



EMI TEST REPORT

Test Report No. : 32BE0245-HO-B

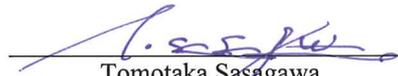
Applicant : Sharp Corporation, Communication Systems Group.
Type of Equipment : Cellular Phone
Model No. : 101SH
FCC ID : APYHRO00155
Test standard : FCC Part 15 Subpart B 2011 Class B
Test Result : Complied

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 30, 2011

Representative test engineer:


Tomotaka Sasagawa
Engineer of WiSE Japan,
UL Verification Service

Approved by:


Mitsuru Fujimura
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

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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 : +81-82-420-1827
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. : 101SH
Serial No. : Refer to Section 4, Clause 4.2
Receipt Date of Sample : September 30, 2011
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

Feature of EUT : 101SH is Dual-band (FDD I/FDD XI) WCDMA 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:1GHz
RTC:32.768kHz
Source oscillation:19.2MHz/24.576MHz
Felica Source oscillation:27.12MHz

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SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : FCC Part 15 Subpart B: 2011, final revised on July 8, 2011 and effective August 8, 2011

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] 12.9dB 0.17441MHz, L [AV] 15.2dB 0.17441MHz, L	Complied
Radiated emission	ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	7.7dB 598.060MHz, Vertical, 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	4.2dB	5.0dB	5.1dB	5.6dB	5.9dB	4.4dB	4.3dB
No.2	4.1dB	5.2dB	5.1dB	5.7dB	5.8dB	4.3dB	4.2dB
No.3	4.5dB	5.0dB	5.2dB	5.7dB	5.8dB	4.5dB	4.2dB
No.4	4.7dB	5.2dB	5.2dB	5.7dB	5.8dB	5.1dB	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
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

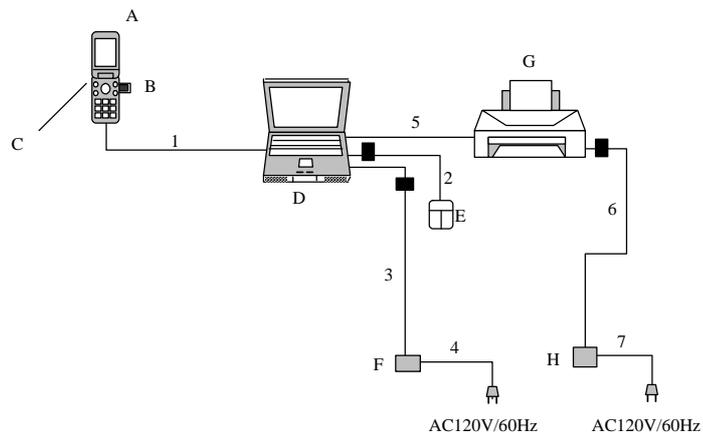
Refer to APPENDIX.

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



■ : Standard Ferrite Core

*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	101SH	004401/11/354876/8	Sharp Corporation	EUT
B	microSD Memory Card	SD-C02GDCYD (GNBKP)	None	TOSHIBA	-
C	Lithium-Ion Battery	SHBEC1	UHA	Sharp Corporation	EUT
D	Personal Computer	PP11L	CN-0D4571-48643-55V-1651	Dell	-
E	Mouse	M-BE55	LZE21450232	Logitec	-
F	AC Adapter (PC)	PA-1650-05D2	CN-0F7970-71615-561-14A1	Dell	-
G	Printer	895Cxi	SG8BL1W16V	Hewlett Packard	-
H	AC Adapter (Printer)	C4557-60004	C8K28B	Hewlett Packard	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB Data Cable	0.80	Shielded	Shielded	-
2	Mouse Cable	0.72	Unshielded	Unshielded	-
3	AC Adaptor Cable (PC)	1.76	Unshielded	Unshielded	-
4	AC Power Cable (PC)	0.85	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. 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

Date: September 30, 2011

Test engineer: Tomotaka Sasagawa

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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 1.

