



FCC CFR47 PART 24 SUBPART E

CERTIFICATION TEST REPORT

FOR

GSM 1900 Phone + Bluetooth

MODEL NUMBER: SM-B510S; SM-B510K

FCC ID: A3LSMB510

REPORT NUMBER: 14I17245-1, Revision A

ISSUE DATE: March 17, 2014

Prepared for

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

Prepared by

**UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888**



NVLAP LAB CODE 200065-0

Revision History

Issue			
Rev.	Date	Revisions	Revised By
--	3/12/14	Initial Issue	P. Kim
A	3/17/14	Antenna Gain Date Inserted on Page 8. Removed Part 22H from Page 6 (Section 2)	P. Kim

TABLE OF CONTENTS

1.	ATTESTATION OF TEST RESULTS	5
2.	TEST METHODOLOGY	6
3.	FACILITIES AND ACCREDITATION	6
4.	CALIBRATION AND UNCERTAINTY	6
4.1.	MEASURING INSTRUMENT CALIBRATION	6
4.2.	SAMPLE CALCULATION.....	6
4.3.	MEASUREMENT UNCERTAINTY	6
5.	EQUIPMENT UNDER TEST	7
5.1.	DESCRIPTION OF EUT.....	7
5.2.	MAXIMUM OUTPUT POWER.....	7
5.3.	DESCRIPTION OF AVAILABLE ANTENNAS	8
5.4.	DESCRIPTION OF TEST SETUP.....	9
6.	TEST AND MEASUREMENT EQUIPMENT.....	12
7.	Summary Table	13
8.	RF POWER OUTPUT VERIFICATION.....	14
8.1.	GSM/GPRS/EDGE	14
9.	LIMITS AND CONDUCTED RESULTS.....	16
9.1.	OCCUPIED BANDWIDTH.....	16
9.1.1.	OCCUPIED BANDWIDTH RESULTS	16
9.1.1.	OCCUPIED BANDWIDTH PLOTS	17
9.2.	BAND EDGE EMISSIONS	19
9.2.1.	BAND EDGE PLOTS	19
9.3.	OUT OF BAND EMISSIONS	21
9.3.1.	OUT OF BAND EMISSIONS RESULT.....	22
9.3.2.	OUT OF BAND EMISSIONS PLOTS	23
9.4.	FREQUENCY STABILITY.....	24
9.4.1.	FREQUENCY STABILITY RESULTS	25
10.	RADIATED TEST RESULTS.....	26
10.1.	RADIATED POWER (ERP & EIRP).....	26
10.1.1.	ERP/EIRP Results	26

10.1.2.	ERP/EIRP DATA	27
10.2.	<i>FIELD STRENGTH OF SPURIOUS RADIATION</i>	28
10.2.1.	SPURIOUS RADIATION PLOTS.....	29
11.	SETUP PHOTOS	30

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM 1900 Phone + Bluetooth

MODEL: SM-B510S; SM-B510K

SERIAL NUMBER: FL-087-A (Radiated)

DATE TESTED: MARCH 6-11, 2014

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 24E	PASS

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report. **Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For

UL Verification Services Inc. By:

Tested By:



PHILIP KIM

STEVEN TRAN

CONSUMER TECHNOLOGY DIVISION
PROGRAM MANAGER
UL VERIFICATION SERVICES INC.

CONSUMER TECHNOLOGY DIVISION
LAB TECHNICIAN
UL VERIFICATION SERVICES INC.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR Part 24 .

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ul.com>

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM Phone with Bluetooth capability that is manufactured by Samsung Electronics

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted and radiated ERP / EIRP output powers as follows:

FCC Part 22/2.4/27						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			Peak (dBm)	Peak (mW)	Peak (dBm)	Peak (mW)
GSM1900	1850~1910	GMSK	29.9	977.24		
	1850~1910	GPRS	29.9	977.24	29.23	837.53

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna for the [List the bands supported] with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
GSM1900, 1850~1910MHz	3.93

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	SM-B510	N/A	N/A
Earphone	Samsung	N/A	N/A	N/A

I/O CABLES (CONDUCTED SETUP)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	RF Out	1	Spectrum Analyzer	Shielded	None	NA
2	Antenna Port	1	EUT	Shielded	0.1m	NA
3	RF In/Out	1	Communication Test Set	Shielded	1m	NA

