



EMI TEST REPORT

Test Report No. : 26CE0198-YK-3

Applicant : Sony EMCS Corporation Saitama TEC

Type of Equipment : Home AV Wireless System Receiver

Model No. : HWS-AV10R

FCC ID : AK8HWSAV10R

Test Standard : FCC Part15 Subpart C,
Section 15.207, Section 15.209, Section 15.231: 2005

Test Result : Complied

1. This test report shall not be reproduced except in full, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this test report are traceable to the national or international standards.

Date of test: January 5 and 6, 2006

Tested by:

G. Ishiwata
Go Ishiwata

&

M. Hosaka
Makoto Hosaka

Approved by:

O. Watatani
Osamu Watatani
Site Manager of Yamakita EMC Lab.

UL Apex Co., Ltd.

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MF060b(01.06.05)

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1 Applicant Information

Company Name : Sony EMCS Corporation Saitama TEC
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2-15-3 Konan Minato-ku, Tokyo, 108-6201 JAPAN
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Contact Person : Kikuo Murata

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2 Product Description

Type of Equipment : Home AV Wireless System Receiver
Model No. : HWS-AV10R
Serial No. : 51
Rating : DC6V (AC120V/60Hz)
Country of Manufacture : China
Receipt Date of Sample : December 28, 2005
Condition of EUT : Engineering prototype
(Not for Sale: This sample is equivalent to mass-produced items.)

Model: HWS-AV10R (referred to as the EUT in this report) is a receiver using 2408-2464 MHz and also a transmitter using 433.92MHz of Home AV Wireless System HWS-AV10K.

<Transmitter>

Frequency of operation : 433.92 MHz
Other clock frequency : 13.4916MHz (RF IC)
Type of modulation : ASK
Antenna type : Integral antenna
Antenna connector type : None
Method of Frequency generation : Simplex

<Receiver>

Frequency of operation : 2408-2464 MHz
Local frequency : 1944.50-1958.50MHz
Intermediate frequency : 477.50 MHz
Other clock frequency : 7MHz (PLL), 4MHz (MPU)
Type of receiver : PSK
Antenna type : External antenna
Antenna connector type : None
Mode of operation : Crystal

Emission designation : K1D
Operation temperature range : 0 ~ 40 deg. C.

*FCC Part15.31 (e)

The HWS-AV10R provides the module with stable power supply (DC5V), and the power is not changed when voltage of the equipment is varied. Therefore, the equipment complies power supply regulation.

*FCC Part15.203

- Transmitting antenna (433MHz band, built-in antenna):

The transmitter and its antenna comply with this requirement since this antenna is built in the equipment and it cannot be replaced by end users.

- Receiving antenna (2.4GHz band, external antenna):

This antenna is only for receiving and is not applicable to the section.

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3 Test Specification, Procedures and Results

3.1 Test specification

Test specification : FCC Part15 Subpart C: 2005
 Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
 Section 15.207 Conducted limits: 2005
 Section 15.209
 Section 15.231

3.2 Procedures & Results

Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
Conducted Emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A	8.6dB (4.4202MHz, N, AV)	Complied
Automatically Deactivate	ANSI C63.4:2003	Section 15.231(a)(1)	Conducted	N/A	-	Complied
Electric Field Strength of Fundamental Emission and Spurious Emission	ANSI C63.4:2003	Section 15.231(b)	Radiated	N/A	Fundamental: 9.6dB (433.92MHz, Horizontal) 2 nd harmonics: 5.7dB (867.92MHz, Horizontal)	Complied
Electric Field Strength of Spurious Emission (other and above 1GHz)	ANSI C63.4:2003	Section 15.205 Section 15.209	Radiated	N/A	3.9dB (476.57MHz, Horizontal)	Complied
-20dB Bandwidth	ANSI C63.4:2003	Section 15.231(c)	Conducted	N/A	-	Complied

Note: UL Apex's EMI Work Procedures No.QPM05.

* Above the 3rd harmonics and other spurious emissions were measured in accordance with Section 15.209.

** No addition, deviation or exclusion has been made from the standard.

3.3 Uncertainty

Conducted emission

The measurement uncertainty (with 95% confidence level) for this test is ± 2.7 dB.

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

Antenna port conducted test (Radio)

The measurement uncertainty (with 95% confidence level) for this test is ± 0.4 dB.

Radiated emission

The measurement uncertainty (with 95% confidence level) for this test using Biconical antenna is ± 4.5 dB.

The measurement uncertainty (with 95% confidence level) for this test using Logperiodic antenna is ± 4.3 dB.

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

The data listed in this report meets the limits unless the uncertainty is taken into consideration.

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3.4 Test Location

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Telephone number : +81 465 77 1011
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NVLAP Lab. code : 200441-0

No. 1 test site has been fully described in a report submitted to FCC office, and accepted on August 26, 2005
(Registration No.: 95486).

IC Registration No. : IC3489A

No. 2 test site has been fully described in a report submitted to FCC office, and accepted on April 4, 2005
(Registration No.: 466226).

IC Registration No. : IC3489A-2

No. 1 anechoic chamber has been fully described in a report submitted to FCC office, and accepted on November 2, 2005 (Registration No.: 95967).

IC Registration No. : IC3489A-B

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 shielded room	8.0 x 5.0 x 2.5	No.1 EMS lab. (Semi-anechoic chamber)	10.0 x 7.5 x 5.7
No.2 shielded room	5.0 x 4.0 x 2.5		
No.3 shielded room	4.0 x 5.0 x 2.7		

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4 System Test Configuration

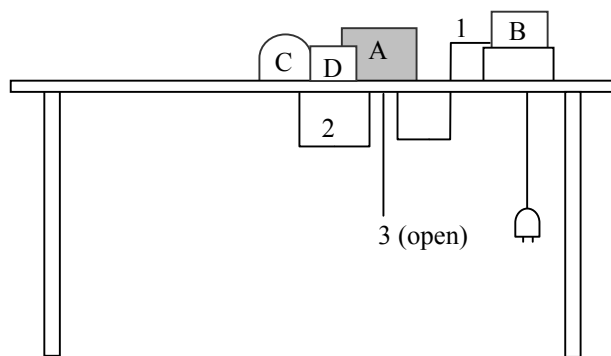
4.1 Justification

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

Test mode: Transmitting mode (433.92MHz)
 Remote control signal which is input to the EUT causes RF signal.

