

FCC Part 22H & 24E & 27

Measurement and Test Report

For

Bulltech Electronic Products S.L
Gran Via, 64, 2-1, 28013 Madrid, Spain.

FCC ID: 2AAM3SYRENI500

FCC Rules:	<u>FCC Part 22H, FCC Part 24E, FCC Part 27</u>
Product Description:	<u>Mobile phone</u>
Tested Model:	<u>Syreni 500</u>
Report No.:	<u>STR13128307I-1</u>
Tested Date:	<u>2014-01-02 to 2014-01-04</u>
Issued Date:	<u>2014-01-10</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM. Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Bulltech Electronic Products S.L
Address of applicant: Gran Via, 64, 2-1, 28013 Madrid, Spain.

Manufacturer: Gipo Holdings Limited
Address of manufacturer: East 1201, Phase II, Tian'an Hi-tech Plaza, Futian District, Shenzhen, China

General Description of EUT	
Product Name:	Mobile phone
Brand Name:	SZENIO, GIPO, AKAI, XION, Everaj
Model No.:	Syreni 500
Adding Mode:	PHA-5880, XI-CE600, U5, U6, Syreni 550
Software Version:	Hugiga HWA860 20131214-190427
Hardware Version:	A25_MB_V2.0
Rated Voltage:	DC 3.7V
Battery:	1900mAh
Power Adaptor:	Input 100-240V, 50/60Hz, Output DC 5V
Device Category:	Portable Device
<p><i>The EUT is GSM850/900/PCS1800/1900, WCDMA Band I, Band V network mobile phone. the mobile phone is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS class 12 for GSM850 and GSM1900 and Bluetooth, Wi-Fi, and camera functions. The EUT has two SIM sockets while with the same RF circuit and function controlled by the firmware software. For more information see the following datasheet</i></p>	
<p><i>The test data is gathered from a production sample, provided by the manufacturer. The other model listed in the report has different appearance only of Syreni 500 without circuit and electronic construction changed, declared by the manufacturer.</i></p>	

Technical Characteristics of EUT	
2G	
Support Networks:	GSM, GPRS
Support Band:	GSM850/PCS1900
Uplink Frequency:	GSM/GPRS 850: 824~849MHz GSM/GPRS 1900: 1850~1910MHz
Downlink Frequency:	GSM/GPRS 850: 869~894MHz GSM/GPRS 1900: 1930~1990MHz
RF Output Power:	GSM850: 31.72dBm, GSM1900: 29.18dBm
Type of Modulation:	GMSK, QPSK
Antenna Type:	Internal Antenna
Antenna Gain:	GSM850: -1.8dBi GSM1900: 0.4dBi
GPRS Class:	Class 12
3G	
Support Networks:	WCDMA
Support Band:	WCDMA Band V
Uplink Frequency:	WCDMA Band V: 824~849MHz
Downlink Frequency:	WCDMA Band V: 869~894MHz
RF Output Power:	WCDMA Band V: 22.76dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	WCDMA Band V: -1.7dBi

1.2 Test Standards

The following report is prepared on behalf of the Bulltech Electronic Products S.L in accordance with FCC Part 2 subpart J, FCC Part 22 subpart H and FCC Part 24 subpart E and FCC Part 27 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 2 subpart J, FCC Part 22 subpart H and FCC Part 24 subpart E and FCC Part 27 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with TIA/EIA 603-C: 2004 and ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

- **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	GSM 850	Low, Middle, High Channels
TM2	GPRS 850	Low, Middle, High Channels
TM3	GSM 1900	Low, Middle, High Channels
TM4	GPRS 1900	Low, Middle, High Channels
TM5	WCDMA Band V	Low, Middle, High Channels
TM6	HSUPA Band V	Low, Middle, High Channels
TM7	HSDPA Band V	Low, Middle, High Channels

Testing Configure			
Support Band	Support Standard	Channel Frequency	Channel Number
GSM 850	GSM/GPRS/EDGE	824.2 MHz	128
		836.6 MHz	190
		848.8 MHz	251
PCS 1900	GSM/GPRS/EDGE	1850.2 MHz	512
		1880.0 MHz	661
		1909.8 MHz	810
WCDMA Band V	WCDMA/HSUPA/HSDPA	826.4 MHz	4132
		836.4 MHz	4182
		846.6 MHz	4233
Note: the transmitter has been tested on the communications mode of GSM, GPRS,WCDMA, HSUPA, HSDPA compliance test and record the worst case.			

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB Cable	1.2	Shielded	Without Ferrite
Earphone	1.2	Unshielded	Without Ferrite

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 1.1307, § 2.1093	RF Exposure	Compliant
§ 22.913 (a), § 24.232 (c) § 27.50 (d)	RF Output Power	Compliant
§ 22.917 (b), § 24.238 (b) § 27.53	Emission Bandwidth	Compliant
§ 22.917 (a), § 24.238 (a), § 27.53	Spurious Emissions at Antenna Terminal	Compliant
§ 22.917 (a), § 24.238 (a), § 27.53	Spurious Radiation Emissions	Compliant
§ 22.917 (a), § 24.238 (a), § 27.53	Out of Band Emissions	Compliant
§ 22.355, § 24.235, § 27.54	Frequency Stability	Compliant

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the SAR report.

4. RF Output Power

4.1 Standard Applicable

According to §22.913(a)(2), The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

According to §24.232 (c), no any case may the peak output power of mobile or portable station transmitter exceed 2 Watt EIRP.

According to §27.50(d) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band are limited to 1 watt EIRP

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-05-07	2014-05-06
Horn Antenna	ETS	3117	00086197	2013-05-07	2014-05-06
Universal Radio Communication Tester	Rohde & Schwarz	CMU200	112012	2013-05-07	2014-05-06
Signal Generator	R&S	SMR20	100047	2013-05-07	2014-05-06

4.3 Test Procedure

Conducted output power test method:



Radiated power test method:

- 1.The setup of EUT is according with per TIA/EIA Standard 603C and ANSI C63.4-2003 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.

4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

4.4 Environmental Conditions

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

Radiated Power

ERP For GSM Mode GSM850

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Corrected Ampl.	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
824.2	28.15	1.5	0	H	1.5	0	26.65	38.45
824.2	31.75	1.5	0	V	1.5	0	30.25	38.45
Middle Channel								
28.03	28.15	1.5	0	H	1.5	0	26.65	38.45
31.37	31.25	1.5	0	V	1.5	0	29.75	38.45
High Channel								
848.8	28.84	1.5	0	H	1.5	0	27.34	38.45
848.8	32.32	1.5	0	V	1.5	0	30.82	38.45

EIRP For GSM Mode PCS1900

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Corrected Ampl.	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	DBm	dBm
Low Channel								
1850.2	32.37	1.5	0	H	1.9	7.7	22.77	33
1850.2	36.59	1.5	0	V	1.9	7.7	26.99	33
Middle Channel								
1880.0	33.01	1.5	0	H	1.9	7.7	23.41	33
1880.0	36.32	1.5	0	V	1.9	7.7	26.72	33
High Channel								
1909.8	31.91	1.5	0	H	1.9	7.7	22.31	33
1909.8	36.02	1.5	0	V	1.9	7.7	26.42	33

ERP For GPRS Mode GSM850

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Corrected Ampl.	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
824.2	27.92	1.5	0	H	1.5	0	26.42	38.45
824.2	31.65	1.5	0	V	1.5	0	30.15	38.45
Middle Channel								
836.6	27.92	1.5	0	H	1.5	0	26.42	38.45
836.6	31.41	1.5	0	V	1.5	0	29.91	38.45
High Channel								
848.8	26.62	1.5	0	H	1.5	0	25.12	38.45
848.8	30.92	1.5	0	V	1.5	0	29.42	38.45

EIRP For GPRS Mode PCS1900

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Corrected Ampl.	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	DBm	dBm
Low Channel								
1850.2	35.83	1.5	0	H	1.9	7.7	26.23	33
1850.2	39.96	1.5	0	V	1.9	7.7	30.36	33
Middle Channel								
1880.0	35.90	1.5	0	H	1.9	7.7	26.30	33
1880.0	40.52	1.5	0	V	1.9	7.7	30.92	33
High Channel								
1909.8	34.70	1.5	0	H	1.9	7.7	25.10	33
1909.8	40.14	1.5	0	V	1.9	7.7	30.54	33

ERP For WCDMA Mode Band V

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Corrected Ampl.	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
826.4	20.62	1.5	0	H	1.5	0	19.12	38.45
826.4	22.12	1.5	0	V	1.5	0	20.62	38.45
Middle Channel								
836.4	18.72	1.5	0	H	1.5	0	17.22	38.45
836.4	22.56	1.5	0	V	1.5	0	21.06	38.45
High Channel								
846.6	19.52	1.5	0	H	1.5	0	18.02	38.45
846.6	21.95	1.5	0	V	1.5	0	20.45	38.45

ERP For HSUPA Mode Band V

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Corrected Ampl.	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	DBm	dBm
Low Channel								
826.4	18.92	1.5	0	H	1.5	0	17.42	38.45
826.4	21.86	1.5	0	V	1.5	0	20.36	38.45
Middle Channel								
836.4	19.70	1.5	0	H	1.5	0	18.20	38.45
836.4	22.48	1.5	0	V	1.5	0	20.98	38.45
High Channel								
846.6	20.41	1.5	0	H	1.5	0	18.91	38.45
846.6	23.89	1.5	0	V	1.5	0	22.39	38.45

ERP For HSDPA Mode Band V

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Corrected Ampl.	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
826.4	20.75	1.5	0	H	1.5	0	19.42	38.45
826.4	22.67	1.5	0	V	1.5	0	21.61	38.45
Middle Channel								
836.4	20.75	1.5	0	H	1.5	0	19.22	38.45
836.4	22.69	1.5	0	V	1.5	0	21.99	38.45
High Channel								
846.6	21.00	1.5	0	H	1.5	0	20.16	38.45
846.6	23.21	1.5	0	V	1.5	0	22.43	38.45

Max. Conducted Output Power

For Cellular Band (GSM850)

Test Mode	Channel	Frequency (MHz)	Output Power (dBm)	FCC Part 22.913 Limit (dBm)
GSM	Low Channel	824.2	31.72	38.45
	Middle Channel	836.6	31.55	38.45
	High Channel	848.8	31.59	38.45
GPRS	Low Channel	824.2	31.64	38.45
	Middle Channel	836.6	31.45	38.45
	High Channel	848.8	31.49	38.45

For PCS Band (GSM1900)

Test Mode	Channel	Frequency (MHz)	Output Power (dBm)	FCC Part 24.232 Limit (dBm)
GSM	Low Channel	1850.2	29.18	33
	Middle Channel	1880.0	28.90	33
	High Channel	1909.8	28.90	33
GPRS	Low Channel	1850.2	29.27	33
	Middle Channel	1880.0	29.02	33
	High Channel	1909.8	28.56	33

For WCDMA Band V

Test Mode	Channel	Frequency (MHz)	Output Power (dBm)	FCC Part 22.913 Limit (dBm)
WCDMA	Low Channel	826.4	22.58	38.45
	Middle Channel	836.4	22.76	38.45
	High Channel	846.6	22.70	38.45
HSUPA	Low Channel	826.4	21.51	38.45
	Middle Channel	836.4	21.61	38.45
	High Channel	846.6	21.70	38.45
HSDPA	Low Channel	826.4	20.99	38.45
	Middle Channel	836.4	21.26	38.45
	High Channel	846.6	21.59	38.45

5. Emission Bandwidth

5.1 Standard Applicable

According to §22.917(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §24.238(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §27.53, The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

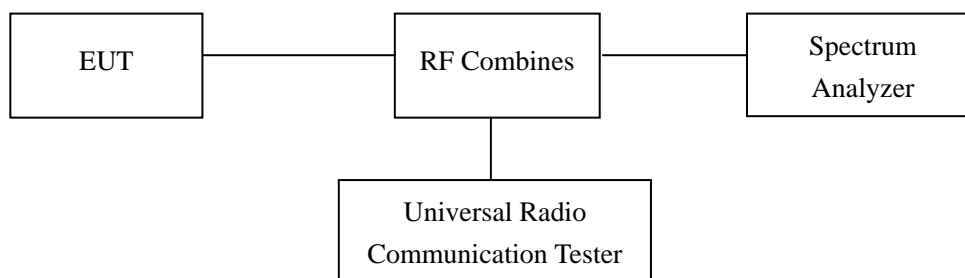
5.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Aglient	Spectrum Analyzer	E4402B	US41192821	2013-05-07	2014-05-06
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	112012	2013-05-07	2014-05-06

5.3 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 30kHz and the 26dB bandwidth was recorded.

Test Configuration for the emission bandwidth testing:



5.4 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results/Plots

For Cellular Band

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM	128	824.2	254.1382	340.856
	190	836.6	250.3227	336.693
	251	848.8	249.0922	335.494
GPRS	128	824.2	252.6220	335.244
	190	836.6	255.7320	338.238
	251	848.8	253.7362	333.297

For PCS Band

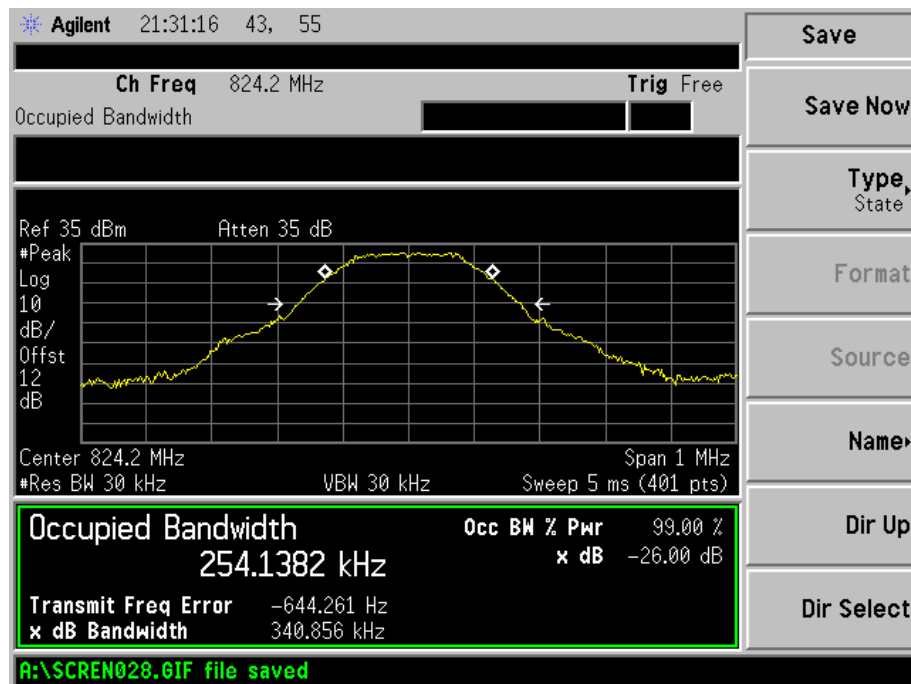
Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM	512	1850.2	257.3912	337.490
	661	1880.0	254.5394	331.698
	810	1909.8	256.8128	338.836
GPRS	512	1850.2	253.6274	339.650
	661	1880.0	257.0134	340.886
	810	1909.8	254.8679	341.604

For Band V

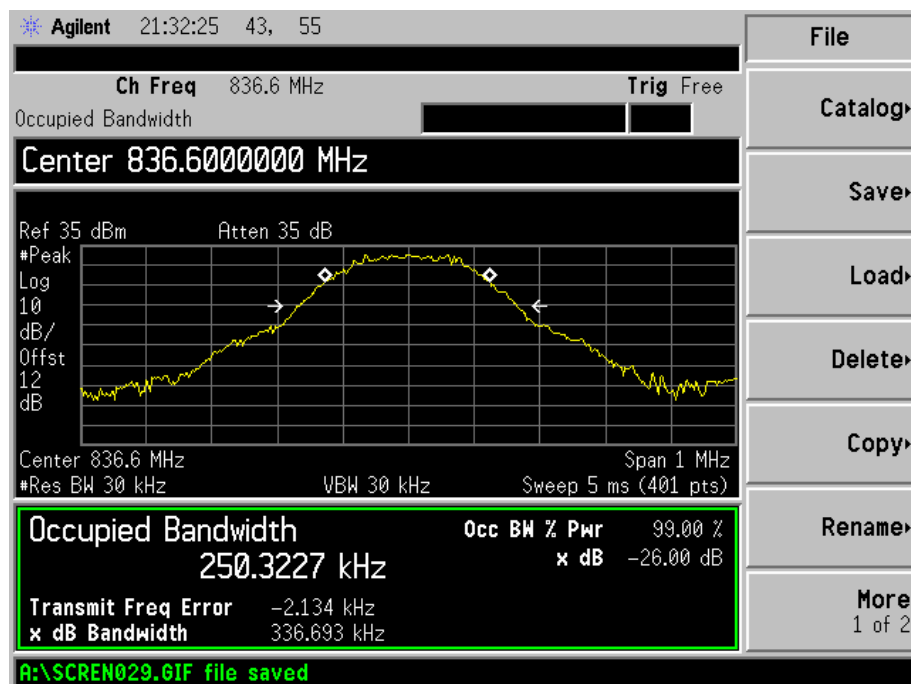
Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
WCDMA	4182	836.4	4.1452	4.634
HSUPA	4182	836.4	4.1614	4.639
HSDPA	4182	836.4	4.1513	4.646

Please refer to the following test plots:

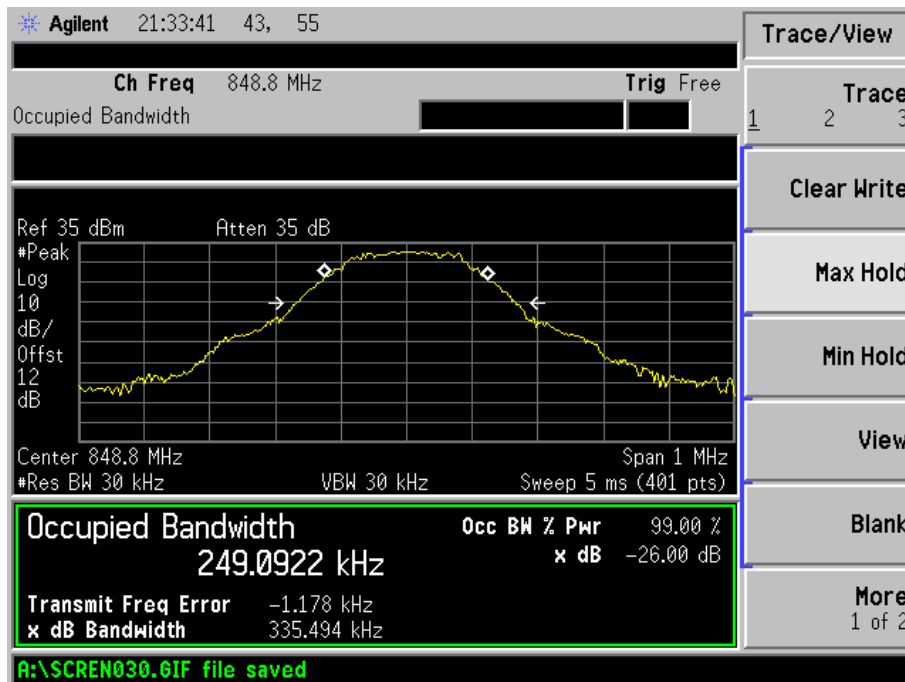
For Cellular Band
GSM Low Channel



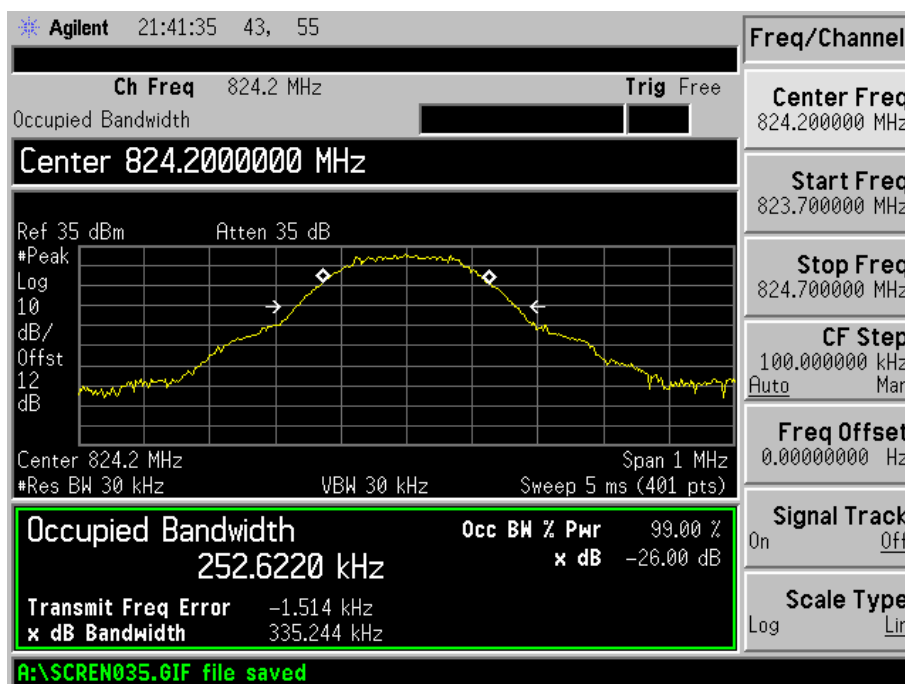
GSM Middle Channel



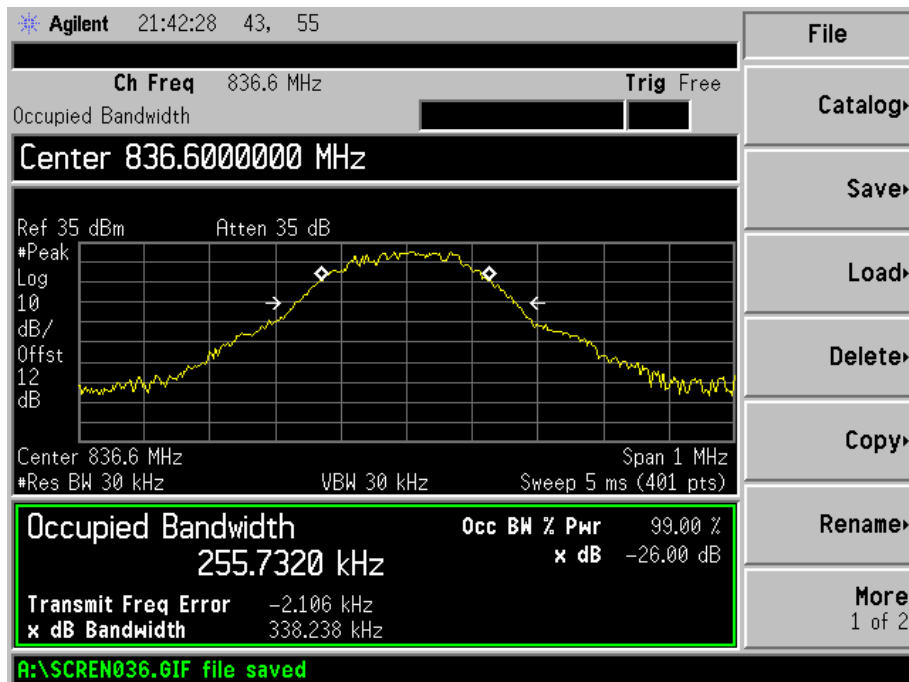
GSM High channel



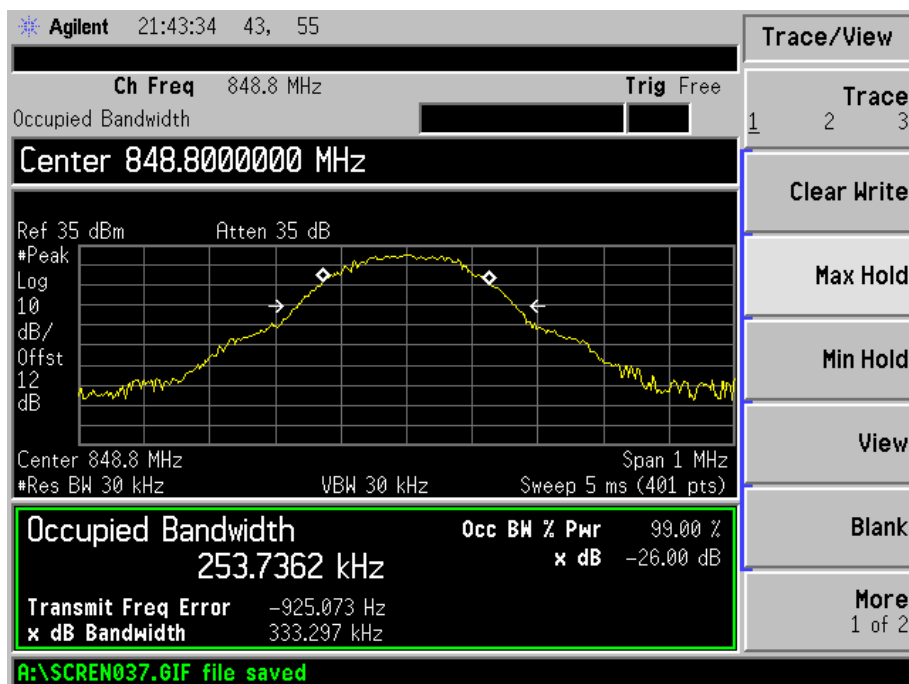
GPRS Low Channel



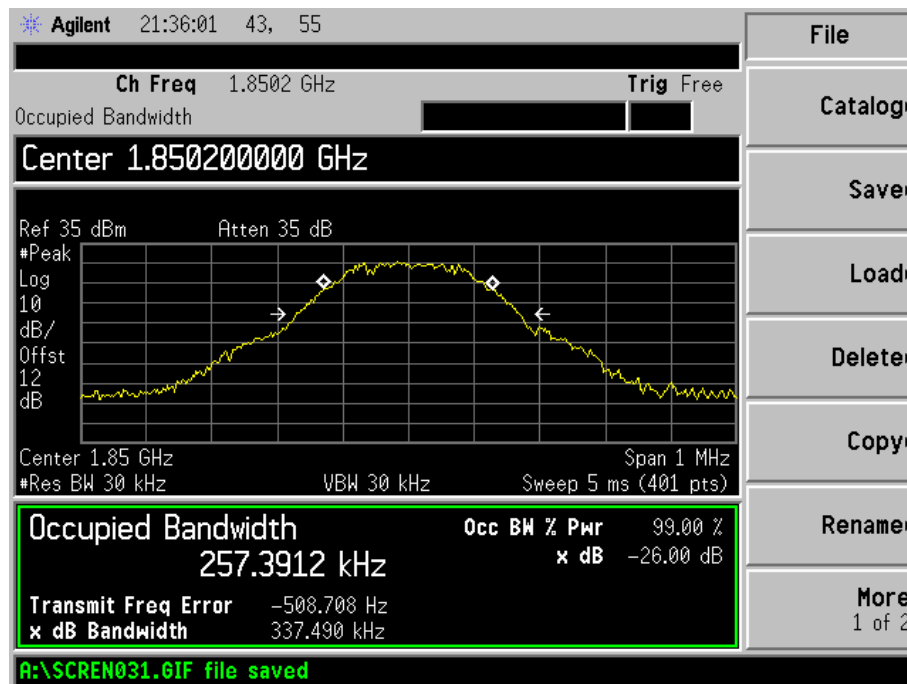
GPRS Middle Channel



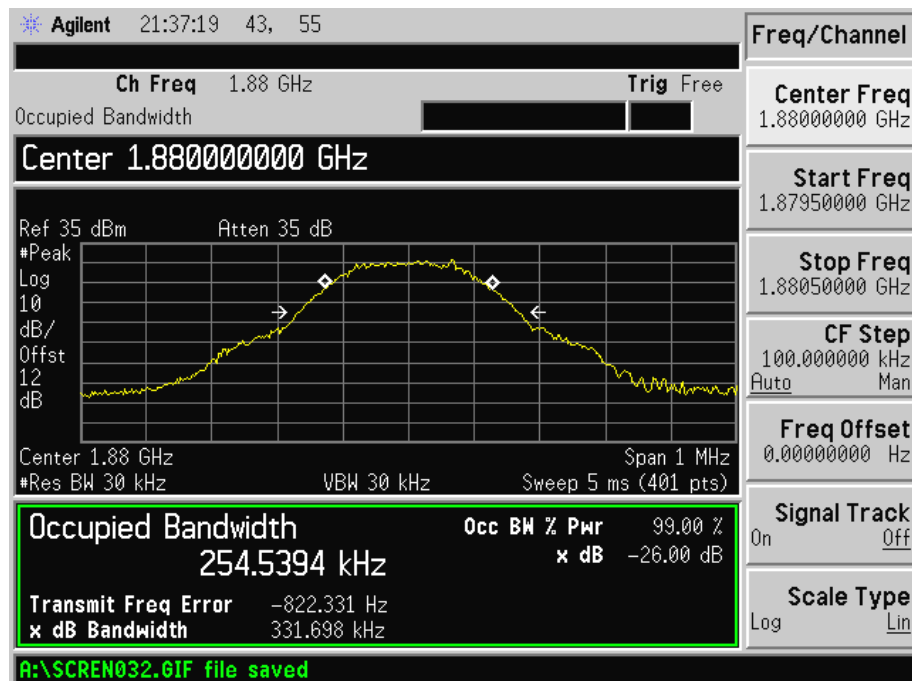
GPRS High Channel



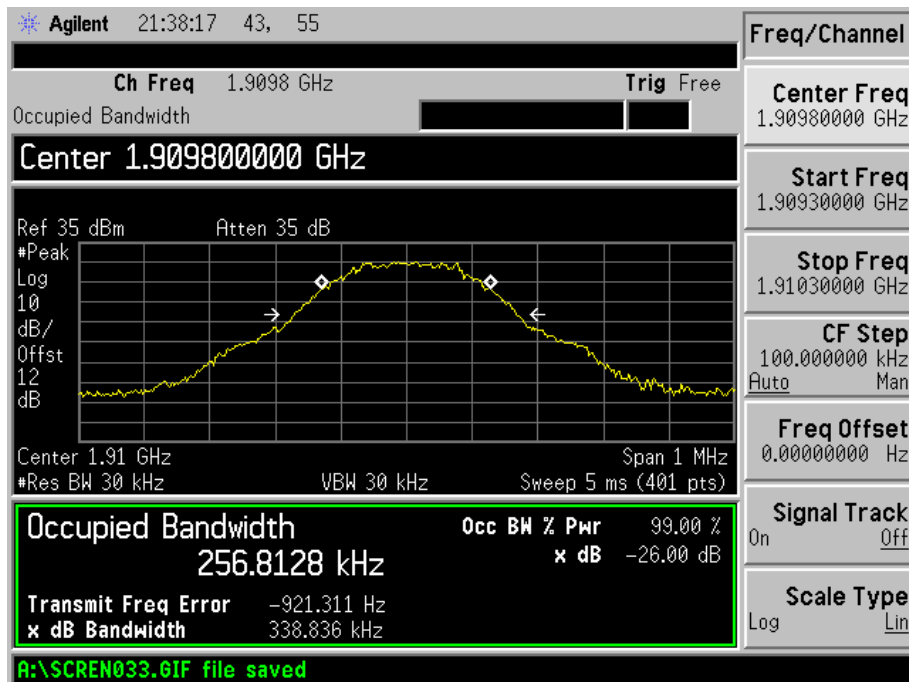
For PCS Band
GSM Low Channel



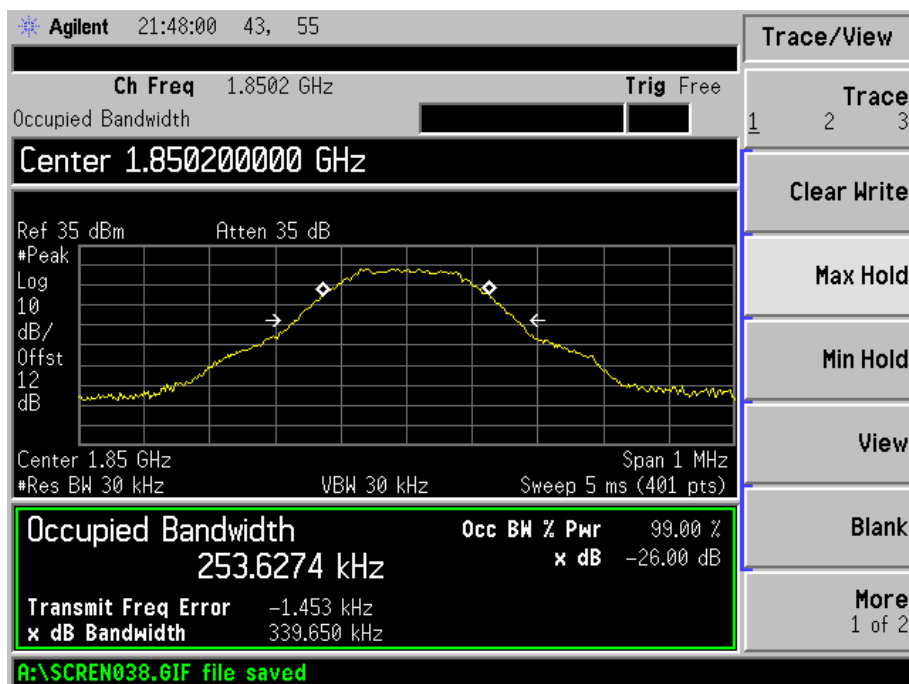
GSM Middle Channel



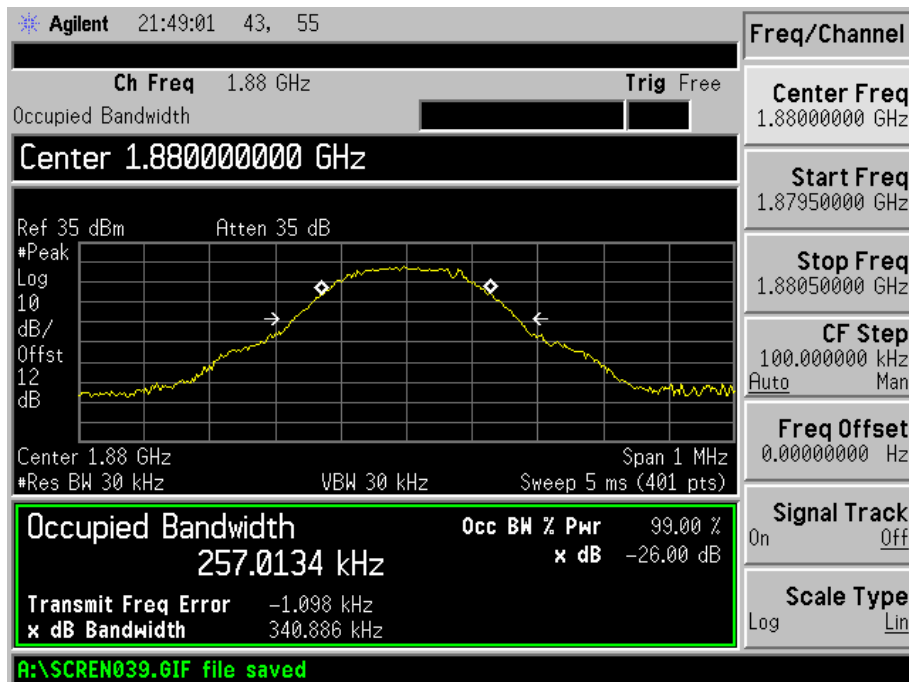
GSM High channel



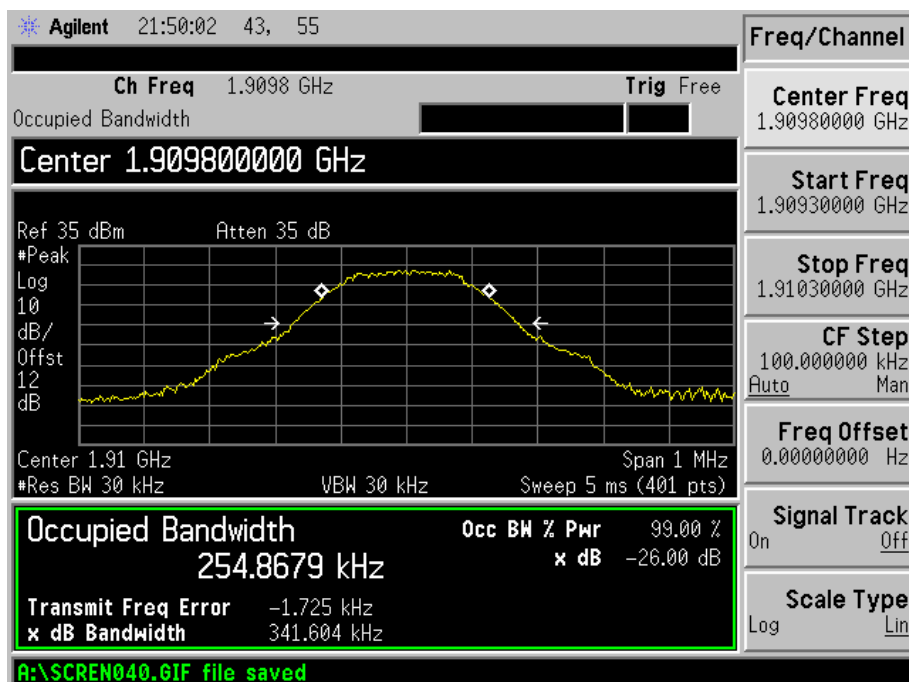
GPRS Low Channel



GPRS Middle Channel

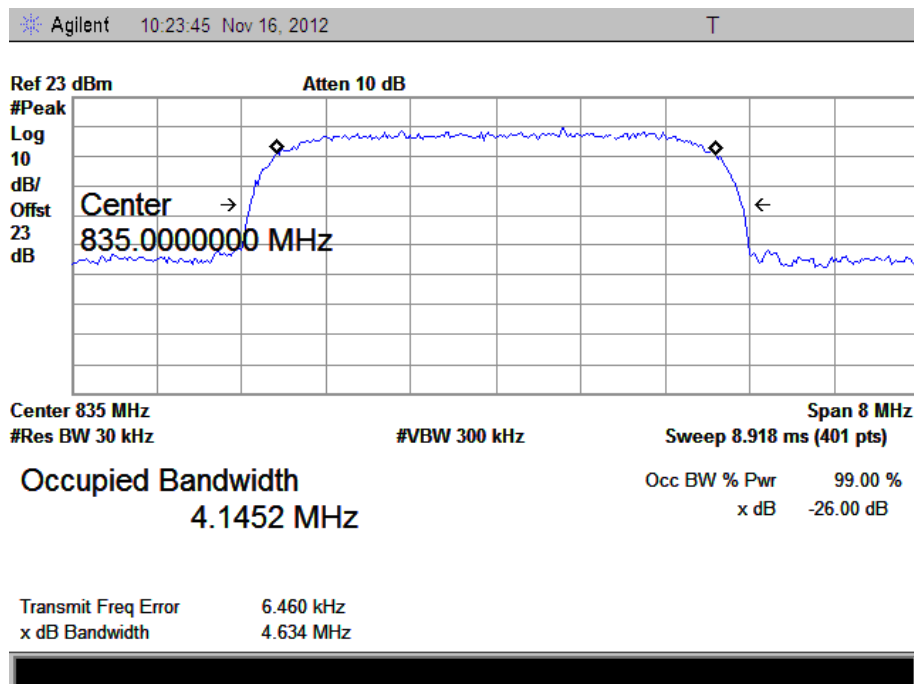


GPRS High Channel

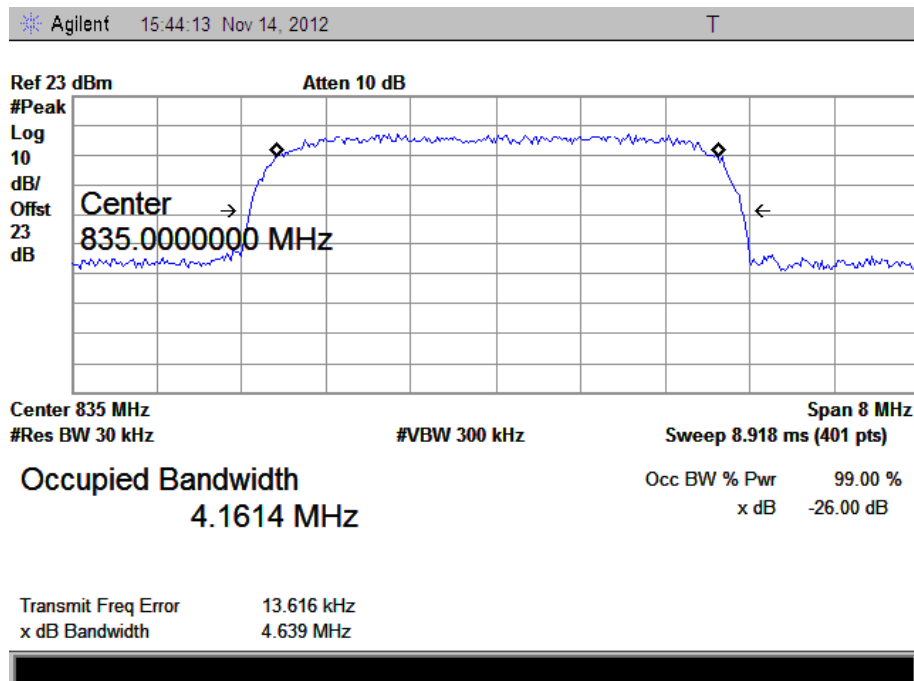


For Band V

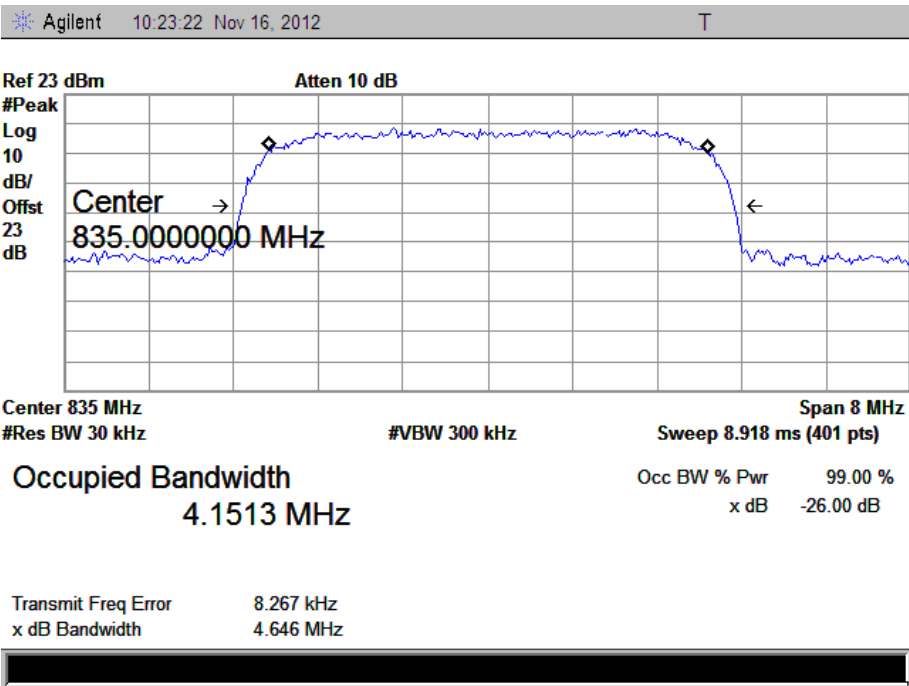
WCDMA Middle Channel



HSUPA Middle Channel



HSDPA Middle Channel



6. Out of Band Emissions at Antenna Terminal

6.1 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §27.53 (h) For operations in the 1710-1755 MHz and 2110-2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB

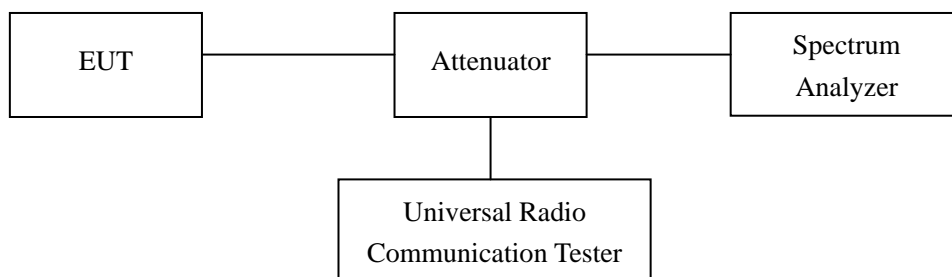
6.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Aglient	Spectrum Analyzer	E4402B	US41192821	2013-05-07	2014-05-06
Rohde & Schwarz	Spectrum Analyzer	FSP	836079/035	2013-05-07	2014-05-06
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	112012	2013-05-07	2014-05-06

6.3 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10th harmonic.

Test Configuration for the out of band emissions testing:



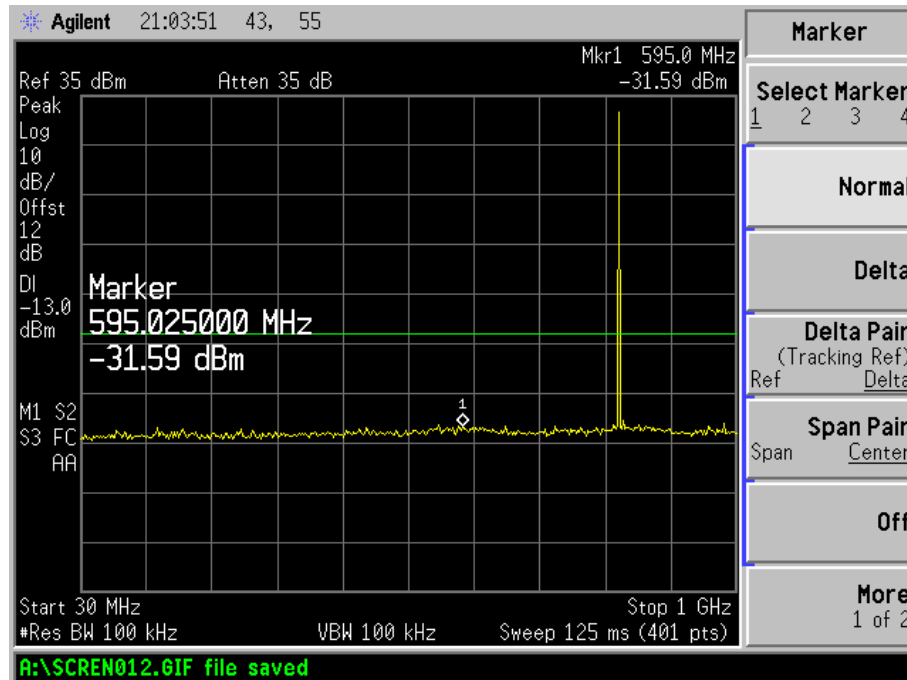
6.4 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

