



RADIO TEST REPORT

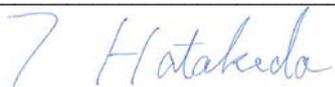
Test Report No. : 28DE0165-HO-01-A-R1

Applicant : Sony Corporation
Type of Equipment : Bluetooth Audio System
Model No. : MEX-BT3600U
FCC ID : AK8MEXBT3600
Test regulation : FCC Part 15 Subpart C 2007
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.
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.
6. Original test report number of this report is 28DE0165-HO-01-A.

Date of test: January 10, 2008

Tested by:

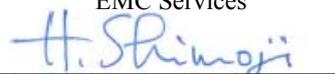


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SECTION 1: Customer information

Company Name : Sony Corporation
Address : 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan
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Facsimile Number : +81-3-5769-5085
Contact Person : Kengo Nakamura

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

2.1 Identification of E.U.T.

Type of Equipment : Bluetooth Audio System
Model No. : MEX-BT3600U
Serial No. : 26
Rating : DC12V
Country of Manufacture : Thailand
Receipt Date of Sample : January 8, 2008
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 No: MEX-BT3600U (referred to as the EUT in this report) is the Bluetooth Audio System.

Clock frequency(ies) in the system : 32.768kHz, 9.0MHz, 11.06MHz, 16.9344MHz, 20.5MHz, 24.0MHz

[Bluetooth Specification]

Equipment Type : Transceiver
Frequency of Operation : 2402-2480MHz
Bandwidth & Channel Spacing : 1MHz & 1MHz
Modulation : FHSS
ITU code : 1M00F1D
Power Supply (inner) : DC 3.3V
Antenna Type : Mono-pole antenna (PWB pattern antenna)
Antenna Connector Type : MHF(I-PEX)
Antenna Gain : -0.01dBi

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C: 2007, final revised on November 13, 2007

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 the EUT. 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	Results
1	Conducted emission	FCC: ANSI C63.4:2003 7. AC powerline conducted emission measurements	FCC: Section 15.207	-	N/A	N/A	N/A*1)
		IC: RSS-Gen 7.2.2	IC: RSS-Gen 7.2.2				
2	Carrier Frequency Separation	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(a)(1)	Conducted	N/A	See data.	Complied
		IC: -	IC: RSS-210 A8.1 (b)				
3	20dB Bandwidth	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(a)(1)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (a)				
4	Number of Hopping Frequency	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(a)(1)(iii)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (d)				
5	Dwell time	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(a)(1)(iii)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (d)				
6	Maximum Peak Output Power	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(b)(1)	Conducted	N/A	Complied	
		IC: RSS-Gen 4.8	IC: RSS-210 A8.4 (2)				
7	Band Edge Compliance	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(d)	Conducted	N/A	Complied	
		IC: -	IC: RSS-210 A8.5				
8	Spurious Emission	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(d)	Conducted/ Radiated	N/A	[Tx] 6.1dB 1654.0MHz, Vert., AV [Rx] 6.2dB 1626.3MHz, Vert., AV	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.

*1) The test is not applicable since EUT is a DC drive device installed on vehicles and is not connected with AC power line.

*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.

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3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	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	4.7dB	4.4dB	3.2dB	3.7dB	4.4dB	5.9dB	6.1dB
No.2 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.3dB	3.9dB	5.9dB	6.1dB
No.3 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.2dB	4.4dB	5.9dB	6.1dB
No.4 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.2dB	4.4dB	5.9dB	6.1dB

*10m/3m = Measurement distance

Radiated emission test

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 for this test is 3.0dB.

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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	IC4247	19.2 x 11.2 x 7.7m	7.0 x 6.0m	No.1 Power source room
No.2 semi-anechoic chamber	655103	IC4247-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	IC4247-3	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	IC4247-4	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)

