



EMI TEST REPORT

Test Report No. : 10658083H-B

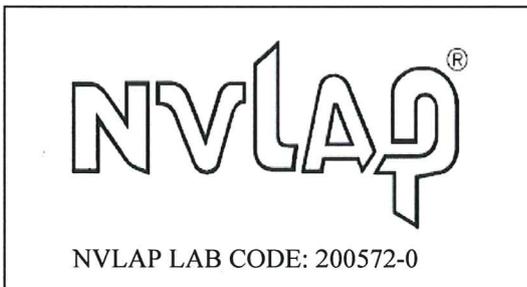
Applicant : Sharp Corporation, Communication Systems Division.
Type of Equipment : Smart Phone
Model No. : SH-04G
FCC ID : APYHRO00223
Test standard : FCC Part 15 Subpart B 2015 Class B
Test Result : Complied

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.
6. This test report covers EMC technical requirements. It does not cover administrative issues such as Manual or non-EMC test related Requirements. (if applicable)

Date of test: April 28, 2015

Representative test engineer: 
Keisuke Kawamura
Engineer
Consumer Technology Division

Approved by : 
Takahiro Hatakeda
Leader
Consumer Technology Division



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 Division.
Address : 2-13-1 Iida Hachihonmatsu HigashiHiroshima-City, Hiroshima, 739-0192
Japan
Telephone Number : +81-82-420-1552
Facsimile Number : +81-82-420-1555
Contact Person : Hachiro Hidaka

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

2.1 Identification of E.U.T.

Type of Equipment : Smart Phone
Model No. : SH-04G
Serial No. : Refer to Section 4, Clause 4.2
Receipt Date of Sample : April 23, 2015
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-04G is Penta-band LTE(B1/B3/B17/B19/B21) and Quad-band W-CDMA(FDD-I/V/VI/XIX) Dual mode Smart 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: 1,190.4MHz (max)
Source oscillation: 19.2MHz(CPU), 27.12MHz(NFC)

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SECTION 3: Test specification, procedures & results

3.1 Test specification

Test specification : FCC Part 15 Subpart B: 2015, final revised on January 21, 2015

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] 3.9 dB 0.16886 MHz, L [AV] 9.3 dB 0.16886 MHz, L	Complied
Radiated emission	ANSI C63.4: 2009 8. Radiated emission measurements	Class B	N/A	8.5 dB 72.026 MHz, 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)
	150 kHz – 30 MHz
No.1	3.5 dB
No.2	3.5 dB
No.3	3.6 dB
No.4	3.5 dB

Test room (semi-anechoic chamber)	Radiated emission						
	(3 m*)(+dB)				(1 m*)(+dB)		(0.5 m*)(+dB)
	9 kHz - 30 MHz	30 MHz - 300 MHz	300 MHz - 1GHz	1 GHz - 10 GHz	10 GHz - 18 GHz	18 GHz - 26.5 GHz	26.5 GHz - 40 GHz
No.1	4.0 dB	5.1 dB	5.0 dB	5.1 dB	6.0 dB	4.9 dB	4.3 dB
No.2	3.9 dB	5.2 dB	5.0 dB	4.9 dB	5.9 dB	4.7 dB	4.2 dB
No.3	4.3 dB	5.1 dB	5.2 dB	5.2 dB	6.0 dB	4.8 dB	4.2 dB
No.4	4.6 dB	5.2 dB	5.0 dB	5.2 dB	6.0 dB	5.7 dB	4.2 dB

*3 m / 1 m / 0.5 m = 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. Ise EMC Lab. *NVLAP Lab. code: 200572-0
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Telephone : +81 596 24 8999 Facsimile : +81 596 24 8124

	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	2973C-1	19.2 x 11.2 x 7.7 m	7.0 x 6.0 m	No.1 Power source room
No.2 semi-anechoic chamber	2973C-2	7.5 x 5.8 x 5.2 m	4.0 x 4.0 m	-
No.3 semi-anechoic chamber	2973C-3	12.0 x 8.5 x 5.9 m	6.8 x 5.75 m	No.3 Preparation room
No.3 shielded room	-	4.0 x 6.0 x 2.7 m	N/A	-
No.4 semi-anechoic chamber	2973C-4	12.0 x 8.5 x 5.9 m	6.8 x 5.75 m	No.4 Preparation room
No.4 shielded room	-	4.0 x 6.0 x 2.7 m	N/A	-
No.5 semi-anechoic chamber	-	6.0 x 6.0 x 3.9 m	6.0 x 6.0 m	-
No.6 shielded room	-	4.0 x 4.5 x 2.7 m	4.0 x 4.5 m	-
No.6 measurement room	-	4.75 x 5.4 x 3.0 m	4.75 x 4.15 m	-
No.7 shielded room	-	4.7 x 7.5 x 2.7 m	4.7 x 7.5 m	-
No.8 measurement room	-	3.1 x 5.0 x 2.7 m	N/A	-
No.9 measurement room	-	8.8 x 4.6 x 2.8 m	2.4 x 2.4 m	-
No.11 measurement room	-	6.2 x 4.7 x 3.0 m	4.8 x 4.6 m	-