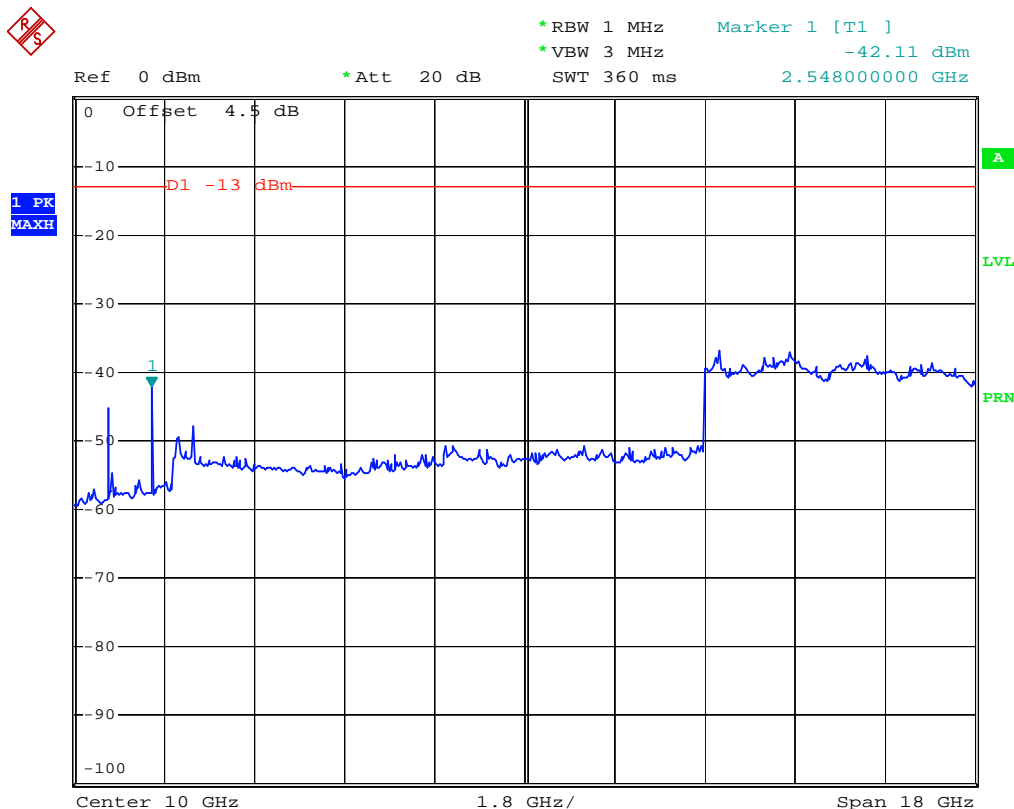
6.5 Summary of Test Results/Plots

Please refer to the following test plots For Cellular Band

GSM Low Channel 30MHz to 1GHz

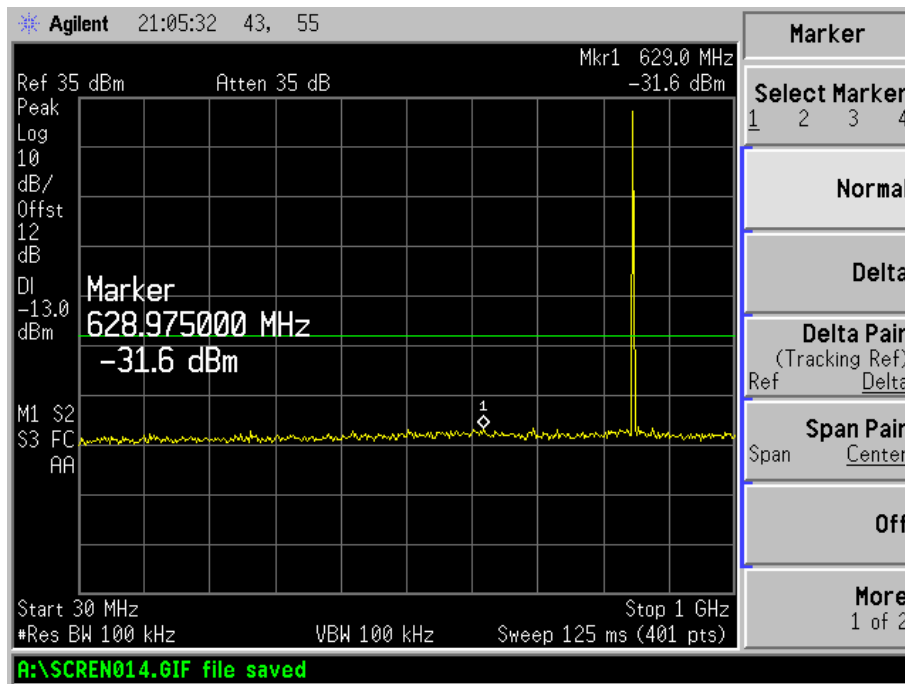


Above 1GHz

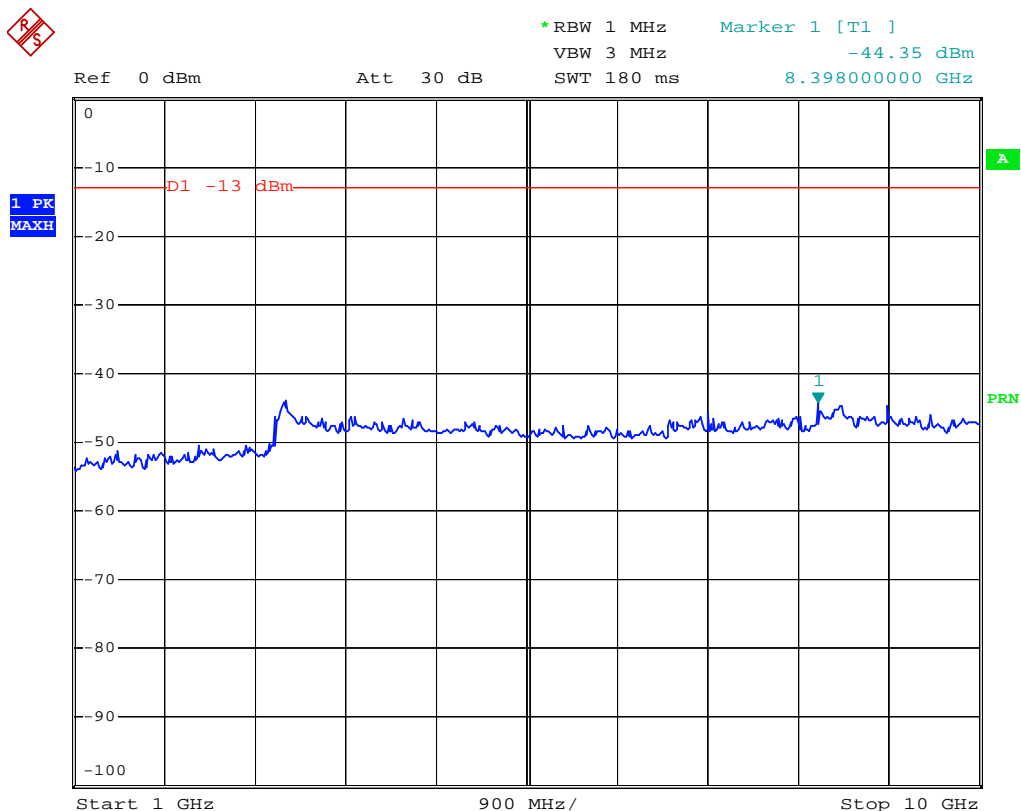


GSM Middle Channel

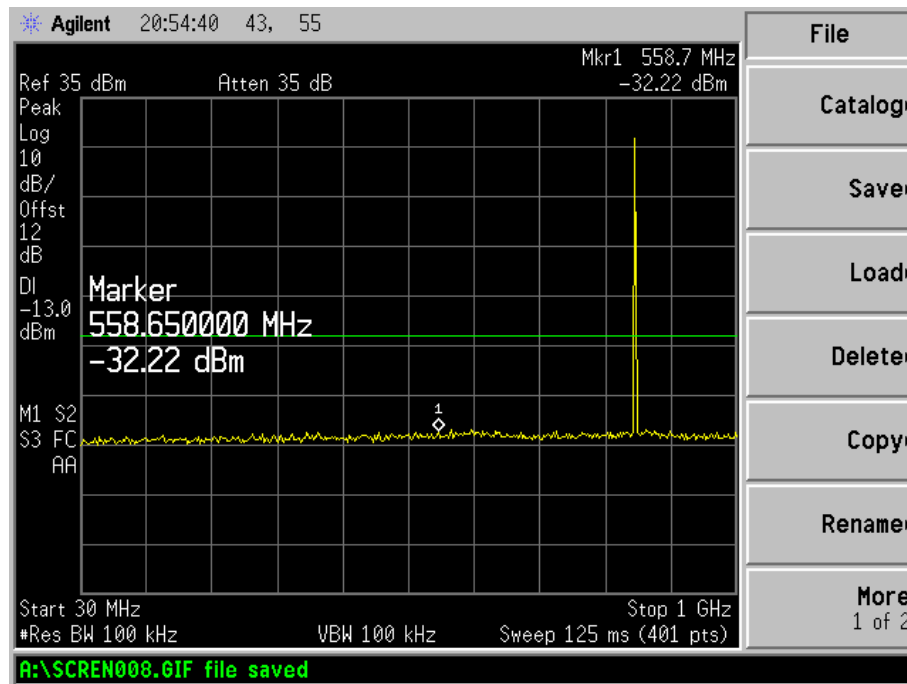
30MHz to 1GHz



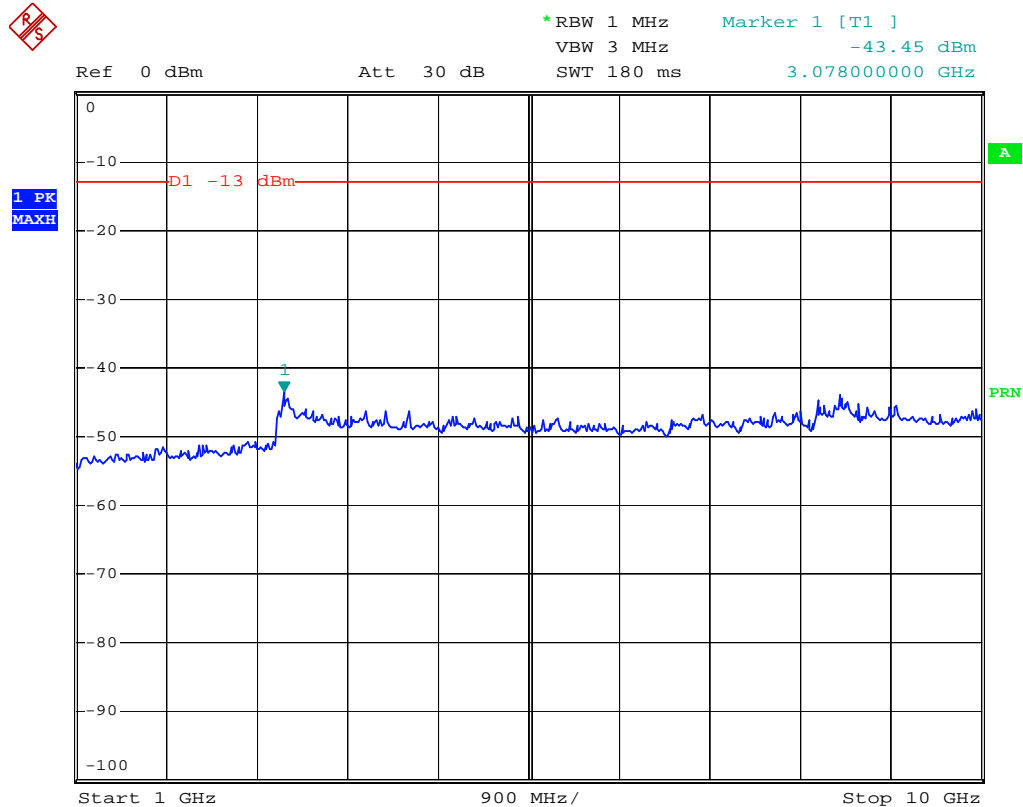
Above 1GHz



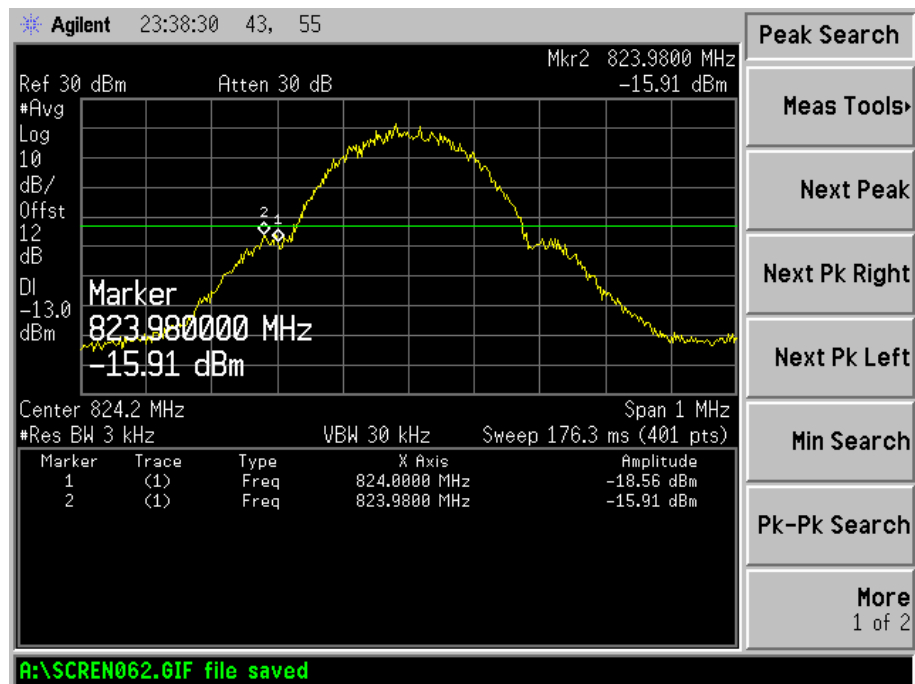
GSM High Channel 30MHz to 1GHz



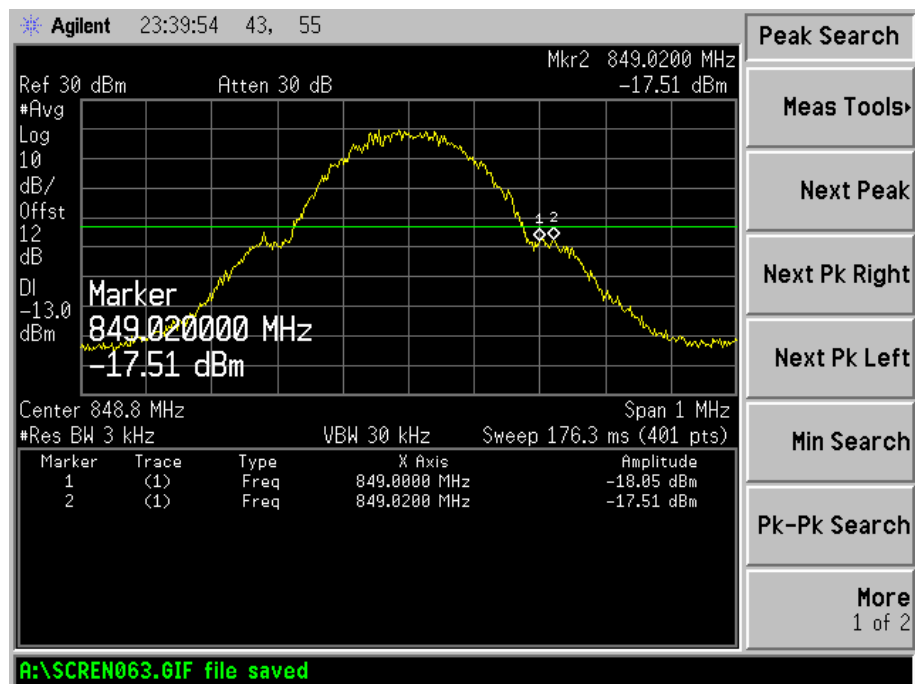
Above 1GHz



GSM Low Band Emission

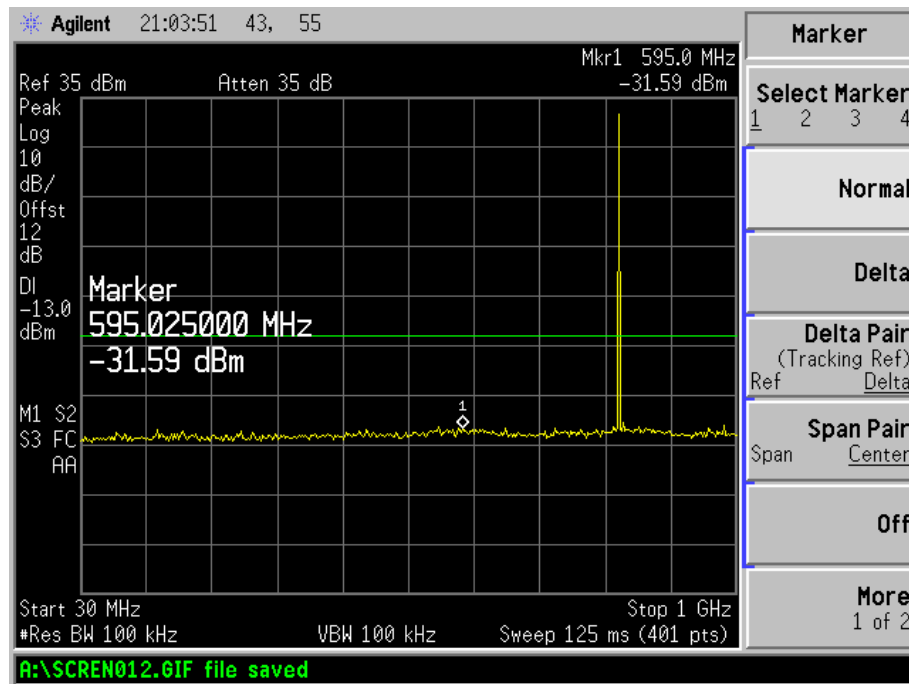


GSM High Band Emission

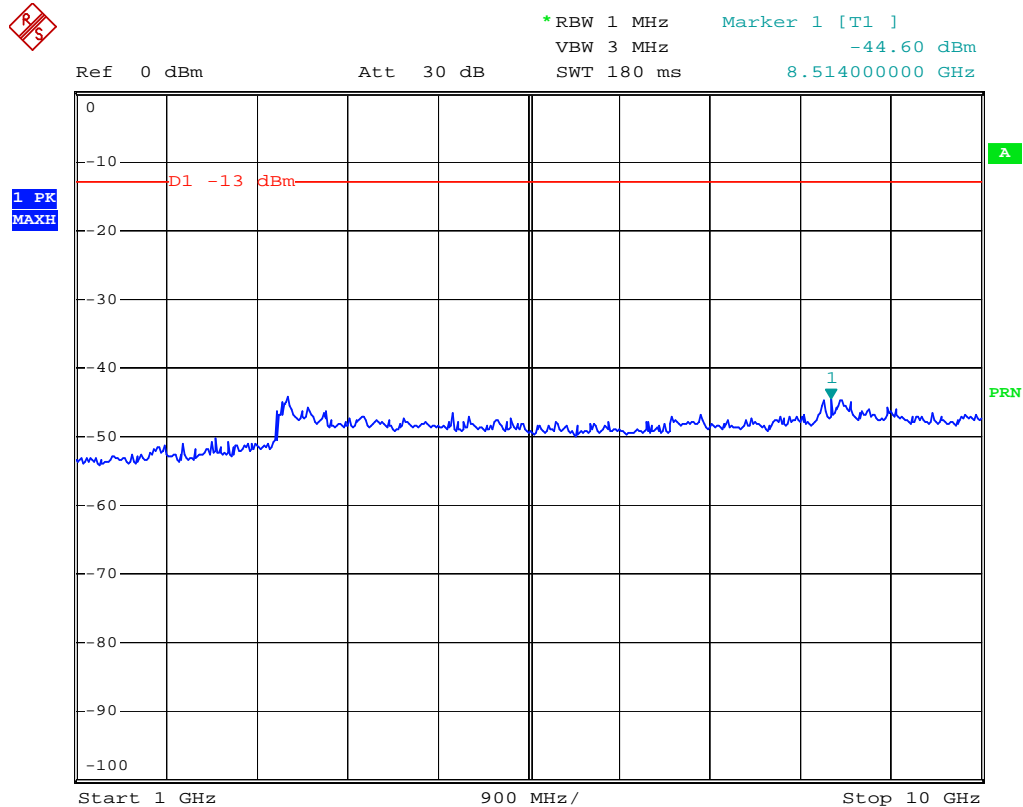


GPRS Low Channel

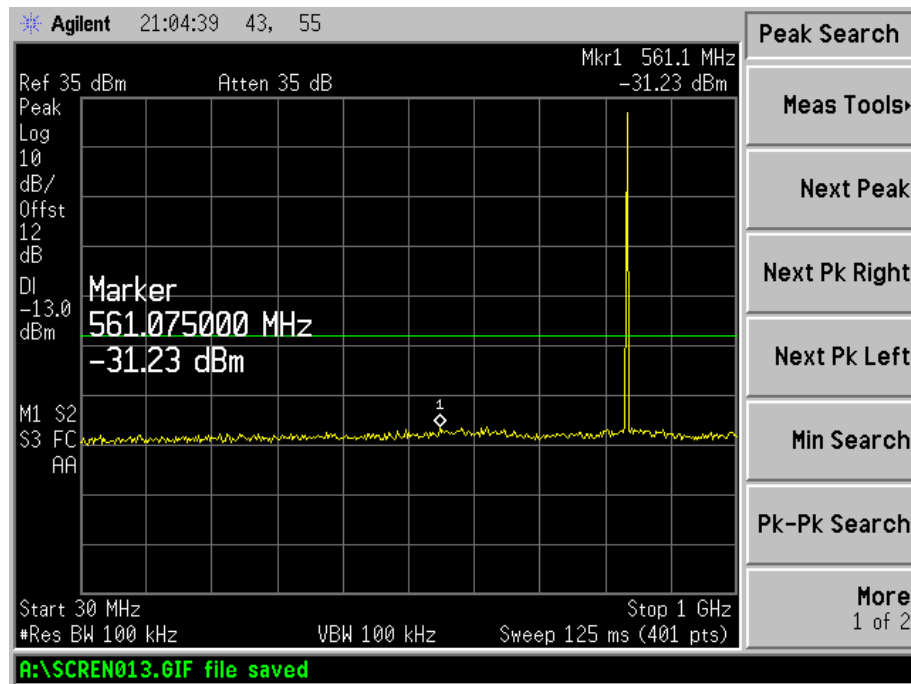
30MHz to 1GHz



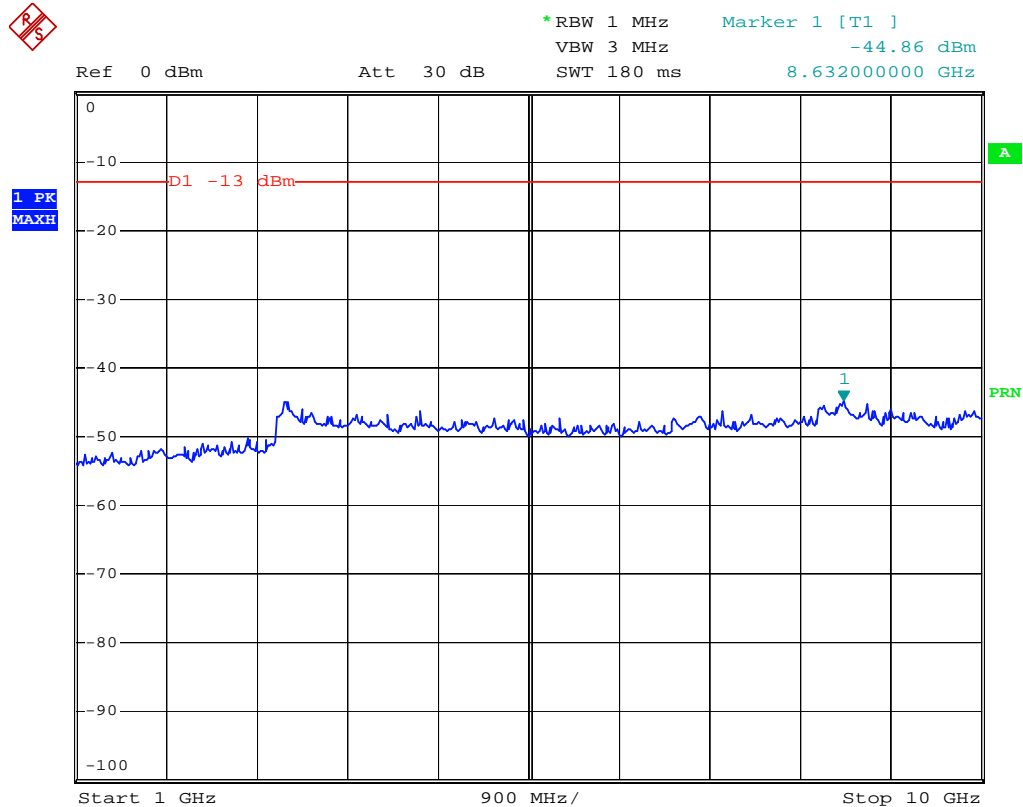
Above 1GHz



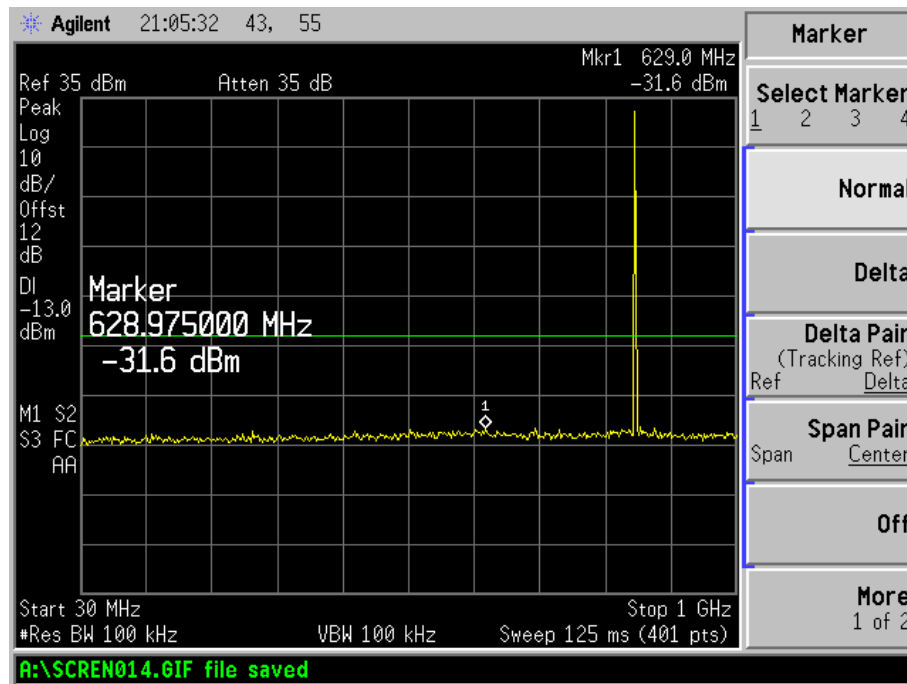
GPRS Middle Channel
30MHz to 1GHz



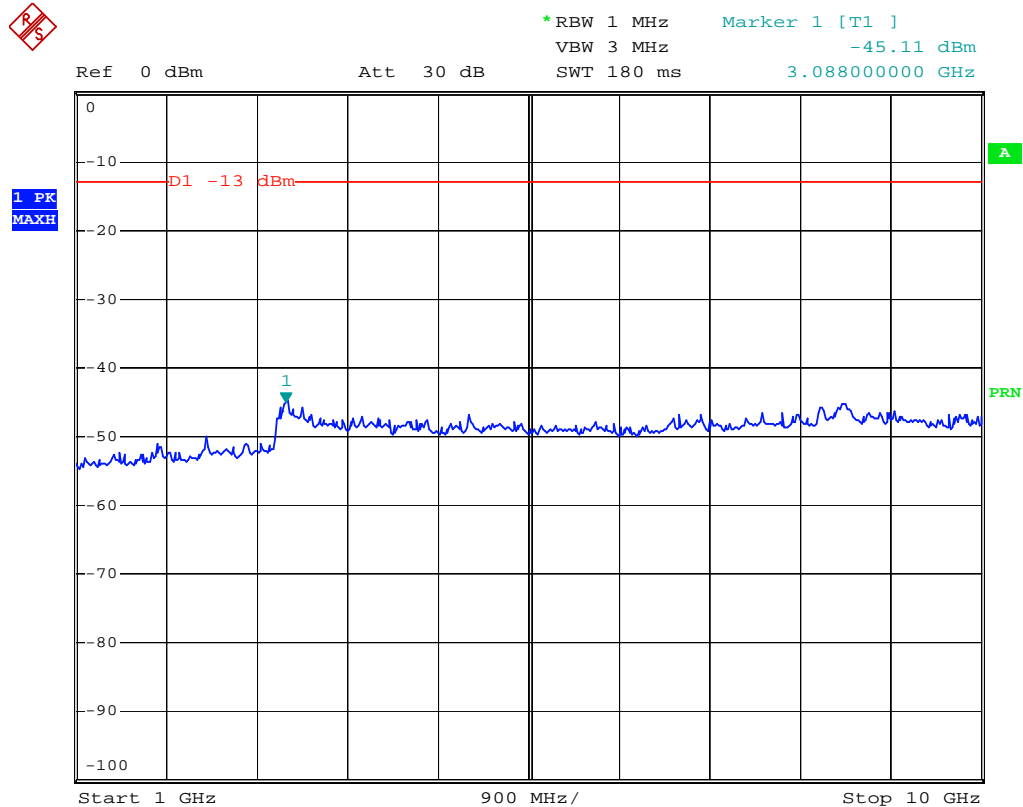
Above 1GHz



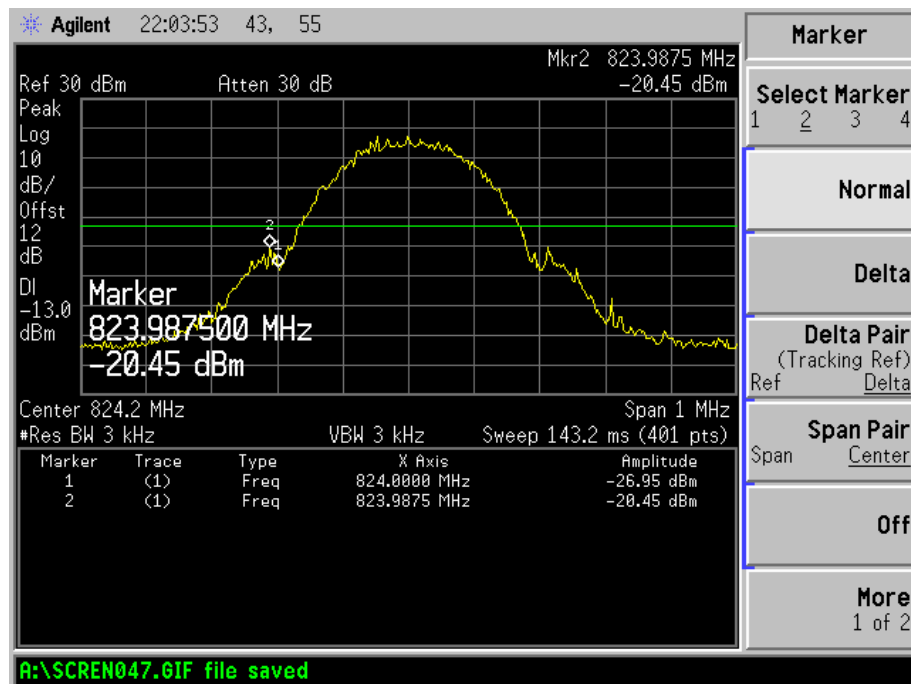
GPRS High Channel
30MHz to 1GHz



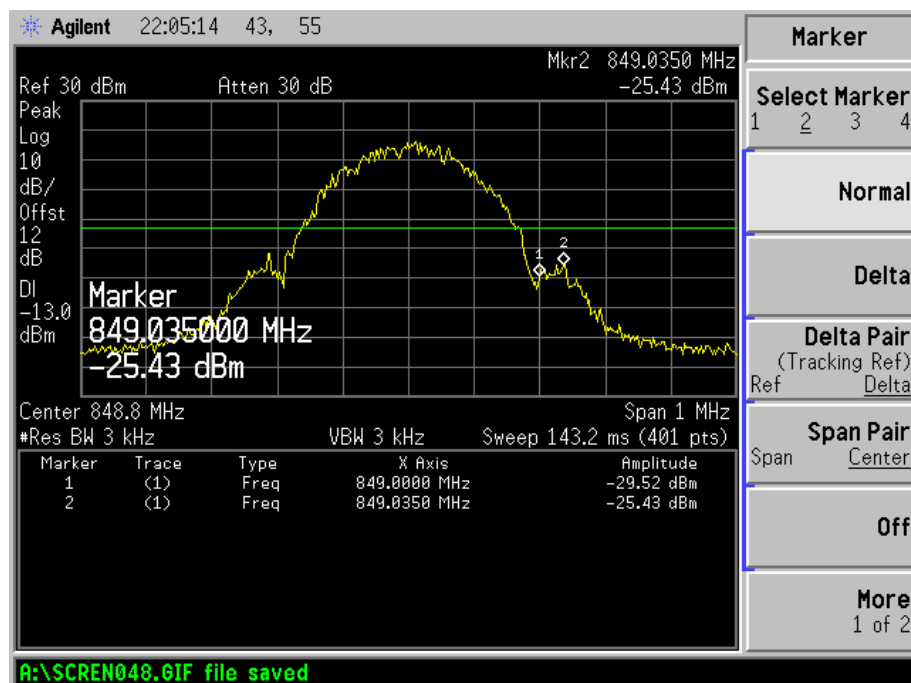
Above 1GHz



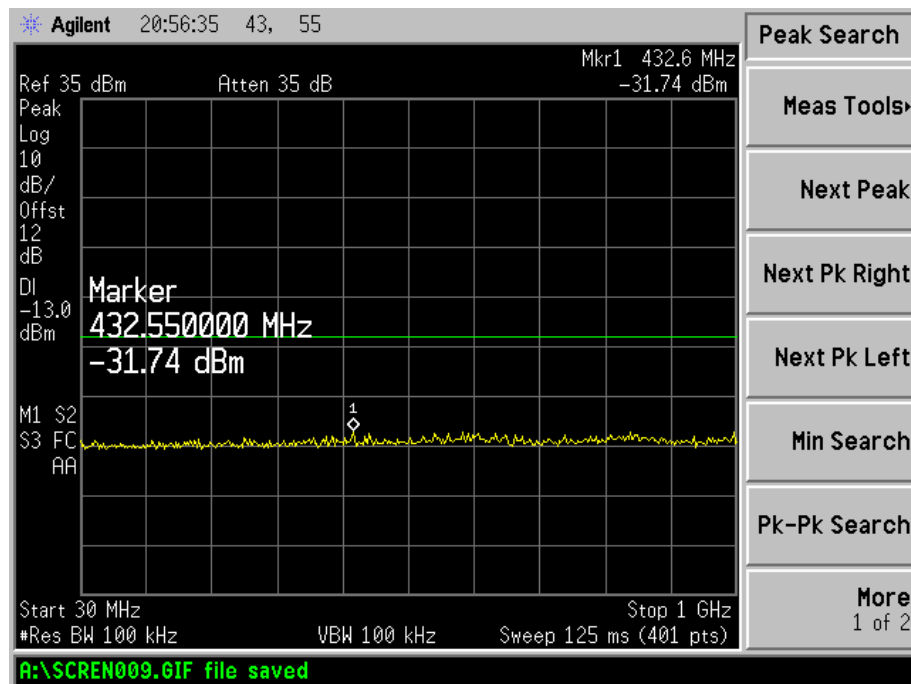
GPRS Low Band Emission



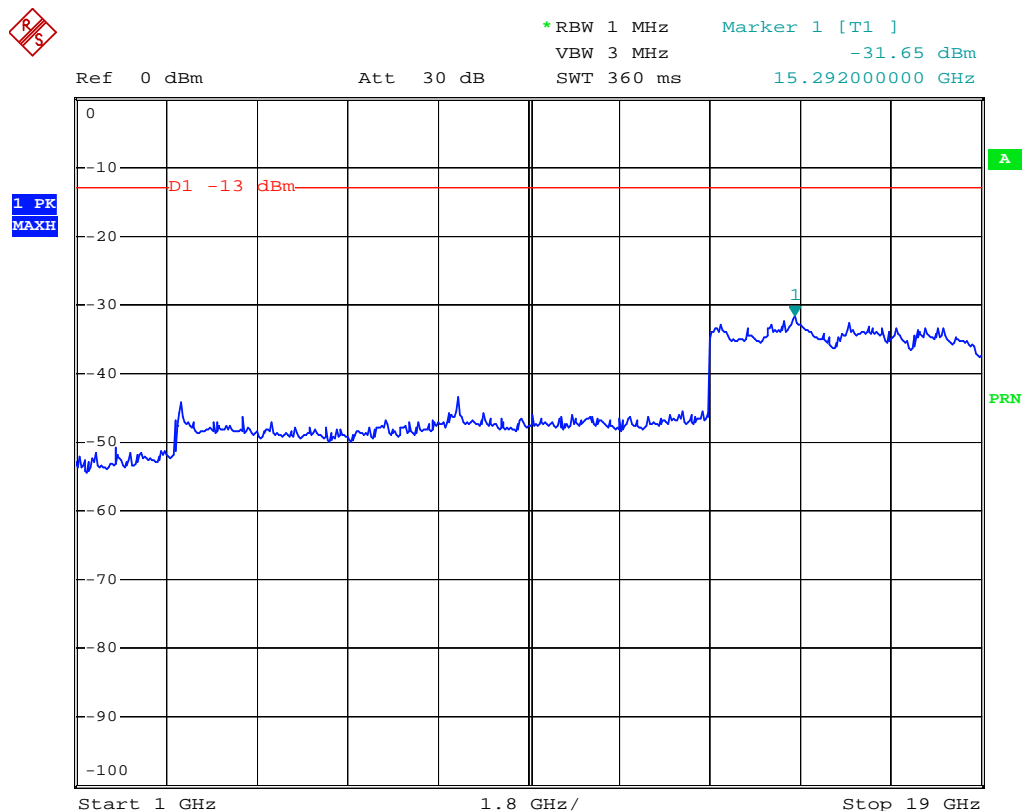
GPRS High Band Emission



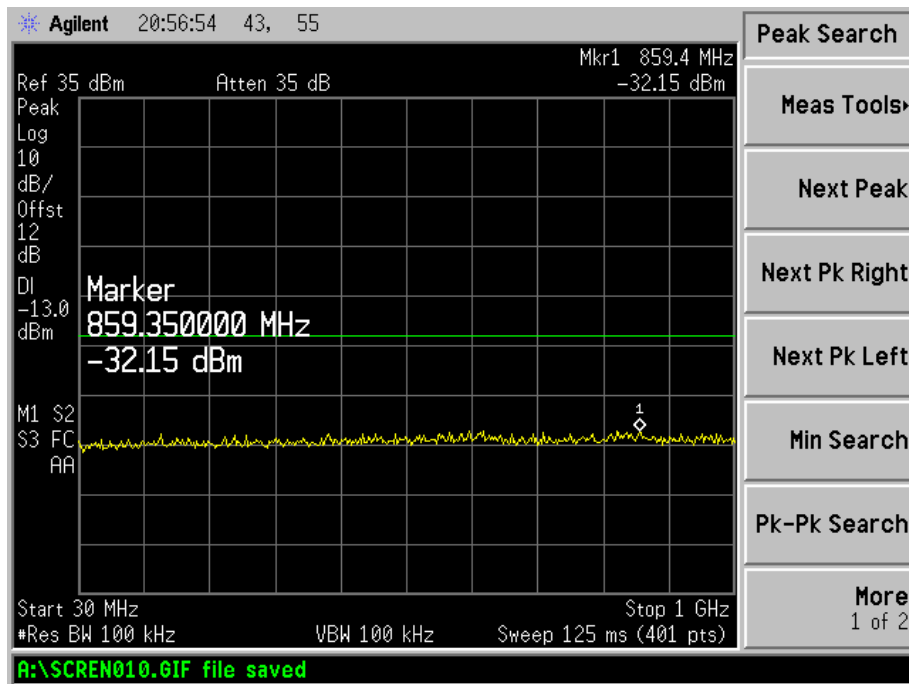
For PCS Band
GSM Low Channel
30MHz to 1GHz



