



EMI TEST REPORT

Test Report No. : 10009156H-B

Applicant : SHARP Corporation, Communication Systems Division.
Type of Equipment : Cellular Phone
Model No. : SH-07E
FCC ID : APYHRO00190
Test standard : FCC Part 15 Subpart B 2012 Class B
Test Result : Complied

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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: April 20 and 21, 2013

**Representative
test engineer:**

Hiroshi Kukita

Engineer of WiSE Japan,
UL Verification Service

Approved by :

Takahiro Hatakeda

Leader of WiSE Japan,
UL Verification Service



NVLAP LAB CODE: 200572-0

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

UL Japan, Inc.

Head Office EMC Lab.

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13-EM-F0429

REVISION HISTORY

Original Test Report No.: 10009156H-B

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SECTION 1: Customer information

Company Name : Sharp Corporation, Communication Systems Division.
Address : 2-13-1 Iida Hachihonmatsu Higashi-hiroshima-city, Hiroshima,
739-0192 Japan
Telephone Number : +81-82-420-1827
Facsimile Number : +81-82-420-1572
Contact Person : Hachiro Hidaka

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

2.1 Identification of E.U.T.

Type of Equipment : Cellular Phone
Model No. : SH-07E
Serial No. : Refer to Section 4, Clause 4.2
Receipt Date of Sample : April 19, 2013
Country of Mass-production : China
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

Feature of EUT : SH-07E is Tri-band LTE(B1/B19/B21) and Quad-band W-CDMA
(FDD 1 / 5 / 6 / 19) and Quad-band GSM(850/900/1800/1900)
Cellular Phone.
The EUT has the function that Bluetooth wireless technology interface
and wireless LAN technical interface for establishing contact and
transmitting data with certain device.
Clock frequencies in the system : CPU: 1,728MHz (max)
RTC: 32.763kHz
Source oscillation: 19.2MHz / 27.00MHz (CPU)

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SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : FCC Part 15 Subpart B: 2012, final revised on December 27, 2012 and effective January 28, 2013

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: 2009 7. AC powerline conducted emission measurements	Class B	N/A	[QP] 8.4dB 0.15670MHz, N [AV] 9.4dB 0.15670MHz, N	Complied
Radiated emission	ANSI C63.4: 2009 8. Radiated emission measurements	Class B	N/A	8.1dB 797.800MHz, Horizontal, QP	Complied

*Note: UL Japan, Inc's EMI Work Procedure 13-EM-W0420.

3.3 Addition to standard

No addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

EMI

The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor k=2.

Test room (semi-anechoic chamber)	Conducted emission (+dB)
	150kHz-30MHz
No.1	3.5dB
No.2	3.6dB
No.3	3.6dB
No.4	3.6dB

Test room (semi-anechoic chamber)	Radiated emission						
	(3m*)(+dB)				(1m*)(+dB)		(0.5m*)(+dB)
	9kHz -30MHz	30MHz -300MHz	300MHz -1GHz	1GHz -10GHz	10GHz -18GHz	18GHz -26.5GHz	26.5GHz -40GHz
No.1	4.3dB	5.0dB	5.1dB	4.9dB	5.8dB	4.4dB	4.3dB
No.2	4.3dB	5.2dB	5.1dB	5.0dB	5.7dB	4.3dB	4.2dB
No.3	4.6dB	5.0dB	5.1dB	5.0dB	5.7dB	4.5dB	4.2dB
No.4	4.8dB	5.2dB	5.0dB	5.0dB	5.7dB	5.2dB	4.2dB

*3m/1m/0.5m = Measurement distance

Conducted Emission test

The data listed in this test report has enough margin, more than the site margin.

Radiated emission test(3m)

The data listed in this test report has enough margin, more than the site margin.

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3.5 Test Location

UL Japan, Inc. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
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Telephone : +81 596 24 8999 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.

