EMI TEST REPORT

Test Report No. : 30IE0129-HO-B

Applicant	:	**Sharp Corporation, Communication Systems Group.**
Type of Equipment	:	**Cellular Phone**
Model No.	:	**SH-09B**
FCC ID	:	**APYHRO00122**
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: May 17, 2010

Tested by: M. Imura
Motoya Imura
Engineer of EMC Service

Approved by: Y. Yoshida
Yutaka Yoshida
Leader of EMC Service

NVLAP®
NVLAP LAB CODE: 200572-0

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

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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-09B
Serial No.	:	Refer to Section 4, Clause 4.2
Receipt Date of Sample	:	May 16, 2010
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-09B(referred to as the EUT in this report) is the Cellular Phone.

Feature of EUT	:	WCDMA & GSM Dual mode Cellular Phone /Felica - GSM (EU: 900/1800M, 1900M) - WCDMA (EU: 2000M, USA: 850, JPN: 800/1700/2000)
Clock frequency(ies) in the system	:	CPU: 500.5GHz, Oscilator: 48MHz

SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : FCC Part 15 Subpart B 2010, final revised on January 22, 2010 and effective March 1, 2010

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]** 16.1dB 0.15355MHz, N **[AV]** 16.0dB 1.93523MHz, L 3.73653MHz, L	Complied
Radiated emission	**FCC:** ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	7.6dB 797.802MHz Vertical,QP	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	2.6dB
No.2	2.9dB
No.3	3.3dB
No.4	2.8dB

Test room (semi-anechoic chamber)	**Radiated emission (10m*)(±dB)**			**Radiated emission**					
				(3m*)(±dB)					**(1m*)(±dB)**
	9kHz -30MHz	30MHz -300MHz	300MHz -1GHz	9kHz -30MHz	30MHz -300MHz	300MHz -1GHz	1GHz -18GHz	18GHz -26.5GHz	26.5GHz -40GHz
No.1	2.7dB	4.8dB	5.0dB	2.9dB	4.8dB	5.0dB	3.9dB	4.5dB	4.4dB
No.2	-	-	-	3.5dB	4.8dB	5.1dB	4.0dB	4.3dB	4.2dB
No.3	-	-	-	3.8dB	4.6dB	4.7dB	4.0dB	4.5dB	4.4dB
No.4	-	-	-	3.5dB	4.4dB	4.9dB	4.0dB	4.6dB	4.5dB

*10m/3m/1m = 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.

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

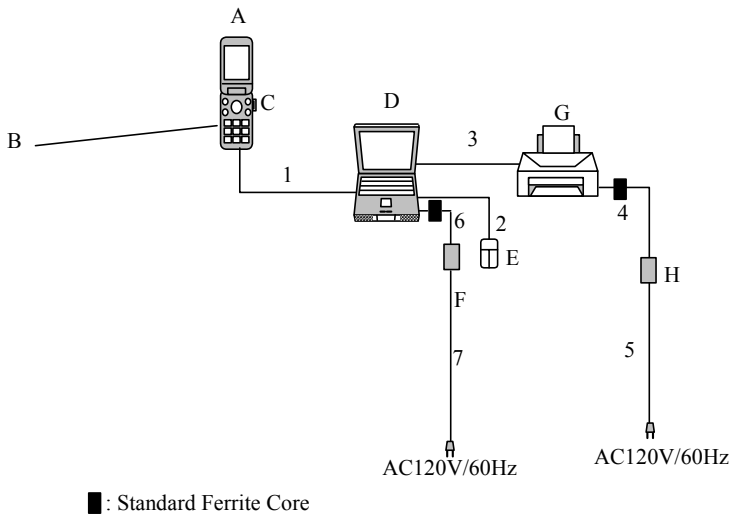
Refer to APPENDIX 1 to 3.

