



EMI TEST REPORT

Test Report No. : 29BE0158-HO

Applicant : Sharp Corporation, Communication Systems Group.
Type of Equipment : Cellular Phone
Model No. : 830SH
FCC ID : APYHRO00073
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>

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 : +81-82-420-1591
Facsimile Number : +81-82-420-1572
Contact Person : Hiroyuki Uwatoko

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

2.1 Identification of E.U.T.

Type of Equipment : Cellular Phone
Model No. : 830SH
Serial No. : 004401/11/150854/1
Rating : AC 120V/60Hz, DC4.0V
Receipt Date of Sample : September 20, 2008
Country of Mass-production : China
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: 830SH (referred to as the EUT in this report) is the Cellular Phone.

Clock frequency : 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

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] 14.5dB, 4.80153MHz, L [AV] 8.3dB, 4.80153MHz, L	Complied
Radiated emission	ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	10.0dB, 81.920MHz, 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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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.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Cellular Phone	830SH	004401/11/150854/1	SHARP	EUT
B	Rechargeable Lithium-ion Battery	SHBBY1	RIA	SHARP	EUT
C	microSD Memory Card	SDSDQ-128	01	SanDisk	EUT
D	Stereo Handsfree	RPHOHA019AF SB	01	SHARP	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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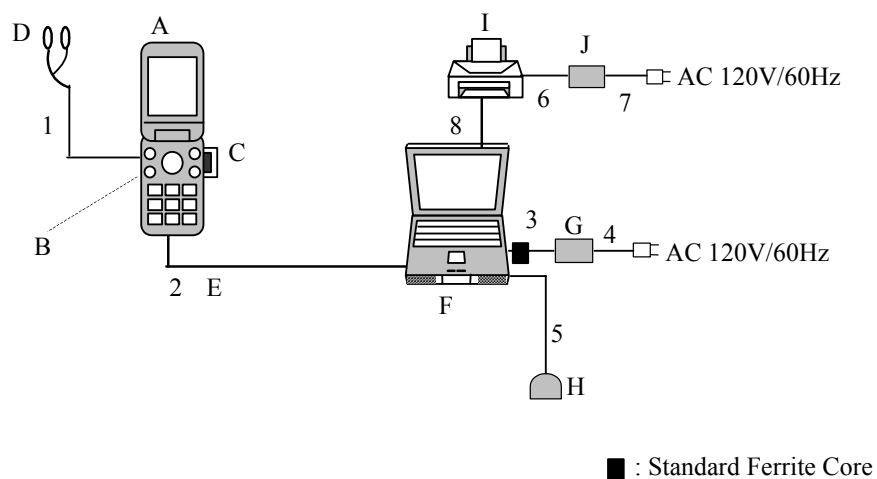
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[Radiated emission test]



*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	830SH	004401/11/150854/1	SHARP	EUT
B	Rechargeable Lithium-ion Battery	SHBBY1	RIA	SHARP	EUT
C	microSD Memory Card	SDSDQ-128	01	SanDisk	EUT
D	Stereo Handsfree	RPHOHA019AF SB	01	SHARP	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.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

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

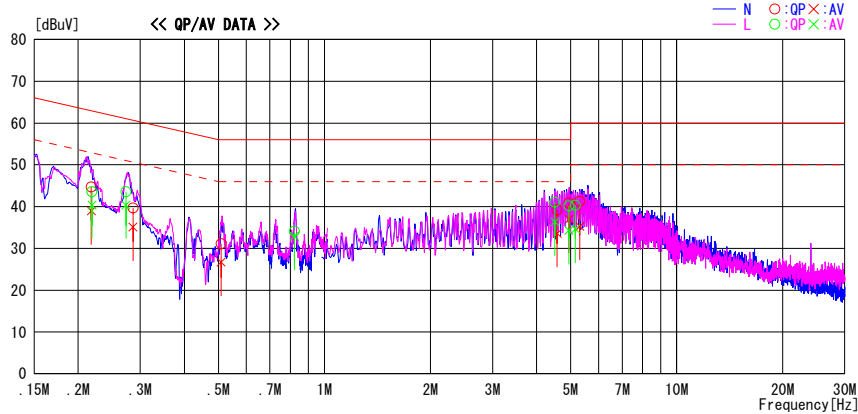
UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber
Date : 2008/09/20

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : 830SH
Serial No. : 004401/11/150854/1

