



EMI TEST REPORT

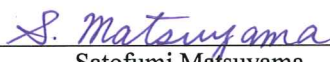
Test Report No. : 32EE0126-HO-B-R1

Applicant : SHARP CORPORATION
Type of Equipment : Cellular Phone
Model No. : SH-05D (JN-PR16)
FCC ID : APYHRO00167
Test standard : FCC Part 15 Subpart B 2011 Class B
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 product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
6. This report is a revised version of 32EE0126-HO-B. 32EE0126-HO-B is replaced with this report.

Date of test: December 19, 2011 and January 11, 2012

Representative test engineer:


Satofumi Matsuyama
Engineer of WiSE Japan,
UL Verification Service

Approved by:


Mitsuru Fujimura
Leader of WiSE Japan,
UL Verification Service



NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.
*As for the range of Accreditation in NVLAP, you may refer to the WEB address,
<http://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap>

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Head Office EMC Lab.

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13-EM-F0429

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SECTION 1: Customer information

Company Name : SHARP CORPORATION
Address : 2-13-1 Iida, Hachihonmatsu, Higashi-Hiroshima City, Hiroshima,
739-0192 Japan
Telephone Number : +81-82-420-1826
Facsimile Number : +81-82-420-1829
Contact Person : Kazuo Sugimoto

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

2.1 Identification of E.U.T.

Type of Equipment : Cellular Phone
Model No. : SH-05D (JN-PR16)
Serial No. : Refer to Section 4, Clause 4.2
Receipt Date of Sample : December 19, 2011
Country of Mass-production : 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

Feature of EUT : Tri Band WCDMA(FDD I, V, VI)
Cellular Phone with Bluetooth, W-LAN
- WCDMA (EU:2000M, US:850M, JPN: 800/2000)
Clock frequency(ies) in the system : CPU: 1.248GHz
Source oscillation:48MHz

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SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : Test specification: FCC Part 15 Subpart B: 2011, final revised on November 21, 2011 and effective December 21, 2011

Title : FCC 47CFR Part15 Radio Frequency Device
Subpart B Unintentional Radiators

*The revision on November 21, 2011 does not affect the test specification applied to the EUT.

3.2 Procedures and results

Item	Test Procedure	Limits	Deviation	Worst margin	Result
Conducted emission	ANSI C63.4: 2003 7. AC powerline conducted emission measurements	Class B	N/A	[QP] 9.4dB 3.84108MHz, N [AV] 10.2dB 2.03714MHz, N	Complied
Radiated emission	ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	5.1dB 798.001MHz, Vertical, QP	Complied

*Note: UL Japan, Inc's EMI Work Procedure 13-EM-W0420.

3.3 Addition to standard

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	3.5dB
No.2	3.6dB
No.3	3.6dB
No.4	3.6dB

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	4.2dB	5.0dB	5.1dB	5.6dB	5.9dB	4.4dB	4.3dB
No.2	4.1dB	5.2dB	5.1dB	5.7dB	5.8dB	4.3dB	4.2dB
No.3	4.5dB	5.0dB	5.2dB	5.7dB	5.8dB	4.5dB	4.2dB
No.4	4.7dB	5.2dB	5.2dB	5.7dB	5.8dB	5.1dB	4.2dB

*3m/1m/0.5m = 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 test report has enough margin, more than the site margin.