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

4.1 Operating modes

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

4.2 Configuration and peripherals



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

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Cellular Phone	SH-09B	004401112575234	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	0D4571-48643-58P-1053	DELL	-
E	Mouse	MOC5UO	H0S03VBY	DELL	-
F	AC Adapter (PC)	PA-1650-05D	CN-0F7970-71615-77H-0D63	DELL	-
G	Printer	895Cxi	SG8BA1W18J	Hewlett-Packard	-
H	AC Adapter (Printer)	C4557-60004	C8L01B	Hewlett-Packard	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB Data Cable	0.75	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	-

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

Date: May 17, 2010 Test engineer: Motoya Imura

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 and Y 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
*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.

Date: May 17, 2010 Test engineer: Motoya Imura

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: Y-axis/ Vertical:Y-axis)

This page has been submitted for a separate exhibit.

APPENDIX 2: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

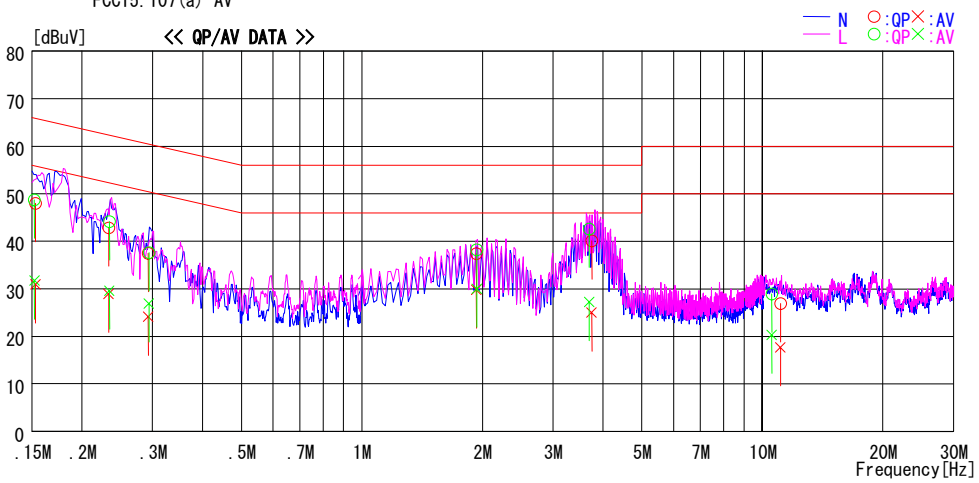
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2010/05/17

Report No. : 30IE0129-HO

Temp./Humi. : 24deg.C. / 52%
Engineer : Motoya Imura

Mode / Remarks : USB Data Com Mode

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



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase	Comment
	QP	AV	Factor	QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.15307	34.8	17.7	13.2	48.0	30.9	65.8	55.8	17.8	24.9	N	
0.23310	29.5	15.6	13.3	42.8	28.9	62.3	52.3	19.5	23.4	N	
0.29234	24.2	10.8	13.3	37.5	24.1	60.5	50.5	23.0	26.4	N	
1.92963	23.9	16.3	13.5	37.4	29.8	56.0	46.0	18.6	16.2	N	
3.74822	26.3	11.2	13.8	40.1	25.0	56.0	46.0	15.9	21.0	N	
11.10822	12.3	3.1	14.6	26.9	17.7	60.0	50.0	33.1	32.3	N	
0.15203	35.5	18.5	13.2	48.7	31.7	65.9	55.9	17.2	24.2	L	
0.23414	30.8	16.3	13.3	44.1	29.6	62.3	52.3	18.2	22.7	L	
0.29394	24.3	13.6	13.3	37.6	26.9	60.4	50.4	22.8	23.5	L	
1.93523	24.7	16.5	13.5	38.2	30.0	56.0	46.0	17.8	16.0	L	
3.69737	28.9	13.5	13.7	42.6	27.2	56.0	46.0	13.4	18.8	L	
10.55200	14.3	5.7	14.6	28.9	20.3	60.0	50.0	31.1	29.7	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.

