FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E

TEST REPORT

For

PDA phone

Model: HERA110

Trade Name: N/A

Issued to

High Tech Computer Corp.
No. 23, Xinghua Rd., Taoyuan City,
Taoyuan County 330, Taiwan

Issued by

Compliance Certification Services Inc.
No. 81-1, Lane 210, Bade Rd. 2, Luchu Hsiang,
Taoyuan Hsien, (338) Taiwan, R.O.C.
http://www.ccsemc.com.tw
service@tw.ccsemc.com

ACCREDITED
No. 0824-01

TAF
Testing Laboratory
0363

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION

Applicant: High Tech Computer Corp.
No. 23, Xinghua Rd., Taoyuan City,
Taoyuan County 330, Taiwan

Equipment Under Test: PDA phone

Trade Name: N/A

Model Number: HERA110

Date of Test: December 26 ~ 31, 2006

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI/TIA/EIA-603-A-2001 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule FCC PART 22 Subpart H and PART 24 Subpart E.

The test results of this report relate only to the tested sample identified in this report.

Approved by:

Gavin Lim
Section Manager
Compliance Certification Services Inc.

Reviewed by:

Amanda Wu
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	PDA phone
Trade Name	N/A
Model Number	HERA110
Model Discrepancy	N/A
Power Supply	Power Adapter 1. DELTA ELECTRONICS, INC. Model: ADP-5FH I/P: 100-240V, 0.2A O/P: 5V, 1A LPS 2. PHIHONG Model: PSAA05A-050 I/P: 100-240V, 200mA, 50-60Hz, 13-20VA O/P: 5, 1A LPS Rechargeable Battery: 1. Celxpert Model: HERA160 Rating: 3.7VDC, 1130mAh 2. DynaPack Model: HERA160 Rating: 3.7VDC, 1130mAh
Accessories	● Holster: NEWTECH (model name: HTC-353-1) ● Earphone: MERRY (model name: EMC220), Unshielded, 1.2m ● USB Cable: Shielded, 1.2m
Frequency Range	TX: 824 ~ 849 MHz / 1850 ~ 1910 MHz RX: 869 ~ 894 MHz / 1930 ~ 1989.8 MHz
Transmit Power (ERP & EIRP Power)	GSM 850: 33.14 dBm GPRS 850: 29.30 dBm GSM 1900: 30.03 dBm GPRS 1900: 30.28 dBm
Cellular Phone Protocol	GSM 850, GSM1900: Class B phone GPRS 850, GPRS1900: Class 10
Type of Emission	254KGXW--
Antenna Gain	850 MHz: 0 dBi 1900 MHz: 1 dBi
Antenna Type	Embedded Quad-Band Antenna

Remark:

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *This submittal(s) (test report) is intended for FCC ID: **NM8HERA** filing to comply with Part 22 and Part 24 of the FCC 47 CFR Rules.*

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4 and FCC CFR 47, 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

3.1 EUT CONFIGURATION

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

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.

3.4 DESCRIPTION OF TEST MODES

The EUT (model: HERA110) comes with two power adaptors, two rechargeable batteries, one headset and one splitter for sale. After the preliminary test, the EUT with power adaptor (Model: ADP-5FH) and battery (HERA160) were found to emit the worst emissions and therefore had been tested under operating condition.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only.

EUT staying in continuous transmitting mode were programmed.

GSM850, GPRS 850: Channel Low (CH128), Channel Mid (CH190) and Channel High (CH251) were chosen for full testing.

GSM1900, GPRS 1900: Channel Low (CH512), Channel Mid (CH661) and Channel High (CH810) were chosen for full testing.

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis).

The worst emission were found:

in lie-down (X axis) for PCS slide mode,

and in stand-up (Z axis) for cellular close mode, and the worst case were recorded.

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: *Each piece of equipment is scheduled for calibration once a year.*

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY43360131	01/18/2007
Spectrum Analyzer	R&S	FSEK30	10026	03/22/2007

3M Semi Anechoic Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY43360131	01/18/2007
Pre-Amplifier	MITEC	AFS42-00102650	924206	N.C.R.
Bi-log Antenna	SCHWAZBECK	VULB9163	145	07/05/2007
Horn antenna	EMCO	3115	00022250	04/16/2007
Reject Filter	Micro-Tronics	HPM13194	003	04/27/2007
Turn Table	EMCO	2081-1.21	9709-1885	N.C.R
Antenna Tower	EMCO	2075-2	9707-2060	N.C.R
Controller	EMCO	2090	9709-1256	N.C.R
Site NSA	C&C	N/A	N/A	09/06/2007
SERIES SWEPT SIGNAL GENERATOR	Agilent	83630B	3844A01022	01/23/2007
Substituted Dipole	SCHWAZBECK	VHAP/UHAP	998 +999/ 981+982	06/11/2007
DC POWER SUPPLY	ABM	8301HD	D011531	07/12/2007
Substituted Horn	EMCO	3115	00022257	12/18/2007
Temp. / Humidity Chamber	TERCHY	MHG-150LF	930619	08/08/2007

Remark: *The measurement uncertainty is less than +/-2.0065dB (30MHz ~ 1GHz), +/-3.0958dB (Above 1GHz) which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.*

Powerline Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI TEST RECEIVER 9kHz-30MHz	ROHDE & SCHWARZ	ESHS30	828144/003	10/31/2007
TWO-LINE V-NETWORK 9kHz-30MHz	SCHAFFNER	NNB41	03/10013	06/14/2007
LISN 10kHz-100MHz	EMCO	3825/2	9106-1809	03/20/2007
Test S/W	LABVIEW (V 6.1)			

Remark: *The measurement uncertainty is less than +/- 2.81dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.*

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

☐ No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

☒ No.11, Wugong 6th Rd., Wugu Industrial Park, Taipei Hsien 248, Taiwan
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

☒ No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	EN 55011, EN 55014-1/2, CISPR 11, CISPR 14-1/2, EN 55022, EN 55015, CISPR 22, CISPR 15, AS/NZS 3548, VCCI V3 (2001), CFR 47, FCC Part 15/18, CNS 13783-1, CNS 13439, CNS 13438, CNS 13803, CNS 14115, EN 55024, IEC 801-2, IEC 801-3, IEC 801-4, IEC/EN 61000-3-2, EIC/EN 61000-3-3, IEC/EN 61000-4-2/3/4/5/6/8/11, EN 50081-1/ EN 61000-6-3, EN 50081-2/EN 61000-6-4, EN 50081-2/EN 61000-6-1: 2001	ACCREDITED 0824-01
USA	FCC	3/10 meter Open Area Test Sites (93105, 90471) / 3M Semi Anechoic Chamber (965860) to perform FCC Part 15/18 measurements	93105, 90471 965860
Japan	VCCI	3/10 meter Open Area Test Sites to perform conducted/radiated measurements	R-393/1066/725/879 C-402/747/912
Norway	NEMKO	EN 50081-1/2, EN 50082-1/2, IEC 61000-6-1/2, EN 50091-2, EN 50130-4, EN 55011, EN 55013, EN 55014-1/2, EN 55015, EN 55022, EN 55024, EN 61000-3-2/3, EN 61326-1, IEC 61000-4-2/3/4/5/6/8/11, EN 60601-1-2, EN 300 328, EN 300 422-2, EN 301 419-1, EN 301 489-01/03/07/08/09/17, EN 301 419-2/3, EN 300 454-2, EN 301 357-2	ELA 124a ELA 124b ELA 124c
Taiwan	TAF	EN 300 328, EN 300 220-1, EN 300 220-2, EN 300 220-3, 47 CFR FCC Part 15 Subpart C, EN 61000-3-2, EN 61000-3-3, CNS 13439, CNS 13783-1, CNS 14115, CNS 13438, AS/NZS CISPR 22, CNS 13022-1, IEC 61000-4-2/3/4/5/6/8/11, CNS 13022-2/3	Testing Laboratory 0363
Taiwan	BSMI	CNS 13438, CNS 13783-1, CNS 13439, CNS 14115	SL2-IS-E-0014 SL2-IN-E-0014 SL2-A1-E-0014 SL2-R1-E-0014 SL2-R2-E-0014 SL2-L1-E-0014
Canada	Industry Canada	3/10 meter Open Area Test Sites (IC 3991-3, IC 3991-4) / 3M Semi Anechoic Chamber (IC 6106) to perform RSS 212 Issue 1	IC 3991-3 IC 3991-4 IC 6106

** No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.*

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	Bluetooth Headset (Remote)	COREGA	CG-BTHS01-10	CG-BTHS01-10	10T90020500124	N/A	N/A
2.	Wireless Communication Test Set (Remote)	Agilent	E5515C	GB44051665	FCC DOC	N/A	N/A
3.	Wireless Pre-N Router (Remote)	BELKIN	F5D8230-4	N/A	SA3-AGNO901APO100	N/A	Unshielded, 1.8m

Remark:

1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

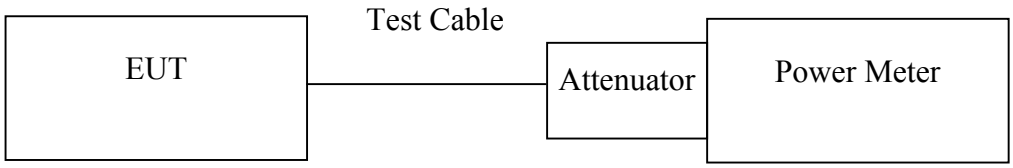
7. FCC PART 22 & 24 REQUIREMENTS

7.1 AVERAGE POWER

LIMIT

According to FCC §2.1046.

Test Configuration



Remark: *Measurement setup for testing on Antenna connector*

TEST PROCEDURE

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

TEST RESULTS

No non-compliance noted.

Test Data

Test Mode	CH	Frequency (MHz)	Power Meter Reading (dBm)	Attenuator (dB)	Average Power (dBm)
GSM 850	128	824.20	6.34	25.87	32.21
	190	836.60	5.84		31.71
	251	848.80	6.79		32.66
GPRS 850 (Class 10)	128	824.20	6.43		32.30
	190	836.60	5.83		31.70
	251	848.80	6.81		32.68

Remark: *The value of factor includes both the loss of cable and external attenuator*

Test Mode	CH	Frequency (MHz)	Power Meter Reading (dBm)	Attenuator (dB)	Average Power (dBm)
GSM 1900	512	1850.20	3.54	25.87	29.41
	661	1880.00	2.93		28.80
	810	1910.00	2.55		28.42
GPRS 1900 (Class 10)	512	1850.20	3.49		29.36
	661	1880.00	2.92		28.79
	810	1910.00	2.56		28.43

Remark: *The value of factor includes both the loss of cable and external attenuator*

7.2 ERP & EIRP MEASUREMENT

LIMIT

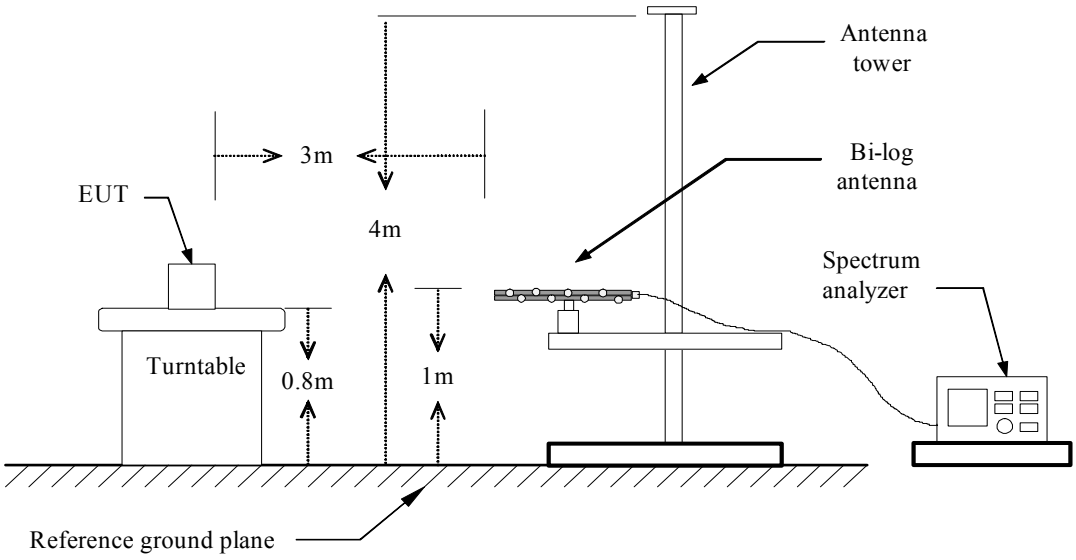
According to FCC §2.1046

FCC 22.913(b): The Effective Radiated Power (ERP) of mobile transmitters must not exceed 7 Watts.

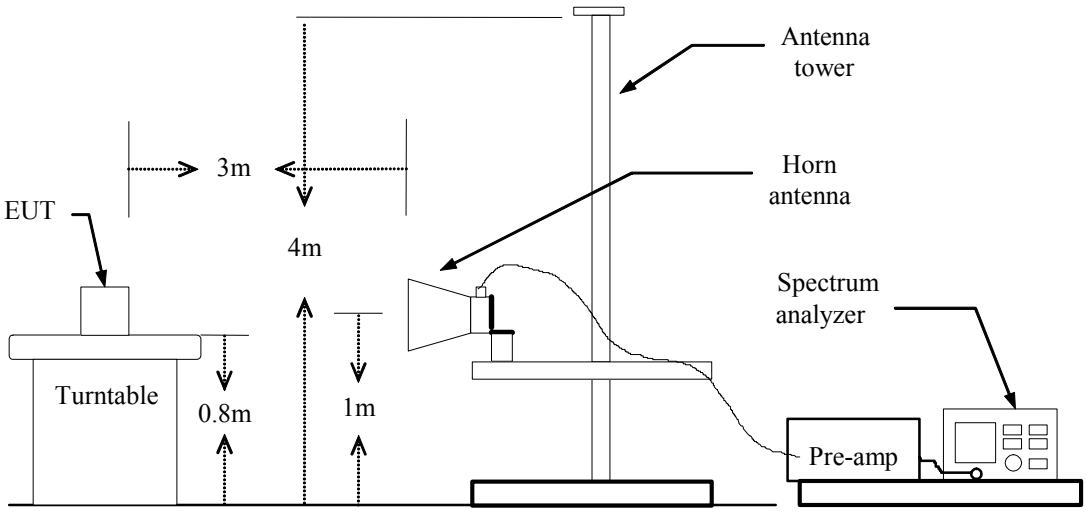
FCC 24.232(b): The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

TEST CONFIGURATION

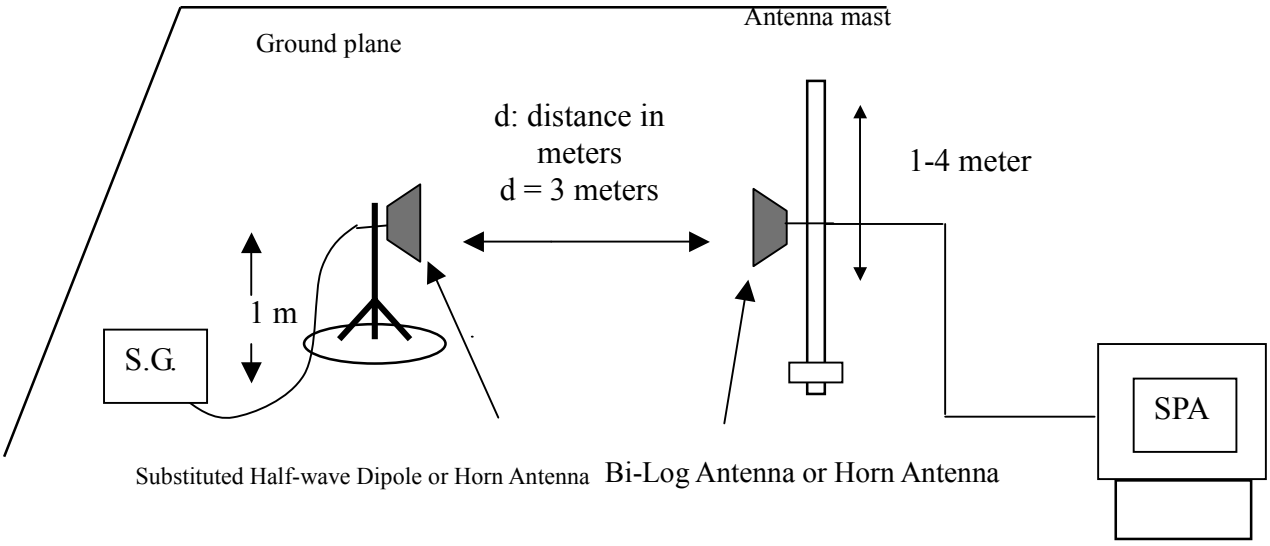
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



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 of the EUT, the resolution bandwidth was set to 3MHz and the average bandwidth was set to 3MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824-849MHz, and EIRP in frequency band 1851.25 –1910MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824-849MHz) or horn antenna (1851.25-1910MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:

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

TEST RESULTS

No non-compliance noted.