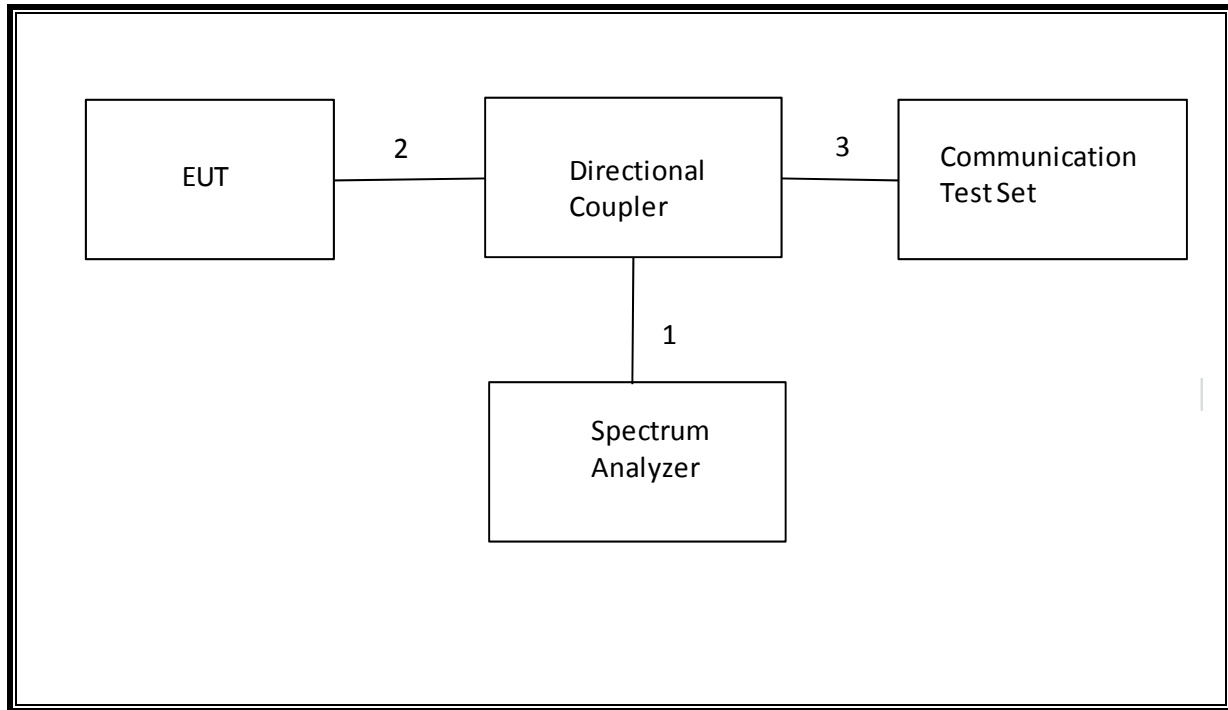
I/O CABLES (RADIATED SETUP)

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	USB	1	AC Adapter	Un-shielded	1.2m	No
2	Jack	1	Headset	Shielded	1m	No
3	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

