



EMI TEST REPORT

Test Report No. : 31DE0029-HO-A

Applicant : Sharp Corporation, Communication Systems Group.
Type of Equipment : Cellular Phone
Model No. : SH-08C
FCC ID : APYHRO00139
Test standard : FCC Part 15 Subpart B: 2010 Class B
Test Result : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
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.

Date of test:

January 14, 2011

Representative test
engineer:

K. Kawamura

Keisuke Kawamura
Engineer of WiSE Japan,
UL Verification Service

Approved by:

Y. Yoshida

Yutaka Yoshida
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/mar1/index.jsp#nvlap>

UL Japan, Inc.

Head Office EMC Lab.

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MF058b (12.01.11)

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SECTION 1: Customer information

Company Name : Sharp Corporation, Communication Systems Group.
Address : 2-13-1 Iida Hachihonmatsu HigashiHiroshima-City, Hiroshima,
739-0192 Japan
Telephone Number : +81-82-420-1825
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-08C
Serial No. : Refer to Section 4, Clause 4.2
Receipt Date of Sample : January 11, 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

Model No: SH-08C (referred to as the EUT in this report) is the Cellular Phone.

Feature of EUT : Tri-band (800/850/2000) WCDMA Cellular Phone
- WCDMA (EU:2000M, USA:850, JPN: 800/2000)
Clock frequency(ies) in the system : 48MHz (Oscillator), 500.5MHz (CPU Clock)

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SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : FCC Part 15 Subpart B: 2010, final revised on December 6, 2010 and effective January 5, 2011

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

3.2 Procedures and results

Item	Test Procedure	Limits	Deviation	Worst margin	Result
Conducted emission	FCC: ANSI C63.4: 2003 7. AC powerline conducted emission measurements	Class B	N/A	[QP] 12.1dB 3.81869MHz, L [AV] 15.2dB 0.17657MHz, L (USB Data Com mode)	Complied
Radiated emission	FCC: ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	8.6dB 639.076MHz, Vertical, QP (USB Data Com mode)	Complied

*Note: UL Japan, Inc's EMI Work Procedure QPM05.

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	3.1dB
No.2	3.3dB
No.3	3.7dB
No.4	3.2dB

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	3.5dB	5.1dB	5.2dB	4.8dB	5.1dB	4.4dB	4.3dB
No.2	4.0dB	5.1dB	5.2dB	4.8dB	5.0dB	4.3dB	4.2dB
No.3	4.2dB	4.7dB	5.2dB	4.8dB	5.0dB	4.5dB	4.2dB
No.4	4.0dB	5.0dB	5.1dB	4.8dB	5.0dB	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

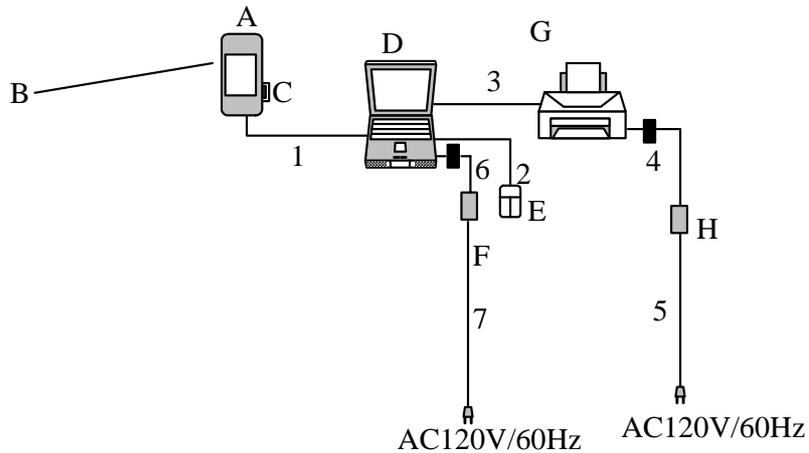
Refer to APPENDIX.