GSM 850 Test Data (Class B) Closed Mode

EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	Reading level (dBuV)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	128	824.20	V	-22.54	46.78	24.24	38.45	-14.21
		824.20	H	-14.47	46.57	32.10	38.45	-6.35
	190	836.60	V	-24.39	46.48	22.10	38.45	-16.35
		836.60	H	-15.48	46.49	31.01	38.45	-7.44
	251	848.80	V	-26.56	45.89	19.33	38.45	-19.12
		848.80	H	-17.73	46.01	28.29	38.45	-10.16
Y	128	824.20	V	-22.82	46.78	23.97	38.45	-14.48
		824.20	H	-14.28	46.57	32.29	38.45	-6.16
	190	836.60	V	-23.66	46.48	22.82	38.45	-15.63
		836.60	H	-14.25	46.48	32.23	38.45	-6.22
	251	848.80	V	-26.43	45.89	19.46	38.45	-18.99
		848.80	H	-16.60	46.01	29.41	38.45	-9.04
Z	128	824.20	V	-13.65	46.78	***33.14**	38.45	-5.31
		824.20	H	-25.43	46.57	21.14	38.45	-17.31
	190	836.60	V	-14.83	46.48	31.65	38.45	-6.80
		836.60	H	-25.11	46.48	21.37	38.45	-17.08
	251	848.80	V	-16.85	45.89	29.03	38.45	-9.42
		848.80	H	-29.02	46.01	16.98	38.45	-21.47

GPRS 850 Test Data (Class 10) Closed Mode

EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	Reading level (dBuV)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	128	824.20	V	-26.84	46.78	19.94	38.45	-18.51
		824.20	H	-17.93	46.57	28.64	38.45	-9.81
	190	836.60	V	-28.60	46.48	17.88	38.45	-20.57
		836.60	H	-20.39	46.48	26.09	38.45	-12.36
	251	848.80	V	-30.02	45.89	15.87	38.45	-22.58
		848.80	H	-19.99	46.01	26.02	38.45	-12.43
Y	128	824.20	V	-28.47	46.78	18.32	38.45	-20.13
		824.20	H	-17.59	46.57	28.98	38.45	-9.47
	190	836.60	V	-27.86	46.48	18.62	38.45	-19.83
		836.60	H	-18.35	46.48	28.13	38.45	-10.32
	251	848.80	V	-29.48	45.89	16.40	38.45	-22.05
		848.80	H	-20.08	46.01	25.93	38.45	-16.52
Z	128	824.20	V	-17.49	46.78	***29.30**	38.45	-9.15
		824.20	H	-27.89	46.57	18.68	38.45	-19.77
	190	836.60	V	-28.30	46.48	18.18	38.45	-20.27
		836.60	H	-18.26	46.48	28.23	38.45	-10.22
	251	848.80	V	-30.60	46.01	15.41	38.45	-23.04
		848.80	H	-19.93	45.89	25.96	38.45	-12.49

GSM 850 Test Data (Class B) Slide Mode

EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	Reading level (dBuV)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	128	824.20	V	-22.05	46.78	24.73	38.45	-13.72
		824.20	H	-14.63	46.57	31.94	38.45	-6.51
	190	836.60	V	-23.63	46.48	22.86	38.45	-15.59
		836.60	H	-15.52	46.48	30.96	38.45	-7.49
	251	848.80	V	-26.66	45.89	19.23	38.45	-19.22
		848.80	H	-17.78	46.01	28.23	38.45	-10.22
Y	128	824.20	V	-17.86	46.78	28.92	38.45	-9.53
		824.20	H	-14.29	46.57	***32.28**	38.45	-6.17
	190	836.60	V	-18.43	46.48	28.06	38.45	-10.39
		836.60	H	-15.25	46.48	31.24	38.45	-7.21
	251	848.80	V	-20.47	45.89	25.42	38.45	-13.03
		848.80	H	-18.02	46.01	27.99	38.45	-10.46
Z	128	824.20	V	-14.82	46.78	31.96	38.45	-6.49
		824.20	H	-18.73	46.57	27.85	38.45	-10.60
	190	836.60	V	-15.76	46.48	30.73	38.45	-7.72
		836.60	H	-18.79	46.48	27.70	38.45	-10.75
	251	848.80	V	-17.86	45.89	28.03	38.45	-10.42
		848.80	H	-21.30	46.01	24.71	38.45	-13.74

GPRS 850 Test Data (Class 10) Slide Mode

EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	Reading level (dBuV)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	128	824.20	V	-26.49	46.78	20.29	38.45	-18.16
		824.20	H	-18.16	46.57	***28.41**	38.45	-10.04
	190	836.60	V	-27.45	46.48	19.03	38.45	-19.42
		836.60	H	-19.00	46.48	27.48	38.45	-10.97
	251	848.80	V	-28.68	45.89	17.20	38.45	-21.25
		848.80	H	-20.94	46.01	25.07	38.45	-13.38
Y	128	824.20	V	-21.60	46.78	25.18	38.45	-13.27
		824.20	H	-18.71	46.57	27.86	38.45	-10.59
	190	836.60	V	-21.61	46.48	24.88	38.45	-13.57
		836.60	H	-18.78	46.48	27.71	38.45	-10.74
	251	848.80	V	-23.24	45.89	22.64	38.45	-15.81
		848.80	H	-20.91	46.01	25.10	38.45	-13.35
Z	128	824.20	V	-18.79	46.78	28.00	38.45	-10.45
		824.20	H	-22.46	46.57	24.11	38.45	-14.34
	190	836.60	V	-19.26	46.48	27.23	38.45	-11.22
		836.60	H	-22.40	46.48	24.09	38.45	-14.36
	251	848.80	V	-20.92	45.89	24.96	38.45	-13.49
		848.80	H	-24.22	46.01	21.79	38.45	-16.66

GSM 1900 Test Data (Class B) Closed Mode

EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	Reading level (dBuV)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	512	1850.20	V	-26.29	46.43	20.15	33.00	-12.85
		1850.20	H	-19.49	47.46	***27.98**	33.00	-5.02
	661	1880.00	V	-27.25	46.63	19.38	33.00	-13.62
		1880.00	H	-20.05	47.68	27.63	33.00	-5.37
	810	1909.80	V	-27.81	46.83	19.02	33.00	-13.98
		1909.80	H	-21.61	47.89	26.28	33.00	-6.72
Y	512	1850.20	V	-20.69	46.43	27.74	33.00	-5.26
		1850.20	H	-24.38	47.46	23.09	33.00	-9.91
	661	1880.00	V	-19.45	46.63	27.18	33.00	-5.82
		1880.00	H	-26.15	47.68	21.53	33.00	-11.47
	810	1909.80	V	-21.49	46.83	25.34	33.00	-7.66
		1909.80	H	-27.04	47.89	20.85	33.00	-12.15
Z	512	1850.20	V	-20.77	46.43	25.67	33.00	-7.33
		1850.20	H	-19.66	47.46	27.80	33.00	-5.20
	661	1880.00	V	-22.36	46.63	24.27	33.00	-8.73
		1880.00	H	-20.80	47.68	26.88	33.00	-6.12
	810	1909.80	V	-24.39	46.83	22.44	33.00	-10.56
		1909.80	H	-21.40	47.89	26.49	33.00	-6.51

GPRS 1900 Test Data (Class 10) Closed Mode

EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	Reading level (dBuV)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	512	1850.20	V	-19.92	47.46	27.55	33.00	-5.45
		1850.20	H	-26.16	46.43	20.27	33.00	-12.73
	661	1880.00	V	-20.11	47.68	***27.57**	33.00	-5.43
		1880.00	H	-27.93	46.63	18.70	33.00	-14.30
	810	1909.80	V	-28.66	46.83	18.17	33.00	-14.83
		1909.80	H	-22.28	47.89	25.61	33.00	-7.39
Y	512	1850.20	V	-18.92	46.43	27.51	33.00	-5.49
		1850.20	H	-25.41	47.46	22.06	33.00	-10.94
	661	1880.00	V	-19.87	46.63	26.76	33.00	-6.24
		1880.00	H	-26.47	47.68	21.21	33.00	-11.79
	810	1909.80	V	-21.83	46.83	25.00	33.00	-8.00
		1909.80	H	-28.15	47.89	19.74	33.00	-13.26
Z	512	1850.20	V	-21.00	46.43	25.43	33.00	-7.57
		1850.20	H	-20.33	47.46	27.14	33.00	-5.86
	661	1880.00	V	-22.83	46.63	23.80	33.00	-9.20
		1880.00	H	-20.67	47.68	27.01	33.00	-5.99
	810	1909.80	V	-24.79	46.83	22.04	33.00	-10.96
		1909.80	H	-21.55	47.89	26.34	33.00	-6.66

GSM 1900 Test Data (Class B) Slide Mode

EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	Reading level (dBuV)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	512	1850.20	V	-30.82	46.43	15.62	33.00	-17.38
		1850.20	H	-18.01	47.46	29.46	33.00	-3.54
	661	1880.00	V	-28.68	46.63	17.95	33.00	-15.05
		1880.00	H	-17.65	47.68	***30.03**	33.00	-2.97
	810	1909.80	V	-29.15	46.83	17.68	33.00	-15.32
		1909.80	H	-19.22	47.89	28.67	33.00	-4.33
Y	512	1850.20	V	-17.38	46.43	29.05	33.00	-3.95
		1850.20	H	-26.06	47.46	21.40	33.00	-11.60
	661	1880.00	V	-17.79	46.63	28.84	33.00	-4.16
		1880.00	H	-26.68	47.68	21.00	33.00	-12.00
	810	1909.80	V	-18.79	46.83	28.04	33.00	-4.96
		1909.80	H	-26.90	47.89	20.99	33.00	-12.01
Z	512	1850.20	V	-19.01	46.43	27.42	33.00	-5.58
		1850.20	H	-19.14	47.46	28.33	33.00	-4.67
	661	1880.00	V	-20.20	46.63	26.43	33.00	-6.57
		1880.00	H	-19.56	47.68	28.12	33.00	-4.88
	810	1909.80	V	-21.86	46.83	24.97	33.00	-8.03
		1909.80	H	-20.75	47.89	27.14	33.00	-5.86

GPRS 1900 Test Data (Class 10) Slide Mode

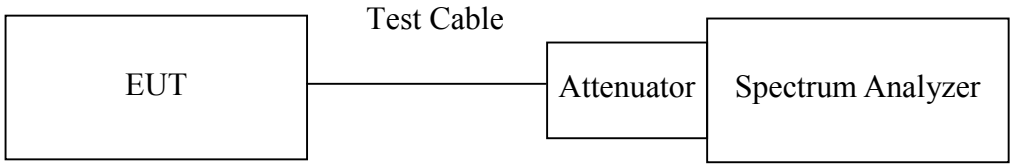
EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	Reading level (dBuV)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	512	1850.20	V	-30.11	46.43	16.32	33.00	-16.68
		1850.20	H	-17.73	47.46	29.73	33.00	-3.27
	661	1880.00	V	-27.67	46.63	18.96	33.00	-14.04
		1880.00	H	-17.40	47.68	***30.28**	33.00	-2.72
	810	1909.80	V	-18.60	46.83	18.23	33.00	-14.77
		1909.80	H	-19.03	47.89	28.86	33.00	-4.14
Y	512	1850.20	V	-17.50	46.43	28.94	33.00	-4.06
		1850.20	H	-25.35	47.46	22.12	33.00	-10.88
	661	1880.00	V	-17.46	46.63	29.17	33.00	-3.83
		1880.00	H	-26.34	47.68	21.34	33.00	-11.66
	810	1909.80	V	-18.96	46.83	27.87	33.00	-5.13
		1909.80	H	-27.29	47.89	20.60	33.00	-12.40
Z	512	1850.20	V	-19.00	46.43	27.43	33.00	-5.57
		1850.20	H	-19.10	47.46	28.36	33.00	-4.64
	661	1880.00	V	-20.31	46.63	26.32	33.00	-6.68
		1880.00	H	-19.63	47.68	28.05	33.00	-4.95
	810	1909.80	V	-22.10	46.83	24.73	33.00	-8.27
		1909.80	H	-20.71	47.89	27.18	33.00	-5.82

7.3 OCCUPIED BANDWIDTH MEASUREMENT

LIMIT

According to §FCC 2.1049.

Test Configuration



Remark: *Measurement setup for testing on Antenna connector*

TEST PROCEDURE

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW is set to 3 times the RBW, -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

TEST RESULTS

No non-compliance noted

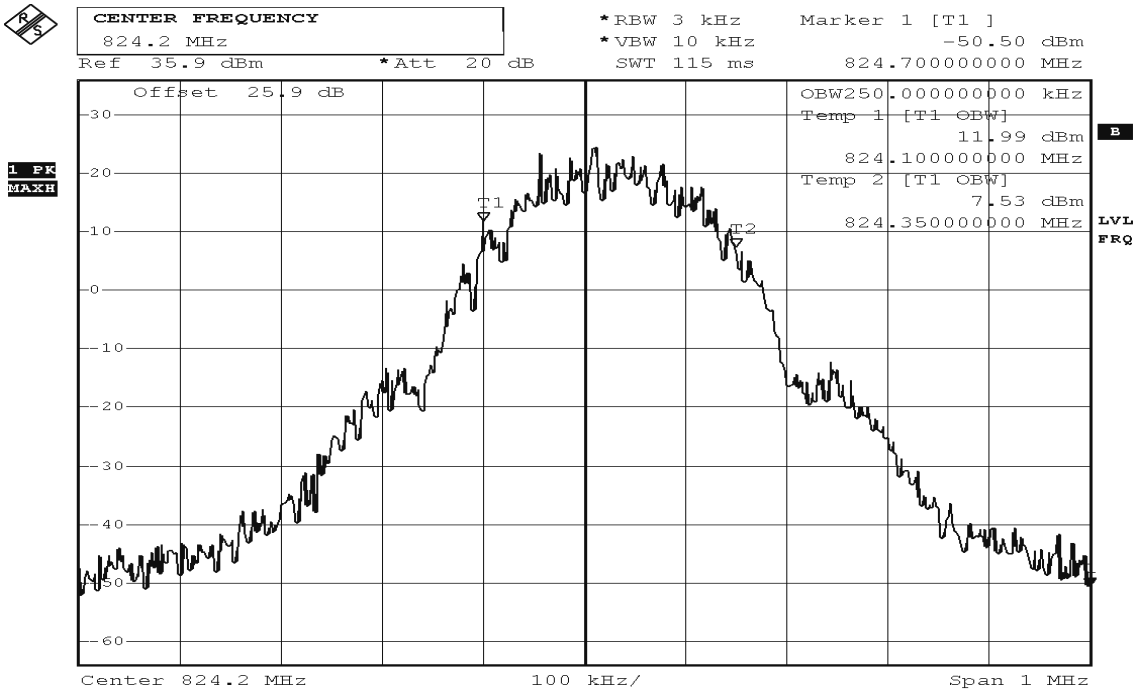
Test Data

Test Mode	CH	Frequency (MHz)	Bandwidth (kHz)
GSM 850 (Class B)	128	824.20	250.00
	190	836.60	254.00
	251	848.80	250.00
GPRS 850 (Class 10)	128	824.20	244.00
	190	836.60	238.00
	251	848.80	242.00

Test Mode	CH	Frequency (MHz)	Bandwidth (kHz)
GSM 1900 (Class B)	512	1850.20	250.00
	661	1880.00	244.00
	810	1909.80	244.00
GPRS 1900 (Class 10)	512	1850.20	246.00
	661	1880.00	242.00
	810	1909.80	244.00

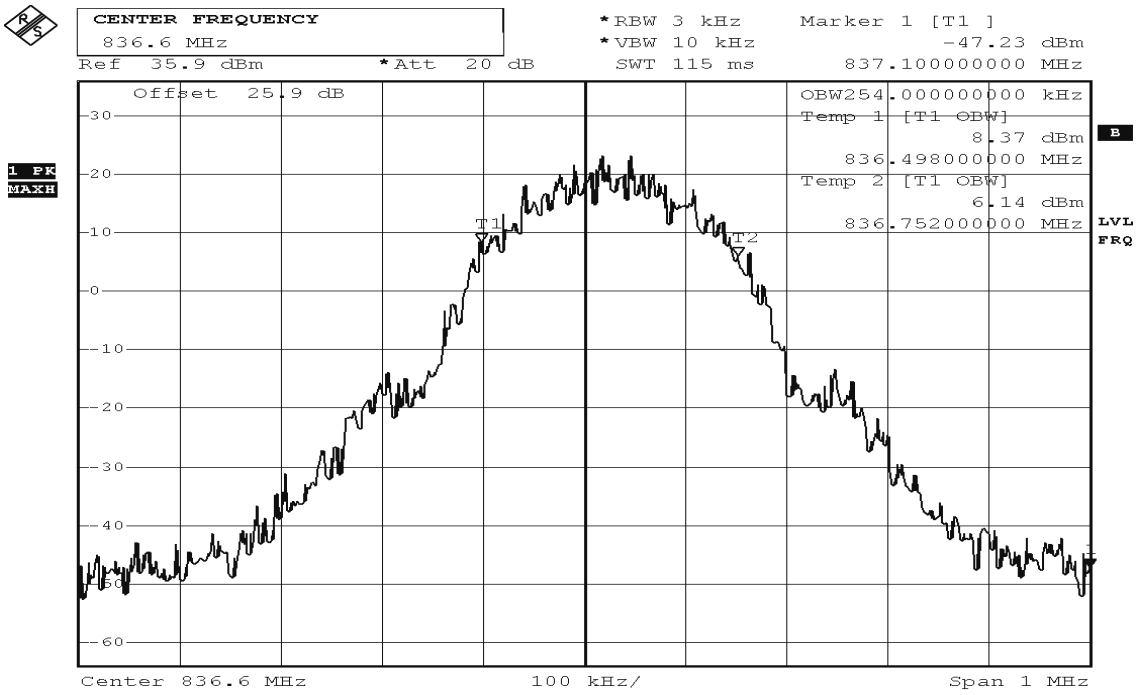
Test Plot

GSM 850 (CH Low)



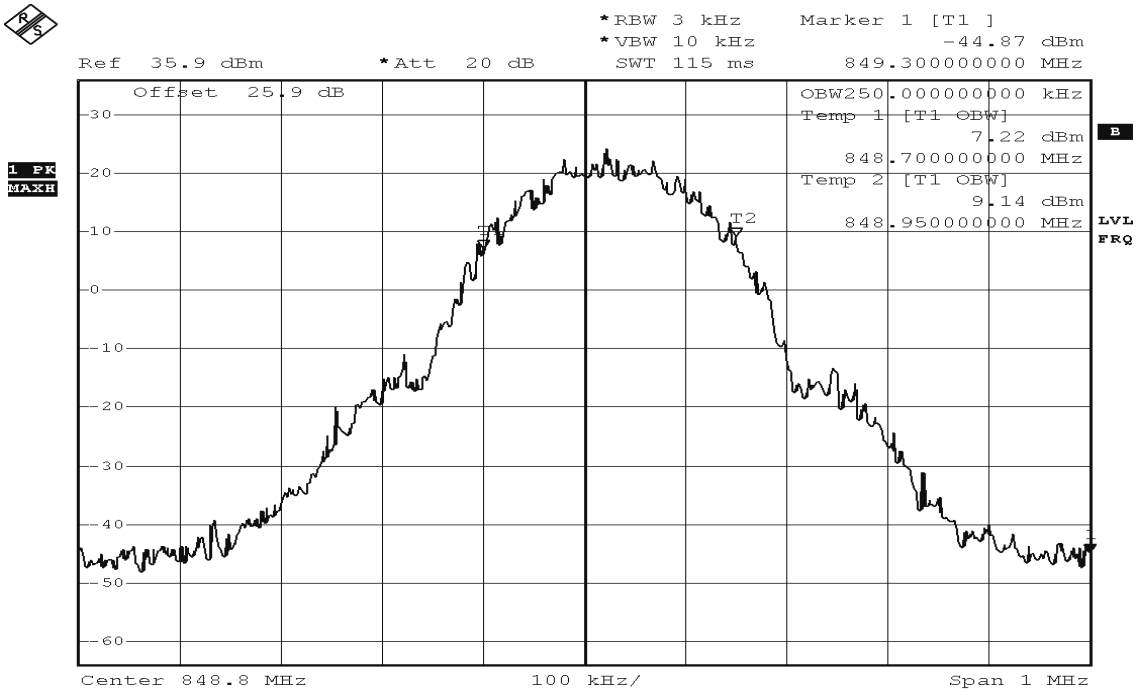
Date: 30.DEC.2006 15:00:33

GSM 850 (CH Mid)