Conducted Emission

-

DATA OF CONDUCTED EMISSION TEST

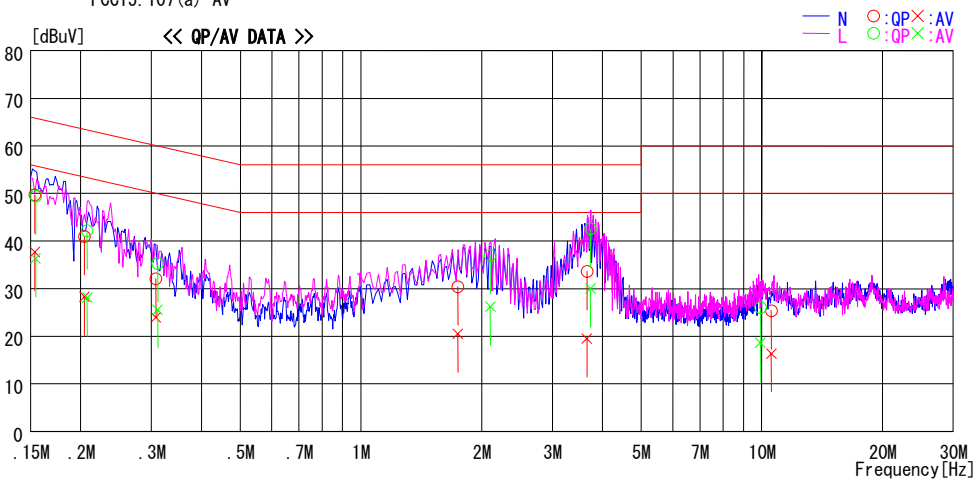
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2010/05/17

Report No. : 30IE0129-HO

Temp./Humi. : 24deg.C. / 52%
Engineer : Motoya Imura

Mode / Remarks: Standby Mode

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



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase	Comment
	QP	AV	Factor	QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.15355	36.5	24.5	13.2	49.7	37.7	65.8	55.8	16.1	18.1	N	
0.20444	27.8	15.1	13.2	41.0	28.3	63.4	53.4	22.4	25.1	N	
0.30789	18.8	10.7	13.3	32.1	24.0	60.0	50.0	27.9	26.0	N	
1.74348	16.9	7.0	13.5	30.4	20.5	56.0	46.0	25.6	25.5	N	
3.66014	19.9	5.8	13.7	33.6	19.5	56.0	46.0	22.4	26.5	N	
10.57065	10.8	1.8	14.6	25.4	16.4	60.0	50.0	34.6	33.6	N	
0.15420	36.3	23.1	13.2	49.5	36.3	65.8	55.8	16.3	19.5	L	
0.20764	29.0	14.9	13.2	42.2	28.1	63.3	53.3	21.1	25.2	L	
0.31100	22.0	12.3	13.3	35.3	25.6	59.9	49.9	24.6	24.3	L	
2.10143	23.5	12.7	13.5	37.0	26.2	56.0	46.0	19.0	19.8	L	
3.73653	28.8	16.2	13.8	42.6	30.0	56.0	46.0	13.4	16.0	L	
9.92206	11.6	4.2	14.4	26.0	18.6	60.0	50.0	34.0	31.4	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.

