



## EMI TEST REPORT

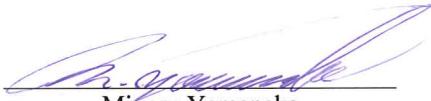
Test Report No. : 29BE0194-HO

**Applicant** : Sharp Corporation, Communication Systems Group.  
**Type of Equipment** : Cellular Phone  
**Model No.** : SH9020C  
**FCC ID** : APYHRO00080  
**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 27, 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>

UL Japan, Inc.

Head Office EMC Lab.

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MF060b (09.01.08)

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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 : +81-82-420-1837  
Facsimile Number : +81-82-420-1654  
Contact Person : Tetsuya Maekawa

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

### **2.1 Identification of E.U.T.**

Type of Equipment : Cellular Phone  
Model No. : SH9020C  
Serial No. : 004401/11/154313/4  
Rating : AC 120V/60Hz, DC4.0V  
Receipt Date of Sample : September 27, 2008  
Country of Mass-production : China  
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: SH9020C (referred to as the EUT in this report) is the Cellular Phone.

Clock frequency(ies) in the system : 26MHz, 208MHz

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### **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**

<b>Item</b>	<b>Test Procedure</b>	<b>Limits</b>	<b>Deviation</b>	<b>Worst margin</b>	<b>Result</b>
Conducted emission	ANSI C63.4: 2003 7. AC powerline conducted emission measurements	Class B	N/A	[QP] 14.6dB, 4.94920MHz, N [AV] 8.9dB, 4.66205MHz, N	Complied
Radiated emission	ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	5.4dB, 144.004MHz, 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.

### 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 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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	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

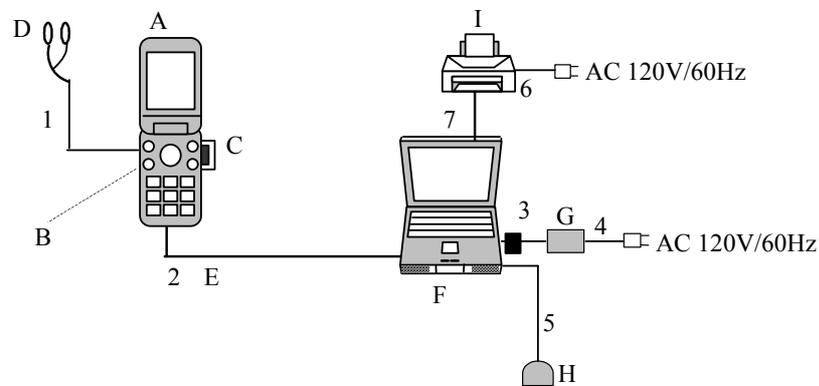
Refer to APPENDIX 1 to 3.

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

### **4.1 Operating modes**

The mode is used : 1) USB Data Com mode  
2) Standby mode

### **4.2 Configuration and peripherals [Conducted emission test]**



■ : Standard Ferrite Core

\*Cabling and setup were taken into consideration and test data was taken under worst case conditions.

**Description of EUT and Support equipment**

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Cellular Phone	SH9020C	004401/11/154313/4	SHARP	EUT
B	Rechargeable Lithium-ion Battery	XN-1BT94	RHA	SANYO	EUT
C	microSD Memory Card	SDSDQ-1024	01	SanDisk	EUT
D	Stereo Handsfree	XN-1ER90	01	HOSIDEN	EUT
E	USB Data Cable	XN-1DC30	-	HOSIDEN	Peripheral(cable)
F	Personal Computer	PP01L	CN-04P240-48643-32M-3708	Dell	DOC
G	AC Adapter (PC)	ADP-90FB	CN-06G356-48661-32H-OBJ9	Dell	-
H	Mouse	X06-08477	63618-OEM-1245101-5	Microsoft	DOC
I	Printer	BJF860	K10201	Canon	DOC