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



■ : Standard Ferrite Core

*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-08C	0440113065177	Sharp Corporation	EUT
B	Lithium-Ion Battery	Battery Pack SH23	-	Sharp Corporation	EUT
C	microSD Memory Card	SD-C08G	0831U49492Y	TOSHIBA	-
D	Personal Computer	PP11L	CN-0D4571-48643-58P-1053	DELL	-
E	Mouse	M-UAG120	G83C0007F310	TOSHIBA	-
F	AC Adapter(PC)	PA-1650-05D	CN-0F7970-71615-77H-0D63	DELL	-
G	Printer	C6410A	SG8BA1W18J	Hewlett-Packard	-
H	AC Adapter (Printer)	AT3018A-0101	C4557-60004	Hewlett-Packard	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB Data Cable	0.70	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)	1.75	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.1 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. 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 1.

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 14, 2011

Test engineer: Keisuke Kawamura

UL Japan, Inc.

Head Office EMC Lab.

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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 1.

6.3 Test conditions

Frequency range : 30MHz-300MHz (Biconical antenna) / 300MHz-1000MHz (Logperiodic antenna)
1000MHz - 5000MHz (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 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.

6.5 Test result

Summary of the test results: Pass

Date: January 14, 2010

Test engineer: Keisuke Kawamura

UL Japan, Inc.

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APPENDIX 1: Photographs of test setup

Conducted Emission

This page has been submitted for a separate exhibit.

Radiated Emission

This page has been submitted for a separate exhibit.

Worst Case Position (Horizontal: Z-axis/ Vertical:Z-axis)

This page has been submitted for a separate exhibit.

APPENDIX 2: Data of EMI test

Conducted Emission

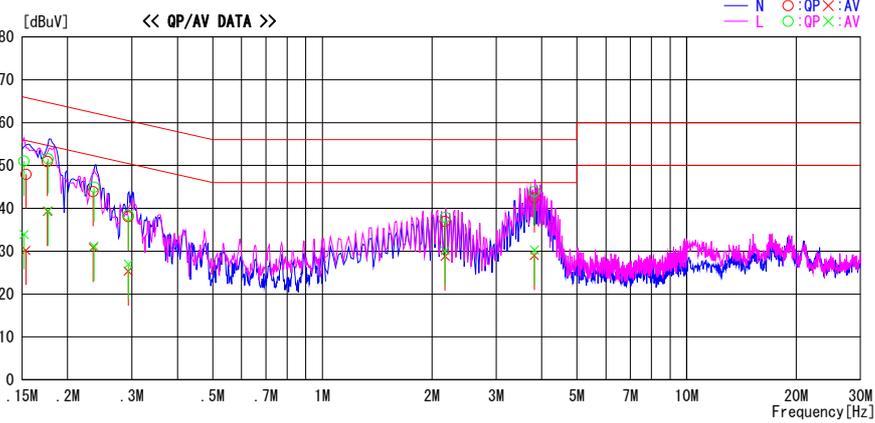
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/01/14

Report No. : 31DE0029-HO
Temp./Humi. : 21deg. C. / 34%
Engineer : Keisuke Kawamura

Mode / Remarks : USB Data Com Mode

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



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]		
0.15349	34.8	17.1	13.1	47.9	30.2	65.8	55.8	17.9	25.6	N	
0.17587	37.8	26.2	13.1	50.9	39.3	64.7	54.7	13.8	15.4	N	
0.23479	30.6	17.5	13.3	43.9	30.8	62.3	52.3	18.4	21.5	N	
0.29304	24.8	12.1	13.3	38.1	25.4	60.4	50.4	22.3	25.0	N	
2.17219	23.5	15.3	13.5	37.0	28.8	56.0	46.0	19.0	17.2	N	
3.81720	28.6	15.2	13.8	42.4	29.0	56.0	46.0	13.6	17.0	N	
0.15174	37.9	20.8	13.1	51.0	33.9	65.9	55.9	14.9	22.0	L	
0.17657	38.5	26.3	13.1	51.6	39.4	64.6	54.6	13.0	15.2	L	
0.23601	31.6	17.8	13.3	44.9	31.1	62.2	52.2	17.3	21.1	L	
0.29336	25.1	13.6	13.3	38.4	26.9	60.4	50.4	22.0	23.5	L	
2.17429	24.4	16.6	13.5	37.9	30.1	56.0	46.0	18.1	15.9	L	
3.81869	30.1	16.4	13.8	43.9	30.2	56.0	46.0	12.1	15.8	L	

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

*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.