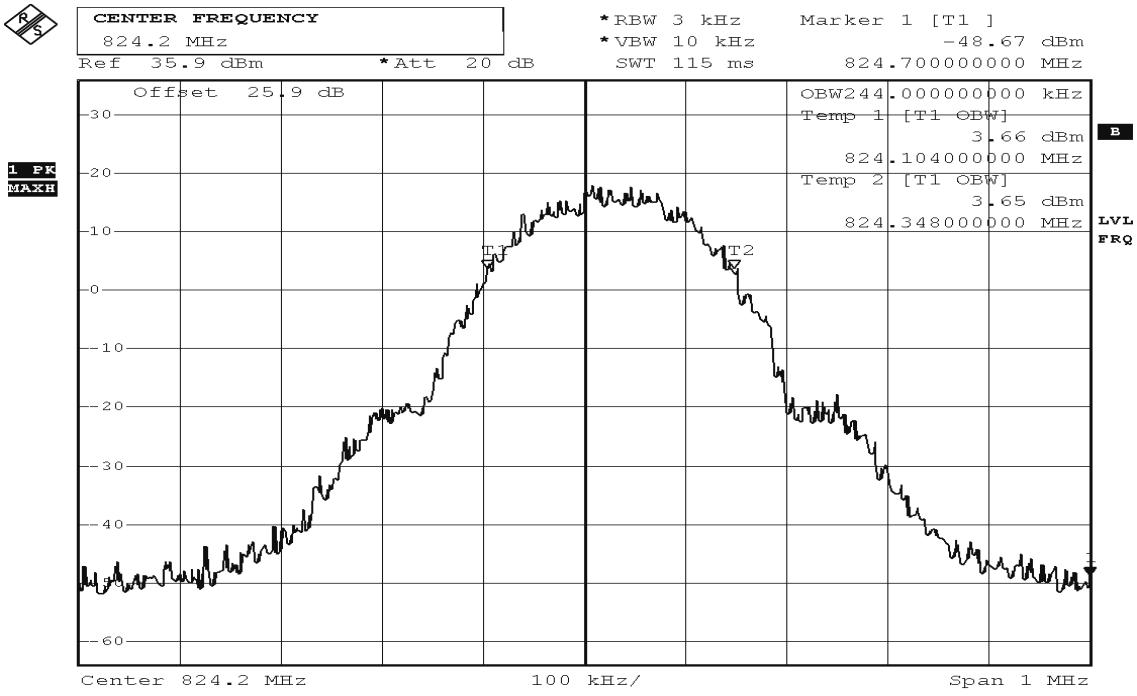
Date: 30.DEC.2006 15:00:12

GSM 850 (CH High)



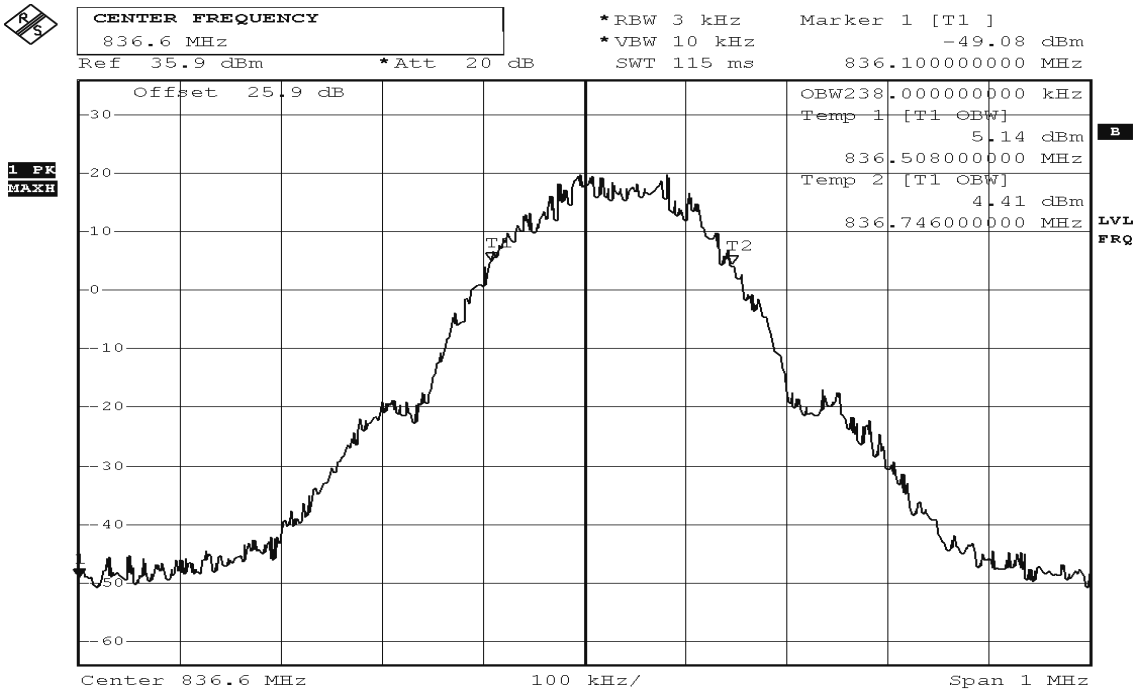
Date: 30.DEC.2006 14:45:53

GPRS 850 (CH Low).



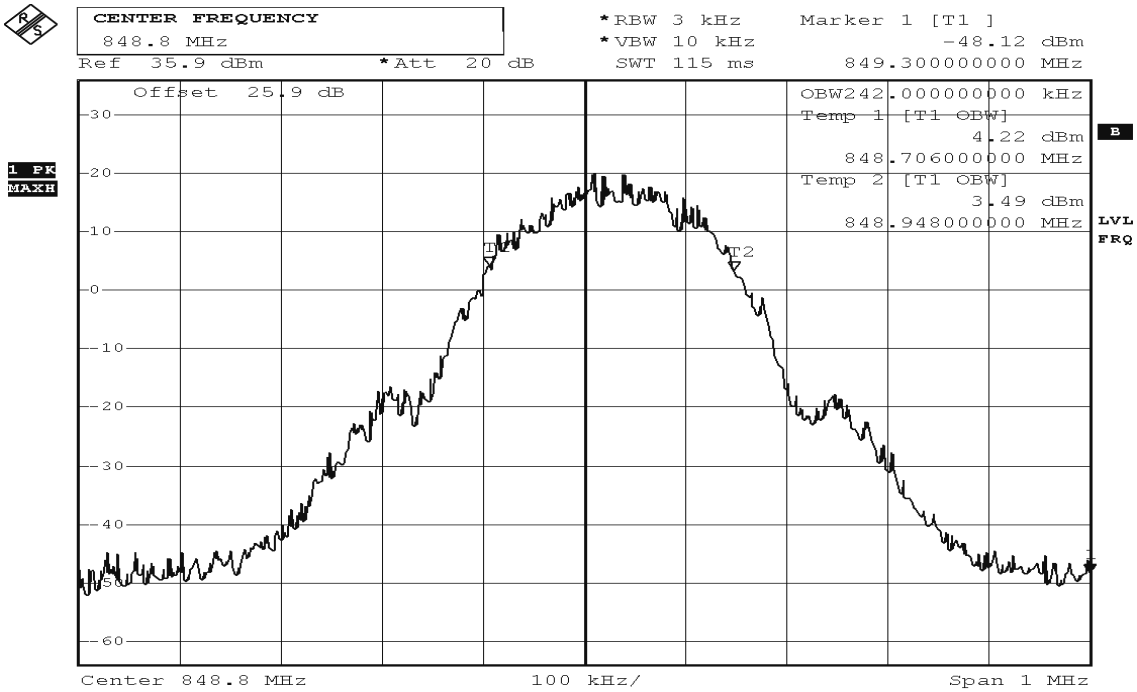
Date: 30.DEC.2006 14:16:54

GPRS 850 (CH Mid)



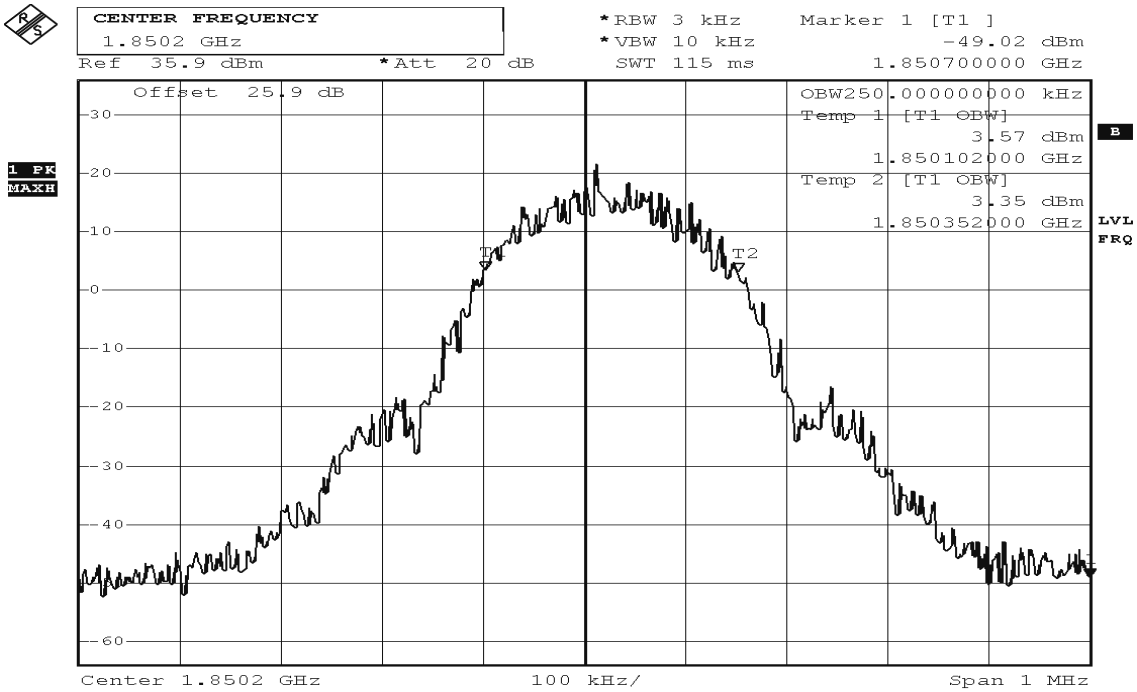
Date: 30.DEC.2006 14:17:51

GPRS 850(CH High)



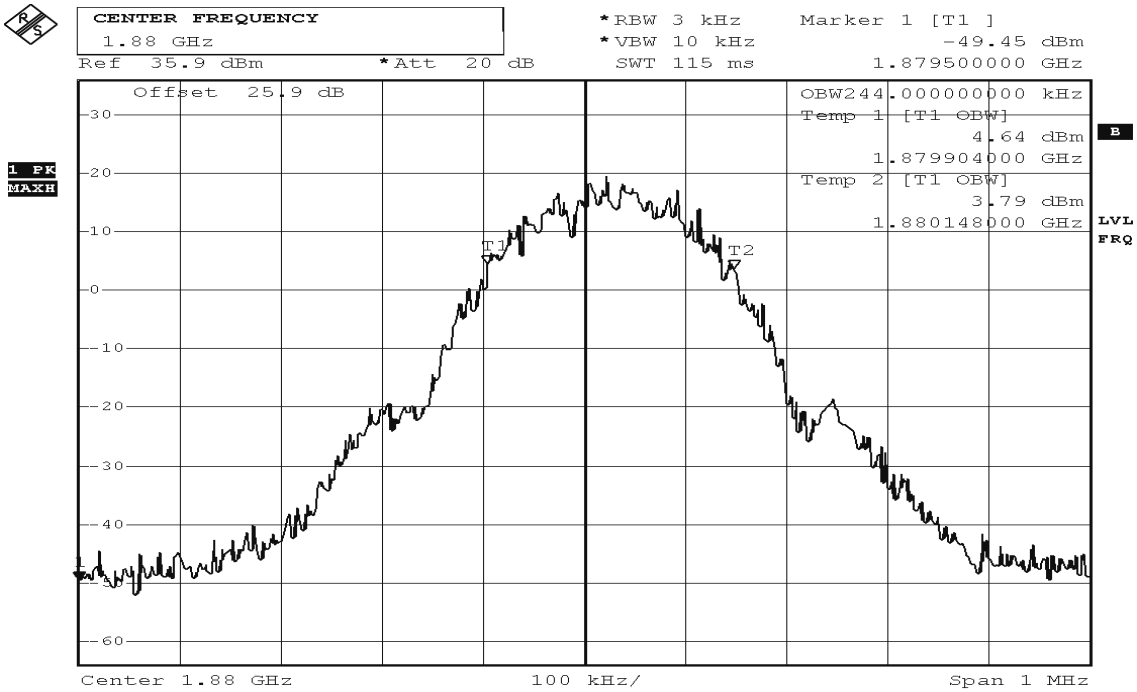
Date: 30.DEC.2006 14:18:51

GSM 1900 (CH Low)



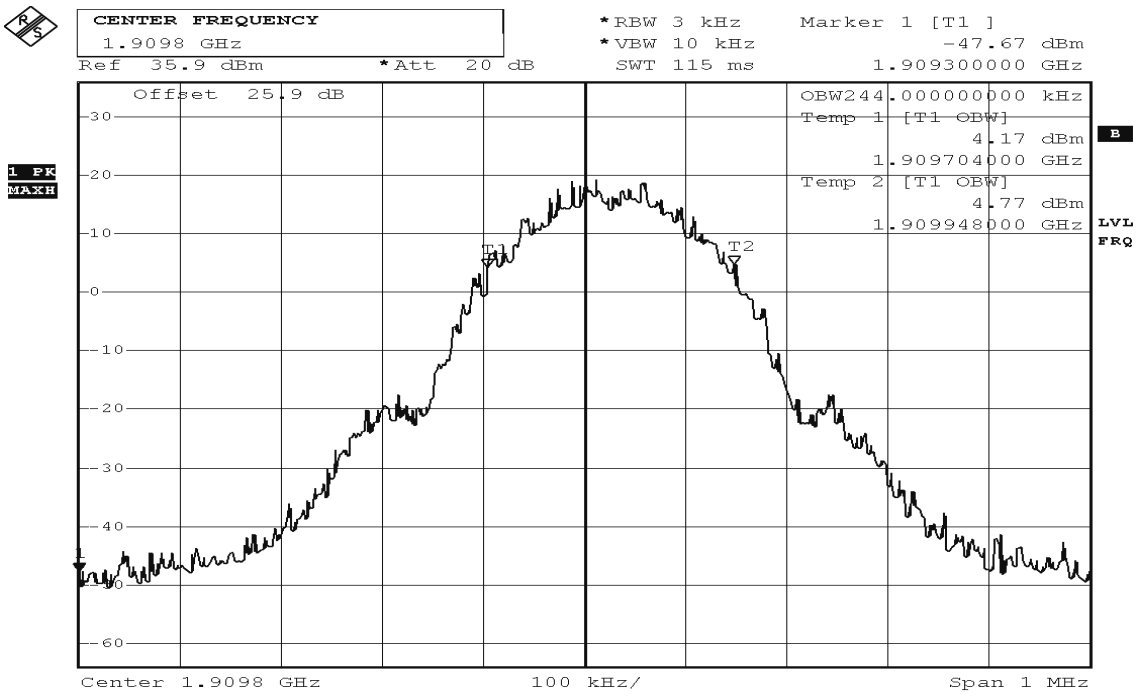
Date: 30.DEC.2006 14:14:38

GSM 1900 (CH Mid)



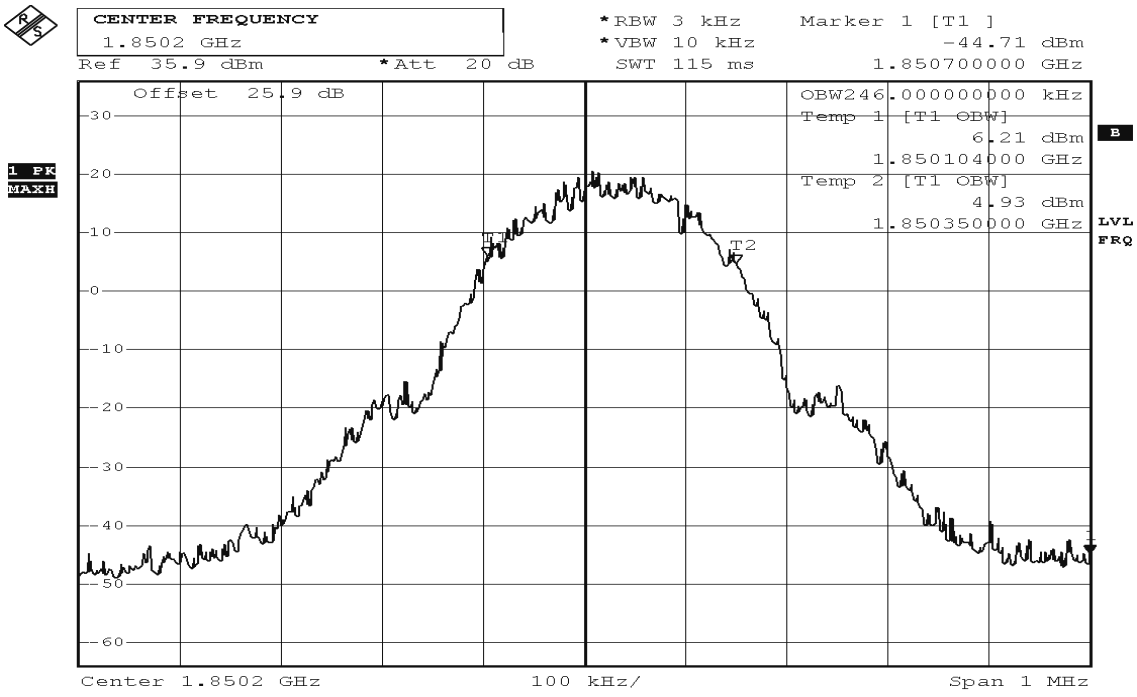
Date: 30.DEC.2006 14:13:48

GSM 1900 (CH High)