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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, Data of EMI, and Test instruments

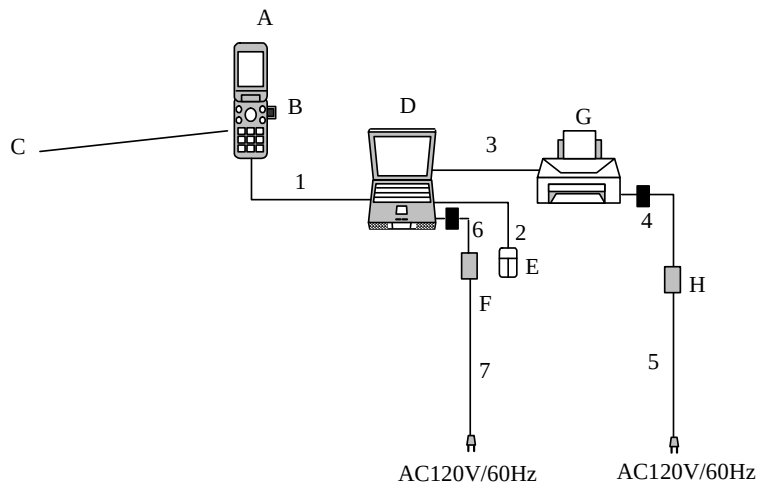
Refer to APPENDIX.

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

4.1 Operating modes

The mode(s) : 1) USB Data Com Mode
The USB data is communicated between EUT and Personal computer (Pair of EUT).
2) Standby Mode
Standby state for USB communication.

4.2 Configuration and peripherals



* Cabling and setup 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	Cellular Phone	SH-05D (JN-PR16)	004401113775254	Sharp Corporation	EUT
B	microSD Memory Card	SD-C08G	0852K93900Y	TOSHIBA	-
C	Lithium-Ion Battery	Battery Pack SH34	-	Sharp Corporation	EUT
D	Personal Computer	PP11L	CN-0D4571-48643-58P-1053	DELL	-
E	Mouse	M-UAG120	G83C0007F310	TOSHIBA	-
F	AC Adapter (PC)	PA-1650-05D2	CN-0F7970-71615-77H-0D63	DELL	-
G	Printer	C6410A	8G8BA1W18J	Hewlett Packard	-
H	AC Adaptor(Printer)	AT-3018A-0101	C4557-60004	Hewlett Packard	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB Data Cable	0.80	Shielded	Shielded	-
2	Mouse Cable	0.71	Shielded	Shielded	-
3	Printer Cable	2.00	Shielded	Shielded	-
4	DC Power Cable(Printer)	2.00	Unshielded	Unshielded	-
5	AC Power Cable(Printer)	1.80	Unshielded	Unshielded	-
6	DC Power Cable(PC)	1.80	Unshielded	Unshielded	-
7	AC Power Cable(PC)	0.90	Unshielded	Unshielded	-

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SECTION 5: Conducted Emission

5.1 Operating environment

Test place : No.4 semi anechoic chamber.
Temperature : See data
Humidity : See data

5.2 Test configuration

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 and its peripherals was 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 the LISN/AMN and excess AC cable was bundled in center. I/O cables that were connected to the other 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. Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN/AMN to the input power source. All unused 50 ohm connectors of the LISN/AMN were resistivity terminated in 50 ohm when not connected to the measuring equipment. Photographs of the set up are shown in Appendix 3.

Frequency range : 0.15 MHz-30MHz
EUT position : Table top
EUT operation mode : See Clause 4.1

5.3 Test procedure

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT within a semi anechoic chamber. The EUT was connected to a Line Impedance Stabilization Network (LISN)/ Artificial Mains network (AMN). An overview sweep with peak detection has been performed. The measurements have been performed with a quasi-peak detector and if required, with an average detector.

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

Detector Type : Quasi-Peak and Average
IF Bandwidth : 9 kHz

5.4 Test result

Summary of the test results: Pass

Date: January 11, 2012

Test engineer: Satofumi Matsuyama

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SECTION 6: Radiated Emission

6.1 Operating environment

Test place : No. 1 semi anechoic chamber
Temperature : See data
Humidity : See data

6.2 Test configuration

EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m, raised 0.8m above the conducting ground plane. The EUT was set on the edge of the tabletop.
Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.
Photographs of the set up are shown in Appendix 3.

