

RADIO TEST REPORT

Test Report No.: 26KE0202-HO-A

Applicant : Sony Computer Entertainment Inc.
Type of Equipment : REFERENCE TOOL
Model No. : DECR-1000A
FCC ID : AK8DEHR1000
Test standard : FCC Part 15 Subpart C
Section 15.207, Section 15.247: 2006
Test Result : Complied

1. This test report shall not be reproduced in full or partial, 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 report are traceable to the national or international standards.

Date of test:

June 22 to 28, 2006

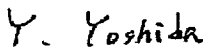
Tested by:



Mitsuru Fujimura
EMC Services

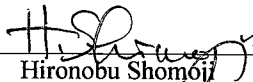


Takumi Shimada
EMC Services



Yutaka Yoshida
EMC Services

Approved by :



Hironobu Shomoji
Group Leader of EMC Services



NVLAP LAB CODE: 200572-0

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*As for the range of Accreditation in NVLAP, you may refer to the WEB address, <http://ulapex.jp/emc/nvlap.htm>

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

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SECTION 1: Client information

Company Name	Sony Computer Entertainment Inc.
Brand Name	SONY
Address	2-6-21 Minamiaoyama, Minato-ku, Tokyo, 107-0062, Japan
Telephone Number	+81-3-6438-8625
Facsimile Number	+81-3-6438-8607
Contact Person	Akiko Tsukada

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

2.1 Identification of E.U.T.

Type of Equipment	REFERENCE TOOL
Model No	DECR-1000A
Serial No	SR00001 (Conducted Emission/ Radiated Emission test) SR00006 (Antenna Terminal Conducted test)
Rating	AC 120V/60Hz
Country of Manufacture	JAPAN
Receipt Date of Sample	June 20, 2006
Condition of EUT	Production 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: DECR-1000A, referred to as the EUT in this report, is a REFERENCE TOOL to make software for game. It contains Bluetooth (Ver. 2.0+EDR) module and IEEE802.11b/g WLAN module. Those modules do not transmit simultaneously.

Bluetooth (Ver. 2.0+EDR)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	FHSS (GFSK, $\pi/4$ DQPSK, 8DPSK)
Bandwidth & Channel spacing	1MHz & 1MHz
Power Supply (inner)	DC3.3V

IEEE802.11b/g WLAN

Equipment Type	Transceiver
Frequency of Operation	2412-2462MHz
Type of Modulation	DSSS/OFDM
Bandwidth & Channel spacing	20MHz & 5MHz
Power Supply (inner)	DC 3.3V/DC1.3V

*For WLAN test, please see UL Apex Test Report No. 26KE0202-HO-B.

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[Antenna]

Antenna Type	Monopole Antenna (Common antenna for Bluetooth and WLAN module)
Antenna Connector Type	SMK TS-6 connector with custom key
Antenna Gain	2.09dBi max

SECTION 3: Test specification, procedures & 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 : 2006
Section 15.247 Operation within the bands 902-928MHz,
2400-2483.5MHz, and 5725-5850MHz: 2006

FCC 15.31 (e)

The stable voltage (DC3.3V) is constantly provided to the Bluetooth module. Therefore, the EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

The EUT has a unique antenna connector (SMK TS-6 connector with custom key). Therefore, the equipment complies with the antenna requirement of Section 15.203.

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3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin*0)	Results
1	Conducted emission	FCC: ANSI C63.4:2003 7. AC powerline conducted emission measurements	FCC: Section 15.207		N/A	11.4dB 0.20542 MHz AV, N	Complied
		IC: RSS-Gen 7.2.2	IC: RSS-Gen 7.2.2				
2	Carrier Frequency Separation	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)	Conducted	N/A	See data.	Complied
		IC: -	IC: RSS-210 A8.1 (2)				
3	20dB Bandwidth	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (1)				
4	Number of Hopping Frequency	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)(iii)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (4)				
5	Dwell time	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)(iii)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (4)				
6	Maximum Peak Output Power	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(b)(1)	Conducted	N/A	Complied	
		IC: RSS-Gen 4.6	IC: RSS-210 A8.4 (2)				
7	Band Edge Compliance	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(d)	Conducted	N/A	Complied	
		IC: -	IC: RSS-210 A8.5				
8	Spurious Emission	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(d)	Conducted/ Radiated	N/A	Tx 3.7dB 750.000MHz QP, Hor Rx 7.5dB 66.650MHz OP. Ver	Complied
		IC: RSS-Gen 4.7 RSS-Gen 4.8	IC: RSS-210 A8.5 RSS-Gen 7.2.1 and 7.2.3				

