47 CFR PART 22H & 24E

TEST REPORT

of

3G QWERTY HAC Compatible Bar wireless phone

Trade Name:	S810
Brand Name:	Verykool
Model Name:	S810
Report No.:	SZ10070019E02
FCC ID.:	WA6S810

prepared for

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

prepared by

Shenzhen Morlab Communications Technology Co., Ltd.
Morlab Laboratory
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Change History		
Issue	Date	Reason for change
1.0	September 25, 2010	First edition

1. TEST CERTIFICATION

Equipment under Test:	3G QWERTY HAC Compatible Bar wireless phone
Trade Name:	S810
Brand Name:	Verykool
Model Name:	S810
FCC ID:	WA6S810
Applicant:	Verykool USA Inc 4350 Executive Dr. #100, San Diego, CA 92121
Manufacturer:	Verykool Wireless Technology Ltd. Room 1701, Reward Building C, No.203, 2nd Section of WangJing, Li Ze Zhong Yuan, ChaoYang District, Beijing, P.R. of China 100102
Test Standards:	47 CFR Part 2 47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
Test Date(s):	August 27, 2010 - September 09, 2010
Test Result:	PASS

*** We Hereby Certify That:**

The equipment under test was tested by Shenzhen Morlab Communications Technology Co., Ltd. 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: Tian Junjie Dated: 2010.9.25
Tian Junjie

Reviewed by: Ni Yong Dated: 2010.09.25
Ni Yong

Approved by: Dated: 2010.9.25
Shu Luan

2. GENERAL INFORMATION

2.1 EUT Description

EUT Type.....:	3G QWERTY HAC Compatible Bar wireless phone
Model Name .....:	S810
Serial No.....:	(n.a, marked #1 by test site)
Hardware Version .....:	P1.2
Software Version .....:	S810_0031
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) WCDMA 850MHz Tx: 826.4- 846.6MHz (at intervals of 200kHz); Rx: 871.4 – 891.6MHz (at intervals of 200kHz) WCDMA 1900MHz Tx: 1852.4 – 1907.6MHz (at intervals of 200kHz); Rx: 1932.4 – 1987.6MHz (at intervals of 200kHz)
Modulation Type.....:	GPRS/GSM Mode with GMSK Modulation EDGE Mode with 8PSK Modulation WCDMA Mode with QPSK Modulation HSDPA Mode with QPSK Modulation
Emission Designators .....:	GSM:300KGXW, EGPRS:260KG7W WCDMA:4M18F9W, HSPA: 4M20F9W
Power Supply.....:	Battery Model Name: H12M20902-7260 Brand name: BAK Capacitance: 1000mAh Rated voltage: 3.7V Manufacturer: Shenzhen BAK Battery Co., Ltd Manufacturer Address: BAK INDUSTRIAL ZONE KUICHONG ST LONGGANG DISTRICT SHENZHEN, GUANGDONG, CHINA
Ancillary Equipments.....:	AC Adapter (Charger for Battery) Model Name: ETPCA-050050UYU7 Brand Name: Tech-Power Serial No.: (n.a. marked #1 by test site)

Rated Input: ~ 47- 63Hz, Max4W
Rated Output: ⎓ Max 2.75W
Manufacturer: TECH-POWER INTERNATIONAL CO., LTD
Manufacturer Address: NO 16, Longwangmiao Industry Zone, Baishixia, Fuyong Town, Bao'an, Shenzhen, China

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: The GPRS was tested under 4 uplink time slots mode.

Note 4: The transmitter (Tx) frequency arrangement of the WCDMA 850MHz band used by the EUT can be represented with the formula F(n)=826.4+0.2*(n-4132), 4132<=n<=4233; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4175 (835MHz) and 4233 (846.6MHz).

Note 5: The transmitter (Tx) frequency arrangement of the WCDMA 1900MHz band used by the EUT can be represented with the formula F(n)=1852.4+0.2*(n-9262), 9262<=n<=9538; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).

Note 6: 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 (10-1-09 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-09 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-09 Edition)	Personal Communications Services

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

No.	Section	Description	Result			
			GSM (850/1900MHz)	EDGE (850/1900MHz)	WCDMA (850/1900MHz)	HSDPA (850/1900MHz)
1	2.1046	Conducted RF Output Power	PASS	PASS	PASS	PASS
2	2.1049	20dB Occupied Bandwidth	PASS	PASS	PASS	PASS
3	2.1055 22.355 24.235	Frequency Stability	PASS	PASS	PASS	PASS
4	2.1051 2.1057 22.917 24.238	Conducted Out of Band Emissions	PASS	PASS	PASS	(n.a)
5	2.1051 2.1057 22.917 24.238	Band Edge	PASS	PASS	PASS	(n.a)
6	22.913 24.232	Transmitter Radiated Power (EIPR/ERP)	PASS	PASS	PASS	PASS
7	2.1053 2.1057 22.917 24.238	Radiated Out of Band Emissions	PASS	PASS	PASS	(n.a)

2.3 Facilities and Accreditations

2.3.1 Facilities

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L3572.

All measurement facilities used to collect the measurement data are located at 3/F, Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, 518055 P. R. 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 (℃):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

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

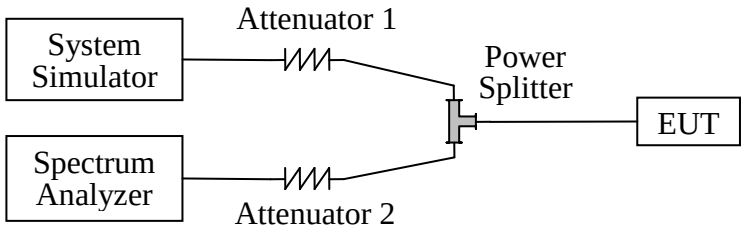
3.1. Conducted RF Output Power

3.1.1 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).

3.1.2 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
System Simulator	Agilent	E5515C	GB43130131	2009.09	1year
Spectrum Analyzer	Agilent	E7405A	US44210471	2009.09	1year
Power Splitter	Weinschel	1506A	NW521	(n.a.)	(n.a.)
Attenuator 1	Resnet	20dB	(n.a.)	(n.a.)	(n.a.)
Attenuator 2	Resnet	3dB	(n.a.)	(n.a.)	(n.a.)

3.1.3 Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT. The EUT was operating at Max Output Power included +2dB tolerance announced by the Applicant. 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.

3. Test Verdict:

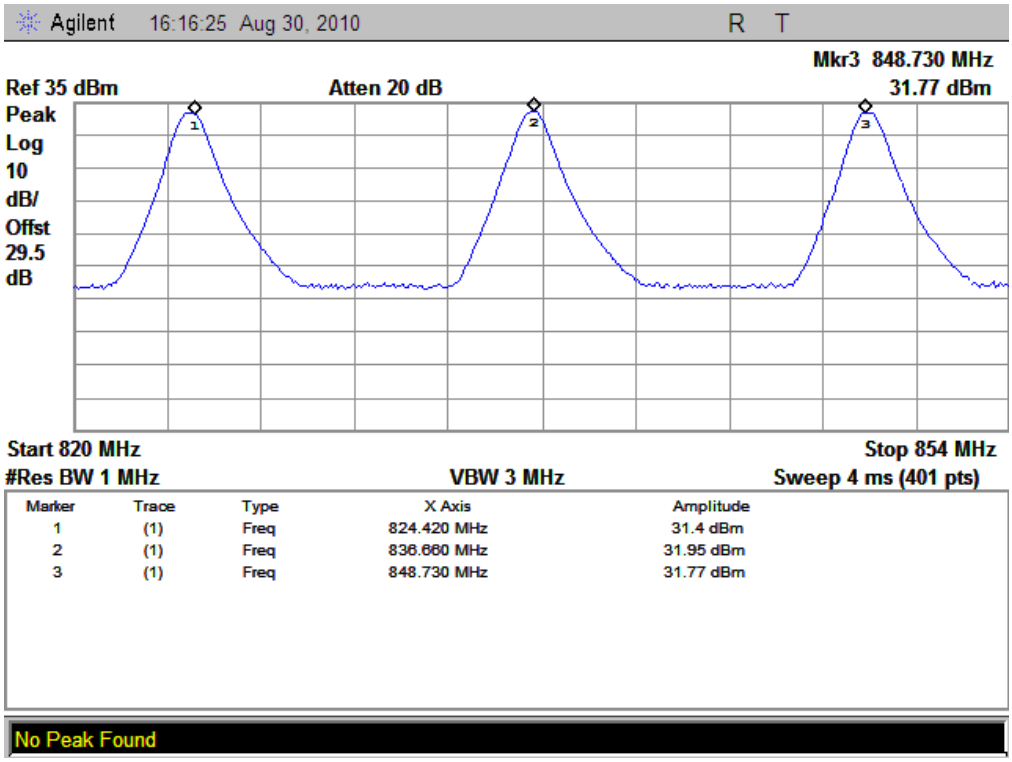
Band	Channel	Frequency (MHz)	Measured Output Power		Rated Output Power		Verdict
			dBm	Refer to Plot	dBm	Tolerance (dB)	
GSM 850MHz	128	824.2	32.3	Plot A	30	±3	PASS
	190	836.6	32.44				PASS
	251	848.8	32.13				PASS
GSM 1900MHz	512	1850.2	31.06	Plot B	29	±3	PASS
	661	1880.0	30.09				PASS
	810	1909.8	30.98				PASS
GPRS 850MHz	128	824.2	32.22	Plot C	30	±3	PASS
	190	836.6	32.37				PASS
	251	848.8	32.07				PASS
GPRS 1900MHz	512	1850.2	31.05	Plot D	29	±3	PASS
	661	1880.0	30.07				PASS
	810	1909.8	30.96				PASS
EDGE 850MHz	128	824.2	31.39	Plot E	30	±3	PASS
	190	836.6	31.71				PASS
	251	848.8	32.06				PASS
EDGE 1900MHz	512	1850.2	29.52	Plot F	27	±3	PASS
	661	1880.0	29.41				PASS
	810	1909.8	29.21				PASS

ltem	band	WCDMA 850			WCDMA 1900		
	ARFCN	4357	4400	4458	9662	9800	9938
	subtest	dBm			dBm		
5.2(WCDMA)	non	21.21	21.42	22.07	23.6	23.87	23.01
5.2AA(HSDPA)	Subtest-1	21.53	21.74	22.01	23.74	23.94	23.34
	Subtest-2	21.47	21.68	22.05	23.71	23.89	23.47
	Subtest-3	20.41	20.73	21.11	22.69	22.81	22.41

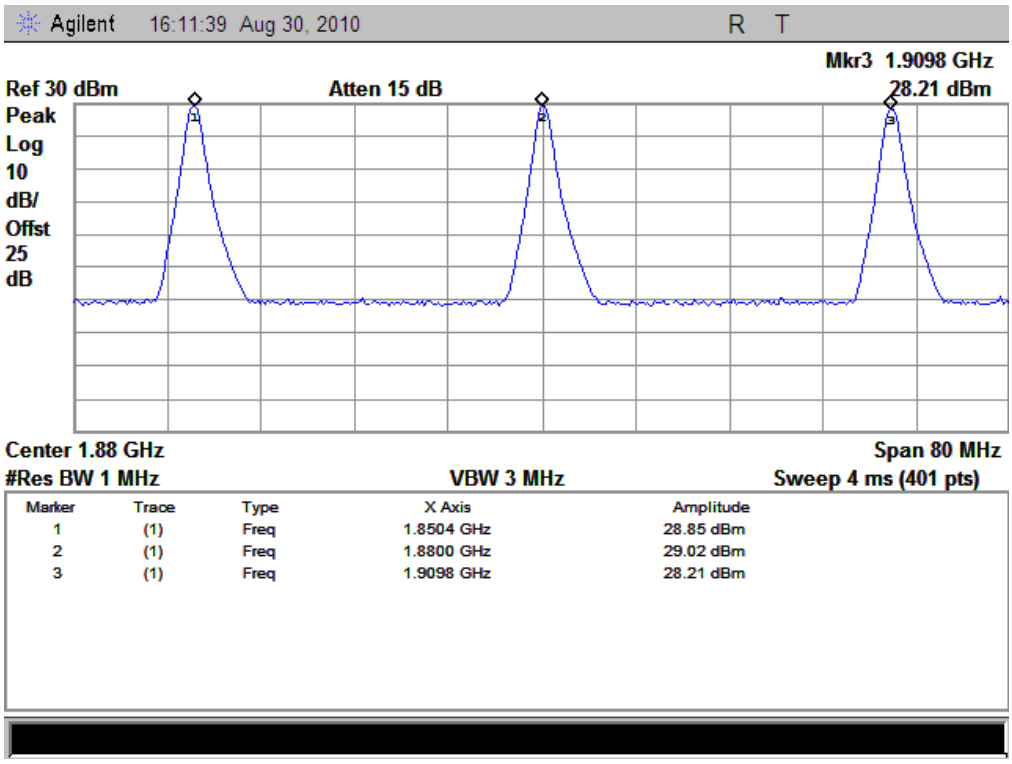
	Subtest-4	19.63	19.57	19.99	21.55	21.77	21.48

Note: For the WCDMA and HSDPA test band, the measured output power was calculated by the reading of the Power Meter and calibration.

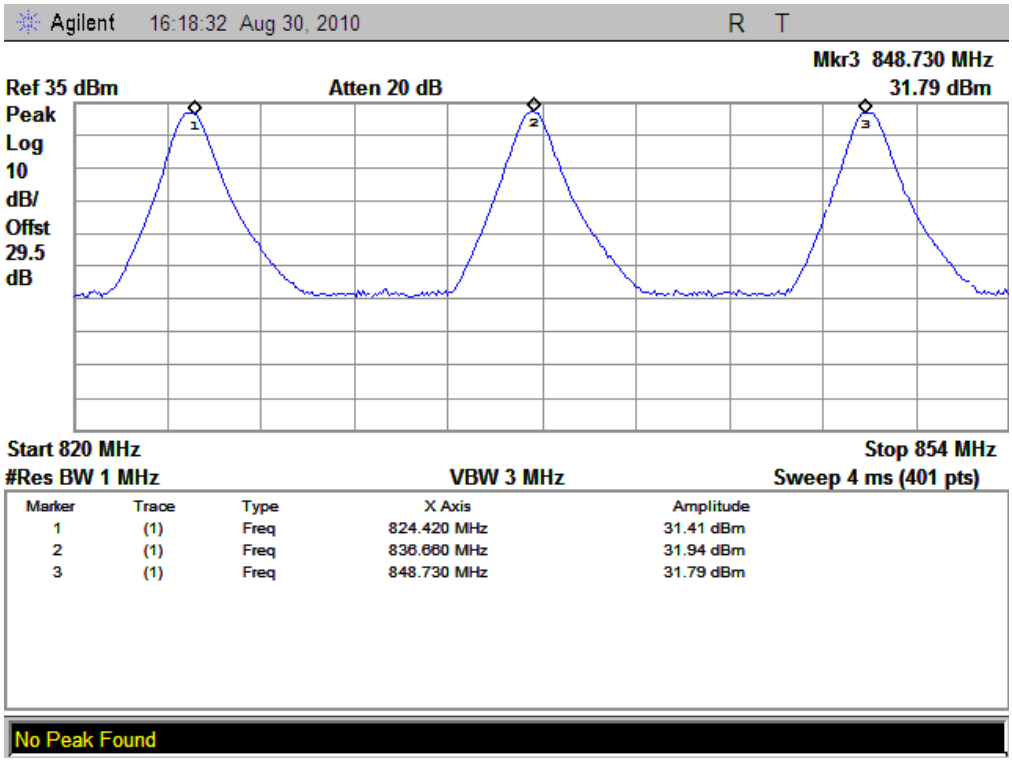
2. Test Plots:



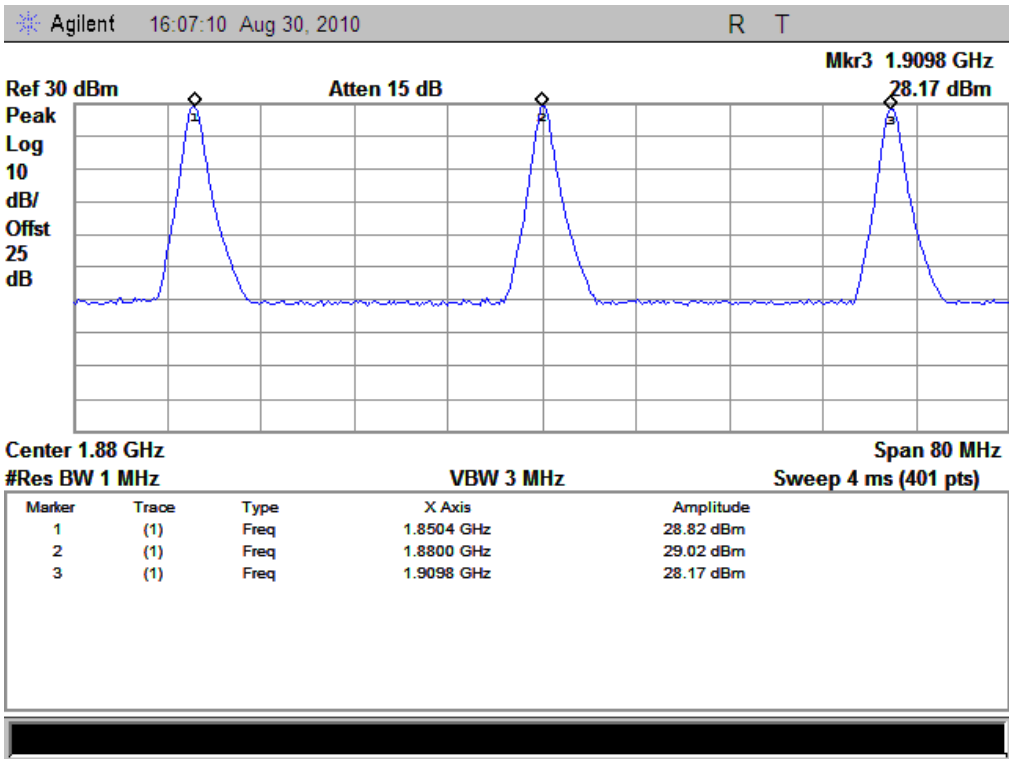
(Plot A: GSM 850MHz Channel = 128,190,251)



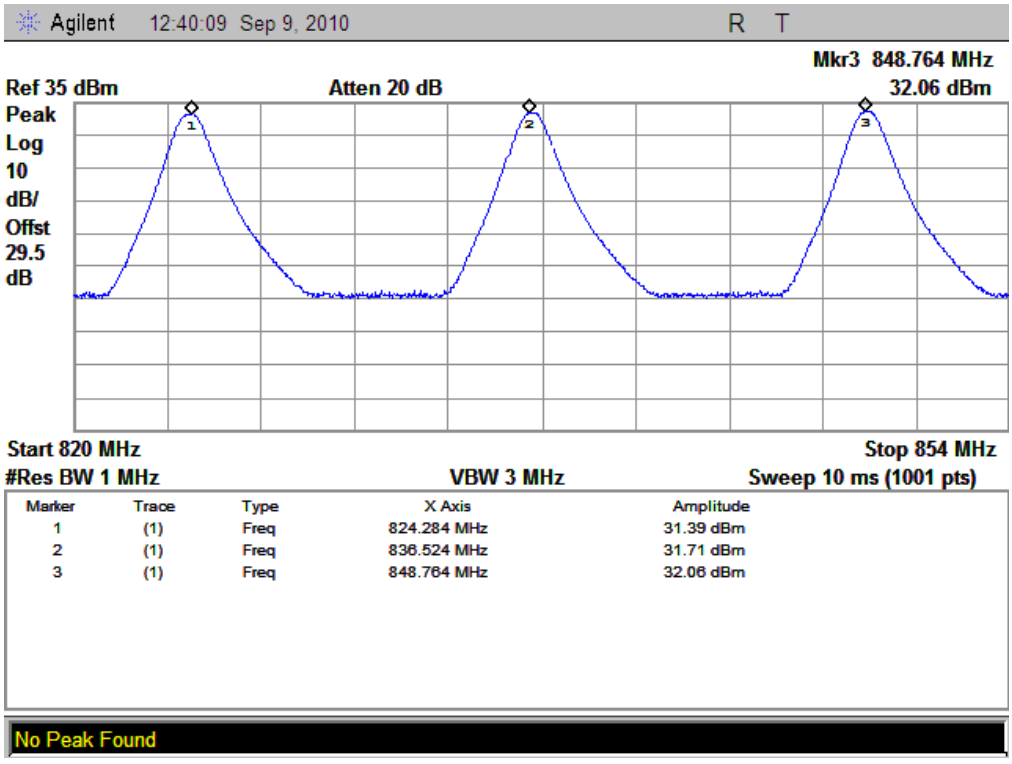
(Plot B: GSM 1900MHz Channel = 512, 661, 810)



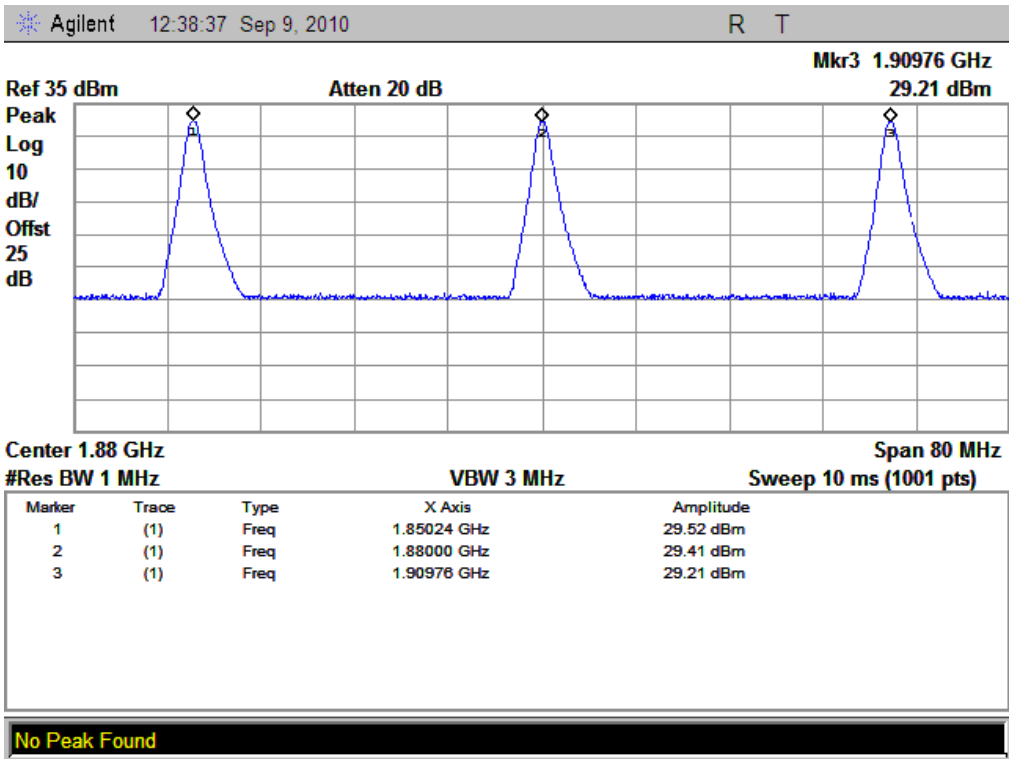
(Plot C: GPRS 850MHz Channel = 128, 190, 251)



(Plot D: GPRS 1900MHz Channel = 512, 661, 810)



(Plot E: EDGE 850MHz Channel = 128, 190, 251)



(Plot F: EDGE 1900MHz Channel = 512, 661, 810)

3.2 99% Occupied Bandwidth

3.2.1 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,.