6.3 Test conditions

Frequency range : 30MHz-300MHz (Biconical antenna) / 300MHz-1000MHz (Logperiodic antenna)
1000MHz - 7000MHz (Horn antenna)
Test distance : 3m
EUT position : Table top
EUT operation mode : See Clause 4.1

6.4 Test procedure

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 intensity.
The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.
The radiated emission measurements were made with the following detector function of the test receiver and the Spectrum analyzer.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
IF Bandwidth	QP: BW 120kHz	PK: RBW:1MHz/VBW: 3MHz AV *1): RBW:1MHz/VBW:10Hz

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

The test was made on EUT at the normal use position.

6.5 Test result

Summary of the test results: Pass

Date: December 19, 2011

Test engineer: Takeshi Choda

UL Japan, Inc.

Head Office EMC Lab.

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APPENDIX 1: Data of EMI test

Conducted Emission

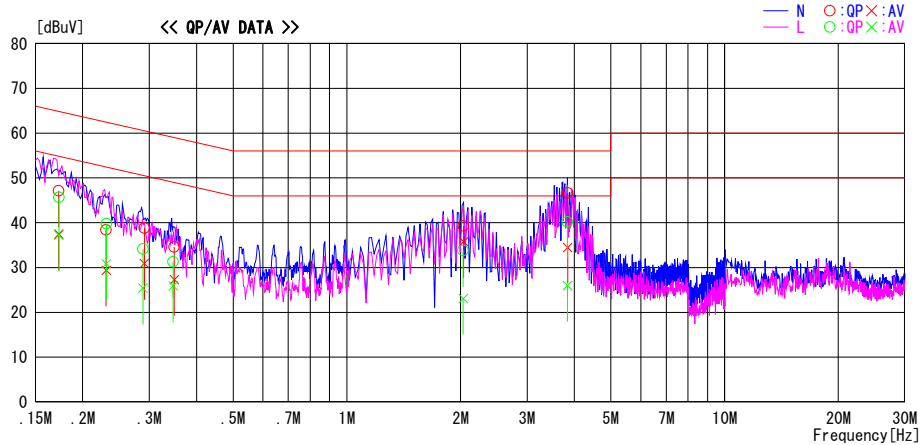
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2012/01/11

Report No. : 32EE0126-H0
Temp./Humi. : 22deg. C / 26% RH
Engineer : Satofumi Matsuyama

Mode / Remarks : USB Data Com Mode

LIMIT : FCC15.107(a) QP ClassB
FCC15.107(a) AV ClassB



Frequency	Reading Level		Corr. Factor	Results		Limit		Margin		Phase	Comment
	QP	AV		QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.17286	33.8	24.2	13.3	47.1	37.5	64.8	54.8	17.7	17.3	N	
0.23076	25.1	16.1	13.3	38.4	29.4	62.4	52.4	24.0	23.0	N	
0.29107	25.5	17.6	13.3	38.8	30.9	60.5	50.5	21.7	19.6	N	
0.34936	21.3	14.0	13.3	34.6	27.3	59.0	49.0	24.4	21.7	N	
2.03714	25.9	22.4	13.4	39.3	35.8	56.0	46.0	16.7	10.2	N	
3.84108	33.0	20.9	13.6	46.6	34.5	56.0	46.0	9.4	11.5	N	
0.17306	32.4	23.9	13.3	45.7	37.2	64.8	54.8	19.1	17.6	L	
0.23098	26.5	17.5	13.3	39.8	30.8	62.4	52.4	22.6	21.6	L	
0.28850	20.8	12.1	13.3	34.1	25.4	60.6	50.6	26.5	25.2	L	
0.34706	18.0	12.6	13.3	31.3	25.9	59.0	49.0	27.7	23.1	L	
2.03184	20.4	9.7	13.4	33.8	23.1	56.0	46.0	22.2	22.9	L	
3.83636	26.6	12.4	13.6	40.2	26.0	56.0	46.0	15.8	20.0	L	

CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT[dBuV]=READING[dBuV]+C.F[dB] (LISN LOSS+CABLE LOSS+ATTEN LOSS)
Except for the above table : adequate margin data below the limits.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

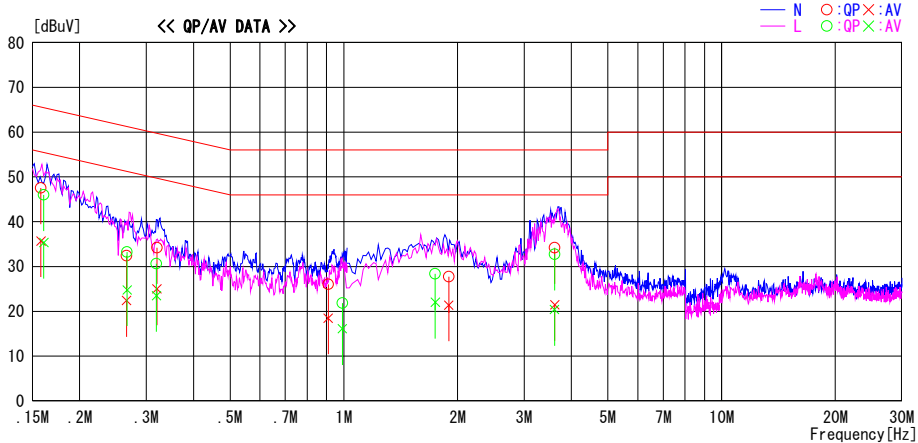
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2012/01/11

Report No. : 32EE0126-H0

Temp./Humi. : 22deg. C / 26% RH
Engineer : Satofumi Matsuyama

Mode / Remarks : Standby Mode

LIMIT : FCC15.107(a) QP ClassB
FCC15.107(a) AV ClassB



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15792	34.2	22.4	13.3	47.5	35.7	65.6	55.6	18.1	19.9	N	
0.16062	32.7	22.1	13.3	46.0	35.4	65.4	55.4	19.4	20.0	L	
0.26696	19.9	11.5	13.3	33.2	24.8	61.2	51.2	28.0	26.4	L	
0.26590	19.1	9.1	13.3	32.4	22.4	61.2	51.2	28.8	28.8	N	
0.32010	20.9	11.7	13.3	34.2	25.0	59.7	49.7	25.5	24.7	N	
0.31912	17.3	10.2	13.3	30.6	23.5	59.7	49.7	29.1	26.2	L	
0.90910	12.7	5.2	13.3	26.0	18.5	56.0	46.0	30.0	27.5	N	
0.99100	8.5	2.8	13.3	21.8	16.1	56.0	46.0	34.2	29.9	L	
1.74642	15.0	8.6	13.4	28.4	22.0	56.0	46.0	27.6	24.0	L	
1.89600	14.3	8.0	13.4	27.7	21.4	56.0	46.0	28.3	24.6	N	
3.61560	20.6	7.9	13.6	34.2	21.5	56.0	46.0	21.8	24.5	N	
3.61211	19.1	6.8	13.6	32.7	20.4	56.0	46.0	23.3	25.6	L	

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT[dBuV]=READING[dBuV]+C.F[dB] (LISN LOSS+CABLE LOSS+ATTEN LOSS)
Except for the above table : adequate margin data below the limits.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Radiated Emission (Below 1GHz)

