



FCC TEST REPORT

Reference No. : G-45-2011-01935
 Applicant : SAMSUNG ELECTRONICS CO., LTD.
 Equipment Under Test (EUT) :
 Product Name : Samsung Mobile Phone
 Model Name : GT-S5610
 Applied Standards : FCC Part 15 : 2009, Subpart B, Class B
 ANSI C63.4 : 2003
 CISPR 22 : 2006
 Date of Receipt : July 07, 2011
 Date of Test : July 08, 2011 ~ July 11, 2011
 Date of Issue : July 11, 2011
 Test Results : Complied

Tested by	:	 ----- Paul Kang
Reviewed by	:	 ----- Forest Lee

The above test certificate is the accredited test results by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

Remarks :

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or Testing done by SGS International Electrical Approvals in connection with distribution or use of the product described in this report must be approved by SGS international Electrical Approvals in writing.



Contents

1. General Information.....	3
1.1 Client Information.....	3
1.2 Test Laboratory.....	3
1.3 General Information of E.U.T.	3
1.4 Operating Modes and Conditions.....	3
1.5 Peripheral Equipments.....	4
1.6 Cable List.....	4
1.7 System Configurations.....	5
1.8 Test System Layout.....	5
1.9 Modifications.....	5
1.10 Applicable Standards for Testing.....	6
1.11 Summary of Test Results.....	6
2. Emission Test.....	7
2.1 Test Results.....	7
2.2 Test Equipments.....	7
2.2 Test Site.....	7
2.3 Conducted Emission Test Data.....	8
2.4 Radiated Emission Test Data.....	9
Appendix A : Conducted Emission.....	11
Appendix B : Radiated Emission.....	12



1. General Information

1.1 Client Information

Applicant : SAMSUNG ELECTRONICS CO., LTD.
 Address of Applicant : 416, Maetan 3 dong, Yeongtong-gu, Suwon-city, Gyeonggi-do, Korea
 Manufacturer : SAMSUNG ELECTRONICS CO., LTD.
 Address of Manufacturer : 416, Maetan 3 dong, Yeongtong-gu, Suwon-city, Gyeonggi-do, Korea

1.2 Test Laboratory

Name and Address : SGS Korea Co., Ltd.
 18-34, Sanbon-dong, Gunpo, Gyeonggi-do, Korea
 435-040

1.3 General Information of E.U.T.

Product Name : Samsung Mobile Phone
 Model Name : GT-S5610
 FCC ID : A3LGTS5610
 Serial No. : R2BB530093T
 Hardware Version : REV1.1
 Software Version : S5610.002
 Highest Internal Frequency : Max. 480 MHz
 Power Supply : 120 V a.c., 60 Hz (Notebook Computer)
 Battery 3.7 V d .c., 1000 mAh, 3.7 Wh Inside

1.4 Operating Modes and Conditions

Operating mode	Operating condition
USB Mode	USB Data Communication

Note: EUT was exercised through Software(Dell Program) during testing.

Dell Program(Model : Dell EUT Exerciser, Version : 3.10, Data transmission speed : 30Mbps)

1.5 Peripheral Equipments

Description	Model	Serial No.	Manufacturer
LCD Monitor	M2362DL	004KCZP02189	LG
USB Keyboard	RT7D50	CN-0W7658-37172-65I-0K5G	DELL
USB Mouse	Basic Optical Mouse 1.0A USB/PS2 Compatible	-	MICROSOFT CORPORATION
Local Area Network	-	-	-
Micro SD Card	Mobile Ultra 2GB	-	SanDisk
Notebook Computer	LGE-DMLGX14(B)	008QTEQ024836	LG Electronics Co., Ltd.

Note: Peripherals are DoC.

