HCT CO., LTD.

CERTIFICATE OF COMPLIANCE

FCC Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Address:
129, Samsung-ro, Yeongtong-gu Suwon-si,
Gyeonggi-do, 443-742 Rep. of Korea

Date of Issue:
January 22, 2013

Test Site/Location:
HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon,
Icheon-si, Kyunggi-Do, Korea

Report No.: HCTR1301FR14

HCT FRN: 0005866421

FCC ID	**: A3LGTS6810M**
APPLICANT	**: SAMSUNG Electronics Co., Ltd.**

FCC Model(s):	GT-S6810M
EUT Type:	850/1900 GSM/GPRS/WCDMA Phone with Bluetooth(LE), 802.11b/g/n, NFC and EDGE Rx Only
RF Output Field Strength	-3.78 dBuV/m
Frequency of Operation:	13.559994 MHz
Modulation type	ASK
FCC Classification:	Low Power Communication Device – Transmitter
FCC Rule Part(s):	FCC Part 15.225 Subpart C

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

Report prepared by
: Jong Seok Lee
Test engineer of RF Team

Approved by
: Chang Seok Choi
Manager of RF Team

,Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1301FR14	January 22, 2013	- First Approval Report

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1. GENERAL INFORMATION

Applicant: SAMSUNG Electronics Co., Ltd.

Address: 129, Samsung-ro, Yeongtong-gu Suwon-si, Gyeonggi-do, 443-742 Rep. of Korea

FCC ID: A3LGTS6810M

EUT: 850/1900 GSM/GPRS/WCDMA Phone with Bluetooth(LE), 802.11b/g/n, NFC and EDGE Rx Only

Model name(s): GT-S6810M

Date of Test: January 18, 2013 ~ January 19, 2013

Place of Tests: HCT Co., Ltd.
105-1, Jangam-ri , Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, KOREA.
(IC Recognition No. : 5944A-3)

2. EUT DESCRIPTION

Product	850/1900 GSM/GPRS/WCDMA Phone with Bluetooth(LE), 802.11b/g/n, NFC and EDGE Rx Only
FCC Model Name	GT-S6810M
Power Supply	DC 3.7 V
Battery Type	Li-ion Battery(Standard)
Frequency of Operation	-3.78 dBuV/m
Transmit Power	13.559994 MHz
Modulation Type	ASK
Antenna Specification	Manufacturer: AMOTECH Co., Ltd. Antenna type: FPCB Antenna

3. TEST METHODOLOGY

The measurement procedure described in the American National Standard for Testing Unlicensed Wireless Devices(ANSI C63.10-2009).

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.225 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2009) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 6.3 of ANSI C63.10. (Version: 2009).

3.4 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

3.5 STANDARDS

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance With

FCC Part 15.Subpart C

Regulation	Measurement standard	Range
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.225(a)	ANSI C63.10:2009	13.553MHz to 13.567MHz
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.225(d)	ANSI C63.10:2009	outside of the 13.110-14.010 MHz band
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.209	ANSI C63.10:2009	9kHz to 30MHz
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.209	ANSI C63.10:2009	30MHz to 1GHz
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.207	ANSI C63.10:2009	150kHz to 30MHz
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.225(e)	ANSI C63.10:2009	0.01% of nominal
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.215(c)	ANSI C63.10:2009	-

4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipments, which is traceable to recognized national standards.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

The 10 m semi anechoic chamber used to collect the Conducted and Radiated 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)

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned loop, dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

* The antennas of this E.U.T are permanently attached.