Radiated Emission

DATA OF RADIATED EMISSION TEST

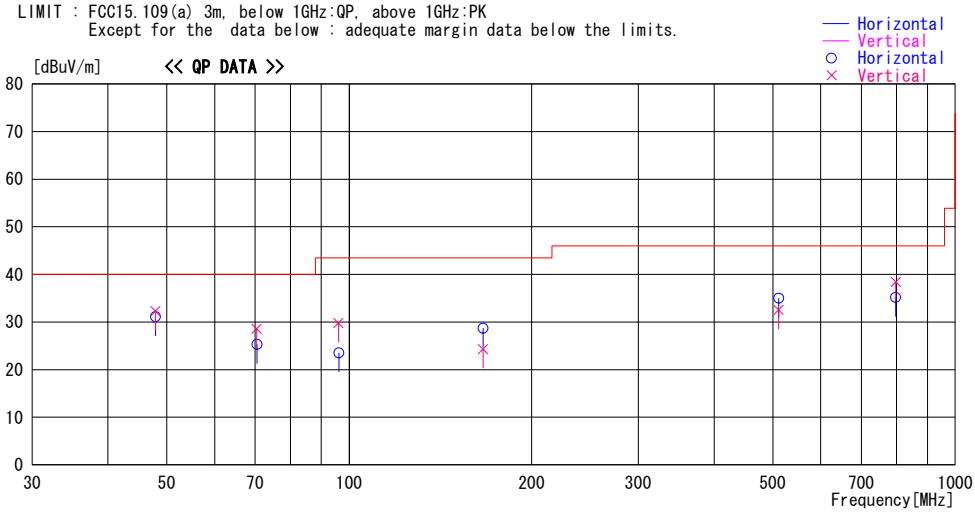
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2010/05/17

Report No. : 30IE0129-HO

Temp./Humi. : 24deg.C / 52%
Engineer : Motoya Imura

Mode / Remarks : USB Data Com Mode

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



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
47.907	53.1	QP	11.6	-33.6	31.1	89	357	Hori.	40.0	8.9	
47.901	54.3	QP	11.6	-33.6	32.3	131	100	Vert.	40.0	7.7	
70.452	52.0	QP	6.5	-33.2	25.3	24	389	Hori.	40.0	14.7	
70.378	55.3	QP	6.5	-33.2	28.6	131	103	Vert.	40.0	11.4	
96.136	46.8	QP	9.3	-32.6	23.5	5	322	Hori.	43.5	20.0	
96.012	53.1	QP	9.3	-32.6	29.8	293	100	Vert.	43.5	13.7	
166.235	44.8	QP	15.4	-31.5	28.7	156	308	Hori.	43.5	14.8	
166.355	40.4	QP	15.4	-31.5	24.3	175	113	Vert.	43.5	19.2	
511.297	45.5	QP	18.3	-28.8	35.0	159	119	Hori.	46.0	11.0	
511.319	43.0	QP	18.3	-28.8	32.5	328	176	Vert.	46.0	13.5	
797.727	40.2	QP	21.9	-26.9	35.2	219	143	Hori.	46.0	10.8	
797.802	43.4	QP	21.9	-26.9	38.4	98	113	Vert.	46.0	7.6	

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)

Radiated Emission

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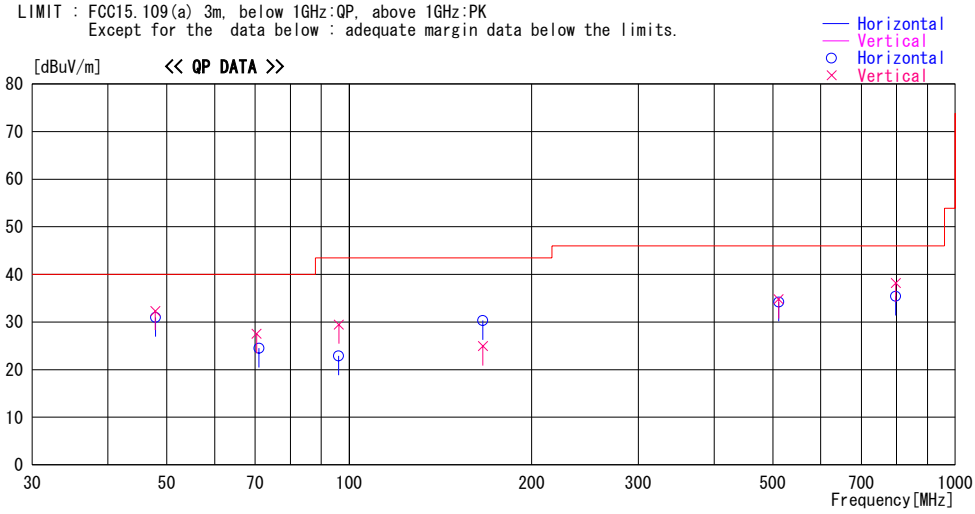
Except for the data below : adequate margin data below the limits.