Report No. : 29BE0158-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	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.21793	44.4	38.7	0.3	44.7	39.0	62.9	52.9	18.2	13.9	N
0.28621	39.4	34.8	0.3	39.7	35.1	60.6	50.6	20.9	15.5	N
0.50896	30.8	26.4	0.3	31.1	26.7	56.0	46.0	24.9	19.3	N
4.58045	38.6	33.0	0.6	39.2	33.6	56.0	46.0	16.8	12.4	N
4.94618	40.3	36.4	0.6	40.9	37.0	56.0	46.0	15.1	9.0	N
5.30935	40.4	34.5	0.8	41.2	35.3	60.0	50.0	18.8	14.7	N
0.21881	43.3	40.1	0.3	43.6	40.4	62.9	52.9	19.3	12.5	L
0.27312	43.3	40.1	0.3	43.6	40.4	61.0	51.0	17.4	10.6	L
0.82136	33.8	32.6	0.3	34.1	32.9	56.0	46.0	21.9	13.1	L
4.50754	40.5	35.7	0.6	41.1	36.3	56.0	46.0	14.9	9.7	L
4.94185	39.6	33.7	0.6	40.2	34.3	56.0	46.0	15.8	11.7	L
5.15992	39.6	33.9	0.7	40.3	34.6	60.0	50.0	19.7	15.4	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

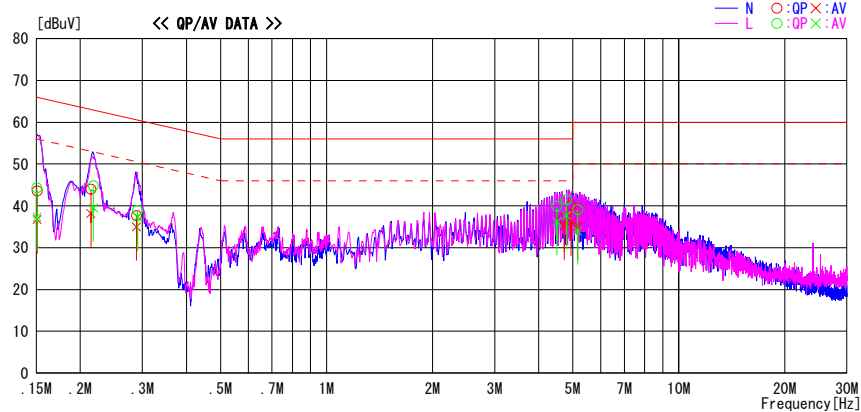
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/09/20

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : 830SH
Serial No. : 004401/11/150854/1

Report No. : 29BE0158-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]	
0.15095	43.3	36.4	0.3	43.6	36.7	65.9	55.9	22.3	19.2	N
0.21423	43.7	37.9	0.3	44.0	38.2	63.0	53.0	19.0	14.8	N
0.28854	37.4	34.7	0.3	37.7	35.0	60.6	50.6	22.9	15.6	N
4.72875	36.5	34.5	0.6	37.1	35.1	56.0	46.0	18.9	10.9	N
4.94821	39.5	35.5	0.6	40.1	36.1	56.0	46.0	15.9	9.9	N
5.16246	38.6	34.5	0.7	39.3	35.2	60.0	50.0	20.7	14.8	N
0.15065	44.0	37.0	0.3	44.3	37.3	66.0	56.0	21.7	18.7	L
0.21777	44.5	39.2	0.3	44.8	39.5	62.9	52.9	18.1	13.4	L
0.29097	38.6	37.0	0.3	38.9	37.3	60.5	50.5	21.6	13.2	L
4.51055	39.3	35.6	0.6	39.9	36.2	56.0	46.0	16.1	9.8	L
4.80153	40.9	37.1	0.6	41.5	37.7	56.0	46.0	14.5	8.3	L
5.16072	38.4	33.3	0.7	39.1	34.0	60.0	50.0	20.9	16.0	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