*The E.U.T Complies with the requirement of §15.203

7. TEST SUMMARY

The results in this report apply only to sample tested

Regulation	Test Type	Range	Result
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.225(a)	Radiated Electric Field Emissions	13.553MHz to 13.567MHz	Pass
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.225(b)	Radiated Electric Field Emissions	13.410MHz to 13.553MHz and 13.567MHz to 13.710MHz	Pass
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.225(c)	Radiated Electric Field Emissions	13.110 MHz to 13.410 MHz and 13.710 MHz to 14.010 MHz	Pass
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.209 (d)	Radiated Electric Field Emissions	9kHz to 30MHz	Pass
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.209	Radiated Electric Field Emissions	30MHz to 1GHz	Pass
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.207	AC power conducted emissions	150kHz to 30MHz	Pass
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.225(e)	Frequency Stability	0.01% of nominal	Pass
Title 47 of the CFR:2009, Part 15 Subpart (c), Clause 15.215(c)	20 dB Bandwidth	-	Pass

8. RADIATED EMISSION MEASUREMENT

Requirement(s): 15.209, 15.225

Except as provided elsewhere in this paragraph the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Minimum Standard: FCC Part 15.225 / 15.209

Rule Part	Frequency (MHz)	Limit
Part 15.209	0.009 ~ 0.490	2400/F(kHz)uV/m@300
	0.490 ~1.705	24000/F(kHz)uV/m@30
	1.705 ~ 30	30 uV/m@30
	30 ~ 88	100 ** uV/m@3m
	88 ~ 216	150 ** uV/m@3m
	216 ~ 960	200 ** uV/m@3m
	Above 960	500 uV/m@3m

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

15.225 Operation within the band 13.110 – 14.010 MHz.

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter (= 84 dBuV/m) at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter (=50.5dBuV/m) at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter (=40.5 dBuV/m) at 30 meters.

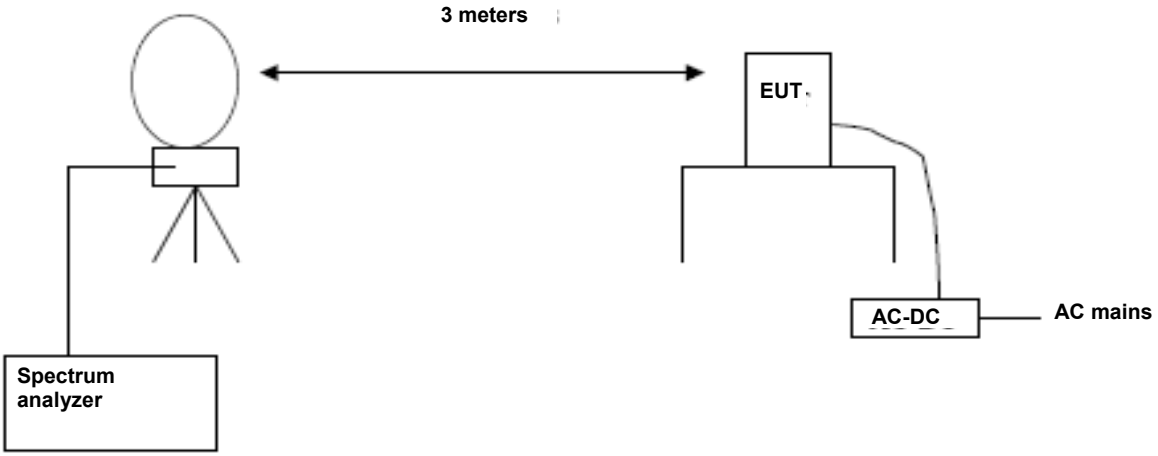
(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

(e) The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of –20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

(f) In the case of radio frequency powered tags designed to operate with a device authorized under this section, the tag may be approved with the device or be considered as a separate device subject to its own authorization. Powered tags approved with a device under a single application shall be labeled with the same identification number as the device.

8.1. RADIATED EMISSION 9 kHz – 30 MHz

Test Set-up



Test Procedure

The EUT was placed on a non-conductive table located on a large open test site.
The loop antenna was placed at a location 3m from the EUT. Radiated emissions were measured with the loop antenna both parallel and perpendicular to the plane of the EUT loop antenna.