DATA OF RADIATED EMISSION TEST

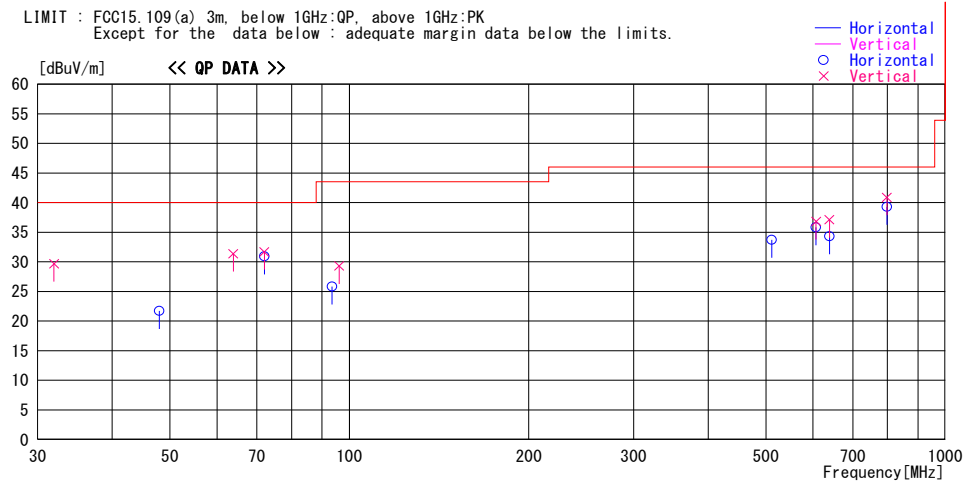
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/12/19

Report No. : 32EE0126-H0

Temp./Humi. : 19deg.C / 31% RH
Engineer : Takeshi Choda

Mode / Remarks : USB Data Com mode

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:PK
Except for the data below : adequate margin data below the limits.



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
48.012	40.8	QP	11.6	-30.7	21.7	108	295	Hori.	40.0	18.3	
63.911	55.0	QP	7.5	-31.1	31.4	213	100	Vert.	40.0	8.6	
31.960	43.7	QP	17.1	-31.1	29.7	204	100	Vert.	40.0	10.3	
72.022	55.0	QP	6.6	-30.7	30.9	110	238	Hori.	40.0	9.1	
72.023	55.8	QP	6.6	-30.7	31.7	85	100	Vert.	40.0	8.3	
93.527	47.2	QP	8.7	-30.1	25.8	294	334	Hori.	43.5	17.7	
96.150	50.1	QP	9.2	-30.0	29.3	291	100	Vert.	43.5	14.2	
511.274	41.2	QP	18.3	-25.8	33.7	130	138	Hori.	46.0	12.3	
607.137	41.2	QP	19.5	-24.9	35.8	164	119	Hori.	46.0	10.2	
607.143	42.2	QP	19.5	-24.9	36.8	334	100	Vert.	46.0	9.2	
639.090	39.1	QP	19.9	-24.7	34.3	157	112	Hori.	46.0	11.7	
639.090	41.9	QP	19.9	-24.7	37.1	23	100	Vert.	46.0	8.9	
798.001	42.5	QP	22.0	-23.6	40.9	72	167	Vert.	46.0	5.1	
798.001	40.9	QP	22.0	-23.6	39.3	154	100	Hori.	46.0	6.7	

CHART:WITH FACTOR ANT TYPE: -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz:-:HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

*The limit is rounded down to one decimal place.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Radiated Emission (Below 1GHz)