Conducted Emission

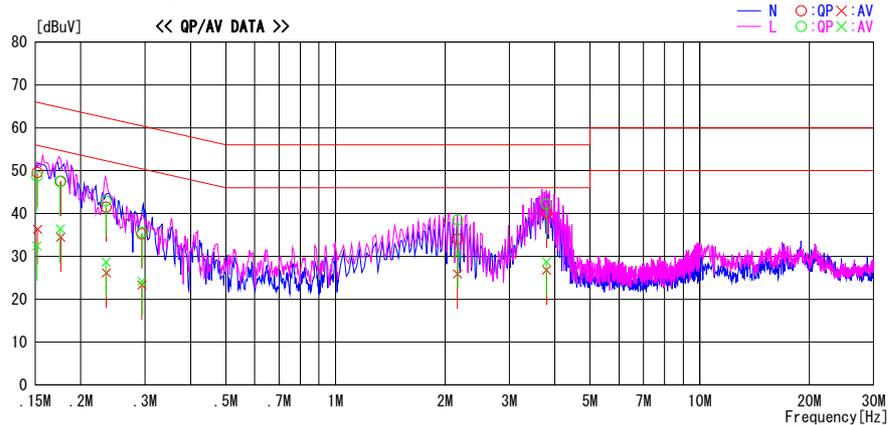
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/01/14

Report No. : 31DE0029-H0
Temp./Humi. : 21deg. C. / 34%
Engineer : Keisuke Kawamura

Mode / Remarks : Standby Mode

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



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]		
0.15199	36.5	23.2	13.1	49.6	36.3	65.9	56.9	16.4	19.6	N	
0.17608	34.4	21.4	13.1	47.5	34.5	64.7	54.7	17.2	20.2	N	
0.23488	28.1	12.9	13.3	41.4	26.2	62.3	52.3	20.9	26.2	N	
0.29399	22.0	10.0	13.3	35.3	23.3	60.4	50.4	25.1	27.1	N	
2.16217	20.5	12.4	13.5	34.0	25.9	56.0	46.0	22.0	20.1	N	
3.79899	26.3	13.0	13.8	40.1	26.8	56.0	46.0	15.9	19.2	N	
0.15161	35.5	19.3	13.1	48.6	32.4	65.9	55.9	17.3	23.5	L	
0.17555	34.4	23.3	13.1	47.5	36.4	64.7	54.7	17.3	18.3	L	
0.23440	29.6	15.3	13.3	42.9	28.6	62.3	52.3	19.4	23.7	L	
0.29447	22.3	10.9	13.3	35.6	24.2	60.4	50.4	24.8	26.2	L	
2.16359	25.1	17.1	13.5	38.6	30.6	56.0	46.0	17.4	15.4	L	
3.79733	28.4	15.0	13.8	42.2	28.8	56.0	46.0	13.8	17.2	L	