The limit is converted from microvolts/meter to decibel microvolts/meter. Sample Calculation:

Corrected Amplitude = Raw Amplitude(dBμV/m) + ACF(dB) + Cable Loss(dB) – Distance Correction Factor

The spectrum analyzer is set to:
Frequency Range = 9 kHz ~ 1GHz

RBW = 9 kHz (9 kHz ~ 30MHz)
= 120 kHz (30 MHz ~ 1 GHz)

Trace Mode = max hold
Detector Mode = peak / Quasi-peak
Sweep time = auto

Test Results

13.553 MHz-13.567 MHz						
Frequency (MHz)	Read Level (dBuV)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.55994	26.50(H)*	9.72	-40	-3.78	84	87.78
13.55994	20.94(V)*	9.72	-40	-9.34	84	93.34

13.410 MHz-13.553 MHz and 13.567 MHz-13.710 MHz						
Frequency (MHz)	Read Level (dBuV)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.553	15.28	9.72	-40	-15.00	50.47	65.47
13.567	14.44	9.72	-40	-15.84	50.47	66.31

13.110 MHz – 13.410 MHz and 13.710 MHz-14.010 MHz						
Frequency (MHz)	Read Level (dBuV)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
13.2417	9.48	9.72	-40	-20.80	40.51	61.31
13.7715	11.06	9.72	-40	-19.22	40.51	59.73

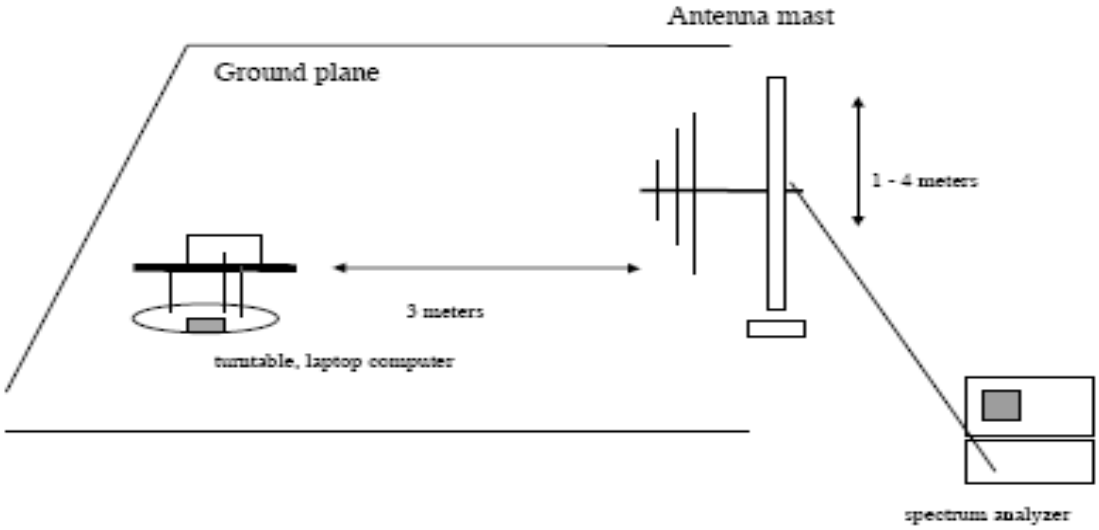
9 kHz -30 MHz						
Frequency (MHz)	Read Level (dBuV)@3m	Ant.Factor+Cable Loss (dB/m)	Distance Correction (dB)	Result Level (dBuV/m)@30m	Limit (dBuV/m)@30m	Margin (dB)
12.7163	12.06	9.90	-40	-18.04	29.54	47.58
29.6925	9.25	5.90	-40	-24.85	29.54	54.39

Note :

1. Distance Correction Below 30MHz = 40log(3m/30m) = - 40 dB
   Measurement Distance : 3 m (Below 30 MHz)
2. Factor = Antenna Factor + Cable Loss
3. Result Level = Read Level + Factor + Distance Correction
4. Margin = Limit – Result Level
5. (H)* and (V)* mean antenna polarization.

8.2. RADIATED EMISSION 30 MHz – 1000 MHz

Test Set-up



Test Procedures: Radiated emissions were measured according to ANSI C63.10.

The EUT was set to transmit at the highest output power.

The EUT was set 3 meter away from the measuring antenna.

