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

588 West Jindu Road, Songjiang District, Shanghai, China

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TEST REPORT

Application No. :	SHEMO10050062301
Applicant:	Sierra Wireless Inc.
FCC ID:	N7NSL6087
IC ID:	2417C-SL6087
Equipment Under Test (EUT):	
Product Name:	Module
Brand Name:	AirPrime™
Model Name:	SL6087US
Marketing Name:	SL6087US
Standards:	IC RSS 132 Issue 2,RSS 133 Issue 5/ FCC part 2, 22H & 24E
Date of Receipt:	May 24,2010
Date of Test:	May 24,2010 to May 31,2010
Date of Issue:	May 31,2010

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.

Jack Wu
Project Engineer
SGS-CSTC (Shanghai)Co., Ltd.

2 Test Summary

Description of Test	FCC Rules	IC Standards	Result
RF Power Output	2.1046(a) 22.913(a) 24.232(b)	RSS-132,4.4 RSS-133,6.4	Compliant
99% Occupied Bandwidth	2.1049(h)	RSS-Gen,4.6	Compliant
Out of Band Emissions at antenna Terminals and Band Edge	2.1051 22.917(a) 24.238(a)	RSS-132,4.5 RSS-133,6.5	Compliant
Field Strength of Spurious Emissions	2.1053 22.917(a) 24.238(a)	RSS-132,4.5 RSS-133,6.5	Compliant
Frequency Stability vs. Temperature and Voltage	2.1055	RSS-132,4.3 RSS-133,6.3	Compliant

3 Contents

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4 General Information

4.1 Client Information

Applicant: Sierra Wireless Inc.

Address of Applicant: 13811 Wireless Way Richmond,British Columbia Canada,V6V 3A4

Manufacturer: Sierra Wireless Inc.

Address of Manufacturer: 13811 Wireless Way Richmond,British Columbia Canada,V6V 3A4

4.2 General Description of E.U.T.

Product Name:	Module
Brand Name:	AirPrime™
Model Name:	SL6087US
Marketing Name:	SL6087US
Power Supply:	3.6V DC

GSM and WCDMA:

	Operating frequency		Rated Power
Cellular phone standards Frequency Range and Power:	GSM/GPRS/EDGE, 850 Class 10	824.2MHz-848.8MHz	33dBm
	GSM/GPRS/EDGE, 1900 Class 10	1850.2MHz-1909.8MHz	30dBm
Hardware Version:	210		
Software Version:	Firmware 7.43.A1(SV 01)		
IMEI:	004401769099199		

4.3 Test Location

Tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shanghai EMC Laboratory

588 West Jindu Road, Songjiang District, Shanghai, China

Tel: +86 21 61915666 Fax: +86 21 61915678

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.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3172 and C-3514 respectively. Date of Registration: 2009-11-30. Date of Expiry: 2012-03-17.

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	2010-4-11	2011-4-10
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	2010-04-27	2011-04-26
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	Power meter	Rohde & Schwarz	NRP	101641	2010-5-5	2011-5-4
12	UNIVERSAL RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMU 200	112012	2009-08-25	2010-08-24
13	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT1800.0/2000.0-0.2/40-5SSK	11	2010-1-27	2011-1-26
14	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/880.0-0.2/40-5SSK	9	2010-1-27	2011-1-26

6 Test Results

6.1 E.U.T. test conditions

Power supply:	DC 3.6V
Operating Environment:	
Temperature:	20.0 -25.0 °C
Humidity:	38-48 % RH
Atmospheric Pressure:	992 -1006 mbar

6.2 RF Power Output

Test Requirement: RSS 132,4.4 The maximum ERP shall be 11.5 watts for mobile stations.

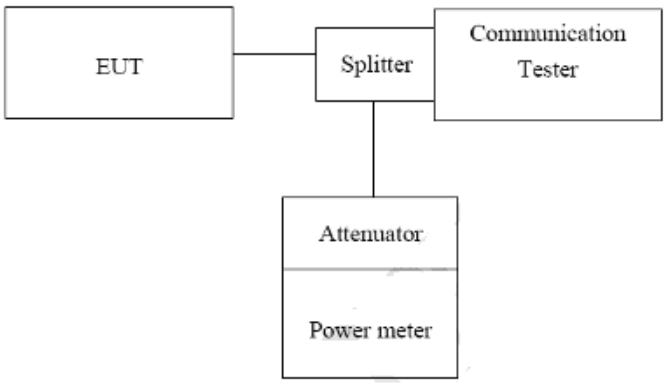
RSS 133,6.4 Mobile stations and hand-held portables are limited to 2 watts maximum e.i.r.p.

Part 2.1046

Part 22.913(a) Mobile station are limited to 7W ERP

Part 24.232(d) peak Power measurement, FCC 24.232(c) Maximum Power reduction 3GPP Power Limitation for HSDPA and HSUPA

Test Setup



Measurement Setup for testing on Antenna connector.

Test Date: May 25,2010

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 vaule of attenuator to the power meter reading.

Measurement Result:

RF Conducted output power

GSM/EDGE (GMSK; 8-PSK)

Result:

GSM 850

Frequency (MHz)	Ch	1 Time Slot				2 Time Slot			
		GMSK Mode		8-PSK Mode		GMSK Mode		8-PSK Mode	
		Peak power (dBm)	AV power (dBm)	Peak power (dBm)	AV power (dBm)	Peak power (dBm)	AV power (dBm)	Peak power (dBm)	AV power (dBm)
824.2	128	32.5	32.4	29.8	26.5	32.5	32.4	29.6	26.4
836.4	189	32.4	32.3	29.8	26.6	32.4	32.3	29.6	26.4
848.8	251	32.3	32.2	29.8	26.6	32.3	32.2	29.6	26.4

PCS 1900

Frequency (MHz)	Ch	1 Time Slot				2 Time Slot			
		GMSK Mode		8-PSK Mode		GMSK Mode		8-PSK Mode	
		Peak power (dBm)	AV power (dBm)	Peak power (dBm)	AV power (dBm)	Peak power (dBm)	AV power (dBm)	Peak power (dBm)	AV power (dBm)
1850.2	512	29.4	29.3	28.3	24.9	29.4	29.3	28.7	25.4
1880.0	661	29.4	29.3	28.3	24.8	29.4	29.3	28.6	25.2
1909.8	810	29.4	29.3	28.2	24.8	29.4	29.3	28.6	25.2

6.3 99% Occupied Bandwidth

Test Requirement: RSS Gen 4.6;
Part 2.1049

Test Date: May 25,2010

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 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 (MHz)
GSM 850 (GMSK)	824.2	128	0.2436
	836.4	189	0.2420
	848.8	251	0.2420

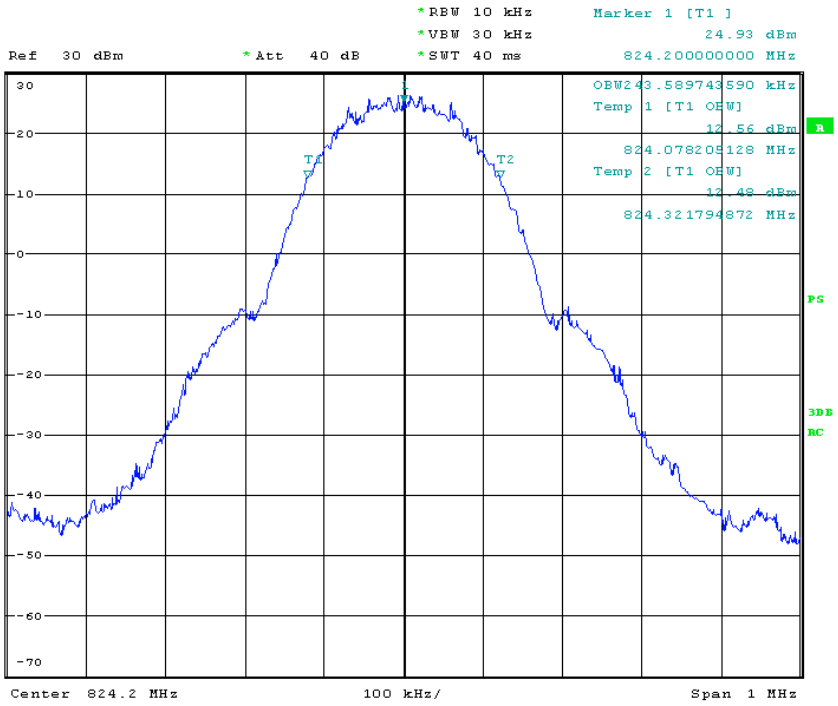
EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GSM 850 (8-PSK)	824.2	128	0.2404
	836.4	189	0.2388
	848.8	251	0.2388

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
PCS 1900 (GMSK)	1850.2	512	0.2436
	1880.0	661	0.2404
	1909.8	810	0.2420

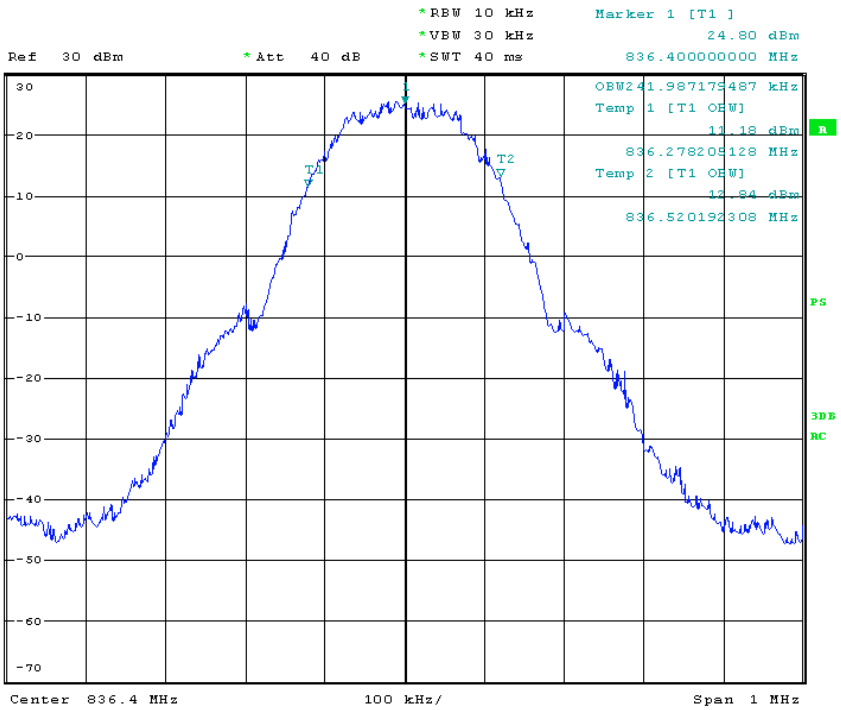
EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
PCS 1900 (8-PSK)	1850.2	512	0.2388
	1880.0	661	0.2372
	1909.8	810	0.2372