DATA OF RADIATED EMISSION TEST

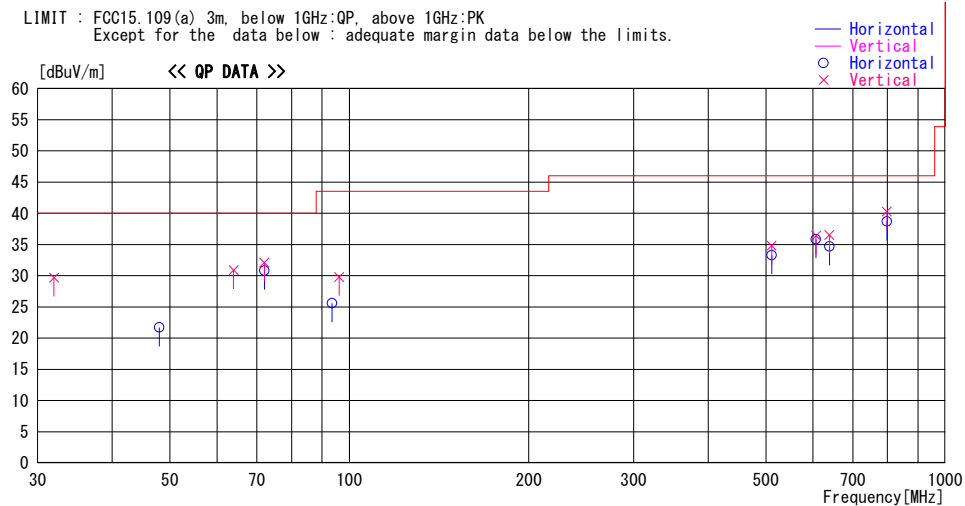
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/12/19

Report No. : 32EE0126-H0

Temp./Humi. : 19deg.C / 31% RH
Engineer : Takeshi Choda

Mode / Remarks : Standby mode

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:PK
Except for the data below : adequate margin data below the limits.



Frequency	Reading	DET	Antenna		Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain							
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
31.955	43.7	QP	17.1	-31.1	29.7	205	100	Vert.	40.0	10.3	
48.015	40.8	QP	11.6	-30.7	21.7	105	307	Hori.	40.0	18.3	
63.917	54.5	QP	7.5	-31.1	30.9	210	100	Vert.	40.0	9.1	
72.017	56.2	QP	6.6	-30.7	32.1	98	100	Vert.	40.0	7.9	
72.025	54.9	QP	6.6	-30.7	30.8	115	243	Hori.	40.0	9.2	
93.521	47.0	QP	8.7	-30.1	25.6	296	323	Hori.	43.5	17.9	
96.139	50.6	QP	9.2	-30.0	29.8	303	100	Vert.	43.5	13.7	
511.272	40.8	QP	18.3	-25.8	33.3	133	139	Hori.	46.0	12.7	
607.135	41.2	QP	19.5	-24.9	35.8	162	122	Hori.	46.0	10.2	
511.271	42.3	QP	18.3	-25.8	34.8	193	100	Vert.	46.0	11.2	
607.145	41.8	QP	19.5	-24.9	36.4	338	100	Vert.	46.0	9.6	
639.092	41.3	QP	19.9	-24.7	36.5	18	100	Vert.	46.0	9.5	
639.089	39.5	QP	19.9	-24.7	34.7	159	100	Hori.	46.0	11.3	
798.001	40.3	QP	22.0	-23.6	38.7	157	100	Hori.	46.0	7.3	
798.001	41.9	QP	22.0	-23.6	40.3	67	163	Vert.	46.0	5.7	

CHART:WITH FACTOR ANT TYPE: -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz:-HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

*The limit is rounded down to one decimal place.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Radiated Emission (Above 1GHz)

DATA OF RADIATED EMISSION TEST

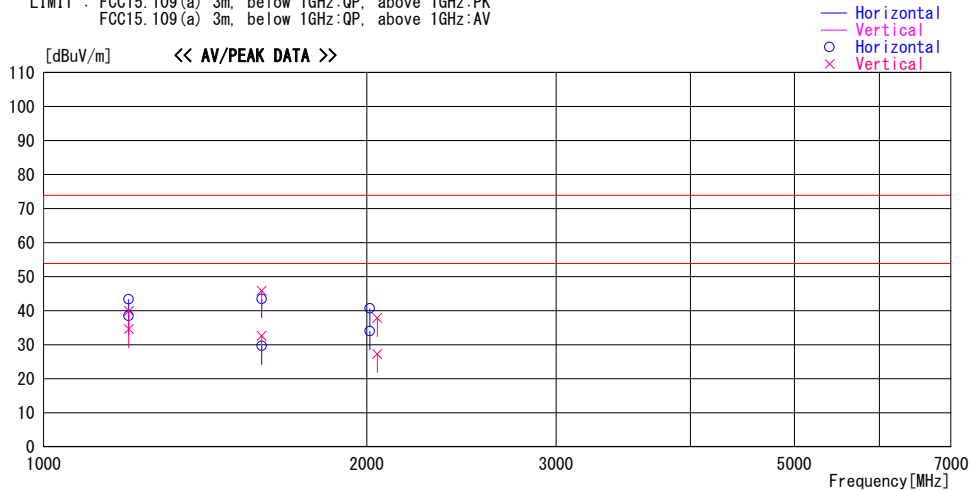
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/12/19