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dBμV	dB /m	dB	(H/V)	dBμV/m	dBμV/m	dB
34.31	22.73	11.25	0.81	H	34.79	40.0	5.21
148.14	21.96	12.25	1.46	V	35.67	43.5	7.83
970.47	13.01	25.75	4.54	H	43.30	46.5	3.20

Remark

1. Result Level = Read Level + (Antenna Factor+ Cable Loss)
2. Margin = Limit – Result Level

9. EMISSION BANDWIDTH PLOT.

Requirement(s):

Test Set-up: The EUT was connected to a spectrum analyzer.

Test Procedure: The 20 dB bandwidth was measured by using a spectrum analyzer.

10. FREQUENCY TOLERANCE

Procedure: Part 15.225, ANSI 63.10

If required, the operating or transmitting frequency of an intentional radiator should be measured in accordance with the following procedure to ensure that the device operates outside certain precluded frequency bands and within the frequency range. No modulation needs to be supplied to the intentional radiator during these tests, unless modulation is required to produce an output, e.g., single-sideband suppressed carrier transmitters.

The frequency stability of the transmitter is measured by:

a) Temperature: The temperature is varied from -20°C to + 50°C using an environmental chamber.

b) For battery operated equipment, the equipment tests shall be performed using a new battery.

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency.

Measurement Result:

VOLTAGE (%)	POWER	Temperature (°C)	Frequency (MHz)	Frequency Error (Hz)
100%	3.7 V	-20	13.560261	267
100%		-10	13.560135	141
100%		0	13.560160	166
100%		10	13.560290	296
100%		20	13.559994	0
100%		30	13.560348	354
100%		40	13.560100	106
100%		50	13.560129	135

Notes:

1. The EUT is supplied with the fully re-charged battery.

11. POWERLINE CONDUCTE EMISSIONS

LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolt (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

Test Plots

Unterminate the Antenna

Conducted Emissions (Line 1)

HCT

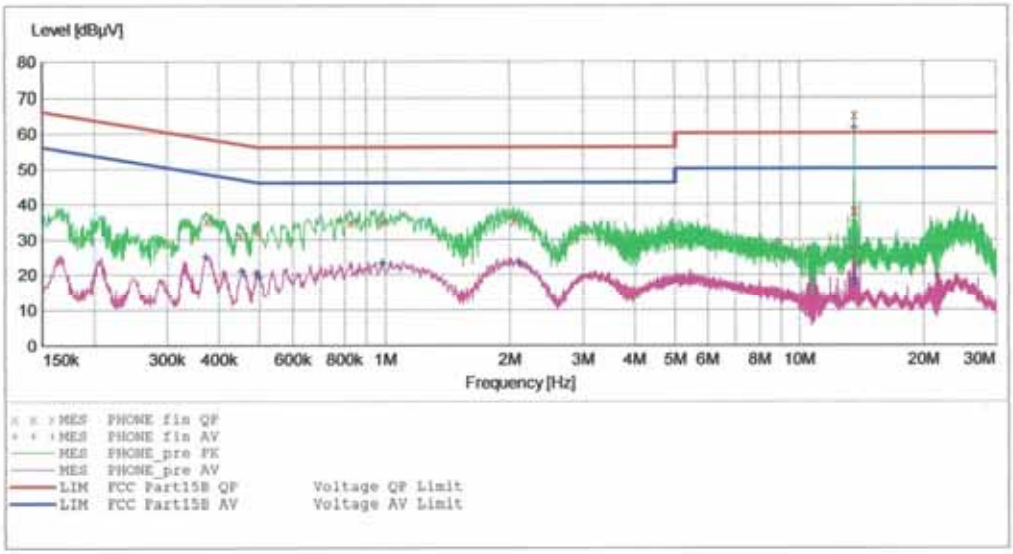
EMC

```
EUT:                  GT-S6810M
Manufacturer:         SAMSUNG
Operating Condition:  NFC MODE
Test Site:            SHIELD ROOM
Operator:             JS LEE
Test Specification:   FCC PART 15 B
Comment:              H(Unterminated)
```

