47 CFR PART 22 SUBPART H & 24 SUBPART E

TEST REPORT

of

GSM Mobile Phone

Model Name: i115
Brand Name: Verykool
Report No.: SH10030004R01
FCC ID: WA6I115

prepared for

Verykool USA Inc.
4350 Executive Dr. #100, San Diego, CA 92121, USA

prepared by

Shenzhen Electronic Product Quality Testing Center
Morlab Laboratory
3/F, Electronic Testing Building, Shahe Road, Xili,
Nanshan District, Shenzhen, 518055 P. R. China
Tel: +86 755 86130398
Fax: +86 755 86130218

CTIA Authorized Test Lab
LAB CODE 20081223-00

NOTE: *This test report can be duplicated completely for the legal use with the approval of the applicant; it shall not be reproduced except in full, without the written approval of Shenzhen Electronic Product Quality Testing Center Morlab Laboratory. Any objections should be raised to us within thirty workdays since the date of issue.*

TABLE OF CONTENT

1. TEST CERTIFICATION

Equipment under Test:	GSM Mobile Phone
Brand Name:	Verykool
Model Name:	I115
FCC ID:	WA6I115
Applicant:	Verykool USA Inc. 4350 Executive Dr. #100, San Diego, CA 92121, USA
Manufacturer:	Verykool USA Inc. 4350 Executive Dr. #100, San Diego, CA 92121, USA
Test Standards:	47 CFR Part 2 47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
Test Date(s):	Mar. 3 ,2009 –Mar.5 , 2009
Test Result:	PASS

*** We Hereby Certify That:**

The equipment under test was tested by Shenzhen Electronic Product Quality Testing Center Morlab Laboratory. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the requirement of related FCC rules.

The test results of this report only apply for the tested sample equipment identified above. The test report shall be invalid without all the signatures of the test engineer, the reviewer and the approver.

Tested by: Zhang Wenjie Dated: 2010.3.12
Zhang Wenjie

Reviewed by: Zhang Jun Dated: 2010.3.12
Zhang Jun

Approved by: Su Feng Dated: 2010.3.12
Su Feng

2. GENERAL INFORMATION

2.1 EUT Description

EUT Type ..... :	GSM Mobile Phone
Model Name ..... :	I115
Serial No. ..... :	(n.a)
IMEI ..... :	(n.a)
Hardware Version ..... :	LKAM512B2
Software Version ..... :	LKAQR01_8_5_1_0T03G0206_M512
Frequency Range ..... :	GSM 850MHz: Tx: 824.20 - 848.80MHz (at intervals of 200kHz); Rx: 869.20 - 893.80MHz (at intervals of 200kHz) GSM 1900MHz: Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz); Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz)
Modulation Type..... :	GMSK
Power Supply ..... :	Battery Brand name: Verykool Mode Name.: 06CA31936 Capacitance: 1000mAh Rated voltage: 3.7V Charge limited: 4.2V Manufacturer: SHENZHEN BAK BATTERY CO.,LTD BAK INDUSTRIAL ZONE KUICHONG ST LONGGANG DISTRICT SHENZHEN GUANGDONG CHINA
Ancillary Equipments :	AC Adapter (Charger for Battery) Brand name: Verykool Mode Name.: ASUC1-050050 Rated Input: AC100--240V 200mA,50/60H Rated Output: 5.0V DC 500mA

Note 1: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula F(n)=824.2+0.2*(n-128), 128<=n<=251; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 190 (836.6MHz) and 251 (848.8MHz).

Note 2: The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can be represented with the formula F(n)=1850.2+0.2*(n-512), 512<=n<=810; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately

512 (1850.2MHz), 661 (1880.0MHz) and 810 (1909.8MHz).

Note 3: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22 and Part 24 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2 (10-1-05 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-05 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-05 Edition)	Personal Communications Services

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	2.106 22.905 24.229	Frequencies	PASS
2	2.1046	Conducted RF Output Power	PASS
3	2.1049	20dB Occupied Bandwidth	PASS
4	2.1055 22.355 24.235	Frequency Stability	PASS
5	2.1051 2.1057 22.917 24.238	Conducted Out of Band Emissions	PASS
6	2.1051 2.1057 22.917 24.238	Band Edge	PASS
7	22.913 24.232	Transmitter Radiated Power (EIPR/ERP)	PASS
8	2.1053 2.1057 22.917 24.238	Radiated Out of Band Emissions	PASS

2.3 Facilities and Accreditations

2.3.1 Facilities

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory is a testing organization accredited by China National Accreditation Board for Laboratories (CNAL) according to ISO/IEC 17025. The accreditation certificate number is L1659.

All measurement facilities used to collect the measurement data are located at Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen 518055 CHINA. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 741109.

2.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	20 - 25
Relative Humidity (%):	40 - 60
Atmospheric Pressure (kPa):	96

3. 47 CFR PART 2, PART 22H &24E REQUIREMENTS

3.1 Frequencies

3.1.1 Requirement

According to FCC section 22.905, the frequency blocks assignment for the cellular radiotelephone service is listed as below:

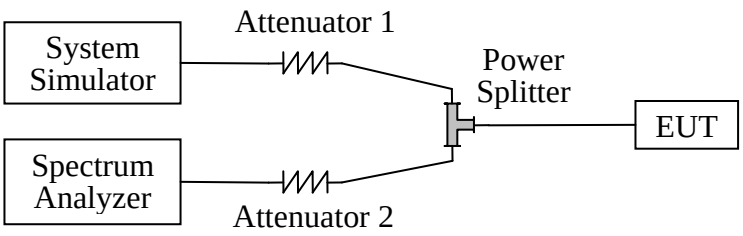
(a) Channel Block A:
Mobile 824 - 835MHz, Base 869 - 880MHz;
Mobile 845 - 846.5MHz, Base 890 - 891.5MHz
(b) Channel Block B:
Mobile 835 - 845 MHz, Base 880 - 890MHz;
Mobile 846.5 - 849 MHz, Base 891.5 - 894MHz

According to FCC section 24.229, the frequencies available in the Broadband PCS services are listed as below, in accordance with the frequency allocations table of FCC section 2.106.

(a) The following frequency blocks are available for assignment on an MTA basis:
Block A: 1850 - 1865MHz paired with 1930 - 1945MHz;
Block B: 1870 - 1885MHz paired with 1950 - 1965MHz.
(b) The following frequency blocks are available for assignment on a BTA basis:
Block C: 1895 - 1910 MHz paired with 1975 - 1990MHz;
Block D: 1865 - 1870 MHz paired with 1945 - 1950MHz;
Block E: 1885 - 1890 MHz paired with 1965 - 1970MHz;
Block F: 1890 - 1895 MHz paired with 1970 - 1975MHz.

3.1.2 Test Description

1. Test Setup:



The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna

terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
SS	Agilent	E5515C	GB46040102	2009.10	1year
Spectrum Analyzer	Agilent	E4440A	MY46187763	2009.10	1year
Power Splitter	HP	11667B	00164	(n.a.)	(n.a.)
Attenuator 1	Resnet	10dB	(n.a.)	(n.a.)	(n.a.)
Attenuator 2	Resnet	10dB	(n.a.)	(n.a.)	(n.a.)

3.1.3 Test Result

The Tx frequency arrangement of the Cellular 850MHz band employed by the EUT should be from 824.2MHz to 848.8MHz (the corresponding frequency block is from 824MHz to 849MHz), and Tx frequency arrangement of the PCS 1900MHz band employed by the EUT should be from 1850.2MHz to 1909.8MHz (the corresponding frequency block is from 1850MHz to 1910MHz). Here the lowest and highest channels are tested to verify the EUT's using the frequency block required.

1. Test Verdict:

The required frequency block is employed legally, the verdict is PASS.

Sim 1:

Band	Channel	Frequency (MHz)	Measured Carrier (dBm)	Refer to Plot
GSM 850MHz	128	824.20	20.98	Plot 1
	251	848.78	22.28	Plot 2
GSM 1900MHz	512	1850.19	21.55	Plot 3
	810	1909.83	20.15	Plot 4
GPRS 850MHz	128	824.15	22.08	Plot 5
	251	848.75	22.48	Plot 6
GPRS 1900MHz	512	1850.15	20.28	Plot 7
	810	1909.75	20.55	Plot 8

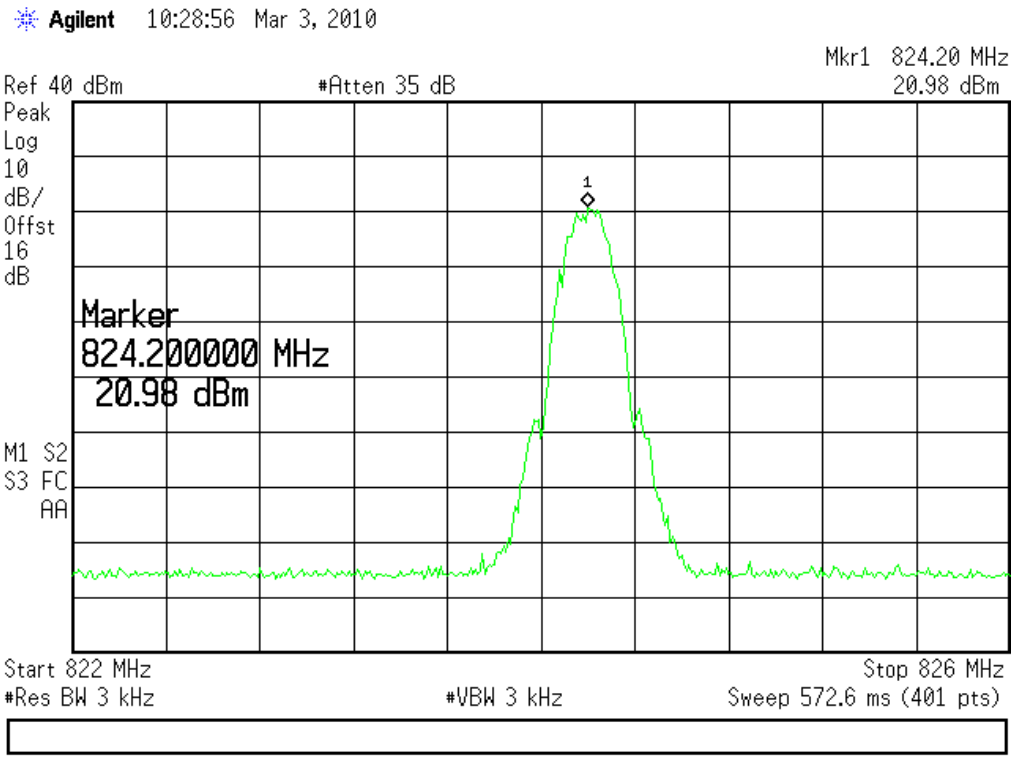
Sim 2:

Band	Channel	Frequency (MHz)	Measured Carrier (dBm)	Refer to Plot
GSM 850MHz	128	824.18	22.59	Plot 9
	251	848.78	22.22	Plot 10
GSM 1900MHz	512	1850.19	20.30	Plot 11
	810	1909.80	21.46	Plot 12
GPRS	128	824.23	20.92	Plot 13

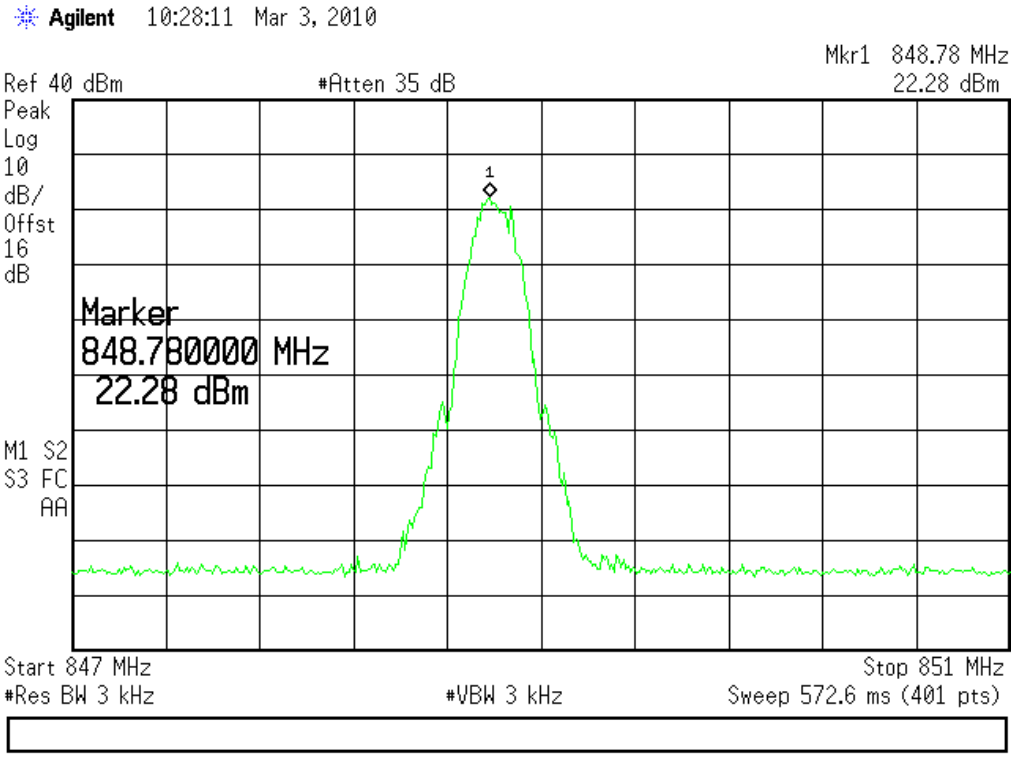
Band	Channel	Frequency (MHz)	Measured Carrier (dBm)	Refer to Plot
850MHz	251	848.81	24.19	Plot 14
GPRS 1900MHz	512	1850.15	20.83	Plot 15
	810	1909.75	21.38	Plot 16

2. Test Plot:

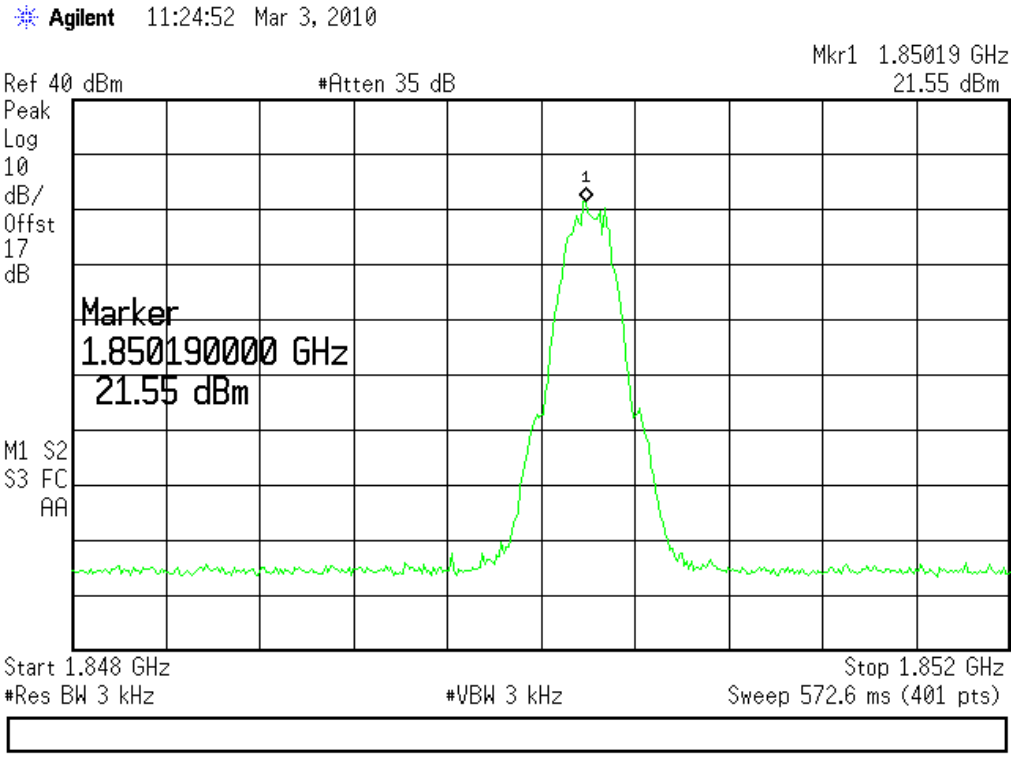
Sim1:



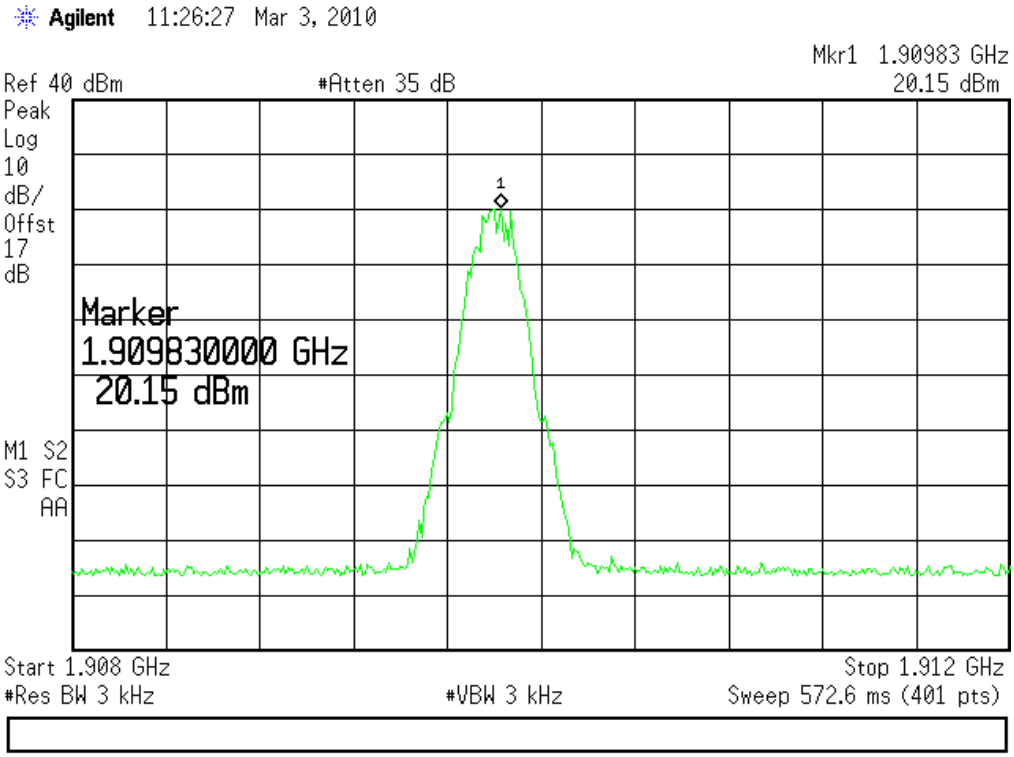
(Plot 1: GSM 850MHz Channel = 128)



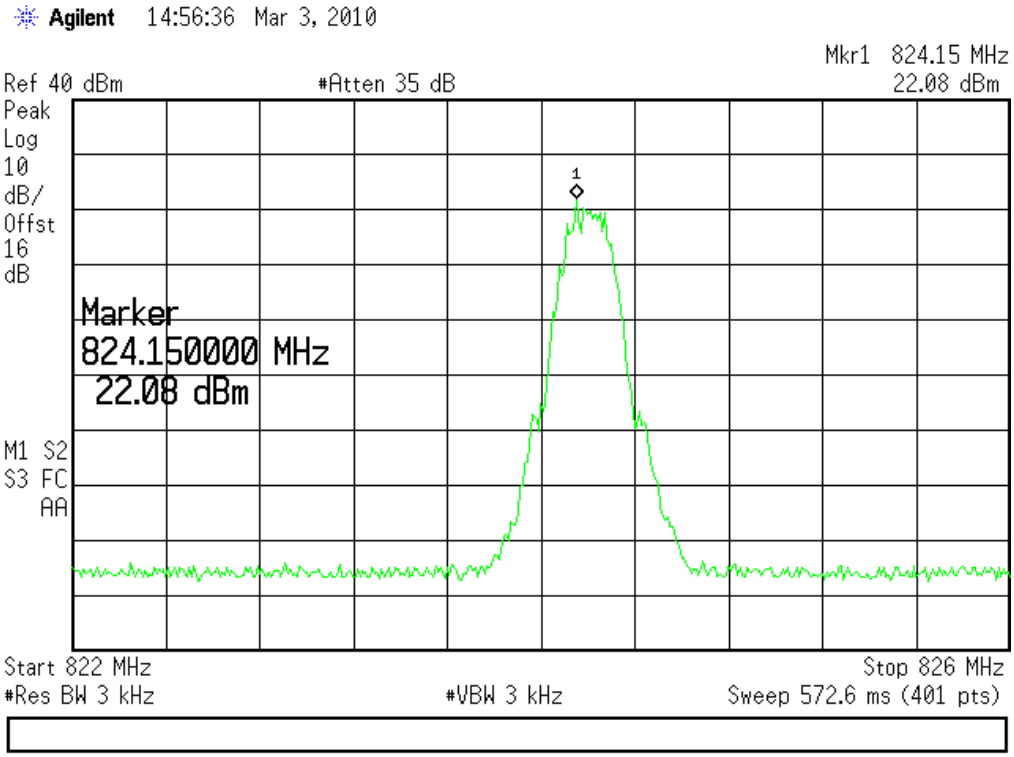
(Plot 2: GSM 850MHz Channel = 251)



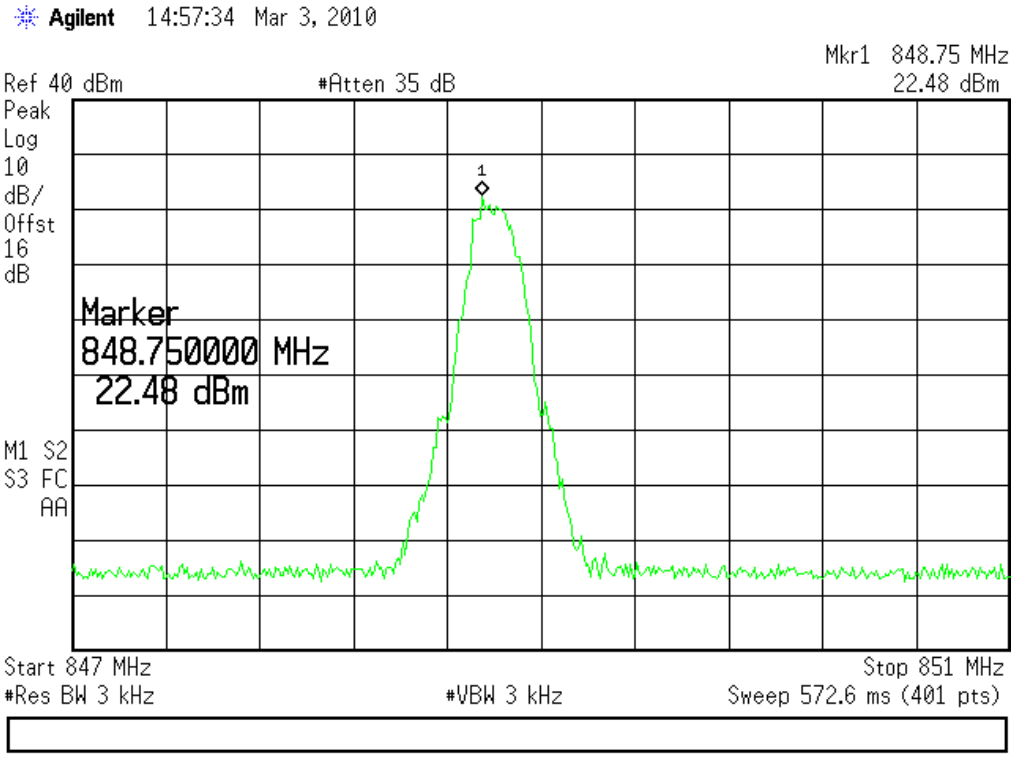
(Plot 3: GSM 1900MHz Channel = 512)



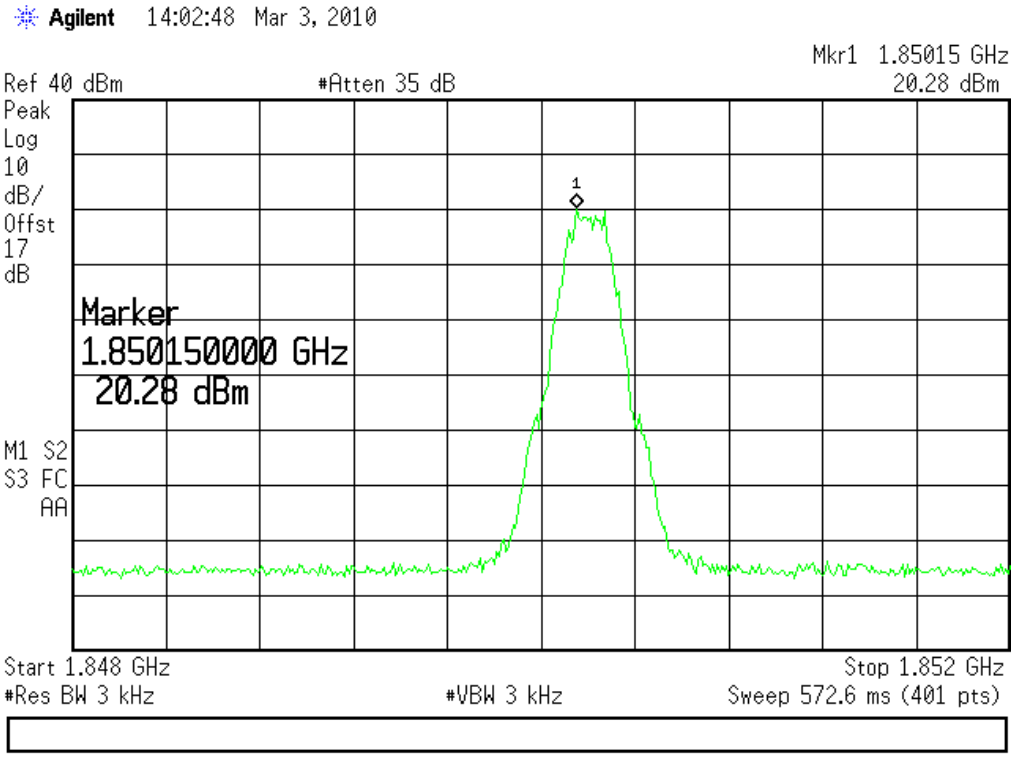
(Plot 4: GSM 1900MHz Channel = 810)



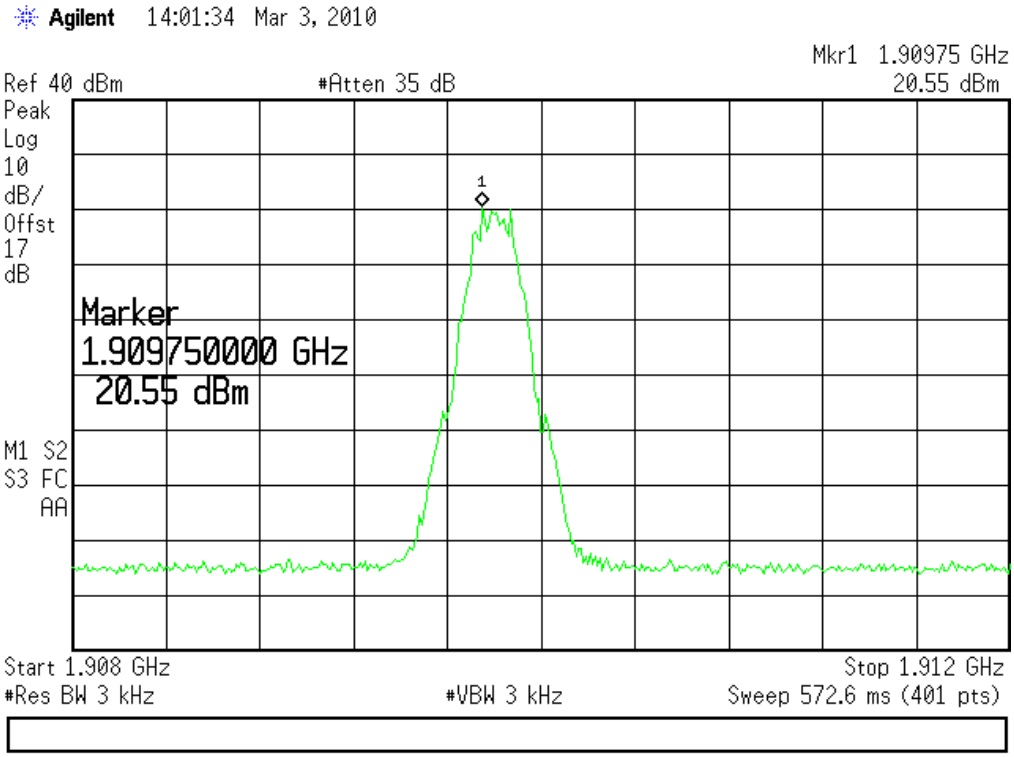
(Plot 5: GPRS 850MHz Channel = 128)



(Plot 6: GPRS 850MHz Channel = 251)

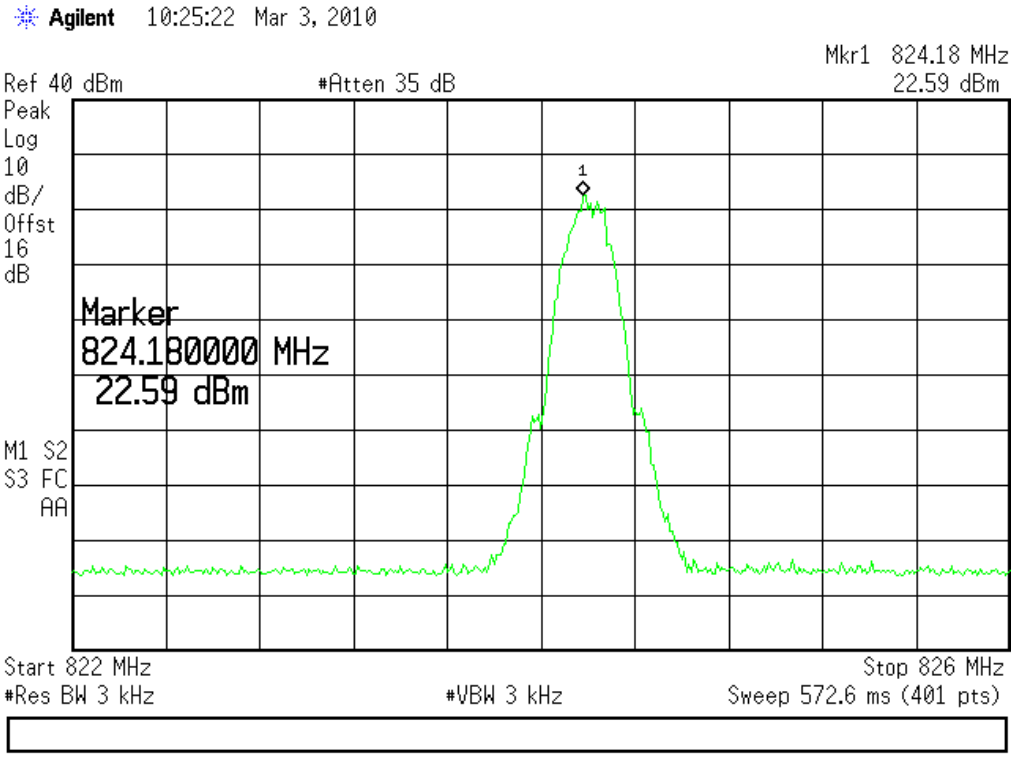


(Plot 7: GPRS 1900MHz Channel = 512)

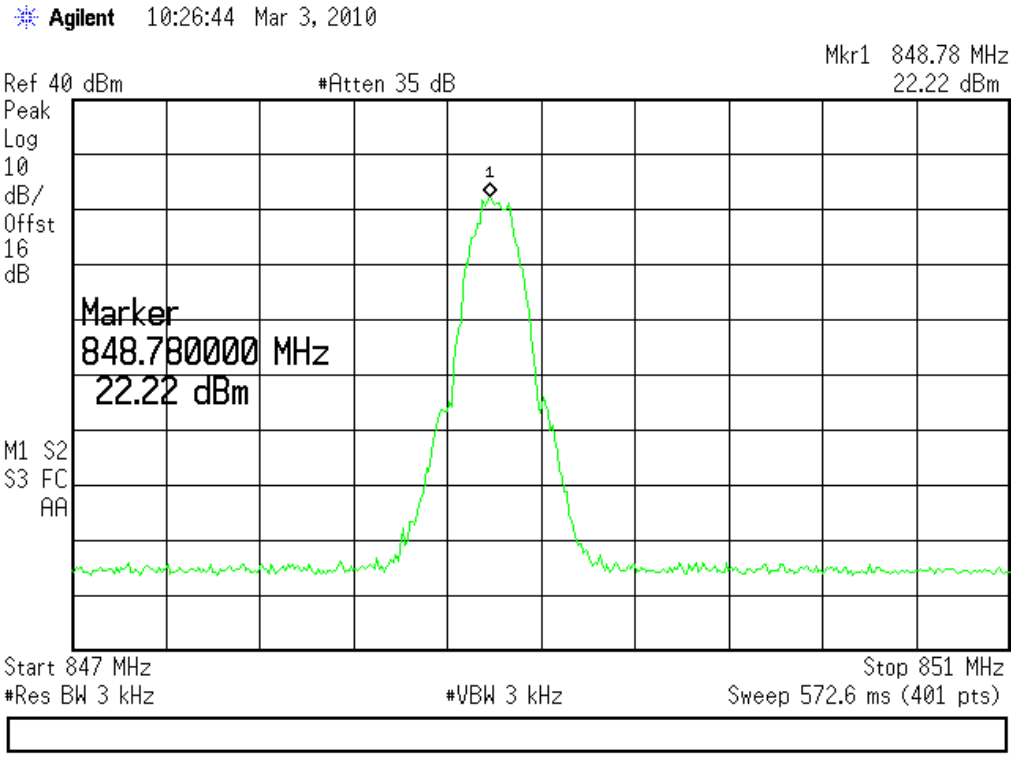


(Plot 8: GPRS 1900MHz Channel = 810)

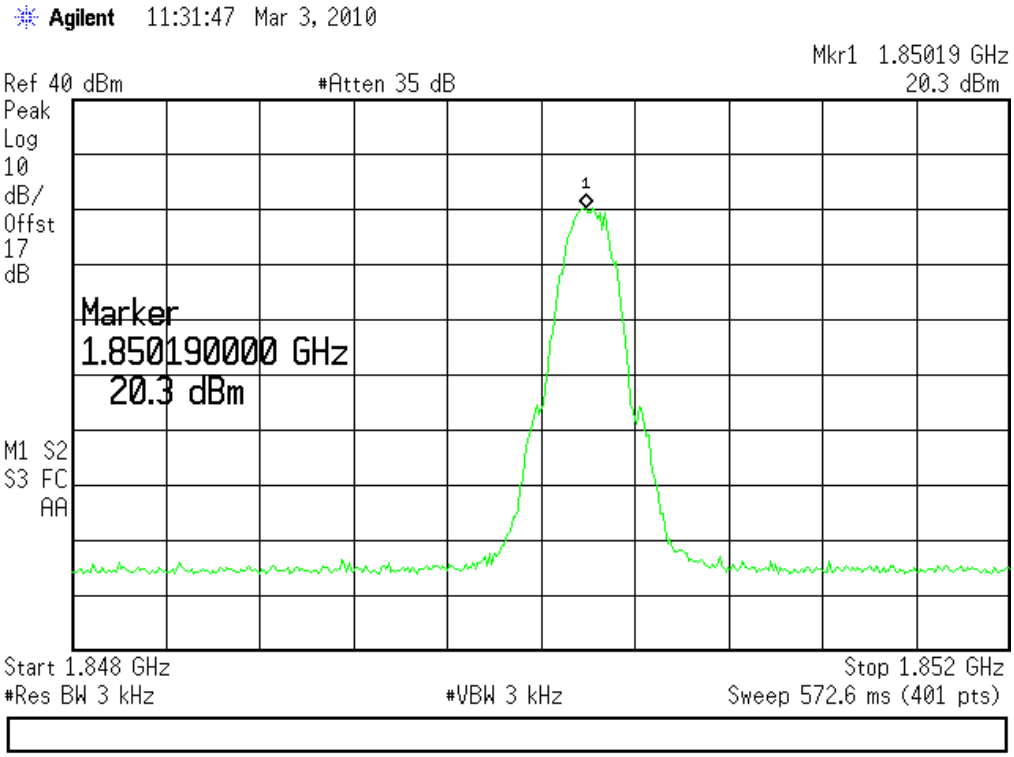
Sim2:



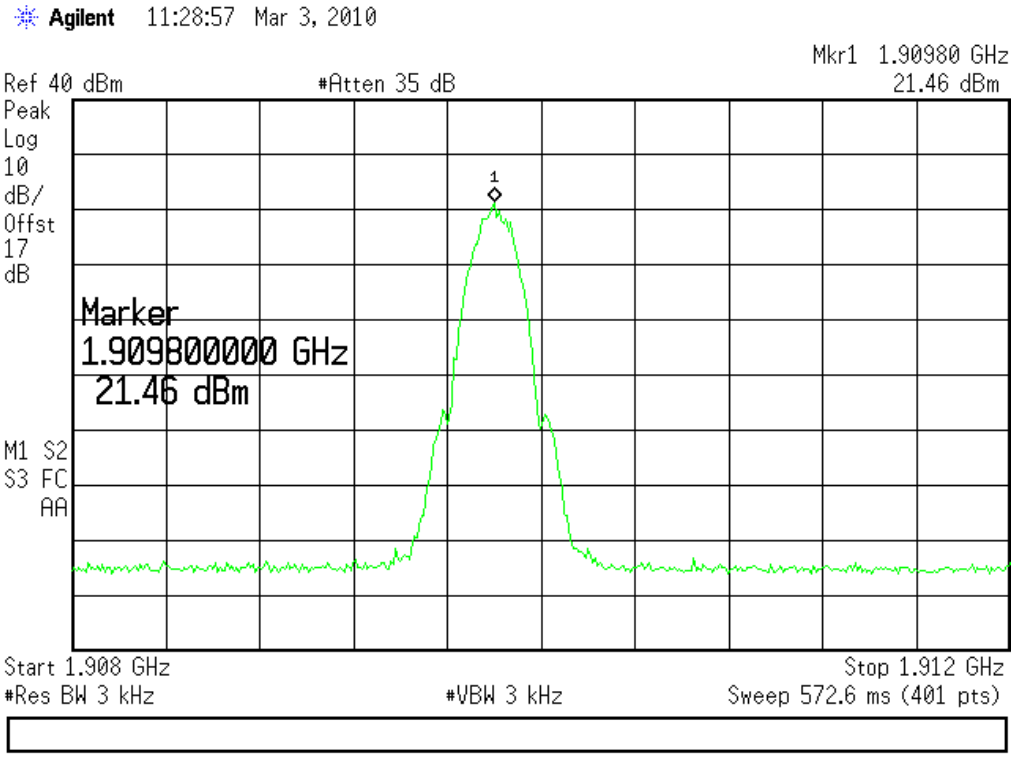
(Plot 9: GSM 850MHz Channel = 128)



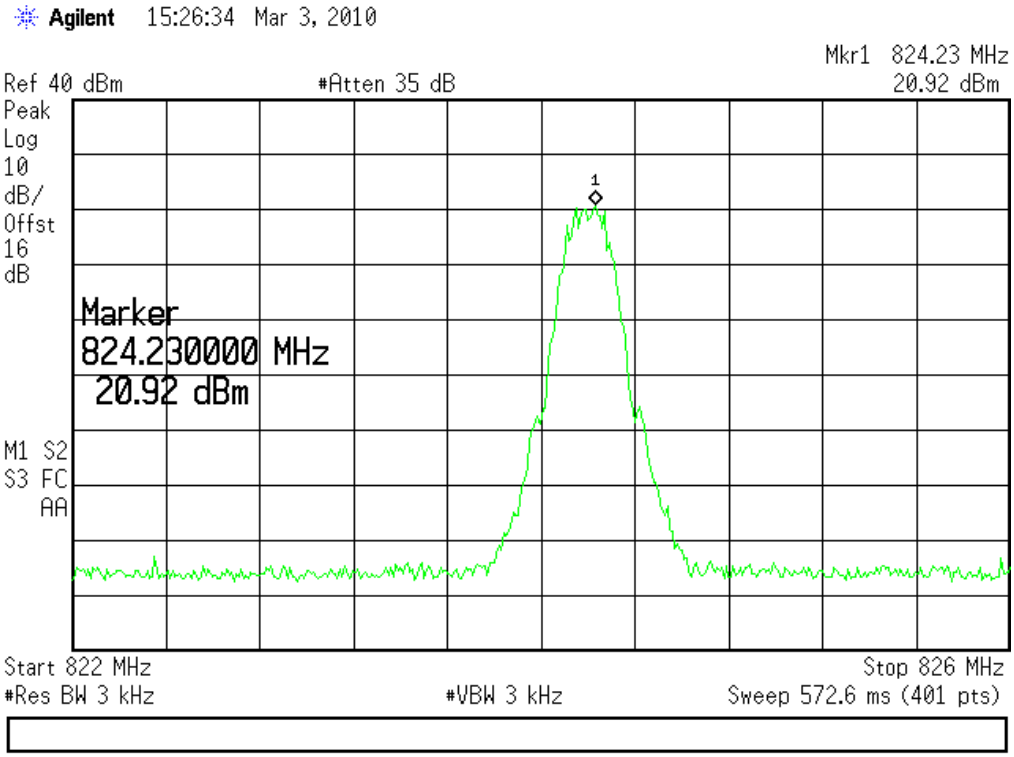
(Plot 10:GSM 850MHz Channel = 251)



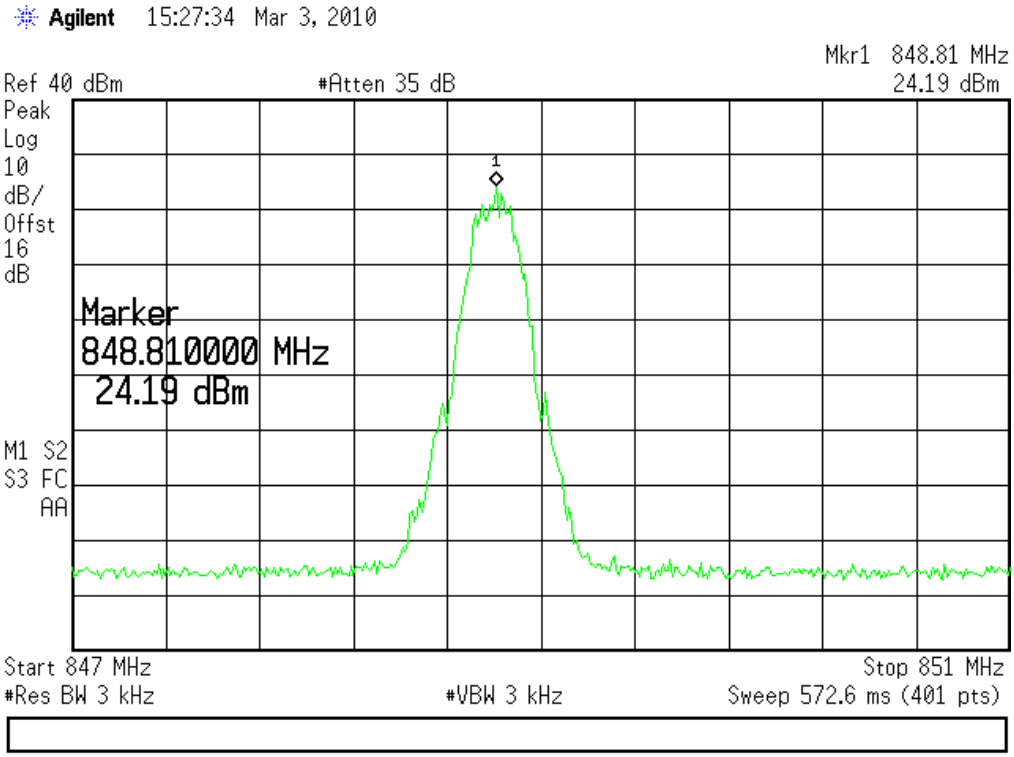
(Plot 11: GSM 1900MHz Channel = 512)



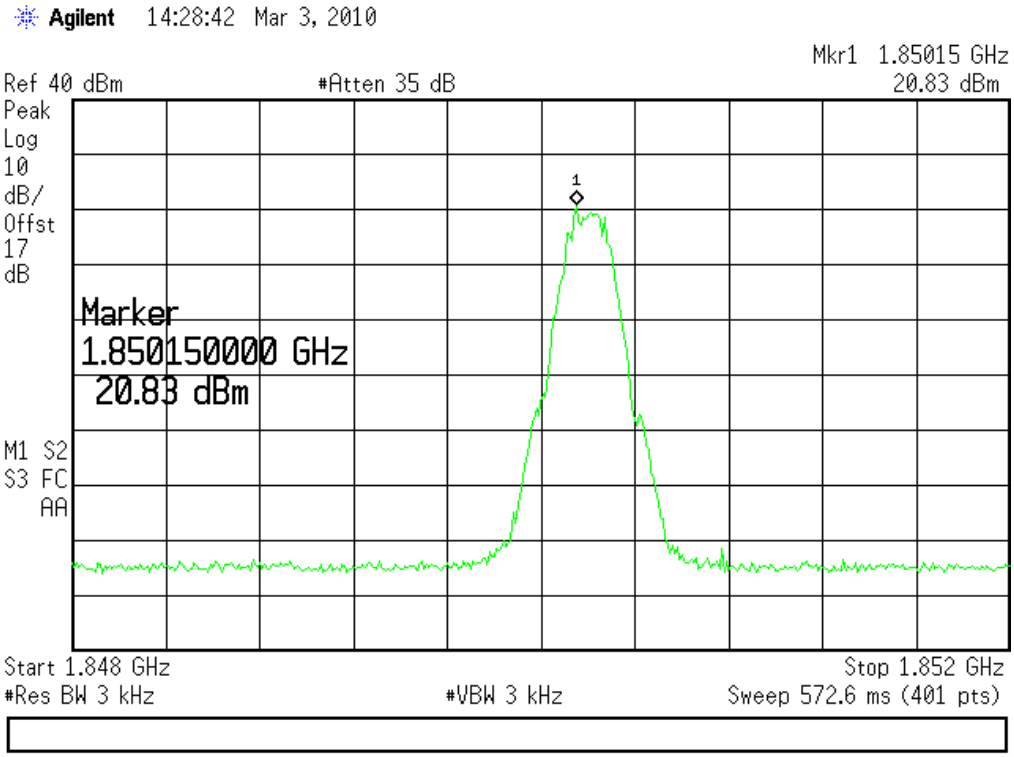
(Plot 12: GSM 1900MHz Channel = 810)



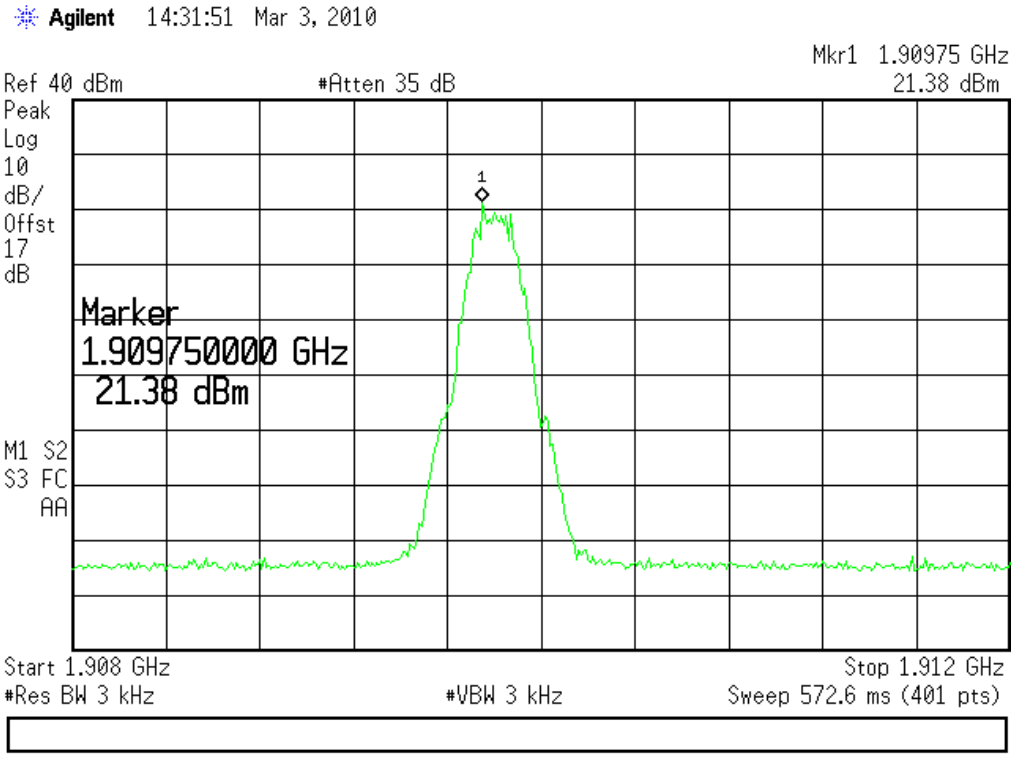
(Plot 13:GPRS 850MHz Channel = 128)



(Plot 14:GPRS 850MHz Channel = 251)



(Plot 15: GPRS 1900MHz Channel = 512)



(Plot 16: GPRS 1900MHz Channel = 810)

3.2 Conducted RF Output Power

3.2.1 Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

3.2.2 Test Description

See section 3.1.2 of this report.

3.2.3 Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT. For the GSM 850MHz operates at PCL=5 (where Power Class is 4), the rated conducted RF output power is 33dBm within the tolerance of ±3dB, and For the GSM 1900MHz operates at PCL=0 (where Power Class is 1), the rated conducted RF output power is 30dBm within the tolerance of ±3dB.

1. Test Verdict:

Sim1:

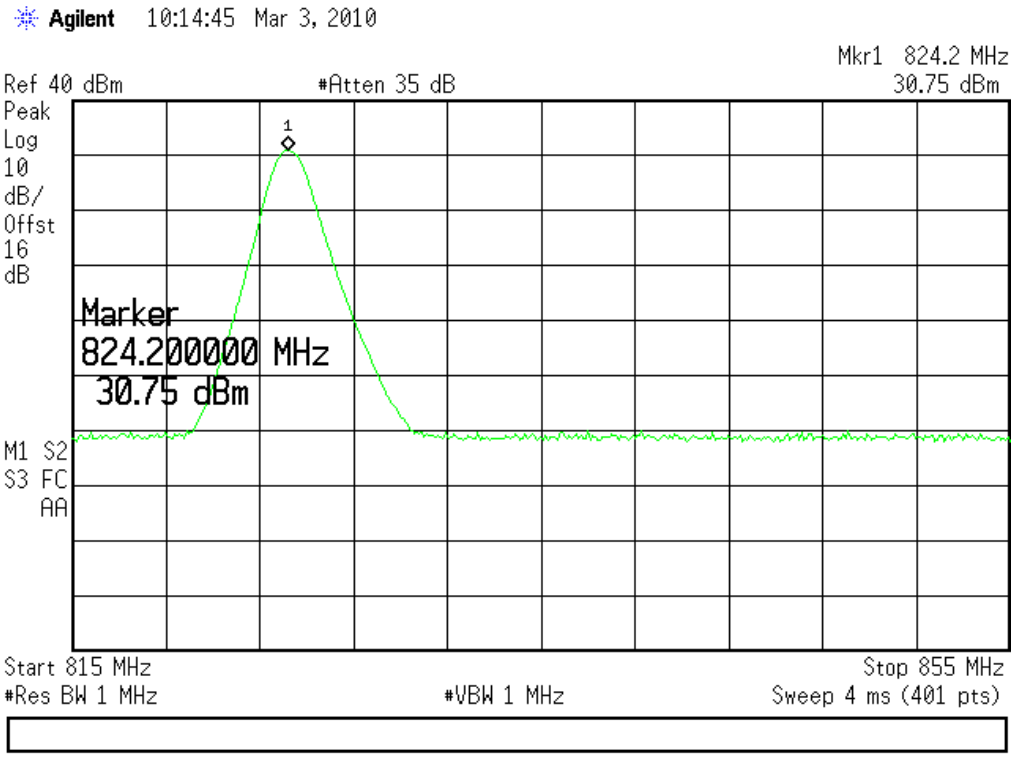
Band	Channel	Frequency (MHz)	Measured Output Power		Rated Output Power		Verdict
			dBm	Refer to Plot	dBm	Tolerance (dB)	
GSM 850MHz	128	824.20	30.75	Plot 17	33	±3	PASS
	190	836.70	30.78	Plot 18			PASS
	251	848.90	31.10	Plot 19			PASS
GSM 1900MHz	512	1850.20	29.01	Plot 20	30	±3	PASS
	661	1880.00	28.84	Plot 21			PASS
	810	1909.80	28.45	Plot 22			PASS
GPRS 850MHz	128	824.20	30.64	Plot 23	33	±3	PASS
	190	836.50	30.76	Plot 24			PASS
	251	848.90	31.13	Plot 25			PASS
GPRS 1900MHz	512	1850.40	28.79	Plot 26	30	±3	PASS
	661	1880.00	28.73	Plot 27			PASS
	810	1909.80	28.34	Plot 28			PASS

Sim2:

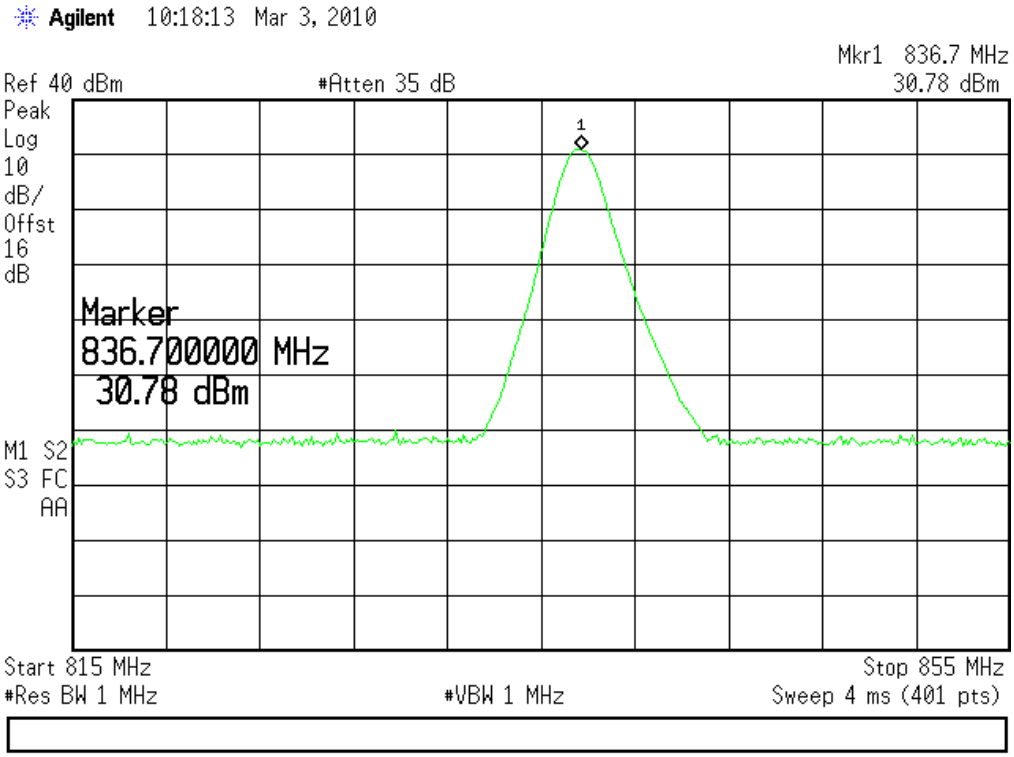
Band	Channel	Frequency (MHz)	Measured Output Power		Rated Output Power		Verdict
			dBm	Refer to Plot	dBm	Tolerance (dB)	
GSM 850MHz	128	824.20	30.60	Plot 29	33	±3	PASS
	190	836.70	30.72	Plot 30			PASS
	251	848.70	31.09	Plot 31			PASS
GSM 1900MHz	512	1850.20	28.93	Plot 32	30	±3	PASS
	661	1880.00	28.81	Plot 33			PASS
	810	1909.80	28.53	Plot 34			PASS
GPRS 850MHz	128	824.30	30.65	Plot 35	33	±3	PASS
	190	836.60	30.80	Plot 36			PASS
	251	848.90	30.70	Plot 37			PASS
GPRS 1900MHz	512	1850.20	28.89	Plot 38	30	±3	PASS
	661	1880.00	28.68	Plot 39			PASS
	810	1909.80	28.22	Plot 40			PASS

2. Test Plot:

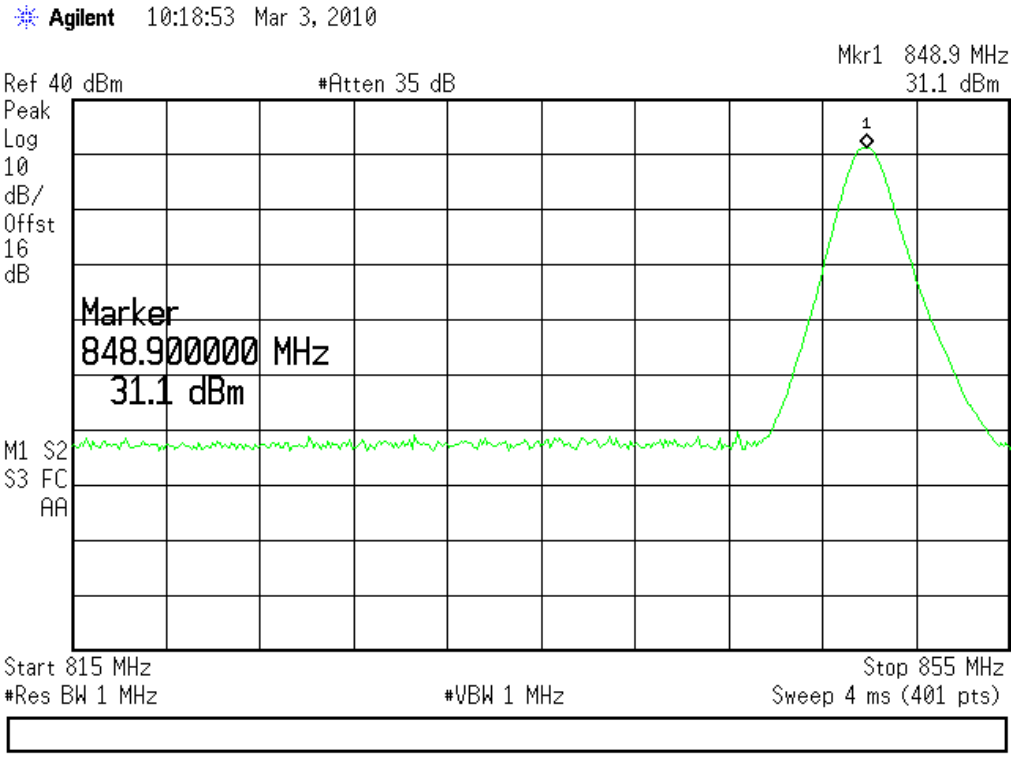
Sim1:



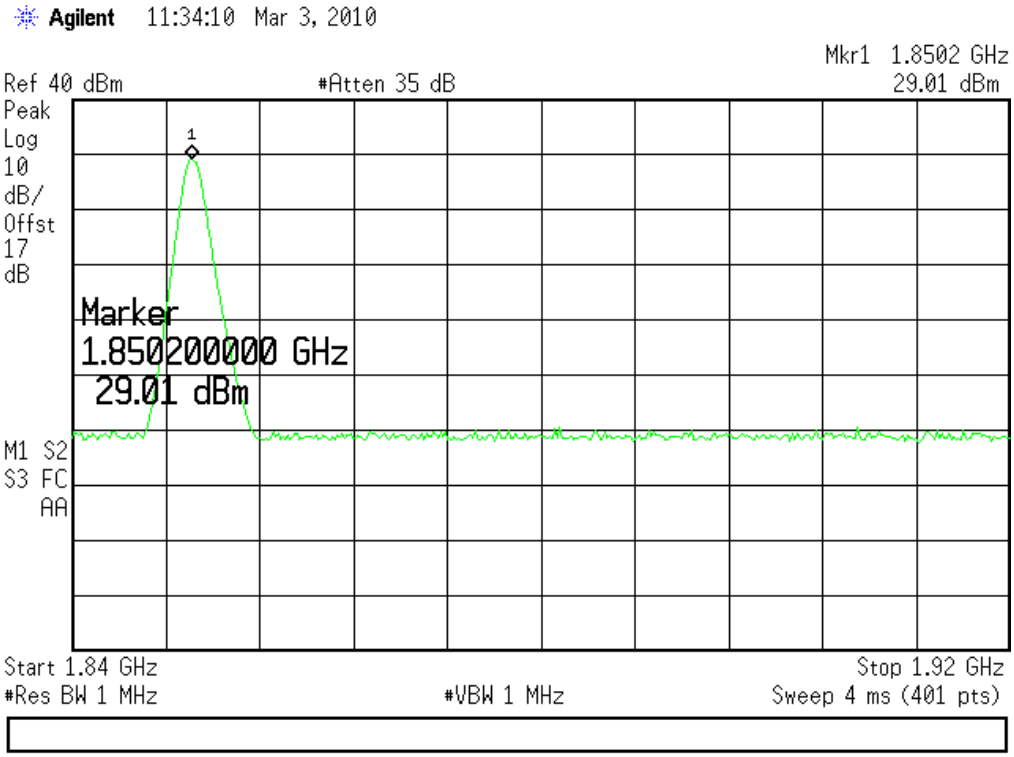
(Plot 17: GSM 850MHz Channel = 128)



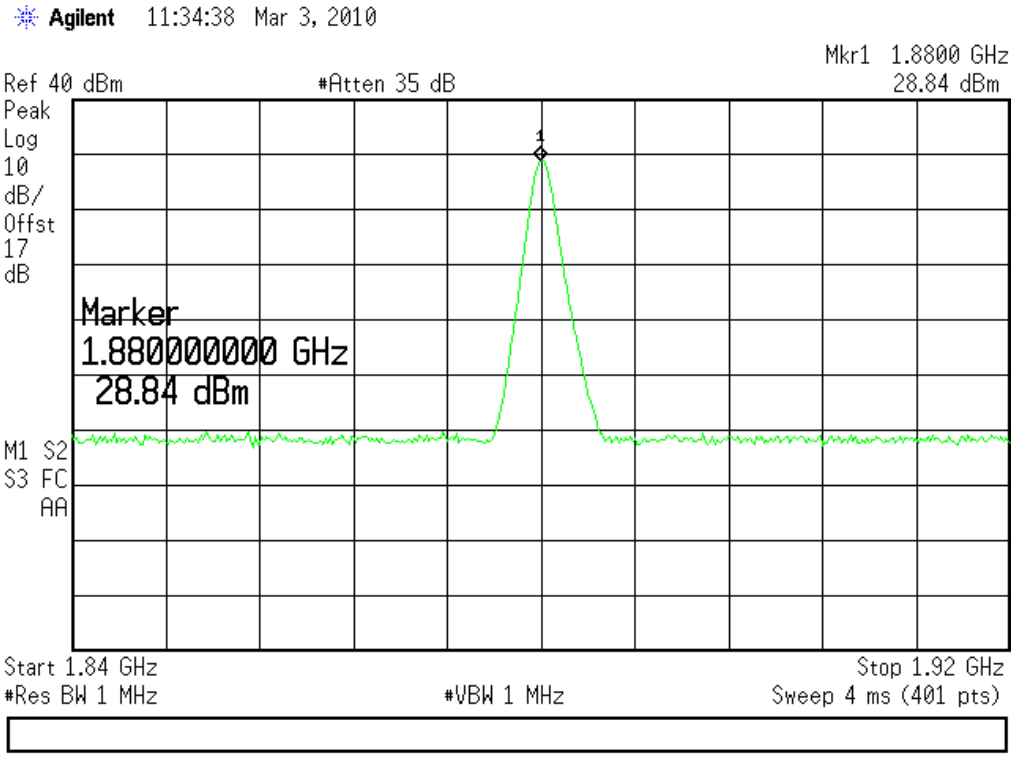
(Plot 18: GSM 850MHz Channel = 190)



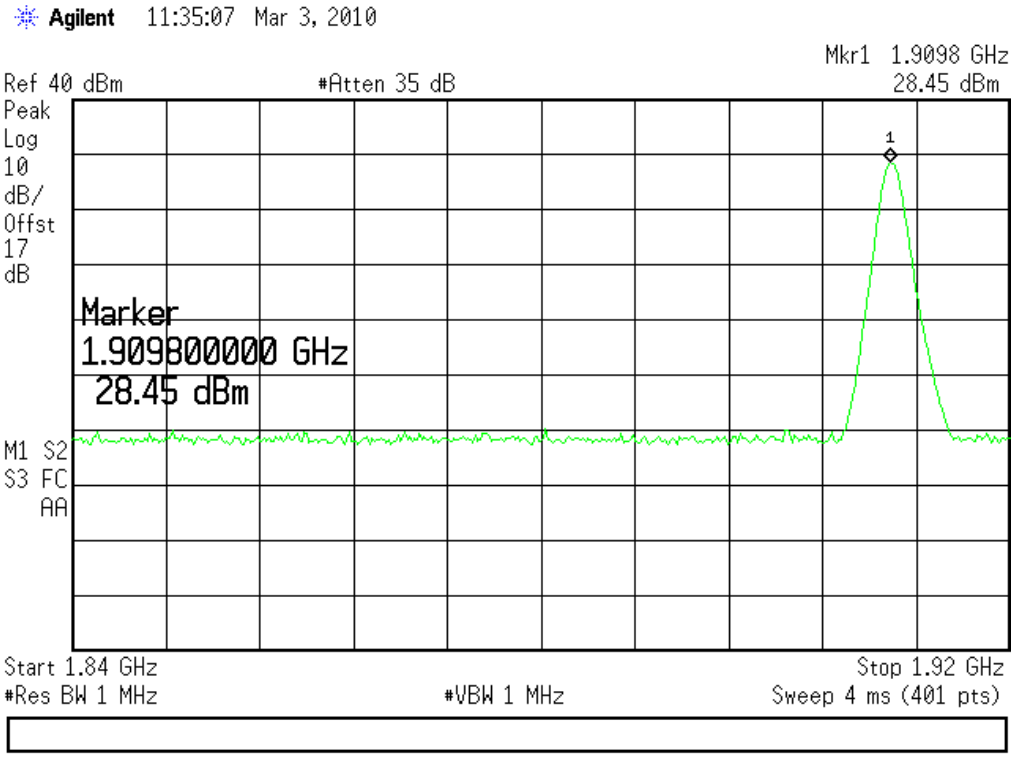
(Plot 19: GSM 850MHz Channel = 251)



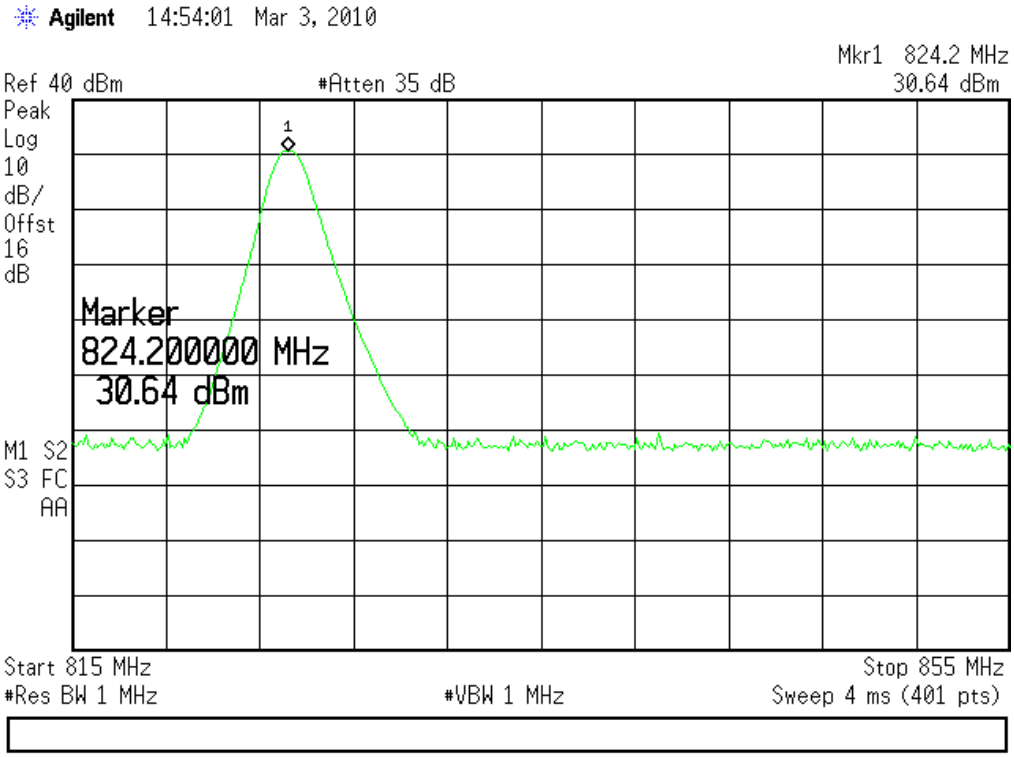
(Plot 20: GSM 1900MHz Channel = 512)



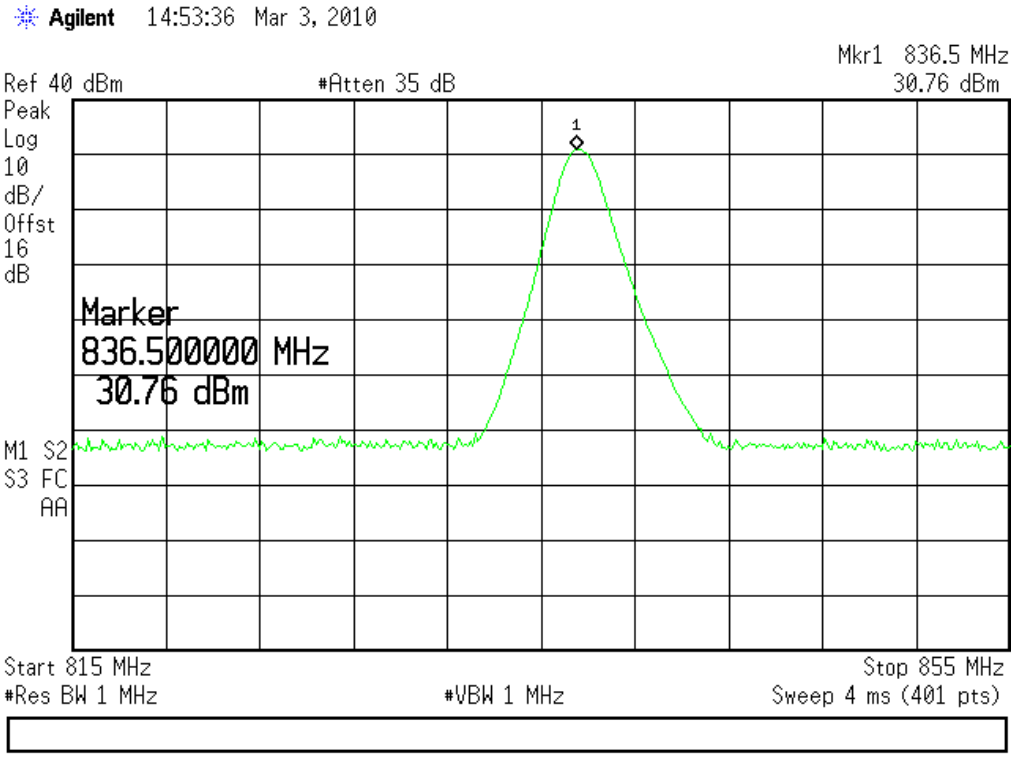
(Plot 21: GSM 1900MHz Channel = 661)



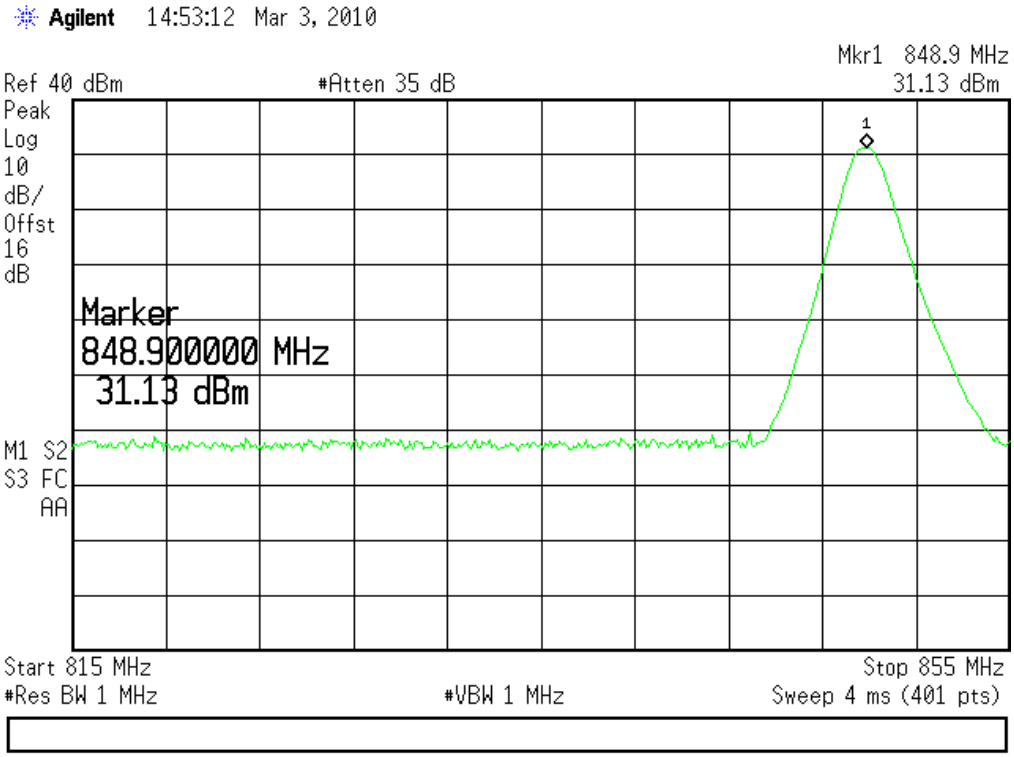
(Plot 22: GSM 1900MHz Channel = 810)



