RADIO TEST REPORT

Test Report No. : 27DE0250-YK-A

Applicant	:	**Sony EMCS Corporation Saitama TEC**
Type of Equipment	:	**Wireless Stereo Headset**
Model No.	:	**DR-BT50**
FCC ID	:	**AK8DRBT50**
Test Standard	:	**FCC Part15 Subpart C,** Section 15.209, Section 15.247: 2006
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 the above regulation.
4. The test results in this test report are traceable to the national or international standards.

Date of test: November 28 and December 1, 2006

Tested by: Tatsuya Arai

Approved by: Osamu Watatani
Manager of Yamakita EMC Lab.

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1 Applicant Information

Company Name	:	Sony EMCS Corporation Saitama TEC
Address	:	Shinagawa INTERCITY C Tower 2-15-3 Konan Minato-ku, Tokyo, 108-6201 JAPAN
Telephone Number	:	+81-3-5769-5640
Facsimile Number	:	+81-3-5769-5962
Contact Person	:	Kikuo Murata

2 Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless Stereo Headset
Model No.	:	DR-BT50
Serial No.	:	91 (Radiated emission test), 74 (other test)
Rating	:	DC3.7V
Country of Manufacture	:	Malaysia
Receipt Date of Sample	:	November 28, 2006
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No modification by the test lab.

2.2 Product Description

Model: DR-BT50 (referred to as the EUT in this report) is a Wireless Stereo Headset.

Equipment type	:	Transceiver
Frequency of operation	:	2402-2480MHz
Clock frequency	:	Module clock: 24MHz
Bandwidth & channel spacing	:	79MHz & 1MHz
Type of modulation	:	FHSS
Antenna type	:	Chip Helical
Antenna connector type	:	Integral
Antenna gain	:	1dBi
Mode of operation	:	Simplex
ITU code	:	F1D
Operation temperature range	:	0 to +45 deg.C.

FCC Part15.31 (e)
The Bluetooth module is provided with stable power supply (DC 1.8 V), therefore, the equipment complies power supply regulation.

FCC Part15.203 Antenna requirement
It is impossible for end users to replace the antenna, because the antenna is mounted inside of the module. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3 Test Specification, Procedures and Results

3.1 Test specification

Test specification : FCC Part15 Subpart C: 2006
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.209 Radiated emission limits, general requirements
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz

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 *1	N/A	N/A
Carrier Frequency Separation	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)	Conducted	N/A	*See data.	Complied
20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)	Conducted	N/A		Complied
Number of Hopping Frequency	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Dwell time	ANSI C63.4:2003 13.Measurement of intentional radiators	Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (b)(1)	Conducted	N/A		Complied
Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.209 Section15.247 (d)	Conducted / Radiated	N/A *1)	8.8dB (3308.05MHz, AV, Vertical, Tx 2480MHz)	Complied

The measurements also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".

*1) The test is not applicable since the EUT has no AC mains.

* No addition, exclusion nor deviation has been made from the standard.

3.3 Uncertainty

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

Spurious emission test (Radiated)
The measurement uncertainty (with 95% confidence level) for this test using Biconical antenna is ±4.5dB.
The measurement uncertainty (with 95% confidence level) for this test using Logperiodic antenna is ±4.3dB.
The measurement uncertainty (with 95% confidence level) for this test using Horn antenna is ±5.2dB.
The data listed in this test report has enough margin, more than site margin.

3.4 Test Location

UL Apex Co., Ltd. Yamakita EMC Lab.
907, Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken 258-0124 JAPAN
Telephone number : +81 465 77 1011
Facsimile number : +81 465 77 2112
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		

4 System Test Configuration

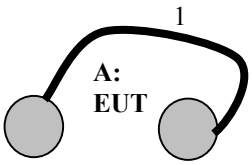
4.1 Justification

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

Test mode: Transmitting (Packet size: DH5)
- Low channel : 2402MHz
- Middle channel : 2441MHz
- High channel : 2480MHz
- Hopping
- Inquiry

*Remarks: Test was not performed at AFH mode, because the decrease of number of channel (min: 20ch) at AFH mode does not influence on the output power and bandwidth of the EUT.
However, the limit level 125mWof AFH mode was used for the test.

4.2 Configuration of Tested System



* Test data was taken under worse case conditions.

Description of EUT and support equipment

No.	Item	Model number	Serial number *1)	Manufacturer	FCC ID (Remarks)
A	Wireless Stereo Headset	DR-BT50	91	SONY	AK8DRBT50 (EUT)
			74		

*1) 91: Radiated emission test, 74: other test

List of cables used

No.	Name	Length (m)	Shield		Remark
			Connector	Cable	
1	Headphone cable	0.6	- (No connector)	Unshielded	-

5 Carrier Frequency Separation

Test Procedure
The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass
Date: December 1, 2006 Test engineer : Tatsuya Arai

6 20dB Bandwidth

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

Summary of the test results: Pass
Date: December 1, 2006 Test engineer : Tatsuya Arai

7 Number of Hopping Frequency

Test Procedure
The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass
Date: December 1, 2006 Test engineer : Tatsuya Arai

8 Dwell time

Test Procedure
The Dwell time was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass
Date: December 1, 2006 Test engineer : Tatsuya Arai

9 Maximum Peak Output Power

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

Summary of the test results: Pass
Date: December 1, 2006 Test engineer : Tatsuya Arai

10 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.

Summary of the test results: Pass
Date: December 1, 2006 Test engineer : Tatsuya Arai

11 Out of Band Emissions (Radiated)

11.1 Operating environment

The test was carried out in No.1 anechoic chamber.

11.2 Test configuration

EUT was placed on a urethane 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.

11.3 Test conditions

Frequency range : 30MHz - 26GHz
Test distance : 3m
EUT operation mode : Transmitting

11.4 Test procedure

The Radiated Electric Field Strength intensity has been measured with a ground plane and at a distance of 3m and 1m. 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.
When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz	PK: RBW: 1MHz/VBW: 1MHz, AV: RBW: 1MHz/VBW: 10Hz
Measuring antenna	Biconical (30-299MHz) Logperiodic (300MHz-1GHz)	Horn

The equipment was previously checked at each position of three axes X, Y and Z. The position in which the maximum noise occurred was chosen to put into measurement. See the table below and photographs in page 11. With the position, the noise levels of all the frequencies were measured.

	Below 1GHz	Above 1GHz
Horizontal	Z	Y
Vertical	X	X

11.5 Results

Summary of the test results : Pass
No noise was detected above the 5th order harmonics.

Date : November 28, 2006 Test engineer : Tatsuya Arai

APPENDIX 1: Photographs of test setup

Page 10 : Radiated emission

Page 11 : Pre-check of the worst position

APPENDIX 2: Test Data

Page 12 : Carrier Frequency Separation

Page 13 : 20dB Bandwidth

Page 14 - 16 : Number of Hopping Frequency

Page 17 - 20 : Dwell time

Page 21 : Maximum Peak Output Power

Page 22 - 27 : Out of Band Emissions (Antenna Port Conducted)

Page 28 - 36 : Out of Band Emissions (Radiated)
28-30 : 30-1000MHz
31-36 : 1-26GHz

Page 37 - 38 : Occupied Bandwidth

APPENDIX 3: Test instruments

Page 39 : Test instruments

Radiated emission

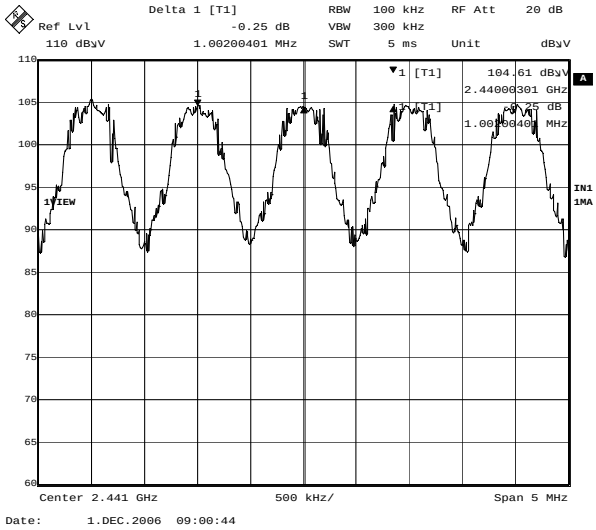
Pre-check of the worst position

Channel Separation: FCC 15.247(a)(1)

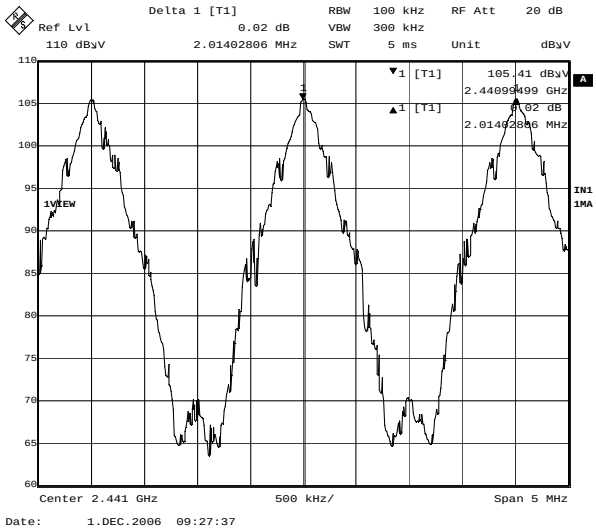
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