**List of cables used**

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	Stereo Handsfree	1.7	Unshielded	Unshielded	-
2	USB Data Cable	0.8	Shielded	Unshielded	-
3	AC Adapter Cable (Dell PC)	1.8	Unshielded	Unshielded	-
4	AC Power Cable (Dell PC)	1.8	Unshielded	Unshielded	-
5	Mouse Cable	1.8	Unshielded	Unshielded	-
6	AC Cable	1.8	Unshielded	Unshielded	-
7	Parallel Cable	2.0	Shielded	Shielded	-

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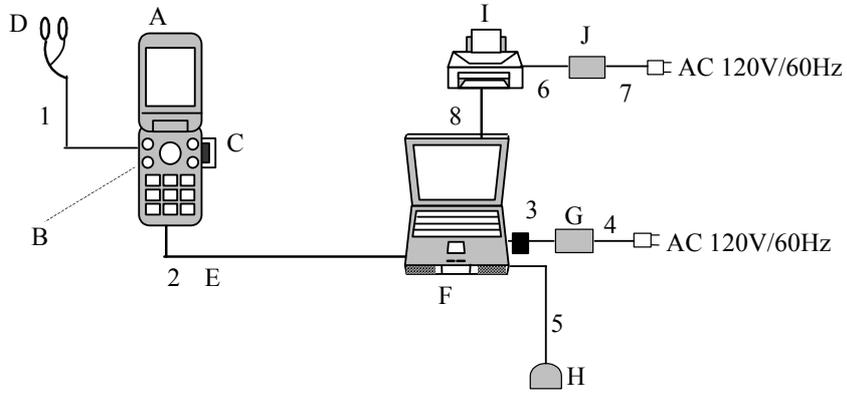
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[Radiated emission test]



■ : Standard Ferrite Core

\*Cabling and setup were taken into consideration and test data was taken under worst case conditions.

**Description of EUT and Support equipment**

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Cellular Phone	SH9020C	004401/11/154313/4	SHARP	EUT
B	Rechargeable Lithium-ion Battery	XN-1BT94	RHA	SANYO	EUT
C	microSD Memory Card	SDSDQ-1024	01	SanDisk	EUT
D	Stereo Handsfree	XN-1ER90	01	HOSIDEN	EUT
E	USB Data Cable	XN-1DC30	-	HOSIDEN	Peripheral(cable)
F	Personal Computer	PP01L	CN-04P240-48643-32M-3708	Dell	DOC
G	AC Adapter (PC)	ADP-90FB	CN-06G356-48661-32H-OBJ9	Dell	-
H	Mouse	X06-08477	63618-OEM-1245101-5	Microsoft	DOC
I	Printer	K10190	XADP01190	Canon	DOC
J	AC Adapter (Printer)	AD-360U	01729379	Canon	-

**List of cables used**

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	Stereo Handsfree	1.7	Unshielded	Unshielded	-
2	USB Data Cable	0.8	Shielded	Unshielded	-
3	AC Adapter Cable (Dell PC)	1.8	Unshielded	Unshielded	-
4	AC Power Cable (Dell PC)	1.8	Unshielded	Unshielded	-
5	Mouse Cable	1.8	Unshielded	Unshielded	-
6	AC Adapter Cable (Printer)	1.0	Unshielded	Unshielded	-
7	AC Power Cable (Printer)	1.5	Unshielded	Unshielded	-
8	Printer Cable	0.8	Shielded	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 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 27, 2008

Test engineer: Kazufumi Nakai

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## **SECTION 6: Radiated Emission**

### **6.1 Operating environment**

Test place : No.4 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 27, 2008

Test engineer: Kazufumi Nakai

**APPENDIX 1: Photographs of test setup**

**Conducted Emission**

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**Radiated Emission**

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**Worst Case Position (Horizontal: Y-axis/ Vertical:Y-axis)**

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**APPENDIX 2: Data of EMI test**