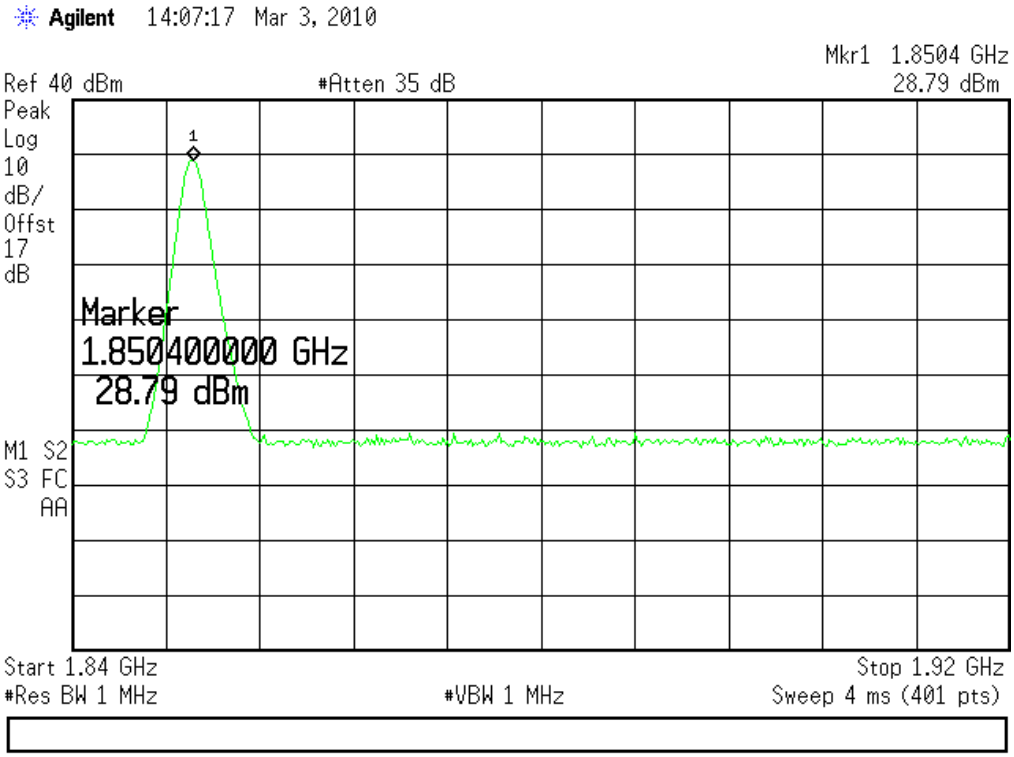
(Plot 23:GPRS 850MHz Channel = 128)



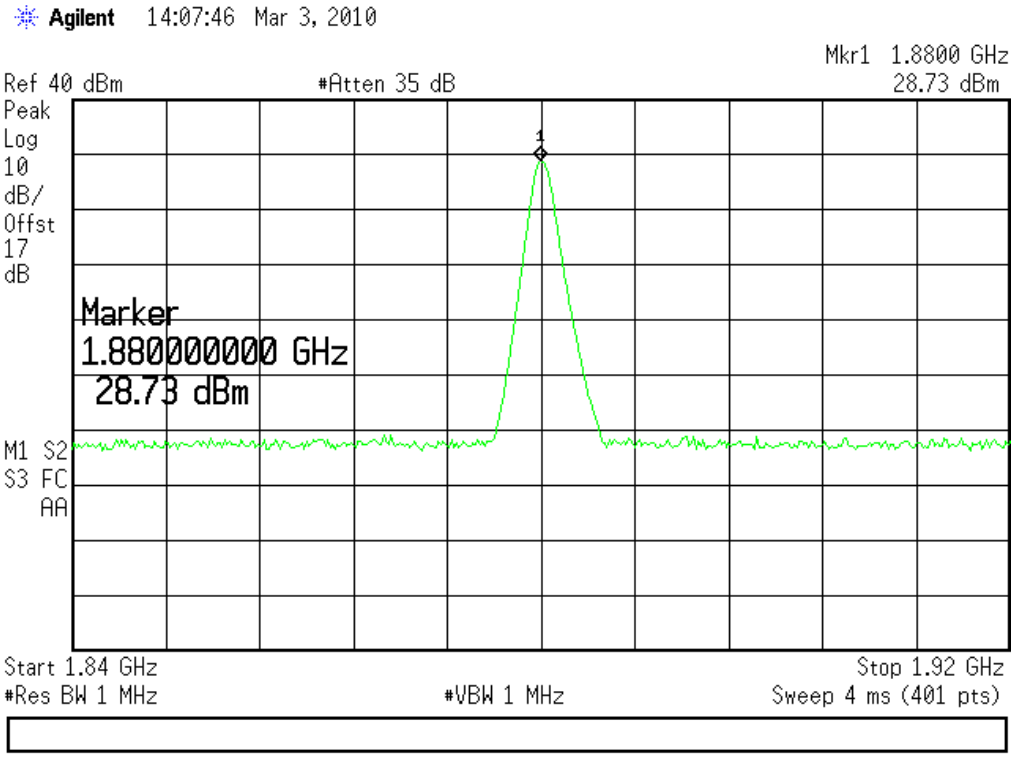
(Plot 24: GPRS 850MHz Channel = 190)



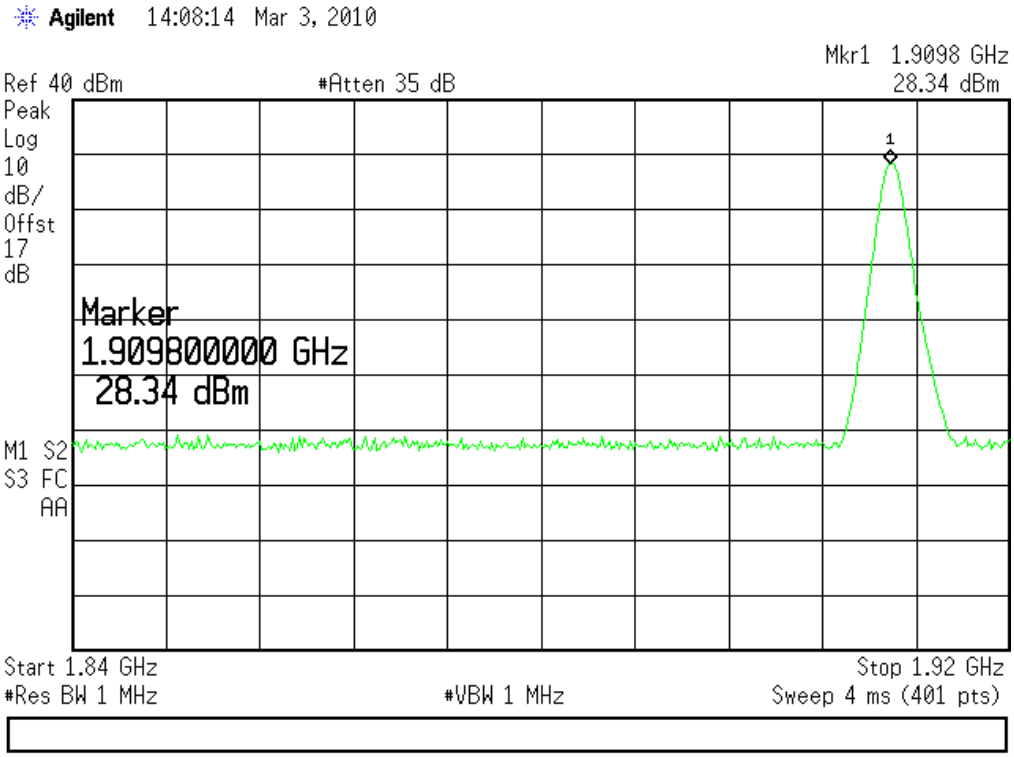
(Plot 25: GPRS 850MHz Channel = 251)



(Plot 26:GPRS 1900MHz Channel = 512)

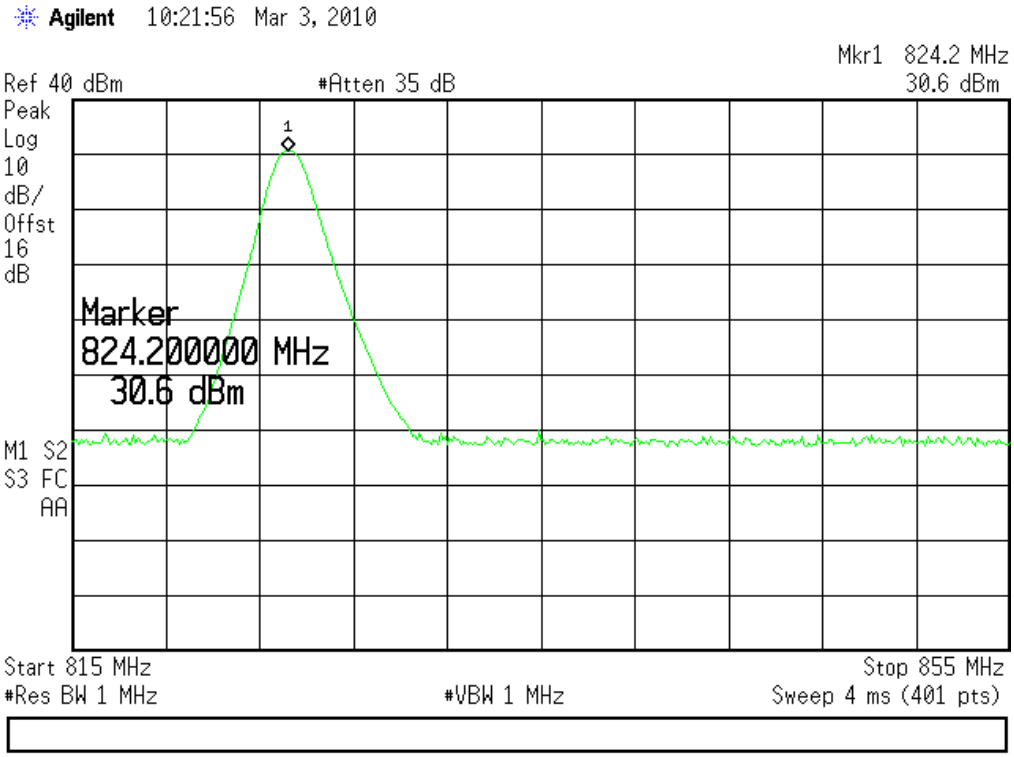


(Plot 27: GPRS 1900MHz Channel = 661)

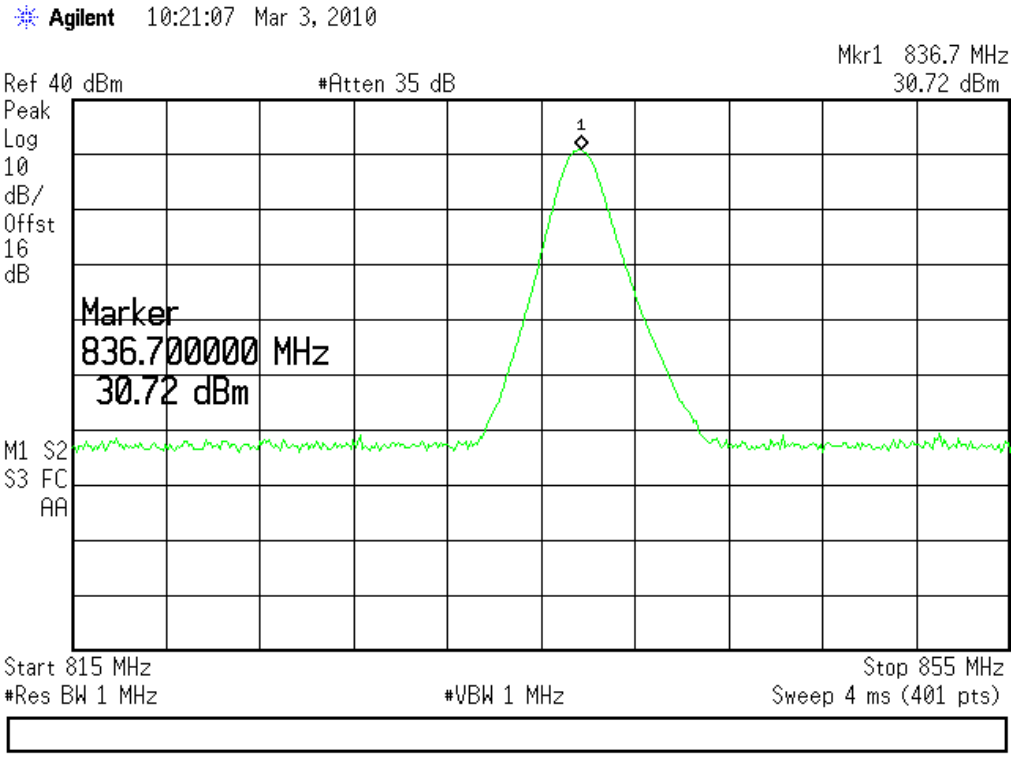


(Plot 28: GPRS 1900MHz Channel = 810)

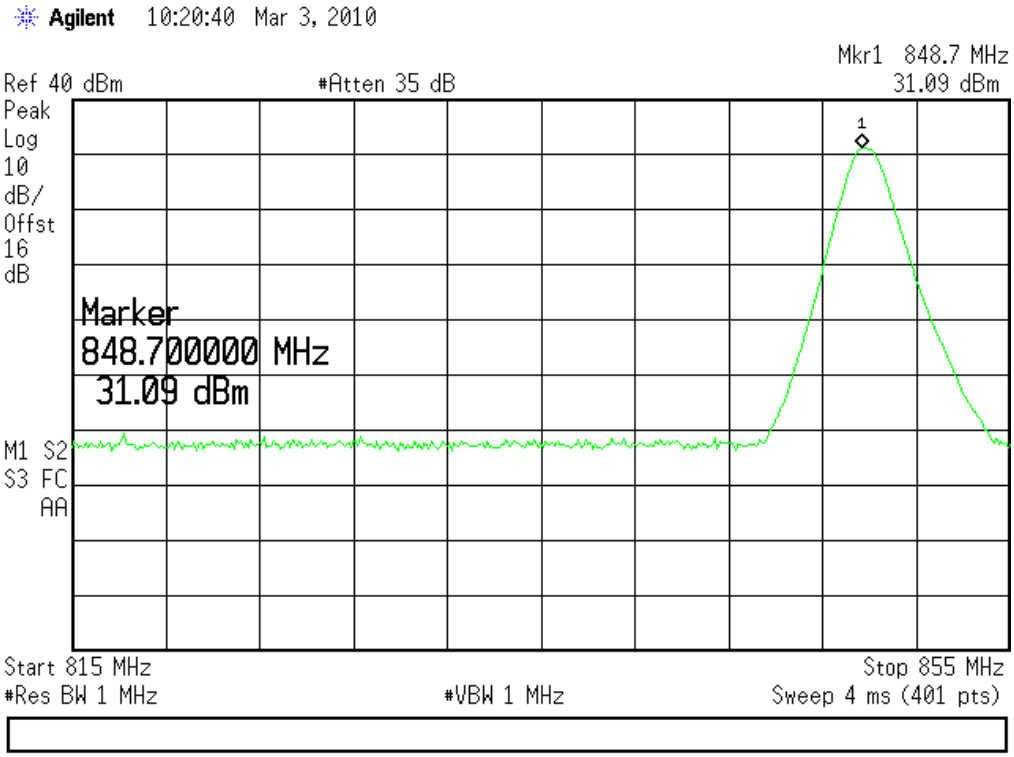
Sim2:



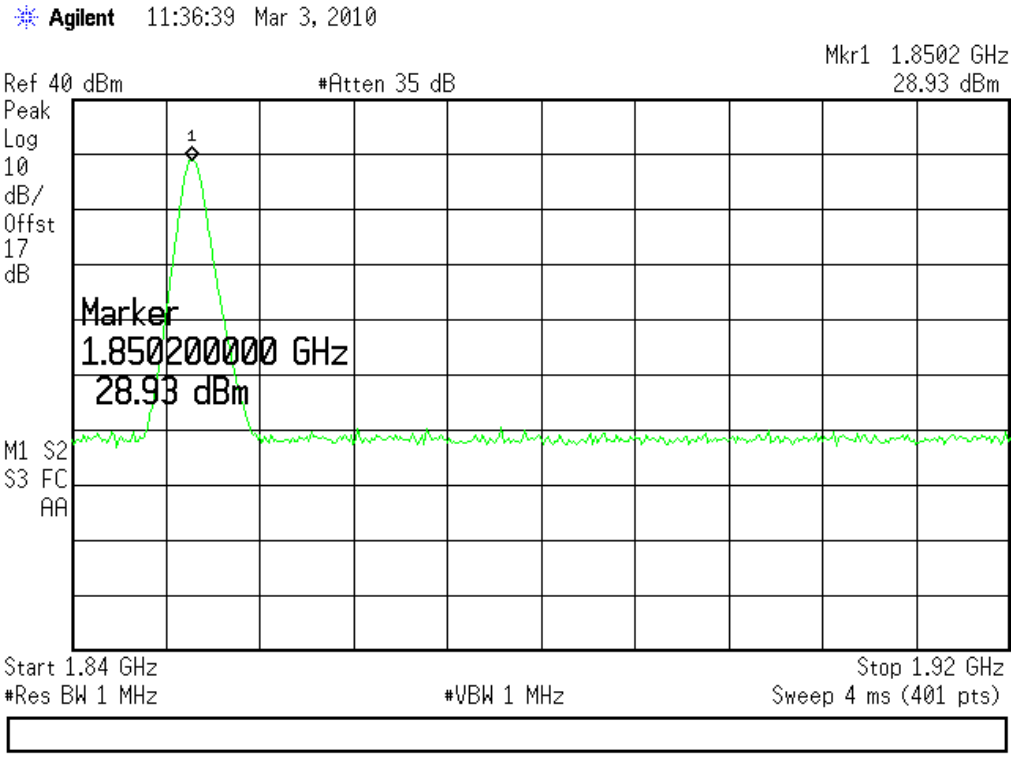
(Plot 29:GSM 850MHz Channel = 128)



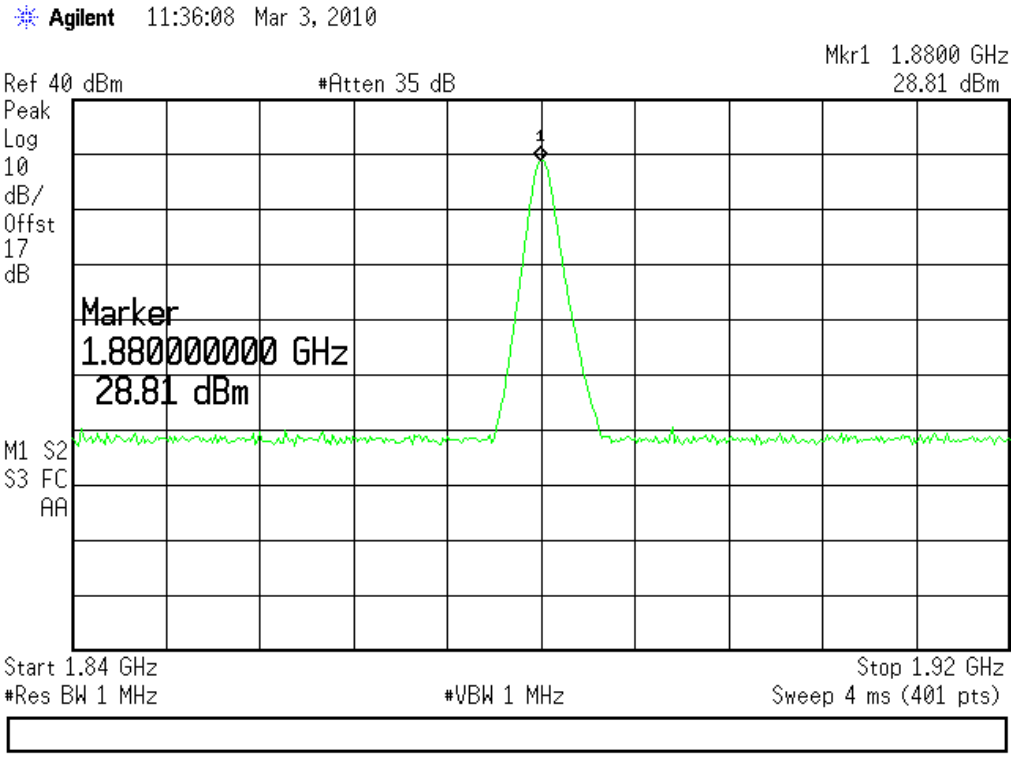
(Plot 30: GSM 850MHz Channel = 190)



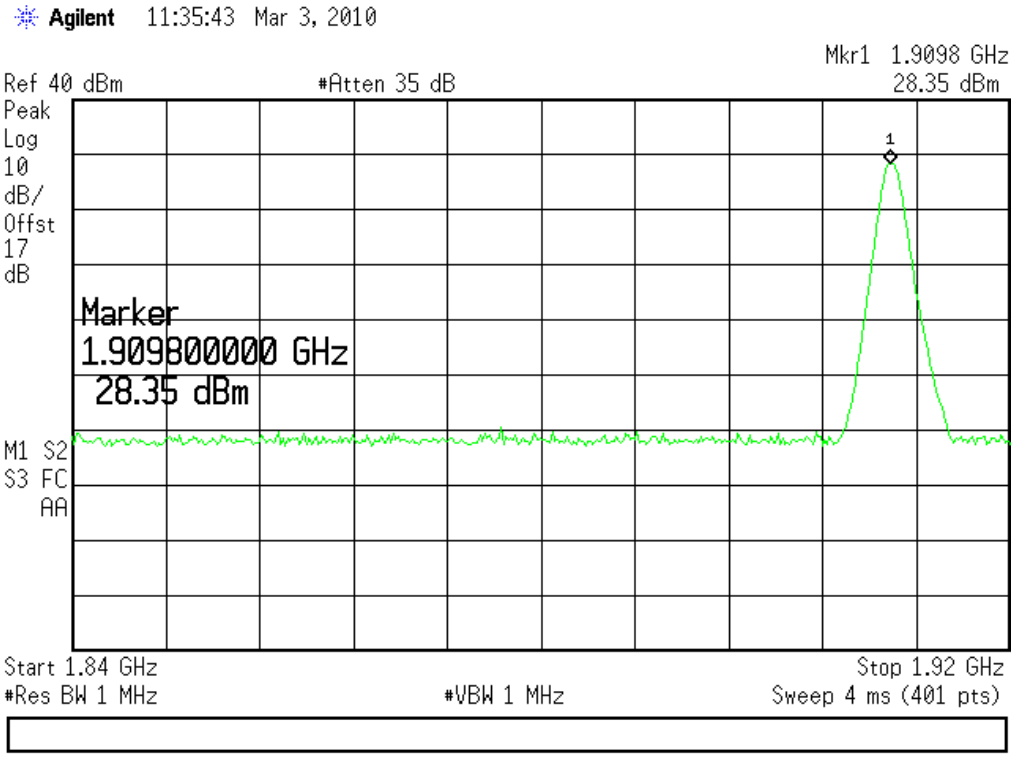
(Plot 31: GSM 850MHz Channel = 251)



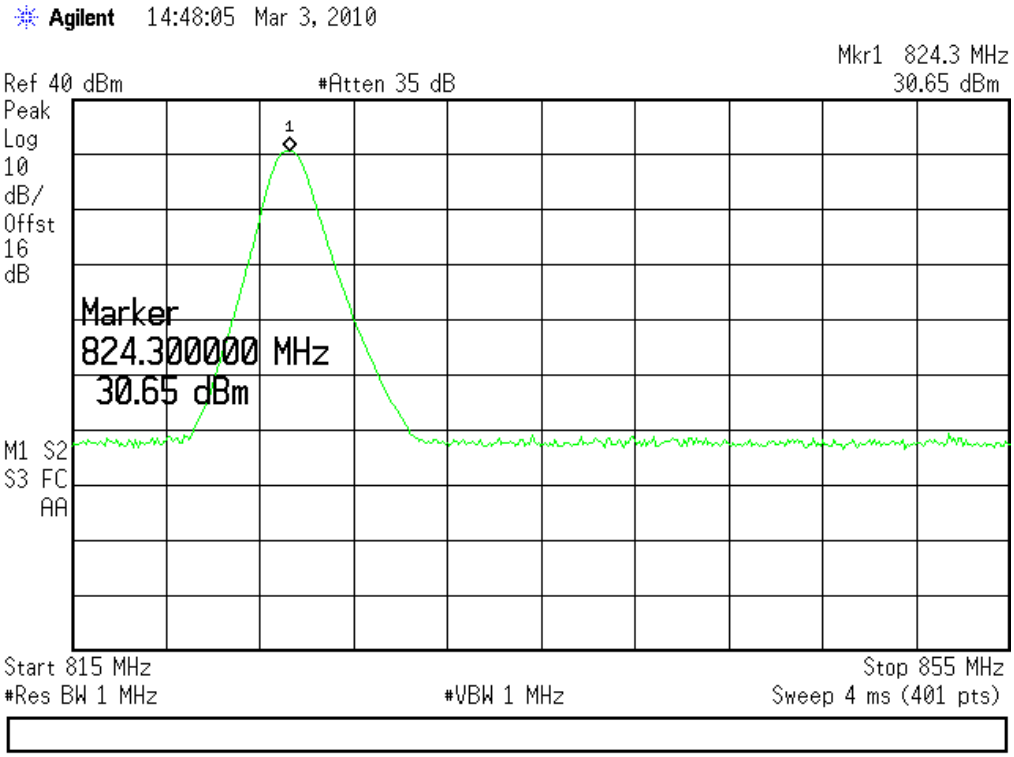
(Plot 32: GSM 1900MHz Channel = 512)



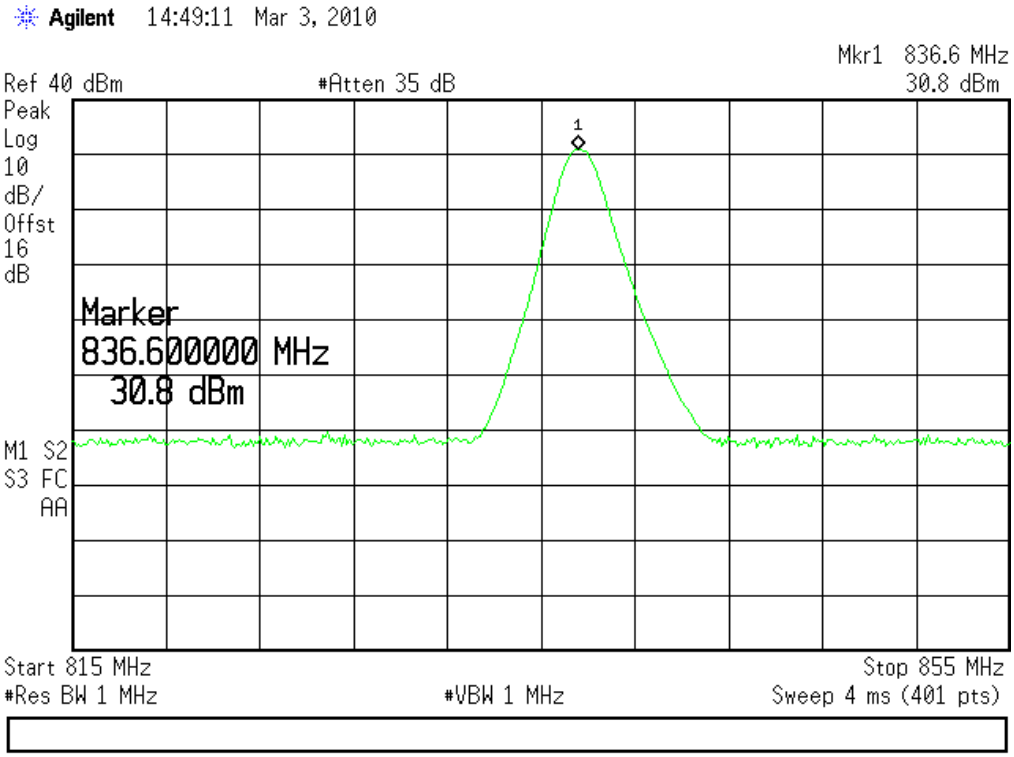
(Plot 33: GSM 1900MHz Channel = 661)



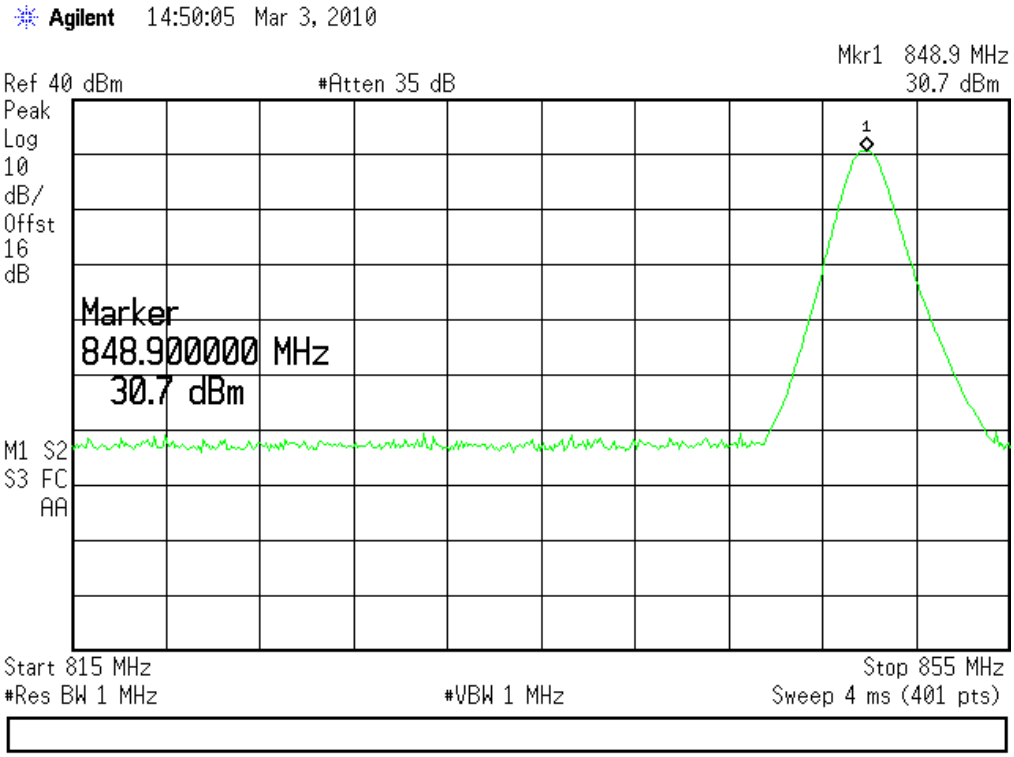
(Plot 34: GSM 1900MHz Channel = 810)



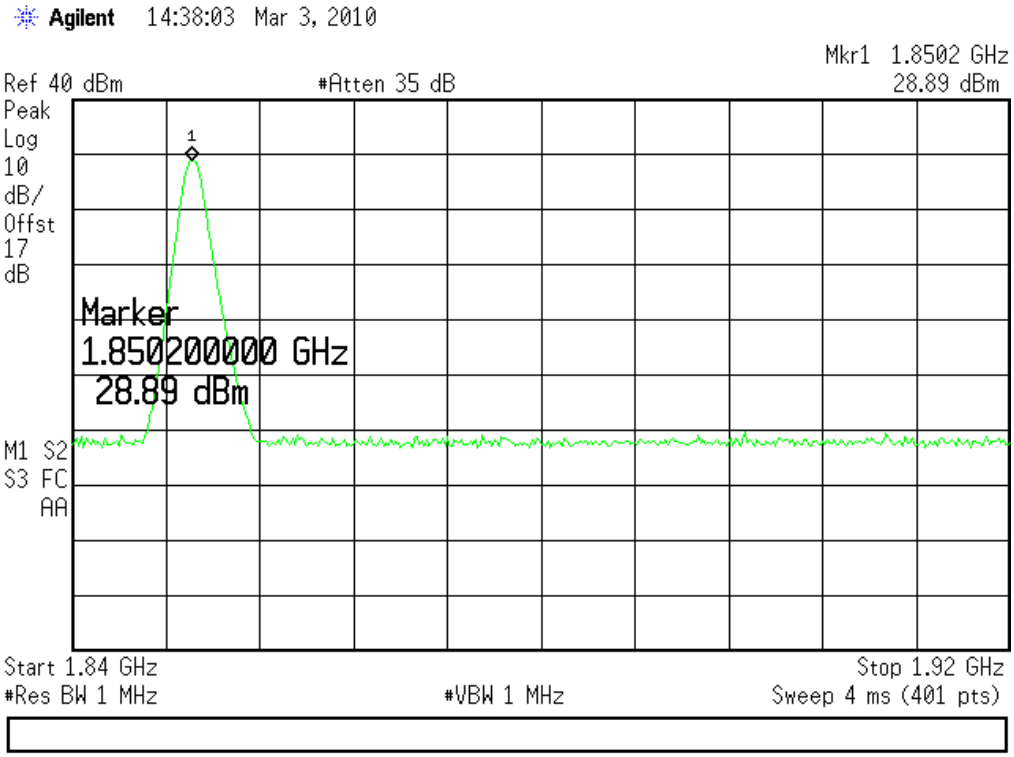
(Plot 35:GPRS 850MHz Channel = 128)



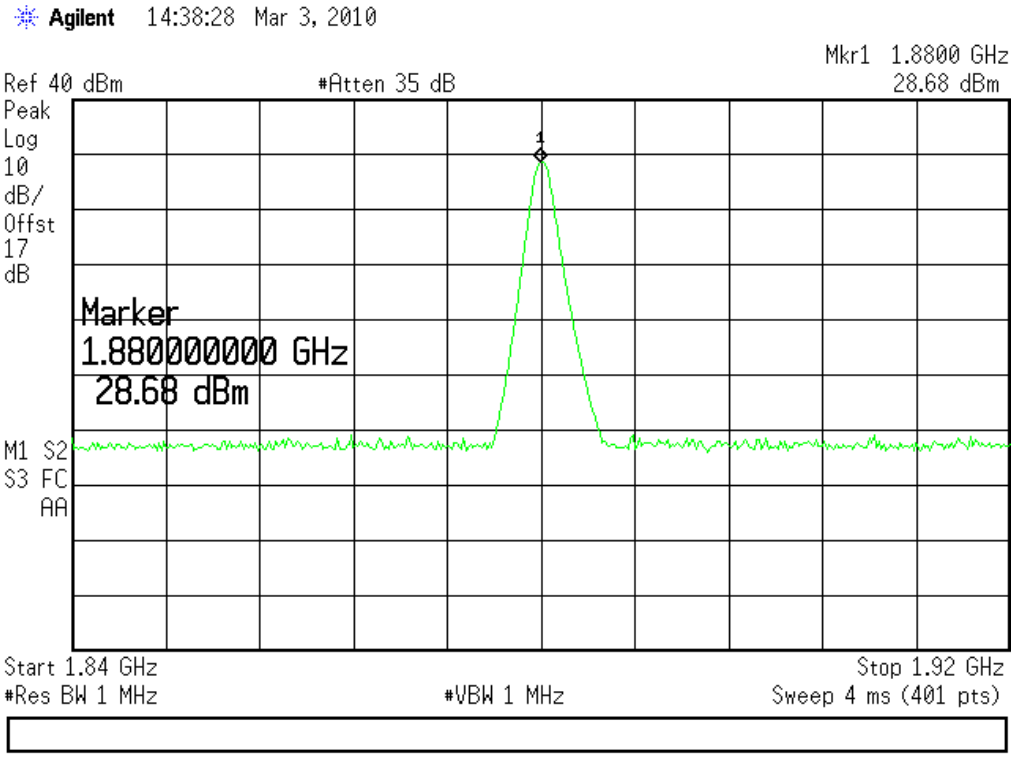
(Plot 36: GPRS 850MHz Channel = 190)



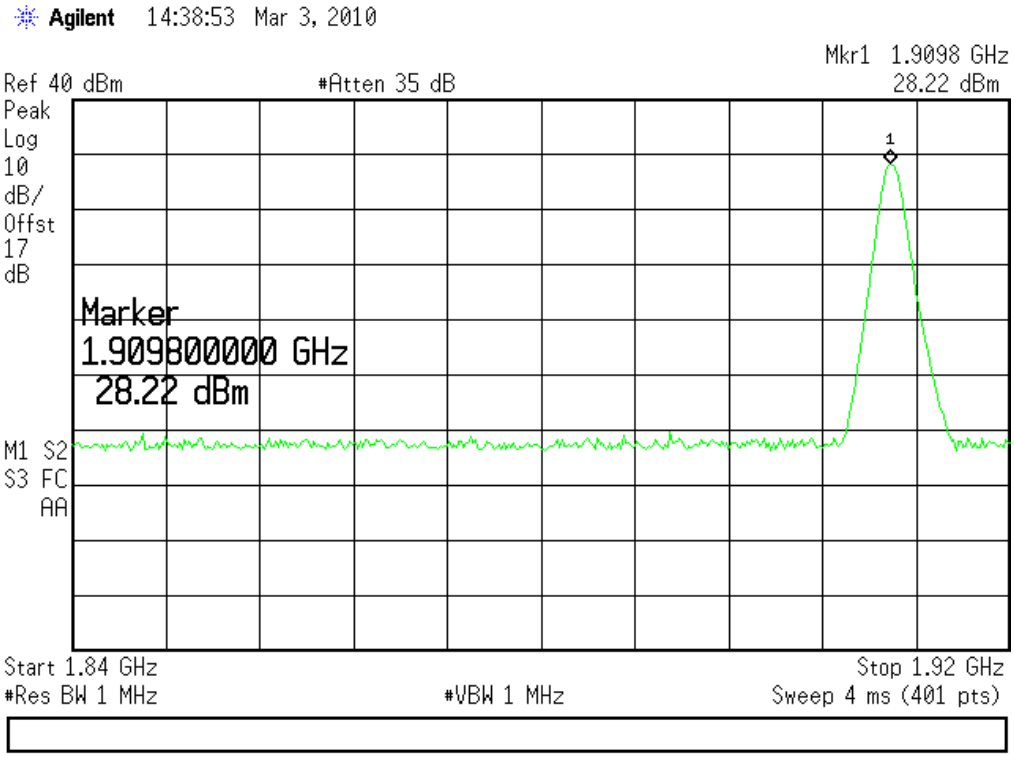
(Plot 37: GPRS 850MHz Channel = 251)



(Plot 38: GPRS 1900MHz Channel = 512)



(Plot 39: GPRS 1900MHz Channel = 661)



(Plot 40: GPRS 1900MHz Channel = 810)

3.3 20dB Occupied Bandwidth

3.3.1 Definition

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth, or 20dB bandwidth (10*log1% = 20dB) taking the total RF output power as reference.

