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EMI CERTIFICATION REPORT

Applicant:

SAMSUNG ELECTRONICS CO., LTD
416. Maetan-3dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 442-742, Korea

Date of Issue: January 03, 2012
Test Report No.: HCTE1201FE01
Test Site: HCT CO., LTD.
HCT FRN: 0005-8664-21

FCC ID: **A3LGTS6102B**

Rule Part(s) / Standard(s)	: FCC PART 15 Subpart B Class B
Equipment Type	: 850/1900 GSM/GPRS and 850 WCDMA Phone with Bluetooth, WLAN
Model(s)	: GT-S6102B
Date of Test	: December 28, 2011 - December 29, 2011
Port / Connector(s)	: USB Data Port / Headset Port

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003. (See Test Report if any modifications were made for compliance)
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HCT certifies that no party to application has been subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

Report prepared by
: Kun-Hyoung Kim
Test Engineer of EMC Team

Approved by
: Sang-Jun Lee
Manager of EMC Team

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ATTACHMENT: TEST SETUP PHOTOGRAPHS

1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test (E.U.T) is **850/1900 GSM/GPRS and 850 WCDMA Phone with Bluetooth, WLAN / Model: GT-S6102B** manufactured by **SAMSUNG ELECTRONICS CO., LTD.** Its basic purpose is used for communications.

Model (s)	GT-S6102B
FCC ID	A3LGTS6102B
E.U.T Type	850/1900 GSM/GPRS and 850 WCDMA Phone with Bluetooth, WLAN
TX Frequency	824.20 ㎒ to 848.80 ㎒ (GSM 850) 1 850.20 ㎒ to 1 909.80 ㎒ (GSM 1 900) 826.40 ㎒ to 846.60 ㎒ (WCDMA 850)
RX Frequency	869.20 ㎒ to 893.80 ㎒ (GSM 850) 1 930.20 ㎒ to 1 989.80 ㎒ (GSM 1 900) 871.40 ㎒ to 891.60 ㎒ (WCDMA 850)

1.2 Related Submittal(s) / Grant(s)

Original submittal only.

1.3 Tested System Details

All equipment descriptions used in the tested system (including inserted cards) are:

Device Type	Manufacturer	Model Number	FCC ID / DoC	Connected To
850/1900 GSM/GPRS and 850 WCDMA Phone with Bluetooth, WLAN	SAMSUNG	GT-S6102B	A3LGTS6102B	Notebook PC
Notebook PC	SAMSUNG	NT-R519	DoC	E.U.T Notebook PC adaptor
Notebook PC adaptor	DELTA (JIANG SU)	SADP-90FH BAD-9019S	-	Notebook PC
Mouse	PRIMAX ELECTRONICS	MOARUO	DoC	Notebook PC
Headset	-	-	-	E.U.T
USB cable	-	-	-	E.U.T Notebook PC
SD card (2 GB)	SanDisk	-	-	E.U.T
RJ45 cable	-	-	-	Notebook PC
Router	-	HIGATE PLUS K12L012.00	-	Notebook PC

1.4 Cable Description

Product Name	Port	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (m)
850/1900 GSM/GPRS and 850 WCDMA Phone with Bluetooth, WLAN	Micro USB	Y	Y	(P,D)0.8
	Headset jack	-	N	(D)1.5
Notebook PC	RJ 45	-	N	(D)2.0
	USB (Mouse)	Y	Y	(D)1.8

* The marked "(D)" means the data cable and "(P)" means the power cable.

1.5 Noise Suppression Parts on Cable. (I/O cable)

Product Name	Port	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
850/1900 GSM/GPRS and 850 WCDMA Phone with Bluetooth, WLAN	Micro USB	N	-	Y	Both End
	Headset jack	N	-	Y	E.U.T End
Notebook PC	RJ 45	N	-	N	Both End
	USB (Mouse)	N	-	Y	Notebook PC End

1.6 Test Methodology

Both Conducted and Radiated testing was performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to E.U.T distance of 3 m

1.7 Test Facility

The 10 m semi anechoic chamber used to collect the test data is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyoungki-Do, Korea. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4.
Detailed description of test facilities was submitted to the Commission and accepted dated Sep. 03, 2010 (Registration Number: 90661)

1.8 Frequency Range of Radiated Measurements

An unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a Radiated Emission limit is specified, up to the frequency shown in the following table