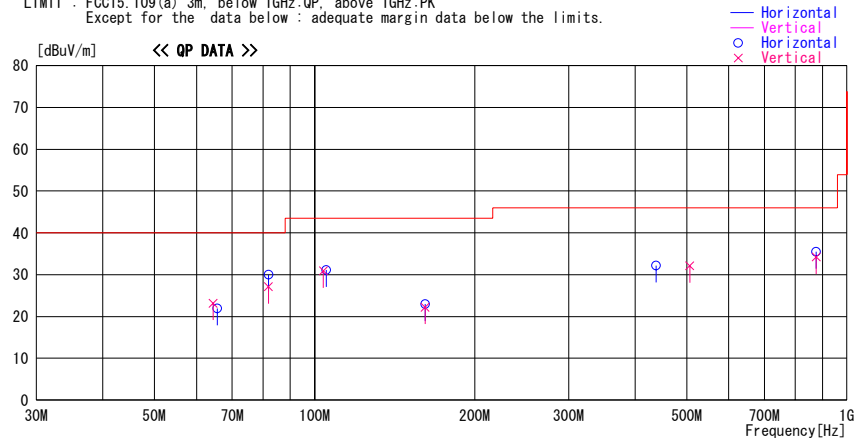
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Report No. : 29BE0158-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24deg. C. / 70%
Engineer : Kazufumi Nakai

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

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



Frequency	Reading	DET	Antenna		Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain					[dBuV/m]	[dB]	
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]				
64.432	40.4	QP	7.2	-24.4	23.2	233	100	Vert.	40.0	16.8	
65.641	39.1	QP	7.1	-24.3	21.9	46	308	Hori.	40.0	18.1	
81.920	47.4	QP	6.7	-24.1	30.0	74	236	Hori.	40.0	10.0	
81.920	44.5	QP	6.7	-24.1	27.1	249	100	Vert.	40.0	12.9	
103.867	44.2	QP	10.5	-23.8	30.9	144	100	Vert.	43.5	12.6	
105.092	44.3	QP	10.6	-23.8	31.1	187	176	Hori.	43.5	12.4	
161.283	30.8	QP	15.4	-23.2	23.0	351	198	Hori.	43.5	20.5	
161.283	30.0	QP	15.4	-23.2	22.2	135	100	Vert.	43.5	21.3	
437.767	35.7	QP	17.6	-21.1	32.2	76	100	Hori.	46.0	13.8	
506.886	34.6	QP	18.1	-20.6	32.1	193	117	Vert.	46.0	13.9	
875.524	30.7	QP	21.4	-17.9	34.2	140	133	Vert.	46.0	11.8	
875.527	32.0	QP	21.4	-17.9	35.5	126	105	Hori.	46.0	10.5	

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

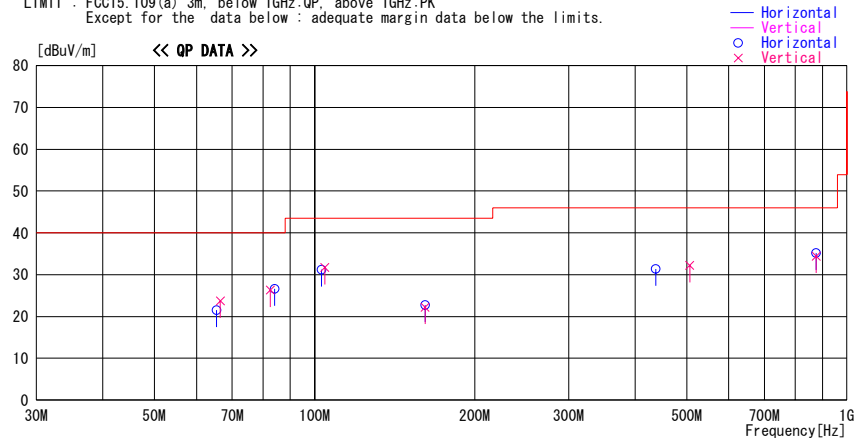
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/09/20

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : 830SH
Serial No. : 004401/11/150854/1

Report No. : 29BE0158-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
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		Comment
			Factor [dB/m]	Loss& Gain [dB]					[dBuV/m]	[dB]	
65.434	38.7	QP	7.1	-24.3	21.5	49	330	Hori.	40.0	18.5	
66.514	41.0	QP	7.0	-24.3	23.7	237	100	Vert.	40.0	16.3	
82.575	43.6	QP	6.8	-24.1	26.3	260	100	Vert.	40.0	13.7	
84.069	43.6	QP	7.1	-24.1	26.6	52	240	Hori.	40.0	13.4	
102.976	44.8	QP	10.3	-23.9	31.2	196	171	Hori.	43.5	12.3	
104.490	44.9	QP	10.6	-23.8	31.7	351	100	Vert.	43.5	11.8	
161.280	30.0	QP	15.4	-23.2	22.2	350	100	Vert.	43.5	21.3	
161.289	30.5	QP	15.4	-23.2	22.7	354	164	Hori.	43.5	20.8	
437.761	34.9	QP	17.6	-21.1	31.4	89	100	Hori.	46.0	14.6	
506.882	34.7	QP	18.1	-20.6	32.2	184	114	Vert.	46.0	13.8	
875.521	31.7	QP	21.4	-17.9	35.2	119	100	Hori.	46.0	10.8	
875.528	30.9	QP	21.4	-17.9	34.4	135	120	Vert.	46.0	11.6	