**Conducted Emission**

**DATA OF CONDUCTED EMISSION TEST**

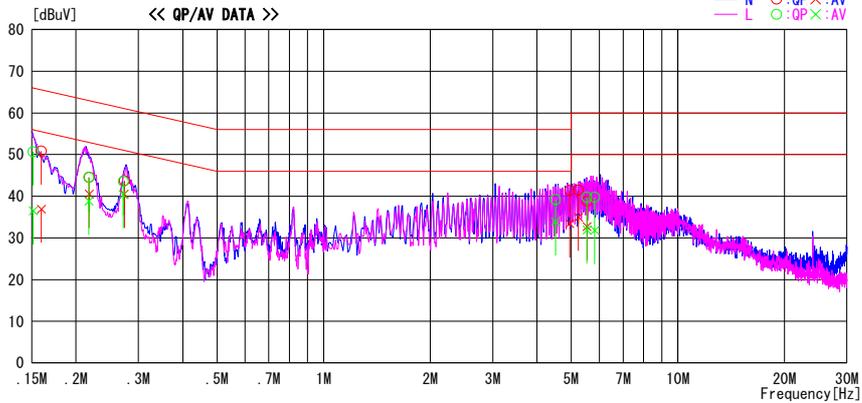
UL Japan, Inc. Head Office EMC Lab. No. 4 Semi Anechoic Chamber  
Date : 2008/09/27

Company : Sharp Corporation  
Kind of EUT : Cellular Phone  
Model No. : SH9020C  
Serial No. : 004401/11/154313/4

Report No. : 29BE0194-HO  
Power : AC 120V / 60Hz  
Temp./Humi. : 23deg. C / 44%  
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	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15957	50.6	36.7	0.2	50.8	36.9	65.5	55.5	14.7	18.6	N	
0.21782	44.2	40.2	0.3	44.5	40.5	62.9	52.9	18.4	12.4	N	
0.27376	43.4	40.2	0.3	43.7	40.5	61.0	51.0	17.3	10.5	N	
4.94920	40.7	32.7	0.7	41.4	33.4	56.0	46.0	14.6	12.6	N	
5.23795	40.7	34.2	0.8	41.5	35.0	60.0	50.0	18.5	15.0	N	
5.53906	38.0	31.9	0.8	38.8	32.7	60.0	50.0	21.2	17.3	N	
0.15130	50.5	36.3	0.2	50.7	36.5	65.9	55.9	15.2	19.4	L	
0.21729	44.2	38.5	0.3	44.5	38.8	62.9	52.9	18.4	14.1	L	
0.27199	43.3	40.1	0.3	43.6	40.4	61.1	51.1	17.5	10.7	L	
4.51138	38.5	33.2	0.7	39.2	33.9	56.0	46.0	16.8	12.1	L	
5.53435	39.0	31.1	0.8	39.8	31.9	60.0	50.0	20.2	18.1	L	
5.82258	39.0	31.0	0.8	39.8	31.8	60.0	50.0	20.2	18.2	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.

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## Conducted Emission

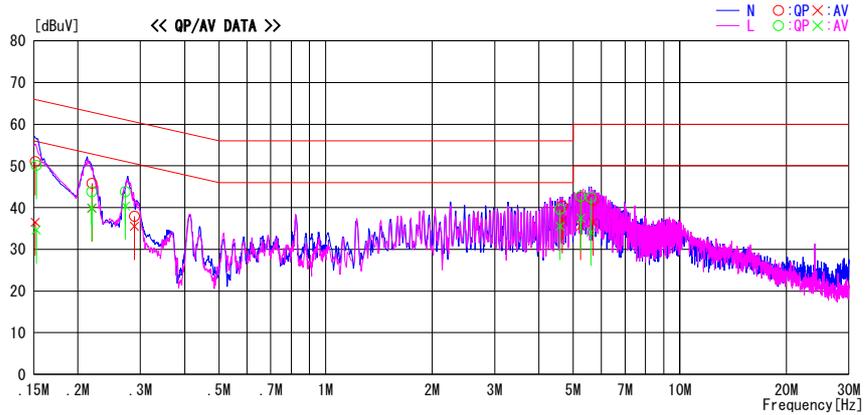
### DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber  
Date : 2008/09/27