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Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Cellular Phone	SH-07E	004401/11/475550/3	Sharp Corporation	EUT
B	microSD Memory Card	SD-C02G	None	TOSHIBA	-
C	Lithium-Ion Battery	SH42	WDA	Sharp Corporation	EUT
D	Personal Computer	PP11L	CN-0D4571-48643-58P-1053	Dell	-
E	Mouse	M-UAG120	LZ733B70EVV	Toshiba	-
F	AC Adapter (PC)	LA65NS1-00	CN-0YD637-71615-64Q-2243	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	1.20	Shielded	Shielded	-
2	Mouse Cable	0.72	Unshielded	Unshielded	-
3	AC Adaptor Cable (PC)	1.76	Unshielded	Unshielded	-
4	AC Power Cable (PC)	1.20	Unshielded	Unshielded	-
5	Parallel Cable	1.65	Shielded	Shielded	-
6	AC Adapter Cable (printer)	2.00	Unshielded	Unshielded	-
7	AC Power Cable (printer)	1.75	Unshielded	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 3.

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: April 21, 2013

Test engineer: Hiroshi Kukita

UL Japan, Inc.

Head Office EMC Lab.

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SECTION 6: Radiated Emission

6.1 Operating environment

Test place : No. 1 semi anechoic chamber
Temperature : See data
Humidity : See data

6.2 Test configuration

EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m, raised 0.8m above the conducting ground plane.

The EUT was set on the edge of the tabletop.

Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

Photographs of the set up are shown in Appendix 3.

6.3 Test conditions

Frequency range : 30MHz-300MHz (Biconical antenna) / 300MHz-1000MHz (Logperiodic antenna)
1000MHz-10000MHz (Horn antenna)
Test distance : 3m
EUT position : Table top
EUT operation mode : See Clause 4.1

6.4 Test procedure

The height of the measuring antenna varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.

The radiated emission measurements were made with the following detector function of the test receiver and the Spectrum analyzer.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
IF Bandwidth	QP: BW 120kHz	PK: RBW:1MHz/VBW: 3MHz AV *1): RBW:1MHz/VBW:10Hz

*1) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

- The noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at representative X-axis since no difference was found among each position.

6.5 Test result

Summary of the test results: Pass

Date: April 20 and 21, 2013

Test engineer: Hiroshi Kukita

UL Japan, Inc.

Head Office EMC Lab.

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APPENDIX 1: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

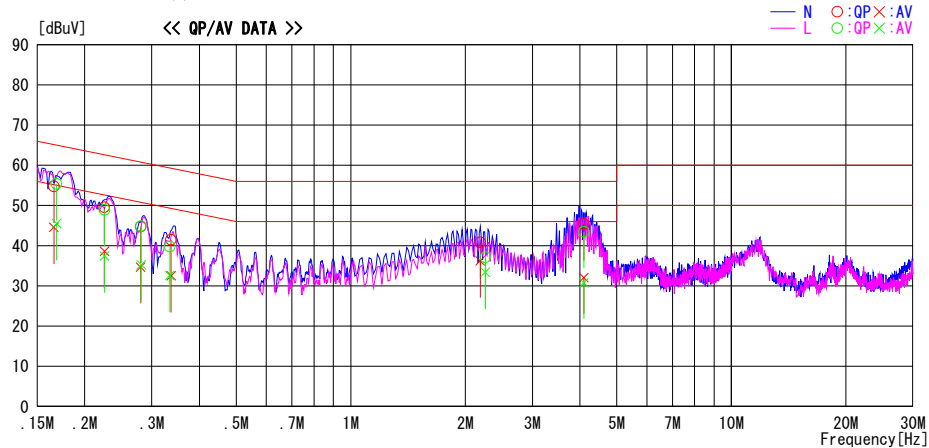
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2013/04/21