3.2.2 Test Description

See section 3.1.2 of this report.

3.2.3 Test Verdict

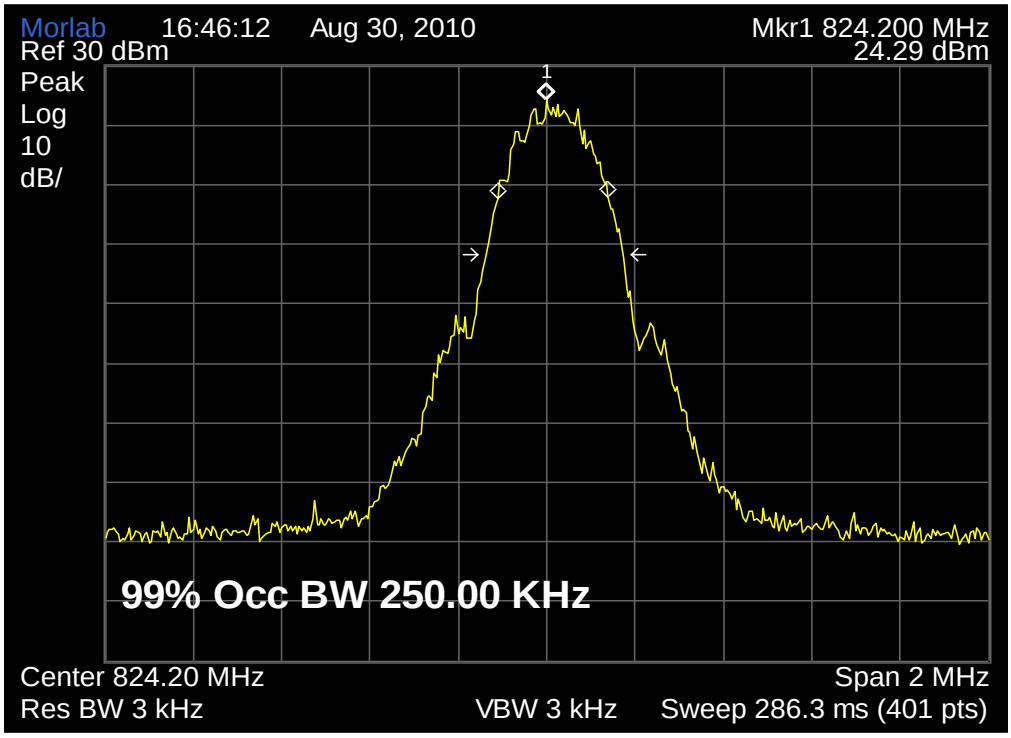
Here the lowest, middle and highest channels are tested to record the 99% occupied bandwidth, it's about 300kHz.

3. Test Verdict:

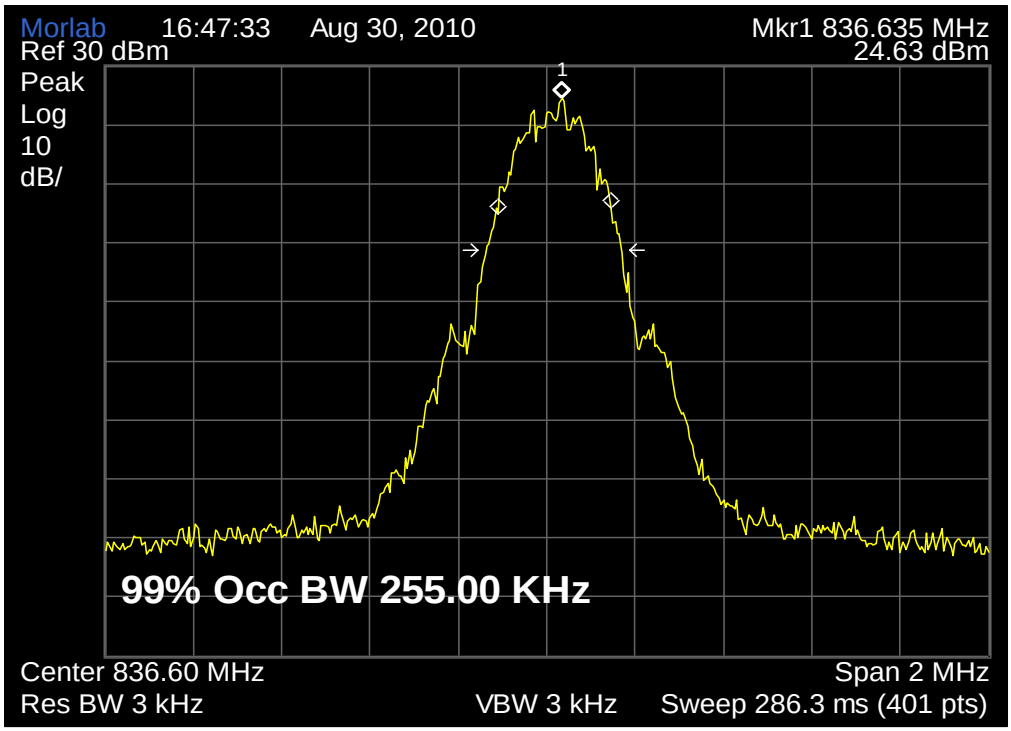
Band	Channel	Frequency (MHz)	Measured 99% Occupied Bandwidth (kHz)	Refer to Plot
GSM 850MHz	128	824.2	250.0Hz	Plot A
	190	836.6	255.0Hz	Plot B
	251	848.8	255.0Hz	Plot C
GSM 1900MHz	512	1850.2	250.0Hz	Plot D
	661	1880.0	255.0Hz	Plot E
	810	1909.8	255.0Hz	Plot F
EDGE 850MHz	128	824.2	246 KHz	Plot G
	190	836.6	250 KHz	Plot H
	251	848.8	246 KHz	Plot I
EDGE 1900MHz	512	1850.2	250 KHz	Plot J
	661	1880.0	250 KHz	Plot K
	810	1909.8	248 KHz	Plot L
WCDMA 850MHz	4400	835	4.20 MHz	Plot M
WCDMA 1900MHz	9800	1880	4.192MHz	Plot N
HSDPA 850MHz	4400	835	4.180 MHz	Plot O
HSDPA	9800	1880	4.160 MHz	Plot P

Band	Channel	Frequency (MHz)	Measured 99% Occupied Bandwidth (kHz)	Refer to Plot
1900MHz				

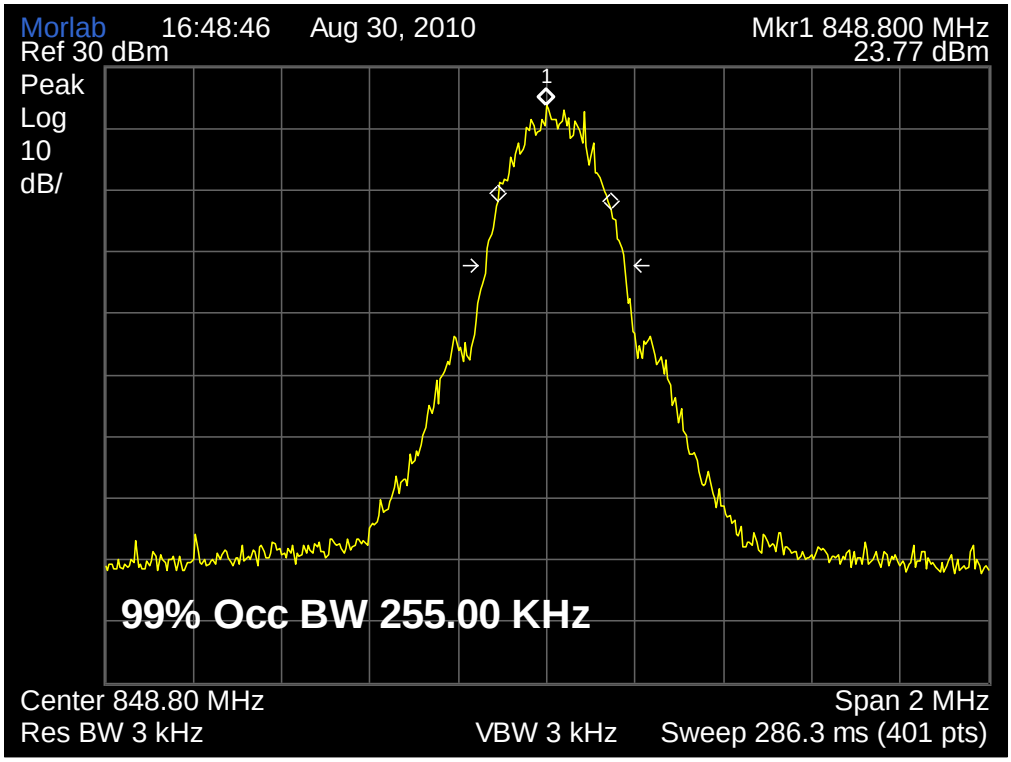
2. Test Plots:



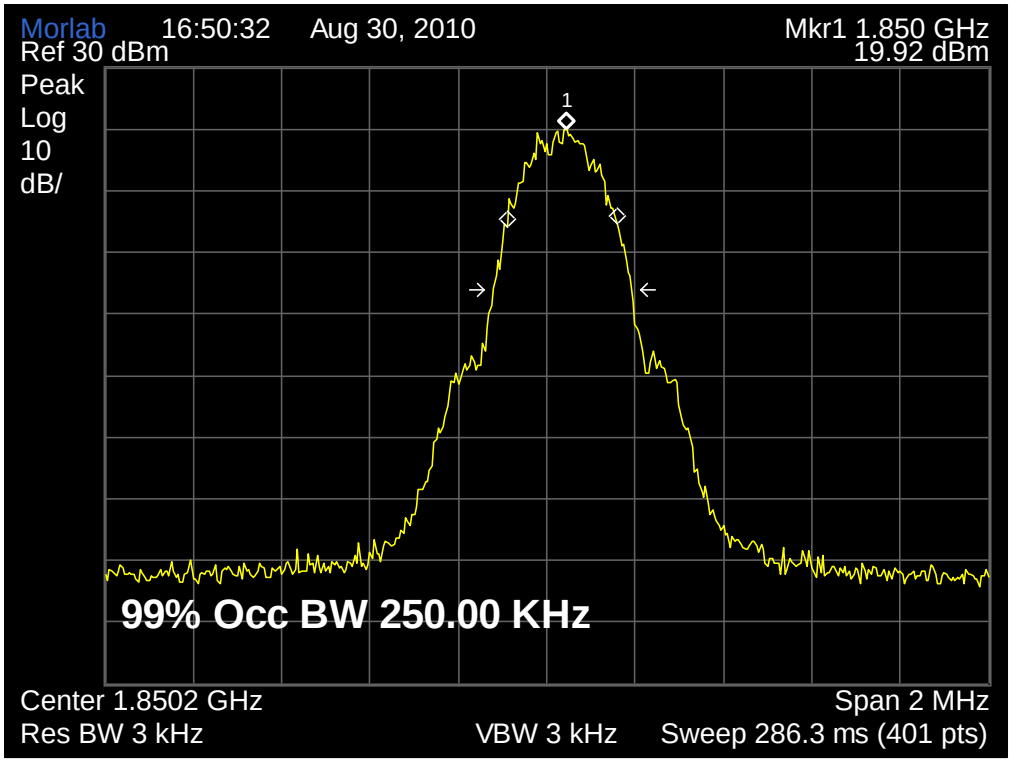
(Plot A: GSM 850MHz Channel = 128)



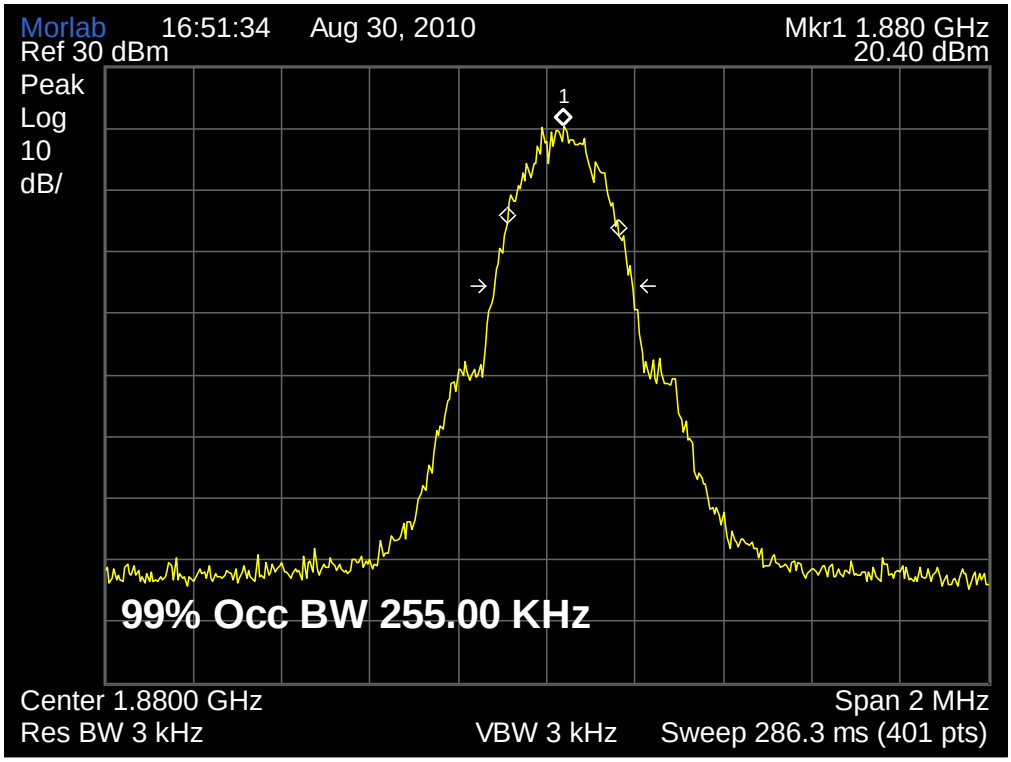
(Plot B: GSM 850MHz Channel = 190)



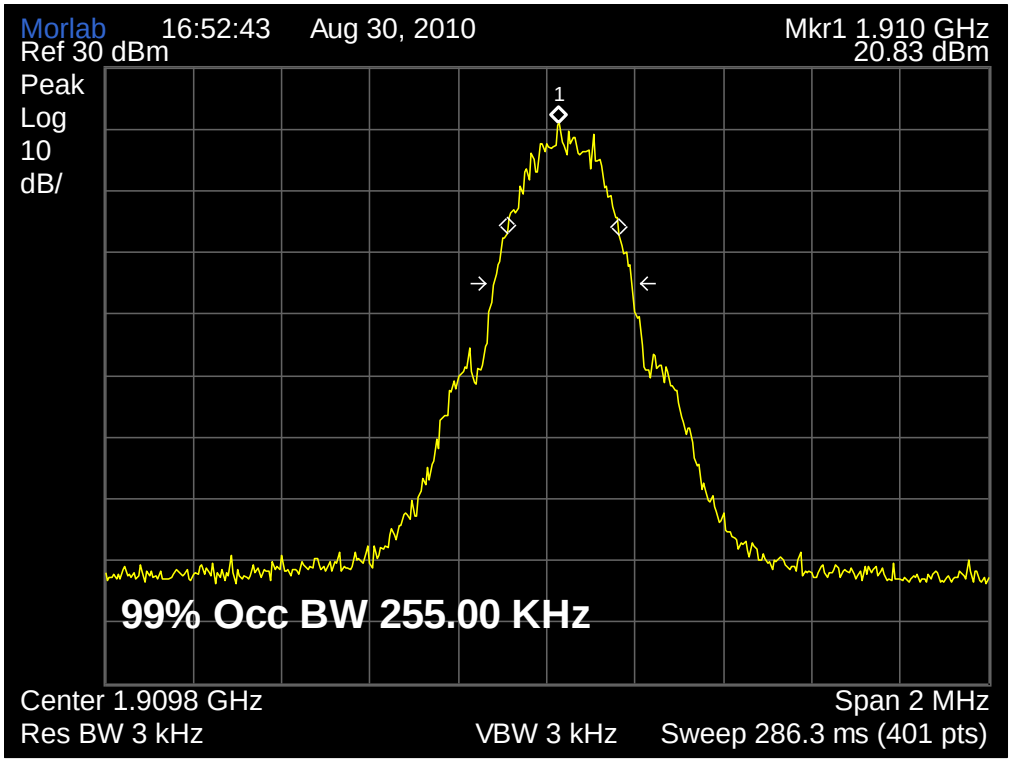
(Plot C: GSM 850MHz Channel = 251)



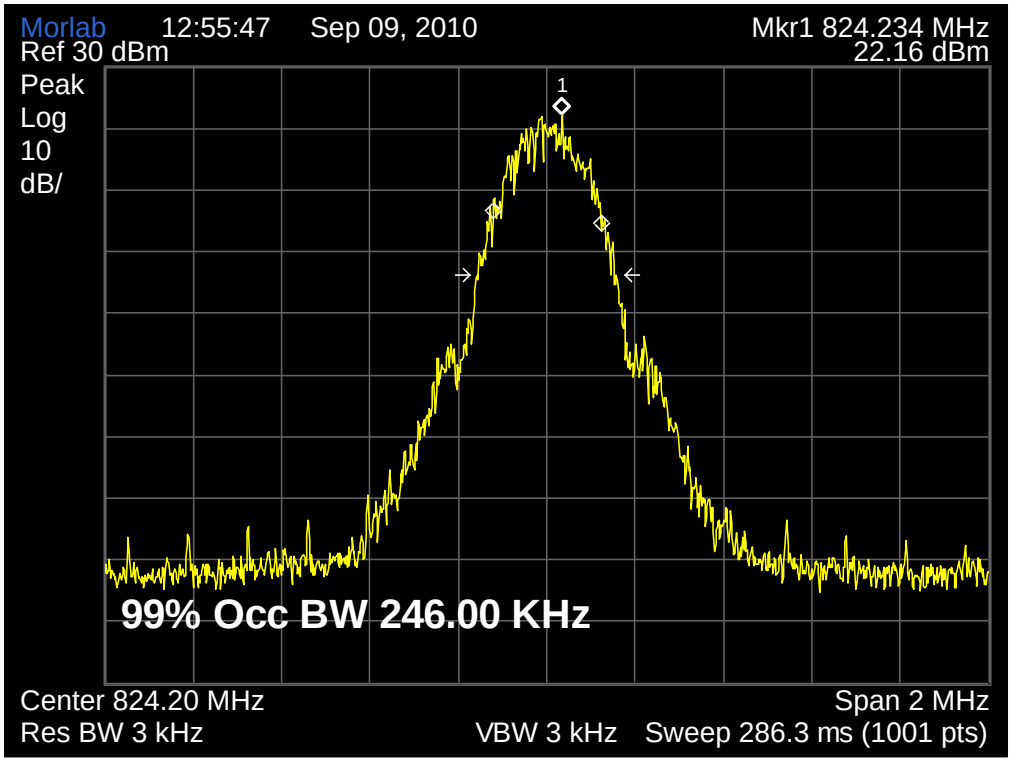
(Plot D: GSM 1900MHz Channel = 512)