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
47.905	53.0	QP	11.6	-33.6	31.0	148	357	Hori.	40.0	9.0	
47.891	54.3	QP	11.6	-33.6	32.3	124	100	Vert.	40.0	7.7	
71.037	51.2	QP	6.5	-33.2	24.5	43	370	Hori.	40.0	15.5	
70.378	54.2	QP	6.5	-33.2	27.5	131	103	Vert.	40.0	12.5	
96.128	46.2	QP	9.3	-32.6	22.9	349	298	Hori.	43.5	20.6	
96.134	52.8	QP	9.3	-32.6	29.5	293	100	Vert.	43.5	14.0	
166.174	46.4	QP	15.4	-31.5	30.3	156	308	Hori.	43.5	13.2	
166.171	41.0	QP	15.4	-31.5	24.9	175	100	Vert.	43.5	18.6	
511.290	44.7	QP	18.3	-28.8	34.2	159	108	Hori.	46.0	11.8	
511.319	45.3	QP	18.3	-28.8	34.8	348	178	Vert.	46.0	11.2	
797.821	40.4	QP	21.9	-26.9	35.4	232	128	Hori.	46.0	10.6	
797.662	43.2	QP	21.9	-26.9	38.2	100	110	Vert.	46.0	7.8	

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)

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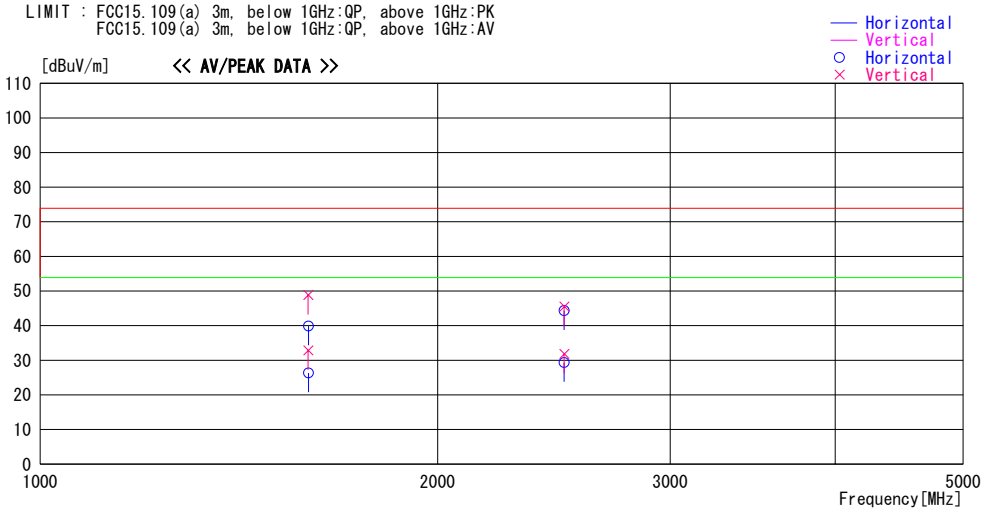
FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
1596.192	48.2	PK	26.3	-34.6	39.9	0	100	Hori.	73.9	34.0	
1595.643	57.1	PK	26.3	-34.6	48.8	8	112	Vert.	73.9	25.1	
1596.192	34.7	AV	26.3	-34.6	26.4	0	100	Hori.	53.9	27.5	
1595.643	41.1	AV	26.3	-34.6	32.8	8	112	Vert.	53.9	21.1	
2493.446	51.0	PK	27.3	-34.0	44.3	68	100	Hori.	73.9	29.6	
2493.882	52.1	PK	27.4	-34.0	45.5	157	100	Vert.	73.9	28.4	
2493.446	36.0	AV	27.3	-34.0	29.3	68	100	Hori.	53.9	24.6	
2493.882	38.4	AV	27.4	-34.0	31.8	157	100	Vert.	53.9	22.1	

