



EMI TEST REPORT

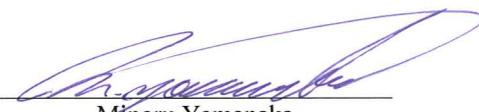
Test Report No. : 29BE0159-HO

Applicant : Sharp Corporation, Communication Systems Group.
Type of Equipment : Cellular Phone
Model No. : CDMA W64SH
FCC ID : APYHRO00076
Test regulation : FCC Part 15 Subpart B 2008 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: September 20, 2008

Tested by: 
Kazufumi Nakai
EMC Services

Approved by : 
Minoru Yamanaka
Assistant Manager of EMC Services



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://uljapan.co.jp/emc/nvlap.htm>

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	7
SECTION 5: Conducted Emission	9
SECTION 6: Radiated Emission	10
APPENDIX 1: Photographs of test setup	11
Conducted Emission	11
Spurious Emission (Radiated)	12
Worst Case Position (Horizontal: X-axis/ Vertical:X-axis)	13
APPENDIX 2: Data of EMI test	14
Conducted Emission	14
Radiated Emission	16
APPENDIX 3: Test instruments	20

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 : +81-82-420-1630
Facsimile Number : +81-82-420-1624
Contact Person : Hachiroh Hidaka

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

2.1 Identification of E.U.T.

Type of Equipment : Cellular Phone
Model No. : CDMA W64SH
Serial No. : SSHBZ002639
Rating : AC 120V/60Hz, DC4.0V
Receipt Date of Sample : September 20, 2008
Country of Mass-production : Japan
Condition of EUT : Production prototype
(Not for Sale: This sample is not mass-produced items.)
Modification of EUT : No Modification by the test lab

2.2 Product Description

Model No: CDMA W64SH is 1xEV-DO Hybrid CDMA Tri-Band Cellular Phone.

Clock frequency : 19.2MHz, 384MHz, 32.768kHz

UL Japan, Inc.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : FCC Part 15 Subpart B 2008, final revised on May 19, 2008
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	ANSI C63.4: 2003 7. AC powerline conducted emission measurements	Class B	N/A	[QP] 11.8dB, 0.20791MHz, L [AV] 6.9dB, 1.34504MHz, L	Complied
Radiated emission	ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	1.2dB, 96.003MHz, QP Horizontal	Complied

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

*These tests were performed without any deviations from test procedure except for addition or exclusion.

3.3 Additions or deviations to standards

No addition, deviation, nor exclusion has been made from standards.

UL Japan, Inc.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

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.

UL Japan, Inc.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

3.5 Test Location

UL Japan, Inc. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
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 1 to 3.

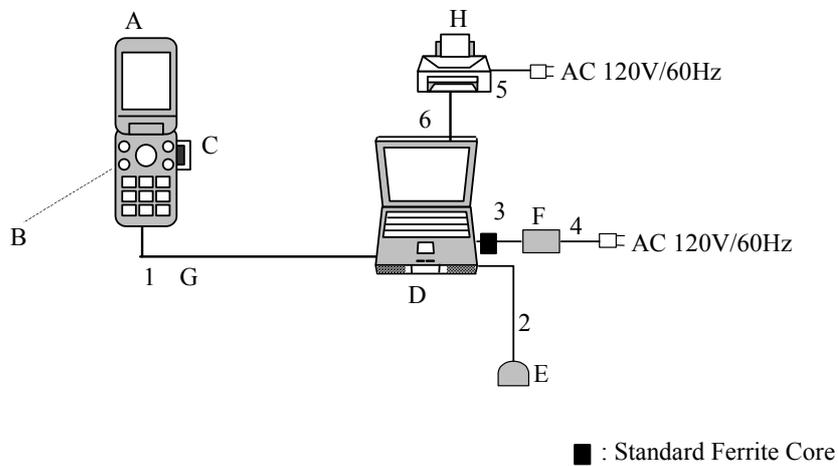
SECTION 4: Operation of E.U.T. during testing

4.1 Operating modes

Operating mode : 1) USB Data Com mode
2) Standby mode

Justification : The system was configured in typical fashion (as a customer would normally use it) for testing.