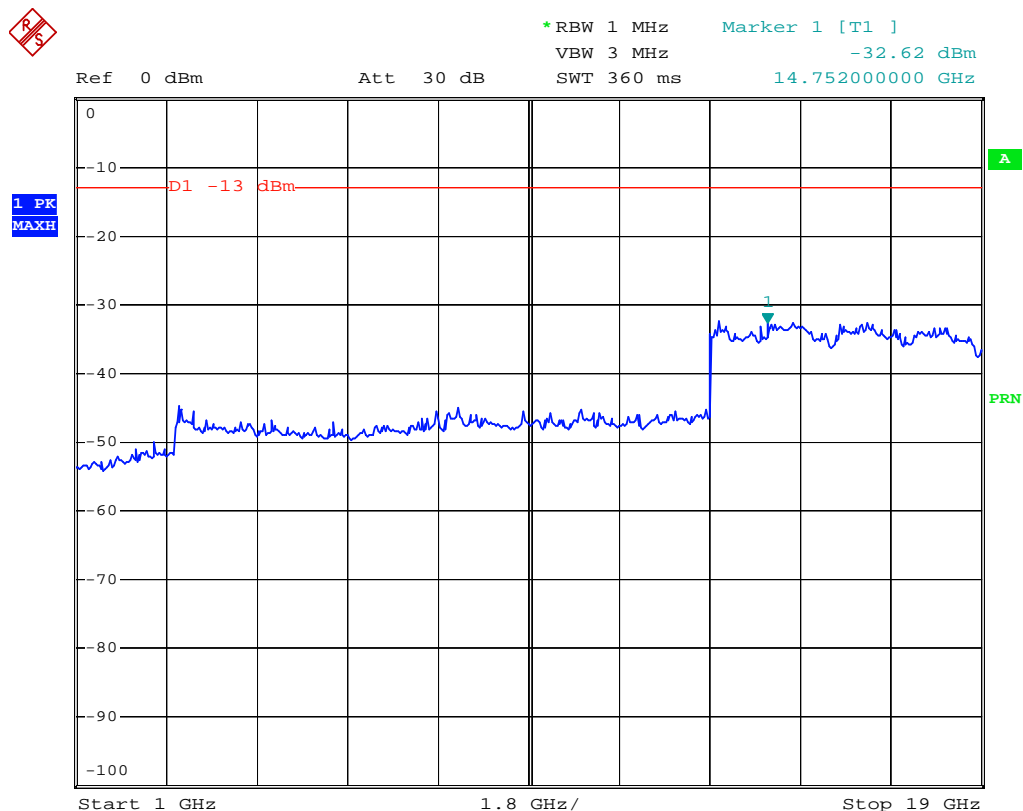
Above 1GHz



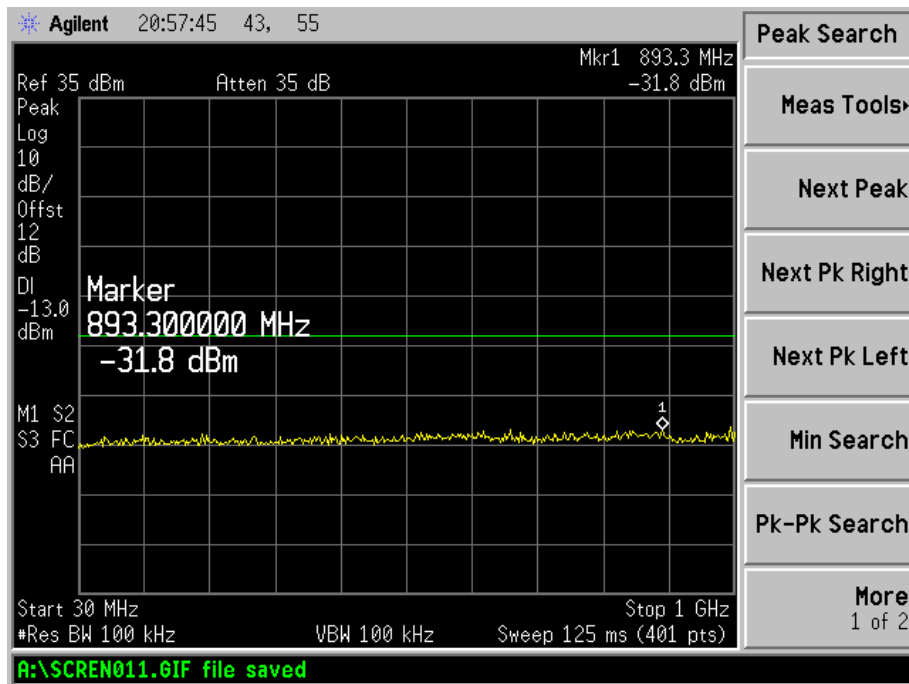
GSM Middle Channel
30MHz to 1GHz



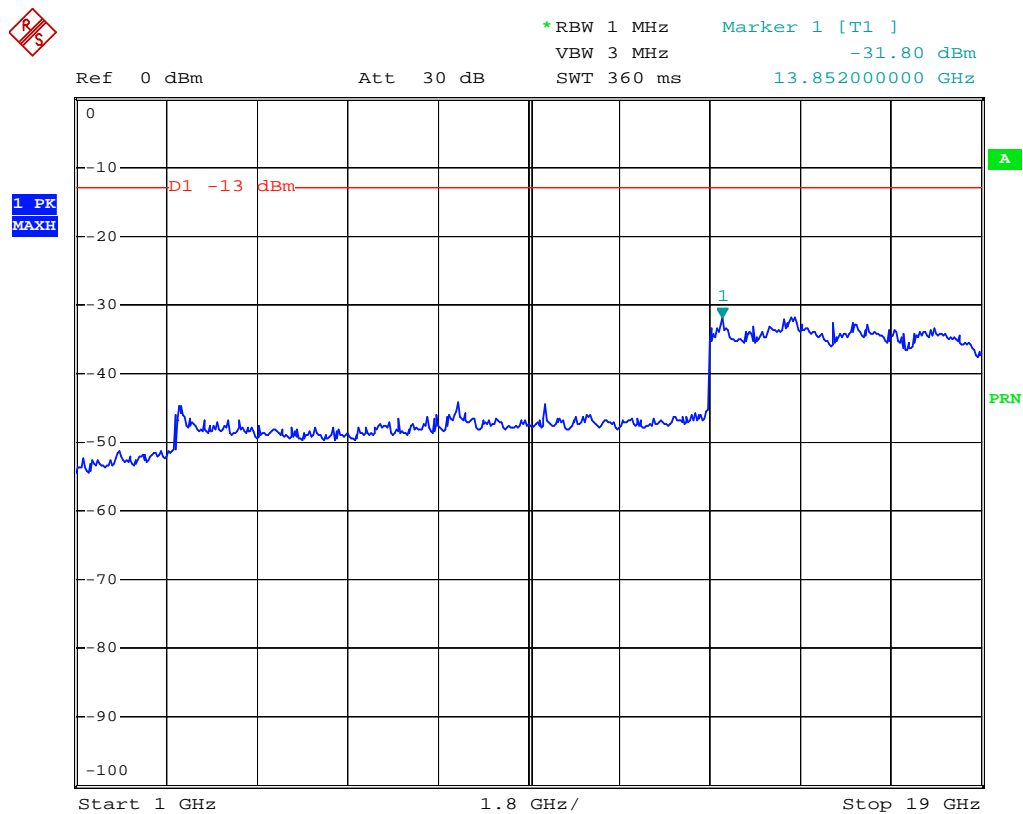
Above 1GHz



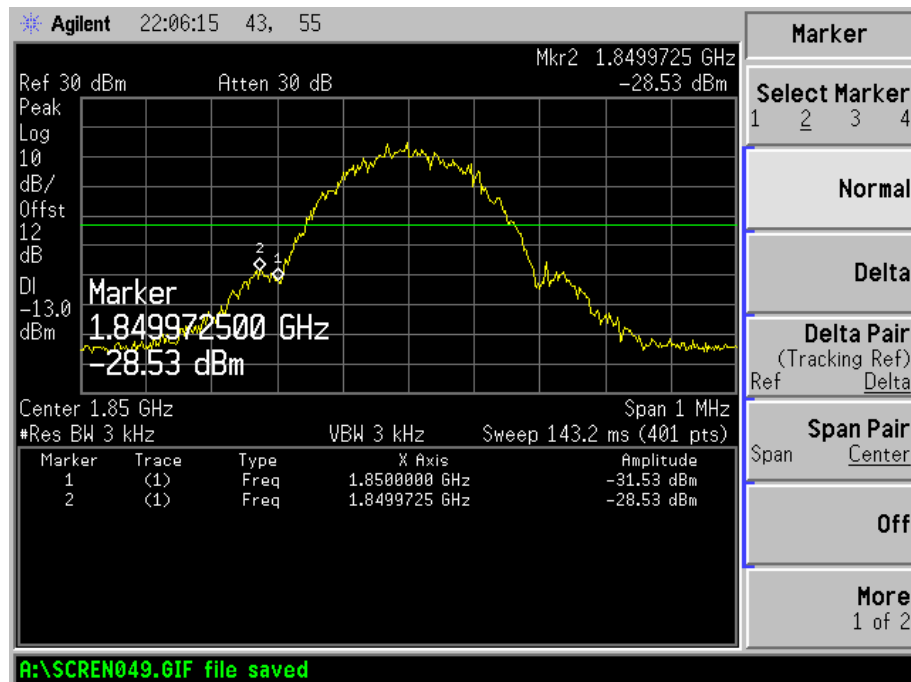
GSM High Channel
30MHz to 1GHz



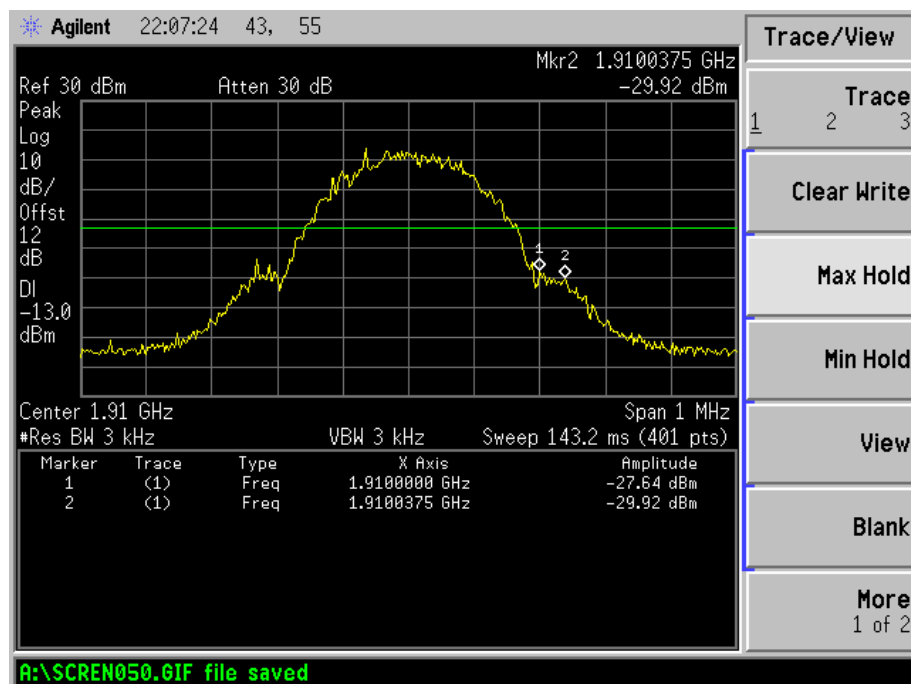
Above 1GHz



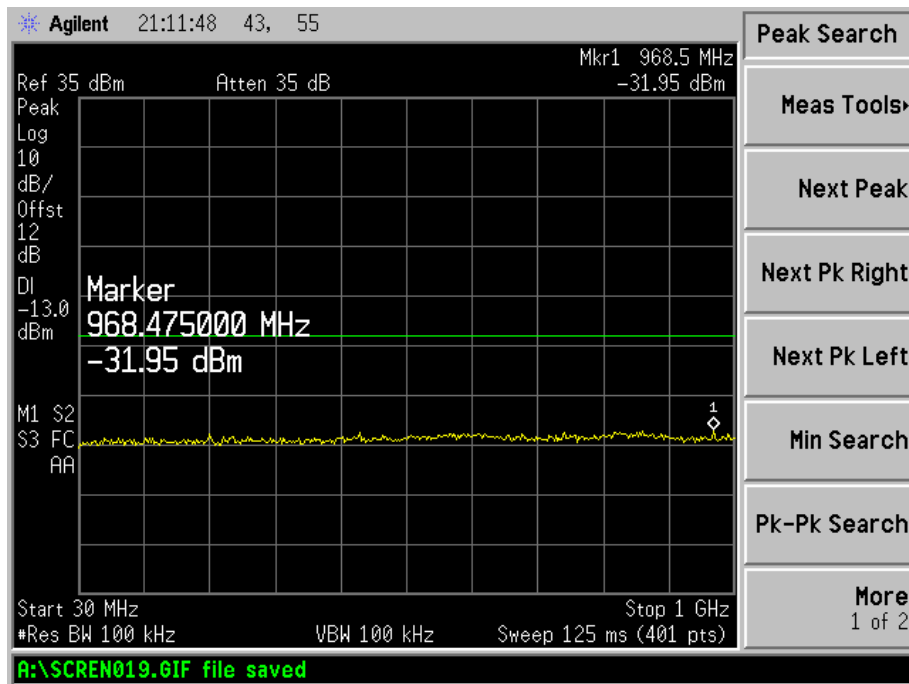
GSM Low Band Emission



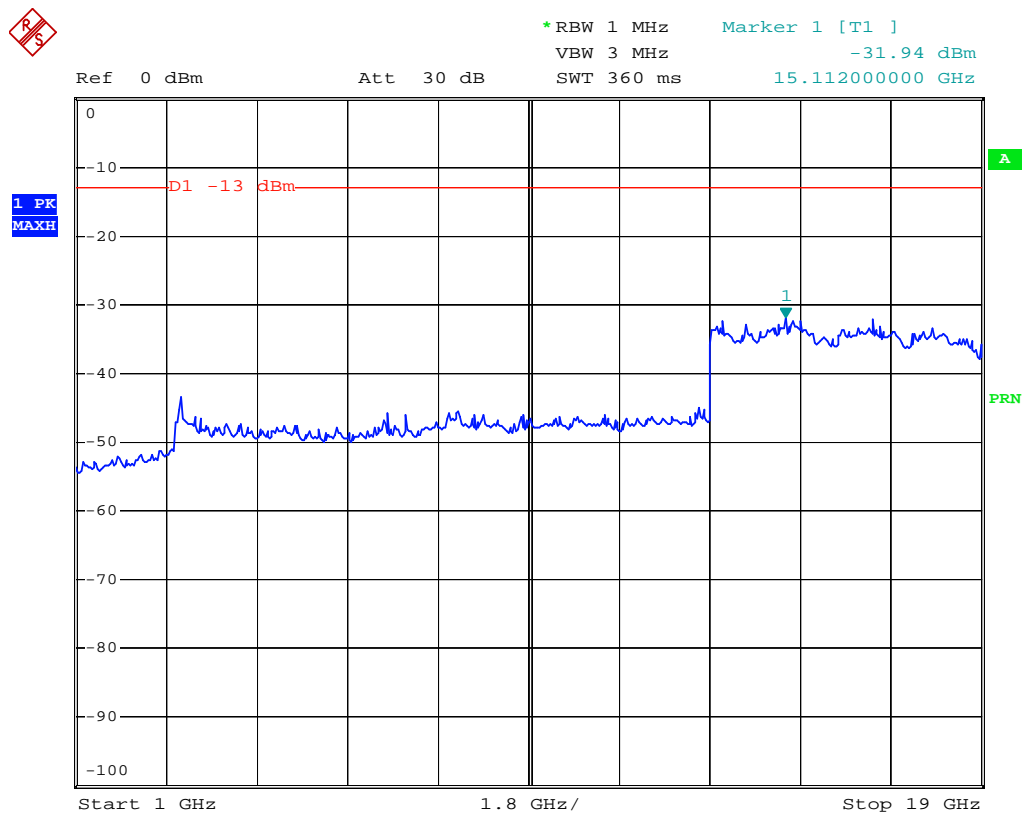
GSM High Band Emission



GPRS Low Channel
30MHz to 1GHz

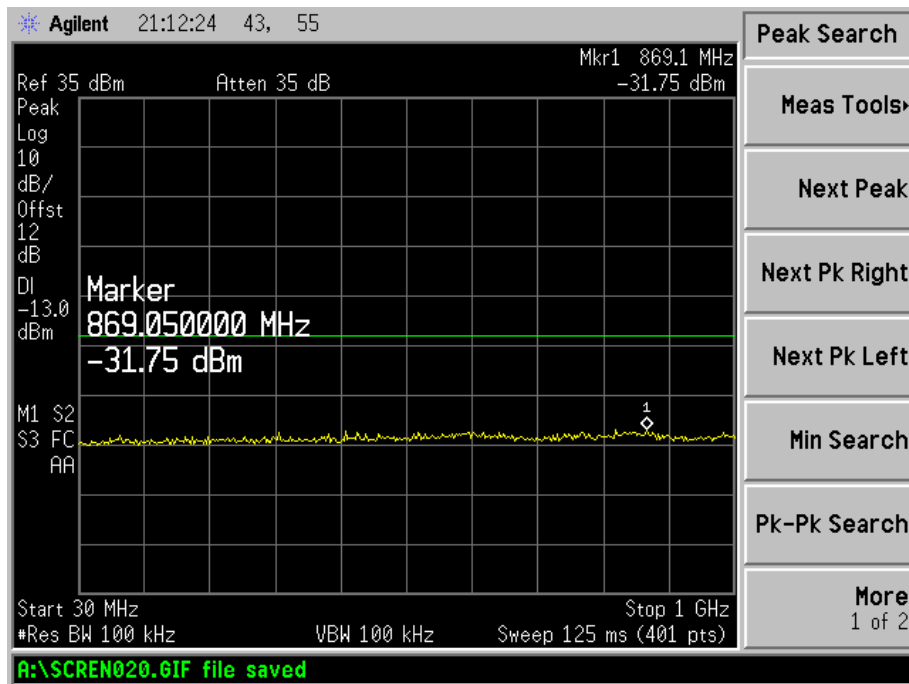


Above 1GHz

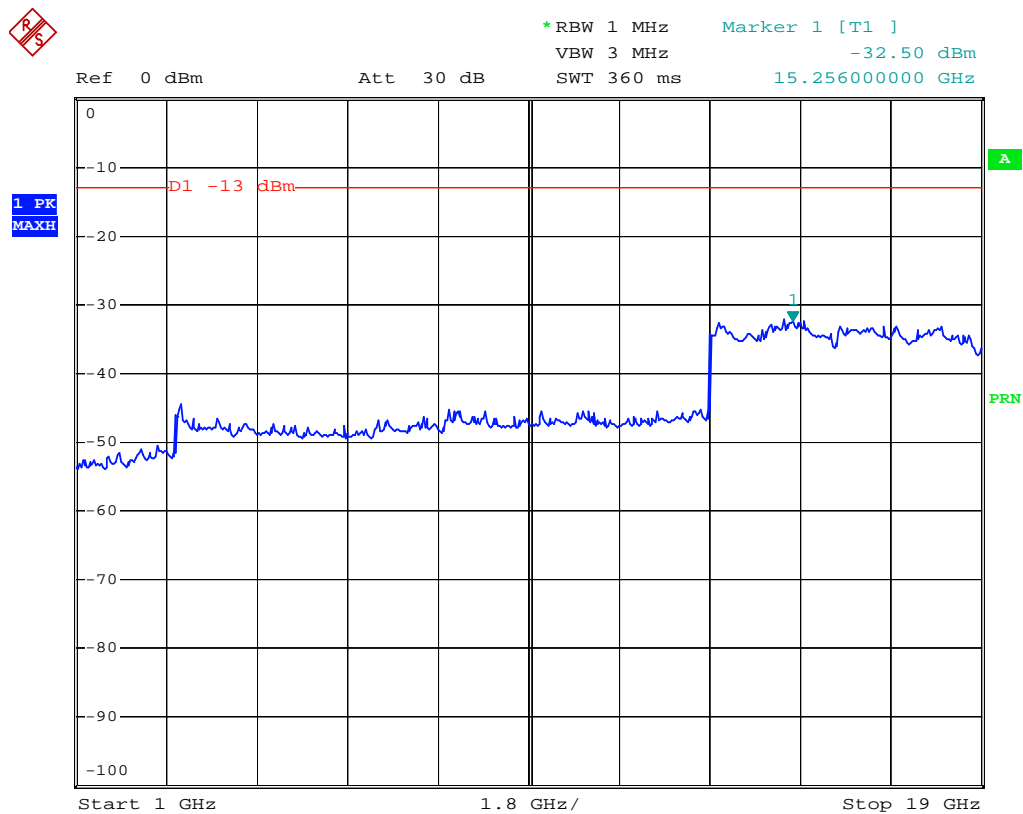


GPRS Middle Channel

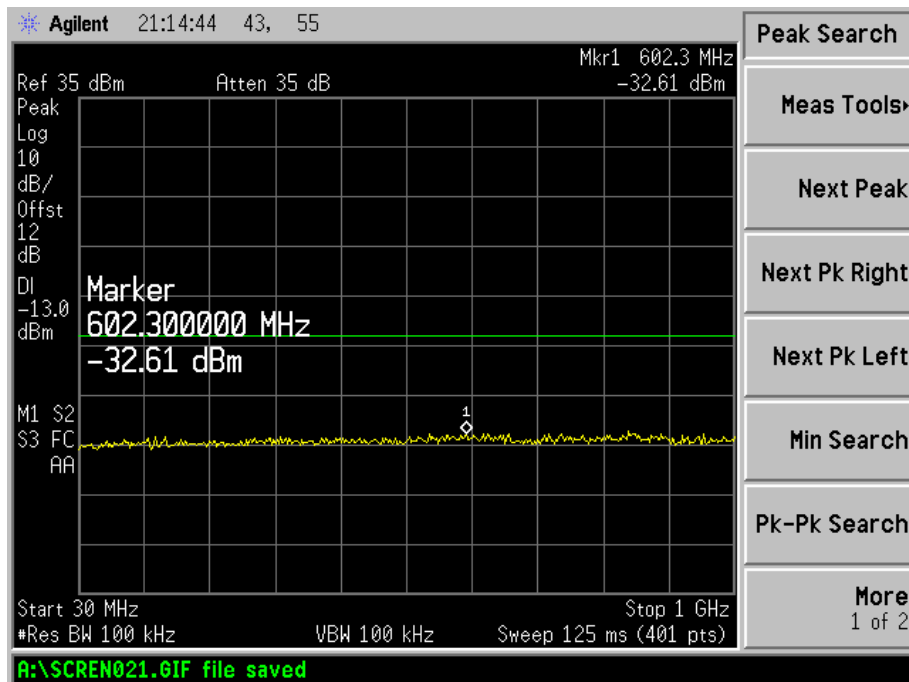
30MHz to 1GHz



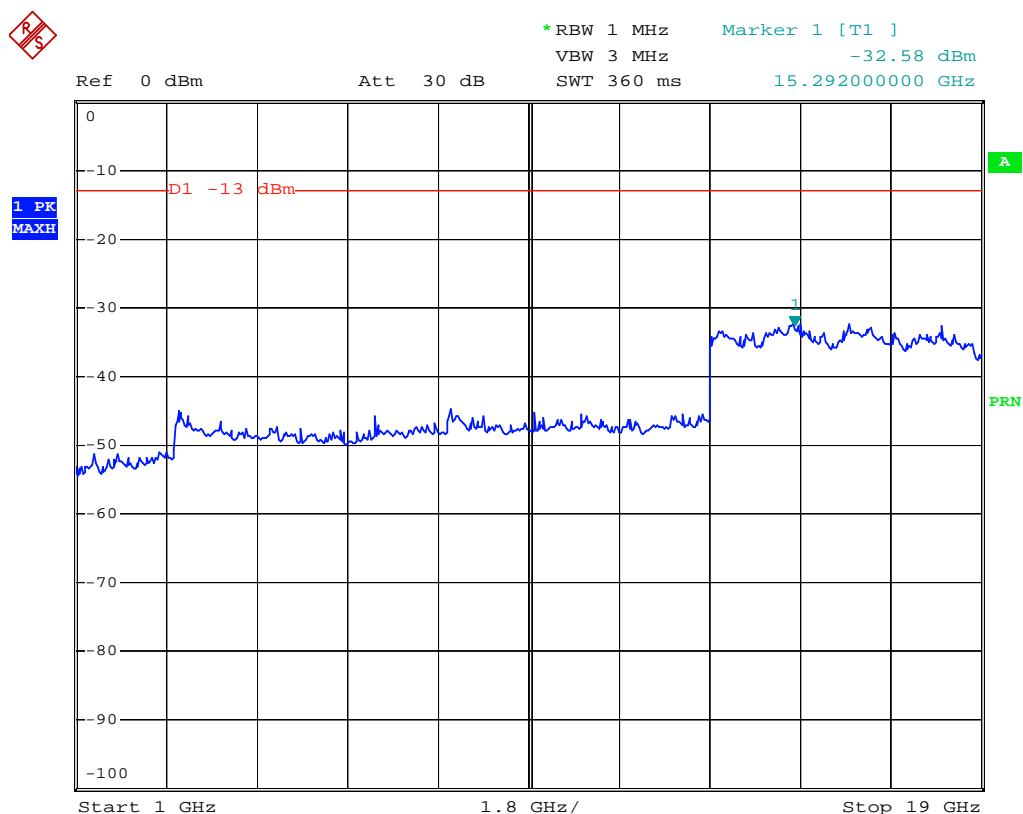
Above 1GHz



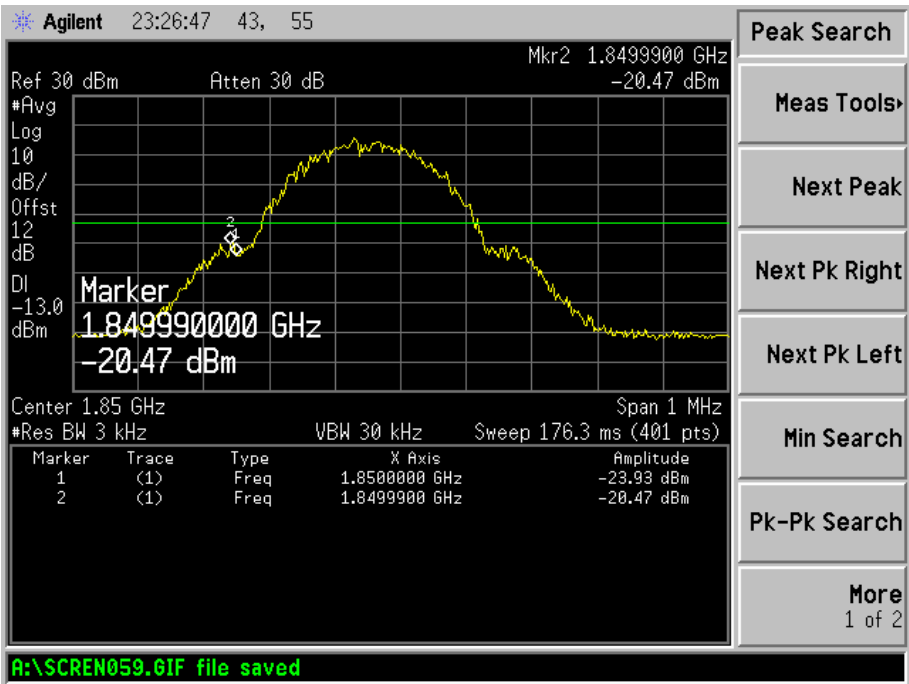
GPRS High Channel
30MHz to 1GHz



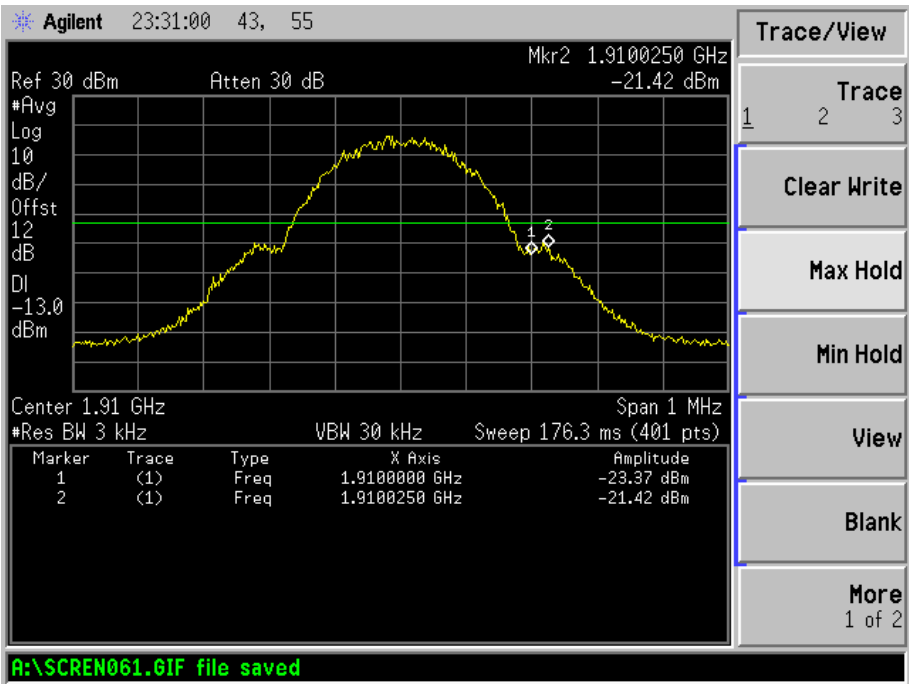
Above 1GHz



GPRS Low Band Emission