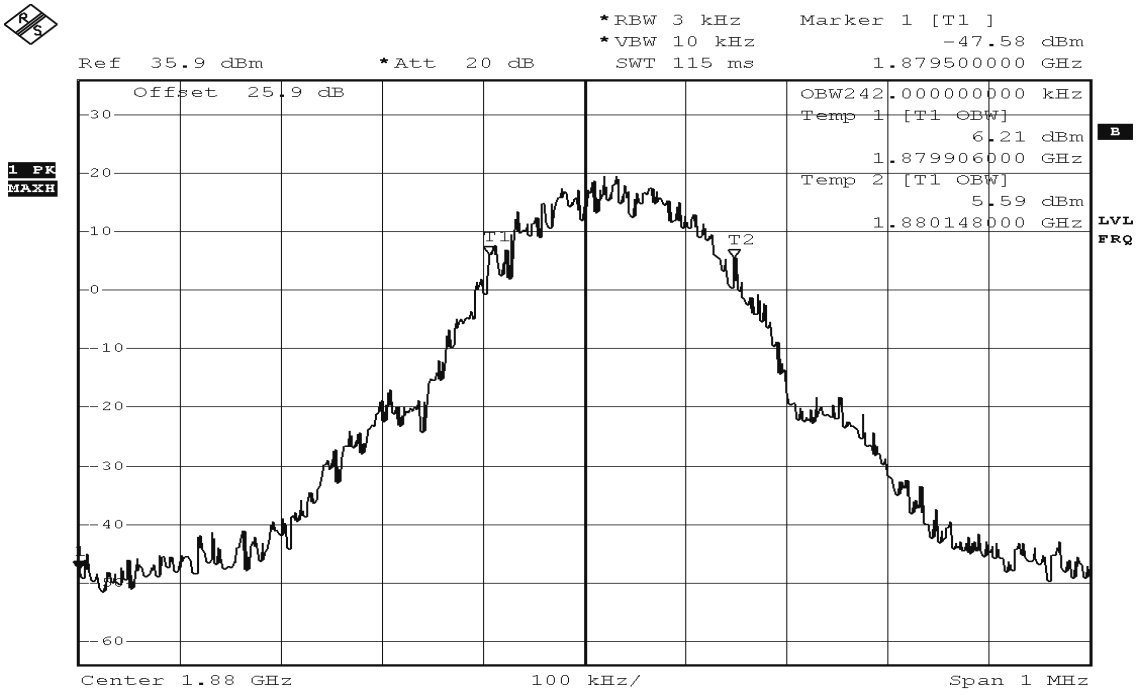
Date: 30.DEC.2006 14:14:58

GPRS 1900 (CH Low)



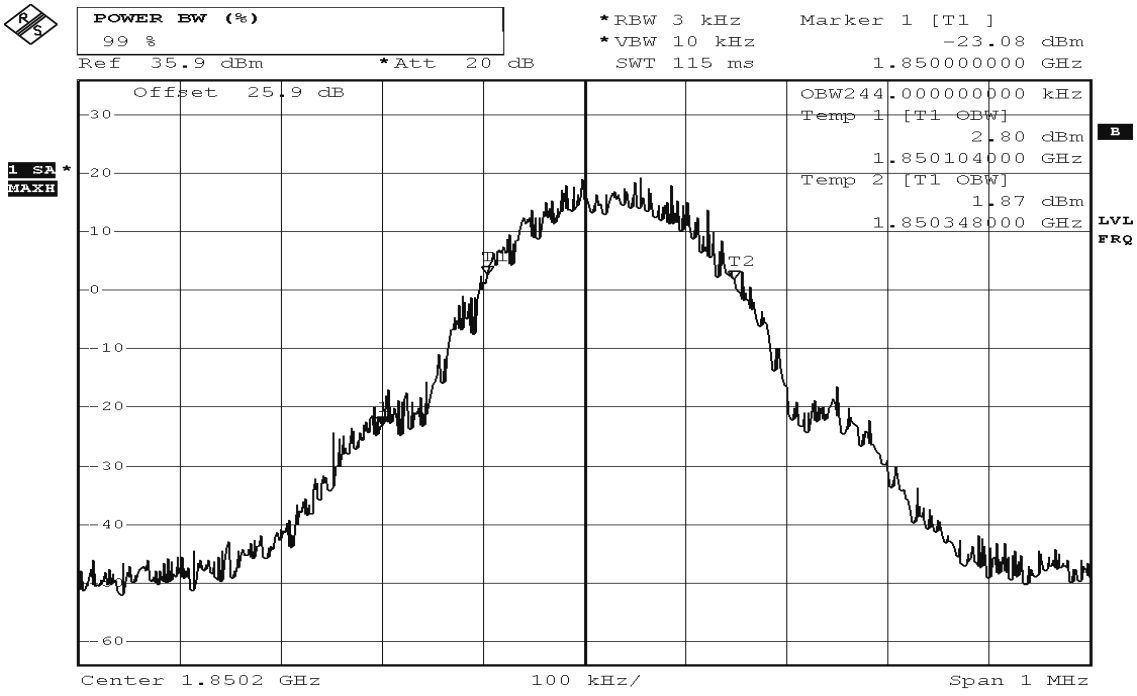
Date: 30.DEC.2006 13:25:42

GPRS 1900 (CH Mid)



Date: 30.DEC.2006 13:24:53

GPRS 1900 (CH High)



Date: 30.DEC.2006 13:24:08

7.4 OUT OF BAND EMISSION AT ANTENNA TERMINALS

LIMIT

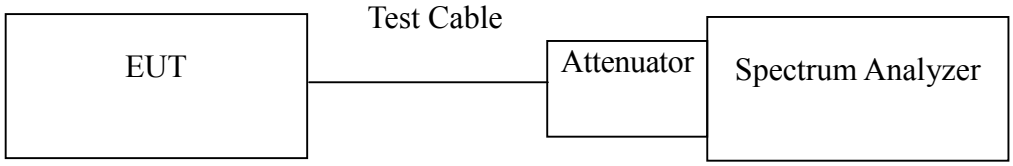
According to FCC §2.1051, FCC §22.917, FCC §24.238(a).

Out of Band Emissions: The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at lease 43 + 10 log P dB.

Mobile Emissions in Base Frequency Range: The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitters operated must be attenuated to a level not exceed –80 dBm at the transmit antenna connector.
Band Edge Requirements: In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at lease 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the Out of band Emission

TEST CONFIGURATION

Out of band emission at antenna terminals:



TEST PROCEDURE

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

For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10 th harmonic. Limit = -13dBm

Band Edge Requirements (824 MHz and 849 MHz /1850MHz and 1910MHz): In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

TEST RESULTS

No non-compliance noted.

Test Data

Mode	CH	Location	Description
GSM 850 (Class B)	128	Figure 7-1	Conducted spurious emissions, 10GHz - 20GHz
	190	Figure 7-2	Conducted spurious emissions, 10GHz - 20GHz
	251	Figure 7-3	Conducted spurious emissions, 30MHz - 20GHz
GPRS 850 (Class 10)	128	Figure 7-4	Conducted spurious emissions, 30MHz - 20GHz
	190	Figure 7-5	Conducted spurious emissions, 30MHz - 20GHz
	251	Figure 7-6	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
GSM 1900 (Class B)	512	Figure 8-1	Conducted spurious emissions, 10GHz - 20GHz
	661	Figure 8-2	Conducted spurious emissions, 10GHz - 20GHz
	810	Figure 8-3	Conducted spurious emissions, 10GHz - 20GHz
GPRS 1900 (Class 10)	512	Figure 8-4	Conducted spurious emissions, 10GHz - 20GHz
	661	Figure 8-5	Conducted spurious emissions, 10GHz - 20GHz
	810	Figure 8-6	Conducted spurious emissions, 10GHz - 20GHz

Mode	CH	Location	Description
GSM 850 (Class B)	128	Figure 9-1	Band Edge emissions
	251	Figure 9-2	Band Edge emissions
GPRS 850 (Class 10)	128	Figure 9-3	Band Edge emissions
	251	Figure 9-4	Band Edge emissions

Mode	CH	Location	Description
GSM 1900 (Class B)	512	Figure 10-1	Band Edge emissions
	810	Figure 10-2	Band Edge emissions
GPRS 1900 (Class 10)	512	Figure 10-3	Band Edge emissions
	810	Figure 10-4	Band Edge emissions

Test Plot

GSM 850

Figure 7-1: Out of Band emission at antenna terminals – GSM CH Low

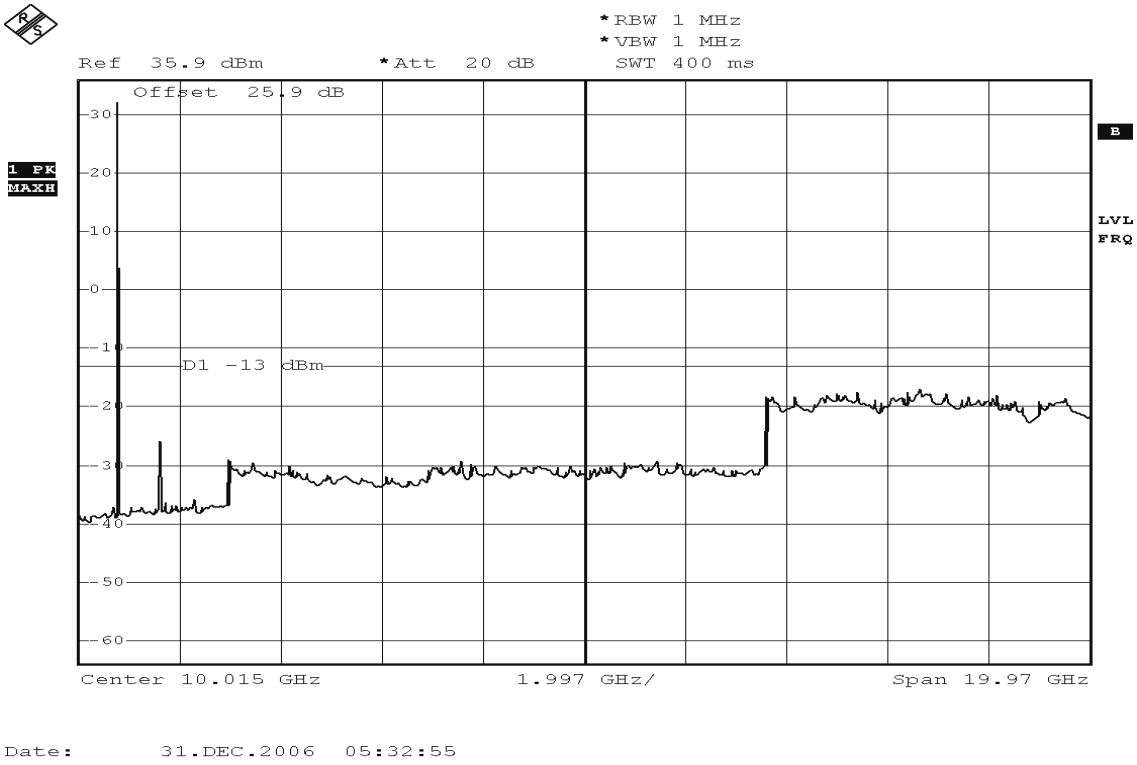


Figure 7-2: Out of Band emission at antenna terminals – GSM CH Mid

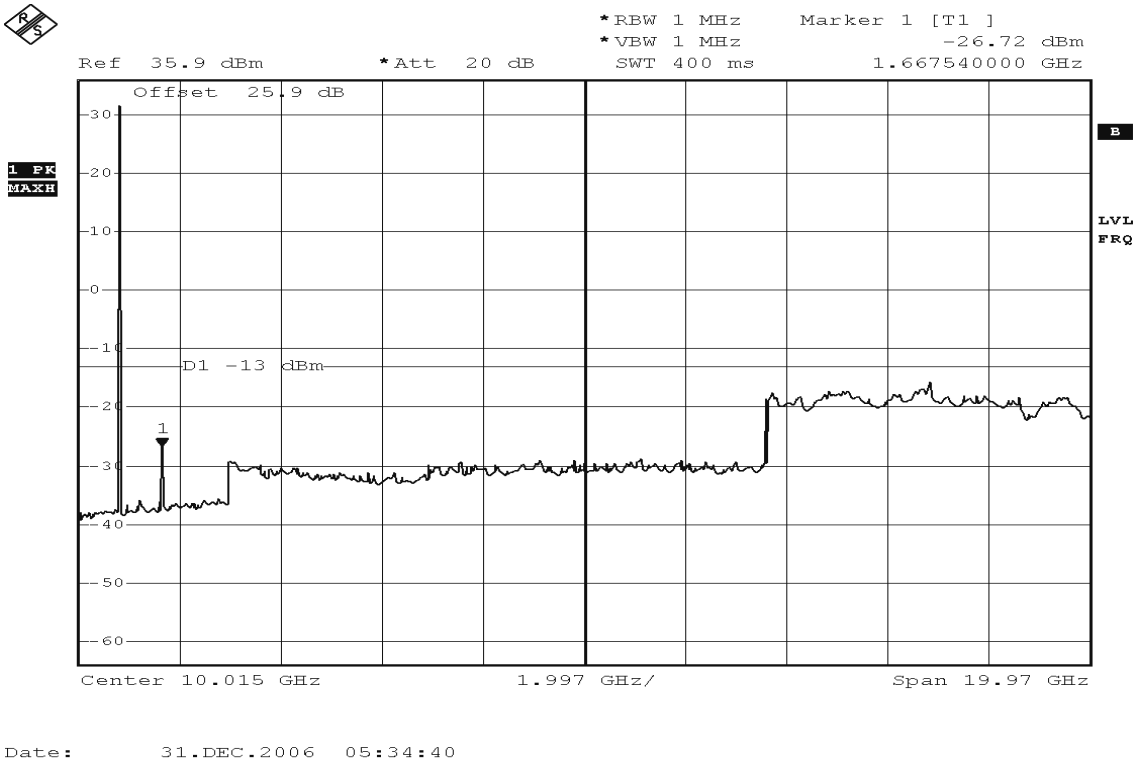
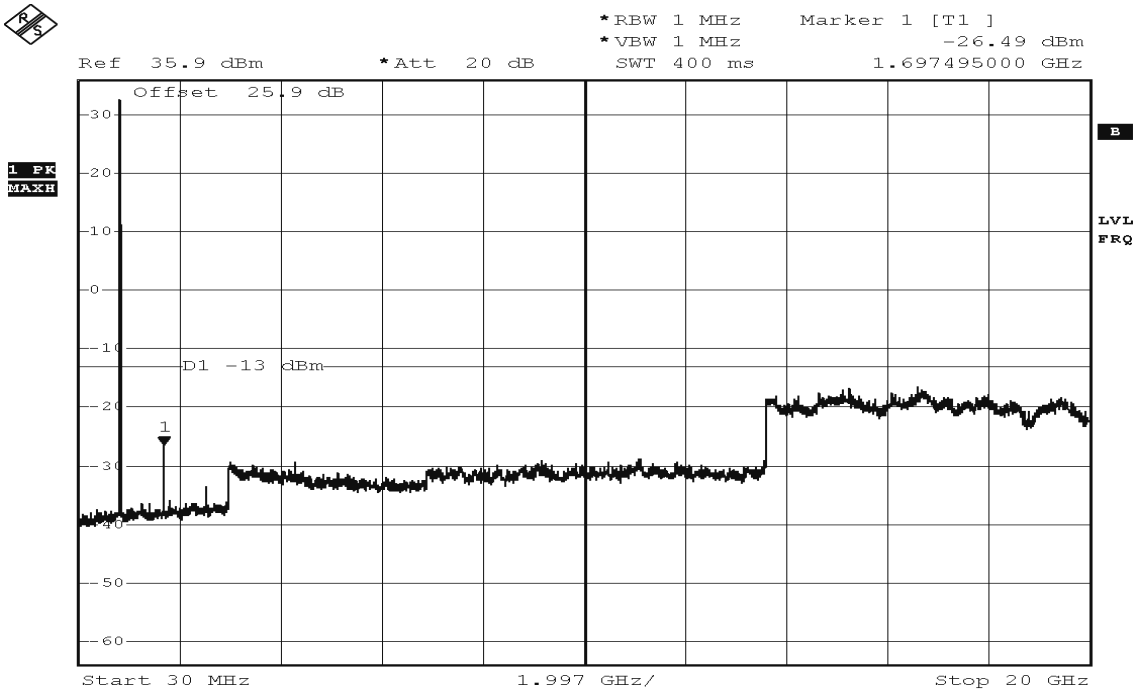