2.2 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	Remark
A	Cellular Phone	CDMA W64SH	SSHBZ002639	SHARP	EUT
B	Lithium-ion Battery	64SHUAA	-	SHARP	-
C	micro SD Memory Card	SanDisk256MB	-	San Disk	-
D	PC	DELL PP10L	8LH3H1X	DELL	DOC
E	USB Mouse	M-UB48	LZE02650788	Logitech	FCC ID: DZL211137
F	AC Adaptor(PC)	AA22850	-	DELL	-
G	USB Data Cable	MQ178Z-EM-18(5)SA-750C	-	HRS	-
H	Printer	BJF860	K10201	Canon	DOC

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	USB Data Cable	0.8	Shielded	Shielded	-
2	USB Mouse Cable	0.8	Shielded	Shielded	-
3	AC Charger Cable(PC)	1.9	Unshielded	Unshielded	-
4	AC Power Cable(PC)	0.9	Unshielded	Unshielded	-
5	AC Cable	1.8	Unshielded	Unshielded	-
6	Parallel Cable	2.0	Shielded	Shielded	-

UL Japan, Inc.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

SECTION 5: Conducted Emission

5.1 Operating environment

Test place : No.3 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 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: September 20, 2008

Test engineer: Kazufumi Nakai

UL Japan, Inc.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

SECTION 6: Radiated Emission

6.1 Operating environment

Test place : No.3 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 -2000MHz (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 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 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.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
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, 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: September 20, 2008

Test engineer: Kazufumi Nakai

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: X-axis/ Vertical:X-axis)

This page has been submitted for a separate exhibit.

APPENDIX 2: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

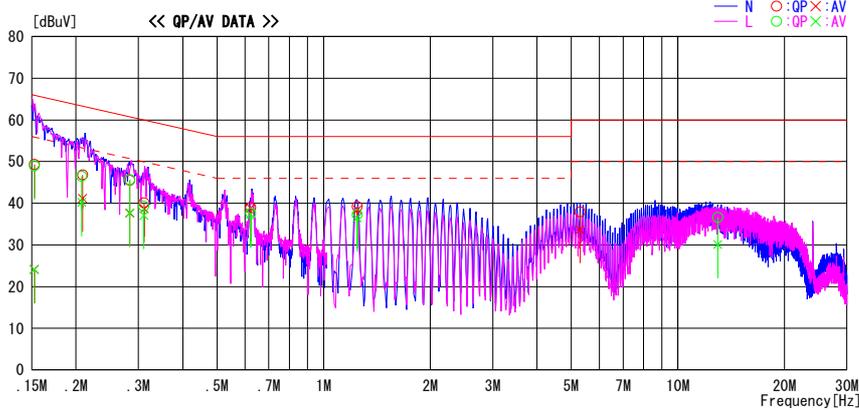
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/09/20

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : W64SH
Serial No. : SSHBZ002639

Report No. : 29BE0159-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24deg. C / 70%
Engineer : Kazufumi Nakai

Mode / Remarks : USB Data Com mode

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



Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.15261	49.0	23.8	0.3	49.3	24.1	65.9	55.9	16.6	31.8	N
0.20876	46.5	40.9	0.3	46.8	41.2	63.3	53.3	16.5	12.1	N
0.28358	45.2	37.3	0.3	45.5	37.6	60.7	50.7	15.2	13.1	N
0.31158	39.8	38.4	0.3	40.1	38.7	59.9	49.9	19.8	11.2	N
0.62212	38.7	38.5	0.3	39.0	38.8	56.0	46.0	17.0	7.2	N
1.24465	38.8	38.0	0.4	39.2	38.4	56.0	46.0	16.8	7.6	N
5.29030	37.1	32.9	0.8	37.9	33.7	60.0	50.0	22.1	16.3	N
0.15255	48.7	23.8	0.3	49.0	24.1	65.9	55.9	16.9	31.8	L
0.20745	46.2	39.9	0.3	46.5	40.2	63.3	53.3	16.8	13.1	L
0.28403	45.4	37.4	0.3	45.7	37.7	60.7	50.7	15.0	13.0	L
0.31092	39.0	36.8	0.3	39.3	37.1	59.9	49.9	20.6	12.8	L
0.62232	37.3	37.1	0.3	37.6	37.4	56.0	46.0	18.4	8.6	L
1.24382	36.9	36.1	0.4	37.3	36.5	56.0	46.0	18.7	9.5	L
12.96620	35.4	28.9	1.2	36.6	30.1	60.0	50.0	23.4	19.9	L