1. Hopping:1002.00kHz



2. Inquiry:2014.03kHz

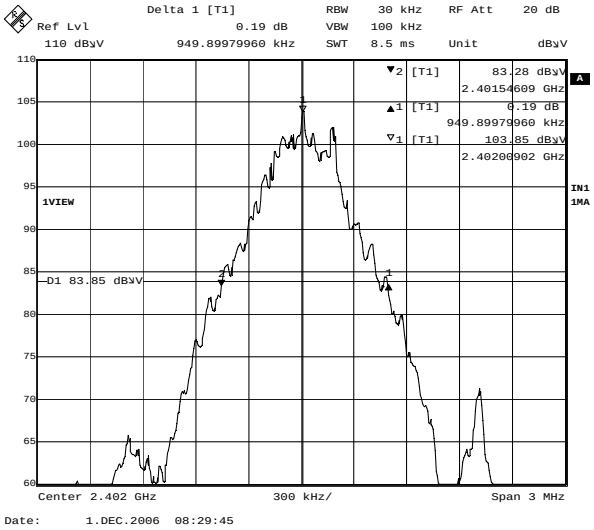


20dB Bandwidth: FCC 15.247(a)(1)

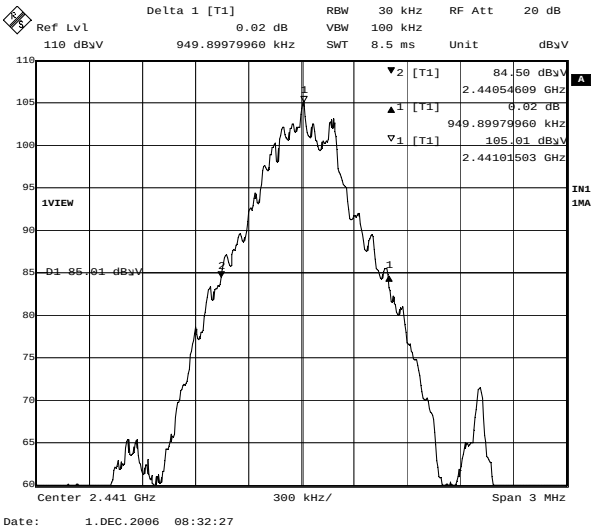
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting (Hopping off)
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

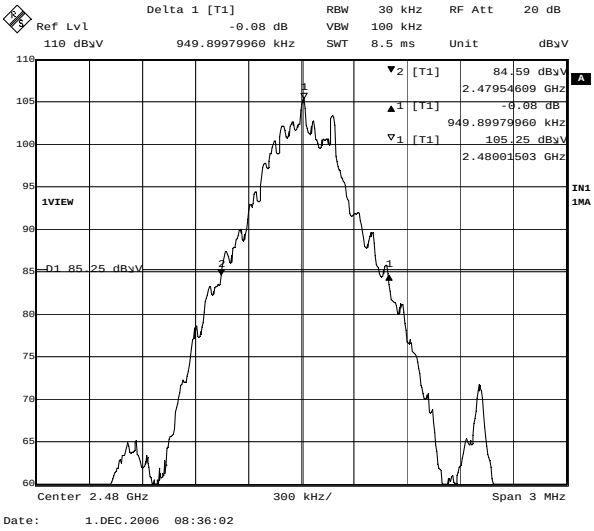
1. ch : 2402MHz/20dB Bandwidth:949.90kHz



2. ch : 2441MHz/20dB Bandwidth:949.90kHz



3. ch : 2480MHz/20dB Bandwidth:949.90kHz



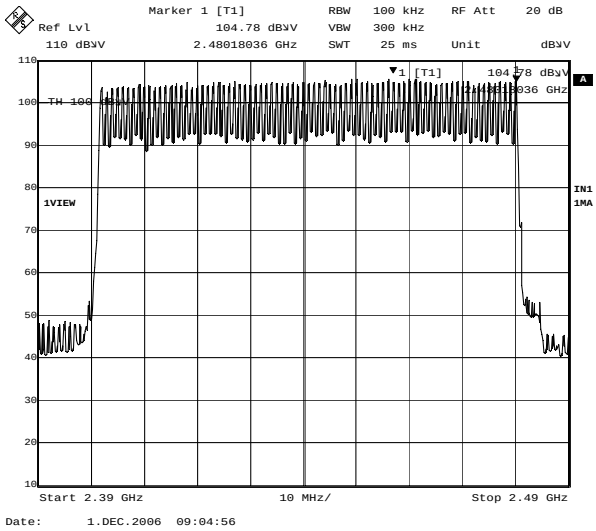
Channel Utilization: FCC 15.247(a)(1)(iii)

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)(ⅲ)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

Hopping: 79ch

1.



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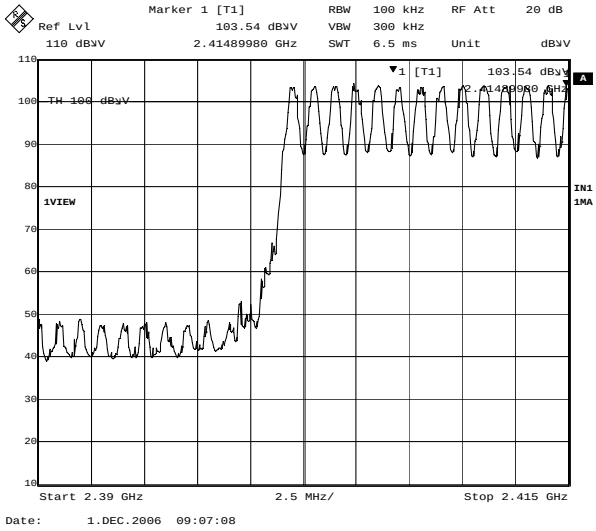

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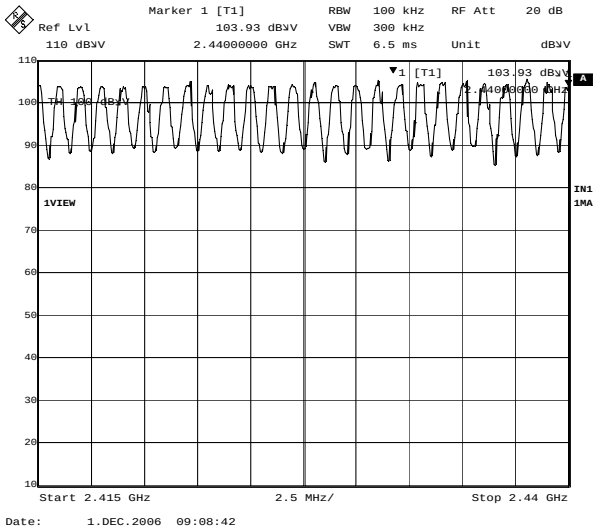
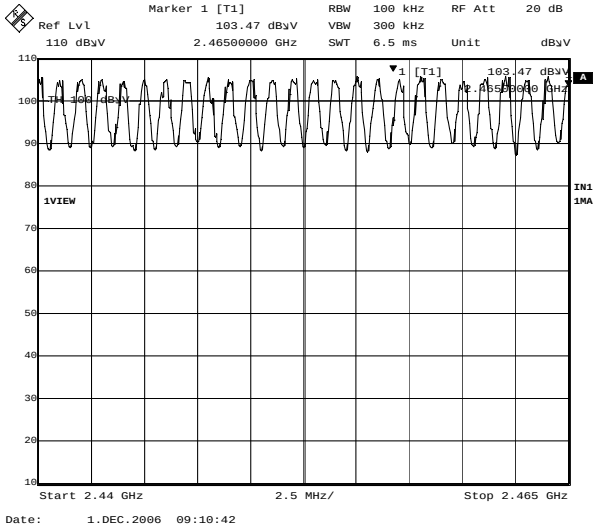


Channel Utilization: FCC 15.247(a)(1)(iii)

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)(iii)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

4.



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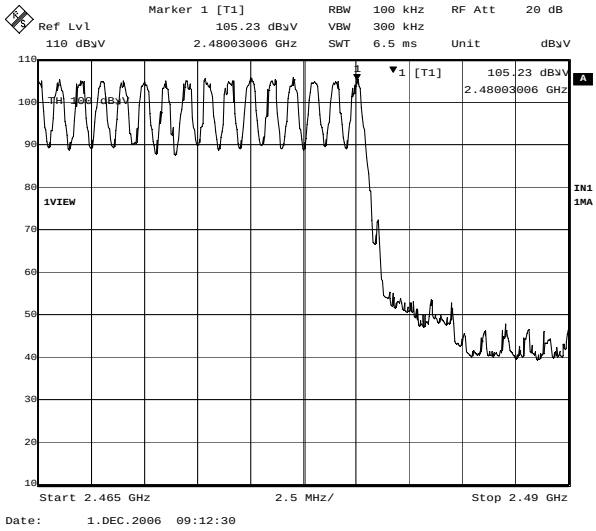
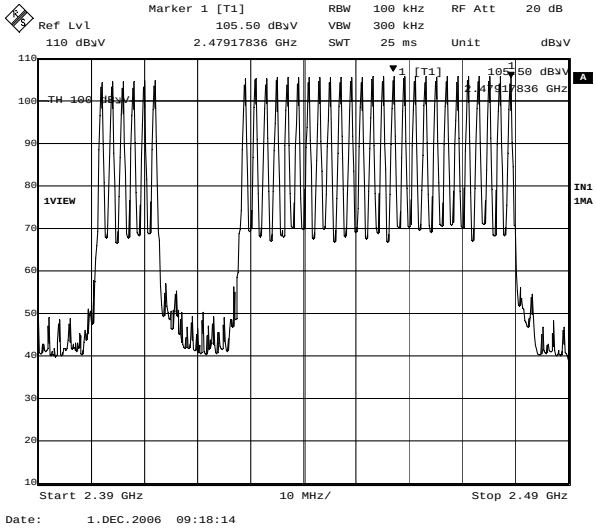