6.3 Test conditions

Frequency range : 30MHz-300MHz (Biconical antenna) / 300MHz-1000MHz (Logperiodic antenna)
1000 - 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, 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: September 30, 2011

Test engineer: Tomotaka Sasagawa

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APPENDIX 1: Data of EMI test

Conducted Emission

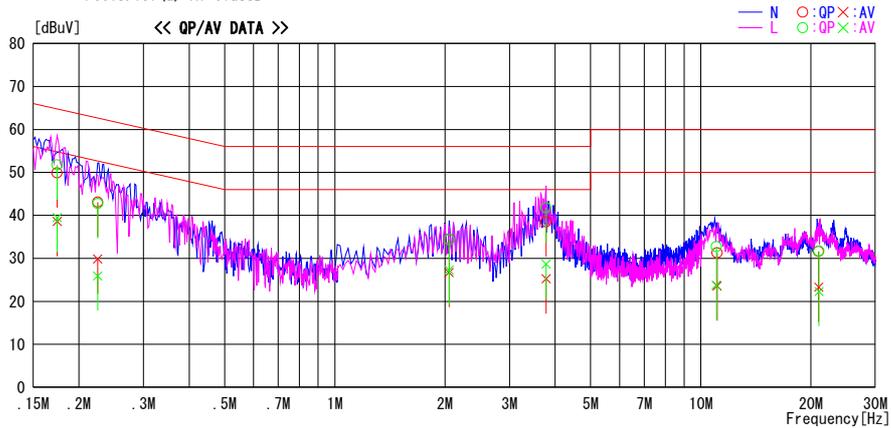
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/09/30

Report No. : 32BE0245-HO
Temp./Humi. : 24deg. C / 56% RH
Engineer : Tomotaka Sasagawa

Mode / Remarks : USB Data Com Mode

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]		
0.17441	36.6	25.3	13.3	49.9	38.6	64.7	54.7	14.9	16.1	N	
0.22497	29.7	16.4	13.4	43.1	29.8	62.6	52.6	19.5	22.8	N	
2.05240	20.6	12.9	13.8	34.4	26.7	56.0	46.0	21.6	19.3	N	
3.77915	24.2	11.0	14.3	38.5	25.3	56.0	46.0	17.6	20.7	N	
11.07505	15.5	7.8	15.8	31.3	23.6	60.0	50.0	28.7	26.4	N	
20.99956	14.0	5.7	17.6	31.6	23.3	60.0	50.0	28.4	26.7	N	
0.17441	38.5	26.2	13.3	51.8	39.5	64.7	54.7	12.9	15.2	L	
0.22497	29.4	12.5	13.4	42.8	25.9	62.6	52.6	19.8	26.7	L	
2.05240	20.5	13.5	13.8	34.3	27.3	56.0	46.0	21.7	18.7	L	
3.77915	27.5	14.4	14.3	41.8	28.7	56.0	46.0	14.2	17.3	L	
11.03487	17.0	8.1	15.7	32.7	23.8	60.0	50.0	27.3	26.2	L	
21.03974	14.1	4.7	17.6	31.7	22.3	60.0	50.0	28.3	27.7	L	

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT [dBuV]=READING [dBuV]+C.F [dB] (L1SN LOSS+CABLE LOSS+ATTEN)
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

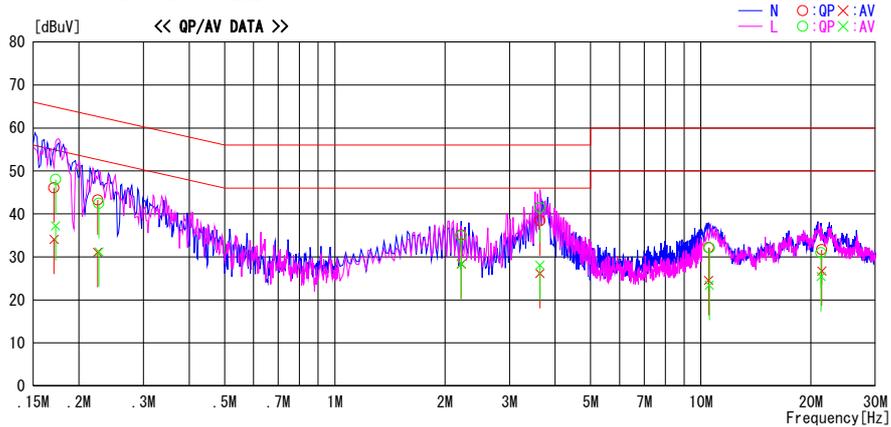
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UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/09/30

Report No. : 32BE0245-HO
Temp./Humi. : 24deg. C / 56% RH
Engineer : Tomotaka Sasagawa