Report No. : 32EE0126-H0

Temp./Humi. : 19deg.C / 31% RH
Engineer : Takeshi Choda

Mode / Remarks : USB Data Com mode

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:PK
FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
1199.998	51.8	AV	24.6	-37.9	38.5	181	127	Hori.	53.9	15.4	
1199.998	47.9	AV	24.6	-37.9	34.6	14	136	Vert.	53.9	19.3	
1199.998	53.3	PK	24.6	-37.9	40.0	14	136	Vert.	73.9	33.9	
1199.998	56.6	PK	24.6	-37.9	43.3	181	127	Hori.	73.9	30.6	
1595.667	56.6	PK	26.2	-36.9	45.9	3	116	Vert.	73.9	28.0	
1595.667	43.3	AV	26.2	-36.9	32.6	3	116	Vert.	53.9	21.3	
1595.928	54.2	PK	26.2	-36.9	43.5	62	100	Hori.	73.9	30.4	
1595.928	40.4	AV	26.2	-36.9	29.7	62	100	Hori.	53.9	24.2	
2013.150	43.3	AV	26.8	-36.1	34.0	213	118	Hori.	53.9	19.9	
2013.150	50.0	PK	26.8	-36.1	40.7	213	118	Hori.	73.9	33.2	
2045.086	47.3	PK	26.7	-36.1	37.9	270	100	Vert.	73.9	36.0	
2045.086	36.7	AV	26.7	-36.1	27.3	270	100	Vert.	53.9	26.6	

CHART:WITH FACTOR ANT TYPE: -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz:-HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

*The limit is rounded down to one decimal place.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Radiated Emission (Above 1GHz)

DATA OF RADIATED EMISSION TEST

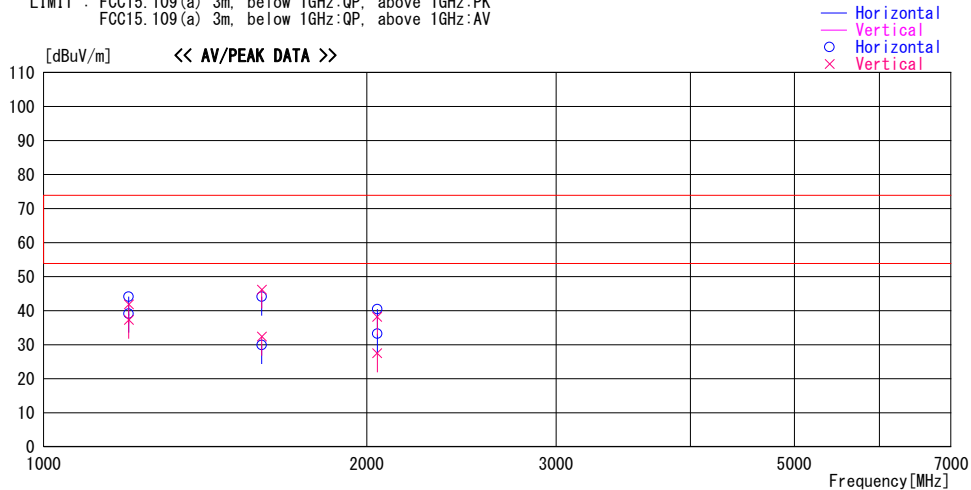
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/12/19

