RADIO TEST REPORT

Test Report No. : 28KE0141-HO-C

Applicant	:	**Sony Corporation**
Type of Equipment	:	**Wireless Link**
Model No.	:	**DMX-WL1T (Transmitter Unit)**
FCC ID	:	**AK8DMXWL1T**
Test regulation	:	**FCC Part 15 Subpart C 2008 Section 15.207, Section 15.247**
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.
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Date of test: June 24 to July 13, 2008

Tested by: K. Nakai
Kazufumi Nakai
EMC Services

Approved by : T. Maeno
Tetsuo Maeno
Site Manager of EMC Services

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SECTION 1: Customer information

Company Name	:	Sony Corporation
Address	:	1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan
Telephone Number	:	+81-3-6748-3629
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Contact Person	:	Tsutomu Shibusawa

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

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless Link
Model No.	:	DMX-WL1T (Transmitter Unit)
Serial No.	:	11, 64
Receipt Date of Sample	:	June 24, 2008
Country of Manufacture	:	Japan
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 No: DMX-WL1T (Transmitter Unit) (referred to as the EUT in this report) is the Wireless Link.
The EUT has IEEE802.15.4 module and WHDI module.

2.2.1 Product Specification

Operation Clock	**DMX-WL1T (Transmitter Unit)**
	Radio part: 40MHz
	The other part: 16.5MHz, 27MHz, 12.288MHz, 8MHz, 74.25MHz, 74.176MHz, 27.027MHz, 27MHz

2.2.2 Radio Specification

Type of radio	IEEE802.15.4 module (Zigbee) *1)	WHDI module *2)
Equipment Type	Transceiver	Transceiver
Clock frequencies	16MHz	40MHz
Frequency of Operation	2405-2480 MHz	5180-5240MHz
Method of frequency generation	Crystal	Crystal
Type of Modulation	DSSS	OFDM
Antenna Type	Chip antenna	Printed Inverted F antenna
Antenna Connector Type	Coaxial U-FL	N/A
Antenna Gain	1.0dBi	3.12 dBi
Power Supply	DC 3.3V	DC 3.3V

*1) Tested in this report.
*2) Tested in Test Report No. 28KE0141-HO-A of UL Japan, Inc.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part15 Subpart C: 2008, final revised on May 19, 2008
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

FCC 15.31 (e)
This EUT provides stable voltage(DC3.3V) constantly to RF Module regardless of input voltage. 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 EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.2 Procedures and results

[DSSS and other forms of modulation]

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	Conducted emission	**FCC:** ANSI C63.4:2003 7. AC powerline conducted emission measurements	**FCC:** Section 15.207	Conducted	N/A	[QP] 6.2dB 0.15055MHz, N [AV] 6.1dB 0.53904MHz, L	Complied
		IC: RSS-Gen 7.2.2	**IC:** RSS-Gen 7.2.2				
2	6dB Bandwidth	**FCC:** "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247"	**FCC:** Section 15.247(a)(2)	Conducted	N/A	See data.	N/A
		IC: RSS-Gen 4.6.2	**IC:** RSS-210 A8.2(a)				
3	Maximum Peak Output Power	**FCC:** "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247"	**FCC:** Section 15.247(b)(3)	Conducted	N/A		Complied
		IC: RSS-Gen 4.8	**IC:** RSS-210 A8.4(4)				
4	Restricted Band Edges	**FCC:** "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247"	**FCC:** Section 15.247 (d)	Conducted/ Radiated	N/A		Complied
		IC: -	**IC:** RSS-210 A8.5				
5	Power Density	**FCC:** "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247"	**FCC:** Section 15.247 (e)	Conducted	N/A		Complied
		IC: -	**IC:** RSS-210 A8.2(b)				
6	Spurious Emission	**FCC:** "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247"	**FCC:** Section15.247(d)	Conducted/ Radiated	N/A	[Tx] 1.7dB 309.120MHz, QP, Horizontal 1.7dB 308.462MHz, QP, Horizontal [Rx] 1.9dB 309.715MHz, QP Horizontal	Complied
		IC: RSS-Gen 4.9 RSS-Gen 4.10	**IC:** RSS-210 A8.5 RSS-Gen 7.2.1 and 7.2.3				
Note: UL Japan, Inc.'s EMI Work Procedures No.QPM05 and QPM15.							

*These tests were performed without any deviations from test procedure except for additions or exclusions.
* In case any questions arise about test procedure, ANSI C63.4: 2003 is also referred.

3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Bandwidth	**IC:** RSS-Gen 4.6.1	**IC:** RSS-Gen 4.6.1	Conducted	N/A	N/A	N/A

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	Conducted emission	Radiated emission (10m*)			Radiated emission (3m*)			Radiated emission (3m*)	
	150kHz-30MHz	9kHz-30MHz	30MHz-300MHz	300MHz-1GHz	9kHz-30MHz	30MHz-300MHz	300MHz-1GHz	1GHz-18GHz	18GHz-40GHz
No.1 semi-anechoic Chamber (±)	3.7dB	3.1dB	4.4dB	4.2dB	3.2dB	3.8dB	3.9dB	5.9dB	6.1dB
No.2 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.4dB	4.0dB	5.9dB	6.1dB
No.3 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.6dB	4.0dB	5.9dB	6.1dB
No.4 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	3.9dB	3.9dB	5.9dB	6.1dB

*10m/3m = Measurement distance

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

Radiated emission test(3m)
The data listed in this report meets the limits unless the uncertainty is taken into consideration.

Other test except Conducted Emission and Spurious Emission (Radiated)
The measurement uncertainty for this test is 3.0dB.

3.5 Test Location

UL Japan, Inc. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
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Telephone : +81 596 24 8116 Facsimile : +81 596 24 8124

	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, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

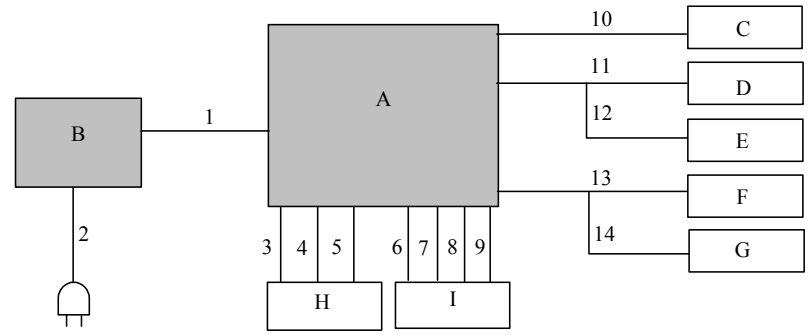
SECTION 4: Operation of E.U.T. during testing

4.1 Operating Mode(s)

Test Item	Operating Mode	Tested frequency
Conducted emission	Zigbee Transmitting (Tx) Payload: PRBS9	2405MHz 2440MHz 2480MHz
	Zigbee Receiving (Rx) Payload: PRBS9	2440MHz
Maximum Peak Output Power, Power Density	Zigbee Transmitting (Tx) Payload: PRBS9	2405MHz 2440MHz 2480MHz
Spurious Emission (Conducted), Spurious Emission (Radiated)	Zigbee Transmitting (Tx) Payload: PRBS9	2405MHz 2440MHz 2480MHz
	Zigbee Receiving (Rx) Payload: PRBS9	2440MHz
Compliance Band Edge	Zigbee Transmitting (Tx) Payload: PRBS9	2405MHz 2480MHz
6dB Bandwidth, 99% Occupied Bandwidth	Zigbee Transmitting (Tx) Payload: PRBS9	2405MHz 2440MHz 2480MHz

Transmitting duty was 100% on all the tests.

4.2 Configuration and peripherals



AC 120V/60Hz

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

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Wireless Link	DMX-WL1T (Transmitter)	11 *1) 64 *2)	Sony Corporation	EUT
B	AC adapter	EADP-16AB A	76W0652000317	Sony Corporation	EUT
C	IR Blaster	-	-	Sony Corporation	-
D	IR Blaster	-	-	Sony Corporation	-
E	IR Blaster	-	-	Sony Corporation	-
F	IR Blaster	-	-	Sony Corporation	-
G	IR Blaster	-	-	Sony Corporation	-
H	Terminator	-	-	Sony Corporation	-
I	Terminator	-	-	Sony Corporation	-

*1) Used for Antenna Terminal Conducted test
*2) Used for Conducted Emission test and Radiated Emission test

List of cables used

No.	Name	Length (m)	Shield	
			Cable	Connector
1	DC Cable	1.8	Unshielded	Unshielded
2	AC Cable	2.0	Unshielded	Unshielded
3	Stereo Cable (IN)	1.2	Shielded	Shielded
4	Component Cable (IN)	1.5	Shielded	Shielded
5	Stereo Cable	1.0	Shielded	Shielded
6	HDMI Cable	1.5	Shielded	Shielded
7	HDMI Cable	1.5	Shielded	Shielded
8	HDMI Cable	1.5	Shielded	Shielded
9	HDMI Cable	1.5	Shielded	Shielded
10	IR Blaster Cable	2.0	Shielded	Shielded
11	IR Blaster Cable	2.0	Shielded	Shielded
12	IR Blaster Cable	2.0	Shielded	Shielded
13	IR Blaster Cable	2.0	Shielded	Shielded
14	IR Blaster Cable	2.0	Shielded	Shielded

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.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT 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 : quasi-peak and average detector (IF BW 9 kHz)
Measurement range : 0.15-30MHz
Test data : APPENDIX 2
Test result : Pass

SECTION 6: Spurious Emission

[Conducted]
Test Procedure
The Out of Band Emission was measured with a spectrum analyzer connected to the antenna port.
It was measured based on "1. RF antenna conducted test" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247 ".
The following spectrum analyzer setting was used:

- RBW: 100kHz
- VBW: 300kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass

[Radiated]
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 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.

The result also satisfied with the general limits specified in section FCC 15.209(a) / RSS-210 2.7 (IC).

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

- The carrier level and noise levels were confirmed at each position of X and Y 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 2
Test result : Pass

SECTION 7: Bandwidth

6dB Bandwidth

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.
It was measured based on "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247 ".
The following spectrum analyzer setting was used:

- Span: 10MHz
- RBW: 100kHz
- VBW: 300kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass

99% Occupied Bandwidth

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.
The following spectrum analyzer setting was used:

- Span: Enough width to display Bandwidth
- RBW: as close to 1% of the Span as is possible without being below 1%
- VBW: Three times of RBW
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass

SECTION 8: Maximum Peak Output Power

Test Procedure

The Maximum Peak Output Power was measured with a power meter (tested bandwidth: 50MHz) connected to the antenna port.
It was measured based on "Power Output Option 1" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247 ".

Test data : APPENDIX 2
Test result : Pass
Test result : Pass

SECTION 9: Peak Power Density

[Conducted]
Test Procedure
The Peak Power Density was measured with a spectrum analyzer connected to the antenna port.
It was measured based on "PSD Option 1" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247 ".

Test data : APPENDIX 2
Test result : Pass