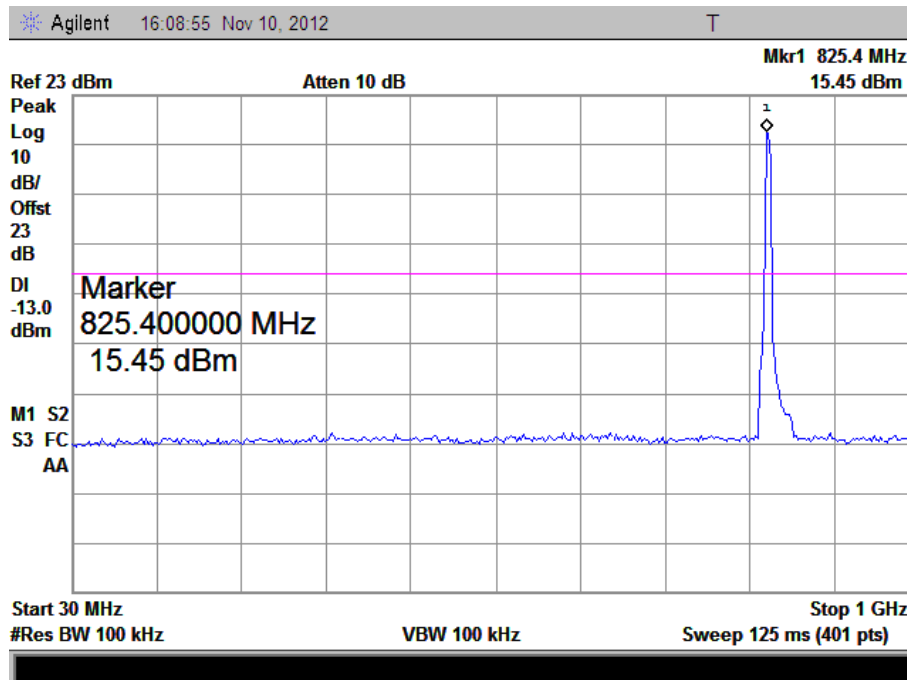
GPRS High Band Emission



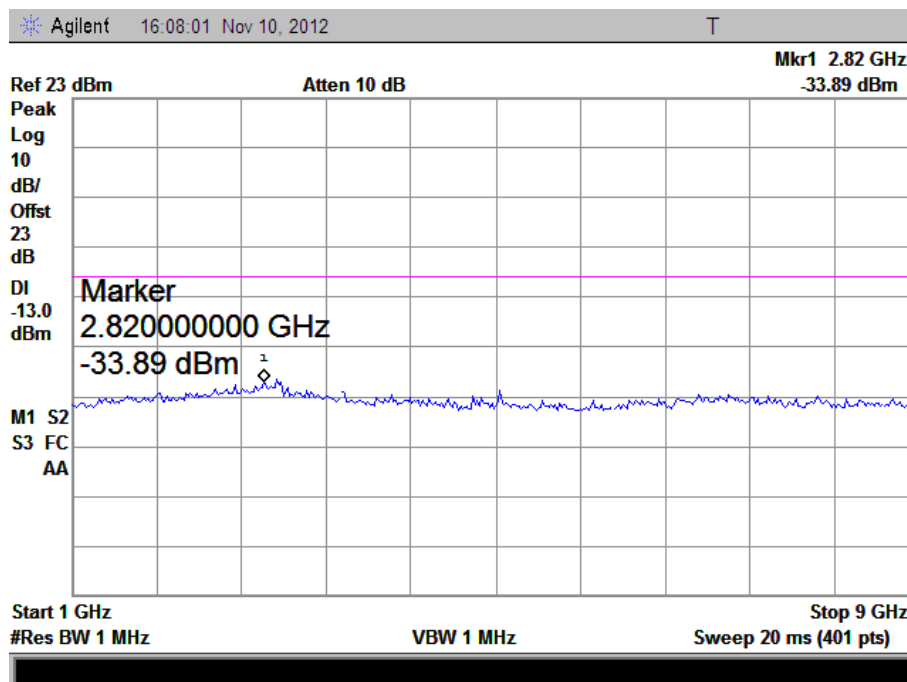
For Band V

WCDMA Low Channel

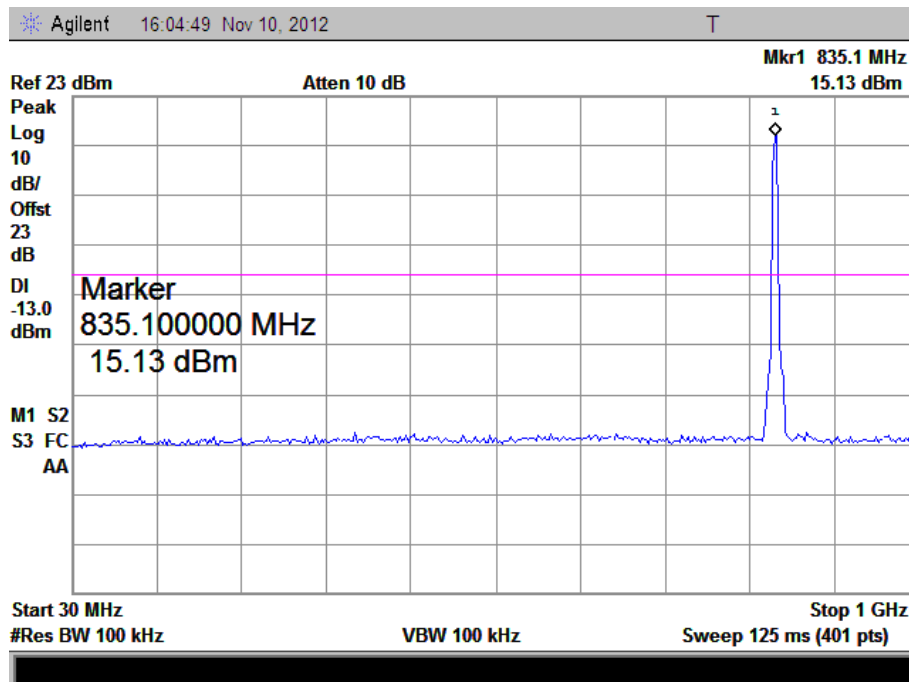
30MHz to 1GHz



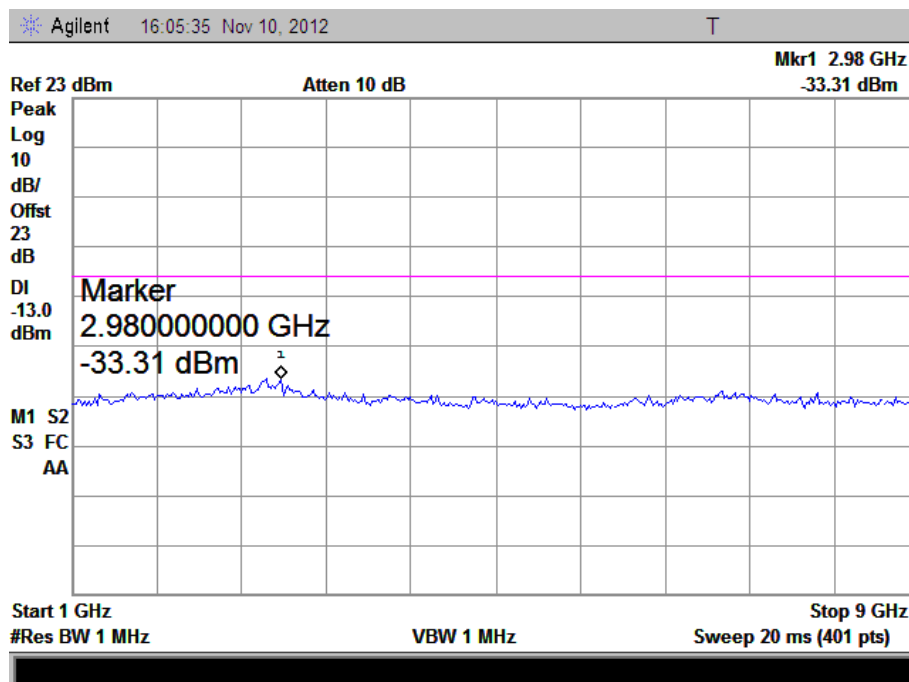
Above 1GHz



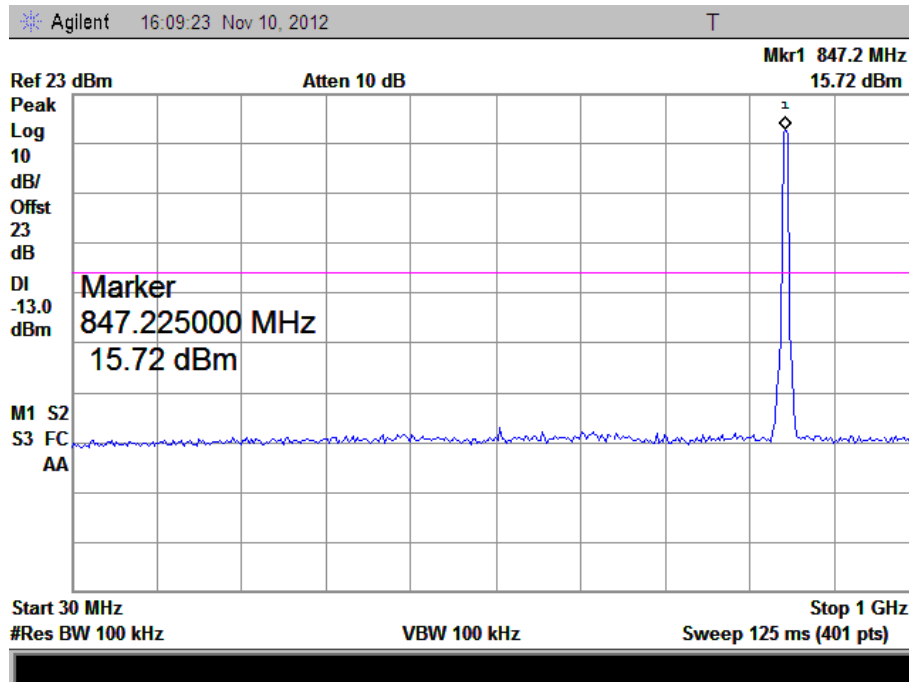
WCDMA Middle Channel
30MHz to 1GHz



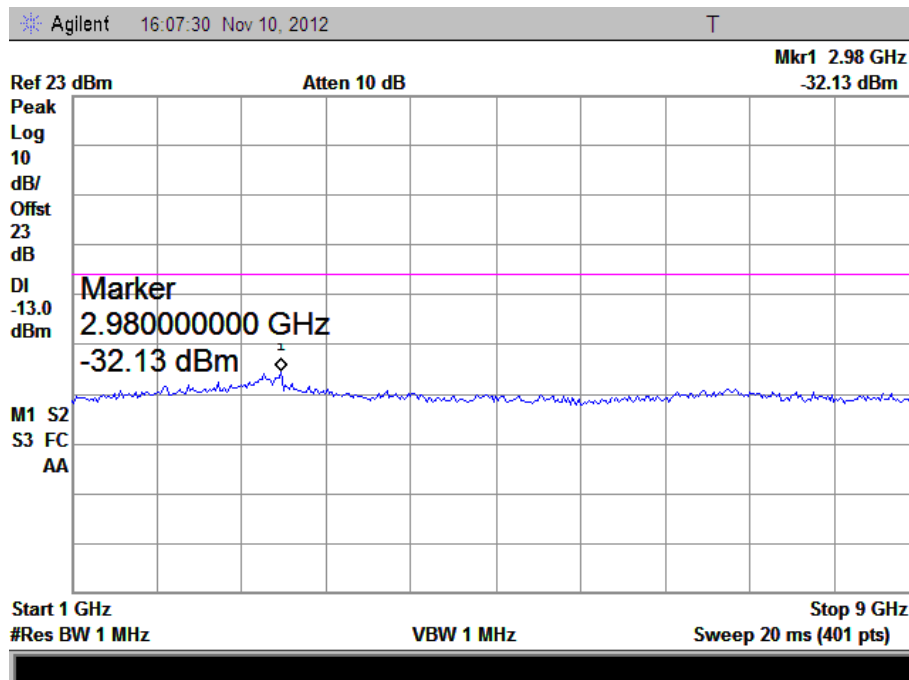
Above 1GHz



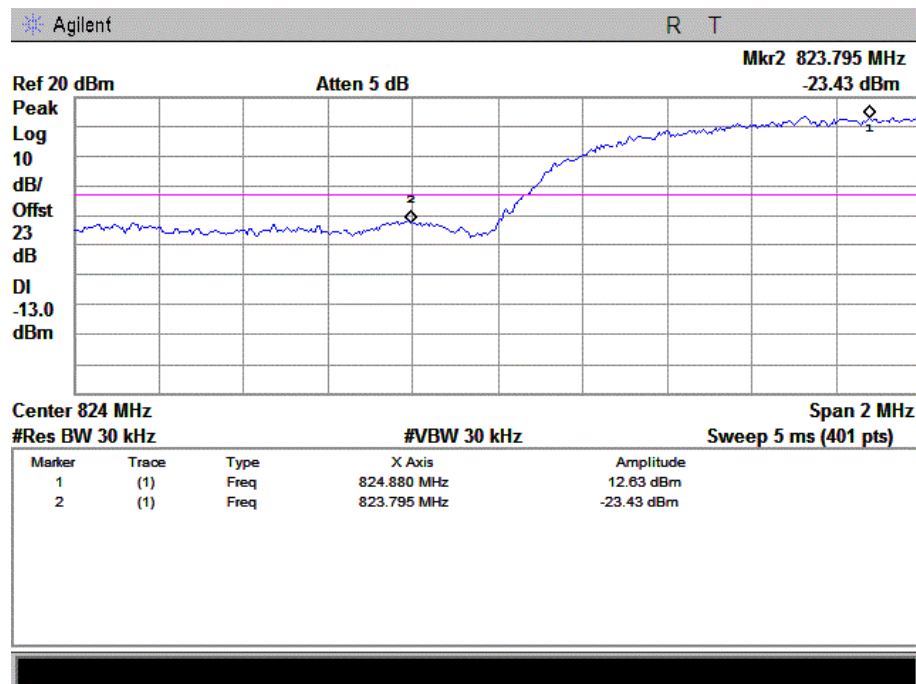
WCDMA High Channel
30MHz to 1GHz



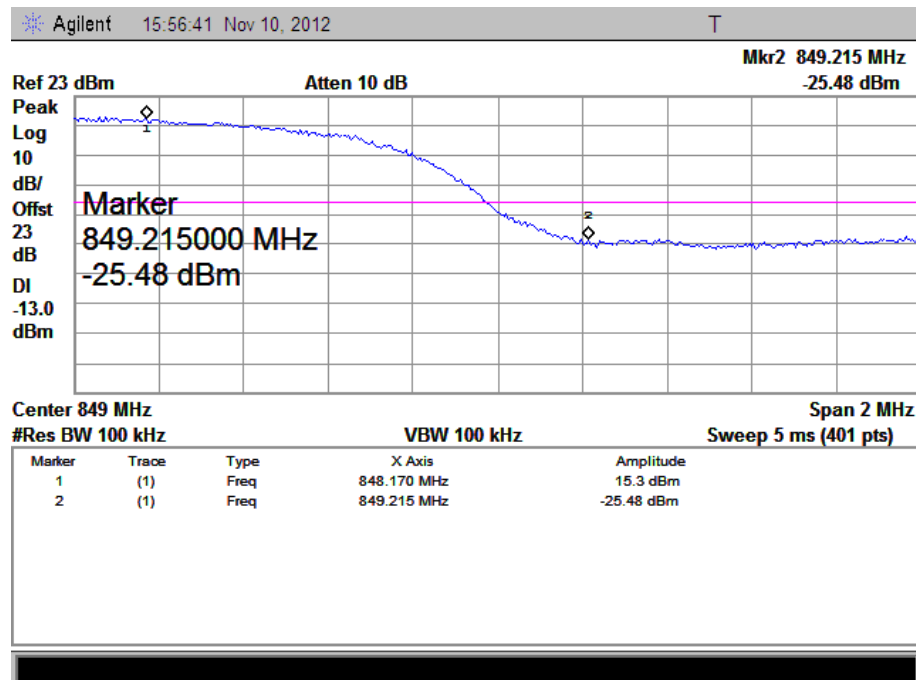
Above 1GHz



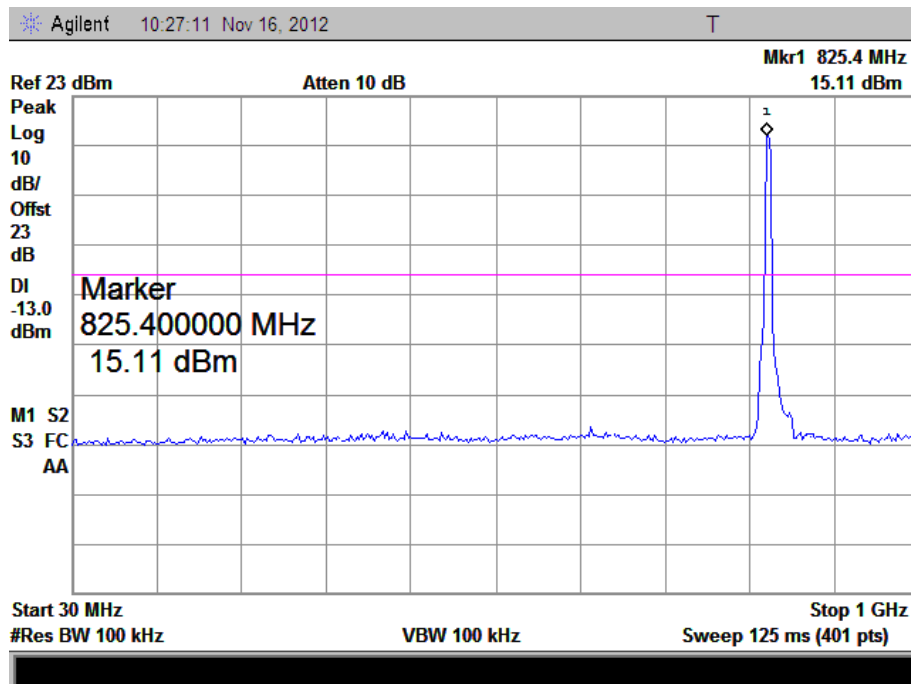
WCDMA Low Band Spurious Emission



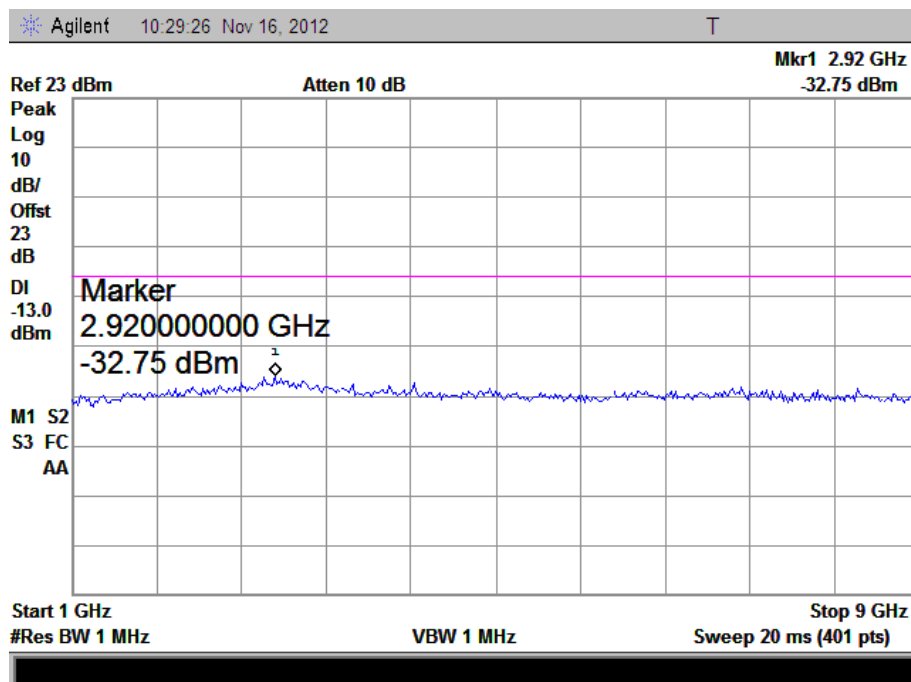
WCDMA High Band Spurious Emission



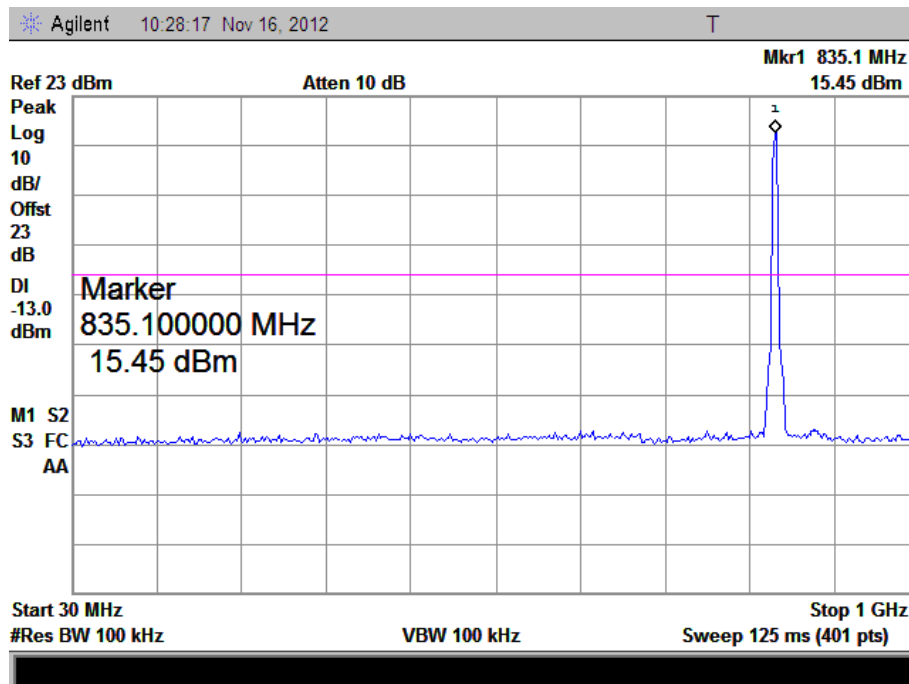
HSUPA Low Channel
30MHz to 1GHz



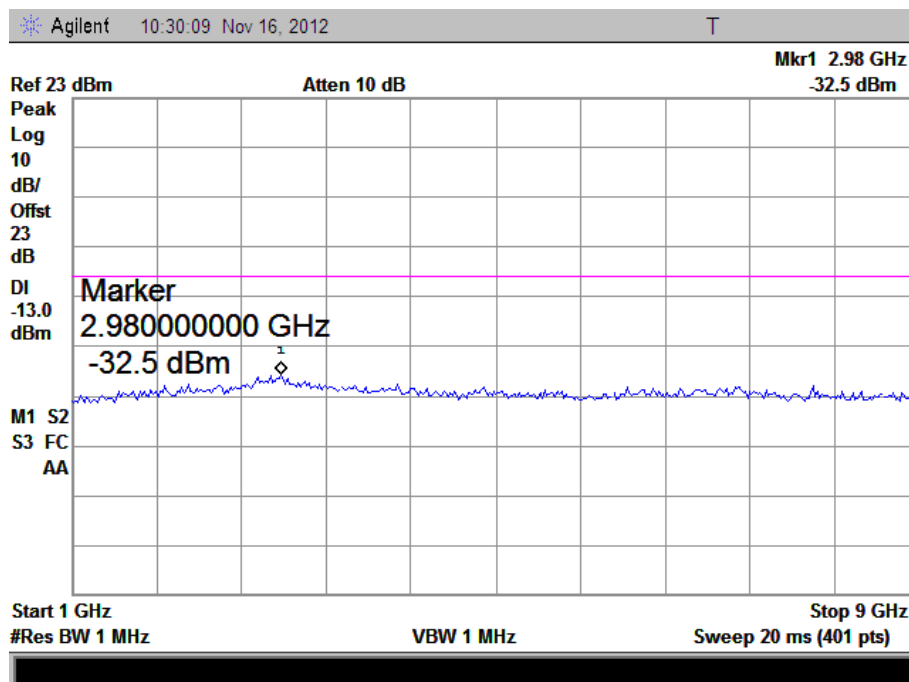
Above 1GHz



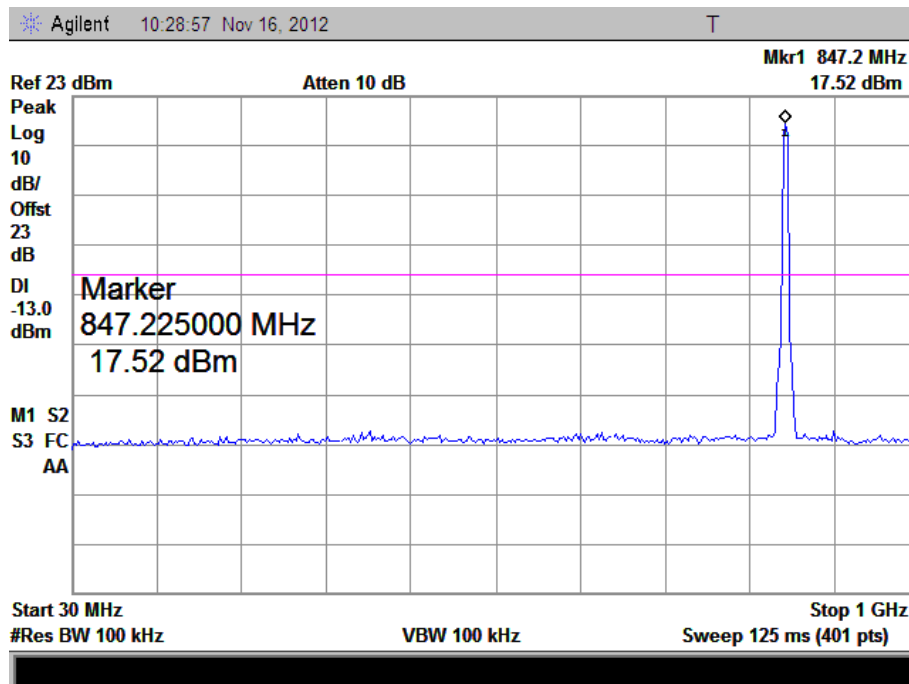
HSUPA Middle Channel
30MHz to 1GHz



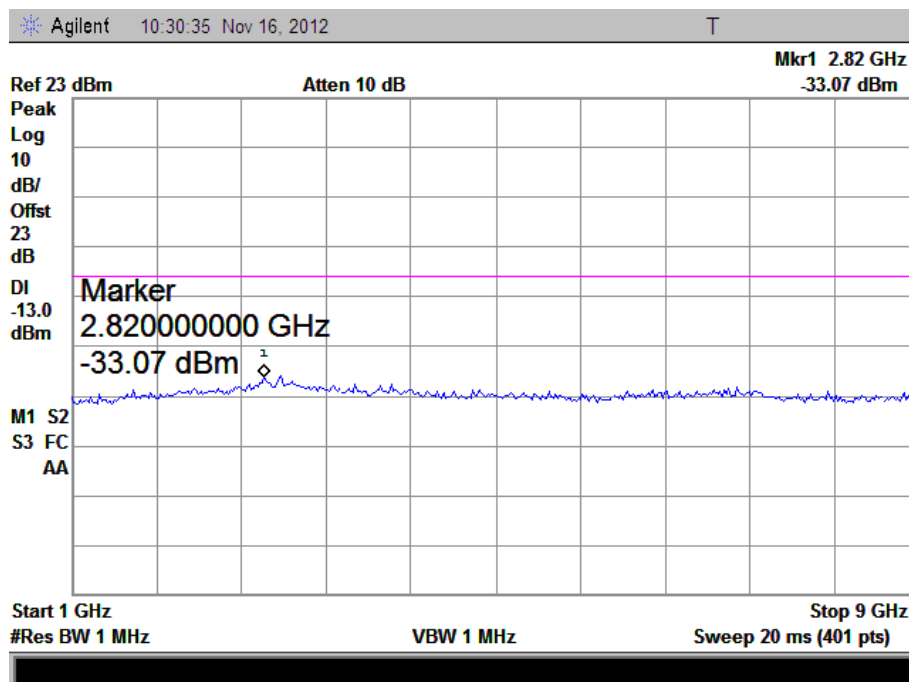