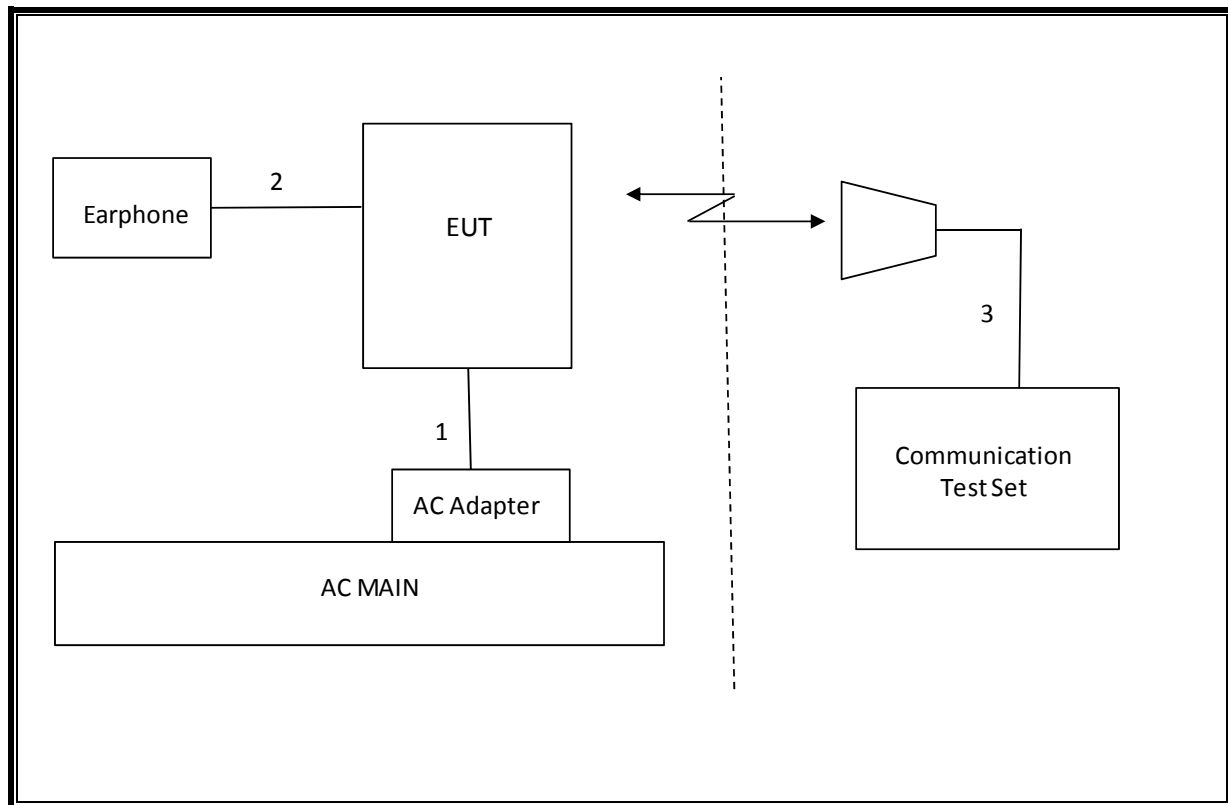
TEST SETUP

The EUT is continuously communicated to the call box during the tests.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01179	02/26/15
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	08/14/14
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/14
Antenna, Horn, 18 GHz	EMCO	3115	C00784	09/25/14
Antenna, Horn, 18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/14
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02688	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	01/09/15
Communications Test Set	R&S	CMW500	T159	07/02/14
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	None	07/06/14
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121C DB4	C00993	02/14/15
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR

7. Summary Table

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Note
2.1049	N/A	Occupied Band width (99%)	N/A	Conducted	Pass	246.8KHz
22.917(a) 24.238(a) 27.53(g) 90.691	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Pass	-34.01dBm
2.1046	N/A	Conducted output power	N/A		Pass	29.9dBm
22.355 24.235 27.54 90.213	RSS-132(4.3) RSS-133(6.3) RSS-139(6.3) RSS-199(4.3)	Frequency Stability	2.5PPM		Pass	0.002PPM
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm	Radiated	Pass	29.23
22.917(a) 24.238(a) 27.53(g)	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Radiated Spurious Emission	-13dBm		Pass	-36.5dBm

8. RF POWER OUTPUT VERIFICATION

8.1. GSM/GPRS/EDGE

Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press Connection control to choose the different menus

Press RESET > choose all to reset all settings

Connection Press Signal Off to turn off the signal and change settings

Network Support > GSM+GPRS or GSM+EGPRS

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal Press Slot Config bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850/900

> 30 dBm for GPRS1800/1900

BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0> 4 dB

Slot Config > Unchanged (if already set under MS Signal)

TCH > choose desired test channel

Hopping > Off

Main Timeslot > 3 (Default)

Network Coding Scheme > CS4 (GPRS) and MCS5 ~ MCS9 (EGPRS)

Bit Stream > 2E9-1PSR Bit Pattern

AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection Press Signal On to turn on the signal and change settings

Band	Mode	Ch.	f(MHz)	1 time slot	2 time slot	3 time slot	4 time slot
				Peak (dBm)	Peak (dBm)	Peak (dBm)	Peak (dBm)
GSM1900	GMSK	512	1850.2	29.9			
		661	1880	29.7			
		810	1909.8	29.6			
	GPRS	512	1850.2	29.9	28.9	25.4	24.4
		661	1880	29.7	28.7	25.2	24.2
		810	1909.8	29.6	28.5	25.1	24.0

9. LIMITS AND CONDUCTED RESULTS

9.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

IC: RSS-132, 4.5; RSS-133, 6.5

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

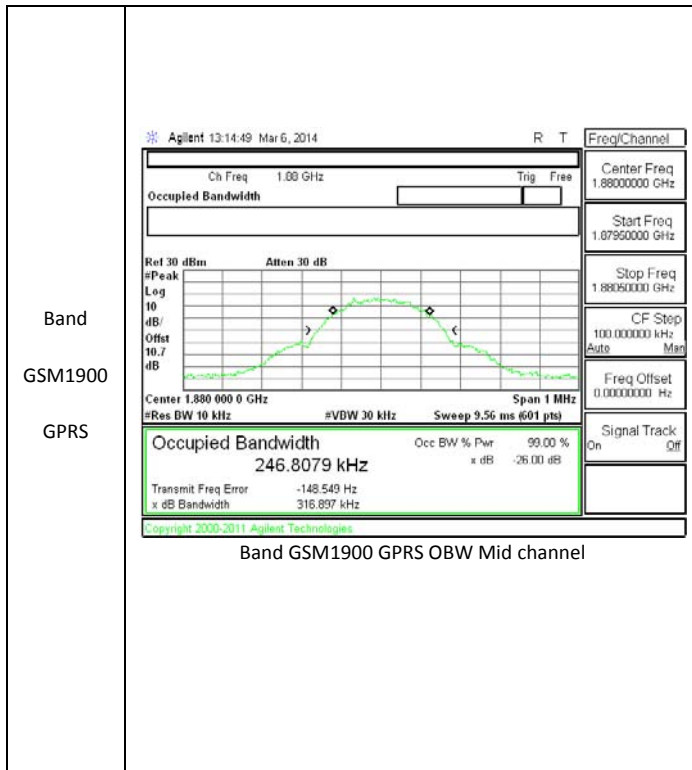
(KDB 971168 D01 Power Meas License Digital Systems v02r01 - 06/07/2013)

MODES TESTED

GSM1900

9.1.1. OCCUPIED BANDWIDTH RESULTS

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
GSM1900	GPRS	512	1850.2	244.8	321.7
		661	1880	246.8	316.9
		810	1909.8	242.2	326

9.1.1. OCCUPIED BANDWIDTH PLOTS



9.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §24.238