Company : Sharp Corporation  
Kind of EUT : Cellular Phone  
Model No. : SH9020C  
Serial No. : 004401/11/154313/4  
Report No. : 29BE0194-HO  
Power : AC 120V / 60Hz  
Temp./Humi. : 23deg. C / 44%  
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	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15155	50.8	36.3	0.2	51.0	36.5	65.9	55.9	14.9	19.4	N	
0.21897	45.5	39.6	0.3	45.8	39.9	62.9	52.9	17.1	13.0	N	
0.28878	37.6	35.2	0.3	37.9	35.5	60.6	50.6	22.7	15.1	N	
4.66205	39.6	36.4	0.7	40.3	37.1	56.0	46.0	15.7	8.9	N	
5.24542	41.7	34.7	0.8	42.5	35.5	60.0	50.0	17.5	14.5	N	
5.68709	40.9	35.7	0.8	41.7	36.5	60.0	50.0	18.3	13.5	N	
0.15255	49.9	34.4	0.2	50.1	34.6	65.9	55.9	15.8	21.3	L	
0.21867	43.5	39.6	0.3	43.8	39.9	62.9	52.9	19.1	13.0	L	
0.27221	43.5	40.1	0.3	43.8	40.4	61.1	51.1	17.3	10.7	L	
4.59035	38.9	34.8	0.7	39.6	35.5	56.0	46.0	16.4	10.5	L	
5.24965	41.9	36.7	0.8	42.7	37.5	60.0	50.0	17.3	12.5	L	
5.60927	41.6	33.3	0.8	42.4	34.1	60.0	50.0	17.6	15.9	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

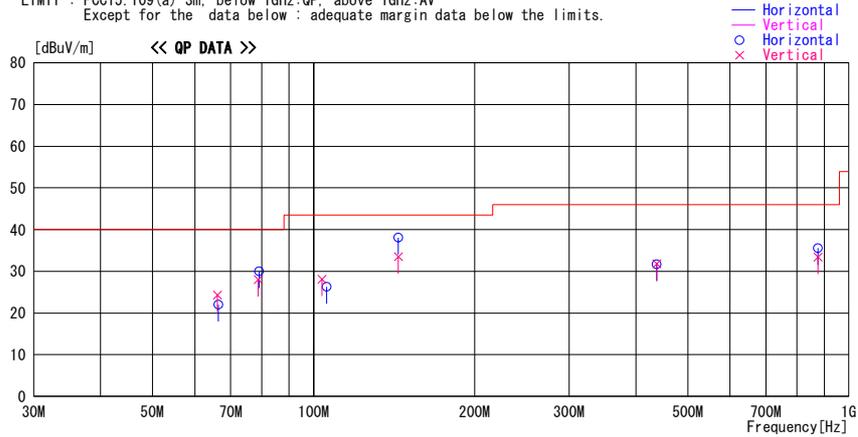
### DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber  
Date : 2008/09/27

Company : Sharp Corporation  
Kind of EUT : Cellular phone  
Model No. : SH9020C  
Serial No. : 004401/11/154313/4  
Report No. : 29BE0194-HO  
Power : AC 120V / 60Hz  
Temp./Humi. : 23deg. C. / 44%  
Operator : Kazufumi Nakai

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

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV  
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]							
66.106	41.5	QP	7.1	-24.3	24.3	259	100	Vert.	40.0	15.7	
66.394	39.2	QP	7.1	-24.3	22.0	61	262	Hori.	40.0	18.0	
78.815	45.8	QP	6.4	-24.2	28.0	257	100	Vert.	40.0	12.0	
79.104	47.8	QP	6.4	-24.2	30.0	49	220	Hori.	40.0	10.0	
103.675	41.3	QP	10.6	-23.8	28.1	161	100	Vert.	43.5	15.4	
105.748	39.2	QP	10.9	-23.8	26.3	189	163	Hori.	43.5	17.2	
144.004	46.9	QP	14.6	-23.4	38.1	326	220	Hori.	43.5	5.4	
144.014	42.3	QP	14.6	-23.4	33.5	193	100	Vert.	43.5	10.0	
437.750	34.4	QP	18.5	-21.2	31.7	276	100	Hori.	46.0	14.3	
437.762	34.5	QP	18.5	-21.2	31.8	173	122	Vert.	46.0	14.2	
875.509	30.4	QP	23.3	-18.1	35.6	129	103	Hori.	46.0	10.4	
875.509	28.2	QP	23.3	-18.1	33.4	142	129	Vert.	46.0	12.6	

