

RADIO TEST REPORT

Test Report No. : 30JE0236-HO-01-A

Applicant : Sony Computer Entertainment Inc.
Type of Equipment : PSP
Model No. : PSP-3001
FCC ID : AK8PSP3001D
Test regulation : FCC Part 15 Subpart C 2010
Test Result : Complied

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Date of test:

June 9 to 24, 2010

**Representative
test engineer:**



Takumi Shimada
Engineer of EMC Service

Approved by:



Mitsuru Fujimura
Manager of EMC Service



NVLAP LAB CODE: 200572-0

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| CONTENTS | PAGE |
|---|-------------|
| SECTION 1: Customer information..... | 3 |
| SECTION 2: Equipment under test (E.U.T.)..... | 3 |
| SECTION 3: Test specification, procedures & results..... | 4 |
| SECTION 4: Operation of E.U.T. during testing..... | 8 |
| SECTION 5: Conducted Emission..... | 11 |
| SECTION 6: Radiated Spurious Emission | 12 |
| SECTION 7: Antenna Terminal Conducted Tests..... | 13 |
| APPENDIX 1: Photographs of test setup | 14 |
| Conducted Emission | 14 |
| Radiated Spurious Emission | 15 |
| Worst Case Position (Horizontal: X-axis/ Vertical:Z-axis) | 16 |
| APPENDIX 2: Data of EMI test..... | 19 |
| Conducted Emission | 19 |
| 6dB Bandwidth | 22 |
| Maximum Peak Output Power | 24 |
| Radiated Spurious Emission | 25 |
| Conducted Spurious Emission | 30 |
| Conducted Emission Band Edge compliance | 34 |
| Power Density | 35 |
| 99%Occupied Bandwidth | 37 |
| APPENDIX 3: Test instruments | 38 |

SECTION 1: Customer information

| | |
|------------------|---|
| Company Name | Sony Computer Entertainment Inc. |
| Brand name | Sony |
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| Facsimile Number | +81-3-6483-8642 |
| Contact Person | Tatsuya Suzuki |

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

2.1 Identification of E.U.T.

| | |
|------------------------|--|
| Type of Equipment | PSP |
| Model No. | PSP-3001 |
| Serial No. | 03-TSP1700H-0000301-PSPXXXX for Conducted Emission and Radiated Emission tests 03-TSP1700H-0000314-PSPXXXX for Antenna Terminal Conducted tests |
| Rating | DC 5V, AC Adaptor (AC 100V-240V) |
| Country of Manufacture | China |
| Receipt Date of Sample | May 31, 2010 |
| 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

Radio Specification

Wireless LAN Module (IEEE802.11b)

| | |
|--------------------------------|-----------------|
| Equipment Type | Transceiver |
| Frequency of Operation | 2412-2462 MHz |
| Clock Frequency | 40MHz |
| ITU Code | G1D |
| Type of Modulation | DSSS |
| Method of frequency generation | Crystal |
| Antenna model | EBMGC5A245FB |
| Antenna type | Monopole |
| Antenna Gain | -1.5 dBi (Max.) |

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C: 2010, final revised on January 22, 2010 and effective March 1, 2010

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

* The EUT complies with FCC Part 15 Subpart B: 2009, final revised on January 22, 2010 and effective March 1, 2010

3.2 Procedures and results

| Item | Test Procedure | Specification | Worst margin | Results | Remarks |
|---|--|--|--|--|-----------|
| Conducted Emission | FCC: ANSI C63.4:2003 7. AC powerline Conducted Emission measurements ----- IC: RSS-Gen 7.2.2 | FCC: Section 15.207 ----- IC: RSS-Gen 7.2.2 | [QP] 18.2dB, 0.19973MHz, L [AV] 18.3dB, 0.19973MHz, L | Complied | - |
| 6dB Bandwidth | FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" ----- IC: RSS-Gen 4.6.2 | FCC: Section 15.247(a)(2) ----- IC: RSS-210 A8.2(a) | See data. | N/A | Conducted |
| Maximum Peak Output Power | FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" ----- IC: RSS-Gen 4.8 | FCC: Section 15.247(b)(3) ----- IC: RSS-210 A8.4(4) | | Complied | Conducted |
| Power Density | FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" ----- IC: - | FCC: Section 15.247 (e) ----- IC: RSS-210 A8.2(b) | | Complied | Conducted |
| Spurious Emission Restricted Band Edges | FCC: "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247" ----- IC: RSS-Gen 4.9 RSS-Gen 4.10 | FCC: Section15.247(d) ----- IC: RSS-210 A8.5 RSS-Gen 7.2.1 and 7.2.3 | | [Tx] 3.9dB 431.999MHz, QP, Hori. [Rx] 4.1dB 431.999MHz, QP, Hori. | Complied |

Note: UL Japan, Inc.'s EMI Work Procedures No.QPM05 and QPM15.

