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

588 West Jindu Road, Songjiang District, Shanghai, China

Telephone: +86 (0) 21 6191 5666
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Tino.Pan@sgs.com

TEST REPORT

Application No. :	SHEMO10010003901
Applicant:	Sagem Wireless
Address:	2, rue du Petit Albi BP 28250 95801 CERGY PONTOISE Cedex
FCC ID:	M9HPM1
Equipment Under Test (EUT):	
Product Name:	P-Phone
Model Name:	P-Phone
Brand Name:	PUMA
Standards:	FCC Part 2, 22H & 24E
Date of Receipt:	Jan 15, 2010
Date of Test:	Jan 18, 2010 to Apr 26,2010
Date of Issue:	Apr 26,2010
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.

Tino Pan
E&E Section Manager
SGS-CSTC(Shanghai) Co., Ltd.

Bruce Zhan
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)	Compliant
99% Occupied Bandwidth	2.1049(h)	Compliant
Effective Isotropic Radiated Power	2.1046(a) 22.913(a) 24.232(c)	Compliant
Out of Band Emissions at antenna Terminals and Band Edge	2.1051 22.917(a) 24.238(a)	Compliant
Field Strength of Spurious Emissions	2.1053 22.917(a) 24.238(a)	Compliant
Frequency Stability vs. Temperature and Voltage	2.1055(a)&(d)	Compliant

3 Contents

Page

4 General Information

4.1 Client Information

Applicant: Sagem Wireless

Address of Applicant: 2, rue du Petit Albi
BP 28250
95801 CERGY PONTOISE Cedex

4.2 General Description of E.U.T.

Product Name:	P-Phone
Model Name:	P-Phone
Brand Name:	PUMA
Product General Description:	GSM Mobile Phone
Support Frequency Band:	GSM 850/900/1800/1900, WCDMA Band I, Band VIII
Testing Frequency Band:	GSM 850/1900
Power Supply:	Adapter Information: Model: FS5GU Input: AC 100-240V, 50-60Hz, 75mA Output : DC 5V, 600mA Reference : 179136129
Headset:	Model: EMB-SGC901STRA Reference: 179136942&179136869
USB data cable:	Model: KF-U4PM5PM-1200 Reference: 179134906
Battery:	Lishen ASG553443LA 880mAh, 3.7V, 3.2Wh Reference: 179134831

GSM 850/1900

	Operating frequency		Rated Power
Cellular phone standards Frequency Range and Power:	GSM/GPRS/E-GPRS 1900	1850MHz-1910MHz	GSM:30dBm EDGE:27dBm
	GSM/GPRS/E-GPRS 850	824MHz-849MHz	GSM:33dBm EDGE:26dBm
Type of Emission:	GSM:245KGXW EDGE:247KG7W		

IMEI:	357211030007589
Hardware Version:	V0x
Software Version:	RC,Q28
IMEI:	357211030008207
Hardware Version:	V0x
Software Version:	RC,Q28

4.3 Test Location

Tests were performed at:

SGS-CSTC Standards Technical Services(Shanghai) Co., Ltd.
588 West Jindu Road, Songjiang District, Shanghai, China
Tel: +86 21 61915666 Fax: +86 21 61915655

4.4 Test Facility

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: 2011-07-29.

- **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: 2012-03-17.

- **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: 2011-09-29.

4.5 Test Methodogy

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	2009-6-4	2010-6-3
2	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-679	2009-6-4	2010-6-3
3	Horn Antenna	Rohde & Schwarz	HF906	100284	2009-4-11	2010-4-10
4	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2009-6-4	2010-6-3
5	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2009-10-9	2010-10-8
6	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY－2003P	--	2009-10-15	2010-10-14
7	CLAMP METER	FLUKE	316	86080010	2009-04-27	2010-04-26
8	Thermo-Hygrometer	ZHICHEN	ZC1-2	01050033	2009-10-15	2010-10-14
9	High-low temperature cabinet	Shanghai YuanZhen	GW2050	--	2009-6-18	2010-6-17
10	DC power	KIKUSUI	PMC35－3	NF100260	2010-1-16	2011-1-15
11	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2009-5-8	2010-5-7
12	Power meter	Rohde & Schwarz	NRP	101641	2009-5-5	2010-5-4
13	UNIVERSAL RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMU 200	112012	2009-08-25	2010-08-24
14	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT1800.0/2000.0-0.2/40-5SSK	11	2010-1-27	2011-1-26
15	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/880.0-0.2/40-5SSK	9	2010-1-27	2011-1-26
16	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2009-6-4	2010-6-3

6 Test Results

6.1 E.U.T. test conditions

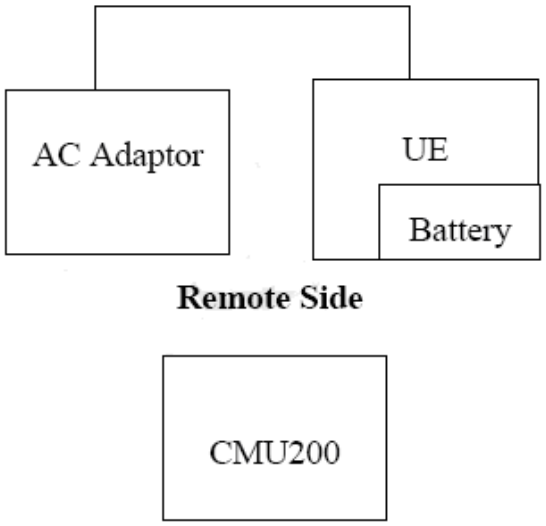
Operating Environment:

Temperature: 20.0 -25.0 °C

Humidity: 38-52% RH

Atmospheric Pressure: 992 -1010 mbar

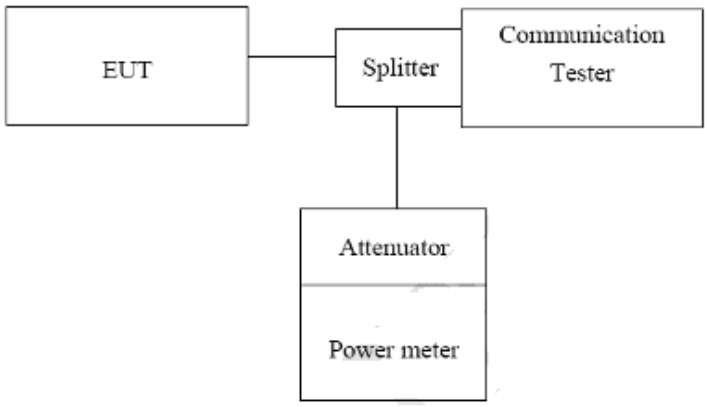
Configuration of Tested System:



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 Setup



Measurement Setup for testing on Antenna connector.

Test Date: Jan 18, 2010

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	32.2	32.0
836.4	189	31.3	31.0
848.8	251	31.0	30.8

PCS 1900(GMSK) Result:

Frequency(MHz)	Channel:	Peak power (dBm)	AV power (dBm)
1850.2	512	30.0	29.8
1880.0	661	29.8	29.6
1909.8	810	29.7	29.6

GSM 850(8-PSK) Result:

Frequency(MHz)	Channel:	Peak power (dBm)	AV power (dBm)
824.2	128	26.8	23.9
836.4	189	26.7	23.8
848.8	251	26.7	23.8

PCS 1900(8-PSK) Result:

Frequency(MHz)	Channel:	Peak power (dBm)	AV power (dBm)
1850.2	512	26.0	23.1
1880.0	661	26.1	23.2
1909.8	810	25.9	23.0

6.3 Occupied Bandwidth

Test Requirement: 2.1049(h)

Test Date: Jan 19, 2010

Test Status: Test lowest, middle, highest channel.

Test Procedure:

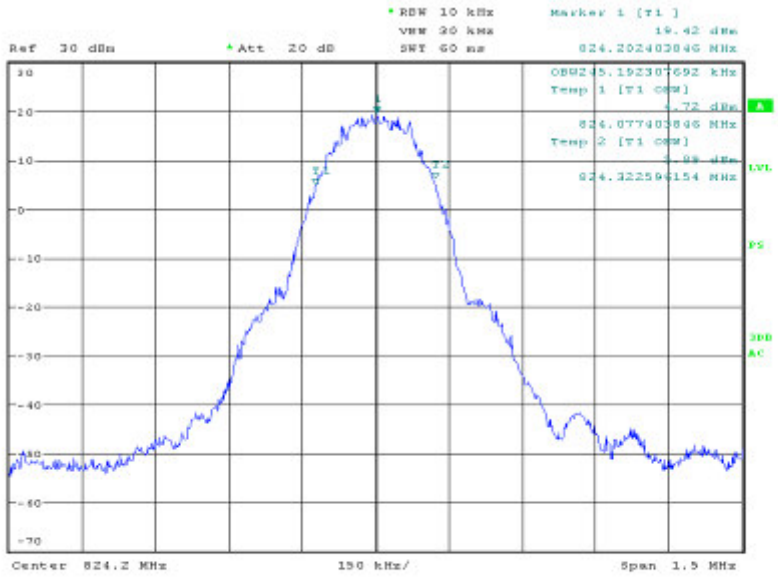
The EUT output RF connector was connected with a short a cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW>=3 times RBW, 99% bandwidth were measured, the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

Test result:

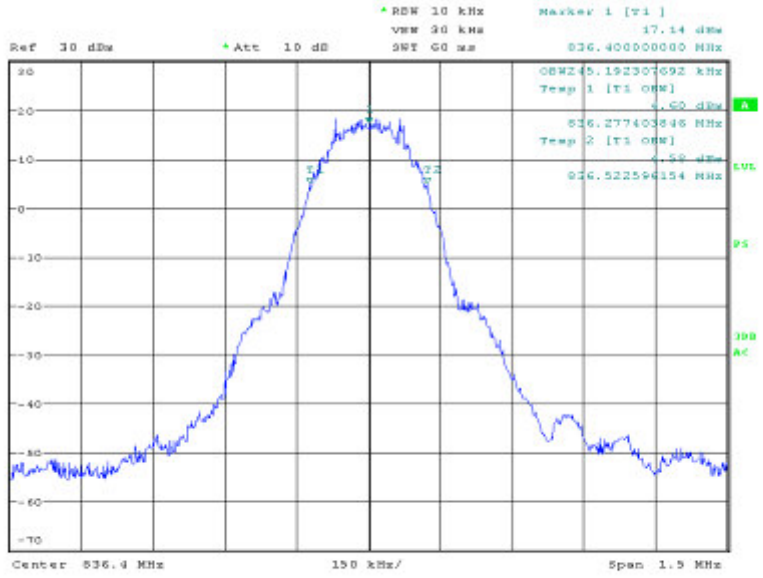
EUT Mode	Frequency (MHz)	CH	99% Bandwidth (kHz)
GSM 850 GMSK	824.2	128	245.192
	836.4	189	245.192
	848.8	251	242.788
EUT Mode	Frequency (MHz)	CH	99% Bandwidth (kHz)
GSM 850 8-PSK	824.2	128	245.192
	836.4	189	242.788
	848.8	251	245.192
EUT Mode	Frequency (MHz)	CH	99% Bandwidth (kHz)
PCS 1900 GMSK	1850.2	512	242.788
	1880.0	661	240.384
	1909.8	810	240.384
EUT Mode	Frequency (MHz)	CH	99% Bandwidth (kHz)
PCS 1900 8-PSK	1850.2	512	240.384
	1880.0	661	247.596
	1909.8	810	240.384

GSM 850 GMSK

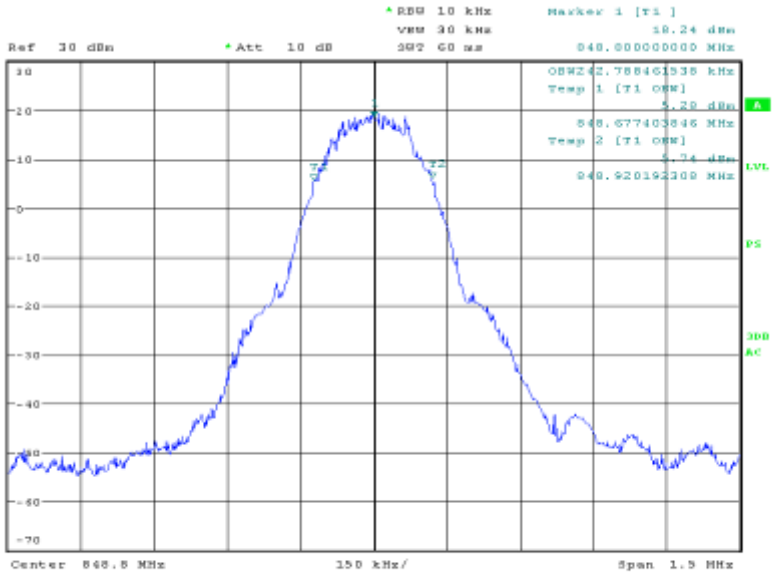
Graph: Channel Low



Channel Middle

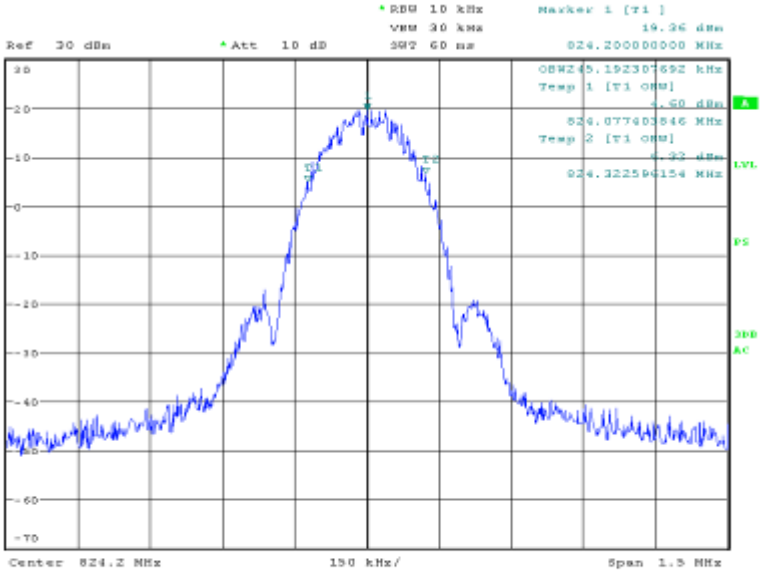


Channel High

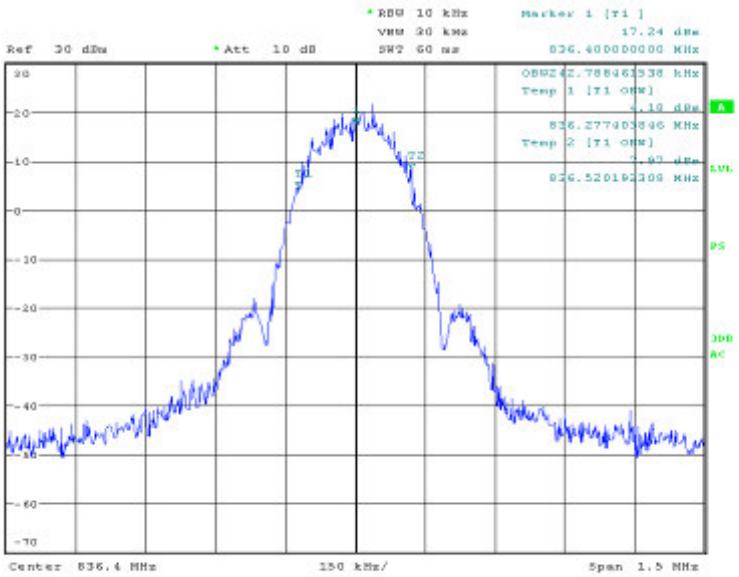


GSM 850 8-PSK

Graph: Channel Low



Channel Middle



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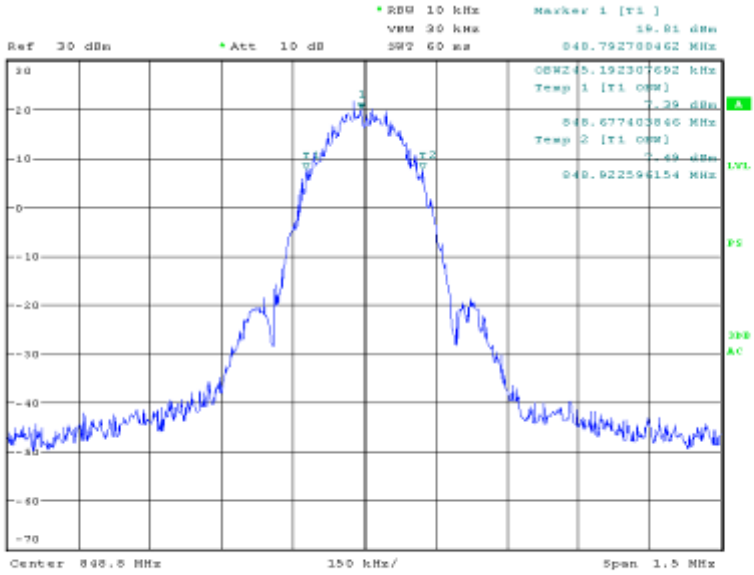
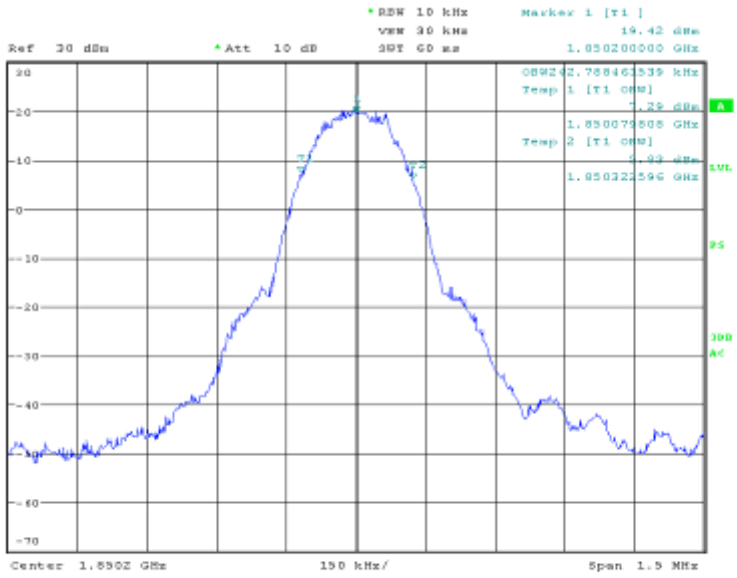