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

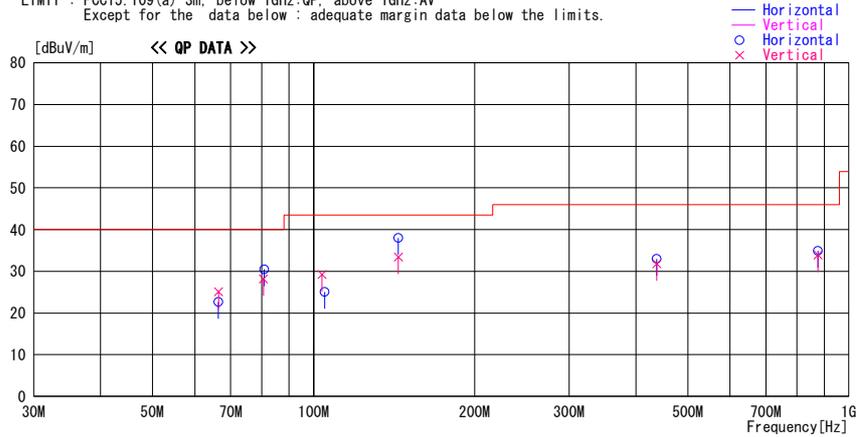
### DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber  
Date : 2008/09/27

Company : Sharp Corporation  
Kind of EUT : Cellular phone  
Model No. : SH9020C  
Serial No. : 004401/11/154313/4  
Report No. : 29BE0194-HO  
Power : AC 120V / 60Hz  
Temp./Humi. : 23deg. C. / 44%  
Operator : Kazufumi Nakai

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

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV  
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]	Gain [dB]							
66.389	39.8	QP	7.1	-24.3	22.6	61	275	Hori.	40.0	17.4	
66.474	42.3	QP	7.1	-24.3	25.1	238	100	Vert.	40.0	14.9	
80.588	45.8	QP	6.5	-24.1	28.2	259	100	Vert.	40.0	11.8	
80.889	48.0	QP	6.6	-24.1	30.5	295	219	Hori.	40.0	9.5	
103.659	42.4	QP	10.6	-23.8	29.2	6	100	Vert.	43.5	14.3	
104.867	38.1	QP	10.8	-23.8	25.1	275	170	Hori.	43.5	18.4	
144.011	46.8	QP	14.6	-23.4	38.0	304	229	Hori.	43.5	5.5	
144.011	42.2	QP	14.6	-23.4	33.4	182	100	Vert.	43.5	10.1	
437.757	34.5	QP	18.5	-21.2	31.8	3	130	Vert.	46.0	14.2	
437.758	35.7	QP	18.5	-21.2	33.0	288	100	Hori.	46.0	13.0	
875.511	28.7	QP	23.3	-18.1	33.9	142	123	Vert.	46.0	12.1	
875.518	29.7	QP	23.3	-18.1	34.9	130	108	Hori.	46.0	11.1	

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.

**Radiated Emission**

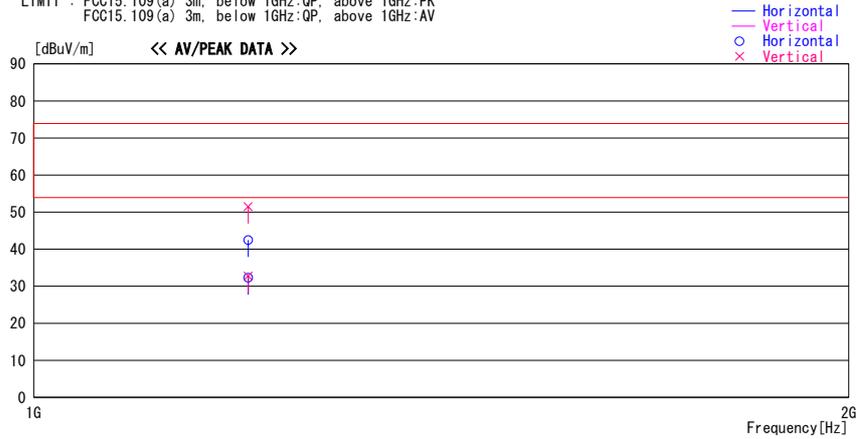
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No. 4 Semi Anechoic Chamber  
 Date : 2008/09/27