Note: UL Apex's EMI Work Procedures No.QPM05 and QPM15.

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

*These tests were also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".

*These tests were performed without any deviations from test procedure except for additions or exclusions.

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3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	RSS-Gen 4.4.1	RSS-Gen 4.4.1	Conducted	N/A	N/A	N/A

3.4 Uncertainty

Conducted Emission

The measurement uncertainty (with a 95% confidence level) for this test is ± 2.6 dB.

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

Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ± 4.59 dB(3m)/ ± 4.58 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ± 4.62 dB(3m)/ ± 4.60 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ± 5.27 dB.

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

[Rx] The data listed in this test report has enough margin, more than the site margin.

Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is ± 3.0 dB.

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3.5 Test Location

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	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	655103	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	IC4247A-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	IC4247A-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	-
No.4 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 shielded room	-	-	6.0 x 6.0 x 3.9m	N/A	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	N/A	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	N/A	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1, No.2, No.3 and No.4 semi-anechoic chambers and No.7 shielded room.

3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

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SECTION 4: Operation of E.U.T. during testing

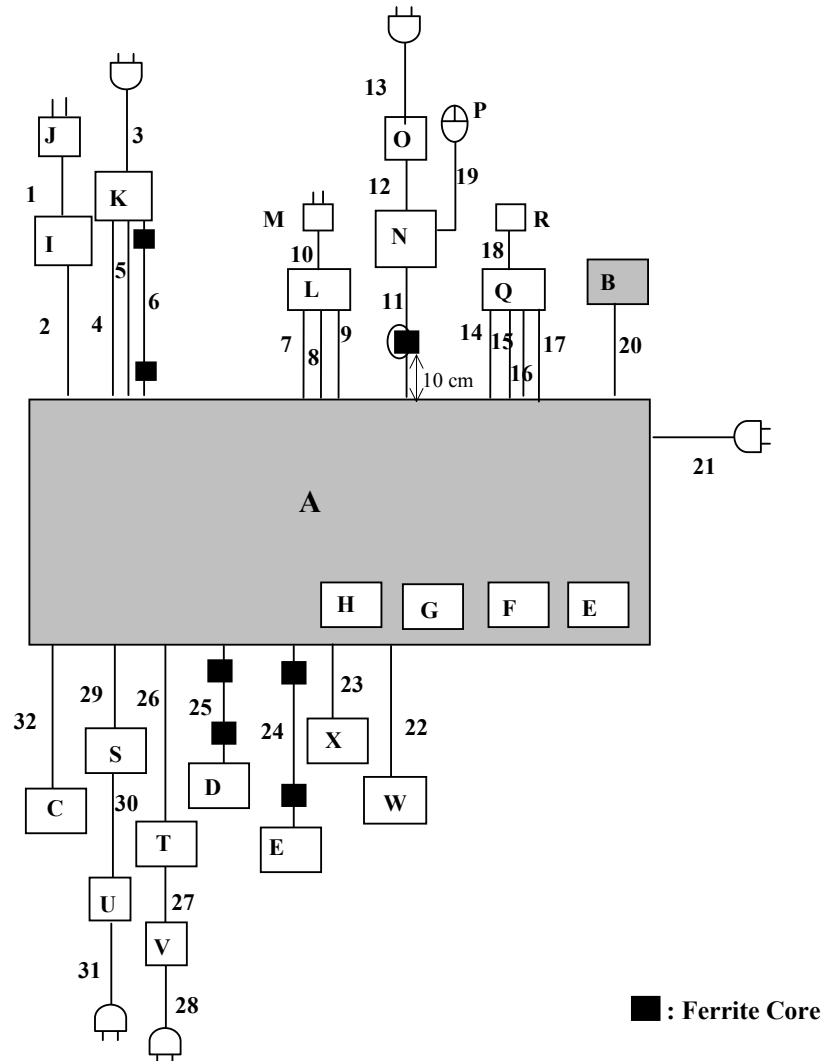
4.1 Operating Modes

The mode used for test :