Mode / Remarks : Standby Mode

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]		
0.17092	32.8	20.8	13.3	46.1	34.1	64.9	54.9	18.9	20.8	N	
0.22497	29.9	17.7	13.4	43.3	31.1	62.6	52.6	19.3	21.5	N	
2.21599	21.2	14.4	13.9	35.1	28.3	56.0	46.0	20.9	17.7	N	
3.63374	24.2	11.9	14.2	38.4	26.1	56.0	46.0	17.6	19.9	N	
10.51252	16.6	8.9	15.6	32.2	24.5	60.0	50.0	27.8	25.5	N	
21.40136	13.9	8.9	17.8	31.7	26.7	60.0	50.0	28.3	23.3	N	
0.17267	34.7	24.0	13.3	48.0	37.3	64.8	54.8	16.8	17.5	L	
0.22671	29.0	17.8	13.4	42.4	31.2	62.6	52.6	20.2	21.4	L	
2.21599	21.0	14.5	13.9	34.9	28.4	56.0	46.0	21.1	17.6	L	
3.63374	27.3	13.9	14.2	41.5	28.1	56.0	46.0	14.5	17.9	L	
10.55270	16.5	7.8	15.6	32.1	23.4	60.0	50.0	27.9	26.6	L	
21.32100	13.2	7.6	17.8	31.0	25.4	60.0	50.0	29.0	24.6	L	

CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT [dBuV] = READING [dBuV] + C. F [dB] (LISN LOSS + CABLE LOSS + ATTEN)
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

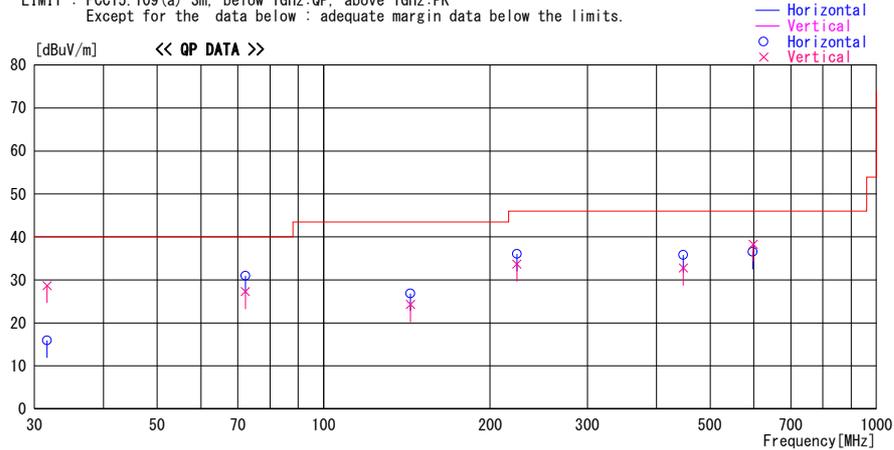
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UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/09/30

Report No. : 32BE0245-HO
Temp./Humi. : 24deg. C / 56% RH
Engineer : Tomotaka Sasagawa

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 [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain							
			[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
31.623	29.2	QP	17.7	-31.0	15.9	239	189	Hori.	40.0	24.1	
31.623	42.0	QP	17.7	-31.0	28.7	332	100	Vert.	40.0	11.3	
72.204	55.0	QP	6.6	-30.6	31.0	316	233	Hori.	40.0	9.0	
72.204	51.3	QP	6.6	-30.6	27.3	169	100	Vert.	40.0	12.8	
143.627	42.0	QP	14.6	-29.8	26.8	48	176	Hori.	43.5	16.7	
143.627	39.5	QP	14.6	-29.8	24.3	290	100	Vert.	43.5	19.2	
223.672	47.9	QP	16.9	-28.7	36.1	200	172	Hori.	46.0	9.9	
223.672	45.5	QP	16.9	-28.7	33.7	9	100	Vert.	46.0	12.3	
447.351	44.3	QP	17.9	-26.4	35.8	304	100	Hori.	46.0	10.2	
447.353	41.3	QP	17.9	-26.4	32.8	162	100	Vert.	46.0	13.3	
597.396	42.2	QP	19.3	-25.0	36.5	145	100	Hori.	46.0	9.5	
598.060	44.0	QP	19.3	-25.0	38.3	342	100	Vert.	46.0	7.7	