Report No. : 10009156H

Temp./Humi. : 22deg. C / 39% RH
Engineer : Hiroshi Kukita

Mode / Remarks : USB Data Com Mode

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



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]		
0.16590	41.5	31.4	13.2	54.7	44.6	65.2	55.2	10.5	10.6	N	
0.22520	36.4	25.4	13.2	49.6	38.6	62.6	52.6	13.0	14.0	N	
0.28060	31.4	21.4	13.3	44.7	34.7	60.8	50.8	16.1	16.1	N	
0.33710	28.2	19.2	13.3	41.5	32.5	59.3	49.3	17.8	16.8	N	
2.18900	27.3	22.7	13.5	40.8	36.2	56.0	46.0	15.2	9.8	N	
4.09780	31.7	18.4	13.7	45.4	32.1	56.0	46.0	10.6	13.9	N	
0.16860	42.2	32.3	13.2	55.4	45.5	65.0	55.0	9.6	9.5	L	
0.22550	35.7	24.2	13.2	48.9	37.4	62.6	52.6	13.7	15.2	L	
0.28150	31.5	21.9	13.3	44.8	35.2	60.8	50.8	16.0	15.6	L	
0.33450	26.4	19.3	13.3	39.7	32.6	59.3	49.3	19.6	16.7	L	
2.25700	23.6	19.9	13.5	37.1	33.4	56.0	46.0	18.9	12.6	L	
4.09570	29.8	17.1	13.7	43.5	30.8	56.0	46.0	12.5	15.2	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 limit is rounded down to one decimal place.

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

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

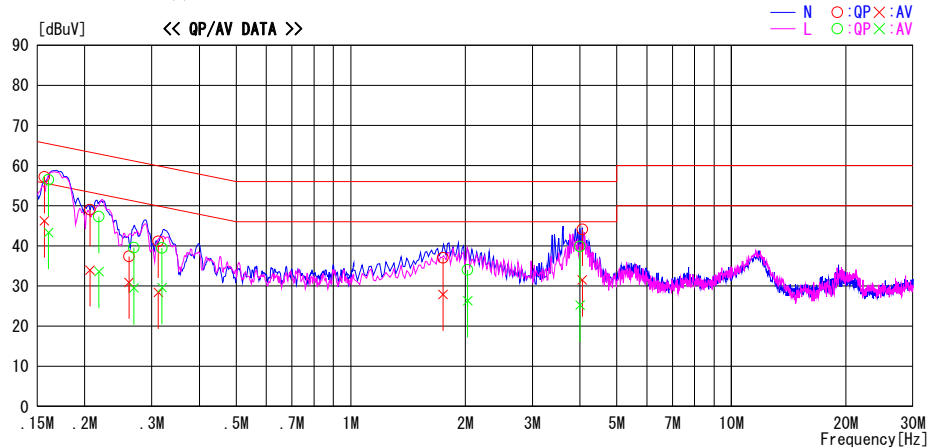
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2013/04/21

Report No. : 10009156H

Temp./Humi. : 22deg. C / 39% RH
Engineer : Hiroshi Kukita

Mode / Remarks : Standby

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



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15670	44.0	33.0	13.2	57.2	46.2	65.6	55.6	8.4	9.4	N	
0.20630	35.8	20.8	13.2	49.0	34.0	63.4	53.4	14.4	19.4	N	
0.26140	24.1	17.6	13.3	37.4	30.9	61.4	51.4	24.0	20.5	N	
0.31200	27.8	15.1	13.3	41.1	28.4	59.9	49.9	18.8	21.5	N	
1.74820	23.5	14.4	13.5	37.0	27.9	56.0	46.0	19.0	18.1	N	
4.05920	30.4	17.8	13.7	44.1	31.5	56.0	46.0	11.9	14.5	N	
0.16064	43.3	30.1	13.2	56.5	43.3	65.4	55.4	8.9	12.1	L	
0.21780	34.1	20.4	13.2	47.3	33.6	62.9	52.9	15.6	19.3	L	
0.26930	26.3	16.2	13.3	39.6	29.5	61.1	51.1	21.5	21.6	L	
0.31930	26.2	16.3	13.3	39.5	29.6	59.7	49.7	20.2	20.1	L	
2.02840	20.5	12.8	13.5	34.0	26.3	56.0	46.0	22.0	19.7	L	
4.00260	26.1	11.5	13.7	39.8	25.2	56.0	46.0	16.2	20.8	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 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 (Below 1GHz)

