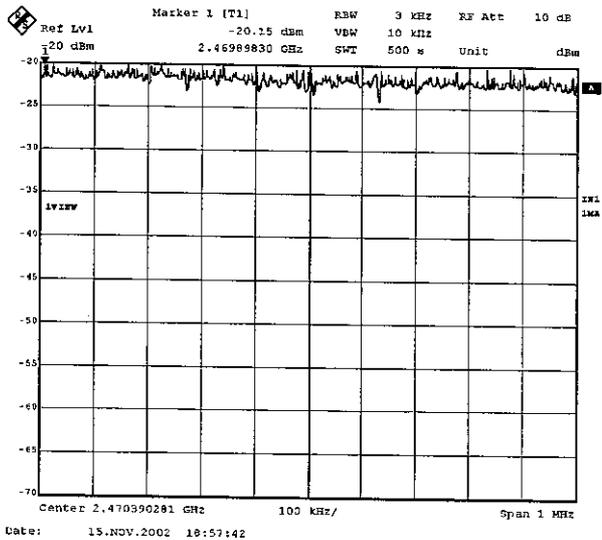
(1) Ch Low:2406MHz



(2) Ch Mid:2442MHz



(3) Ch High:2470MHz



Test Report No :23CE0026-YK-1

APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
KAF-01	Pre Amplifier	Hewlett Packard	8447D	RE	2002/08/03 * 12
KAF-02	Pre Amplifier	Hewlett Packard	8449B	RE	2002/05/07 * 12
KAT10-S1	Attenuator	Agilent	8449D 010	RE/AT	2002/04/16 * 12
KAT6-01	Attenuator	INMET	18N-6dB	RE	2002/06/20 * 12
KBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2002/08/17 * 12
KCC-10/11/12/13/18	Coaxial Cable	Fujikura/Suhner	8D-2W/12D-SF A/S04272B/S04272B/S04272B	RE	2002/08/17 * 12
KCC-14/15/16/18/KPL-01	Coaxial Cable/Pulse Limitter	Fujikura/Suhner/PMM	5D-2W/8D-2W/S04272B/S04272B/PL01	CE	2002/08/17 * 12
KCC-D3	Coaxial Cable	Rosenberger	2201	RE	2002/06/28 * 12
KCC-D5	Coaxial Cable	Storm	421-011(2m)	AT	2002/04/16 * 12
KFL-01	Highpass Filter	Hewlett Packard	84300 80038	RE	2002/05/02 * 12
KHA-01	Horn Antenna	A.H.Systems	SAS-200/571	RE	2002/07/14 * 12
KHA-03	Horn Antenna	EMCO	3160-09	RE	2002/04/27 * 12
KLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2002/08/17 * 12
KLS-01	LISN	Schwarzbeck	NSLK8126	CE	2002/08/16 * 12
KOTS-01	Open Test Site	JSE	30m	RE	2002/08/18 * 12
KPM-05	Power meter	Agilent	E4417A	AT	2002/02/15 * 12
KPSS-01	Power sensor	Agilent	E9327A	AT	2002/03/12 * 12
KSA-01	Spectrum Analyzer	Advantest	R3365	CE/RE	2002/06/20 * 12
KTR-01	Test Receiver	Rohde & Schwarz	ES140	CE/RE/AT	2002/07/22 * 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