SGS-CSTC Standards Technical Services（Shanghai） Co., Ltd.

588 West Jindu Road,Songjiang District,Shanghai,China

Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5655
ee.shang@sgs.com

TEST REPORT

Application No. :	SHEM1209001403RF
Applicant:	MobiWire SAS
FCC ID:	QPN-MOBIPRINT2

Equipment Under Test (EUT):

NOTE: The following sample(s) submitted was/were identified on behalf of the client as

Product Name:	MobiWire Mobiprinter
Brand Name:	MobiWire
Model Name:	MobiPrint²
Emission Designator:	313KGXW(GSM 850) 316KGXW(GSM 1900)
Standards:	FCC Part 2, 22H & 24E
Date of Receipt:	Sep. 25, 2012
Date of Test:	Sep. 26, 2012 to Oct. 21, 2012
Date of Issue:	Oct. 23, 2012
Test Result :	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above. Please refer to section 2 of this report for further details.

Jim Xu
E&E Section Head
SGS-CSTC(Shanghai) Co., Ltd.

Neil Zhang
Project Engineer
SGS-CSTC(Shanghai) Co., Ltd.

2 Test Summary

Description of Test	FCC Rules	Result
RF Power Output	2.1046(a) 22.913(a) 24.232(c)	PASS
99% Occupied Bandwidth	2.1049(h)	PASS
Effective Isotropic Radiated Power	2.1046(a) 22.913(a) 24.232(c)	PASS
Conducted Emission	2.1051	PASS
Out of Band Emissions at antenna Terminals and Band Edge	2.1051 22.917(a) 24.238(a)	PASS
Field Strength of Spurious Emissions	2.1053 22.917(a) 24.238(a)	PASS
Frequency Stability vs. Temperature and Voltage	2.1055(a)&(d) 22.863 24.235	PASS

3 Contents

4 General Information

4.1 Client Information

Applicant:	MobiWire SAS
Address of Applicant:	79 avenue Francois Arago, 92000 NANTERRE France
Manufacturer:	MOBIWIRE MOBILES (NINGBO) Co. , Ltd
Address of Manufacturer:	No.999, Dacheng East Road, Fenghua City, Zhejiang

4.2 General Description of E.U.T.

Product Name	MobiWire Mobiprinter
Brand Name:	MobiWire
Model No:	MobiPrint²
Antenna Type	Interior antenna
Supported Frequency Bands:	GSM850: 824.2MHz ~ 848.8MHz GSM1900: 1850.2MHz ~ 1909.8MHz
Modulation Type(GPRS)：	GMSK
Emission Designator:	313KGXW(GSM 850) 316KGXW(GSM 1900)
Test Frequency Bands:	GSM850/PCS1900

4.3 Details of E.U.T.

Hardware Version:	V03
Software Version:	V00-M121106-MP2-MP
Bluetooth support:	V 2.1 (EDR)
WiFi support:	802.11 b/g
AC Adaptor :	Mode: S024WM1200200 Input: 100~240V~50/60Hz 600mA Output: 12V DC 2000mA
Battery:	1800mAh 13.2W/h

4.4 Standards Applicable for Testing

The standards used were FCC PART 2, FCC PART 22 and FCC PART 24.

4.5 Test Location

All the tests were performance at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.
Tel: +86 21 6191 5666
Fax: +86 21 6191 5655

4.6 Test Facility

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2015-02-22.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

4.7 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on TIA/EIA-603-C-2004 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

5 Equipments Used during Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2012-6-4	2013-6-3
2	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-679	2012-6-4	2013-6-3
3	Horn Antenna	Rohde & Schwarz	HF906	100284	2012-3-10	2013-3-9
4	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2012-6-4	2013-6-3
5	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2011-12-9	2012-12-8
6	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY－2003P	--	2011-11-15	2012-11-14
7	CLAMP METER	FLUKE	316	86080010	2012-04-22	2013-04-20
8	Thermo-Hygrometer	ZHICHEN	ZC1-2	01050033	2011-11-15	2012-11-14
9	High-low temperature cabinet	Shanghai YuanZhen	GW2050	--	2012-6-17	2013-6-16
10	DC power	KIKUSUI	PMC35－3	NF100260	2012-1-16	2013-1-15
11	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2012-5-7	2013-5-6
12	Power meter	Rohde & Schwarz	NRP	101641	2012-5-5	2013-5-4
13	UNIVERSAL RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMU 200	112012	2012-04-13	2013-04-12
14	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT1800.0/2000.0-0.2/40-5SSK	11	2012-1-26	2013-1-25

15	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/880.0-0.2/40-5SSK	9	2012-1-26	2013-1-25
16	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2012-6-4	2013-6-3

6 Test Results

6.1 E.U.T. test conditions

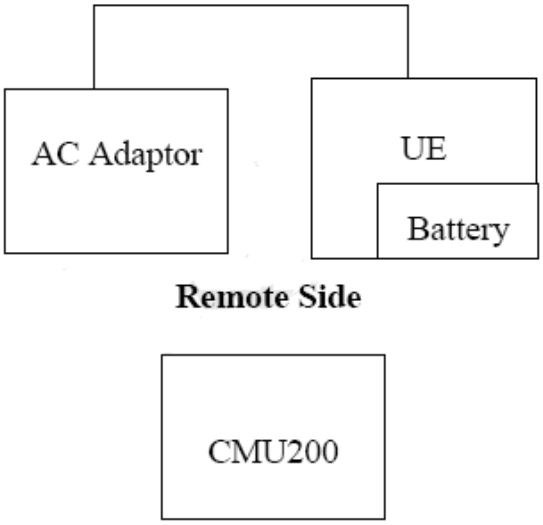
Operating Environment:

Temperature: 20.0 -25.0 °C

Humidity: 38-52% RH

Atmospheric Pressure: 992 -1010 mbar

Configuration of Tested System:

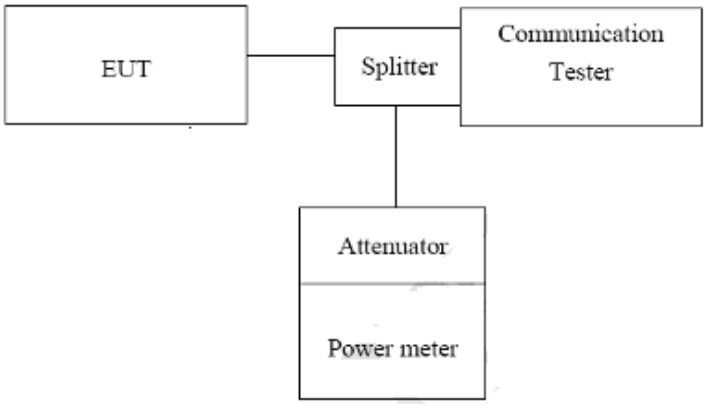


6.2 RF Power Output

Test Requirement: 2.1046(a)
22.913(a) Mobile station are limited to 7 watts
24.232(c) Mobile and portable stations are limited to 2 watts

Test Date: Sep. 27, 2012

Test Setup



Measurement Setup for testing on Antenna connector.

Test Status: Test lowest, middle, highest channel.

Test Procedure:

The transmitter output was connected to calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power in dBm. The power output at the transmitter antenna port was determined by adding the value of attenuator to the power meter reading.

RF Conducted output power:

GSM 850(GMSK) Result:

Frequency(MHz)	Channel:	Peak power (dBm)	AV power (dBm)
824.2	128	32.4	23.6
836.4	189	32.5	23.7
848.8	251	32.4	23.6

PCS 1900(GMSK) Result:

Frequency(MHz)	Channel:	Peak power (dBm)	AV power (dBm)
1850.2	512	28.8	20.3
1880.0	661	28.7	20.2
1909.8	810	28.7	20.2

6.3 Occupied Bandwidth

Test Requirement: 2.1049(h)

Test Date: ×××. ××, 2012

Test Status: Test lowest, middle, highest channel.

Test Procedure:

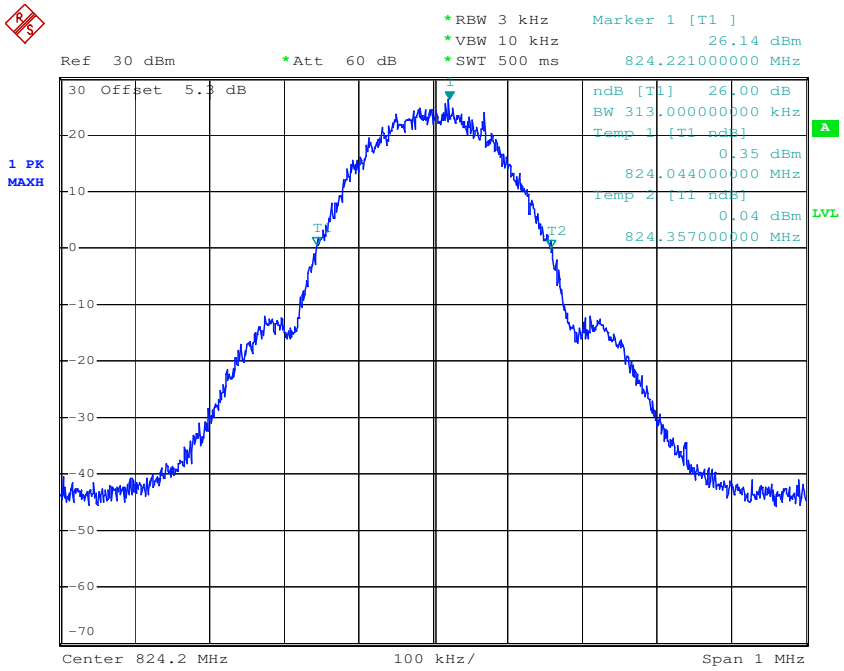
The EUT output RF connector was connected with a short a cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW>=3 times RBW, the -26dbc bandwidth were measured, the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

Test result:

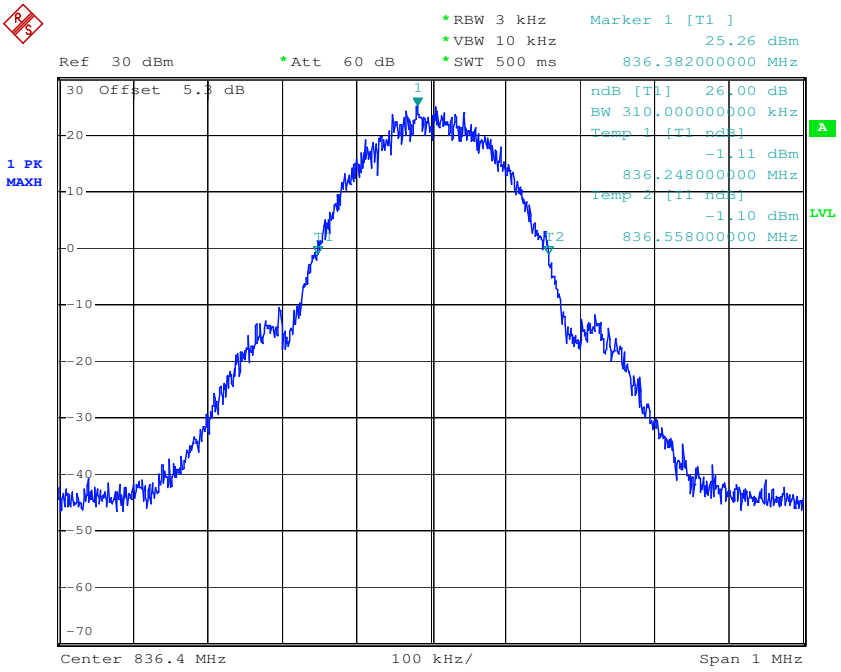
EUT Mode	Frequency (MHz)	CH	26db Bandwidth (kHz)
GSM 850 GMSK	824.2	128	313.00
	836.4	189	310.00
	848.8	251	312.00
EUT Mode	**Frequency (MHz)**	**CH**	**26db Bandwidth (kHz)**
PCS 1900 GMSK	1850.2	512	304.00
	1880.0	661	316.00
	1909.8	810	314.00