DATA OF RADIATED EMISSION TEST

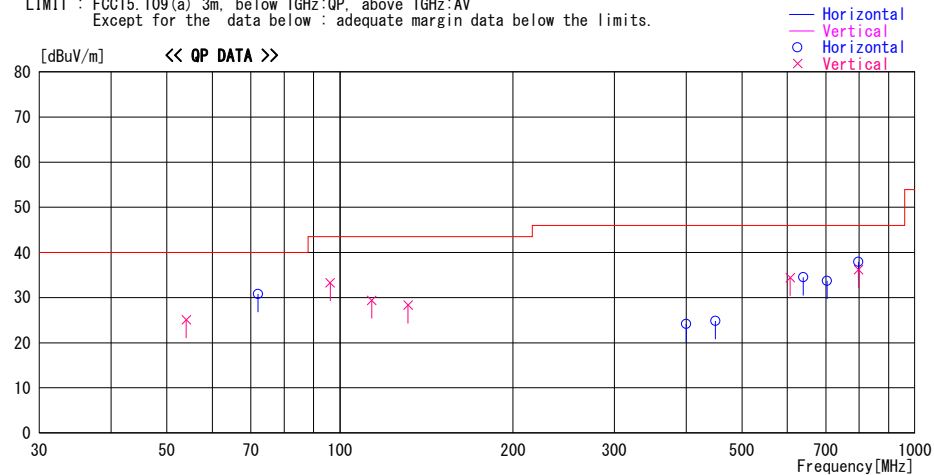
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2013/04/20

Report No. : 10009156H

Temp./Humi. : 23deg. C / 35% RH
Engineer : Hiroshi Kukita

Mode / Remarks : USB Data Com Mode

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]							
54.040	46.2	QP	9.9	-31.0	25.1	249	100	Vert.	40.0	14.9	
72.030	54.8	QP	6.7	-30.7	30.8	100	271	Hori.	40.0	9.2	
96.135	54.0	QP	9.6	-30.3	33.3	141	100	Vert.	43.5	10.2	
113.620	47.1	QP	12.5	-30.2	29.4	101	100	Vert.	43.5	14.1	
131.340	44.3	QP	14.1	-30.1	28.3	123	100	Vert.	43.5	15.2	
399.886	34.0	QP	17.6	-27.4	24.2	12	100	Hori.	46.0	21.8	
450.000	33.8	QP	17.9	-26.9	24.8	4	100	Hori.	46.0	21.2	
607.130	40.3	QP	19.6	-25.5	34.4	341	100	Vert.	46.0	11.6	
639.090	40.0	QP	20.0	-25.5	34.5	154	110	Hori.	46.0	11.5	
703.040	38.0	QP	20.7	-25.0	33.7	139	100	Hori.	46.0	12.3	
797.380	38.0	QP	22.4	-24.2	36.2	57	100	Vert.	46.0	9.8	
797.800	39.7	QP	22.4	-24.2	37.9	126	118	Hori.	46.0	8.1	

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) + D-FACTOR

*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 (Below 1GHz)

DATA OF RADIATED EMISSION TEST

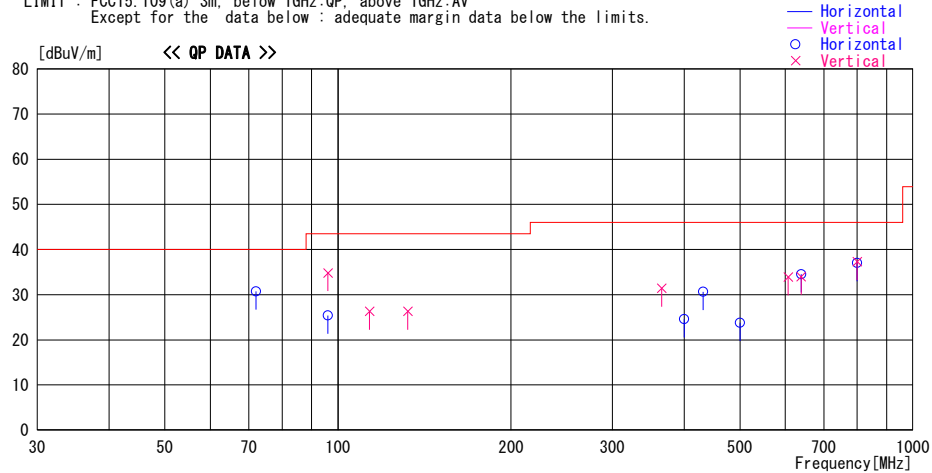
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2013/04/20