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

3.6 Test data, Test instruments, and Test set up

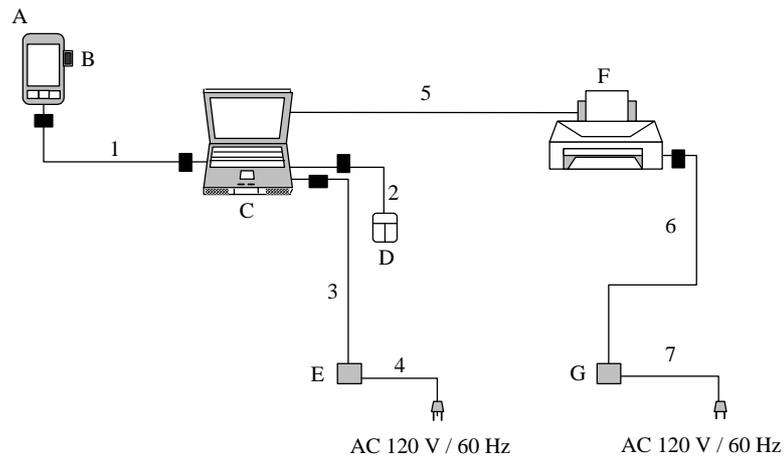
Refer to APPENDIX.

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



■ : Ferrite core which has been standard on support equipment.

*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	Smart Phone	SH-04G	004401/11/545127/6	Sharp Corporation	EUT
B	microSD Memory Card	SD-C02G	None	TOSHIBA	-
C	Personal Computer	PP11L	CN-0D4571-48643-58P-1053	Dell	-
D	Mouse	M-UAG120	LZ733B70EVV	TOSHIBA	-
E	AC Adapter(PC)	LA65NS1-00	CN-0YD637-71615-64Q-2243	Dell	-
F	Printer	895Cxi	SG8BA1W18J	Hewlett Packard	-
G	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. 1 semi anechoic chamber
Temperature : See data
Humidity : See data

5.2 Test configuration

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

The rear of tabletop was located 40 cm 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 80 cm from any other grounded conducting surface. EUT was located 80 cm from the LISN/AMN. I/O cables that were connected to the other peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm 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 - 30 MHz
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 CISPR AV
IF Bandwidth : 9 kHz

5.4 Test result

Summary of the test results: Pass

Date: April 28, 2015

Test engineer: Keisuke Kawamura

UL Japan, Inc.

Ise 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, 1.0 m by 1.5 m, raised 0.8 m 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 : 30 MHz - 300 MHz (Biconical antenna) / 300 MHz - 1000 MHz (Logperiodic antenna)
1000 MHz - 6000 MHz (Horn antenna)
Test distance : 3 m
EUT position : Table top
EUT operation mode : See Clause 4.1

6.4 Test procedure

The height of the measuring antenna varied between 1 m and 4 m 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.

The radiated emission measurements were made with the following detector function of the Test Receiver.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Test Receiver
IF Bandwidth	QP: BW 120kHz	PK: BW 1MHz, CISPR AV: BW 1MHz

- 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: April 28, 2015

Test engineer: Keisuke Kawamura

UL Japan, Inc.