GSM 1900 GMSK

Graph: Channel Low



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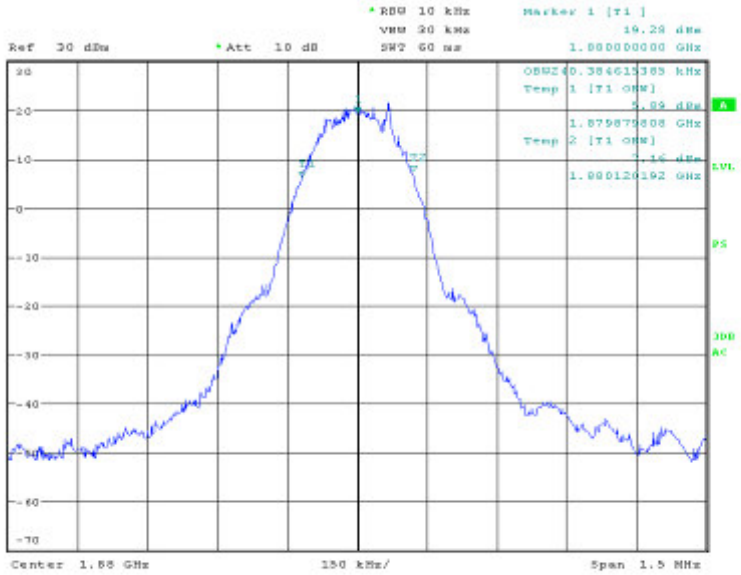
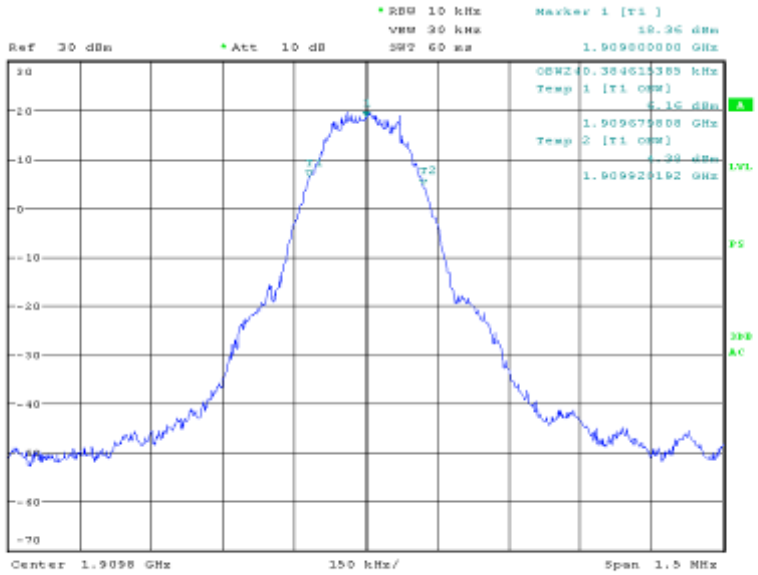
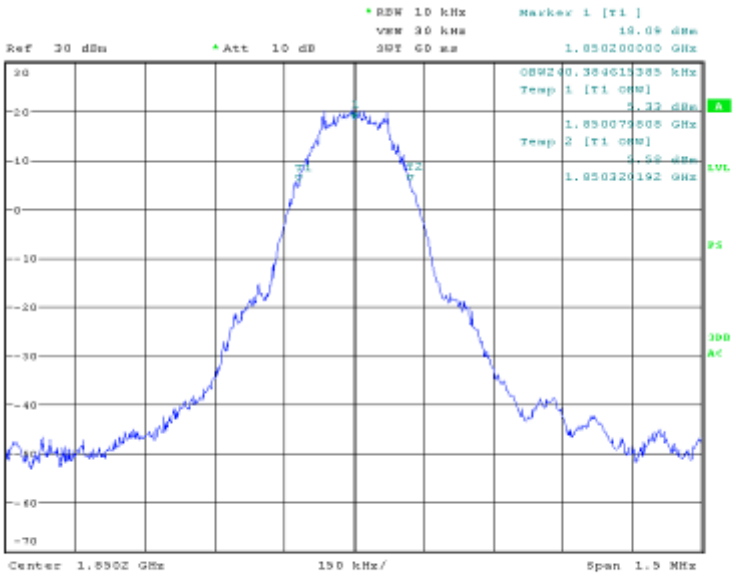


Channel High

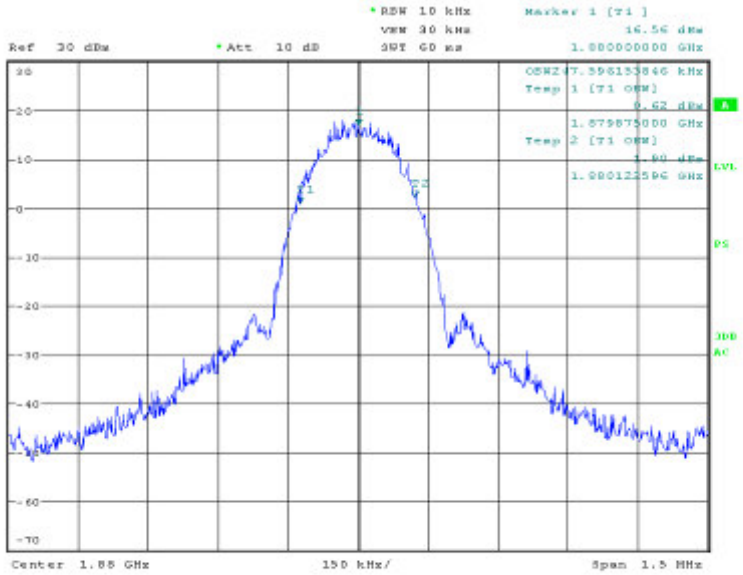


GSM 1900 8-PSK

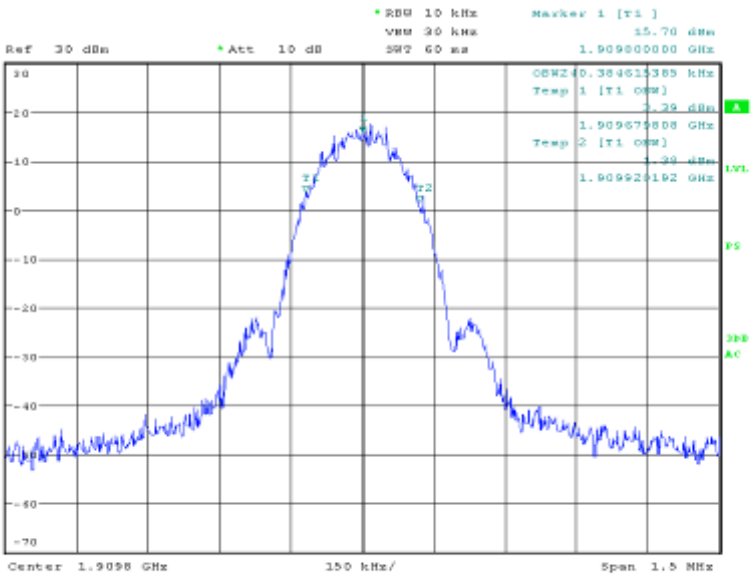
Graph: Channel Low



Channel Middle



Channel High



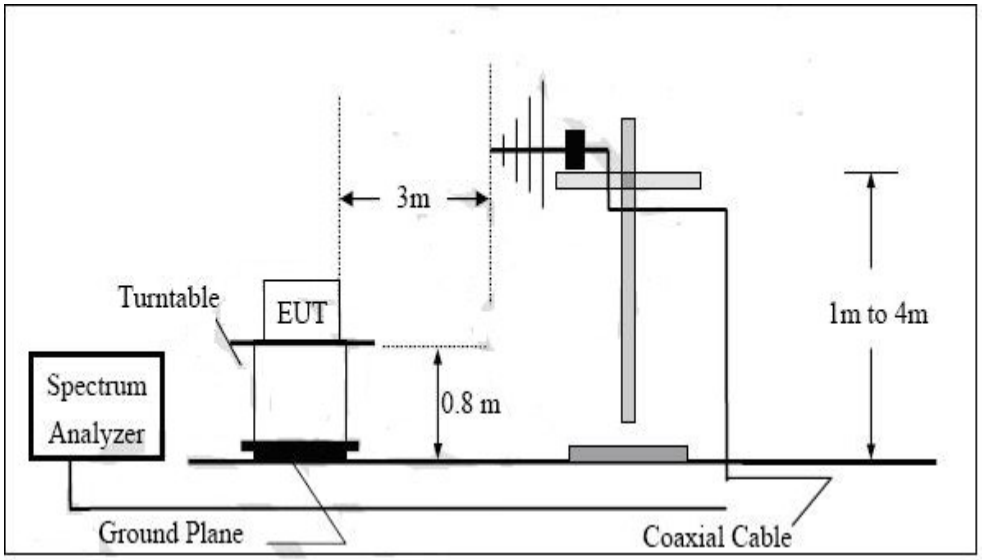
6.4 Effective Isotropic Radiated Power

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

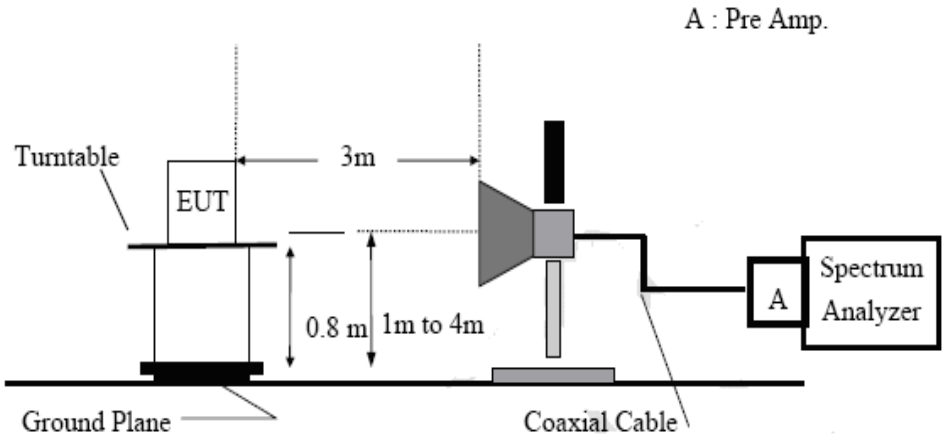
Test Date: Jan 20, 2010

Test Setup:

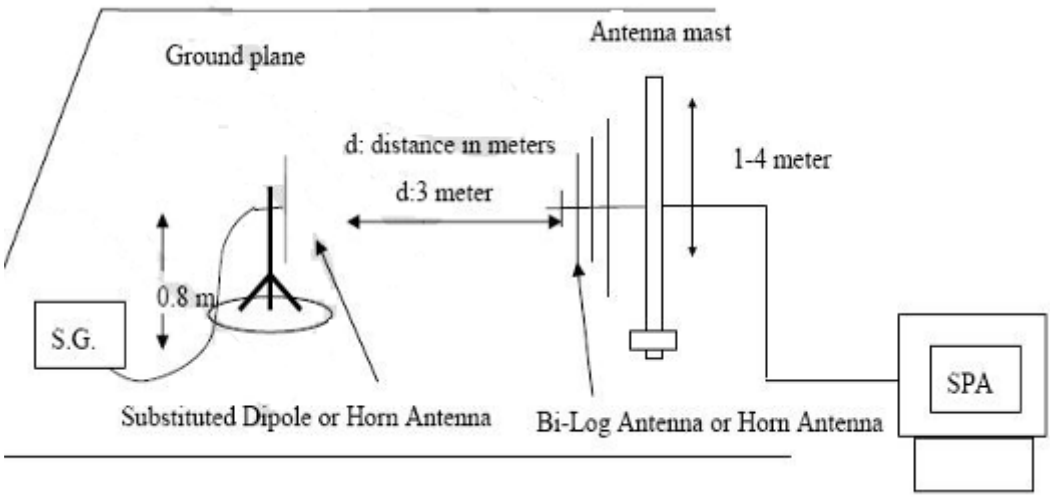
(A) Radiated emission Test setup, Below Frequency 1000MHz:



(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 1850.5-1909.8MHz 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)

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

Measurement result:
The RBW, VBW of SPA for frequency

Below 1GHz was RBW=300KHz, VBW=1MHz;

Above 1GHz was RBW=1MHz, VBW=3MHz.

EUT mode	Frequency (MHz)	CH	EUT Pol.	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	H	V	100.47	18.75	8.40	3.32	22.61	38.45
				H	100.59	20.31	8.40	3.32	23.12	38.45
	836.4	189	H	V	101.44	19.55	8.42	3.40	23.78	38.45
				H	99.72	18.13	8.42	3.40	21.74	38.45
	848.8	251	H	V	102.16	16.76	8.47	3.43	24.15	38.45
				H	98.43	18.73	8.47	3.43	22.28	38.45
EUT mode	Frequency (MHz)	CH	EUT Pol.	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	H	V	98.54	14.00	9.15	4.15	19.00	33.00
				H	101.62	16.06	9.15	4.15	21.06	33.00
	1880.0	661	H	V	97.64	12.33	9.22	4.28	17.27	33.00
				H	102.78	15.4	9.22	4.28	20.34	33.00
	1909.8	810	H	V	99.33	11.51	9.25	4.41	16.35	33.00
				H	100.69	13.29	9.25	4.41	18.13	33.00
EUT mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. output (dBm)	Antenna Gain (dBd)	Cable loss (dB)	ERP (dBm)	Limit (dBm)
GSM 850 8-PSK	824.2	128	H	V	100.39	14.71	8.4	3.32	19.79	38.45
				H	100.48	15.78	8.4	3.32	20.86	38.45
	836.4	189	H	V	101.73	15.19	8.42	3.40	20.21	38.45
				H	99.03	13.75	8.42	3.40	18.77	38.45
	848.8	251	H	V	97.03	11.61	8.47	3.43	16.65	38.45
				H	98.03	13.64	8.47	3.43	18.68	38.45

EUT mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. output (dBm)	Antenna Gain (dBi)	Cable loss (dB)	EIRP (dBm)	Limit (dBm)
PCS 1900 8-PSK	1850.2	512	H	V	97.41	10.58	9.15	4.15	15.58	33.00
				H	99.90	11.45	9.15	4.15	16.45	33.00
	1880.0	661	H	V	97.05	8.85	9.22	4.28	13.79	33.00
				H	100.51	10.65	9.22	4.28	15.59	33.00
	1909.8	810	H	V	97.86	7.48	9.25	4.41	12.32	33.00
				H	97.93	9.30	9.25	4.41	14.14	33.00

6.5 Out of band emissions at antenna Terminals

6.5.1 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: Jan 20,2010

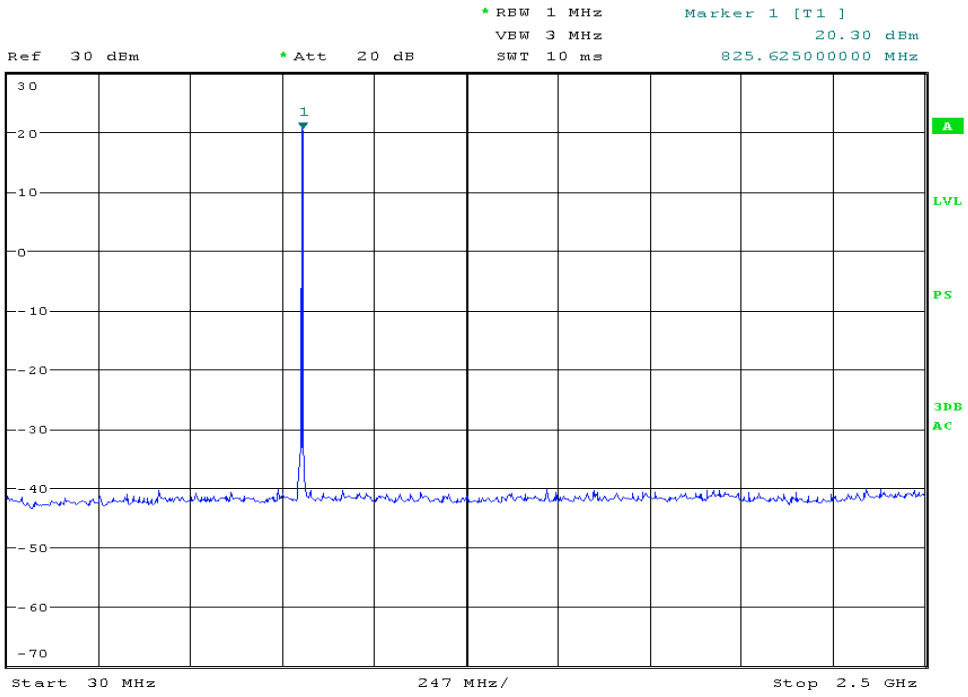
Test Procedure:

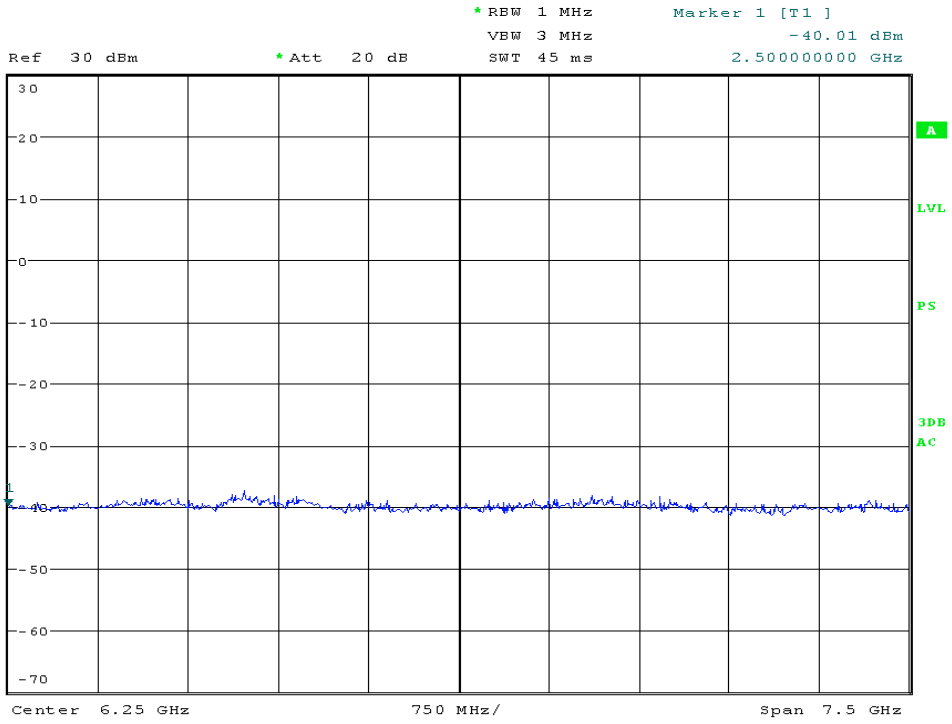
The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emission is any up to 10th harmonic.

