

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Report No: CCIS13120056801

FCC REPORT

Applicant: MOX GROUP LIMITED

Address of Applicant: RM2508-2509, T-Share international building A, taoyuan Road

Nan shan, Shenzhen, China

Equipment Under Test (EUT)

Product Name: Mobile Phone

Model No.: A40

Trade mark: MOX

FCC ID: 2ABBS-A40

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: 13 Dec., 2013

Date of Test: 16 Dec., to 27 Dec., 2013

Date of report issued: 30 Dec., 2013

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.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



GGS Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Report No: CCIS13120056801

2. Version

Version No.	Date	Description
00	30 Dec., 2013	Original

Prepared by:	Sera Ximy	Date:	30 Dec., 2013
	Report Clerk		
Reviewed by:	Nime was	Date:	30 Dec., 2013



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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.



5. General Information

5.1 Client Information

Applicant:	MOX GROUP LIMITED
Address of Applicant:	RM2508-2509, T-Share international building A, taoyuan Road
	Nan shan,Shenzhen,China
Manufacturer:	MOX GROUP LIMITED
Address of Manufacturer:	RM2508-2509, T-Share international building A, taoyuan Road
	Nan shan,Shenzhen,China

5.2 General Description of E.U.T.

	,
Product Name:	Mobile Phone
Model No.:	A40
Trade mark:	MOX
Operation Frequency range:	GSM 850: 824.20MHz-848.80MHz
	PCS1900: 1850.20MHz-1909.80MHz
	WCDMA Band V:826.4MHz-846.6MHz
	WCDMA Band II:1852.4 MHz -1907.6 MHz
Modulation type:	GSM/GPRS:GMSK, UMTS:QPSK
Antenna type:	Integral Antenna
Antenna gain:	GSM 850: -3.1 dBi
	PCS 1900:-1.8 dBi
	WCDMA 850 : -3.1 dBi
	WCDMA1900 : -1.8 dBi
AC adapter:	Model:MOX-F02
	Input:100-240V AC,50/60Hz 150mA
	Output:5.0V DC MAX1000mA
Power supply:	Rechargeable Li-ion Battery DC3.7V-1400mAh



Operation Frequency List:				
GSM	1 850	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	
WCDMA Band V		WCDMA Band II		
Channel:	Frequency (MHz)	Channel:	Frequency (MHz)	
Channel: 4132	Frequency (MHz) 826.40	Channel: 9262	Frequency (MHz) 1852.40	
	• • • • •		. , ,	
4132	826.40	9262	1852.40	
4132 4133	826.40 826.60	9262 9263	1852.40 1852.60	
4132 4133 	826.40 826.60 	9262 9263 	1852.40 1852.60 	
4132 4133 4182	826.40 826.60 836.40	9262 9263 9399	1852.40 1852.60 1879.80	
4132 4133 4182 4183	826.40 826.60 836.40 836.60	9262 9263 9399 9400	1852.40 1852.60 1879.80 1880.00	
4132 4133 4182 4183 4184	826.40 826.60 836.40 836.60 836.80	9262 9263 9399 9400 9401	1852.40 1852.60 1879.80 1880.00 1880.20	
4132 4133 4182 4183 4184 	826.40 826.60 836.40 836.60 836.80 	9262 9263 9399 9400 9401	1852.40 1852.60 1879.80 1880.00 1880.20	



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	ghest channel 251 848.80		Highest channel	810	1909.80	
	WCDMA Band V			WCDMA Band II		
Channel Frequency(MHz)			Channel	Frequency(MHz)		
Lowest channel	4132	826.40	Lowest channel	9262	1852.40	
Middle channel	4183	836.60	Middle channel	9400	1880.00	
Highest channel	4233	846.60	Highest channel	9538	1907.60	



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.
Communicate mode (UMTS 850)	Keep the EUT in communicating mode on UMTS 850 band.
Communicate mode (UMTS 1900)	Keep the EUT in communicating mode on UMTS 1900 band.
Data mode (RMC UMTS 850)	Keep the EUT in data communicating mode on RMC in UMTS 850 (12.2 kbps, 64 kbps, 144 kbps & 384 kbps).
Data mode (HSDPA UMTS 850)	Keep the EUT in data communicating mode on HSDPA in UMTS 850(Sub-test 1~Sub-test 4).
Data mode (HSUPA UMTS 850)	Keep the EUT in data communicating mode on HSDPA in UMTS 850(Sub-test 1~Sub-test 5).
Data mode (RMC UMTS 1900)	Keep the EUT in data communicating mode on RMC in UMTS 850 (12.2 kbps, 64 kbps, 144 kbps & 384 kbps).
Data mode (HSDPA UMTS 1900)	Keep the EUT in data communicating mode on HSDPA in UMTS 1900. (Sub-test 1~Sub-test 4).
Data mode (HSDPA UMTS 1900)	Keep the EUT in data communicating mode on HSDPA in UMTS 1900. (Sub-test 1~Sub-test 5).
Remark :	Pre-test output power of all modes, and found GSM 850, PCS 1900, UMTS 850 12.2 kbps RMC & UMTS 1900 12.2 kbps RMC 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: 0755-23118282 Fax: 0755-23116366

Shenzhen Zhongjian Nanfang Testing Co., Ltd. No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366



5.8 Test Instruments list

Report No: CCIS13120056801

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	(mm-dd-yy) June 09 2013	(mm-dd-yy) June 08 2014
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	June 04 2013	June 03 2014
3	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	May 30 2013	May 29 2014
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
5	Coaxial Cable	CCIS	N/A	CCIS0016	Apr. 01 2013	Mar. 31 2014
6	Coaxial Cable	CCIS	N/A	CCIS0017	Apr. 01 2013	Mar. 31 2014
7	Coaxial cable	CCIS	N/A	CCIS0018	Apr. 01 2013	Mar. 31 2014
8	Coaxial Cable	CCIS	N/A	CCIS0019	Apr. 01 2013	Mar. 31 2014
9	Coaxial Cable	CCIS	N/A	CCIS0087	Apr. 01 2013	Mar. 31 2014
10	Amplifier(10kHz- 1.3GHz)	HP	8447D	CCIS0003	Apr. 01 2013	Mar. 31 2014
11	Amplifier(1GHz- 18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	June 09 2013	June 08 2014
12	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Apr. 01 2013	Mar. 31 2014
13	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2013	Mar. 29 2014
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	CCIS0023	May. 29 2013	May. 28 2014
17	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Apr 01 2013	Mar. 31 2014
18	Loop antenna	Laplace instrument	RF300	EMC0701	Aug. 12 2013	Aug. 11 2014
19	Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	May. 29 2013	May. 28 2014
20	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	May. 29 2013	May. 28 2014



6. System test configuration

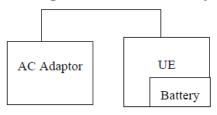
6.1 EUT Configuration

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, WCDMA Band V and WCDMA Band II) with power adaptor, earphone and Data cable. The worst-case H mode for GSM850, PCS1900, UMTS 850 and UMTS 1900.