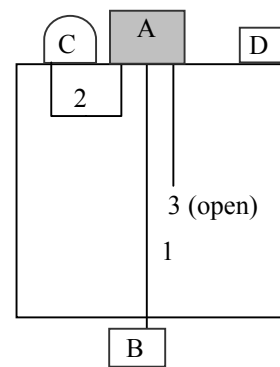
4.2 Configuration of Tested System

Front View (Conducted emission)



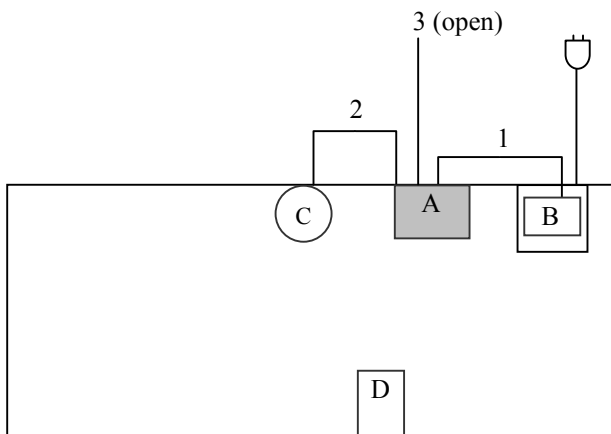
AC120V/60Hz

Front View (Radiated emission)



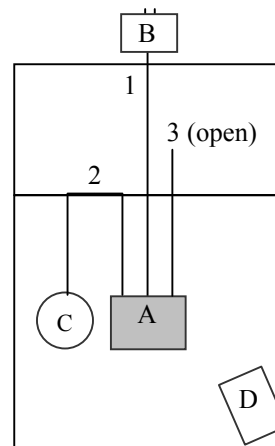
AC120V/60Hz

Top View (Conducted emission)



* Test data was taken under worse case conditions.

Top View (Radiated emission)



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Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID (Remarks)
A	Home AV Wireless System Receiver (with built-in Transmitting antenna)	HWS-AV10R	51	SONY	AK8HWSAV10R (EUT)
B	AC Adaptor	AC-ES608K3	-	SONY	-
C	Receiving antenna (2.4GHz band)	-	-	SONY	-
D	Remote Controller	RMT-D114J	-	SONY	-

List of cables used

No.	Name	Length (m)	Shield	Remark
1	DC cable	2.2	Unshielded	-
2	Antenna cable	1.05	Unshielded	-
3	Audio cable	1.1	Unshielded	-

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5 Conducted Emissions

5.1 Operating environment

The test was carried out in No.2 shielded room.

5.2 Test configuration

EUT was placed on a platform of nominal size, 1m by 1.8m, 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 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 a Line Impedance Stabilization Network (LISN) and excess AC cable was bundled in center. I/O cable 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.

5.3 Test conditions

Frequency range : 0.15 - 30MHz
EUT operation mode : Transmitting

5.4 Test procedure

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

The Conducted emission measurements were made with the following detector function of the test receiver.

Detector: QP/AV
IF Bandwidth: 9kHz

5.5 Results

Summary of the test results : Pass
Test data : APPENDIX 2 Page 15 to 17

Date : January 6, 2006 Test engineer : Makoto Hosaka

6 Automatically deactivate

Limit: A manually transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

Summary of the test results : Pass
Test data : APPENDIX 2 Page 18

Date : January 6, 2006 Test engineer : Makoto Hosaka

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7 Radiated Emissions

7.1 Operating environment

The test was carried out in No.1 open site.

7.2 Test configuration

EUT was placed on a platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane. A drawing of the set up is shown in the photos of Appendix 1.

7.3 Test conditions

Frequency range : 30MHz - 5GHz
Test distance : 3m
EUT operation mode : Transmitting

7.4 Test procedure

The Radiated Electric Field Strength intensity has been measured 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.

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.

Measurements were performed with QP, PK, and AV detector.

The radiated emission measurements were made with the following detector function of the test receiver.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector	QP, PK: BW 120kHz	PK: RBW: 1MHz/VBW: 1MHz
IF Bandwidth		AV: RBW: 1MHz/VBW: 10Hz

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

7.5 Results

Summary of the test results : Pass
Test data : APPENDIX 2 Page 19 to 21 (Fundamental and Spurious (2nd harmonics))
: APPENDIX 2 Page 22 to 24 (Spurious)

Date : January 5, 2006 Test engineer : Go Ishiwata

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8 20dB Bandwidth

8.1 Operating environment

The test was carried out in No.2 shielded room.

8.2 Test procedure

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

20dB Bandwidth	:	72.75kHz
Occupied Bandwidth (99%)	:	168.94kHz

8.3 Results

Summary of the test results :	Pass
Test data :	APPENDIX 2 Page 25 to 26

Date :	January 6, 2006	Test engineer :	Makoto Hosaka
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APPENDIX 1: Photographs of test setup

Page 13 : Conducted emission

Page 14 : Radiated emission

APPENDIX 2: Test Data

Page 15 - 17 : Conducted emission

Page 18 : Automatically deactivate

Page 19 - 24 : Radiated emission

19 : Fundamental and Spurious (2nd harmonics)

20 - 21 : Duty factor calculation and Transmitting time and interval

22 - 24 : Spurious

Page 25 : 20dB bandwidth

Page 26 : Occupied bandwidth

APPENDIX 3: Test instruments

Page 27 : Test instruments

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Conducted emission



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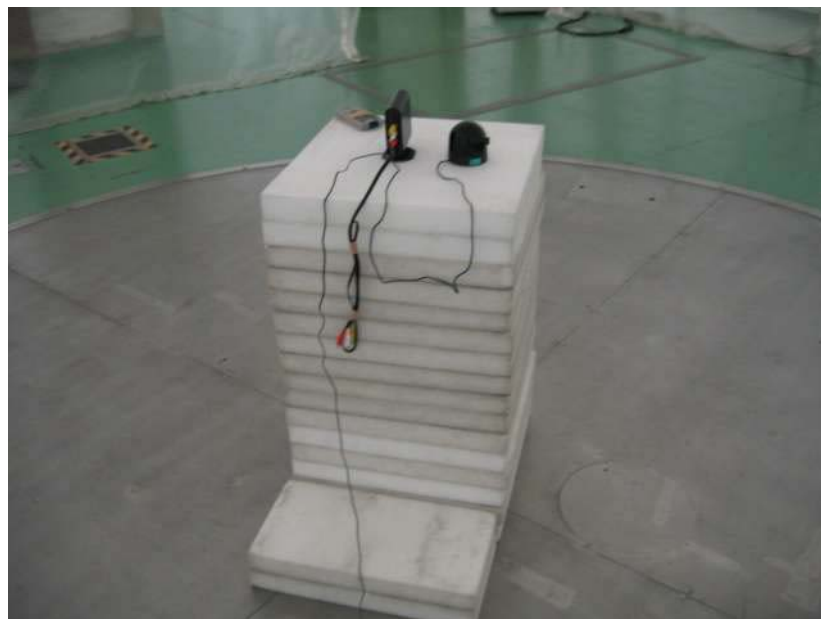
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Radiated emission