* In case any questions arise about test procedure, ANSI C63.4: 2003 is also referred.

FCC 15.31 (e)

This EUT provides stable voltage (DC3.1V/1.9V) constantly to RF Part regardless of input voltage. (For details, refer to Block Diagram for the product.) Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.3 Addition to standard

| Item | Test Procedure | Specification | Worst margin | Results | Remarks |
|------------------------|-------------------|-------------------|--------------|---------|-----------|
| 99% Occupied Bandwidth | IC: RSS-Gen 4.6.1 | IC: RSS-Gen 4.6.1 | N/A | N/A | Conducted |

Other than above, no addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

EMI

The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor k=2.

| Test room (semi-anechoic chamber) | Conducted emission (+dB) |
|--------------------------------------|-----------------------------|
| | 150kHz-30MHz |
| No.1 | 2.6dB |
| No.2 | 2.9dB |
| No.3 | 3.3dB |
| No.4 | 2.8dB |

| Test room (semi-anechoic chamber) | Radiated emission (10m*)(+dB) | | |
|--------------------------------------|----------------------------------|------------------|-----------------|
| | 9kHz -30MHz | 30MHz -300MHz | 300MHz -1GHz |
| No.1 | 2.7dB | 4.8dB | 5.0dB |
| No.2 | - | - | - |
| No.3 | - | - | - |
| No.4 | - | - | - |

*10m = Measurement distance

| Test room (semi-anechoic chamber) | Radiated emission | | | | | | |
|--------------------------------------|-------------------|------------------|-----------------|----------------|-----------------|-------------------|-------------------|
| | (3m*)(+dB) | | | | (1m*)(+dB) | | (0.5m*)(+dB) |
| | 9kHz -30MHz | 30MHz -300MHz | 300MHz -1GHz | 1GHz -10GHz | 10GHz -18GHz | 18GHz -26.5GHz | 26.5GHz -40GHz |
| No.1 | 2.9dB | 4.8dB | 5.0dB | 3.9dB | 4.3dB | 4.5dB | 4.3dB |
| No.2 | 3.5dB | 4.8dB | 5.1dB | 4.0dB | 4.2dB | 4.4dB | 4.2dB |
| No.3 | 3.8dB | 4.6dB | 4.7dB | 4.0dB | 4.2dB | 4.5dB | 4.2dB |
| No.4 | 3.5dB | 4.4dB | 4.9dB | 4.0dB | 4.2dB | 4.6dB | 4.2dB |

*3m/1m/0.5m = Measurement distance

| Power meter (+dB) | |
|-------------------|------------|
| Below 1GHz | Above 1GHz |
| 1.0dB | 1.0dB |

| Antenna terminal conducted emission and Power density (+dB) | | | Antenna terminal conducted emission (+dB) | | Channel power (+dB) |
|--|-----------|------------|--|---------------|------------------------|
| Below 1GHz | 1GHz-3GHz | 3GHz-18GHz | 18GHz-26.5GHz | 26.5GHz-40GHz | |
| 1.0dB | 1.1dB | 2.7dB | 3.2dB | 3.3dB | 1.5dB |

Conducted Emission test

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

Radiated emission test

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

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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 | 2973C-1 | 19.2 x 11.2 x 7.7m | 7.0 x 6.0m | No.1 Power source room |
| No.2 semi-anechoic chamber | 655103 | 2973C-2 | 7.5 x 5.8 x 5.2m | 4.0 x 4.0m | - |
| No.3 semi-anechoic chamber | 148738 | 2973C-3 | 12.0 x 8.5 x 5.9m | 6.8 x 5.75m | No.3 Preparation room |
| No.3 shielded room | - | - | 4.0 x 6.0 x 2.7m | N/A | - |
| No.4 semi-anechoic chamber | 134570 | 2973C-4 | 12.0 x 8.5 x 5.9m | 6.8 x 5.75m | No.4 Preparation room |
| No.4 shielded room | - | - | 4.0 x 6.0 x 2.7m | N/A | - |
| No.5 semi-anechoic chamber | - | - | 6.0 x 6.0 x 3.9m | 6.0 x 6.0m | - |
| No.6 shielded room | - | - | 4.0 x 4.5 x 2.7m | 4.75 x 5.4 m | - |
| No.6 measurement room | - | - | 4.75 x 5.4 x 3.0m | 4.75 x 4.15 m | - |
| 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 | - |
| No.9 measurement room | - | - | 8.0 x 4.5 x 2.8m | 2.0 x 2.0m | - |
| No.10 measurement room | - | - | 2.6 x 2.8 x 2.5m | 2.4 x 2.4m | - |
| No.11 measurement room | - | - | 3.1 x 3.4 x 3.0m | 2.4 x 3.4m | - |

* 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.3 and No.4 shielded rooms.