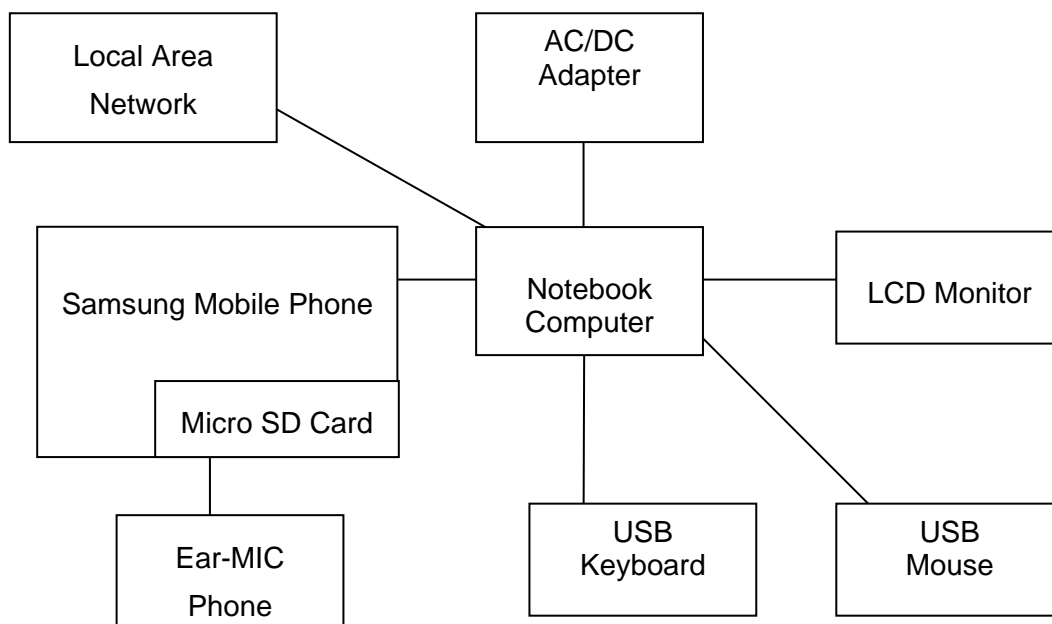
1.6 Cable List

Start		END		Cable Spec.	
Name	I/O Port	Name	I/O Port	Length	Shield
Samsung Mobile Phone	USB	Notebook Computer	-	0.8	Shield
	IO	Ear-MIC Phone	-	1.6	Unshield
	MicroSD	Micro SD Card	-	-	-
Notebook Computer	DC IN	AC/DC Adapter	DC OUT	1.8	Unshield
	RGB	LCD Monitor	RGB	1.8	Shield
	USB	USB Keyboard	USB	2.0	Shield
	USB	USB Mouse	USB	1.8	Shield
	LAN	Local Area Network	-	6.0	Unshield
AC/DC Adapter	AC IN	Power Source	-	1.2	Unshield

1.7 System Configurations

Description	Model	Serial No.	Manufacturer
Battery	AB463651BU	TH1B419GS/4-B	SAMSUNG
Ear-MIC Phone	-	-	SAMSUNG
USB Cable	ECC1DU0BBK	KD1B208TS E	SAMSUNG

1.8 Test System Layout



1.9 Modifications

There was no modified item during the test.



1.10 Applicable Standards for Testing

Standards	Status	Deviation
FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Applicable	No Deviation

1.11 Summary of Test Results

Test Item	Standards	Results
Conducted Emission	FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Complied
Radiated Emission	FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Complied

EMISSION

2.1 Test Results

Test Items	Standards	Test Results
Conducted Emission	FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Complied
Radiated Emission	FCC Part 15 : 2009, Subpart B ANSI C63.4 : 2003 CISPR 22 : 2006	Complied

2.2 Test Equipments

Equipment	Model	Manufacturer	S/N	Last Cal. Date
Two-Line V-Network	ENV216	R & S	100190	2011.01.06
Artificial Mains Networks	ESH2-Z5	R & S	100280	2011.04.06
Test Receiver	ESHS10	R & S	863365/018	2011.04.27
Horn Antenna	HF906	R & S	100326	2009.10.08
Bilog Antenna	VULB9163	SCHWARZBEC K MESS- ELEKTRONIK	390	2011.04.27
Test Receiver	ESU26	R & S	100109	2011.04.27
Amplifier	8447F	HP	2944A03909	2011.07.04
Preamplifier	8449B	Agilent	3008A01932	2011.03.31

Note : Only the calibration period of Antennas is 2 years but the period of every equipment is 1 year.

