



EMI TEST REPORT

Test Report No. : 29IE0051-HO

Applicant : Sharp Corporation, Communication Systems Group.
Type of Equipment : Cellular Phone
Model No. : CDMA E06SH
FCC ID : APYHRO00102
Test regulation : FCC Part 15 Subpart B 2009 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 28, 2009

Tested by:

K. Okai

Katsunori Okai
EMC Services

Approved by :

Minoru Yamanaka
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.html>

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SECTION 1: Customer information

Company Name : Sharp Corporation, Communication Systems Group.
Brand Name : SHARP
Address : 2-13-1 Iida Hachihonmatsu, Higashi-Hiroshima City, Hiroshima, 739-0192,
Japan
Telephone Number : +81-82-420-1630
Facsimile Number : +81-82-420-1624
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. : CDMA E06SH
Serial No. : SSHCG000768
Rating : AC 120V/60Hz, DC4.0V
Receipt Date of Sample : May 25, 2009
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

Sharp Corporation, Communication Systems Group., Model No: CDMA E06SH is the Cellular Phone.

Clock frequency : CPU: 19.2MHz (384MHz)
RTC: 32.768kHz

Feature of EUT : CDMA E06SH is 1xEV-DO Hybrid CDMA Tri-Band Cellular Phone.
The CDMA E06SH has the function that Bluetooth wireless technology
interface for establishing contact and transmitting data with certain devices.

UL Japan, Inc.

Head Office EMC Lab.

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

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : FCC Part 15 Subpart B 2009, final revised on February 27, 2009
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] 15.5dB 0.15000MHz, N 0.20746MHz, L [AV] 10.2dB 0.51736MHz, N 0.51769MHz, N	Complied
Radiated emission	ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	6.1dB, 107.375MHz, QP Horizontal	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	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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Head Office EMC Lab.

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

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

3.5 Test Location

UL Japan, Inc. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116 Facsimile : +81 596 24 8124

	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	2973C-1	19.2 x 11.2 x 7.7m	7.0 x 6.0m	No.1 Power source room
No.2 semi-anechoic chamber	655103	2973C-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	2973C-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.3 Preparation room
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	2973C-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.4 Preparation room
No.4 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 semi-anechoic chamber	-	-	6.0 x 6.0 x 3.9m	6.0 x 6.0m	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	4.75 x 5.4 m	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	4.75 x 4.15 m	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-
No.9 measurement room	-	-	8.0 x 4.5 x 2.8m	2.0 x 2.0m	-
No.10 measurement room	-	-	2.6 x 2.8 x 2.5m	2.4 x 2.4m	-
No.11 measurement room	-	-	3.1 x 3.4 x 3.0m	2.4 x 3.4m	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1, No.2, No.3, and No.4 semi-anechoic chambers and No.3 and No.4 shielded rooms.

3.6 Test set up, Data of EMI, and Test instruments

Refer to APPENDIX 1 to 3.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Cellular Phone	CDMA E06SH	SSHCG000768	SHARP	EUT
B	PC	DELL PP10L	8LH3H1X	DELL	-
C	Printer	PM-890C	DYFE488606	EPSON	-
D	USB Mouse	DELL M05UOA	G0N00FiF	DELL	-
E	AC Adapter (PC)	AA22850	-	DELL	-
F	micro SD Memory Card	64MB type	-	PANASONIC	-
G	Lithium-ion Battery	05SHUFA	-	SHARP	3.7V, 1540mAh (5.7Wh)

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	USB Data Cable	0.8	Shielded	Shielded	-
2	Parallel Cable	2.0	Shielded	Shielded	-
3	AC Power Cable (Printer)	2.3	Unshielded	Unshielded	-
4	Mouse Cable	1.9	Shielded	Shielded	-
5	AC Charger Cable (PC)	1.9	Unshielded	Unshielded	-
6	AC Power Cable (PC)	0.9	Unshielded	Unshielded	-

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Head Office EMC Lab.

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

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SECTION 5: Conducted Emission

5.1 Operating environment

Test place : No.2 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: May 28, 2009

Test engineer: Katsunori Okai

UL Japan, Inc.

Head Office EMC Lab.

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

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

SECTION 6: Radiated Emission

6.1 Operating environment

Test place : No.2 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 center 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 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: 1MHz 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 the position that has the maximum noise.

6.5 Test result

Summary of the test results: Pass

Date: May 28, 2009

Test engineer: Katsunori Okai

UL Japan, Inc.

Head Office EMC Lab.