GSM 850 GMSK

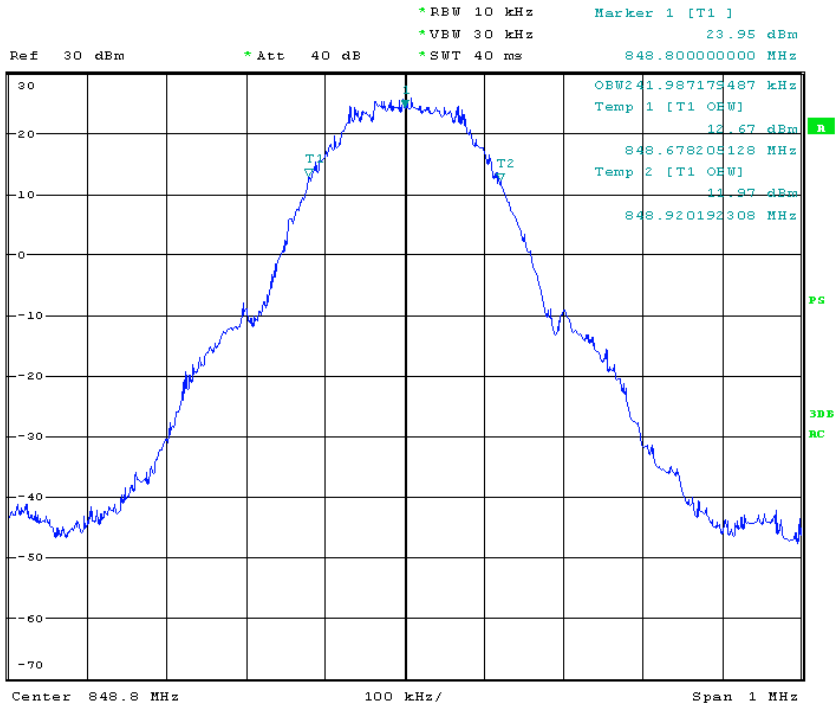
Channel Low



Channel Mid

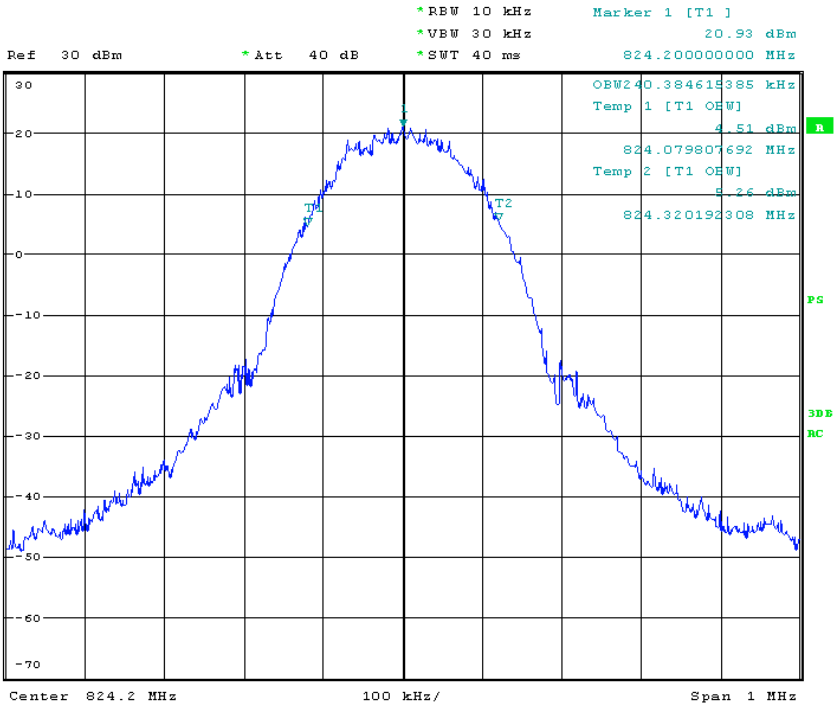


Channel High



GSM 850 8-PSK

Channel Low



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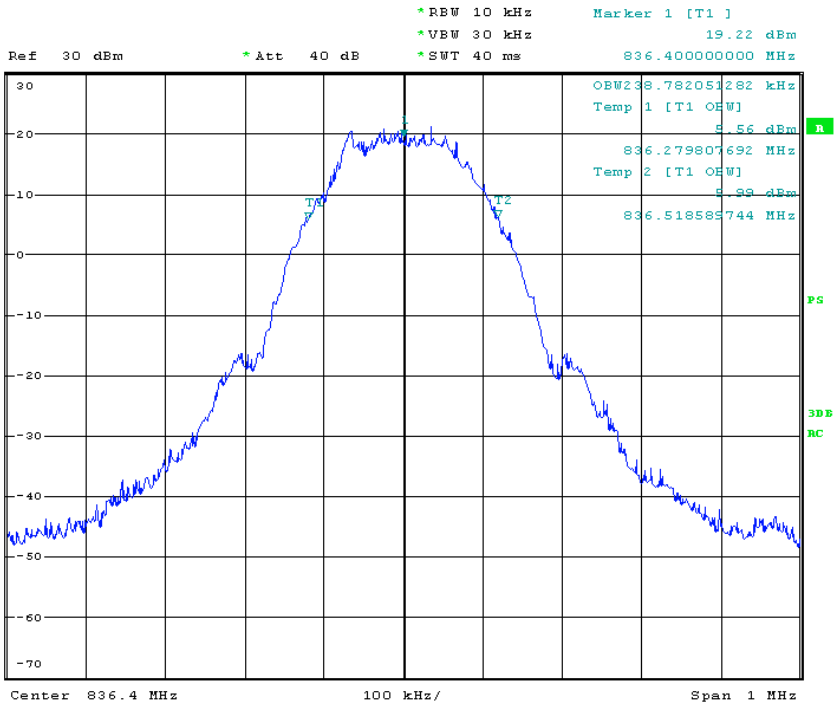

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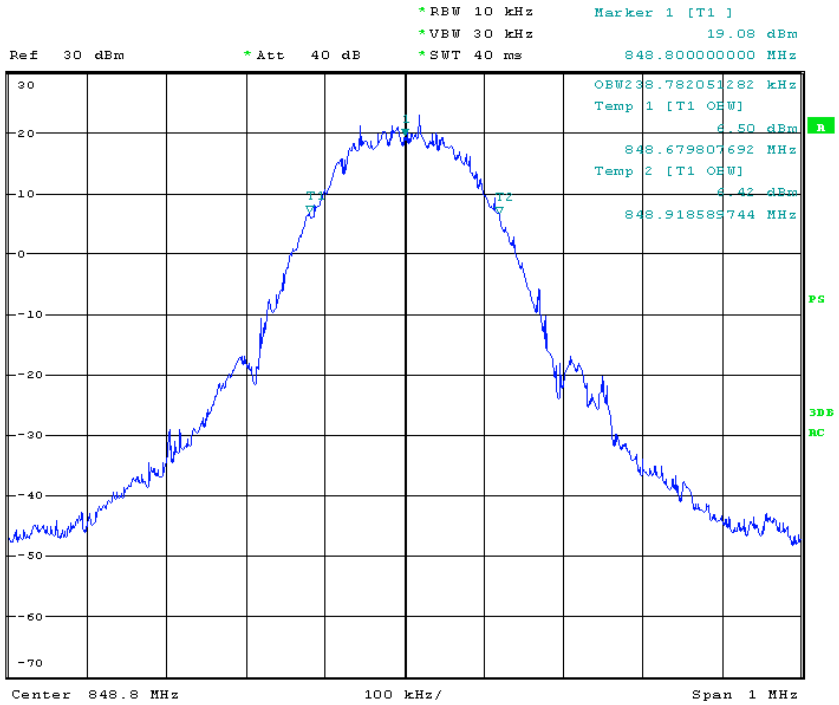
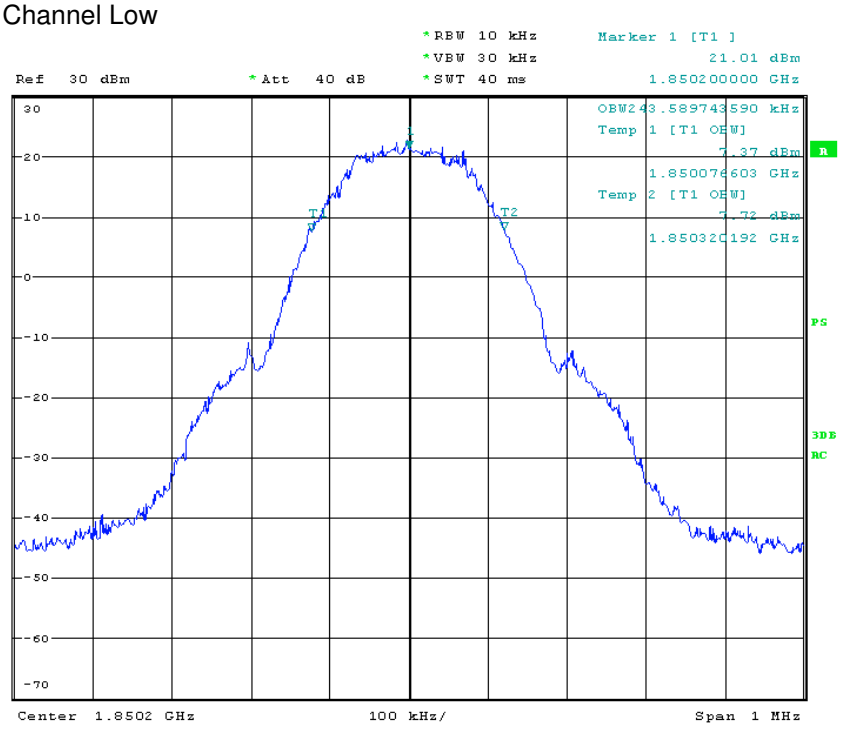


PCS 1900 GMSK

Channel Low



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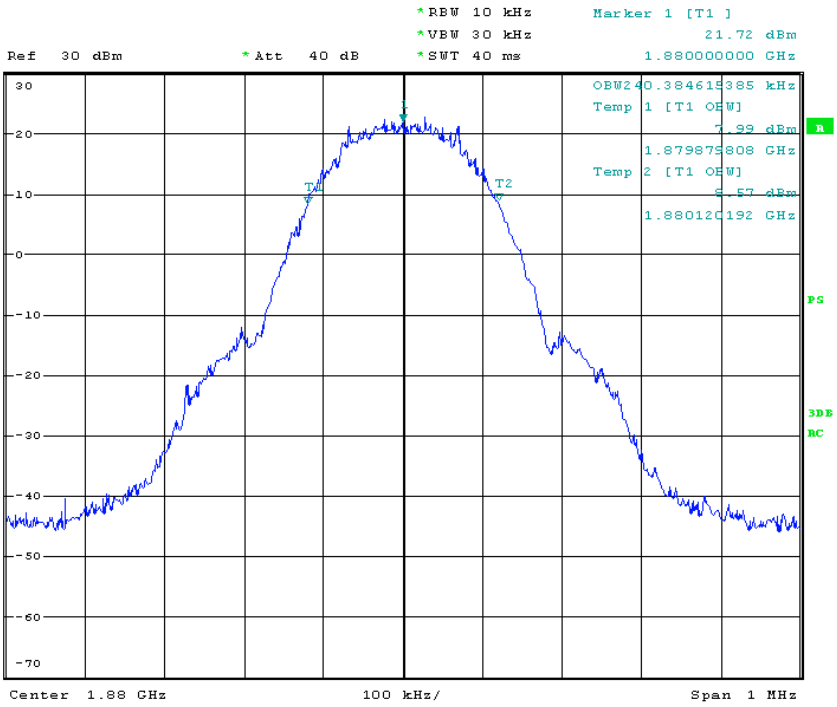
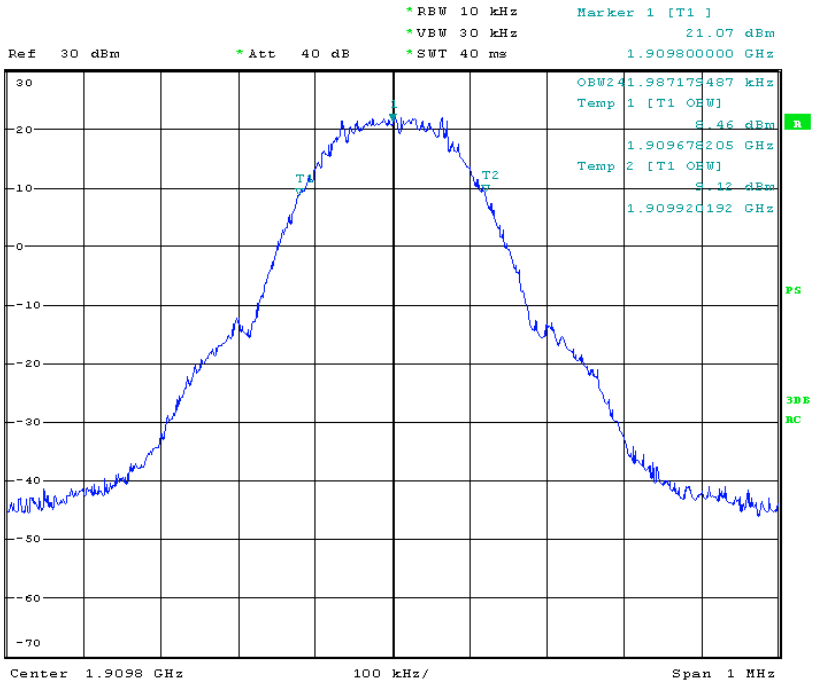
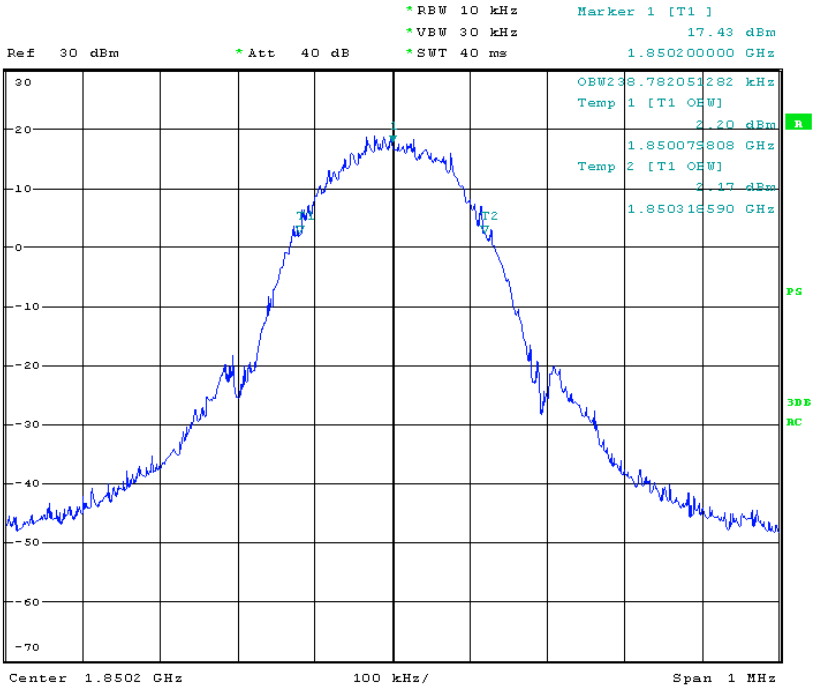