Report No. : 32EE0126-H0

Temp./Humi. : 19deg.C / 31% RH
Engineer : Takeshi Choda

Mode / Remarks : Standby mode

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:PK
FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
1199.998	52.4	AV	24.6	-37.9	39.1	186	126	Hori.	53.9	14.8	
1199.998	50.6	AV	24.6	-37.9	37.3	16	184	Vert.	53.9	16.6	
1199.998	55.2	PK	24.6	-37.9	41.9	16	184	Vert.	73.9	32.0	
1199.998	57.4	PK	24.6	-37.9	44.1	186	126	Hori.	73.9	29.8	
1595.861	54.8	PK	26.2	-36.9	44.1	65	100	Hori.	73.9	29.8	
1595.861	40.6	AV	26.2	-36.9	29.9	65	100	Hori.	53.9	24.0	
1596.200	43.1	AV	26.2	-36.9	32.4	1	100	Vert.	53.9	21.5	
1596.200	56.9	PK	26.2	-36.9	46.2	1	100	Vert.	73.9	27.7	
2045.085	42.6	AV	26.7	-36.1	33.2	217	114	Hori.	53.9	20.7	
2045.085	49.9	PK	26.7	-36.1	40.5	217	114	Hori.	73.9	33.4	
2045.086	36.9	AV	26.7	-36.1	27.5	270	100	Vert.	53.9	26.4	
2045.086	47.6	PK	26.7	-36.1	38.2	270	100	Vert.	73.9	35.7	

CHART:WITH FACTOR ANT TYPE: -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz:-HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

*The limit is rounded down to one decimal place.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

APPENDIX 2: Test instruments

EMI Test Instruments

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-01	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 10m	DA-06881	RE/CE	2011/07/10 * 12
MOS-01	Digital Humidity Indicator	N.T	NT-1800	MOS01	RE/CE	2011/02/23 * 12
MJM-01	Measure	KDS	ES19-55	-	RE/CE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	100084	RE/CE	2011/12/27 * 12
KBA-05	Biconical Antenna	Schwarzbeck	BBA9106	2513	RE	2011/11/23 * 12
KLA-04	Logperiodic Antenna	Schwarzbeck	USLP9143	361	RE	2011/11/23 * 12
MAT-08	Attenuator(6dB)	Weinschel Corp	2	BK7971	RE	2011/11/02 * 12
MCC-02	Coaxial Cable	Suhner/storm/Agilent/TSJ	-	-	RE	2011/09/17 * 12
MPA-19	Pre Amplifier	MITEQ	MLA-10K01-B01-35	1237616	RE	2011/02/28 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	253	RE	2011/06/19 * 12
MHA-01	Horn Antenna 18-26.5GHz	EMCO	3160-09	1266	RE	2011/06/20 * 12
MCC-134	Microwave Cable	HUBER+SUHNER	SUCOFLEX104	336167/4(1m) / 340641(5m)	RE	2011/09/07 * 12
AF-06	Pre Amplifier	Agilent	HP8449B	3008A01672	RE	2011/12/06 * 12
MRENT-95	Spectrum Analyzer	Agilent	E4440A	MY46185823	RE	2011/06/30 * 12
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	CE	2011/03/01 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	CE	2011/02/23 * 12
MJM-07	Measure	PROMART	SEN1955	-	CE	-
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	CE	2011/10/19 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(EUT)	2011/02/20 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE(AE)	2011/02/22 * 12
MTA-29	Terminator	TME	CT-01	-	CE	2012/01/11 * 12
MAT-67	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2011/02/22 * 12
MCC-113	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(5m)/421-010(1m)/sucoform141-PE(1m)/RFM-E121(Switcher)	-/04178	CE	2011/07/04 * 12

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

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item:

CE: Conducted emission

RE: Radiated emission

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