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DATA OF CONDUCTION TEST

UL Apex Co.,Ltd.
YAMAKITA No.2 SHIELD ROOM
Report No. : 26CE0198-YK - 3

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Home AV Wireless System Receiver
Model No. : HWS-AV10R
Serial No. : 51
Power : AC120V/60Hz (DC6V)
Mode : Transmitting(433.92MHz)
Remarks :
Date : 1/6/2006
Phase : Single Phase
Temperature : 20 °C
Humidity : 27 %
Regulation : FCC Part15C § 15.207. (CISPR Pub. 22)
Engineer : Makoto Hosaka

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μ V]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB]	AV [dB]
1.	0.1961	48.4	35.2	48.1	32.6	0.1	0.1	0.0	48.6	35.4	63.8	53.8	15.2	18.4
2.	0.2942	39.2	-	40.8	-	0.1	0.1	0.0	41.0	-	60.4	50.4	19.4	-
3.	0.7274	32.2	-	32.0	-	0.1	0.1	0.0	32.4	-	56.0	46.0	23.6	-
4.	1.8715	34.4	-	34.2	-	0.1	0.2	0.0	34.7	-	56.0	46.0	21.3	-
5.	3.8304	39.5	36.3	39.3	35.9	0.2	0.3	0.0	40.0	36.8	56.0	46.0	16.0	9.2
6.	4.4202	39.5	36.9	38.6	35.9	0.2	0.3	0.0	40.0	37.4	56.0	46.0	16.0	8.6

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

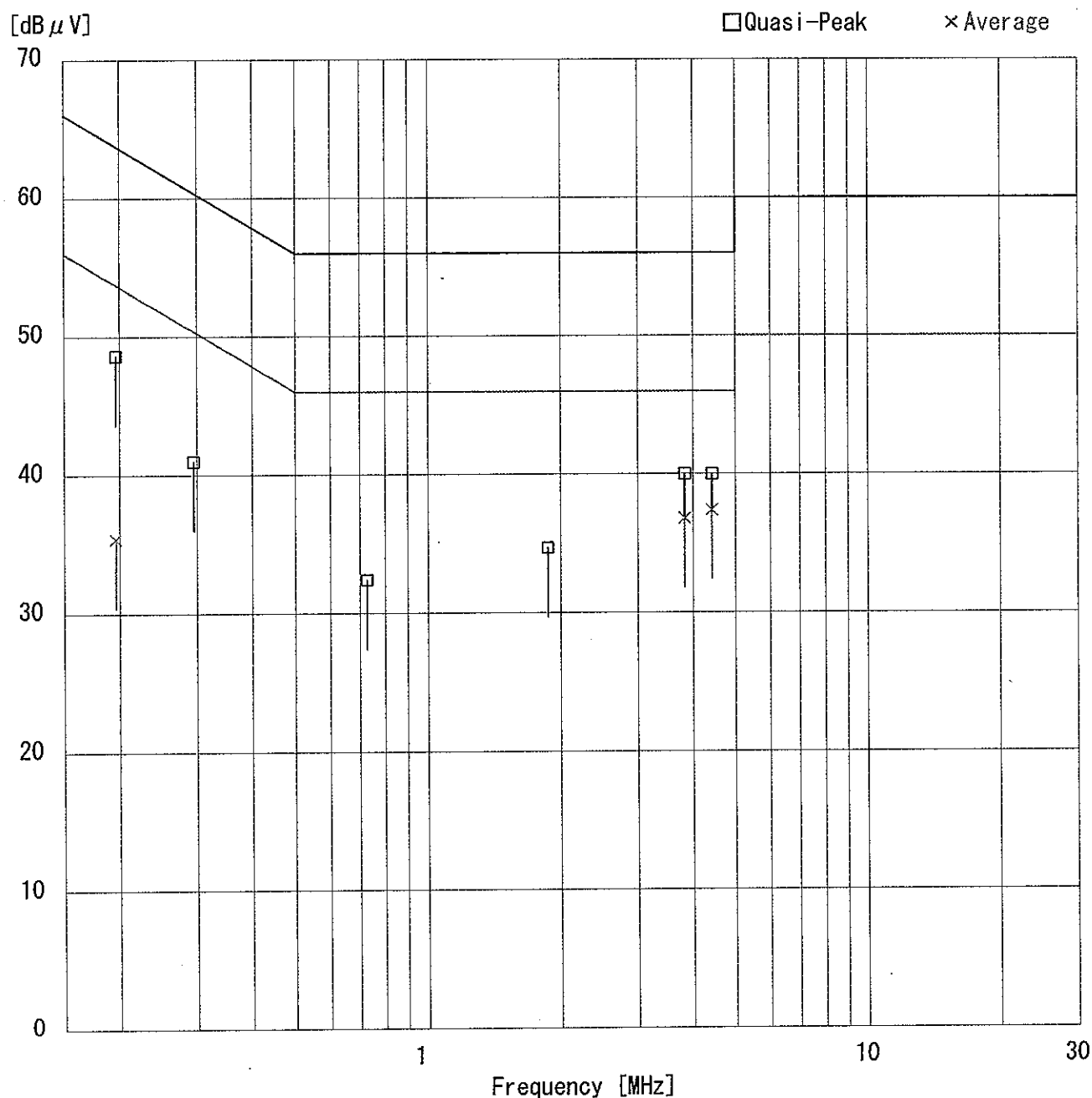
■ LISN: KLS-05 (NSLK8126) ■ COAXIAL CABLE: KCC-33/34
■ EMI RECEIVER: KTR-01 (ES140)

DATA OF CONDUCTION TEST

UL Apex Co.,Ltd.
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Report No. : 26CE0198-YK - 3

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Kind of Equipment : Home AV Wireless System Receiver
Model No. : HWS-AV10R
Serial No. : 51
Power : AC120V/60Hz (DC6V)
Mode : Transmitting (433.92MHz)
Remarks :
Date : 1/6/2006
Phase : Single Phase
Temperature : 20 °C
Humidity : 27 %
Regulation : FCC Part15C § 15.207. (CISPR Pub.22)

Engineer : Makoto Hosaka



Page:

DATA OF CONDUCTION TEST CHART

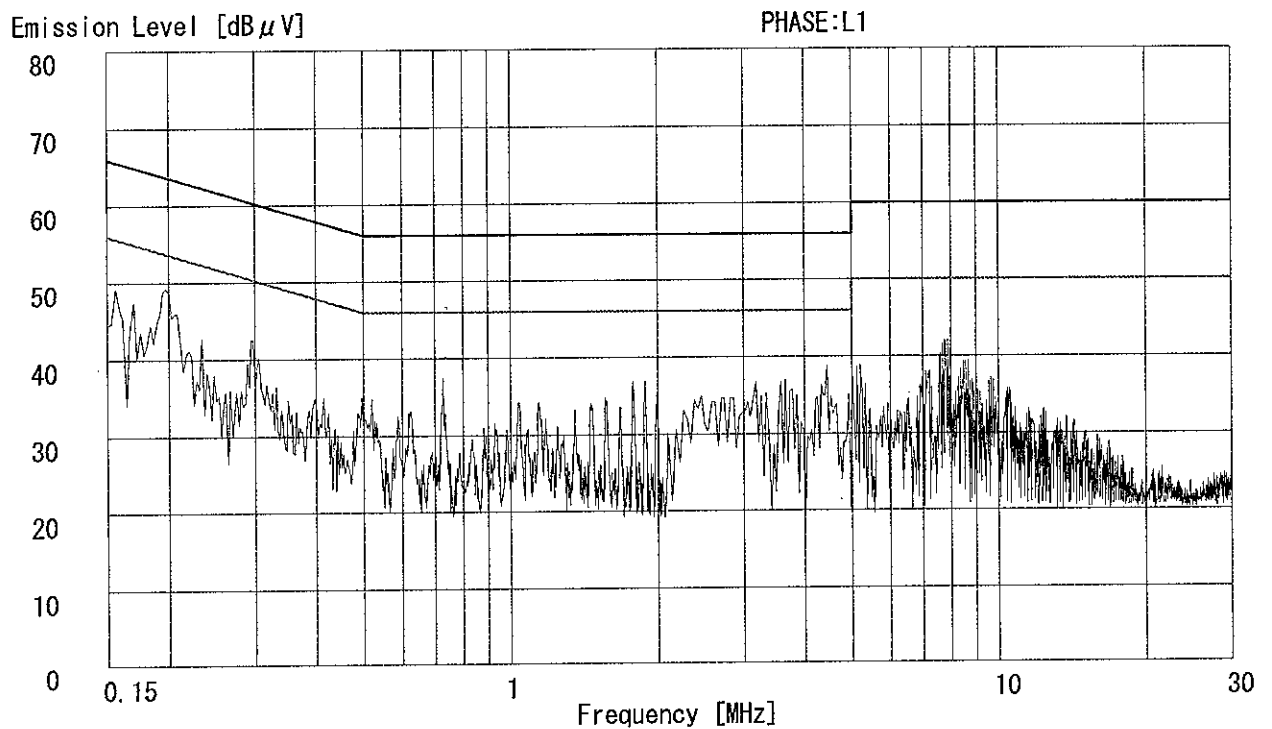
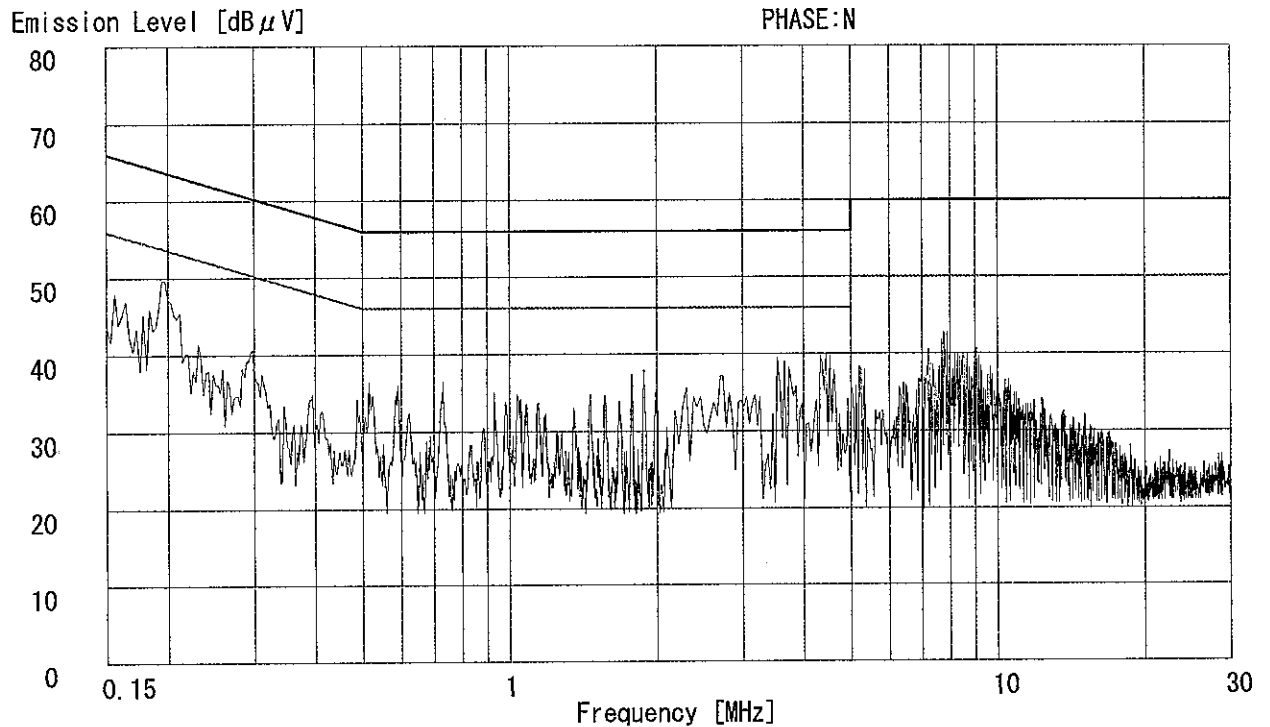
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YAMAKITA No.2 SHIELD ROOM

Report No. : 26CE0198-YK = 3

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Home AV Wireless System Receiver
Model No. : HWS-AV10R
Serial No. : 51
Power : AC120V/60Hz (DC6V)
Mode : Transmitting (433.92MHz)
Remarks :
Date : 1/6/2006
Phase : Single Phase
Temperature : 20 °C
Humidity : 27 %
Regulation 1 : FCC Part15C § 15.207. (CISPR Pub.22)
Regulation 2 : None