2.2 Test Site

Conducted Emission : Shield Room in Gunpo Laboratory

Radiated Emission : 3m Semi-Anechoic Chamber in Gunpo Laboratory

2.3 Conducted Emission Test Data

The initial preliminary exploratory scans were performed measuring frequency range(0.15MHz to 30MHz) using a max hold mode incorporating a Peak detector and Average detector and using the software of ES-K1(Version V1.71 from R&S). The final test data was measured using a Quasi-Peak detector and Average detector.

Temperature : 21.0 °C
 Humidity : 47.0 % RH
 Atmospheric Pressure : 99.1 kPa

Freq (MHz)	Line (H/N)	Level(dB μ V)		C/L (dB)	LISN (dB)	Result (dB μ V)		Limit (dB μ V)		Margin (dB)	
		Q/P	A/V			Q/P	A/V	Q/P	A/V	Q/P	A/V
0.15	N	42.40	24.00	0.30	9.65	52.35	33.95	66.00	56.00	13.65	22.05
0.16	H	45.60	30.50	0.31	9.57	55.48	40.38	65.73	55.73	10.25	15.35
0.20	H	38.90	25.70	0.40	9.57	48.87	35.67	63.61	53.61	14.74	17.94
0.27	N	30.20	13.20	0.47	9.65	40.32	23.32	61.27	51.27	20.95	27.95
0.28	H	30.90	14.60	0.48	9.57	40.95	24.65	60.82	50.82	19.87	26.17
13.56	H	30.60	29.10	0.26	9.64	40.50	39.00	60.00	50.00	19.50	11.00

Measurement Uncertainty : ± 3.37 dB (The confidential level is about 95%, K=2)

- Note :
- Line (H) : Hot
 - Line (N) : Neutral
 - C/L: Cable Loss
 - LISN : LISN Factor
 - Result = Level + C/L + LISN
 - Margin = Limit - Result

See Appendix A (Conducted Emission)

2.4 Radiated Emission Test Data

The initial preliminary exploratory scans were performed measuring frequency range(30MHz to 2GHz) using a max hold mode incorporating a Peak detector and using the software of EP5RE(Version Ver3.10.20 from TOYO). The final test data was measured using a Quasi-Peak detector below 1GHz and a Peak and Average detector above 1GHz. Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

Below 1GHz (3m method)

Temperature : 21.0 °C
 Humidity : 47.0 % RH
 Atmospheric Pressure : 99.4 kPa

FREQ. (MHz)	LEVEL (dB μ V)	POL (H/V)	A (°)	H (m)	AF (dB)	CL (dB)	Amp (dB)	F/S (dB μ V/m)	LIMIT (dB μ V/m)	MARGIN (dB)
195.10	50.80	H	32.3	2.00	10.27	1.37	27.65	34.79	43.50	8.71
199.43	51.70	H	302.1	2.10	10.31	1.39	27.63	35.77	43.50	7.73
202.34	51.10	H	45.4	1.90	10.36	1.40	27.62	35.24	43.50	8.26
239.98	52.90	H	113.0	2.00	12.10	1.53	27.42	39.11	46.00	6.89
308.45	48.70	H	180.0	1.00	13.49	1.75	27.42	36.52	46.00	9.48
382.03	46.50	H	152.4	1.00	15.16	1.91	27.94	35.63	46.00	10.37

Measurement Uncertainty (Horizontal) : \pm 5.66dB (The confidential level is about 95%, K=2)

Measurement Uncertainty (Vertical) : \pm 5.72dB (The confidential level is about 95%, K=2)

Note : • AF = Antenna Factor • CL = Cable Loss • F/S = Field Strength
 • POL H = Horizontal • POL V = Vertical • Amp = Amplifier Gain
 • Margin = Limit – F/S
 • A : Angle • H : Height



Above 1GHz (3m method)

Temperature : 22.0 °C

Humidity : 39.0 % RH

Atmospheric Pressure : 100.2 kPa

FREQ. (MHz)	LEVEL (dB μ V)	POL (H/V)	A (°)	H (m)	AF (dB)	CL (dB)	Amp (dB)	F/S (dB μ V/m)	LIMIT (dB μ V/m)	MARGIN (dB)
Peak Detector										
1330.83	51.70	V	95.0	1.00	25.02	3.62	35.42	44.92	74.00	29.08
1947.00	48.50	V	360.0	1.00	27.44	4.37	34.72	45.58	74.00	28.42
Average Detector										
1330.83	31.40	V	95.00	1.00	25.02	3.62	35.42	24.62	54.00	29.38
1947.00	28.70	V	360.00	1.00	27.44	4.37	34.72	25.78	54.00	28.22