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





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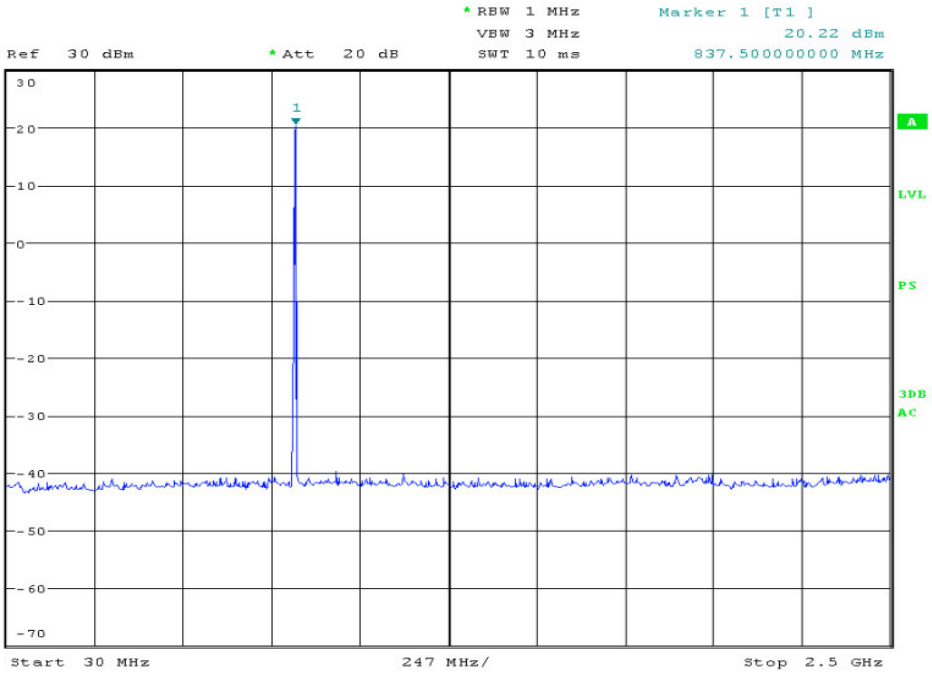
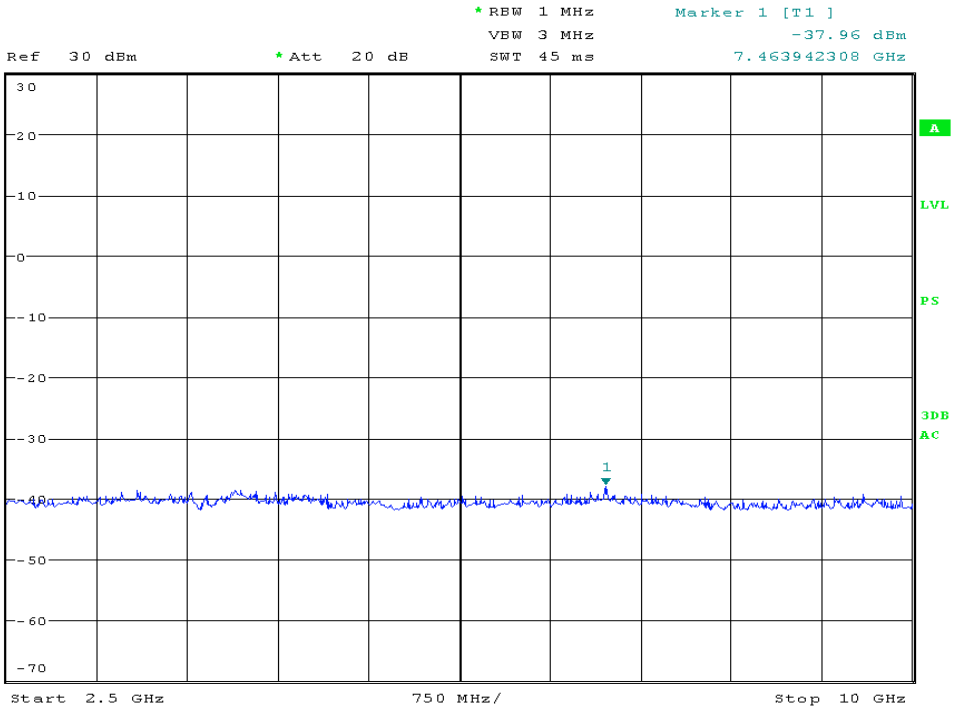
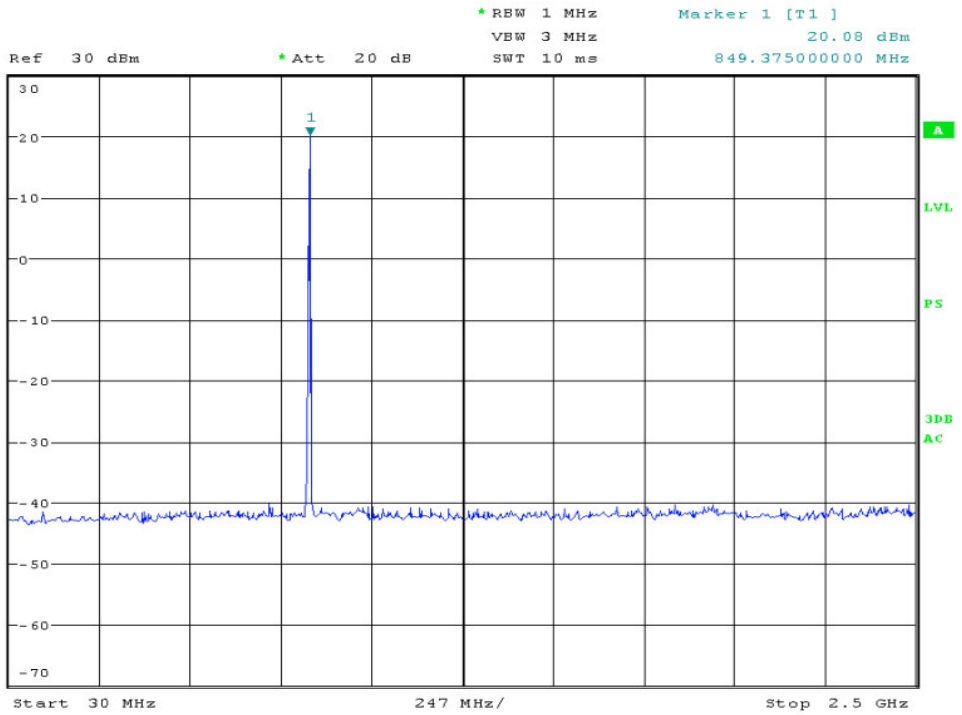
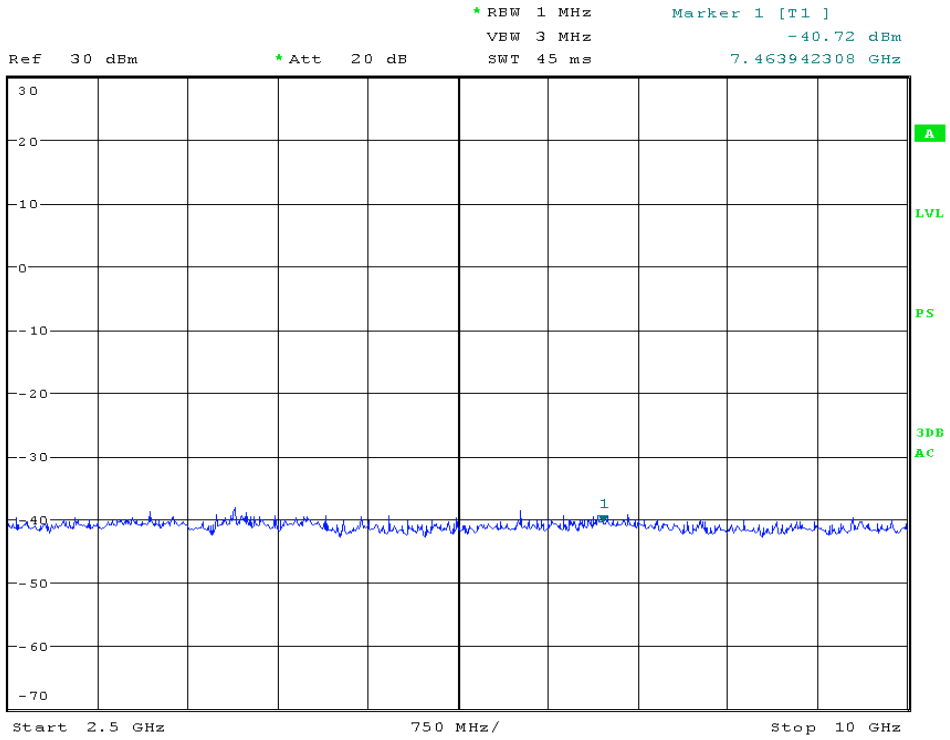