Engineer : Makoto Hosaka



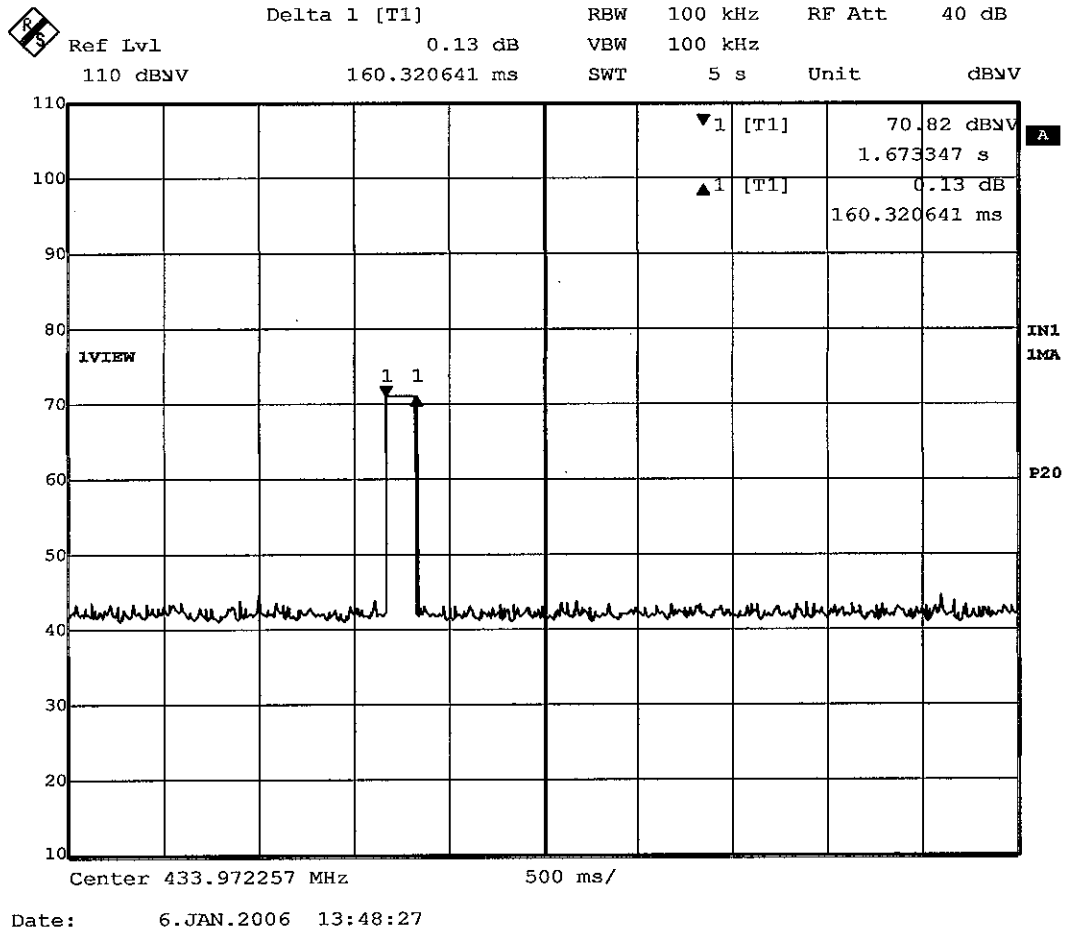
Page:

Automatically deactivate: FCC 15.231(a)(1)

COMPANY : Sony EMCS Corporation Saitama TEC
EQUIPMENT : Home AV Wireless System Receiver
MODEL NUMBER: HWS-AV10R
SERIAL NUMBER: 51
FCC ID : AK8HWSAV10R
POWER : AC120V/60Hz(DC6V)

UL Apex Co., Ltd. Yamakita No.2 Shielded Room
REPORT NO : 26CE0198-YK = 3
REGULATION : Fcc Part15SubpartC 231(a)(1)
DATE : 2006/01/06
TEMP./HUMI : 20°C/29%
TEST MODE : Transmitting
ENGINEER : Makoto Hosaka

Time of Transmitting	Limit
[sec]	[sec]
0.16	5.00



Electric Field Strength of Fundamental and Spurious emissions

UL Apex Co.,Ltd.

YAMAKITA NO.1 OPEN TEST SITE

Report No. : 26CE0198-YK-3

Company : Sony EMCS Corporation Saitama TEC
 Equipment : Home AV Wireless System Receiver
 Model : HWS-AV10R
 Sample No. : 51
 Power : AC120V/60Hz (DC 6.0V)
 Mode : Transmitting (433.92MHz)
 FCC ID : AK8HWSAV10R

Regulation : FCC Part15C Section 15.231(b)
 Test Distance : 3m
 Date : 2006/1/5
 Temperature : 15deg.C
 Humidity : 47%

ENGINEER : Go Ishiwata

Fundamental : PK DETECT(Test Receiver : IF BW 120kHz)

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN [dB]	Duty Factor	RESULT		LIMIT [dBuV/m]	MARGIN	
		HOR [dBuV]	VER [dBuV]						HOR [dBuV/m]	VER [dBuV/m]		HOR [dB]	VER [dB]
1	433.92	74.9	73.9	17.6	28.8	5.9	6.0	-4.4	71.2	70.2	80.8	9.6	10.6

2nd harmonic : PK DETECT(Test Receiver : IF BW 120kHz)

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN [dB]	Duty Factor	RESULT		LIMIT [dBuV/m]	MARGIN	
		HOR [dBuV]	VER [dBuV]						HOR [dBuV/m]	VER [dBuV/m]		HOR [dB]	VER [dB]
1	867.92	51.9	48.7	21.5	28.8	8.9	6.0	-4.4	55.1	51.9	60.8	5.7	8.9

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + ATT + Duty Factor(PK detect only)

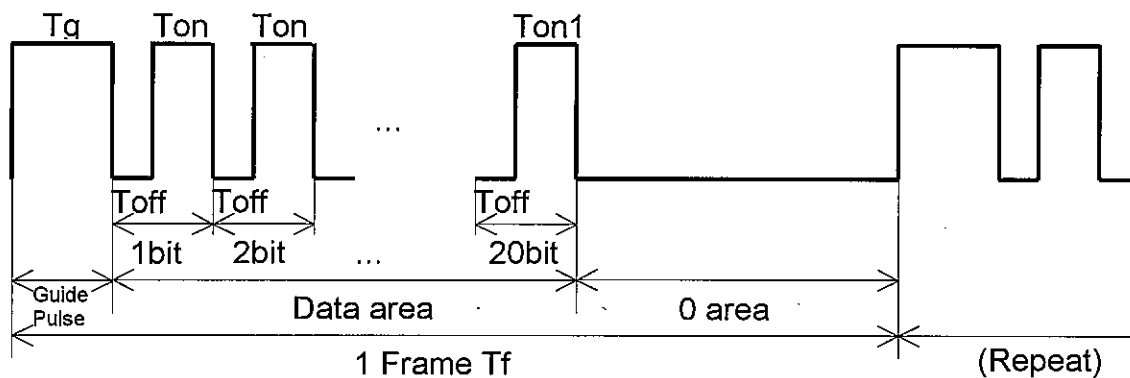
* Above the 3rd harmonics and other spurious emissions were measured in accordance with Section 15.209. (p.22-24)

Except for the above table : All other spurious emissions were less than 20dB for the limit.