Above 1GHz



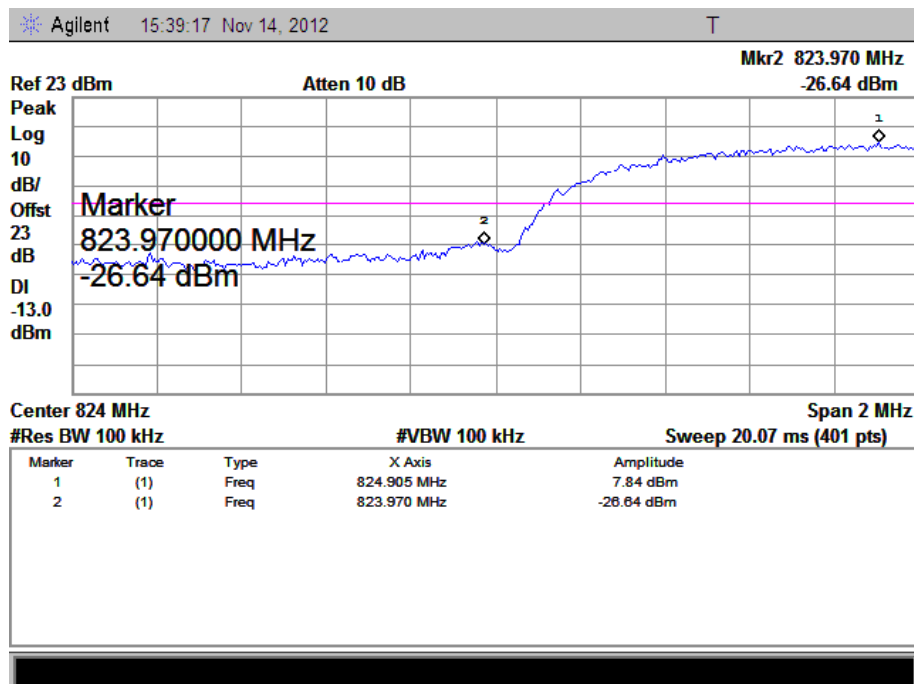
HSUPA High Channel 30MHz to 1GHz



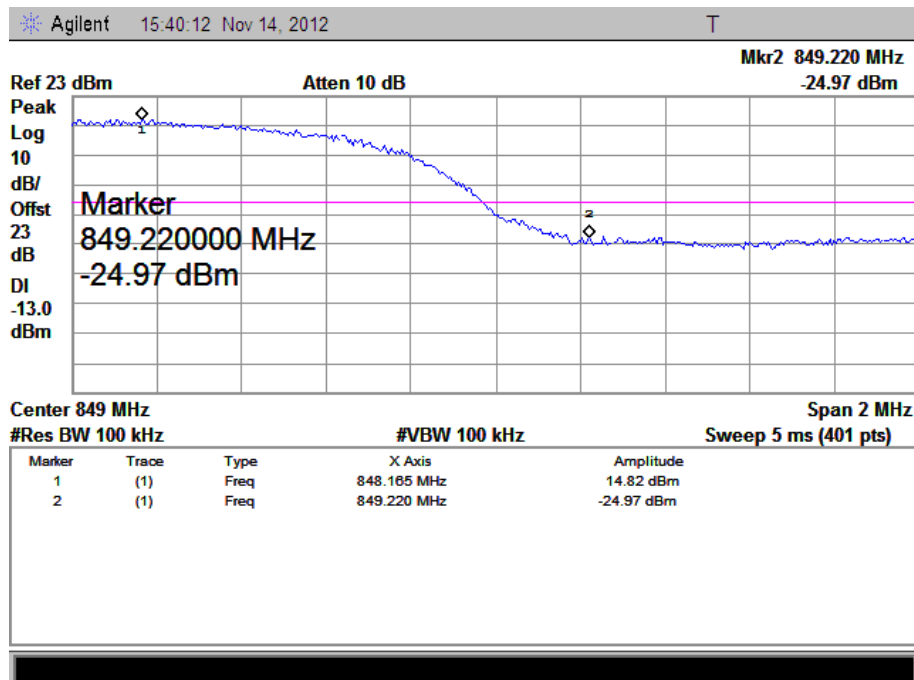
Above 1GHz



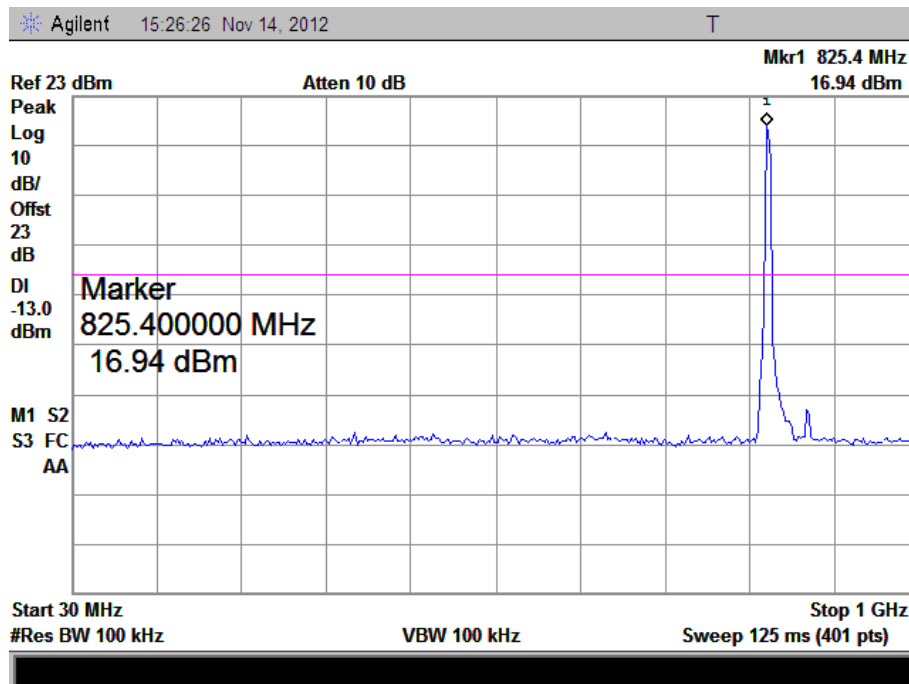
HSUPA Low Band Spurious Emission



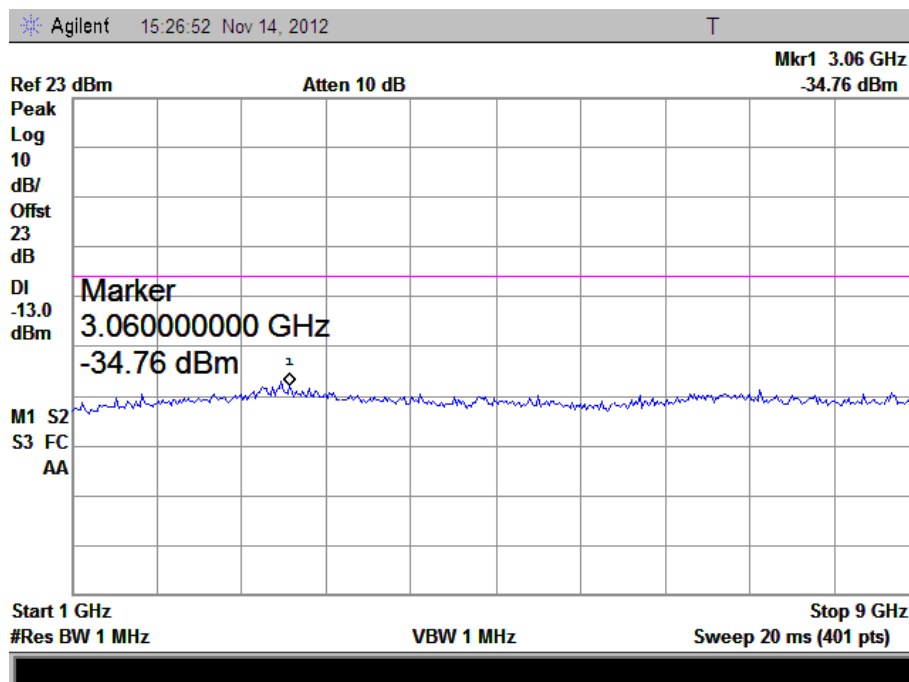
HSUPA High Band Spurious Emission



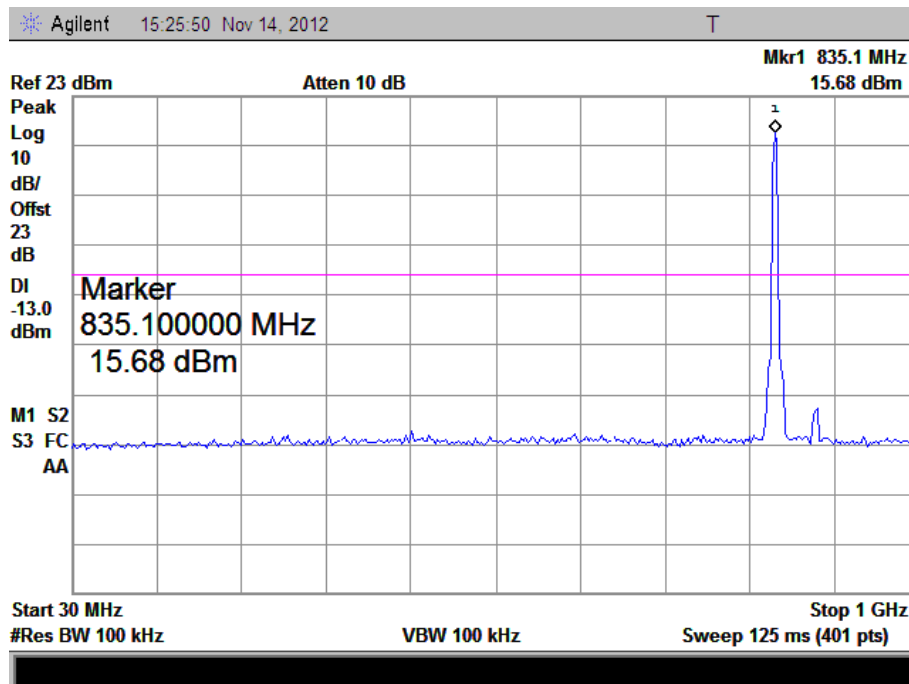
HSDPA Low Channel 30MHz to 1GHz



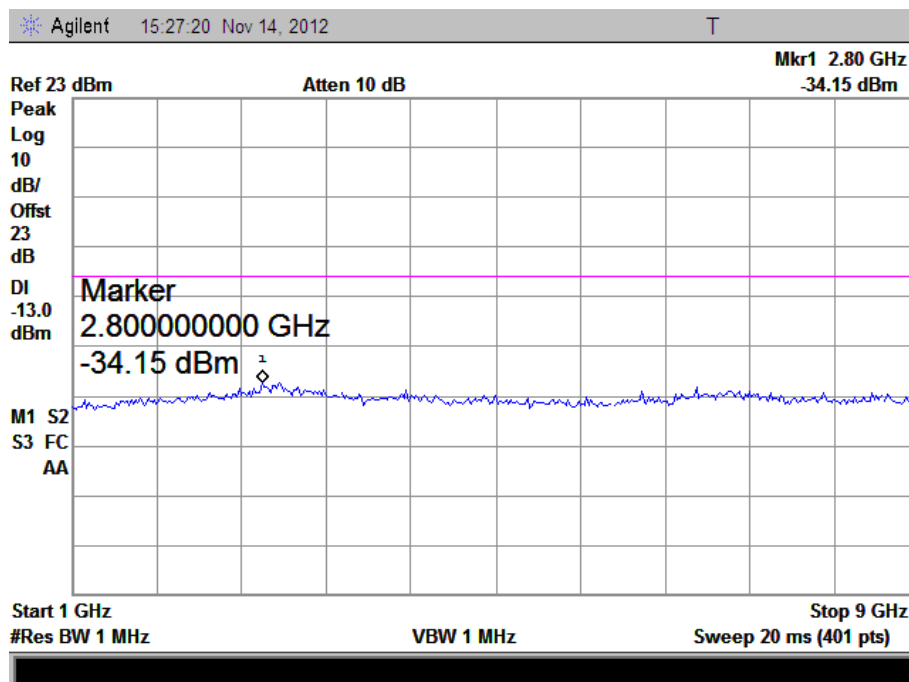
Above 1GHz



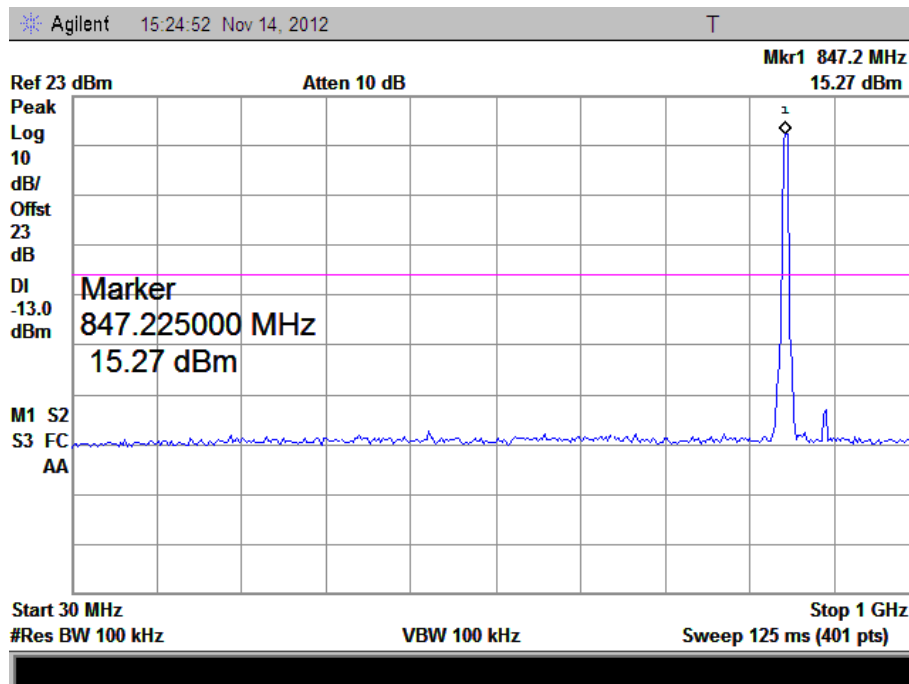
HSDPA Middle Channel 30MHz to 1GHz



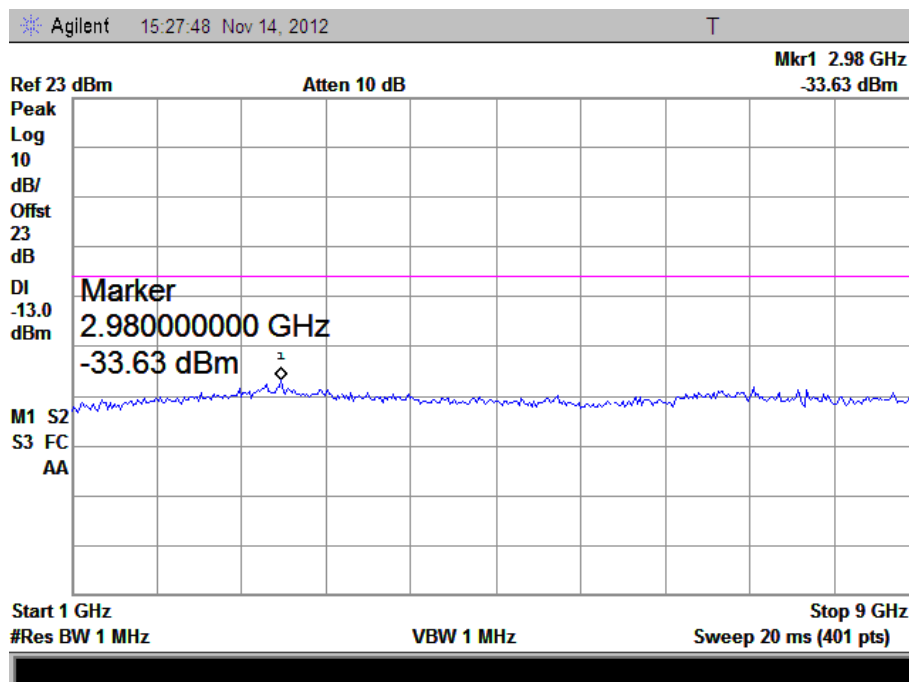
Above 1GHz



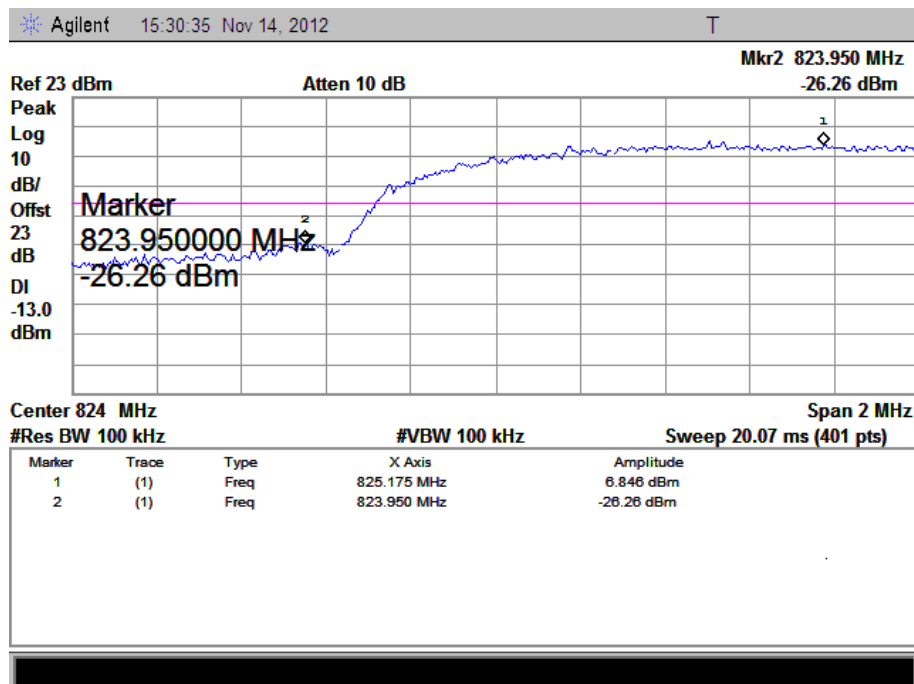
HSDPA High Channel 30MHz to 1GHz



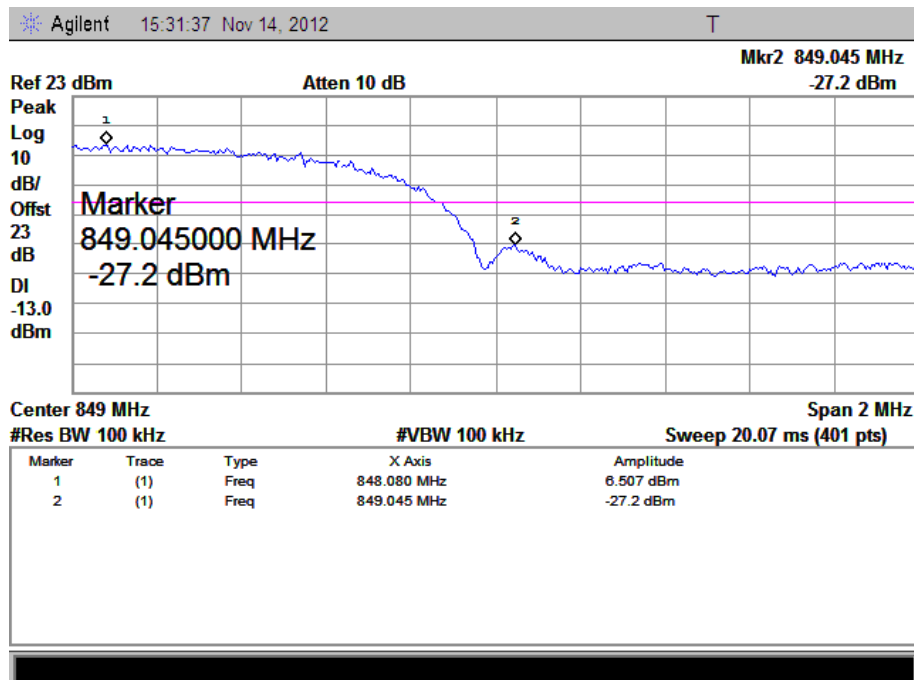
Above 1GHz



HSDPA Low Band Spurious Emission



HSDPA High Band Spurious Emission



7. Spurious Radiated Emissions

7.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ± 5.20 dB.