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

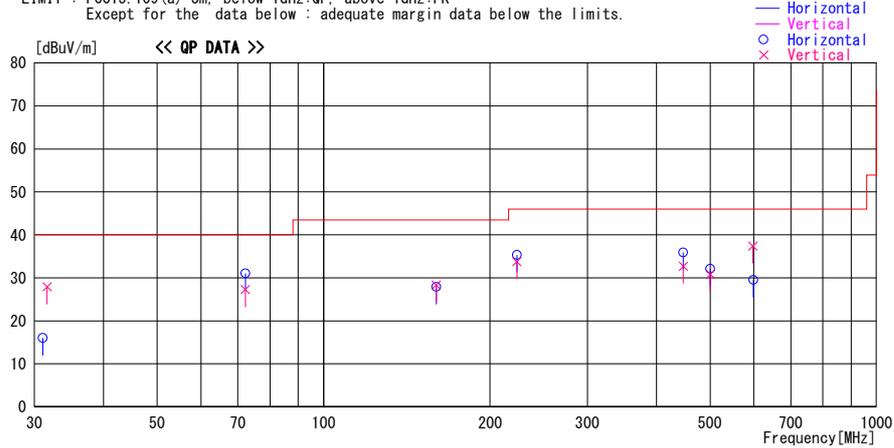
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Date : 2011/09/30

Report No. : 32BE0245-H0
Temp./Humi. : 24deg. C / 56% RH
Engineer : Tomotaka Sasagawa

Mode / Remarks : Standby Mode

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 [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss&Gain [dB]							
31.082	29.1	QP	17.9	-31.0	16.0	240	100	Hori.	40.0	24.0	
31.623	41.2	QP	17.7	-31.0	27.9	-36	100	Vert.	40.0	12.1	
72.204	55.1	QP	6.6	-30.6	31.1	329	267	Hori.	40.0	9.0	
72.204	51.3	QP	6.6	-30.6	27.3	219	100	Vert.	40.0	12.8	
159.860	42.1	QP	15.4	-29.6	27.9	320	207	Hori.	43.5	15.6	
159.860	42.6	QP	15.4	-29.6	28.4	129	100	Vert.	43.5	15.1	
223.707	47.1	QP	16.9	-28.7	35.3	187	244	Hori.	46.0	10.7	
223.707	45.6	QP	16.9	-28.7	33.8	1	100	Vert.	46.0	12.2	
447.294	44.4	QP	17.9	-26.4	35.9	141	100	Hori.	46.0	10.2	
447.368	41.2	QP	17.9	-26.4	32.7	162	100	Vert.	46.0	13.3	
500.601	39.8	QP	18.2	-25.9	32.1	212	100	Hori.	46.0	13.9	
500.486	38.6	QP	18.2	-25.9	30.9	230	100	Vert.	46.0	15.1	
597.396	43.1	QP	19.3	-25.0	37.4	0	100	Vert.	46.0	8.6	
598.799	35.2	QP	19.3	-25.0	29.5	144	100	Hori.	46.0	16.5	

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.

Radiated Emission

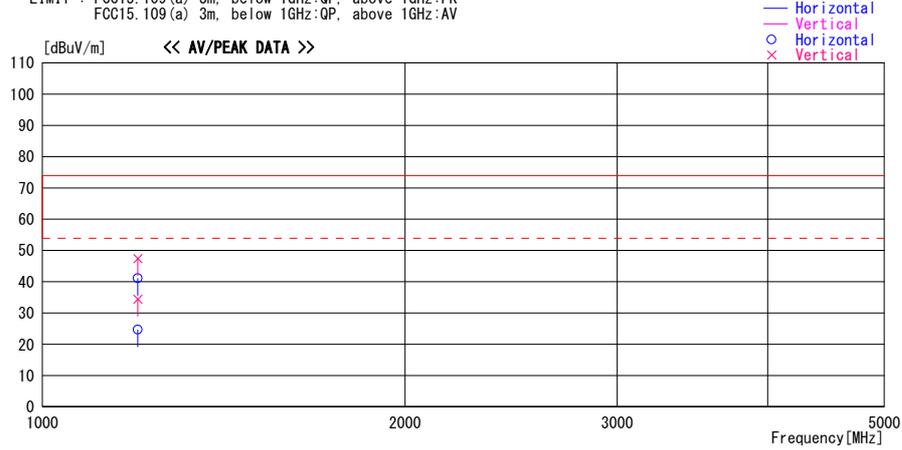
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/09/30