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"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.373010	35.20	9.8	58	23.2	---	---
0.449010	31.10	9.8	57	25.8	---	---
0.495010	32.30	9.8	56	23.8	---	---
0.824000	34.80	9.8	56	21.2	---	---
0.988000	35.00	9.8	56	21.0	---	---
2.044000	35.40	9.9	56	20.6	---	---
13.528000	37.90	10.8	60	22.1	---	---
13.560000	65.00	10.8	60	-5.0	---	---
13.580000	38.10	10.8	60	21.9	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.371010	25.00	9.8	49	23.4	---	---
0.454010	21.00	9.8	47	25.8	---	---
0.493010	20.50	9.8	46	25.6	---	---
0.500000	19.20	9.8	46	26.8	---	---
0.988000	23.30	9.8	46	22.7	---	---
2.108000	23.50	9.9	46	22.5	---	---
13.528000	18.80	10.8	50	31.2	---	---
13.560000	61.40	10.8	50	-11.4	---	---
13.580000	17.30	10.8	50	32.7	---	---

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Conducted Emissions (Line 2)

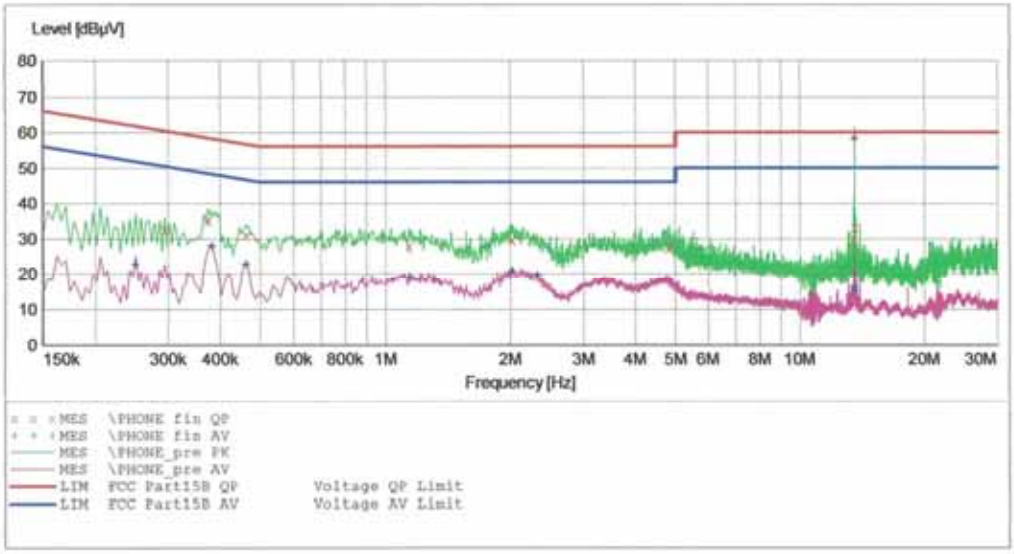
HCT

EMC

```
EUT:                    GT-S6810M
Manufacturer:           SAMSUNG
Operating Condition:    NFC MODE
Test Site:              SHIELD ROOM
Operator:               JS LEE
Test Specification:     FCC PART 15 CLASS B
Comment:                N(Unterminated)
```

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

```
  Short Description:                FCC PART 15 CLASS B
  Start       Stop        Step      Detector  Meas.     IF       Transducer
  Frequency   Frequency   Width               Time      Bandw.
  150.0 kHz   500.0 kHz   4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
  500.0 kHz   5.0 MHz     4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
  5.0 MHz     30.0 MHz    4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
```



MEASUREMENT RESULT: "\PHONE_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.294010	32.60	9.9	60	27.8	---	---
0.374010	35.20	10.0	58	23.2	---	---
0.462010	31.00	10.0	57	25.6	---	---
1.140000	27.70	10.0	56	28.3	---	---
2.024000	29.70	10.1	56	26.3	---	---
4.824000	27.50	10.4	56	28.5	---	---
13.480000	30.00	11.1	60	30.0	---	---
13.560000	59.50	11.1	60	0.5	---	---
13.580000	33.20	11.1	60	26.8	---	---