3.3.2 Test Description

See section 3.1.2 of this report.

3.3.3 Test Verdict

Here the lowest, middle and highest channels are tested to record the 20dB occupied bandwidth, it's about 300kHz.

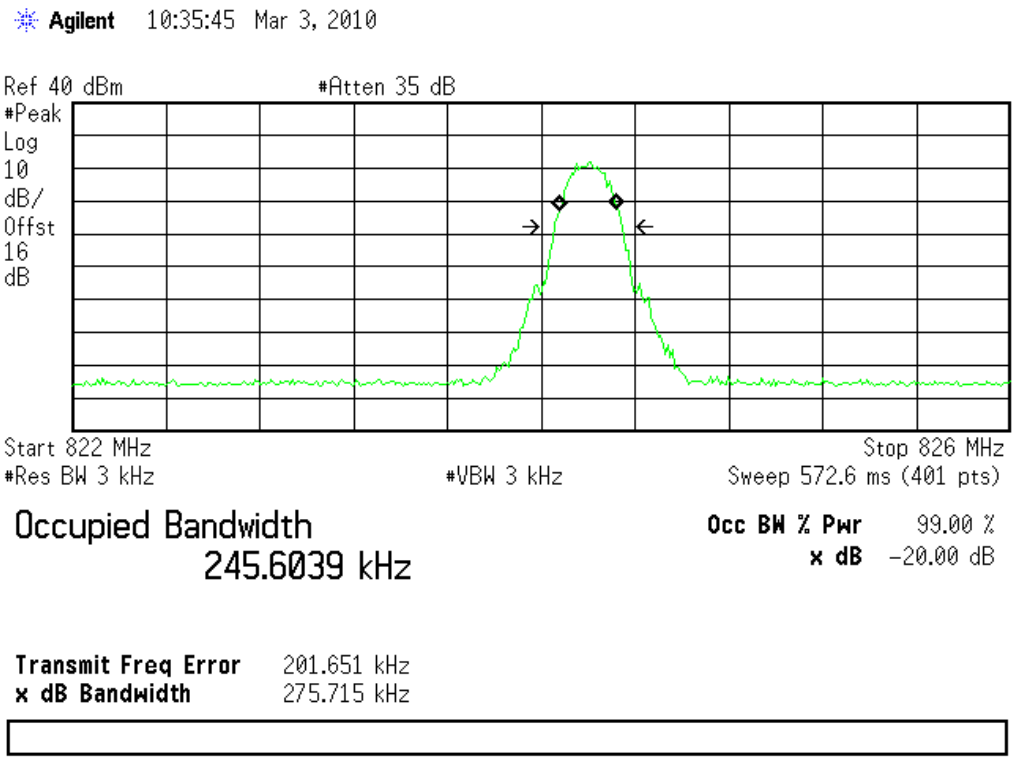
1. Test Verdict:

Sim1:

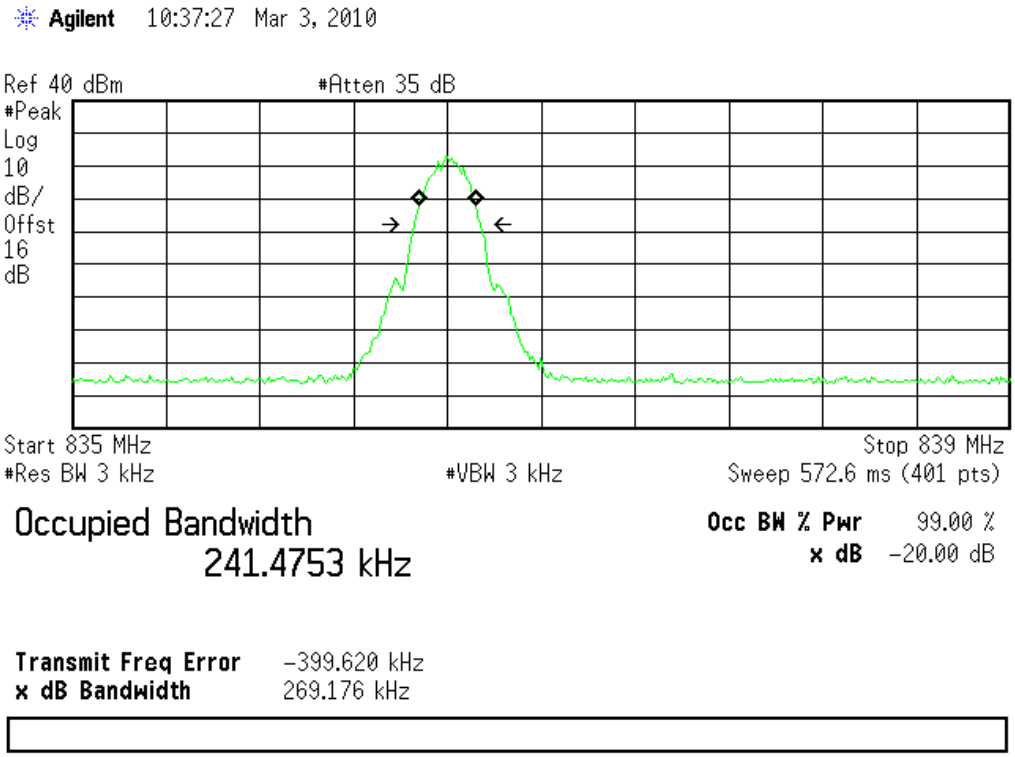
Band	Channel	Frequency (MHz)	Measured 20dB Occupied Bandwidth (kHz)	Refer to Plot
GSM 850MHz	128	824.20	275.715	Plot 41
	190	836.60	269.176	Plot 42
	251	848.80	270.350	Plot 43
GSM 1900MHz	512	1850.20	279.608	Plot 44
	661	1880.00	270.708	Plot 45
	810	1909.80	274.863	Plot 46
GPRS 850MHz	128	824.20	276.377	Plot 47
	190	836.60	271.157	Plot 48
	251	848.80	270.436	Plot 49
GPRS 1900MHz	512	1850.20	276.053	Plot 50
	661	1880.00	270.976	Plot 50
	810	1909.80	271.421	Plot 52

2. Test Plot:

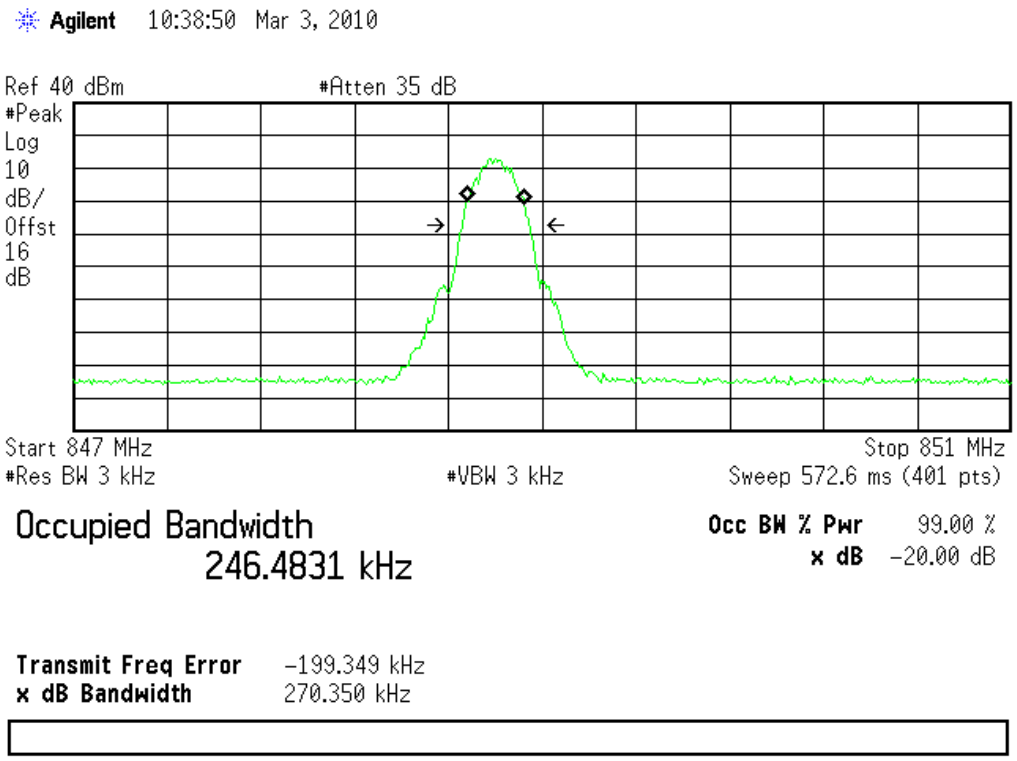
Sim1:



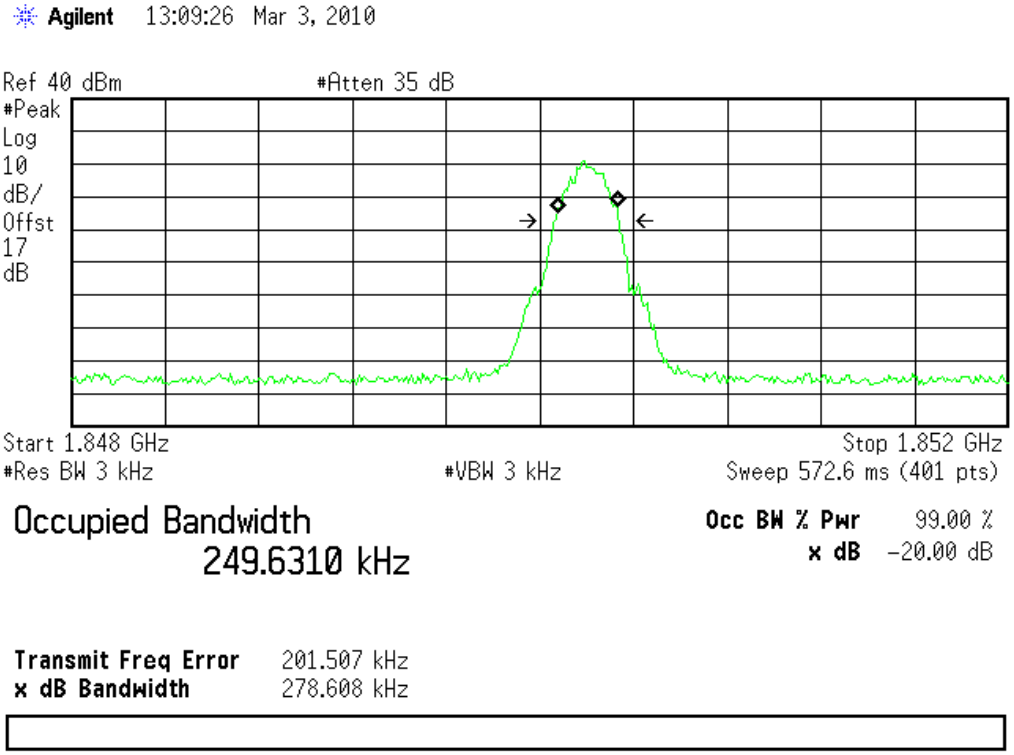
(Plot 41: GSM 850MHz Channel = 128)



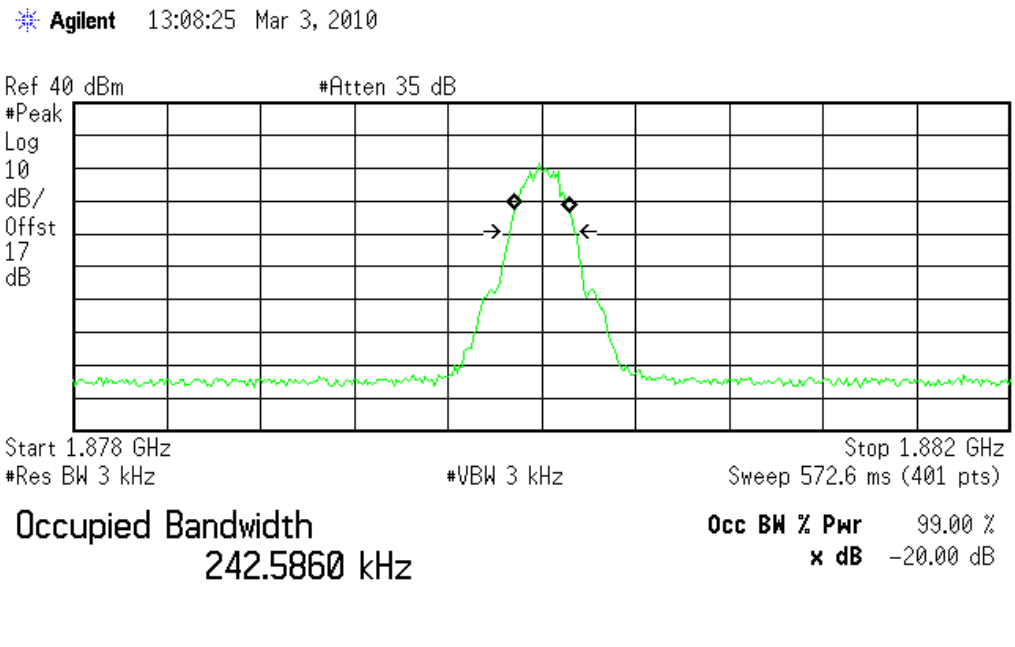
(Plot 42: GSM 850MHz Channel = 190)



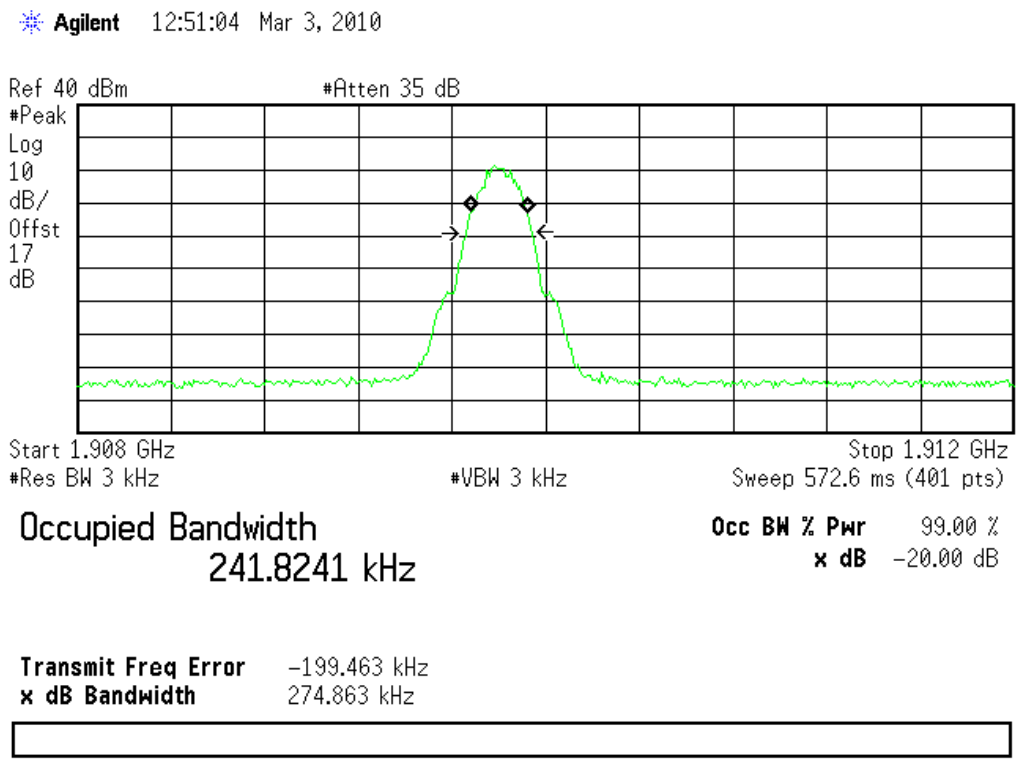
(Plot 43: GSM 850MHz Channel = 251)



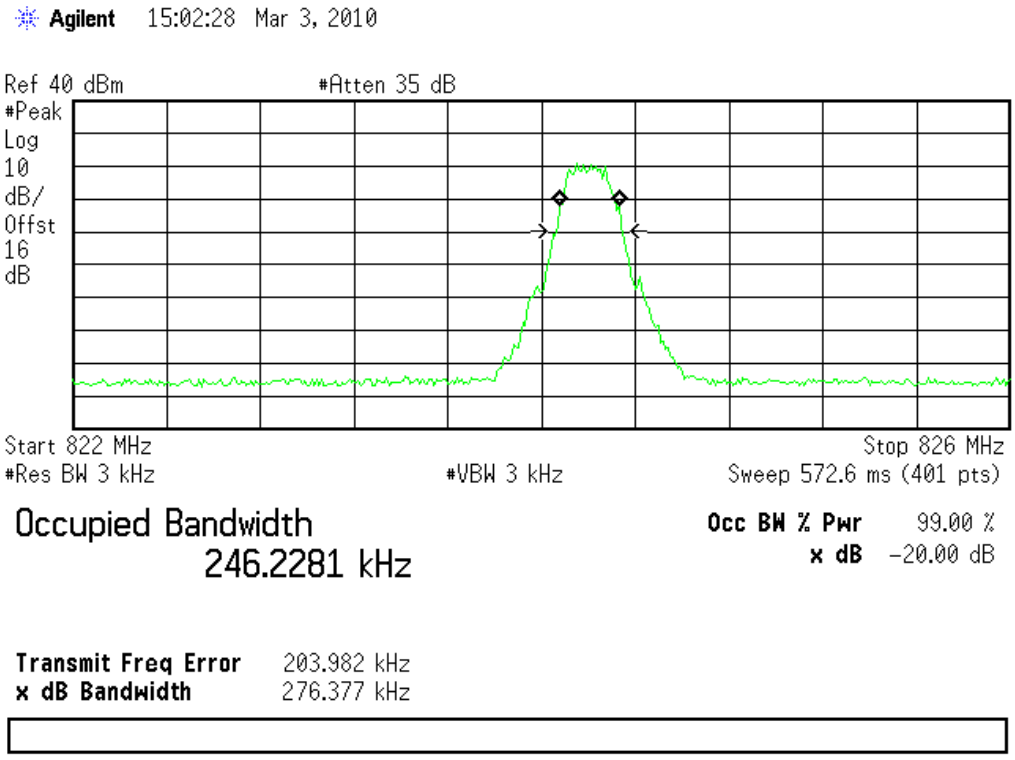
(Plot 44: GSM 1900MHz Channel = 512)



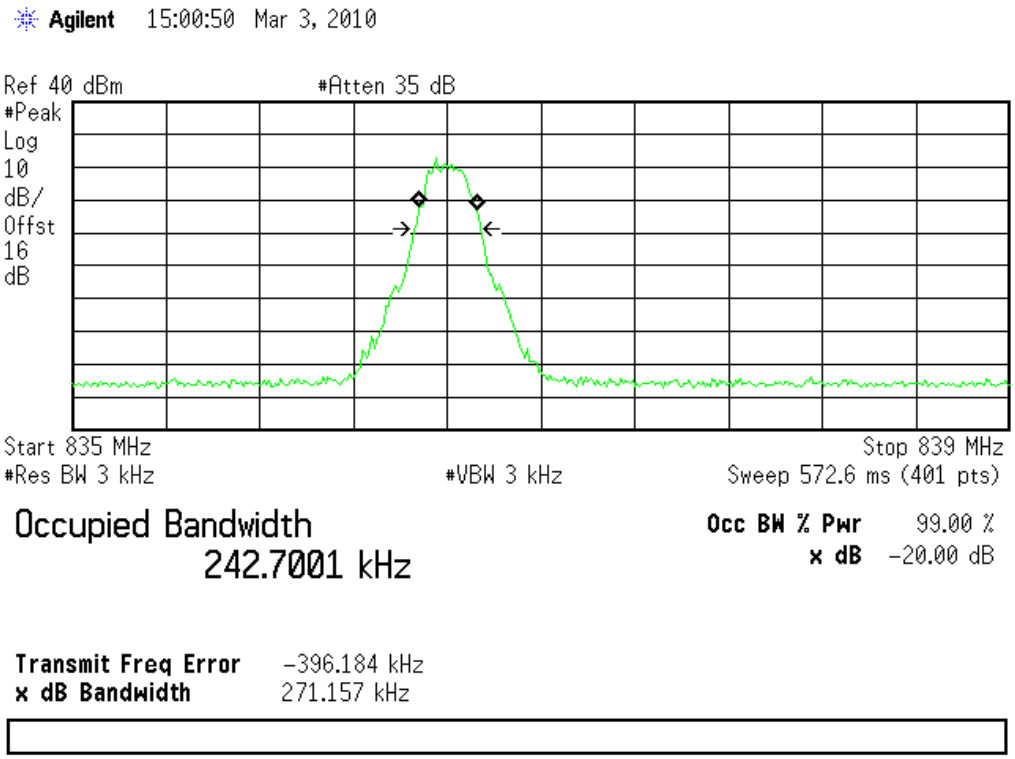
(Plot 45: GSM 1900MHz Channel = 661)



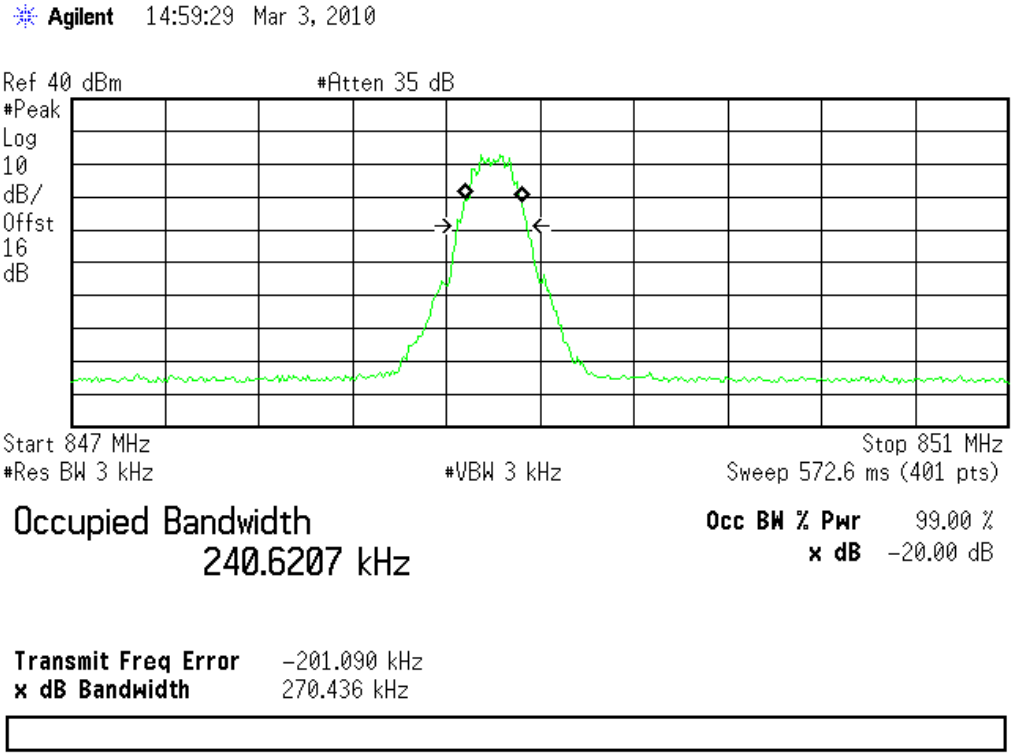
(Plot 46: GSM 1900MHz Channel = 810)



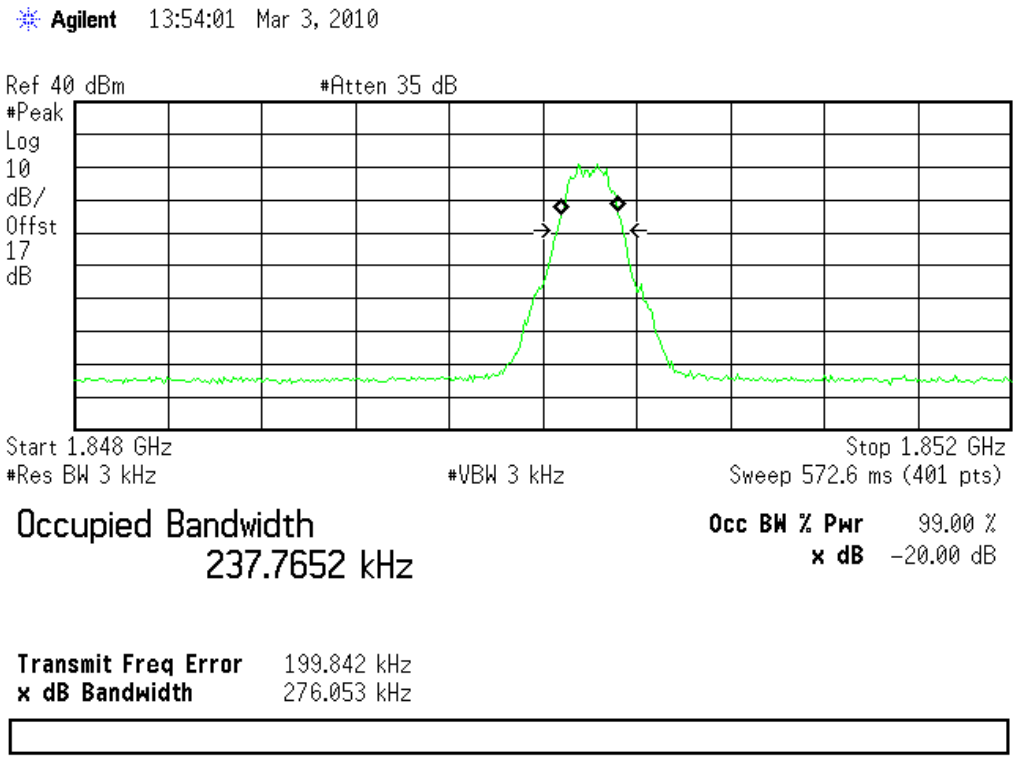
(Plot 47:GPRS 850MHz Channel = 128)



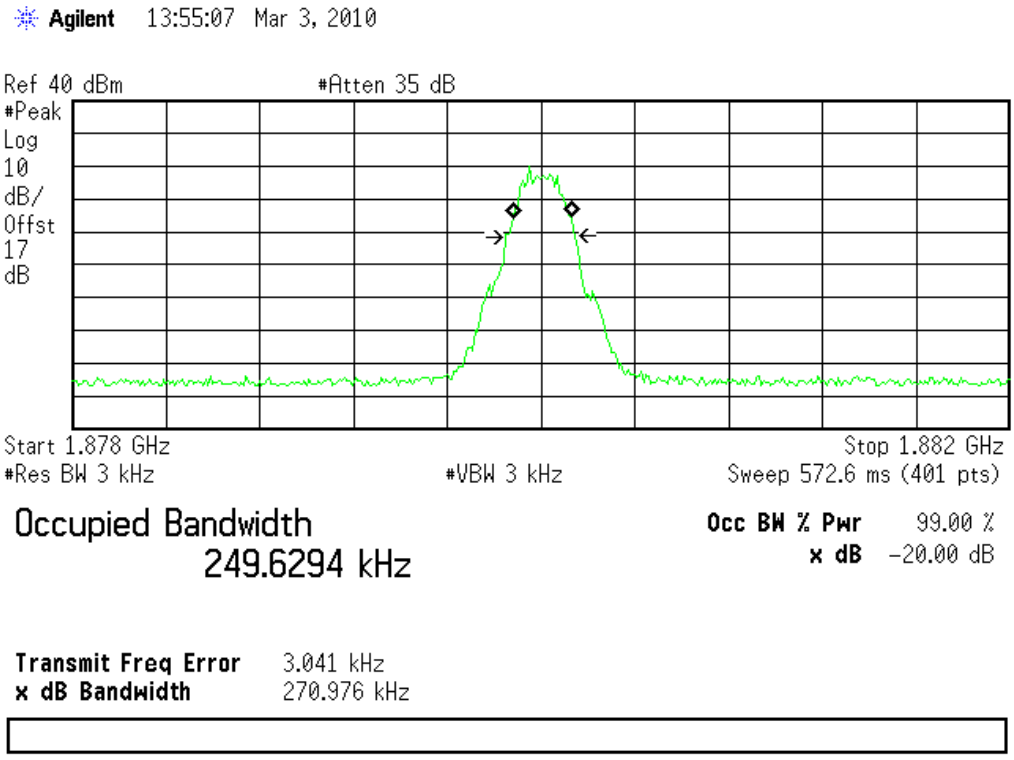
(Plot 48: GPRS 850MHz Channel = 190)



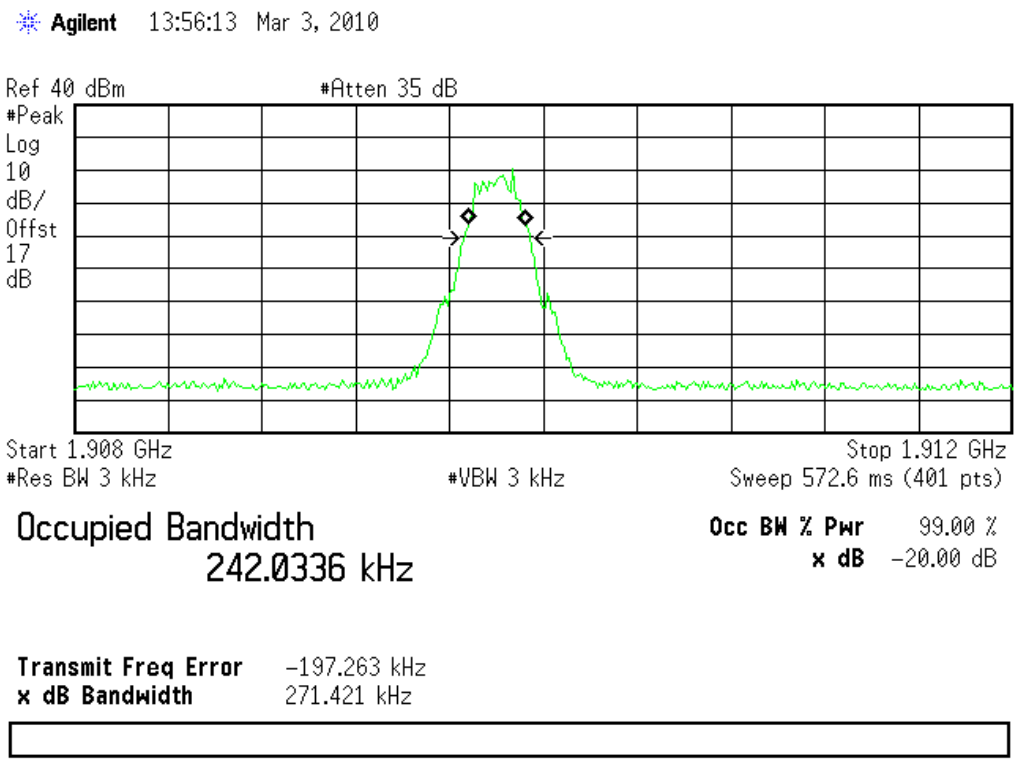
(Plot 49: GPRS 850MHz Channel = 251)



(Plot 50:GPRS 1900MHz Channel = 512)



(Plot 51: GPRS 1900MHz Channel = 661)



(Plot 52: GPRS 1900MHz Channel = 810)

3.4 Frequency Stability

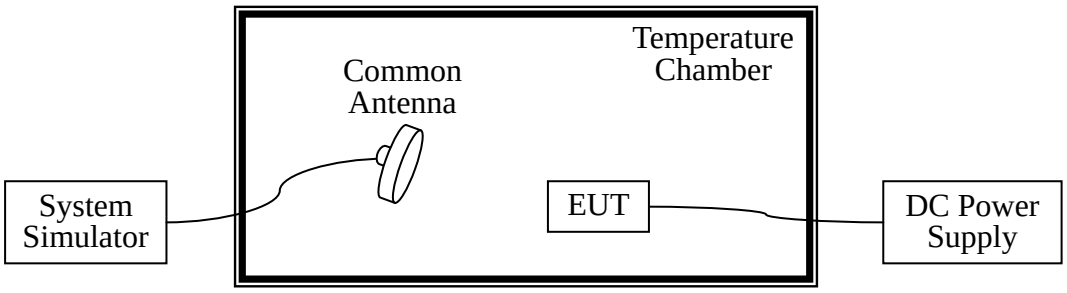
3.4.1 Requirement

According to FCC section 22.355 and FCC section 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.
(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

3.4.2 Test Description

1. Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
CMU200	Rohde&Schwarz	FSP30	101020	2009.10	1year
DC Power Supply	Good Will	GPS-3030DD	EF920938	2009.10	2year
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2009.10	1year

3.4.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.7VDC, 4.2VDC and 3.6VDC, which are specified by the applicant; the normal temperature here used is 25°C. The frequency

deviation limit is ±2.5ppm.

Sim1:

Band	Test Conditions		Frequency Deviation						Verdict
	Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)/ Channel = 512 (1850.2MHz)		Channel = 190 (836.6MHz)/ Channel = 661 (1880.0MHz)		Channel = 251 (848.8MHz)/ Channle = 810 (1909.8MHz)		
			Hz	Limit	Hz	Limit	Hz	Limit	
GSM 850MHz	3.7	-30	-13.12	±2060.5	14.52	±2091.5	-16.45	±2122.0	PASS
		-20	14.15		-13.37		-10.17		
		-10	14.25		18.27		16.67		
		0	-15.14		11.49		16.12		
		+10	-13.61		12.26		10.22		
		+20	-12.53		-12.50		15.20		
		+30	14.27		10.21		13.78		
		+40	-17.32		-13.69		13.24		
		+50	-18.18		-20.28		12.27		
	4.2	+25	-19.01		-13.24		13.92		
	3.6	+25	-13.38		-19.88		12.14		
GSM 1900MHz	3.7	-30	24.42	±1550.2	-32.79	±1550.0	24.54	±1707.5	PASS
		-20	16.54		15.46		12.14		
		-10	-13.24		9.21		-12.19		
		0	13.86		10.77		-16.16		
		+10	10.54		8.16		15.45		
		+20	17.58		26.56		-20.12		
		+30	-11.23		-12.87		-10.12		
		+40	-15.54		13.14		14.79		
		+50	13.38		21.08		-12.17		
	4.2	+25	-12.21		-9.18		-15.83		
	3.6	+25	-8.73		-19.18		15.50		
GPRS 850MHz	3.7	-30	-15.17	±2060.5	14.52	±2091.5	-16.45	±2122.0	PASS
		-20	13.10		-20.37		-10.17		
		-10	14.22		9.27		16.67		
		0	-14.13		11.49		16.12		
		+10	-19.11		12.26		10.22		
		+20	-12.53		-12.50		15.20		
		+30	11.27		10.21		13.78		
		+40	-11.32		-13.09		13.24		
		+50	-13.18		-20.28		12.27		

Band	Test Conditions		Frequency Deviation						Verdict
	Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)/ Channel = 512 (1850.2MHz)		Channel = 190 (836.6MHz)/ Channel = 661 (1880.0MHz)		Channel = 251 (848.8MHz)/ Channle = 810 (1909.8MHz)		
			Hz	Limit	Hz	Limit	Hz	Limit	
	4.2	+25	-10.09		-13.24		13.92		
	3.6	+25	-14.33		-18.88		12.14		
GPRS 1900MHz	3.7	-30	24.42	±1550.2	-32.79	±1550.0	37.54	±1707.5	PASS
		-20	16.54		15.46		12.14		
		-10	-13.24		9.26		-12.19		
		0	10.86		10.77		-16.16		
		+10	10.54		8.16		15.45		
		+20	17.58		26.56		-20.12		
		+30	-11.23		-12.87		-10.12		
		+40	-15.54		13.14		24.79		
		+50	13.38		21.08		-12.17		
	4.2	+25	-12.21		-9.18		-15.83		
	3.6	+25	-8.73		-19.18		15.50		

3.5 Conducted Out of Band Emissions

3.6 Requirement

According to FCC section 22.917(a) and FCC section 24.238(a), the power of any emission 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. This calculated to be -13dBm.