Report No. : 32BE0245-H0
Temp./Humi. : 24deg. C / 56% RH
Engineer : Tomotaka Sasagawa

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		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss&Gain [dB]							
1199.999	52.1	PK	24.6	-35.6	41.1	122	100	Hori.	73.9	32.8	
1199.999	58.4	PK	24.6	-35.6	47.4	45	100	Vert.	73.9	26.5	
1199.999	45.4	AV	24.6	-35.6	34.4	45	100	Vert.	53.9	19.5	
1199.999	35.7	AV	24.6	-35.6	24.7	122	100	Hori.	53.9	29.3	

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

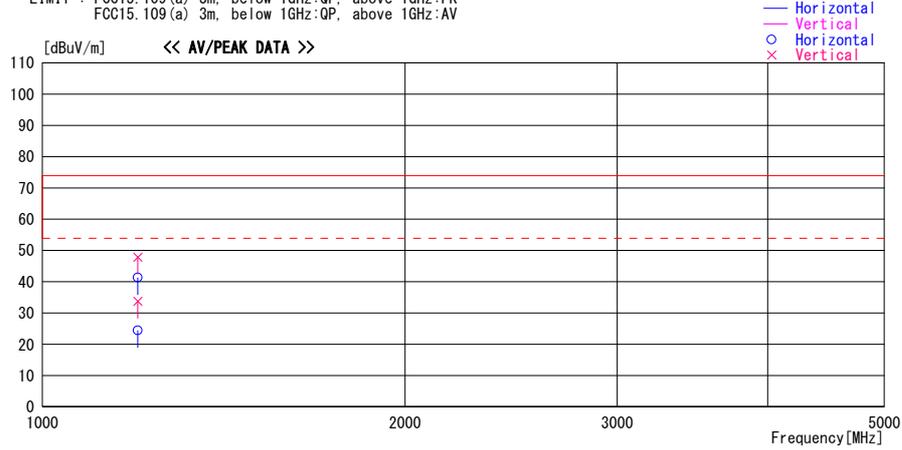
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2011/09/30

Report No. : 32BE0245-H0
Temp./Humi. : 24deg. C / 56% RH
Engineer : Tomotaka Sasagawa

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 [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]							
1199.999	52.3	PK	24.6	-35.6	41.3	127	100	Hori.	73.9	32.6	
1199.999	58.9	PK	24.6	-35.6	47.9	23	100	Vert.	73.9	26.1	
1199.999	44.8	AV	24.6	-35.6	33.8	23	100	Vert.	53.9	20.1	
1199.999	35.5	AV	24.6	-35.6	24.5	127	100	Hori.	53.9	29.4	

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)

*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-01	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 10m	DA-06881	RE	2011/07/10 * 12
MOS-01	Digital Humidity Indicator	N.T	NT-1800	MOS01	RE	2011/02/23 * 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	2010/12/07 * 12
KBA-05	Biconical Antenna	Schwarzbeck	BBA9106	2513	RE	2011/09/10 * 12
KLA-04	Logperiodic Antenna	Schwarzbeck	USLP9143	361	RE	2011/08/17 * 12
MAT-08	Attenuator(6dB)	Weinschel Corp	2	BK7971	RE	2010/11/05 * 12
MCC-02	Coaxial Cable	Suhner/storm/Agilent/TSJ	-	-	RE	2011/09/17 * 12
MPA-19	Pre Amplifier	MITEQ	MLA-10K01-B01-35	1237616	RE	2011/02/28 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(EUT)	2011/02/20 * 12
MLS-03	LISN(AMN)	Schwarzbeck	NSLK8127	8127384	CE(AE)	2011/07/11 * 12
MTA-30	Terminator	TME	CT-01	-	CE	2011/01/05 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/TSJ	5D-2W(20m)/3D-2W(7.5m)/RG400u(1.5m)/RFM-E421(Switcher)	- /01068(Switcher)	CE	2011/01/16 * 12
MAT-64	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2011/02/22 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	253	RE	2011/06/19 * 12
MCC-134	Microwave Cable	HUBER+SUHNER	SUCOFLEX104	336167/4(1m) / 340641(5m)	RE	2011/09/07 * 12
MPA-01	Pre Amplifier	Agilent	8449B	3008A01671	RE	2011/02/24 * 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 Emissions

RE: Radiated Emissions

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