Channel High

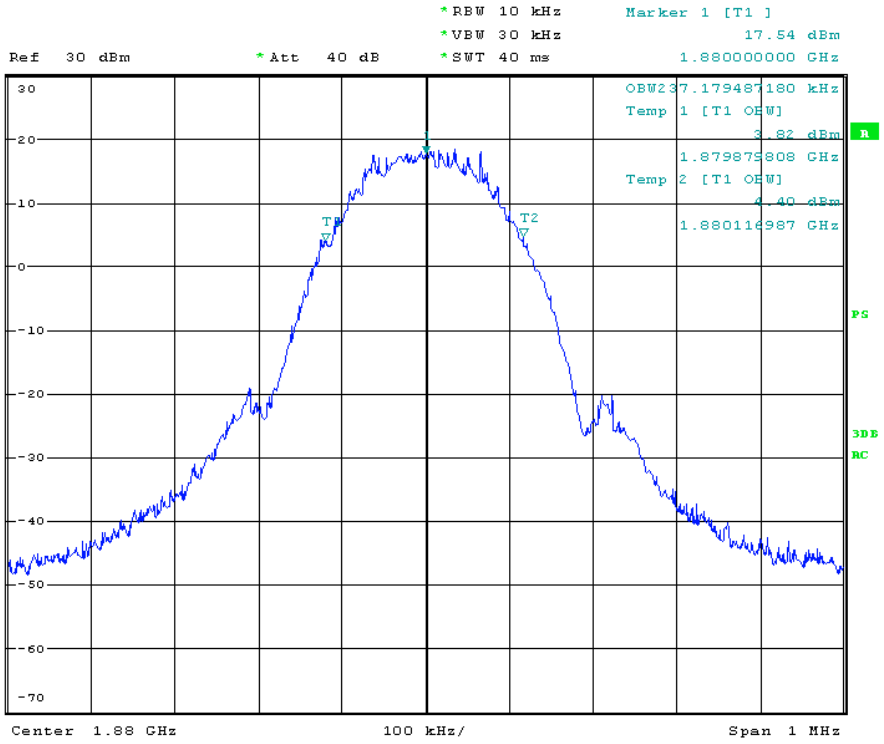


PCS 1900 8-PSK

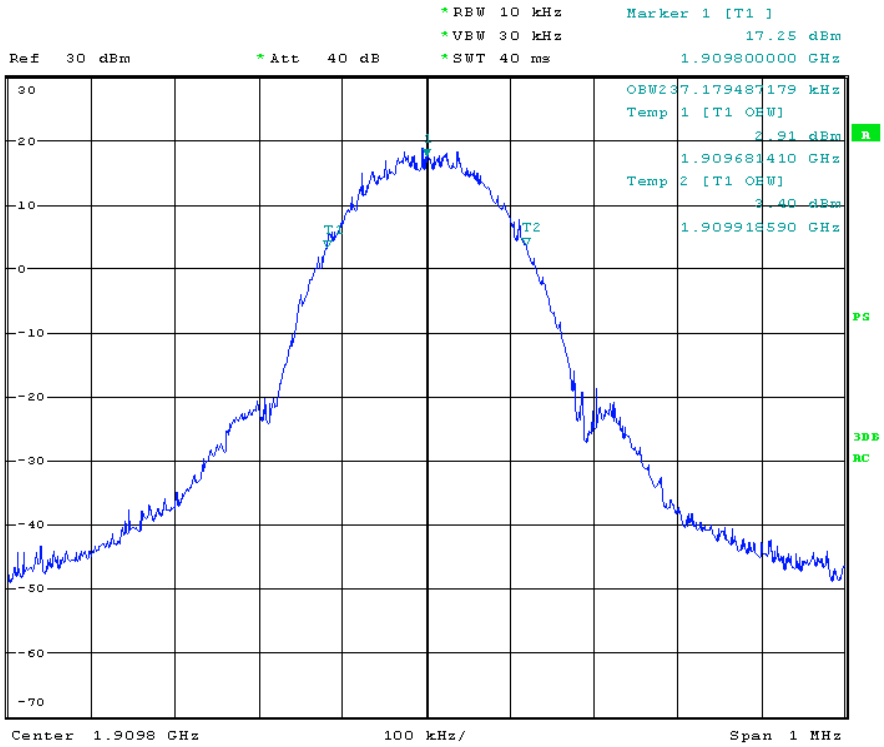
Channel Low



Channel Mid



Channel High



6.4 Out of band emissions at antenna Terminals

6.4.1 Band edges emissions

Test Requirement: RSS 132, 4.5.1;RSS 133, 6.5.1(a)(i),(b)
Part 2.1051,
FCC part 22.917(a), 24.238(a) 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: May 25,2010

Test Procedure:

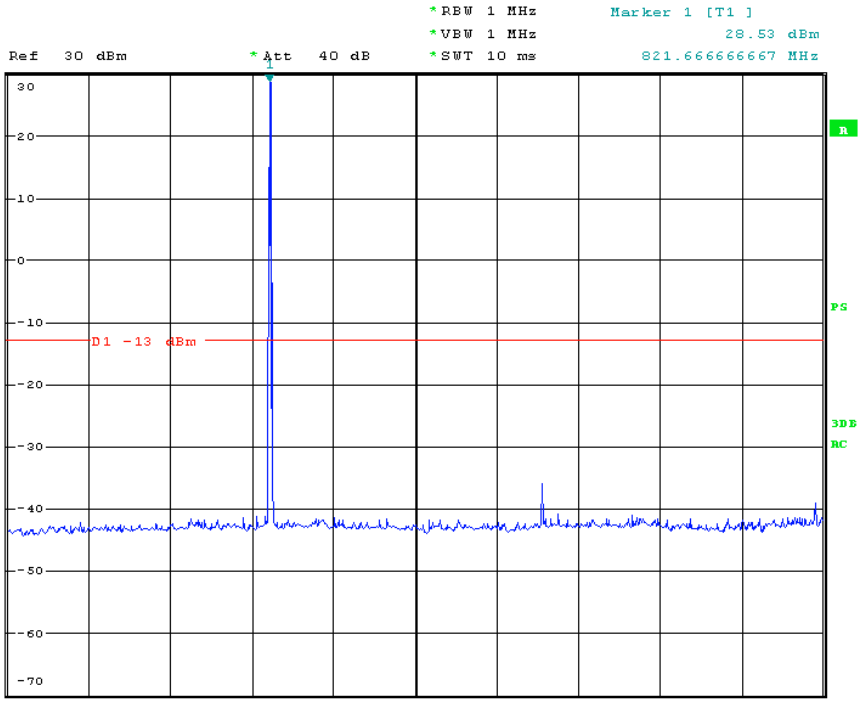
The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emission is any up to 10^{th} harmonic.

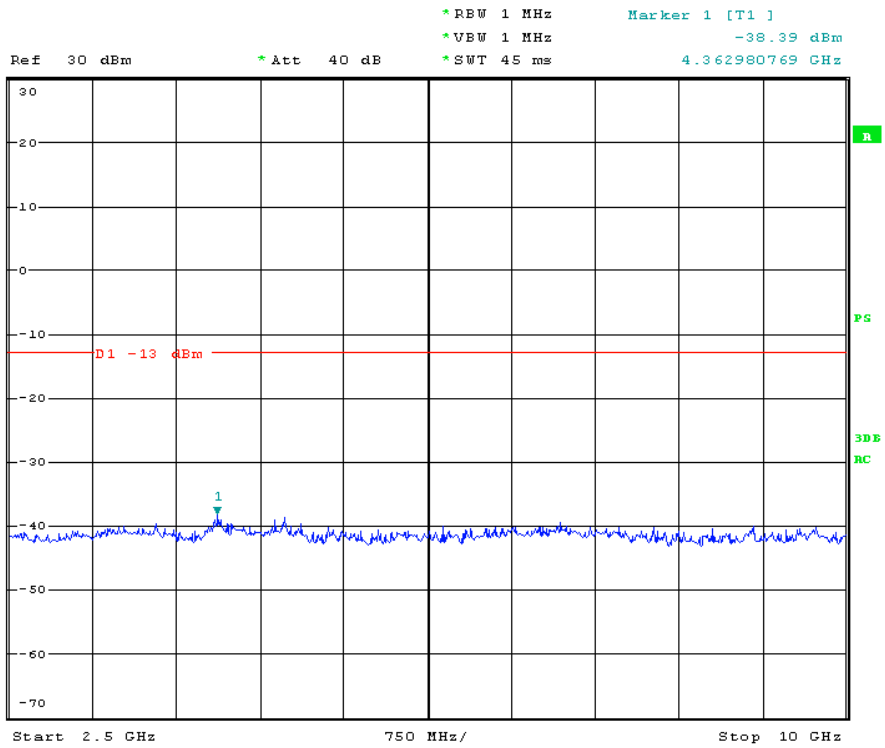
For the out of band: set RBW, VBW=1MHz, stat=30MHz, stop= 10 th harmonic. Limit= --13dBm

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.