3.6.1 Test Description

See section 3.1.2 of this report.

3.6.2 Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

Sim1:

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	2975.00	-16.16	Plot 65	-13	PASS
	190	2975.00	-16.16	Plot 66		PASS
	251	2975.00	-15.25	Plot 67		PASS
GSM 1900MHz	512	2950.00	-15.40	Plot 68	-13	PASS
	661	2950.00	-16.18	Plot 69		PASS
	810	2950.00	-15.31	Plot 70		PASS
GPRS 850MHz	128	2950.00	-16.28	Plot 71	-13	PASS
	190	2975.00	-15.78	Plot 72		PASS
	251	2975.00	-15.95	Plot 73		PASS
GPRS 1900MHz	512	2950.00	-19.83	Plot 74	-13	PASS
	661	2950.00	-20.56	Plot 75		PASS
	810	2950.00	-20.41	Plot 76		PASS

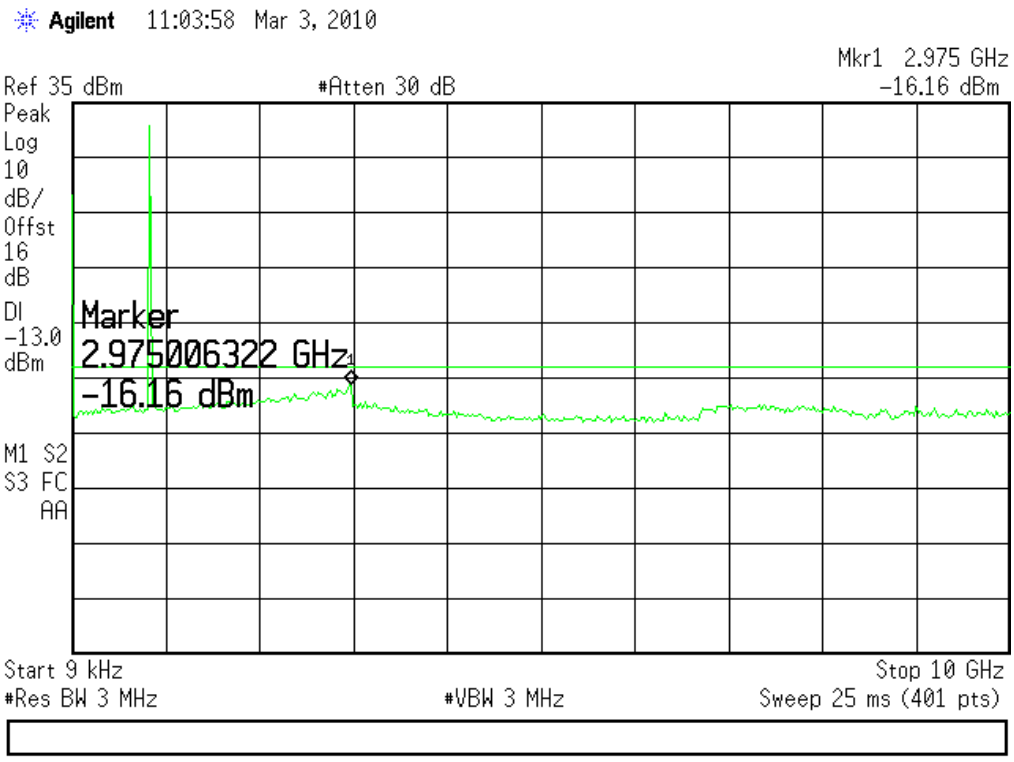
Sim2:

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	2975.00	-16.08	Plot 77	-13	PASS
	190	2975.00	-15.40	Plot 78		PASS
	251	2950.00	-16.02	Plot 79		PASS
GSM 1900MHz	512	2950.00	-15.51	Plot 80	-13	PASS
	661	2950.00	-15.74	Plot 81		PASS
	810	2950.00	-15.42	Plot 82		PASS
GPRS 850MHz	128	2975.00	-16.55	Plot 83	-13	PASS
	190	2975.00	-15.85	Plot 84		PASS
	251	2975.00	-16.12	Plot 85		PASS
GPRS 1900MHz	512	2950.00	-15.98	Plot 86	-13	PASS
	661	2950.00	-16.37	Plot 87		PASS
	810	2950.00	-15.70	Plot 88		PASS

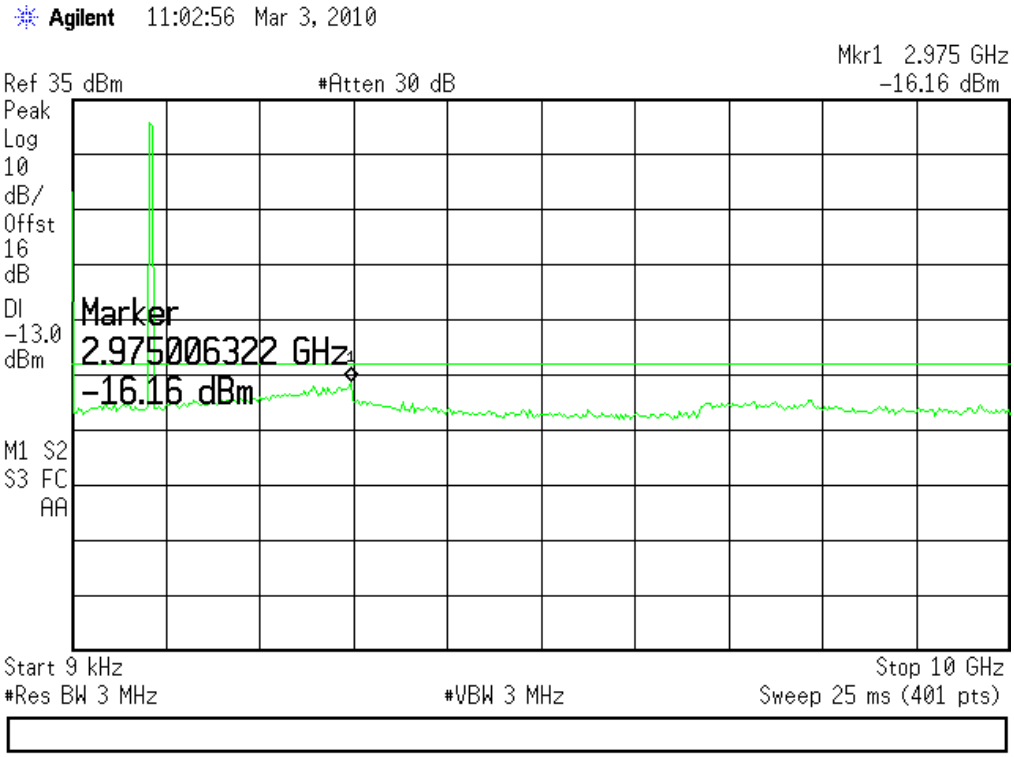
2. Test Plot for the Whole Measurement Frequency Range:

Note: the power of the EUT transmitting frequency should be ignored.

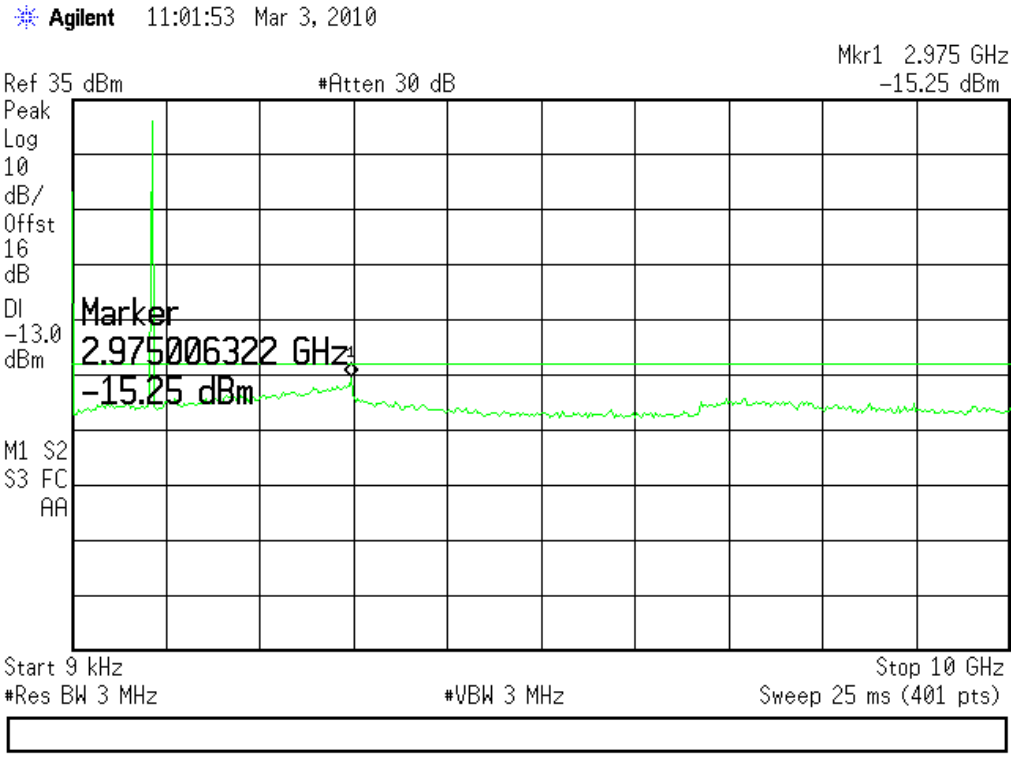
Sim1:



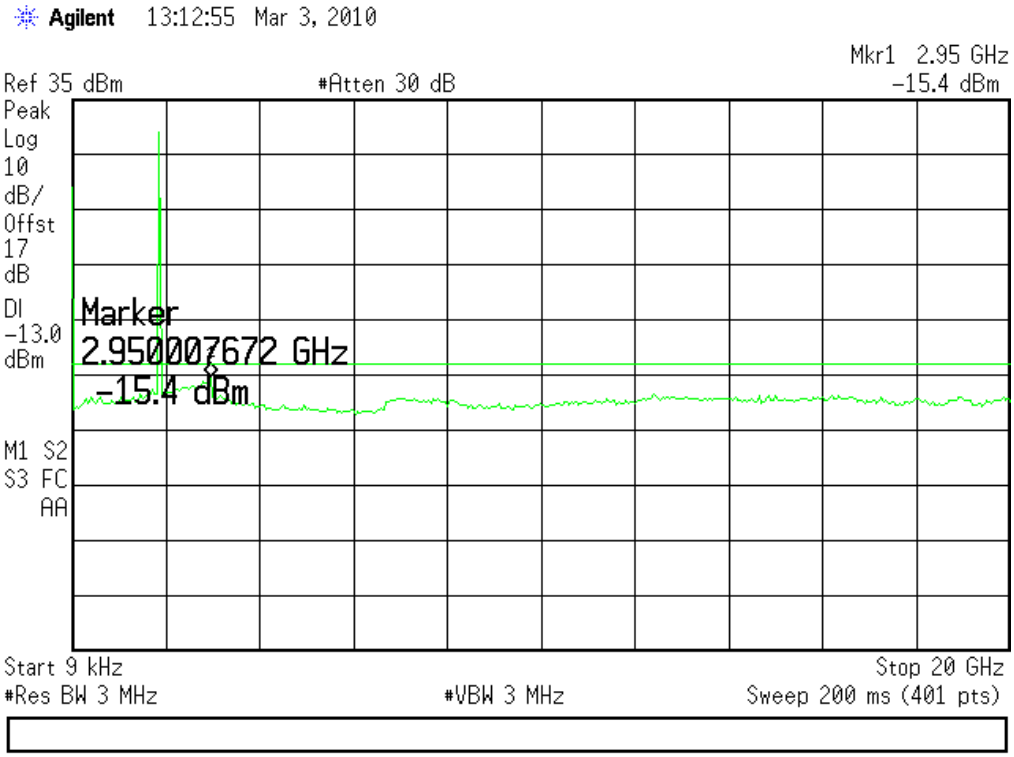
(Plot 65: GSM 850MHz Channel = 128)



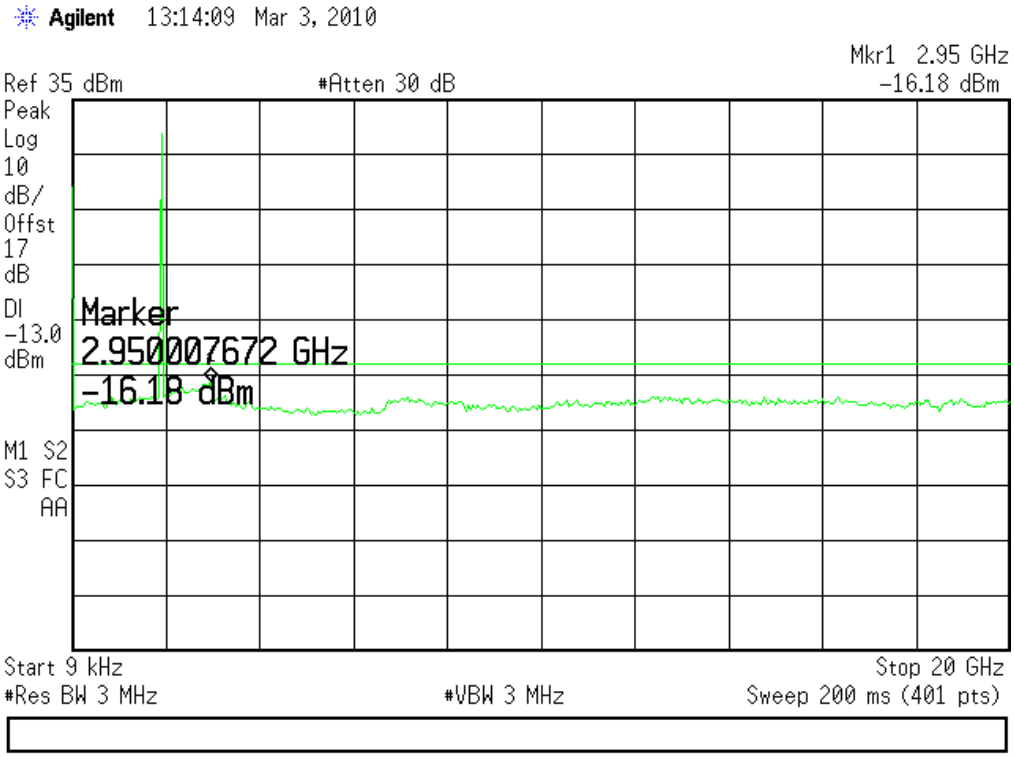
(Plot 66: GSM 850MHz Channel = 190)



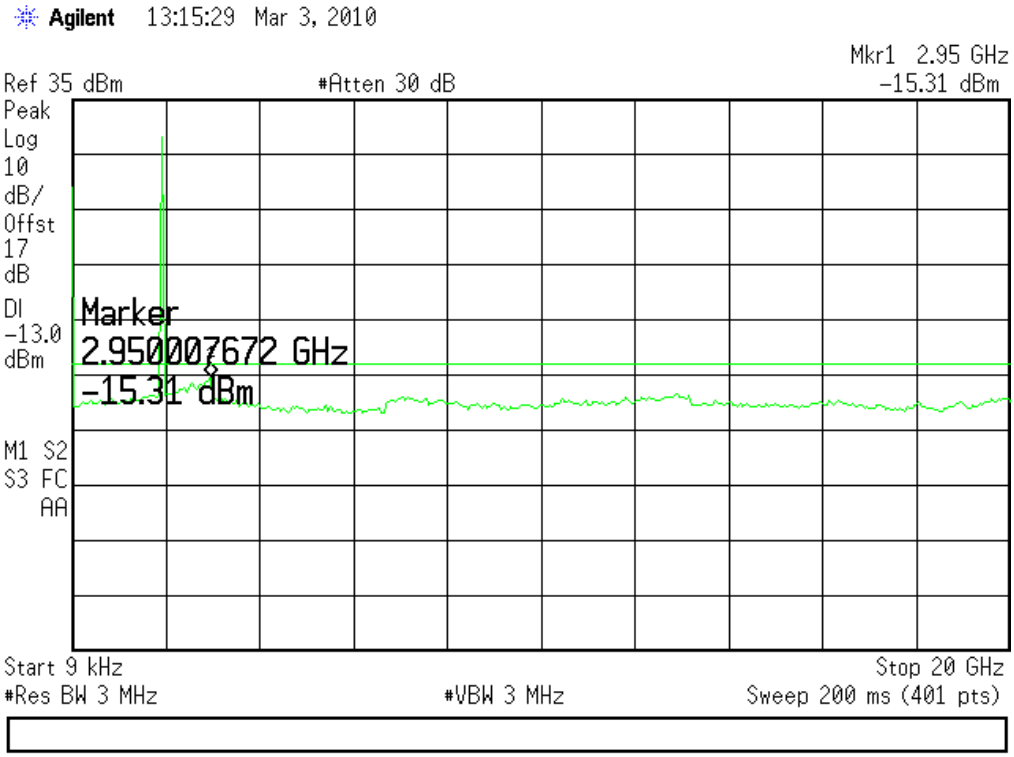
(Plot 67: GSM 850MHz Channel = 251)



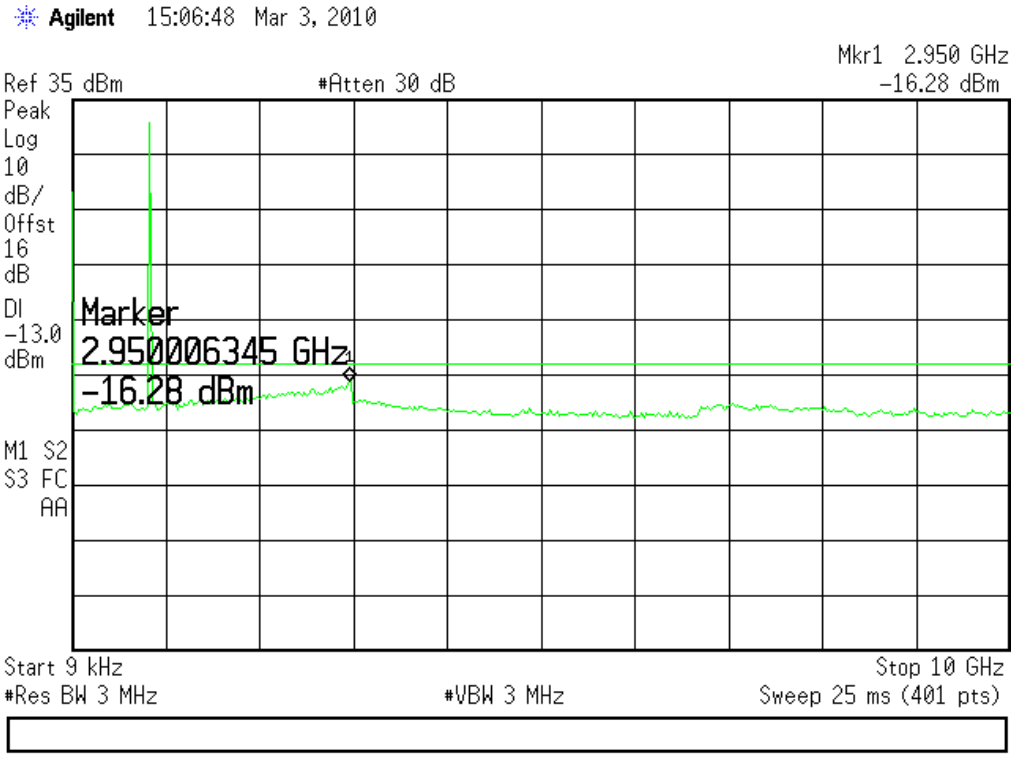
(Plot 68: GSM 1900MHz Channel = 512)



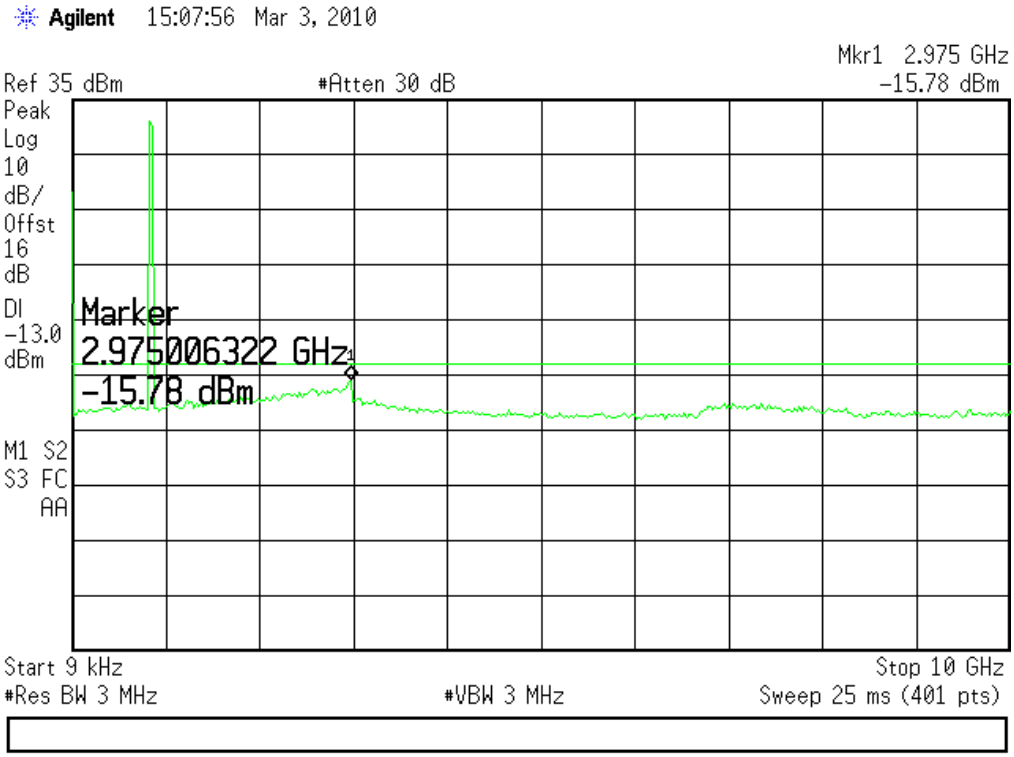
(Plot 69: GSM 1900MHz Channel = 661)



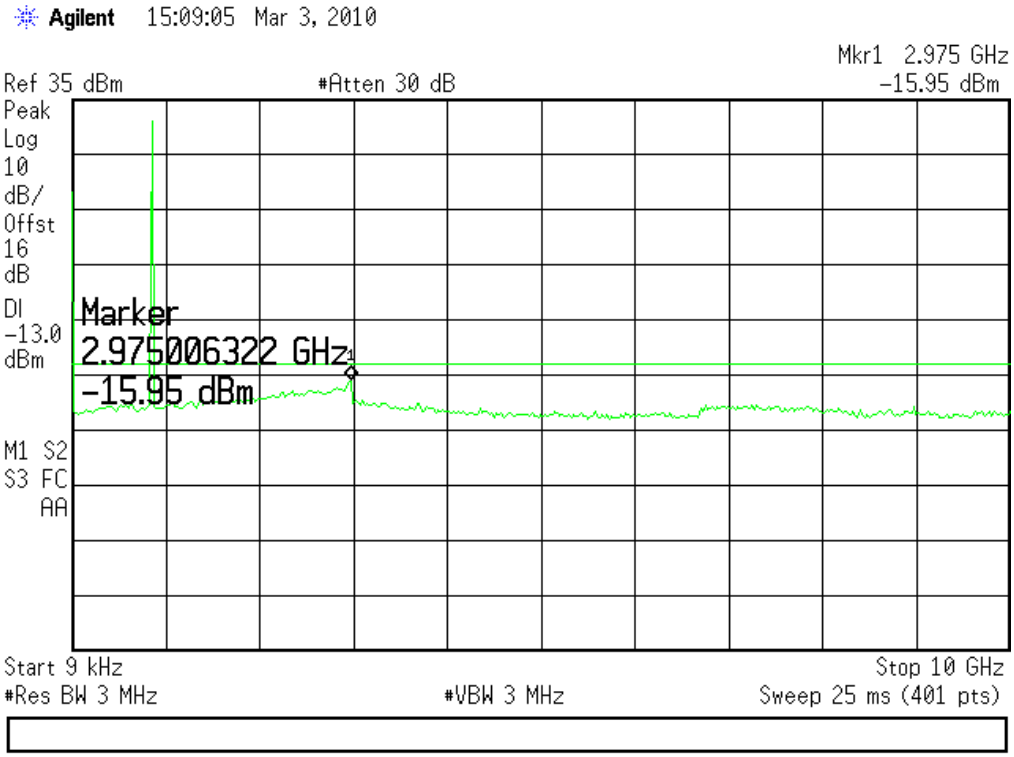
(Plot 70: GSM 1900MHz Channel = 810)



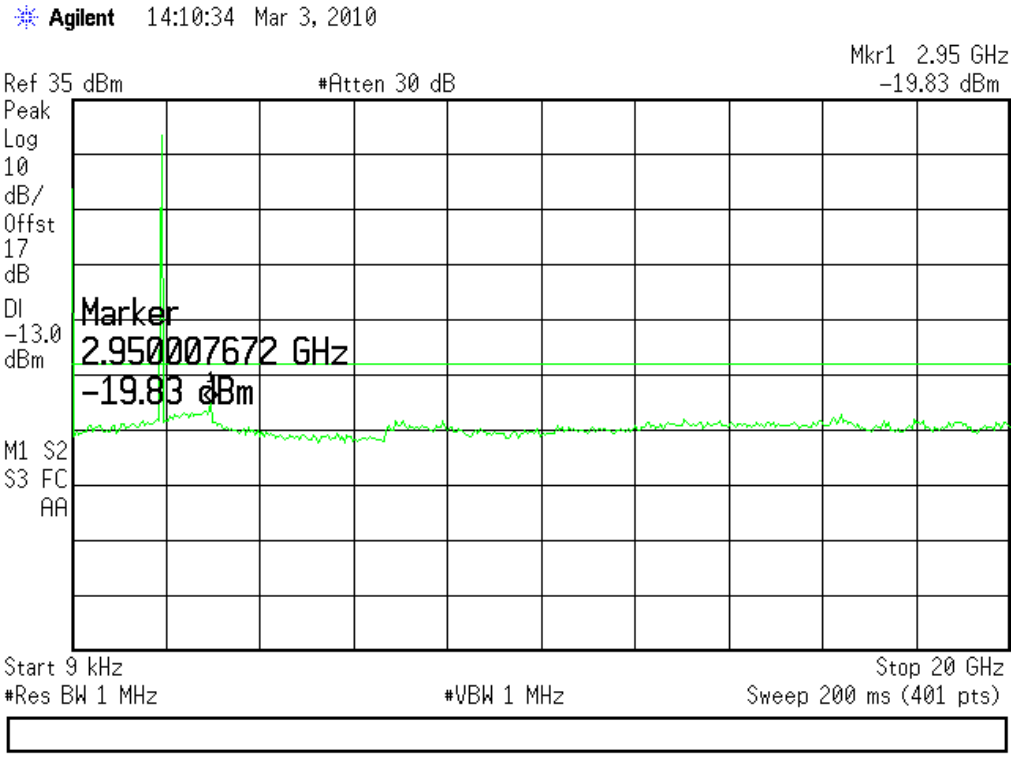
(Plot 71:GPRS 850MHz Channel = 128)



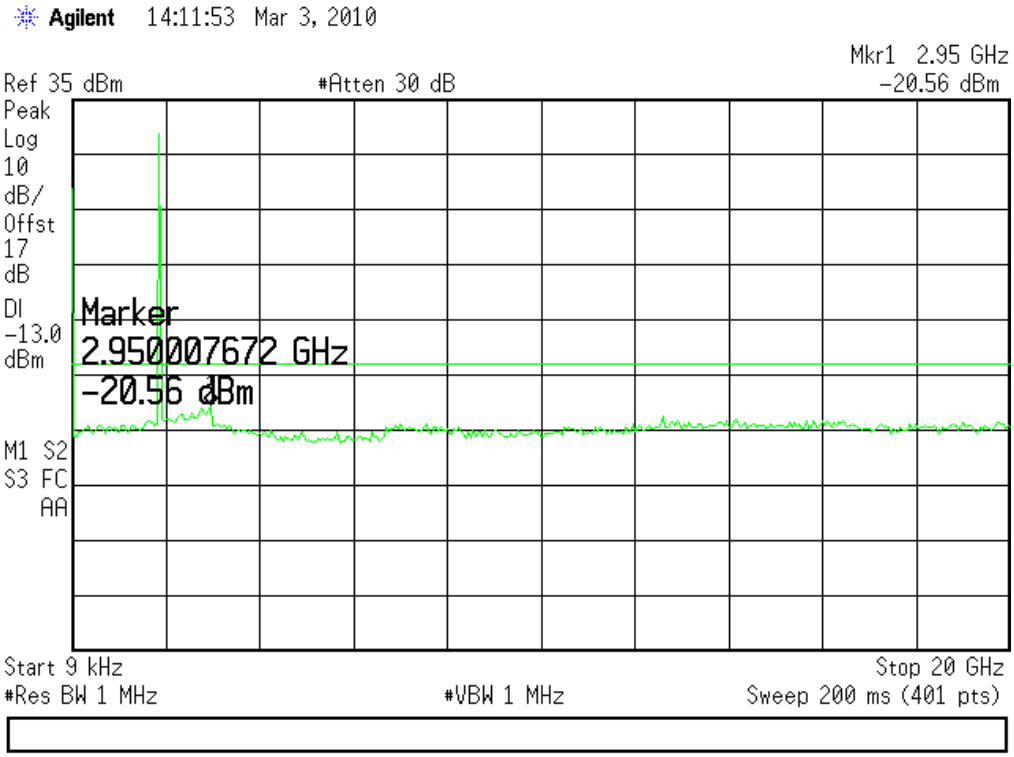
(Plot 72: GPRS 850MHz Channel = 190)



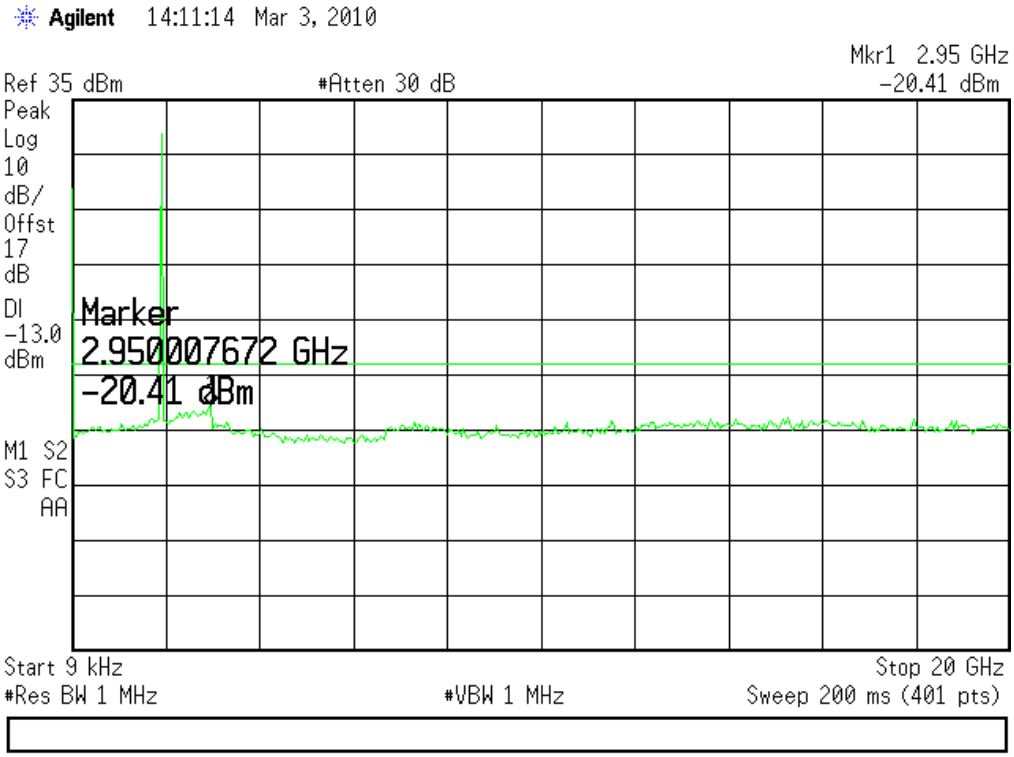
(Plot 73: GPRS 850MHz Channel = 251)



(Plot 74:GPRS 1900MHz Channel = 512)

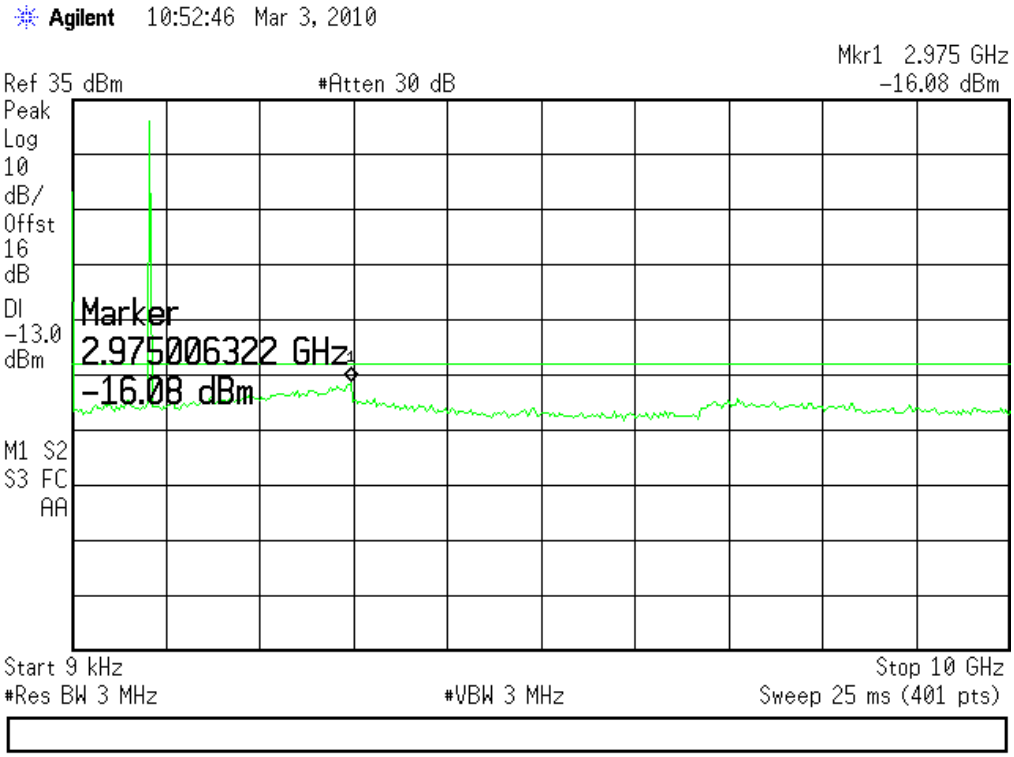


(Plot 75: GPRS 1900MHz Channel = 661)