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 WCDMA Band V: 7W WCDMA Band II: 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 GSM 850 128 824.20 32.34 32.34 32.36 32.36 32.36 32.36 32.36 32.36 32.34 32.54 32.54 32.34 32.54 32.34 32.34 32.39 32.34 32.39 32.39 32.39 32.39 32.39 32.39 32.39 32.31 32.39 32.31 32.39 32.31 32.39 32.31 32.31 32.39 32.31 32.39 32.31 32.39 32.31 32.39 32.39 32.31 32.39 32.31 32.39 32.31 32.39 32.31 32.39 32.31 32.39 32.31 32.39 32.31 </th <th></th> <th></th> <th></th> <th></th> <th>Report No: CC</th> <th>1010120000</th>					Report No: CC	1010120000
Section	ELIT Mada	Channal	I Frequency (MHz)	Burst Average	Limit/dDm\	Result
GSM 850 190 836.60 32.36 251 848.80 32.54 GPRS 850 190 836.60 32.39 (1 Uplink slot) 251 848.80 32.51 GPRS 850 128 824.20 31.62 (2 Uplink slots) 190 836.60 31.69 GPRS 850 190 836.60 30.18 GPRS 850 190 836.60 30.07 (3 Uplink slots) 251 848.80 30.47 GPRS 850 190 836.60 29.73 (4 Uplink slots) 251 848.80 29.72 PCS 1900 661 1880.00 29.91 GPRS 1900 661 1880.00 29.91 GPRS 1900 661 1880.00 29.94 (1 Uplink slots) 512 1850.20 29.10 GPRS 1900 661 1880.00 29.91 GPRS 1900 661 1880.00 29.19 GPRS 1900 6512 1850.20 29.19 GPRS 1900 661 1	EUT Mode	Channel		power (dBm)	Limit(aBm)	
Section		128	824.20	32.34		
GPRS 850 (1 Uplink slot) 128 824.20 32.34 32.39 251 848.80 32.51 GPRS 850 (2 Uplink slots) 251 848.80 31.62 190 836.60 31.69 38.45 Pass GPRS 850 (3 Uplink slots) 251 848.80 31.89 128 824.20 30.18 GPRS 850 (3 Uplink slots) 251 848.80 30.47 GPRS 850 (4 Uplink slots) 251 848.80 30.47 GPRS 850 (4 Uplink slots) 251 848.80 30.47 GPRS 850 (4 Uplink slots) 251 848.80 29.73 GPRS 850 (4 Uplink slots) 251 848.80 29.72 FOR 1900 661 1880.00 29.91 810 1909.80 30.09 GPRS 1900 (1 Uplink slot) GPRS 1900 (2 Uplink slots) GPRS 1900 (2 Uplink slots) GPRS 1900 (2 Uplink slots) GPRS 1900 (3 Uplink slots) GPRS 1900 (4 Uplink slots) GPRS 1900 (5 Uplink slots) GPRS 1900 (6 Uplink slots) GPRS 1900 (5 Uplink slots) GPRS 1900 (6 Uplink slots) GPRS 1900 (6 Uplink slots) GPRS 1900 (5 Uplink slots) GPRS 1900 (6 Uplink slots) GPRS 1900 (6 Uplink slots) GPRS 1900 (6 Uplink slots) STA STAN STAN STAN STAN STAN STAN STAN S	GSM 850	190	836.60	32.36		
Company		251	848.80	32.54		
190	0000 050	128	824.20	32.34		
251 848.80 32.51		190	836.60	32.39		
GPRS 850 (2 Uplink slots) 190 836.60 31.69 38.45 Pass GPRS 850 (3 Uplink slots) 128 824.20 30.18 30.07	(1 Oplink Slot)	251	848.80	32.51		
190	0000 050	128	824.20	31.62		
251		190	836.60	31.69	38.45	Pass
GPRS 850 (3 Uplink slots) 251 848.80 30.47 GPRS 850 (4 Uplink slots) 251 848.80 29.73 GPRS 850 (4 Uplink slots) 251 848.80 29.72 PCS 1900 661 1880.00 29.91 810 1909.80 30.09 GPRS 1900 (1 Uplink slot) GPRS 1900 (1 Uplink slot) GPRS 1900 (2 Uplink slots) 190 836.60 29.73 848.80 29.72 512 1850.20 29.91 810 1909.80 30.09 Pass GPRS 1900 (2 Uplink slots) 810 1909.80 29.10 GPRS 1900 (2 Uplink slots) 810 1909.80 29.41 GPRS 1900 (2 Uplink slots) 810 1909.80 29.41 GPRS 1900 (2 Uplink slots) 190 836.60 29.73 29.97 29.91 33.00 Pass	(2 Uplink slots)	251	848.80	31.89		
190	000000	128	824.20	30.18		
251 848.80 30.47		190	836.60	30.07		
GPRS 850 (4 Uplink slots) 190 836.60 29.53 PCS 1900 512 1850.20 29.89 PCS 1900 661 1880.00 29.91 810 1909.80 30.09 GPRS 1900 (1 Uplink slot) 661 1880.00 29.94 GPRS 1900 (2 Uplink slots) 512 1850.20 29.10 GPRS 1900 (2 Uplink slots) 661 1880.00 29.19 33.00 Pass GPRS 1900 (2 Uplink slots) 512 1850.20 29.41 GPRS 1900 (2 Uplink slots) 512 1850.20 27.50	(3 Uplink slots)	251	848.80	30.47		
(4 Uplink slots) 190 836.60 29.53 251 848.80 29.72 512 1850.20 29.89 PCS 1900 661 1880.00 29.91 810 1909.80 30.09 GPRS 1900 661 1880.00 29.91 (1 Uplink slot) 810 1909.80 30.13 GPRS 1900 661 1880.00 29.10 GPRS 1900 661 1880.00 29.19 33.00 Pass GPRS 1900 512 1850.20 27.50 GPRS 1900 512 1850.20 27.50		128	824.20	29.73		
PCS 1900		190	836.60	29.53		
PCS 1900 661 1880.00 29.91 810 1909.80 30.09 512 1850.20 29.91 (1 Uplink slot) 810 1909.80 30.13 GPRS 1900 661 1880.00 29.10 GPRS 1900 661 1880.00 29.10 GPRS 1900 661 1880.00 29.19 GPRS 1900 661 1880.00 29.19 GPRS 1900 710 710 710 710 710 710 710 710 710 7		251	848.80	29.72		
810 1909.80 30.09 GPRS 1900 (1 Uplink slot) 512 1850.20 29.91 661 1880.00 29.94 810 1909.80 30.13 GPRS 1900 (2 Uplink slots) 512 1850.20 29.10 GPRS 1900 (2 Uplink slots) 810 1909.80 29.41 GPRS 1900 (2 Uplink slots) 512 1850.20 27.50		512	1850.20	29.89		
GPRS 1900 (1 Uplink slot)	PCS 1900	661	1880.00	29.91		
GPRS 1900 (1 Uplink slot) 661 1880.00 29.94 810 1909.80 30.13 512 1850.20 29.10 GPRS 1900 (2 Uplink slots) 810 1909.80 29.19 33.00 Pass GPRS 1900 GPRS 1900		810	1909.80	30.09		
(1 Uplink slot) 661 1880.00 29.94 810 1909.80 30.13 GPRS 1900 661 1850.20 29.10 GPRS 1900 810 1909.80 29.41 GPRS 1900		512	1850.20	29.91		
810 1909.80 30.13		661	1880.00	29.94		
GPRS 1900 661 1880.00 29.19 33.00 Pass (2 Uplink slots) 810 1909.80 29.41 512 1850.20 27.50	(1 Uplink slot)	810	1909.80	30.13		
(2 Uplink slots) 661 1880.00 29.19 33.00 Pass 810 1909.80 29.41 512 1850.20 27.50		512	1850.20	29.10		
810 1909.80 29.41 512 1850.20 27.50 GPRS 1900		661	1880.00	29.19	33.00	Pass
GPRS 1900		810	1909.80	29.41		
GPRS 1900	GPRS 1900 (3 Uplink slots)	512	1850.20	27.50		
661 1880.00 27.60		661	1880.00	27.60		
(3 Uplink slots) 810 1909.80 27.92		810	1909.80	27.92		
512 1850.20 26.70	GPRS 1900 (4 Uplink slots)	512	1850.20	26.70		
661 1880.00 26.79		661	1880.00	26.79		
(4 Uplink slots) 810 1909.80 27.12		810		27.12		