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT [dBuV] = READING [dBuV] + C. F [dB] (LISN LOSS + CABLE 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

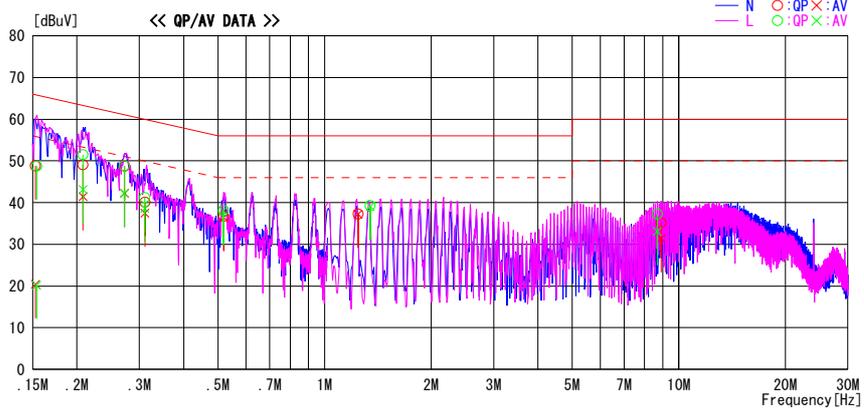
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/09/20

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : W64SH
Serial No. : SSHB2002639

Report No. : 29BE0159-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24deg. C / 70%
Engineer : Kazufumi Nakai

Mode / Remarks : Standby mode

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



Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.15265	48.5	20.1	0.3	48.8	20.4	65.9	55.9	17.1	35.5	N
0.20795	48.8	41.1	0.3	49.1	41.4	63.3	53.3	14.2	11.9	N
0.27252	48.4	41.9	0.3	48.7	42.2	61.0	51.0	12.3	8.8	N
0.31101	39.8	37.2	0.3	40.1	37.5	59.9	49.9	19.8	12.4	N
0.51906	36.4	36.1	0.3	36.7	36.4	56.0	46.0	19.3	9.6	N
1.24384	36.9	36.8	0.4	37.3	37.2	56.0	46.0	18.7	8.8	N
8.90938	34.2	30.4	1.0	35.2	31.4	60.0	50.0	24.8	18.6	N
0.15395	48.4	19.9	0.3	48.7	20.2	65.8	55.8	17.1	35.6	L
0.20791	51.2	42.8	0.3	51.5	43.1	63.3	53.3	11.8	10.2	L
0.27185	48.5	41.9	0.3	48.8	42.2	61.1	51.1	12.3	8.9	L
0.31068	40.9	38.3	0.3	41.2	38.6	60.0	50.0	18.8	11.4	L
0.51792	37.8	37.7	0.3	38.1	38.0	56.0	46.0	17.9	8.0	L
1.34504	38.9	38.7	0.4	39.3	39.1	56.0	46.0	16.7	6.9	L
8.69380	36.3	32.1	1.0	37.3	33.1	60.0	50.0	22.7	16.9	L

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT [dBuV] = READING [dBuV] + C. F [dB] (LISN LOSS + CABLE 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