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Duty Factor Calculation and Transmitting time and interval (1/2)

Time of the Remote Controller Command's 1 frame (case of the longest time for ON)



- 1 Frame Tf : 45msec
- Guide Pulse Tg : 2.4msec
- Data Ton1 : 1.2msec / Toff : 0.6msec

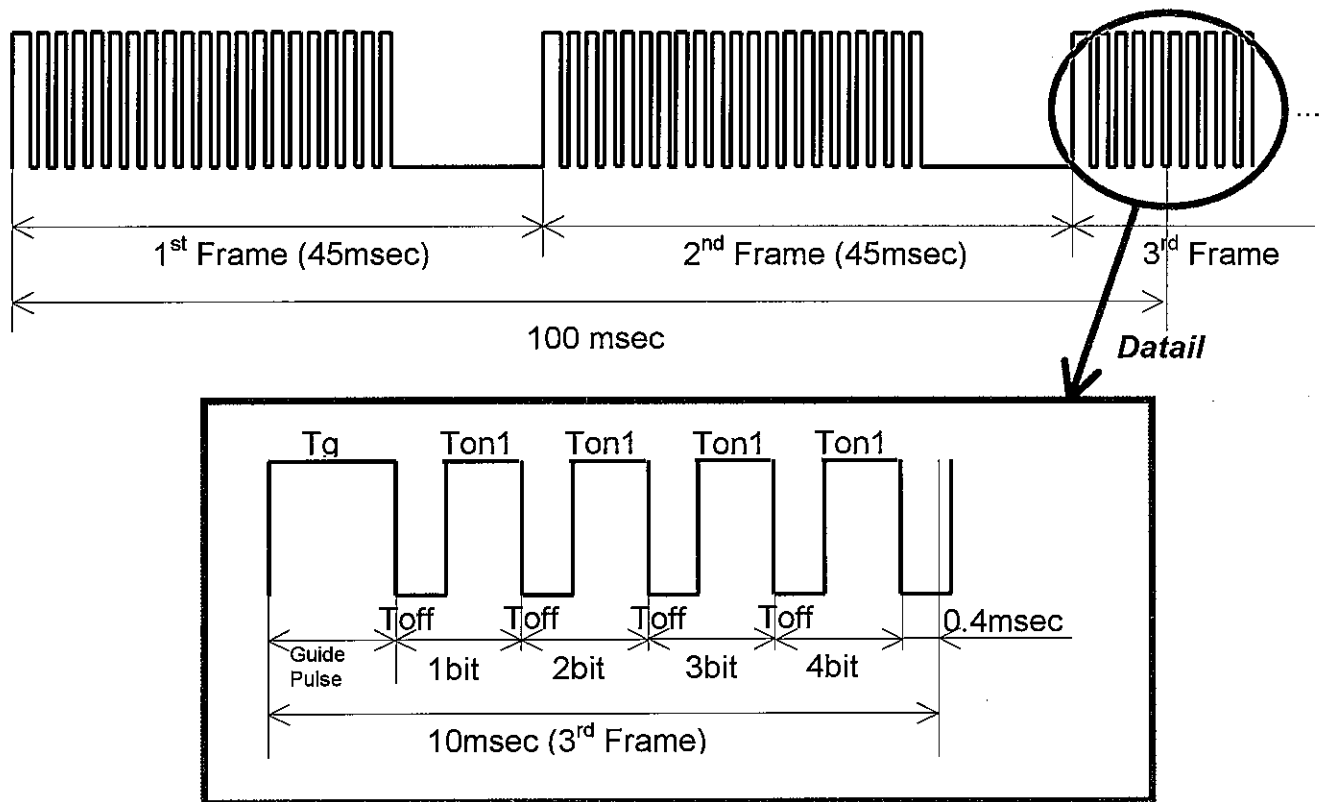
Time for ON and OFF in 1 frame

<u>ON</u>	<u>OFF</u>
Tg: 2.4msec	Toff: 0.6msec x 20 = 12msec
Ton1: 1.2msec x 20 = 24msec	0 area: 6.6msec
Total time: 26.4msec	Total time: 18.6msec

Duty Factor Calculation and Transmitting time and interval (2/2)

- 1 Frame T_f : 45msec
- Guide Pulse T_g : 2.4msec
- Data T_{on1} : 1.2msec / T_{off} : 0.6msec

Data frame in 100msec (3 commands output by 1 push of button)



Time for ON and OFF in 100msec

<u>ON</u>	<u>OFF</u>
<ul style="list-style-type: none"> ·1st and 2nd Frame : 26.4msec x 2 = 52.8msec ·3rd Frame T_g: 2.4msec T_{on1}: 1.2msec x 4 = 4.8msec 	<ul style="list-style-type: none"> ·1st and 2nd Frame 18.6msec x 2 = 37.2msec ·3rd Frame T_{off}: 0.6msec x 4 = 2.4msec OFF of 5bit = 0.4msec
Total time: 60msec	Total time: 40msec

Duty Cycle Factor

$$20 \log (100\text{msec} / 60\text{msec}) = \underline{\underline{4.437\text{dB}}}$$

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 OPEN TEST SITE

Report No. : 26CE0198-YK - 3

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Home AV Wireless System Receiver
Model No. : HWS-AV10R
Serial No. : 51
Power : AC120V/60Hz (DC6V)
Mode : Transmitting (433.92MHz)
Remarks : Other
Date : 1/5/2006
Test Distance : 3 m
Temperature : 15 °C
Humidity : 47 %
Regulation : FCC Part15C § 15.209

Engineer : Go Ishiwata

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μV/m]	MARGIN	
			HOR [dB μV]	VER [dB μV]					HOR [dB μV/m]	VER [dB μV/m]		HOR [dB]	VER [dB]
1.	393.29	BB	32.4	33.6	16.9	28.5	5.6	6.0	32.4	33.6	46.0	13.6	12.4
2.	406.84	BB	36.3	35.5	17.2	28.6	5.7	6.0	36.6	35.8	46.0	9.4	10.2
3.	420.42	BB	35.8	32.7	17.4	28.7	5.8	6.0	36.3	33.2	46.0	9.7	12.8
4.	476.57	BB	40.7	37.8	18.2	29.0	6.2	6.0	42.1	39.2	46.0	3.9	6.8

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

■ 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-02 (ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 OPEN TEST SITE

Report No. : 26CE0198-YK - 3

Applicant : Sony EMCS Corporation Saitama TEC
 Kind of Equipment : Home AV Wireless System Receiver
 Model No. : HWS-AV10R
 Serial No. : 51
 Power : AC120V/60Hz (DC6V)
 Mode : Transmitting (433.92MHz)
 Remarks : PK (RBW:1MHz, VBW:1MHz)
 Date : 1/5/2006
 Test Distance : 3 m
 Temperature : 15 °C
 Humidity : 47 %
 Regulation : FCC Part15C § 15.209 (PK Detection)