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EUT	Mode	Channel	Frequency (MHz)	Burst Average power (dBm)	Limit(dBm)	Result
		4132	826.40	23.20		
	Subtest 1	4183	836.00	23.19		
		4233	846.60	22.88		
		4132	826.40	22.63		
	Subtest 2	4183	836.00	22.76		
UMTS 850		4233	846.60	22.58		
HSDPA		4132	826.40	20.78		
	Subtest 3	4183	836.00	21.12		
		4233	846.60	21.10		
	Subtest 4	4132	826.40	20.85		
		4183	836.00	21.09		
		4233	846.60	21.06		
		4132	826.40	22.86		
	Subtest 1	4183	836.00	23.09	38.45	Pass
		4233	846.60	22.89		
	Subtest 2	4132	826.40	23.03		
		4183	836.00	23.14		
		4233	846.60	22.90		
		4132	826.40	20.75		
UMTS 850	Subtest 3	4183	836.00	21.20		
HSUPA		4233	846.60	21.05		
		4132	826.40	23.19		
	Subtest 4	4183	836.00	23.17		
		4233	846.60	22.87		
		4132	826.40	21.62		
	Subtest 5	4183	836.00	22.08		
		4233	846.60	21.95		



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UMTS 850 RMC	12.2kbps	4132 4183 4233	826.40 836.00 846.60	24.14 24.17 23.88	
		4233	040.00	23.00	
		4132	826.40	24.11	
UMTS 850	12.2kbps	4183	836.00	24.16	
AMR		4233	846.60	23.88	



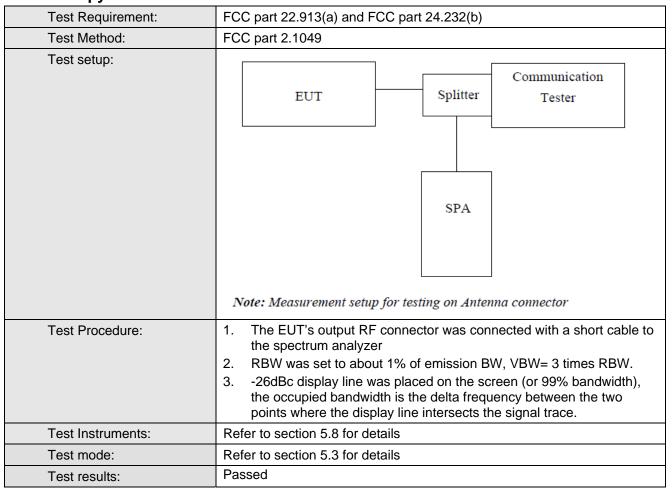
EUT Mode		Channel	Frequency (MHz)	Burst Average power (dBm)	Limit(dBm)	Result
		9262	1852.40	22.65		
	Subtest 1	9400	1880.00	22.30		
		9538	1907.60	21.85		
		9262	1852.40	22.31		Pass
	Subtest 2	9400	1880.00	21.82		
UMTS1900		9538	1907.60	21.59		
HSDPA		9262	1852.40	20.80		
	Subtest 3	9400	1880.00	20.53		
		9538	1907.60	20.09		
	Subtest 4	9262	1852.40	20.80	33.00	
		9400	1880.00	20.35		
		9538	1907.60	20.19		
	Subtest 1	9262	1852.40	22.68		
		9400	1880.00	22.25		
		9538	1907.60	21.85		
	Subtest 2	9262	1852.40	22.71		
		9400	1880.00	22.31		
		9538	1907.60	21.79		
LINATO 4 000	Subtest 3	9262	1852.40	20.82		
UMTS1900		9400	1880.00	20.31		
HSUPA		9538	1907.60	20.04		
		9262	1852.40	22.70		
	Subtest 4	9400	1880.00	22.34		
		9538	1907.60	21.82		
		9262	1852.40	21.81		
	Subtest 5	9400	1880.00	21.40		
		9538	1907.60	21.04		



		9262	1852.40	23.67	
JMTS1900	12.2kbps	9400	1880.00	23.29	
RMC		9538	1907.60	22.78	
		9262	1852.40	23.68	
JMTS1900	12.2kbps	9400	1880.00	23.33	
AMR		9538	1907.60	22.69	



6.6 Occupy Bandwidth



Measurement Data



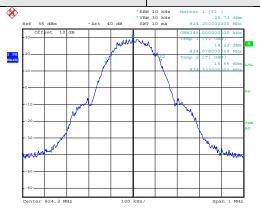
EUT Mode	Channel	Frequency (MHz)	99% Occupy bandwidth (kHz)	-26dB bandwidth (kHz)
	128	824.2	245	322
GSM 850	190	836.6	242	317
	251	848.8	245	319
	512	1850.2	244	316
PCS 1900	661	1880.0	242	321
	810	1909.8	246	319
	4132	824.40	4160	4690
UMTS850	4183	836.00	4160	4710
12.2k RMC	4233	846.60	4170	4720
	9262	1852.40	4150	4700
UMTS1900	9400	1880.00	4160	4720
12.2k RMC	9538	1907.60	4170	4700

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:

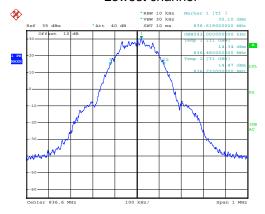


Test Item: 99% Occupy bandwidth Test Mode: GSM850



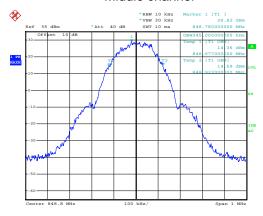
Date: 19.DEC.2013 12:20:56

Lowest channel



Date: 19.DEC.2013 12:22:00

Middle channel

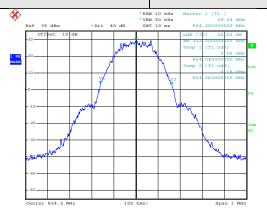


Date: 19.DEC.2013 12:22:58

Highest channel







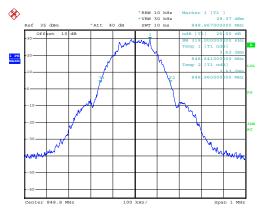
Date: 19.DEC.2013 12:26:21

Lowest channel



Date: 19.DEC.2013 12:25:10

Middle channel

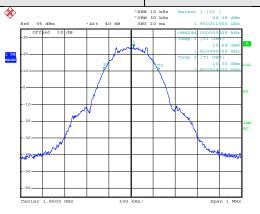


Date: 19.DEC.2013 12:23:26

Highest channel

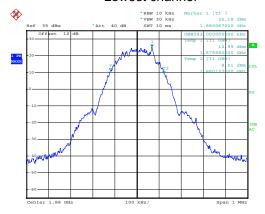


Test Item: 99% Occupy bandwidth Test Mode: PCS 1900



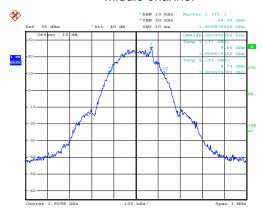
Date: 19.DEC.2013 12:39:33

Lowest channel



Date: 19.DEC.2013 12:40:35

Middle channel

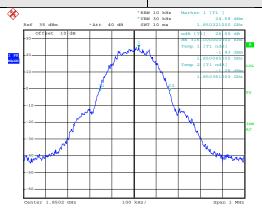


Date: 19.DEC.2013 12:41:52

Highest channel

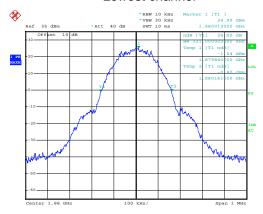


Test Item: -26dB bandwidth Test Mode: PCS 1900



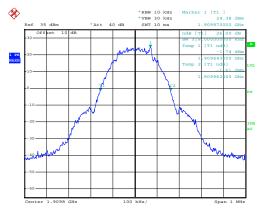
Date: 19.DEC.2013 12:44:18

Lowest channel



Date: 19.DEC.2013 12:43:29

Middle channel

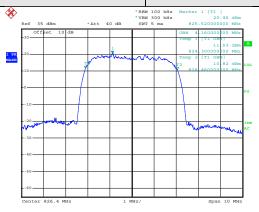


Date: 19.DEC.2013 12:42:15

Highest channel

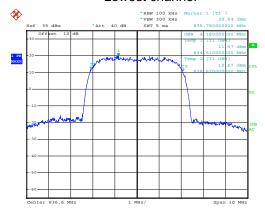


Test Item: 99% Occupy bandwidth Test Mode: UMTS 850 12.2k RMC



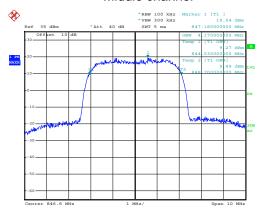
Date: 20.DEC.2013 02:56:59

Lowest channel



Date: 20.DEC.2013 02:58:52

Middle channel

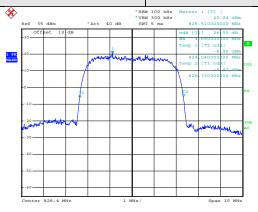


Date: 20.DEC.2013 02:59:54

Highest channel

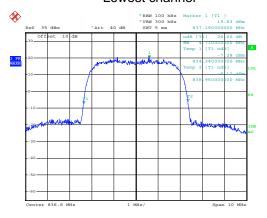


Test Item: -26dB bandwidth Test Mode: UMTS 850 12.2k RMC



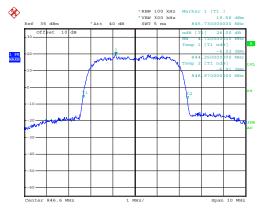
Date: 20.DEC.2013 03:04:36

Lowest channel



Date: 20.DEC.2013 03:02:36

Middle channel

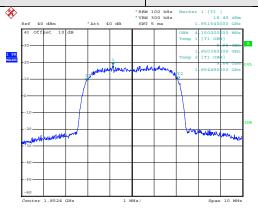


Date: 20.DEC.2013 03:01:42

Highest channel

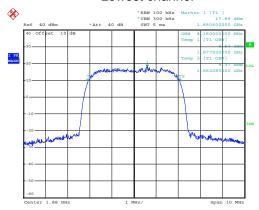


Test Item: 99% Occupy bandwidth Test Mode: UMTS 1900 12.2k RMC



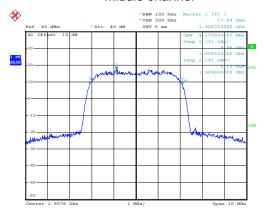
Date: 23.DEC.2013 09:39:24

Lowest channel



Date: 23.DEC.2013 09:38:24

Middle channel

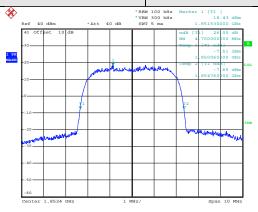


Date: 23.DEC.2013 09:37:09

Highest channel

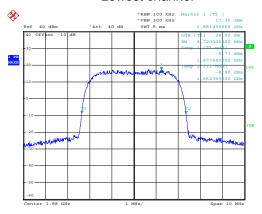


Test Item: -26dB bandwidth Test Mode: UMTS 1900 12.2k RMC



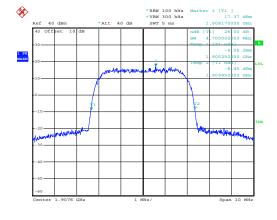
Date: 23.DEC.2013 09:40:14

Lowest channel



Date: 23.DEC.2013 09:41:10

Middle channel



Date: 23.DEC.2013 09:43:06

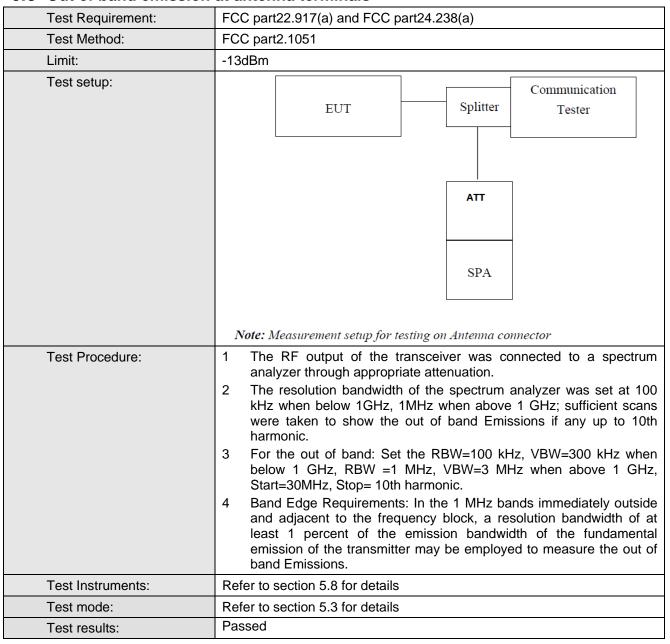
Highest channel



6.7 Modulation Characteristic

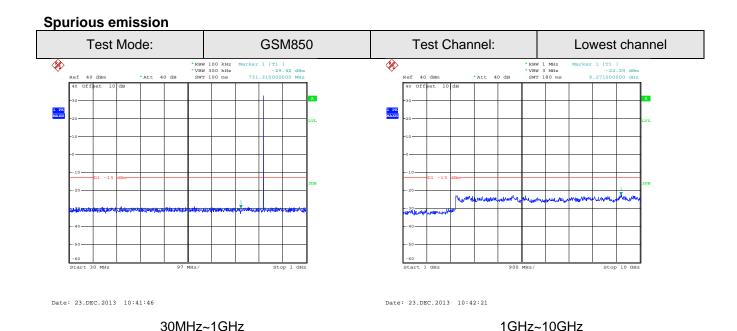
According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

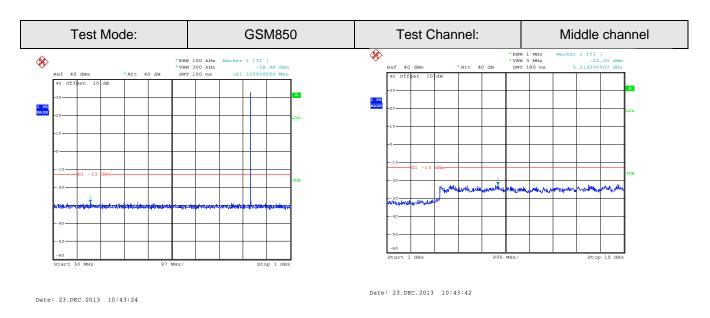
6.8 Out of band emission at antenna terminals



Test plots as follows:

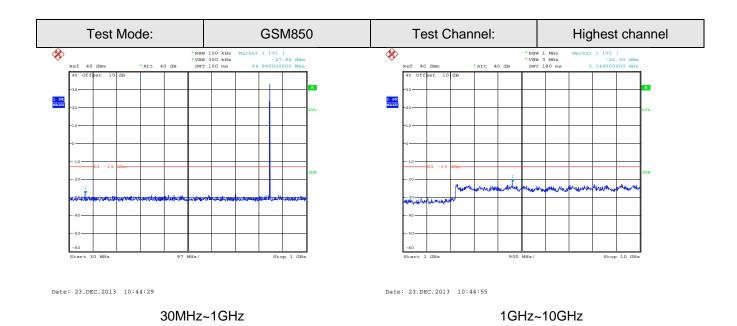


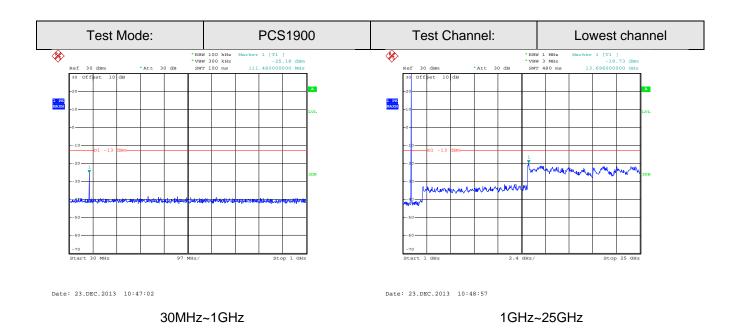




30MHz~1GHz 1GHz~10GHz

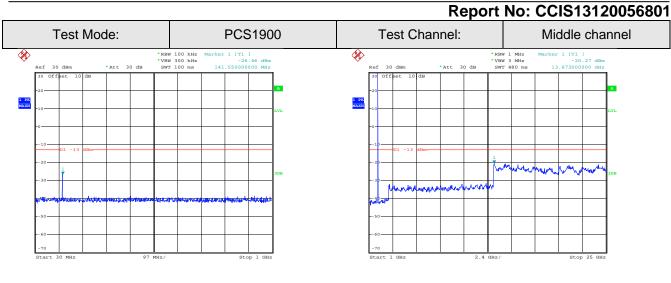






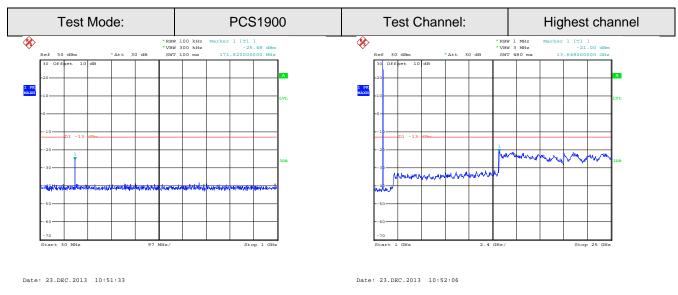


Date: 23.DEC.2013 10:49:39



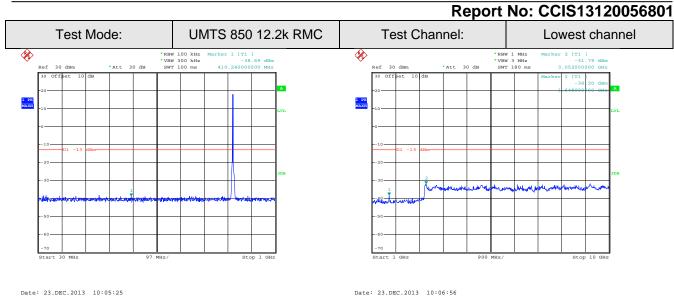
30MHz~1GHz 1GHz~25GHz

Date: 23.DEC.2013 10:50:58

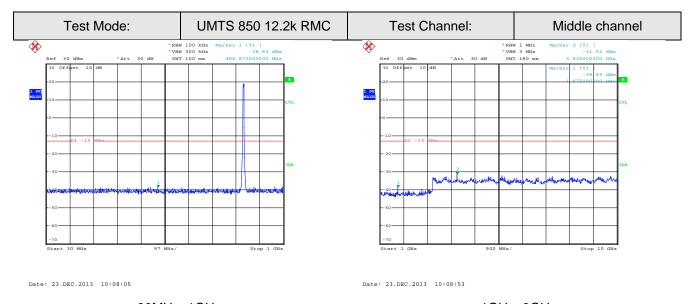


30MHz~1GHz 1GHz~25GHz



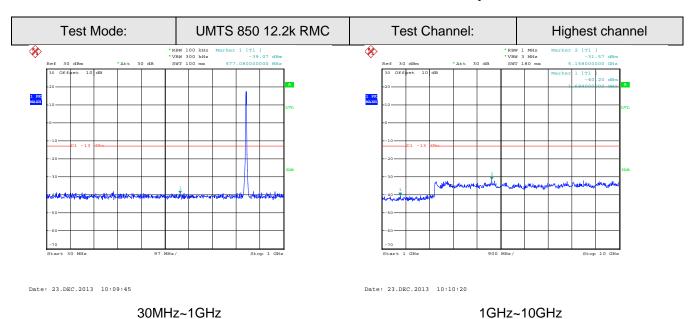


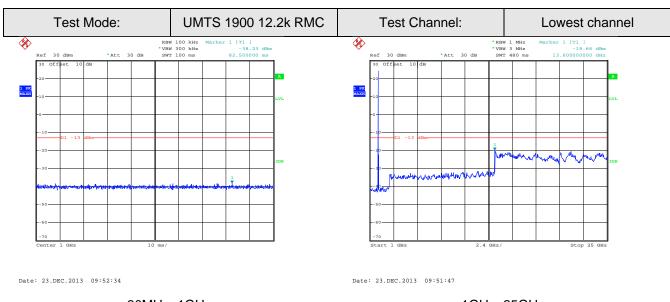
30MHz~1GHz 1GHz~10GHz



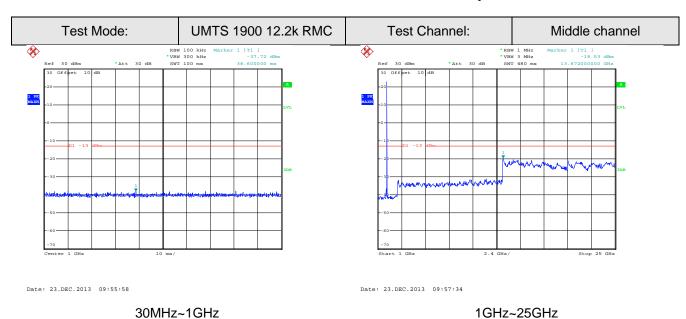
30MHz~1GHz 1GHz~9GHz

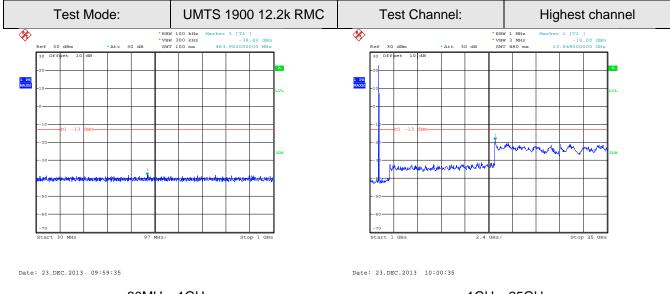








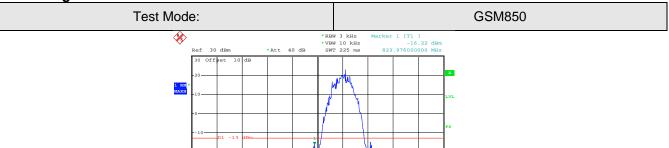




30MHz~1GHz 1GHz~25GHz

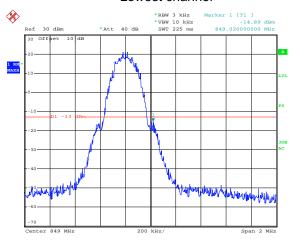


Band edge emission:



Date: 21.DEC.2013 05:31:05

Lowest channel

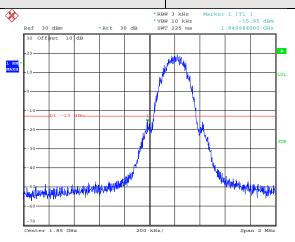


Date: 21.DEC.2013 05:30:18

Highest channel

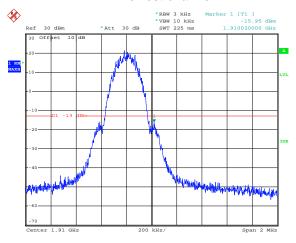


Test Mode: PCS1900



Date: 23.DEC.2013 10:55:35

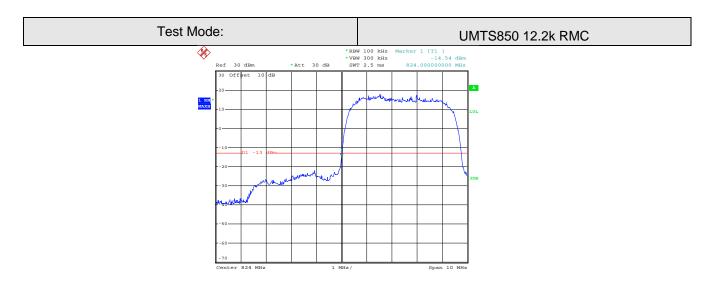
Lowest channel



Date: 23.DEC.2013 10:54:17

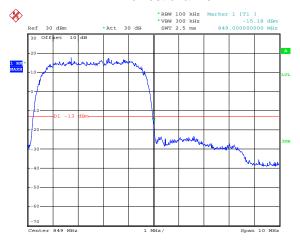
Highest channel





Date: 26.DEC.2013 09:14:43

Lowest channel

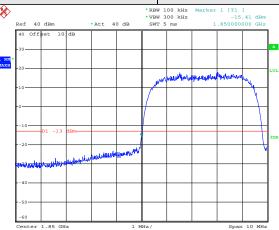


Date: 26.DEC.2013 09:15:38

Highest channel

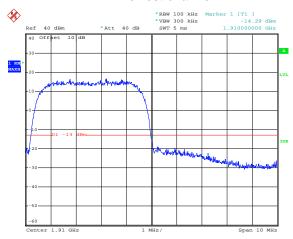






Date: 23.DEC.2013 09:46:24

Lowest channel



Date: 23.DEC.2013 09:45:36

Highest channel



6.9 ERP, EIRP Measurement

0.5 ERP, EIRP Weasuren	10111
Test Requirement:	FCC part 22.913(a) and FCC part 24.232(b)
Test Method:	FCC part 2.1046
Limit:	GSM850 7W ERP PCS1900 2W EIRP WCDMA Band V: 7W ERP WCDMA Band II: 2W EIRP
Test setup:	Below 1GHz
	Antenna Tower Search Antenna RF Test Receiver Ground Plane Above 1GHz Antenna Tower Horn Antenna Spectrum Analyzer Amplifier
	Substituted method: Antenna mast Ground plane
	d: distance in meters d:3 meter I -4 meter SPA Substituted Dipole or Horn Antenna Bi-Log Antenna or Horn Antenna



	•
Test Procedure:	 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.
	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
		V	35.15			
	GSM850 251	Н	Н	27.21		
			V	35.12		
GSM850		E1	Н	27.19	38.45	Pass
			V	35.08		
	E2	Н	27.15			

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
	810 E1	V	26.65						
					Н	Н	25.00		
				V	26.61		_		
PCS1900		E1	Н	24.97	33.00	Pass			
				V	26.58				
		E2	Н	24.95					



EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
			V	27.07		
		Н	Н	18.78		
UMTS 850			V	26.98		
12.2k RMC	4183	E1	Н	18.73	38.45	Pass
			V	26.95		
		E2	Н	18.70		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
			V	23.41		
		Н	Н	17.34		
UMTS 1900			V	23.38		
12.2k RMC	9262	E1	Н	17.30	33.00	Pass
			V	23.34		
		E2	Н	17.27		



6.10 Field strength of spurious radiation measurement

Test Requirement:	FCC part 22.917(a) and FCC part 24.238(a)
Test Method:	FCC part 2.1053
Limit:	-13dBm
Test setup:	Below 1GHz Antenna Tower
	Search Antenna Tum O.8m Im Table Ground Plane
	Above 1GHz
	Antenna Tower Horn Antenna Spectrum Analyzer Turn Table Amplifier
	Substituted method:
	Antenna mast
	Ground plane d: distance in meters d:3 meter 1-4 meter S.G. Substituted Dipole or Horn Antenna Bi-Log Antenna or Horn Antenna
Test Procedure:	 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. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.



	Report No: CCIS1312005680 ⁻
	4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB)
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, UMTS RMC 850 and UMTS RMC 1900 for Radiated spurious emission test, other modes were not test.
Test results:	Passed



Measurement Data (worst case)

Test mode:	,	1 850	Test channel:	Lowest
	Spurious	Emission		
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
1648.40	Vertical	-43.51		
2472.60	V	-40.28		
3296.80	V	-48.10	40.00	6
4121.00	V	-47.62	-13.00	Pass
4945.20	V			
5769.40	V			
1648.40	Horizontal	-43.41		
2472.60	Н	-35.43		Pass
3296.80	Н	-48.01	40.00	
4121.00	Н	-44.42	-13.00	
4945.20	Н			
5769.40	н			
0.000				
Test mode:		л850	Test channel:	Middle
Test mode:	GSN	1850 Emission		
	GSN		Test channel: Limit (dBm)	Middle Result
Test mode:	GSN Spurious	Emission		
Test mode: Frequency (MHz)	Spurious Polarization	Emission Level (dBm)		
Test mode: Frequency (MHz) 1673.20	Spurious Polarization Vertical	Emission Level (dBm) -41.84	Limit (dBm)	Result
Test mode: Frequency (MHz) 1673.20 2509.80	Spurious Polarization Vertical V	Emission Level (dBm) -41.84 -44.85		
Test mode: Frequency (MHz) 1673.20 2509.80 3346.40	Spurious Polarization Vertical V	Emission Level (dBm) -41.84 -44.85 -47.12	Limit (dBm)	Result
Test mode: Frequency (MHz) 1673.20 2509.80 3346.40 4183.00	Spurious Polarization Vertical V V	Emission Level (dBm) -41.84 -44.85 -47.12	Limit (dBm)	Result
Test mode: Frequency (MHz) 1673.20 2509.80 3346.40 4183.00 5019.60	Spurious Polarization Vertical V V V V	Emission Level (dBm) -41.84 -44.85 -47.12 -44.77	Limit (dBm)	Result
Test mode: Frequency (MHz) 1673.20 2509.80 3346.40 4183.00 5019.60 5856.20	Spurious Polarization Vertical V V V V V	Emission Level (dBm) -41.84 -44.85 -47.12 -44.77	Limit (dBm)	Result
Test mode: Frequency (MHz) 1673.20 2509.80 3346.40 4183.00 5019.60 5856.20 1673.20	Spurious Polarization Vertical V V V V V Horizontal	Emission Level (dBm) -41.84 -44.85 -47.12 -44.77 -41.32	-13.00	Result Pass
Test mode: Frequency (MHz) 1673.20 2509.80 3346.40 4183.00 5019.60 5856.20 1673.20 2509.80	Spurious Polarization Vertical V V V V V Horizontal H	Emission Level (dBm) -41.84 -44.85 -47.12 -44.77 -41.32 -36.86	Limit (dBm)	Result
Test mode: Frequency (MHz) 1673.20 2509.80 3346.40 4183.00 5019.60 5856.20 1673.20 2509.80 3346.40	Spurious Polarization Vertical V V V V V Horizontal H H	Emission Level (dBm) -41.84 -44.85 -47.12 -44.77 -41.32 -36.86 -47.84	-13.00	Result Pass

Remark

- 1. The emission behavior belongs to narrowband spurious emission.
- 2. Remark"---" means that the emission level is too low to be measured
- 3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.