Figure 7-3: Out of Band emission at antenna terminals – GSM CH High



GPRS 850

Figure 7-4: Out of Band emission at antenna terminals – GPRS CH Low

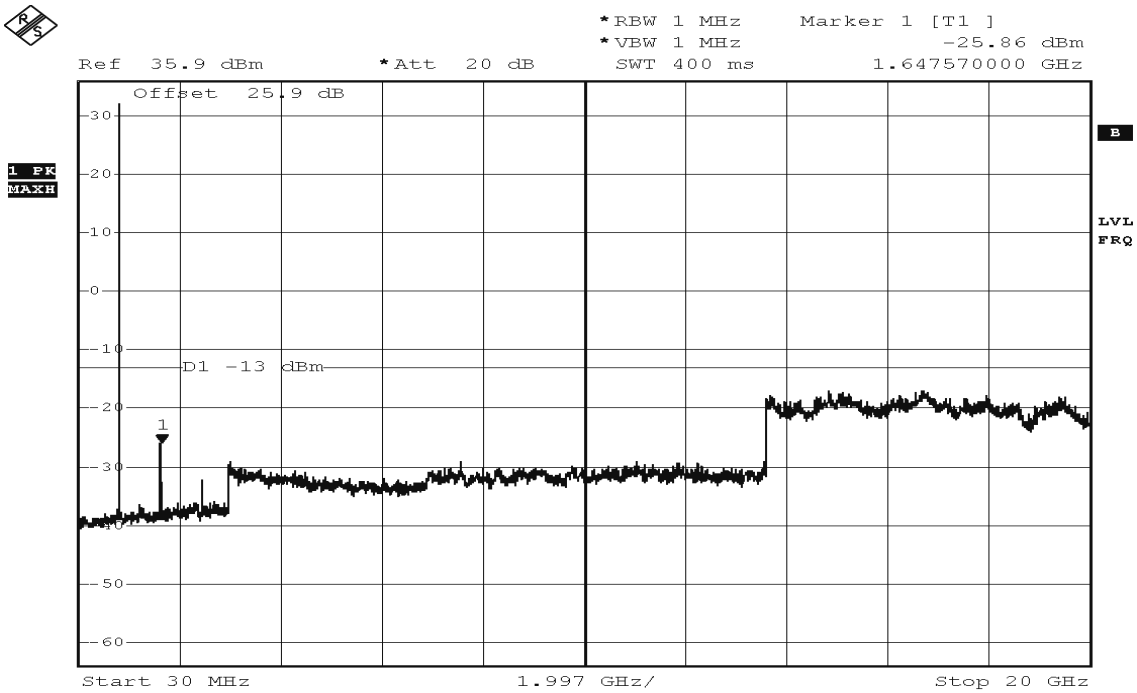


Figure 7-5: Out of Band emission at antenna terminals – GPRS CH Mid

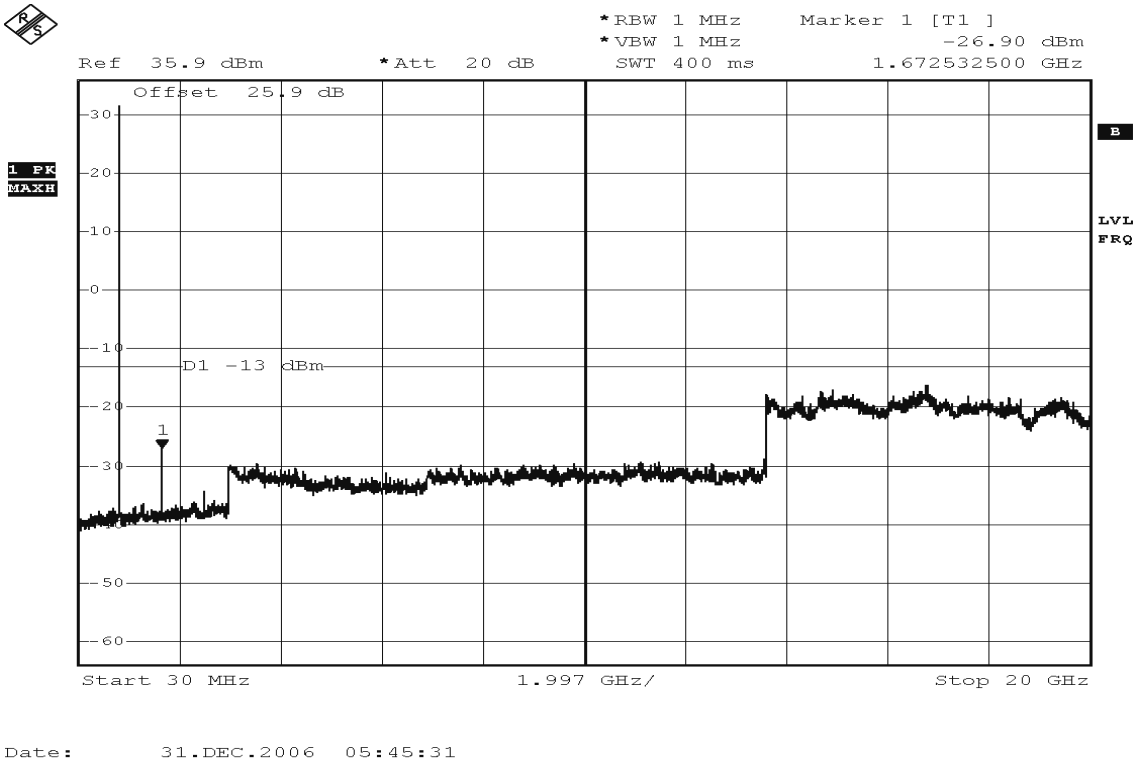
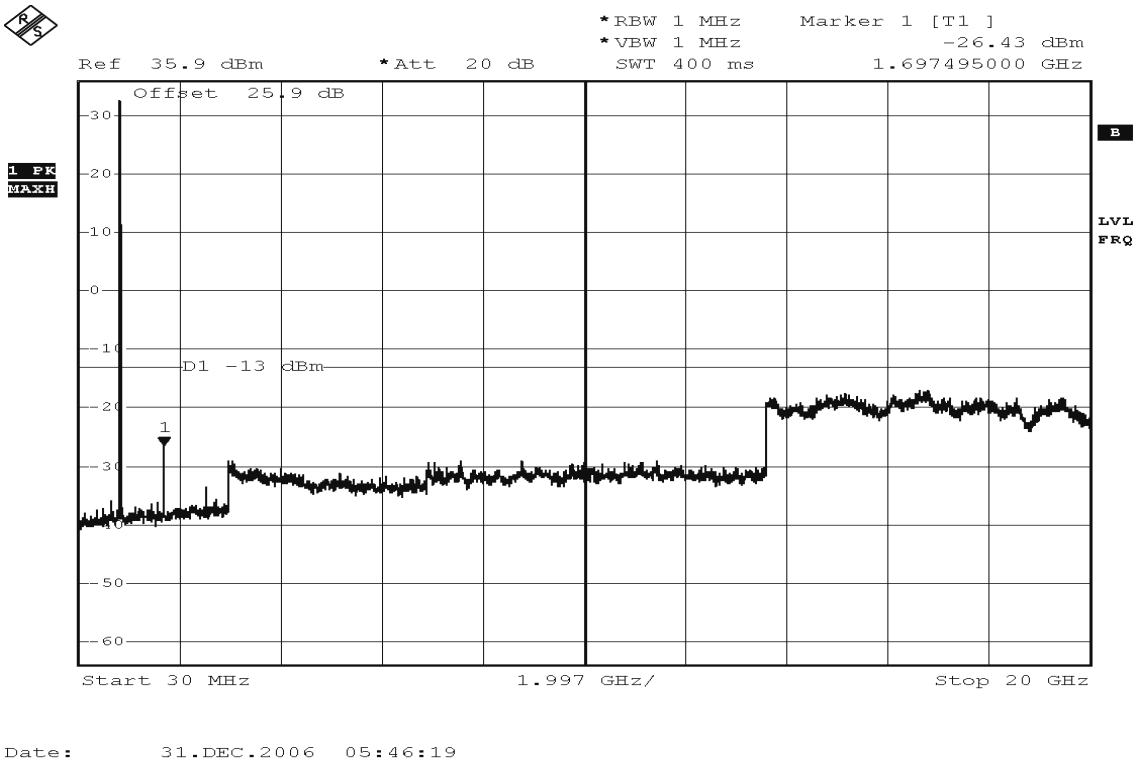


Figure 7-6: Out of Band emission at antenna terminals – GPRS CH High



GSM 1900

Figure 8-1: Out of Band emission at antenna terminals – GSM CH Low

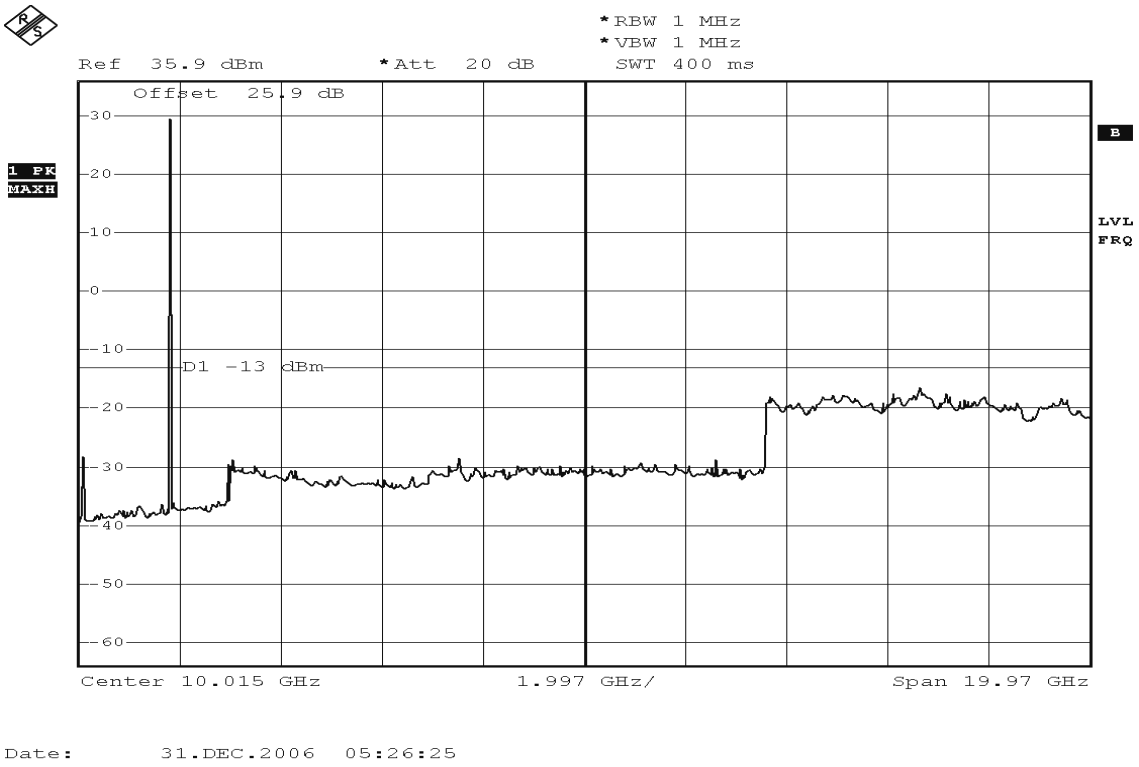


Figure 8-2: Out of Band emission at antenna terminals – GSM CH Mid

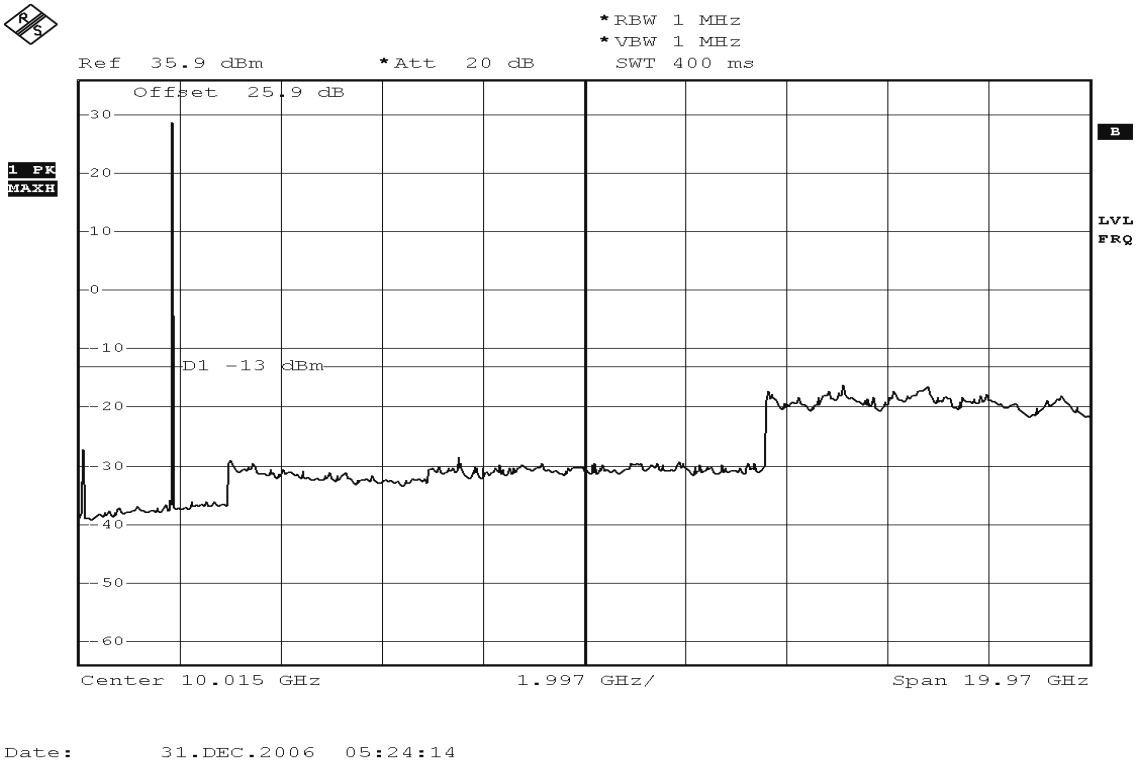
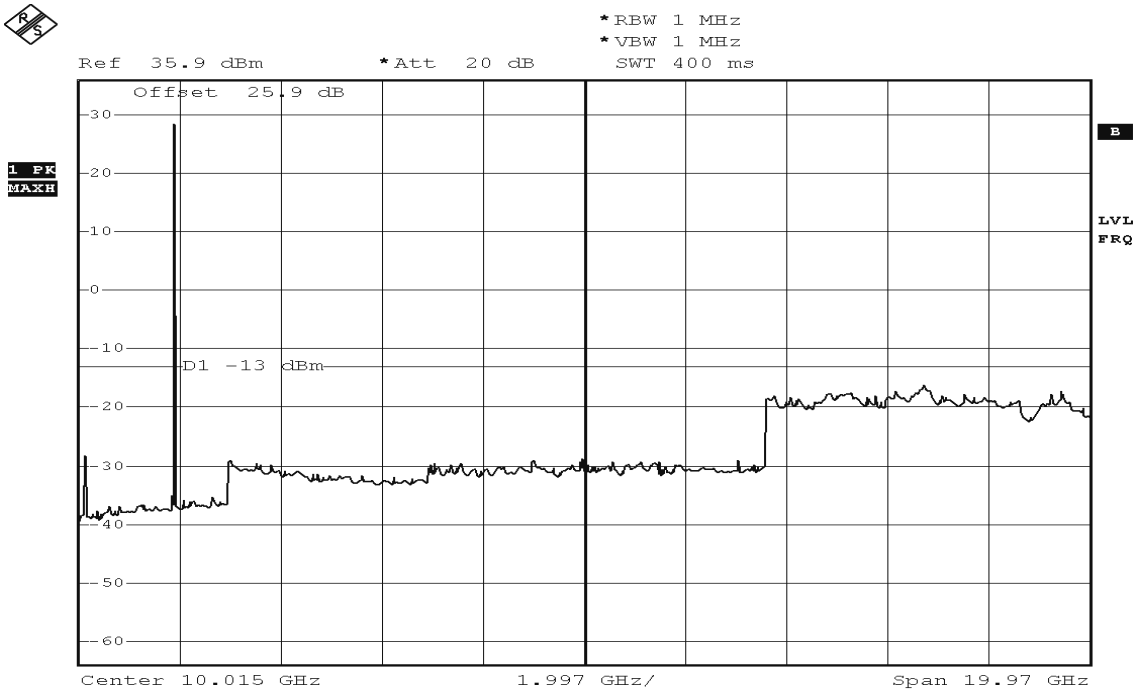


Figure 8-3: Out of Band emission at antenna terminals – GSM CH High



GPRS 1900

Figure 8-4: Out of Band emission at antenna terminals – GPRS CH Low

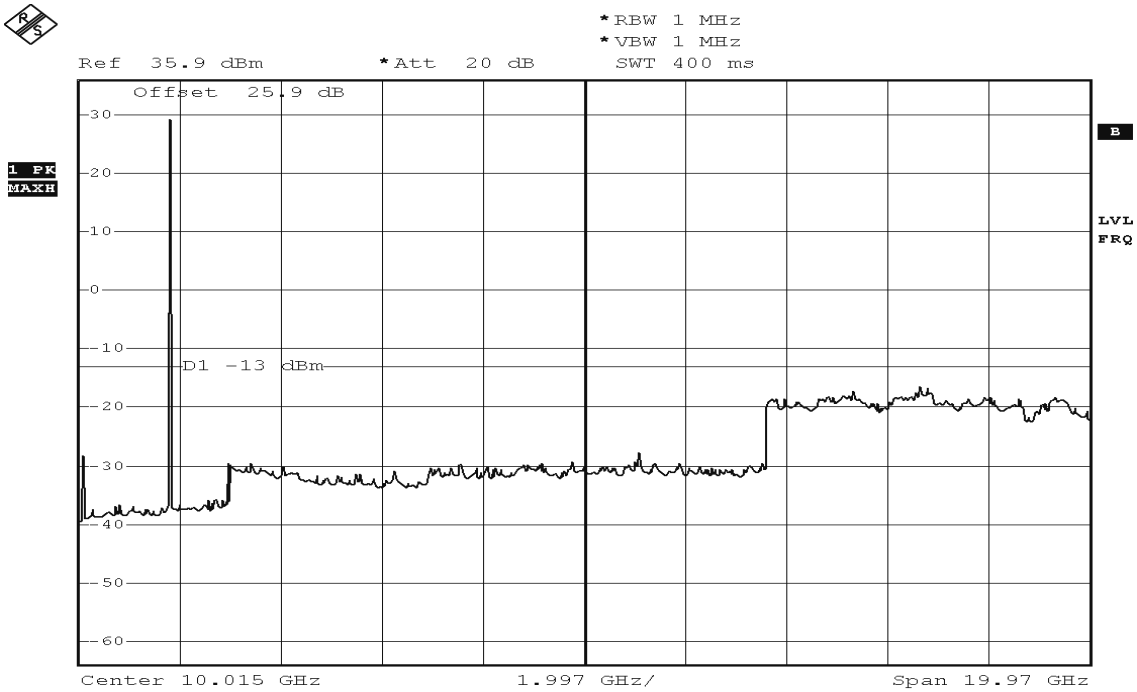


Figure 8-5: Out of Band emission at antenna terminals – GPRS CH Mid

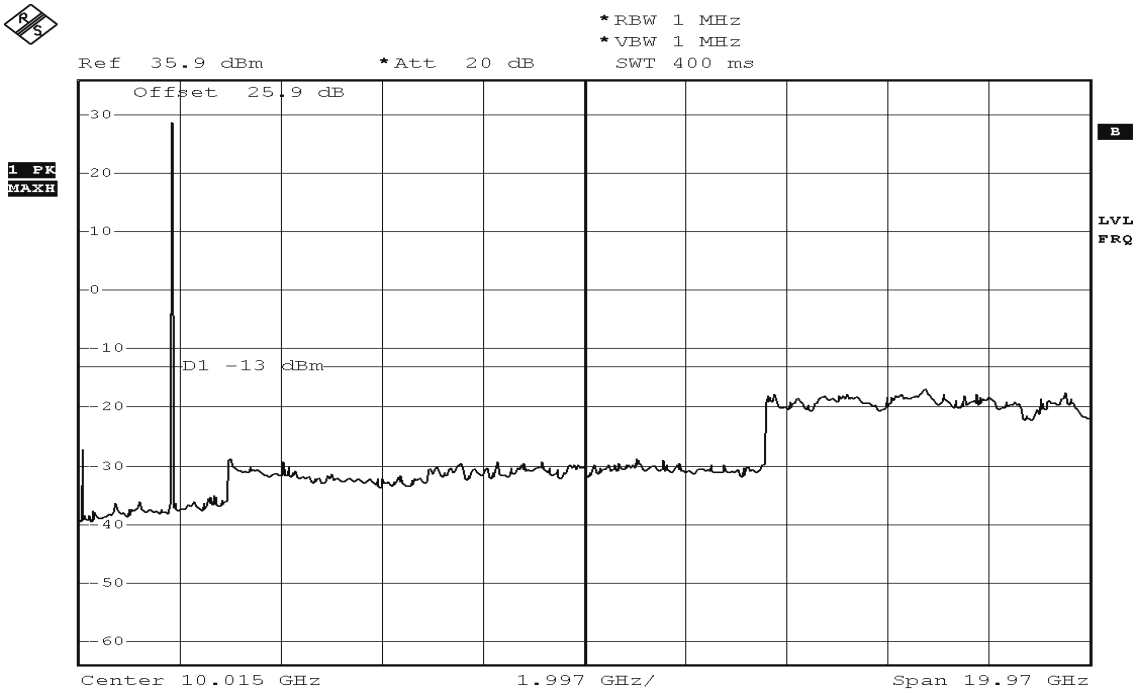
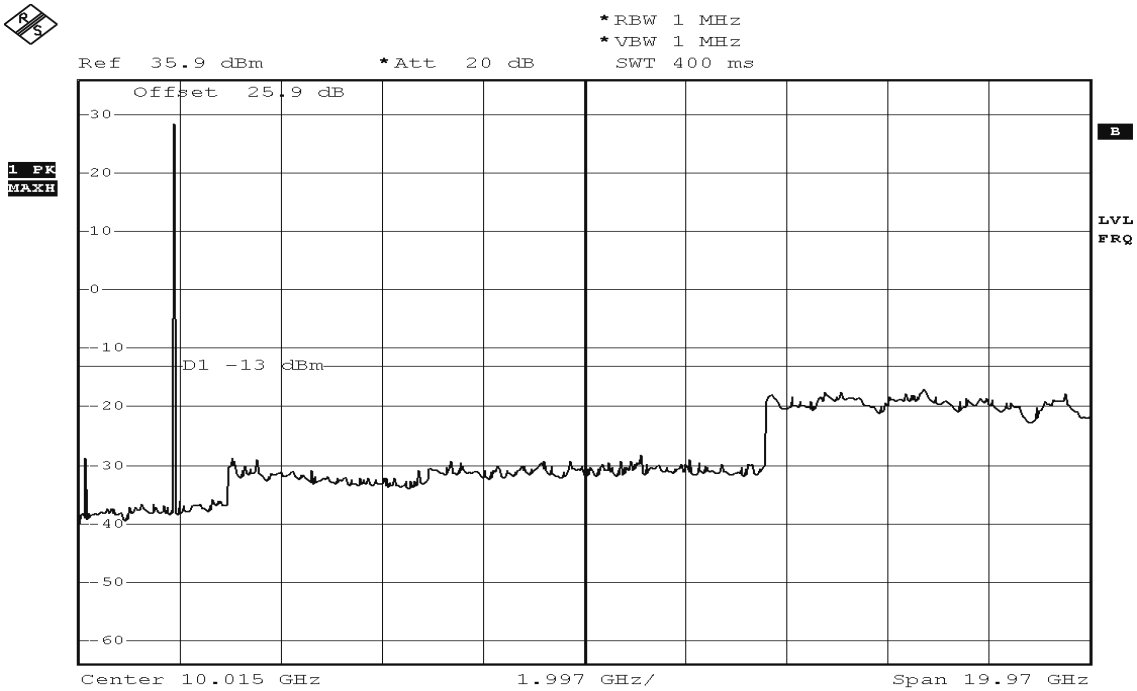