Channel Utilization: FCC 15.247(a)(1)(iii)

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)(ⅲ)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

1. Inquiry: 32ch



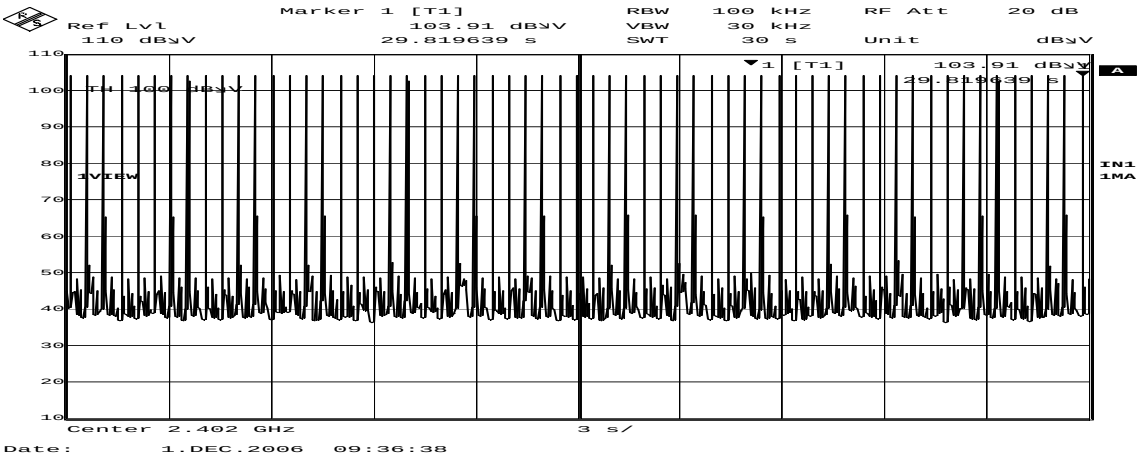
Dwell Time: FCC 15.247(a)(1)(iii)

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)(iii)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

Hopping:

Count 1



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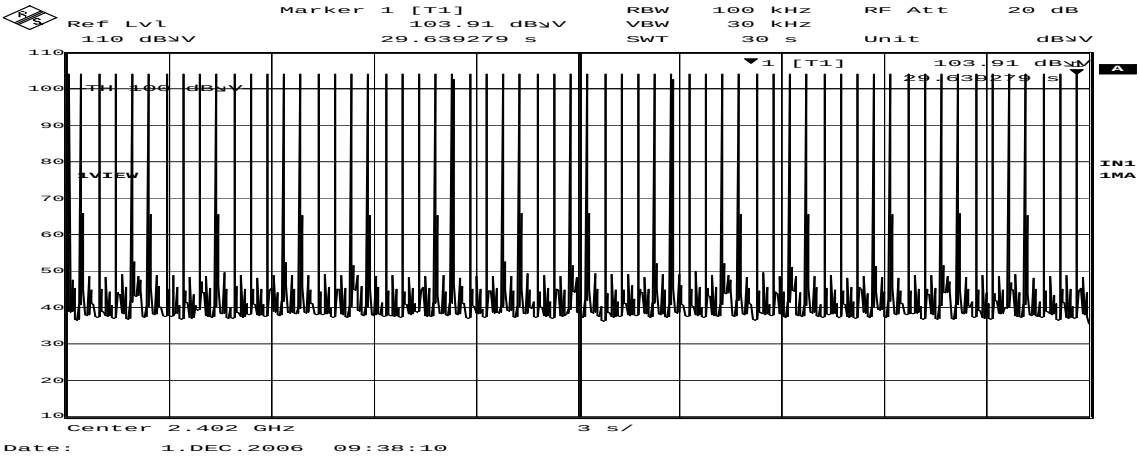

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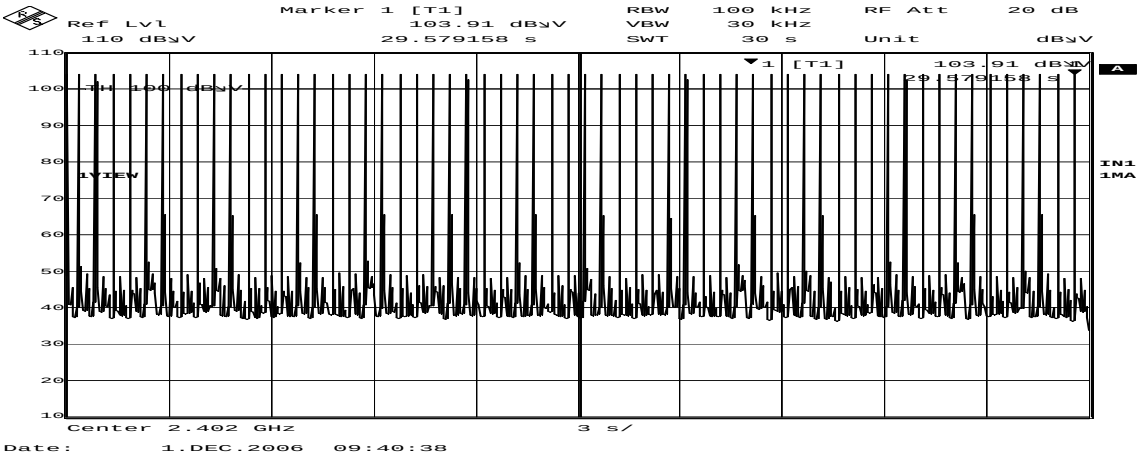
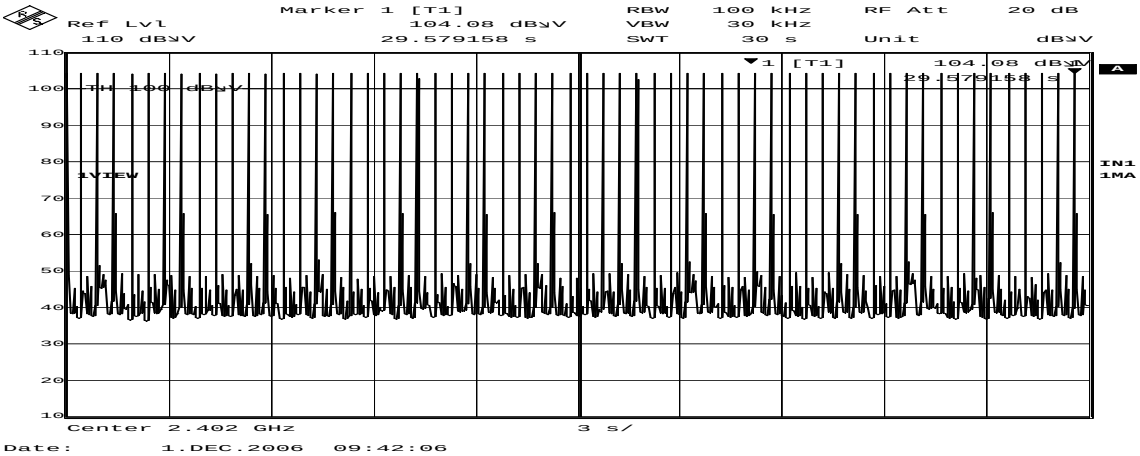


Dwell Time: FCC 15.247(a)(1)(iii)

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)(iii)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

Count 4



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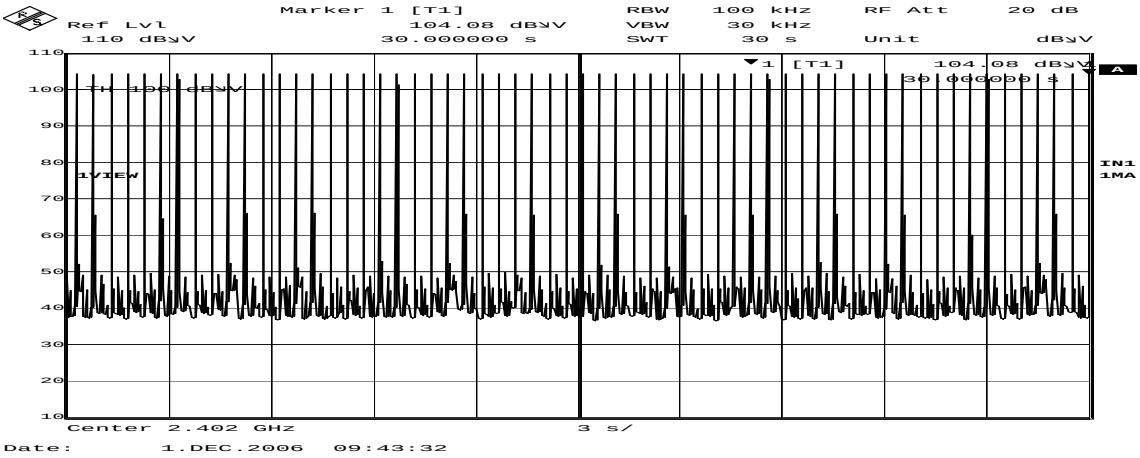
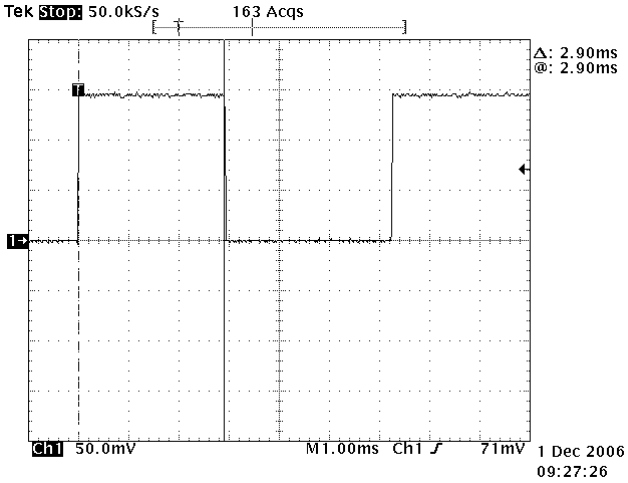