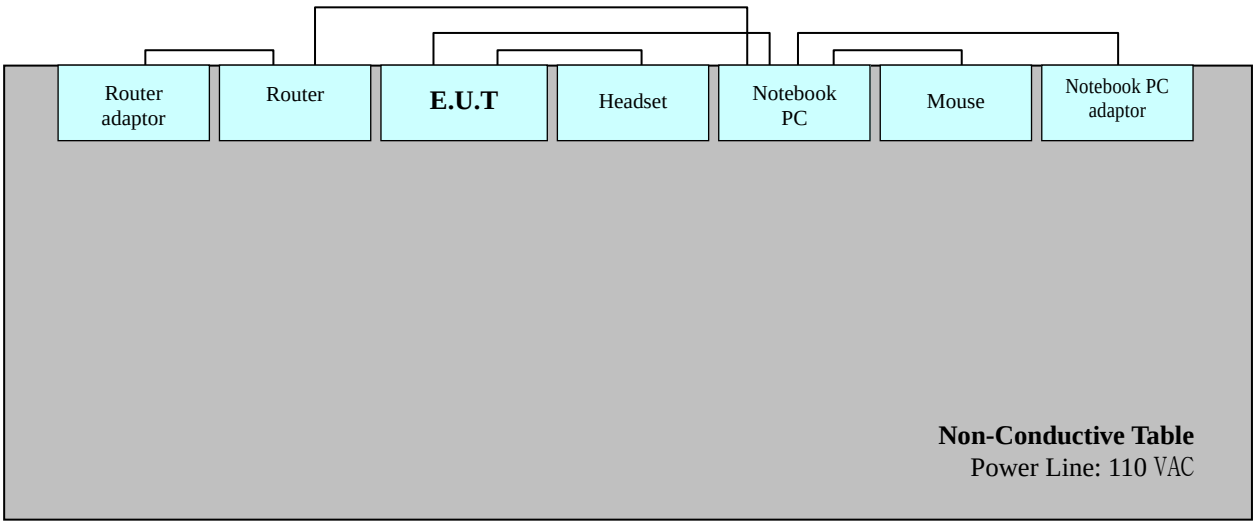
Highest frequency generated or used in the device or on which the device operates or tunes (㎒)	**Upper frequency of measurement range** (㎒)
Below 1.705	30
1.705 to 108	1 000
108 to 500	2 000
500 to 1 000	5 000
Above 1 000	5^{th} harmonic of the highest frequency or 40 ㎓, whichever is lower

2. SYSTEM TEST CONFIGURATION

Power Line Conducted test : E.U.T was connected to LISN via Notebook PC adaptor. Preliminary Power Line Conducted Emission tests were performed by using the procedure in ANSI C63.4/2003 7.2.3 to determine the worst operating conditions.

Radiated Emission test : Preliminary Radiated Emission tests were performed by using the procedure in ANSI C63.4/2003 8.3.1.1 to determine the worst operating condition. Final Radiated Emission tests were performed at 3 m semi-anechoic chamber.

[Configuration of Tested System]



3. PRELIMINARY TEST

3.1 Conducted Emission Test

■ It was tested Data Communication mode, after connecting all peripheral devices.

Operation Mode	The Worst Operating Condition
Data Communication	○

3. 2 Radiated Emission Test

■ It was tested Data Communication mode, after connecting all peripheral devices.

Operation Mode	The Worst Operating Condition
Data Communication	○

4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY

4.1 Conducted Emission Test

The following table shows the highest levels of conducted emissions on both polarization of hot and neutral line.

Limit apply to	: FCC PART 15 Subpart B Class B
Detector	: Quasi-Peak, Average (6 ㏈ Bandwidth: 9 ㎑)
Operation Mode	: Data Communication mode
Temperature	: 24.5 °C
Humidity level	: 47.4 %
Test date	: December 29, 2011

※ **NOTE:** Refer to page 10 to page 13 for details.

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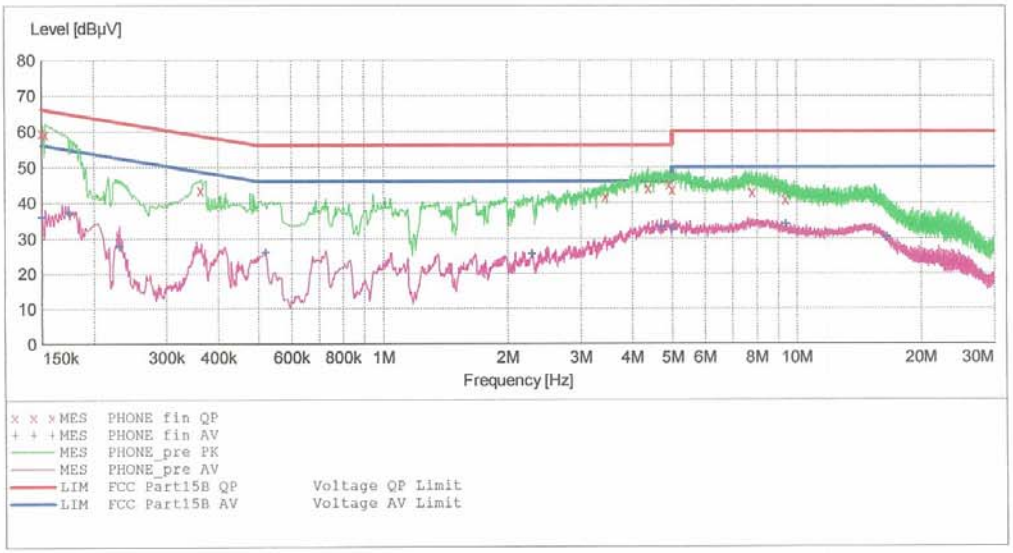
EUT: GT-S6102B
Manufacturer: SAMSUNG
Operating Condition: DATA MODE
Test Site: SHIELD ROOM
Operator: JH CHOI
Test Specification: FCC PART15 CLASS B
Comment: H