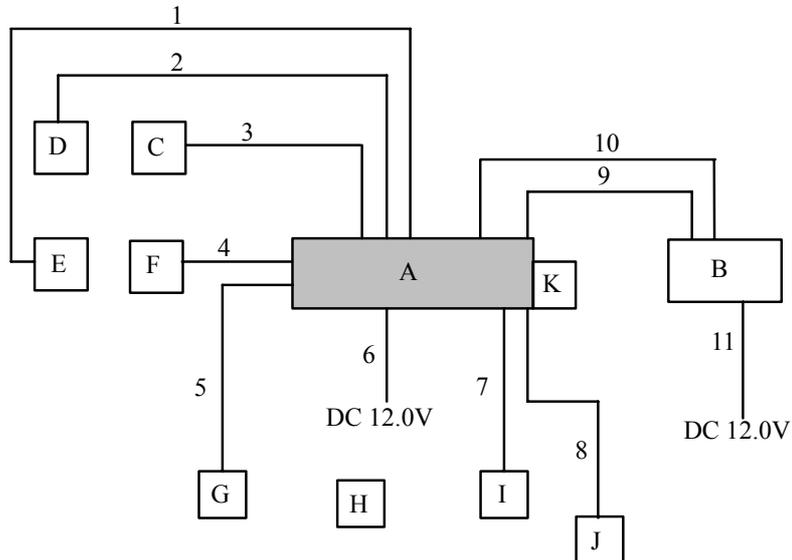
The mode(s)

Test	Mode	Tested frequency
Carrier Frequency Separation	Transmitting (Tx)(Hopping ON)/Inquiry	2402MHz 2441MHz 2480MHz
20dB Bandwidth Maximum Peak Output Power	Transmitting (Tx)(Hopping Off)/Inquiry	2402MHz 2441MHz 2480MHz
Number of Hopping Frequency	Transmitting (Tx)(Hopping ON)/Inquiry	-
Dwell time	Transmitting (Tx)(Hopping ON) -DH1 -DH3 -DH5 ----- Inquiry	-
Suprious Emission (Conducted/Radiated)	Transmitting (Tx), DH5 ----- Receiving (Rx)	2402MHz 2441MHz 2480MHz ----- 2441MHz
Band Edge Compliance (Conducted)	Transmitting (Tx), DH5 -Hopping ON -Hopping OFF	2402MHz 2480MHz

As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload (except Dwell time test)

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 and peripherals



* 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	Bluetooth Audio System	MEX-BT3600U	26	Sony	EUT
B	Stereo Power Amplifier	XM-423SL	0020316	Sony	-
C	Speaker 1	XS-F1611	-	Sony	-
D	Speaker 2	XS-F1611	-	Sony	-
E	Speaker 3	1-544-814-31	-	AIWA	-
F	Speaker 4	1-544-814-31	-	AIWA	-
G	Wired Remote controller	RM-XX4S	-	Sony	-
H	Remote Controller	RM-X304	-	Sony	-
I	Digital Media player	WM-11	5008910	Sony	-
J	Dummy resistance	-	-	-	-
K	Dummy resistance	-	-	-	-

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List of cables used

No.	Name	Length (m)	Shield	
			Cable	Connector
1	Speaker Cable	2.0	Unshielded	Unshielded
2	Speaker Cable	2.0	Unshielded	Unshielded
3	Speaker Cable	2.0	Unshielded	Unshielded
4	Speaker Cable	2.0	Unshielded	Unshielded
5	Cable for wired Remote Controller	2.0	Unshielded	Unshielded
6	DC Cable	2.0	Unshielded	Unshielded
7	USB Cable	1.0	Shielded	Shielded
8	AUX Cable	2.0	Unshielded	Unshielded
9	Audio Cable	5.2	Unshielded	Unshielded
10	Audio Cable	5.2	Unshielded	Unshielded
11	DC Cable	2.0	Unshielded	Unshielded

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SECTION 5: Spurious Emission

[Conducted]

Test Procedure

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

EUT was placed on a urethane platform of nominal size, 1.0m by 2.0m, 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 FCC15.205 / 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 test was made on EUT at the normal use position.

Test data : APPENDIX 2

Test result : Pass

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SECTION 6: Bandwidth

Test Procedure

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

- Span: 3MHz
- RBW: 30kHz
- VBW: 30kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass

SECTION 7: 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.

Test data : APPENDIX 2
Test result : Pass

SECTION 8: Carrier Frequency Separation

Test Procedure

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

- Span: 3MHz
- RBW: 100kHz
- VBW: 300kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass

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SECTION 9: Number of Hopping Frequency

Test Procedure

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

- Span: 30MHz
- RBW: 300kHz
- VBW: 1MHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass

SECTION 10: Dwell time

Test Procedure

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

- Span: Zero Span
- RBW: 1MHz
- VBW: 1MHz
- Sweep: as necessary to capture the entire dwell time per hopping channel
- Detector: function peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass