



EMI TEST REPORT

Test Report No. : 32JE0205-HO-G

Applicant : SAMSUNG ELECTRONICS CO., LTD.
Type of Equipment : GPRS850/1900, EDGE850/1900, WCDMA2,
WCDMA5, LTE4, LTE17 Tablet with 802.11bgn,
BT(EDR, LE)
Model No. : SGH-I497
Test regulation : FCC Part 15 Subpart B: 2012 Class B
FCC ID : A3LSGHI497
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 limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Date of test: June 26, 2012

Representative test engineer:

T. Nakagawa

Tomohisa Nakagawa
Engineer of WiSE Japan,
UL Verification Service

Approved by:

T. Hatakedo

Takahiro Hatakedo
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 : SAMSUNG ELECTRONICS CO., LTD.
Address : 416, MAETAN 3-DONG, YEONGTONG-GU SUWON-CITY,
GYEONGGI-DO 443-742, SOUTH KOREA

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

2.1 Identification of E.U.T.

Type of Equipment : GPRS850/1900, EDGE850/1900, WCDMA2, WCDMA5, LTE4,
LTE17 Tablet with 802.11bgn, BT(EDR, LE)
Model No. : SGH-I497
Serial No. : Refer to Section 4, Clause 4.2
Rating : DC5.0V(USB Power Supply)
DC3.7V/7000mAh, 25.9Wh
Receipt Date of Sample : June 21, 2012
Modification of EUT : No Modification by the test lab

2.2 Product Description

Maximum frequency generated or used by the EUT: 19.2MHz (oscillator), 1.5GHz (processor)

Radio Specification

Bluetooth

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	FHSS
Bandwidth & Channel spacing	1MHz & 1MHz
Antenna Type	PIFA
Antenna Gain	-4.8 dBi (MAX)

WLAN (IEEE802.11b/g/n-20)

Equipment Type	Transceiver
Frequency of Operation	2412-2462MHz
Type of Modulation	DSSS, OFDM
Bandwidth & Channel spacing	20MHz & 5MHz
Antenna Type	PIFA
Antenna Gain	-4.8 dBi (MAX)

Low Energy

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	DSSS
Bandwidth & Channel spacing	1MHz & 2MHz
Antenna Type	PIFA
Antenna Gain	-4.8 dBi (MAX)

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GSM

Equipment Type	Transceiver
Frequency of Operation	[Up Link] GSM850: 824 – 849MHz PCS: 1850 – 1910MHz [Down Link] GSM850: 869 – 894MHz PCS: 1930 – 1990MHz
Type of Modulation	GMSK , 8PSK
Antenna Type	PIFA
Antenna Gain	GSM850: 824-849MHz: -5.73dBi (MAX) 869-894MHz: -5.83dBi (MAX) PCS: 1850-1910MHz: -5.62dBi (MAX) 1930-1990MHz: -5.51dBi (MAX)

W-CDMA

Equipment Type	Transceiver
Frequency of Operation	[Up Link] Band V: 824 – 849MHz Band II: 1850 – 1910MHz [Down Link] Band V: 869 – 894MHz Band II: 1930 – 1990MHz
Type of Modulation	QPSK
Antenna Type	PIFA
Antenna Gain	Band V: 824-849MHz: -5.73dBi (MAX) 869-894MHz: -5.83dBi (MAX) Band II: 1850-1910MHz: -5.62dBi (MAX) 1930-1900MHz: -5.51dBi (MAX)

LTE

Equipment Type	Transceiver
Frequency of Operation	[Up Link] Band IV: 1710 – 1755MHz Band X VII: 704 – 716MHz [Down Link] Band IV: 2110 – 2155MHz Band X VII: 734 – 746MHz
Type of Modulation	QPSK, 16QAM
Antenna Type	PIFA
Antenna Gain	Band IV: 1710-1755MHz: -5.57dBi (MAX) 2110-2155MHz: -3.86dBi (MAX) Band X VII: 704-716MHz: -5.95dBi (MAX) 734-746MHz: -4.23dBi (MAX)

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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 May 17, 2012 and effective June 18, 2012

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] 14.6dB 0.15000MHz, L [AV] 22.0dB 4.63586MHz, L	Complied
Radiated emission	ANSI C63.4: 2003 8. Radiated emission measurements	Class B	N/A	5.0dB 37.412MHz, QP Vertical	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	4.7dB	5.7dB	4.4dB	4.3dB
No.2	4.1dB	5.2dB	5.1dB	4.8dB	5.6dB	4.3dB	4.2dB
No.3	4.5dB	5.0dB	5.2dB	4.8dB	5.6dB	4.5dB	4.2dB
No.4	4.7dB	5.2dB	5.2dB	4.8dB	5.6dB	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 Data of EMI, Test instruments, and Test set up

Refer to APPENDIX.

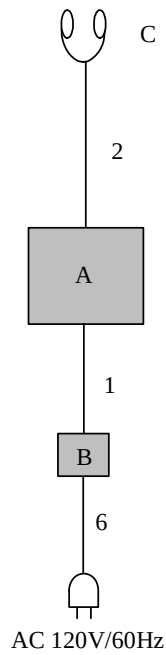
SECTION 4: Operation of E.U.T. during testing

4.1 Operating modes

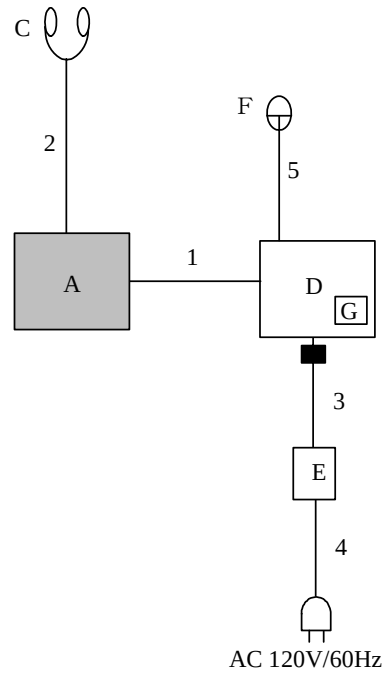
Mode	Remarks
Charge mode	-
USB mode	-

4.2 Configuration and peripherals

Charge mode



USB mode



■ : Ferrite Core (Standard Attachment)

*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	GPRS850/1900, EDGE850/1900, WCDMA2, WCDMA5, LTE4, LTE17 Tablet with 802.11bgn, BT(EDR, LE)	SGH-I497	R31C50X3RBZ	SAMSUNG	EUT
B	AC Adaptor	ETA-P11X	-	SAMSUNG	EUT
C	Ear phone	-	-	SAMSUNG	-
D	Laptop PC	2537C96	R86LHRH	Lenovo	-
E	AC Adaptor	42T4418	11S42T4418Z1ZG WG0940B0	Lenovo	-
F	Mouse	MS303V	018051	Arvel	-
G	SD Card	RP-SD256B	BJ8CA308935	Panasonic	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB Cable	1.0	Shielded	Shielded	-
2	Ear phone Cable	1.2	Unshielded	Unshielded	-
3	DC Cable	1.8	Unshielded	Unshielded	-
4	AC Cable	1.0	Unshielded	Unshielded	-
5	Mouse Cable	1.0	Shielded	Shielded	-
6	AC Cable	1.0	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. 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: June 26, 2012

Test engineer: Tomohisa Nakagawa

UL Japan, Inc.

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SECTION 6: Radiated Emission

6.1 Operating environment

Test place : No.3 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 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: June 26, 2012

Test engineer: Tomohisa Nakagawa

UL Japan, Inc.

Head Office EMC Lab.

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Conducted Emission USB Mode

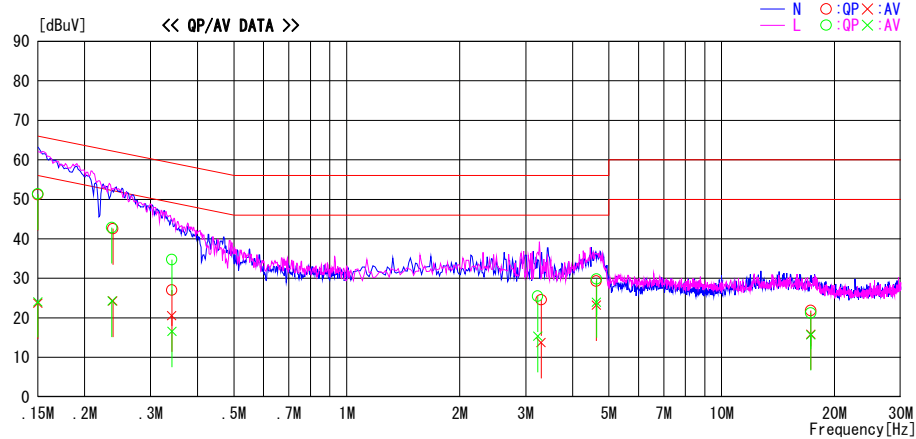
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2012/06/26

Report No. : 32JE0205-HO
Power : AC 120V / 60Hz
Temp./Humi. : 25 deg.C / 58% RH
Engineer : Tomohisa Nakagawa

Mode / Remarks : USB Mode

LIMIT : FCC15.107 QP Class B
FCC15.107 AV Class B



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]		
0.15000	37.9	10.4	13.3	51.2	23.7	66.0	56.0	14.8	32.3	N	
0.23780	29.3	10.9	13.3	42.6	24.2	62.2	52.2	19.6	28.0	N	
0.34141	13.7	7.2	13.3	27.0	20.5	59.2	49.2	32.2	28.7	N	
3.29850	11.0	0.1	13.6	24.6	13.7	56.0	46.0	31.4	32.3	N	
4.62801	15.6	9.5	13.7	29.3	23.2	56.0	46.0	26.7	22.8	N	
17.27718	7.4	1.5	14.4	21.8	15.9	60.0	50.0	38.2	34.1	N	
0.15000	38.1	10.8	13.3	51.4	24.1	66.0	56.0	14.6	31.9	L	
0.23630	29.5	10.9	13.3	42.8	24.2	62.2	52.2	19.4	28.0	L	
0.34185	21.4	3.3	13.3	34.7	16.6	59.2	49.2	24.5	32.6	L	
3.23162	11.9	1.7	13.6	25.5	15.3	56.0	46.0	30.5	30.7	L	
4.63586	16.1	10.3	13.7	29.8	24.0	56.0	46.0	26.2	22.0	L	
17.28335	6.8	1.3	14.4	21.2	15.7	60.0	50.0	38.8	34.3	L	

CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT=READING+C.F.(L1SN LOSS+ATT 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

Charge mode

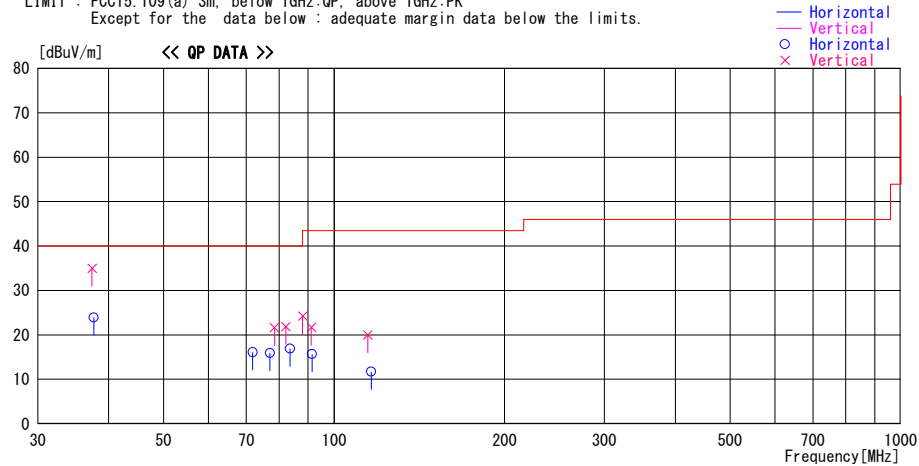
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2012/06/26

Report No. : 32JE0205-HO
Power : AC 120V / 60Hz
Temp./Humi. : 25 deg.C / 58% RH
Engineer : Tomohisa Nakagawa

Mode / Remarks : Charge 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	Loss&	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		Factor	Gain	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
37.412	44.1	QP	15.9	-25.0	35.0	128	100	Vert.	40.0	5.0	
37.656	33.1	QP	15.8	-25.0	23.9	122	315	Hori.	40.0	16.1	
71.830	33.9	QP	6.6	-24.4	16.1	245	239	Hori.	40.0	23.9	
77.012	33.6	QP	6.5	-24.2	15.9	244	239	Hori.	40.0	24.1	
78.524	39.4	QP	6.4	-24.2	21.6	178	100	Vert.	40.0	18.4	
82.172	39.4	QP	6.8	-24.3	21.9	215	100	Vert.	40.0	18.1	
83.600	34.1	QP	7.1	-24.3	16.9	67	212	Hori.	40.0	23.1	
88.045	40.4	QP	8.0	-24.2	24.2	227	100	Vert.	43.5	19.3	
91.190	37.4	QP	8.6	-24.3	21.7	267	100	Vert.	43.5	21.8	
91.443	31.3	QP	8.7	-24.3	15.7	270	305	Hori.	43.5	27.8	
114.660	31.8	QP	12.2	-24.0	20.0	76	100	Vert.	43.5	23.5	
116.400	23.2	QP	12.5	-24.0	11.7	0	300	Hori.	43.5	31.8	

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)

*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
USB mode

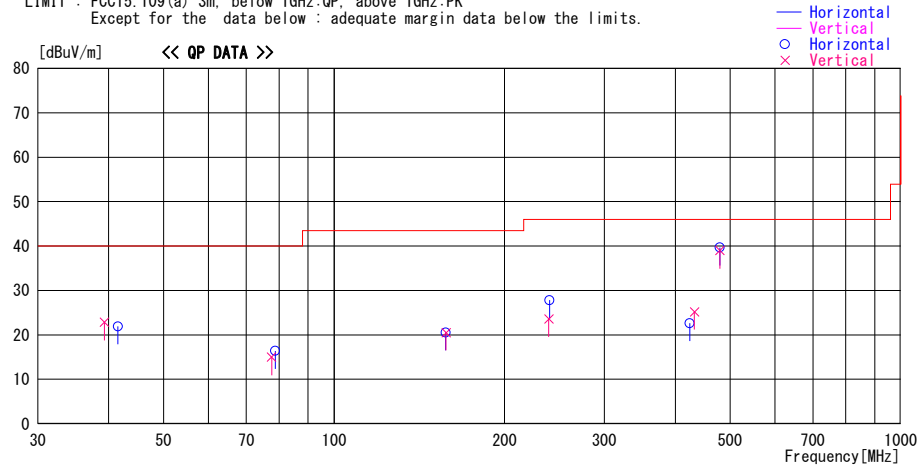
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Report No. : 32JE0205-HO
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Temp./Humi. : 25 deg.C / 58% RH
Engineer : Tomohisa Nakagawa

Mode / Remarks : USB 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 [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
39.322	32.5	QP	15.2	-24.9	22.8	262	100	Vert.	40.0	17.2	
41.549	32.5	QP	14.3	-24.9	21.9	154	300	Hori.	40.0	18.1	
77.580	32.8	QP	6.4	-24.2	15.0	169	300	Vert.	40.0	25.0	
78.770	34.2	QP	6.4	-24.2	16.4	232	258	Hori.	40.0	23.6	
157.349	28.7	QP	15.2	-23.4	20.5	212	100	Hori.	43.5	23.0	
157.689	28.7	QP	15.2	-23.4	20.5	359	100	Vert.	43.5	23.0	
239.460	28.9	QP	17.3	-22.6	23.6	0	100	Vert.	46.0	22.4	
240.149	33.1	QP	17.3	-22.6	27.8	248	141	Hori.	46.0	18.2	
424.520	25.9	QP	17.9	-21.2	22.6	272	254	Hori.	46.0	23.4	
432.560	28.4	QP	17.9	-21.1	25.2	335	121	Vert.	46.0	20.8	
479.665	41.6	QP	18.2	-20.8	39.0	181	100	Vert.	46.0	7.0	
479.665	42.3	QP	18.2	-20.8	39.7	19	100	Hori.	46.0	6.3	

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 Charge mode

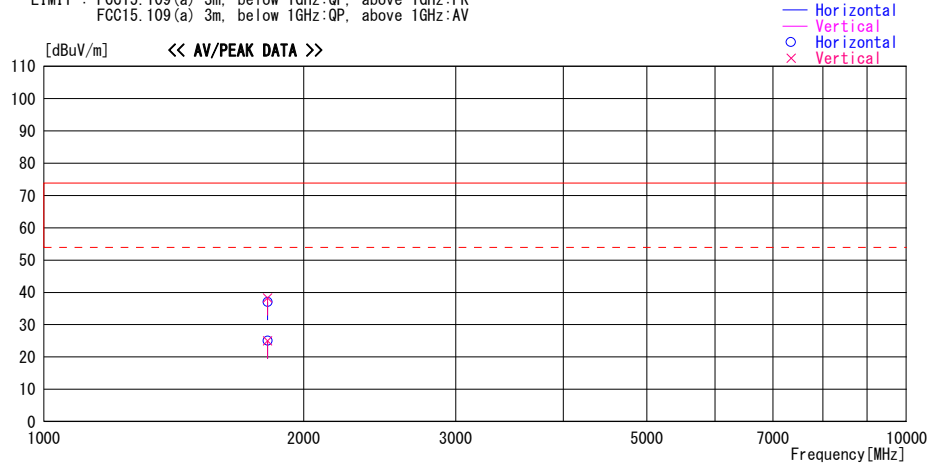
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Report No. : 32JE0205-HO
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Temp./Humi. : 25 deg. C / 58% RH
Engineer : Tomohisa Nakagawa

Mode / Remarks : Charge 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	Margin	Comment
			Factor [dB/m]	Gain [dB]					[dBuV/m]	[dB]	
1817.005	42.3	PK	25.7	-31.0	37.0	359	100	Hori.	73.9	36.9	
1817.005	43.6	PK	25.7	-31.0	38.3	359	100	Vert.	73.9	35.6	
1817.005	30.3	AV	25.7	-31.0	25.0	359	100	Hori.	53.9	28.9	
1817.005	30.3	AV	25.7	-31.0	25.0	359	100	Vert.	53.9	28.9	

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)

*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 USB mode

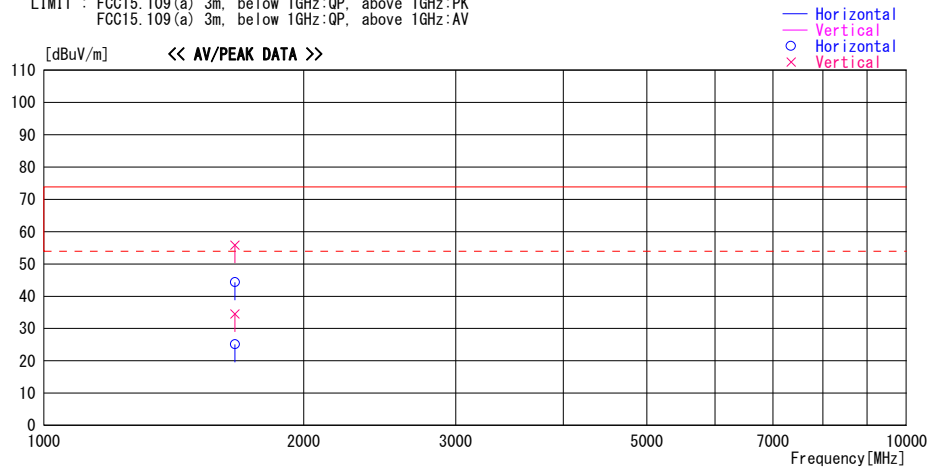
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2012/06/26

Report No. : 32JE0205-HO
Power : AC 120V / 60Hz
Temp./Humi. : 25 deg.C / 58% RH
Engineer : Tomohisa Nakagawa

Mode / Remarks : USB 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]	
1665.004	50.3	PK	25.5	-31.4	44.4	17	100	Hori.	73.9	29.5	
1665.004	61.7	PK	25.5	-31.4	55.8	359	100	Vert.	73.9	18.1	
1665.004	31.0	AV	25.5	-31.4	25.1	17	100	Hori.	53.9	28.8	
1665.004	40.4	AV	25.5	-31.4	34.5	359	100	Vert.	53.9	19.4	

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 equipment

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	RE/CE	2012/02/24 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE/CE	2012/02/06 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE/CE	
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	RE/CE	2011/11/23 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100767	RE/CE	2011/08/11 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2011/10/15 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2011/10/15 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2011/07/15 * 12
MAT-09	Attenuator(6dB)	Weinschel Corp	2	BK7973	RE	2011/11/02 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2012/03/16 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE	2012/02/06 * 12
MTA-31	Terminator	TME	CT-01	-	CE	2012/01/11 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(3m)/sucoform141-PE(1m)/421-010(1.5m)/RFM-E321(Switcher)	-/00640	CE	2011/07/15 * 12
MAT-66	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2012/01/28 * 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	2011/09/07 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2012/03/29 * 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 emission

RE: Radiated emission

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