SCAN TABLE: "FCC PART 15 B(H)"

Short Description: FCC PART 15 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	1.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

12/29/2011 10:01AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150010	59.60	10.1	66	6.4	---	---
0.153010	59.00	10.1	66	6.8	---	---
0.363010	43.50	10.1	59	15.2	---	---
3.444000	41.70	10.3	56	14.3	---	---
4.392000	44.10	10.4	56	11.9	---	---
4.924000	45.10	10.5	56	10.9	---	---
5.000000	43.70	10.5	56	12.3	---	---
7.812000	43.00	10.8	60	17.0	---	---
9.420000	40.90	10.9	60	19.1	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

12/29/2011 10:01AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150010	35.90	10.1	56	20.1	---	---
0.174010	37.40	10.1	55	17.4	---	---
0.231010	27.60	10.1	52	24.8	---	---
0.520000	26.10	10.1	46	19.9	---	---
2.296000	25.60	10.2	46	20.4	---	---
4.708000	33.20	10.5	46	12.8	---	---
5.000000	32.80	10.5	46	13.2	---	---
9.432000	34.10	10.9	50	15.9	---	---
16.560000	30.50	11.5	50	19.5	---	---

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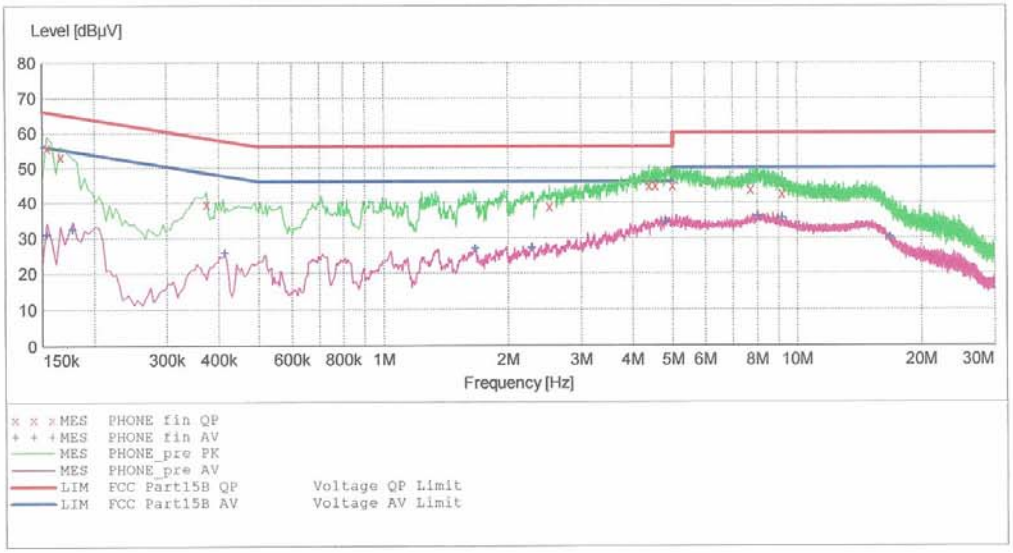
EUT:	GT-S6102B
Manufacturer:	SAMSUNG
Operating Condition:	DATA MODE
Test Site:	SHIELD ROOM
Operator:	JH CHOI
Test Specification:	FCC PART15 CLASS B
Comment:	N

SCAN TABLE: "FCC PART 15 B(N)"

Short Description: FCC PART 15 CLASS B

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

12/29/2011 9:55AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.154010	55.70	10.3	66	10.1	---	---
0.166010	53.10	10.3	65	12.0	---	---
0.374010	39.60	10.3	58	18.8	---	---
2.524000	38.80	10.5	56	17.2	---	---
4.396000	44.90	10.7	56	11.1	---	---
4.544000	44.70	10.7	56	11.3	---	---
5.000000	44.90	10.7	56	11.1	---	---
7.728000	43.60	11.0	60	16.4	---	---
9.200000	42.60	11.0	60	17.4	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