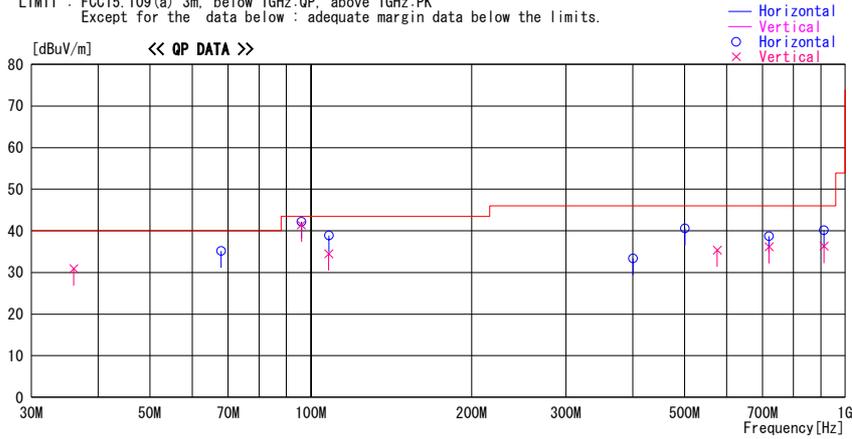
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/09/20

Company : Sharp Corporation Report No. : 29BE0159-HO
Kind of EUT : Cellular phone Power : AC 120V / 60Hz
Model No. : W64SH Temp./Humi. : 24deg. C. / 70%
Serial No. : SSHBZ002639 Engineer : Kazufumi Nakai

Mode / Remarks : USB Data Com mode, Worst-axis(Hori:X, Vert:X)

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]							
36.004	40.0	QP	15.8	-24.9	30.9	180	100	Vert.	40.0	9.1	
68.001	52.7	QP	6.8	-24.3	35.2	237	317	Hori.	40.0	4.8	
96.001	56.1	QP	9.2	-23.9	41.4	149	115	Vert.	43.5	2.1	
96.002	56.9	QP	9.2	-23.9	42.2	159	198	Hori.	43.5	1.3	
108.003	47.3	QP	11.0	-23.8	34.5	299	100	Vert.	43.5	9.0	
108.123	51.6	QP	11.1	-23.8	38.9	278	300	Hori.	43.5	4.6	
400.937	37.4	QP	17.3	-21.3	33.4	358	102	Hori.	46.0	12.6	
501.173	43.2	QP	18.1	-20.7	40.6	0	192	Hori.	46.0	5.4	
576.003	36.7	QP	19.0	-20.3	35.4	132	115	Vert.	46.0	10.6	
720.004	37.8	QP	20.3	-19.4	38.7	106	121	Hori.	46.0	7.3	
720.014	35.3	QP	20.3	-19.4	36.2	3	100	Vert.	46.0	9.8	
912.011	36.2	QP	21.5	-17.5	40.2	58	102	Hori.	46.0	5.8	
912.019	32.3	QP	21.5	-17.5	36.3	314	191	Vert.	46.0	9.7	

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.

UL Japan, Inc.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

Radiated Emission

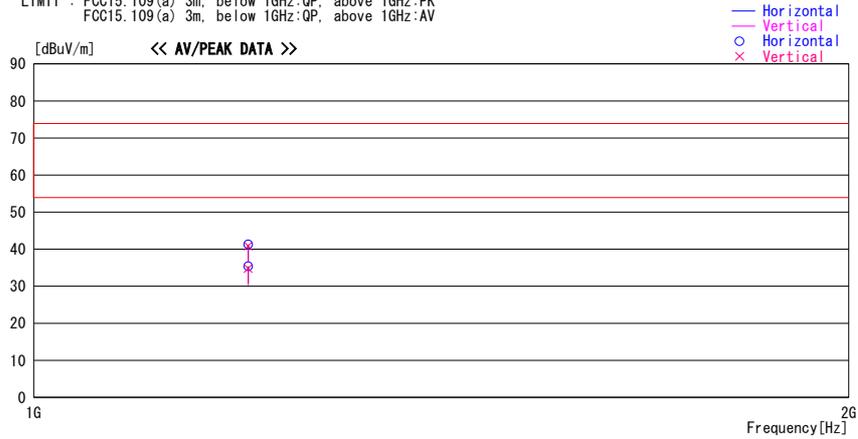
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber
 Date : 2008/09/20