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

SOP

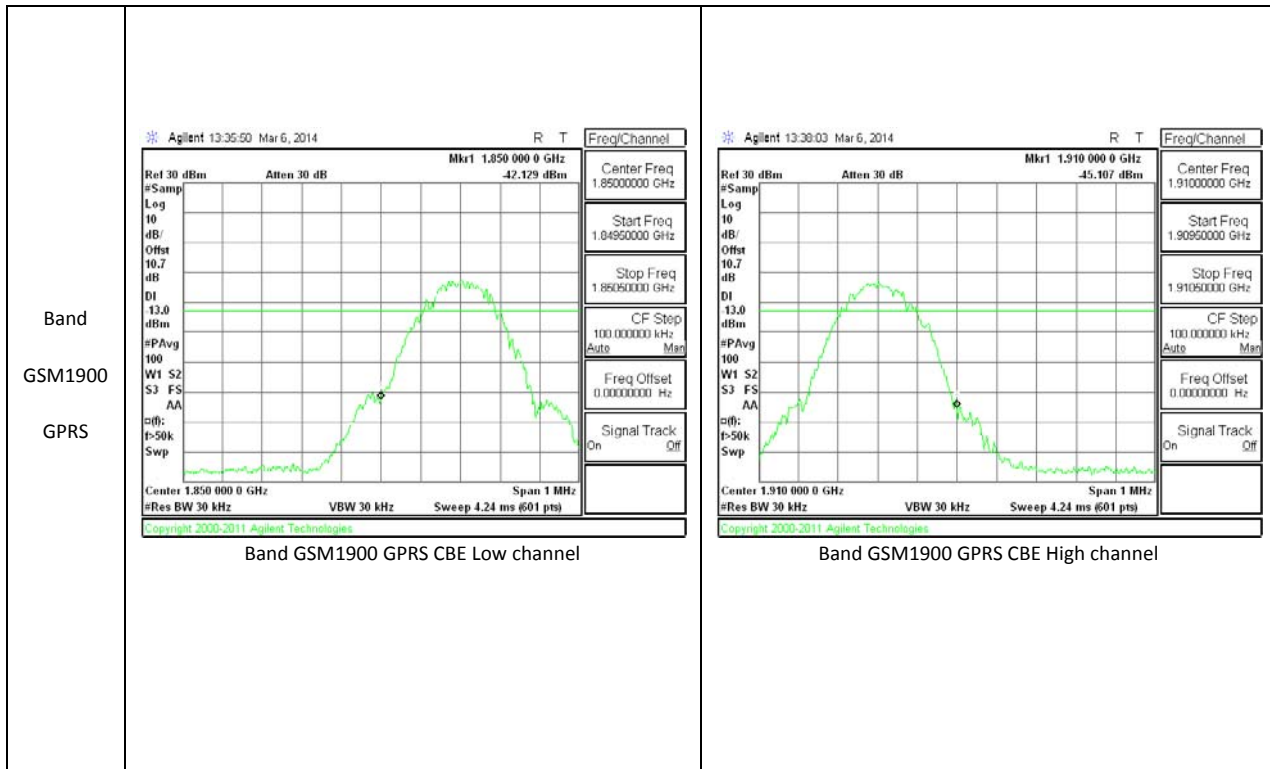
For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency (824, 849, 1850, 1910 and 1915MHz)
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm.
- Set resolution bandwidth to at least 1% of emission bandwidth.
- (m)(6) Compliance with these rules is based on the user of measurement instrumentation employing a resolution bandwidth of 1MHz or greater. However, in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 1 percent of the emission bandwidth may be employed.