Duty cycle(Hopping)



Average times of rising in 30 sec. of sweep = (61 + 61 + 61 + 61 + 61) / 5 = 61
Average times of rising in 1 sec. = 61 / 30s = 2.03
Average times of rising in 0.4x = 0.4 * 79ch * 2.03 = 64.15
Dwell time = 64.15 * 2.90 = 186.04 [ms]
Limit : Dwell Time < 0.4[s]

Dwell Time: FCC 15.247(a)(1)(iii)

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

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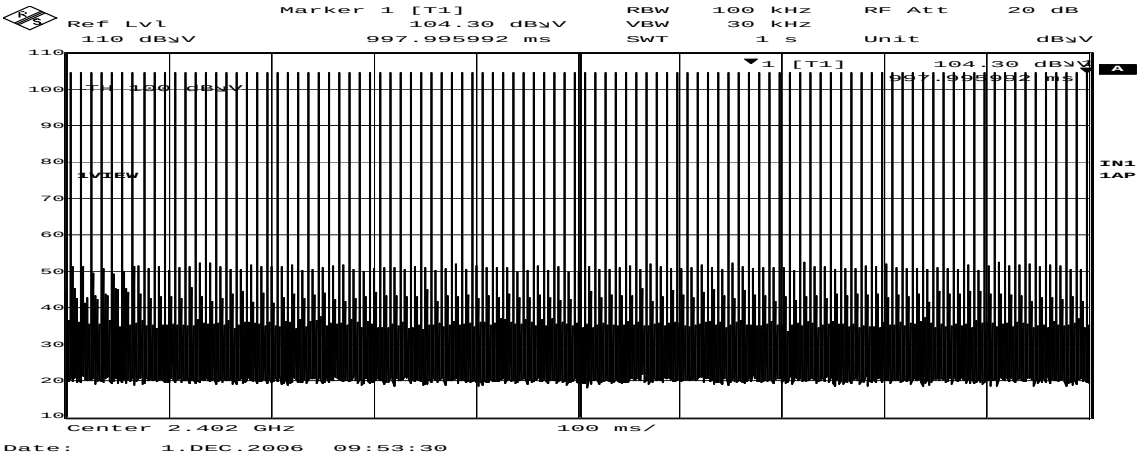
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)(iii)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

Inquiry:

Count 1



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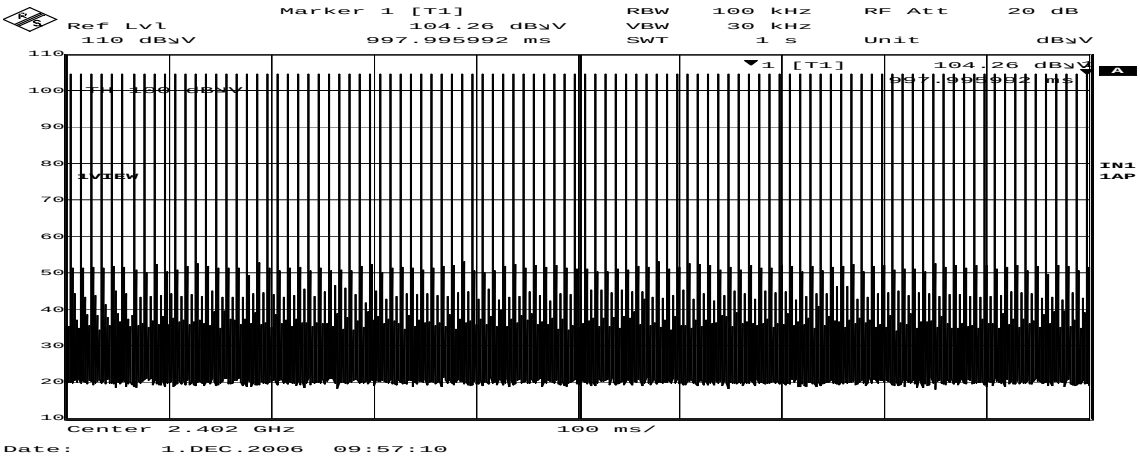

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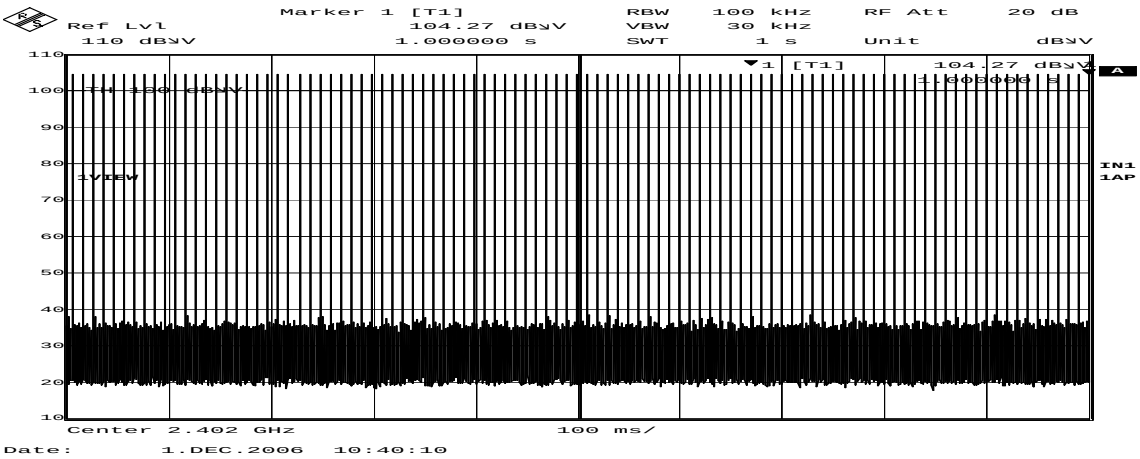
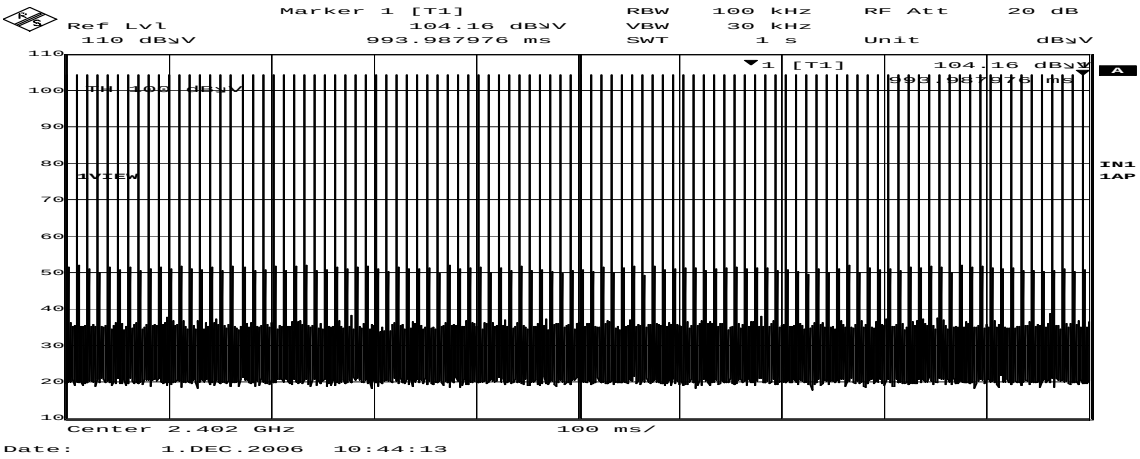


Dwell Time: FCC 15.247(a)(1)(iii)

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(a)(1)(iii)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