3.6 Test set up, Data of EMI, and Test instruments

Refer to APPENDIX.

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

4.1 Operating Mode(s)

| Mode | Remarks* |
|--|-----------------|
| IEEE 802.11b (11b) | 11Mbps, PN9 |
| *Transmitting duty was 100% on all tests. *The worst condition was determined based on the test result of Maximum Peak Output Power (Mid Channel) | |

*Details of Operating mode(s)

| Test Item | Operating Mode | Tested frequency |
|---|-----------------------|-------------------------------|
| Conducted Emission Spurious Emission | 11b Tx | 2412MHz 2437MHz 2462MHz |
| | 11b Rx | 2437MHz |
| 6dB Bandwidth Maximum Peak Output Power Power Density 99% Occupied Bandwidth | 11b Tx | 2412MHz 2437MHz 2462MHz |

4.2 Configuration and peripherals

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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 0.8m 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 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. All unused 50ohm connectors of the LISN(AMN) were resistivity terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber.

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

The test results and limit are rounded off to one decimal place, so some differences might be observed.

| | |
|--------------------------|---------------------|
| Detector | : QP and AV |
| Measurement range | : 0.15-30MHz |
| Test data | : APPENDIX |
| Test result | : Pass |

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SECTION 6: Radiated Spurious Emission

Test Procedure

It was measured based on "2. Radiated emission test" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247".

EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m, raised 0.8m above the conducting ground plane.

The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

The height of the measuring antenna varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field strength.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.

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

Test Antennas are used as below;

| | | | | |
|--------------|-------------|-----------------|----------------|------------|
| Frequency | Below 30MHz | 30MHz to 300MHz | 300MHz to 1GHz | Above 1GHz |
| Antenna Type | Loop | Biconical | Logperiodic | Horn |

| | | | |
|-----------------|----------------|--|------------------------|
| Frequency | Below 1GHz | Above 1GHz | |
| Instrument used | Test Receiver | Spectrum Analyzer | |
| Detector | QP | PK | AV |
| IF Bandwidth | BW 120kHz(T/R) | RBW: 1MHz VBW: 3MHz | RBW: 1MHz VBW: 10Hz |
| Test Distance | 3m | 3m (below 10GHz), 1m*1) (above 10GHz) | |

*1) Distance Factor: $20 \times \log(3.0\text{m}/1.0\text{m}) = 9.5\text{dB}$

- 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.

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Measurement range : 30M-25GHz
Test data : APPENDIX
Test result : Pass

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SECTION 7: Antenna Terminal Conducted Tests

Test Procedure

The tests were made with below setting connected to the antenna port.

| Test | Span | RBW | VBW | Sweep time | Detector | Trace | Instrument used |
|-----------------------------|--|-----------------|--------------------|-------------------|-----------------|--------------|--------------------------------|
| 6dB Bandwidth | 20MHz | 100kHz | 300kHz | Auto | Peak | Max Hold | Spectrum Analyzer |
| 99% Occupied Bandwidth | Enough width to display 20dB Bandwidth | 1 to 3% of Span | Three times of RBW | Auto | Peak | Max Hold | Spectrum Analyzer |
| Maximum Peak Output Power | - | - | - | Auto | Peak | - | Power Meter (Sensor: 50MHz BW) |
| Peak Power Density | 18MHz | 30kHz | 100kHz | 600sec | Peak | Max Hold | Spectrum Analyzer *1) *2) |
| Conducted Spurious Emission | Less or equal to 5GHz (Range: 30MHz-25GHz) | 100kHz | 300kHz | Auto | Peak | Max Hold | Spectrum Analyzer |

*1) PSD Option 1 of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247".

*2) The test was not performed at RBW:3kHz however the measurement is to be performed with RBW:3kHz in the regulation, because, the measurement value with RBW:3kHz is less than the value of RBW:30kHz and the test data met the limit with RBW:30kHz.

The test results and limit are rounded off to two decimals place, so some differences might be observed.

Test data : APPENDIX
Test result : Pass