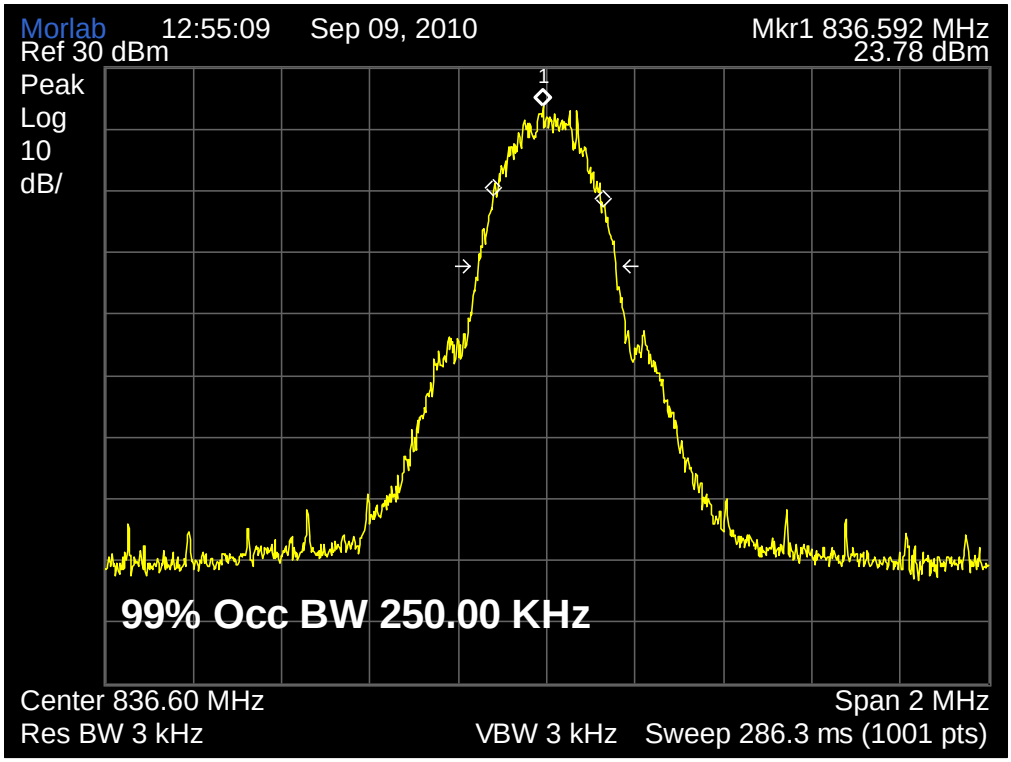
(Plot E: GSM 1900MHz Channel = 661)



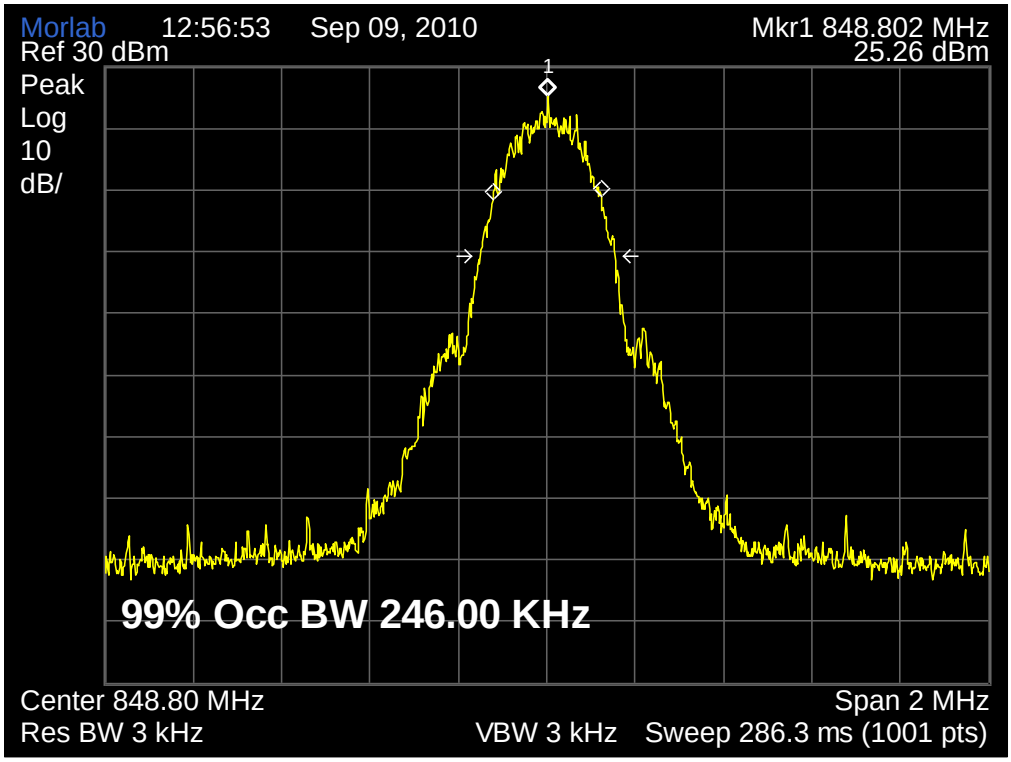
(Plot F: GSM 1900MHz Channel = 810)



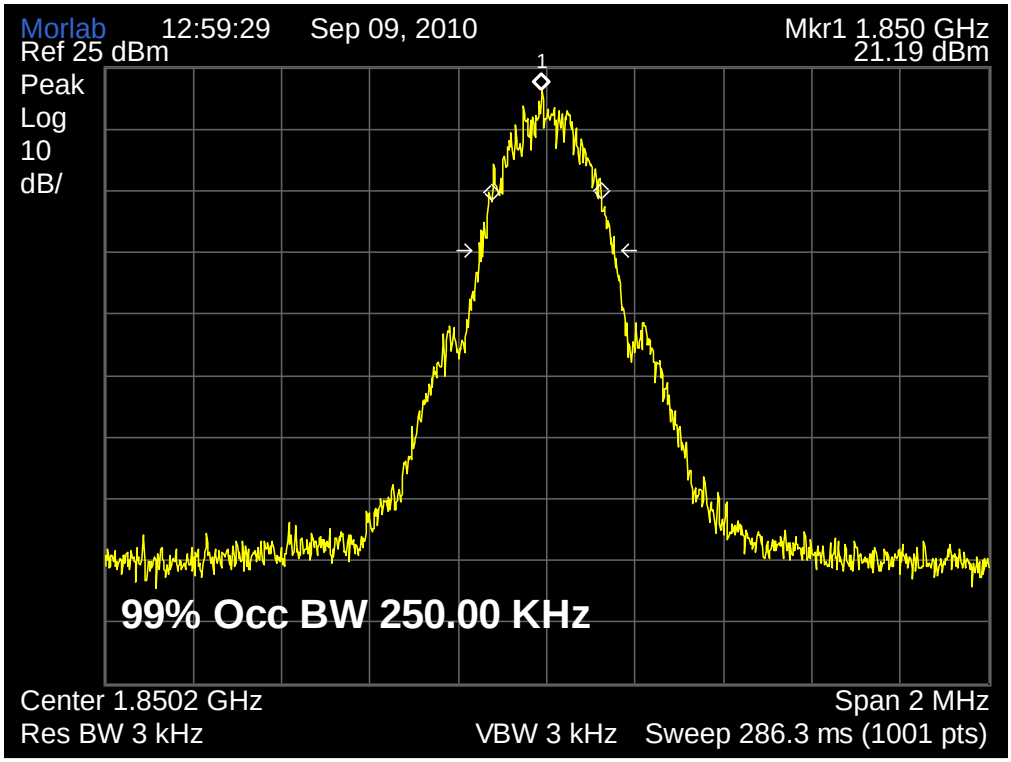
(Plot G: EDGE 850MHz Channel = 128)



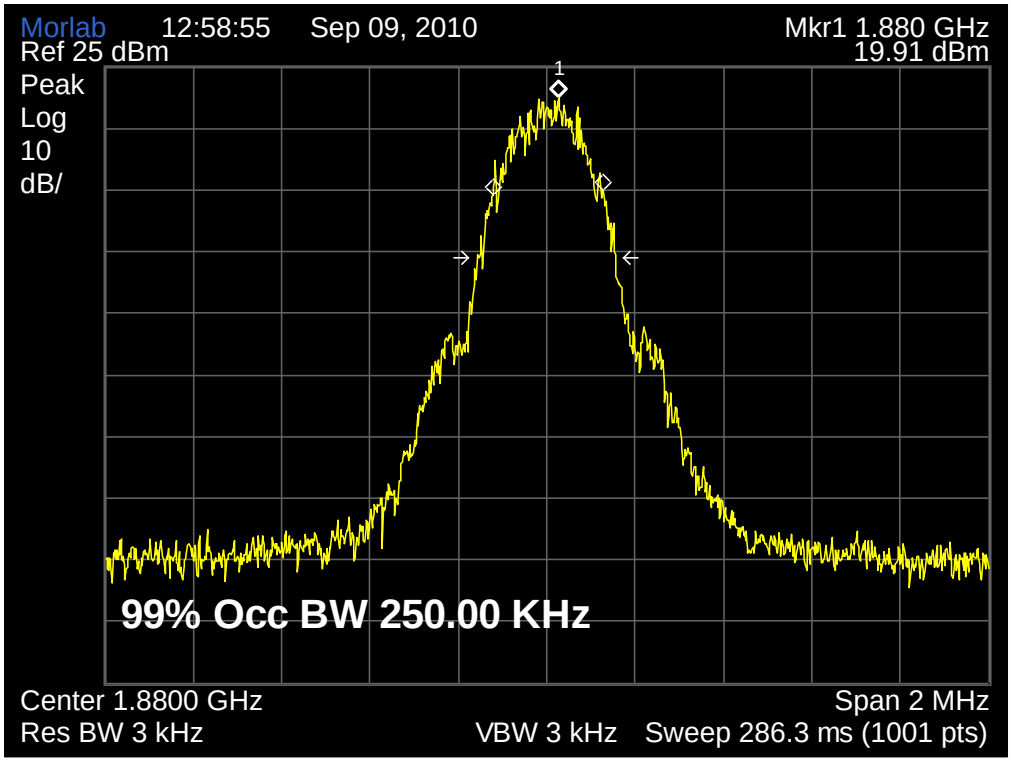
(Plot H: EDGE 850MHz Channel = 190)



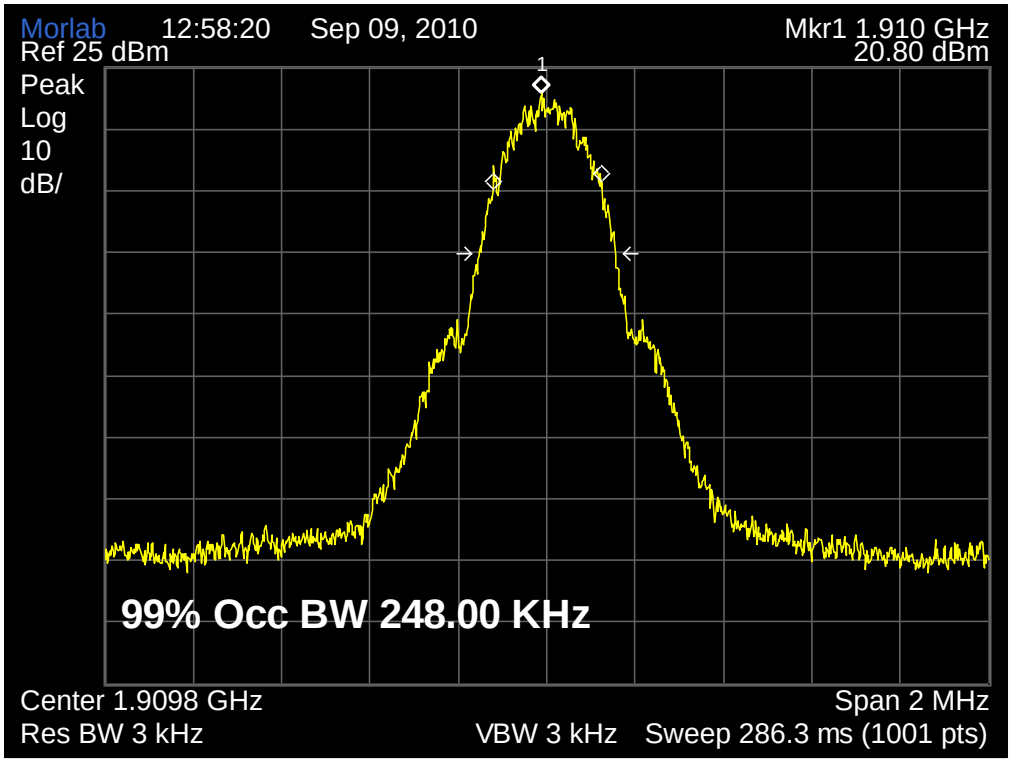
(Plot I: EDGE 850MHz Channel = 251)



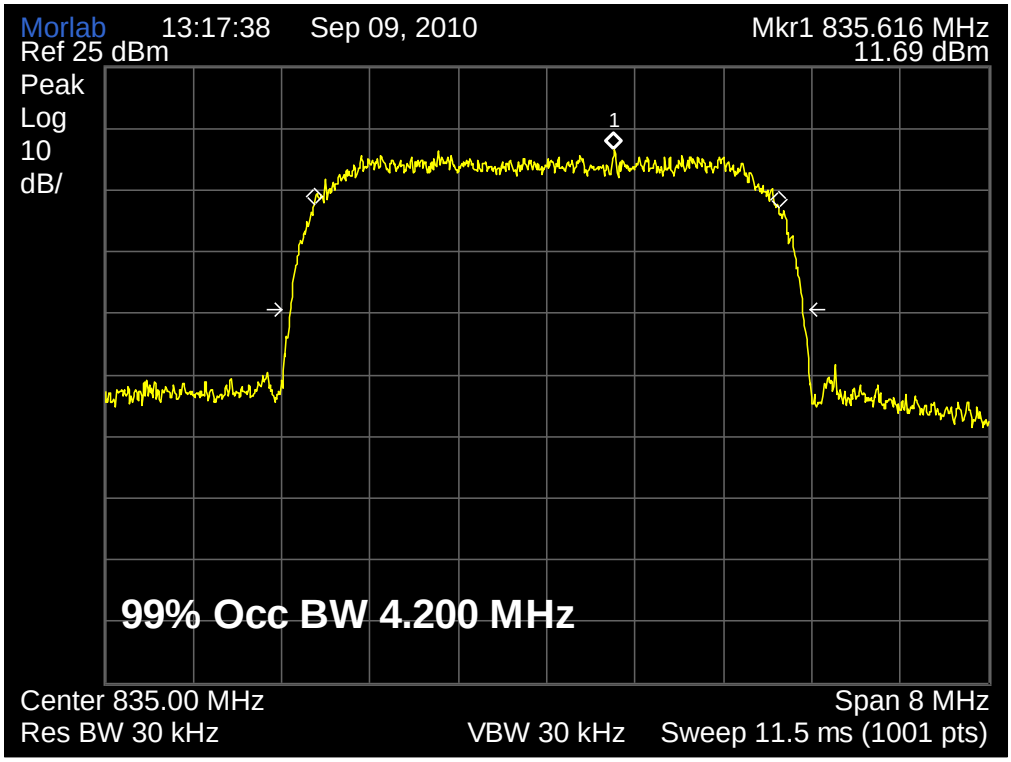
(Plot J: EDGE 1900MHz Channel = 512)



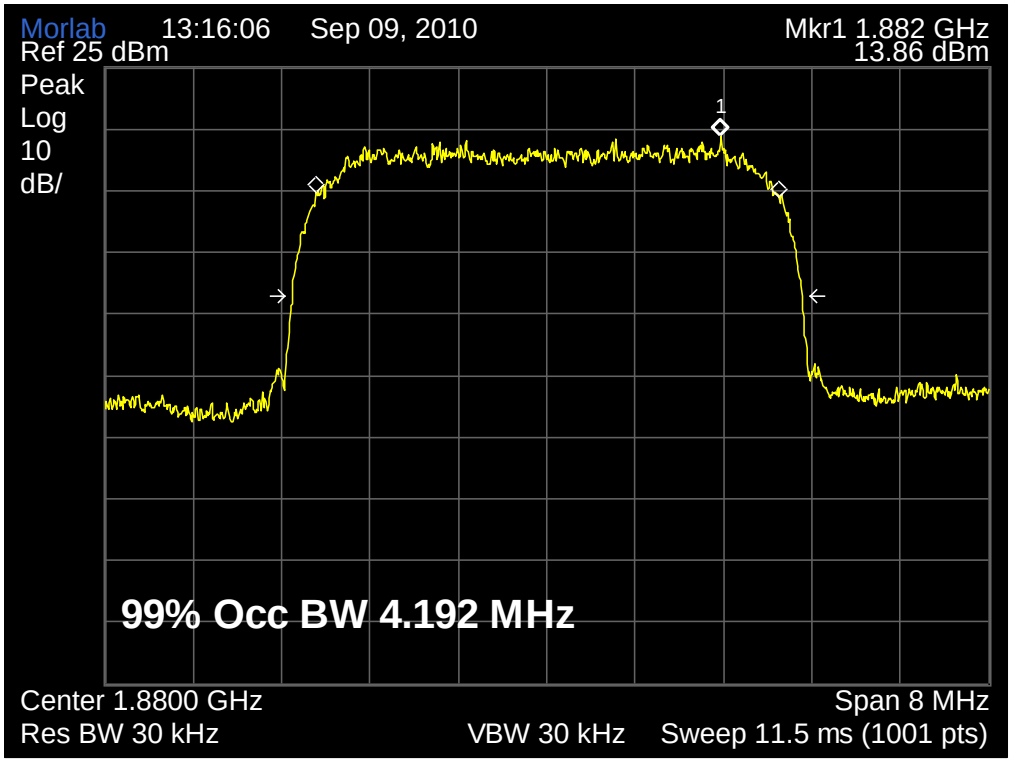
(Plot K: EDGE 1900MHz Channel = 661)



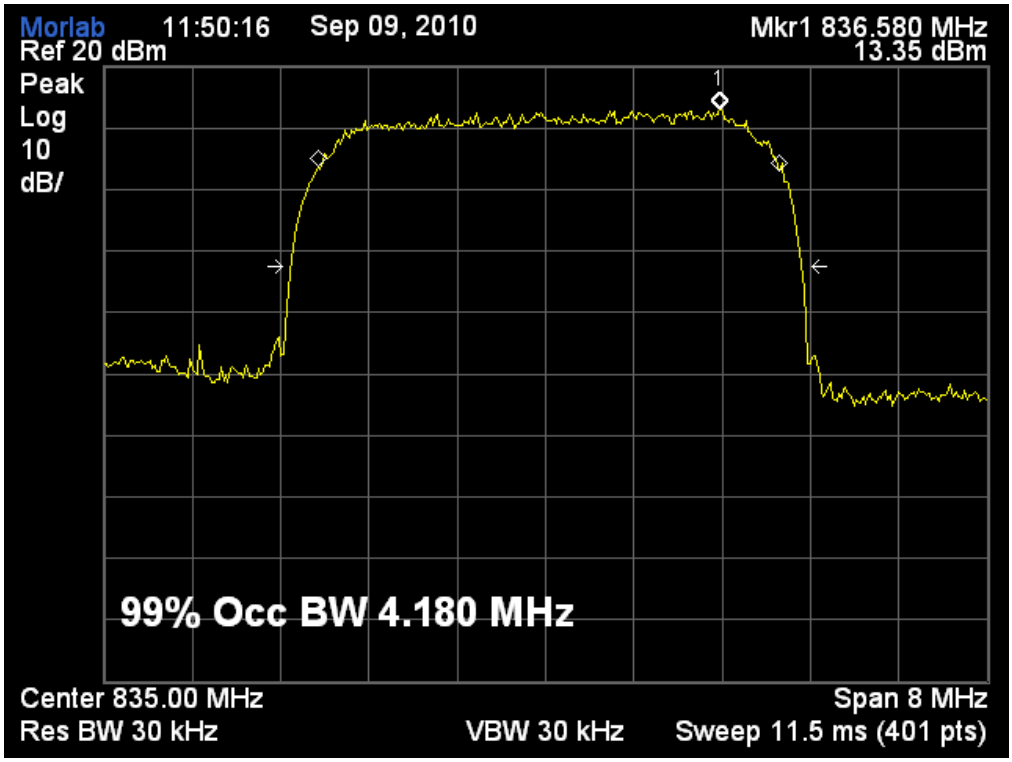
(Plot L: EDGE 1900MHz Channel = 810)



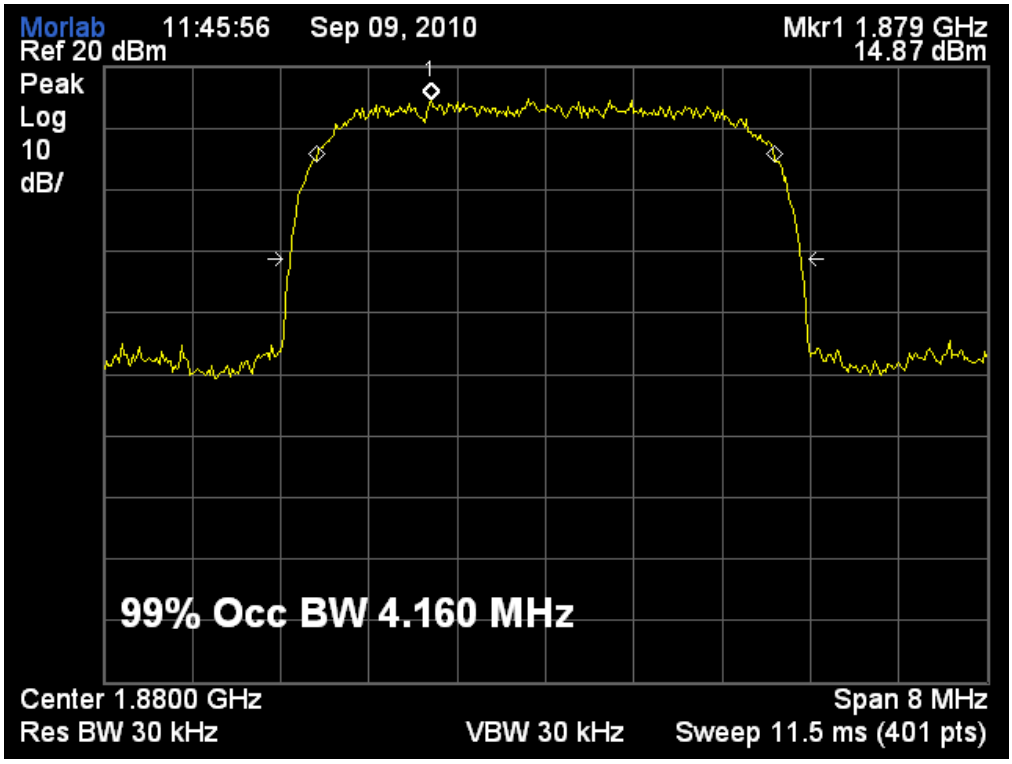
(Plot M: WCDMA 850MHz Channel = 4400)



(Plot N: WCDMA 1900MHz Channel = 9800)



(Plot O: HSDPA850MHz Channel = 4400)



(Plot P: HSDPA1900MHz Channel = 9800)

3.3 Frequency Stability

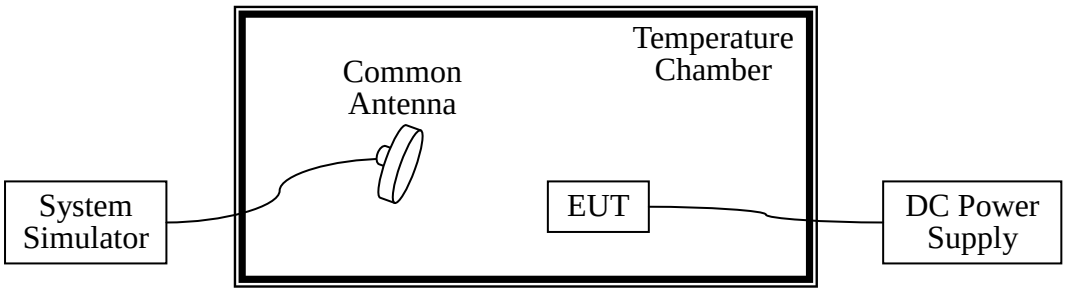
3.3.1 Requirement

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 ℃ to +50 ℃ at intervals of not more than 10 ℃.
(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.