Figure 8-6: Out of Band emission at antenna terminals – GPRS CH High



GSM 850

Figure 9-1: Band Edge emissions – GSM CH Low

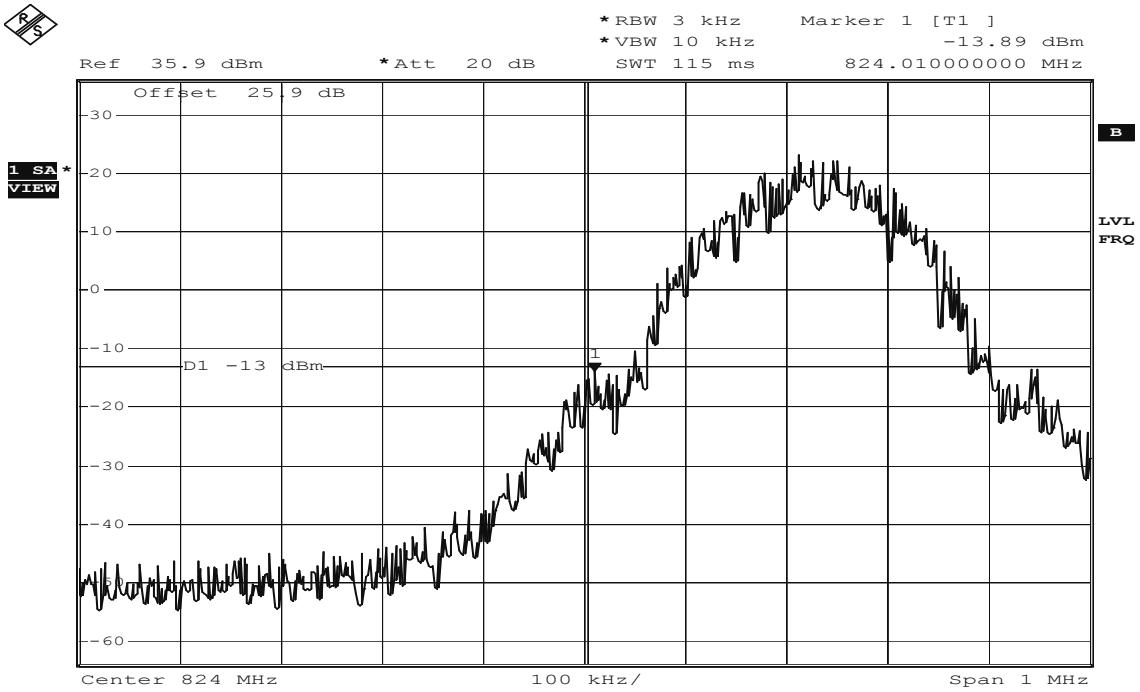
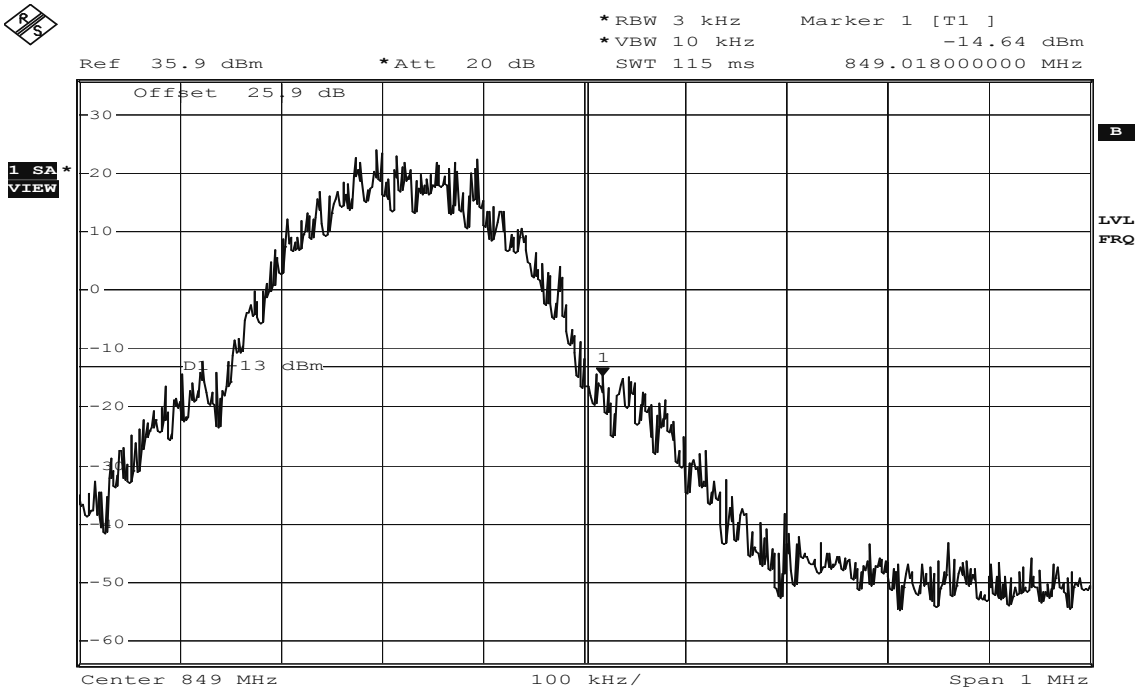


Figure 9-2: Band Edge emissions – GSM CH High



GPRS 850

Figure 9-3: Band Edge emissions – GPRS CH Low

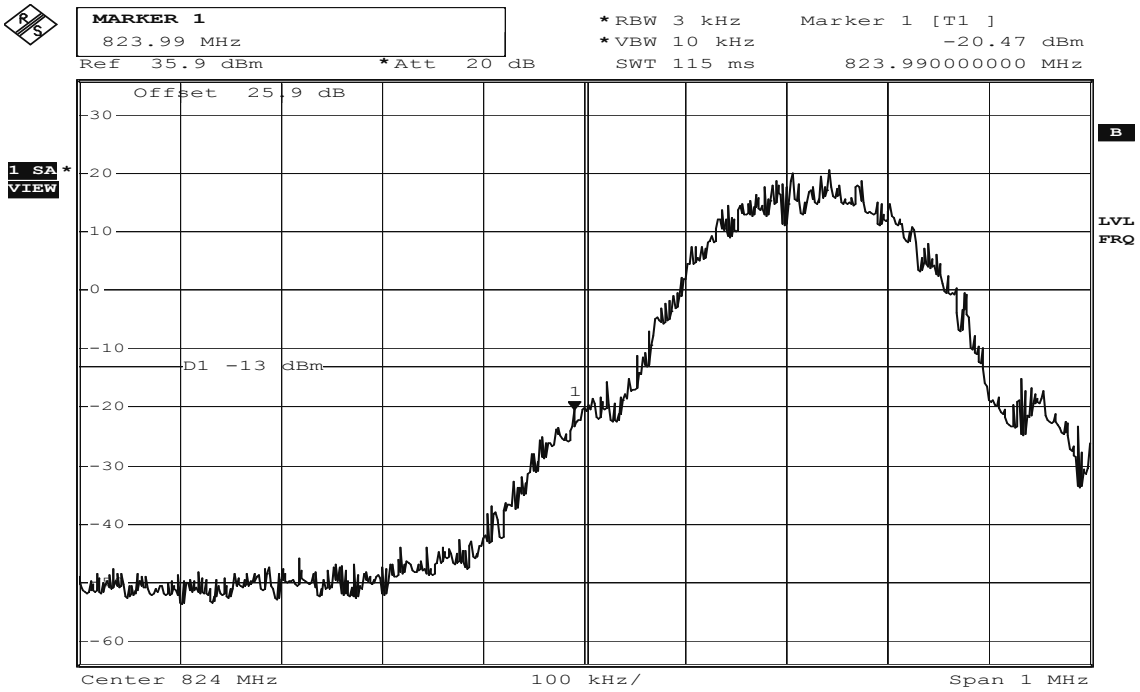
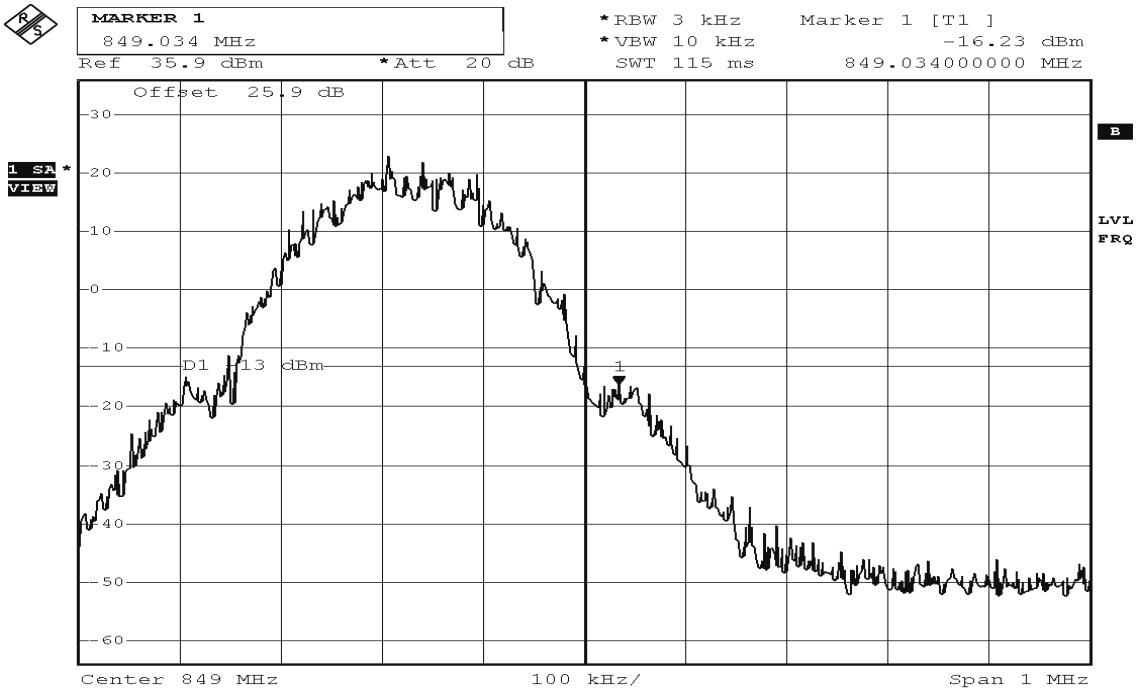
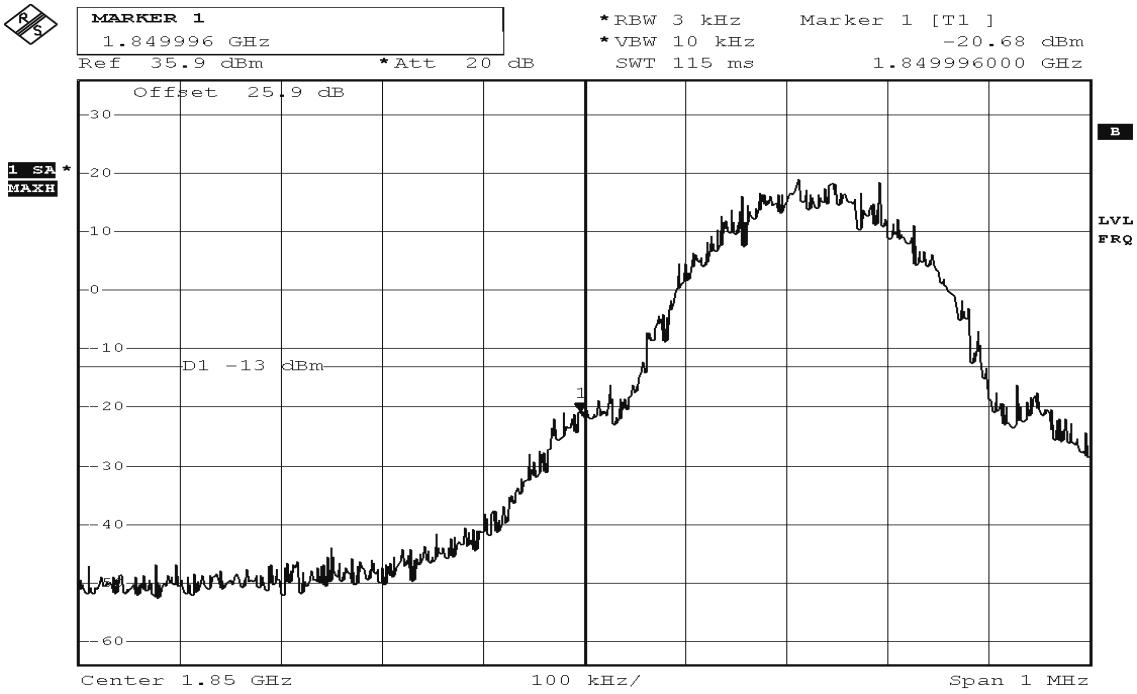