Test mode:	GSN	1850	Test channel:	Highest
	Spurious	Emission		
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
1697.60	Vertical	-44.13		
2546.40	V	-48.06		
3395.20	V	-44.93		_
4244.00	V	-41.30	-13.00	Pass
5092.80	V			
5941.60	V			
1697.60	Horizontal	-41.28		
2546.40	Н	-43.26		
3395.20	Н	-45.24	40.00	Pass
4244.00	Н	-45.75	-13.00	
5092.80	Н			
5941.60	Н			
Test mode:	PCS	1900	Test channel:	Lowest
Fraguesov (MIH=)	Spurious	Emission	Limit (dDm)	Dooult
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
2700 40	i e			
3700.40	Vertical	-39.03		
5550.60	Vertical V	-39.03 -32.09		
			12.00	Door
5550.60	V	-32.09	-13.00	Pass
5550.60 7400.80	V V	-32.09 -34.83	-13.00	Pass
5550.60 7400.80 9251.00	V V V	-32.09 -34.83 	-13.00	Pass
5550.60 7400.80 9251.00 11101.20	V V V	-32.09 -34.83 	-13.00	Pass
5550.60 7400.80 9251.00 11101.20 12951.40	V V V V	-32.09 -34.83 	-13.00	Pass
5550.60 7400.80 9251.00 11101.20 12951.40 3700.40	V V V V Horizontal	-32.09 -34.83 -40.06	_	
5550.60 7400.80 9251.00 11101.20 12951.40 3700.40 5550.60	V V V V V Horizontal	-32.09 -34.83 -40.06 -36.76	-13.00	Pass
5550.60 7400.80 9251.00 11101.20 12951.40 3700.40 5550.60 7400.80	V V V V V Horizontal H H	-32.09 -34.83 -40.06 -36.76 -35.21	_	

Remark:

- 1. The emission behavior belongs to narrowband spurious emission.
- 2. Remark"---" means that the emission level is too low to be measured
- 3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	PCS1900	Test channel:	Middle
	. 00.000		



Spurious Emission Limit (dBm) Result				- Nopoli No	
Polarization Level (dBm)	Fragues au (NALIE)	Spurious	Emission	Limit (dDmn)	Dogult
5640.00 V -34.91 7520.00 V -38.14 9400.00 V 11280.00 V 13160.00 V 3760.00 Horizontal -33.81 5640.00 H -38.94 7520.00 H -38.12 9400.00 H 11280.00 H 13160.00 H 13160.00 H Test mode: PCS1900 Test channel: Highest Spurious Emission Limit (dBm) Result Polarization Level (dBm) Limit (dBm) Pass 5729.40 V -36.13 -13.00 Pass 11458.80 V -13.00 Pass 5729.40 H -37.63 -13.00 Pass 5729.40 H -38.24 -13.00 Pass 5729.40 H -38.24 -13.00	Frequency (MHZ)	Polarization	Level (dBm)	Limit (dBm)	Result
7520.00 V -38.14 -13.00 Pass 9400.00 V 11280.00 V 13160.00 V 13160.00 Horizontal -33.81 -38.94 -7520.00 H -38.12 -13.00 Pass -13.00 Pass Pass -13.00 Pass Pass -13.00 Pass Pass -13.00 Pass -13.00	3760.00	Vertical	-34.83		
9400.00	5640.00	V	-34.91		
9400.00	7520.00	V	-38.14	40.00	
13160.00	9400.00	V		-13.00	Pass
3760.00 Horizontal -33.81 5640.00 H -38.94 7520.00 H -38.12 9400.00 H 11280.00 H 13160.00 H Test mode: PCS1900 Test channel: Highest Spurious Emission Polarization Level (dBm) Limit (dBm) Result 3819.60 Vertical -31.50 -36.13 7639.20 V -38.45 -13.00 Pass 11458.80 V -13.00 Pass 5729.40 H -37.63 -13.00 Pass 5729.40 H -38.24 -13.00 Pass 5729.40 H -38.24 -13.00 Pass 11458.80 H -13.00 Pass	11280.00	V			
5640.00 H -38.94 7520.00 H -38.12 9400.00 H 11280.00 H 13160.00 H Test mode: PCS1900 Test channel: Highest Spurious Emission Limit (dBm) Result 3819.60 Vertical -31.50 5729.40 V -36.13 -13.00 Pass 9549.00 V -13.00 Pass 11458.80 H -37.63 -13.00 Pass 11458.80 H -13.00 Pass	13160.00	V			
7520.00 H -38.12 -13.00 Pass 9400.00 H -13.00 Pass 11280.00 H 13160.00 H Highest Frequency (MHz) Spurious Emission Limit (dBm) Result 3819.60 Vertical -31.50 5729.40 V -36.13 7639.20 V -38.45 9549.00 V 11458.80 V 3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 113368.60 H	3760.00	Horizontal	-33.81		
9400.00 H -13.00 Pass 11280.00 H Highest Test mode: PCS1900 Test channel: Highest Frequency (MHz) Spurious Emission Limit (dBm) Result 3819.60 Vertical -31.50 5729.40 V -38.45 9549.00 V -38.45 9549.00 V	5640.00	Н	-38.94		
9400.00	7520.00	Н	-38.12	40.00	Davis
Test mode: PCS1900 Test channel: Highest Frequency (MHz) Spurious Emission Limit (dBm) Result 3819.60 Vertical -31.50 5729.40 V -36.13 7639.20 V -38.45 9549.00 V 11458.80 V 3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 113368.60 H	9400.00	Н		-13.00	Pass
Test mode: PCS1900 Test channel: Highest Frequency (MHz) Spurious Emission Limit (dBm) Result 3819.60 Vertical -31.50 5729.40 V -36.13 7639.20 V -38.45 9549.00 V 11458.80 V 3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	11280.00	Н			
Spurious Emission Limit (dBm) Result Polarization Level (dBm) Limit (dBm) Result 3819.60 V -36.13 -13.00 Pass 9549.00 V -13.00 Pass 11458.80 V -13.00 Pass 5729.40 H -37.63 -13.00 Pass 7639.20 H -38.24 -13.00 Pass 11458.80 H -13.00 Pass	13160.00	Н			
Frequency (MHz) Polarization Level (dBm) Limit (dBm) Result 3819.60 Vertical -31.50 -36.13 -36.13 -7639.20 V -38.45 -13.00 Pass 9549.00 V -13.00 Pass 11458.80 V -13.00 Pass 5729.40 H -37.63 -7639.20 H -38.24 -13.00 Pass 11458.80 H -13.00 Pass	Test mode:	PCS	1900	Test channel:	Highest
Polarization Level (dBm)		Spurious	Emission		
5729.40 V -36.13 7639.20 V -38.45 9549.00 V 11458.80 V 13368.60 V 3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
7639.20 V -38.45 9549.00 V 11458.80 V 13368.60 V 3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	3819.60	Vertical	-31.50		
9549.00 V 11458.80 V 13368.60 V 3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	5729.40	V	-36.13		
9549.00 V 11458.80 V 13368.60 V 3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	7639.20	V	-38.45	40.00	Dana
13368.60 V 3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	9549.00	V		-13.00	Pass
3819.60 Horizontal -34.89 5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	11458.80	V			
5729.40 H -37.63 7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	13368.60	V			
7639.20 H -38.24 9549.00 H 11458.80 H 13368.60 H	3819.60	Horizontal	-34.89		
9549.00 H 11458.80 H 13368.60 H	5729.40	Н	-37.63		
9549.00 H 11458.80 H 13368.60 H	7639.20	Н	-38.24	40.00	Desir
13368.60 H	9549.00	Н		-13.00	Pass
	11458.80	Н			
		Н			

Remark:

- 1. The emission behavior belongs to narrowband spurious emission.
- 2. Remark"---" means that the emission level is too low to be measured
- 3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	UMTS850 12.2k RMC		Test channel:	Lowest	
	Spurious	Emission			
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result	
1652.80	Vertical	-53.04	-13.00	Pass	

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			Report No	: CCIS13120056801
2479.20	V	-38.09		
3305.60	V	-49.74		
4132.00	V	-47.73		
4958.40	V			
5784.80	V			
1652.80	Horizontal	-55.31		
2479.20	Н	-43.81		
3305.60	Н	-49.61	40.00	
4132.00	Н	-48.85	-13.00	Pass
4958.40	Н			
5784.80	Н			
Test mode:	UMTS850	12.2k RMC	Test channel:	Middle
F	Spurious	Spurious Emission		D 16
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
1673.20	Vertical	-51.03		
2509.80	V	-43.58		
3346.40	V	-49.80	40.00	
4183.00	V	-48.21	-13.00	Pass
5019.60	V			
5856.20	V			
1673.20	Horizontal	-55.93		
2509.80	Н	-43.16		
3346.40	Н	-48.55	40.00	Descri
4183.00	Н	-48.49	-13.00	Pass
5019.60	Н			
5856.20	Н			



Test mode:	UMTS850 12.2k RMC		UMTS850 12.2k RMC Test channel:		
_	Spurious Emission			5 "	
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result	
1693.20	Vertical	-53.77			
2539.80	V	-43.87			
3386.40	V	-48.46		_	
4233.00	V	-47.42	-13.00	Pass	
5079.60	V				
5926.20	V				
1693.20	Horizontal	-55.50			
2539.80	Н	-45.90			
3386.40	Н	-48.91	40.00		
4233.00	Н	-48.90	-13.00	Pass	
5079.60	Н				
5926.20	Н				

Remark:

- 1. The emission behavior belongs to narrowband spurious emission.
- 2. Remark"---" means that the emission level is too low to be measured
- 3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.



Test mode:	UMTS 1900 12.2k RMC		Test channel:	Lowest	
	Spurious	Emission	Lineit (dDun)	Result	
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)		
3704.80	Vertical	-38.26			
5557.20	V	-31.09			
7409.60	V	-30.36	40.00	Dana	
9262.00	V		-13.00	Pass	
11114.40	V				
12966.80	V				
3704.80	Horizontal	-37.60			
5557.20	Н	-35.61			
7409.60	Н	-32.43		_	
9262.00	Н		-13.00	Pass	
11114.40	Н				
12966.80	Н				
Test mode:	UMTS 1900	12.2k RMC	Test channel:	Middle	
	Spurious	Spurious Emission		5 "	
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result	
3760.00	Vertical	-36.71			
5640.00					
5640.00	V	-33.42			
7520.00	V	-33.42 -35.76		_	
			-13.00	Pass	
7520.00	V	-35.76	-13.00	Pass	
7520.00 9400.00	V V	-35.76	-13.00	Pass	
7520.00 9400.00 11280.00	V V V	-35.76 	-13.00	Pass	
7520.00 9400.00 11280.00 13160.00	V V V	-35.76 	-13.00	Pass	
7520.00 9400.00 11280.00 13160.00 3760.00	V V V V Horizontal	-35.76 -33.48			
7520.00 9400.00 11280.00 13160.00 3760.00 5640.00	V V V V Horizontal	-35.76 -33.48 -36.80	-13.00	Pass	
7520.00 9400.00 11280.00 13160.00 3760.00 5640.00 7520.00	V V V V Horizontal H	-35.76 -33.48 -36.80 -35.45			



Test mode:	UMTS 1900	UMTS 1900 12.2k RMC		Highest	
- (MIL)	Spurious Emission			.	
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result	
3815.20	Vertical	-37.07			
5722.80	V	-33.81			
7630.40	V	-36.32		Pass	
9538.00	V		-13.00		
11445.60	V				
13353.20	V				
3815.20	Horizontal	-33.12			
5722.80	Н	-34.76			
7630.40	Н	-36.24	40.00		
9538.00	Н		-13.00	Pass	
11445.60	Н				
13353.20	Н				

Remark:

- 1. The emission behavior belongs to narrowband spurious emission.
- 2. Remark"---" means that the emission level is too low to be measured
- 3. 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:	 The equipment under test was connected to an external DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached
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:

Refe	erence Frequency: G	SM850 Mido	lle channel=190 chann	el=836.6MHz	
B	T	Frequency error		1	Б
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
	-30	145	0.173321		
	-20	138	0.164953		
	-10	136	0.162563		
	0	130	0.155391		
3.70	10	100	0.119531	2.5	Pass
	20	105	0.125508		
	30	126	0.150610	- - -	
	40	123	0.147024		
	50	117	0.139852		
Refe	erence Frequency: P(CS1900 Mid	dle channel=661 chanr	nel=1880MHz	
		Frequency error			_
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Resu	Result
	-30	130	0.069149		
	-20	126	0.067021		
	-10	120	0.063830		
	0	114	0.060638		
3.70	10	108	0.057447	2.5	Pass
	20	103	0.054787		
	30	108	0.057447		
	40	117	0.062234		
	50	113	0.060106		



Reference F	Reference Frequency: UMTS850 12.2k RMC Middle channel=4183 channel=836.6MHz							
Power supplied (Vdc)	Temperature (°ℂ)	Frequency error		Limit (ppm)	Result			
1 ower supplied (vdc)	remperature (c)	Hz	ppm	Еппі (рріп)	rtoour			
	-30	103	0.123117					
	-20	128	0.153000					
	-10	129	0.154196					
	0	104	0.124313					
3.70	10	97	0.115945	2.5	Pass			
	20	103	0.123117					
	30	104	0.124313					
	40	96	0.114750					
	50	85	0.101602					
Reference F	requency: UMTS190	0 12.2k RM	IC Middle channel=940	0 channel=1880	MHz			
	- (00)	Frequency error			Danielt			
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result			
	-30	136	0.072340					
	-20	108	0.057447					
	-10	107	0.056915					
	0	98	0.052128					
3.70	10	96	0.051064	2.5	Pass			
	20	89	0.047340					
	30	76	0.040426					
	40	79	0.042021					
	50	85	0.045213					



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:	Spectrum analyzer EUT Variable Power Supply Note: Measurement setup for testing on Antenna connector
Test procedure:	 Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. Reduce the input voltage to specify extreme voltage variation (+/-15%) and endpoint, record the maximum frequency change.
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						
T(°C)	Power supplied	Frequency error		1.1 - 21 ()	5	
Temperature (℃)	(Vdc)	Hz	ppm	Limit (ppm)	Result	
	4.25	106	0.126703			
25	3.70	107	0.127899	2.5	Pass	
	3.40	103	0.123117			
Refe	erence Frequency: P0	CS1900 Middle ch	nannel=661 chann	el=1880MHz		
Townsoreture (°C)	Power supplied	Frequer	ncy error	1.1 11 ()	D It	
Temperature (℃)	(Vdc)	Hz	ppm	Limit (ppm)	Result	
	4.25	98	0.052128			
25	3.70	96	0.051064	2.5	Pass	
	3.40	90	0.047872			



Reference F	Frequency: UMTS 85	0 12.2k RMC Mid	dle channel=4183	3 channel=836.6	MHz
Tamparatura (%)	Power supplied	Frequency error			Danult
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.25	75	0.089649		
25	3.70	95	0.113555	2.5	Pass
	3.40	96	0.114750		
Reference F	requency: UMTS 190	00 12.2k RMC Mi	ddle channel=940	00 channel=1880	MHz
Tomporature (%)	Power supplied	Frequer	ncy error		Doords
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.25	92	0.048936		
25	3.70	70	0.037234	2.5	Pass
	3.40	60	0.031915		