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

*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

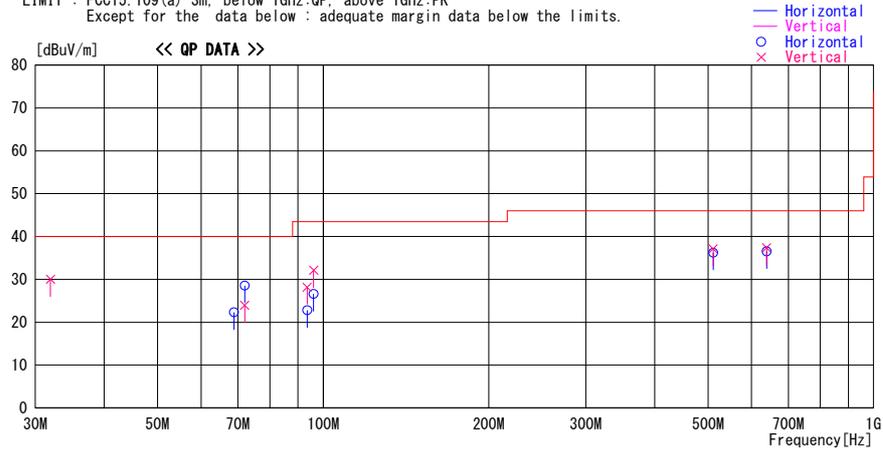
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UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/01/14

Report No. : 31DE0029-H0
Temp./Humi. : 21deg. C. / 34%
Engineer : Keisuke Kawamura

Mode / Remarks : USB Data Com Mode Worst-Axis(Hori:Z / Vert:Z)

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss&Gain [dB]							
31.943	46.4	QP	17.6	-34.0	30.0	273	100	Vert.	40.0	10.0	
68.841	48.8	QP	6.7	-33.2	22.3	323	277	Hori.	40.0	17.7	
72.008	55.3	QP	6.4	-33.2	28.5	105	235	Hori.	40.0	11.5	
72.008	50.8	QP	6.4	-33.2	24.0	64	176	Vert.	40.0	16.0	
93.514	47.0	QP	8.5	-32.7	22.8	271	198	Hori.	43.5	20.7	
93.514	52.4	QP	8.5	-32.7	28.2	78	100	Vert.	43.5	15.3	
96.124	50.2	QP	9.0	-32.6	26.6	82	192	Hori.	43.5	16.9	
96.124	55.7	QP	9.0	-32.6	32.1	284	100	Vert.	43.5	11.4	
511.261	46.3	QP	18.8	-28.9	36.2	130	100	Hori.	46.0	9.8	
511.261	47.3	QP	18.8	-28.9	37.2	327	100	Vert.	46.0	8.8	
639.076	44.0	QP	20.5	-28.0	36.5	322	121	Hori.	46.0	9.5	
639.076	44.9	QP	20.5	-28.0	37.4	24	100	Vert.	46.0	8.6	

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

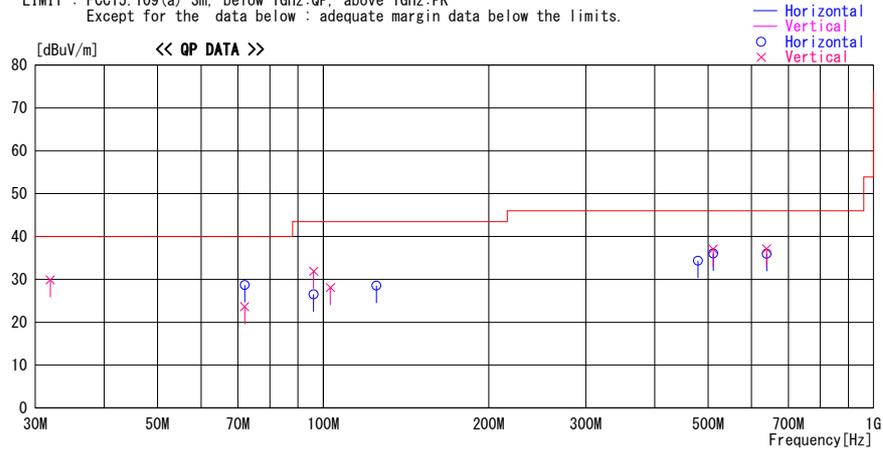
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Date : 2011/01/14

Report No. : 31DE0029-H0
Temp./Humi. : 21deg. C. / 34%
Engineer : Keisuke Kawamura

Mode / Remarks : Standby Mode Worst-Axis(Hori:Z / Vert:Z)