Company : Sharp Corporation  
 Kind of EUT : Cellular phone  
 Model No. : SH9020C  
 Serial No. : 004401/11/154313/4  
 Report No. : 29BE0194-HO  
 Power : AC 120V / 60Hz  
 Temp./Humi. : 23deg. C. / 44%  
 Operator : Kazufumi Nakai

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

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]	Polar.	Limit	Margin	Comment
			Factor [dB/m]	Gain [dB]			[dBuV/m]	[dB]	
1199.993	49.7	PK	24.9	-32.1	42.5	Hori.	73.9	31.4	
1199.993	39.5	AV	24.9	-32.1	32.3	Hori.	53.9	21.6	
1199.993	58.7	PK	24.9	-32.1	51.5	Vert.	73.9	22.4	
1199.993	40.0	AV	24.9	-32.1	32.8	Vert.	53.9	21.1	

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.

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**Radiated Emission**

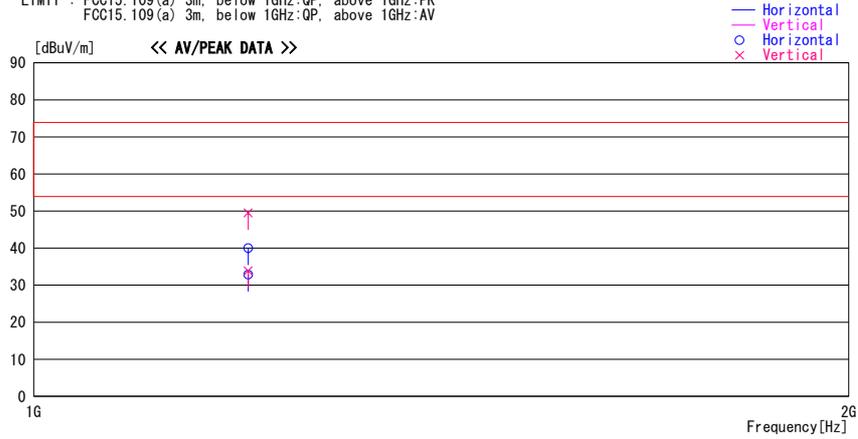
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber  
 Date : 2008/09/27

Company : Sharp Corporation  
 Kind of EUT : Cellular phone  
 Model No. : SH9020C  
 Serial No. : 004401/11/154313/4  
 Report No. : 29BE0194-HO  
 Power : AC 120V / 60Hz  
 Temp./Humi. : 23deg.C. / 44%  
 Operator : Kazufumi Nakai

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

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]					
1200.027	47.2	PK	24.9	-32.1	40.0	Hori.	73.9	33.9	
1200.027	40.0	AV	24.9	-32.1	32.8	Hori.	53.9	21.1	
1200.027	56.7	PK	24.9	-32.1	49.5	Vert.	73.9	24.4	
1200.027	41.1	AV	24.9	-32.1	33.9	Vert.	53.9	20.0	

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**

<b>Control No.</b>	<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Test Item</b>	<b>Calibration Date * Interval(month)</b>
MAEC-04	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE/CE	2008/03/27 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	RE/CE	2008/01/10 * 12
MJM-07	Measure	PROMART	SEN1955	RE/CE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE/CE	-
MSA-05	Spectrum Analyzer	Advantest	R3273	RE/CE	2008/06/25 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	RE/CE	2007/09/14 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	RE	2008/01/12 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	RE	2008/01/12 * 12
MCC-50	Coaxial cable	UL Japan	-	RE	2008/03/17 * 12
MAT-31	Attenuator(6dB)	TME	UFA-01	RE	2008/03/10 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	RE	2008/03/06 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2008/08/11 * 12
MCC-56	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2008/03/12 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	RE	2008/02/27 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	RE	2008/03/13 * 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-113	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**

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