3.3.2 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
System Simulator	Agilent	E5515C	GB43130131	2009.09	1year
DC Power Supply	Good Will	GPS-3030DD	EF920938	2009.09	2year
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2009.09	1year

3.3.3 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 ℃. The frequency

deviation limit of GSM 850MHz band is ±2.5ppm, and GSM 1900MHz is ±1ppm

GSM 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (℃)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	12.39	±2060.5	14.93	±2091.5	16.62	±2122	PASS
	-20	-28.73		-12.02		-15.34		
	-10	20.13		-9.85		13.75		
	0	16.44		14.33		29.11		
	+10	12.13		28.64		17.42		
	+20	21.13		25.08		22.51		
	+30	-1.97		10.03		-25.05		
	+40	-22.24		-24.24		-20.23		
	+50	22.39		22.67		23.31		
4.2	+25	14.22		18.59		18.54		
3.6	+25	25.35		21.34		12.81		

GSM 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (℃)	Channel = 512 (1850.2MHz)		Channel = 661 (1880.0MHz)		Channel = 810 (1909.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	-0.43	±1850.2	9.24	±1880.0	-4.67	±1909.8	PASS
	-20	11.47		16.43		17.01		
	-10	-22.54		-8.78		-20.32		
	0	10.21		13.76		14.87		
	+10	-25.03		-21.04		-11.01		
	+20	-23.63		-18.09		-21.05		
	+30	17.07		25.33		10.67		
	+40	2.59		11.93		17.01		
	+50	-12.46		-20.81		-20.33		
4.2	+25	-24.05		-21.08		-23.80		
3.6	+25	27.43		22.08		28.31		

EDGE 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (℃)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (℃)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	11.92	±2060.5	14.48	±2091.5	5.76	±2122	PASS
	-20	-10.37		-13.17		-5.90		
	-10	20.05		-2.59		4.12		
	0	11.37		13.38		10.27		
	+10	22.04		8.74		16.21		
	+20	24.02		1.25		3.24		
	+30	-13.78		-0.18		-5.65		
	+40	-21.67		-27.92		-21.13		
	+50	20.34		26.74		29.52		
4.2	+25	17.05		16.88		8.41		
3.6	+25	24.05		7.96		2.26		

EDGE 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (℃)	Channel = 512 (1850.2MHz)		Channel = 661 (1880.0MHz)		Channel = 810 (1909.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	-11.02	±1850.2	-0.87	±1880.0	-14.04	±1909.8	PASS
	-20	15.70		11.27		9.87		
	-10	-2.91		-25.32		-14.04		
	0	11.63		12.76		17.82		
	+10	-24.16		-20.07		20.07		
	+20	-13.09		-16.54		-21.37		
	+30	13.54		22.08		28.08		
	+40	25.09		13.74		13.17		
	+50	-20.54		-21.01		-5.74		
4.2	+25	-21.08		-1.74		-20.37		
3.6	+25	22.71		21.02		21.55		

WCDMA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (℃)	Channel = 4132 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.7	-30	9.49	±826.4	16.54	±835	21.65	±846.6	PASS
	-20	-26.41		-2.93		-2.68		

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (℃)	Channel = 4132 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
	-10	19.05		16.21		-24.83		
	0	11.03		26.06		26.31		
	+10	-13.65		-18.33		-8.55		
	+20	-2.86		-21.43		-26.31		
	+30	-13.43		-27.19		-23.88		
	+40	5.76		1.86		13.44		
	+50	31.05		10.32		-20.01		
4.2	+25	-7.44		-19.22		-15.07		
3.6	+25	-17.04		-26.43		-23.61		

WCDMA 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (℃)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	16.33	±1852.4	23.31	±1880.0	14.27	±1907.6	PASS
	-20	-12.61		-1.99		-10.24		
	-10	-20.33		33.11		-22.07		
	0	-22.31		-14.42		-21.07		
	+10	20.91		27.92		18.53		
	+20	-2.77		-15.41		-20.53		
	+30	-15.07		-12.62		-19.43		
	+40	-15.66		-9.15		-10.22		
	+50	23.04		-27.21		-25.81		
4.2	+25	-16.54		-17.88		-23.11		
3.6	+25	31.01		-9.21		-17.08		

3.4 Conducted Out of Band Emissions

3.4.1 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.

3.4.2 Test Description

See section 3.1.2 of this report.

3.4.3 Test Result

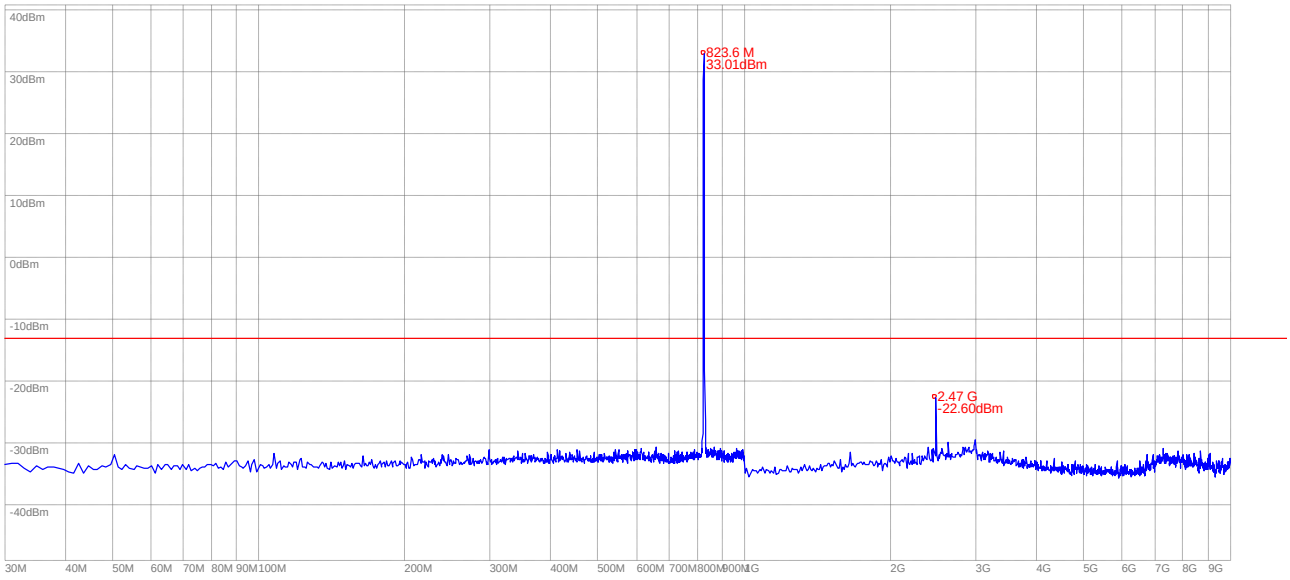
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

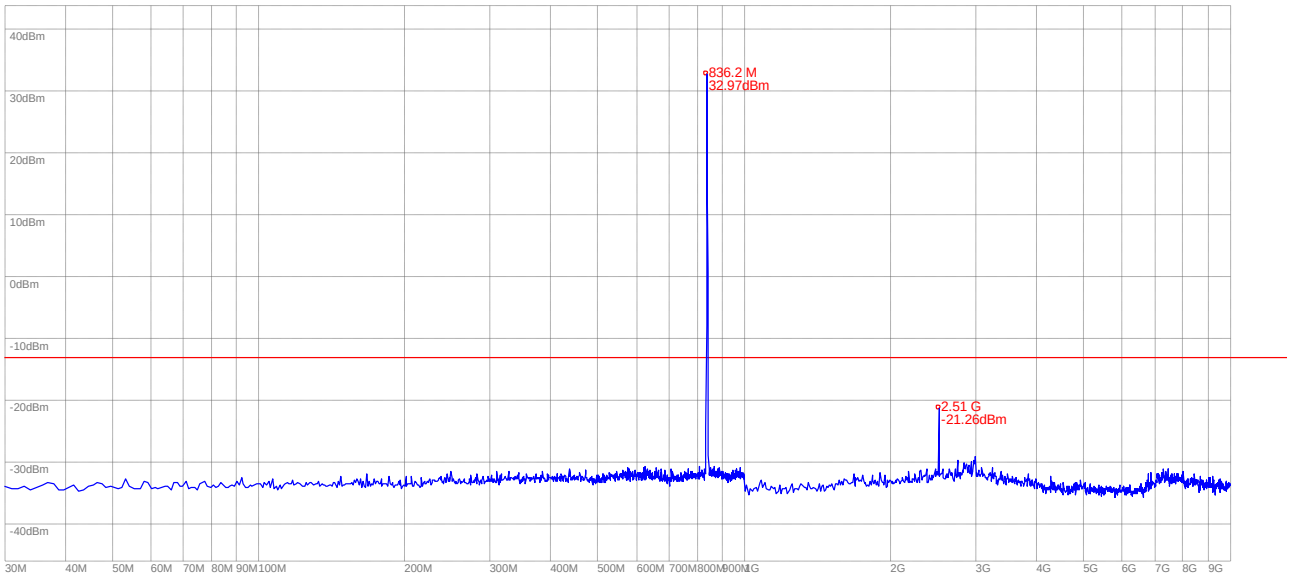
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-22.60	Plot A	-13	PASS
	190	836.6	-21.26	Plot B		PASS
	251	848.8	-22.81	Plot C		PASS
GSM 1900MHz	512	1850.2	-36.18	Plot D	-13	PASS
	661	1880.0	-35.88	Plot E		PASS
	810	1909.8	-37.22	Plot F		PASS
EDGE 850MHz	128	824.2	-21.71	Plot G	-13	PASS
	190	836.6	-21.86	Plot H		PASS
	251	848.8	-22.50	Plot I		PASS
EDGE 1900MHz	512	1850.2	-32.23	Plot J	-13	PASS
	661	1880.0	-37.22	Plot K		PASS
	810	1909.8	-37.25	Plot L		PASS
WCDMA 850MHz	4357	826.4	-29.77	Plot M	-13	PASS
	4400	835	-30.12	Plot N		PASS
	4258	846.6	-30.02	Plot O		PASS
WCDMA 1900MHz	9662	1852.4	-36.20	Plot P	-13	PASS
	9800	1880	-35.95	Plot Q		PASS
	9938	1907.6	-36.32	Plot R		PASS

2. Test Plots for the Whole Measurement Frequency Range:

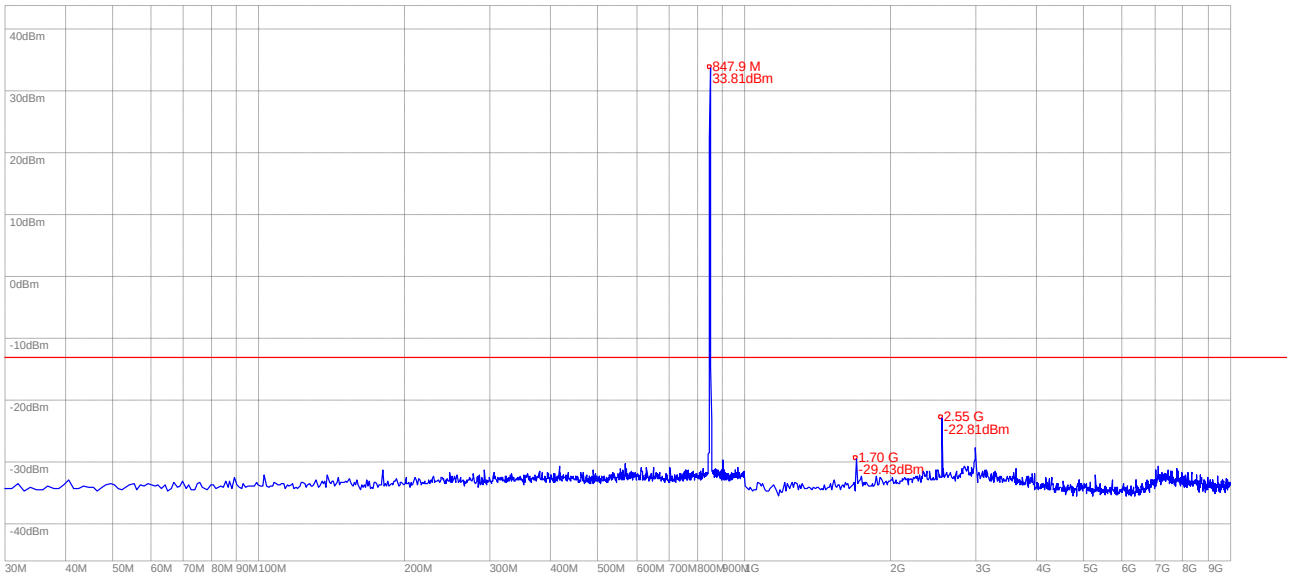
Note: the power of the EUT transmitting frequency should be ignored.



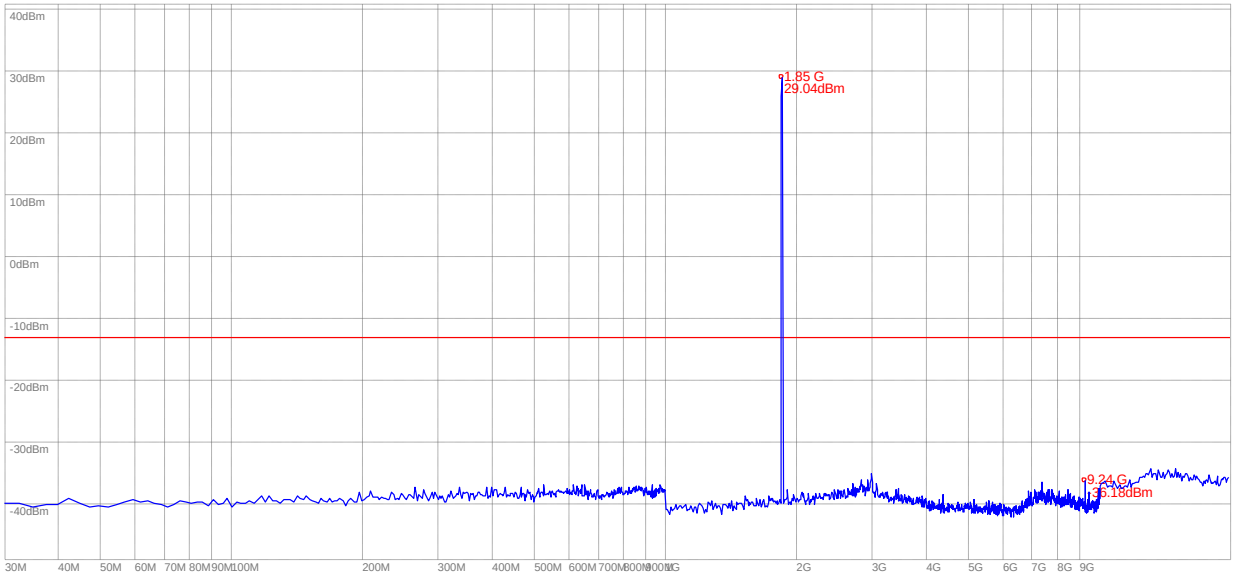
(Plot A: GSM 850MHz Channel = 128, 30MHz to 10GHz)



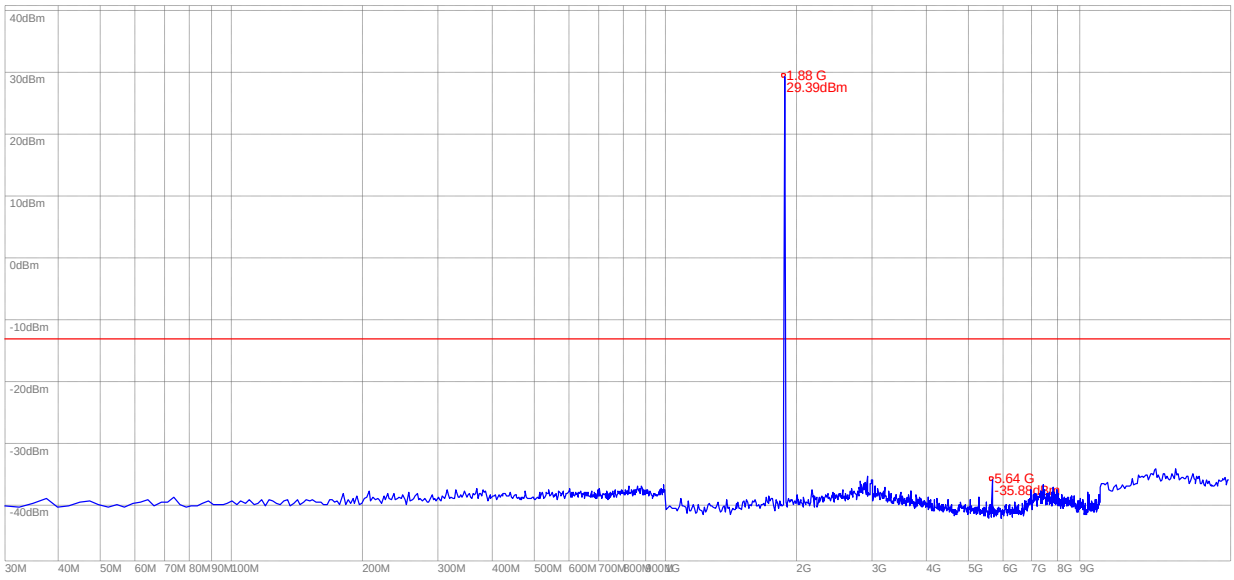
(Plot B: GSM 850MHz Channel = 190, 30MHz to 10GHz)



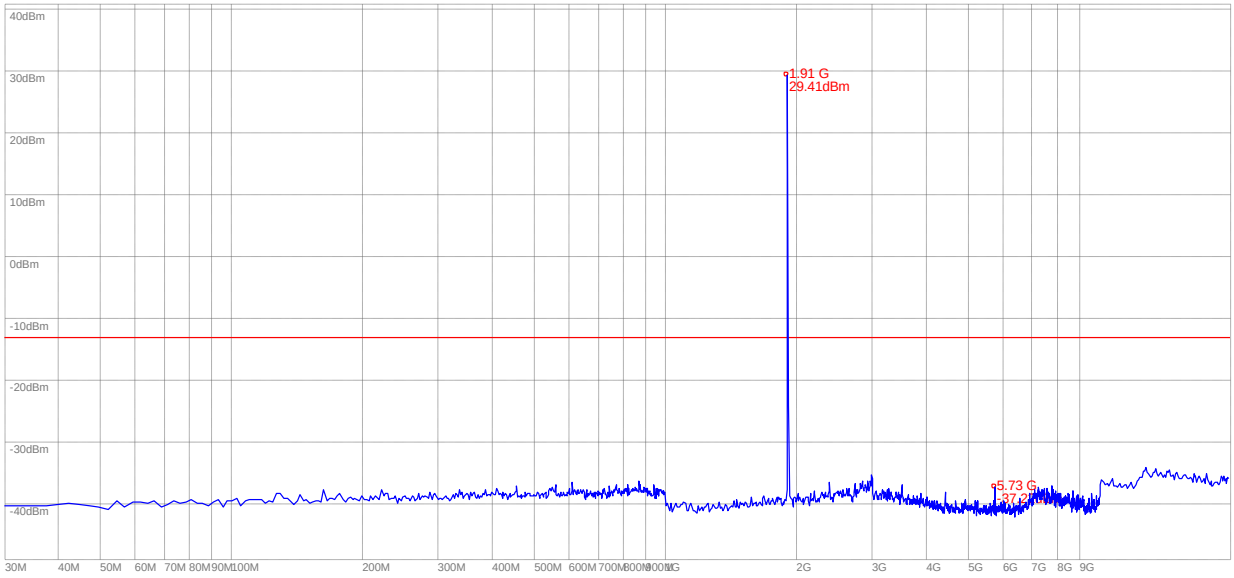
(Plot C: GSM 850MHz Channel = 251, 30MHz to 10GHz)