1. Transmitting mode: GFSK (Packet size DH1^{*1}), DH3*, DH5, Data packet: PRBS9)
 - Low Channel : 2402MHz
 - Mid Channel : 2441MHz
 - High Channel : 2480MHz
 2. Transmitting mode: 8DPSK^{*2} (Packet size 3-DH1^{*1}, 3-DH3^{*1}, 3-DH5, Data packet: PRBS9)
 - Low Channel : 2402MHz
 - Mid Channel : 2441MHz
 - High Channel : 2480MHz
 3. Receiving mode
 - Mid Channel : 2441MHz
 4. Inquiry mode (only for Antenna Terminal Conducted test)
- ^{*1}) Used for Dwell time test only
- ^{*2}) As the Conducted Power level at 8DPSK was higher than the one at 4DPSK, the test was performed at 8DPSK.

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, bandwidth, and spurious emission of the EUT. However, the limit level 125mW mode was used due to AFH and EDR mode.

4.2 Configuration and peripherals



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

* The Ferrite Core (model: RFC-13, manufactured by Kitagawa) attached to the cable 11 will be contained in the same package of the EUT.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	REFERENCE TOOL	DECR-1000A	SR00001 *1) SR00006 *2)	Sony Computer Entertainment Inc.	EUT
B	EXT-ANT	-	-	Sony Computer Entertainment Inc.	EUT
C	Foot SW	-	-	-	-
D	Controller	-	-	Sony Computer Entertainment Inc	-
E	Controller	-	-	Sony Computer Entertainment Inc	-
F	SD Memory	RP-SDK512	-	Panasonic	-
G	CF Memory	RCF-X	-	BUFFALO	-
H	Memory Stick	MSX-M512S	-	Sony Computer Entertainment Inc	-
I	HDMI Selector	HDMI Switcher 2x1	64372	Gefen	-
J	AC Adapter	GFP101U-520	0501000803	Gefen	-
K	Display Monitor	MDT201WS	5Z002107GJ	Mitsubishi	-
L	HUB	FXG-05TXJ	29EH03103A1	PLANEX	-
M	AC Adapter	MTIS-5050250-A1	-	PLANEX	-
N	PC	PP10L	16784800629	DELL	-
O	AC Adapter	PA-1650-05D	-	DELL	-
P	Mouse	M-UV94	LNA51401252	Logitech	-
Q	Audio Selector	SB-A40	-	Sony Computer Entertainment Inc	-
R	Speaker	MF5000	-	Creative	-
S	PSP	PSP-1000	00-27400000-0635932	Sony Computer Entertainment Inc	-
T	PSP	PSP-1000	00-27400000-0635933	Sony Computer Entertainment Inc	-
U	AC Adapter	PSP-100	05010144149A	Mitsumi	-
V	AC Adapter	PSP-100	0501044150A	Mitsumi	-
W	USB Mouse	PCGA-UMS3	51101013	Sony Computer Entertainment Inc	-
X	USB Keyboard	SCPH-10240	-	Sony Computer Entertainment Inc	-

*1) Used for Conducted Emission/ Radiated Emission test

*2) Used for Antenna Terminal Measurement test

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Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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List of cables used