Measurement Uncertainty (Horizontal) : \pm 4.89dB (The confidential level is about 95%, K=2)

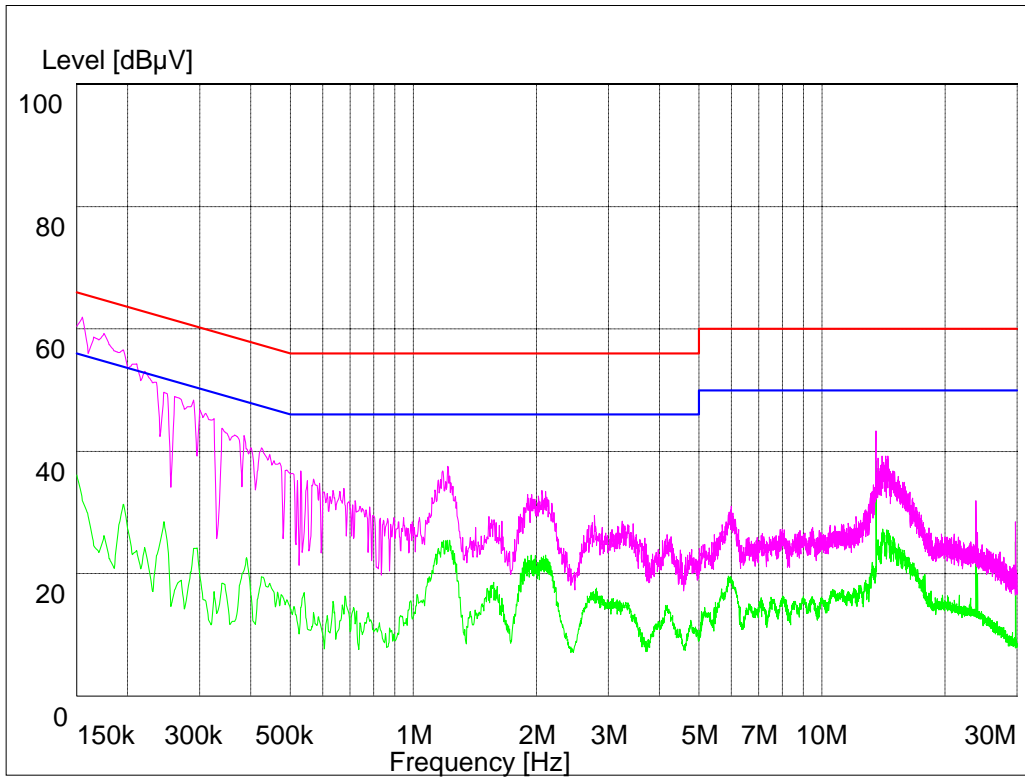
Measurement Uncertainty (Vertical) : \pm 4.93dB (The confidential level is about 95%, K=2)

- Note :
- AF = Antenna Factor
 - POL H = Horizontal
 - Margin = Limit – F/S
 - A : Angle
 - CL = Cable Loss
 - POL V = Vertical
 - F/S = Level + AF + CL – Amp
 - H : Height
 - F/S = Field Strength
 - Amp = Amplifier Gain