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APPENDIX 1: Test data

Conducted Emission

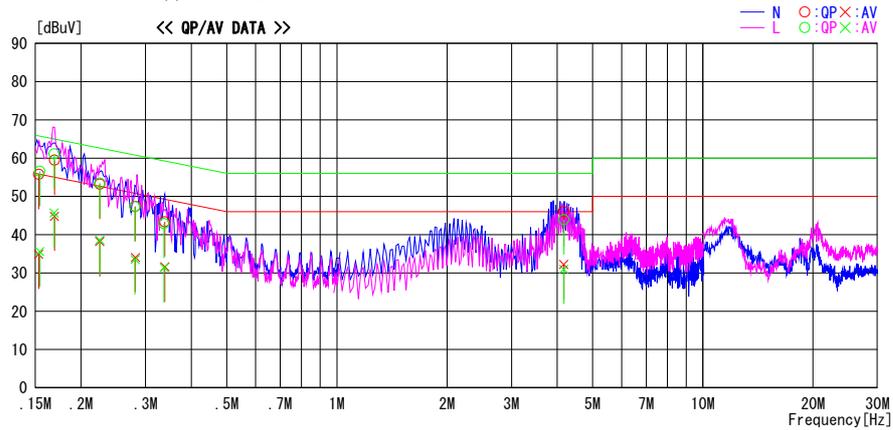
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Ise EMC Lab. No.1 Semi Anechoic Chamber
Date : 2015/04/28

Report No. : 10658083H
Temp./Humi. : 22deg. C / 51% RH
Engineer : Keisuke Kawamura

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]		
0.15326	42.5	21.7	13.2	55.7	34.9	65.8	55.8	10.1	20.9	N	
0.16925	46.3	31.6	13.2	59.5	44.8	65.0	55.0	5.5	10.2	N	
0.22497	39.9	24.9	13.3	53.2	38.2	62.6	52.6	9.4	14.4	N	
0.28131	34.1	20.8	13.3	47.4	34.1	60.8	50.8	13.4	16.7	N	
0.33858	30.1	18.3	13.3	43.4	31.6	59.2	49.2	15.8	17.6	N	
4.16831	32.1	18.3	13.9	46.0	32.2	56.0	46.0	10.0	13.8	N	
0.15422	43.4	22.4	13.2	56.6	35.6	65.8	55.8	9.2	20.2	L	
0.16886	47.9	32.5	13.2	61.1	45.7	65.0	55.0	3.9	9.3	L	
0.22499	40.2	25.3	13.3	53.5	38.6	62.6	52.6	9.1	14.0	L	
0.28076	34.0	20.2	13.3	47.3	33.5	60.8	50.8	13.5	17.3	L	
0.33708	29.6	18.1	13.3	42.9	31.4	59.3	49.3	16.4	17.9	L	
4.16831	30.0	17.1	13.9	43.9	31.0	56.0	46.0	12.1	15.0	L	

CHART : WITH FACTOR. Peak hold data. CALCULATION : RESULT = READING + C.F (LISN + ATTEN. + CABLE)
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

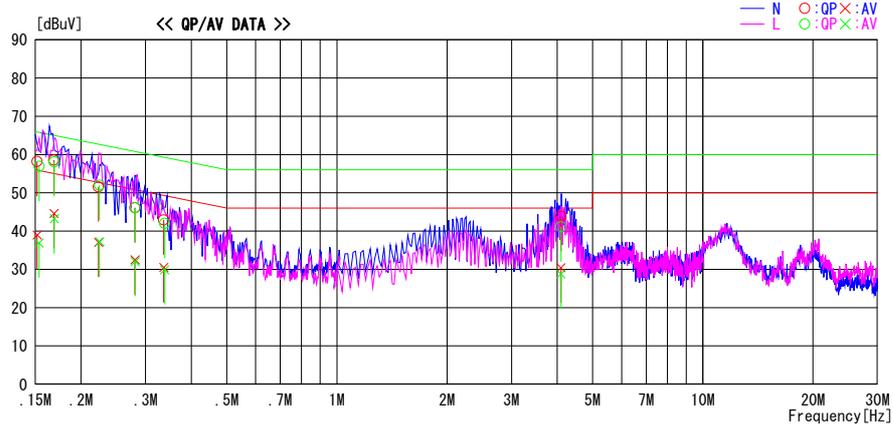
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Date : 2015/04/28

Report No. : 10658083H
Temp./Humi. : 22deg. C / 51% RH
Engineer : Keisuke Kawamura

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]		
0.15174	45.0	25.8	13.2	58.2	39.0	65.9	55.9	7.7	16.9	N	
0.16861	45.4	31.4	13.2	58.6	44.6	65.0	55.0	6.4	10.4	N	
0.22323	38.3	23.8	13.3	51.6	37.1	62.7	52.7	11.1	15.6	N	
0.28076	32.8	19.2	13.3	46.1	32.5	60.8	50.8	14.7	18.3	N	
0.33655	29.6	17.2	13.3	42.9	30.5	59.3	49.3	16.4	18.8	N	
4.09785	29.9	16.5	13.9	43.8	30.4	56.0	46.0	12.2	15.6	N	
0.15349	43.7	23.7	13.2	56.9	36.9	65.8	55.8	8.9	18.9	L	
0.16906	44.9	30.0	13.2	58.1	43.2	65.0	55.0	6.9	11.8	L	
0.22469	38.7	23.9	13.3	52.0	37.2	62.6	52.6	10.6	15.4	L	
0.28112	32.8	18.8	13.3	46.1	32.1	60.8	50.8	14.7	18.7	L	
0.33827	28.7	16.6	13.3	42.0	29.9	59.2	49.2	17.2	19.3	L	
4.09785	27.2	14.9	13.9	41.1	28.8	56.0	46.0	14.9	17.2	L	

