

## Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Report No: CCIS15010006401

# **FCC REPORT**

Applicant: Interglobe Connection Corp

Address of Applicant: 7500 NW 25<sup>th</sup> Street 112 Miami, Florida 33122 USA

**Equipment Under Test (EUT)** 

Product Name: MOBILE PHONE

Model No.: SOLE-R150

Trade mark: SOLE

FCC ID: 2AC7ISOLE-R150

FCC CFR Title 47 Part 2

Applicable standards: FCC CFR Title 47 Part22 Subpart H

FCC CFR Title 47 Part24 Subpart E

Date of sample receipt: 23 Jan., 2015

**Date of Test:** 23 Jan., to 07 Feb., 2015

Date of report issued: 08 Feb., 2015

Test Result: PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

#### Authorized Signature:



Bruce Zhang Laboratory Manager

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 and does not permit the use of the CCIS product certification mark. 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.

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## 2. Version

Version No.	Date	Description
00	08 Feb., 2015	Original

Prepared by: Date: 08 Feb., 2015

Report Clerk

Reviewed by: Date: 08 Feb., 2015

Project Engineer





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4. Test Summary

Test Item	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	Passed* (Please refer to SAR Report)
RF Output Power	Part 2.1046 Part 22.913 (a)(2) Part 24.232 (c)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 22.917 Part 24.238	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 22.917 (a) Part 24.238 (a)	Pass
Field Strength of Spurious Radiation	Part 2.1053 Part 22.917 (a) Part 24.238 (a)	Pass
Out of band emission, Band Edge	Part 22.917 (a) Part 24.238 (a)	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b)	Pass
Frequency stability vs. voltage	Part 2.1055(d)(1)(2)	Pass

Pass: The EUT complies with the essential requirements in the standard.



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## 5. General Information

## 5.1 Client Information

Applicant:	Interglobe Connection Corp
Address of Applicant:	7500 NW 25 <sup>th</sup> Street 112 Miami, Florida 33122 USA

## 5.2 General Description of E.U.T.

Product Name:	MOBILE PHONE
Model No.:	SOLE-R15
Operation Frequency range:	GSM 850: 824.20MHz-848.80MHz PCS1900: 1850.20MHz-1909.80MHz
Modulation type:	GSM/GPRS:GMSK
Antenna type:	Integral Antenna
Antenna gain:	GSM 850: 1.1 dBi PCS 1900: 1.1 dBi
AC adapter:	Input:100-240V AC,50/60Hz 0.15A Output:5.0V DC MAX 500mA
Power supply:	Rechargeable Li-ion Battery DC3.7V-500mAh





**Operation Frequency List:** 

Operation Frequency List.					
GSI	M 850	PCS1900			
Channel:	Frequency (MHz)	Channel:	Frequency (MHz)		
128	824.20	512	1850.20		
129	824.40	513	1850.40		
189	836.40	660	1879.80		
190	836.60	661	1880.00		
191	836.80	662	1880.20		
250	848.60	809	1909.60		
251	848.80	810	1909.80		





Regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

GSM850				PCS1900	
Channel Frequency(MHz)				Channel	Frequency(MHz)
Lowest channel	128	824.20	Lowest channel	512	1850.20
Middle channel	190	836.60	Middle channel	661	1880.00
Highest channel	251	848.80	Highest channel	810	1909.80

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#### 5.3 Test modes

Communicate mode (GSM850)	Keep the EUT in communicating mode on GSM 850 band.
Data mode (GPRS850)	Keep the EUT in data communicating mode on GPRS 850 band.
Communicate mode (PCS1900)	Keep the EUT in communicating mode on PCS1900 band.
Data mode (GPRS1900)	Keep the EUT in data communicating mode on GPRS1900 band.
Remark :	Pre-test output power of all modes, and found GSM 850, PCS
Remark.	1900 were the worst case. The details please refer to section 6.5.

## 5.4 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is filing to comply with Section Part 22 subpart H and Part 24 subpart E of the FCC CFR 47 Rules.

## 5.5 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on TIA/EIA 603 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

### 5.6 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### • FCC - Registration No.: 817957

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

#### • IC - Registration No.: 10106A-1

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

#### • CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

## 5.7 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282 Fax: +86-755-23116366

#### 5.8 Test Instruments list

Radia	Radiated Emission:							
Item	Test Equipment Manufacturer Model No.		Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)			
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017		
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	04-19-2014	04-19-2015		
3	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	04-19-2014	04-19-2015		
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		
5	Coaxial Cable	CCIS	N/A	CCIS0016	04-01-2014	03-31-2015		
6	Coaxial Cable	CCIS	N/A	CCIS0017	04-01-2014	03-31-2015		

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

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Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366





7	Coaxial cable	CCIS	N/A	CCIS0018	04-01-2014	03-31-2015
8	Coaxial Cable	CCIS	N/A	CCIS0019	04-01-2014	03-31-2015
9	Coaxial Cable	CCIS	N/A	CCIS0087	04-01-2014	03-31-2015
10	Amplifier(10kHz- 1.3GHz)	HP	8447D	CCIS0003	04-01-2014	03-31-2015
11	Amplifier(1GHz- 18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	06-09-2014	06-08-2015
12	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	04-01-2014	03-31-2015
13	Horn Antenna	ETS-LINDGREN	3160	GTS217	03-30-2014	03-29-2015
14	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
15	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
16	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP 30	CCIS0023	04-19-2014	04-19-2015
17	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	04-01-2014	03-31-2015
18	Loop antenna	Laplace instrument	RF300	EMC0701	04-01-2014	03-31-2015
19	Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	05-29-2014	05-28-2015
20	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	04-19-2014	04-19-2015



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## 6. System test configuration

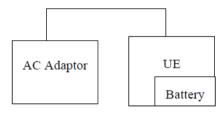
## 6.1 EUT Configuration

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

### 6.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency which was for the purpose of the measurements.

## 6.3 Configuration of Tested System



#### Remote Side



## 6.4 Description of Test Modes

The EUT has been tested under operating condition.

EUT staying in continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for three modes (GSM850, PCS1900 with power adaptor, earphone and Data cable. The worst-case H mode for GSM850, PCS1900.





## **6.5 Conducted Output Power**

Test Requirement:	FCC part 22.913(a) and FCC part 24.232(b)				
Test Method:	FCC part 2.1046				
Limit:	GSM 850 7W PCS 1900 2W				
Test setup:	EUT  ATT  Communication  Tester  Note: Measurement setup for testing on Antenna connector				
Test Procedure:	The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the CMU200. Transmitter output power was read off in dBm.				
Test Instruments:	Refer to section 5.8 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Passed				

Measurement Data



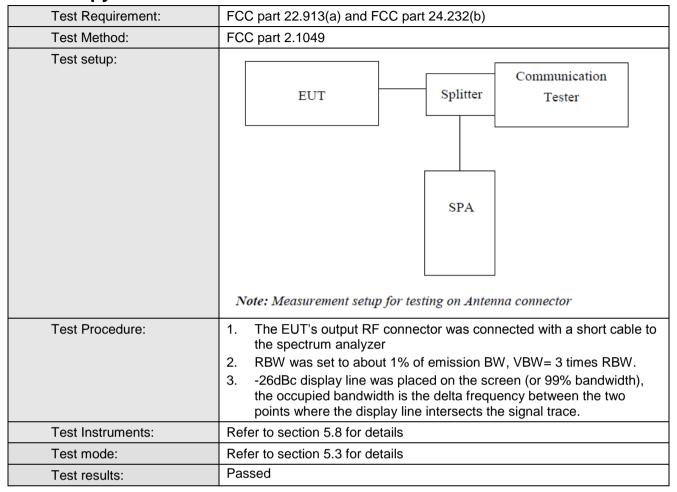


EUT Mode	Channel	Frequency (MHz)	Burst Average power (dBm)	Limit(dBm)	Result
	128	824.20	32.30		
GSM 850	190	836.60	32.37		
	251	848.80	32.47		
GPRS 850	128	824.20	32.39		
(1 Uplink slot)	190	836.60	32.46		
(1 Opinik slot)	251	848.80	32.48		
GPRS 850	128	824.20	30.59		
(2 Uplink slots)	190	836.60	30.60	38.45	Pass
(2 opinik oloto)	251	848.80	30.62		
GPRS 850	128	824.20	28.46		
(3 Uplink slots)	190	836.60	28.47		
(6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	251	848.80	28.52		
GPRS 850	128	824.20	26.21		
(4 Uplink slots)	190	836.60	26.29		
, ,	251	848.80	26.41		
	512	1850.20	29.94		
PCS 1900	661	1880.00	29.32		
	810	1909.80	29.12		
0000 4000	512	1850.20	29.96		
GPRS 1900 (1 Uplink slot)	661	1880.00	29.35		
(1 Oplitik Slot)	810	1909.80	29.18		
0000 4000	512	1850.20	27.53		
GPRS 1900 (2 Uplink slots)	661	1880.00	27.02	33.00	Pass
(2 Oplitik Siots)	810	1909.80	26.65		
0000 4000	512	1850.20	25.76		
GPRS 1900 (3 Uplink slots)	661	1880.00	25.17		
	810	1909.80	24.86		
CDDC 4000	512	1850.20	23.51		
GPRS 1900 (4 Uplink slots)	661	1880.00	23.05		
(4 Ohiii ik Siots)	810	1909.80	22.65		





### 6.6 Occupy Bandwidth



Measurement Data





EUT Mode	Channel	Frequency (MHz)	99% Occupy bandwidth (kHz)	-26dB bandwidth (kHz)
	128	824.2	246	324
GSM 850	190	836.6	242	316
	251	848.8	248	322
	512	1850.2	246	332
PCS 1900	661	1880.0	248	312
	810	1909.8	242	314

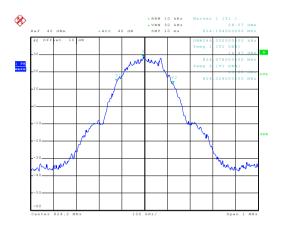
Note: GSM & GPRS use the same modulation technical (GMSK), and with the same channels, so the 99% OBW and the -26dB of GPRS not performed.

Test plot as follows:



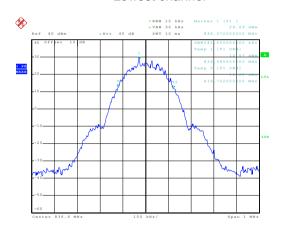
### 99% Occupy bandwidth

#### GSM850



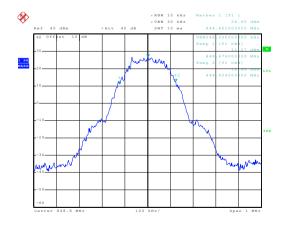
Date: 23.JAN.2015 18:46:50

#### Lowest channel



Date: 23..TAN.2015 18:48:31

#### Middle channel



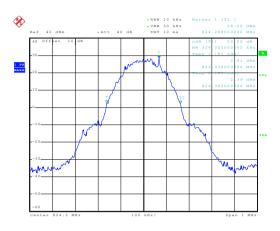
Date: 23.JAN.2015 18:48:59

Highest channel



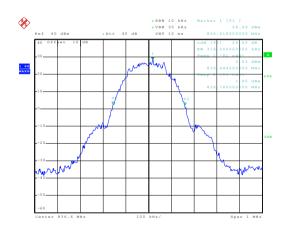
#### 26dB Emission Bandwidth

#### GSM850



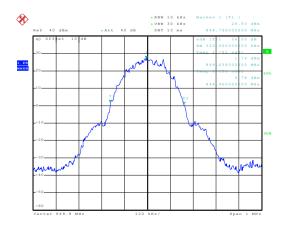
Date: 23.JAN.2015 18:47:33

#### Lowest channel



Date: 23.JAN.2015 18:48:12

#### Middle channel



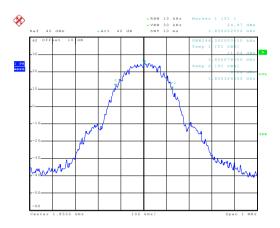
Date: 23.JAN.2015 18:49:18

Highest channel



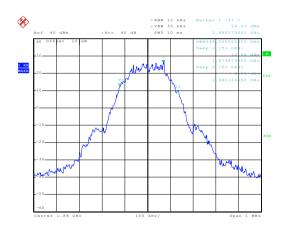
#### 99% Occupy bandwidth

#### PCS 1900



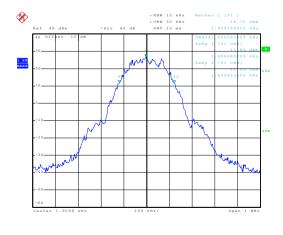
Date: 23.JAN.2015 19:02:59

#### Lowest channel



Date: 23..TAN.2015 19:02:34

#### Middle channel



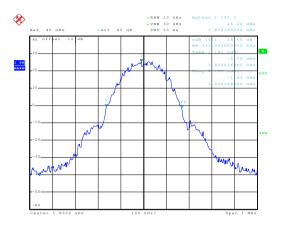
Date: 23.JAN.2015 19:01:15

Highest channel



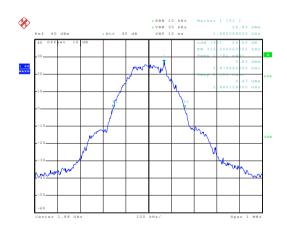
#### 26dB Emission Bandwidth

#### PCS 1900



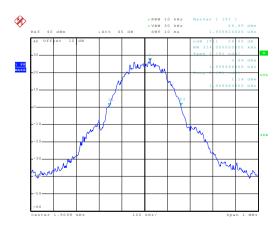
Date: 23.JAN.2015 19:03:21

#### Lowest channel



Date: 23.JAN.2015 19:02:17

#### Middle channel



Date: 23.JAN.2015 19:01:52

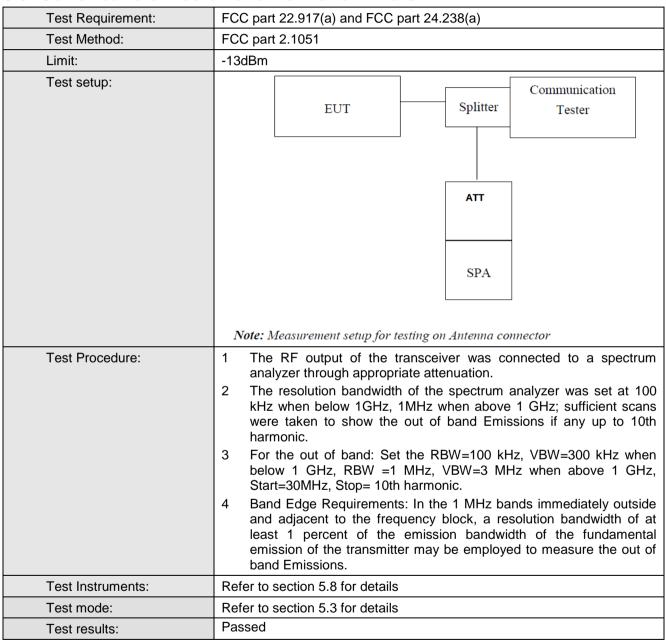
Highest channel



#### 6.7 Modulation Characteristic

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

#### 6.8 Out of band emission at antenna terminals



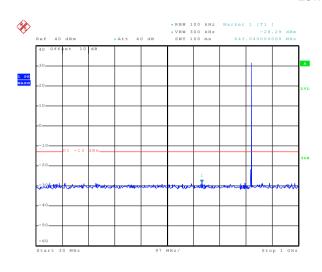
Test plots as follows:

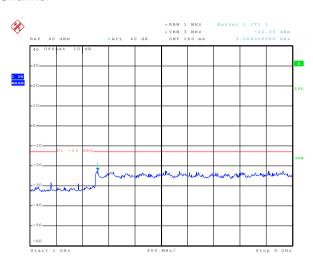


#### **Spurious emission**

#### **GSM 850**

#### **Lowest Channel**





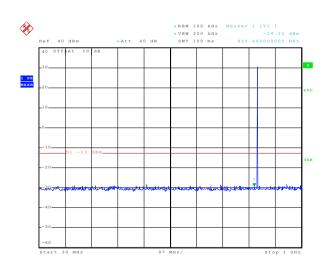
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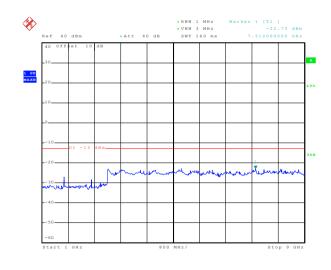
30MHz~1GHz

Date: 23.JAN.2015 18:52:10

1GHz~9GHz

#### Middle channel





Date: 23.JAN.2015 18:51:00

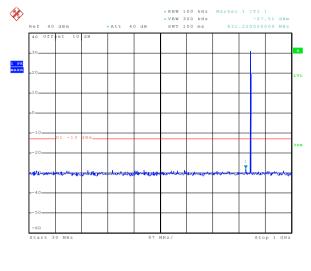
Date: 23.JAN.2015 18:52:35

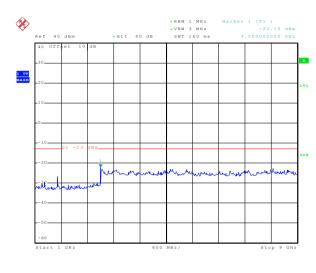
30MHz~1GHz

1GHz~9GHz



### **Highest Channel**





Date: 23.JAN.2015 18:50:32

30MHz~1GHz

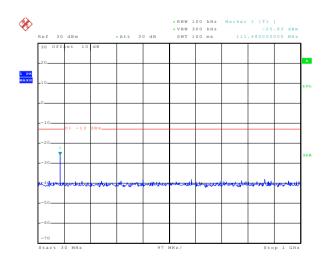
1GHz~9GHz

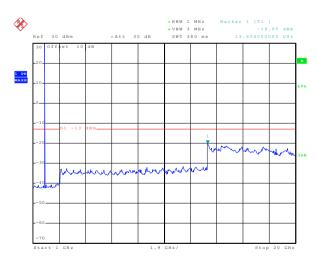
#### **PCS 1900**

Date: 23.JAN.2015 18:52:55

Date: 23.JAN.2015 18:55:50

#### **Lowest Channel**





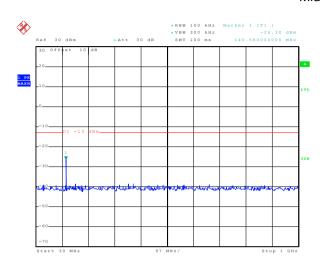
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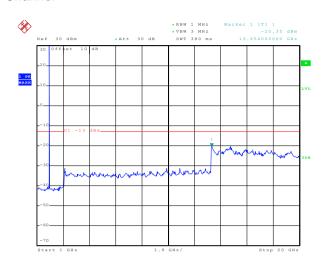
30MHz~1GHz

1GHz~20GHz



#### Middle Channel





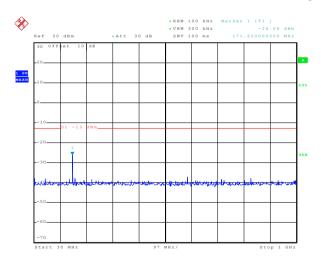
Date: 23.JAN.2015 18:57:54

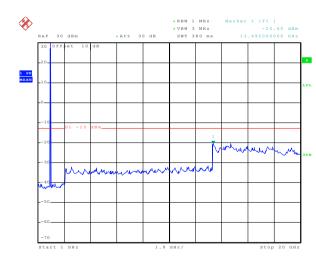
30MHz~1GHz

Date: 23.JAN.2015 18:56:28

1GHz~20GHz

### **Highest Channel**





Date: 23.JAN.2015 18:57:37

30MHz~1GHz

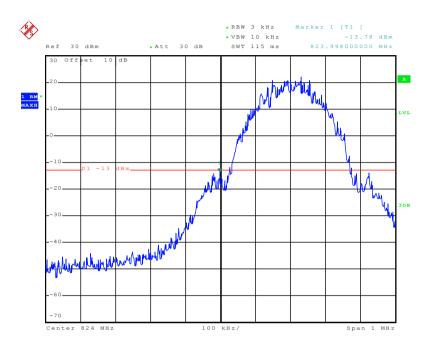
Date: 23.JAN.2015 18:57:04

1GHz~20GHz



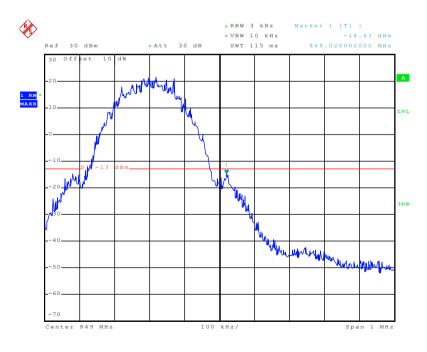
#### Band edge emission

#### GSM850



Date: 23.JAN.2015 18:39:57

#### Lowest channel

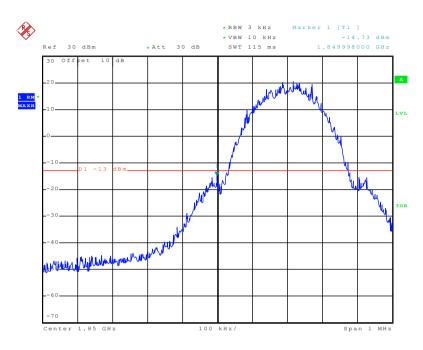


Date: 23.JAN.2015 18:37:00

Highest channel

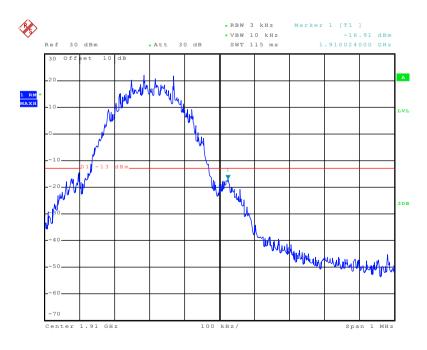






Date: 23.JAN.2015 18:59:37

#### Lowest channel



Date: 23.JAN.2015 19:00:15

Highest channel



## 6.9 ERP, EIRP Measurement

Test Method:  Limit:  GSM850 7W ERP PCS1900 2W EIRP  Test setup:  Below 1GHz  Antenna Tower  Antenna Tower  Antenna Tower  Ground Plane  Above 1GHz  Antenna Tower  Antenna Tower  Itera Antenna Tower  Itera Antenna Tower  Spectrum Analyzer  Antenna Tower  Antenna Tower  Antenna Tower  Antenna Tower  Itera Antenna Tower	Test Descriptions of	FOO and 00 040(a) and FOO and 04 000(b)
Test setup:  Below 1GHz  Antenna Tower  Ground Plane  Above 1GHz  Antenna Tower	Test Requirement:	FCC part 22.913(a) and FCC part 24.232(b)
PCS1900 2W EIRP  Below 1GHz  Antenna Tower  Scarch Antenna Tower	Test Method:	FCC part 2.1046
Below 1GHz  Antenna Tower  Scarch Autenna Tower  Ground Plane  Above 1GHz  Antenna Tower  Antenn	Limit:	
Antenna Tower  Search Antenna  Ground Plane  Above 1GHz  Antenna  Antenna Tower  Antenna  RF T est Receiver  Receiver  Antenna  Antenna  Tower  Antenna  Antenna  Antenna  Tower  Antenna  Antenna  Tower  Antenna  Antenna  Antenna  Tower  Antenna  Antenna  Tower  Towar  Antenna  Tower  Towar  Antenna  Tower  Towar  Antenna  Tower  Antenna  Tower  Antenna  Tower  Towar  Antenna  Tower  Towar  Antenna  Tower  Towar  Antenna  Tower  Towar  Antenna  Towar  Towar  Towar  Antenna  Towar  Towar  Towar  Antenna  Towar  Towar  Towar  Towar  Towar  Towar  Towar  Antenna  Towar  Towar  Towar  Towar  Towar  Towar  Towar  Towar  Towar  Antenna  Towar  Antenna  Towar  T		PCS1900 2W EIRP
Substituted Dipole or Horn Antenna Bi-Log Antenna or Horn Antenna SPA		Below 1GHz  Search Antenna Tower  Ground Plane  Antenna Tower  Antenna Tower
		1 DI-Log Antenna of Horn Antenna





Test Procedure:	<ol> <li>The EUT was placed on an non-conductive turntable using a non- conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.</li> </ol>
	2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.
	3. ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:
	ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)
	4. EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:
	EIRP = S.G. output (dBm) + Antenna Gain (dBi) - Cable Loss (dB)
	5. The worse case was relating to the conducted output power.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case)