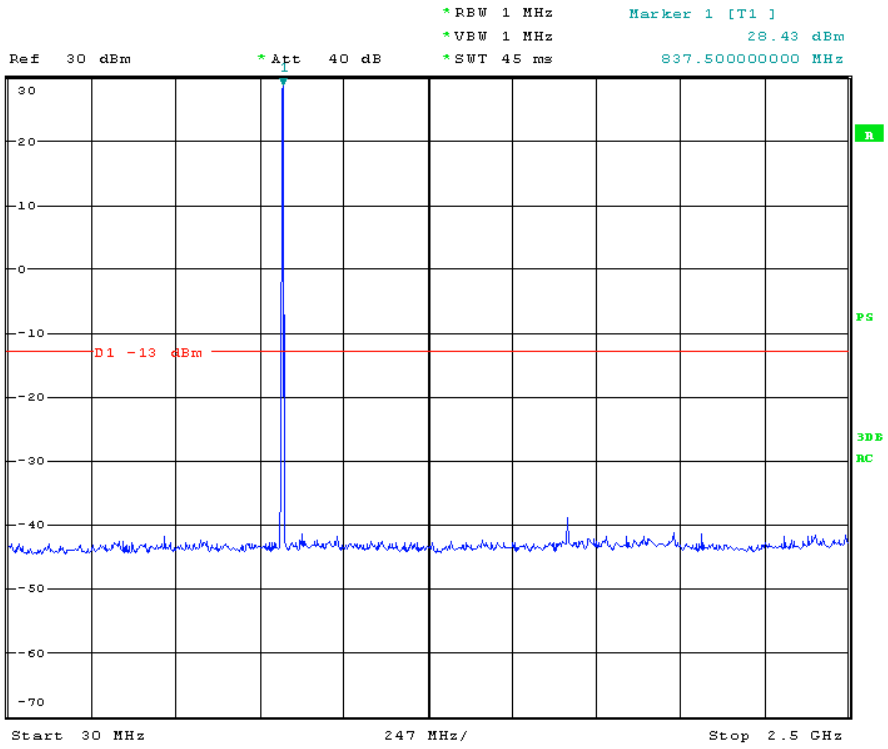
Measurement result:

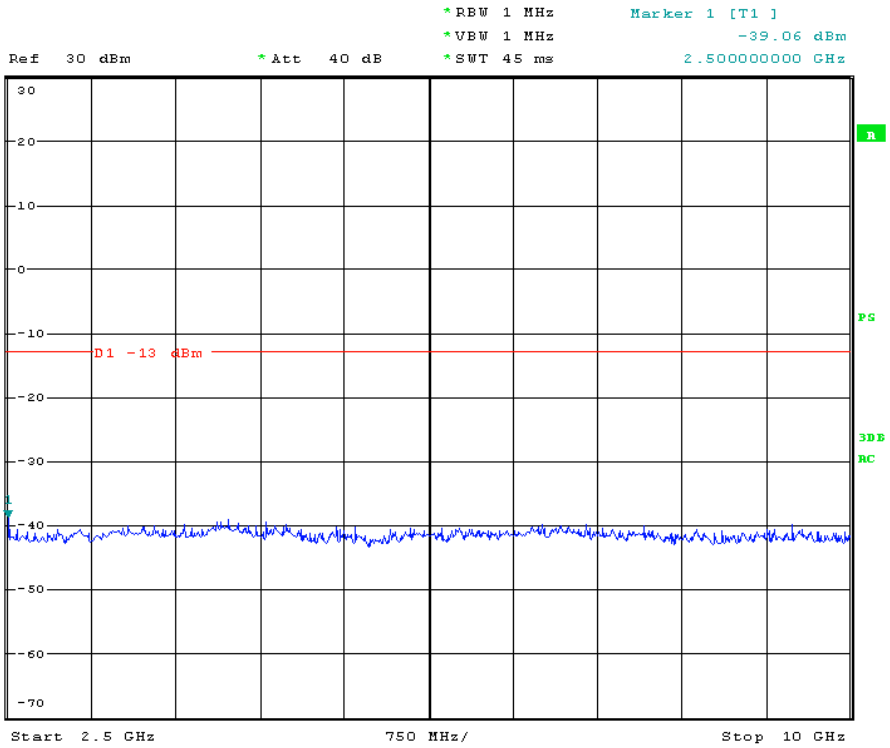
GSM 850 Channel Low



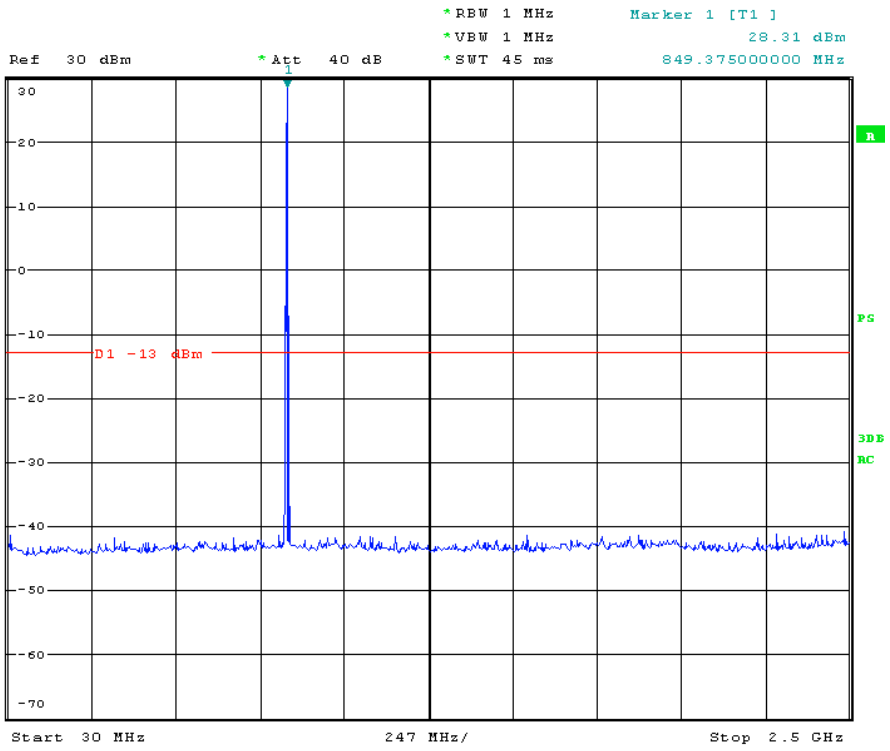


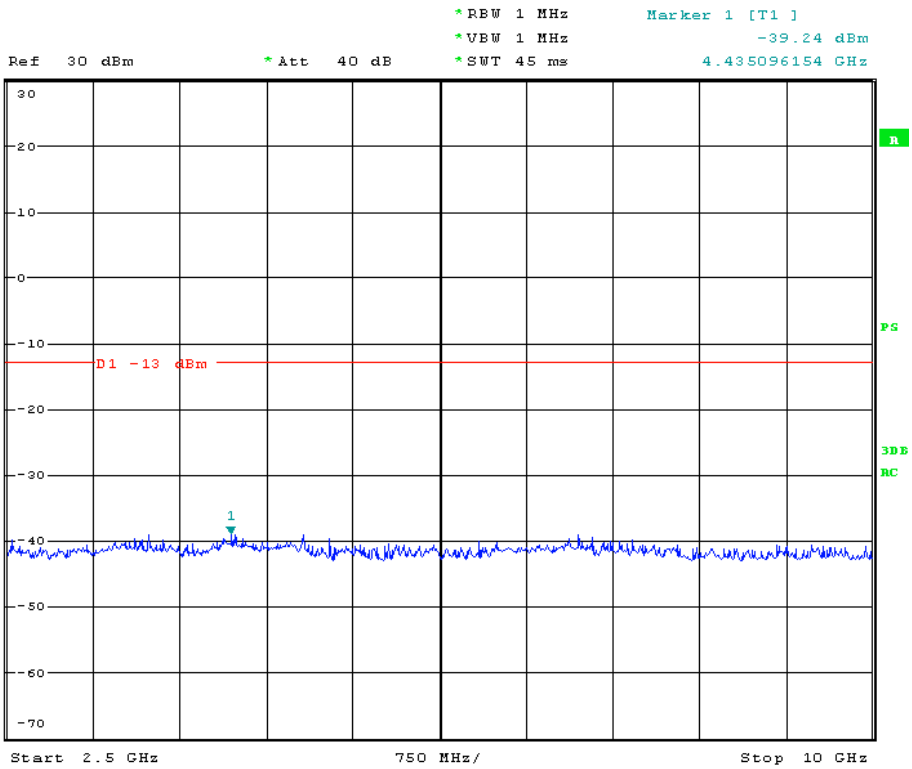
GSM 850 Channel Mid



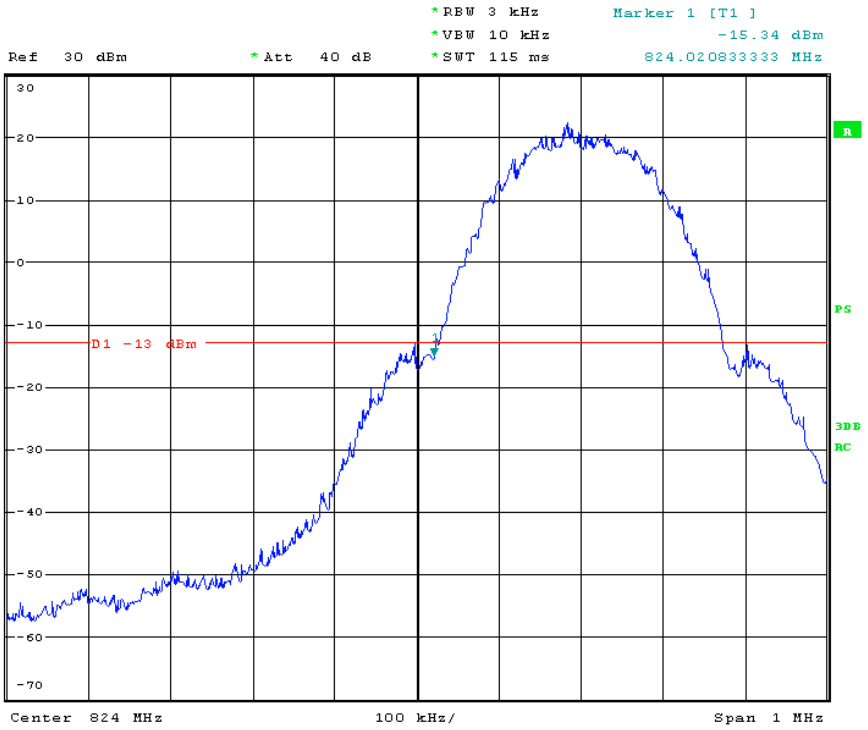


GSM 850 Channel High

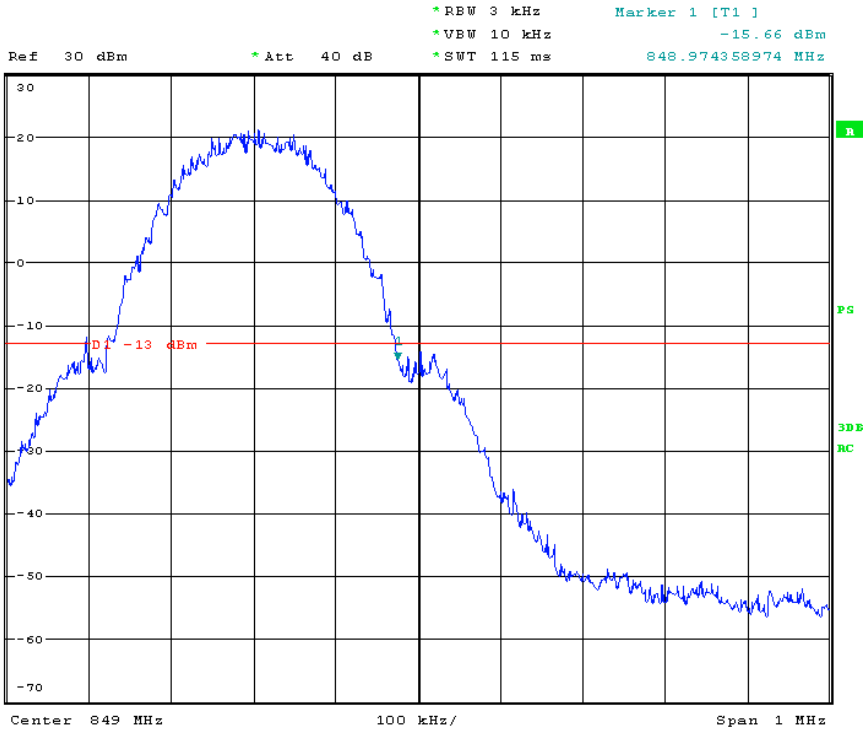




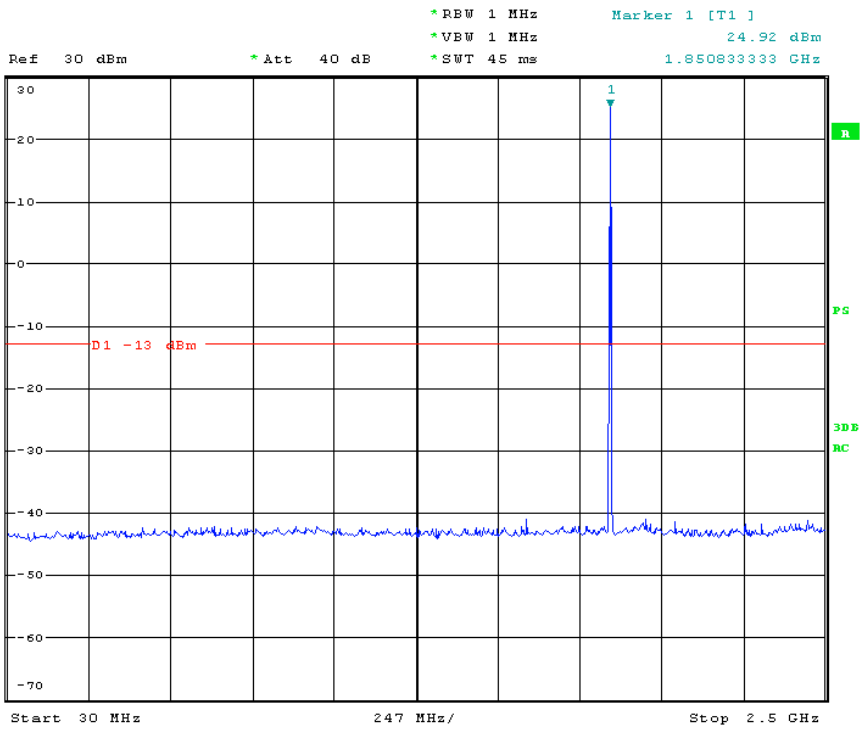
Band Edge emission GSM 850 Channel Low

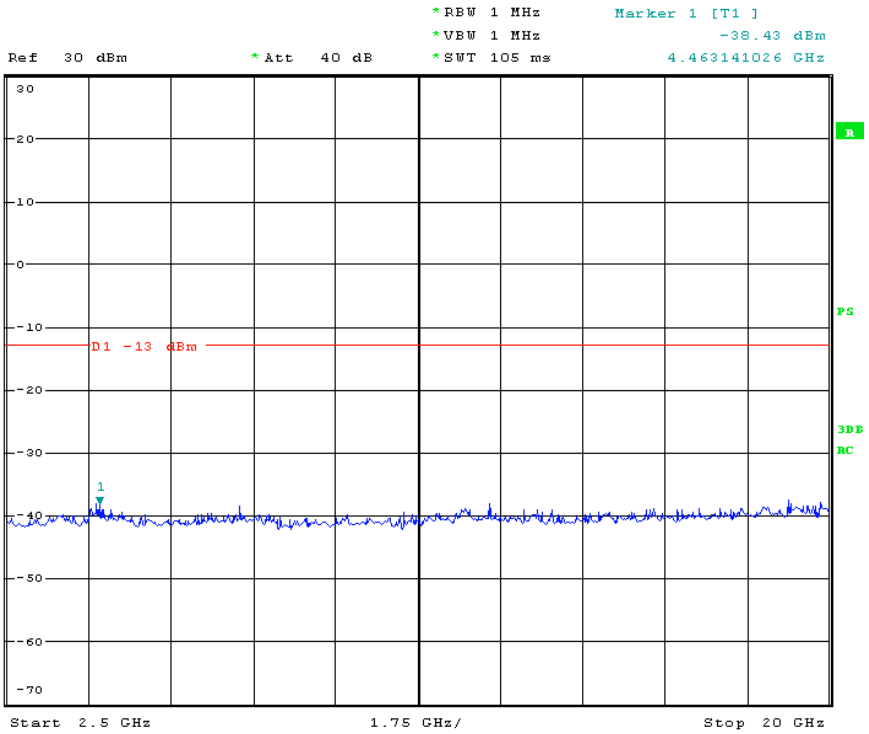


Band Edge emission GSM 850 Channel high

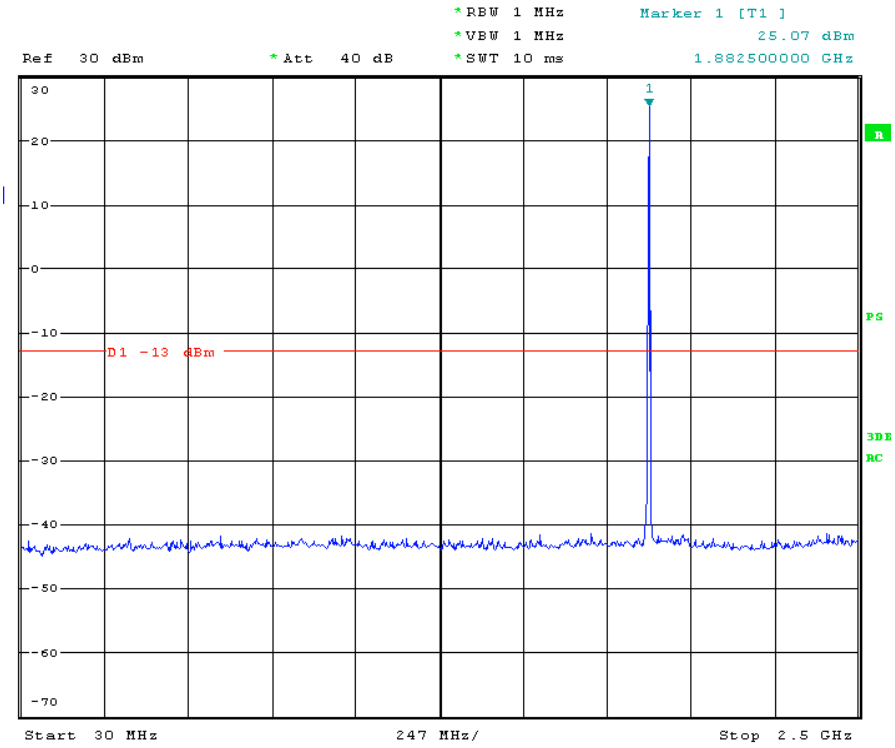


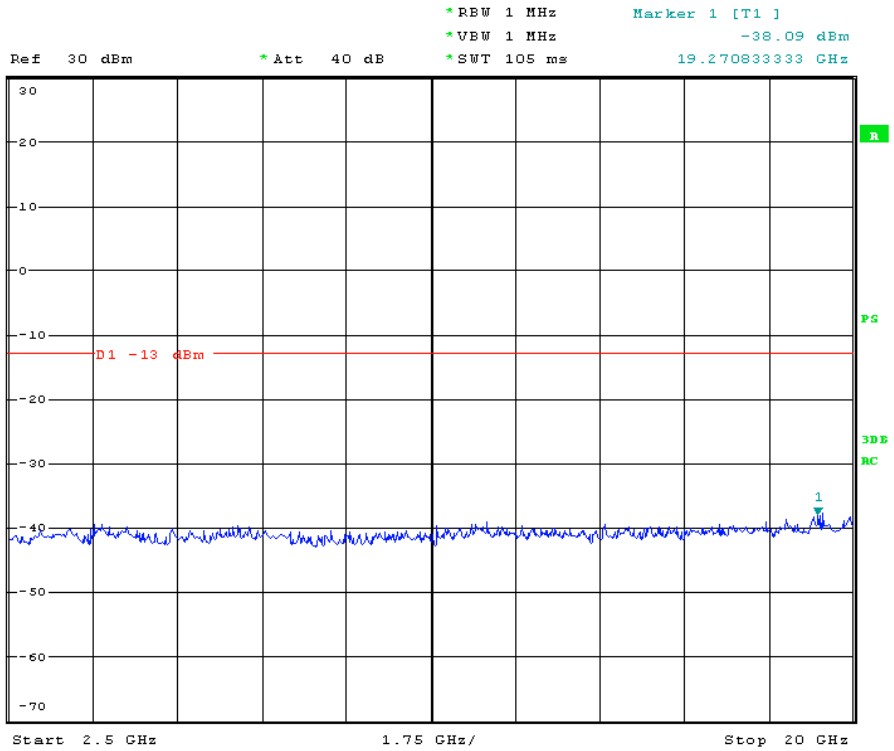
PCS 1900 Channel Low



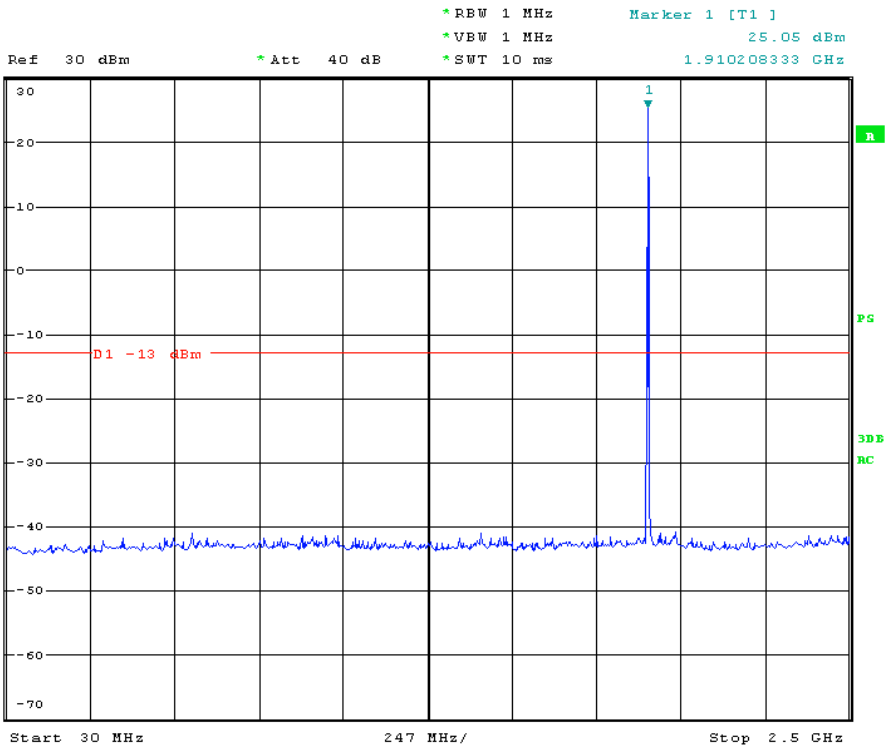


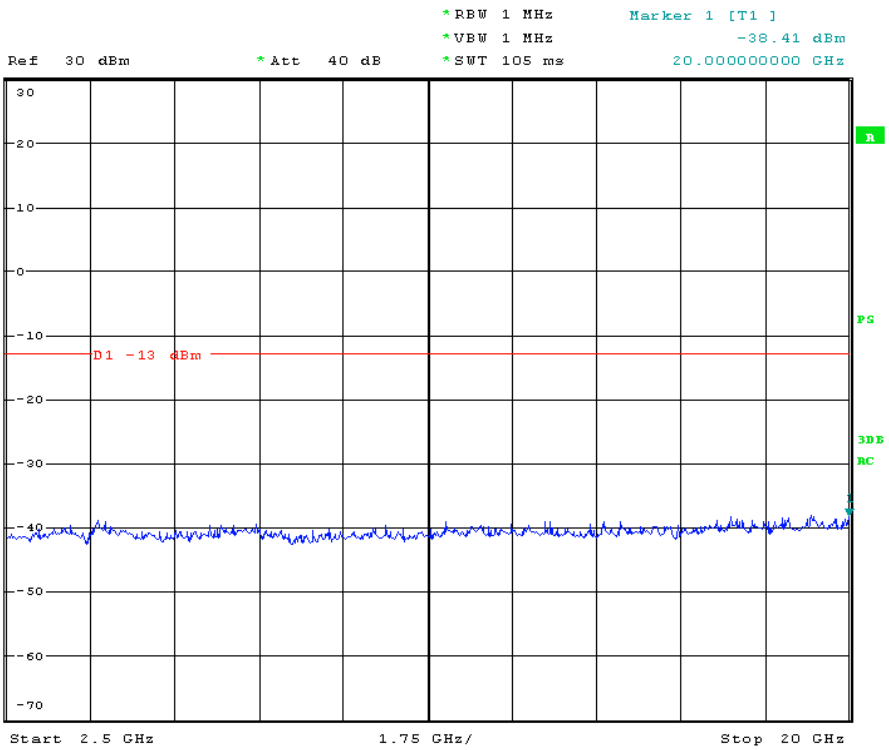