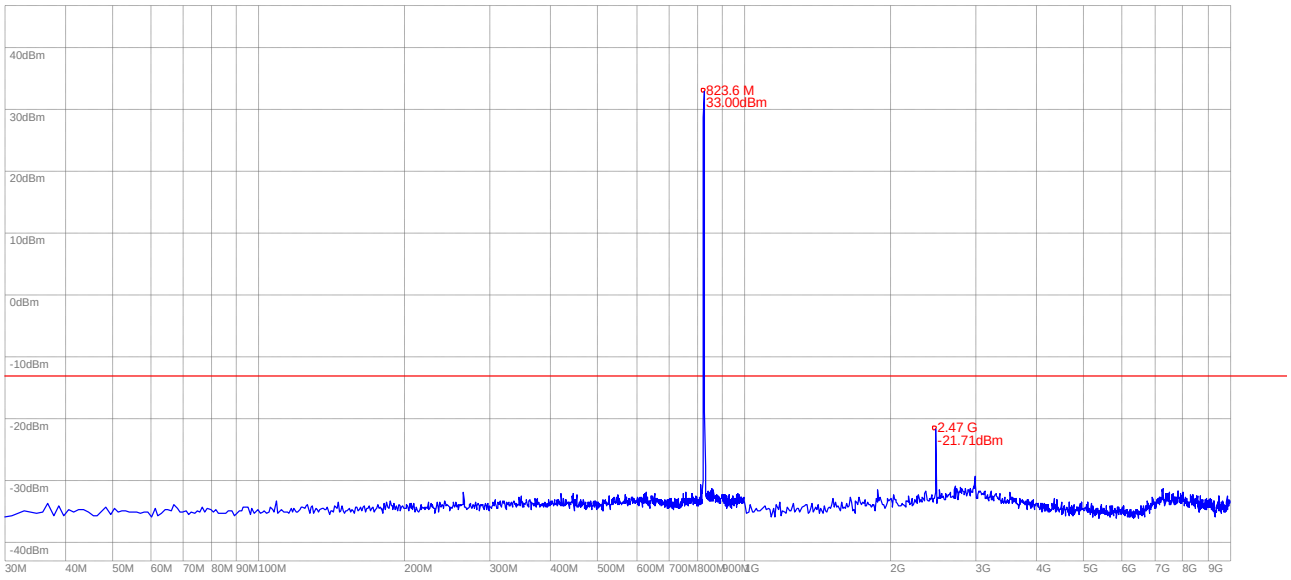
(Plot D: GSM 1900MHz Channel = 512, 30MHz to 20GHz)



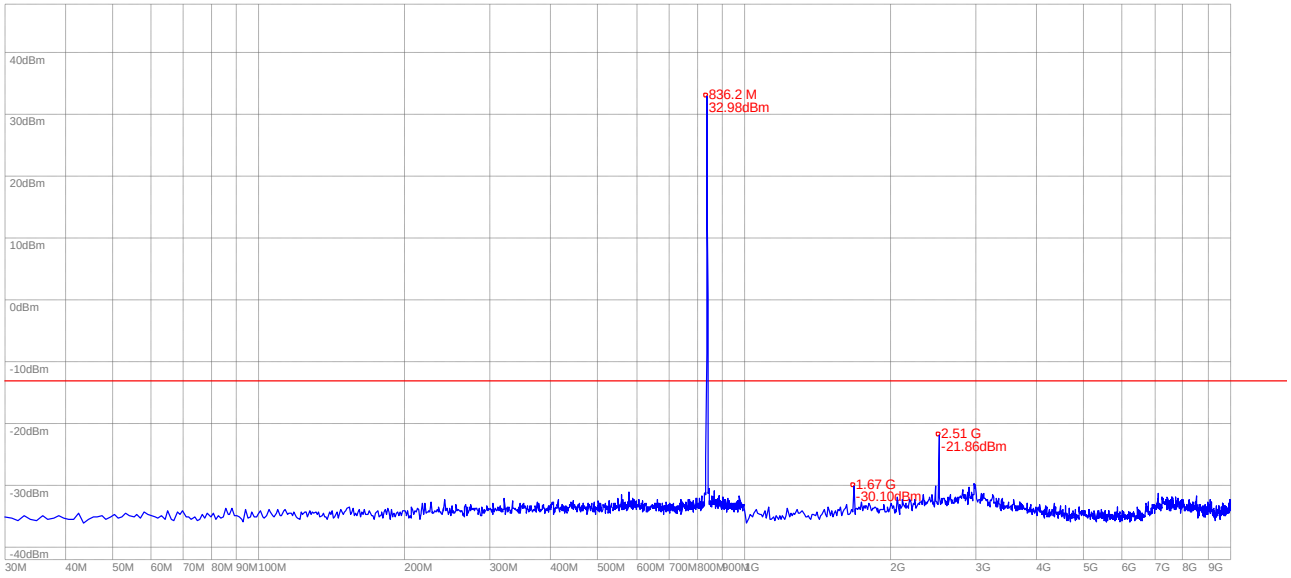
(Plot E: GSM 1900MHz Channel = 661, 30MHz to 20GHz)



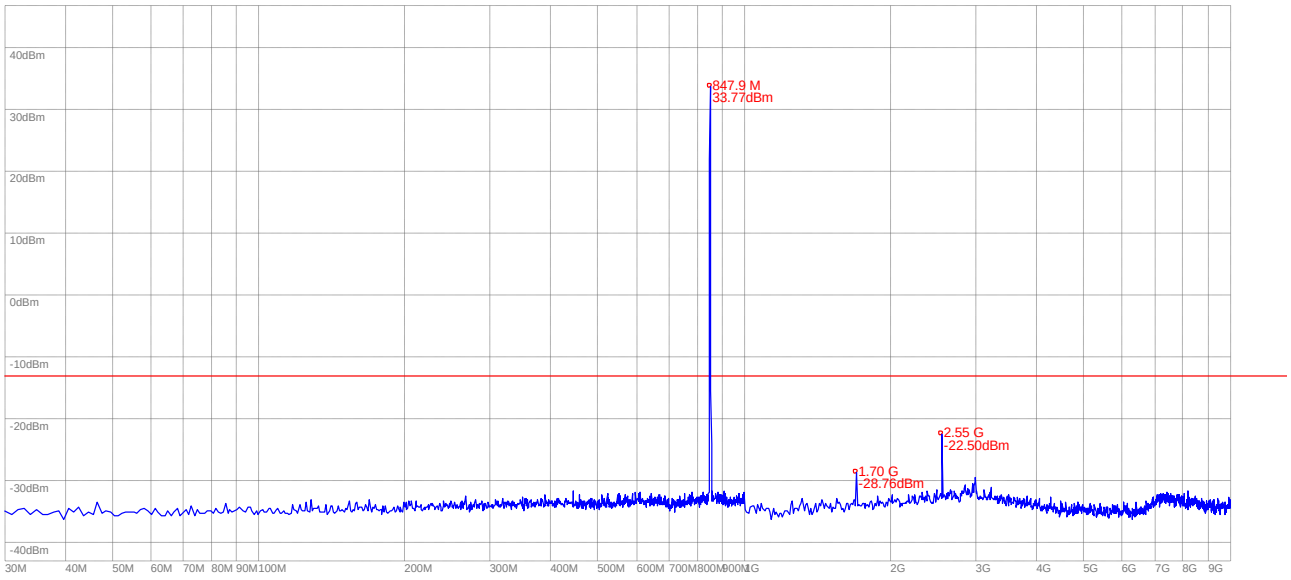
(Plot F: GSM 1900MHz Channel = 810, 30MHz to 20GHz)



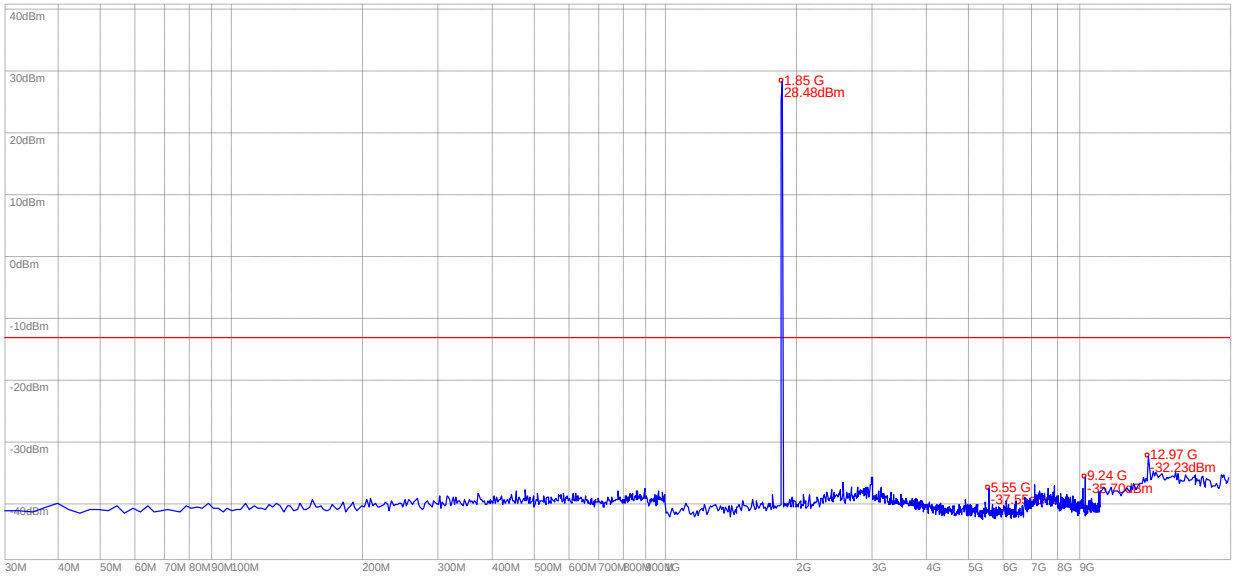
(Plot G: EDGE 850MHz Channel = 128, 30MHz to 10GHz)



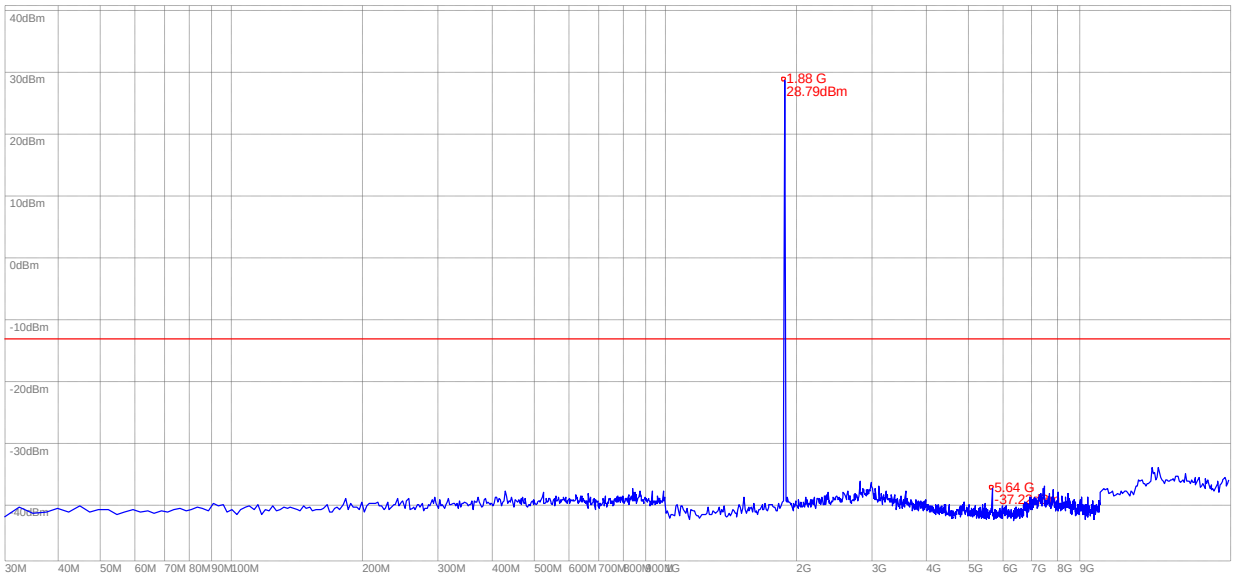
(Plot H: EDGE 850MHz Channel = 190, 30MHz to 10GHz)



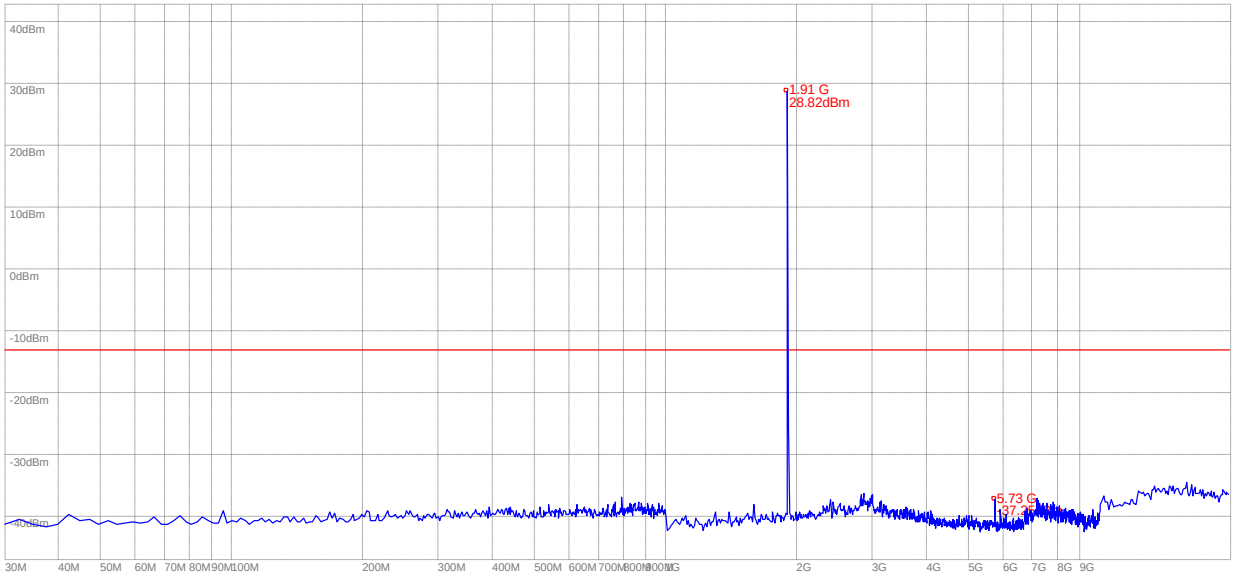
(Plot I: EDGE 850MHz Channel = 251, 30MHz to 10GHz)



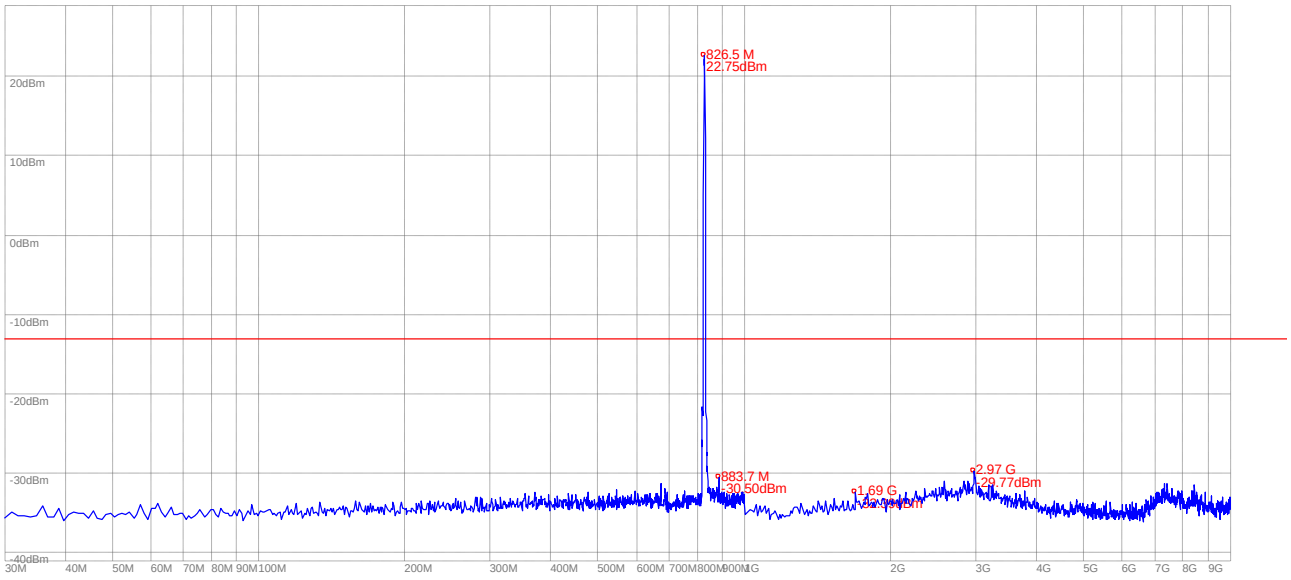
(Plot J: EDGE 1900MHz Channel = 512, 30MHz to 20GHz)



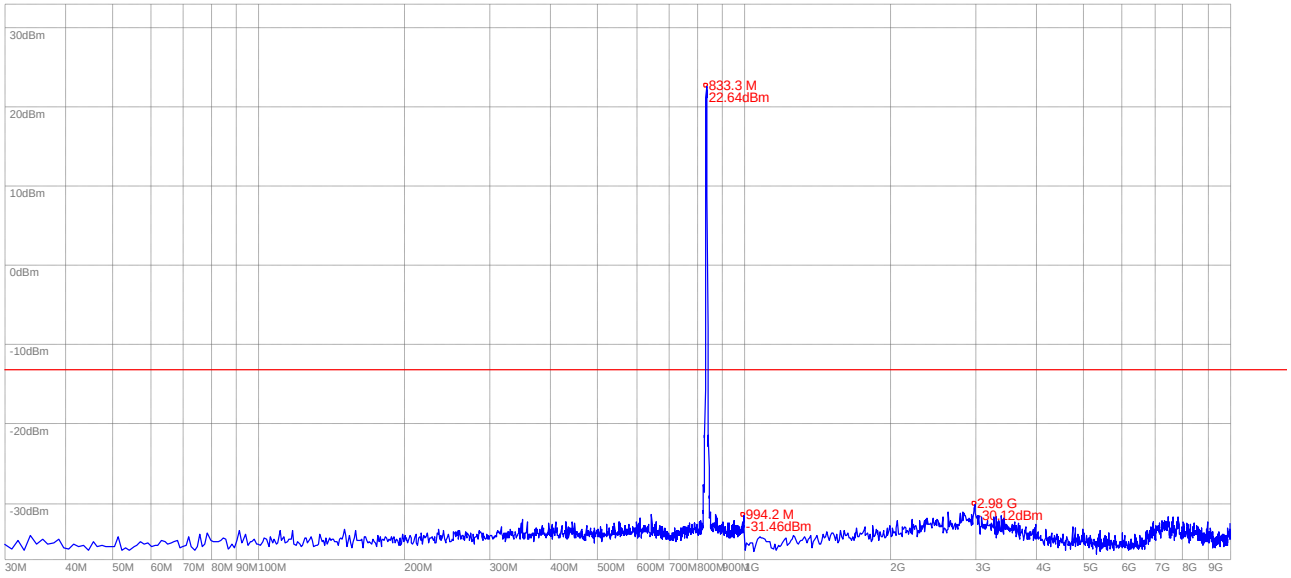
(Plot K: EDGE 1900MHz Channel = 661, 30MHz to 20GHz)



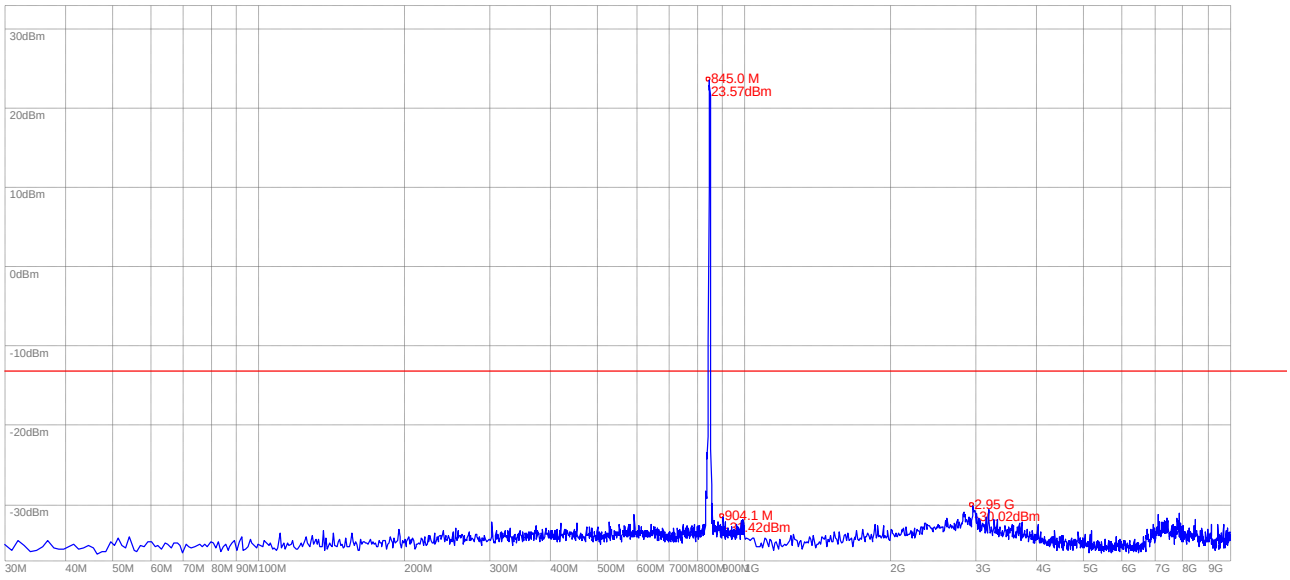
(Plot L: EDGE 1900MHz Channel = 810, 30MHz to 20GHz)