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss&Gain [dB]							
31.933	46.3	QP	17.6	-34.0	29.9	262	100	Vert.	40.0	10.1	
71.998	50.4	QP	6.4	-33.2	23.6	258	100	Vert.	40.0	16.4	
71.998	55.5	QP	6.4	-33.2	28.7	106	242	Hori.	40.0	11.3	
96.121	55.5	QP	9.0	-32.6	31.9	216	100	Vert.	43.5	11.6	
96.121	50.1	QP	9.0	-32.6	26.5	69	198	Hori.	43.5	17.0	
103.046	50.4	QP	10.2	-32.5	28.1	330	100	Vert.	43.5	15.4	
124.975	47.9	QP	12.8	-32.1	28.6	286	250	Hori.	43.5	14.9	
479.306	44.9	QP	18.5	-29.0	34.4	137	100	Hori.	46.0	11.6	
511.248	46.1	QP	18.8	-28.9	36.0	127	100	Hori.	46.0	10.0	
511.248	47.2	QP	18.8	-28.9	37.1	329	100	Vert.	46.0	9.0	
639.068	43.5	QP	20.5	-28.0	36.0	316	118	Hori.	46.0	10.0	
639.068	44.6	QP	20.5	-28.0	37.1	29	100	Vert.	46.0	8.9	

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

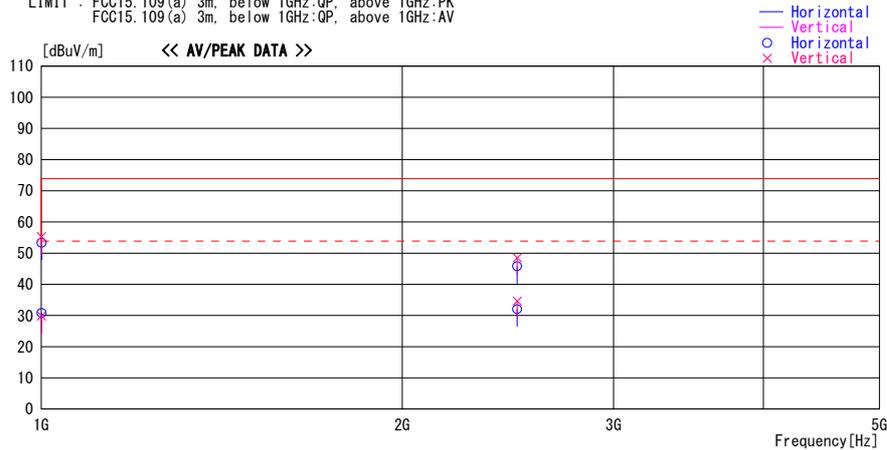
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/01/14

Report No. : 31DE0029-HO
Temp./Humi. : 21deg. C. / 34%
Engineer : Keisuke Kawamura

Mode / Remarks : USB Data Com Mode Worst-Axis(Hori:Z / Vert:Z)

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]							
1000.417	66.8	PK	24.0	-35.5	55.3	16	159	Vert.	73.9	18.6	
1000.417	64.8	PK	24.0	-35.5	53.3	351	100	Hori.	73.9	20.6	
1000.417	42.3	AV	24.0	-35.5	30.8	351	100	Hori.	53.9	23.2	
1000.417	41.3	AV	24.0	-35.5	29.8	16	159	Vert.	53.9	24.1	
2493.333	52.4	PK	27.0	-33.6	45.8	49	100	Hori.	73.9	28.1	
2493.333	38.7	AV	27.0	-33.6	32.1	49	100	Hori.	53.9	21.9	
2493.333	55.1	PK	27.0	-33.6	48.5	351	100	Vert.	73.9	25.4	
2493.333	41.3	AV	27.0	-33.6	34.7	351	100	Vert.	53.9	19.2	