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MEASUREMENT RESULT: "\PHONE_fin AV"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.250010	22.60	10.0	52	29.1	---	---
0.382010	27.80	10.0	48	20.4	---	---
0.462010	22.60	10.0	47	24.0	---	---
1.148000	18.90	10.0	46	27.1	---	---
2.024000	20.60	10.1	46	25.4	---	---
2.328000	19.70	10.2	46	26.3	---	---
13.532000	16.40	11.1	50	33.6	---	---
13.560000	58.00	11.1	50	-8.0	---	---
13.580000	15.20	11.1	50	34.8	---	---

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Terminate the Antenna

Conducted Emissions (Line 1)

HCT

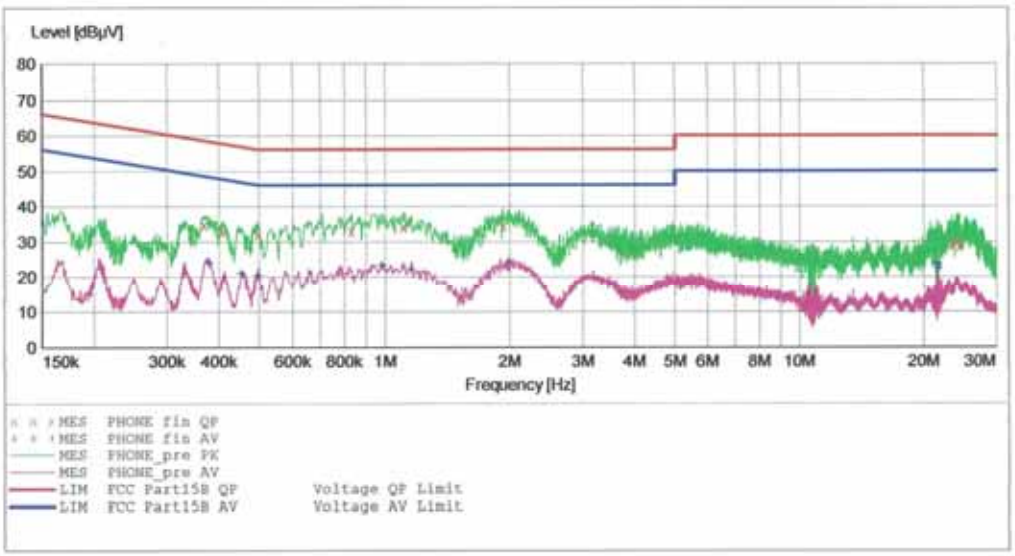
EMC

```
EUT:                    GT-S6810M
Manufacturer:           SAMSUNG
Operating Condition:    NFC MODE
Test Site:              SHIELD ROOM
Operator:               JS LEE
Test Specification:     FCC PART 15 B
Comment:                H(Terminated)
```

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"

1/19/2013 1:49AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.368010	34.80	9.8	59	23.7	---	---
0.408010	32.80	9.8	58	24.8	---	---
0.495010	32.20	9.8	56	23.9	---	---
0.832000	33.10	9.8	56	22.9	---	---
1.108000	34.20	9.8	56	21.8	---	---
1.928000	34.50	9.9	56	21.5	---	---
23.408000	29.10	11.9	60	30.9	---	---
24.172000	30.00	11.9	60	30.0	---	---
24.424000	28.70	12.0	60	31.3	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

1/19/2013 1:49AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.379010	24.00	9.8	48	24.3	---	---
0.453010	21.00	9.8	47	25.8	---	---
0.497010	20.30	9.8	46	25.7	---	---
0.988000	23.30	9.8	46	22.7	---	---
1.160000	22.30	9.8	46	23.7	---	---
1.984000	24.10	9.9	46	21.9	---	---
21.504000	23.20	11.8	50	26.8	---	---
21.544000	23.70	11.8	50	26.3	---	---
21.584000	22.30	11.8	50	27.7	---	---

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Conducted Emissions (Line 2)