PCS 1900 Channel Mid



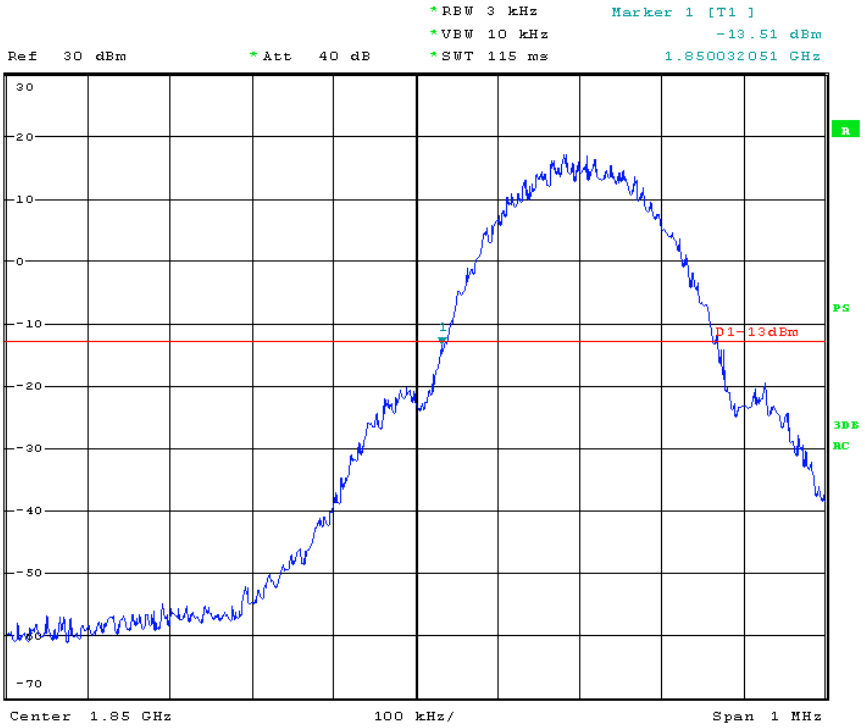


PCS 1900 Channel High

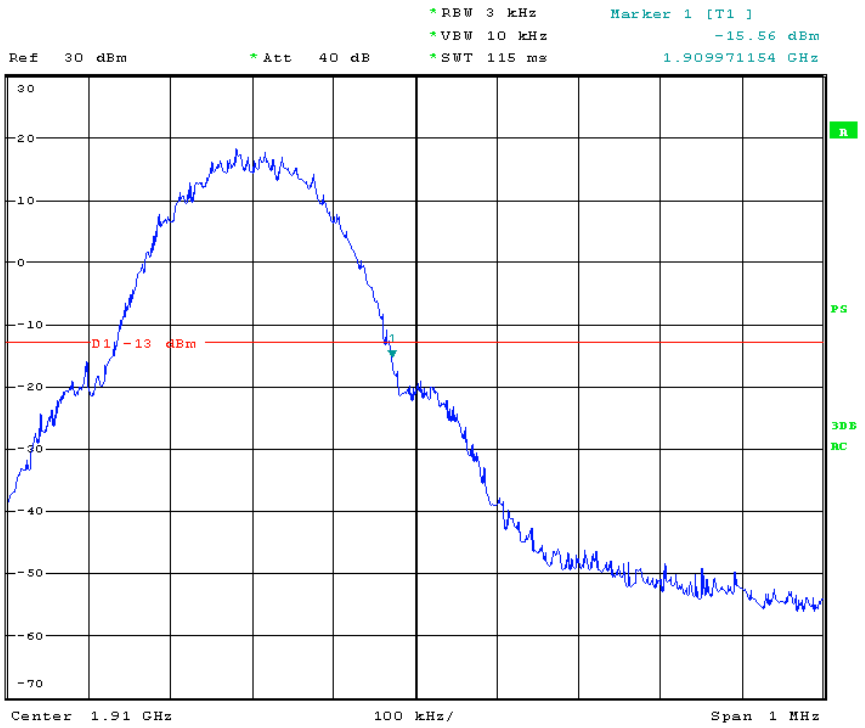




Band Edge emission PCS 1900 Channel Low



Band Edge emission PCS 1900 Channel high



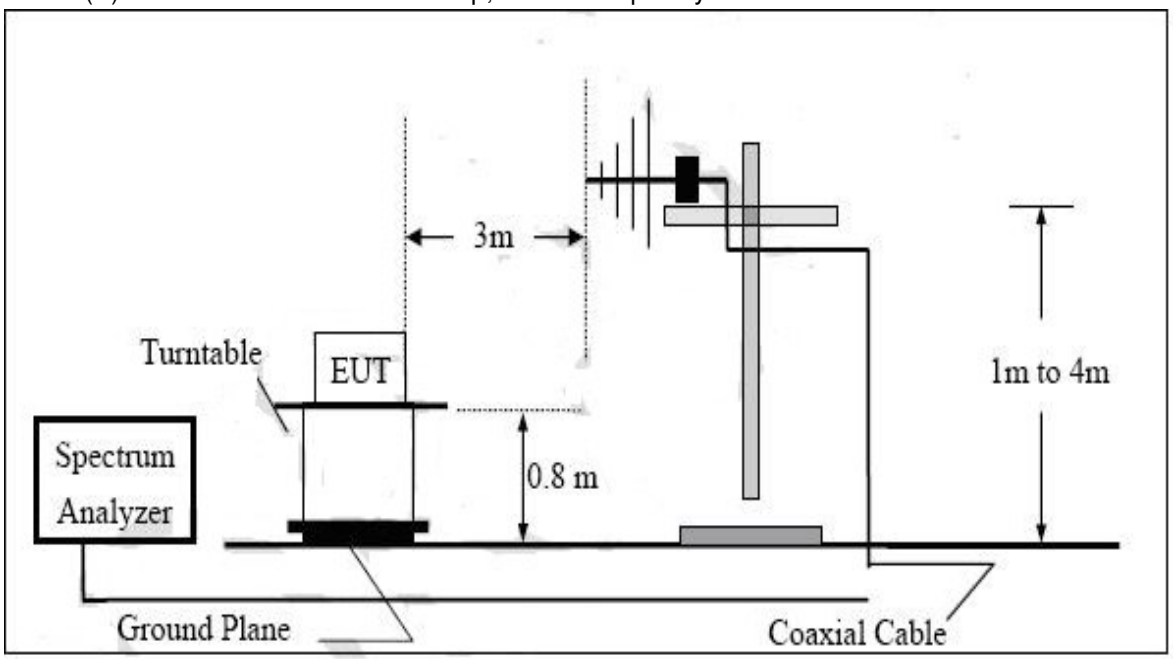
6.5 Field Strength of Radiated Spurious Emissions

Test Requirement: RSS 132, 4.5.1;RSS 133, 6.5.1(a)(i),(b)
Part 2.1053
FCC part 22.917(a), 24.238(a) 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).

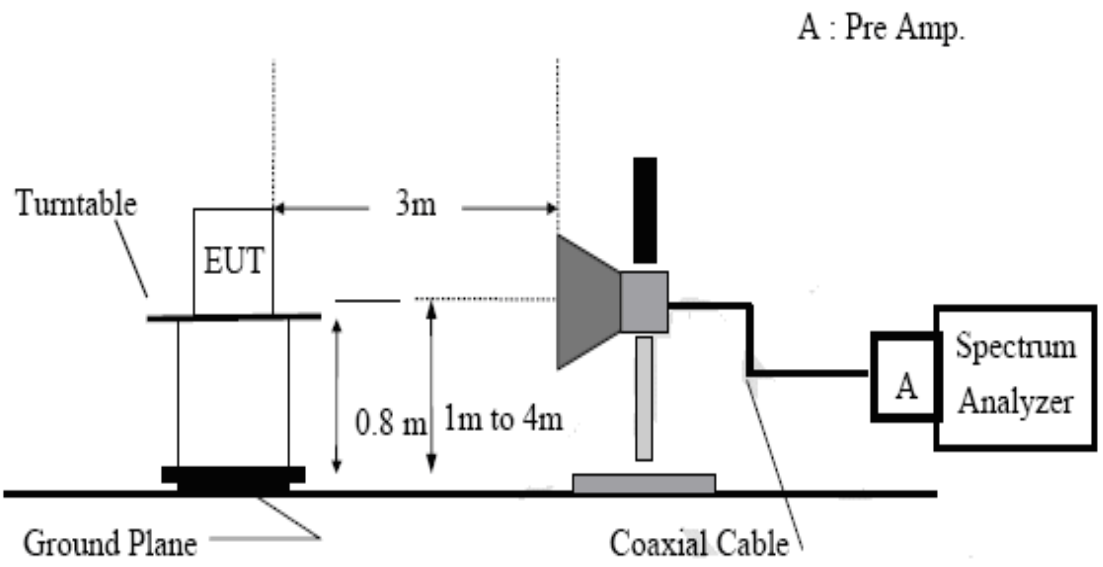
Test Date: May 26,2010

Test Setup:

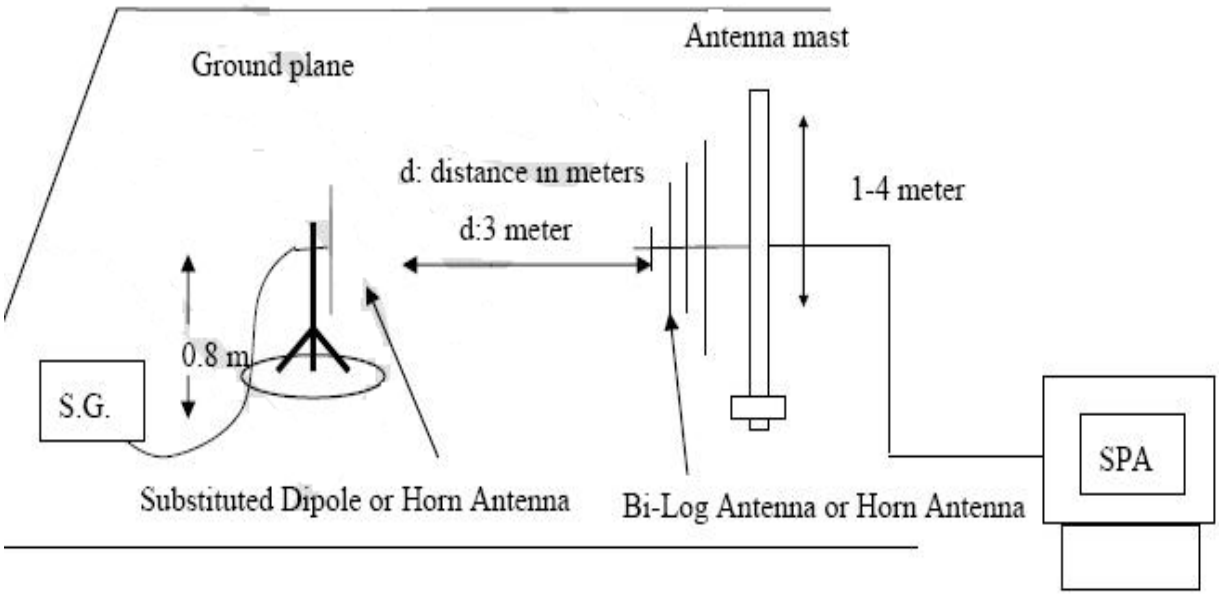
(A) Radiated emission Test setup, Below Frequency 1000MHz:



(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)

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 824.2MHz

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBd)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
100.00	H	-53.94	2.6	1	-52.34	-13	39.34
200.00	H	-54.89	9.1	1.42	-47.21	-13	34.21
800.00	H	-54.6	8.7	2.86	-48.76	-13	35.76
1648.40	H	-49.32	6.95	4.17	-46.54	-13	33.54
2472.60	H	-53.22	8.35	5.24	-50.11	-13	37.11
3296.80	H	-49.69	8.15	6.11	-47.65	-13	34.65
4121.00	H	-50.59	8.45	6.94	-49.08	-13	36.08
100.00	V	-52.61	2.6	1	-51.01	-13	38.01
200.00	V	-54.39	9.1	1.42	-46.71	-13	33.71
800.00	V	-54.77	8.7	2.86	-48.93	-13	35.93
1648.40	V	-49.55	6.95	4.17	-46.77	-13	33.77
2472.60	V	-51.43	8.35	5.24	-48.32	-13	35.32
3296.80	V	-49.19	8.15	6.11	-47.15	-13	34.15
4121.00	V	-49.73	8.45	6.94	-48.22	-13	35.22

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

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

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH Mid mode

Fundamental Frequency: 836.40MHz

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBd)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
100.00	H	-53.76	2.6	1	-52.16	-13	39.16
200.00	H	-55.45	9.1	1.42	-47.77	-13	34.77
800.00	H	-54.36	8.7	2.86	-48.52	-13	35.52
1672.80	H	-48.07	6.95	4.2	-45.32	-13	32.32
2509.20	H	-49.92	8.35	5.36	-46.93	-13	33.93
3345.60	H	-50.53	8.15	6.25	-48.63	-13	35.63
4182.00	H	-50.58	8.45	6.98	-49.11	-13	36.11
100.00	V	-52.37	2.6	1	-50.77	-13	37.77
200.00	V	-54.66	9.1	1.42	-46.98	-13	33.98
800.00	V	-53.89	8.7	2.86	-48.05	-13	35.05
1672.80	V	-48.83	6.95	4.2	-46.08	-13	33.08
2509.20	V	-50.86	8.35	5.36	-47.87	-13	34.87
3345.60	V	-49.78	8.15	6.25	-47.88	-13	34.88
4182.00	V	-49.98	8.45	6.98	-48.51	-13	35.51

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

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

Radiated spurious Emission Measurement Result: GSM 850 mode

Operation mode: TX CH High mode

Fundamental Frequency: 848.8MHz

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBd)	Cable Loss (dBm)	ERP (dBm)	Limit (dBm)	Safe Margin (dB)
100.00	H	-54.04	2.6	1	-52.44	-13	39.44
200.00	H	-55.73	9.1	1.42	-48.05	-13	35.05
800.00	H	-54.15	8.7	2.86	-48.31	-13	35.31
1697.60	H	-49.43	6.95	4.22	-46.7	-13	33.7
2546.40	H	-50.29	8.35	5.39	-47.33	-13	34.33
3395.20	H	-50.49	8.15	6.35	-48.69	-13	35.69
4244.00	H	-49.77	8.45	7.04	-48.36	-13	35.36
100.00	V	-52.14	2.6	1	-50.54	-13	37.54
200.00	V	-56.41	9.1	1.42	-48.73	-13	35.73
800.00	V	-53.53	8.7	2.86	-47.69	-13	34.69
1697.60	V	-48.72	6.95	4.22	-45.99	-13	32.99
2546.40	V	-50.1	8.35	5.39	-47.14	-13	34.14
3395.20	V	-49.76	8.15	6.35	-47.96	-13	34.96
4244.00	V	-50.43	8.45	7.04	-49.02	-13	36.02

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH Low mode

Fundamental Frequency: 1850.2MHz

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.00	H	-53.24	2.6	1	-51.64	-13	38.64
200.00	H	-56.94	9.1	1.42	-49.26	-13	36.26
800.00	H	-54.47	8.7	2.86	-48.63	-13	35.63
1800.00	H	-51.44	7	4.38	-48.82	-13	35.82
3700.40	H	-47.94	8.35	6.77	-46.36	-13	33.36
5550.60	H	-49.39	9.55	8.1	-47.94	-13	34.94
7400.80	H	-50.5	9.75	9.51	-50.26	-13	37.26
9251.00	H	-48.57	10.55	11.08	-49.1	-13	36.1
100.00	V	-52.58	2.6	1	-50.98	-13	37.98
200.00	V	-56.69	9.1	1.42	-49.01	-13	36.01
800.00	V	-53.73	8.7	2.86	-47.89	-13	34.89
1800.00	V	-50.97	7	4.38	-48.35	-13	35.35
3700.40	V	-44.08	8.35	6.77	-42.5	-13	29.5
5550.60	V	-47.82	9.55	8.1	-46.37	-13	33.37
7400.80	V	-47.78	9.75	9.51	-47.54	-13	34.54
9251.00	V	-49.48	10.55	11.08	-50.01	-13	37.01

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH mid mode

Fundamental Frequency: 1880.0MHz

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.00	H	-52.7	2.6	1	-51.1	-13	38.1
200.00	H	-56.98	9.1	1.42	-49.3	-13	36.3
800.00	H	-54.41	8.7	2.86	-48.57	-13	35.57
1800.00	H	-50.41	7	4.38	-47.79	-13	34.79
3760.00	H	-47.83	8.42	6.84	-46.25	-13	33.25
5640.00	H	-46.19	9.5	8.31	-45	-13	32
7520.00	H	-51.72	9.78	9.6	-51.54	-13	38.54
9400.00	H	-49.65	10.61	11.32	-50.36	-13	37.36
100.00	V	-51.65	2.6	1	-50.05	-13	37.05
200.00	V	-56.46	9.1	1.42	-48.78	-13	35.78
800.00	V	-54.56	8.7	2.86	-48.72	-13	35.72
1800.00	V	-50.28	7	4.38	-47.66	-13	34.66
3760.00	V	-47.05	8.42	6.84	-45.47	-13	32.47
5640.00	V	-47.41	9.5	8.31	-46.22	-13	33.22
7520.00	V	-49.11	9.78	9.6	-48.93	-13	35.93
9400.00	V	-48.85	10.61	11.32	-49.56	-13	36.56

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

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

Radiated spurious Emission Measurement Result: PCS 1900 mode

Operation mode: TX CH High mode

Fundamental Frequency: 1909.8MHz

Frequency (MHz)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dBi)	Cable Loss (dBm)	EIRP (dBm)	Limit (dBm)	Safe Margin (dB)
100.00	H	-53.61	2.6	1	-52.01	-13	39.01
200.00	H	-57.03	9.1	1.42	-49.35	-13	36.35
800.00	H	-54.45	8.7	2.86	-48.61	-13	35.61
1800.00	H	-51.33	7	4.38	-48.71	-13	35.71
3819.60	H	-45.3	8.42	6.88	-43.76	-13	30.76
5729.80	H	-48.47	9.5	8.48	-47.45	-13	34.45
7639.20	H	-50.32	9.78	9.7	-50.24	-13	37.24
9549.00	H	-48.34	10.61	11.64	-49.37	-13	36.37
100.00	V	-53.07	2.6	1	-51.47	-13	38.47
200.00	V	-56.61	9.1	1.42	-48.93	-13	35.93
800.00	V	-53.39	8.7	2.86	-47.55	-13	34.55
1800.00	V	-49.88	7	4.38	-47.26	-13	34.26
3819.60	V	-43.29	8.42	6.88	-41.75	-13	28.75
5729.80	V	-47.48	9.5	8.48	-46.46	-13	33.46
7639.20	V	-48.74	9.78	9.7	-48.66	-13	35.66
9549.00	V	-47.9	10.61	11.64	-48.93	-13	35.93

Remark:

1 emission behaviors belong to narrowband spurious emission.

2 The result basic equation calculation is as follow:

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

6.6 Receiver Spurious Emissions

Test Requirement: RSS-GEN section 6;
RSS-GEN section 7.2.3.2

Limit:

Table 1 - Spurious Emission Limits for Receivers

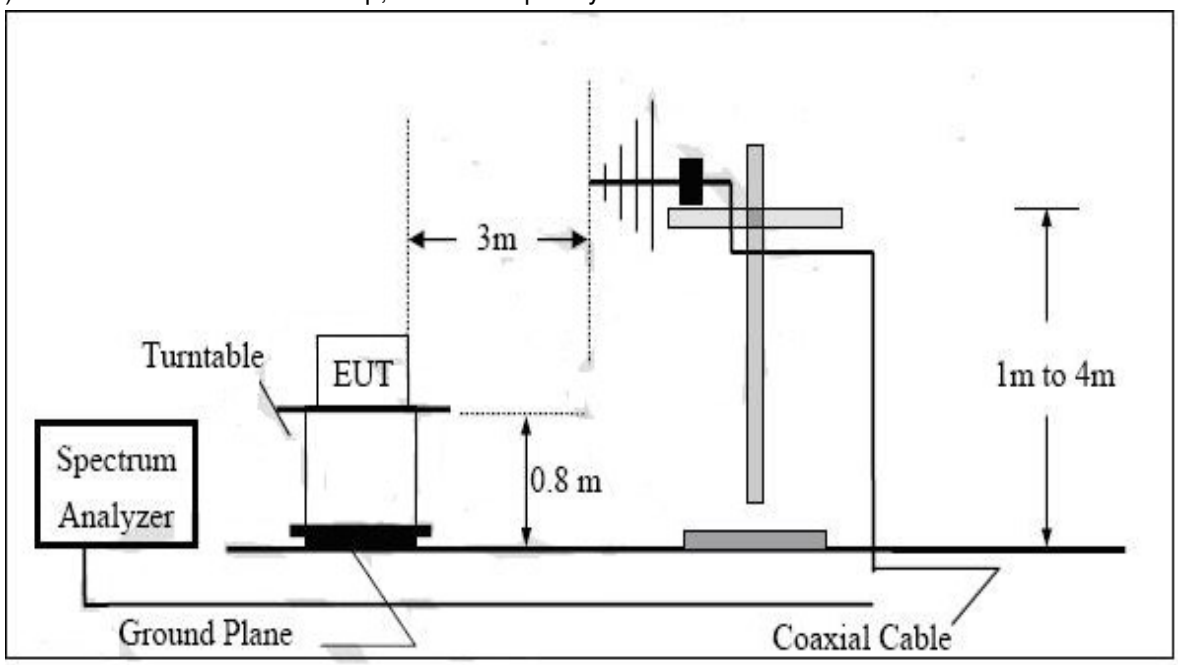
Spurious Frequency (MHz)	Field Strength (microvolt/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

40.0 dBμV/m between 30MHz to 88MHz
43.5 dBμV/m between 88MHz to 216MHz
46.0 dBμV/m between 216MHz to 960MHz
54.0 dBμV/m above 960MHz

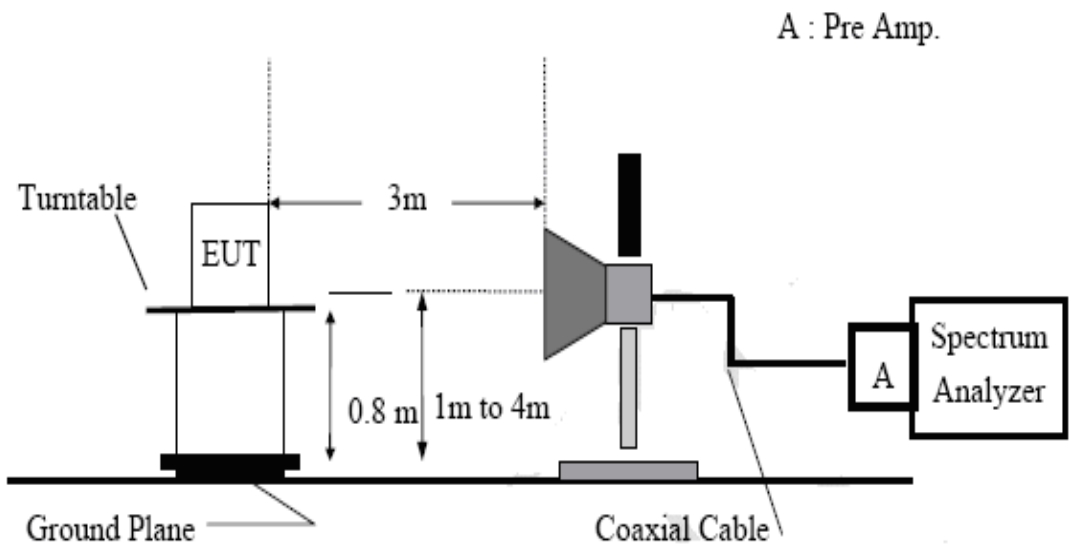
Test Date: May 27,2010

Test Setup:

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



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



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. For emissions below 1 GHz, measurements shall be performed using QP detector. Above 1 GHz, measurements shall be performed using an average detector.