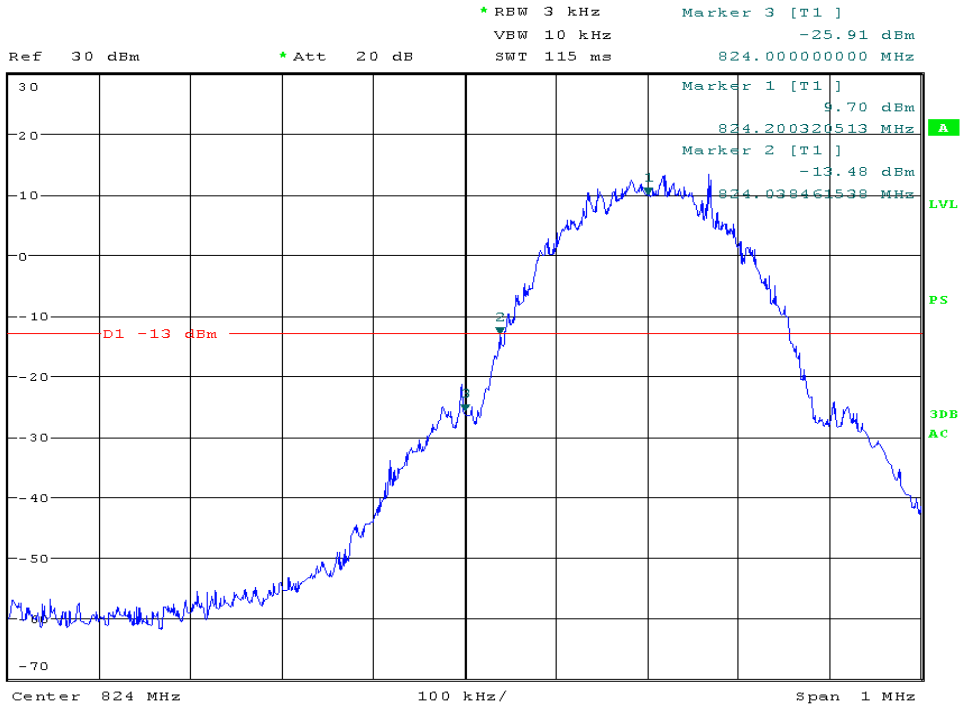


Channel High

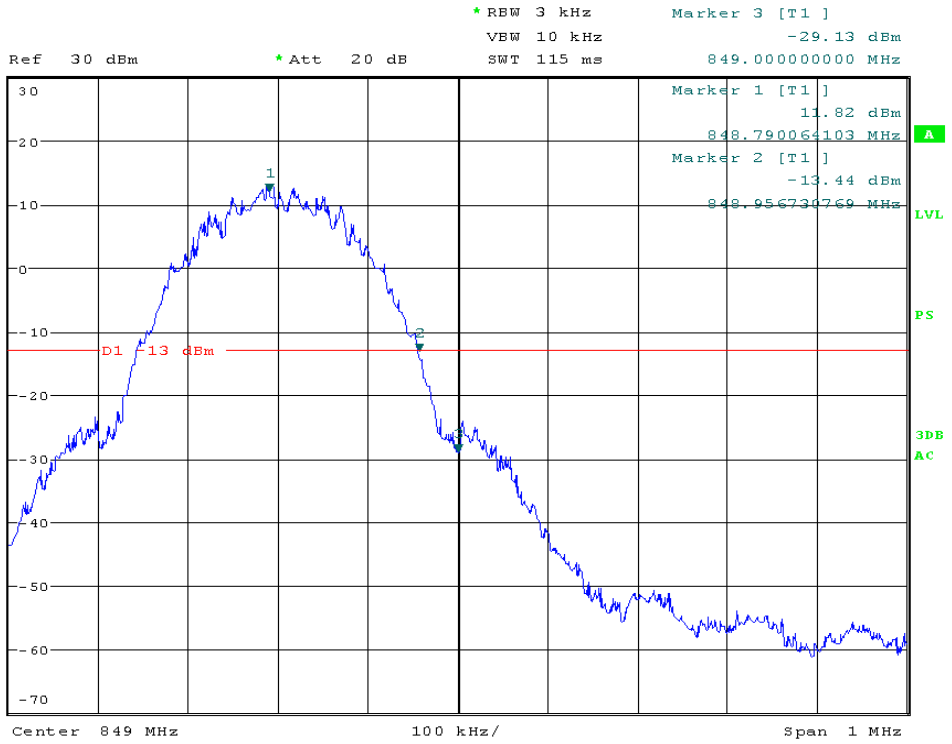




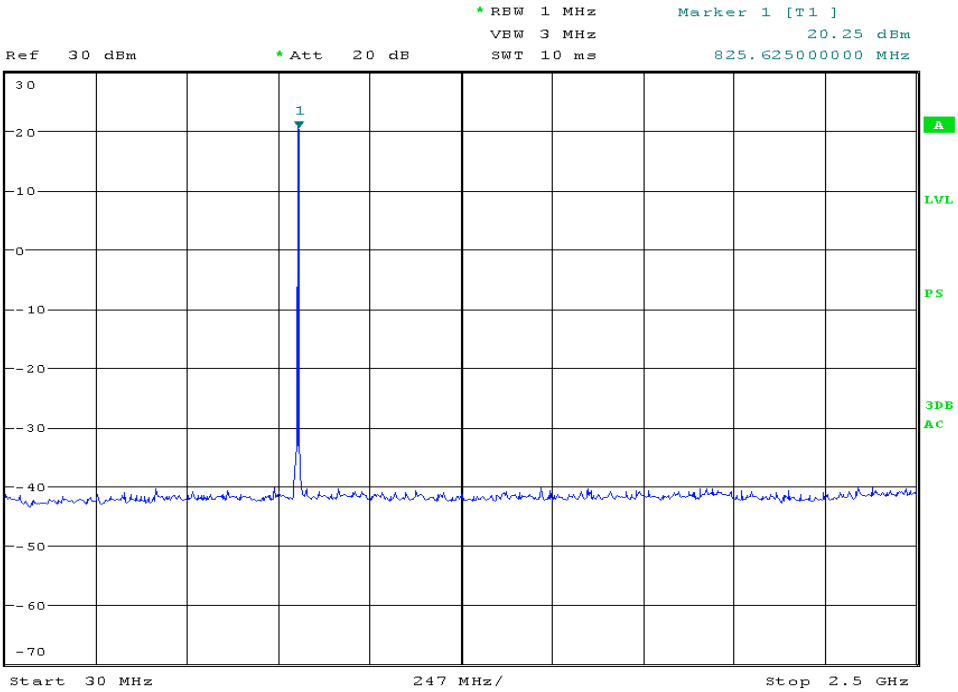
Band Edge emission Channel Low

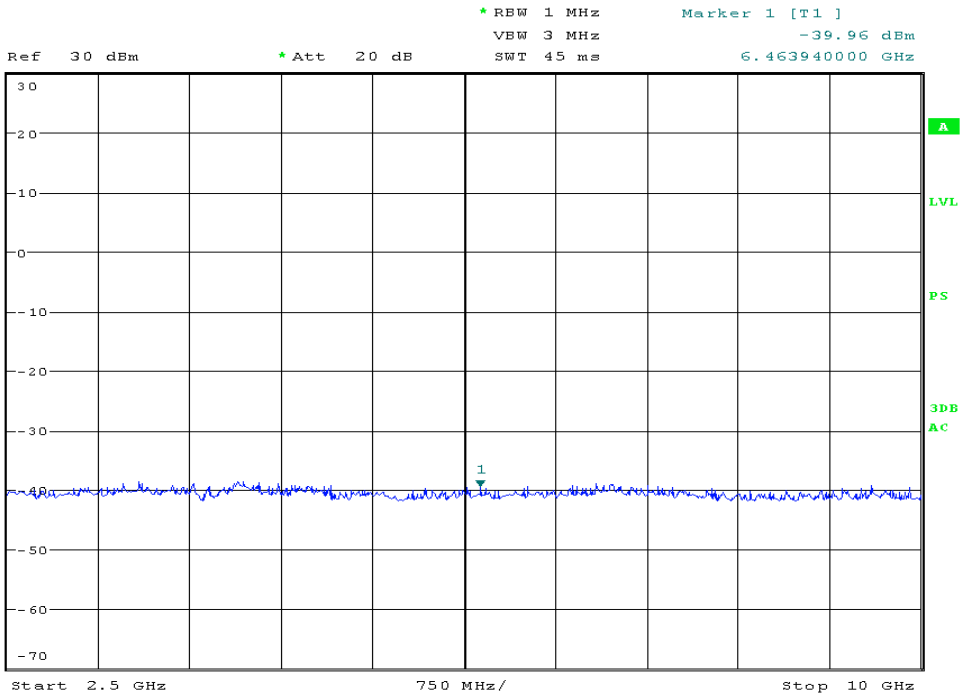


Band Edge emission Channel high

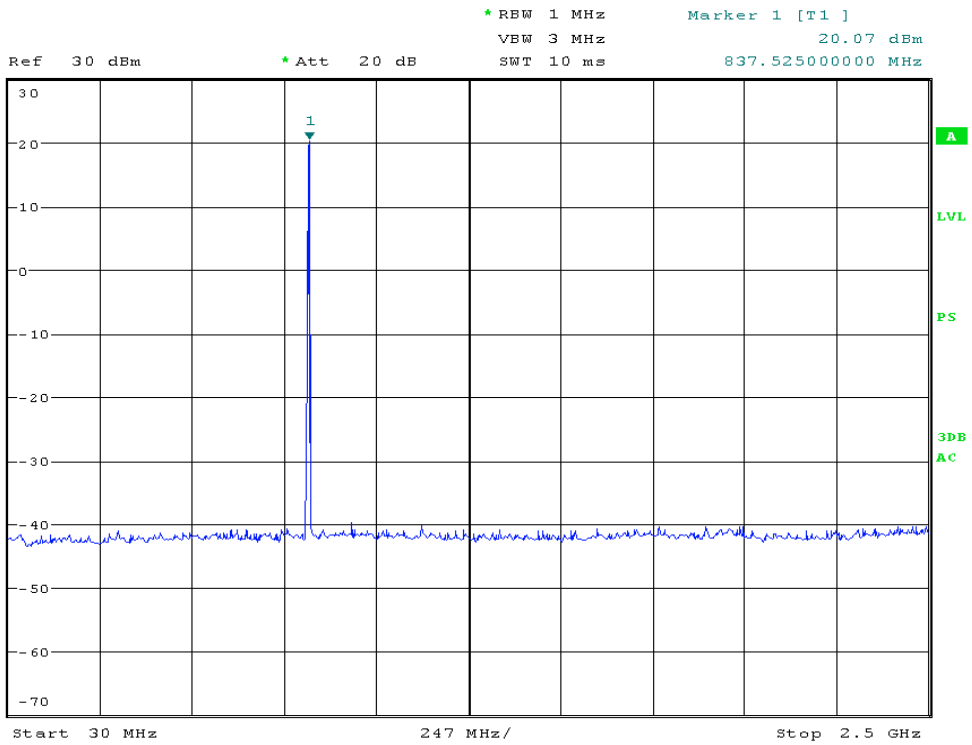


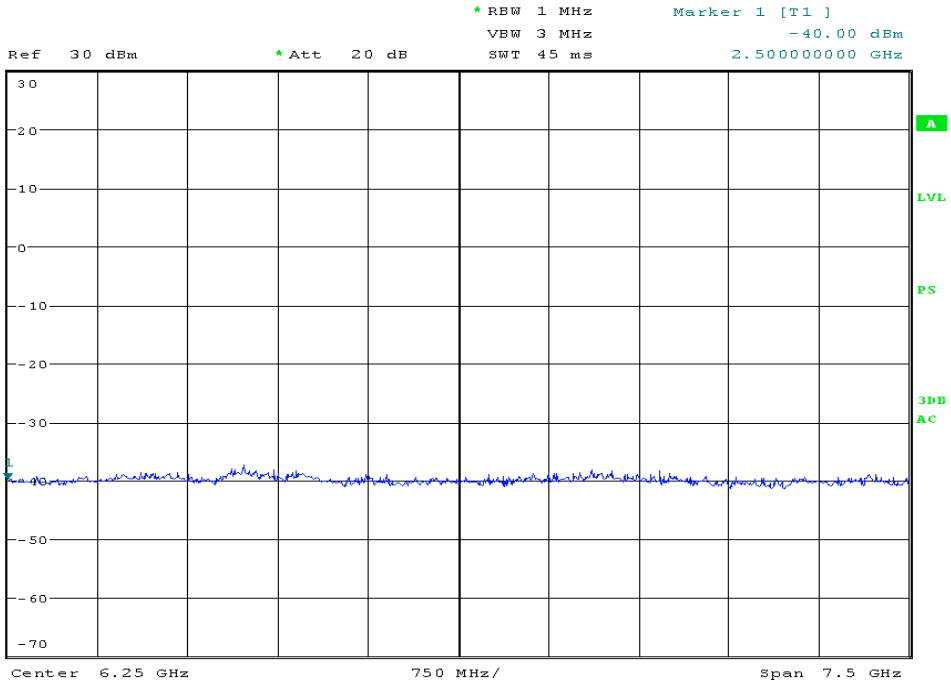
GSM 850 8-PSK Channel Low



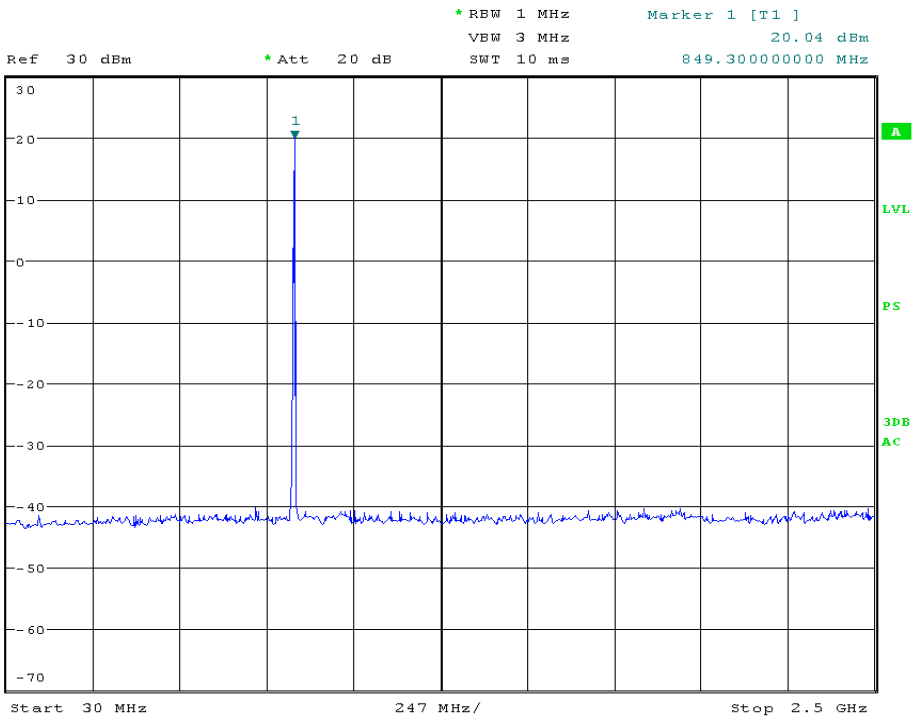


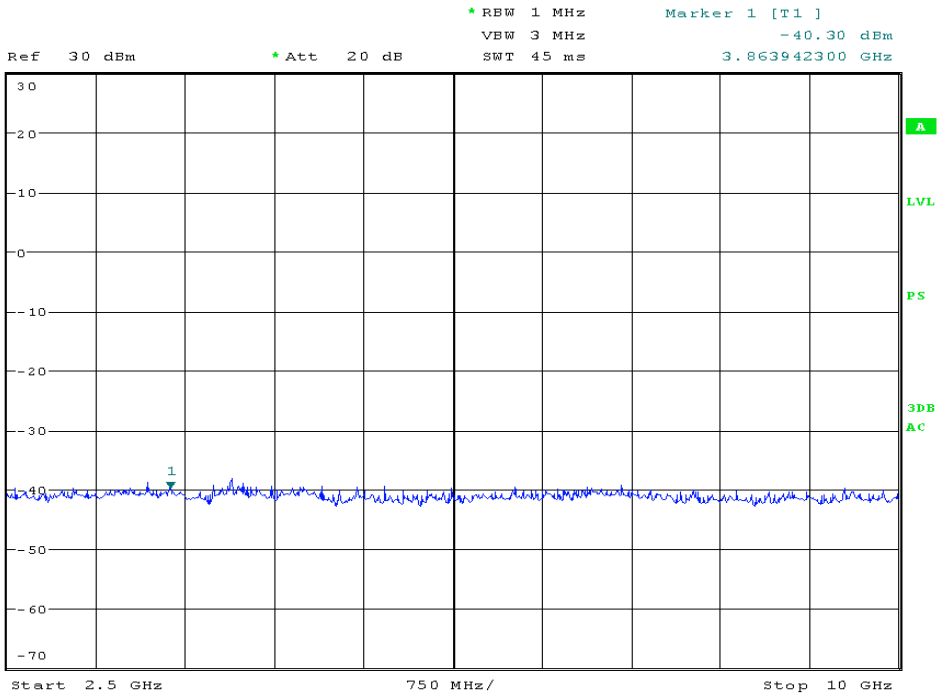
Channel Mid



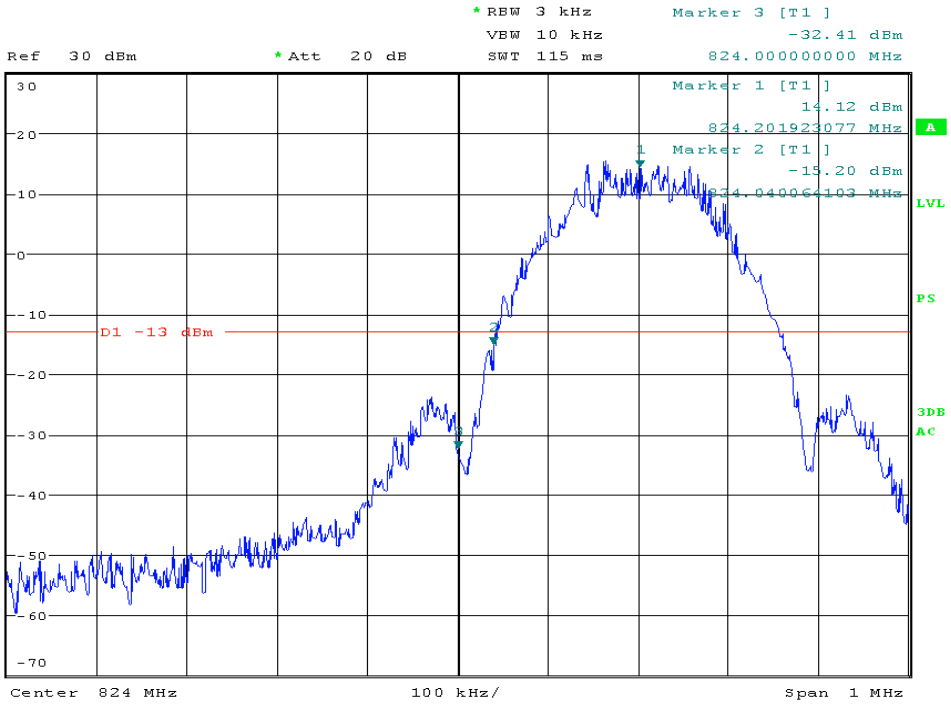


Channel High

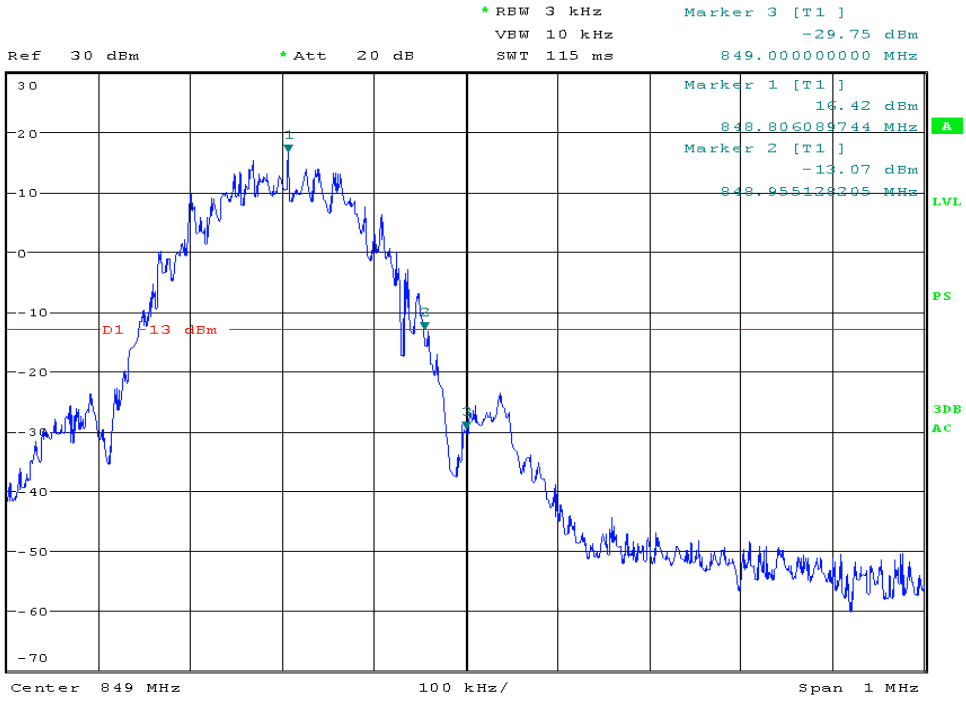




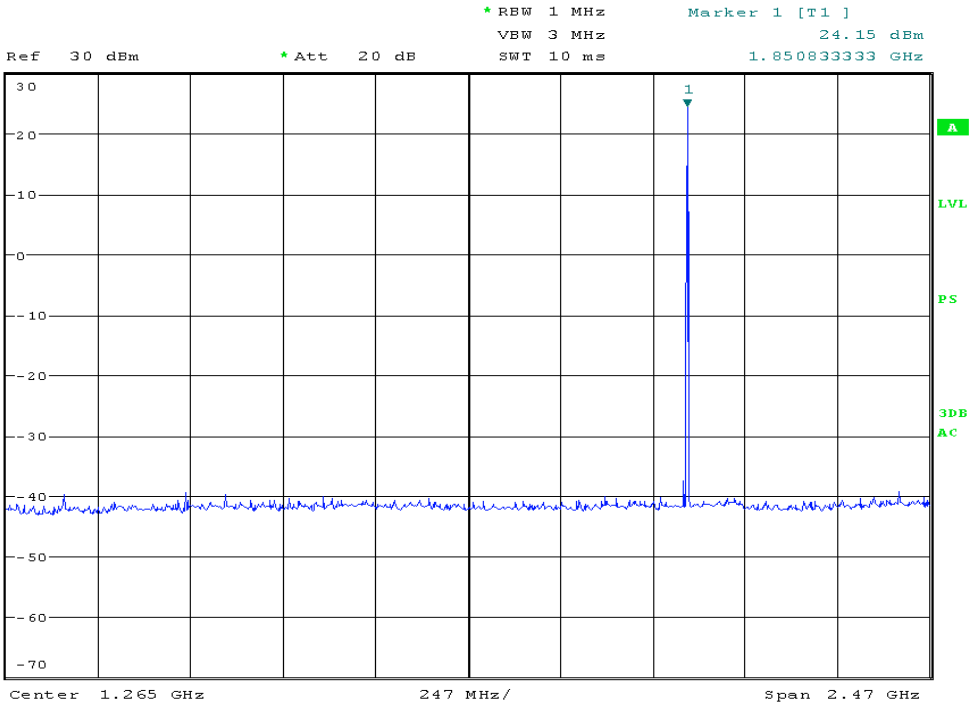
Band Edge emission Channel Low

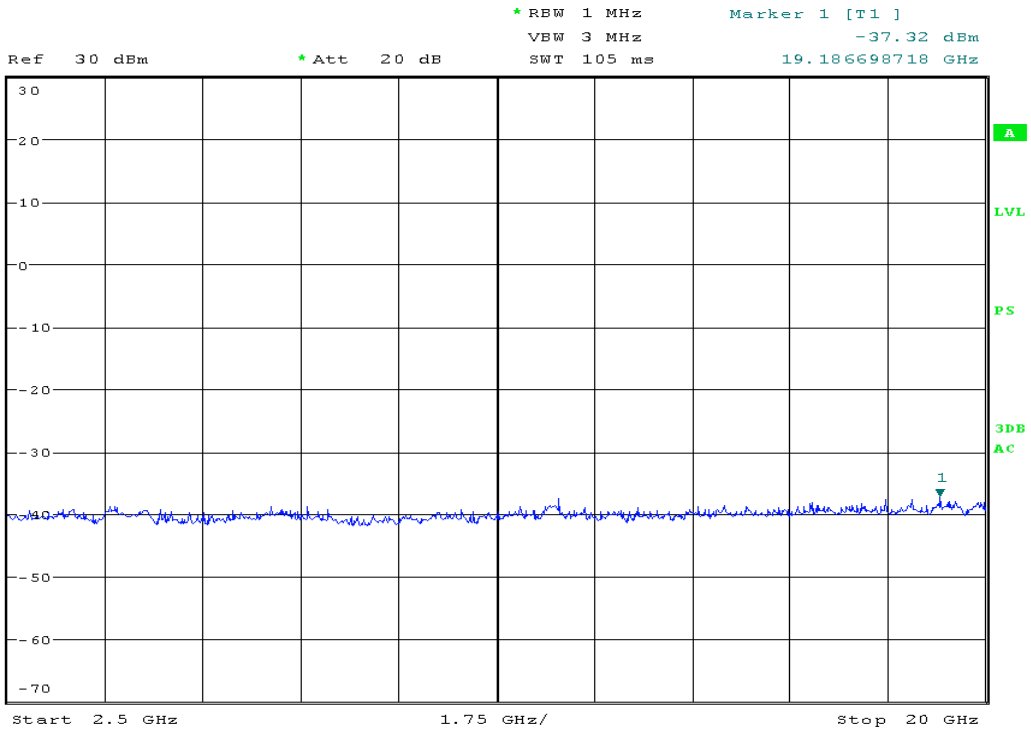


Band Edge emission Channel high：

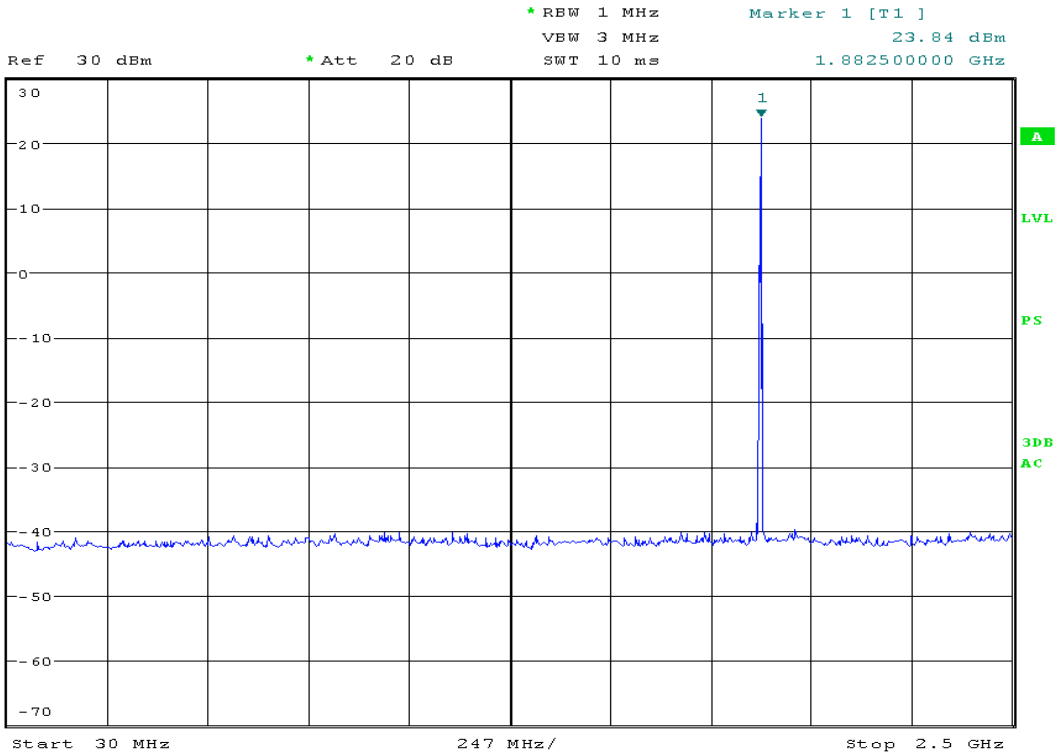


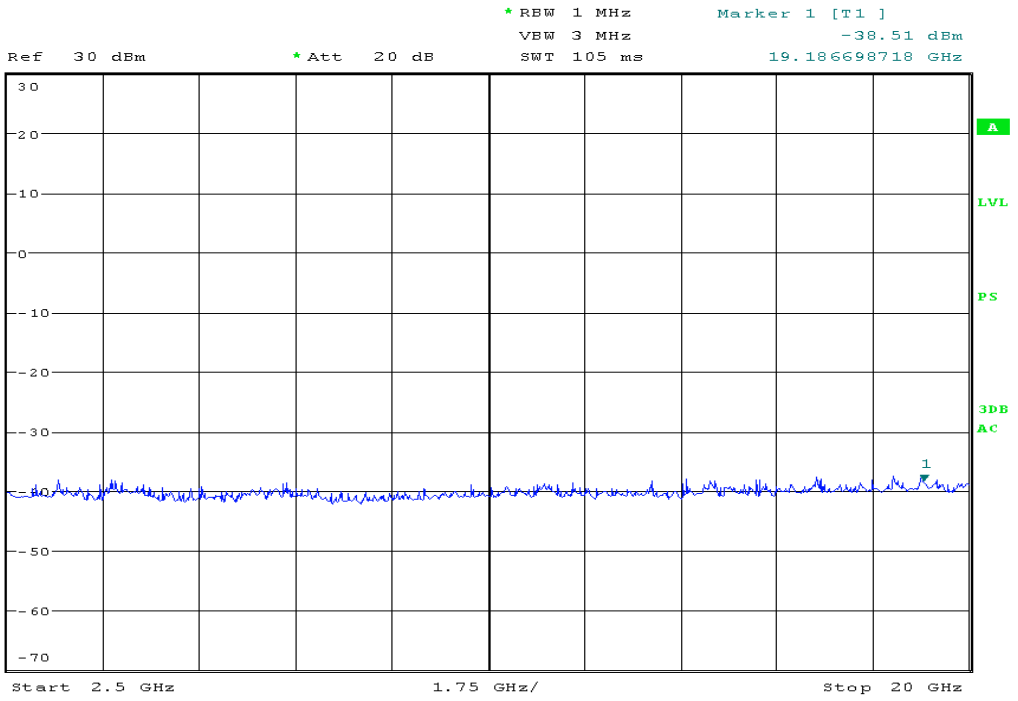
GSM 1900 GMSK：Channel Low



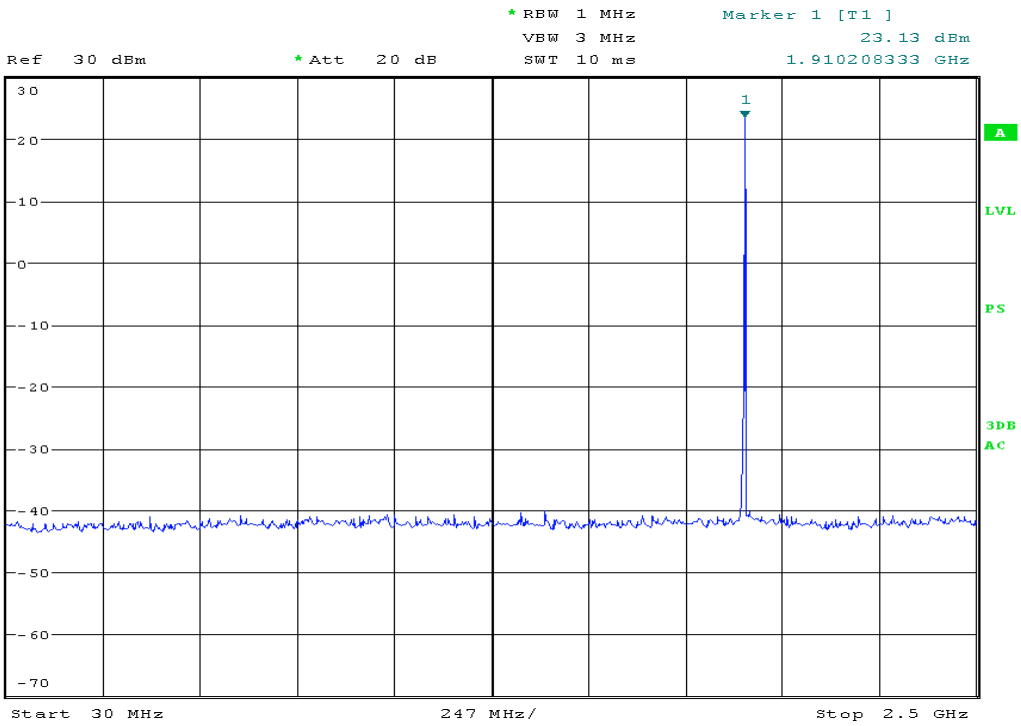


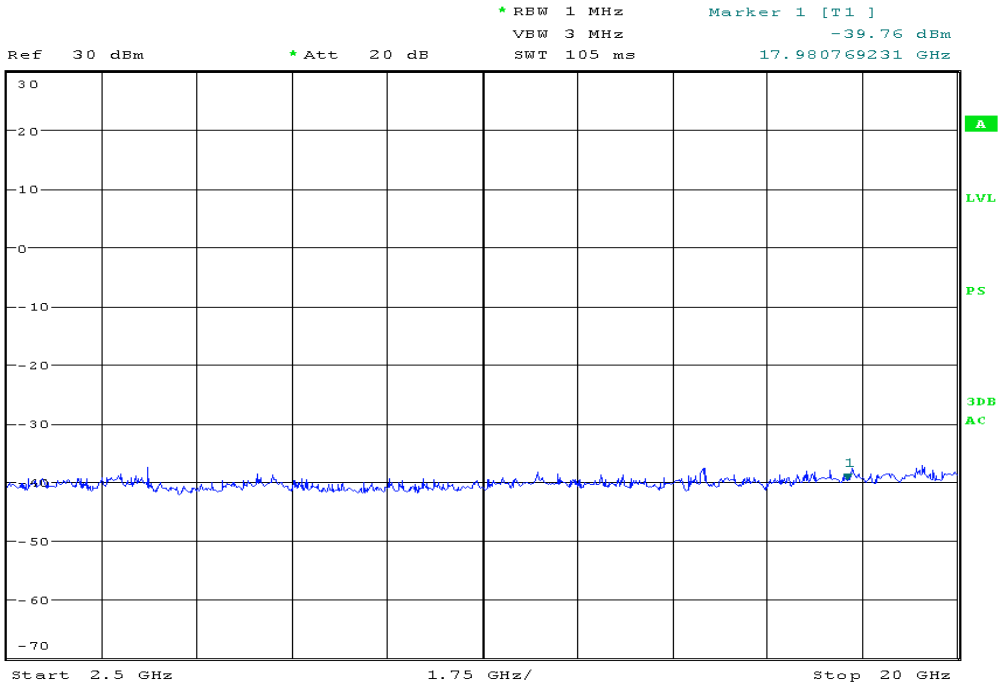
Channel Mid



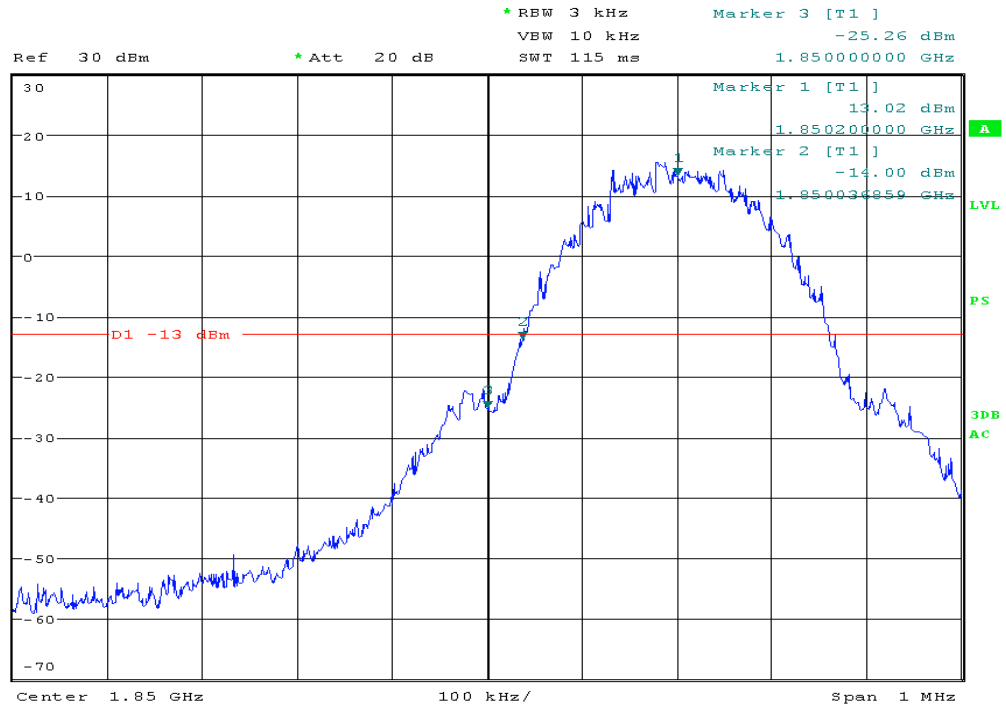


Channel High

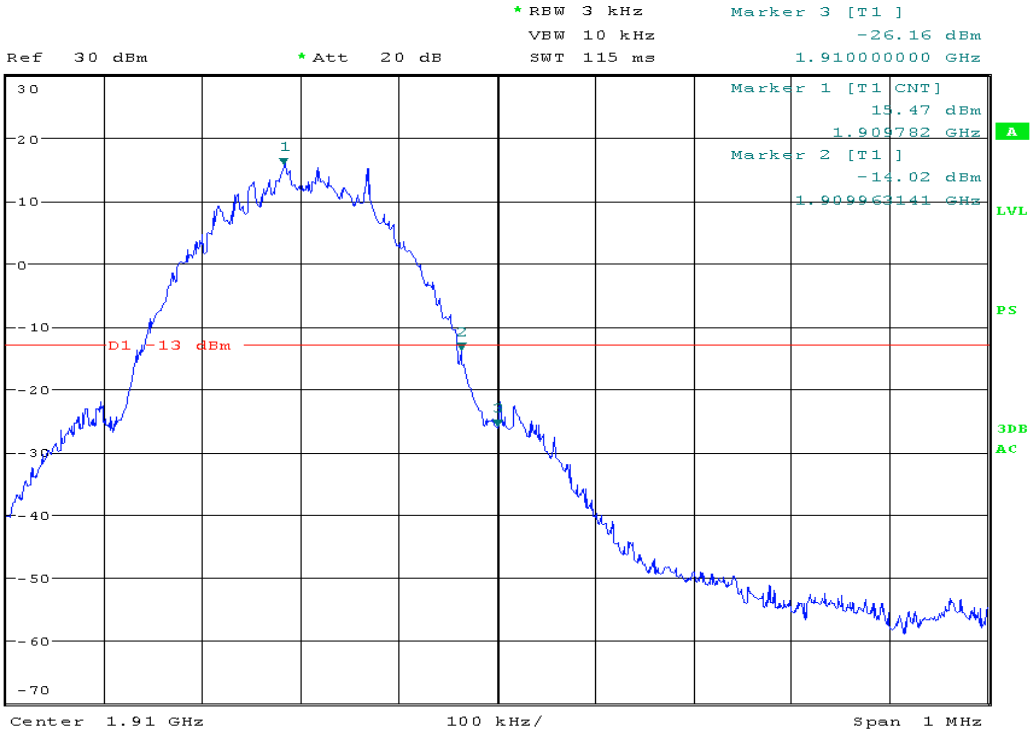




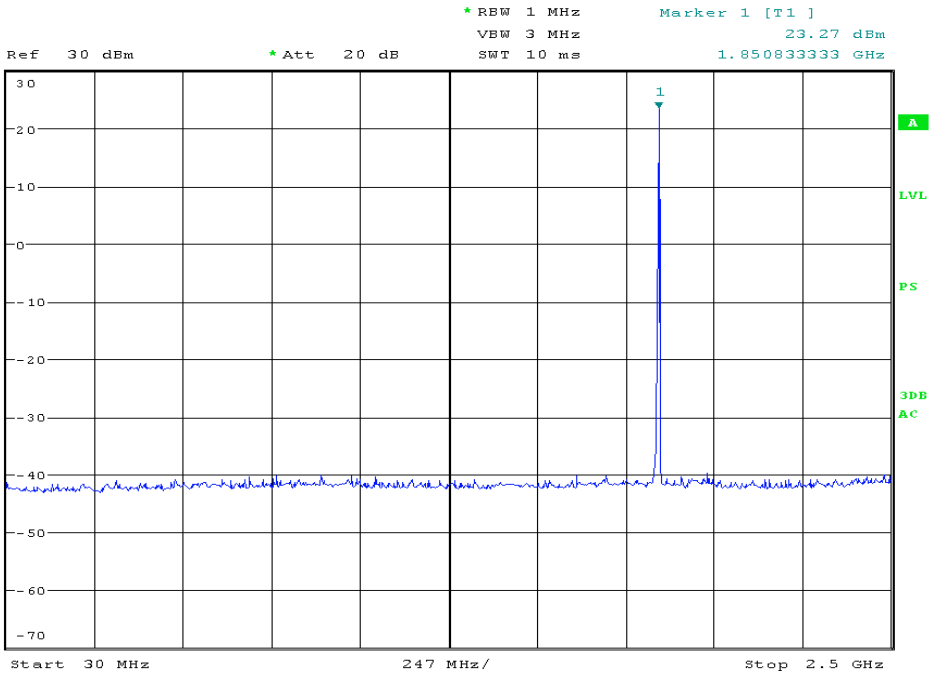
Band Edge emission Channel Low

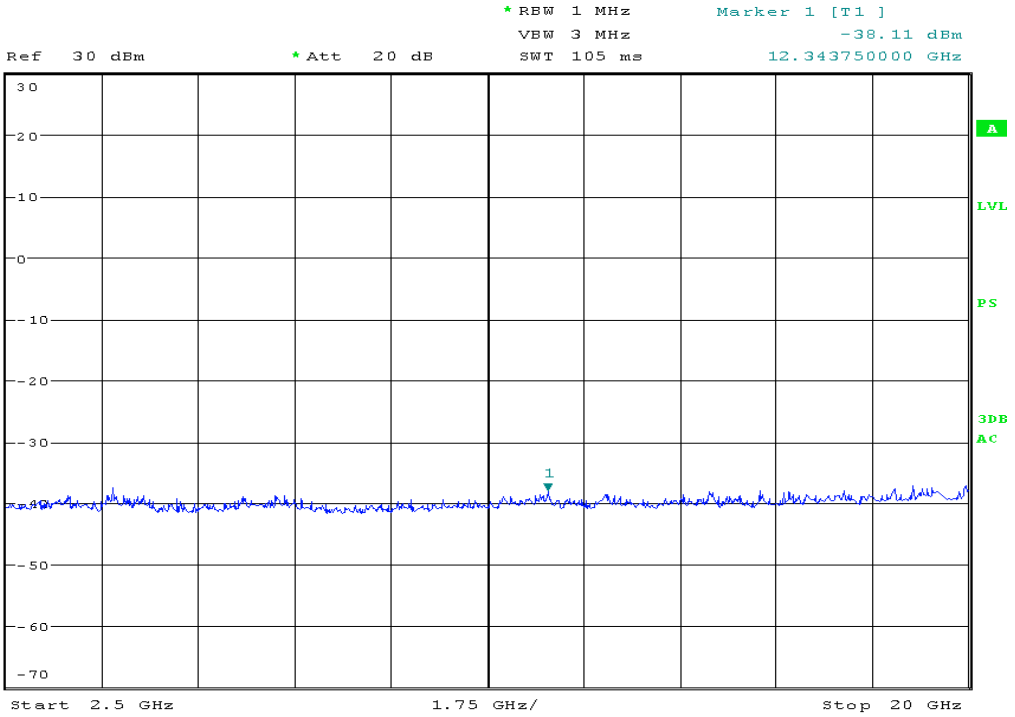


Band Edge emission Channel high

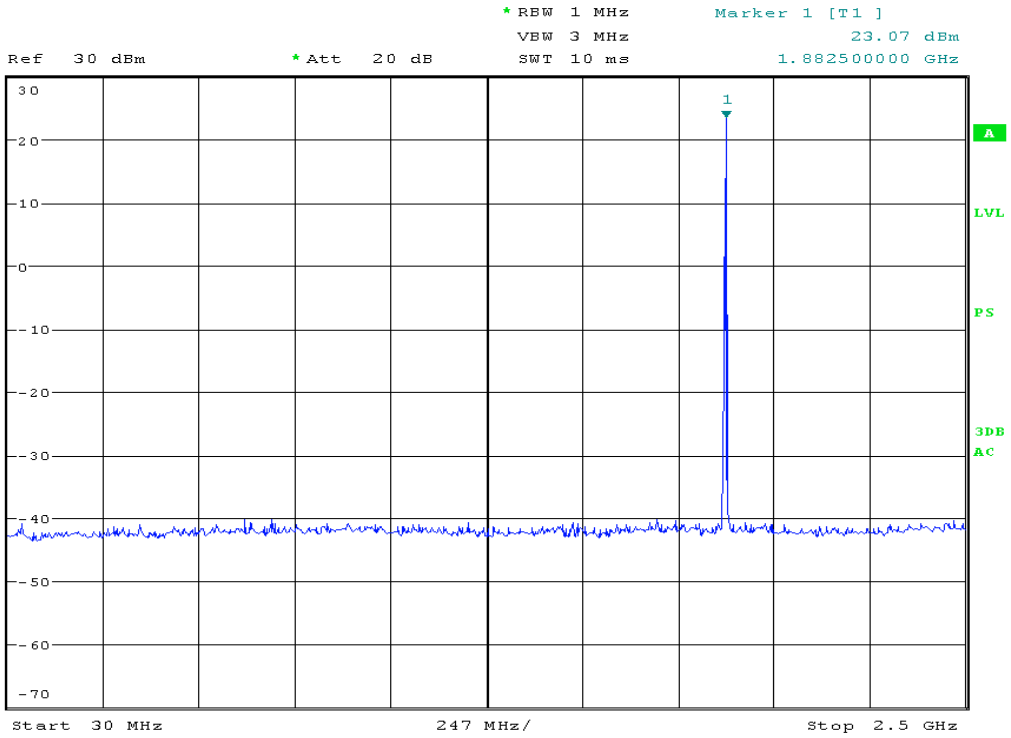


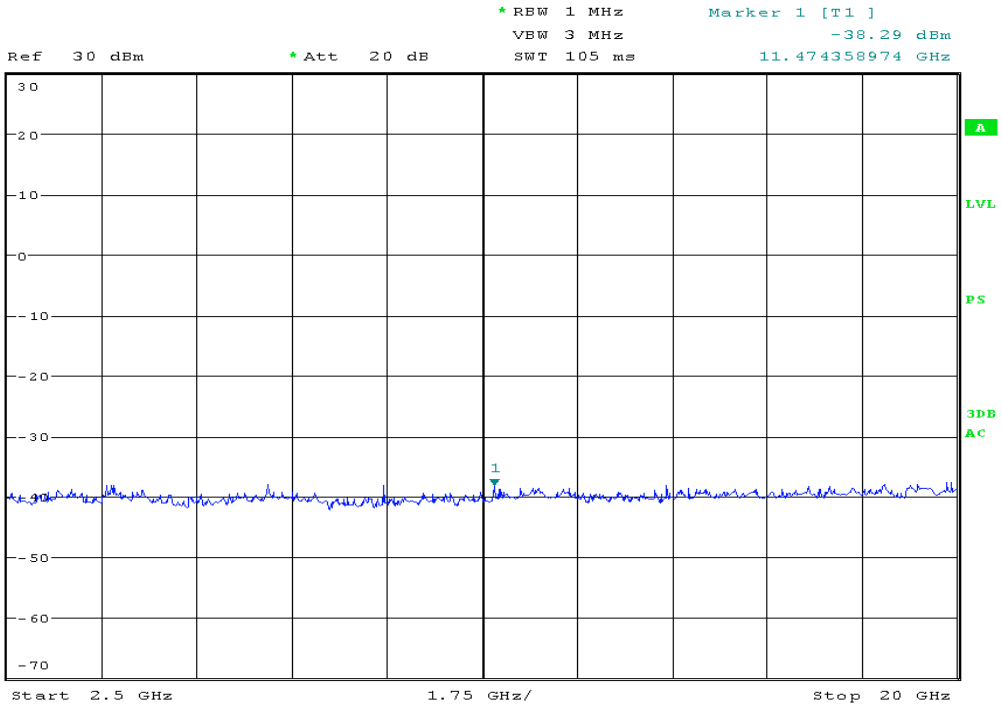
GSM 1900 8-PSK Channel Low



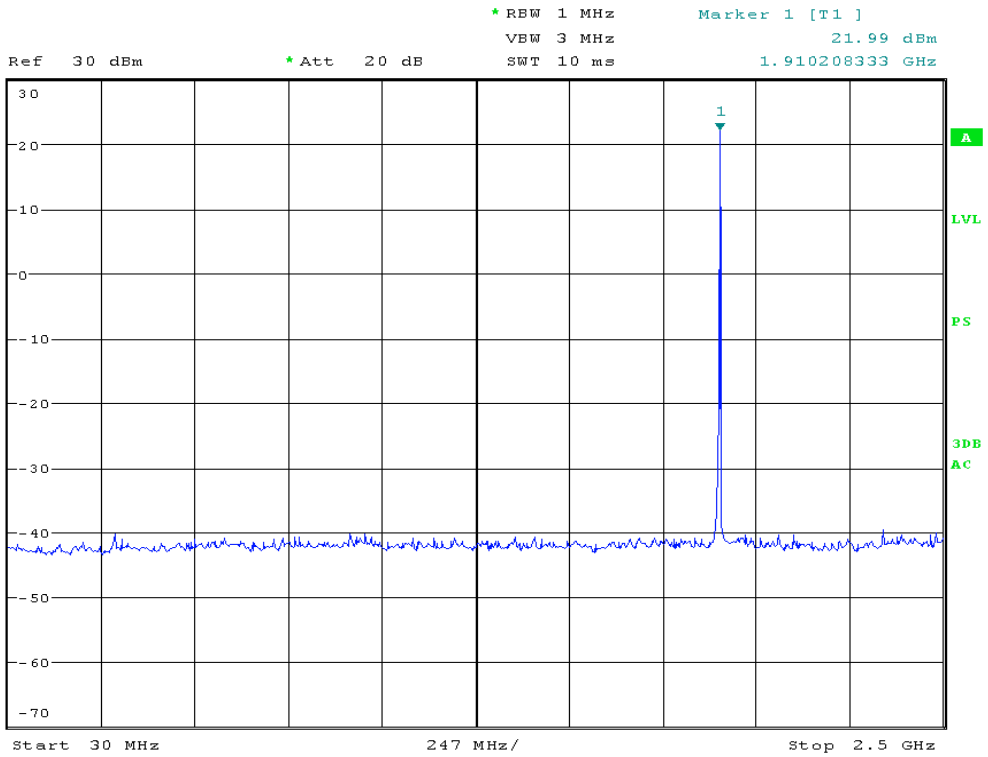