Report No. : 10009156H

Temp./Humi. : 23deg. C / 35% RH
Engineer : Hiroshi Kukita

Mode / Remarks : Standby

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV
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]	
72.030	54.7	QP	6.7	-30.7	30.7	118	252	Hori.	40.0	9.3	
96.132	55.5	QP	9.6	-30.3	34.8	173	100	Vert.	43.5	8.7	
96.132	46.1	QP	9.6	-30.3	25.4	69	278	Hori.	43.5	18.1	
113.520	44.0	QP	12.5	-30.2	26.3	153	100	Vert.	43.5	17.2	
132.320	42.2	QP	14.2	-30.1	26.3	182	100	Vert.	43.5	17.2	
365.740	42.5	QP	16.6	-27.7	31.4	194	145	Vert.	46.0	14.6	
399.908	34.4	QP	17.6	-27.4	24.6	349	100	Hori.	46.0	21.4	
432.000	39.9	QP	17.8	-27.1	30.6	358	100	Hori.	46.0	15.4	
500.000	32.2	QP	18.1	-26.5	23.8	0	205	Hori.	46.0	22.2	
607.136	39.8	QP	19.6	-25.5	33.9	353	100	Vert.	46.0	12.1	
639.089	40.0	QP	20.0	-25.5	34.5	152	100	Hori.	46.0	11.5	
639.089	39.5	QP	20.0	-25.5	34.0	162	100	Vert.	46.0	12.0	
799.660	39.0	QP	22.4	-24.1	37.3	64	100	Vert.	46.0	8.7	
800.002	38.7	QP	22.4	-24.1	37.0	119	100	Hori.	46.0	9.0	

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) + D-FACTOR

*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 (Above 1GHz)

DATA OF RADIATED EMISSION TEST

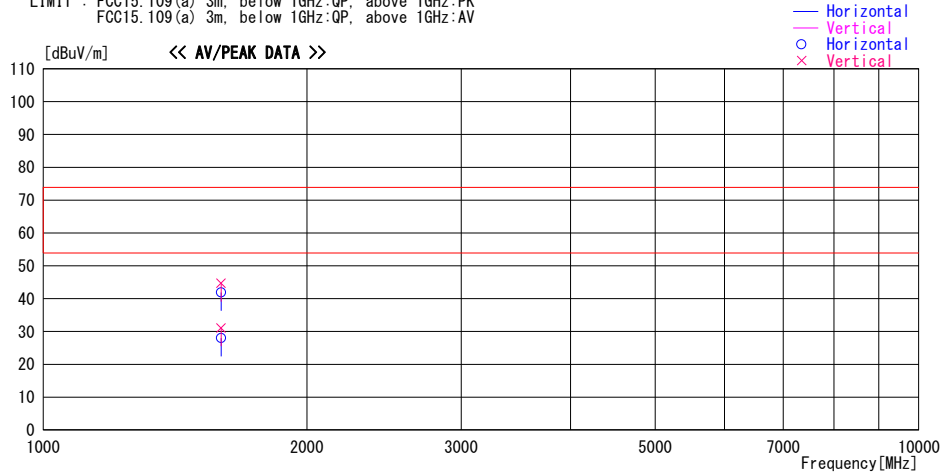
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2013/04/21

Report No. : 10009156H

Temp./Humi. : 22deg. C / 39% RH
Engineer : Hiroshi Kukita

Mode / Remarks : USB Data Com Mode

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
1596.588	50.9	PK	25.4	-31.6	44.7	2	100	Vert.	73.9	29.2	
1596.588	37.3	AV	25.4	-31.6	31.1	2	100	Vert.	53.9	22.8	
1596.581	48.1	PK	25.4	-31.6	41.9	101	100	Hori.	73.9	32.0	
1596.581	34.2	AV	25.4	-31.6	28.0	101	100	Hori.	53.9	25.9	

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) + D-FACTOR

*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 (Above 1GHz)