Engineer : Go Ishiwata

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μV/m]	MARGIN	
			HOR [dB μV]	VER [dB μV]					HOR [dB μV/m]	VER [dB μV/m]		HOR [dB]	VER [dB]
1.	1301.76	BB	50.0	50.7	24.7	37.9	3.0	10.0	49.8	50.5	74.0	24.2	23.5
2.	1735.68	BB	48.6	52.8	26.6	37.3	3.4	10.0	51.3	55.5	74.0	22.7	18.5
3.	2169.60	BB	44.8	45.2	28.6	37.0	3.8	10.0	50.2	50.6	74.0	23.8	23.4
4.	2603.52	BB	44.7	44.2	29.1	37.1	4.1	10.0	50.8	50.3	74.0	23.2	23.7
5.	3037.44	BB	44.5	44.1	30.3	37.2	4.5	10.1	52.2	51.8	74.0	21.8	22.2
6.	3471.36	BB	44.3	44.5	30.1	36.9	4.8	10.0	52.3	52.5	74.0	21.7	21.5
7.	3905.28	BB	44.1	43.9	31.6	36.7	5.0	0.5	44.5	44.3	74.0	29.5	29.7
8.	4339.20	BB	44.0	44.0	32.1	36.6	5.2	0.5	45.2	45.2	74.0	28.8	28.8

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz

■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3271A (KSA-04)

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 OPEN TEST SITE

Report No. : 26CE0198-YK - 3

Applicant : Sony EMCS Corporation Saitama TEC
 Kind of Equipment : Home AV Wireless System Receiver
 Model No. : HWS-AV10R
 Serial No. : 51
 Power : AC120V/60Hz (DC6V)
 Mode : Transmitting (433.92MHz)
 Remarks : AV (RBW:1MHz, VBW:10Hz)
 Date : 1/5/2006
 Test Distance : 3 m
 Temperature : 15 °C
 Humidity : 47 %
 Regulation : FCC Part15C § 15.209 (AV Detection)

Engineer : Go Ishiwata

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.	1301.76	BB	39.9	41.7	24.7	37.9	3.0	10.0	39.7	41.5	54.0	14.3	12.5
2.	1735.68	BB	38.9	42.1	26.6	37.3	3.4	10.0	41.6	44.8	54.0	12.4	9.2
3.	2169.60	BB	34.2	34.2	28.6	37.0	3.8	10.0	39.6	39.6	54.0	14.4	14.4
4.	2603.52	BB	34.3	34.2	29.1	37.1	4.1	10.0	40.4	40.3	54.0	13.6	13.7
5.	3037.44	BB	34.1	34.2	30.3	37.2	4.5	10.1	41.8	41.9	54.0	12.2	12.1
6.	3471.36	BB	33.5	34.0	30.1	36.9	4.8	10.0	41.5	42.0	54.0	12.5	12.0
7.	3905.28	BB	33.4	33.3	31.6	36.7	5.0	0.5	33.8	33.7	54.0	20.2	20.3
8.	4339.20	BB	33.1	33.2	32.1	36.6	5.2	0.5	34.3	34.4	54.0	19.7	19.6

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz

■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUMANALYZER: R3271A (KSA-04)

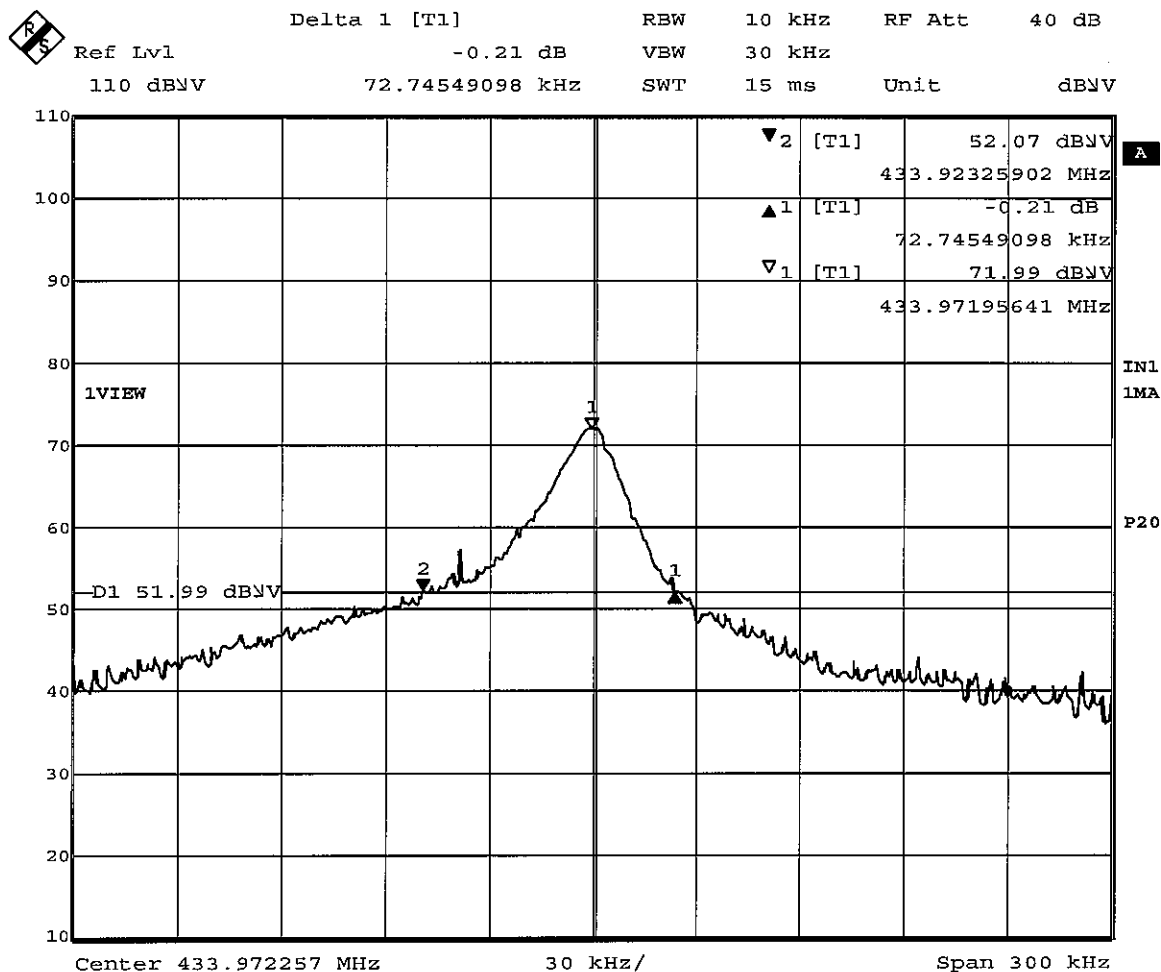
Page:

-20dB Bandwidth

COMPANY : Sony EMCS Corporation Saitama TEC
EQUIPMENT : Home AV Wireless System Receiver
MODEL NUMBER: HWS-AV10R
SERIAL NUMBER: 51
FCC ID : AK8HWSAV10R
POWER : AC120V/60Hz(DC6V)

UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
REPORT NO : 26CE0198-YK - 3
REGULATION : Fcc Part15SubpartC 231(c)
DATE : 2006/01/06
TEMP/HUMI : 20°C/29%
TEST MODE : Transmitting
ENGINEER : Makoto Hosaka

-20dB Bandwidth	Limit
[kHz]	Fundamental Frequency *0.25% [kHz]
72.75	1084.8

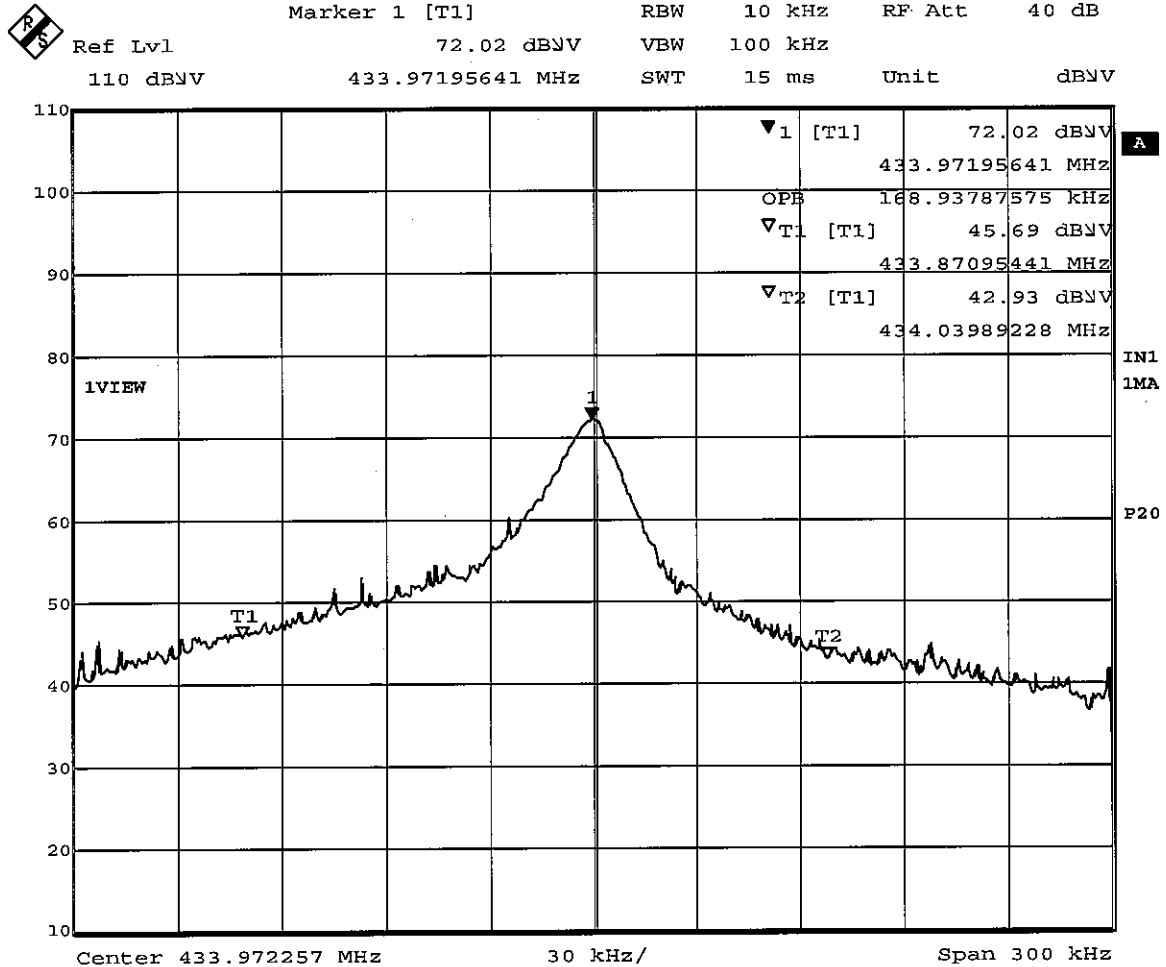


Date: 6.JAN.2006 13:38:18

Occupied Bandwidth(99%)

COMPANY	: Sony EMCS Corporation Saitama TEC	UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
EQUIPMENT	: Home AV Wireless System Receiver	REPORT NO : 26CE0198-YK-3
MODEL NUMBER	: HWS-AV10R	DATE : 2006/01/06
SERIAL NUMBER	: 51	TEMP./HUMI : 20°C/29%
FCC ID	: AK8HWSAV10R	TEST MODE : Transmitting
POWER	: AC120V/60Hz(DC6V)	ENGINEER : Makoto Hosaka

99% Occupied Bandwidth
[kHz]
168.94



Date: 6.JAN.2006 13:40:40

Test Report No :26CE0198-YK-3

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	2005/05/24 * 12
KAF-02	Pre Amplifier	Hewlett Packard	8449B	RE	2005/04/28 * 12
KAF-05	Pre Amplifier	Agilent	8447D	AT	2005/05/11 * 12
KAT10-S1	Attenuator	Agilent	8449D 010	RE	2005/04/12 * 12
KAT6-02	Attenuator	INMET	18N-6dB	RE	2005/04/07 * 12
KBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/08/04 * 12
KCC-10/11/12 /13/18	Coaxial Cable	Fujikura/Suhner	8D-2W/12D-SFA/S0 4272B/S04272B/S04 272B	RE	2005/06/14 * 12
KCC-33/34	Coaxial Cable	Fujikura/Suhner	5D-2W/S04272B	AT	2005/12/22 * 12
KCC-A2/A3	Coaxial Cable	Fujikura	5D-2W	RE/AT	2005/06/03 * 12
KCC-D3/D7	Coaxial Cable	Rosenberger/Advantest	2201/JUN-08-01-06 1	RE	2005/04/12 * 12
KFL-01	Highpass Filter	Hewlett Packard	84300 80038	RE	2005/04/12 * 12
KHA-01	Horn Antenna	A.H.Systems	SAS-200/571	RE	2005/08/20 * 12
KLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/01/29 * 12
KLS-05	LISN(AMN)	Schwarzbeck	NSLK8126	CE	2005/09/06 * 12
KOTS-01	Open Test Site	JSE	30m	RE	2005/08/10 * 12
KSA-01	Spectrum Analyzer	Advantest	R3365	RE	2005/07/06 * 12
KTR-01	Test Receiver	Rohde & Schwarz	ES140	CE/AT	2005/08/05 * 12
KTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE	2005/11/10 * 12
KSA-04	Spectrum Analyzer	Advantest	R3271A	CE	2005/09/13 * 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 conducted test

1 20dB Bandwidth

2 Automatically deactivate