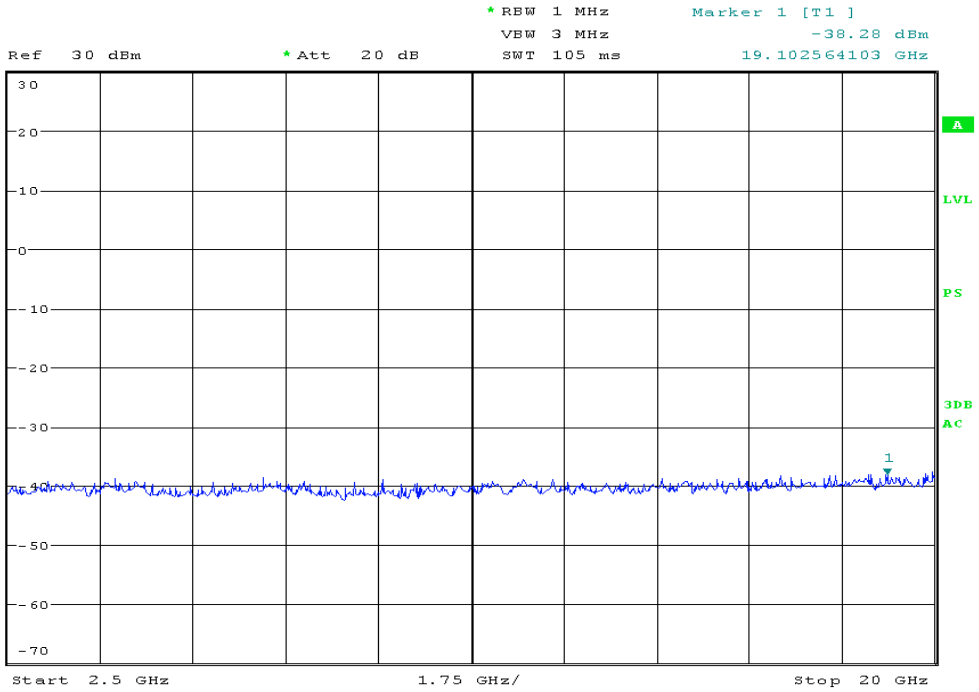
Channel Mid



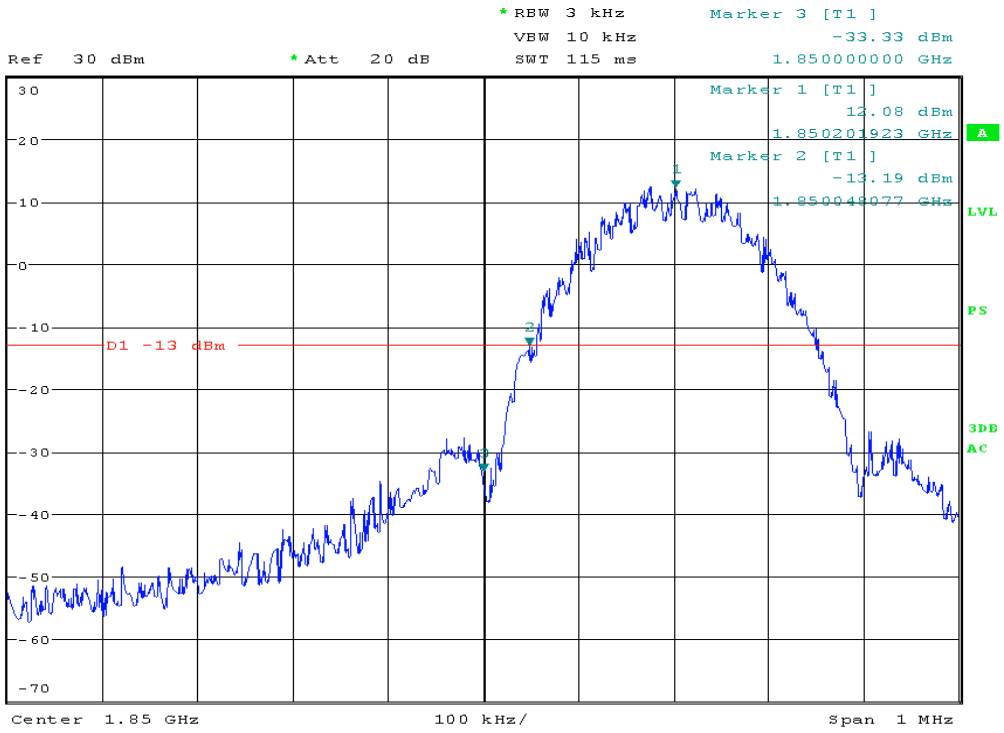


Channel High

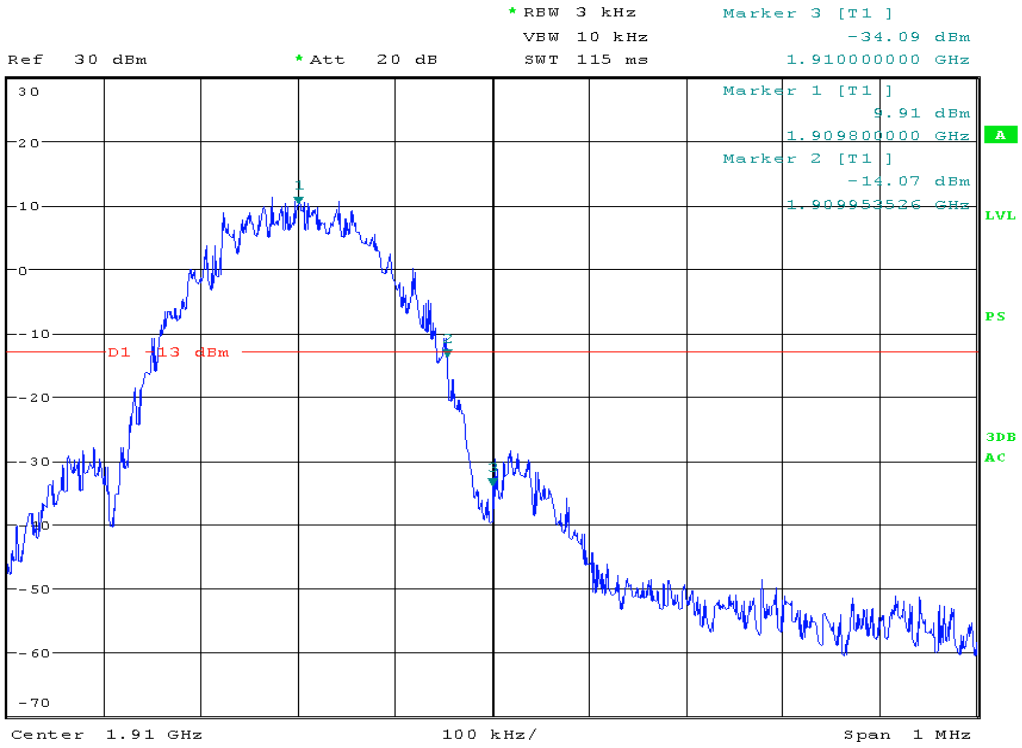




Band Edge emission Channel Low



Band Edge emission Channel high



6.6 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: Jan 21, 2010

Test Procedure:

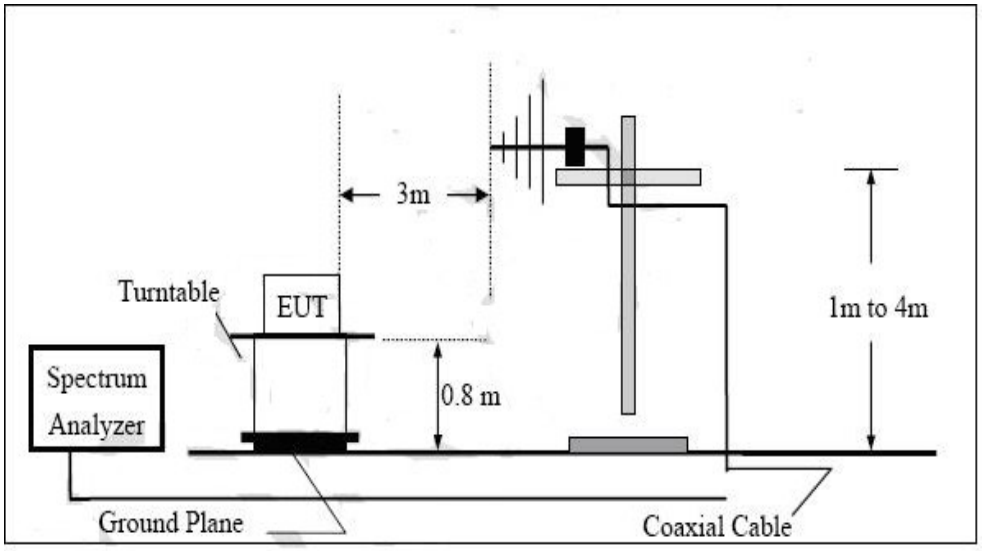
The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emission is any up to 10th harmonic.

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

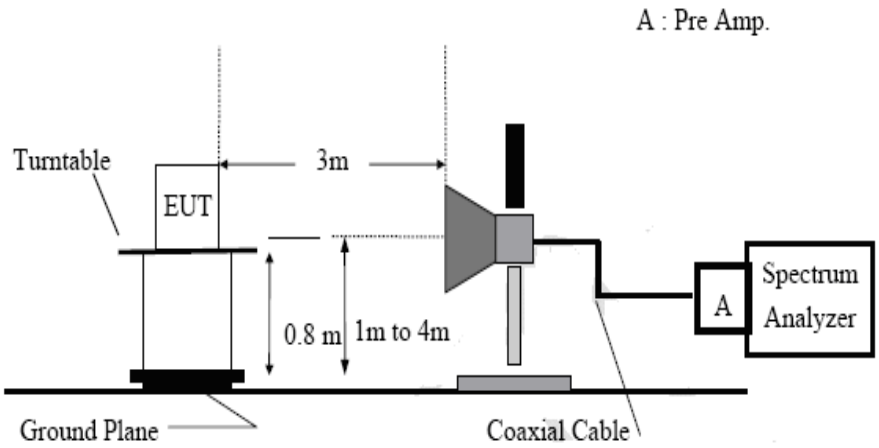
Band Edge requirements: In 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 % of bandwidth of fundamental emission of the transmitter any be employed to measure the out of band emission. Limit=--13dBm.

Test Setup:

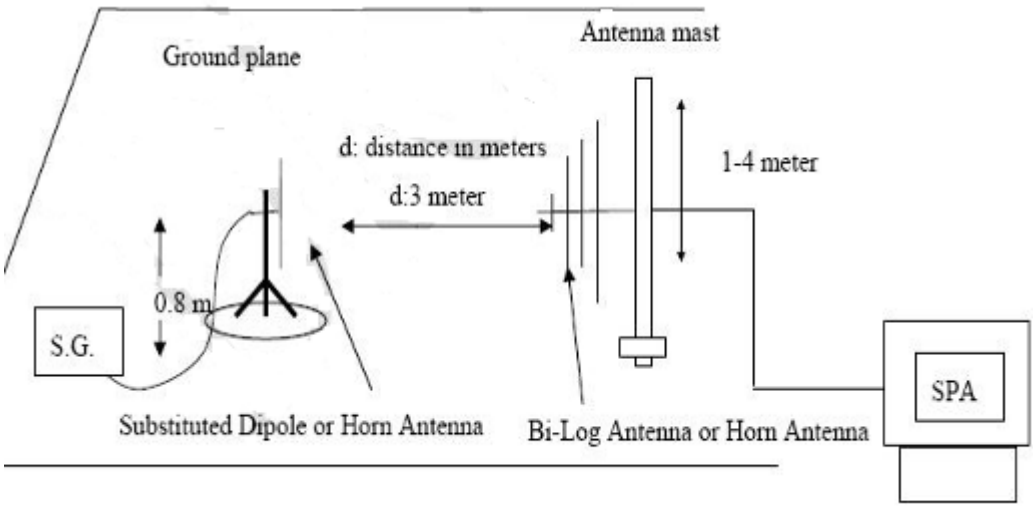
(A) Radiated emission Test setup, Below Frequency 1000MHz:



(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

Fundamental Frequency: 824.2MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.02	H	-52.27	2.60	1.02	-50.69	-13.0	37.69
200.0	43.46	H	-52.00	9.10	1.66	-44.56	-13.0	31.56
800.0	43.89	H	-54.67	8.70	2.10	-48.07	-13.0	35.07
1648.4	44.94	H	-51.73	6.95	3.93	-48.71	-13.0	35.71
2472.6	45.73	H	-52.39	8.35	5.02	-49.06	-13.0	36.06
3296.8	46.79	H	-51.34	8.15	5.62	-48.81	-13.0	35.81
4121.0	46.97	H	-49.84	8.45	6.13	-47.52	-13.0	34.52
100.0	42.50	V	-53.87	2.60	1.02	-52.29	-13.0	39.29
200.0	42.73	V	-54.57	9.10	1.66	-47.13	-13.0	34.13
800.0	43.80	V	-55.37	8.70	2.1	-48.77	-13.0	35.77
1648.4	45.03	V	-51.43	6.95	3.93	-48.41	-13.0	35.41
2472.6	45.73	V	-52.99	8.35	5.02	-49.66	-13.0	36.66
3296.8	46.09	V	-52.28	8.15	5.62	-49.75	-13.0	36.75
4121.0	46.44	V	-50.3	8.45	6.13	-47.98	-13.0	34.98

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

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Mid mode

Fundamental Frequency: 836.40MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.72	H	-52.66	2.60	1.02	-51.08	-13.0	38.08
200.0	42.77	H	-52.39	9.10	1.66	-44.95	-13.0	31.95
800.0	43.63	H	-55.06	8.70	2.1	-48.46	-13.0	35.46
1672.8	45.02	H	-52.12	7.00	4.04	-49.16	-13.0	36.16
2509.2	45.83	H	-52.78	8.44	5.02	-49.36	-13.0	36.36
3345.6	45.91	H	-51.73	8.22	5.71	-49.22	-13.0	36.22
4182.0	46.61	H	-50.23	8.51	6.2	-47.92	-13.0	34.92
100.0	42.61	V	-54.26	2.60	1.02	-52.68	-13.0	39.68
200.0	43.56	V	-54.96	9.10	1.66	-47.52	-13.0	34.52
800.0	43.84	V	-55.76	8.70	2.1	-49.16	-13.0	36.16
1672.8	45.78	V	-51.82	7.00	4.04	-48.86	-13.0	35.86
2509.2	45.30	V	-53.38	8.44	5.02	-49.96	-13.0	36.96
3345.6	46.22	V	-52.67	8.22	5.71	-50.16	-13.0	37.16
4182.0	46.87	V	-50.69	8.51	6.2	-48.38	-13.0	35.38