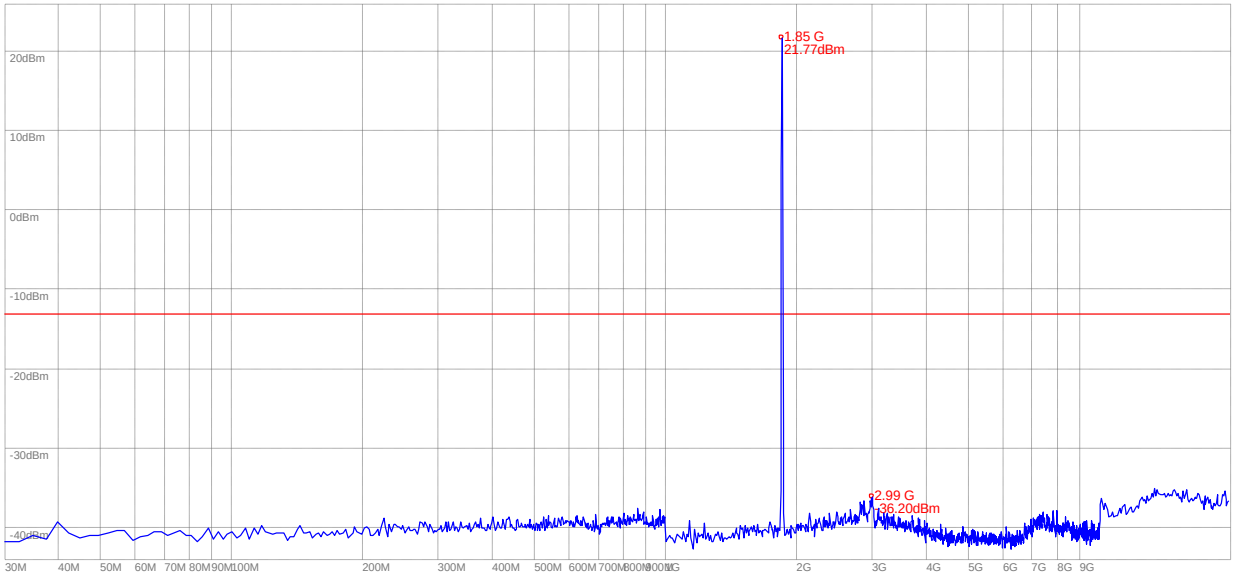
(Plot M: WCDMA 850MHz Channel = 4357, 30MHz to 10GHz)



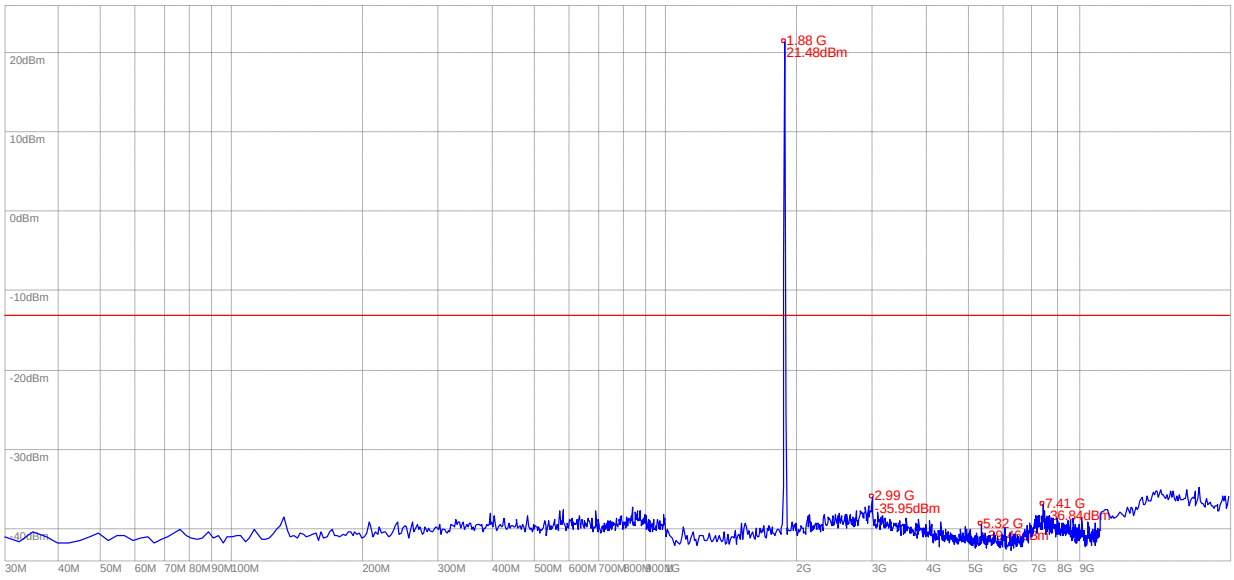
(Plot N: WCDMA 850MHz Channel = 4400, 30MHz to 10GHz)



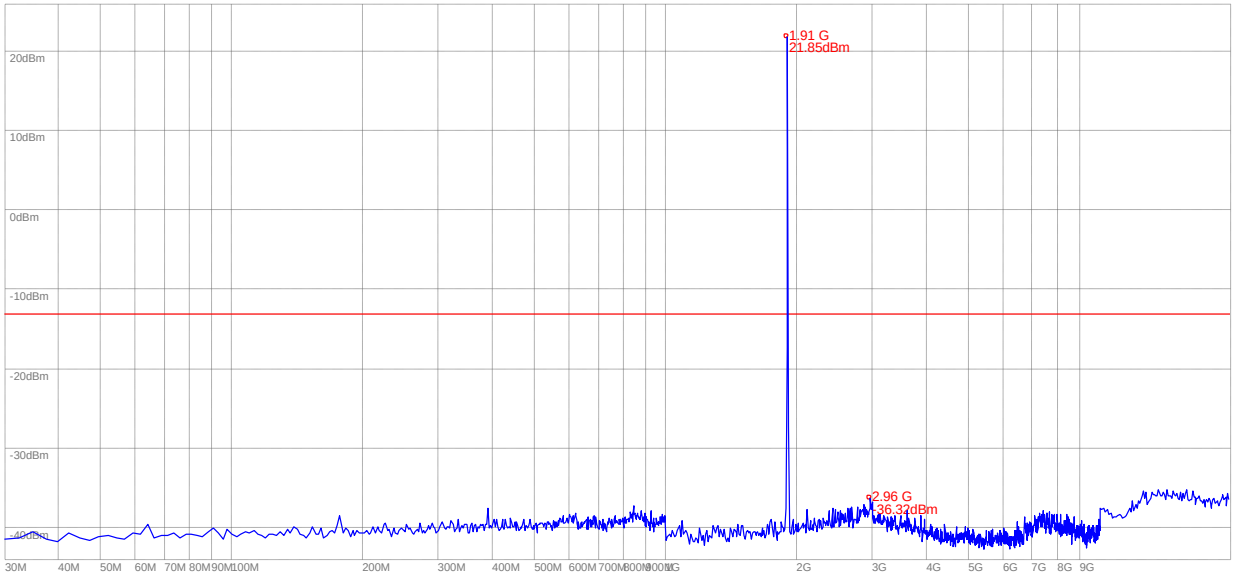
(Plot O: WCDMA 850MHz Channel = 4458, 30MHz to 10GHz)



(Plot P: WCDMA 1900MHz Channel = 9662, 30MHz to 20GHz)



(Plot Q: WCDMA 1900MHz Channel = 9800, 30MHz to 20GHz)



(Plot R: GSM 1900MHz Channel = 9938, 30MHz to 20GHz)

3.5 Band Edge

3.5.1 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.

3.5.2 Test Description

See section 3.1.2 of this report.

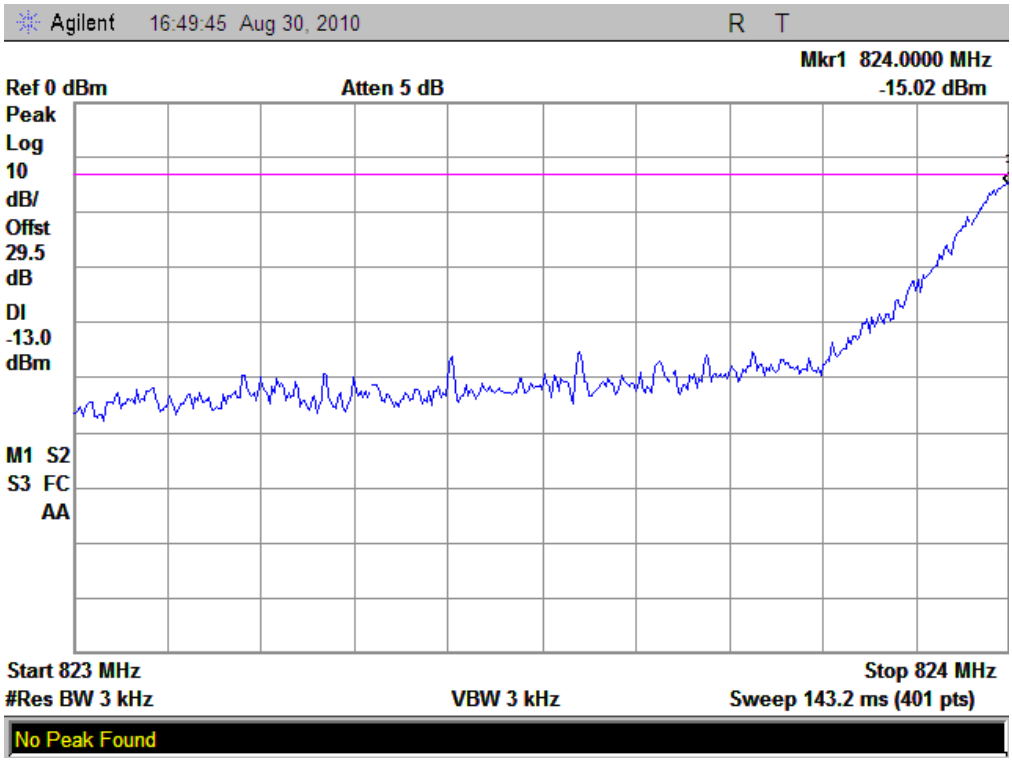
3.5.3 Test Result

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

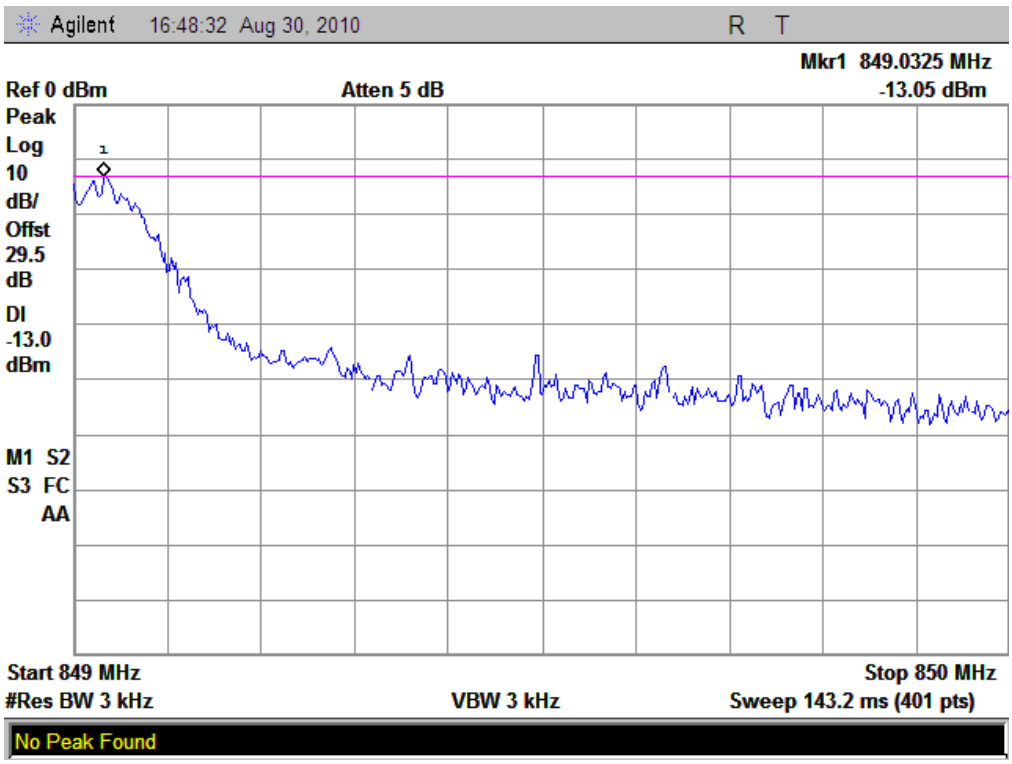
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-15.02	Plat A	-13	PASS
	251	848.8	-13.05	Plot B		PASS
GSM 1900MHz	512	1850.2	-20.72	Plat C	-13	PASS
	810	1909.8	-17.28	Plot D		PASS
EDGE 850MHz	128	824.2	-14.67	Plat E	-13	PASS
	251	848.8	-13.52	Plot F		PASS
EDGE 1900MHz	512	1850.2	-16.27	Plat G	-13	PASS
	810	1909.8	-16.92	Plot H		PASS
WCDMA 850MHz	4132	823.98	-26.4	Plat I	-13	PASS
	4233	849.04	-23.66	Plot J		PASS
WCDMA 1900MHz	9262	1849.98	-25.68	Plat K	-13	PASS
	9538	1910.00	-26.53	Plot L		PASS

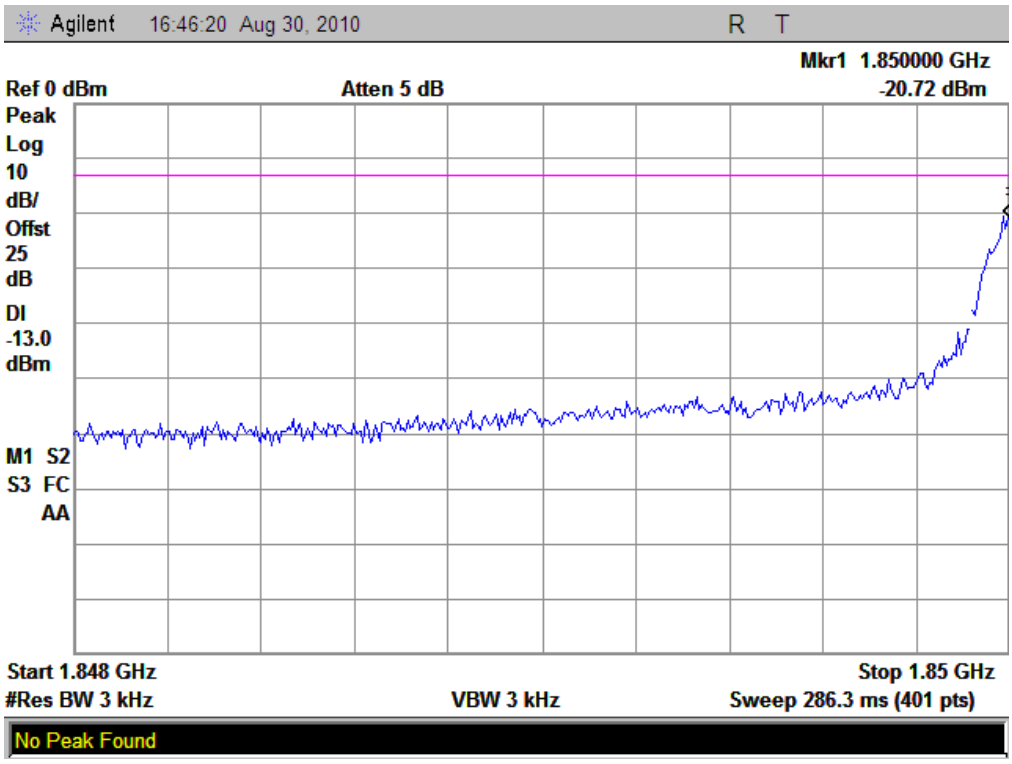
2. Test Plots:



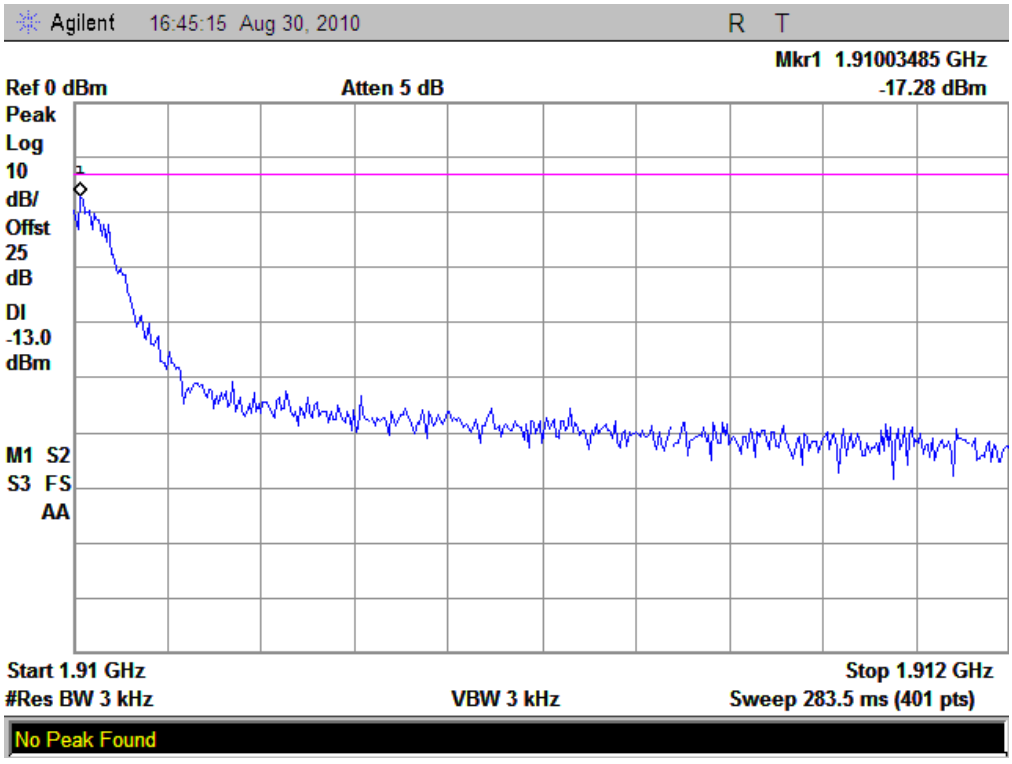
(Plot A: GSM850 Channel = 128)



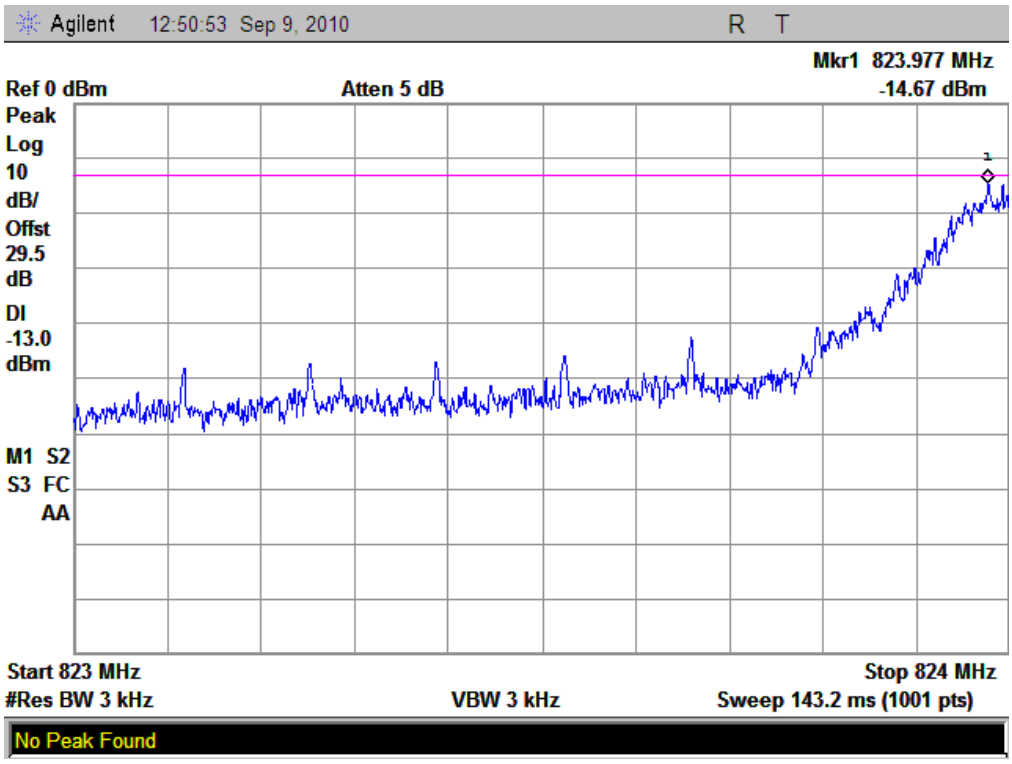
(Plot B: GSM850 Channel = 251)



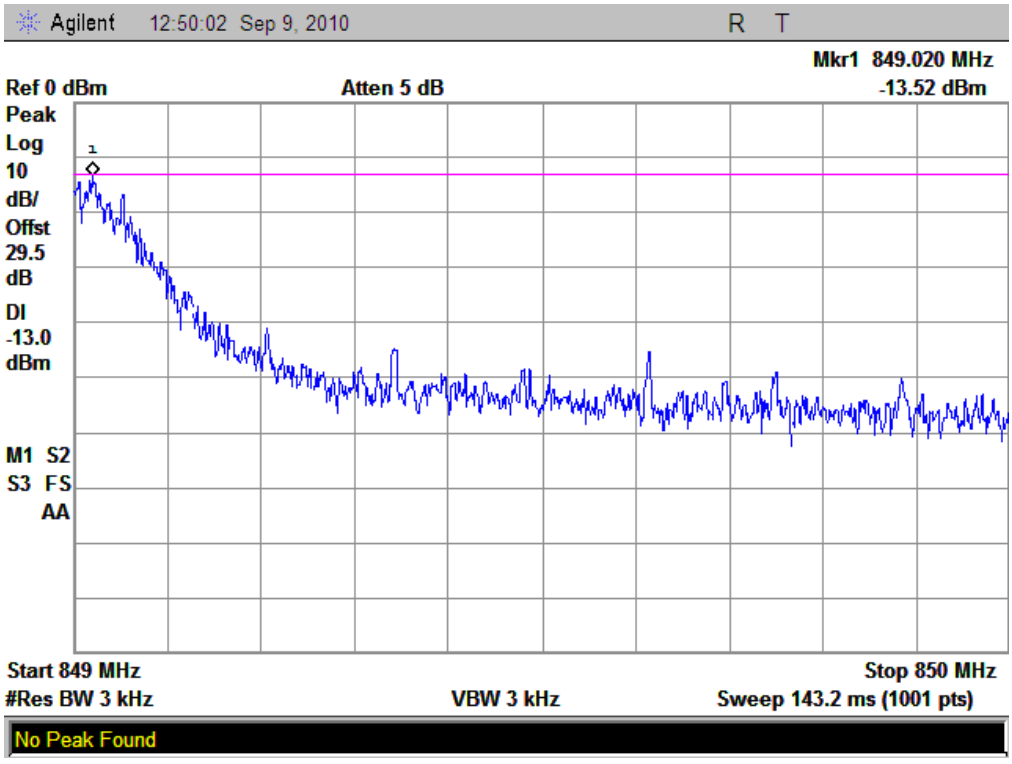
(Plot C: GSM1900 Channel = 512)