CHART : WITH FACTOR. Peak hold data. CALCULATION : RESULT = READING + C.F (LISN + ATTEN. + CABLE)
Except for the above table : adequate margin data below the limits.

*The limit is rounded down to one decimal place.

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Radiated Emission
(Below 1GHz)

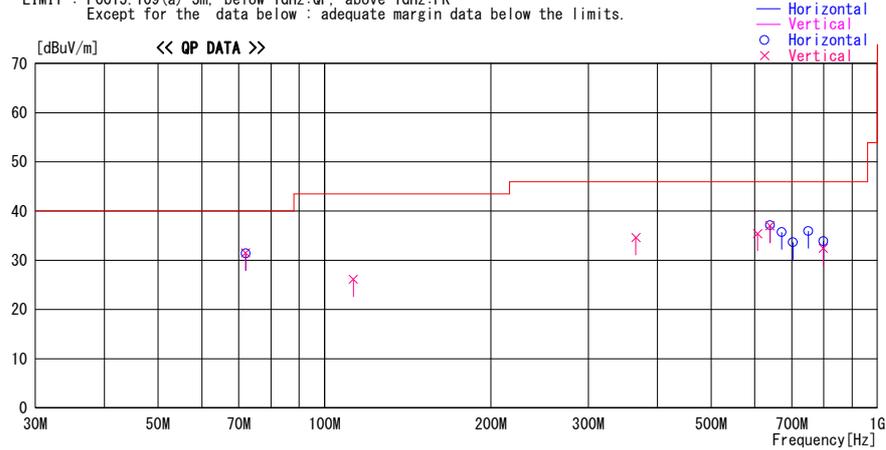
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UL Japan, Inc. Ise EMC Lab. No.1 Semi Anechoic Chamber
Date : 2015/04/28

Report No. : 10658083H
Temp./Humi. : 22deg. C / 51% RH
Engineer : Keisuke Kawamura

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 [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]							
72.026	56.0	QP	6.3	-30.8	31.5	102	252	Vert.	40.0	8.5	
72.026	55.9	QP	6.3	-30.8	31.4	103	246	Hori.	40.0	8.6	
112.787	44.6	QP	11.7	-30.2	26.1	132	151	Vert.	43.5	17.4	
365.777	45.9	QP	16.5	-27.8	34.6	190	132	Vert.	46.0	11.4	
607.134	41.5	QP	19.5	-25.6	35.4	0	100	Vert.	46.0	10.6	
639.081	42.5	QP	19.9	-25.4	37.0	356	100	Vert.	46.0	9.0	
639.081	42.6	QP	19.9	-25.4	37.1	146	118	Hori.	46.0	8.9	
671.044	40.8	QP	20.2	-25.3	35.7	138	118	Hori.	46.0	10.3	
702.991	38.3	QP	20.5	-25.1	33.7	223	100	Hori.	46.0	12.3	
749.991	39.6	QP	21.1	-24.8	35.9	68	112	Hori.	46.0	10.1	
798.077	35.2	QP	21.7	-24.5	32.4	59	149	Vert.	46.0	13.6	
798.077	36.7	QP	21.7	-24.5	33.9	122	114	Hori.	46.0	12.1	

CHART:WITH FACTOR ANT TYPE: -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz-:HORN
CALCULATION : RESULT = READING + ANT FACTOR + LOSS & GAIN(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
(Below 1GHz)