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

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH High mode

Fundamental Frequency: 848.8MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.43	H	-53.09	2.60	1.02	-51.51	-13.0	38.51
200.0	42.89	H	-51.81	9.10	1.66	-44.37	-13.0	31.37
800.0	43.24	H	-54.05	8.70	2.10	-47.45	-13.0	34.45
1697.6	44.53	H	-52.21	7.12	3.93	-49.02	-13.0	36.02
2546.4	44.61	H	-51.99	8.48	5.02	-48.53	-13.0	35.53
3395.2	45.40	H	-50.98	8.25	5.62	-48.35	-13.0	35.35
4244.0	45.74	H	-50.76	8.60	6.13	-48.29	-13.0	35.29
100.0	42.05	V	-53.61	2.60	1.02	-52.03	-13.0	39.03
200.0	42.56	V	-53.13	9.10	1.66	-45.69	-13.0	32.69
800.0	43.40	V	-55.60	8.70	2.10	-49	-13.0	36.00
1697.6	43.78	V	-52.10	7.12	3.93	-48.91	-13.0	35.91
2546.4	44.37	V	-52.40	8.48	5.02	-48.94	-13.0	35.94
3395.2	45.29	V	-52.33	8.25	5.62	-49.7	-13.0	36.70
4244.0	46.13	V	-51.29	8.60	6.13	-48.82	-13.0	35.82

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 1850.2MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.55	H	-52.67	2.6	1.02	-51.09	-13.0	38.09
200.0	42.68	H	-52.50	9.1	1.66	-45.06	-13.0	32.06
800.0	43.49	H	-52.17	8.7	2.10	-45.57	-13.0	32.57
1800.0	44.41	H	-51.24	7.0	4.28	-48.52	-13.0	35.52
3700.4	44.60	H	-52.43	8.35	4.57	-48.65	-13.0	35.65
5550.6	45.49	H	-51.29	9.55	5.57	-47.31	-13.0	34.31
7400.8	46.05	H	-51.17	9.75	7.62	-49.04	-13.0	36.04
9251.0	45.64	H	-53.33	10.55	10.9	-53.68	-13.0	40.68
100.0	42.33	V	-52.17	2.6	1.02	-50.59	-13.0	37.59
200.0	42.42	V	-53.55	9.1	1.66	-46.11	-13.0	33.11
800.0	43.62	V	-53.69	8.7	2.10	-47.09	-13.0	34.09
1800.0	44.46	V	-49.40	7.0	4.28	-46.68	-13.0	33.68
3700.4	45.63	V	-51.73	8.35	4.57	-47.95	-13.0	34.95
5550.6	45.49	V	-51.91	9.55	5.57	-47.93	-13.0	34.93
7400.8	46.41	V	-51.25	9.75	7.62	-49.12	-13.0	36.12
9251.0	46.78	V	-51.39	10.55	10.9	-51.74	-13.0	38.74

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH mid mode

Fundamental Frequency: 1880.0MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100	42.12	H	-52.61	2.6	1.02	-51.03	-13.0	38.03
200	42.33	H	-54.44	9.1	1.66	-47.00	-13.0	34.00
800	43.84	H	-54.11	8.7	2.10	-47.51	-13.0	34.51
1800	44.72	H	-51.11	7.0	4.28	-48.39	-13.0	35.39
3760.0	45.10	H	-51.11	8.42	4.59	-47.28	-13.0	34.28
5640.0	45.26	H	-51.21	9.5	5.59	-47.30	-13.0	34.3
7520.0	45.77	H	-51.16	9.78	7.72	-49.10	-13.0	36.1
9400.0	46.04	H	-53.27	10.61	10.98	-53.64	-13.0	40.64
100.0	42.15	V	-54.11	2.6	1.02	-52.53	-13.0	39.53
200.0	42.54	V	-54.11	9.1	1.66	-46.67	-13.0	33.67
800.0	43.49	V	-53.11	8.7	2.10	-46.51	-13.0	33.51
1800.0	44.58	V	-52.31	7.0	4.28	-49.59	-13.0	36.59
3760.0	45.12	V	-53.67	8.42	4.59	-49.84	-13.0	36.84
5640.0	45.63	V	-53.81	9.5	5.59	-49.9	-13.0	36.9
7520.0	46.06	V	-53.19	9.78	7.72	-51.13	-13.0	38.13
9400.0	46.77	V	-53.31	10.61	10.98	-53.68	-13.0	40.68

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH High mode

Fundamental Frequency: 1909.8MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.69	H	-50.96	2.6	1.02	-49.38	-13.0	36.38
200.0	42.71	H	-50.85	9.1	1.66	-43.41	-13.0	30.41
800.0	43.01	H	-50.64	8.7	2.1	-44.04	-13.0	31.04
1800.0	44.32	H	-51.1	7.0	4.28	-48.38	-13.0	35.38
3981.6	45.26	H	-51.07	8.42	4.59	-47.24	-13.0	34.24
5972.4	45.98	H	-50.86	9.5	5.59	-46.95	-13.0	33.95
7963.2	45.96	H	-51.89	9.78	7.72	-49.83	-13.0	36.83
9954	46.56	H	-51.61	10.61	10.98	-51.98	-13.0	38.98
100.0	42.30	V	-52.13	2.6	1.02	-50.55	-13.0	37.55
200.0	42.67	V	-52.51	9.1	1.66	-45.07	-13.0	32.07
800.0	42.85	V	-51.81	8.7	2.1	-45.21	-13.0	32.21
1800.0	43.68	V	-50.96	7.0	4.28	-48.24	-13.0	35.24
3981.6	44.10	V	-52.76	8.42	4.59	-48.93	-13.0	35.93
5972.4	44.99	V	-52.49	9.5	5.59	-48.58	-13.0	35.58
7963.2	45.32	V	-51.87	9.78	7.72	-49.81	-13.0	36.81
9954.0	46.38	V	-52.27	10.61	10.98	-52.64	-13.0	39.64

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

PSK mode:

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 824.2MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.02	H	-52.20	2.60	1.02	-50.62	-13.0	37.62
200.0	43.46	H	-52.50	9.10	1.66	-44.06	-13.0	31.06
800.0	43.89	H	-54.60	8.70	2.10	-48.00	-13.0	35.00
1648.4	44.94	H	-51.70	6.95	3.93	-48.68	-13.0	35.68
2472.6	45.73	H	-52.00	8.35	5.02	-49.00	-13.0	36.00
3296.8	46.79	H	-51.52	8.15	5.62	-49.00	-13.0	36.00
4121.0	46.97	H	-49.84	8.45	6.13	-47.52	-13.0	34.52
100.0	42.50	V	-53.87	2.60	1.02	-52.29	-13.0	39.29
200.0	42.73	V	-55.00	9.10	1.66	-47.13	-13.0	34.13
800.0	43.80	V	-55.42	8.70	2.1	-48.75	-13.0	35.75
1648.4	45.03	V	-52.01	6.95	3.93	-48.41	-13.0	35.41
2472.6	45.73	V	-52.90	8.35	5.02	-49.60	-13.0	36.60
3296.8	46.09	V	-51.99	8.15	5.62	-50.00	-13.0	37.00
4121.0	46.44	V	-50.30	8.45	6.13	-47.00	-13.0	34.00

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

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Mid mode

Fundamental Frequency: 836.40MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.72	H	-52.60	2.60	1.02	-51.00	-13.0	38.00
200.0	42.77	H	-52.45	9.10	1.66	-44.80	-13.0	31.80
800.0	43.63	H	-54.88	8.70	2.1	-48.40	-13.0	35.40
1672.8	45.02	H	-52.10	7.00	4.04	-49.00	-13.0	36.00
2509.2	45.83	H	-52.22	8.44	5.02	-48.50	-13.0	35.50
3345.6	45.91	H	-52.23	8.22	5.71	-49.11	-13.0	36.11
4182.0	46.61	H	-50.00	8.51	6.2	-47.90	-13.0	34.90
100.0	42.61	V	-54.20	2.60	1.02	-52.68	-13.0	39.68
200.0	43.56	V	-55.55	9.10	1.66	-47.50	-13.0	34.50
800.0	43.84	V	-55.70	8.70	2.1	-49.62	-13.0	36.62
1672.8	45.78	V	-51.82	7.00	4.04	-48.86	-13.0	35.86
2509.2	45.30	V	-53.34	8.44	5.02	-49.96	-13.0	36.96
3345.6	46.22	V	-52.60	8.22	5.71	-50.10	-13.0	37.10
4182.0	46.87	V	-50.60	8.51	6.20	-48.35	-13.0	35.35

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

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH High mode

Fundamental Frequency: 848.8MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.43	H	-53.55	2.60	1.02	-51.40	-13.0	38.40
200.0	42.89	H	-51.47	9.10	1.66	-44.30	-13.0	31.30
800.0	43.24	H	-54.50	8.70	2.10	-47.00	-13.0	34.00
1697.6	44.53	H	-52.89	7.12	3.93	-48.00	-13.0	35.00
2546.4	44.61	H	-51.90	8.48	5.02	-48.33	-13.0	35.33
3395.2	45.40	H	-50.67	8.25	5.62	-48.30	-13.0	35.30
4244.0	45.74	H	-50.72	8.60	6.13	-48.20	-13.0	35.20
100.0	42.05	V	-53.61	2.60	1.02	-52.00	-13.0	39.00
200.0	42.56	V	-53.10	9.10	1.66	-45.00	-13.0	32.00
800.0	43.40	V	-55.65	8.70	2.10	-49.00	-13.0	36.00
1697.6	43.78	V	-52.16	7.12	3.93	-48.50	-13.0	35.50
2546.4	44.37	V	-52.44	8.48	5.02	-48.90	-13.0	35.90
3395.2	45.29	V	-52.30	8.25	5.62	-49.40	-13.0	36.40
4244.0	46.13	V	-51.20	8.60	6.13	-48.22	-13.0	35.22

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 1850.2MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.55	H	-52.72	2.6	1.02	-51.00	-13.0	38.00
200.0	42.68	H	-52.55	9.1	1.66	-45.40	-13.0	32.40
800.0	43.49	H	-52.28	8.7	2.10	-45.50	-13.0	32.50
1800.0	44.41	H	-51.22	7.0	4.28	-48.25	-13.0	35.25
3700.4	44.60	H	-52.41	8.35	4.57	-48.65	-13.0	35.65
5550.6	45.49	H	-51.25	9.55	5.57	-47.42	-13.0	34.42
7400.8	46.05	H	-51.14	9.75	7.62	-49.00	-13.0	36.00
9251.0	45.64	H	-53.30	10.55	10.9	-53.68	-13.0	40.68
100.0	42.33	V	-52.19	2.6	1.02	-50.60	-13.0	37.60
200.0	42.42	V	-53.50	9.1	1.66	-46.10	-13.0	33.10
800.0	43.62	V	-53.72	8.7	2.10	-47.09	-13.0	34.09
1800.0	44.46	V	-49.41	7.0	4.28	-46.68	-13.0	33.68
3700.4	45.63	V	-51.70	8.35	4.57	-47.95	-13.0	34.95
5550.6	45.49	V	-51.92	9.55	5.57	-47.12	-13.0	34.12
7400.8	46.41	V	-51.50	9.75	7.62	-49.10	-13.0	36.10
9251.0	46.78	V	-51.42	10.55	10.9	-51.50	-13.0	38.50

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH mid mode

Fundamental Frequency: 1880.0MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100	42.12	H	-52.40	2.6	1.02	-51.00	-13.0	38.00
200	42.33	H	-54.24	9.1	1.66	-47.50	-13.0	34.50
800	43.84	H	-54.43	8.7	2.10	-47.50	-13.0	34.50
1800	44.72	H	-51.22	7.0	4.28	-48.40	-13.0	35.40
3760.0	45.10	H	-51.07	8.42	4.59	-47.28	-13.0	34.28
5640.0	45.26	H	-51.20	9.5	5.59	-47.30	-13.0	34.30
7520.0	45.77	H	-51.62	9.78	7.72	-49.14	-13.0	36.14
9400.0	46.04	H	-53.20	10.61	10.98	-53.40	-13.0	40.40
100.0	42.15	V	-54.13	2.6	1.02	-52.22	-13.0	39.22
200.0	42.54	V	-54.46	9.1	1.66	-46.60	-13.0	33.60
800.0	43.49	V	-53.27	8.7	2.10	-46.44	-13.0	33.44
1800.0	44.58	V	-52.13	7.0	4.28	-49.00	-13.0	36.00
3760.0	45.12	V	-53.67	8.42	4.59	-49.80	-13.0	36.80
5640.0	45.63	V	-53.81	9.5	5.59	-49.60	-13.0	36.60
7520.0	46.06	V	-53.10	9.78	7.72	-51.10	-13.0	38.10
9400.0	46.77	V	-53.30	10.61	10.98	-53.88	-13.0	40.88

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH High mode

Fundamental Frequency: 1909.8MHz

Frequency (MHz)	SPA Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi/dBd)	Cable Loss (dBm)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.0	42.69	H	-50.55	2.6	1.02	-49.88	-13.0	36.88
200.0	42.71	H	-50.80	9.1	1.66	-43.14	-13.0	30.14
800.0	43.01	H	-50.64	8.7	2.1	-44.04	-13.0	31.04
1800.0	44.32	H	-51.12	7.0	4.28	-48.83	-13.0	35.83
3981.6	45.26	H	-51.70	8.42	4.59	-47.52	-13.0	34.52
5972.4	45.98	H	-50.66	9.5	5.59	-46.59	-13.0	33.59
7963.2	45.96	H	-51.81	9.78	7.72	-49.83	-13.0	36.83
9954	46.56	H	-51.61	10.61	10.98	-51.42	-13.0	38.42
100.0	42.30	V	-52.13	2.6	1.02	-50.55	-13.0	37.55
200.0	42.67	V	-52.50	9.1	1.66	-45.71	-13.0	32.71
800.0	42.85	V	-51.84	8.7	2.1	-45.21	-13.0	32.21
1800.0	43.68	V	-50.95	7.0	4.28	-48.24	-13.0	35.24
3981.6	44.10	V	-52.77	8.42	4.59	-47.93	-13.0	34.93
5972.4	44.99	V	-52.55	9.5	5.59	-48.58	-13.0	35.58
7963.2	45.32	V	-51.43	9.78	7.72	-49.17	-13.0	36.17
9954.0	46.38	V	-52.71	10.61	10.98	-52.60	-13.0	39.60

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

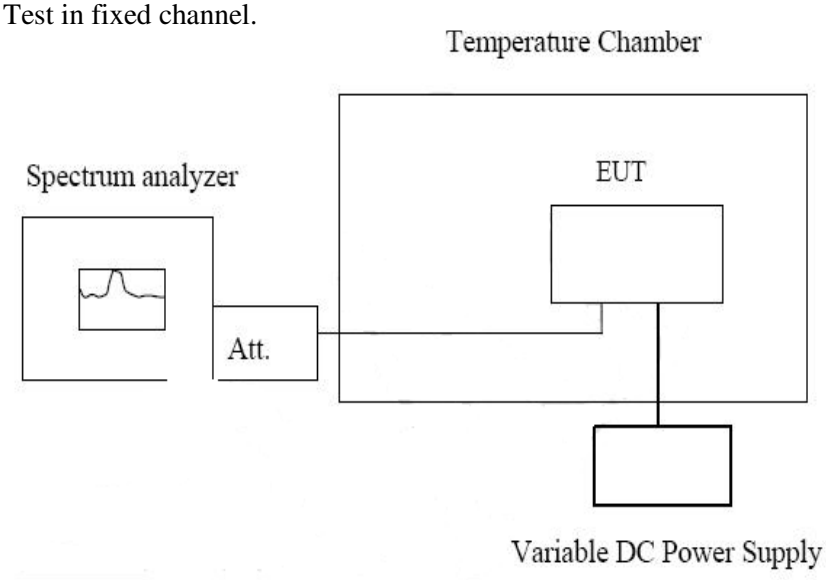
6.7 Frequency Stability V.S. TEMPERATURE MEASUREMENT

Test Requirement: Part 2.1055(a)(1)

Test Date: Jan 21, 2010 to Apr 26,2010

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 824.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	824.200043	43	2091
3.9	-20	824.200009	9	2091
3.9	-10	824.200031	31	2091
3.9	10	824.200016	16	2091
3.9	20	824.200068	68	2091
3.9	30	824.200014	14	2091
3.9	40	824.200002	2	2091
3.9	50	824.200007	7	2091

Reference Frequency: GSM channel 836.4MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	836.400006	6	2091
3.9	-20	836.400012	12	2091
3.9	-10	836.400004	4	2091
3.9	10	836.399992	8	2091
3.9	20	836.400016	16	2091
3.9	30	836.400008	8	2091
3.9	40	836.400020	20	2091
3.9	50	836.400011	11	2091

Reference Frequency: GSM channel 848.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	848.800022	22	2091
3.9	-20	848.800073	73	2091
3.9	-10	848.800006	6	2091
3.9	10	848.800009	9	2091
3.9	20	848.800029	29	2091
3.9	30	848.800040	40	2091
3.9	40	848.800012	12	2091
3.9	50	848.800017	17	2091

GSM850-8PSK:

Reference Frequency: GSM channel 824.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	824.200058	58	2091
3.9	-20	824.200047	47	2091
3.9	-10	824.200083	83	2091
3.9	10	824.200063	63	2091
3.9	20	824.200098	98	2091
3.9	30	824.200072	72	2091
3.9	40	824.200083	83	2091
3.9	50	824.200069	69	2091

Reference Frequency: GSM channel 836.4MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	836.400044	44	2091
3.9	-20	836.400053	53	2091
3.9	-10	836.400082	82	2091
3.9	10	836.400024	24	2091
3.9	20	836.400024	24	2091
3.9	30	836.400048	48	2091
3.9	40	836.400055	55	2091
3.9	50	836.400067	67	2091

Reference Frequency: GSM channel 848.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	848.800072	72	2091
3.9	-20	848.800081	81	2091
3.9	-10	848.800072	72	2091
3.9	10	848.800049	49	2091
3.9	20	848.800056	56	2091
3.9	30	848.800082	82	2091
3.9	40	848.800052	52	2091
3.9	50	848.800049	49	2091

PCS1900-GMSK:

Reference Frequency: PCS channel 1850.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	1850.199997	3	4700
3.9	-20	1850.199921	79	4700
3.9	-10	1850.199973	27	4700
3.9	10	1850.199920	70	4700
3.9	20	1850.199922	78	4700
3.9	30	1850.199991	9	4700
3.9	40	1850.199932	68	4700
3.9	50	1850.199988	12	4700

Reference Frequency: PCS channel 1880MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	1879.999982	18	4700
3.9	-20	1879.999992	9	4700
3.9	-10	1879.999950	50	4700
3.9	10	1879.999914	86	4700
3.9	20	1879.999994	6	4700
3.9	30	1879.999987	13	4700
3.9	40	1879.999973	27	4700
3.9	50	1879.999986	14	4700

Reference Frequency: PCS channel 1909.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	1909.799990	10	4700
3.9	-20	1909.799986	14	4700
3.9	-10	1909.799972	28	4700
3.9	10	1909.799976	24	4700
3.9	20	1909.799992	8	4700
3.9	30	1909.799991	9	4700
3.9	40	1909.799986	14	4700
3.9	50	1909.799969	31	4700

PCS1900-8PSK:

Reference Frequency: PCS channel 1850.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	1850.200043	43	4700
3.9	-20	1850.200048	48	4700
3.9	-10	1850.200072	72	4700
3.9	10	1850.200083	83	4700
3.9	20	1850.200050	50	4700
3.9	30	1850.200083	83	4700
3.9	40	1850.200039	39	4700
3.9	50	1850.200071	71	4700