Figure 9-4: Band Edge emissions –GPRS CH High



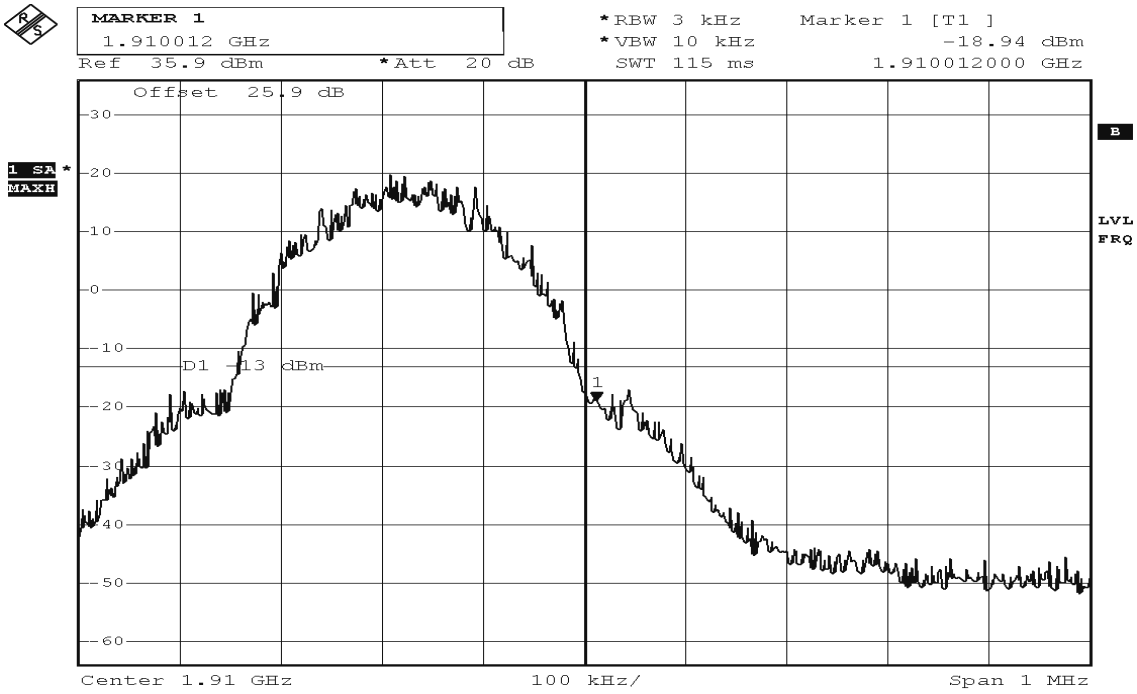
GSM 1900

Figure 10-1: Band Edge emissions – GSM CH Low



Date: 30.DEC.2006 13:05:56

Figure 10-2: Band Edge emissions – GSM CH High



Date: 30.DEC.2006 13:06:34

GPRS 1900

Figure 10-3: Band Edge emissions – GPRS CH Low

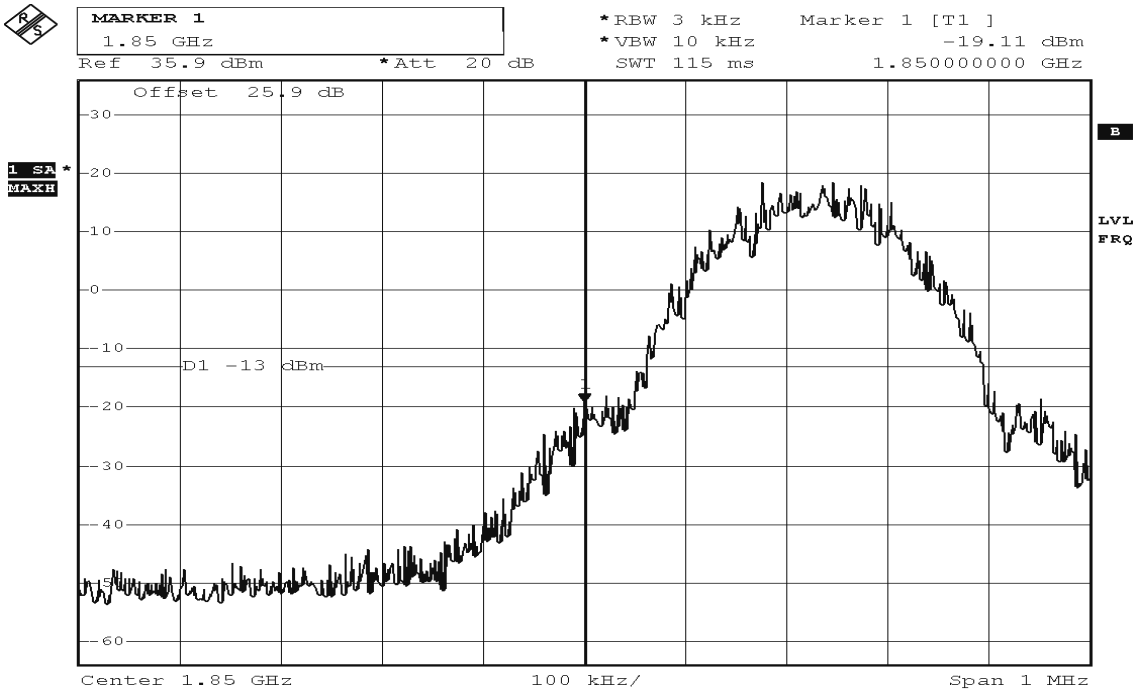
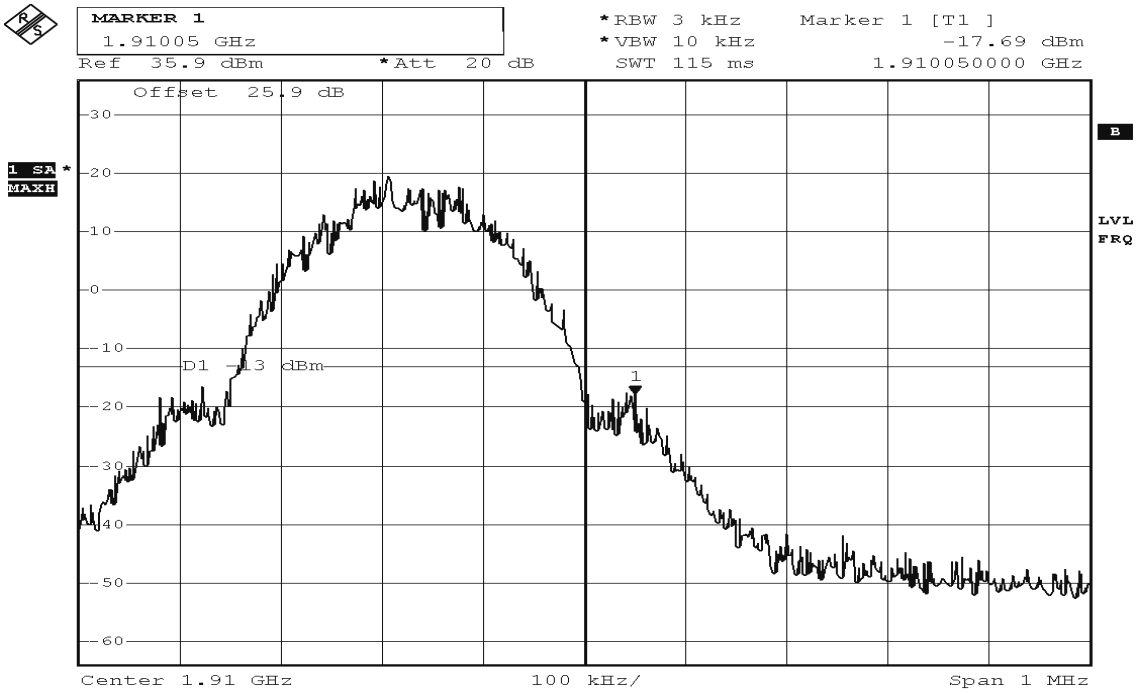


Figure 10-4: Band Edge emissions – GPRS CH High



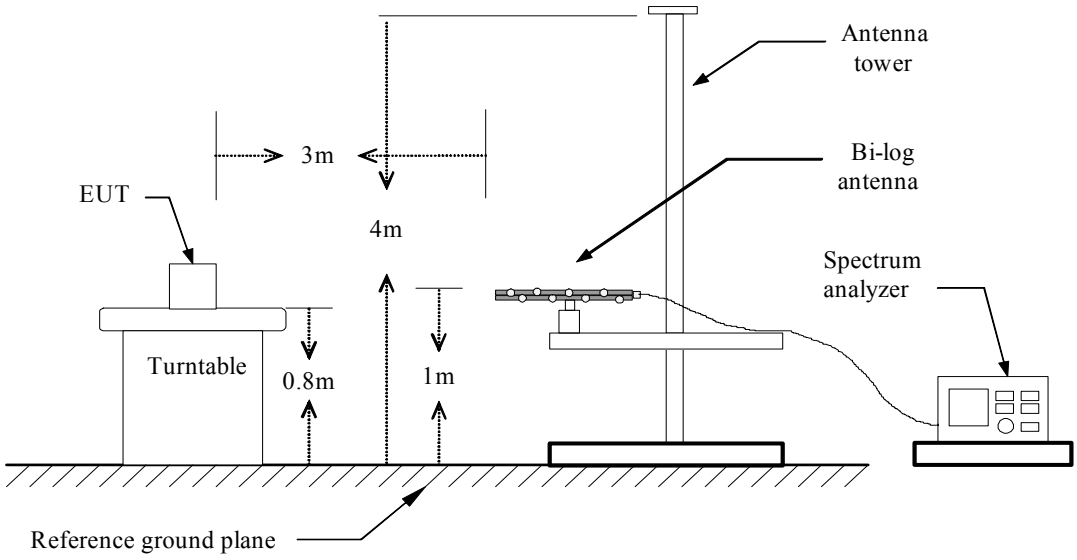
7.5 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

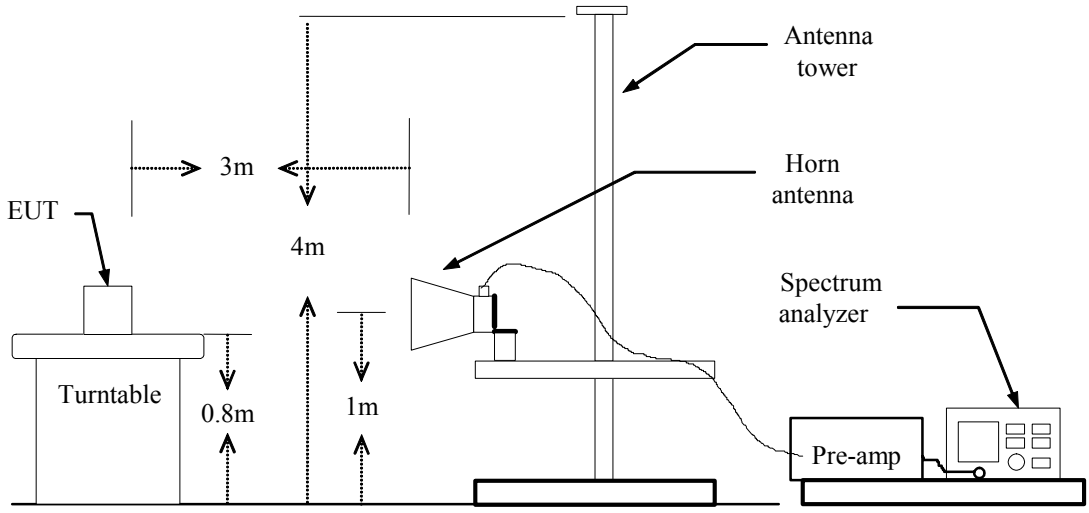
According to FCC §2.1053

Test Configuration

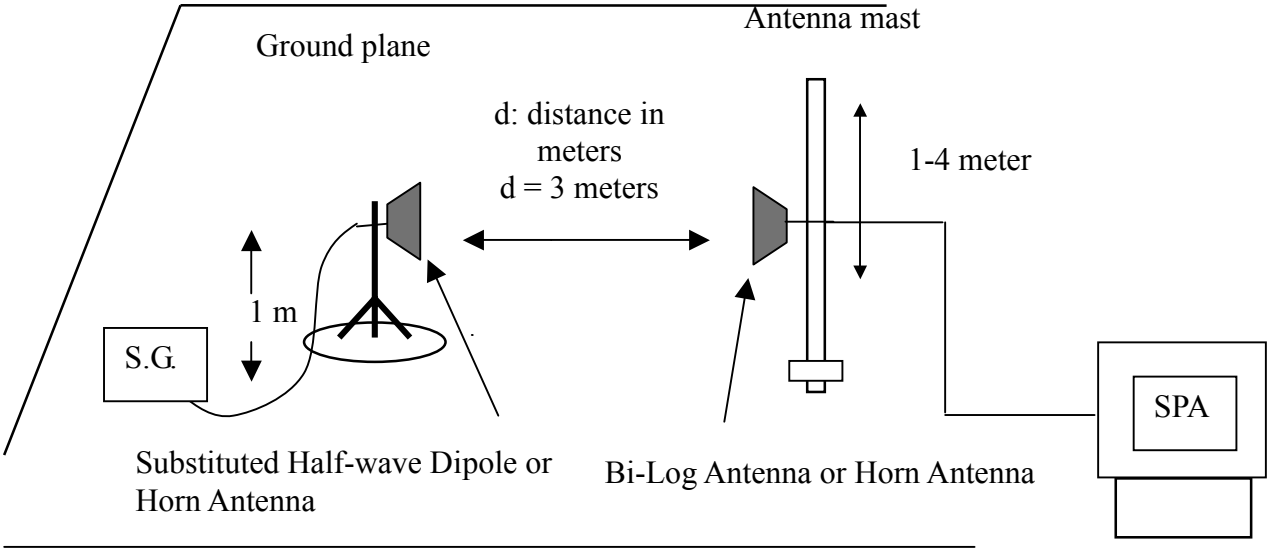
Below 1 GHz



Above 1 GHz



Substituted Method Test Set-up



TEST PROCEDURE

The EUT was placed on a non-conductive, the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission were identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

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

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

TEST RESULTS

Refer to the attached tabular data sheets.

Radiated Spurious Emission Measurement Result

Below 1GHz

Operation Mode: GSM 850 Closed Mode / TX / CH 128 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
90.14	V	-62.30	-8.67	-70.97	-13.00	-57.97
146.40	V	-65.39	-3.43	-68.83	-13.00	-55.83
198.78	V	-64.95	-4.60	-69.55	-13.00	-56.55
270.56	V	-65.22	-2.52	-67.74	-13.00	-54.74
N/A						
90.14	H	-64.42	-8.95	-73.37	-13.00	-60.37
149.31	H	-66.75	-3.49	-70.24	-13.00	-57.24
214.30	H	-64.91	-1.75	-66.66	-13.00	-53.66
379.20	H	-64.80	1.54	-63.26	-13.00	-50.26
N/A						

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GSM 850 Closed Mode / TX / CH 190 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
90.14	V	-62.45	-8.67	-71.12	-13.00	-58.12
150.28	V	-66.90	-2.23	-69.13	-13.00	-56.13
229.82	V	-65.40	-3.25	-68.65	-13.00	-55.65
256.98	V	-65.18	-2.81	-67.99	-13.00	-54.99
510.15	V	-65.31	3.72	-61.59	-13.00	-48.59
N/A						
90.14	H	-60.82	-8.95	-69.77	-13.00	-56.77
120.21	H	-65.37	-8.72	-74.09	-13.00	-61.09
150.28	H	-66.53	-3.39	-69.92	-13.00	-56.92
182.29	H	-65.33	-4.27	-69.60	-13.00	-56.60
342.34	H	-64.89	0.56	-64.33	-13.00	-51.33
N/A						

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GSM 850 Closed Mode / TX / CH 251 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
90.14	V	-61.22	-8.67	-69.89	-13.00	-56.89
150.28	V	-66.85	-2.23	-69.08	-13.00	-56.08
168.71	V	-65.43	-5.72	-71.15	-13.00	-58.15
192.96	V	-65.35	-4.85	-70.20	-13.00	-57.20
N/A						
90.14	H	-60.67	-8.95	-69.62	-13.00	-56.62
149.31	H	-66.50	-3.49	-69.98	-13.00	-56.98
175.50	H	-65.47	-4.28	-69.75	-13.00	-56.75
212.36	H	-65.68	-1.83	-67.50	-13.00	-54.50
234.67	H	-65.20	-2.24	-67.44	-13.00	-54.44
N/A						

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 850 Closed Mode / TX / CH 128 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
90.14	V	-60.31	-8.67	-68.98	-13.00	-55.98
148.34	V	-66.44	-2.72	-69.16	-13.00	-56.16
173.56	V	-65.35	-5.54	-70.89	-13.00	-57.89
274.44	V	-65.33	-2.64	-67.97	-13.00	-54.97
N/A						
90.14	H	-62.16	-8.95	-71.11	-13.00	-58.11
99.84	H	-61.82	-8.95	-70.78	-13.00	-57.78
149.31	H	-67.27	-3.49	-70.76	-13.00	-57.76
180.35		-66.30	-4.19	-70.49	-13.00	-57.49
222.06		-65.20	-1.60	-66.80	-13.00	-53.80
512.09		-62.36	3.58	-58.78	-13.00	-45.78

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 850 Closed Mode / TX / CH 190 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
90.14	V	-61.38	-8.67	-70.05	-13.00	-57.05
150.28	V	-65.94	-2.23	-68.17	-13.00	-55.17
246.31	V	-65.46	-2.77	-68.23	-13.00	-55.23
270.56	V	-64.84	-2.52	-67.36	-13.00	-54.36
N/A						
90.14	H	-61.19	-8.95	-70.14	-13.00	-57.14
149.31	H	-66.71	-3.49	-70.19	-13.00	-57.19
217.21	H	-65.78	-1.64	-67.42	-13.00	-54.42
316.15	H	-65.28	-0.60	-65.88	-13.00	-52.88
N/A						

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 850 Closed Mode / TX / CH 251 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
89.17	V	-62.13	-8.37	-70.49	-13.00	-57.49
121.18	V	-65.10	-7.47	-72.57	-13.00	-59.57
150.28	V	-66.39	-2.23	-68.62	-13.00	-55.62
172.59	V	-65.35	-5.57	-70.92	-13.00	-57.92
N/A						
90.14	H	-61.48	-8.95	-70.43	-13.00	-57.43
126.03	H	-64.48	-8.90	-73.39	-13.00	-60.39
149.31	H	-66.28	-3.49	-69.77	-13.00	-56.77
182.29	H	-65.05	-4.27	-69.32	-13.00	-56.32
214.30	H	-66.28	-1.75	-68.03	-13.00	-55.03
N/A						

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Above 1GHz

Operation Mode: GSM 850 Closed Mode / TX / CH 128 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
1651.00	V	-46.18	4.58	-41.60	-13.00	-28.60
2470.00	V	-52.93	9.12	-43.82	-13.00	-30.82
3296.00	V	-52.06	11.37	-40.68	-13.00	-27.68
4122.00	V	-58.87	11.91	-46.96	-13.00	-33.96
4948.00	V	-55.90	12.65	-43.26	-13.00	-30.26
N/A						
1651.00	H	-46.24	4.88	-41.37	-13.00	-28.37
2470.00	H	-50.67	9.31	-41.36	-13.00	-28.36
3296.00	H	-52.72	11.24	-41.48	-13.00	-28.48
4122.00	H	-56.09	11.77	-44.32	-13.00	-31.32
5767.00	H	-58.76	13.32	-45.44	-13.00	-32.44
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GSM 850 Closed Mode / TX / CH 190 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
1672.00	V	-46.73	4.75	-41.98	-13.00	-28.98
2512.00	V	-53.88	9.28	-44.60	-13.00	-31.60
3345.00	V	-57.35	11.36	-45.99	-13.00	-32.99
5018.00	V	-55.32	12.69	-42.63	-13.00	-29.63
N/A						
1672.00	H	-45.55	5.07	-40.48	-13.00	-27.48
2512.00	H	-50.96	9.43	-41.53	-13.00	-28.53
4185.00	H	-56.59	11.89	-44.71	-13.00	-31.71
5018.00	H	-59.01	12.91	-46.10	-13.00	-33.10
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GSM 850 Closed Mode / TX / CH 251 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
1700.00	V	-49.78	4.98	-44.80	-13.00	-31.80
2547.00	V	-56.66	9.43	-47.23	-13.00	-34.23
3394.00	V	-51.89	11.35	-40.55	-13.00	-27.55
4241.00	V	-51.55	12.04	-39.51	-13.00	-26.51
5095.00	V	-53.52	12.71	-40.81	-13.00	-27.81
N/A						
1700.00	H	-49.15	5.34	-43.81	-13.00	-30.81
2547.00	H	-56.58	9.57	-47.01	-13.00	-34.01
3394.00	H	-52.94	11.18	-41.76	-13.00	-28.76
4248.00	H	-50.14	12.00	-38.14	-13.00	-25.14
5095.00	H	-58.63	12.92	-45.71	-13.00	-32.71
5942.00	H	-57.16	13.54	-43.62	-13.00	-30.62

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 850 Closed Mode / TX / CH 128 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
1651.00	V	-49.91	4.58	-45.33	-13.00	-32.33
2470.00	V	-57.59	9.12	-48.47	-13.00	-35.47
3296.00	V	-55.32	11.37	-43.95	-13.00	-30.95
4122.00	V	-58.77	11.91	-46.86	-13.00	-33.86
4948.00	V	-52.47	12.65	-39.83	-13.00	-26.83
N/A						
1651.00	H	-50.79	4.88	-45.91	-13.00	-32.91
2470.00	H	-57.46	9.31	-48.15	-13.00	-35.15
3296.00	H	-57.68	11.24	-46.44	-13.00	-33.44
4122.00	H	-56.35	11.77	-44.57	-13.00	-31.57
5767.00	H	-58.84	13.32	-45.53	-13.00	-32.53
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 850 Closed Mode / TX / CH 190 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
1672.00	V	-50.56	4.75	-45.81	-13.00	-32.81
2512.00	V	-55.25	9.28	-45.98	-13.00	-32.98
3345.00	V	-58.29	11.36	-46.93	-13.00	-33.93
4185.00	V	-58.65	11.98	-46.67	-13.00	-33.67
5018.00	V	-56.44	12.69	-43.75	-13.00	-30.75
N/A						
1672.00	H	-49.86	5.07	-44.78	-13.00	-31.78
4185.00	H	-56.09	11.89	-44.21	-13.00	-31.21
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 850 Closed Mode / TX / CH 251 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
1700.00	V	-51.74	4.98	-46.76	-13.00	-33.76
2547.00	V	-58.14	9.43	-48.70	-13.00	-35.70
3394.00	V	-55.41	11.35	-44.06	-13.00	-31.06
4241.00	V	-51.62	12.04	-39.58	-13.00	-26.58
5095.00	V	-54.23	12.71	-41.52	-13.00	-28.52
N/A						
1700.00	H	-53.89	5.34	-48.56	-13.00	-35.56
3394.00	H	-59.47	11.18	-48.29	-13.00	-35.29
4241.00	H	-51.83	11.99	-39.84	-13.00	-26.84
5095.00	H	-58.47	12.92	-45.55	-13.00	-32.55
214.30	H	-66.28	-1.75	-68.03	-13.00	-55.03
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Below 1GHz