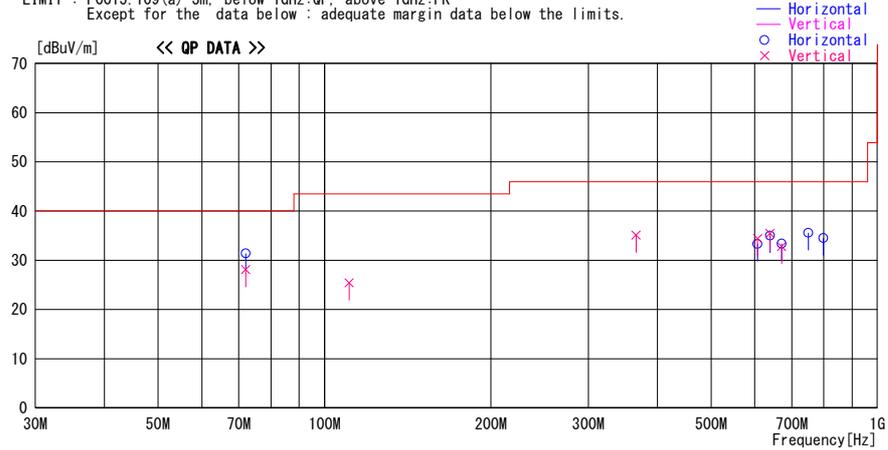
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Engineer : Keisuke Kawamura

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	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
72.026	55.9	QP	6.3	-30.8	31.4	106	246	Hori.	40.0	8.6	
72.026	52.6	QP	6.3	-30.8	28.1	37	100	Vert.	40.0	11.9	
110.787	44.2	QP	11.4	-30.2	25.4	151	100	Vert.	43.5	18.1	
365.825	46.4	QP	16.5	-27.8	35.1	184	135	Vert.	46.0	10.9	
607.137	40.5	QP	19.5	-25.6	34.4	0	100	Vert.	46.0	11.6	
607.137	39.4	QP	19.5	-25.6	33.3	158	100	Hori.	46.0	12.7	
639.081	41.0	QP	19.9	-25.4	35.5	356	100	Vert.	46.0	10.5	
639.081	40.5	QP	19.9	-25.4	35.0	146	117	Hori.	46.0	11.0	
671.044	37.9	QP	20.2	-25.3	32.8	81	100	Vert.	46.0	13.2	
671.044	38.5	QP	20.2	-25.3	33.4	138	118	Hori.	46.0	12.6	
749.991	39.3	QP	21.1	-24.8	35.6	71	113	Hori.	46.0	10.4	
798.077	37.3	QP	21.7	-24.5	34.5	127	113	Hori.	46.0	11.5	

CHART: WITH FACTOR ANT TYPE: -30MHz: LOOP 30-300MHz: BICONICAL 300MHz-1000MHz: LOGPERIODIC 1000MHz-: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS & GAIN(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
(Above 1GHz)

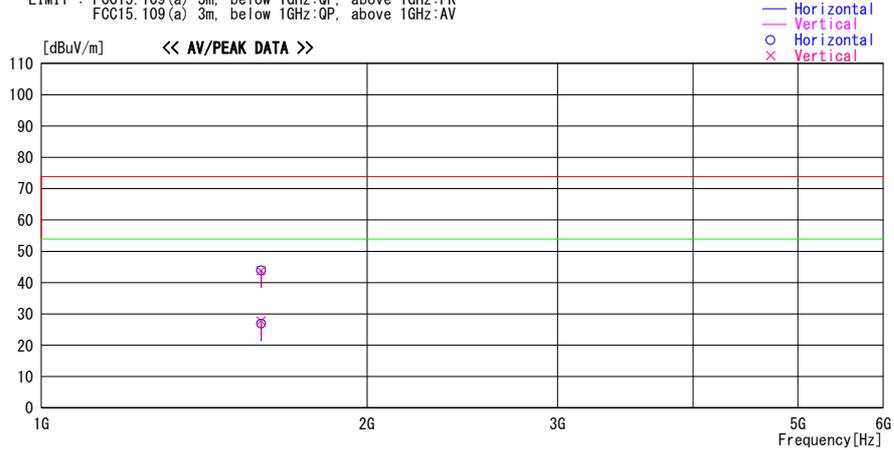
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Temp./Humi. : 22deg. C / 51% RH
Engineer : Keisuke Kawamura

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	Loss&	Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain							
			[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
1596.000	52.8	PK	25.2	-34.1	43.9	350	100	Vert.	73.9	30.0	
1596.000	52.8	PK	25.2	-34.1	43.9	230	100	Hori.	73.9	30.1	
1596.000	35.8	AV	25.2	-34.1	26.9	230	100	Hori.	53.9	27.0	
1596.000	36.6	AV	25.2	-34.1	27.7	350	100	Vert.	53.9	26.2	

CHART: WITH FACTOR ANT TYPE: -30MHz: LOOP 30-300MHz: BICONICAL 300MHz-1000MHz: LOGPERIODIC 1000MHz-: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS & GAIN(CABLE - 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
(Above 1GHz)

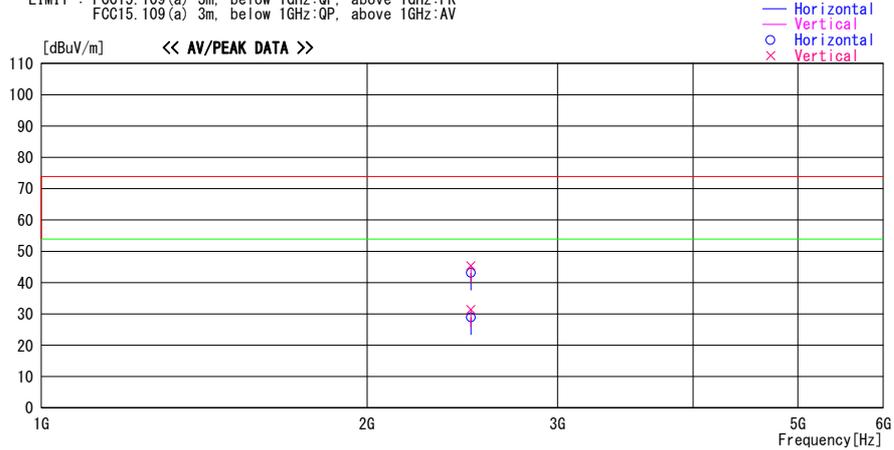
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Ise EMC Lab. No.1 Semi Anechoic Chamber
Date : 2015/04/28

Report No. : 10658083H
Temp./Humi. : 22deg. C / 51% RH
Engineer : Keisuke Kawamura

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 [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]	
2493.825	52.0	PK	26.9	-33.5	45.4	341	148	Vert.	73.9	28.5	
2493.825	49.7	PK	26.9	-33.5	43.1	189	136	Hori.	73.9	30.8	
2493.825	35.5	AV	26.9	-33.5	28.9	189	136	Hori.	53.9	25.0	
2493.825	38.0	AV	26.9	-33.5	31.4	341	148	Vert.	53.9	22.5	

CHART:WITH FACTOR ANT TYPE: -30MHz:LOOP 30-300MHz:BICONICAL 300MHz-1000MHz:LOGPERIODIC 1000MHz--:HORN
CALCULATION : RESULT = READING + ANT FACTOR + LOSS & GAIN(CABLE - 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/CE	2014/09/01 * 12
MOS-27	Thermo-Hygrometer	CUSTOM	CTH-201	A08Q26	RE/CE	2015/01/13 * 12
MJM-21	Measure	KOMELON	KMC-36	-	RE/CE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MTR-09	EMI Test Receiver	Rohde & Schwarz	ESU26	100412	RE/CE	2014/06/06 * 12
KBA-05	Biconical Antenna	Schwarzbeck	BBA9106	2513	RE	2014/11/22 * 12
KLA-04	Logperiodic Antenna	Schwarzbeck	USLP9143	361	RE	2014/11/22 * 12
MAT-08	Attenuator(6dB)	Weinschel Corp	2	BK7971	RE	2014/11/20 * 12
MCC-02	Coaxial Cable	Suhner/storm/Agilent/ TSJ	-	-	RE	2014/09/12 * 12
MPA-19	Pre Amplifier	MITEQ	MLA-10K01-B01-35	1237616	RE	2015/02/03 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	253	RE	2014/05/16 * 12
MTW-01	Torque wrench	HUBER+SUHNER	74 Z-0-0-21	98019	RE	2015/01/16 * 36
MPA-01	Pre Amplifier	Agilent	8449B	3008A01671	RE	2015/02/04 * 12
MCC-165	Microwave Cable	Junkosha	MWX221	1203S213(1m) / 1311S166(5m)	RE	2014/11/11 * 12
MLS-25	LISN(AMN)	Schwarzbeck	NSLK8127	8127-731	CE(AE)	2014/07/09 * 12
MLS-24	LISN(AMN)	Schwarzbeck	NSLK8127	8127-730	CE(EUT)	2014/07/10 * 12
MTA-30	Terminator	TME	CT-01	-	CE	2015/01/19 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/TSJ	5D-2W(20m)/ 3D-2W(7.5m)/ RG400u(1.5m)/ RFM-E421(Switcher)	-/01068 (Switcher)	CE	2014/09/12 * 12
MAT-64	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2015/01/29 * 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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