GSM 850 GMSK

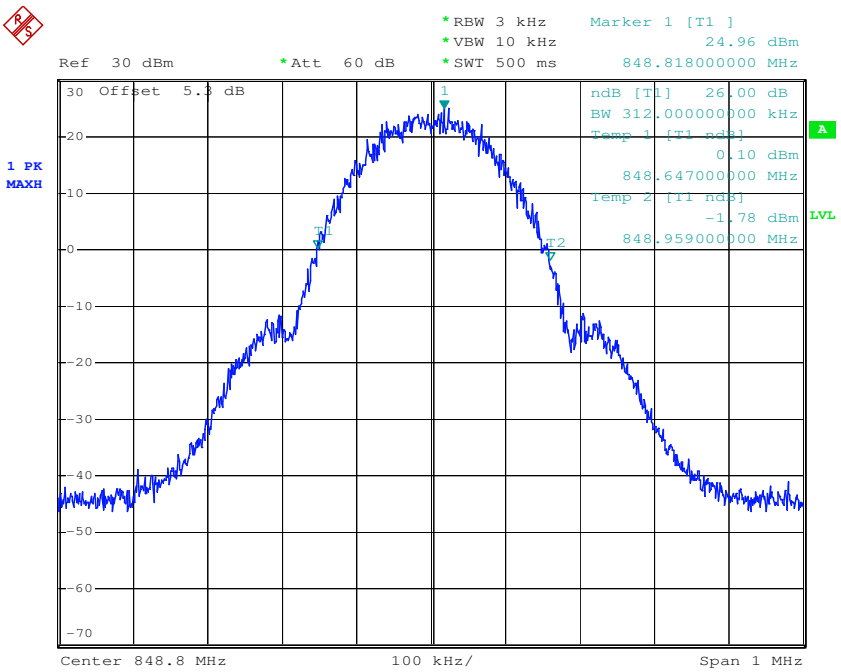
Graph: Channel Low



Channel Middle

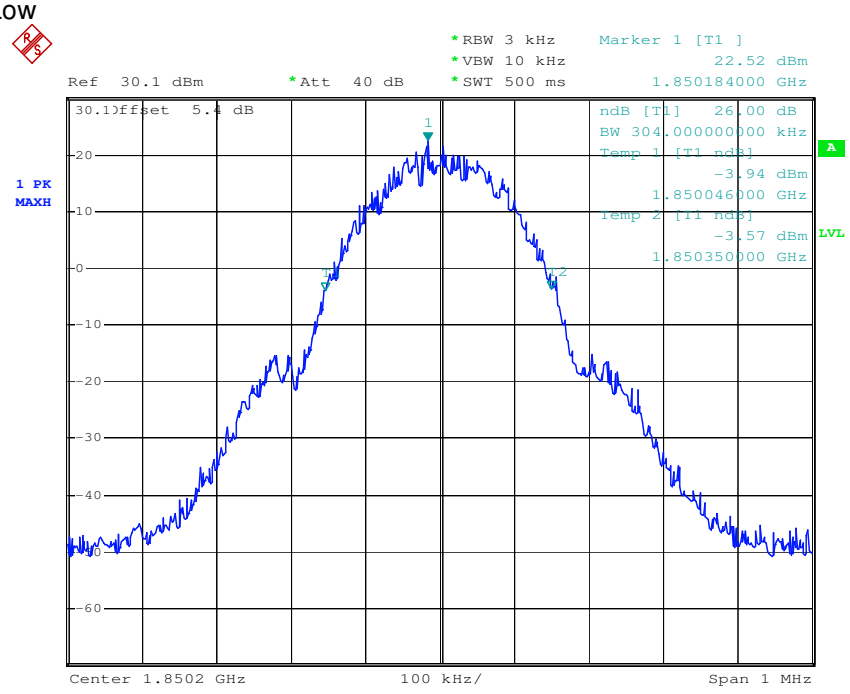


Channel High

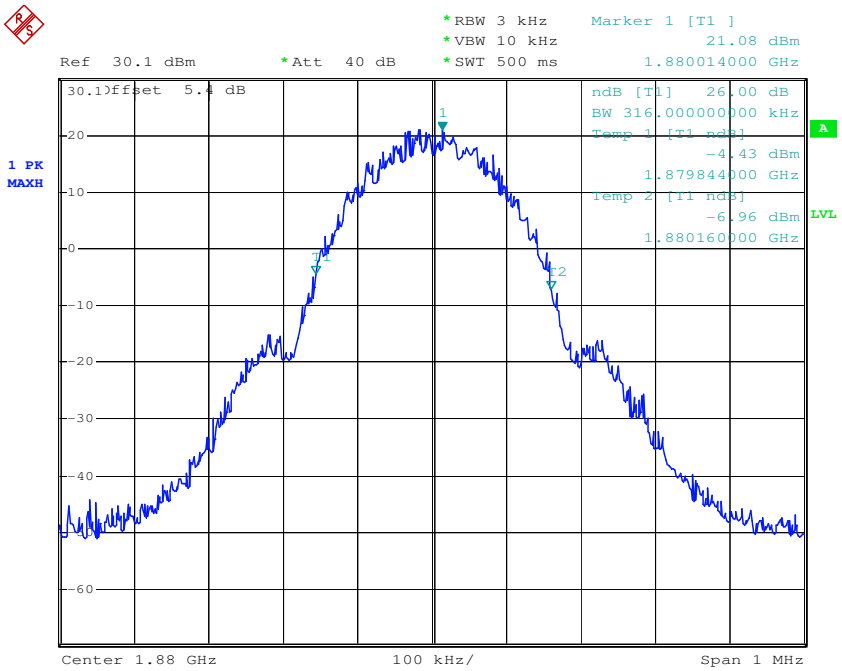


GSM 1900 GMSK

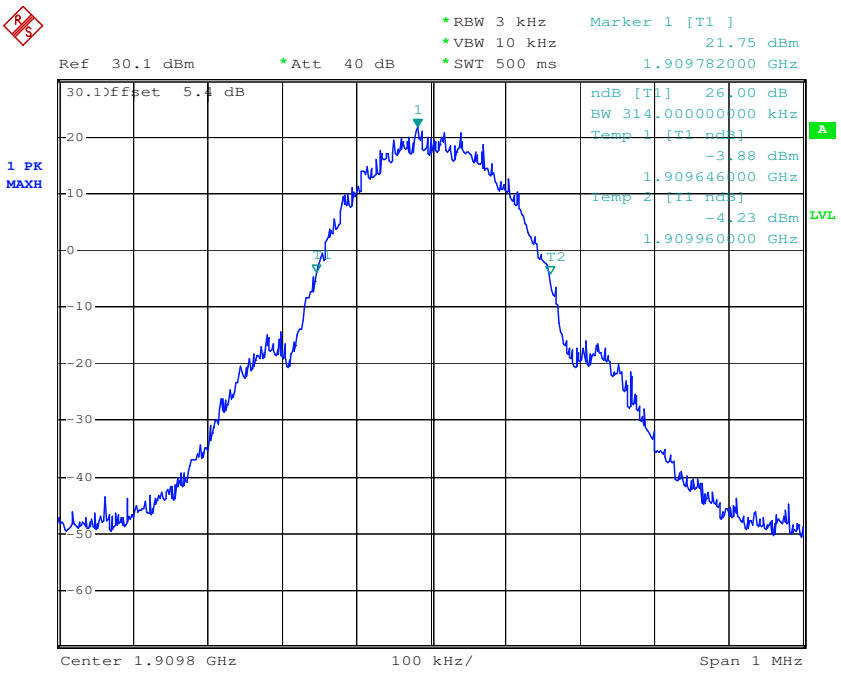
Graph: Channel Low



Channel Middle



Channel High



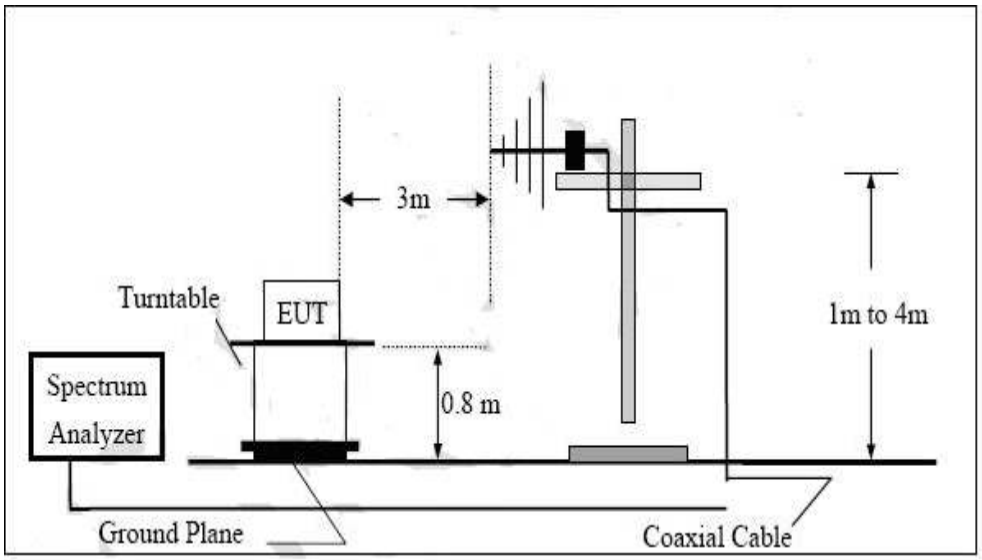
6.4 Effective Radiated Power (ERP) & Effective Isotropic Radiated Power (EIRP)

Test Requirement: 2.1046(a)
22.913(a) Mobile station are limited to 7 watts ERP.
24.232(c) Mobile and portable stations are limited to 2 watts EIRP

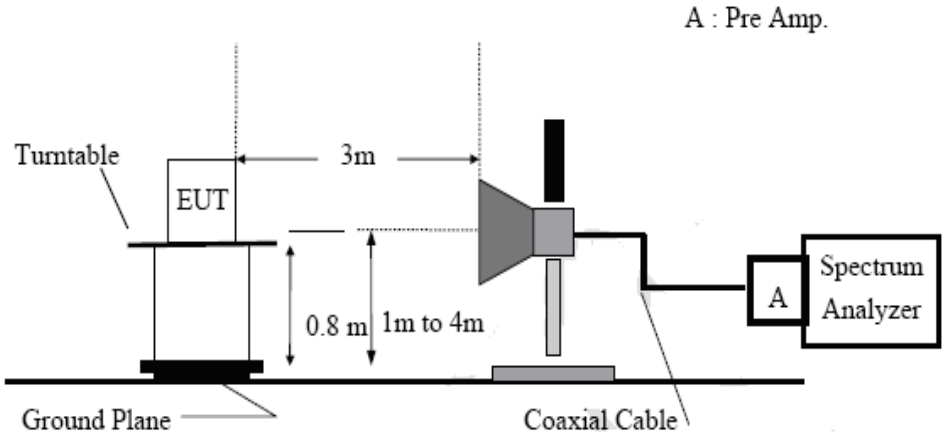
Test Date: Oct. 8, 2012

Test Setup:

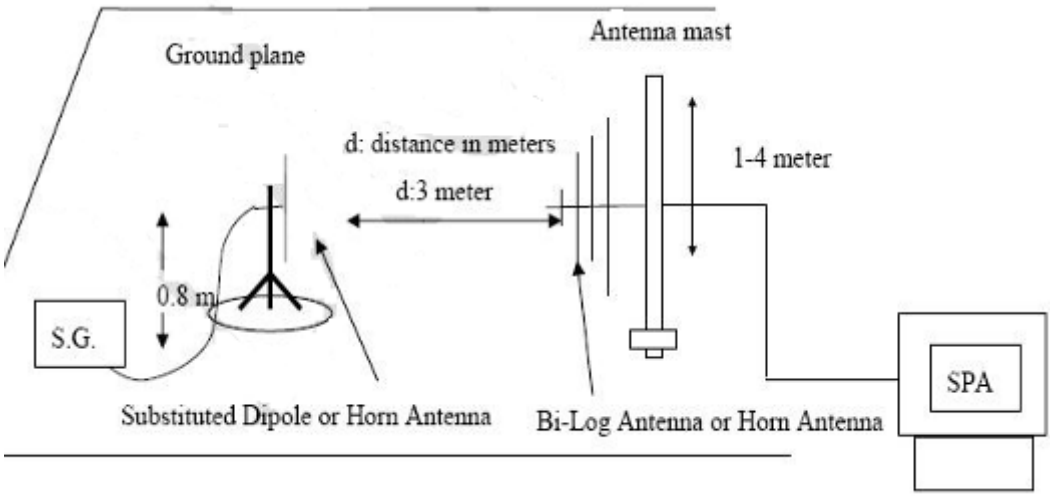
(A) Radiated emission Test setup, Below Frequency 1000MHz:



(B) Radiated emission Test setup frequency over 1GHz:



(C) Substituted Method Test setup:



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 measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2-848.8MHz were measured using substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follow:

EIRP in frequency band 1850.2-1909.8MHz were measured using a substitution method. The EUT was replaced by a horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

ERP=S.G. output (dBm) + Antenna Gain (dBd) - Cable Loss(dB)

EIRP= S.G. output (dBm) + Antenna Gain (dBi) - Cable Loss(dB)

ERP/EIRP: Below 1GHz was RBW=300KHz, VBW=1MHz; Above 1GHz was RBW=1MHz, VBW=3MHz

Measurement result:

EUT mode	Frequency (MHz)	CH	Antenna Pol.	SPA Reading (dBuV)	S.G. output (dBm)	Antenna Gain (dBd)	Cable loss (dB)	ERP (dBm)	Limit (dBm)
GSM 850 GMSK	824.2	128	V	97.27	20.33	8.40	3.32	25.41	38.45
			H	97.29	15.57	8.40	3.32	20.65	38.45
	836.4	189	V	98.04	21.05	8.42	3.40	26.07	38.45
			H	96.22	16.32	8.42	3.40	21.34	38.45
	848.8	251	V	98.56	20.50	8.47	3.43	25.54	38.45
			H	95.03	15.48	8.47	3.43	20.52	38.45
EUT mode	**Frequency (MHz)**	**CH**	**Antenna Pol.**	**SPA Reading (dBuV)**	**S.G. output (dBm)**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**EIRP (dBm)**	**Limit (dBm)**
PCS 1900 GMSK	1850.2	512	V	95.74	18.7	9.15	4.15	23.70	33.00
			H	99.02	16.35	9.15	4.15	21.35	33.00
	1880.0	661	V	94.54	19.37	9.22	4.28	24.31	33.00
			H	99.38	19.55	9.22	4.28	24.49	33.00
	1909.8	810	V	95.83	20.66	9.25	4.41	25.50	33.00
			H	97.09	20.71	9.25	4.41	25.55	33.00

6.5 Conducted Emission

Test Requirement: FCC Part 2.1051

Test Date: Oct. 18, 2012

Standard Applicable According to section 15.207,frequency 150KHz to 30MHz shall not not exceed the limit table as blew.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

*

EUT Setup

1.The conducted emission tests were performed in the test site,using the setup in accordance with the ANSI C63.10-2009.

2.EUT is charged with Adapter.The AC Power adaptor was plug-in LISN.The rear of the EUT and periphearals were placed flushed with the rear of the tabletop.

3.The LISN was connected with 120V AC/60Hz power source.

Measurement Result

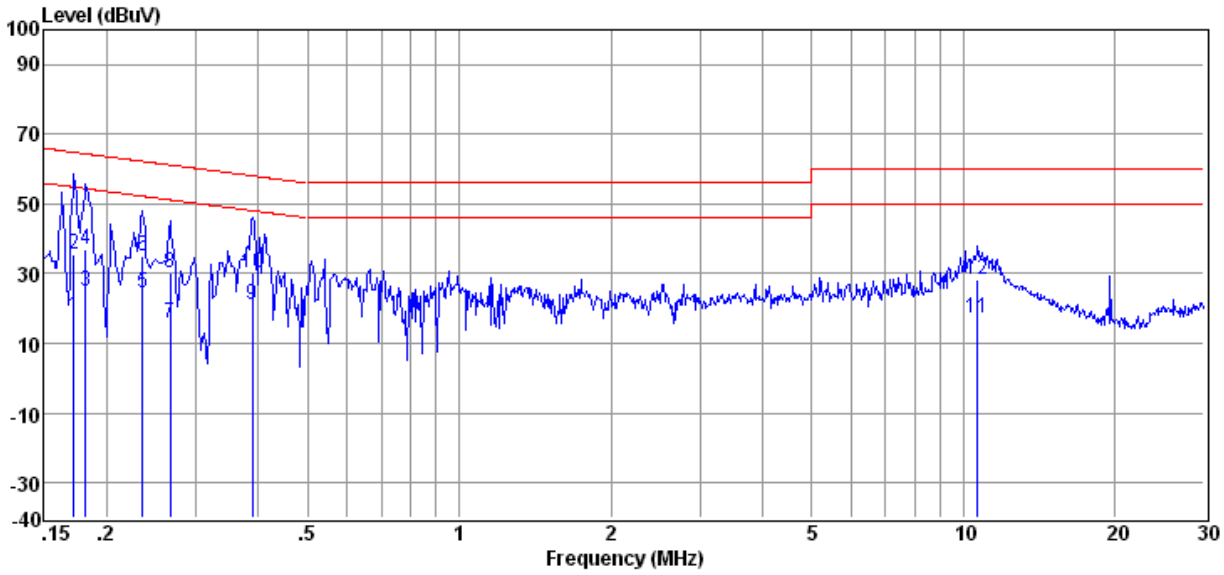
Operation mode: Normal Link Mode with CMU200.

Note:All test modes have been tested.

Measurement Data

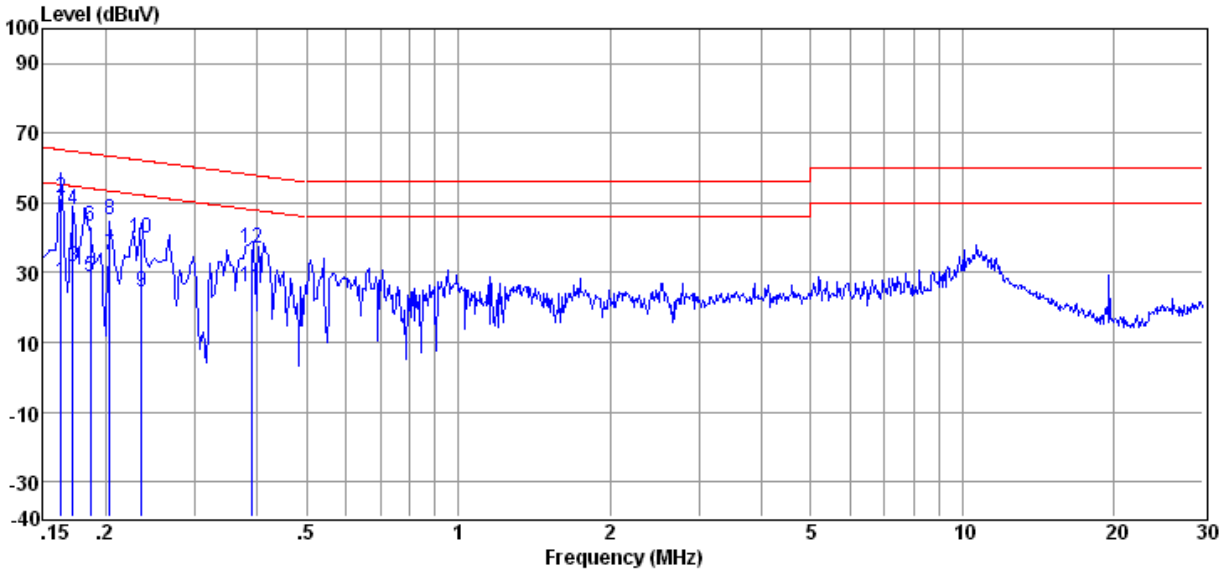
850 Band GPRS Link mode:

Live Line:



Freq (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector
0.172	17.27	0.16	0.10	17.53	54.86	-37.33	Average
0.172	35.11	0.16	0.10	35.37	64.86	-29.49	QP
0.182	24.79	0.14	0.10	25.03	54.42	-29.39	Average
0.182	36.58	0.14	0.10	36.82	64.42	-27.60	QP
0.235	24.36	0.11	0.10	24.57	52.26	-27.69	Average
0.235	34.75	0.11	0.10	34.96	62.26	-27.30	QP
0.267	15.50	0.12	0.10	15.72	51.20	-35.48	Average
0.267	30.13	0.12	0.10	30.35	61.20	-30.85	QP
0.389	20.92	0.16	0.10	21.18	48.08	-26.90	Average
0.389	29.88	0.16	0.10	30.14	58.08	-27.94	QP
10.676	16.45	0.60	0.10	17.15	50.00	-32.85	Average
10.676	27.57	0.60	0.10	28.27	60.00	-31.73	QP

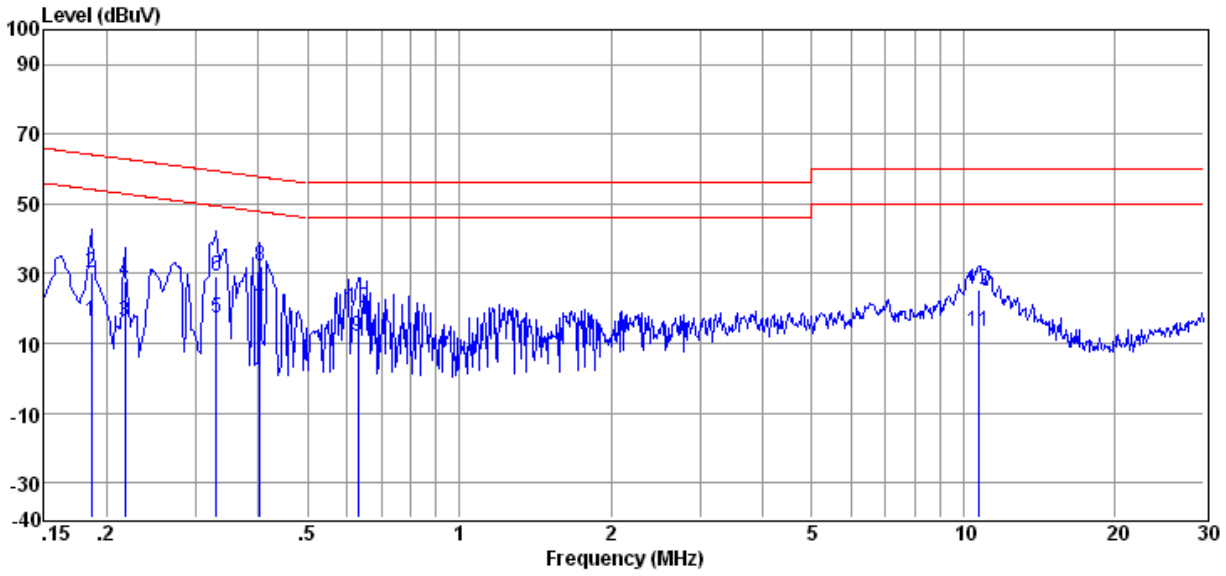
Neutral Line:



Freq (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector
0.163	27.31	0.17	0.10	27.58	55.30	-27.72	Average
0.163	50.93	0.17	0.10	51.20	65.30	-14.10	QP
0.172	31.61	0.16	0.10	31.87	54.86	-22.99	Average
0.172	47.55	0.16	0.10	47.81	64.86	-17.05	QP
0.186	28.60	0.13	0.10	28.83	54.20	-25.37	Average
0.186	43.24	0.13	0.10	43.47	64.20	-20.73	QP
0.204	34.89	0.10	0.10	35.09	53.45	-18.36	Average
0.204	44.74	0.10	0.10	44.94	63.45	-18.51	QP
0.235	24.49	0.11	0.10	24.70	52.26	-27.56	Average
0.235	39.75	0.11	0.10	39.96	62.26	-22.30	QP
0.389	25.67	0.16	0.10	25.93	48.08	-22.15	Average
0.389	36.73	0.16	0.10	36.99	58.08	-21.09	QP

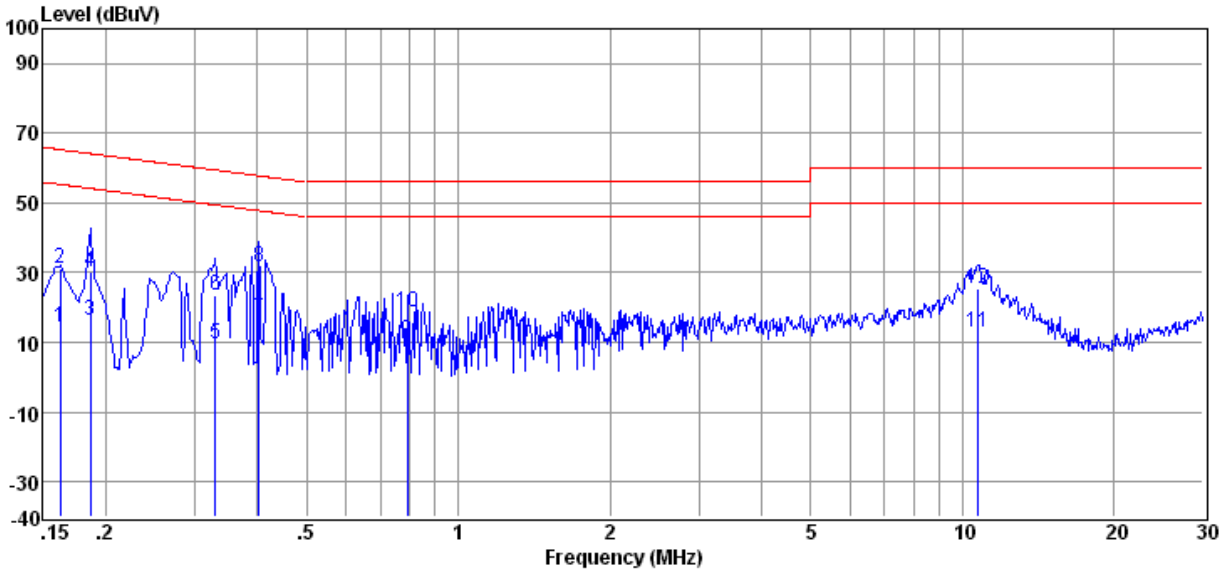
1900 Band GPRS Link mode:

Live Line:



Freq (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector
0.186	16.24	0.13	0.10	16.47	54.20	-37.73	Average
0.186	30.02	0.13	0.10	30.25	64.20	-33.95	QP
0.217	16.17	0.11	0.10	16.38	52.92	-36.54	Average
0.217	27.59	0.11	0.10	27.80	62.92	-35.12	QP
0.330	16.84	0.14	0.10	17.08	49.44	-32.36	Average
0.330	28.95	0.14	0.10	29.19	59.44	-30.25	QP
0.402	19.40	0.17	0.10	19.67	47.81	-28.14	Average
0.402	31.92	0.17	0.10	32.19	57.81	-25.62	QP
0.630	11.71	0.20	0.10	12.01	46.00	-33.99	Average
0.630	20.01	0.20	0.10	20.31	56.00	-35.69	QP
10.733	12.61	0.60	0.10	13.31	50.00	-36.69	Average
10.733	24.59	0.60	0.10	25.29	60.00	-34.71	QP

Neutral Line:



Freq (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector
0.162	14.25	0.18	0.10	14.53	55.34	-40.81	Average
0.162	30.80	0.18	0.10	31.08	65.34	-34.26	QP
0.186	15.85	0.13	0.10	16.08	54.20	-38.12	Average
0.186	29.86	0.13	0.10	30.09	64.20	-34.11	QP
0.330	9.43	0.14	0.10	9.67	49.44	-39.77	Average
0.330	23.41	0.14	0.10	23.65	59.44	-35.79	QP
0.402	16.62	0.17	0.10	16.89	47.81	-30.92	Average
0.402	31.38	0.17	0.10	31.65	57.81	-26.16	QP
0.792	10.21	0.20	0.10	10.51	46.00	-35.49	Average
0.792	18.18	0.20	0.10	18.48	56.00	-37.52	QP
10.733	12.14	0.60	0.10	12.84	50.00	-37.16	Average
10.733	24.59	0.60	0.10	25.29	60.00	-34.71	QP

6.6 Out of band emissions at antenna Terminals

6.6.1 Band edges emissions

Test Requirement: Part 2.1051

The magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specification in the instruction manual and/or alignment procedure, shall not be less than 43+10log(Mean power in watts) dBc below the mean power output outside a license's frequency block(-13dBm).

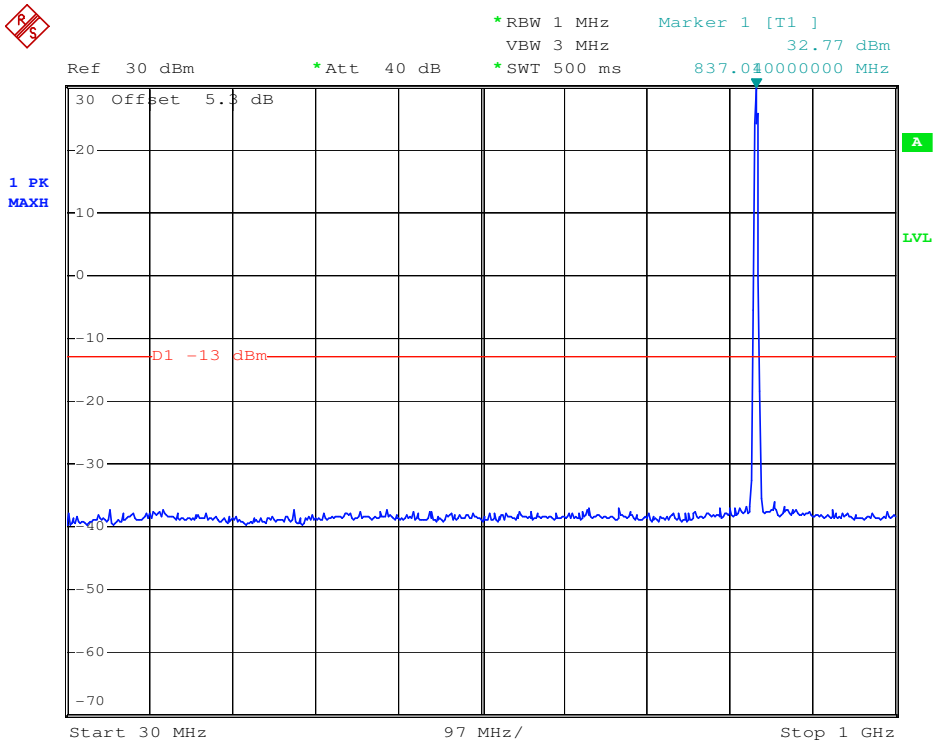
Test Date: Oct. 10 2012 to Oct. 12, 2012

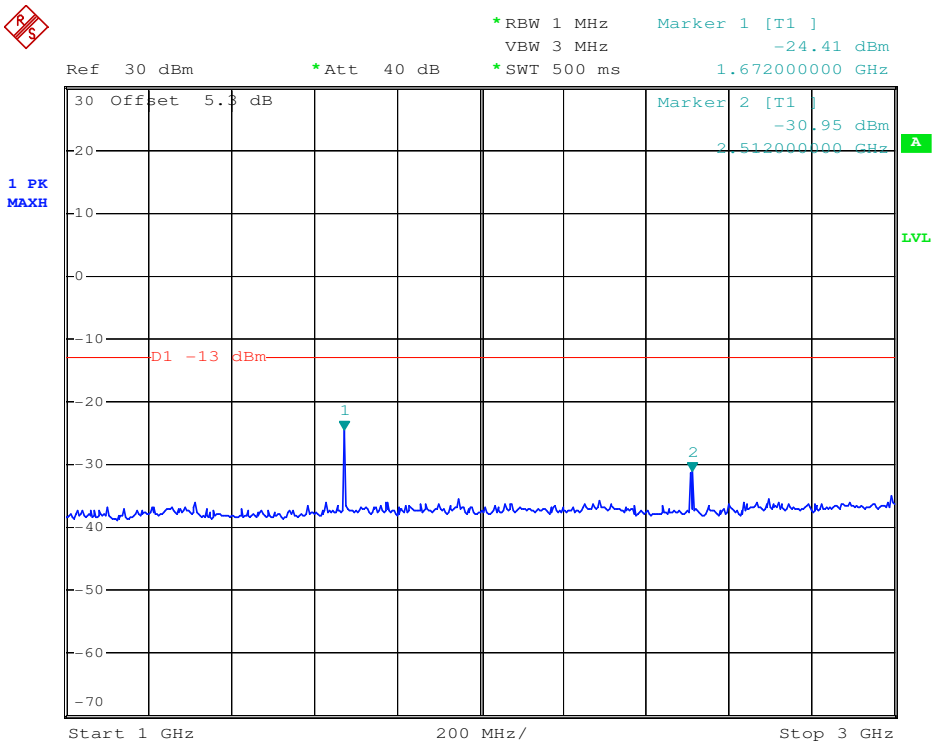
Test Procedure: The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emission is any up to 10th harmonic.

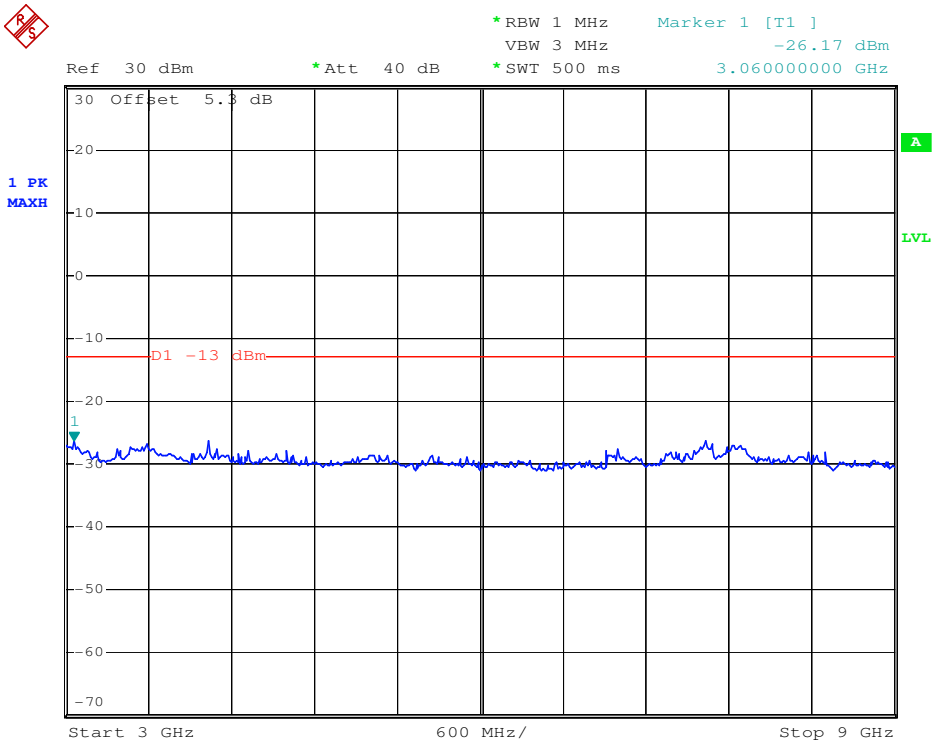
For the out of band: set RBW=1MHz, VBW=3MHz, stat=30MHz, stop= 10 th harmonic. Limit= --13dBm Band Edge requirements: In 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 % of bandwidth of fundamental emission of the transmitter any be employed to measure the out of band emission. Limit= - 13dBm.

Measurement result: GSM 850 GMSK:

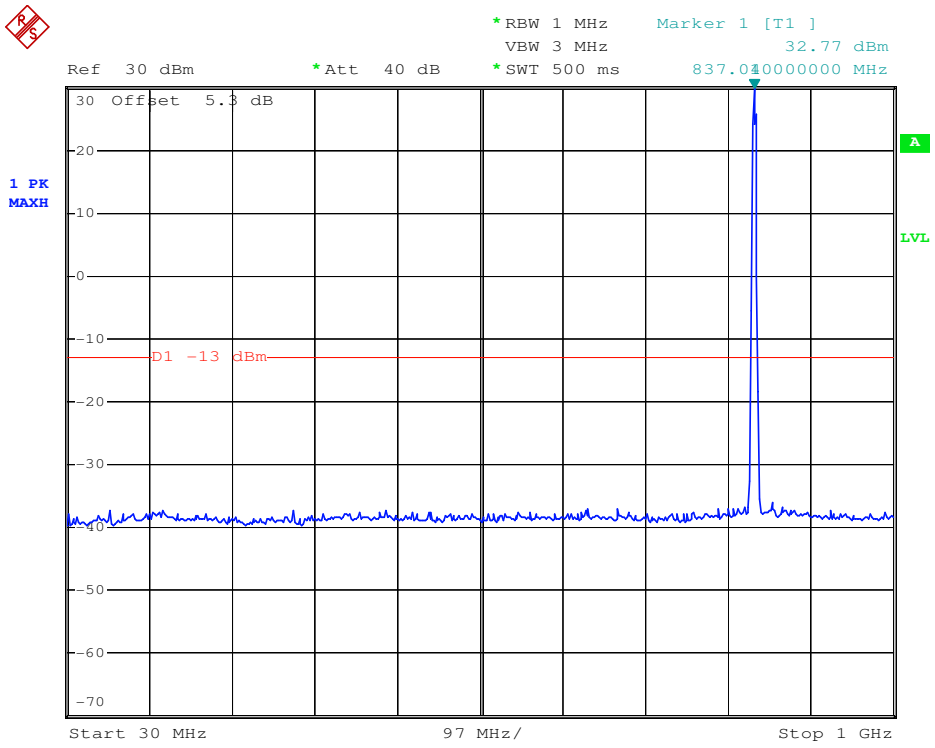
Channel Low

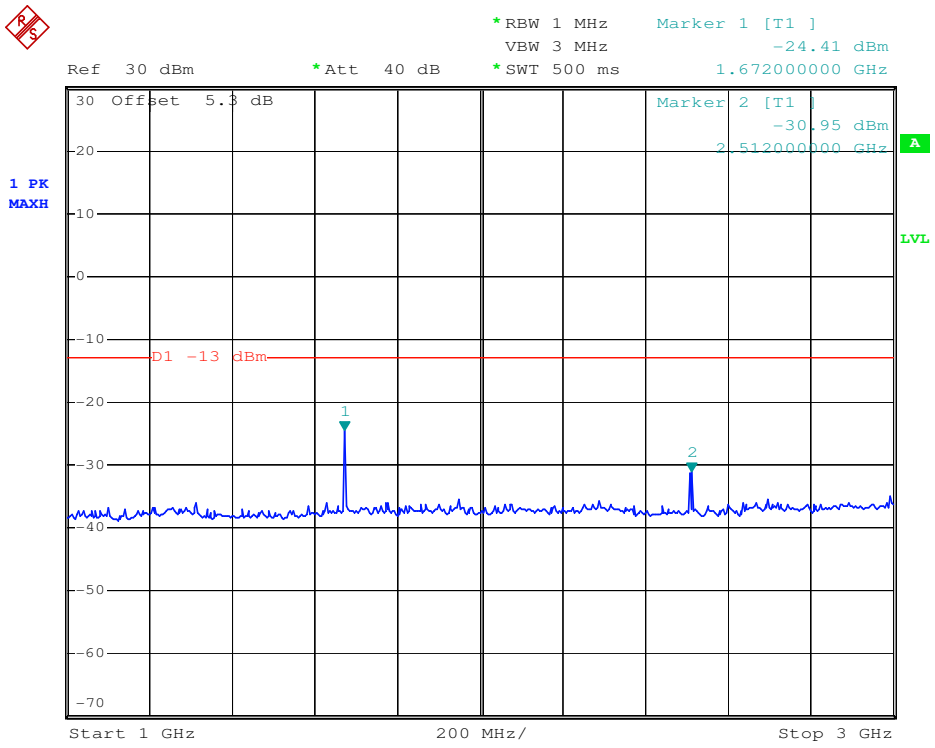


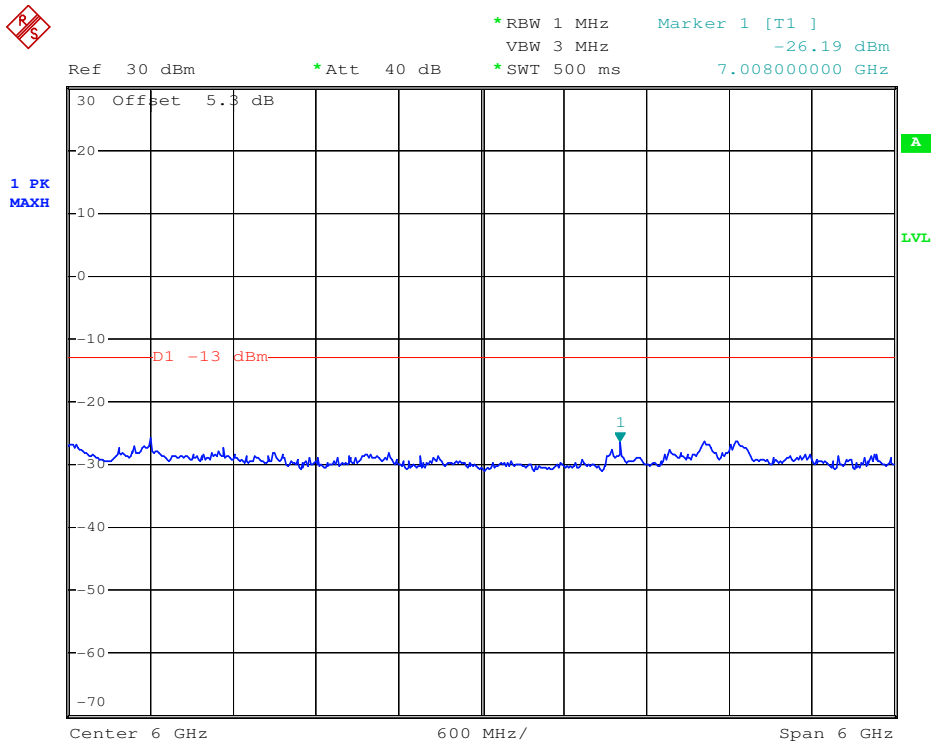




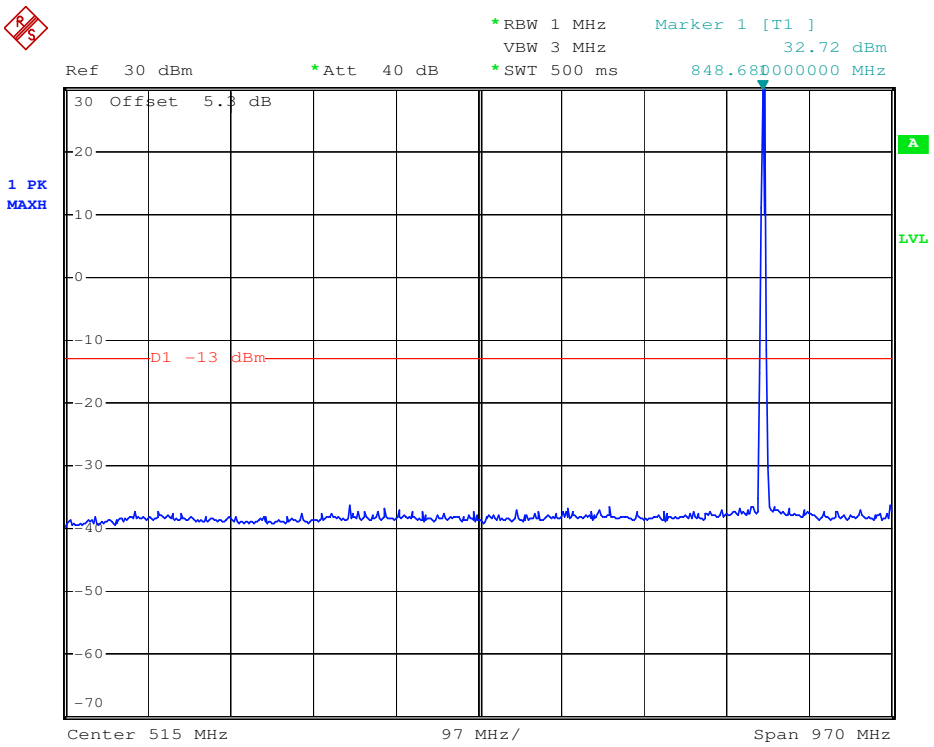
Channel Mid

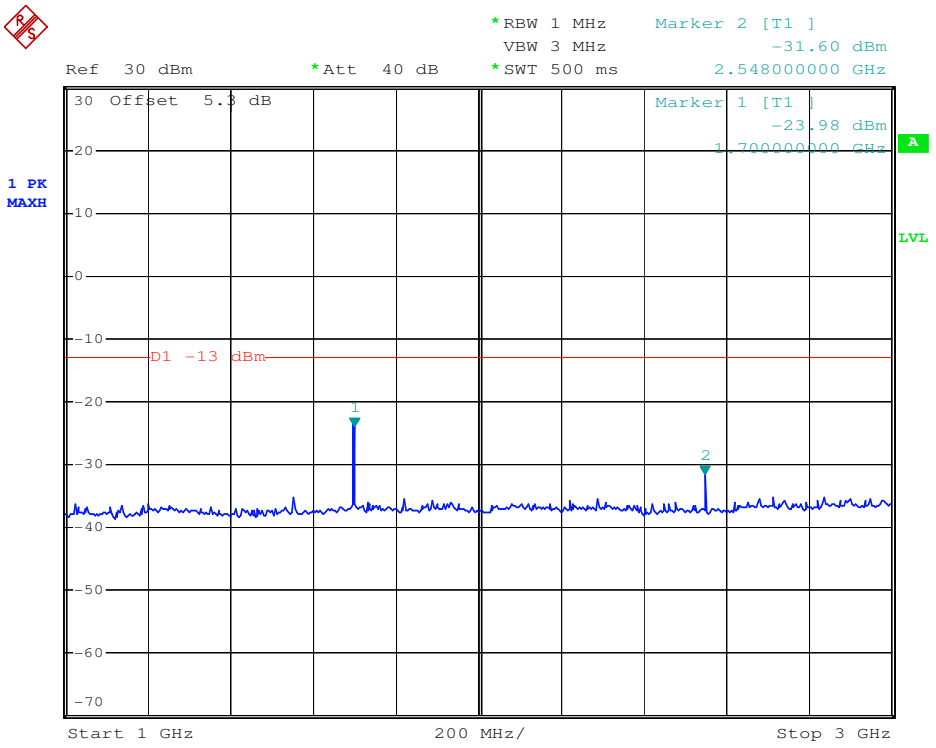


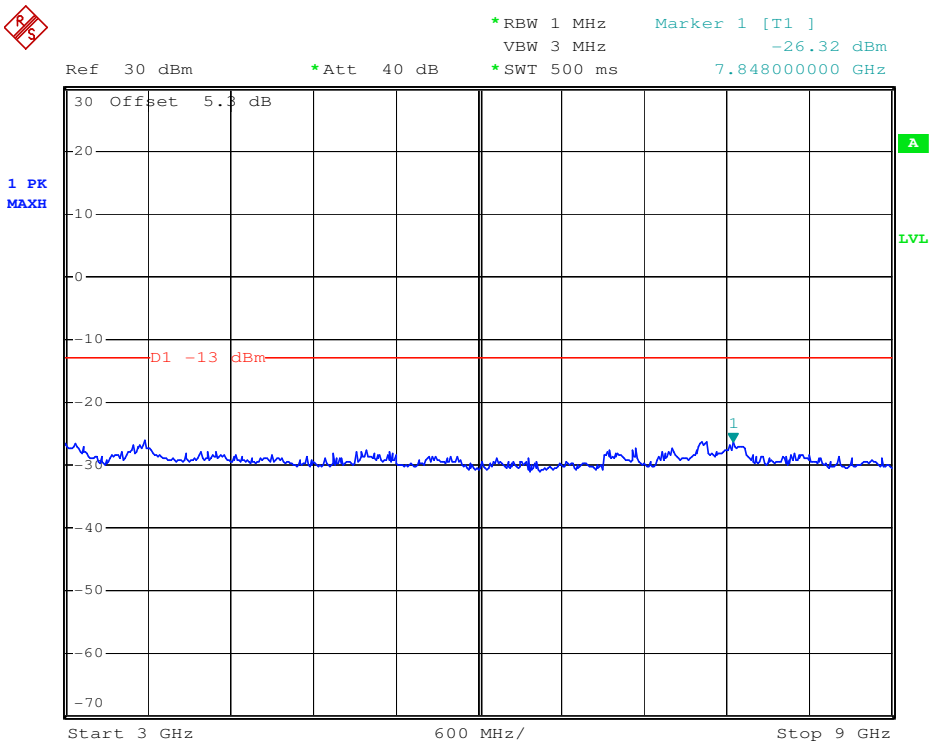




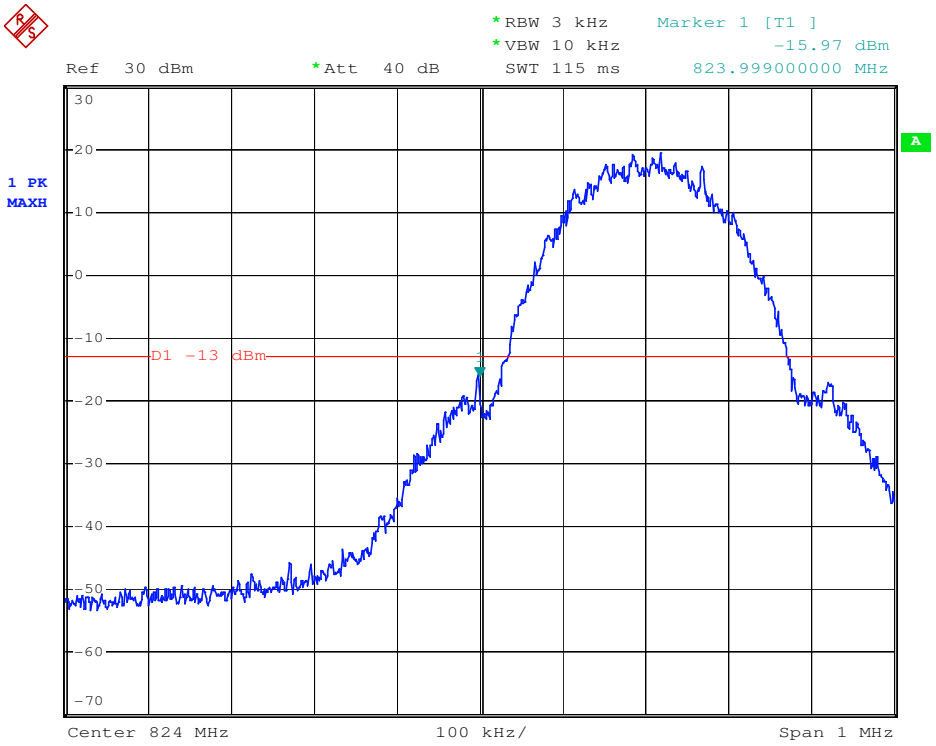
Channel High



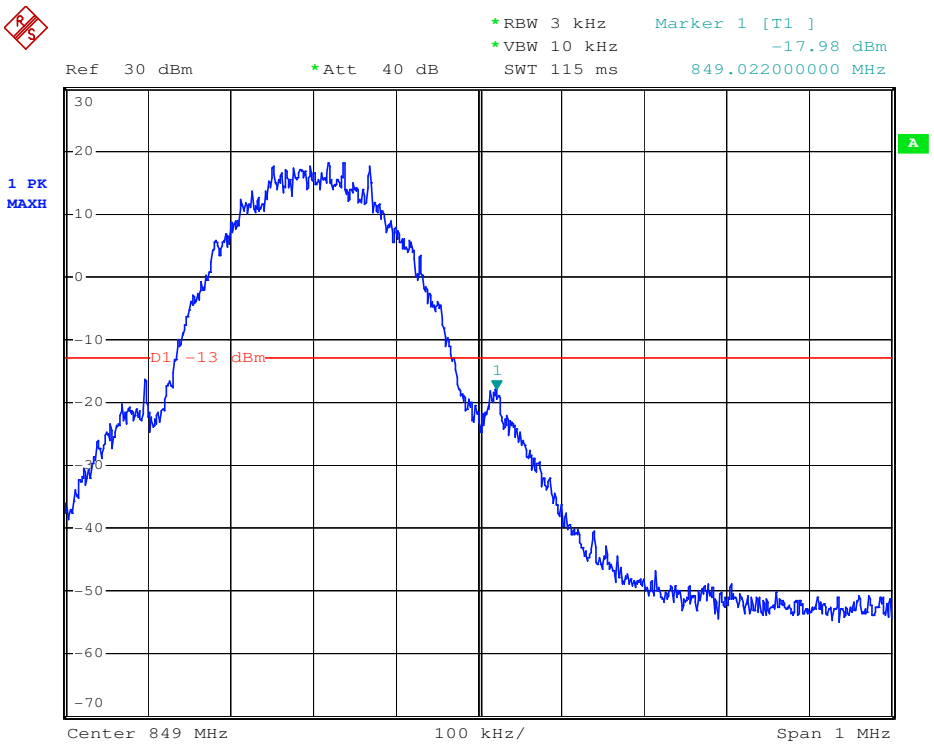




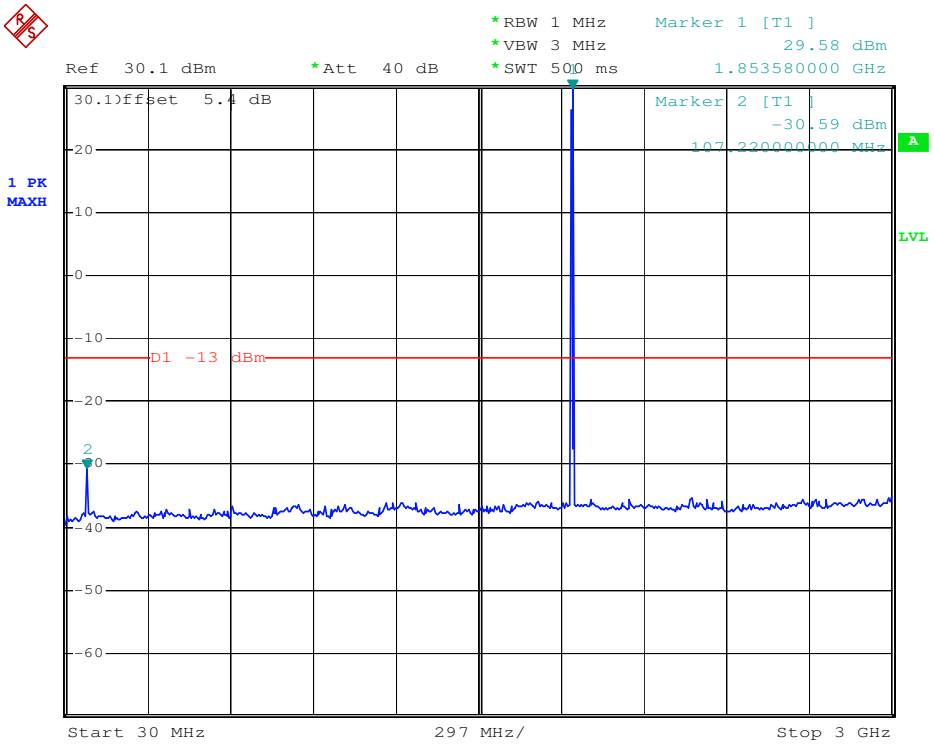
Band Edge emission Channel Low

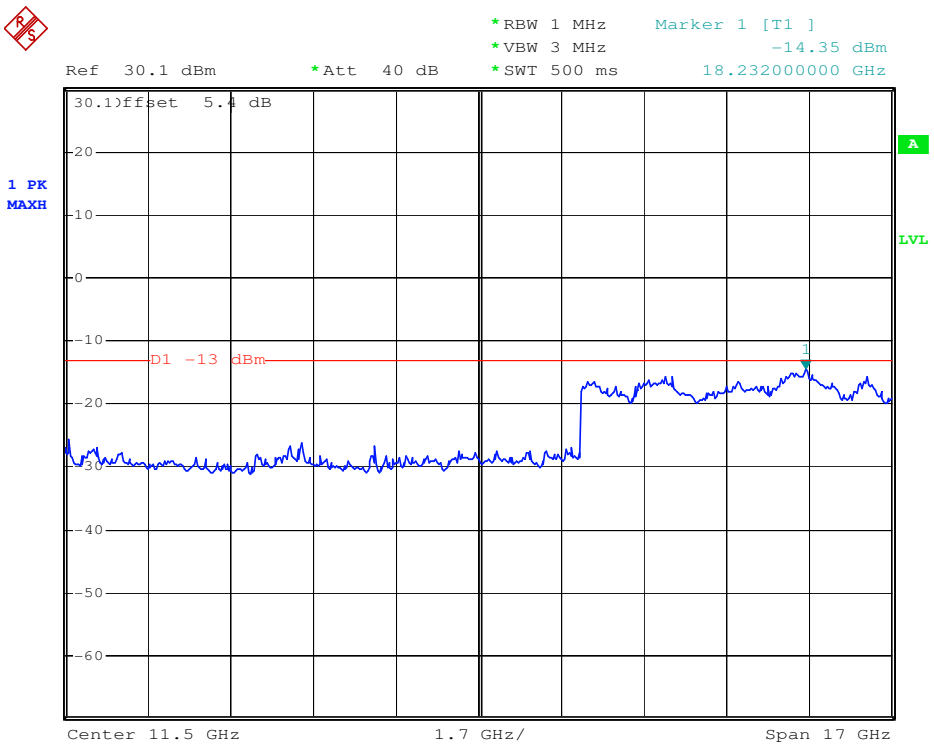


Band Edge emission Channel high

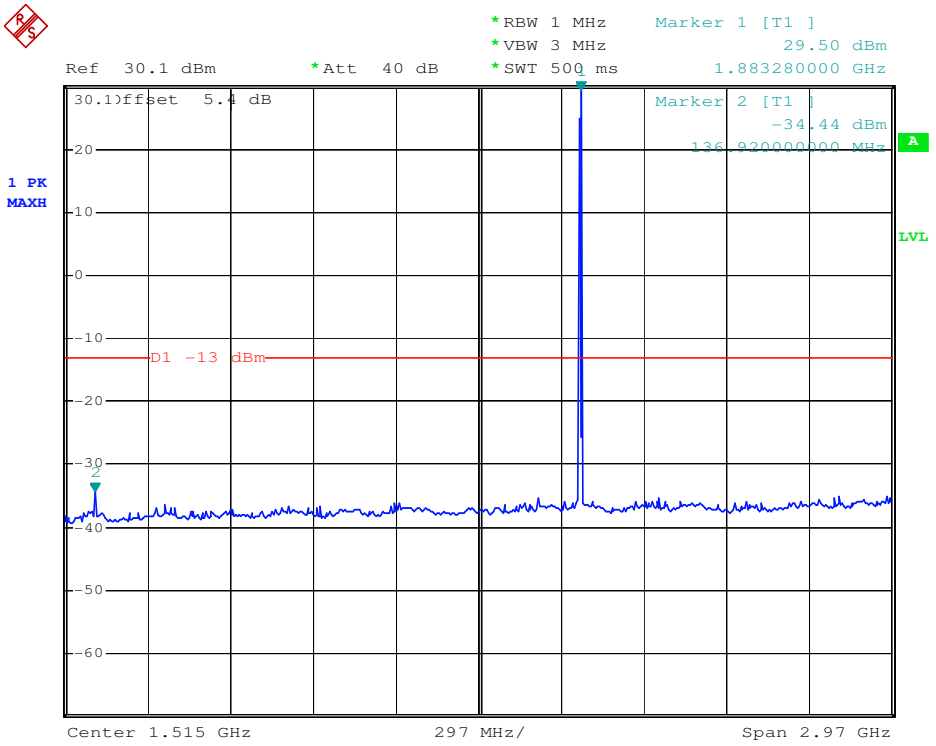


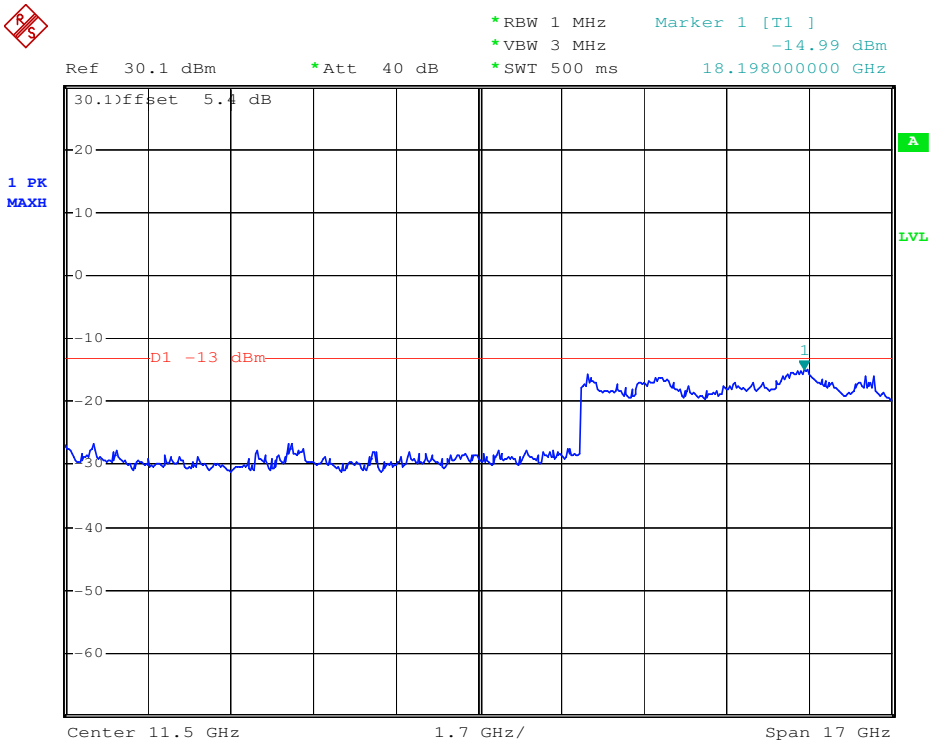
GSM 1900 GMSK：Channel Low



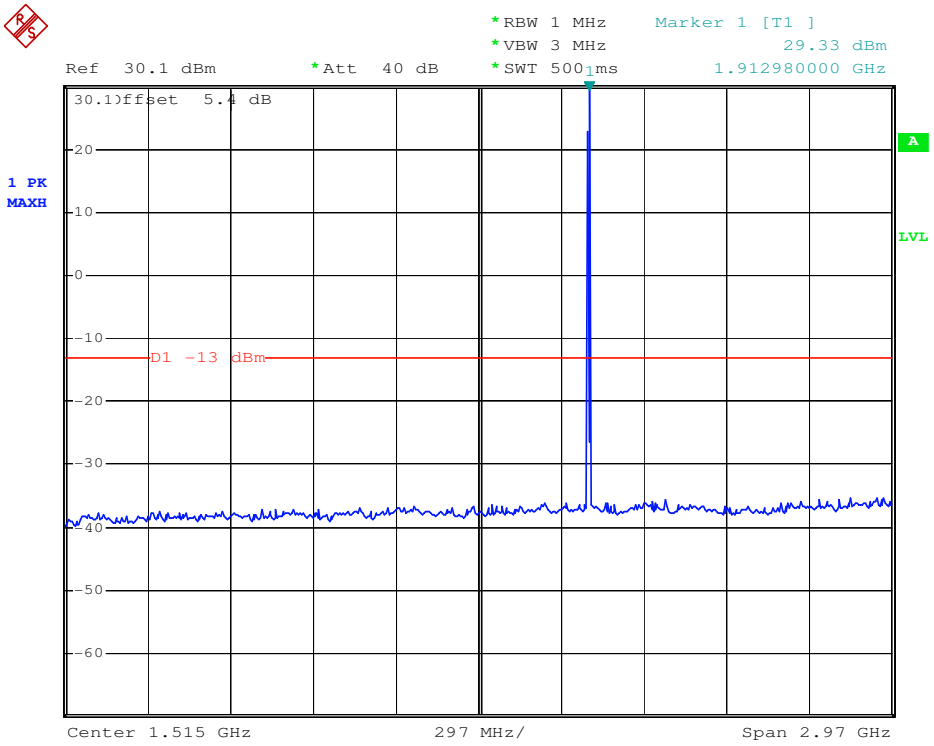


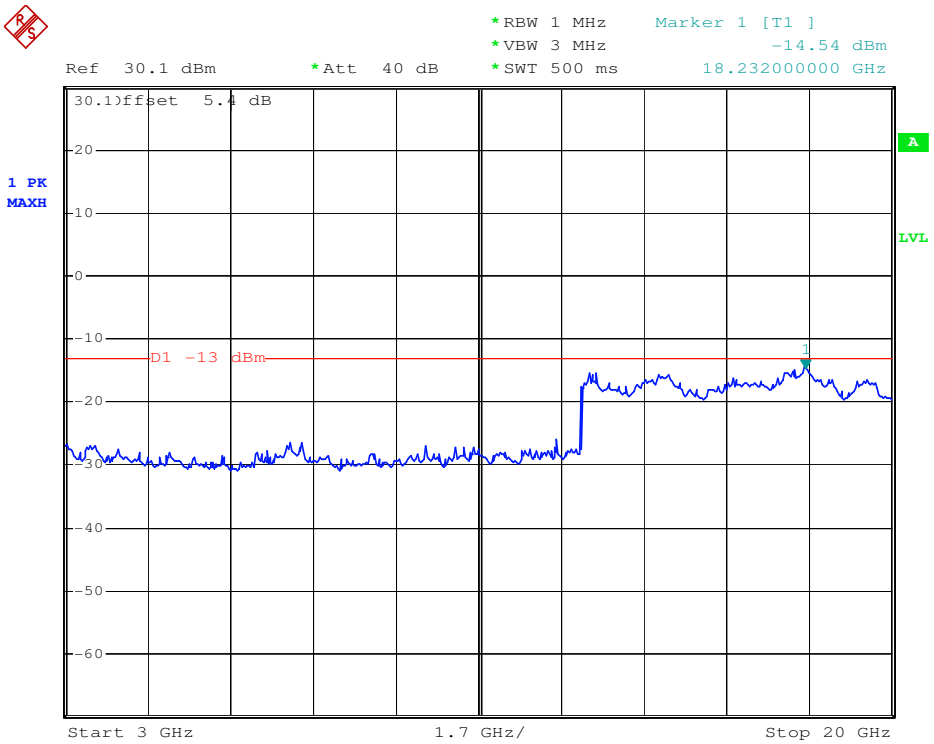
Channel Mid



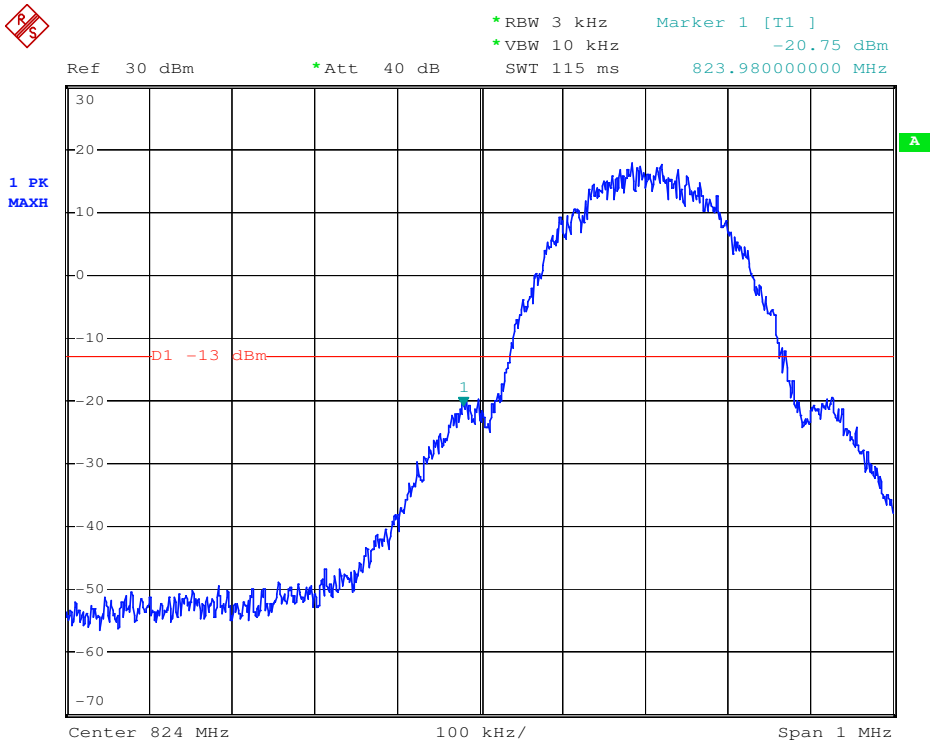


Channel High

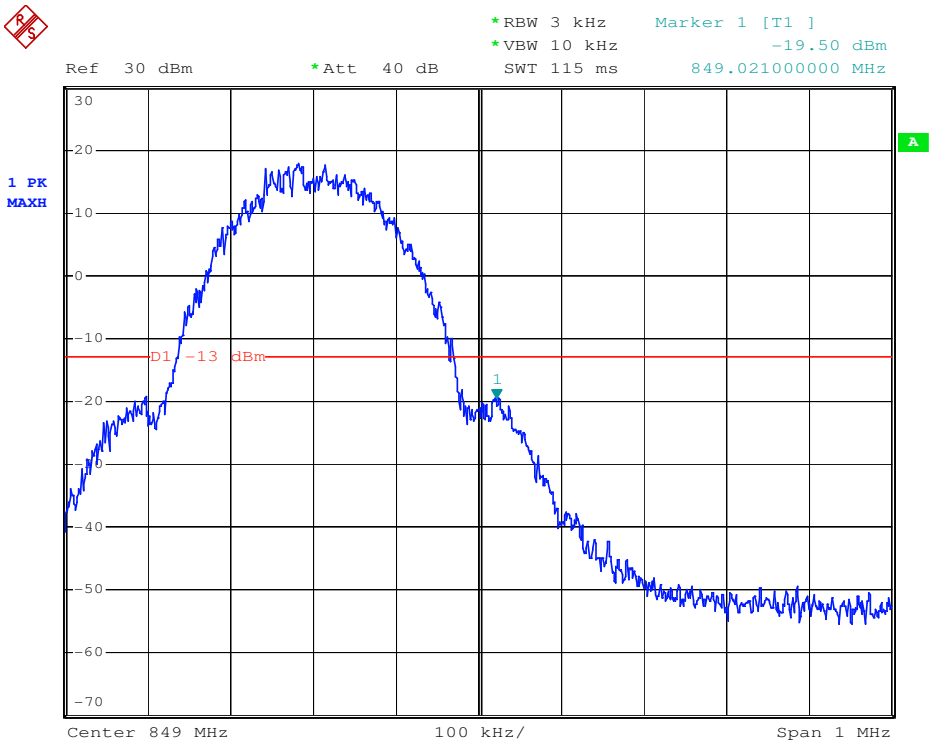




Band Edge emission Channel Low



Band Edge emission Channel high



6.7 Field Strength of Radiated Spurious Emissions

Test Requirement: Part 2.1051

The magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specification in the instruction manual and/or alignment procedure, shall not be less than 43+10log(Mean power in watts) dBc below the mean power output outside a license's frequency block(-13dBm).