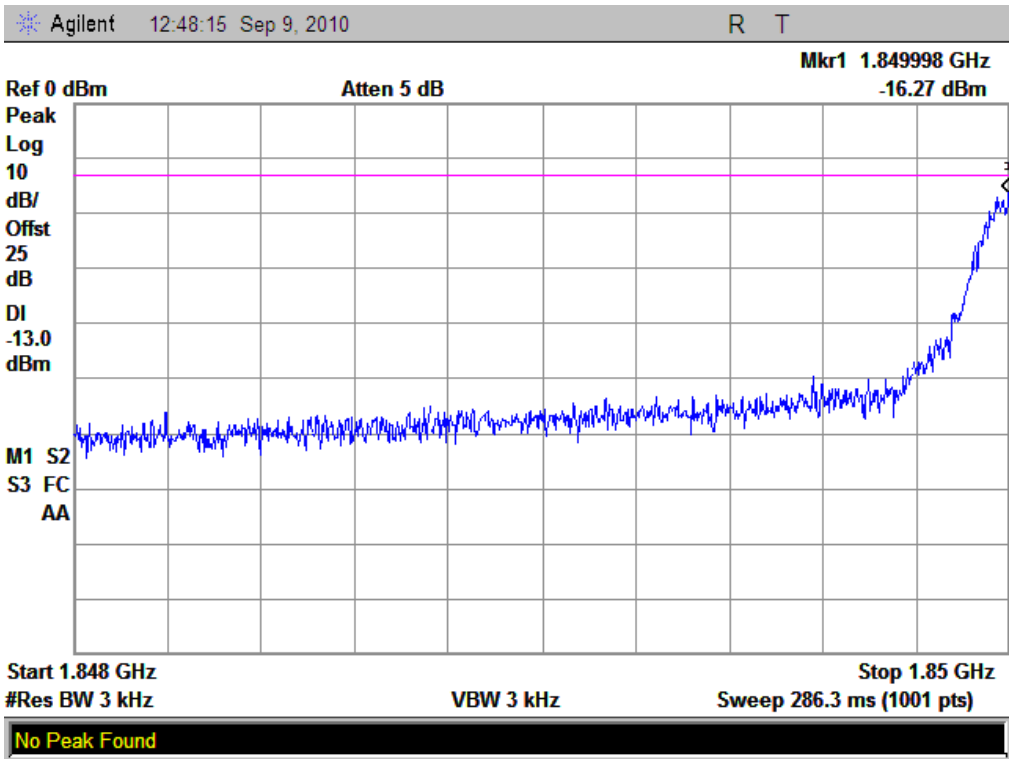
(Plot D: GSM1900 Channel = 810)



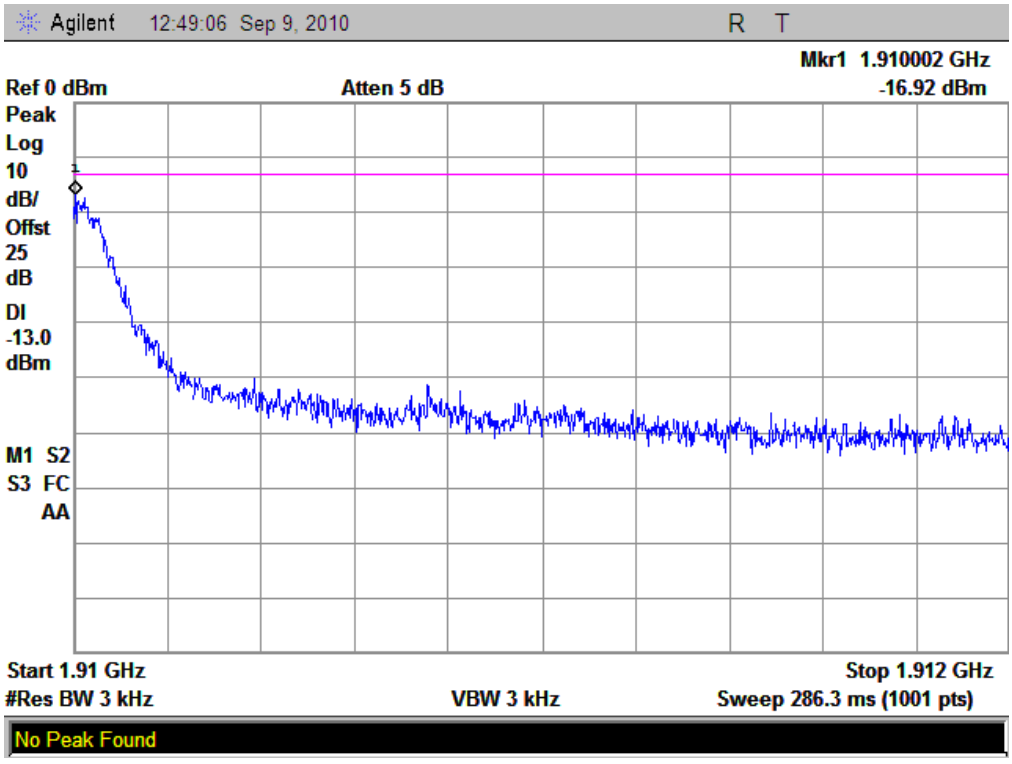
(Plot E: EDGE 850MHz Channel = 128)



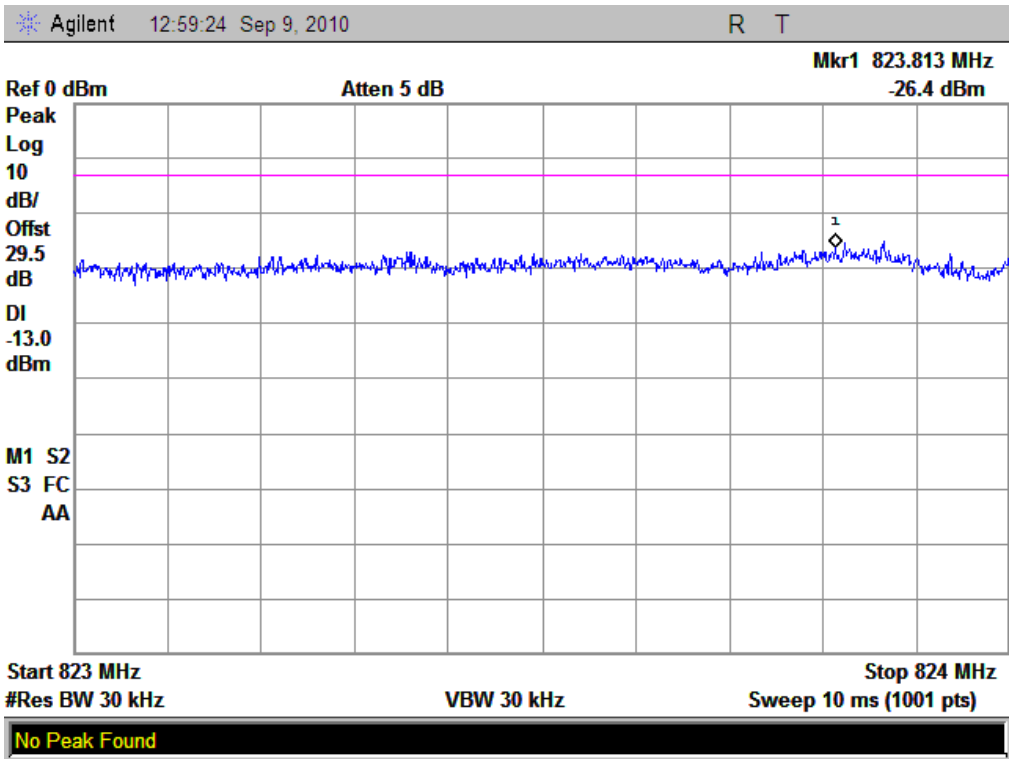
(Plot F: EDGE 850MHz Channel = 251)



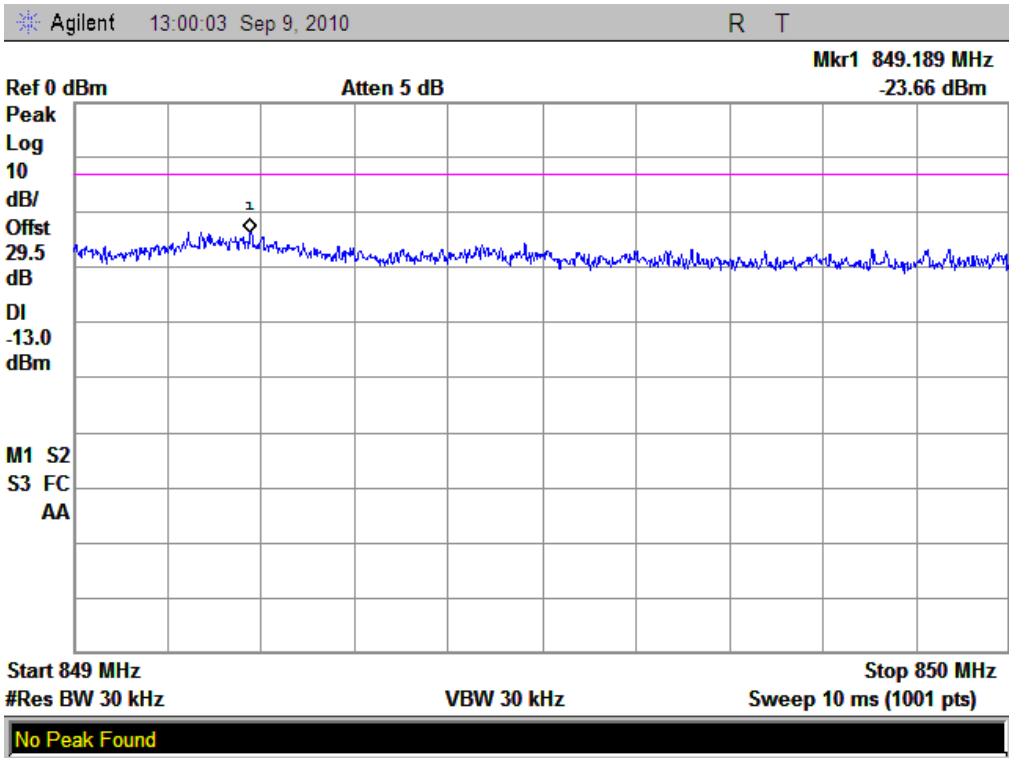
(Plot G: EDGE 1900MHz Channel = 512)



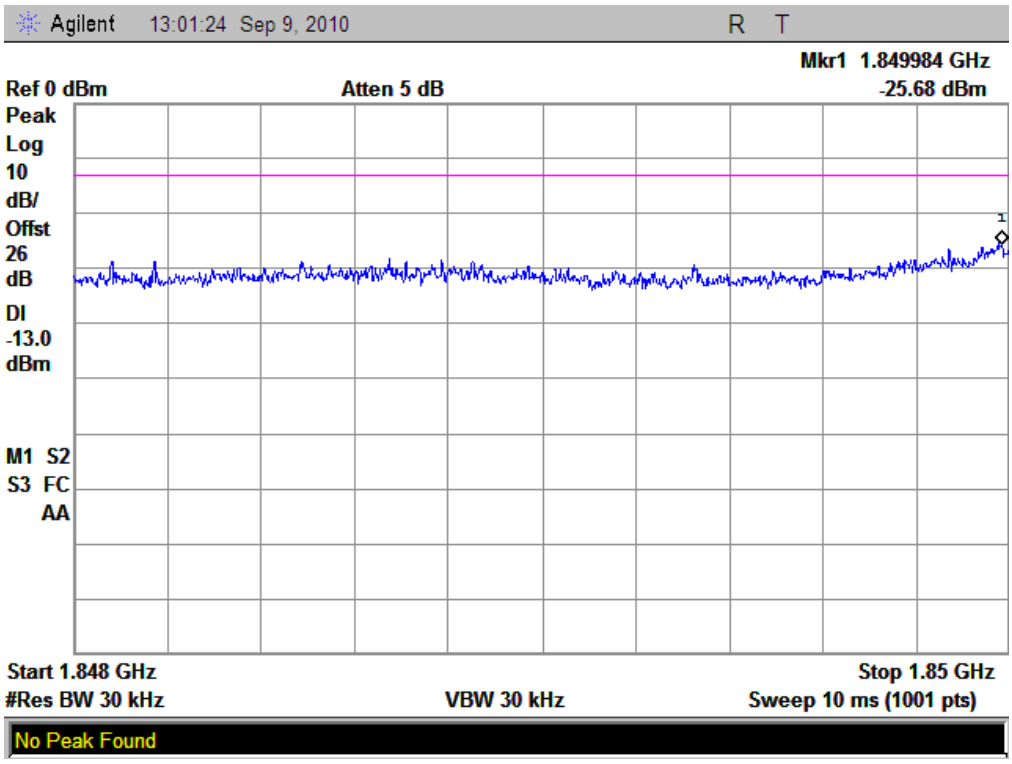
(Plot H: EDGE 1900MHz Channel = 810)



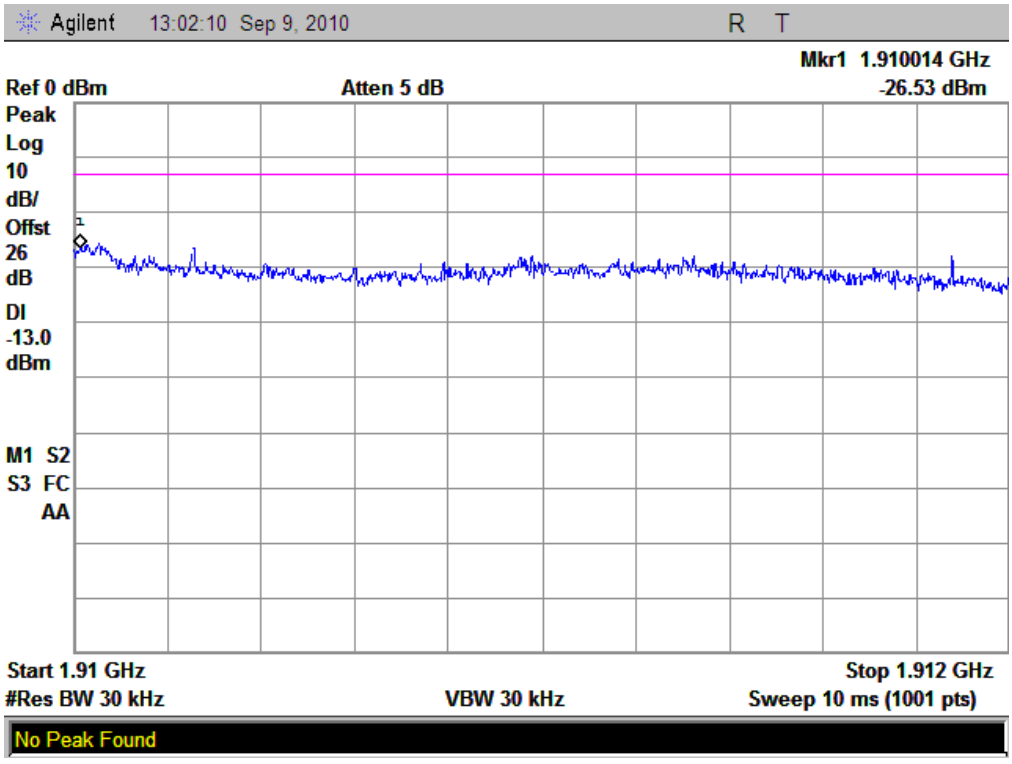
(Plot I: WCDMA 850MHz Channel = 4357)



(Plot J: WCDMA 850MHz Channel = 4458)



(Plot K: WCDMA 1900MHz Channel = 9662)



(Plot L: WCDMA 1900MHz Channel = 9938)

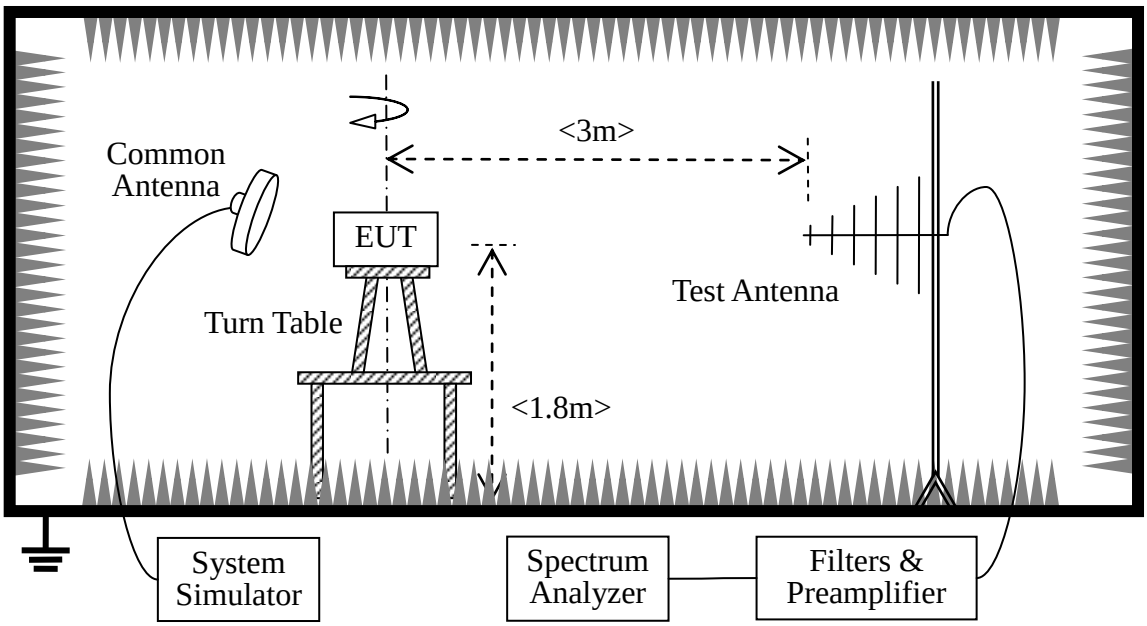
3.6 Transmitter Radiated Power (EIRP/ERP)

3.6.1 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.

3.6.2 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.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded.

-Maximum RF output power: GSM850 31.95dBm, GSM 1900 29.02dBm, Please refer to section 3.1.3 of this report.

- Step size (dB): 3dB

- Minimum RF power: GSM850 4.23dBm, GSM 1900 -4.93dBm

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
System Simulator	Agilent	E5515C	GB43130131	2009.09	1year
Spectrum Analyzer	Agilent	E7405A	US44210471	2009.09	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2009.09	2year
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2009.09	1year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2009.09	1year

3.6.3 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.

The substitution corrections are obtained as described below:

$A_{SUBST} = P_{SUBST\_TX} - P_{SUBST\_RX} - L_{SUBST\_CABLES} + G_{SUBST\_TX\_ANT}$

$A_{TOT} = L_{CABLES} + A_{SUBST}$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

$G_{SUBST\_TX\_ANT}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of A_{TOT}.