12/29/2011 9:55AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.154010	30.90	10.3	56	24.9	---	---
0.178010	32.30	10.3	55	22.3	---	---
0.414010	25.60	10.3	48	22.0	---	---
1.668000	26.90	10.4	46	19.1	---	---
2.288000	27.00	10.4	46	19.0	---	---
4.800000	34.30	10.7	46	11.7	---	---
8.052000	36.00	11.0	50	14.0	---	---
9.200000	35.50	11.0	50	14.5	---	---
16.820000	29.90	11.5	50	20.1	---	---

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4.2 Radiated Emission Test

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

Limit Apply to : FCC PART 15 Subpart B Class B

-For measurement below 1 ㎓

Detector : Quasi-Peak (6 ㏈ Bandwidth: 120 ㎑)

Operation Mode : Data Communication mode

-For measurement above 1 ㎓

Detector : Peak mode: Peak (RBW: 1 ㎒ / VBW: 1 ㎒)

: Average mode: Peak (RBW: 1 ㎒ / VBW: 10 ㎐)

Operation Mode : Data Communication mode

Temperature : 25.3 °C

Humidity Level : 46.3 %

Test Date : December 28, 2011

Frequency (MHz)	Reading (dBuV)	Polarity (H/V)	Antenna Height (m)	Correction Factor		Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
				Antenna (dB/m)	Cable (dB)			
36.200	12.57	V	2.7	11.81	3.42	40.0	27.8	12.2
77.100	13.55	H	2.7	8.68	3.77	40.0	26.0	14.0
300.010	22.61	H	1.2	13.39	4.60	46.0	40.6	5.4
529.900	18.03	H	1.0	18.31	5.36	46.0	41.7	4.3
847.800	11.90	V	1.0	22.95	5.84	46.0	40.7	5.3
873.600	6.93	H	3.1	23.15	5.92	46.0	36.0	10.0

※ **NOTE:**

1. Measurement above 1 ㎓ performed from 1 ㎓ to the 5th harmonic of highest fundamental frequency. The highest fundamental frequency is GSM 1 900 center frequency.
2. For measurement above 1 ㎓, Emission noise was not founded over the ambient noise.

5. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the antenna factor and cable factor.
The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

Where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 21.5 dBμV is obtained. The antenna factor of 7.4 dB/m and a cable factor of 1.1 dB are added. The 30 dBμV/m value is mathematically converted to its corresponding level in μV/m.

FS = 21.5 + 7.4 + 1.1 = 30 dBμV/m

[Radiated Emission Limits]

Frequency of Emission (㎒)	Field Strength	
	μV/m	dBμV/m
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

6. TEST EQUIPMENT

	Type	Manufacturer	Model Number	Serial Number	Next CAL Date
	Conducted Emission				
☒	EMI Test Receiver	Rohde & Schwarz	ESCI	100584	2012.05.03
☒	LISN	Rohde & Schwarz	ESH3-Z5	100282	2012.02.01
☐	LISN	Rohde & Schwarz	ENV216	100073	2012.04.01
☒	Attenuator	Rohde & Schwarz	ESH3-Z2	357.8810.352	2012.08.01
	Radiated Emission				
☒	EMI Test Receiver	Rohde & Schwarz	ESI40	831564103	2012.05.26
☐	EMI Test Receiver	Rohde & Schwarz	ESU26	100241	2012.08.02
☐	Trilog Antenna	Schwarzbeck	VULB9160	3125	2013.05.03
☒	Trilog Antenna	Schwarzbeck	VULB9160	3301	2012.09.13
☐	Antenna master	INNCO Systems	MA4000-EP	MA4000/283	-
☐	Turn Table	INNCO Systems	DT3000-3T	DT3000/69	-
☒	Antenna master	HD GmbH	MA240	240/520	-
☒	Antenna master controller	HD GmbH	HD100	100/637BJ:00	
☒	Turn Table	HD GmbH	2090	9702/1224	-
☒	Power Amplifier	Rohde & Schwarz	SCU-18	10094	2012.09.19
☐	Communication Antenna	Schwarzbeck	USLP9142	9142-248	-
☒	Horn Antenna	Schwarzbeck	BBHA 9120D	-	2012.04.13

7. CONCLUSION

The data collected shows that the **850/1900 GSM/GPRS and 850 WCDMA Phone with Bluetooth, WLAN / Model: GT-S6102B, FCC ID: A3LGTS6102B** complies with §15.107 and §15.109 of the FCC rules.