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

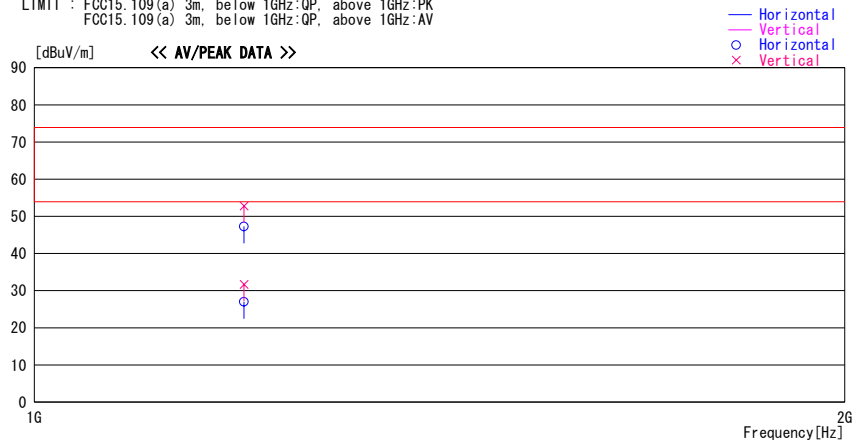
DATA OF RADIATED EMISSION TEST

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

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : 830SH
Serial No. : 004401/11/150854/1
Report No. : 29BE0158-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	Reading	DET	Antenna	Loss&	Level	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		Factor	Gain	[dBuV/m]		[dBuV/m]	[dB]	
1196.425	55.3	PK	24.8	-32.8	47.3	Hori.	73.9	26.6	
1196.425	60.8	PK	24.8	-32.8	52.8	Vert.	73.9	21.1	
1196.425	35.0	AV	24.8	-32.8	27.0	Hori.	53.9	26.9	
1196.425	39.7	AV	24.8	-32.8	31.7	Vert.	53.9	22.2	

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.

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Radiated Emission

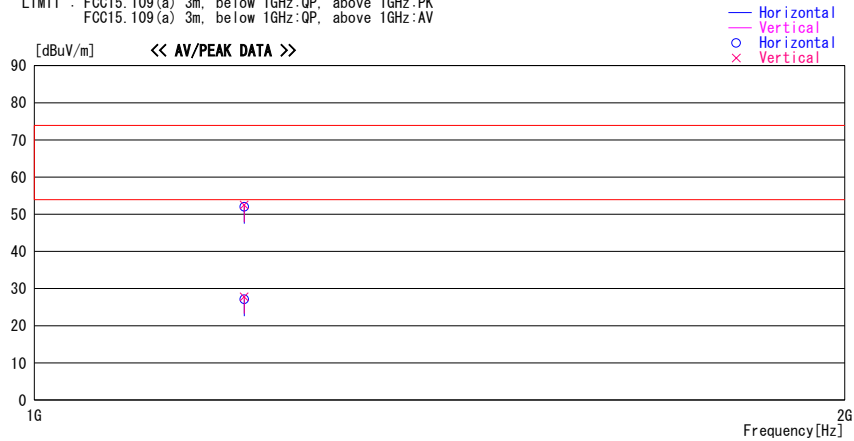
DATA OF RADIATED EMISSION TEST

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. : 830SH
Serial No. : 004401/11/150854/1
Report No. : 29BE0158-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	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
1196.558	60.0	PK	24.8	-32.8	52.0	Hori.	73.9	21.9	
1196.558	60.5	PK	24.8	-32.8	52.5	Vert.	73.9	21.4	
1196.558	35.1	AV	24.8	-32.8	27.1	Hori.	53.9	26.8	
1196.558	35.8	AV	24.8	-32.8	27.8	Vert.	53.9	26.1	

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.

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

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