No.	Name	Length (m)	Cable Shielding	Connector Shielding	Remark
1	DC Cable	1.8	Unshielded	Unshielded	-
2	HDMI Cable	1.8	Shielded	Shielded	-
3	AC Cable	2.0	Shielded	Shielded	-
4	HDMI-DVI Cable	2.0	Shielded	Shielded	-
5	Video Cable (D-Shaped)	2.4	Shielded	Shielded	-
6	VGA Cable	2.0	Shielded	Shielded	Two ferrite cores (standard attachment)
7	LAN Cable	2.0	Shielded	Shielded	-
8	LAN Cable	2.0	Shielded	Shielded	-
9	LAN Cable	2.0	Shielded	Shielded	-
10	DC Cable	1.8	Unshielded	Unshielded	-
11	LAN Cable	3.0	Shielded	Shielded	One ferrite core
12	DC Cable	1.8	Unshielded	Unshielded	-
13	AC Cable	0.8	Unshielded	Unshielded	-
14	Audio Cable	1.5	Shielded	Shielded	-
15	Audio Cable	1.5	Shielded	Shielded	-
16	Audio Cable	1.5	Shielded	Shielded	-
17	Audio Cable	1.5	Shielded	Shielded	-
18	Audio Cable	0.5	Shielded	Shielded	-
19	Mouse Cable	0.6	Shielded	Shielded	-
20	Antenna Cable	2.0	Shielded	Shielded	-
21	AC Power Cable	2.0	Unshielded	Unshielded	-
22	Mouse Cable	0.8	Shielded	Shielded	-
23	Keyboard Cable	1.9	Unshielded	Unshielded	-
24	USB Cable	1.8	Shielded	Shielded	Two ferrite cores (standard attachment)
25	USB Cable	1.8	Shielded	Shielded	Two ferrite cores (standard attachment)
26	USB Cable	1.8	Shielded	Shielded	-
27	DC Cable	1.5	Unshielded	Unshielded	-
28	AC Cable	1.0	Unshielded	Unshielded	-
29	USB Cable	1.8	Shielded	Shielded	-
30	DC Cable	1.5	Unshielded	Unshielded	-
31	AC Cable	1.0	Unshielded	Unshielded	-
32	Foot SW Cable	2.0	Shielded	Shielded	-

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4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m, raised 80cm above the conducting ground plane.

The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and 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)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

For the tests on EUT with other peripherals (as a whole system)

I/O cable and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the antenna in a Semi Anechoic Chamber or a Measurement Room.

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

Detector	: CISPR quasi-peak and average detector (IF BW 9 kHz)
Measurement range	: 0.15-30MHz
Test data	: APPENDIX 3
Test result	: Pass

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SECTION 6: Spurious Emission

[Conducted]

Test Procedure

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

Test data : APPENDIX 3

Test result : Pass

[Radiated]

Test Procedure

EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m, raised 80cm above the conducting ground plane.

The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz).

The height of the measuring 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 with the Test Receiver, or the Spectrum Analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

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

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.

20dBc was applied to the frequency over the limit of FCC 15.209 / Table 2 of RSS-210 2.7 (IC) and outside the restricted band of 15.205 / Table 1 of RSS-210 2.7 (IC).

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver / Spectrum Analyzer	Spectrum Analyzer
Detector	QP: BW 120kHz(T/R)	PK: RBW:1MHz/VBW: 1MHz
IF Bandwidth	20dBc : RBW: 100kHz VBW: 300kHz (S/A)	AV: RBW:1MHz/VBW:10Hz 20dBc : RBW:100kHz/VBW:300kHz

The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Test data : APPENDIX 3

Test result : Pass

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4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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SECTION 7: Bandwidth

Test Procedure

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

Test data	: APPENDIX 3
Test result	: Pass

SECTION 8: Maximum Peak Output Power

Test Procedure

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

Test data	: APPENDIX 3
Test result	: Pass

SECTION 9: Carrier Frequency Separation

Test Procedure

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

Test data	: APPENDIX 3
Test result	: Pass

SECTION 10: Number of Hopping Frequency

Test Procedure

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

Test data	: APPENDIX 3
Test result	: Pass

SECTION 11: Dwell time

Test Procedure

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

Test data	: APPENDIX 3
Test result	: Pass

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