Reference Frequency: PCS channel 1880MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	1880.000063	63	4700
3.9	-20	1880.000055	55	4700
3.9	-10	1880.000049	49	4700
3.9	10	1880.000075	75	4700
3.9	20	1880.000044	44	4700
3.9	30	1880.000055	55	4700
3.9	40	1880.000073	73	4700
3.9	50	1880.000086	86	4700

Reference Frequency: PCS channel 1909.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
3.9	-30	1909.800102	102	4700
3.9	-20	1909.800038	38	4700
3.9	-10	1909.800094	94	4700
3.9	10	1909.800081	81	4700
3.9	20	1909.800076	76	4700
3.9	30	1909.800059	59	4700
3.9	40	1909.800068	68	4700
3.9	50	1909.800077	77	4700

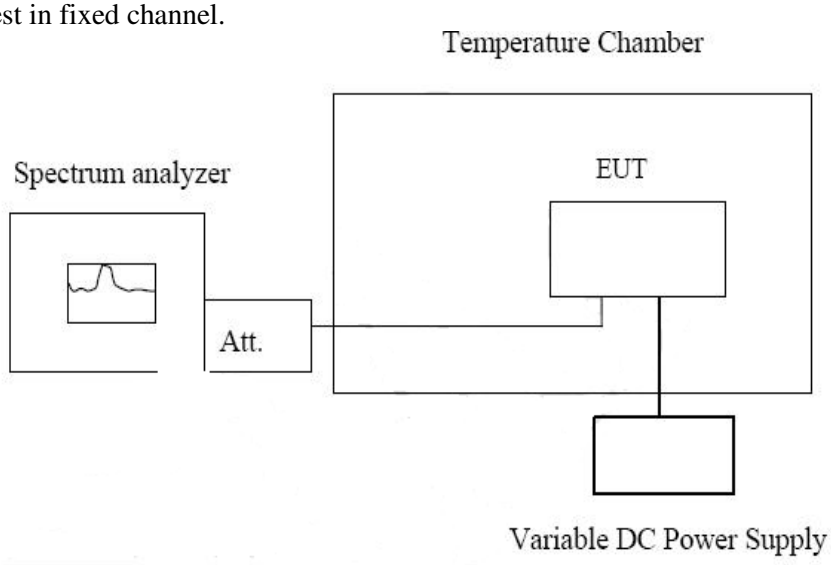
6.8 Frequency Stability V.S. VOLTAGE MEASUREMENT

Test Requirement: Part 2.1055(a)(1)

Test Date: Jan 21, 2010 to Apr 26,2010

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 824.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	824.200011	11	2091
4.1	25	824.200017	17	2091
4.0	25	824.200013	13	2091
3.9	25	824.200015	15	2091
3.8	25	824.200009	9	2091
3.7	25	824.200020	20	2091
3.6	25	824.200014	14	2091
3.5 (Endpoint)	25	824.200031	31	2091

Reference Frequency: GSM channel 836.4MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	836.400014	14	2091
4.1	25	836.400021	21	2091
4.0	25	836.400006	6	2091
3.9	25	836.400008	8	2091
3.8	25	836.400011	11	2091
3.7	25	836.400012	12	2091
3.6	25	836.400008	8	2091
3.5 (Endpoint)	25	836.400027	27	2091

Reference Frequency: GSM channel 848.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	848.800025	25	2091
4.1	25	848.800016	16	2091
4.0	25	848.800011	11	2091
3.9	25	848.800009	9	2091
3.8	25	848.800021	21	2091
3.7	25	848.800013	13	2091
3.6	25	848.800008	8	2091
3.5 (Endpoint)	25	848.800023	23	2091

GSM850-8PSK:

Reference Frequency: GSM channel 824.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	824.200046	46	2091
4.1	25	824.200057	57	2091
4.0	25	824.200033	33	2091
3.9	25	824.200090	90	2091
3.8	25	824.200081	81	2091
3.7	25	824.200022	22	2091
3.6	25	824.200047	47	2091
3.5 (Endpoint)	25	824.200058	58	2091

Reference Frequency: GSM channel 836.4MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	836.400057	57	2091
4.1	25	836.400049	49	2091
4.0	25	836.400066	66	2091
3.9	25	836.400073	73	2091
3.8	25	836.400082	82	2091
3.7	25	836.400064	64	2091
3.6	25	836.400072	72	2091
3.5 (Endpoint)	25	836.400064	64	2091

Reference Frequency: GSM channel 848.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 2091Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	848.800055	55	2091
4.1	25	848.800048	48	2091
4.0	25	848.800027	27	2091
3.9	25	848.800091	91	2091
3.8	25	848.800064	64	2091
3.7	25	848.800052	52	2091
3.6	25	848.800074	74	2091
3.5 (Endpoint)	25	848.800065	65	2091

PCS1900-GMSK:

Reference Frequency: PCS channel 1850.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	1850.199982	18	4700
4.1	25	1850.199980	20	4700
4.0	25	1850.199991	9	4700
3.9	25	1850.199979	21	4700
3.8	25	1850.199989	11	4700
3.7	25	1850.199990	10	4700
3.6	25	1850.199976	24	4700
3.5 (Endpoint)	25	1850.199972	28	4700

Reference Frequency: PCS channel 1880MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	1879.999994	6	4700
4.1	25	1879.999988	12	4700
4.0	25	1879.999992	8	4700
3.9	25	1879.999990	10	4700
3.8	25	1879.999994	6	4700
3.7	25	1879.999980	20	4700
3.6	25	1879.999981	19	4700
3.5 (Endpoint)	25	1879.999982	18	4700

Reference Frequency: PCS channel 1909.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	1909.799984	16	4700
4.1	25	1909.799986	14	4700
4.0	25	1909.799990	10	4700
3.9	25	1909.799987	13	4700
3.8	25	1909.799982	18	4700
3.7	25	1909.799991	9	4700
3.6	25	1909.799992	8	4700
3.5 (Endpoint)	25	1909.799987	13	4700

PCS1900-8PSK:

Reference Frequency: PCS channel 1850.2MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	1850.200027	27	4700
4.1	25	1850.200077	77	4700
4.0	25	1850.200064	64	4700
3.9	25	1850.200058	58	4700
3.8	25	1850.200049	49	4700
3.7	25	1850.200062	62	4700
3.6	25	1850.200057	57	4700
3.5 (Endpoint)	25	1850.200082	82	4700

Reference Frequency: PCS channel 1880MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	1880.000042	42	4700
4.1	25	1880.000067	67	4700
4.0	25	1880.000071	71	4700
3.9	25	1880.000059	59	4700
3.8	25	1880.000066	66	4700
3.7	25	1880.000052	52	4700
3.6	25	1880.000077	77	4700
3.5 (Endpoint)	25	1880.000090	90	4700

Reference Frequency: PCS channel 1909.8MHz@ 25 degree				
Limit: +/- 2.5ppm = 4700Hz				
Power Supply	Environment	Frequency	Delta	Limit
Vdc	Temperature(degree)	(MHz)	(Hz)	(Hz)
4.2	25	1909.800010	10	4700
4.1	25	1909.800026	26	4700
4.0	25	1909.800054	54	4700
3.9	25	1909.800077	77	4700
3.8	25	1909.800066	66	4700
3.7	25	1909.800069	69	4700
3.6	25	1909.800083	83	4700
3.5 (Endpoint)	25	1909.800054	54	4700

Note: The High and normal voltage is DC 4.2V, and low voltage is DC 3.5V.

6.9 Conducted Emissions Mains Terminals, 150 kHz to 30MHz

Test Requirement: Part 15.207

Test Method: ANSI C63.4:2003

Test Date: Jan 19, 2010

Frequency Range: 150KHz to 30MHz

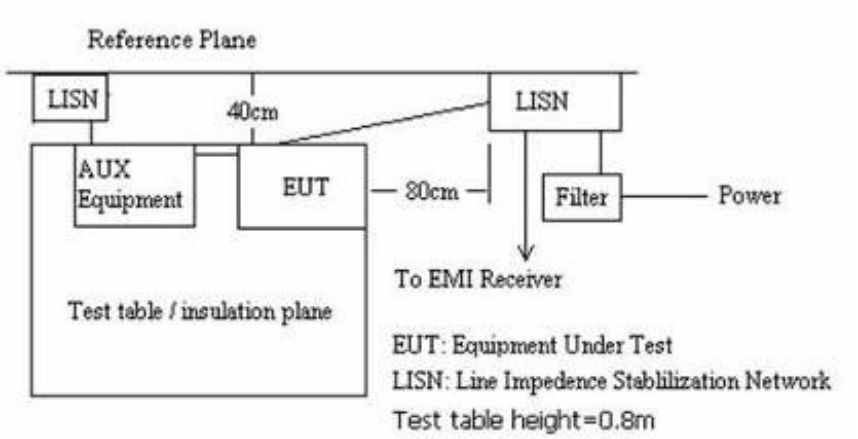
Detector: Peak for pre-scan (9kHz Resolution Bandwidth)
Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit

EUT Operation:

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Plan View of Test Setup

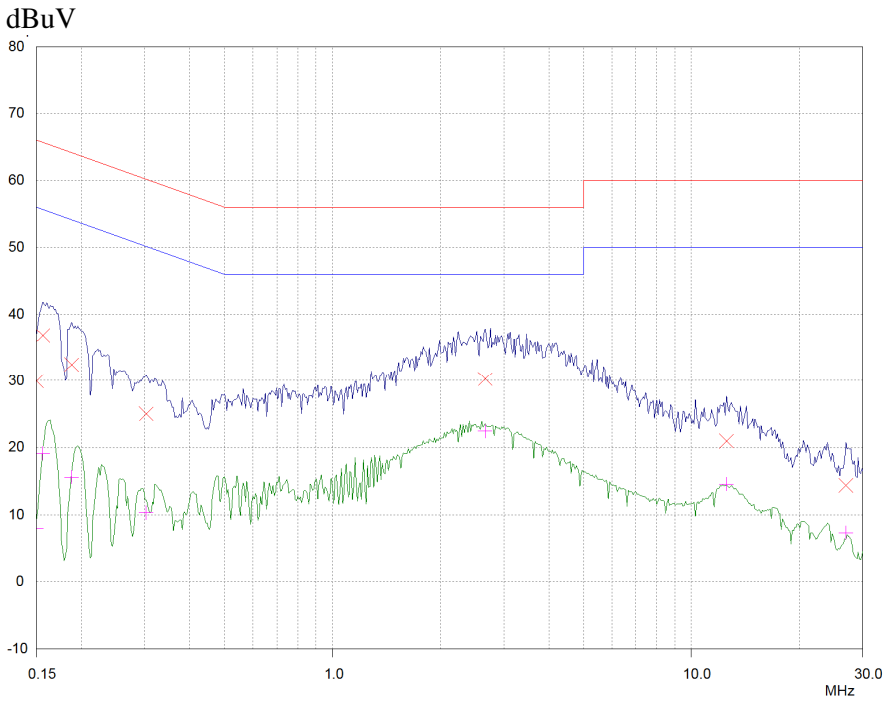


Limit:

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

Operating mode: GSM 850 Link

Live Line:



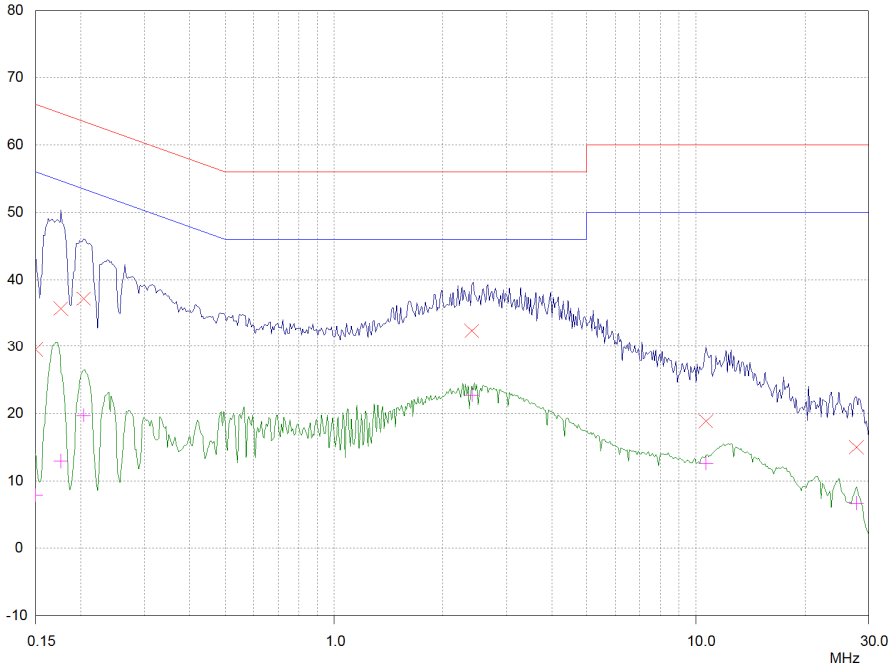
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.15	29.98	66.00	36.02
0.15609	36.83	65.67	28.84
0.18749	32.48	64.15	31.67
0.30242	25.05	60.18	35.13
2.66282	30.27	56.00	25.73
12.49357	20.94	60.00	39.06
26.84711	14.36	60.00	45.64

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.15	8.00	56.00	48.00
0.15609	19.11	55.67	36.56
0.18749	15.59	54.15	38.56
0.30242	10.32	50.18	39.86
2.66282	22.43	46.00	23.57
12.49357	14.53	50.00	35.47
26.84711	7.30	50.00	42.70

Operating mode: GSM 850 Link

N Line:

dBuV



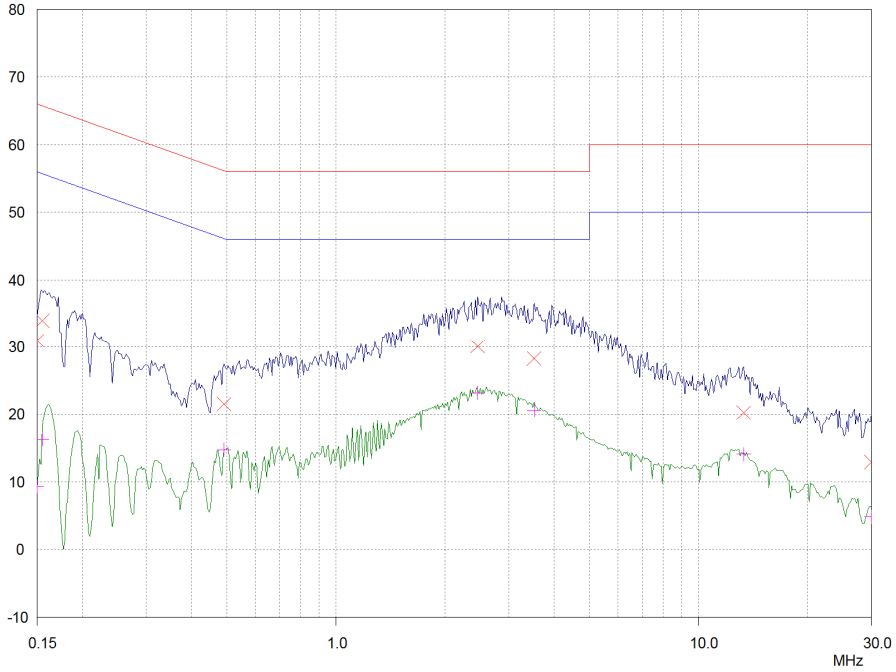
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.15	29.51	66.00	36.49
0.17591	35.69	64.68	28.99
0.20304	37.17	63.49	26.32
2.4008	32.38	56.00	23.62
10.65309	18.87	60.00	41.13
27.71658	14.98	60.00	45.02

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.15	7.90	56.00	48.10
0.17591	12.91	54.68	41.77
0.20304	19.70	53.49	33.79
2.4008	22.75	46.00	23.25
10.65309	12.64	50.00	37.36
27.71658	6.68	50.00	43.32

Operating mode: GSM 1900 Link

Live Line:

dBuV



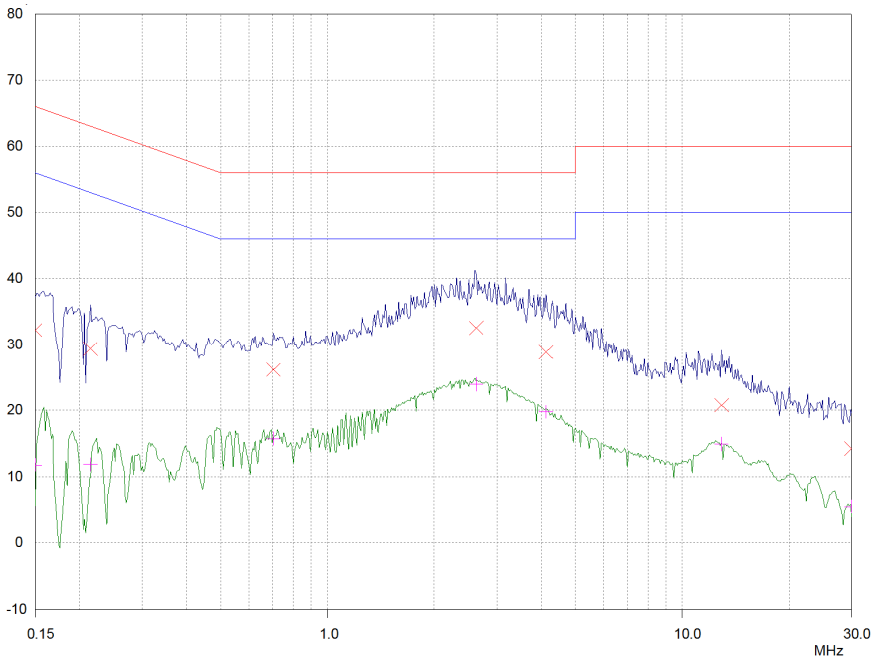
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.15	31.02	66.00	34.98
0.15485	33.94	65.74	31.80
0.49171	21.49	56.14	34.65
2.45888	30.08	56.00	25.92
3.51934	28.25	56.00	27.75
13.3159	20.25	60.00	39.75
30.0	12.92	60.00	47.08

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.15	9.33	56.00	46.67
0.15485	16.27	55.74	39.47
0.49171	14.75	46.14	31.39
2.45888	23.17	46.00	22.83
3.51934	20.63	46.00	25.37
13.3159	14.07	50.00	35.93
30.0	4.85	50.00	45.15

Operating mode: GSM 1900 Link

N Line:

dBuV



Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.15	32.20	66.00	33.80
0.21469	29.30	63.02	33.72
0.70377	26.13	56.00	29.87
2.62073	32.53	56.00	23.47
4.12736	28.83	56.00	27.17
12.89818	20.77	60.00	39.23
30.0	14.18	60.00	45.82

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.15	11.73	56.00	44.27
0.21469	11.82	53.02	41.20
0.70377	15.71	46.00	30.29
2.62073	23.93	46.00	22.07
4.12736	19.80	46.00	26.20
12.89818	14.90	50.00	35.10
30.0	5.49	50.00	44.51