Company : Sharp Corporation
 Kind of EUT : Cellular phone
 Model No. : W64SH
 Serial No. : SSHBZ002639
 Report No. : 29BE0159-HO
 Power : AC 120V / 60Hz
 Temp./Humi. : 24deg. C. / 70%
 Engineer : Kazufumi Nakai

Mode / Remarks : USB Data Com mode, Worst-axis(Hori:X, Vert:X)

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]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss&Gain [dB]					
1200.016	49.3	PK	24.8	-32.8	41.3	Hori.	73.9	32.6	
1200.016	48.9	PK	24.8	-32.8	40.9	Vert.	73.9	33.0	
1200.016	43.4	AV	24.8	-32.8	35.4	Hori.	53.9	18.5	
1200.016	42.8	AV	24.8	-32.8	34.8	Vert.	53.9	19.1	

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.

UL Japan, Inc.
Head Office EMC Lab.
 4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
 Telephone : +81 596 24 8116
 Facsimile : +81 596 24 8124

Radiated Emission

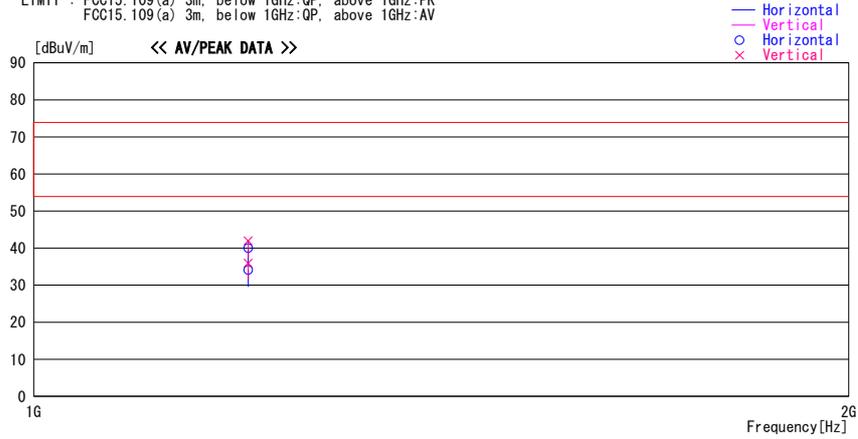
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/09/20

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : W64SH
Serial No. : SSHBZ002639
Report No. : 29BE0159-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24deg. C. / 70%
Engineer : Kazufumi Nakai

Mode / Remarks : Standby mode, Worst-axis(Hori:X, Vert:X)

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]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss& Gain [dB]					
1200.045	48.0	PK	24.8	-32.8	40.0	Hori.	73.9	33.9	
1200.045	50.0	PK	24.8	-32.8	42.0	Vert.	73.9	31.9	
1200.045	42.1	AV	24.8	-32.8	34.1	Hori.	53.9	19.8	
1200.045	44.0	AV	24.8	-32.8	36.0	Vert.	53.9	17.9	

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	Test Item	Calibration Date * Interval(month)
MAEC-03	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE/CE	2008/03/25 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	RE/CE	2008/01/10 * 12
MJM-06	Measure	PROMART	SEN1955	RE/CE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE/CE	-
MSA-09	Spectrum Analyzer	Advantest	R3273	RE/CE	2007/12/21 * 12
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	RE/CE	2008/04/02 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2008/01/12 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2008/01/12 * 12
MCC-51	Coaxial cable	UL Japan	-	RE	2008/07/18 * 12
MAT-30	Attenuator(6dB)	TME	UFA-01	RE	2008/03/10 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	RE	2008/03/06 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2008/04/23 * 12
MCC-56	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2008/03/12 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	RE	2008/03/13 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	RE	2008/02/27 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	CE(AE)	2008/02/19 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2008/02/20 * 12
MTA-07	Terminator	MCL	BTRM-50	CE	2008/02/04 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	-	CE	2008/07/03 * 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

UL Japan, Inc.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124