Operation Mode: GSM 1900 Slide Mode / TX / CH 512 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
90.14	V	-62.02	-8.67	-70.69	-13.00	-57.69
106.63	V	-72.20	-8.10	-80.29	-13.00	-67.29
120.21	V	-73.33	-7.51	-80.84	-13.00	-67.84
150.28	V	-75.58	-2.23	-77.81	-13.00	-64.81
364.65	V	-74.41	0.85	-73.56	-13.00	-60.56
789.51	V	-73.92	7.88	-66.04	-13.00	-53.04
90.14	H	-62.12	-8.95	-71.07	-13.00	-58.07
126.03	H	-68.26	-8.90	-77.16	-13.00	-64.16
155.13	H	-71.54	-6.83	-78.37	-13.00	-65.37
220.12	H	-74.25	-1.53	-75.78	-13.00	-62.78
232.73	H	-73.67	-2.08	-75.76	-13.00	-62.76
372.41	H	-73.91	1.24	-72.67	-13.00	-59.67

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GSM 1900 Slide Mode / TX / CH 661 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
89.17	V	-63.84	-8.37	-72.21	-13.00	-59.21
120.21	V	-73.26	-7.51	-80.77	-13.00	-67.77
150.28	V	-76.37	-2.23	-78.61	-13.00	-65.61
220.12	V	-74.96	-3.60	-78.56	-13.00	-65.56
326.82	V	-74.40	0.11	-74.29	-13.00	-61.29
556.71	V	-73.82	4.45	-69.37	-13.00	-56.37
89.17	H	-62.51	-8.74	-71.25	-13.00	-58.25
106.63	H	-71.77	-8.44	-80.21	-13.00	-67.21
120.21	H	-69.57	-8.72	-78.29	-13.00	-65.29
126.03	H	-64.29	-8.90	-73.19	-13.00	-60.19
155.13	H	-72.53	-6.83	-79.36	-13.00	-66.36
233.70	H	-74.35	-2.16	-76.51	-13.00	-63.51

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GSM 1900 Slide Mode / TX / CH 810 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
60.07	V	-70.03	7.65	-62.38	-13.00	-49.38
89.17	V	-64.43	-8.37	-72.80	-13.00	-59.80
151.25	V	-69.53	-2.65	-72.17	-13.00	-59.17
301.60	V	-69.46	-1.26	-70.72	-13.00	-57.72
377.26	V	-69.52	1.17	-68.35	-13.00	-55.35
402.48	V	-69.83	1.45	-68.37	-13.00	-55.37
60.07	H	-72.51	6.49	-66.02	-13.00	-53.02
90.14	H	-58.31	-8.95	-67.26	-13.00	-54.26
120.21	H	-60.63	-8.72	-69.35	-13.00	-56.35
151.25	H	-64.43	-4.08	-68.51	-13.00	-55.51
377.26	H	-72.18	1.45	-70.73	-13.00	-57.73
402.48	H	-70.50	2.06	-68.44	-13.00	-55.44

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 1900 Slide Mode / TX / CH 512 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
89.17	V	-63.05	-8.37	-71.41	-13.00	-58.41
106.63	V	-71.45	-8.10	-79.54	-13.00	-66.54
120.21	V	-71.56	-7.51	-79.06	-13.00	-66.06
150.28	V	-76.51	-2.23	-78.75	-13.00	-65.75
324.88	V	-75.20	0.07	-75.12	-13.00	-62.12
N/A						
90.14	H	-62.23	-8.95	-71.18	-13.00	-58.18
120.21	H	-67.36	-8.72	-76.09	-13.00	-63.09
126.03	H	-64.97	-8.90	-73.87	-13.00	-60.87
141.55	H	-72.08	-6.77	-78.85	-13.00	-65.85
221.09	H	-75.35	-1.57	-76.91	-13.00	-63.91
237.58	H	-72.34	-2.48	-74.81	-13.00	-61.81

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 1900 Slide Mode / TX / CH 661 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
89.17	V	-63.11	-8.37	-71.47	-13.00	-58.47
94.99	V	-71.14	-8.70	-79.84	-13.00	-66.84
106.63	V	-70.80	-8.10	-78.90	-13.00	-65.90
126.03	V	-72.48	-7.28	-79.76	-13.00	-66.76
150.28	V	-76.48	-2.23	-78.72	-13.00	-65.72
157.07	V	-73.21	-5.13	-78.33	-13.00	-65.33
89.17	H	-62.56	-8.74	-71.30	-13.00	-58.30
106.63	H	-72.82	-8.44	-81.26	-13.00	-68.26
126.03	H	-66.86	-8.90	-75.76	-13.00	-62.76
149.31	H	-75.58	-3.49	-79.06	-13.00	-66.06
170.65	H	-74.81	-4.39	-79.20	-13.00	-66.20
234.67	H	-74.25	-2.24	-76.49	-13.00	-63.49

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 1900 Slide Mode / TX / CH 810 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
90.14	V	-61.81	-8.67	-70.48	-13.00	-57.48
95.96	V	-71.29	-8.71	-80.00	-13.00	-67.00
120.21	V	-72.89	-7.51	-80.39	-13.00	-67.39
139.61	V	-74.51	-5.83	-80.34	-13.00	-67.34
151.25	V	-75.60	-2.65	-78.24	-13.00	-65.24
236.61	V	-75.30	-2.94	-78.24	-13.00	-65.24
89.17	H	-64.12	-8.74	-72.87	-13.00	-59.87
120.21	H	-69.77	-8.72	-78.49	-13.00	-65.49
136.70	H	-71.54	-7.96	-79.49	-13.00	-66.49
155.13	H	-72.23	-6.83	-79.06	-13.00	-66.06
235.64	H	-74.05	-2.32	-76.37	-13.00	-63.37
326.82	H	-74.33	-0.07	-74.40	-13.00	-61.40

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Above 1GHz

Operation Mode: GSM 1900 Slide Mode / TX / CH 512 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
3702.00	V	-54.57	11.50	-43.07	-13.00	-30.07
5550.00	V	-57.49	12.90	-44.59	-13.00	-31.59
N/A						
3702.00	H	-51.46	11.30	-40.17	-13.00	-27.17
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GSM 1900 Slide Mode / TX / CH 661 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
3758.00	V	-54.33	11.55	-42.77	-13.00	-29.77
5641.00	V	-57.74	13.06	-44.69	-13.00	-31.69
N/A						
3758.00	H	-49.26	11.34	-37.92	-13.00	-24.92
5641.00	H	-57.83	13.15	-44.68	-13.00	-31.68
7524.00	H	-58.56	16.35	-42.21	-13.00	-29.21
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GSM 1900 Slide Mode / TX / CH 810 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
3821.00	V	-54.13	11.61	-42.52	-13.00	-29.52
5732.00	V	-53.85	13.21	-40.64	-13.00	-27.64
N/A						
3821.00	H	-50.16	11.40	-38.77	-13.00	-25.77
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 1900 Slide Mode / TX / CH 512 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
3702.00	V	-50.65	11.50	-39.15	-13.00	-26.15
7398.00	V	-59.66	16.15	-43.51	-13.00	-30.51
N/A						
3702.00	H	-46.77	11.30	-35.47	-13.00	-22.47
5550.00	H	-59.07	13.03	-46.04	-13.00	-33.04
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 1900 Slide Mode / TX / CH 661 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
3758.00	V	-50.74	11.55	-39.18	-13.00	-26.18
N/A						
3758.00	H	-45.00	11.34	-33.66	-13.00	-20.66
5571.00	H	-59.39	13.06	-46.33	-13.00	-33.33
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode: GPRS 1900 Slide Mode / TX / CH 810 **Test Date:** December 26, 2006

Temperature: 25°C **Tested by:** Skyman Tsai

Humidity: 55 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Antenna Polarization (V/H)	Reading (dBm)	Correction Factor (dB)	Emission level (dBm)	Limit (dBm)	Margin (dB)
3821.00	V	-51.94	11.61	-40.33	-13.00	-27.33
5732.00	V	-55.24	13.21	-42.02	-13.00	-29.02
N/A						
3821.00	H	-48.78	11.40	-37.39	-13.00	-24.39
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

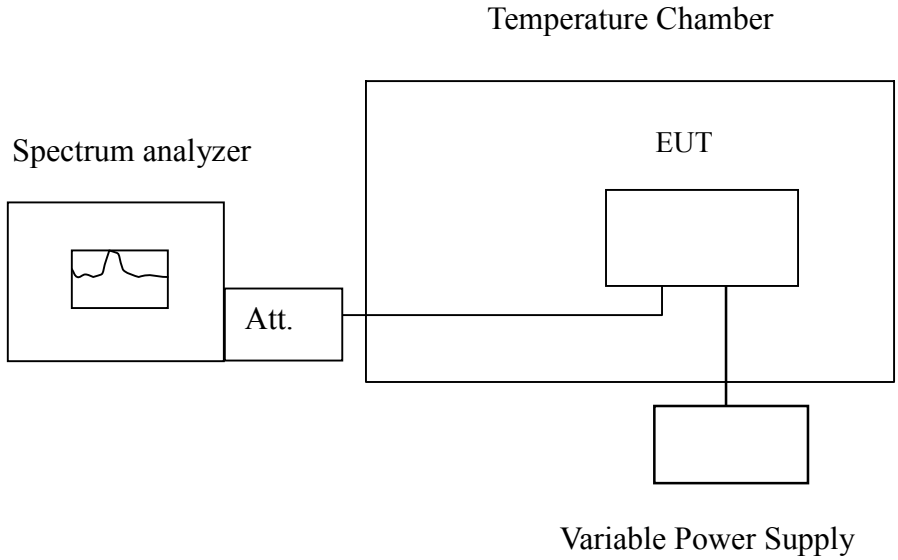
7.6 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

LIMIT

According to FCC §2.1055, FCC §24.235.

Frequency Tolerance: 2.5 ppm

Test Configuration



Remark: *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 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST RESULTS

No non-compliance noted.

Reference Frequency: GSM Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090 Hz				
Power Supply Vdc	**Environment Temperature (°C)**	**Frequency (Hz)**	**Delta (Hz)**	**Limit (Hz)**
3.7	50	83599988	-5	2090
	40	83599996	3	
	30	83600011	18	
	20	83599993	0	
	10	83600009	16	
	0	83600023	30	
	-10	83599986	-7	
	-20	83599991	-2	
	-30	83599982	-11	

Reference Frequency: GSM Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	**Environment Temperature (°C)**	**Frequency (Hz)**	**Delta (Hz)**	**Limit (Hz)**
3.7	50	1879999988	-7	4700
	40	1879999996	1	
	30	1880000003	8	
	20	1879999995	0	
	10	1879999987	-8	
	0	1880000015	20	
	-10	1879999988	-7	
	-20	1880000014	19	
	-30	1879999991	-4	

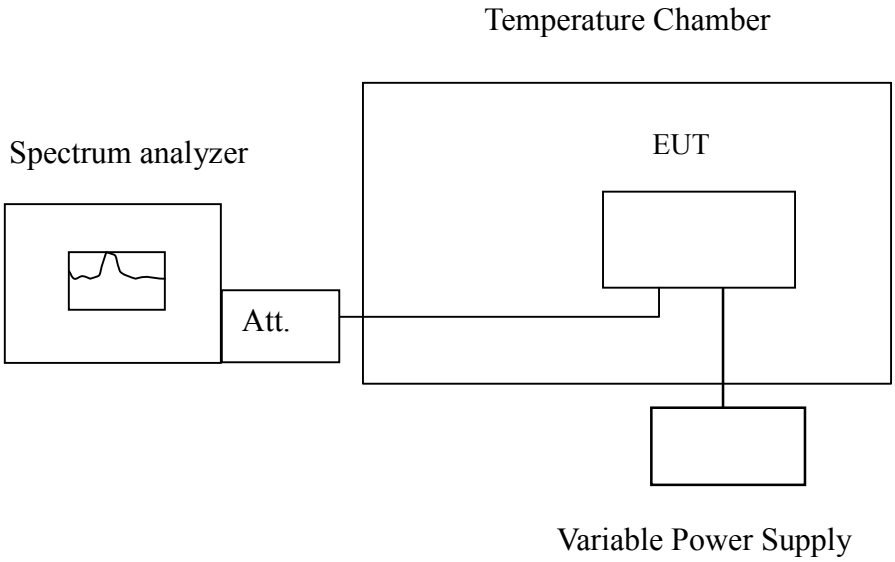
7.7 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

LIMIT

According to FCC §2.1055, FCC §24.235,

Frequency Tolerance: 2.5 ppm.

Test Configuration



Remark: *Measurement setup for testing on Antenna connector.*

TEST PROCEDURE

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (± 15%) and endpoint, record the maximum frequency change.

TEST RESULTS

No non-compliance noted.

Reference Frequency: GSM Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090Hz				
Power Supply Vdc	**Environment Temperature (°C)**	**Frequency (Hz)**	**Delta (Hz)**	**Limit (Hz)**
4.2	20	83600002	9	2090
3.7		83599993	0	
3.3 (End Point)		83599988	-5	

Reference Frequency: GSM Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	**Environment Temperature (°C)**	**Frequency (Hz)**	**Delta (Hz)**	**Limit (Hz)**
4.2	20	1879999983	-12	4700
3.7		1879999995	0	
3.3 (End Point)		1879999986	-9	

7.8 POWERLINE CONDUCTED EMISSIONS

LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBµV)	
	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

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete..

TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Operation Mode:	Normal Link with charging	**Test Date:**	December 28, 2006
Temperature:	20°C	**Tested by:**	Skyman Tsai
Humidity:	55% RH		

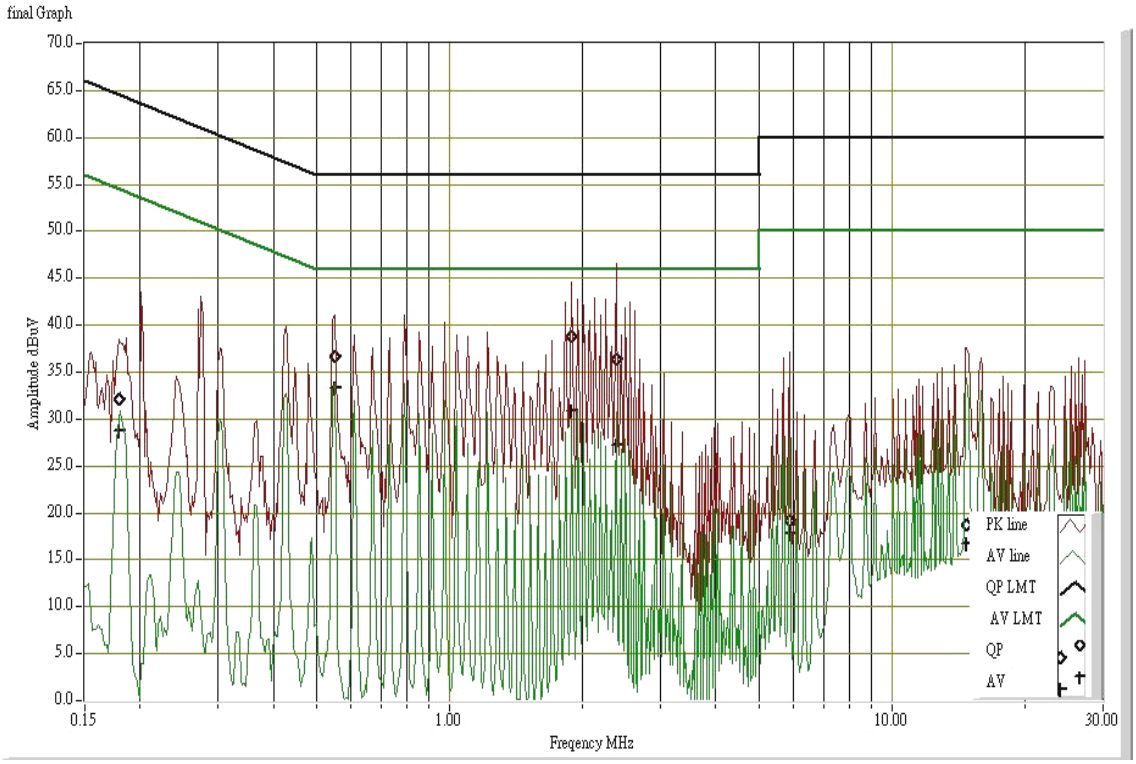
Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.179	32.150	28.740	0.142	32.292	28.882	64.532	54.532	-32.240	-25.650	L1
0.550	36.670	33.290	0.100	36.770	33.390	56.000	46.000	-19.230	-12.610	L1
1.890	38.730	30.960	0.100	38.830	31.060	56.000	46.000	-17.170	-14.940	L1
2.382	36.410	27.260	0.100	36.510	27.360	56.000	46.000	-19.490	-18.640	L1
5.861	19.150	17.770	0.286	19.436	18.056	60.000	50.000	-40.564	-31.944	L1
14.769	18.780	16.760	0.795	19.575	17.555	60.000	50.000	-40.425	-32.445	L1
0.180	30.380	27.180	0.140	30.520	27.320	64.486	54.486	-33.966	-27.166	L2
0.372	8.990	5.000	0.100	9.090	5.100	58.456	48.456	-49.366	-43.356	L2
2.130	38.270	29.350	0.100	38.370	29.450	56.000	46.000	-17.630	-16.550	L2
2.253	35.070	27.210	0.100	35.170	27.310	56.000	46.000	-20.830	-18.690	L2
5.907	33.450	32.700	0.291	33.741	32.991	60.000	50.000	-26.259	-17.009	L2
26.634	14.250	11.540	1.265	15.515	12.805	60.000	50.000	-44.485	-37.195	L2

Remark:

1. *Measuring frequencies from 0.15 MHz to 30MHz.*
2. *The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.*
3. *The IF bandwidth of SPA between 0.15MHz to 30MHz was 10kHz; the IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9kHz;*
4. *L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)*

Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)