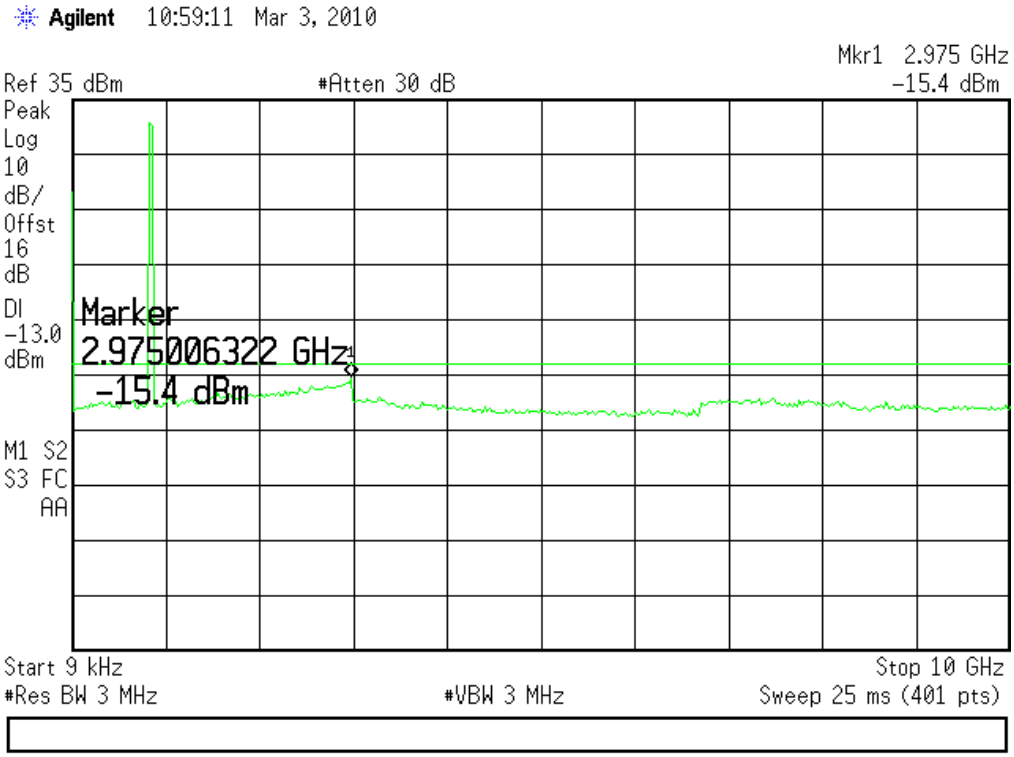


(Plot 76: GPRS 1900MHz Channel = 810)

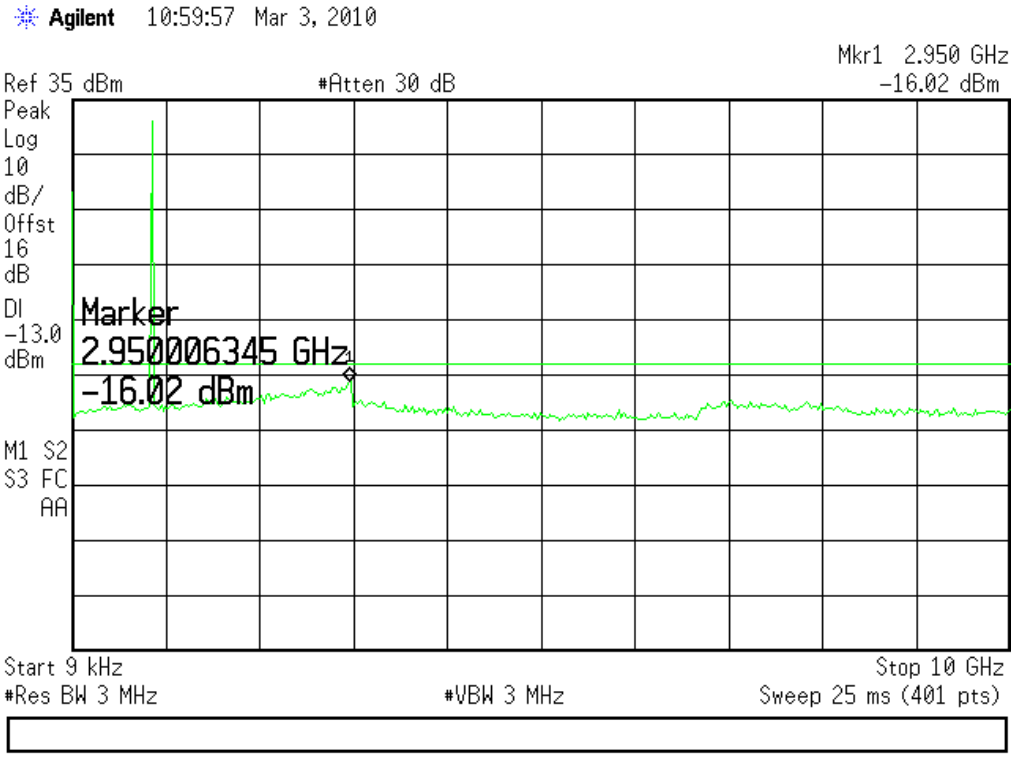
Sim2:



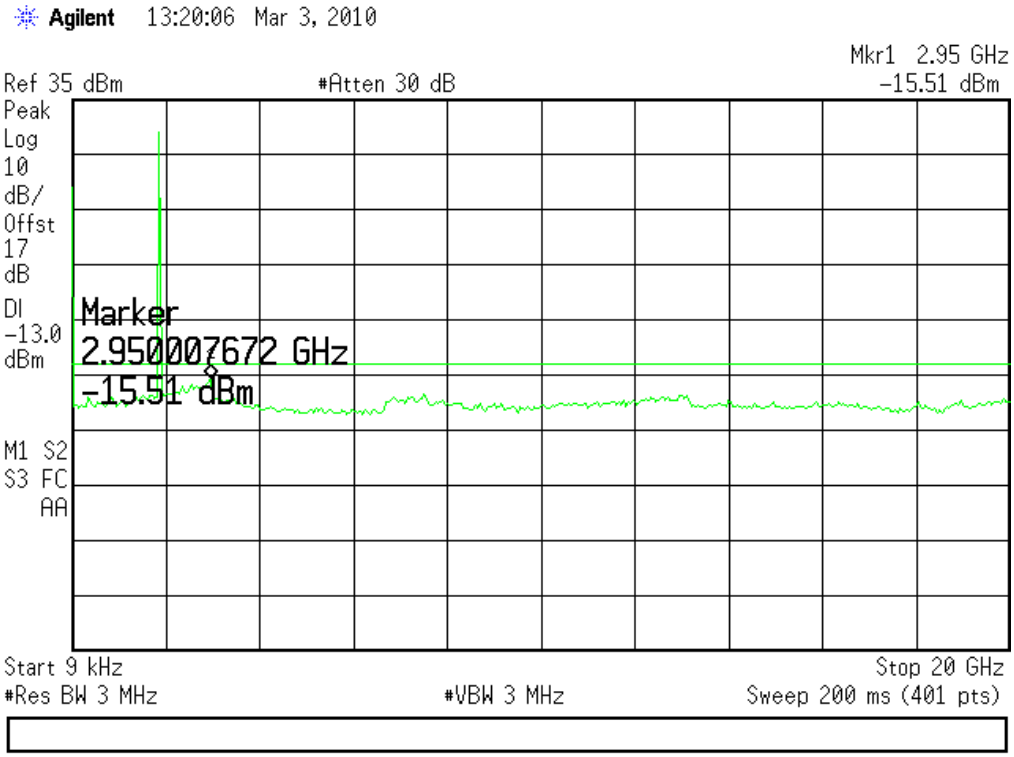
(Plot 77:GSM 850MHz Channel = 128)



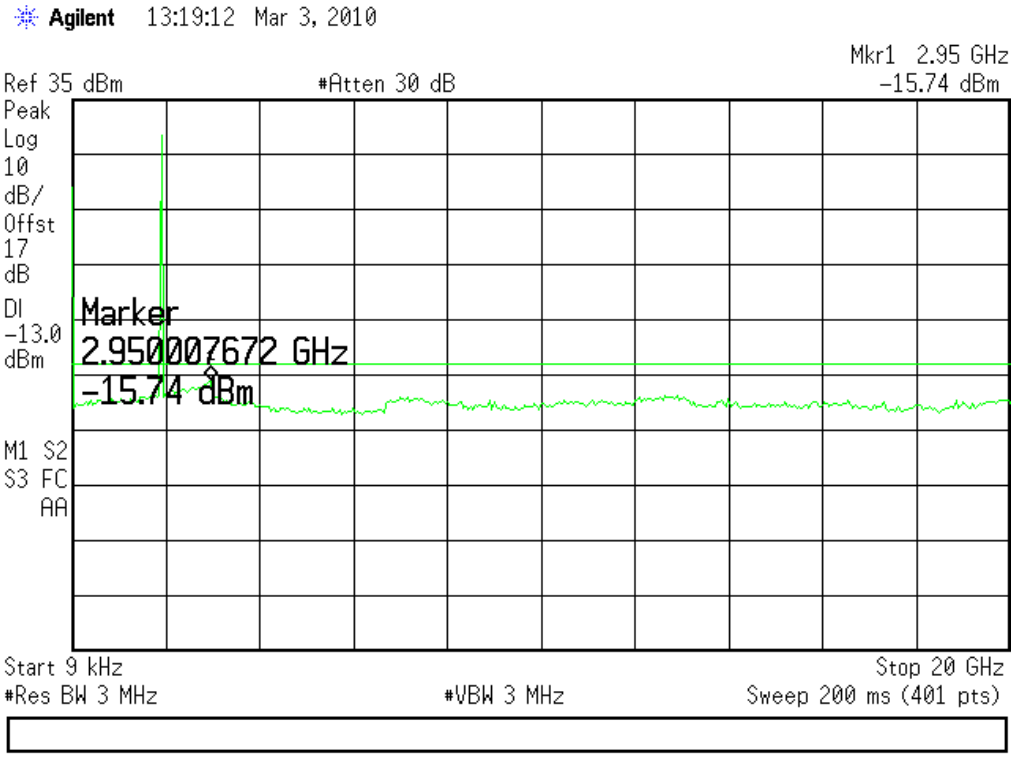
(Plot 78:GSM 850MHz Channel = 190)



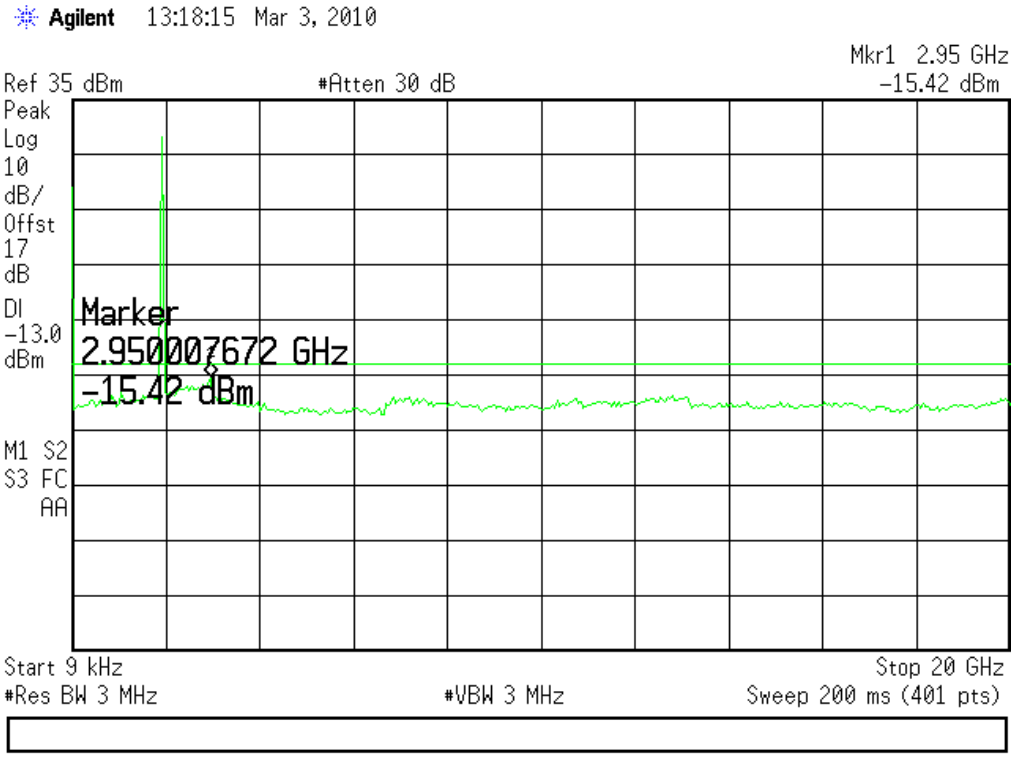
(Plot 79: GSM 850MHz Channel = 251)



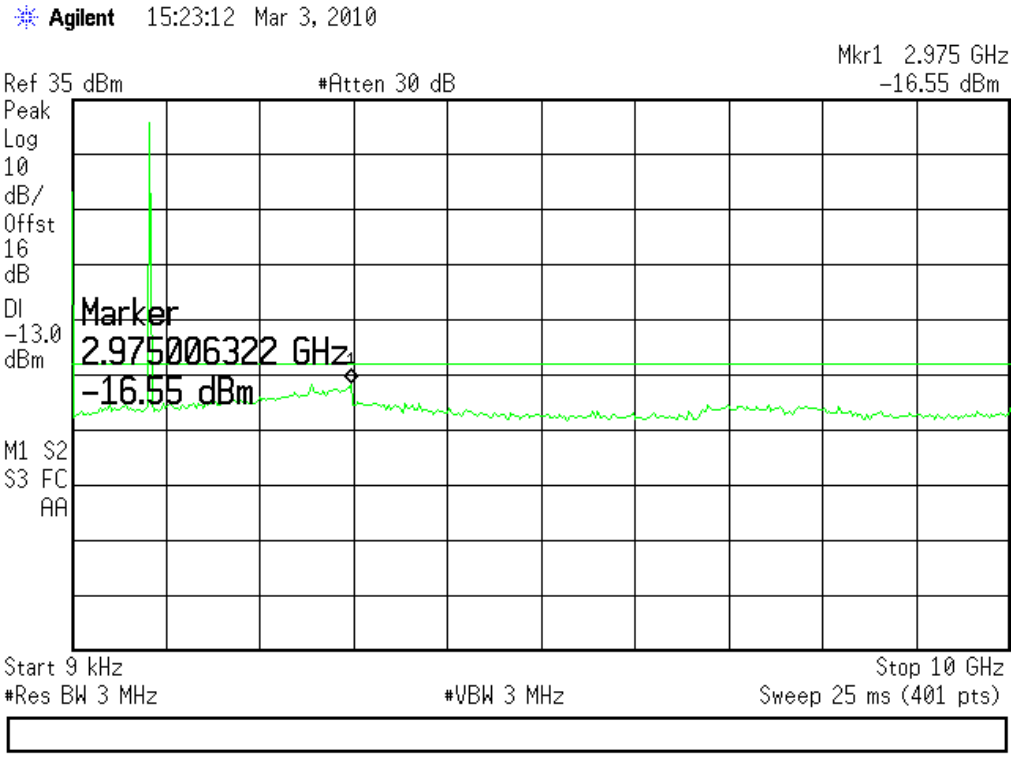
(Plot 80: GSM 1900MHz Channel = 512)



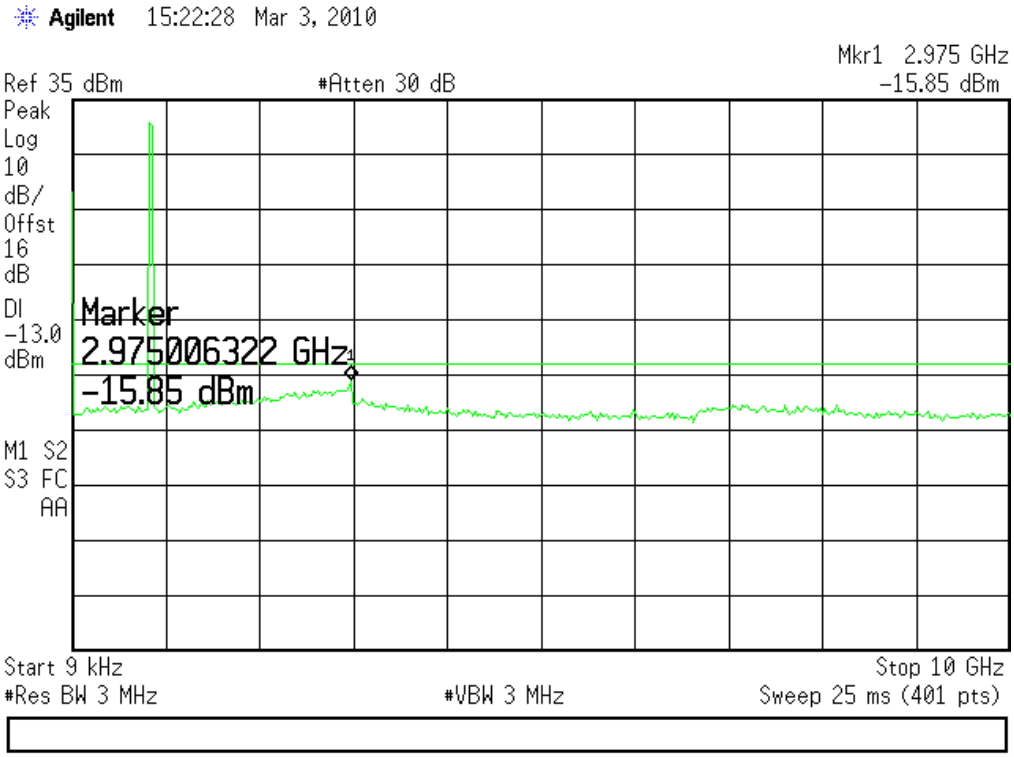
(Plot 81: GSM 1900MHz Channel = 661)



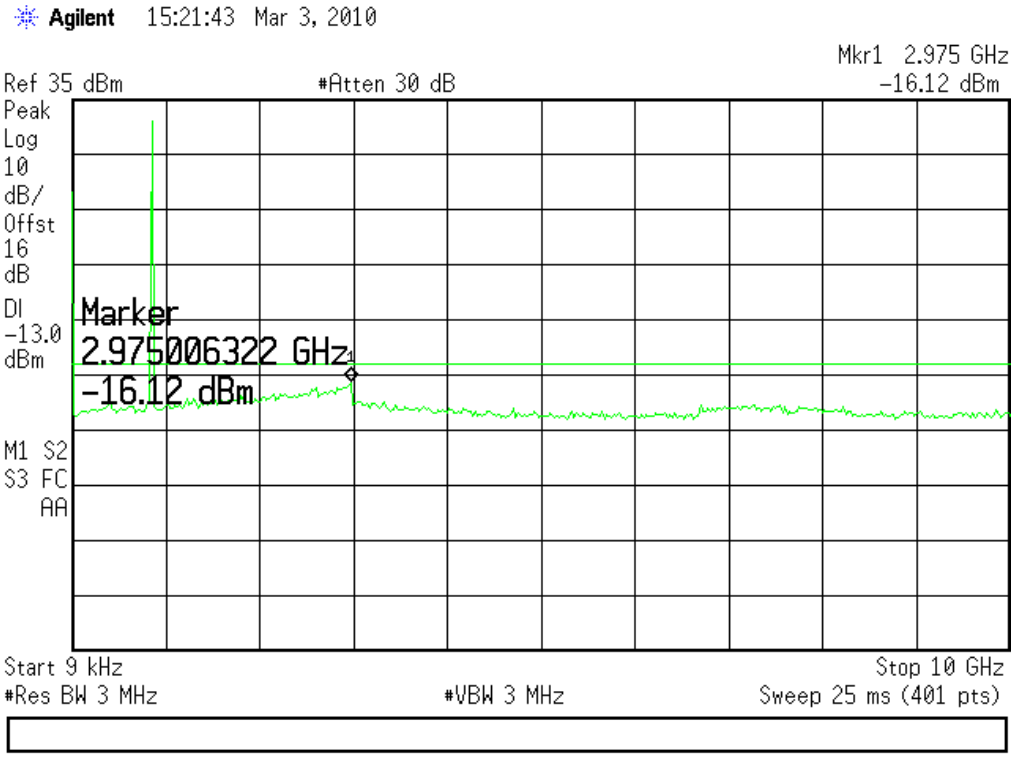
(Plot 82: GSM 1900MHz Channel = 810)



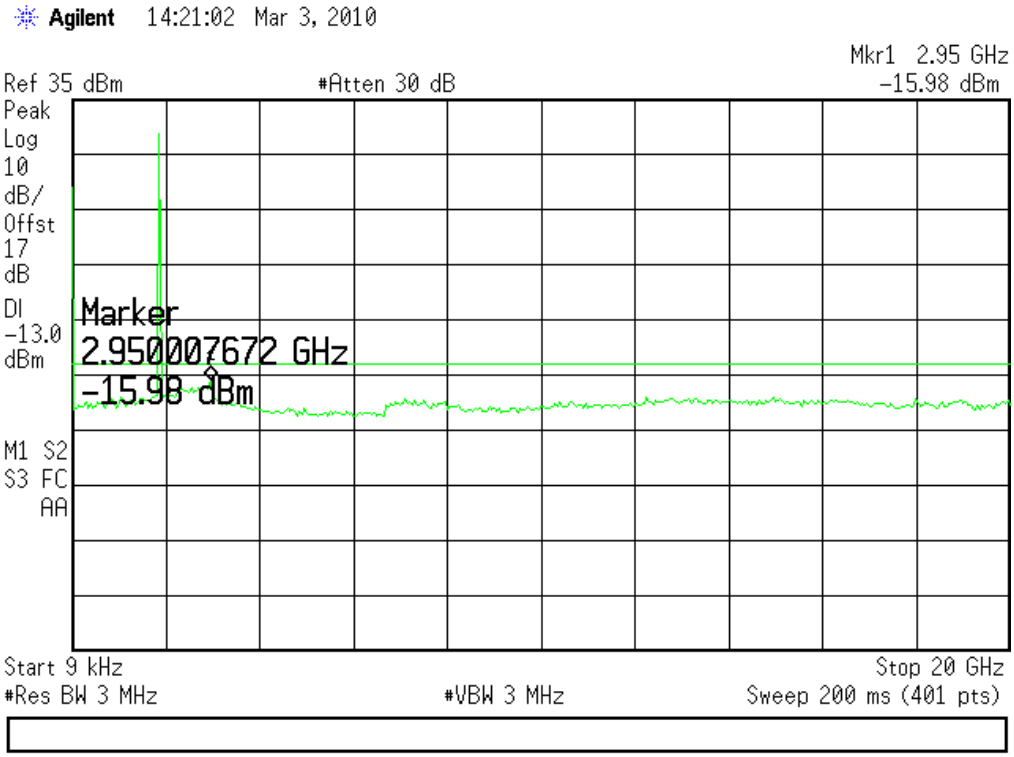
(Plot 83:GPRS 850MHz Channel = 128)



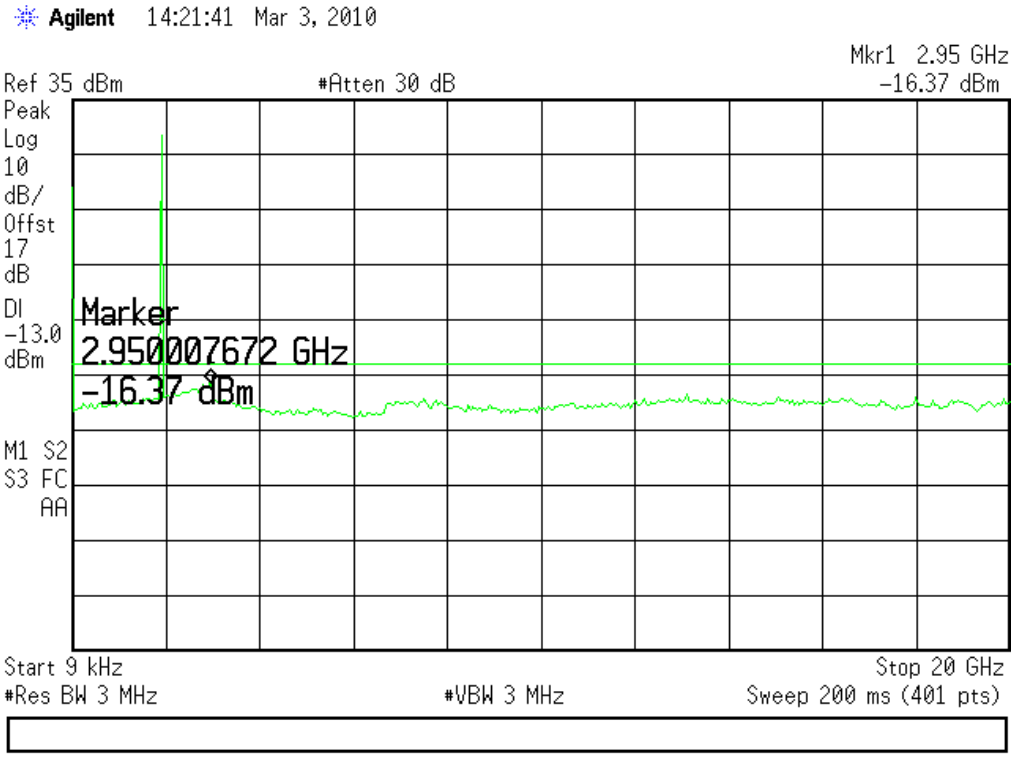
(Plot 84:GPRS 850MHz Channel = 190)



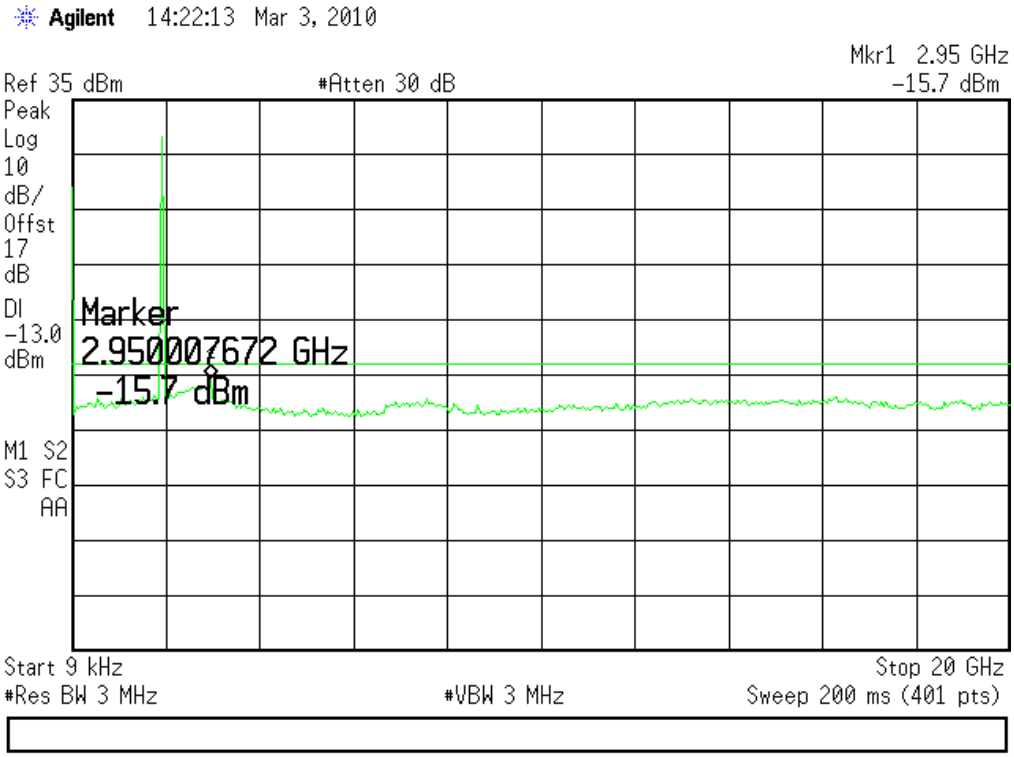
(Plot 85: GPRS 850MHz Channel = 251)



(Plot 86: GPRS 1900MHz Channel = 512)



(Plot 87: GPRS 1900MHz Channel = 661)



(Plot 88: GPRS 1900MHz Channel = 810)

3.6 Band Edge

3.6.1 Requirement

According to FCC section 22.917(b) and FCC section 24.238(b), in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

3.6.2 Test Description

See section 3.1.2 of this report.

3.6.3 Test Result

The lowest and highest channels are tested to verify the band edge emissions.

1. Test Verdict:

Sim1:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	823.98	-16.03	Plat 89	-13	PASS
	251	849.02	-13.75	Plot 90		PASS
GSM 1900MHz	512	1849.98	-16.91	Plat 91	-13	PASS
	810	1910.02	-17.25	Plot 92		PASS
GPRS 850MHz	128	823.99	-14.93	Plat 93	-13	PASS
	251	849.01	-13.80	Plot 94		PASS
GPRS 1900MHz	512	1849.98	-15.30	Plat 95	-13	PASS
	810	1910.1	-18.02	Plot 96		PASS

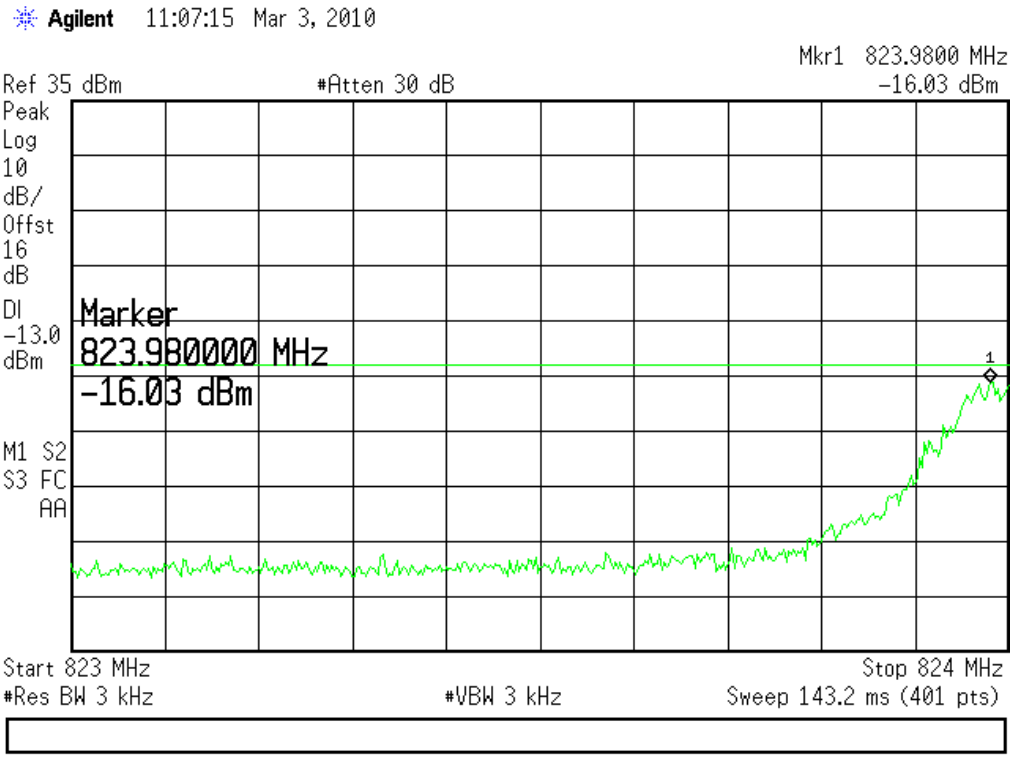
Sim2:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	823.97	-16.53	Plat 97	-13	PASS
	251	849.00	-15.00	Plot 98		PASS
GSM 1900MHz	512	1849.97	-17.10	Plat 99	-13	PASS
	810	1910.02	-17.54	Plot 100		PASS
GPRS 850MHz	128	823.99	-15.84	Plat 101	-13	PASS
	251	849.02	-13.64	Plot 102		PASS

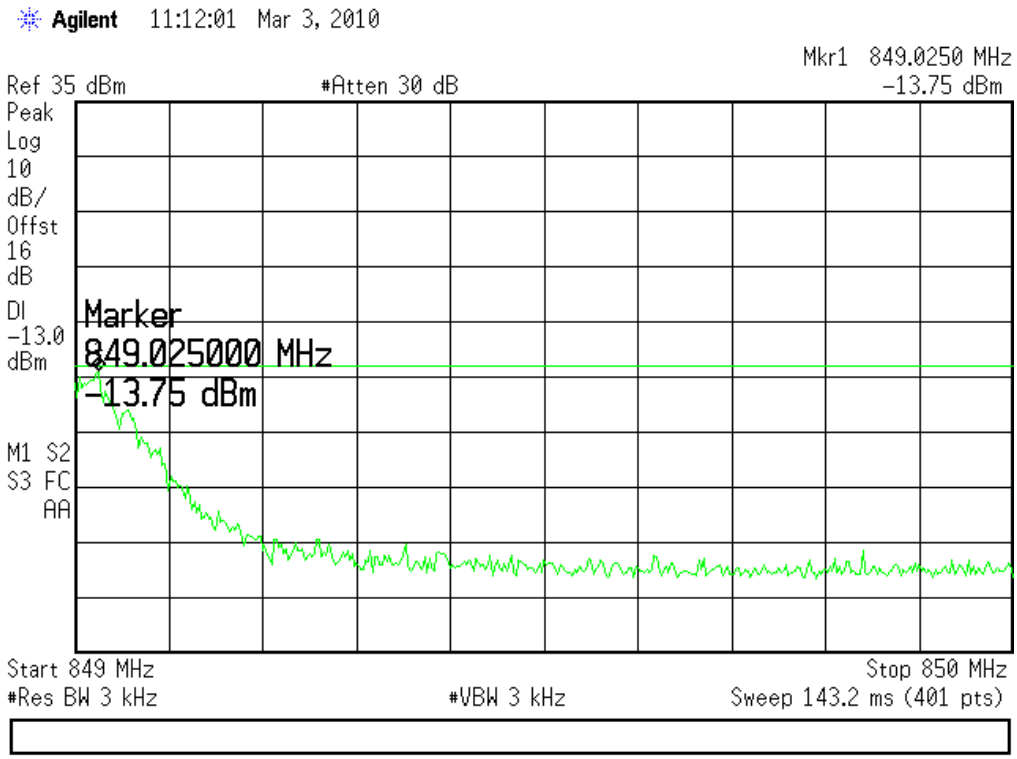
GPRS	512	1849.97	-17.10	Plat 103	-13	PASS
1900MHz	810	1910.02	-18.84	Plot 104		PASS

2. Test Plot:

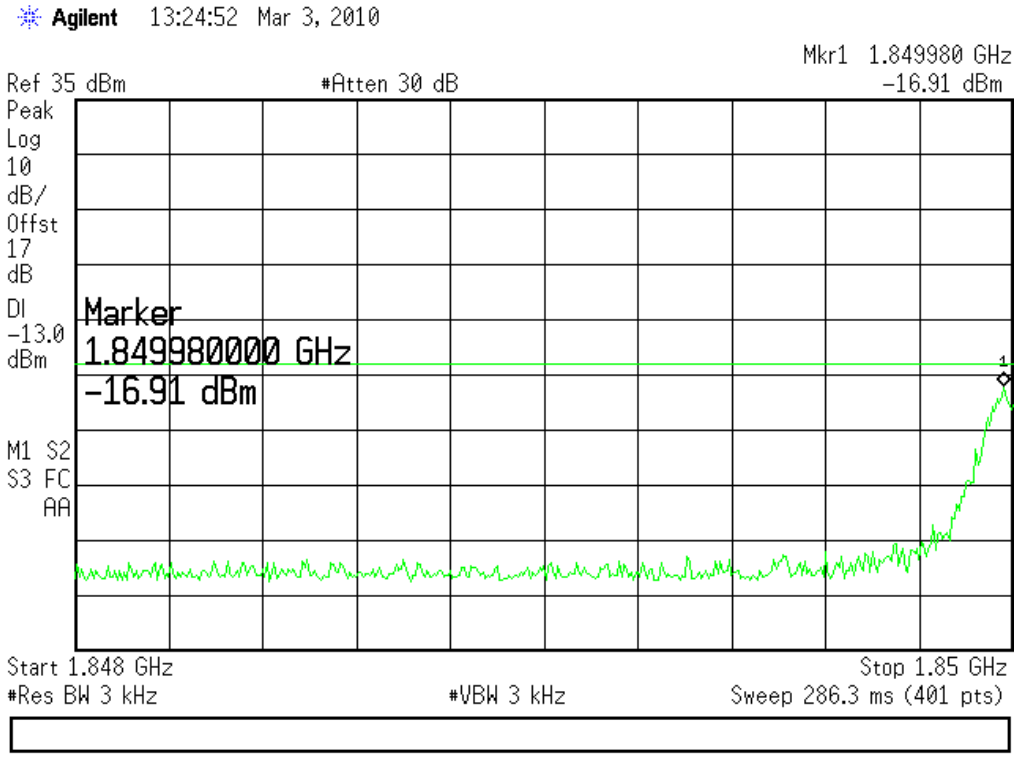
Sim1:



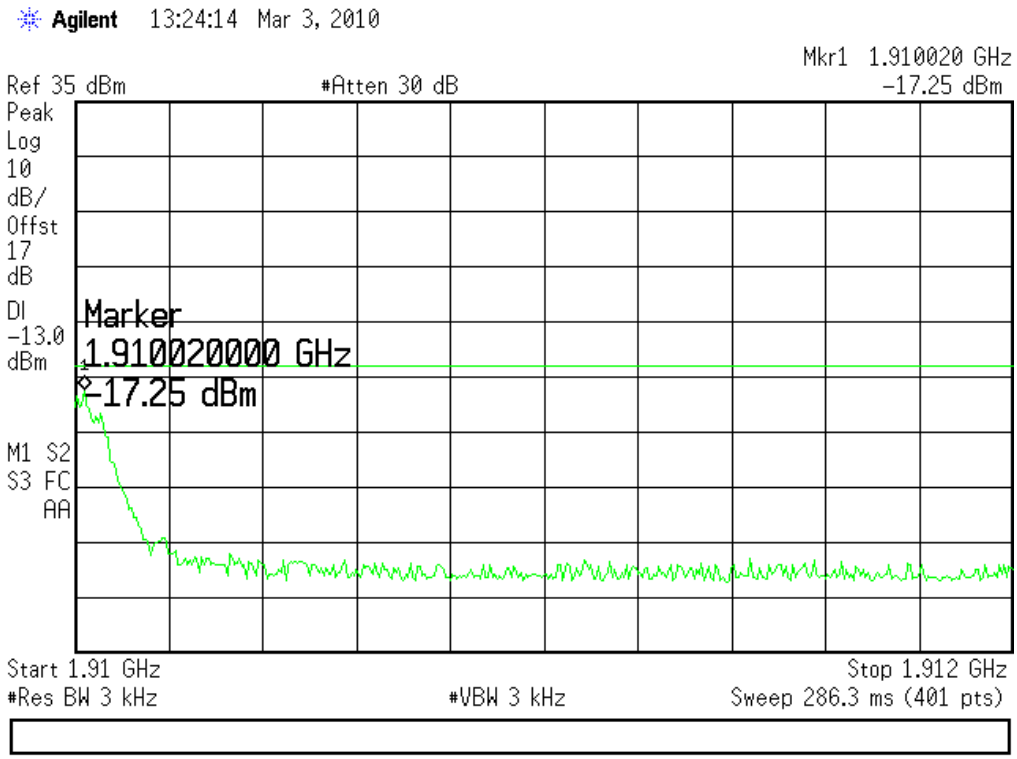
(Plot 89: GSM 850MHz Channel = 128)



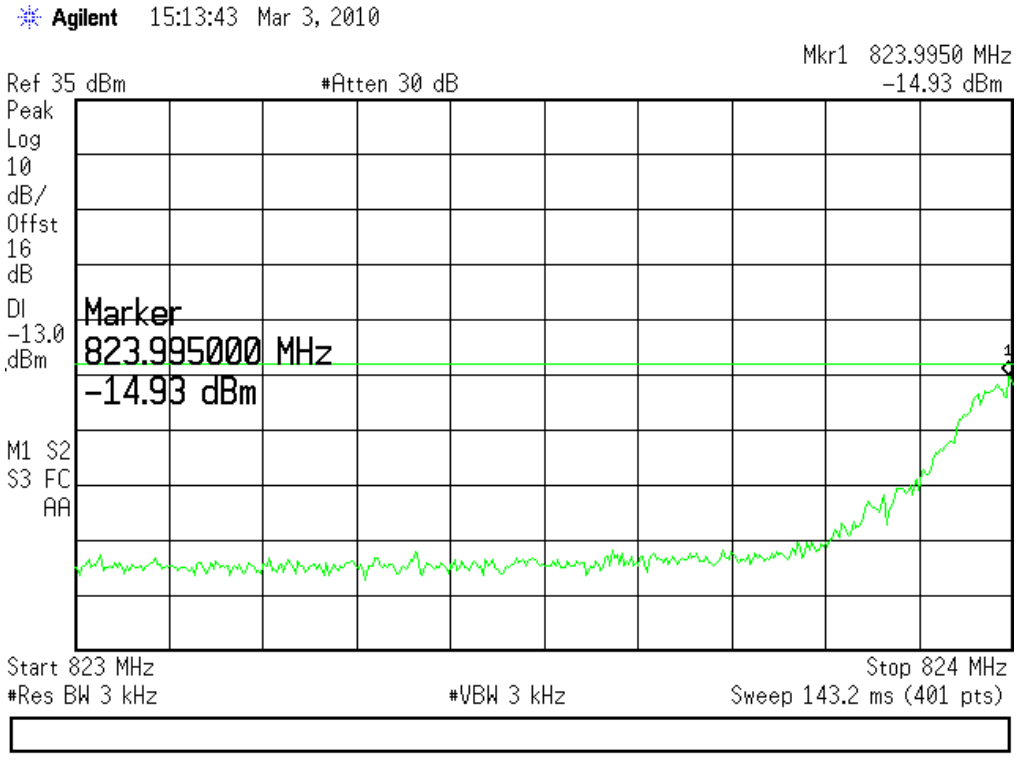
(Plot 90: GSM 850MHz Channel = 251)



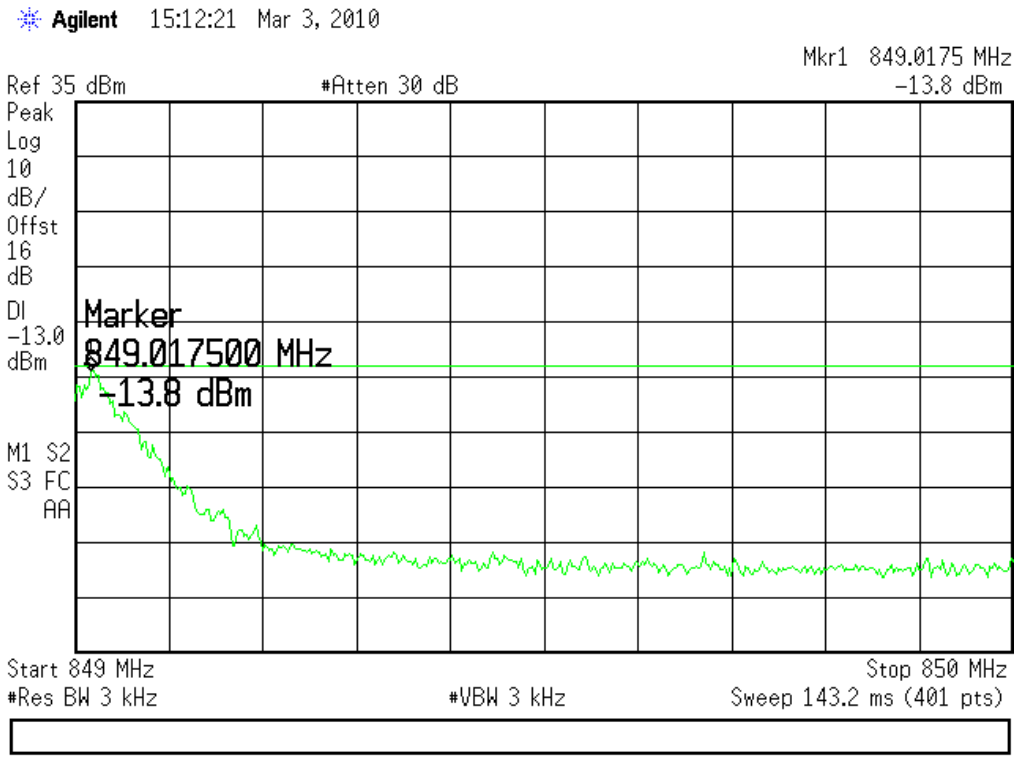
(Plot 91: GSM 1900MHz Channel = 512)



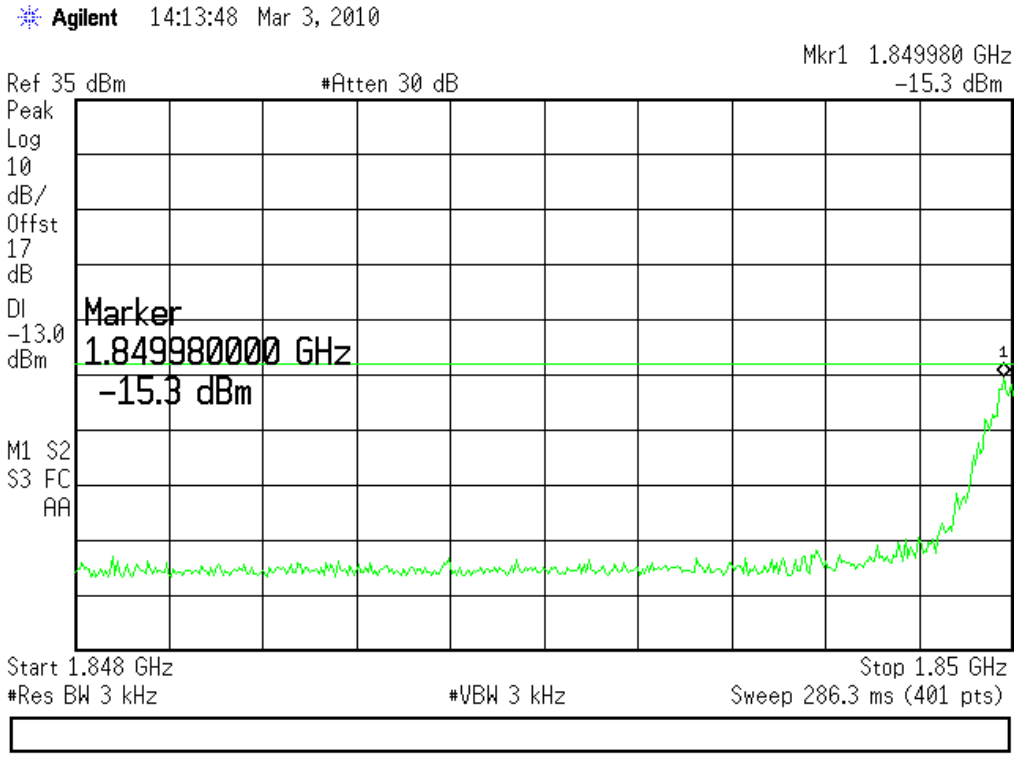
(Plot 92: GSM 1900MHz Channel = 810)



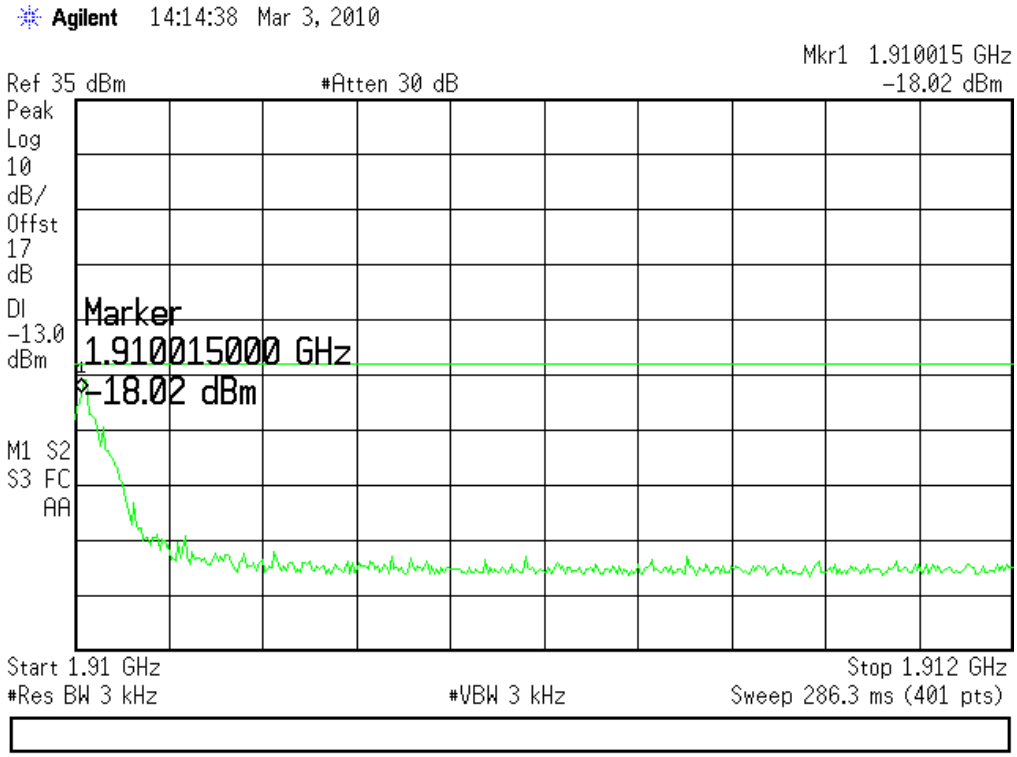
(Plot 93: GPRS 850MHz Channel = 128)



(Plot 94: GPRS 850MHz Channel = 251)

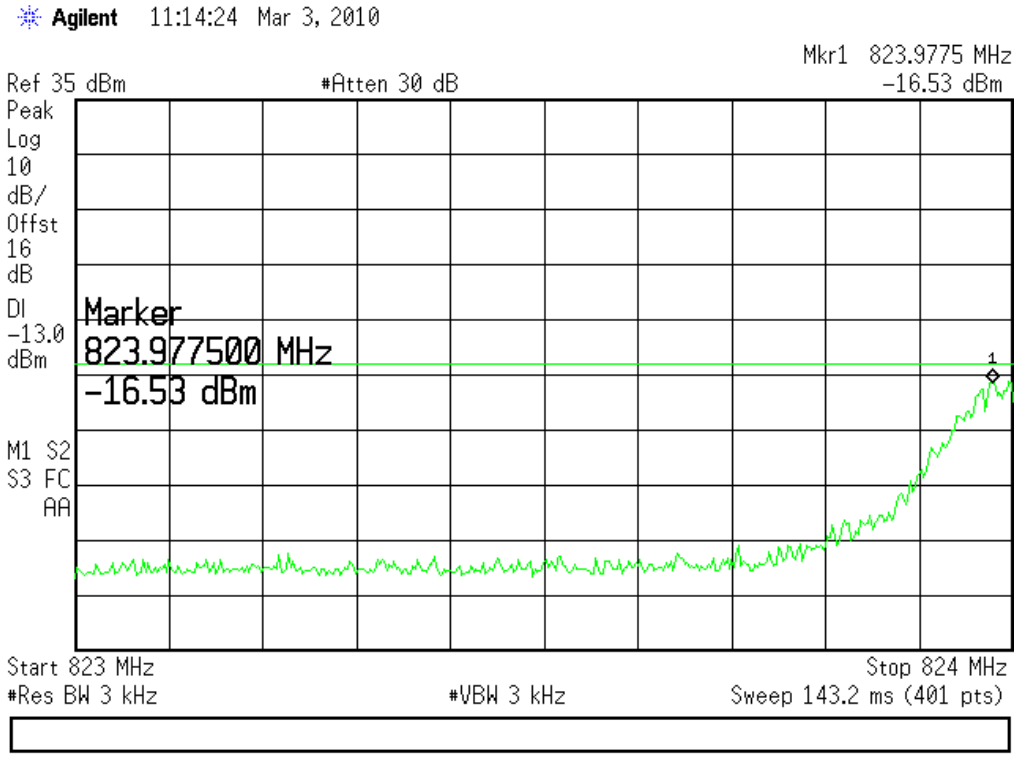


(Plot 95: GPRS 1900MHz Channel = 512)

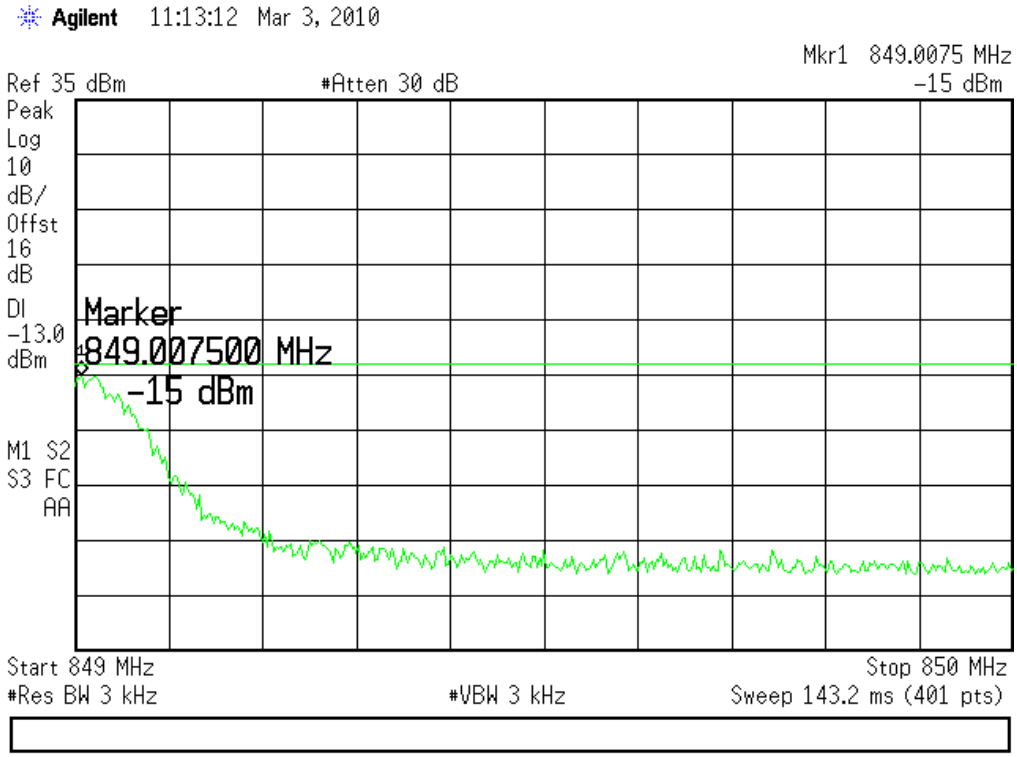


(Plot 96: GPRS 1900MHz Channel = 810)

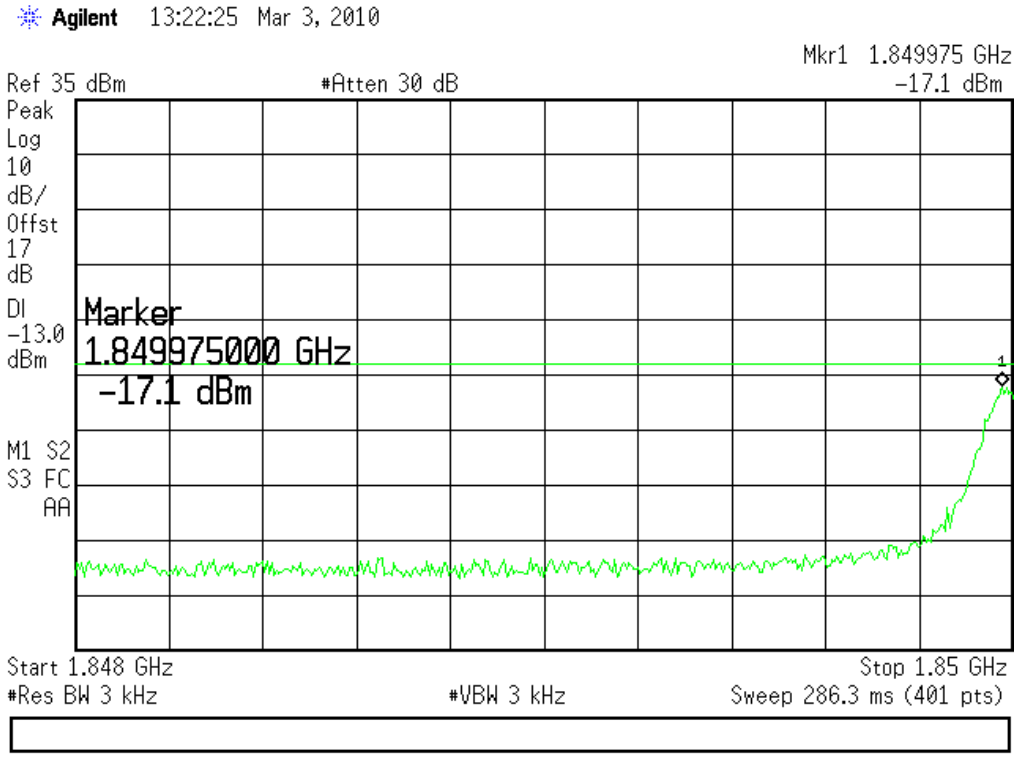
Sim2:



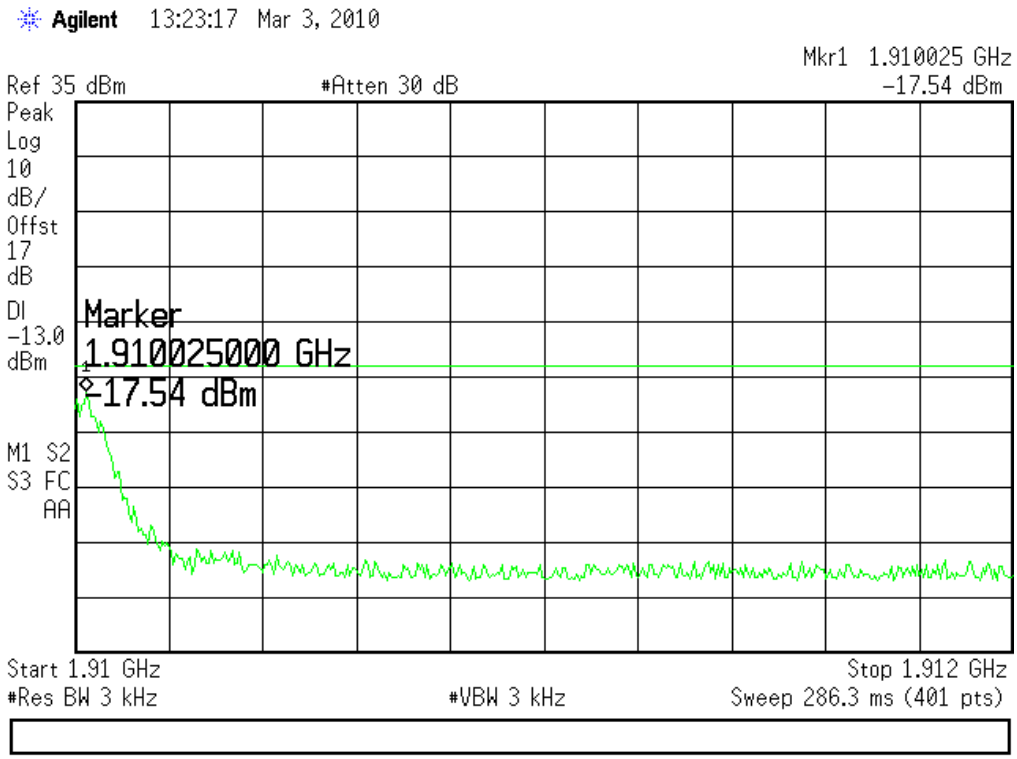
(Plot 97:GSM 850MHz Channel = 128)



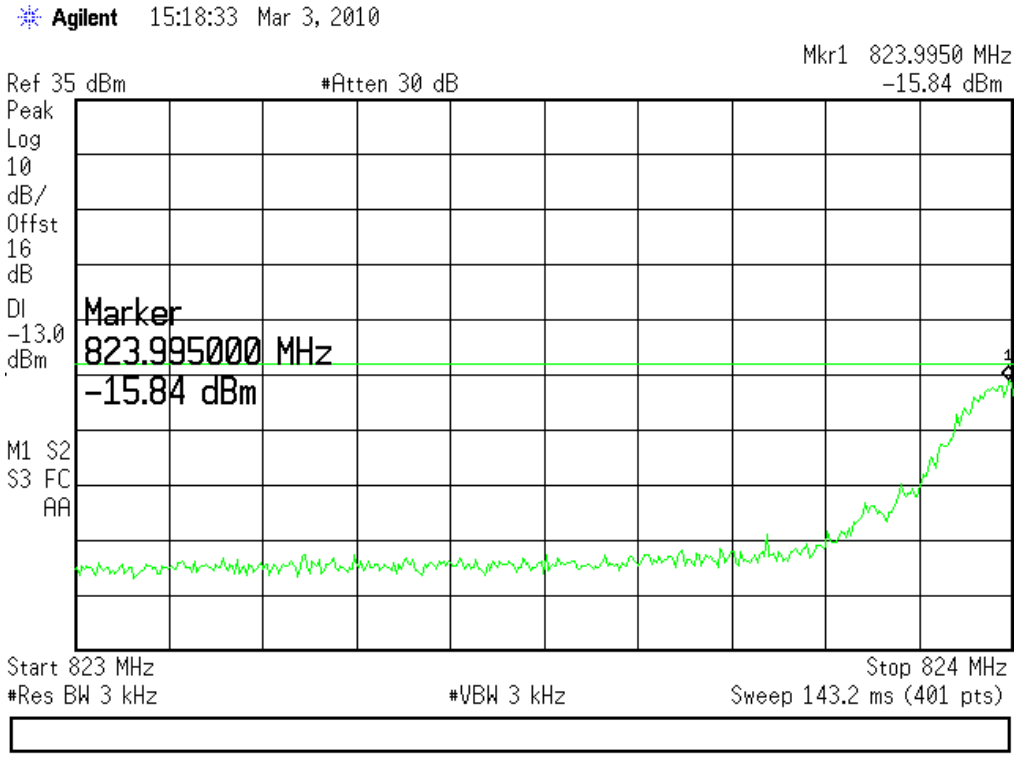
(Plot 98:GSM 850MHz Channel = 251)



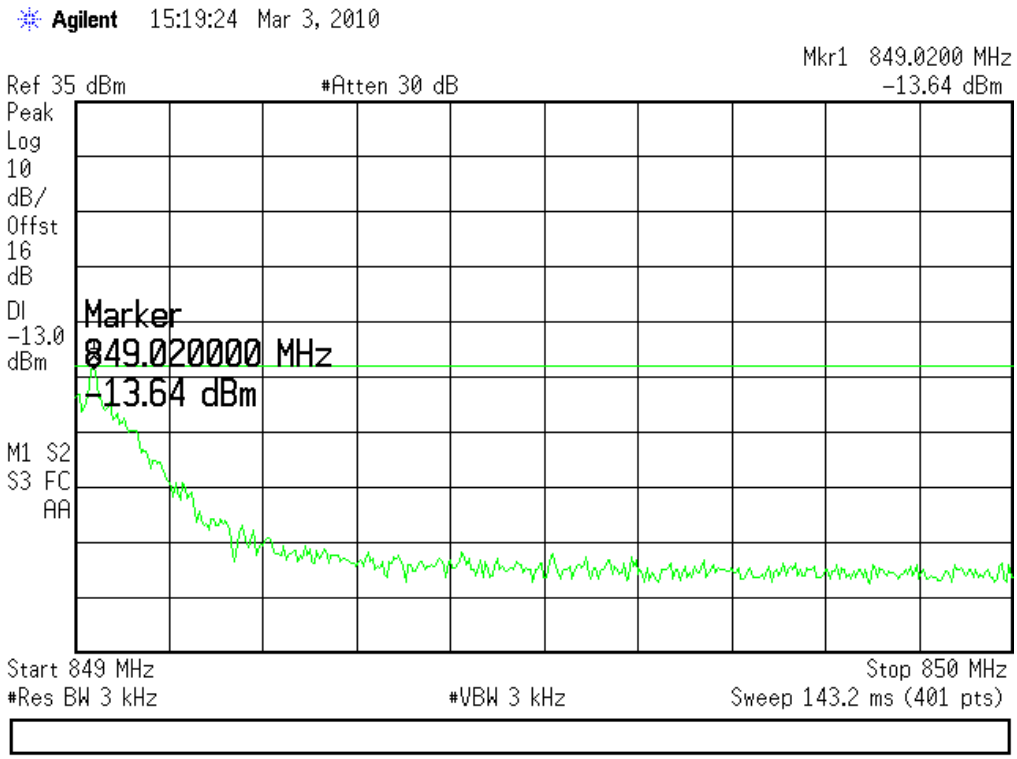
(Plot 99: GSM 1900MHz Channel = 512)



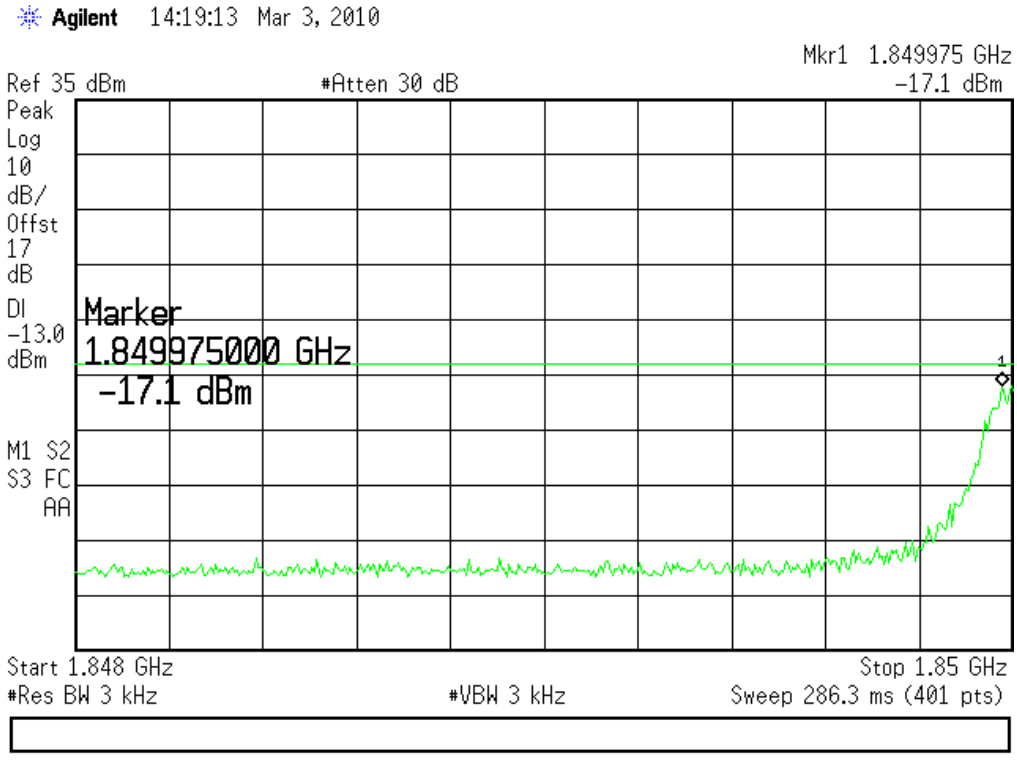
(Plot 100: GSM 1900MHz Channel = 810)



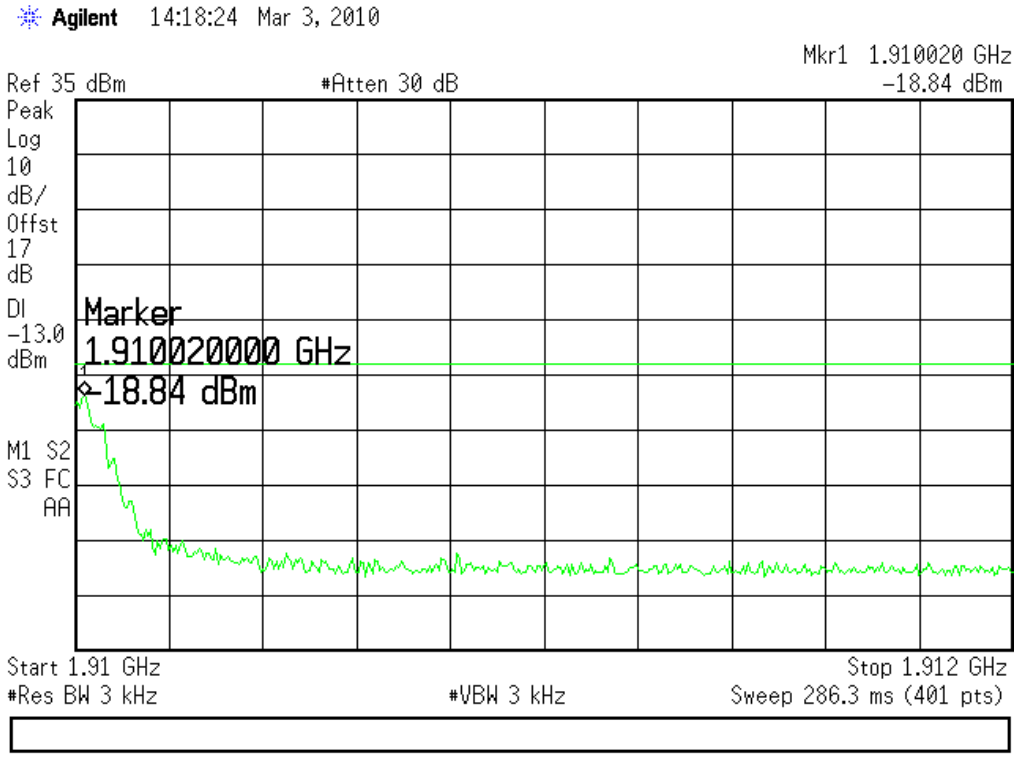
(Plot 101:GPRS 850MHz Channel = 128)



(Plot 102:GPRS 850MHz Channel = 251)



(Plot 103: GPRS 1900MHz Channel = 512)



(Plot 104: GPRS 1900MHz Channel = 810)

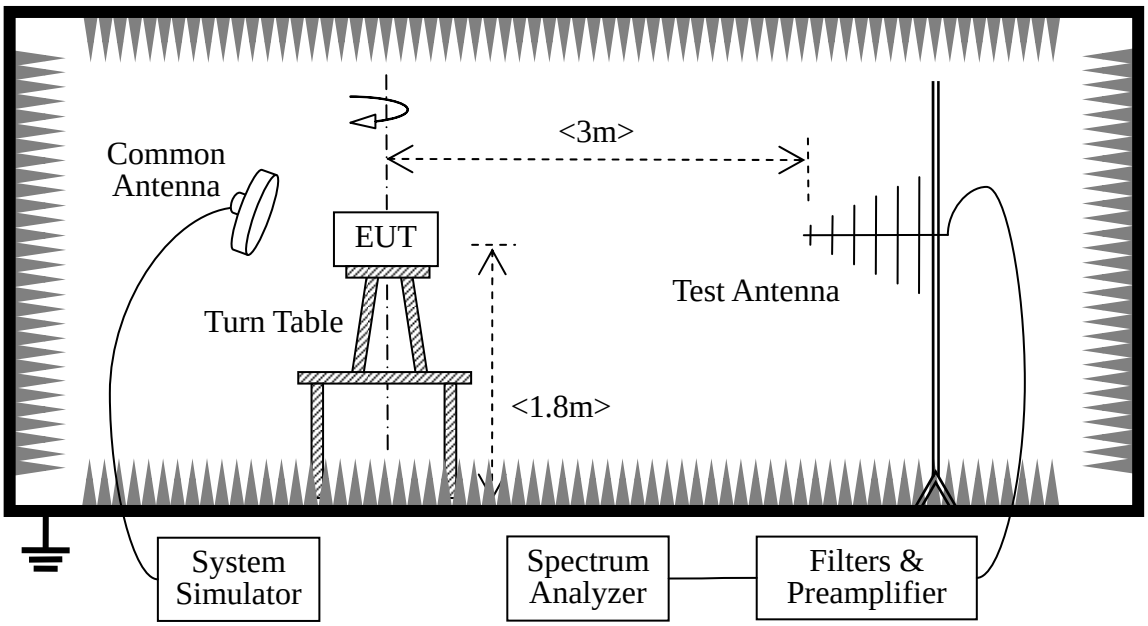
3.7 Transmitter Radiated Power (EIRP/ERP)

3.7.1 Requirement

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232, the broadband PCS mobile station is limited to 2Watts e.i.r.p. peak power.

3.7.2 Test Description

1. Test Setup:



The EUT, which is powered by the Battery charged with the AC Adapter, is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. GSM850MHz band Power Control Level (PCL) = 5 and Power Class = 4 and GSM1900MHz band Power Control Level (PCL) = 0 and Power Class = 1. A call is established between the EUT and the SS via a Common Antenna.