Measurement Result:

Operation mode: GSM 850 Receiver mode

Frequency (MHz)	Ant.Pol. H/V	Level (dBuV/m)	Limit (dBuV/m)	Safe Margin (dB)
30	H	14.8	40	25.2
100	H	15	43.5	28.5
200	H	13.9	43.5	29.6
300	H	20	46	26
500	H	22.5	46	23.5
1500	H	18.5	54	35.5
35	V	23	40	17
40	V	25	40	15
100	V	14.2	43.5	29.3
300	V	18.7	46	27.3
500	V	25	46	21
1500	H	18.3	54	35.7

Measurement Result:

Operation mode: GSM 1900 Receiver mode

Frequency (MHz)	Ant.Pol. H/V	Level (dBuV/m)	Limit (dBuV/m)	Safe Margin (dB)
30	H	14.9	40	25.1
100	H	13.2	43.5	30.3
200	H	14.6	43.5	28.9
300	H	19.9	46	26.1
500	H	22.4	46	23.6
3000	H	21.0	54	33.0
35	V	15.1	40	24.9
40	V	12.6	43.5	30.9
100	V	15.1	43.5	28.4
300	V	18.7	46	27.3
500	V	22.1	46	23.9
3000	H	20.8	54	33.2

6.7 Frequency Stability V.S. TEMPERATURE MEASUREMENT

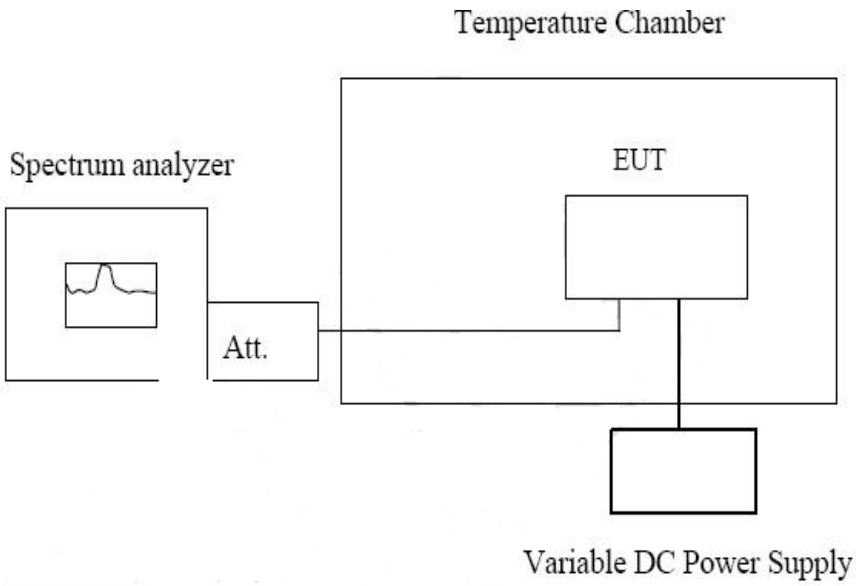
Test Requirement: RSS-132,4.3; RSS-133,6.3;

Part 2.1055(a)(1)

Test Date: May 28,2010

Test Status: Test lowest channel, middle, highest 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. Reference power supply voltage for these tests is DC 3.6 V.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 for 850MHz band

+/-2.5ppm for 1900MHz band

Reference Frequency: GSM 850 Low channel 824.2MHz@ 25 degree			
Limit: +/- 2.5ppm = 2091Hz			
Environment Temperature(degree)	Frequency (MHz)	Delta (Hz)	Limit (Hz)
-30	824.200059	59	2091
-20	824.200040	40	2091
-10	824.200027	27	2091
10	824.200014	14	2091
20	824.200006	6	2091
30	824.200014	14	2091
40	824.200009	9	2091
50	824.200039	39	2091

Reference Frequency: GSM 850 Mid channel 836.4MHz@ 25 degree			
Limit: +/- 2.5ppm = 2091Hz			
Environment Temperature(degree)	Frequency (MHz)	Delta (Hz)	Limit (Hz)
-30	836.400040	40	2091
-20	836.400033	33	2091
-10	836.400025	25	2091
10	836.399997	3	2091
20	836.400004	4	2091
30	836.400021	21	2091
40	836.400034	34	2091
50	836.400045	45	2091

Reference Frequency: GSM 850 High channel 848.8MHz@ 25 degree			
Limit: +/- 2.5ppm = 2091Hz			
Environment Temperature(degree)	Frequency (MHz)	Delta (Hz)	Limit (Hz)
-30	848.800053	53	2091
-20	848.800044	44	2091
-10	848.800025	25	2091
10	848.800008	8	2091
20	848.800006	6	2091
30	848.800032	32	2091
40	848.800027	27	2091
50	848.800038	38	2091

Reference Frequency: PCS 1900 Low channel 1850.2MHz@ 25 degree			
Limit: +/- 2.5ppm = 4700Hz			
Environment Temperature(degree)	Frequency (MHz)	Delta (Hz)	Limit (Hz)
-30	1850.199956	44	4700
-20	1850.199969	31	4700
-10	1850.199978	22	4700
10	1850.199989	11	4700
20	1850.199991	9	4700
30	1850.200014	14	4700
40	1850.200026	26	4700
50	1850.200033	33	4700

Reference Frequency: PCS 1900 Mid channel 1880MHz@ 25 degree			
Limit: +/- 2.5ppm = 4700Hz			
Environment Temperature(degree)	Frequency (MHz)	Delta (Hz)	Limit (Hz)
-30	1879.999954	46	4700
-20	1879.999968	32	4700
-10	1879.999972	28	4700
10	1879.999984	16	4700
20	1879.999995	5	4700
30	1879.999987	13	4700
40	1879.999977	23	4700
50	1879.999969	31	4700

Reference Frequency: PCS 1900 High channel 1909.8MHz@ 25 degree			
Limit: +/- 2.5ppm = 4700Hz			
Environment Temperature(degree)	Frequency (MHz)	Delta (Hz)	Limit (Hz)
-30	1909.799960	40	4700
-20	1909.799967	33	4700
-10	1909.799978	22	4700
10	1909.799989	11	4700
20	1909.799994	6	4700
30	1909.799990	10	4700
40	1909.799982	18	4700
50	1909.799965	35	4700

6.8 Frequency Stability V.S. VOLTAGE MEASUREMENT

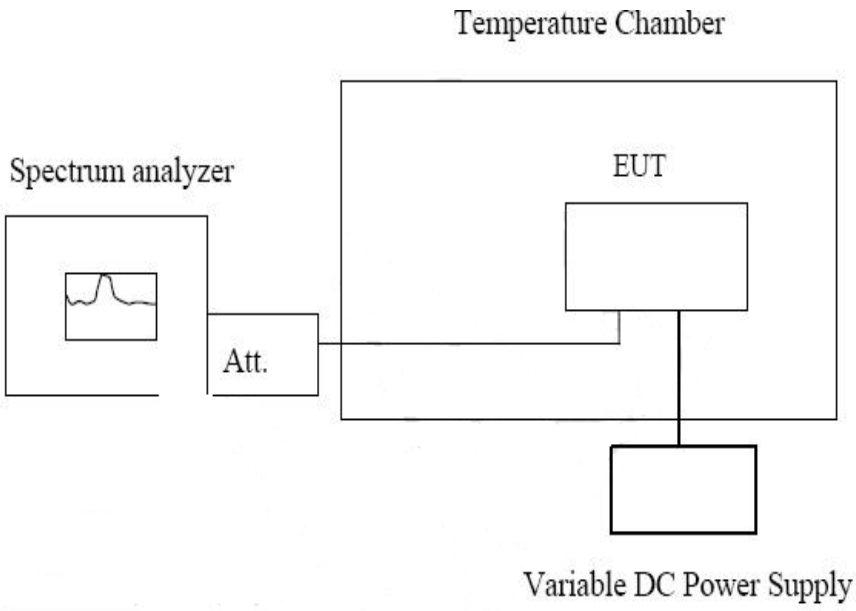
Test Requirement: RSS-132,4.3; RSS-133,6.3 ;

Part 2.1055(d)(1)

Test Date: May 28,2010

Test Status: Test lowest channel, middle, highest 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. Reference power supply voltage for these tests is DC 3.6 V. 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.

Frequency Tolerance: +/-2.5ppm for 850MHz band

+/-2.5ppm for 1900MHz band

Reference Frequency: GSM 850 Low channel 824.2MHz@ 25 degree			
Limit: +/- 2.5ppm = 2091Hz			
Power Supply Vdc	Frequency (MHz)	Delta (Hz)	Limit (Hz)
4.8	824.200027	27	2091
3.6	824.200000	0	2091
3.2	824.200025	25	2091

Reference Frequency: GSM 850 Mid channel 836.4MHz@ 25 degree			
Limit: +/- 2.5ppm = 2091Hz			
Power Supply Vdc	Frequency (MHz)	Delta (Hz)	Limit (Hz)
4.8	836.400020	20	2091
3.6	836.400000	0	2091
3.2	836.400016	16	2091

Reference Frequency: GSM 850 High channel 848.8MHz@ 25 degree			
Limit: +/- 2.5ppm = 2091Hz			
Power Supply Vdc	Frequency (MHz)	Delta (Hz)	Limit (Hz)
4.8	848.800019	19	2091
3.6	848.800000	0	2091
3.2	848.800015	15	2091

Reference Frequency: PCS 1900 Low channel 1850.2MHz@ 25 degree			
Limit: +/- 2.5ppm = 4700Hz			
Power Supply Vdc	Frequency (MHz)	Delta (Hz)	Limit (Hz)
4.8	1850.199971	29	4700
3.6	1850.200000	0	4700
3.2	1850.199982	18	4700

Reference Frequency: PCS 1900 Mid channel 1880MHz@ 25 degree			
Limit: +/- 2.5ppm = 4700Hz			
Power Supply Vdc	Frequency (MHz)	Delta (Hz)	Limit (Hz)
4.8	1879.999969	31	4700
3.6	1880.000000	0	4700
3.2	1879.999972	28	4700

Reference Frequency: PCS 1900 High channel 1909.8MHz@ 25 degree			
Limit: +/- 2.5ppm = 4700Hz			
Power Supply Vdc	Frequency (MHz)	Delta (Hz)	Limit (Hz)
4.8	1909.799973	27	4700
3.6	1909.800000	0	4700
3.2	1909.799984	16	4700

~End of Report~