Count 4



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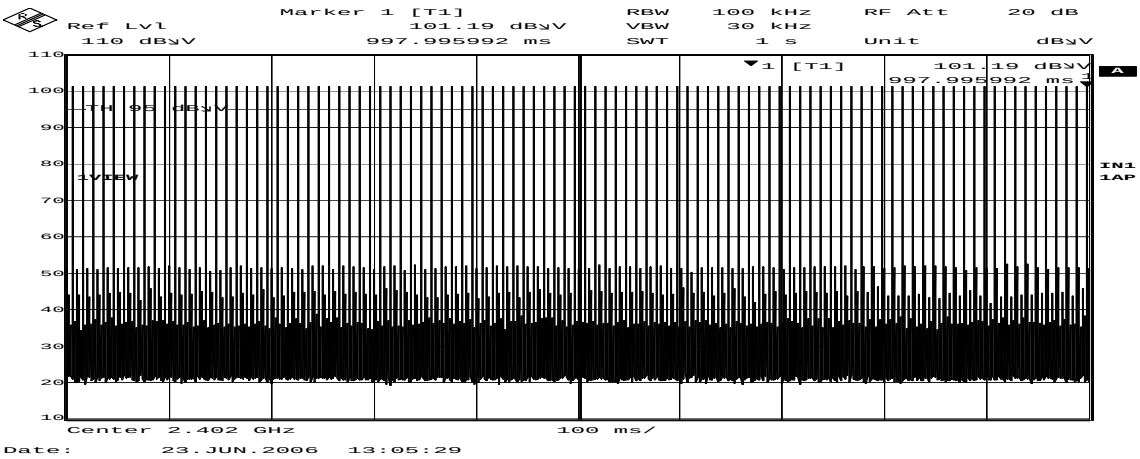
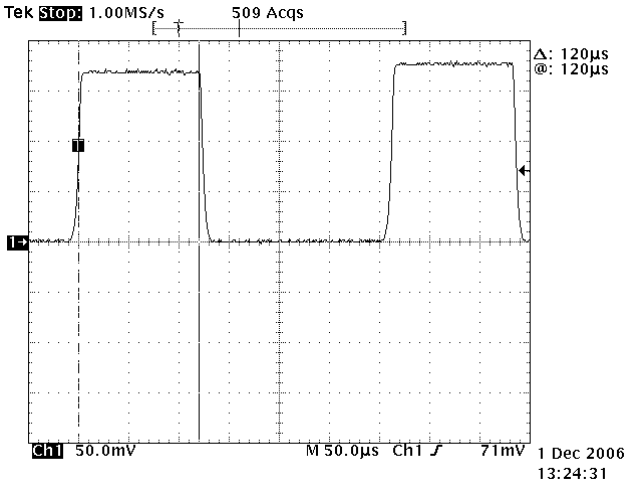


Duty cycle(Inquiry)



Average times of rising in 30 sec. of sweep = (100 + 100 + 100 + 100 + 100) / 5 = 100
Average times of rising in 1 sec. = 100 / 1s = 100.0
Average times of rising in 0.4x = 0.4 * 32ch * 100.0 = 1280.0
Dwell time = 1280.0 * 0.12 = 153.60 [ms]
Limit : Dwell Time < 0.4[s]

Maximum Peak Conducted Output Power

UL Apex Co.,Ltd
YAMAKITA No.5 Shielded Room

COMPANY : Sony EMCS Corporation Saitama TEC
EQUIPMENT : Wireless Stereo Headset
MODEL NUMBE : DR-BT50
SERIAL NUMBE : 74
FCC ID : AK8DRBT50
POWER : DC3.7V
TEST MODE : Transmitting

REPORT NO : 27DE0250-YK-A
REGULATION : Fcc Part15SubpartC 247(b)(1)
DATE : 2006/12/01
TEMP./HUMI : 20deg.C/46%

ENGINEER : Tatsuya Arai

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	-2.23	0.40	-1.83	20.96	22.79
Mid	2441.00	-1.56	0.40	-1.16	20.96	22.12
High	2480.00	-1.34	0.30	-1.04	20.96	22.00
Hopping	-	-1.30	0.40	-0.90	20.96	21.86
Inquiry	-	-0.98	0.40	-0.58	20.96	21.54

Limit: 125mW=20.96dBm
P/M: Power Meter
CABLE LOSS:KCC-D7

Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

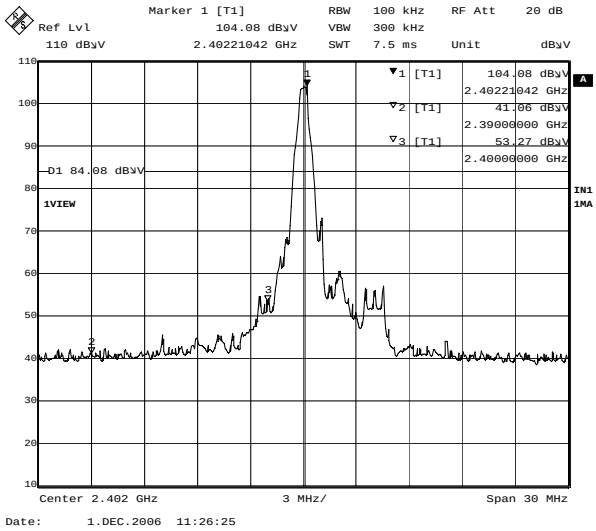
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(d)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting (Hopping off)
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

[Transmitting]

Ch:2402MHz

1.



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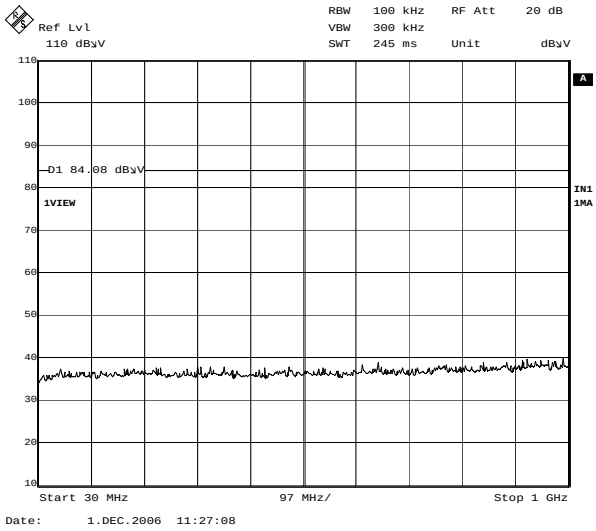

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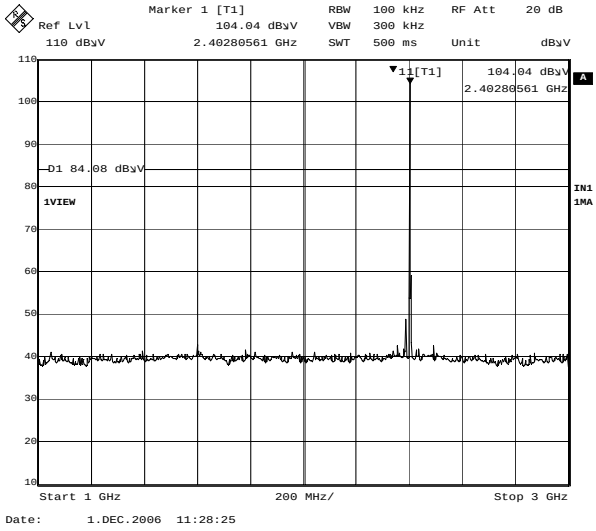


Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

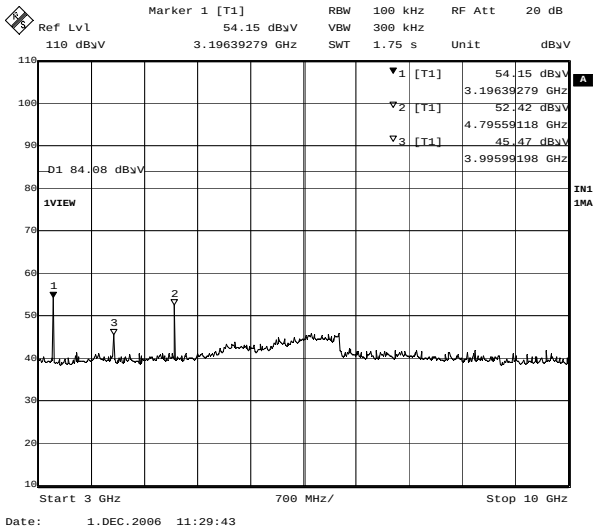
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(d)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting (Hopping off)
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

[Transmitting]

Ch:2402MHz

4.



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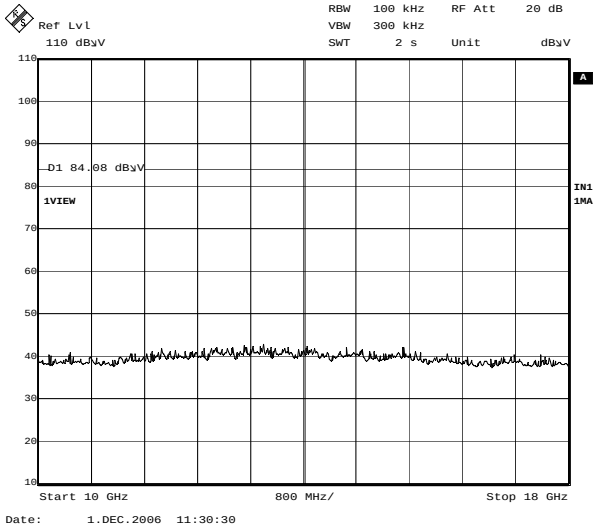

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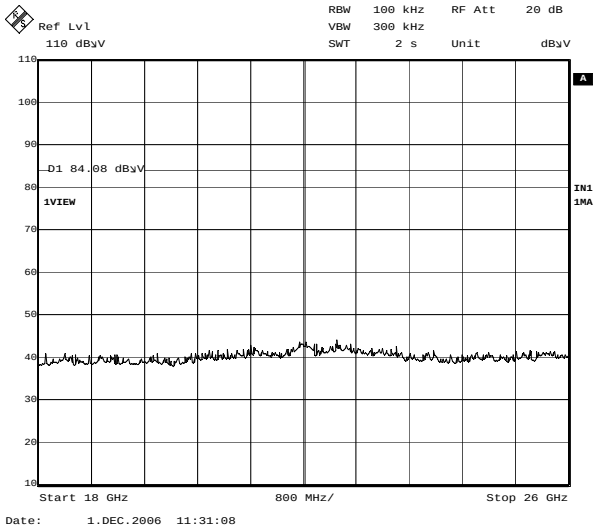


Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

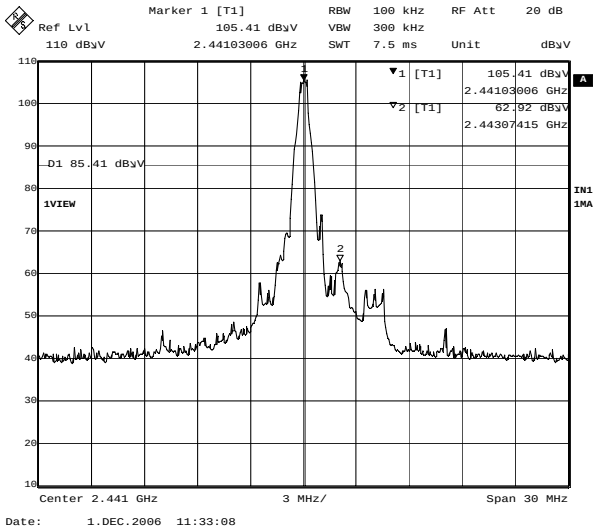
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(d)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting (Hopping off)
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

[Transmitting]

Ch:2441MHz

1.



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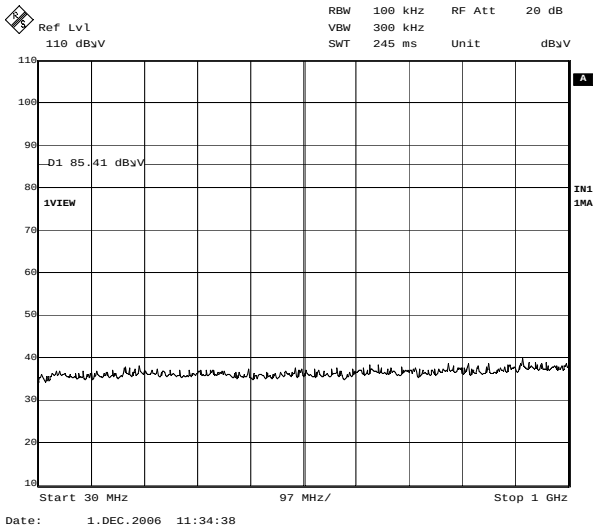

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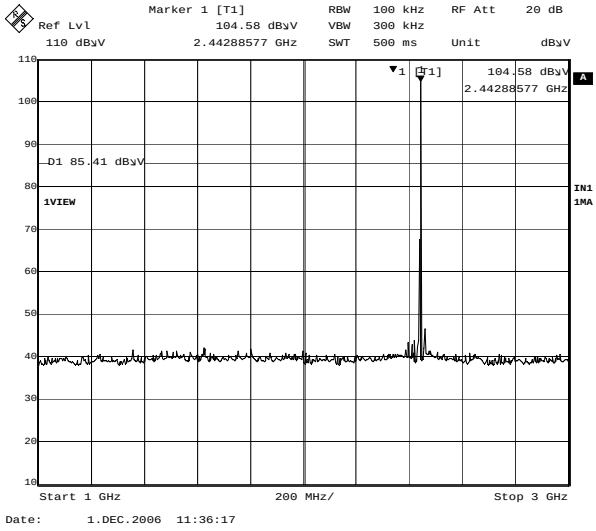


Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

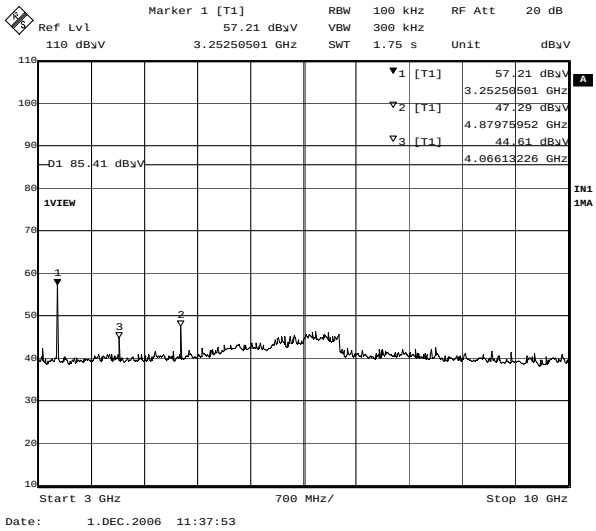
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(d)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting (Hopping off)
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

[Transmitting]

Ch:2441MHz

4.



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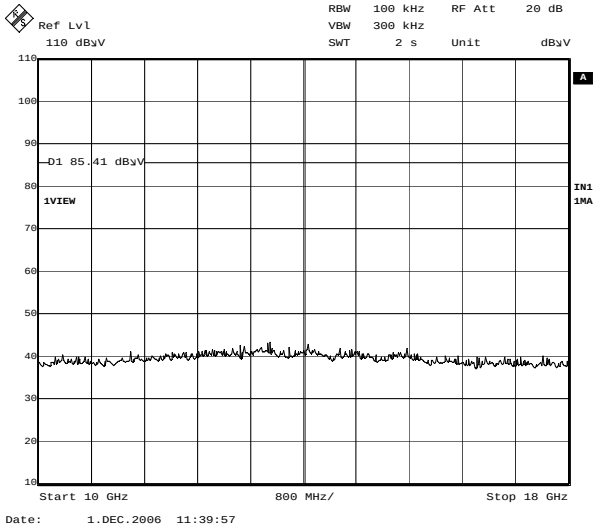

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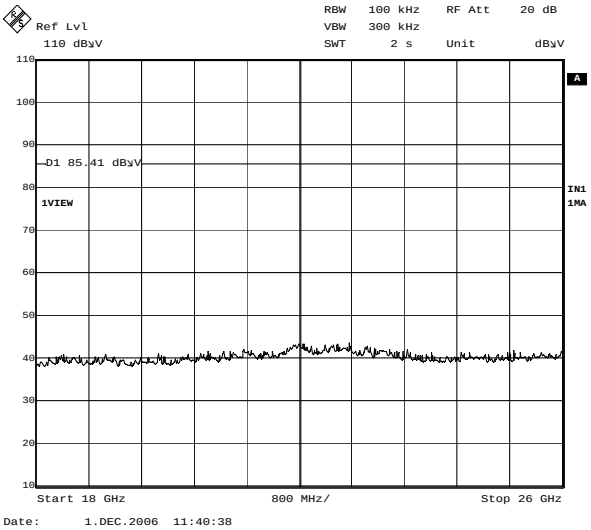


Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

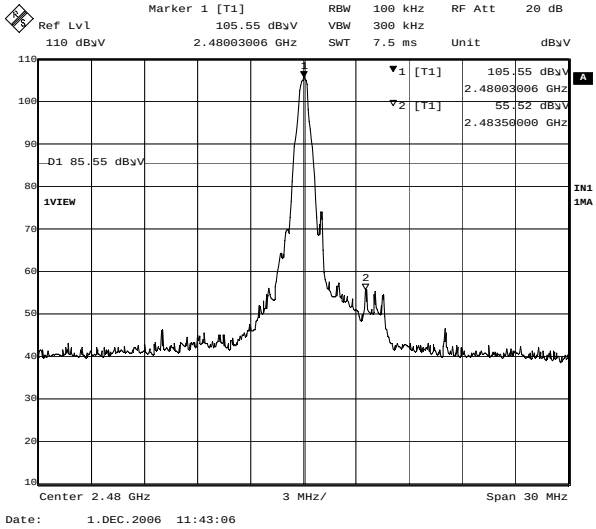
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(d)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting (Hopping off)
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

[Transmitting]

Ch11:2480MHz

1.



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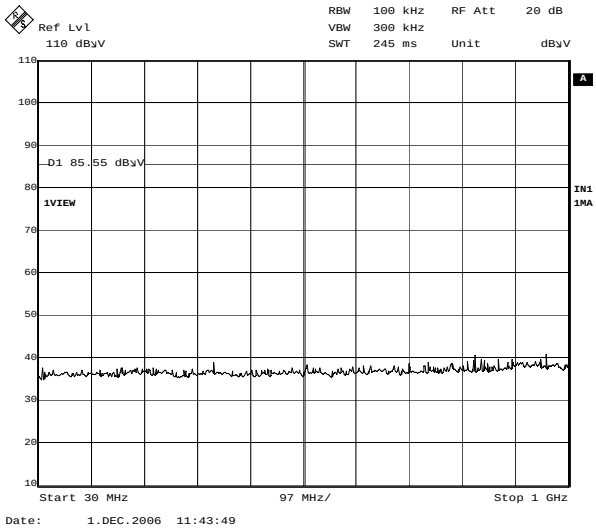

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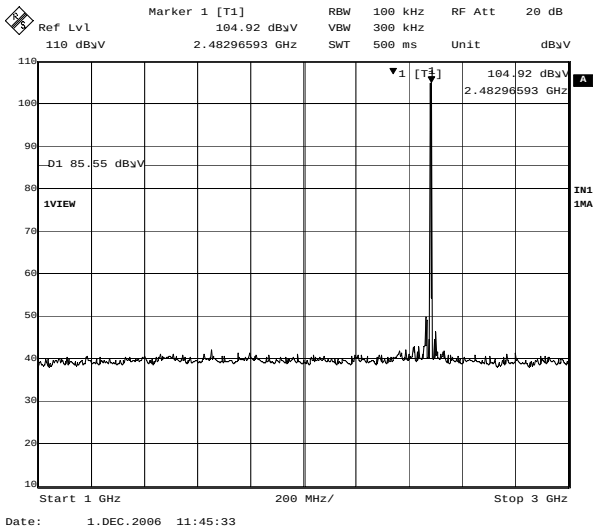


Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

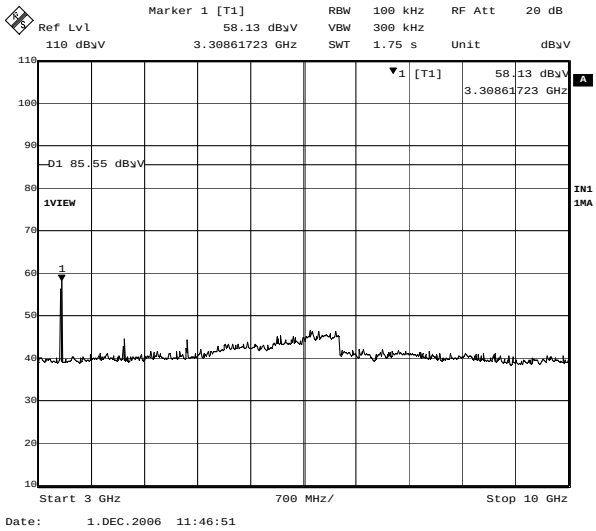
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: Fcc Part15SubpartC 247(d)
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting (Hopping off)
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

[Transmitting]

Ch:2480MHz

4.



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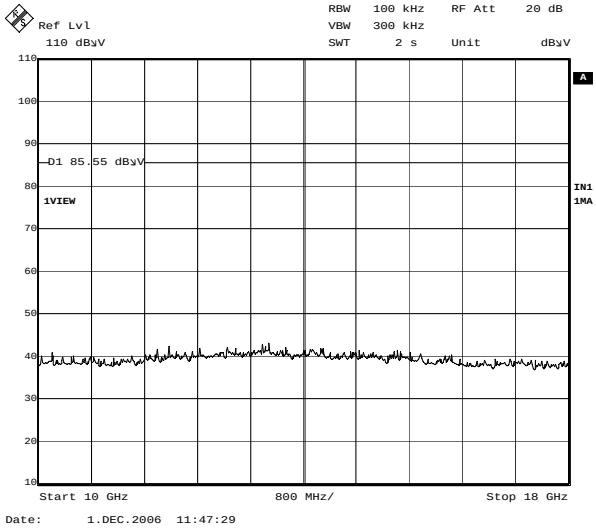

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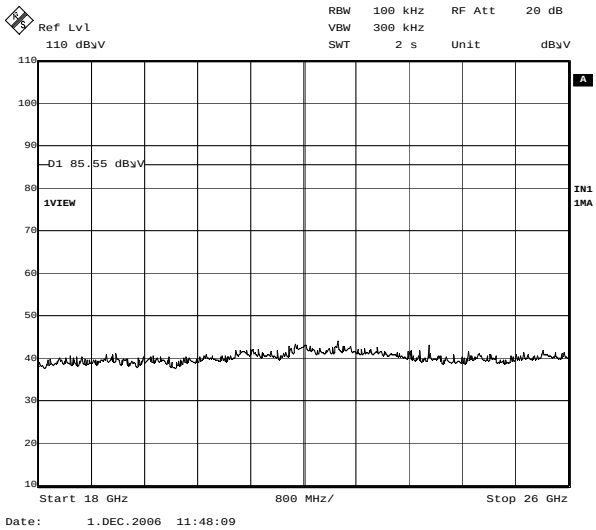


DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2402MHz
Remarks : -
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	156.00	BB	19.0	19.1	15.4	28.2	2.6	6.0	14.8	14.9	43.5	28.7	28.6
2.	312.01	BB	27.4	24.5	15.2	27.7	3.9	6.0	24.8	21.9	46.0	21.2	24.1
3.	624.00	BB	19.3	19.4	19.8	29.3	5.6	6.0	21.4	21.5	46.0	24.6	24.5

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

■ANTENNA:KBA-03(BBA9106)30-299.99MHz/KLA-03(USLP9143)300-1000MHz
■AMP:KAF-05(8447D) ■RECEIVER:KTR-01(ESI40) ■KCC-30_31_32_34(RE)

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2441MHz
Remarks : –
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	156.00	BB	19.1	19.1	15.4	28.2	2.6	6.0	14.9	14.9	43.5	28.6	28.6
2.	312.00	BB	25.5	21.5	15.2	27.7	3.9	6.0	22.9	18.9	46.0	23.1	27.1
3.	624.00	BB	19.3	19.4	19.8	29.3	5.6	6.0	21.4	21.5	46.0	24.6	24.5

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

■ANTENNA:KBA-03(BBA9106)30-299.99MHz/KLA-03(USLP9143)300-1000MHz
■AMP:KAF-05(8447D) ■RECEIVER:KTR-01(ESI40) ■KCC-30_31_32_34(RE)

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2480MHz
Remarks : -
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	156.00	BB	19.1	19.0	15.4	28.2	2.6	6.0	14.9	14.8	43.5	28.6	28.7
2.	312.00	BB	24.7	22.4	15.2	27.7	3.9	6.0	22.1	19.8	46.0	23.9	26.2
3.	624.00	BB	19.4	19.3	19.8	29.3	5.6	6.0	21.5	21.4	46.0	24.5	24.6

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

■ANTENNA:KBA-03(BBA9106)30-299.99MHz/KLA-03(USLP9143)300-1000MHz
■AMP:KAF-05(8447D) ■RECEIVER:KTR-01(ESI40) ■KCC-30_31_32_34(RE)

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2402MHz
Remarks : PK (RBW: 1MHz, VBW: 1MHz)
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2390.00	BB	48.6	48.6	27.1	34.8	4.0	9.9	54.8	54.8	74.0	19.2	19.2
2.	3202.30	BB	44.7	46.7	28.3	34.9	4.5	10.1	52.7	54.7	74.0	21.3	19.3
3.	4804.00	BB	43.4	43.4	31.1	34.6	5.8	0.5	46.2	46.2	74.0	27.8	27.8
4.	7206.00	BB	43.8	43.8	35.3	34.4	6.6	0.5	51.8	51.8	74.0	22.2	22.2
5.	9608.00	BB	42.7	43.6	37.9	34.6	7.6	1.0	54.6	55.5	74.0	19.4	18.5

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

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■AMP:KAF-04(8449B) ■SPECTRUM ANALYZER:KTR-01 ■CABLE:KCC-D3/D7

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2402MHz
Remarks : AV (RBW: 1MHz, VBW: 10Hz)
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2390.00	BB	34.9	34.9	27.1	34.8	4.0	9.9	41.1	41.1	54.0	12.9	12.9
2.	3202.30	BB	32.1	34.9	28.3	34.9	4.5	10.1	40.1	42.9	54.0	13.9	11.1
3.	4804.00	BB	30.6	30.8	31.1	34.6	5.8	0.5	33.4	33.6	54.0	20.6	20.4
4.	7206.00	BB	30.7	30.7	35.3	34.4	6.6	0.5	38.7	38.7	54.0	15.3	15.3
5.	9608.00	BB	30.6	30.6	37.9	34.6	7.6	1.0	42.5	42.5	54.0	11.5	11.5

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

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■AMP:KAF-04(8449B) ■SPECTRUM ANALYZER:KTR-01 ■CABLE:KCC-D3/D7

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2441MHz
Remarks : PK (RBW: 1MHz, VBW: 1MHz)
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	3254.02	BB	46.3	46.0	28.3	34.8	4.5	10.1	54.4	54.1	74.0	19.6	19.9
2.	4882.00	BB	41.7	42.5	31.3	34.7	5.8	0.5	44.6	45.4	74.0	29.4	28.6
3.	7323.00	BB	43.6	43.7	35.4	34.4	6.7	0.5	51.8	51.9	74.0	22.2	22.1
4.	9764.00	BB	43.5	44.3	37.9	34.6	7.6	0.9	55.3	56.1	74.0	18.7	17.9

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

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■AMP:KAF-04(8449B) ■SPECTRUM ANALYZER:KTR-01 ■CABLE:KCC-D3/D7

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2441MHz
Remarks : AV (RBW: 1MHz, VBW: 10Hz)
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	3254.02	BB	34.2	33.8	28.3	34.8	4.5	10.1	42.3	41.9	54.0	11.7	12.1
2.	4882.00	BB	29.2	29.9	31.3	34.7	5.8	0.5	32.1	32.8	54.0	21.9	21.2
3.	7323.00	BB	30.5	30.5	35.4	34.4	6.7	0.5	38.7	38.7	54.0	15.3	15.3
4.	9764.00	BB	31.1	31.2	37.9	34.6	7.6	0.9	42.9	43.0	54.0	11.1	11.0

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

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■AMP:KAF-04(8449B) ■SPECTRUM ANALYZER:KTR-01 ■CABLE:KCC-D3/D7

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2480MHz
Remarks : PK (RBW: 1MHz, VBW: 1MHz)
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209(PK Detection)1-26GHz:3m/26-40GHz:1m