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

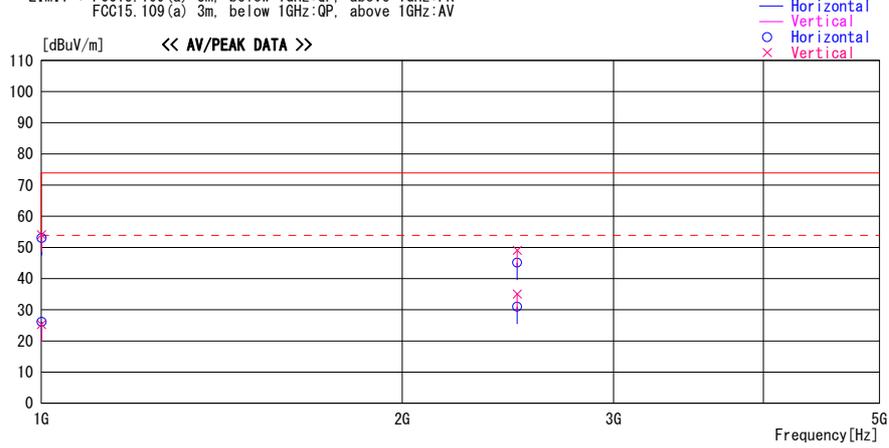
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/01/14

Report No. : 31DE0029-HO
Temp./Humi. : 21deg. C. / 34%
Engineer : Keisuke Kawamura

Mode / Remarks : Standby Mode Worst-Axis(Hori:Z / Vert:Z)

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		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB]	Loss&Gain [dB]							
1000.417	65.6	PK	24.0	-35.5	54.1	6	160	Vert.	73.9	19.8	
1000.417	64.5	PK	24.0	-35.5	53.0	332	100	Hori.	73.9	20.9	
1000.417	37.6	AV	24.0	-35.5	26.1	332	100	Hori.	53.9	27.8	
1000.417	36.8	AV	24.0	-35.5	25.3	6	160	Vert.	53.9	28.6	
2493.333	51.7	PK	27.0	-33.6	45.1	51	100	Hori.	73.9	28.8	
2493.333	37.7	AV	27.0	-33.6	31.1	51	100	Hori.	53.9	22.9	
2493.333	41.7	AV	27.0	-33.6	35.1	351	100	Vert.	53.9	18.8	
2493.333	55.6	PK	27.0	-33.6	49.0	351	100	Vert.	73.9	24.9	

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 3: Test instruments

EMI test equipment

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	2010/07/02 * 12
MOS-01	Digital Humidity Indicator	N.T	NT-1800	MOS01	RE/CE	2010/02/09 * 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	2010/12/07 * 12
KBA-05	Biconical Antenna	Schwarzbeck	BBA9106	2513	RE	2010/10/15 * 12
KLA-04	Logperiodic Antenna	Schwarzbeck	USLP9143	361	RE	2010/10/16 * 12
MAT-08	Attenuator(6dB)	Weinschel Corp	2	BK7971	RE	2010/11/05 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent/TSJ	-	-	RE	2010/10/14 * 12
MPA-20	Pre Amplifier	Elena	EPA-4020YA	030801	RE	2010/03/23 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	253	RE	2010/06/29 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	148048-143(1m) / 292410(5m)	RE	2010/09/30 * 12
MPA-01	Pre Amplifier	Agilent	8449B	3008A01671	RE	2010/02/12 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	RE	2010/02/03 * 12
MLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	8127383	CE(EUT)	2010/07/04 * 12
MLS-03	LISN(AMN)	Schwarzbeck	NSLK8127	8127384	CE(AE)	2010/07/28 * 12
MTA-06	Terminator	MCL	BTRM-50	1 9951	CE	2010/02/02 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/TSJ	5D-2W(20m)/3D-2W(7.5m)/RG400u(1.5m)/RFM-E421(Switcher)	-/ 01068(Switcher)	CE	2010/01/05 * 12
MAT-64	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2010/02/04 * 12

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

All equipment is calibrated with traceable calibrations. Each calibration 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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