MODES TESTED

GSM1900

9.2.1.BAND EDGE PLOTS



9.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051§24.238

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

SOP

For each out of band emissions measurement:

- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

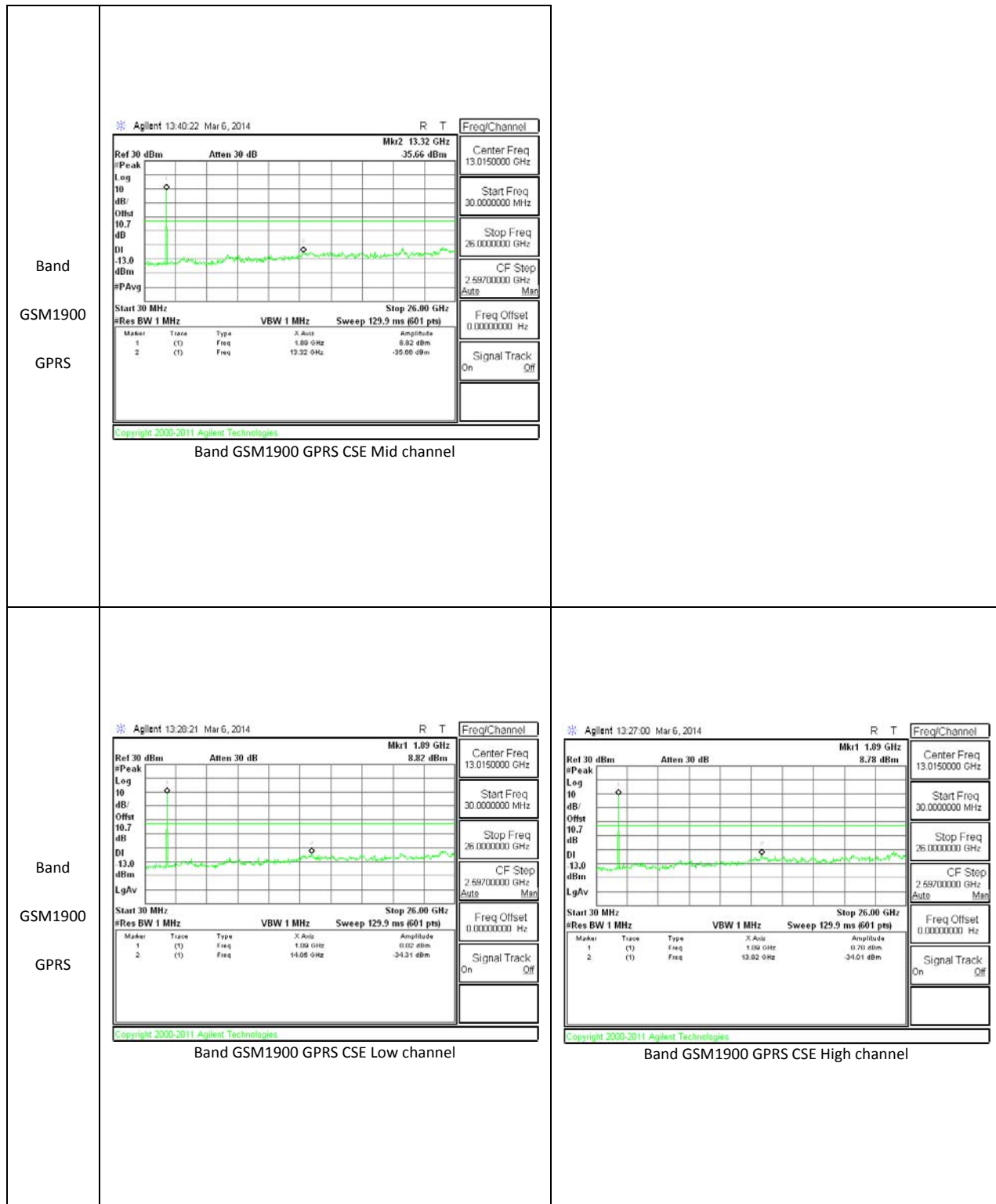
MODES TESTED

GSM 1900

RESULTS

9.3.1. OUT OF BAND EMISSIONS RESULT

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM1900	GPRS	1850.2	-34.31	-13	-21.31
		1880	-35.66	-13	-22.66
		1909.8	-34.01	-13	-21.01

9.3.2. OUT OF BAND EMISSIONS PLOTS

9.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055§24.235

LIMITS

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

SOP

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50°C is reached. Reference power supply voltage for these tests is 3.7Vdc.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case). The test voltage ranges from 3.30 to 4.2 VDC.

MODES TESTED

GSM 1900

RESULTS

See the following pages.

9.4.1. FREQUENCY STABILITY RESULTS**GPRS 1900, Channel 661 Freq: 1880MHz– MID CHANNEL**

Reference Frequency: PCS Mid Channel 1880MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1879.999989	0.002	2.5
3.70	40	1879.999992	0.001	2.5
3.70	30	1879.999992	0.001	2.5
3.70	20	1879.999993	0	2.5
3.70	10	1879.999994	-0.001	2.5
3.70	0	1879.999991	0.001	2.5
3.70	-10	1879.999995	-0.001	2.5
3.70	-20	1879.999994	-0.001	2.5
3.70	-30	1879.999993	0.000	2.5

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1879.999993	0	2.5
4.20	20	1879.999992	0.001	2.5
3.30	20	1879.999995	-0.001	2.5

10. RADIATED TEST RESULTS

10.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046§24.232

LIMITS

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

MODES TESTED

GSM1900

TEST RESULTS

10.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	29.02	797.99
		661	1880	29.23	837.53
		810	1909.8	28.478	704.37