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

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

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

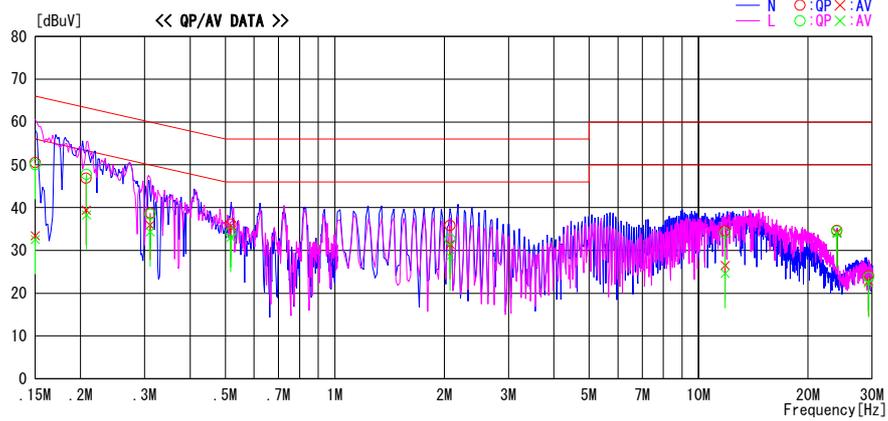
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2009/05/28

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : CDMA E06SH
Serial No. : SSHCG000768
Report No. : 29IE0051-HO
Power : AC 120V / 60Hz
Temp./Humi. : 23deg C / 59%
Engineer : Katsunori Okai

Mode / Remarks : USB Date com mode

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



Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.15000	50.2	33.1	0.3	50.5	33.4	66.0	56.0	15.5	22.6	N
0.15000	49.7	32.2	0.3	50.0	32.5	66.0	56.0	16.0	23.5	L
0.20716	46.6	39.1	0.3	46.9	39.4	63.3	53.3	16.4	13.9	N
0.20746	47.5	38.0	0.3	47.8	38.3	63.3	53.3	15.5	15.0	L
0.31043	38.4	35.6	0.3	38.7	35.9	60.0	50.0	21.3	14.1	N
0.31072	38.2	34.0	0.3	38.5	34.3	60.0	50.0	21.5	15.7	L
0.51736	35.8	35.5	0.3	36.1	35.8	56.0	46.0	19.9	10.2	N
0.51746	33.8	32.7	0.3	34.1	33.0	56.0	46.0	21.9	13.0	L
2.07328	32.1	28.1	0.5	32.6	28.6	56.0	46.0	23.4	17.4	L
2.07361	35.3	30.9	0.5	35.8	31.4	56.0	46.0	20.2	14.6	N
11.81936	33.1	25.0	1.5	34.6	26.5	60.0	50.0	25.4	23.5	N
11.82081	32.5	23.1	1.5	34.0	24.6	60.0	50.0	26.0	25.4	L
24.00014	32.4	31.9	2.3	34.7	34.2	60.0	50.0	25.3	15.8	N
24.00022	32.2	31.6	2.3	34.5	33.9	60.0	50.0	25.5	16.1	L
29.33354	21.2	19.8	2.6	23.8	22.4	60.0	50.0	36.2	27.6	L
29.33362	21.4	20.2	2.6	24.0	22.8	60.0	50.0	36.0	27.2	N

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

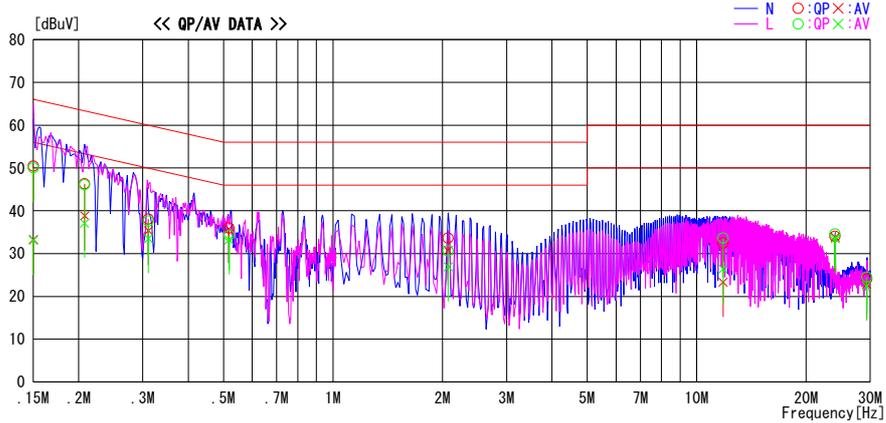
UL Japan, Inc. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2009/05/28

Company : Sharp Corporation
Kind of EUT : Cellular phone
Model No. : CDMA E06SH
Serial No. : SSHCG000768

Report No. : 29IE0051-HO
Power : AC 120V / 60Hz
Temp./Humi. : 23deg.C / 59%
Engineer : Katsunori Okai