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), and it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
CMU200	Rohde&Schwarz	FSP30	101020	2009.10	1year
Spectrum Analyzer	Rohde&Schwarz	FSP30	101020	2009.10	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2009.10	2year
Test Antenna - Bi-Log	Rohde&Schwarz	HL562	100385	2009.10	1year
Test Antenna - Horn	Rohde&Schwarz	HF906	100565	2009.10	1year

3.7.3 Test Result

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

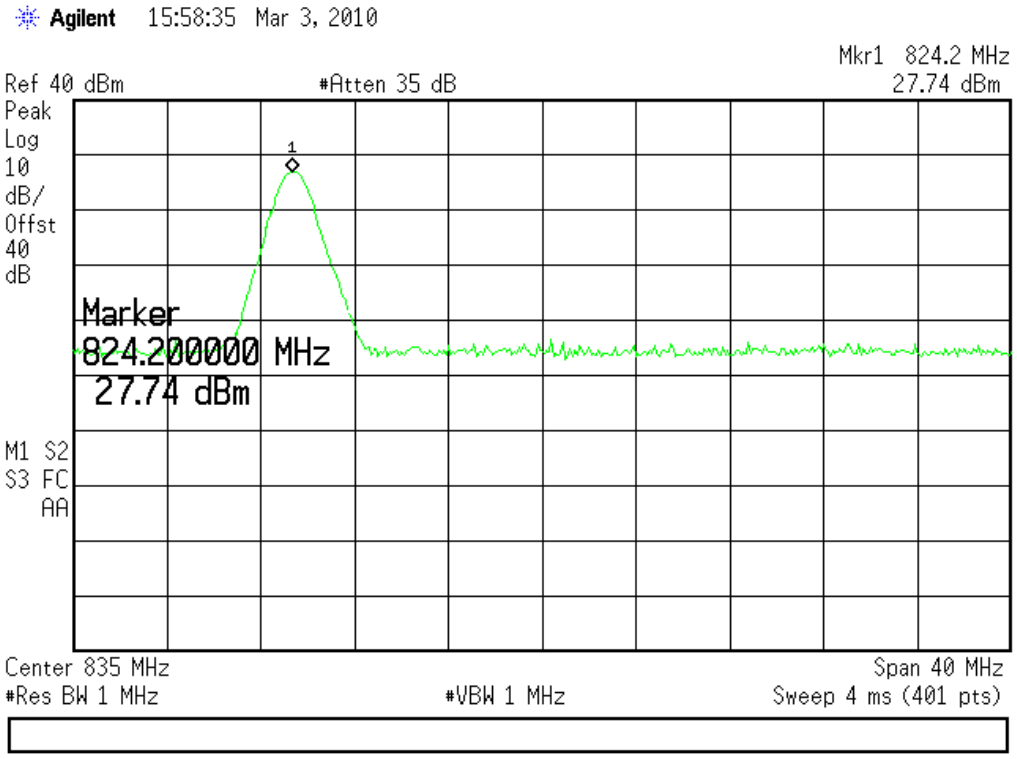
1. Test Verdict:

Sim1:

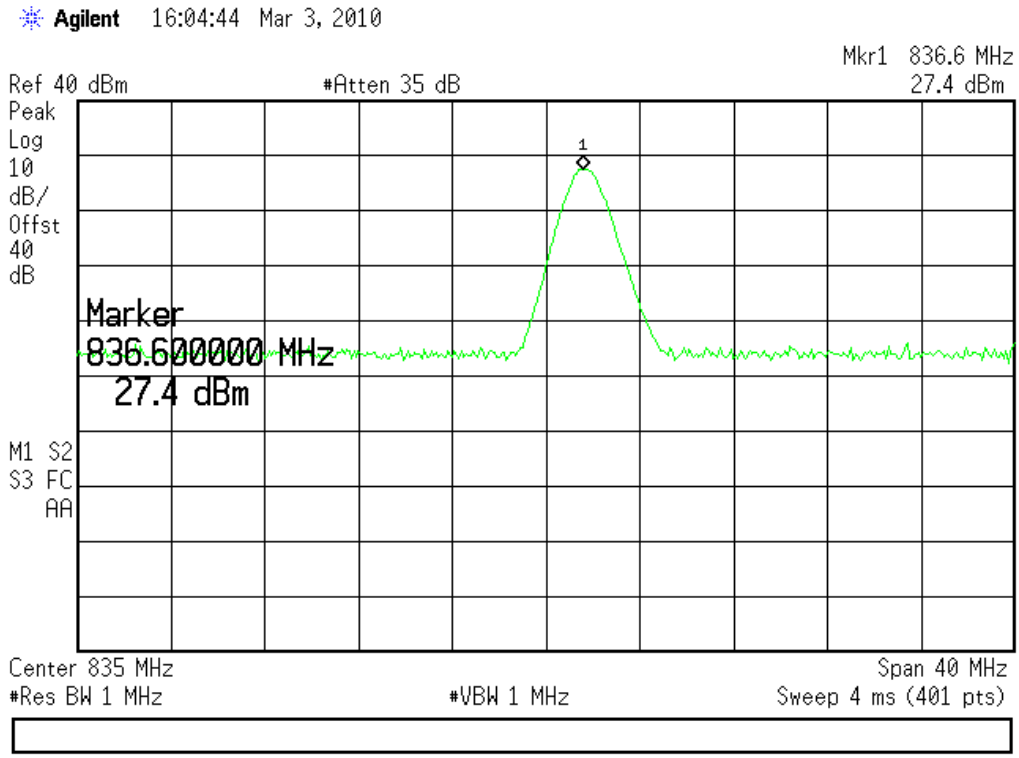
Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
GSM 850MHz	128	824.20	27.74		Plot 105	<38.5	<7	PASS
	190	836.60	27.4		Plot 106			PASS
	251	848.80	27.92		Plot 107			PASS
GSM 1900MHz	512	1850.40	25.59		Plot 108	<33.0	<2	PASS
	661	1880.00	26.13		Plot 109			PASS
	810	1909.80	25.56		Plot 110			PASS
GPRS 850MHz	128	824.20	27.22		Plot 111	<38.5	<7	PASS
	190	836.70	27.69		Plot 112			PASS
	251	848.70	27.75		Plot 113			PASS
GPRS 1900MHz	512	1850.40	25.14		Plot 114	<33.0	<2	PASS
	661	1880.00	26.42		Plot 115			PASS
	810	1909.80	25.87		Plot 116			PASS

2. Test Plot

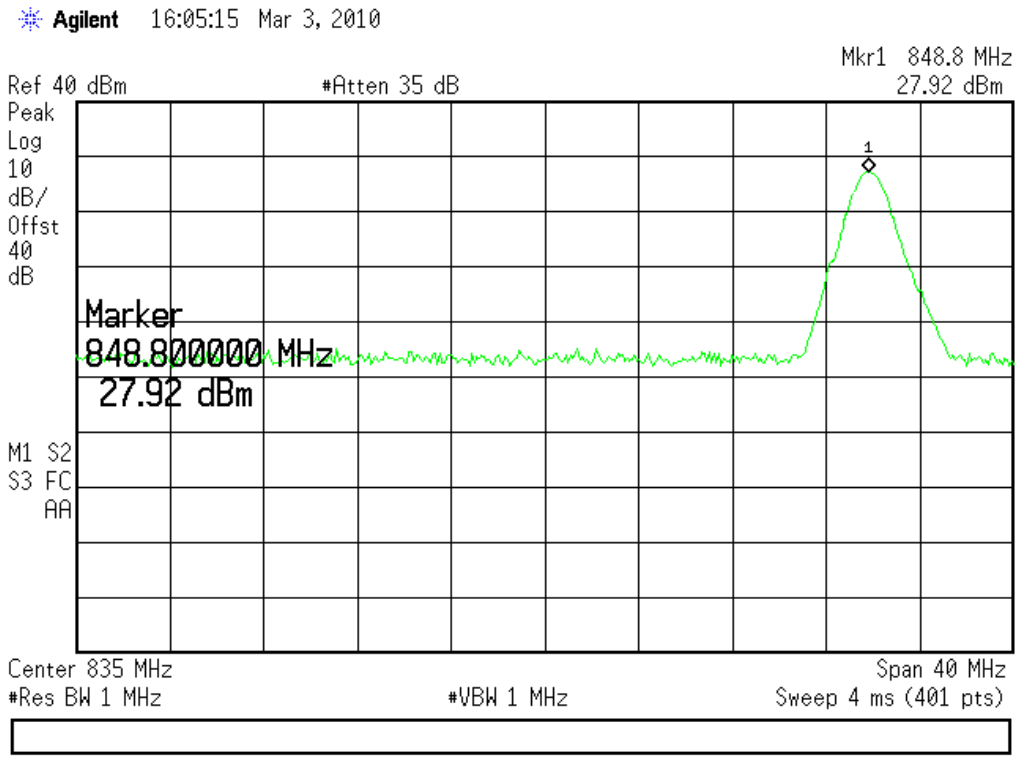
Sim1:



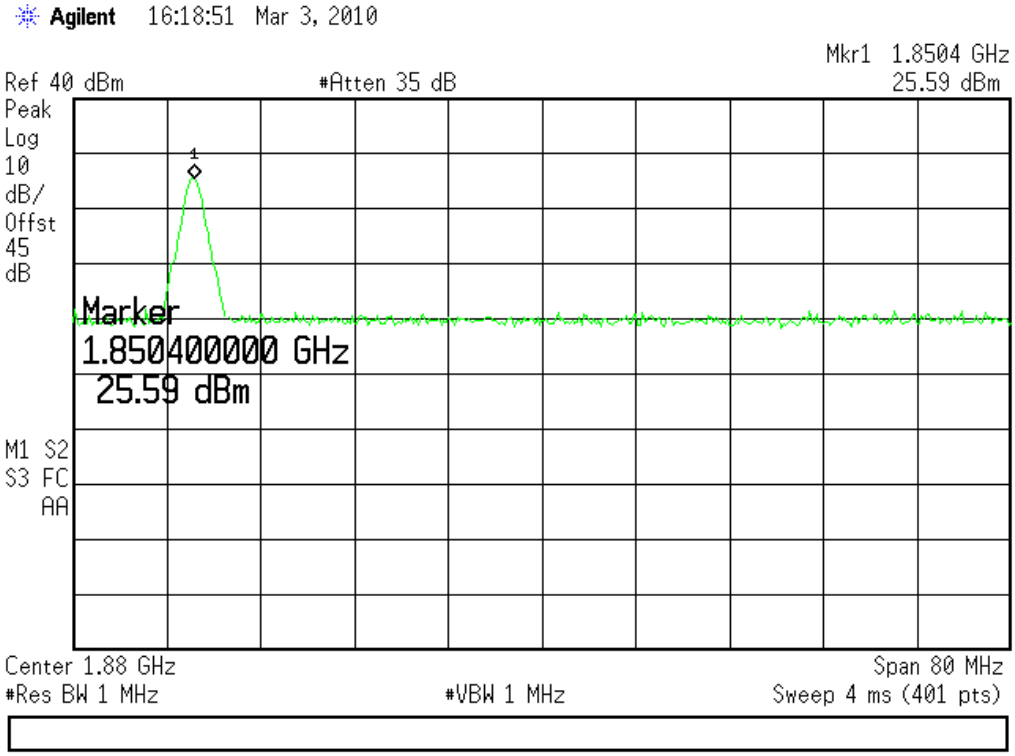
(Plot 105: GSM 850MHz Channel = 128)



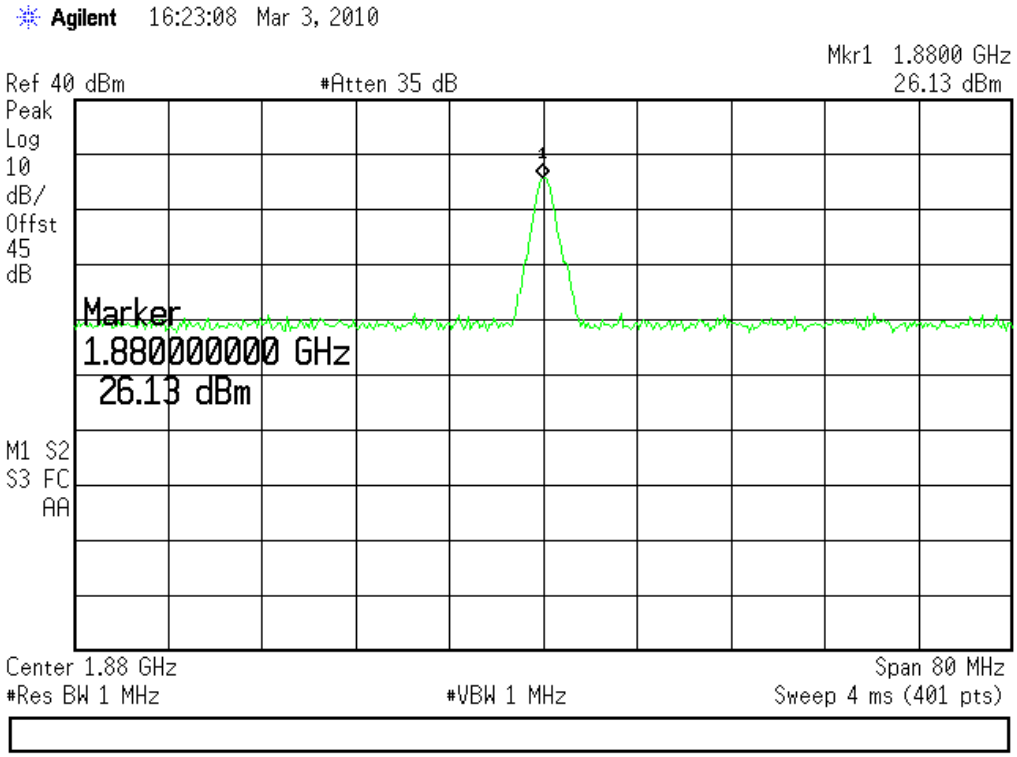
(Plot 106: GSM 850MHz Channel = 190)



(Plot 107: GSM 850MHz Channel = 251)

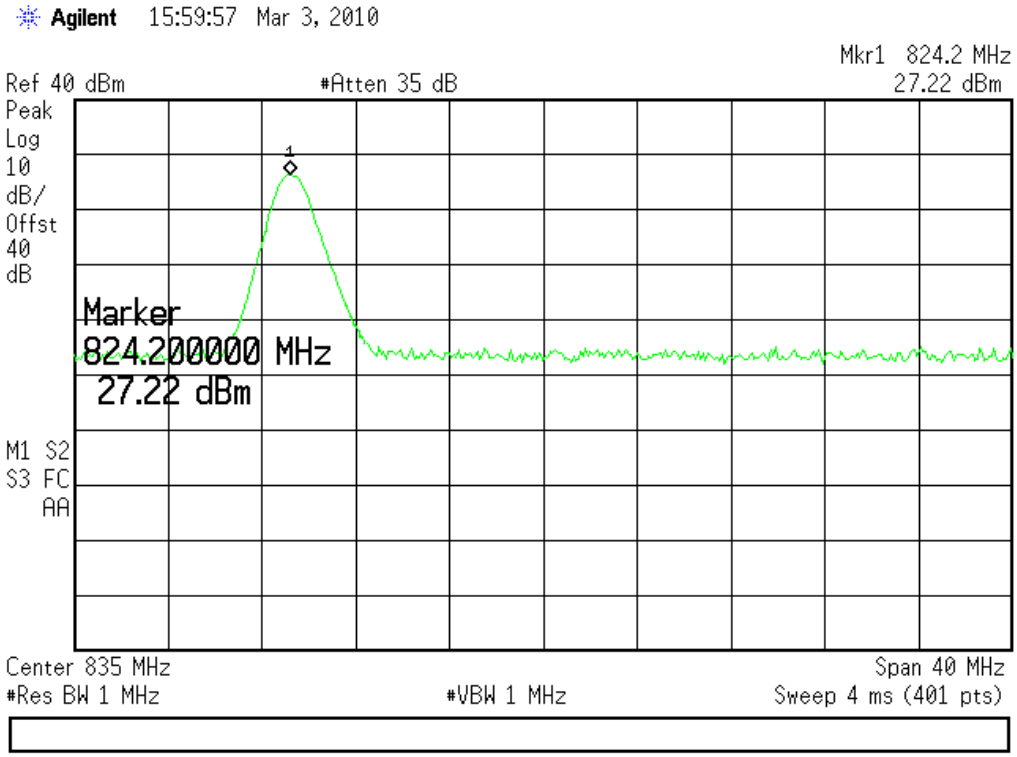


(Plot 108: GSM 1900MHz Channel = 512)

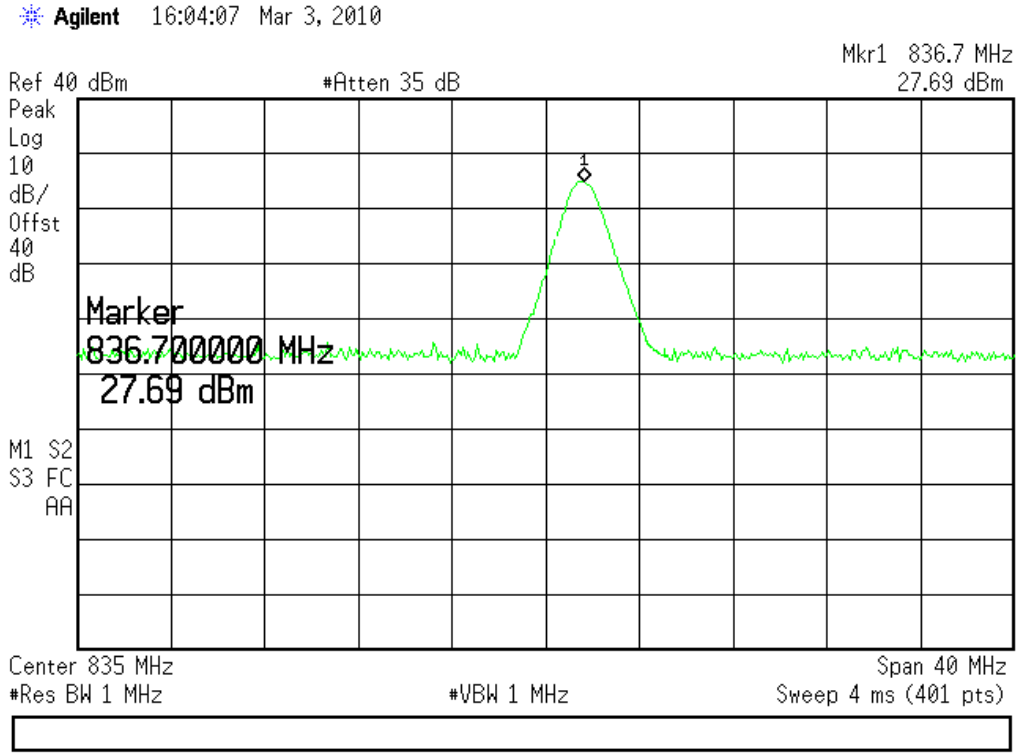


(Plot 109: GSM 1900MHz Channel = 661)

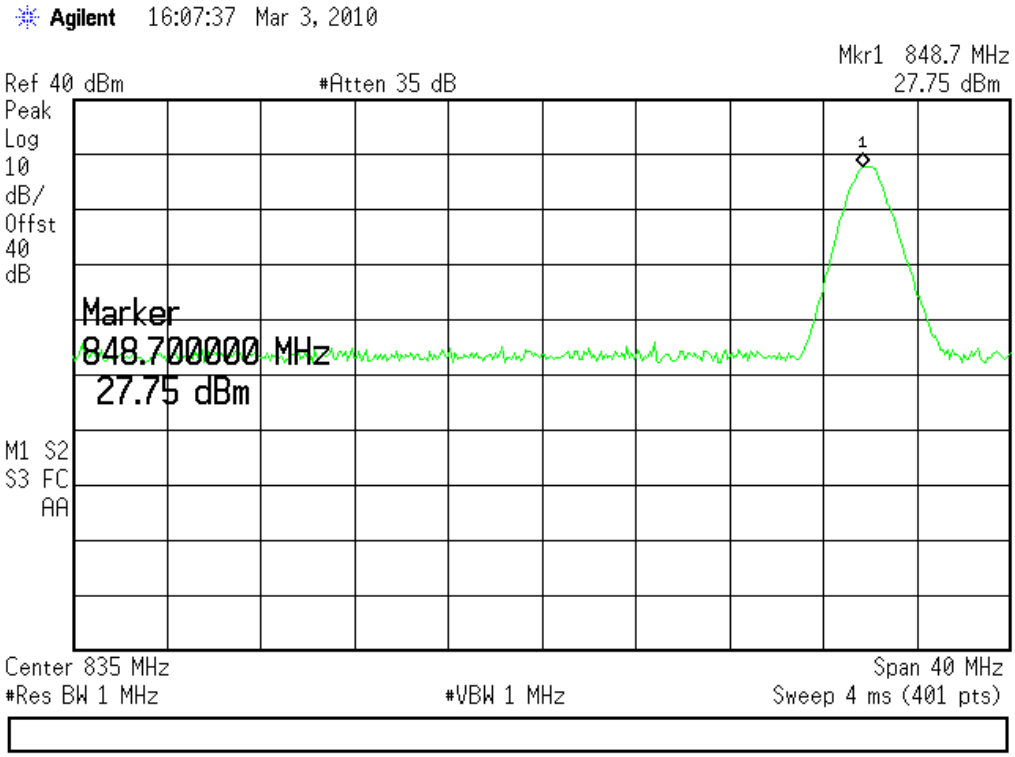
(Plot 110: GSM 1900MHz Channel = 810)



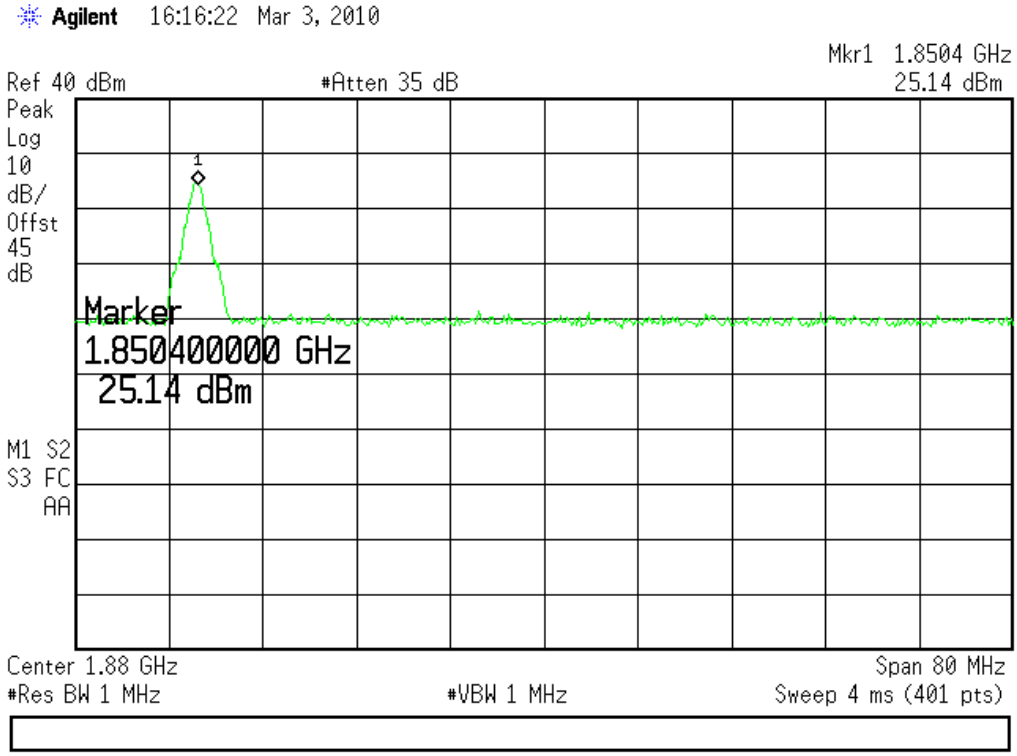
(Plot 111:GPRS 850MHz Channel = 128)



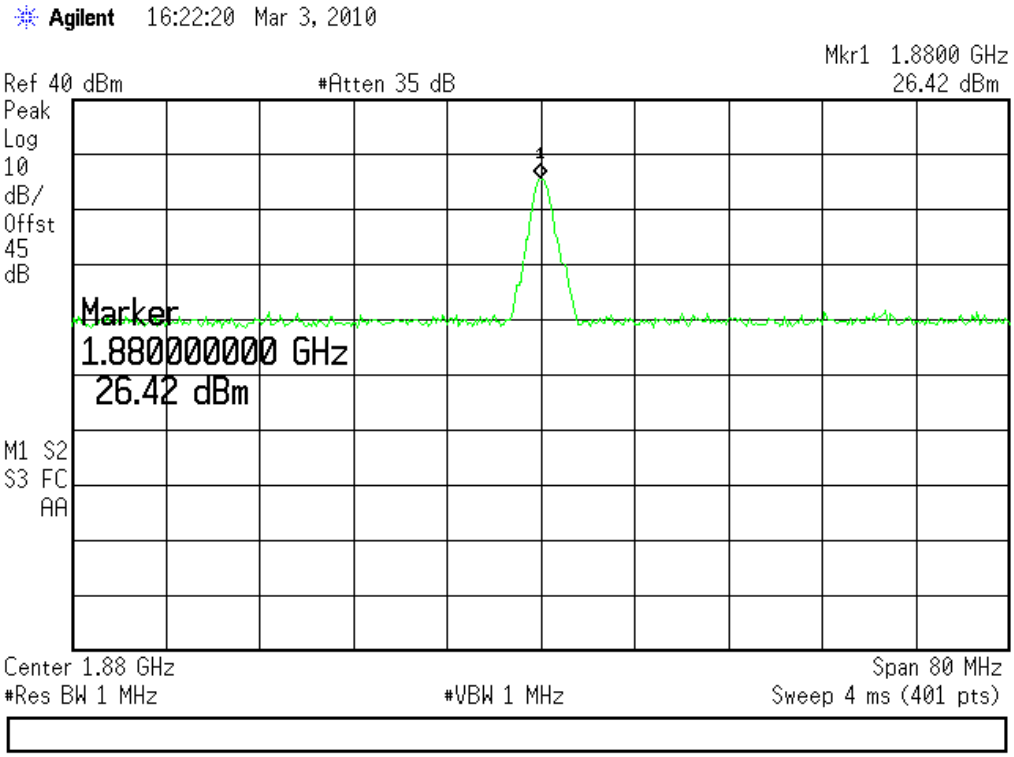
(Plot 112: GPRS 850MHz Channel = 190)



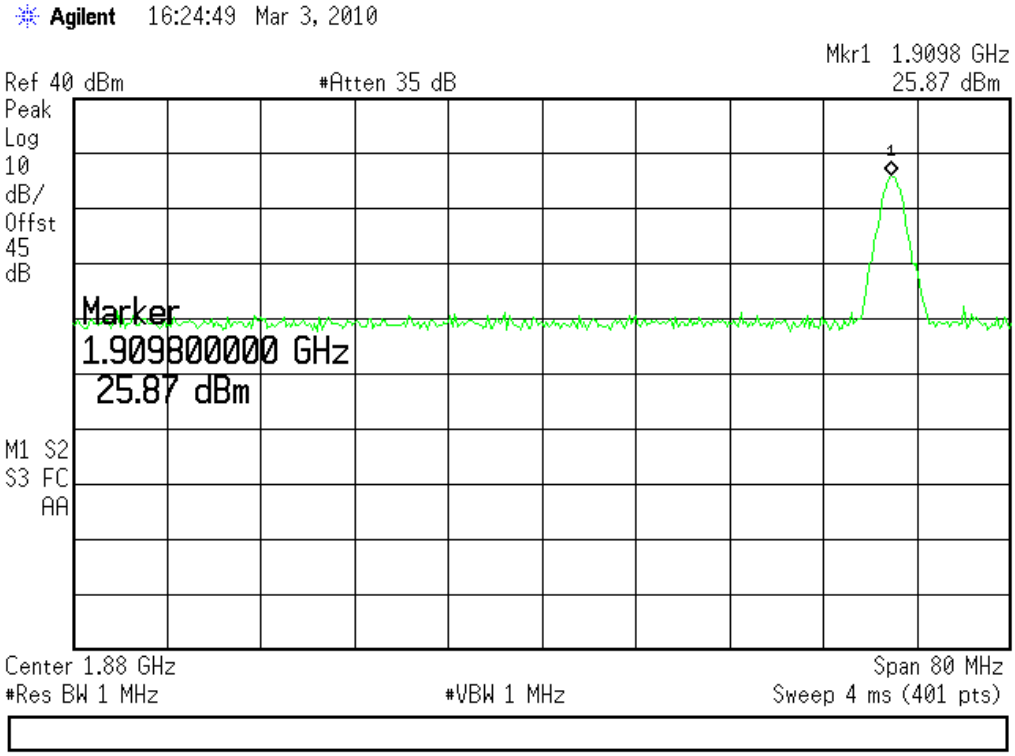
(Plot 113: GPRS 850MHz Channel = 251)



(Plot 114:GPRS 1900MHz Channel = 512)



(Plot 115: GPRS 1900MHz Channel = 661)



(Plot 116: GPRS 1900MHz Channel = 810)

3.8 Radiated Out of Band Emissions

3.8.1 Requirement

According to FCC section 22.717(a) and section 24.235(a), the power of any emission 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. This calculated to be -13dBm.

3.6.3 Test Description

See section 3.7.2 of this report.

3.6.4 Test Result

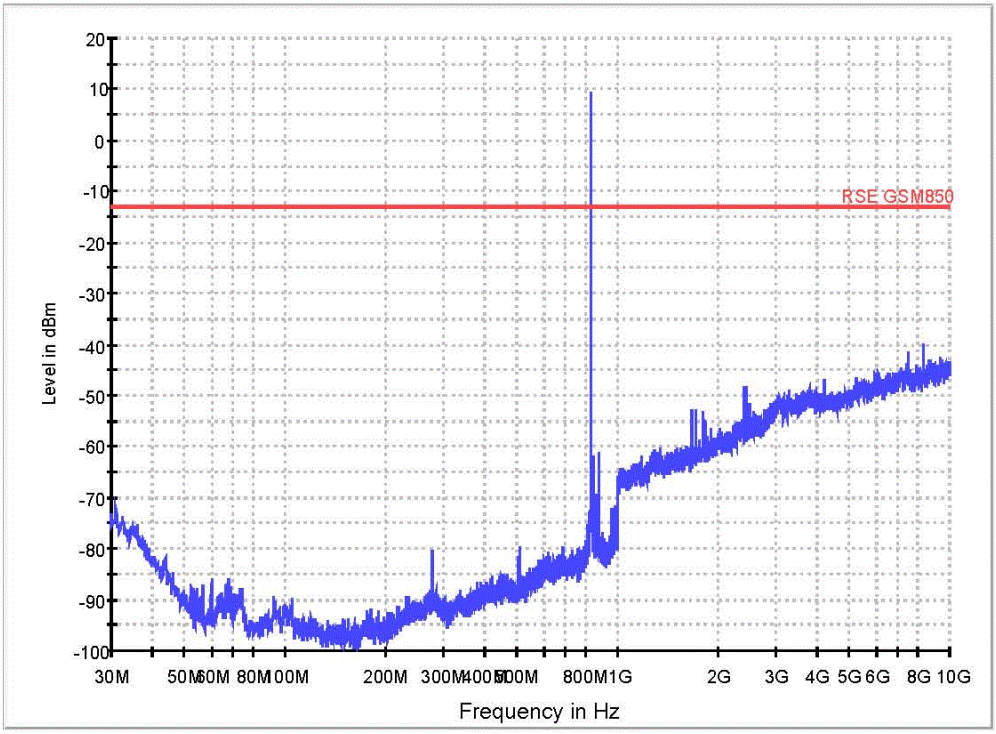
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.

Note: only the worst case was recorded in this report.

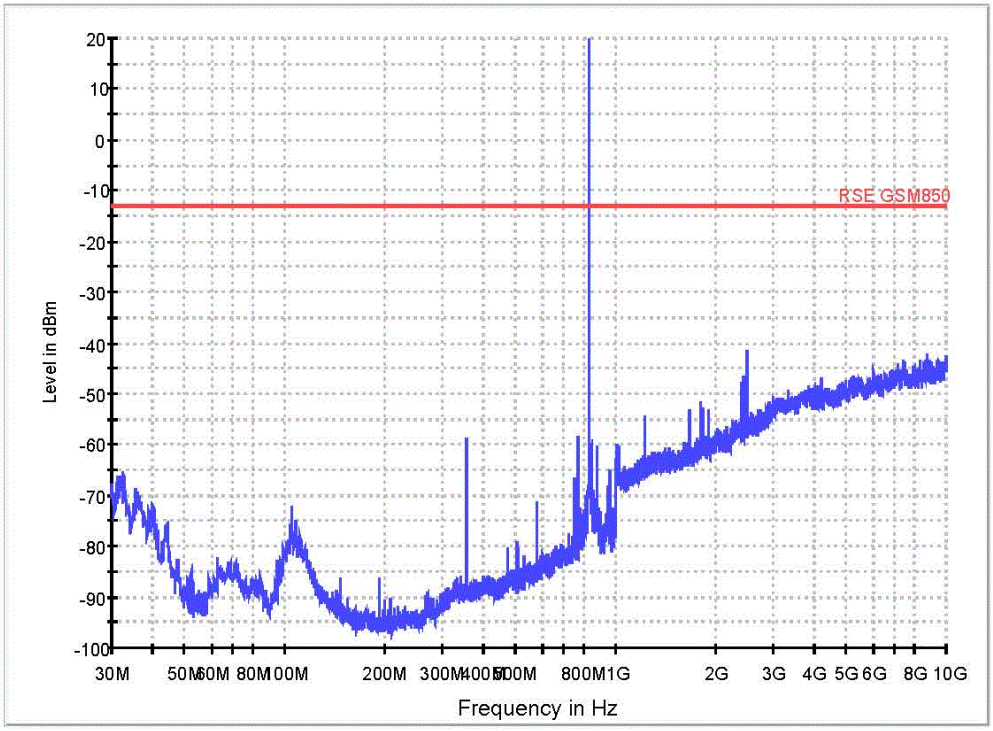
3. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical		
GSM 850MHz	128	824.2	< -30	< -30	-13	PASS
	190	836.6	< -30	< -30		PASS
	251	848.8	< -30	< -30		PASS
GSM 1900MHz	512	1850.2	< -25	< -25	-13	PASS
	661	1880.0	< -25	< -25		PASS
	810	1909.8	< -25	< -25		PASS

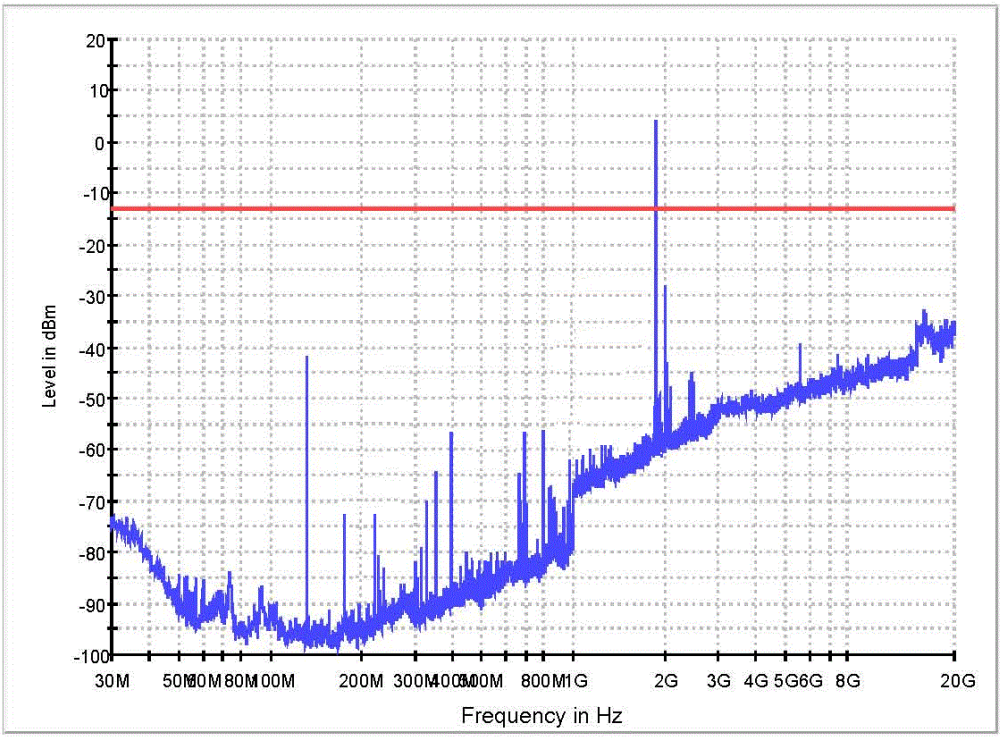
4. Test Plot



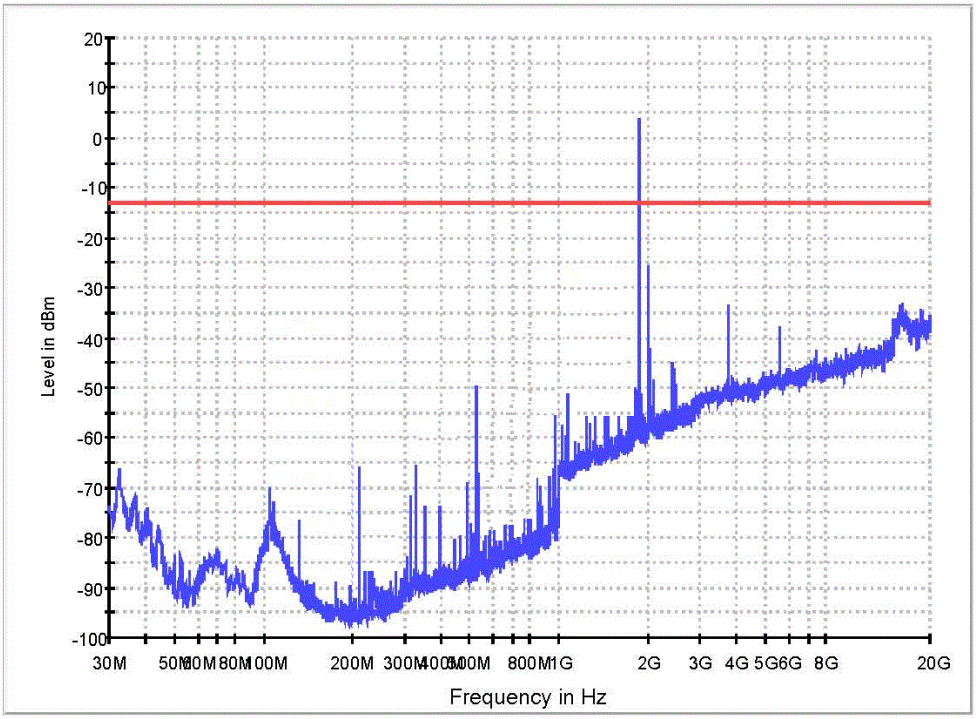
GSM850 CH190-H



GSM850 CH190-V



GSM1900 CH661-H



GSM1900 CH661-V

** END OF REPORT **