Test Date: Oct. 15, 2012

Test Procedure:

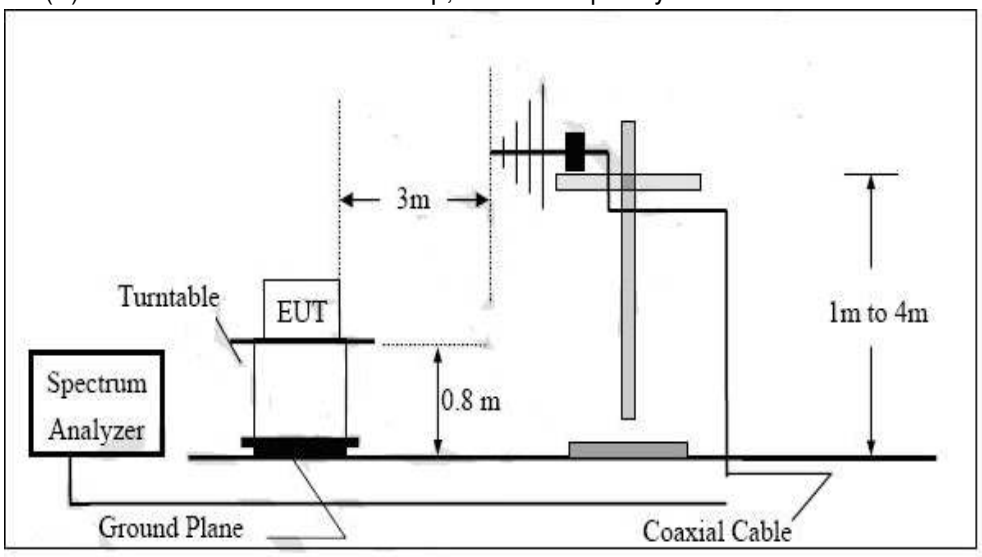
The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emission is any up to 10th harmonic.

For the out of band: set RBW, VBW=1MHz, stat=30MHz, stop= 10 th harmonic. Limit= --13dBm.

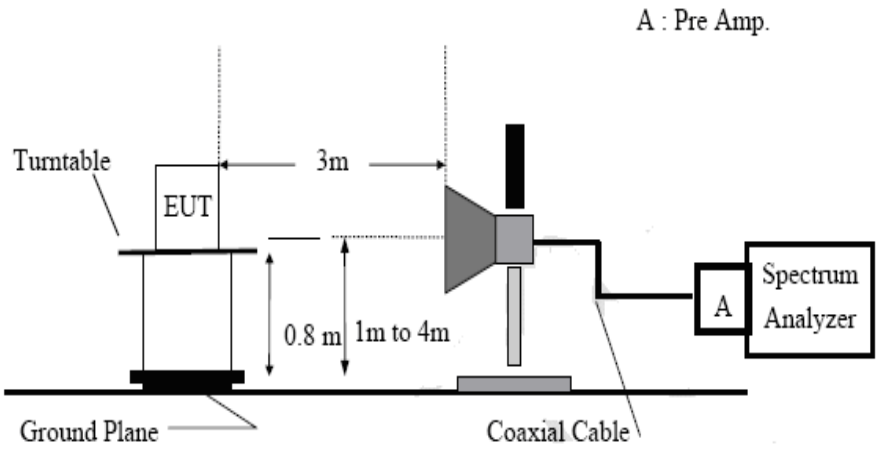
Band Edge requirements: In 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 % of bandwidth of fundamental emission of the transmitter any be employed to measure the out of band emission. Limit=-13dBm.