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]	
0.15000	50.1	33.0	0.3	50.4	33.3	66.0	56.0	15.6	22.7	N
0.15000	49.7	32.8	0.3	50.0	33.1	66.0	56.0	16.0	22.9	L
0.20725	45.8	36.8	0.3	46.1	37.1	63.3	53.3	17.2	16.2	L
0.20754	46.0	38.5	0.3	46.3	38.8	63.3	53.3	17.0	14.5	N
0.31064	37.3	33.2	0.3	37.6	33.5	60.0	50.0	22.4	16.5	L
0.31068	37.8	35.1	0.3	38.1	35.4	60.0	50.0	21.9	14.6	N
0.51769	35.7	35.5	0.3	36.0	35.8	56.0	46.0	20.0	10.2	N
0.51812	34.0	32.9	0.3	34.3	33.2	56.0	46.0	21.7	12.8	L
2.07116	33.1	30.2	0.5	33.6	30.7	56.0	46.0	22.4	15.3	N
2.07266	30.1	26.4	0.5	30.6	26.9	56.0	46.0	25.4	19.1	L
11.80946	30.9	21.8	1.5	32.4	23.3	60.0	50.0	27.6	26.7	N
11.81312	32.1	24.9	1.5	33.6	26.4	60.0	50.0	26.4	23.6	L
24.00018	31.7	31.5	2.3	34.0	33.8	60.0	50.0	26.0	16.2	N
24.00021	32.3	31.2	2.3	34.6	33.5	60.0	50.0	25.4	16.5	L
29.33311	21.9	19.8	2.6	24.5	22.4	60.0	50.0	35.5	27.6	L
29.33352	21.5	20.2	2.6	24.1	22.8	60.0	50.0	35.9	27.2	N

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

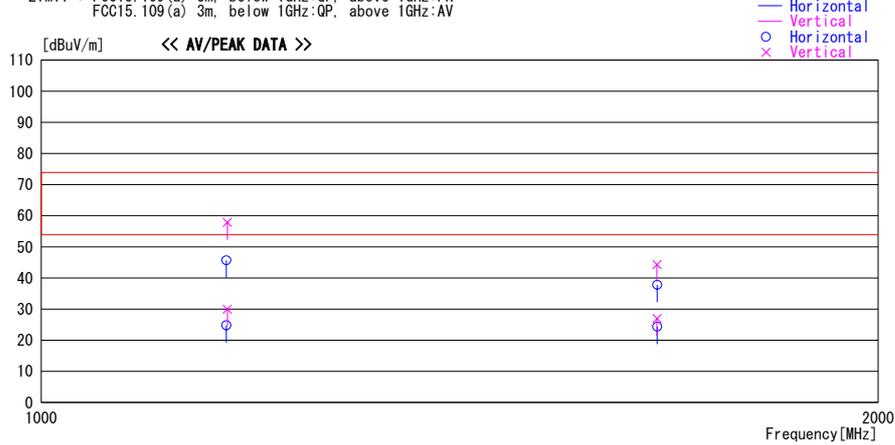
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2009/05/28

Company : Sharp Corporation
Kind of EUT : Cellular Phone
Model No. : CDMA E06SH
Serial No. : SSHCG000768
Report No. : 29IE0051-HO
Power : AC 120V / 60Hz
Temp./Humi. : 23deg. C. / 59%
Engineer : Katsunori Okai

Mode / Remarks : USB data com mode, Worst-axis(Hori:X, Vert:X)

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss& Gain [dB]					
1165.467	52.8	PK	24.8	-31.9	45.7	Hori.	73.9	28.2	
1165.467	31.9	AV	24.8	-31.9	24.8	Hori.	53.9	29.1	
1166.473	37.1	AV	24.8	-31.9	30.0	Vert.	53.9	23.9	
1166.473	64.9	PK	24.8	-31.9	57.8	Vert.	73.9	16.1	
1665.003	31.9	AV	25.9	-30.8	27.0	Vert.	53.9	26.9	
1665.003	49.2	PK	25.9	-30.8	44.3	Vert.	73.9	29.6	
1665.373	29.3	AV	25.9	-30.8	24.4	Hori.	53.9	29.5	
1665.373	42.7	PK	25.9	-30.8	37.8	Hori.	73.9	36.1	

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	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	RE/CE	2008/05/17 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	RE/CE	2009/02/05 * 12
MJM-05	Measure	PROMART	SEN1955	-	RE/CE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MRENT-62	Spectrum Analyzer	Agilent	E4448A	MY46180856	RE/CE	2008/11/25 * 12
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	100300	RE/CE	2009/04/14 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(EUT)	2009/02/18 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE(AE)	2009/02/18 * 12
MTA-07	Terminator	MCL	BTRM-50	1 9944	CE	2009/02/17 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	-	CE	2009/02/16 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	VHA9103200 8	RE	2008/10/18 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	201	RE	2008/10/18 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	-	RE	2009/02/16 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	BK7970	RE	2008/11/14 * 12
MPA-09	Pre Amplifier	Agilent	8447D	2944A10845	RE	2008/09/04 * 12
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	RE	2009/01/31 * 12
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	RE	2008/09/17 * 12
MCC-47	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	295123(5m) / 287573(1m)	RE	2008/11/27 * 12

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

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item:

CE: Conducted emission

RE: Radiated emission

UL Japan, Inc.

Head Office EMC Lab.

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

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124