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2483.50	BB	44.2	44.4	27.3	34.8	4.0	9.9	50.6	50.8	74.0	23.4	23.2
2.	3308.05	BB	47.6	49.0	28.3	34.8	4.5	10.1	55.7	57.1	74.0	18.3	16.9
3.	4960.00	BB	43.2	43.2	31.4	34.7	5.8	0.4	46.1	46.1	74.0	27.9	27.9
4.	7440.00	BB	43.2	42.6	35.6	34.5	6.7	0.5	51.5	50.9	74.0	22.5	23.1
5.	9920.00	BB	43.1	43.8	38.0	34.6	7.6	0.8	54.9	55.6	74.0	19.1	18.4

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

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■AMP:KAF-04(8449B) ■SPECTRUM ANALYZER:KTR-01 ■CABLE:KCC-D3/D7

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 27DE0250-YK-A

Applicant : Sony EMCS Corporation Saitama TEC
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT50
Serial No. : 91
Power : DC3.7V
Mode : Tx2480MHz
Remarks : AV (RBW: 1MHz, VBW: 10Hz)
Date : 11/28/2006
Test Distance : 3 m
Temperature : 22 ℃ Engineer : Tatsuya Arai
Humidity : 58 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2483.50	BB	34.2	33.2	27.3	34.8	4.0	9.9	40.6	39.6	54.0	13.4	14.4
2.	3308.05	BB	36.8	37.1	28.3	34.8	4.5	10.1	44.9	45.2	54.0	9.1	8.8
3.	4960.00	BB	29.3	29.4	31.4	34.7	5.8	0.4	32.2	32.3	54.0	21.8	21.7
4.	7440.00	BB	30.1	30.1	35.6	34.5	6.7	0.5	38.4	38.4	54.0	15.6	15.6
5.	9920.00	BB	30.3	30.3	38.0	34.6	7.6	0.8	42.1	42.1	54.0	11.9	11.9

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

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■AMP:KAF-04(8449B) ■SPECTRUM ANALYZER:KTR-01 ■CABLE:KCC-D3/D7

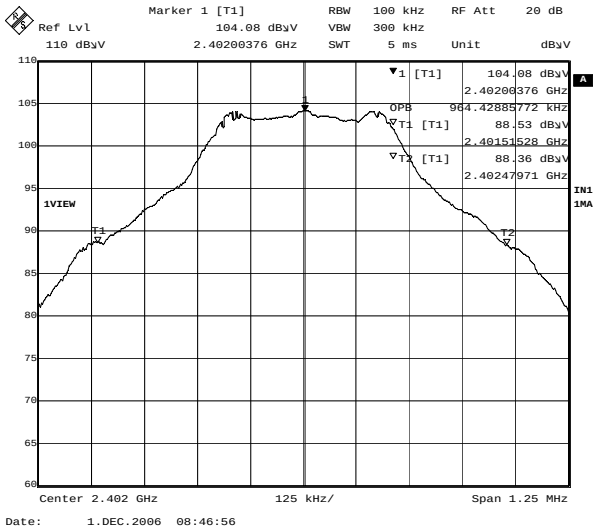
Page:

Occupied Bandwidth(99%)

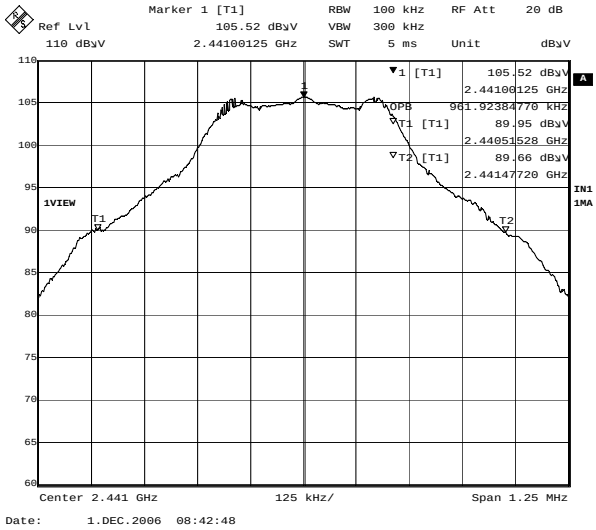
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: RSS-210
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

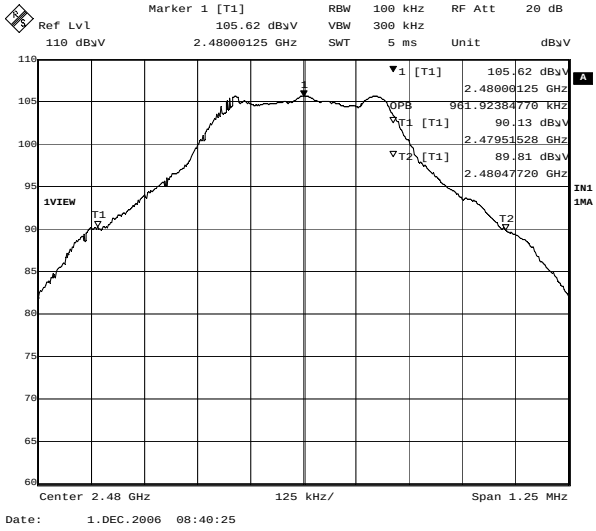
1. ch : 2402MHz/Occupied Bandwidth:964.43kHz



2. ch : 2441MHz/Occupied Bandwidth:961.92kHz



3. ch : 2480MHz/Occupied Bandwidth:961.92kHz

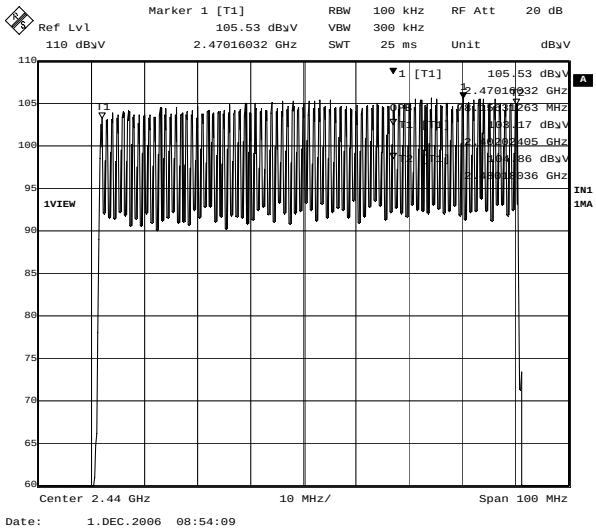


Occupied Bandwidth(99%)

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

COMPANY	: Sony EMCS Corporation Saitama TEC	REPORT NO	: 27DE0250-YK-A
EQUIPMENT	: Wireless Stereo Headset	REGULATION	: RSS-210
MODEL NUMBER	: DR-BT50	DATE	: 2006/12/01
SERIAL NUMBER	: 74	TEMP./HUMI	: 20deg.C./46%
FCC ID	: AK8DRBT50	TEST MODE	: Transmitting
POWER	: DC3.7V	ENGINEER	: Tatsuya Arai

4. Hopping/Occupied Bandwidth:78.16MHz



Test Report No :27DE0250-YK-A

APPENDIX 3
Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
YA-RE	Radiated emission(software)	UL-Apex	RE(Ver.1.5)	RE	–
KAEC-01(NSA)	Anechoic Chamber	JSE	Semi 3m	RE	2006/08/31 * 12
KAF-05	Pre Amplifier	Agilent	8447D	RE	2006/04/21 * 12
KAT6-01	Attenuator	INMET	18N-6dB	RE	2006/03/24 * 12
KBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2006/01/17 * 12
KCC-30/31/32 /34/KRM-03	Coaxial Cable/RF Relay Matrix	Fujikura/Suhner/TSJ	5D-2W/S04272B/RFM-E421	RE	2006/11/27 * 12
KLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2006/01/17 * 12
KTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE/AT 1,2,3,4,6	2006/11/01 * 12
KOS-02	Humidity Indicator	Custom	CTH-190	RE	2006/07/10 * 24
KJM-01	Measure	TAJIMA	GL19-55	RE	–
KSA-01	Spectrum Analyzer	Advantest	R3365	RE	2006/07/01 * 12
KAF-04	Pre Amplifier	Agilent	8449B	RE	2006/04/24 * 12
KAT10-S1	Attenuator	Agilent	8449D 010	RE	2006/04/11 * 12
KCC-D3/D7	Coaxial Cable	Rosenberger/Advantest	2201/JUN-08-01-061	RE	2006/04/11 * 12
KDT-01	Coaxial Crystal Detector	Agilent	8473C	AT 4	Pre Check
KFL-01	Highpass Filter	Hewlett Packard	84300 80038	RE	2006/04/11 * 12
KHA-02	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2006/04/10 * 12
KHA-04	Horn Antenna	EMCO	3160-09	RE	2006/04/10 * 12
KPM-05	Power meter	Agilent	E4417A	AT 5	2006/02/16 * 12
KPSS-01	Power sensor	Agilent	E9327A	AT 5	2006/03/15 * 12
KST-09	Digitizing Oscilloscope	Tektronix	TDS420A	AT 4	2006/08/21 * 12
KCC-D7	Coaxial Cable	Advantest	A01002	AT all	2006/04/11 * 12

The expiration date of the calibration is the end of the expired month .

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

Test Item :

RE: Out of Band Emission (Radiated)

AT: Antenna terminal conducted test

1:Carrier Frequency Separation
2:20dB Bandwidth
3:Number of Hopping Frequncy
4:Dwell time
5:Maximum Peak Output Power
6:Out of Band Emission (Conducted)