7.2 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §27.53 (h) For operations in the 1710-1755 MHz and 2110-2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB

7.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-05-07	2014-05-06
Horn Antenna	ETS	3117	00086197	2013-05-07	2014-05-06
Universal Radio Communication Tester	Rohde & Schwarz	CMU200	112012	2013-05-07	2014-05-06
Signal Generator	R&S	SMR20	100047	2013-05-07	2014-05-06

7.4 Test Procedure

1. The setup of EUT is according with per TIA/EIA Standard 603C and ANSI C63.4-2003 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious attenuation limit in dB = $43 + 10 \log_{10}(\text{power out in Watts})$

7.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

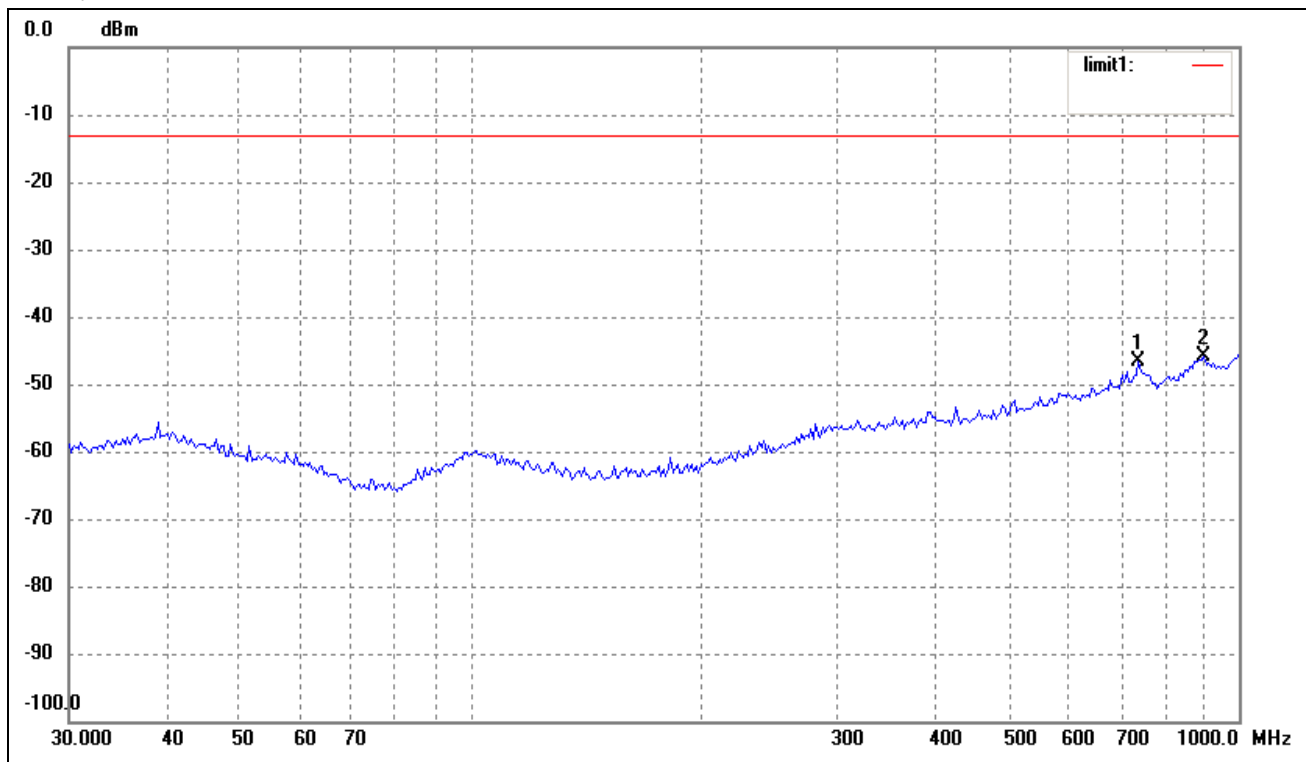
7.6 Summary of Test Results/Plots

According to the data below, the FCC Part 22.917 and 24.238 standards, and had the worst margin of:

Spurious Emission From 30MHz to 1GHz

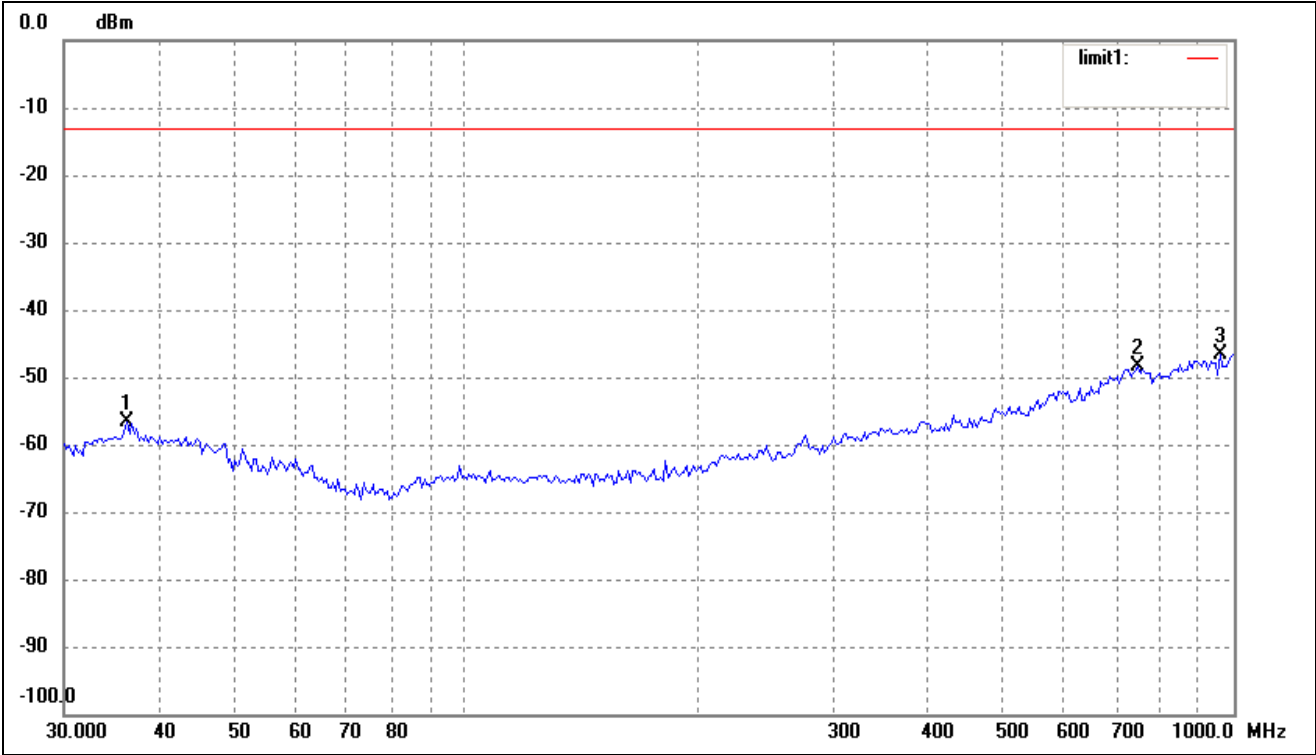
For Cellular Band_GSM Mode

Horizontal:



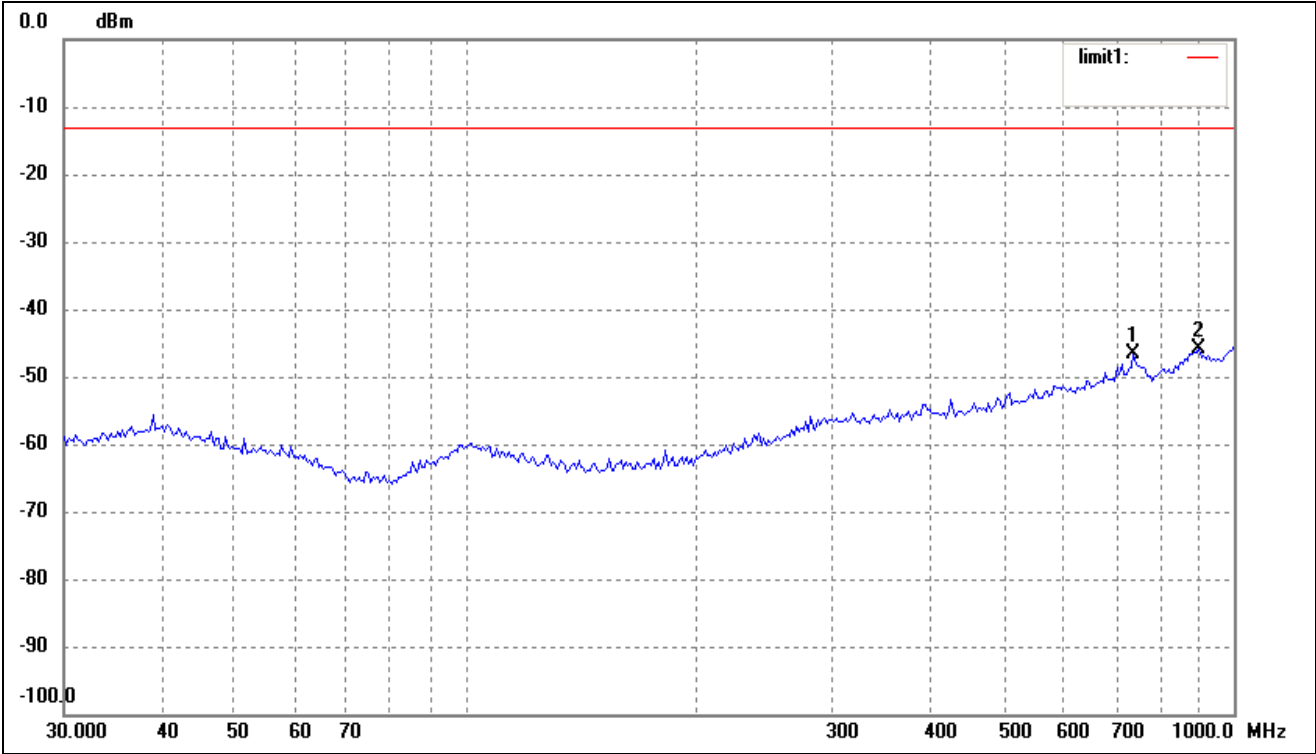
No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	739.6604	-76.39	29.87	-46.52	-13.00	-33.52	ERP
2	900.1474	-77.00	31.18	-45.82	-13.00	-32.82	ERP

Vertical:



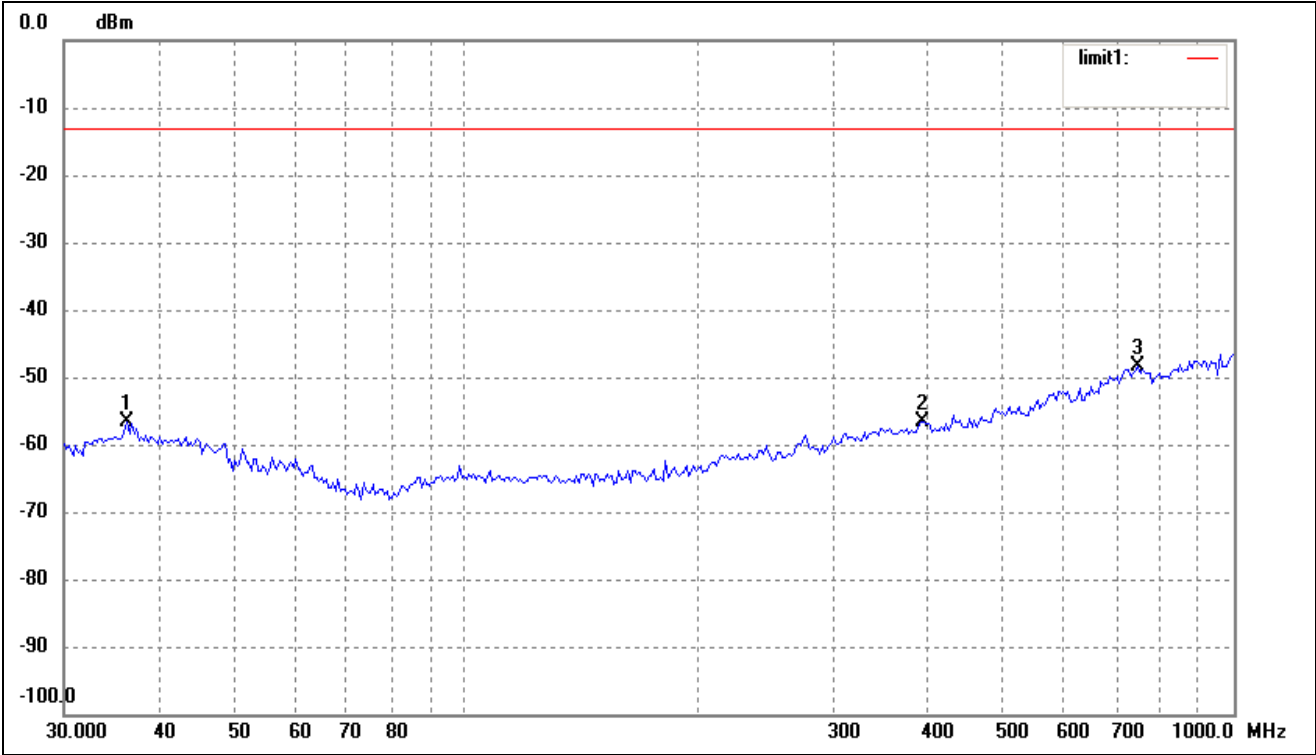
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	36.2541	-77.52	20.89	-56.63	-13.00	-43.63	ERP
2	750.1082	-77.94	29.58	-48.36	-13.00	-35.36	ERP
3	958.7943	-76.69	29.96	-46.73	-13.00	-33.73	ERP

For Cellular Band_GPRS Mode
Horizontal:



No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	739.6604	-76.39	29.87	-46.52	-13.00	-33.52	ERP
2	900.1474	-77.00	31.18	-45.82	-13.00	-32.82	ERP

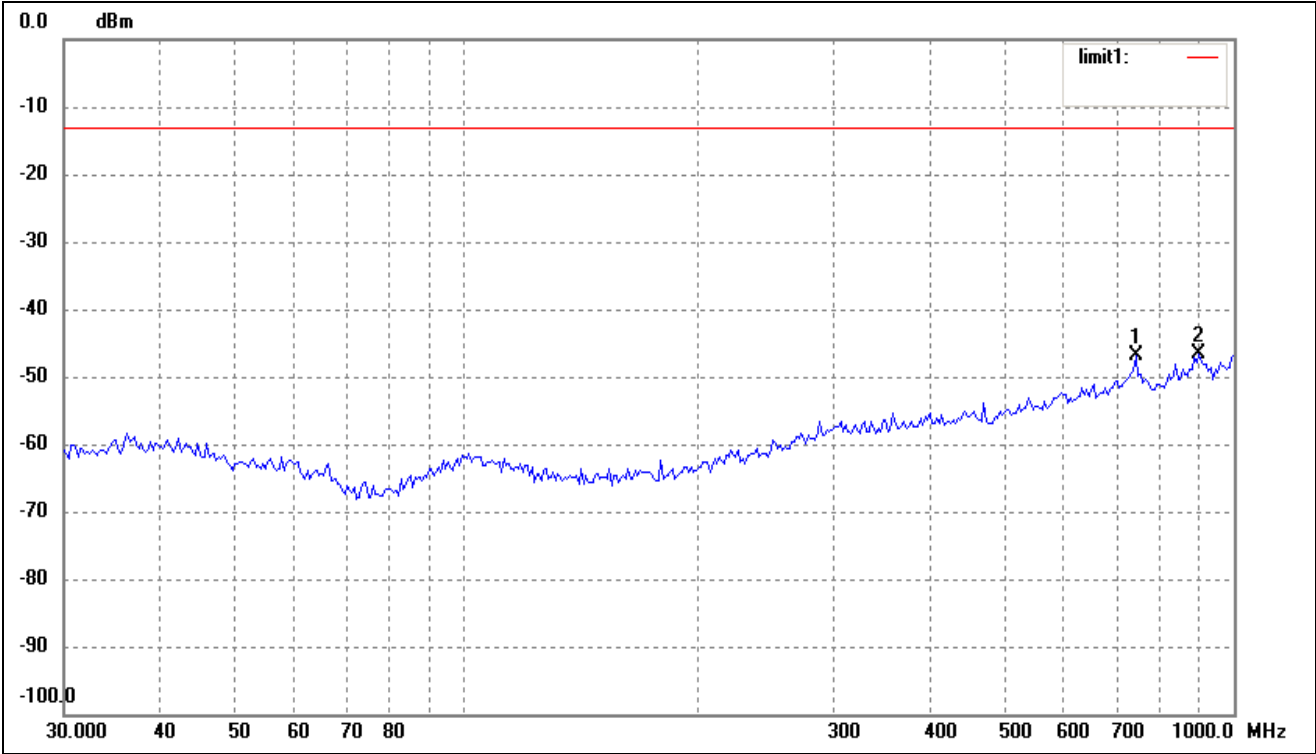
Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	36.2541	-77.52	20.89	-56.63	-13.00	-43.63	ERP
2	393.4723	-79.58	23.04	-56.54	-13.00	-43.54	ERP
3	750.1082	-77.94	29.58	-48.36	-13.00	-35.36	ERP

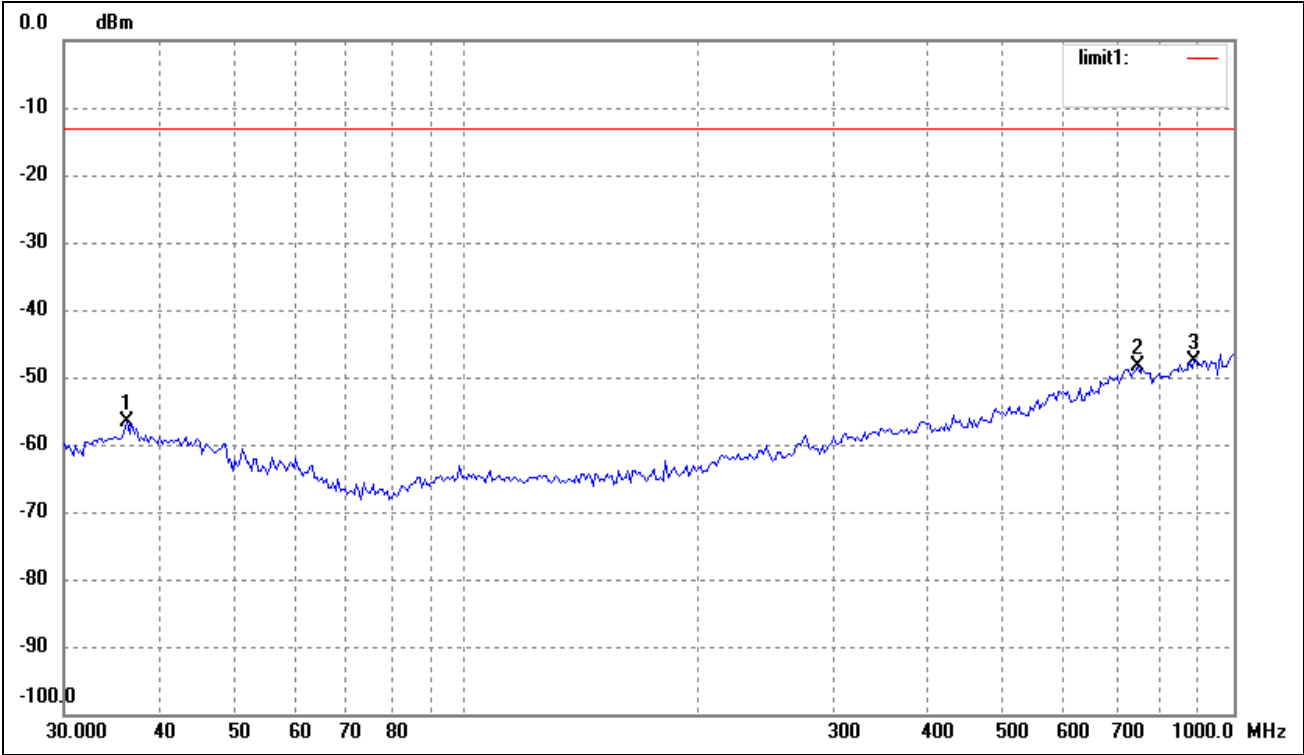
For PCS Band_GSM Mode

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	744.8661	-76.59	29.74	-46.85	-13.00	-33.85	ERP
2	900.1474	-77.91	31.18	-46.73	-13.00	-33.73	ERP

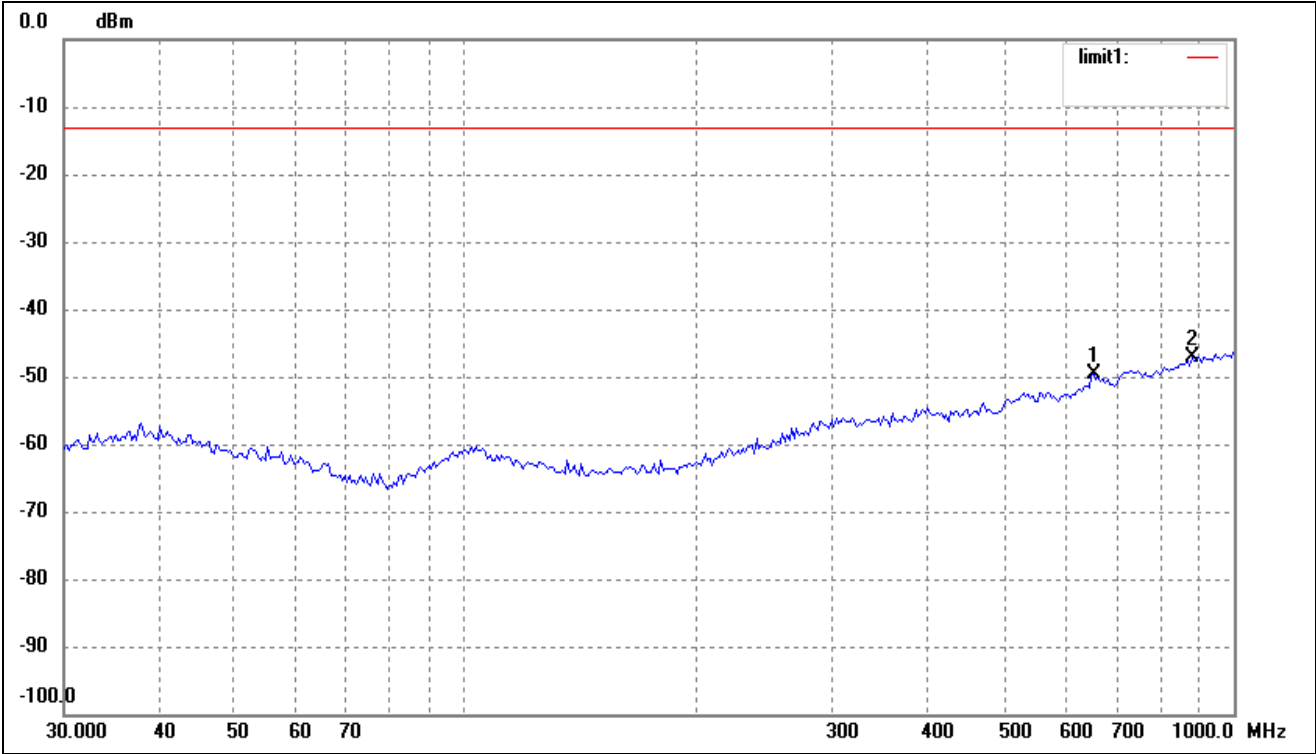
Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	36.2541	-77.52	20.89	-56.63	-13.00	-43.63	ERP
2	750.1082	-77.94	29.58	-48.36	-13.00	-35.36	ERP
3	887.6099	-78.51	30.95	-47.56	-13.00	-34.56	ERP

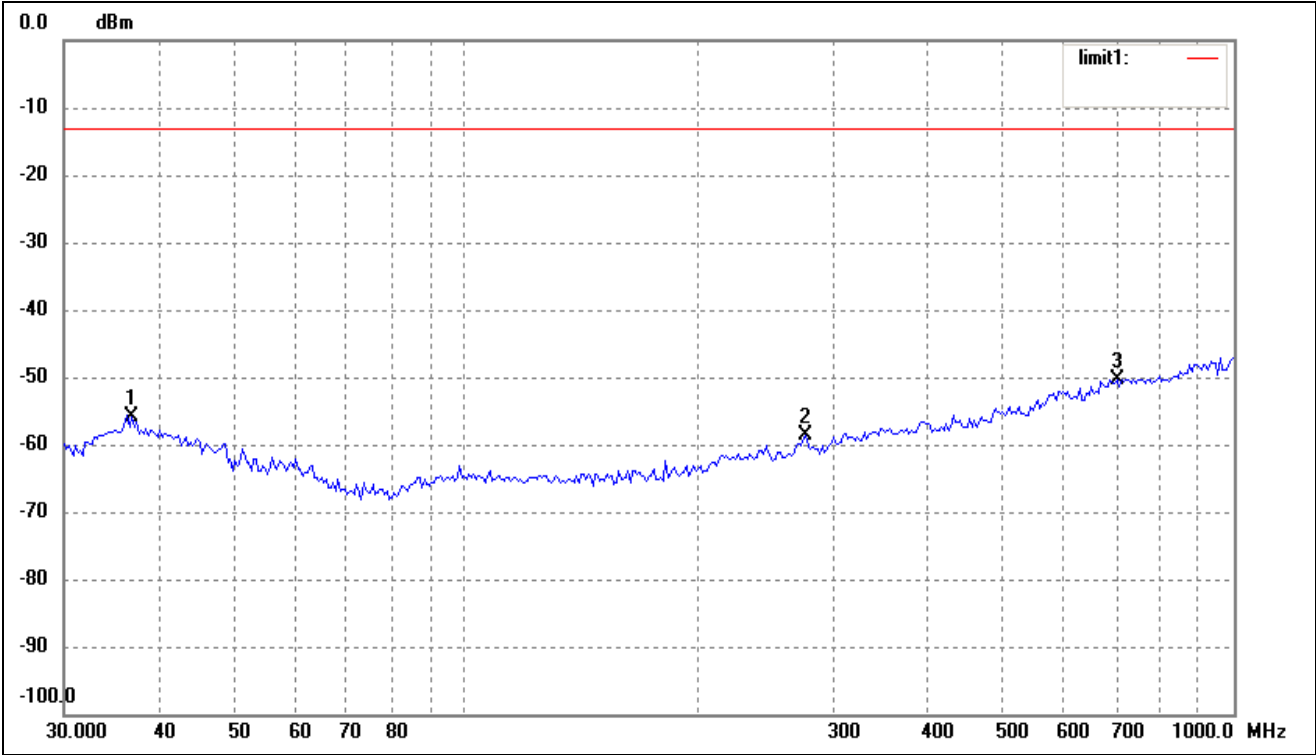
For PCS Band_GPRS Mode

Horizontal:



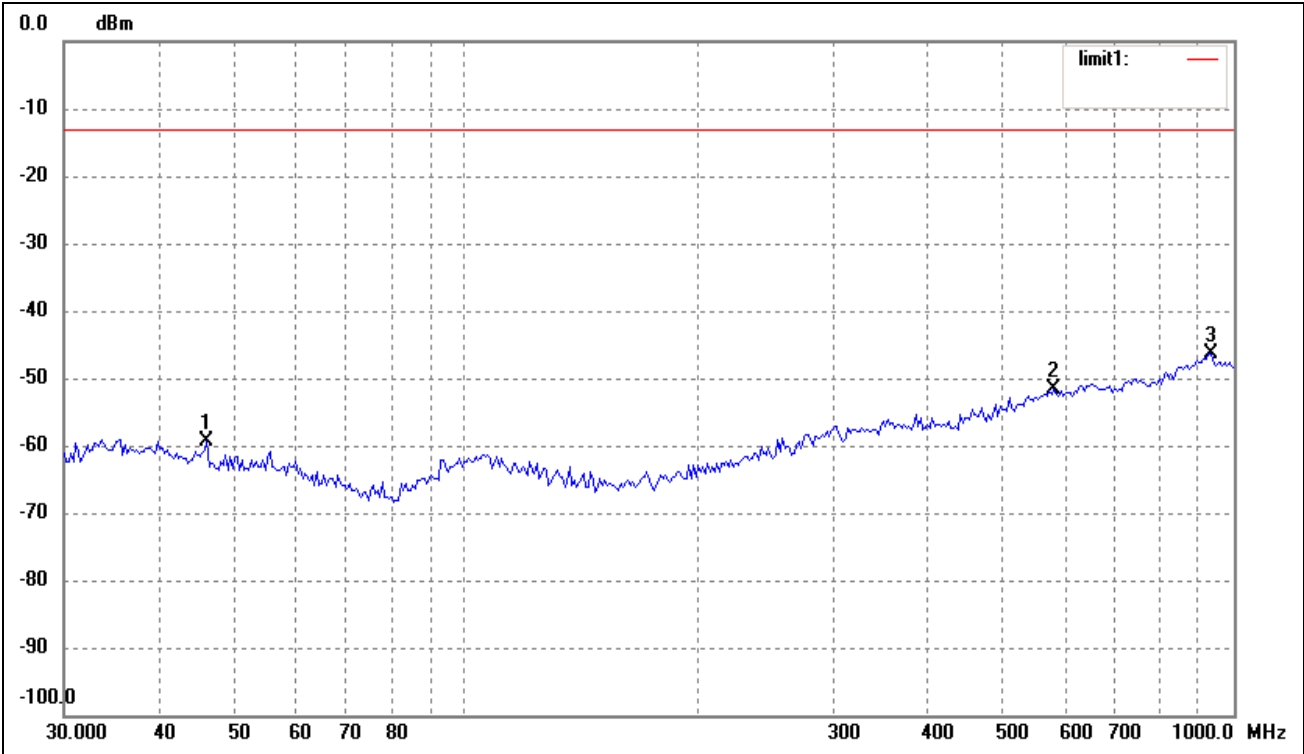
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	656.5300	-76.31	26.70	-49.61	-13.00	-36.61	ERP
2	881.4067	-77.87	30.83	-47.04	-13.00	-34.04	ERP

Vertical:



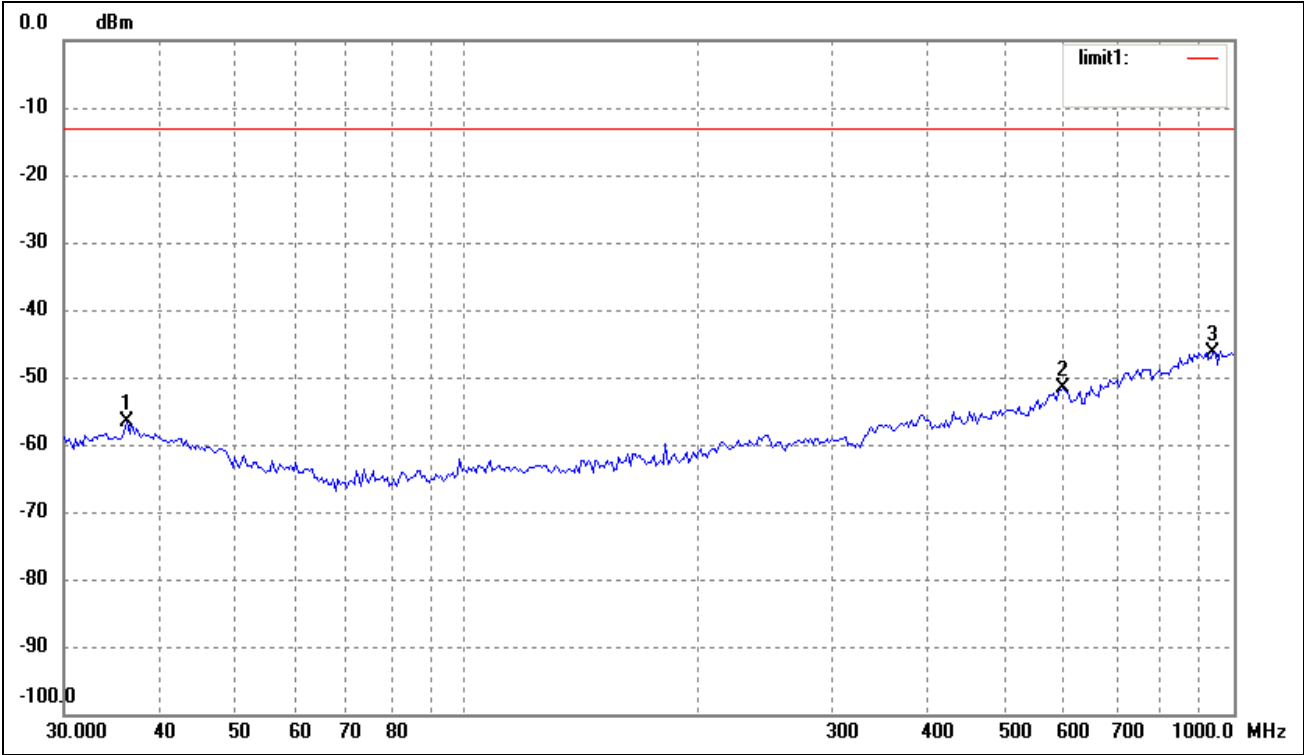
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	36.7661	-76.87	20.96	-55.91	-13.00	-42.91	ERP
2	277.0935	-79.46	20.81	-58.65	-13.00	-45.65	ERP
3	704.2259	-77.98	27.73	-50.25	-13.00	-37.25	ERP

Spurious Emission From 30MHz to 1GHz
For band V WCDMA Mode
Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	46.0163	-79.05	19.65	-59.40	-13.00	-46.40	ERP
2	582.7423	-77.80	26.07	-51.73	-13.00	-38.73	ERP
3	932.2713	-76.49	30.11	-46.38	-13.00	-33.38	ERP

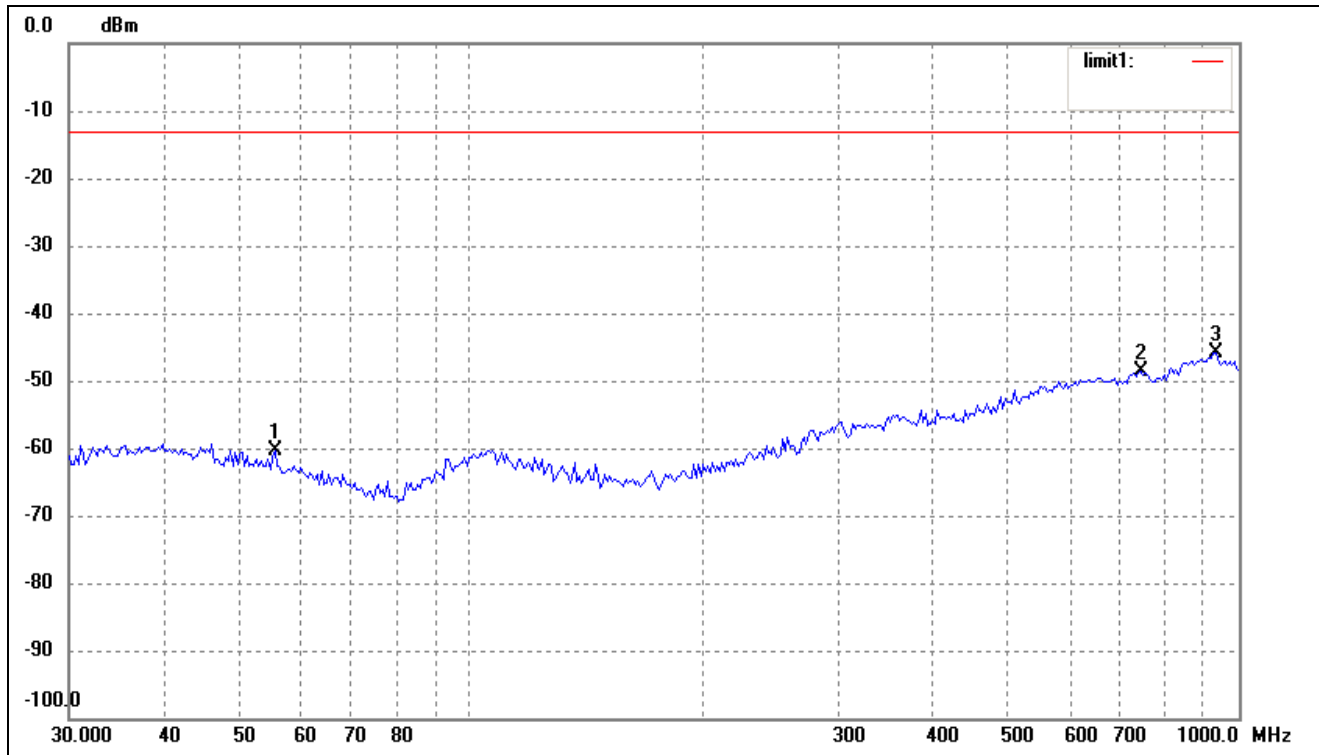
Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	36.2541	-77.52	20.89	-56.63	-13.00	-43.63	ERP
2	599.3211	-78.06	26.56	-51.50	-13.00	-38.50	ERP
3	938.8324	-76.22	29.91	-46.31	-13.00	-33.31	ERP

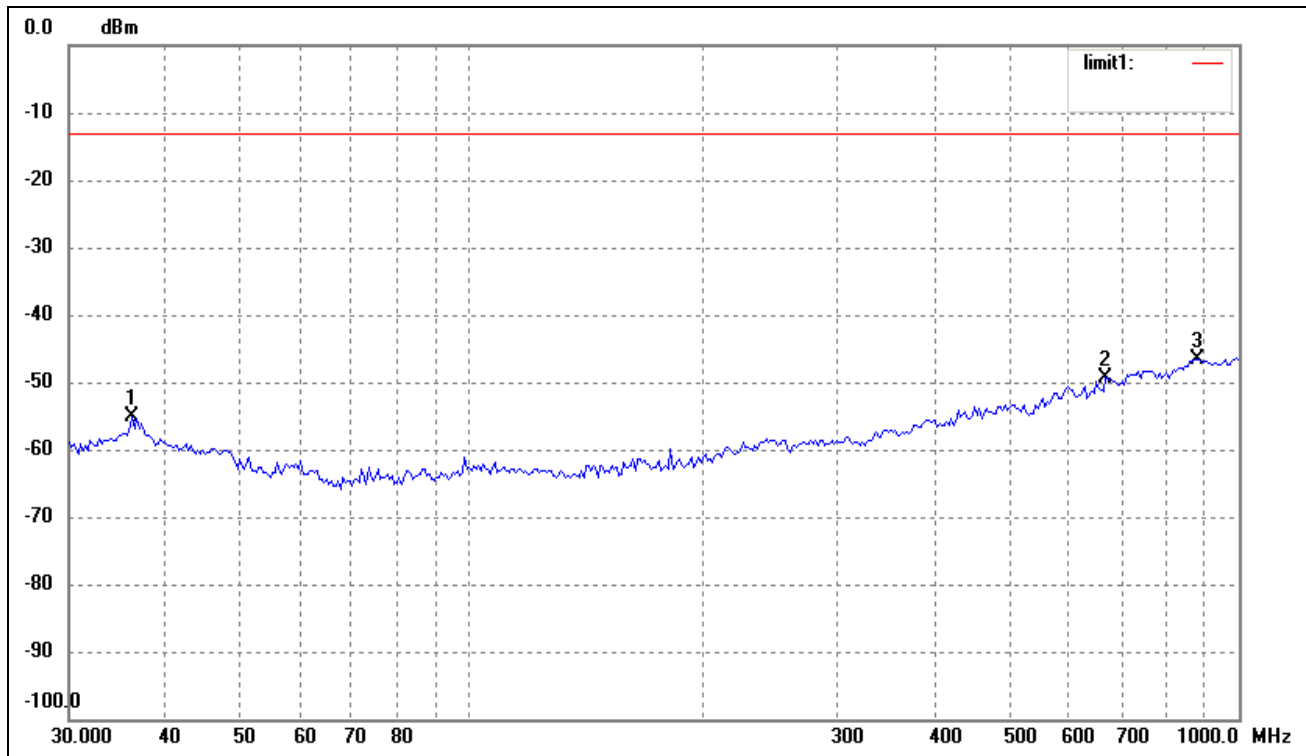
For band V HSDPA Mode

Horizontal:



No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	55.6094	-78.32	17.91	-60.41	-13.00	-47.41	ERP
2	744.8659	-78.26	29.74	-48.52	-13.00	-35.52	ERP
3	932.2713	-75.99	30.11	-45.88	-13.00	-32.88	ERP

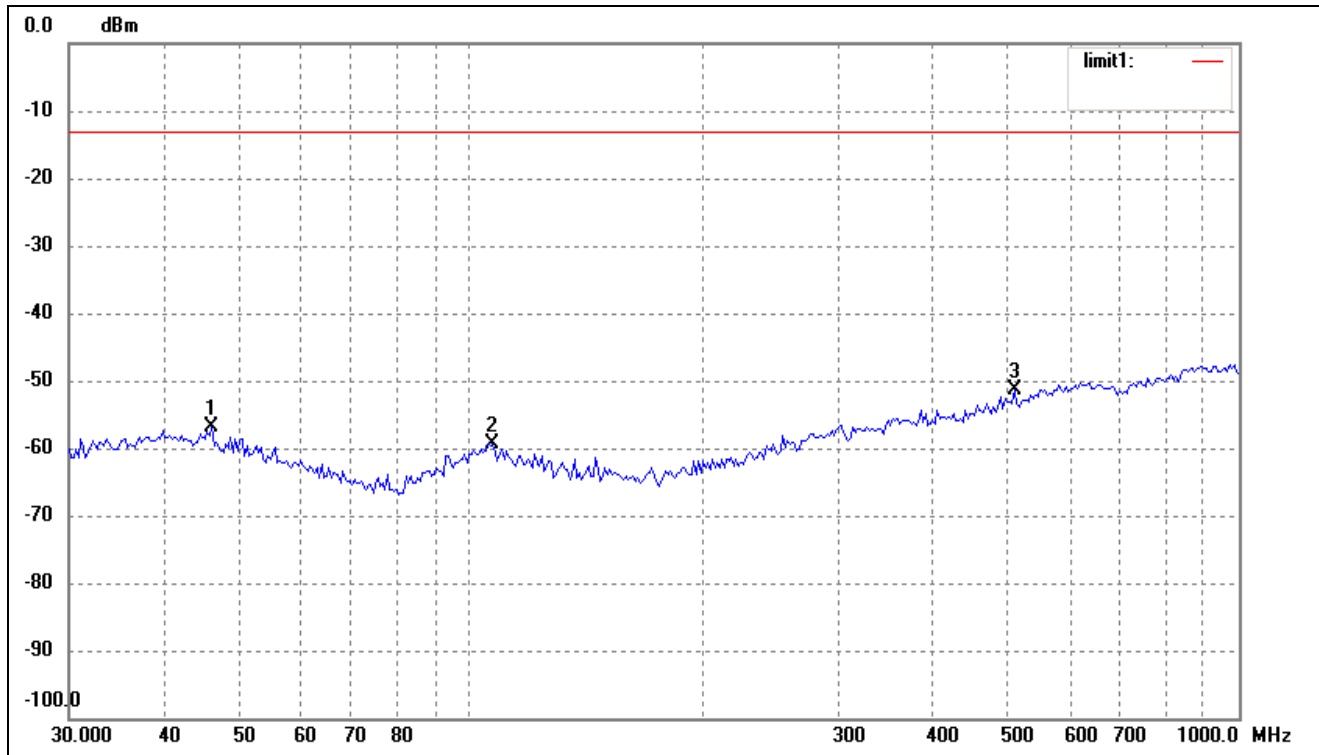
Vertical:



No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	36.2541	-76.02	20.89	-55.13	-13.00	-42.13	ERP
2	670.4891	-76.22	26.97	-49.25	-13.00	-36.25	ERP
3	881.4067	-77.38	30.83	-46.55	-13.00	-33.55	ERP

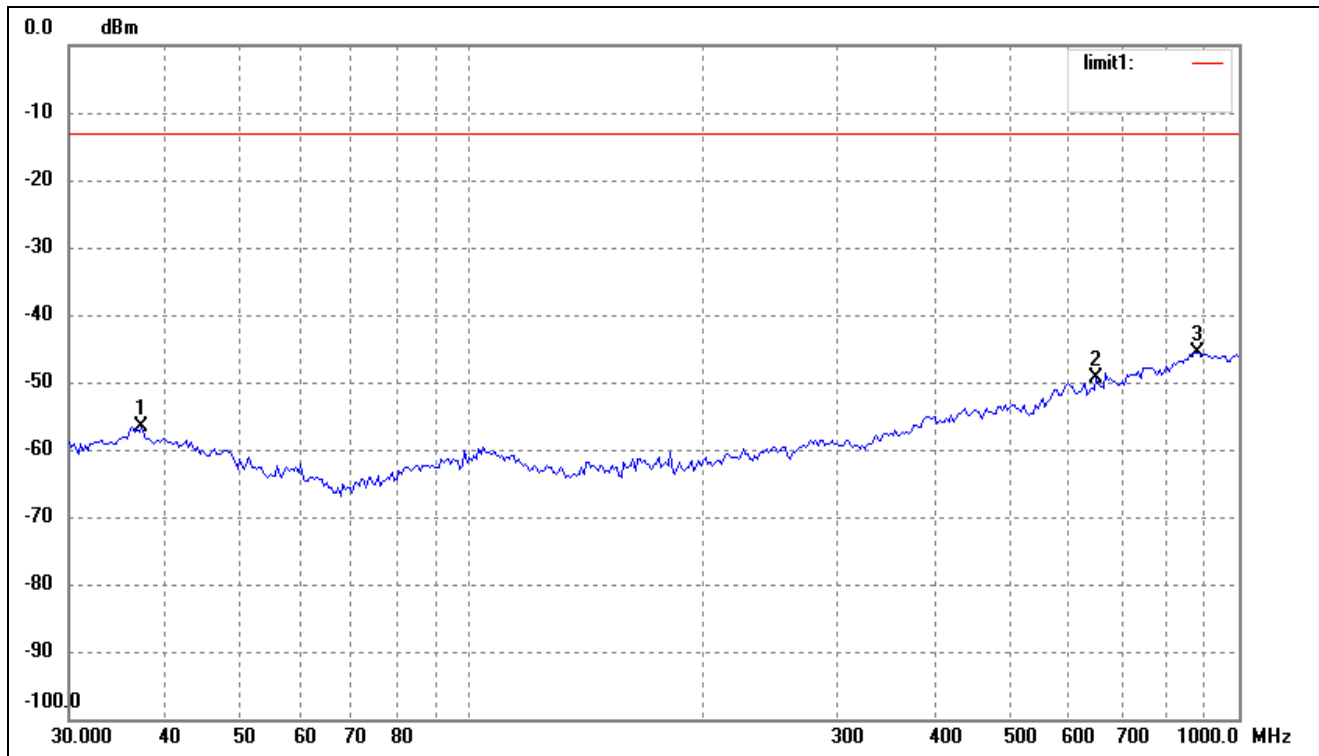
For band V HSDPA Mode

Horizontal:



No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	46.0163	-76.55	19.65	-56.90	-13.00	-43.90	ERP
2	106.7587	-77.35	17.98	-59.37	-13.00	-46.37	ERP
3	510.0436	-75.85	24.36	-51.49	-13.00	-38.49	ERP

Vertical:



No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	37.2854	-77.65	21.05	-56.60	-13.00	-43.60	ERP
2	651.9415	-76.30	26.87	-49.43	-13.00	-36.43	ERP
3	881.4067	-76.38	30.83	-45.55	-13.00	-32.55	ERP

*Spurious Emissions Above 1GHz**For Cellular Band_GSM Mode*

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (824.2MHz)						
1858.000	-56.55	-0.63	-57.18	-13.00	-44.18	H
9954.000	-59.27	15.78	-43.49	-13.00	-30.49	H
7776.000	-60.23	13.66	-46.57	-13.00	-33.57	V
9954.000	-60.77	15.78	-44.99	-13.00	-31.99	V
Middle Channel (836.6MHz)						
11186.000	-59.10	16.53	-42.57	-13.00	-29.57	H
10020.000	-59.39	15.98	-43.41	-13.00	-30.41	H
8678.000	-59.72	15.15	-44.57	-13.00	-31.57	V
9954.000	-60.03	15.78	-44.25	-13.00	-31.25	V
High Channel (848.8MHz)						
1858.000	-56.56	-0.63	-57.19	-13.00	-44.19	H
7424.000	-60.30	13.77	-46.53	-13.00	-33.53	H
1858.000	-56.96	-0.63	-57.59	-13.00	-44.59	V
5620.000	-59.45	10.18	-49.27	-13.00	-36.27	V

For Cellular Band_GPRS Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (824.2MHz)						
1858.000	-55.05	-0.63	-55.68	-13.00	-42.68	H
8612.000	-60.81	15.03	-45.78	-13.00	-32.78	H
1858.000	-52.55	-0.63	-53.18	-13.00	-40.18	V
11076.000	-59.12	16.38	-42.74	-13.00	-29.74	V
Middle Channel (836.6MHz)						
1858.000	-56.53	-0.63	-57.16	-13.00	-44.16	H
8788.000	-59.37	15.37	-44.00	-13.00	-31.00	H
1858.000	-58.26	-0.63	-58.89	-13.00	-45.89	V
11032.000	-59.98	16.32	-43.66	-13.00	-30.66	V
High Channel (848.8MHz)						
1858.000	-57.30	-0.63	-57.93	-13.00	-44.93	H
5642.000	-59.29	10.17	-49.12	-13.00	-36.12	H
9954.000	-58.57	15.78	-42.79	-13.00	-29.79	V
11164.000	-59.41	16.50	-42.91	-13.00	-29.91	V

For PCS Band_GSM Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (824.2MHz)						
1836.000	-57.64	-0.75	-58.39	-13.00	-45.39	H
4278.000	-59.33	6.91	-52.42	-13.00	-39.42	H
5510.000	-59.37	10.27	-49.10	-13.00	-36.10	V
8722.000	-59.25	15.25	-44.00	-13.00	-31.00	V
Middle Channel (836.6MHz)						
8590.000	-59.45	14.98	-44.47	-13.00	-31.47	H
11648.000	-59.97	17.02	-42.95	-13.00	-29.95	H
8986.000	-59.80	15.77	-44.03	-13.00	-31.03	V
11054.000	-59.29	16.34	-42.95	-13.00	-29.95	V
High Channel (848.8MHz)						
5994.000	-57.88	9.92	-47.96	-13.00	-34.96	H
7358.000	-57.84	13.47	-44.37	-13.00	-31.37	H
11516.000	-60.70	16.97	-43.73	-13.00	-30.73	V
8832.000	-60.05	15.46	-44.59	-13.00	-31.59	V

For PCS Band_GPRS Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (824.2MHz)						
5554.000	-59.66	10.24	-49.42	-13.00	-36.42	H
7446.000	-59.53	13.86	-45.67	-13.00	-32.67	H
8766.000	-58.99	15.33	-43.66	-13.00	-30.66	V
11648.000	-59.61	17.02	-42.59	-13.00	-29.59	V
Middle Channel (836.6MHz)						
1880.000	-52.35	-0.50	-52.85	-13.00	-39.85	H
11076.000	-59.09	16.38	-42.71	-13.00	-29.71	H
1880.000	-54.42	-0.50	-54.92	-13.00	-41.92	V
11054.000	-59.29	16.34	-42.95	-13.00	-29.95	V
High Channel (848.8MHz)						
8766.000	-59.49	15.33	-44.16	-13.00	-31.16	H
11604.000	-60.50	17.00	-43.50	-13.00	-30.50	H
1902.000	-56.43	-0.38	-56.81	-13.00	-43.81	V
7556.000	-59.47	14.01	-45.46	-13.00	-32.46	V

*Spurious Emission Test Data for WCDMA/HSUPA/HSDPA**For Band V_WCDMA Mode*

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (826.4MHz)						
8590.000	-59.45	14.98	-44.47	-13.00	-31.47	H
11648.000	-59.97	17.02	-42.95	-13.00	-29.95	H
1880.000	-53.42	-0.50	-53.92	-13.00	-40.92	V
7424.000	-59.65	13.77	-45.88	-13.00	-32.88	V
Middle Channel (836.4MHz)						
4058.000	-58.68	6.86	-51.82	-13.00	-38.82	H
8436.000	-59.17	14.62	-44.55	-13.00	-31.55	H
9932.000	-59.63	15.67	-43.96	-13.00	-30.96	V
11626.000	-60.66	17.01	-43.65	-13.00	-30.65	V
High Channel (846.6MHz)						
4058.000	-57.79	6.86	-50.93	-13.00	-37.93	H
8612.000	-60.81	15.03	-45.78	-13.00	-32.78	H
4058.000	-58.29	6.86	-51.43	-13.00	-38.43	V
7776.000	-59.73	13.66	-46.07	-13.00	-33.07	V

For Band V_HSUPA Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (826.4MHz)						
7446.000	-59.53	13.86	-45.67	-13.00	-32.67	H
11670.000	-60.01	17.02	-42.99	-13.00	-29.99	H
7336.000	-59.63	13.38	-46.25	-13.00	-33.25	V
11648.000	-59.61	17.02	-42.59	-13.00	-29.59	V
Middle Channel (836.4MHz)						
7358.000	-57.84	13.47	-44.37	-13.00	-31.37	H
11076.000	-59.56	16.38	-43.18	-13.00	-30.18	H
8832.000	-60.05	15.46	-44.59	-13.00	-31.59	V
1902.000	-57.55	-0.38	-57.93	-13.00	-44.93	V
High Channel (846.6MHz)						
5444.000	-58.96	10.06	-48.90	-13.00	-35.90	H
11648.000	-59.97	17.02	-42.95	-13.00	-29.95	H
8986.000	-59.80	15.77	-44.03	-13.00	-31.03	V
1880.000	-53.42	-0.50	-53.92	-13.00	-40.92	V

For Band V_HSDPA Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (826.4MHz)						
3024.000	-58.49	4.02	-54.47	-13.00	-41.47	H
11186.000	-59.10	16.53	-42.57	-13.00	-29.57	H
1726.000	-54.46	-1.38	-55.84	-13.00	-42.84	V
11032.000	-59.98	16.32	-43.66	-13.00	-30.66	V
Middle Channel (836.4MHz)						
1858.000	-56.34	-0.63	-56.97	-13.00	-43.97	H
6500.000	-58.06	10.61	-47.45	-13.00	-34.45	H
11054.000	-59.29	16.34	-42.95	-13.00	-29.95	V
8766.000	-59.35	15.33	-44.02	-13.00	-31.02	V
High Channel (846.6MHz)						
8766.000	-58.92	15.33	-43.59	-13.00	-30.59	H
8766.000	-59.84	15.33	-44.51	-13.00	-31.51	H
8832.000	-60.05	15.46	-44.59	-13.00	-31.59	V
4278.000	-58.77	6.91	-51.86	-13.00	-38.86	V

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

8. Frequency Stability

8.1 Standard Applicable

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Cellular Band

Frequency range (MHz)	Base, fixed (ppm)	Mobile ≤3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	N/A	N/A
929 to 960	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

According to §27.54 The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

8.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Aglient	Spectrum Analyzer	E4402B-ESA	US41192821	2013-05-07	2014-05-06
Rohde & Schwarz	Universal Radio Communication	CMU200	112012	2013-05-07	2014-05-06
GONGWEN	Moisture Test Chamber	GDS-150	SEMT-0013	2013-05-07	2014-05-06

8.3 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

Temperature:	Supply Voltage
20°C	85-115% of declared nominal voltage
-30°C to +50°C	Normal

8.4 Environmental Conditions

Temperature:	20°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

8.5 Summary of Test Results/Plots

For Cellular Band GSM Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	46	0.0550
40	3.7	30	0.0359
30	3.7	21	0.0251
20	3.7	25	0.0299
10	3.7	32	0.0383
0	3.7	38	0.0454
-10	3.7	46	0.0550
-20	3.7	40	0.0478
-30	3.7	48	0.0574

For PCS Band GSM Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	-73	-0.0388
40	3.7	-69	-0.0367
30	3.7	-51	-0.0271
20	3.7	-67	-0.0356
10	3.7	-48	-0.0255
0	3.7	-37	-0.0197
-10	3.7	-43	-0.0229
-20	3.7	-57	-0.0303
-30	3.7	-53	-0.0282

For Cellular Band GPRS Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	63	0.0753
40	3.7	57	0.0681
30	3.7	46	0.0550
20	3.7	36	0.0430
10	3.7	28	0.0335
0	3.7	37	0.0442
-10	3.7	42	0.0502
-20	3.7	45	0.0538
-30	3.7	48	0.0574

For PCS Band GPRS Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	-30	-0.0160
40	3.7	-19	-0.0101
30	3.7	-21	-0.0112
20	3.7	-27	-0.0144
10	3.7	-30	-0.0160
0	3.7	-38	-0.0202
-10	3.7	-46	-0.0245
-20	3.7	-43	-0.0229
-30	3.7	-50	-0.0266

For WCDMA Band V Mode

Reference Frequency(Middle Channel): 836.4 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	-50	-0.0598
40	3.7	-45	-0.0538
30	3.7	-38	-0.0454
20	3.7	-33	-0.0394
10	3.7	-38	-0.0454
0	3.7	-40	-0.0478
-10	3.7	-45	-0.0538
-20	3.7	-56	-0.0669
-30	3.7	-63	-0.0753

For HSPA Band V Mode

Reference Frequency(Middle Channel): 836.4 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	-55	-0.0658
40	3.7	-43	-0.0514
30	3.7	-38	-0.0454
20	3.7	-40	-0.0478
10	3.7	-46	-0.0550
0	3.7	-53	-0.0634
-10	3.7	-47	-0.0562
-20	3.7	-55	-0.0658
-30	3.7	-63	-0.0753

For HSDPA Band V Mode

Reference Frequency(Middle Channel): 836.4 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	-64	-0.0765
40	3.7	-58	-0.0693
30	3.7	-47	-0.0562
20	3.7	-52	-0.0622
10	3.7	-66	-0.0789
0	3.7	-70	-0.0837
-10	3.7	-73	-0.0873
-20	3.7	-82	-0.0980
-30	3.7	-78	-0.0933

So, Frequency Stability Versus Input Voltage is:

Reference Frequency(Middle Channel): GSM 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	34	0.0406
	3.7	25	0.0299
	4.2	38	0.0454
Reference Frequency(Middle Channel): GSM 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	-72	-0.0383
	3.7	-67	-0.0356
	4.2	-70	-0.0372
Reference Frequency(Middle Channel): GPRS 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	44	0.0526
	3.7	36	0.0430
	4.2	42	0.0502
Reference Frequency(Middle Channel): GPRS 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	-33	-0.0176
	3.7	-27	-0.0144
	4.2	-38	-0.0202
Reference Frequency(Middle Channel): WCDMA 836.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	-38	-0.0454
	3.7	-33	-0.0395
	4.2	-30	-0.0359

Reference Frequency(Middle Channel): WCDMA 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	42	0.0223
	3.7	35	0.0186
	4.2	38	0.0202
Reference Frequency(Middle Channel): WCDMA 1733 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	35	0.0418
	3.7	40	0.0411
	4.2	46	0.0412
Reference Frequency(Middle Channel): HSUPA 836.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	-46	-0.0245
	3.7	-40	-0.0213
	4.2	-38	-0.0202
Reference Frequency(Middle Channel): HSDPA 836.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	-48	-0.0574
	3.7	-52	-0.0622
	4.2	-55	-0.0658

***** END OF REPORT *****