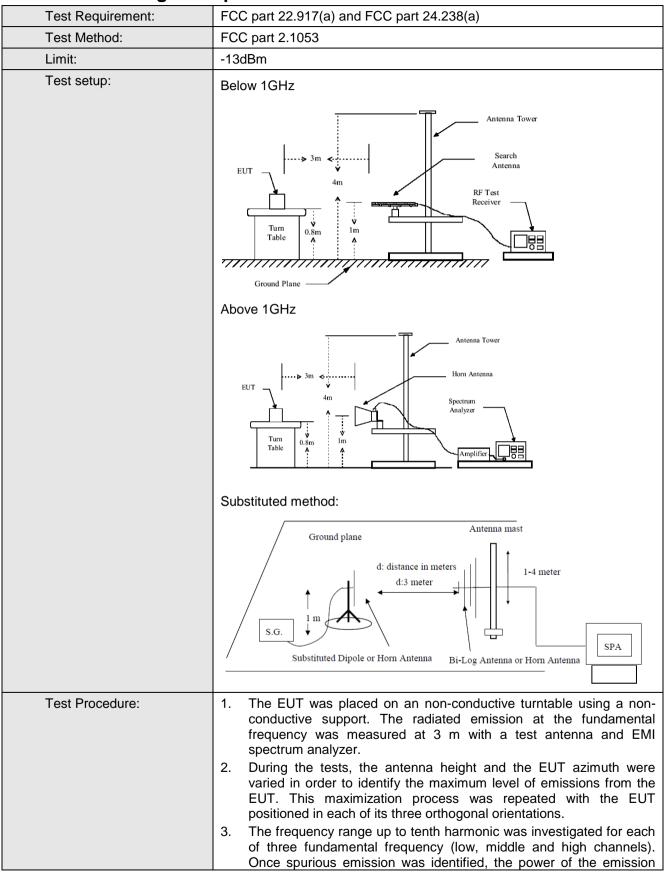


EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
		Н —	V	29.27		
			Н	19.57	38.45	Pass
CCMOEO	GSM850 251		V	29.22		
GSIVI85U		E1	Н	19.52		
	E2	V	29.13			
		E2	Н	19.48		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
		1.1	V	25.88		Dave
		Н	Н	19.29		
DCC4000	224000	540	V	25.67	00.00	
PCS1900 512	E1	Н	19.21	33.00	Pass	
	Fo	V	25.54			
	E2 -	Н	19.18			



## 6.10 Field strength of spurious radiation measurement







	<ul> <li>was determined using the substitution method.</li> <li>4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.</li> <li>ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB)</li> </ul>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details.  Based on the ERP/EIRP results, we selected GSM850, PCS1900 for Radiated spurious emission test, other modes were not test.
Test results:	Passed





Measurement Data (worst case)

Test mode:	GSM	1850	Test channel:	Lowest	
Frequency (MHz)	Spurious	Emission	Limit (dBm)	Result	
riequency (Minz)	Polarization	Level (dBm)	Limit (dbm)	Resuit	
1648.40	Vertical	-35.90			
2472.60	V	-33.77			
3296.80	V	-38.69	-13.00	Pass	
4121.00	V	-48.62			
4945.20	V	-35.63			
1648.40	Horizontal	-38.01			
2472.60	Н	-34.92			
3296.80	Н	-37.63	-13.00	Pass	
4121.00	Н	-44.92			
4945.20	Н	-35.47			
Test mode:	GSM	1850	Test channel:	Middle	
Frequency (MHz)	Spurious	Emission		Result	
Frequency (IVIF12)	Polarization	Level (dBm)	Limit (dBm)		
1673.20	Vertical	-31.44		Pass	
2509.80	V	-33.83	-13.00		
3346.40	V	-32.76			
1673.20	Horizontal	-35.49		Pass	
2509.80	I	-38.89	-13.00		
3346.40	H	-33.51		. 5.52	
Test mode:	GSN	1850	Test channel:	Highest	
Frequency (MHz)	Spurious	Emission	Limit (dBm)	Result	
r requericy (wir iz)	Polarization	Level (dBm)	Limit (dbm)	Nesuit	
1697.60	Vertical	-27.31			
2546.40	V	-35.80	-13.00	Pass	
3395.20	V	-30.33			
1697.60	Horizontal	-27.79			
2546.40	Н	-29.99	-13.00	Pass	
3395.20	Н	-32.34	]		