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)

Radiated Emission

DATA OF RADIATED EMISSION TEST

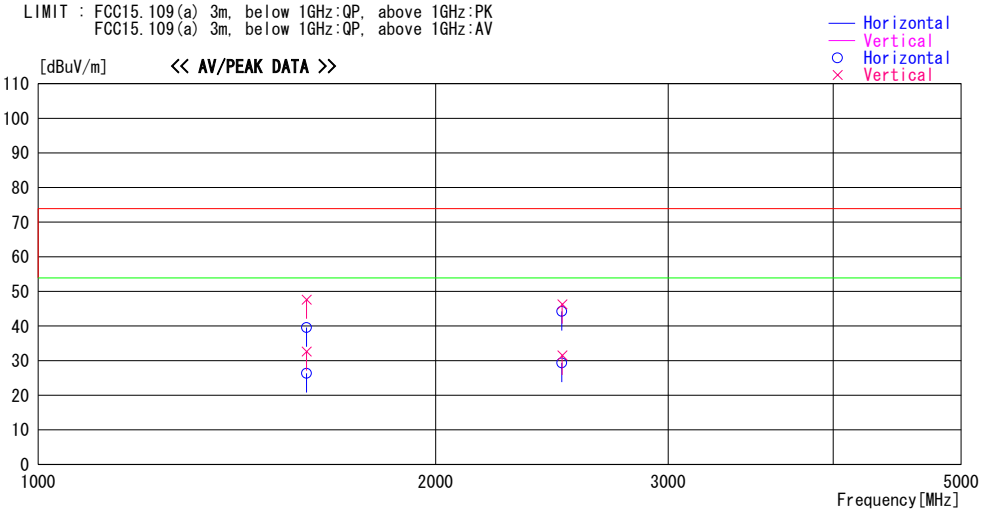
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2010/05/17

Report No. : 30IE0129-HO

Temp./Humi. : 24deg.C / 52%
Engineer : Motoya Imura

Mode / Remarks : Standby Mode

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



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
1596.260	47.9	PK	26.3	-34.6	39.6	0	100	Hori.	73.9	34.3	
1596.982	56.0	PK	26.3	-34.6	47.7	12	108	Vert.	73.9	26.3	
1596.260	34.7	AV	26.3	-34.6	26.4	0	100	Hori.	53.9	27.5	
1596.982	41.0	AV	26.3	-34.6	32.7	12	108	Vert.	53.9	21.3	
2490.981	50.9	PK	27.3	-34.0	44.2	76	100	Hori.	73.9	29.7	
2493.750	52.9	PK	27.4	-34.0	46.3	356	100	Vert.	73.9	27.7	
2490.981	36.0	AV	27.3	-34.0	29.3	76	100	Hori.	53.9	24.6	
2493.750	38.1	AV	27.4	-34.0	31.5	356	100	Vert.	53.9	22.4	

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)

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	2009/06/26 * 12
MOS-01	Digital Humidity Indicator	N.T	NT-1800	MOS01	RE	2010/02/09 * 12
MJM-01	Measure	KDS	ES19-55	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	100084	RE	2009/12/17 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	VHA91032007	RE	2009/10/03 * 12
KLA-04	Logperiodic Antenna	Schwarzbeck	USLP9143	361	RE	2009/07/12 * 12
MAT-08	Attenuator(6dB)	Weinschel Corp	2	BK7971	RE	2009/11/13 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent/ TSJ	-	-	RE	2009/10/09 * 12
MPA-20	Pre Amplifier	Elena	EPA-4020YA	030801	RE	2010/03/23 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	253	RE	2009/06/15 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	233010(1m) / 292410(5m)	RE	2009/09/16 * 12
MPA-01	Pre Amplifier	Agilent	8449B	3008A01671	RE	2010/02/12 * 12
MLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	8127383	CE(EUT)	2009/06/22 * 12
MLS-03	LISN(AMN)	Schwarzbeck	NSLK8127	8127384	CE(AE)	2009/07/16 * 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