DATA OF RADIATED EMISSION TEST

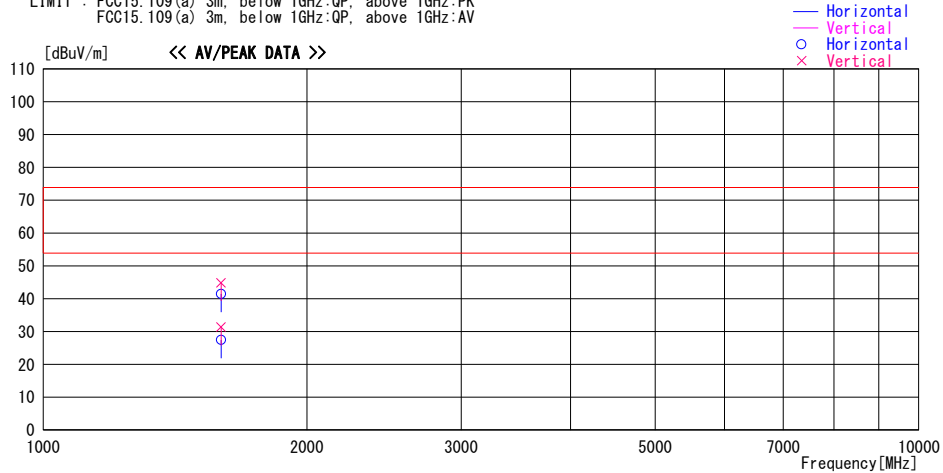
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2013/04/21

Report No. : 10009156H

Temp./Humi. : 22deg. C / 39% RH
Engineer : Hiroshi Kukita

Mode / Remarks : Standby

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg.]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
1596.558	51.1	PK	25.4	-31.6	44.9	2	100	Vert.	73.9	29.0	
1596.558	37.6	AV	25.4	-31.6	31.4	2	100	Vert.	53.9	22.5	
1596.702	33.7	AV	25.4	-31.6	27.5	81	100	Hori.	53.9	26.4	
1596.702	47.7	PK	25.4	-31.6	41.5	81	100	Hori.	73.9	32.4	

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) + D-FACTOR

*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 2: Test instruments

EMI Test Instruments

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	CE	2013/02/28 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	CE	2013/02/26 * 12
MJM-16	Measure	KOMELON	KMC-36	-	CE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	CE	-
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	CE	2012/08/23 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(EUT)	2013/01/07 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE(AE)	2013/01/07 * 12
MTA-31	Terminator	TME	CT-01	-	CE	2013/01/21 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/ SFM141(3m)/ suoform141-PE(1m)/ 421-010(1.5m)/ RFM-E321(Switcher)	-/00640	CE	2012/07/12 * 12
MAT-66	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2013/01/22 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2012/05/25 * 12
MCC-133	Microwave Cable	HUBER+SUHNER	SUCOFLEX104	336164/4(1m)/ 340640(5m)	RE	2012/09/05 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2013/03/12 * 12
MAEC-01	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 10m	DA-06881	RE	2012/08/01 * 12
MOS-27	Thermo-Hygrometer	CUSTOM	CTH-201	A08Q26	RE	2013/02/26 * 12
MJM-01	Measure	KDS	ES19-55	-	RE	-
MTR-09	EMI Test Receiver	Rohde & Schwarz	ESU26	100412	RE	2012/06/14 * 12
KBA-05	Biconical Antenna	Schwarzbeck	BBA9106	2513	RE	2012/11/18 * 12
KLA-04	Logperiodic Antenna	Schwarzbeck	USLP9143	361	RE	2012/11/18 * 12
MAT-08	Attenuator(6dB)	Weinschel Corp	2	BK7971	RE	2012/11/06 * 12
MCC-02	Coaxial Cable	Suhner/storm/Agilent/TSJ	-	-	RE	2012/09/13 * 12
MPA-19	Pre Amplifier	MITEQ	MLA-10K01-B01-35	1237616	RE	2013/02/07 * 12
MSA-06	Spectrum Analyzer	Agilent	E4407B	MY45107638	RE	2013/04/05 * 12

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

All equipment is calibrated with valid calibrations. Each measurement data 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 Emissions

RE: Radiated Emissions

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