10.1.2. ERP/EIRP DATA

Band GSM1900 GPRS	High Frequency Fundamental Measurement Compliance Certification Services Chamber B																																																																																										
	Company: Samsung																																																																																										
	Project #: 14I17245																																																																																										
	Date: 03/11/14																																																																																										
	Test Engineer: R. Alegre																																																																																										
	Configuration: EUT only, x position																																																																																										
	Mode: GPRS_1900																																																																																										
	Test Equipment:																																																																																										
	Receiving: Horn T345, and Chamber B SMA Cables																																																																																										
	Substitution: Horn T59 Substitution, 4ft SMA Cable (244639001) Warehouse																																																																																										
	<table border="1"> <thead> <tr> <th>f GHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1.8502</td> <td>20.0</td> <td>V</td> <td>0.85</td> <td>5.58</td> <td>24.71</td> <td>33.0</td> <td>-8.3</td> <td></td> </tr> <tr> <td>1.8502</td> <td>24.3</td> <td>H</td> <td>0.85</td> <td>5.58</td> <td>29.02</td> <td>33.0</td> <td>-4.0</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1.8800</td> <td>21.5</td> <td>V</td> <td>0.85</td> <td>5.60</td> <td>26.21</td> <td>33.0</td> <td>-6.8</td> <td></td> </tr> <tr> <td>1.8800</td> <td>24.5</td> <td>H</td> <td>0.85</td> <td>5.60</td> <td>29.23</td> <td>33.0</td> <td>-3.8</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1.9098</td> <td>17.6</td> <td>V</td> <td>0.85</td> <td>5.63</td> <td>22.38</td> <td>33.0</td> <td>-10.6</td> <td></td> </tr> <tr> <td>1.9098</td> <td>23.7</td> <td>H</td> <td>0.85</td> <td>5.63</td> <td>28.48</td> <td>33.0</td> <td>-4.5</td> <td></td> </tr> </tbody> </table>	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1.8502	20.0	V	0.85	5.58	24.71	33.0	-8.3		1.8502	24.3	H	0.85	5.58	29.02	33.0	-4.0		Mid Ch									1.8800	21.5	V	0.85	5.60	26.21	33.0	-6.8		1.8800	24.5	H	0.85	5.60	29.23	33.0	-3.8		High Ch									1.9098	17.6	V	0.85	5.63	22.38	33.0	-10.6		1.9098	23.7	H	0.85	5.63	28.48	33.0	-4.5	
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																			
Low Ch																																																																																											
1.8502	20.0	V	0.85	5.58	24.71	33.0	-8.3																																																																																				
1.8502	24.3	H	0.85	5.58	29.02	33.0	-4.0																																																																																				
Mid Ch																																																																																											
1.8800	21.5	V	0.85	5.60	26.21	33.0	-6.8																																																																																				
1.8800	24.5	H	0.85	5.60	29.23	33.0	-3.8																																																																																				
High Ch																																																																																											
1.9098	17.6	V	0.85	5.63	22.38	33.0	-10.6																																																																																				
1.9098	23.7	H	0.85	5.63	28.48	33.0	-4.5																																																																																				
Rev. 3.17.11																																																																																											

10.2. FIELD STRENGTH OF SPURIOUS RADIATION**RULE PART(S)**

FCC: §2.1053§24.238

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

MODES TESTED

GSM1900

RESULTS

10.2.1. SPURIOUS RADIATION PLOTS

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		14I17245							
Date:		03/11/14							
Test Engineer:		R. Alegre							
Configuration:		EUT w/ AC Adapter, x position							
Mode:		GPRS 1900							
Chamber		Pre-amplifier		Filter		Limit			
5m Chamber B		T343 8449B		Filter 1		Part 24			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz									
3.700	-9.9	V	3.0	35.4	1.0	-44.3	-13.0	-31.3	
5.550	-2.8	V	3.0	34.7	1.0	-36.5	-13.0	-23.5	
7.400	-13.3	V	3.0	34.9	1.0	-47.2	-13.0	-34.2	
3.700	-13.9	H	3.0	35.4	1.0	-48.3	-13.0	-35.3	
5.550	-9.7	H	3.0	34.7	1.0	-43.4	-13.0	-30.4	
7.400	-12.4	H	3.0	34.9	1.0	-46.3	-13.0	-33.3	
Mid Ch, 1880.0MHz									
3.760	-16.8	V	3.0	35.3	1.0	-51.2	-13.0	-38.2	
5.640	-13.3	V	3.0	34.7	1.0	-47.1	-13.0	-34.1	
7.520	-12.9	V	3.0	34.9	1.0	-46.8	-13.0	-33.8	
3.760	-12.1	H	3.0	35.3	1.0	-46.4	-13.0	-33.4	
5.640	-13.2	H	3.0	34.7	1.0	-46.9	-13.0	-33.9	
7.520	-13.3	H	3.0	34.9	1.0	-47.2	-13.0	-34.2	
High Ch, 1909.8 MHz									
3.820	-20.6	V	3.0	35.3	1.0	-54.9	-13.0	-41.9	
5.729	-9.7	V	3.0	34.7	1.0	-43.4	-13.0	-30.4	
7.640	-13.7	V	3.0	35.0	1.0	-47.6	-13.0	-34.6	
3.820	-15.7	H	3.0	35.3	1.0	-50.0	-13.0	-37.0	
5.729	-13.7	H	3.0	34.7	1.0	-47.4	-13.0	-34.4	
7.640	-12.2	H	3.0	35.0	1.0	-46.1	-13.0	-33.1	
Rev. 03.03.09									