#### Remark:

1. The emission levels of below 1 GHz are very lower than the limit and not show in test report.





Test mode:	PCS	1900	Test channel:	Lowest	
Frequency (MHz)	Spurious	Emission	Limit (dBm)	Result	
Frequency (MHZ)	Polarization	Level (dBm)	Lilliit (dbill)	Result	
3700.40	Vertical	-42.16	-13.00	Door	
5550.60	V	-33.50	-13.00	Pass	
3700.40	Horizontal	-38.59	-13.00	Pass	
5550.60	Н	-34.81	-13.00	Pass	
Test mode:	PCS	1900	Test channel:	Middle	
Frequency (MHz)	Spurious	Emission	Limit (dBm)	Result	
Frequency (MHZ)	Polarization	Level (dBm)	Lilliit (dbill)		
3760.00	Vertical	-41.34	-13.00	Pass	
5640.00	V	-42.44	-13.00	F 4 5 5	
3760.00	Horizontal	-43.20	-13.00	Pass	
5640.00	Н	-36.74	-13.00	Pass	
Test mode:	PCS	1900	Test channel:	Highest	
Frequency (MHz)	Spurious	Emission	Limit (dPm)	Dogult	
Frequency (IVIF12)	Polarization	Level (dBm)	Limit (dBm)	Result	
3819.60	Vertical	-39.08	-13.00	Pass	
5729.40	V	-40.59	-13.00	Fa55	
3819.60	Horizontal	-38.50	-13.00	Page	
5729.40	Н	-38.46	-13.00	Pass	

#### Remark:

1. The emission levels of below 1 GHz are very lower than the limit and not show in test report.





## 6.11 Frequency stability V.S. Temperature measurement

Test Requirement:	FCC Part 2.1055(a)(1)(b)
Test Method:	FCC Part 2.1055(a)(1)(b)
Limit:	2.5 ppm
Test setup:	Spectrum analyzer  EUT  Att.  Variable Power Supply
	Note: Measurement setup for testing on Antenna connector
Test procedure:	<ol> <li>The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.</li> <li>The EUT was placed inside the temperature chamber.</li> <li>Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25 °C operating frequency as reference frequency.</li> <li>Turn EUT off and set the chamber temperature to -30 °C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>Repeat step measure with 10 °C increased per stage until the highest temperature of +50 °C reached</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.





#### Measurement Data:

easurement Data:					
Re	ference Frequency: G	SM850 Midd	lle channel=190 channe	el=836.6MHz	
Power supplied	Temperature (°C)	Frequency error		Limit (ppm)	Result
(Vdc)	Temperature ( c)	Hz	ppm	Еппі (рріп)	rcsuit
	-30	175	0.209180		
	-20	170	0.203203		
	-10	163	0.194836		
	0	158	0.188860		
3.70	10	162	0.193641	2.5	Pass
	20	124	0.148219		
	30	138	0.164953		
	40	133	0.158977		
	50	109	0.130289		
Re	ference Frequency: PC	CS1900 Mid	dle channel=661 chann	el=1880MHz	
Power supplied	Tomporature (°C)	Frequency error		Limit (nnm)	Dogult
(Vdc)	Temperature (℃)	Hz	ppm	Limit (ppm)	Result
	-30	160	0.085106		
	-20	124	0.065957		
3.70	-10	137	0.072872		
	0	125	0.066489		
	10	136	0.072340	2.5	Pass
	20	152	0.080851		
	30	121	0.064362	1	
	40	108	0.057447		
	50	129	0.068617	]	





## 6.12 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part 2.1055(d)(1)(2)
Test Method:	FCC Part 2.1055(d)(1)(2)
Limit:	2.5ppm
Test setup:	Temperature Chamber  Spectrum analyzer  EUT  Variable Power Supply  Note: Measurement setup for testing on Antenna connector
Test procedure:	<ol> <li>Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> <li>Reduce the input voltage to specify extreme voltage variation (+/-15%) and endpoint, record the maximum frequency change.</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Passed

Measurement Data (the worst channel):





Reference Frequency: GSM850 Middle channel=190 channel=836.6MHz							
Temperature (°C)	Power supplied	Frequer	cy error	Limit (ppm)	Result		
	(Vdc)	Hz	ppm	Limit (ppm)	Nesuit		
	4.25	107	0.127899				
25	3.70	67	0.080086	2.5	Pass		
	3.40	95	0.113555				
Refe	erence Frequency: PO	CS1900 Middle ch	annel=661 chann	el=1880MHz			
T	Power supplied	Frequer	ncy error	1.11( ()	D !!		
Temperature (℃)	(Vdc)	Hz	ppm	Limit (ppm)	Result		
	4.25	87	0.046277				
25	3.70	48	0.025532	2.5	Pass		
	3.40	55	0.029255				