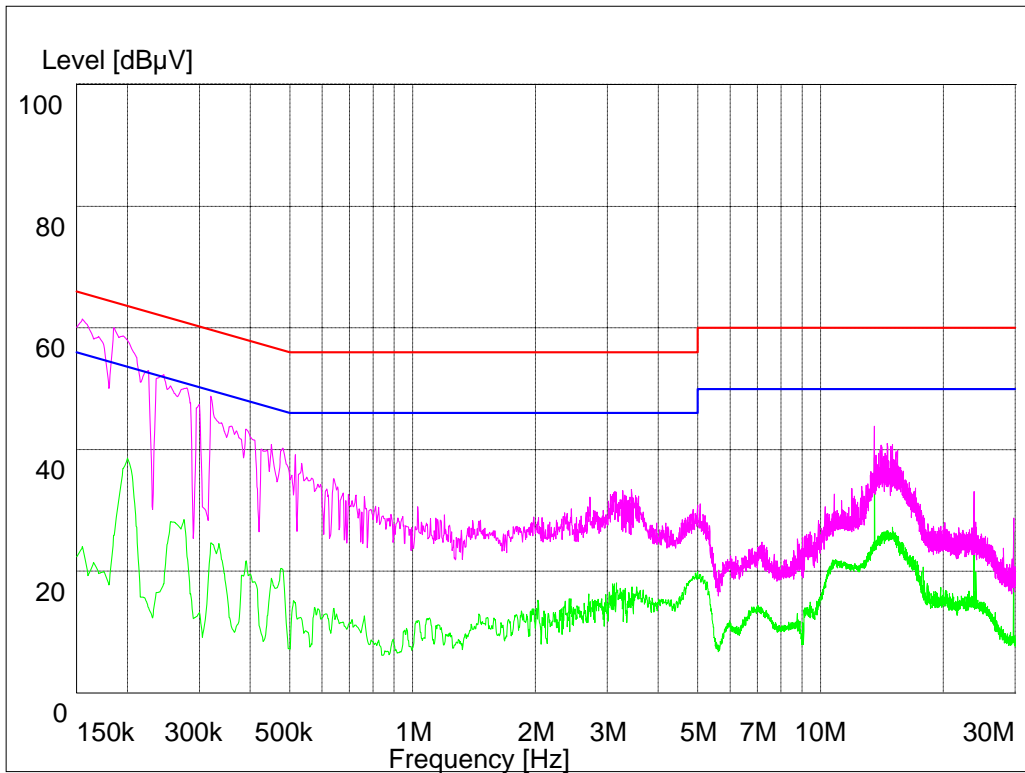
See Appendix B (Radiated Emission)

Appendix A : Conducted Emission

Neutral

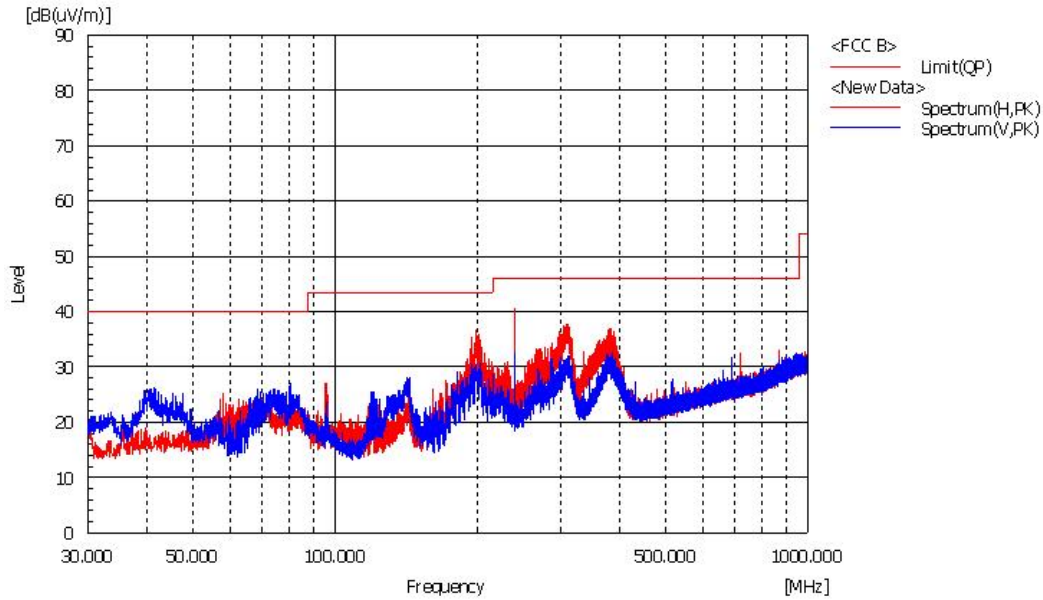


Hot



Appendix B : Radiated Emission

Below 1GHz



Above 1GHz