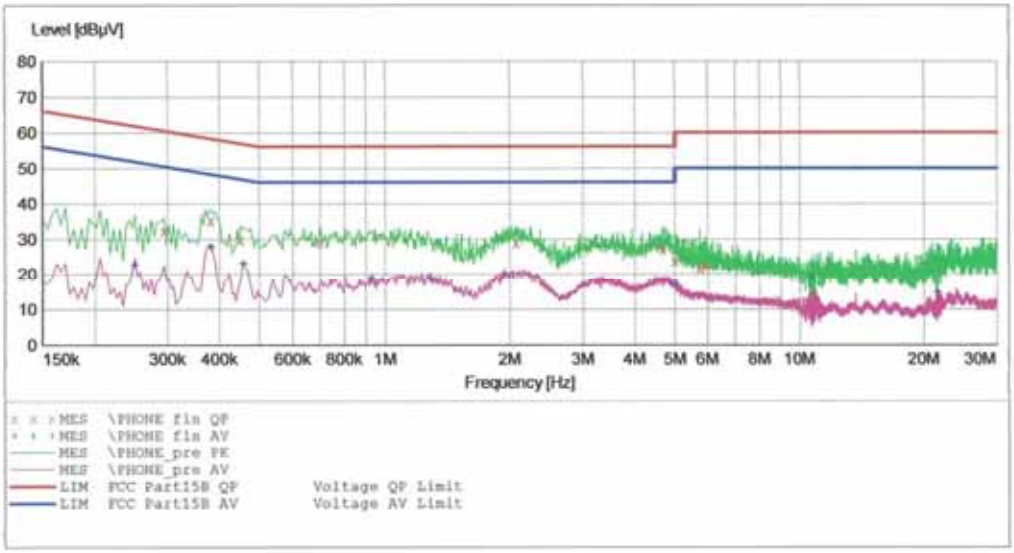
HCT

EMC

```
EUT:                    GT-S6810M
Manufacturer:           SAMSUNG
Operating Condition:    NFC MODE
Test Site:              SHIELD ROOM
Operator:               JS LEE
Test Specification:     FCC PART 15 CLASS B
Comment:                N(Terminated)
```

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

```
  Short Description:          FCC PART 15 CLASS B
  Start      Stop       Step      Detector  Meas.     IF       Transducer
  Frequency  Frequency  Width               Time      Bandw.
  150.0 kHz  500.0 kHz  4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                  Average
  500.0 kHz  5.0 MHz    4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                  Average
  5.0 MHz    30.0 MHz   4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                  Average
```



MEASUREMENT RESULT: "\PHONE_fin QP"

1/19/2013 1:53AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.294010	32.30	9.9	60	28.1	---	---
0.382010	35.30	10.0	58	23.0	---	---
0.450010	29.80	10.0	57	27.0	---	---
0.700000	28.90	10.0	56	27.1	---	---
2.072000	29.00	10.1	56	27.0	---	---
4.676000	27.00	10.4	56	29.0	---	---
5.008000	23.80	10.4	60	36.2	---	---
5.756000	21.80	10.4	60	38.2	---	---
5.928000	22.40	10.4	60	37.6	---	---

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MEASUREMENT RESULT: "\PHONE_fin AV"

1/19/2013 1:53AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.250010	22.70	10.0	52	29.1	---	---
0.382010	27.80	10.0	48	20.4	---	---
0.458010	22.90	10.0	47	23.8	---	---
0.932000	18.80	10.0	46	27.2	---	---
1.288000	18.70	10.0	46	27.3	---	---
1.944000	20.00	10.1	46	26.0	---	---
5.000000	17.20	10.4	46	28.8	---	---
10.752000	19.10	10.8	50	30.9	---	---
21.500000	14.80	12.2	50	35.2	---	---

12. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ENV216/ LISN	Annual	02/09/2013	100073
Schwarzbeck	VULB 9168/ TRILOG Antenna	Biennial	02/09/2013	200
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	05/03/2013	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	05/02/2013	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	07/31/2013	MY51110020
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	10/17/2013	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/09/2013	839117/011
Agilent	E4416A /Power Meter	Annual	11/07/2013	GB41291412
Agilent	E9327A /POWER SENSOR	Annual	05/02/2013	MY4442009
Hewlett Packard	11636B/Power Divider	Annual	11/07/2013	11377
Hewlett Packard	11667B / Power Splitter	Annual	06/05/2013	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	11/07/2013	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/07/2013	010002156287001199
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
Agilent	8493C / Attenuator(10 dB)	Annual	07/30/2013	76649