Test Setup:

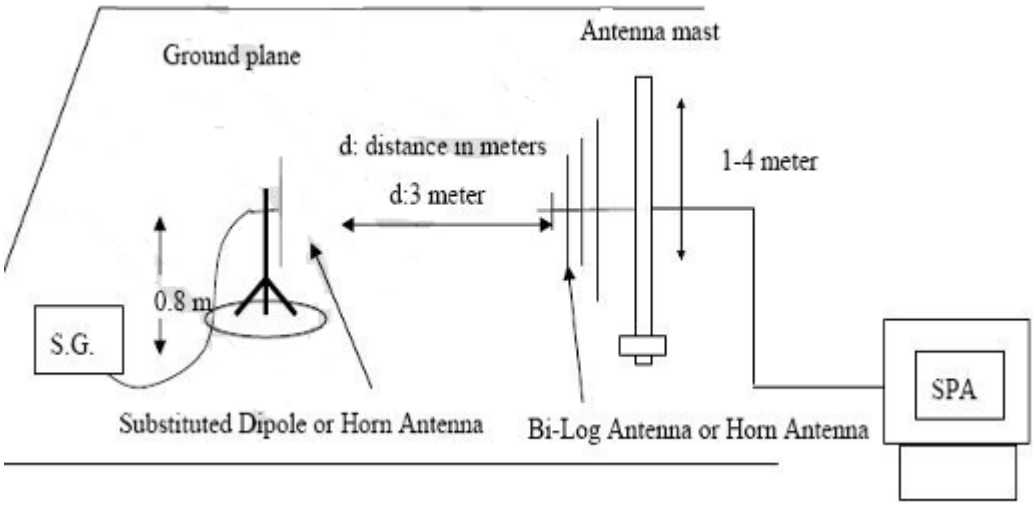
(A) Radiated emission Test setup, Below Frequency 1000MHz:



(B) Radiated emission Test setup frequency over 1GHz:



(C) Substituted Method Test setup:



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 measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2-848.8MHz were measured using substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follow:

ERP in frequency band 1710-1755MHz and 1850.5-1909.8MHz were measured using a substitution method. The EUT was replaced by a horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

ERP=S.G. output (dBm) + Antenna Gain (dBd)-Cable Loss (dB)
EIRP=S.G. output (dBm) + Antenna Gain (dBi)-Cable Loss (dB)

GMSK mode: Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Low mode

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
1648.3	H	-53.92	6.95	3.93	-50.90	-13	37.90
2472.6	H	-49.96	8.35	5.02	-46.63	-13	33.63
1684.7	V	-48.52	6.95	3.93	-45.50	-13	32.50
2472.9	V	-47.52	8.35	5.02	-44.19	-13	31.19

Remark:

1. emission behaviors belong to narrowband spurious emission.

2. The result basic equation calculation is as follow:

ERP/EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBd/dBi)-Cable Loss.

3. The emission level of 3rd to 10th harmonic is greather than 20dB from the limit.

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Mid mode

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
1673.4	H	-53.85	7.00	4.04	-50.89	-13	37.89
2509.5	H	-50.79	8.44	5.02	-47.37	-13	34.37
1673.1	V	-49.05	7.00	4.04	-46.09	-13	33.09
2509.5	V	-46.51	8.44	5.02	-43.09	-13	30.09

Remark:

1. emission behaviors belong to narrowband spurious emission.

2. The result basic equation calculation is as follow:

ERP/EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBd/dBi)-Cable Loss.

3. The emission level of 3rd to 10th harmonic is greather than 20dB from the limit.

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH High mode

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
1697.6	H	-52.94	7.12	3.93	-49.75	-13	36.75
2546.2	H	-49.92	8.48	5.02	-46.46	-13	33.46
1697.3	V	-52.29	7.12	3.93	-49.10	-13	36.10
2546.6	V	-51.21	8.48	5.02	-47.75	-13	34.75

Remark:

1. emission behaviors belong to narrowband spurious emission.

2. The result basic equation calculation is as follow:

ERP/EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBd/dBi)-Cable Loss.

3. The emission level of 3rd to 10th harmonic is greather than 20dB from the limit.

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH Low mode

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
3700.1	H	-48.38	8.35	4.57	-44.60	-13	31.60
5550.4	H	-38.39	9.55	5.57	-34.41	-13	21.41
7400.6	H	-46.34	9.75	7.62	-44.21	-13	31.21
11101.0	H	-40.161	10.55	10.9	-40.51	-13	27.51
3700.5	V	-49.14	8.35	4.57	-45.36	-13	32.36
5550.6	V	-40.90	9.55	5.57	-36.92	-13	23.92
7400.6	V	-43.99	9.75	7.62	-41.86	-13	28.86
11101.0	V	-44.01	10.55	10.9	-44.36	-13	31.36

Remark:

1. emission behaviors belong to narrowband spurious emission.

2. The result basic equation calculation is as follow:

ERP/EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBd/dBi)-Cable Loss.

3. The emission level of 5th to 10th harmonic is greather than 20dB from the limit.

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH mid mode

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
3760.1	H	-44.31	8.42	4.59	-40.48	-13	27.48
5640.0	H	-36.30	9.50	5.59	-32.39	-13	19.39
7519.9	H	-42.27	9.78	7.72	-40.21	-13	27.21
11280.0	H	-42.21	10.61	10.98	-42.58	-13	29.58
3760.1	V	-44.99	8.42	4.59	-41.16	-13	28.16
5640.0	V	-35.61	9.50	5.59	-31.70	-13	18.70
7519.9	V	-42.96	9.78	7.72	-40.90	-13	27.90
11280.0	V	-43.92	10.61	10.98	-44.29	-13	31.29

Remark:

1. emission behaviors belong to narrowband spurious emission.

2. The result basic equation calculation is as follow:

ERP/EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBd/dBi)-Cable Loss.

3. The emission level of 5th to 10th harmonic is greather than 20dB from the limit.

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH High mode

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
3819.4	H	-43.57	8.42	4.59	-39.74	-13	26.74
5730.0	H	-37.45	9.50	5.59	-33.54	-13	20.54
7639.1	H	-43.15	9.78	7.72	-41.09	-13	28.09
11459.0	H	-39.23	10.61	10.98	-39.60	-13	26.60
3819.8	V	-39.27	8.42	4.59	-35.44	-13	22.44
5729.6	V	-42.68	9.50	5.59	-38.77	-13	25.77
7639.5	V	-44.01	9.78	7.72	-41.95	-13	28.95
11458.5	V	-43.79	10.61	10.98	-44.16	-13	31.16

Remark:

1. emission behaviors belong to narrowband spurious emission.

2. The result basic equation calculation is as follow:

ERP/EIRP(dBm)=S.G. Output(dBm) + Antenna Gain(dBd/dBi)-Cable Loss.

3. The emission level of 5th to 10th harmonic is greather than 20dB from the limit.

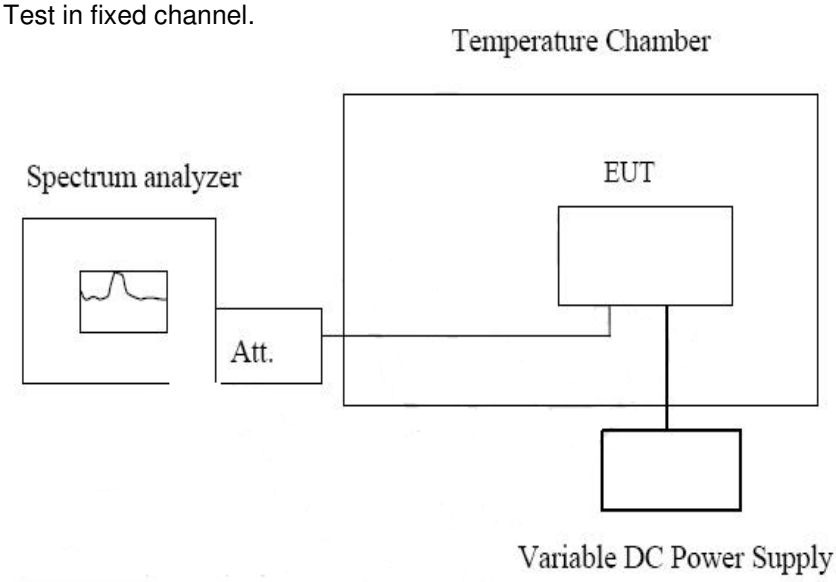
6.8 Frequency Stability V.S. TEMPERATURE MEASUREMENT

Test Requirement: Part 2.1055(a)(1)

Test Date: Oct. 20, 2012

Test Status: Test in fixed channel.

Test Setup:



Note: Measurement setup for testing On antenna connector.

Test procedure: The equipment under test was connected to an external AC or 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 degree operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30 degree. After the temperature stabilized for approximately 30 minutes record the frequency. Repeat step measure with 10 degree per stage until the highest temperature of 50 degree reached.

Frequency Tolerance: +/-2.5ppm

GSM850-GMSK:

Reference Frequency: GSM channel 836.4MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
8.0	-30	836.400012	12	2091
8.0	-20	836.400008	8	2091
8.0	-10	836.400011	11	2091

8.0	10	836.399991	9	2091
8.0	20	836.400010	10	2091
8.0	30	836.400013	13	2091
8.0	40	836.400022	22	2091
8.0	50	836.400016	16	2091

PCS1900-GMSK:

Reference Frequency: PCS channel 1880MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	**Environment**	**Frequency**	**Delta**	**Limit**
Vdc	**Temperature(degree)**	**(MHz)**	**(Hz)**	**(Hz)**
8.0	-30	1879.999977	-23	4700
8.0	-20	1879.999983	-17	4700
8.0	-10	1879.999967	-33	4700
8.0	10	1879.999942	-58	4700
8.0	20	1879.999982	-18	4700
8.0	30	1879.999964	-36	4700
8.0	40	1879.999969	-31	4700
8.0	50	1879.999973	-27	4700

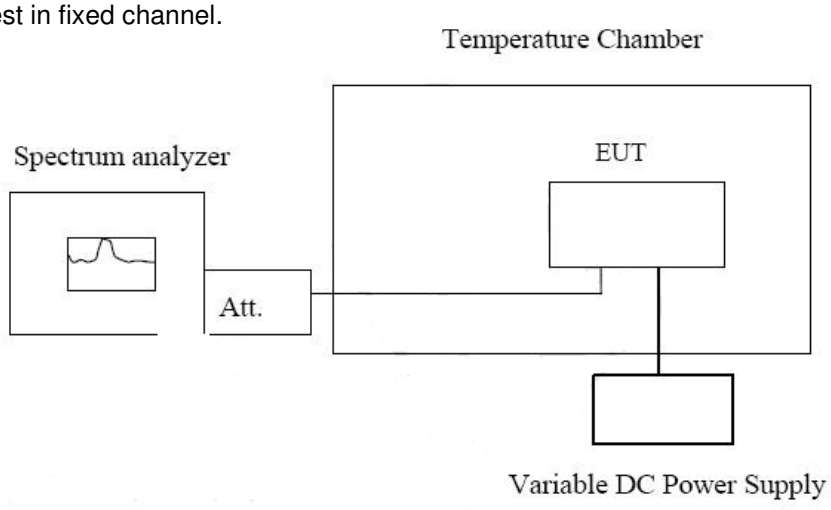
6.9 Frequency Stability V.S. VOLTAGE MEASUREMENT

Test Requirement: Part 2.1055(a)(1)

Test Date: Oct. 21, 2012

Test Status: Test in fixed channel.

Test Setup:



Note: Measurement setup for testing On antenna connector.

Test procedure: Set chamber temperature to 25 degree. Use a variable AC power/ DC power supply to power the EUT and set the Voltage to rated voltage. Set the spectrum analyzer RBW enough to obtain the desired frequency resolution and recorded the frequency.Reduce the input voltage to specified extreme voltage variation (+/-15%) and endpoint, record the maximum frequency change.

GSM850-GMSK:

Reference Frequency: GSM channel 836.4MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
8.40	25	836.400022	22	2091
8.00	25	836.400031	31	2091
7.30	25	836.400035	35	2091

PCS1900-GMSK:

Reference Frequency: PCS channel 1880MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
8.40	25	1879.999983	48	4700
8.00	25	1879.999991	51	4700
7.30	25	1879.999975	49	4700

Note: The High voltage is DC 8.4V, the normal voltage is DC 8.0V, and low voltage is DC 7.3V.

The end of report