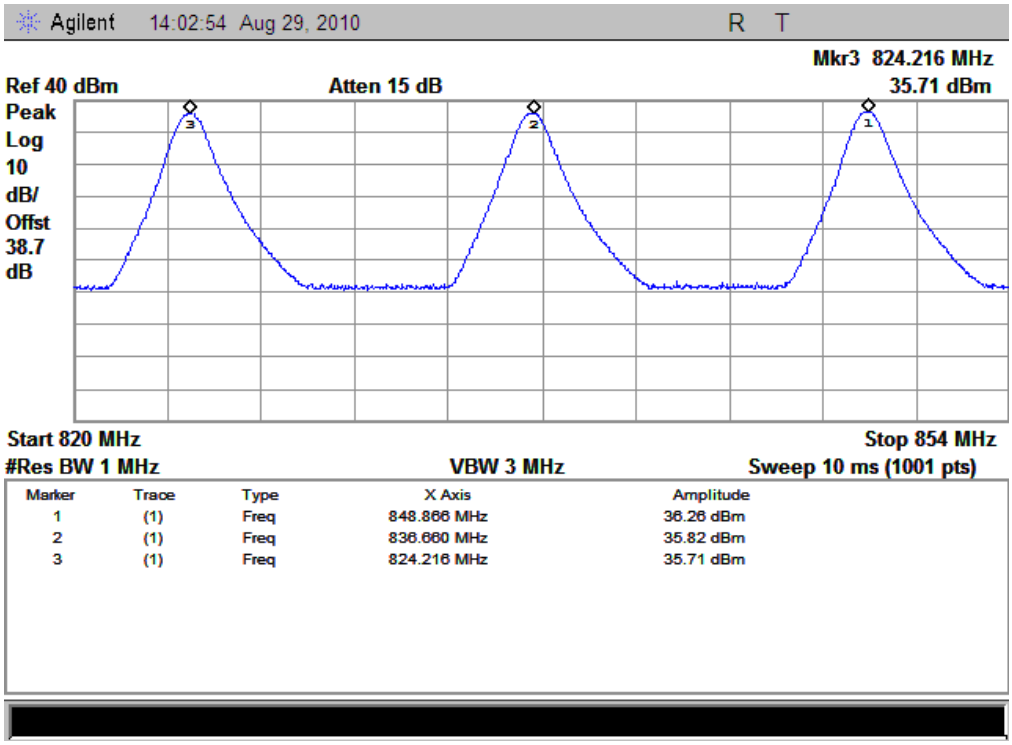
1. Test Verdict:

Band	Channel	Frequency (MHz)	PCL	Measured ERP/EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 850MHz	128	824.20	5	36.26	4.23	Plot A	38.45	7	PASS
	190	836.60	5	35.82	3.82				PASS
	251	848.80	5	35.71	3.72				PASS
GSM 1900MHz	512	1850.2	0	27.77	0.60	Plot B	33	2	PASS
	661	1880.0	0	30.38	1.09				PASS
	810	1909.8	0	31.86	1.53				PASS
GPRS 850MHz	128	824.20	5	34.78	3.01	Plot C	38.45	7	PASS
	190	836.60	5	34.37	2.74				PASS
	251	848.80	5	34.81	3.03				PASS
GPRS 1900MHz	512	1850.2	0	27.2	0.52	Plot D	33	2	PASS
	661	1880.0	0	28.86	0.77				PASS
	810	1909.8	0	30.85	1.22				PASS
EDGE 850MHz	128	824.20	5	34.25	2.66	Plot E	38.45	7	PASS
	190	836.60	5	34.63	2.90				PASS
	251	848.80	5	35.04	3.19				PASS
EDGE 1900MHz	512	1850.2	0	31.09	1.29	Plot F	33	2	PASS
	661	1880.0	0	28.52	0.71				PASS
	810	1909.8	0	26.58	0.45				PASS

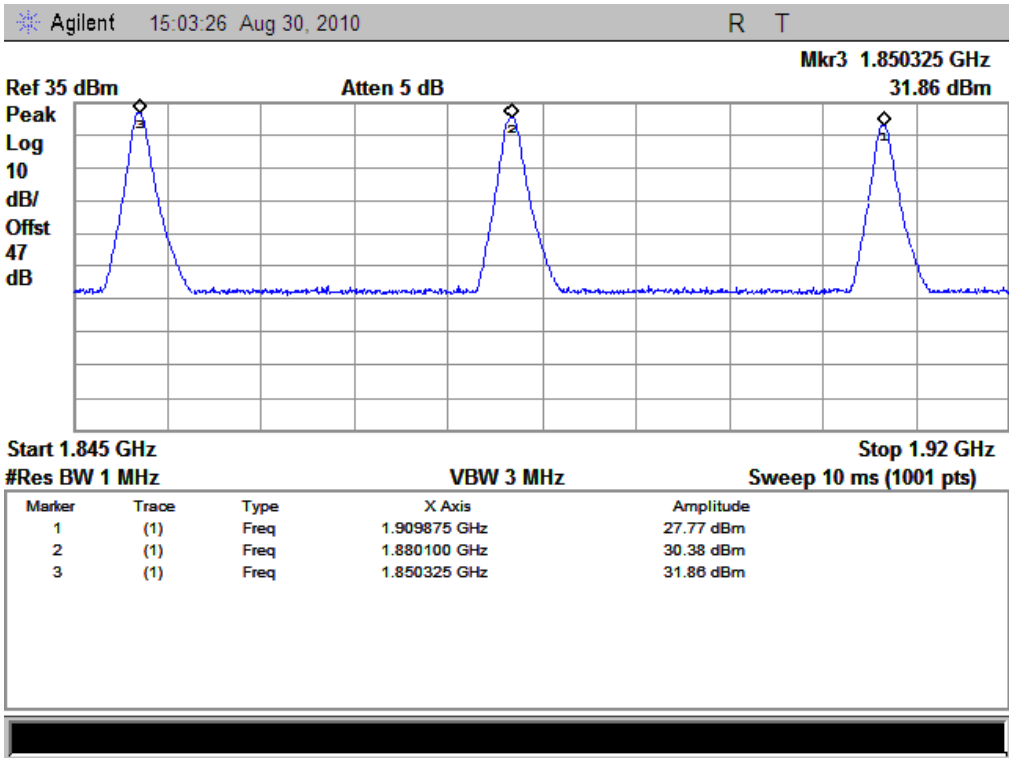
Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA 850MHz	4357	826.4	27.02	0.50	38.5	7	PASS
	4400	835	26.1	0.41			PASS
	4458	846.6	26.09	0.41			PASS
WCDMA 1900MHz	9662	1852.4	23.5	0.22	33	2	PASS
	9800	1880	22.78	0.19			PASS
	9938	1907.6	21.58	0.14			PASS
HSDPA 850MHz	4357	826.4	26.45	0.44	38.5	7	PASS
	4400	835	25.92	0.39			PASS
	4458	846.6	25.87	0.39			PASS
HSDPA 1900MHz	9662	1852.4	20.92	0.12	33	2	PASS
	9800	1880	21.56	0.14			PASS
	9938	1907.6	22.01	0.16			PASS

Note: For the WCDMA and HSDPA test band, the measured output power was calculated by the reading of the Power Meter and calibration

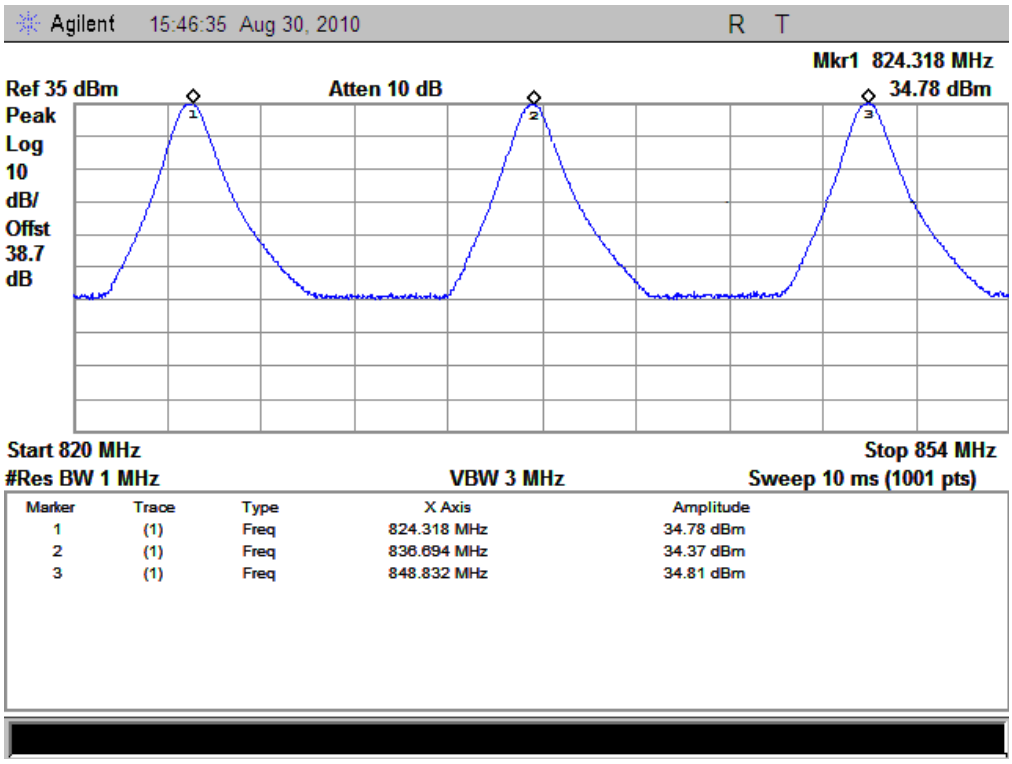
2. Test Plots:



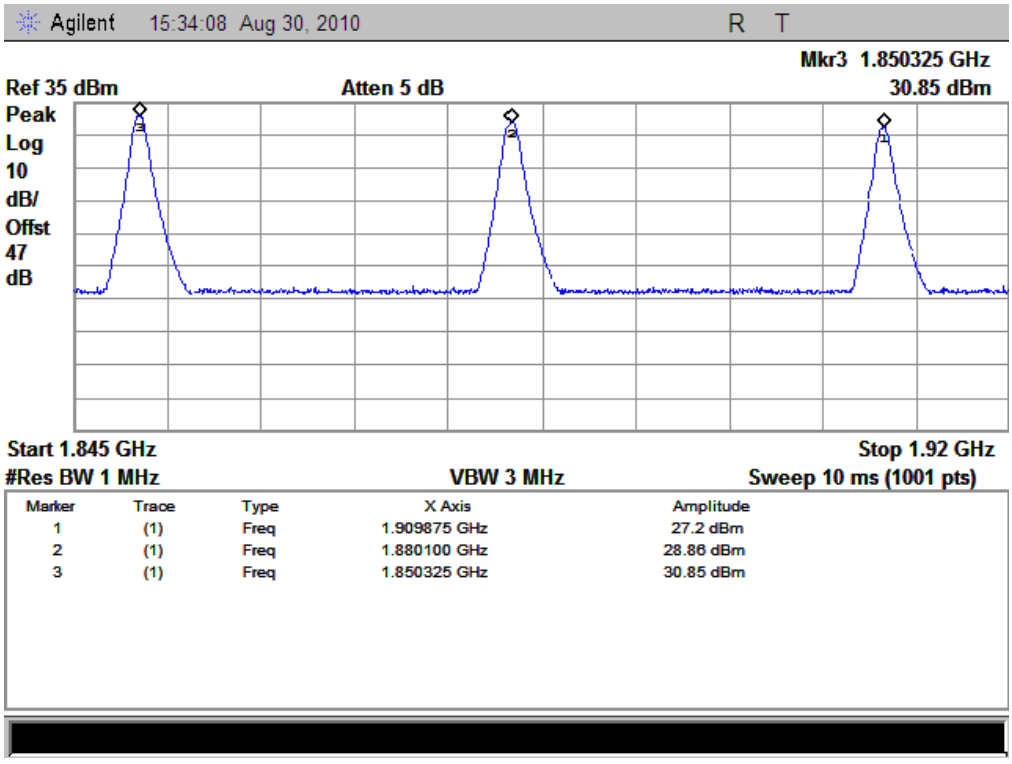
(Plot A: GSM 850MHz Channel = 128, 190, 251)



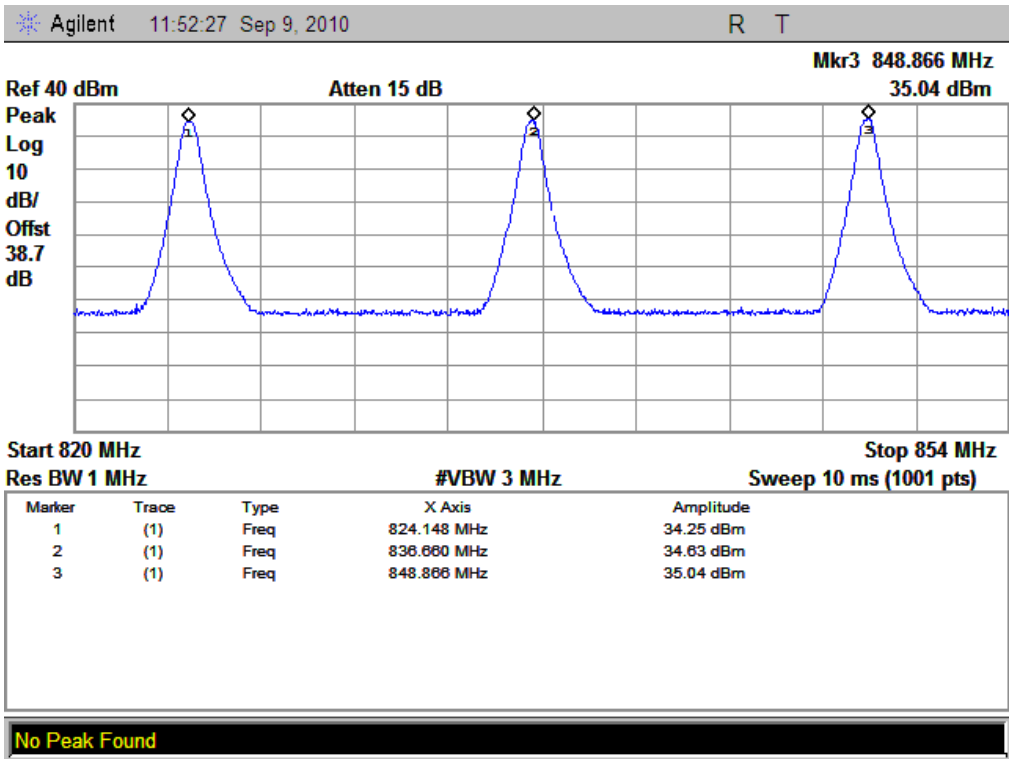
(Plot B: GSM 1900MHz Channel = 512, 661, 810)



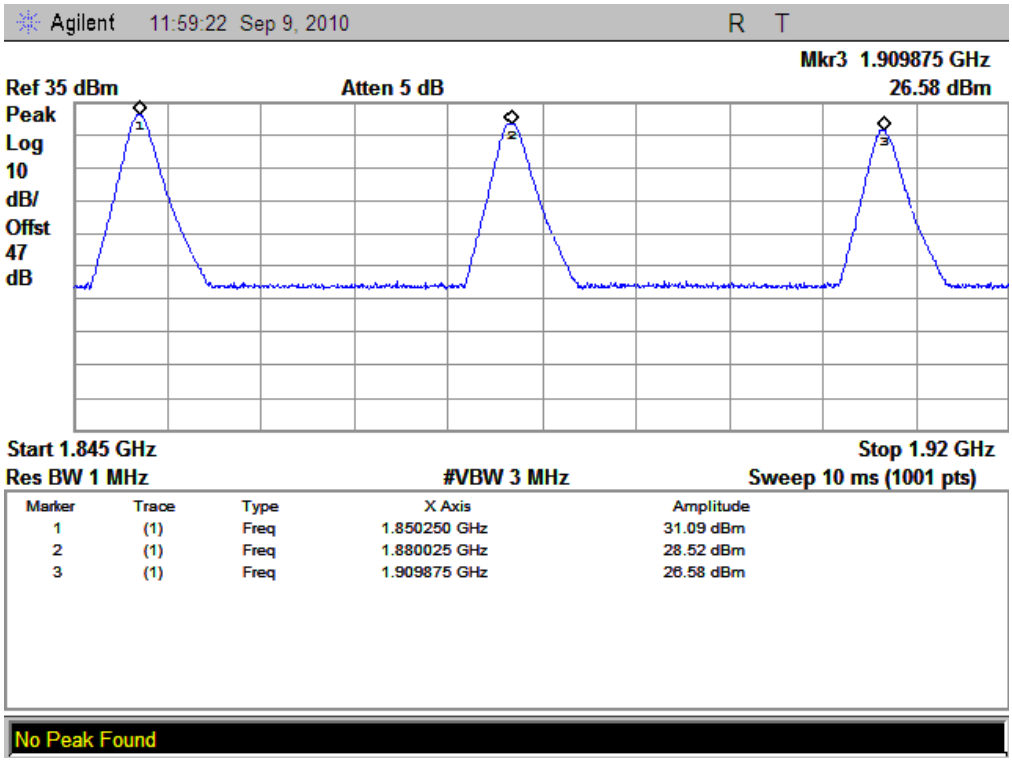
(Plot C: GPRS 850MHz Channel = 128, 190, 251)



(Plot D: GPRS 1900MHz Channel = 512, 661, 810)



(Plot E: EDGE 850MHz Channel = 128, 190, 251)



(Plot F: EDGE 1900MHz Channel = 512, 661, 810)

3.7 Radiated Out of Band Emissions

3.7.1 Requirement

According to FCC section 22.917(a) and 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.

3.7.2 Test Description

See section 3.7.2 of this report.

Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

3.7.3 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.

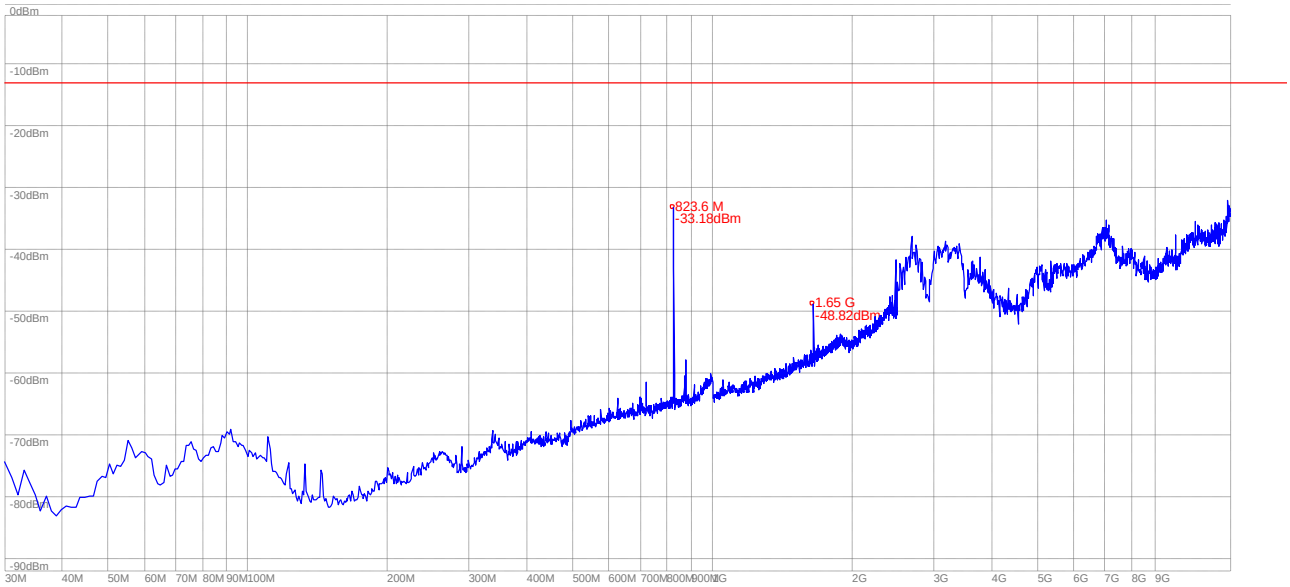
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
GSM 850MHz	128	824.2	-48.82	-45.8	Plot A.1/A.2	-13	PASS
	190	836.6	-43.41	-42.04	Plot B.1/B.2		PASS
	251	848.8	-31.87	-40.06	Plot C.1/C.2		PASS
GSM 1900MHz	512	1850.2	-19.49	-38.90	Plot D.1/D.2	-13	PASS
	661	1880.0	-23.52	-45.40	Plot E.1/E.2		PASS
	810	1909.8	-23.83	-49.90	Plot F.1/F.2		PASS
EDGE 850MHz	128	824.2	-44.19	-40.82	Plot G.1/G.2	-13	PASS
	190	836.6	-46.99	-40.0	Plot H.1/H.2		PASS
	251	848.8	-47.80	-41.40	Plot I.1/I.2		PASS
EDGE 1900MHz	512	1850.2	-36.96	-40.14	Plot J.1/J.2	-13	PASS
	661	1880.0	-55.05	-34.96	Plot K.1/K.2		PASS
	810	1909.8	-50.89	-49.13	Plot L.1/L.2		PASS
WCDMA	4357	826.4	< -25	< -25	Plot M.1/M.2	-13	PASS

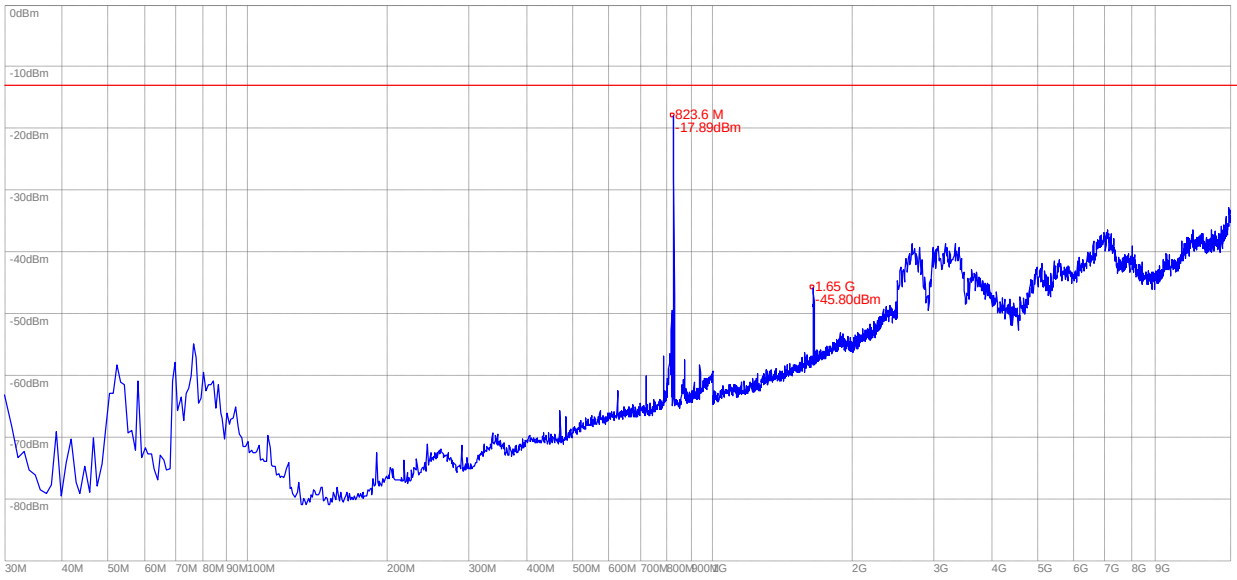
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
850MHz	4400	835	< -25	< -25	Plot N.1/N.2		PASS
	4458	846.6	< -25	< -25	Plot O.1/O.2		PASS
WCDMA 1900MHz	9662	1852.4	< -25	< -25	Plot P.1/P.2	-13	PASS
	9800	1880	< -25	< -25	Plot Q.1/Q.2		PASS
	9938	1907.6	< -25	< -25	Plot R.1/R.2		PASS

2. Test Plots for the Whole Measurement Frequency Range:

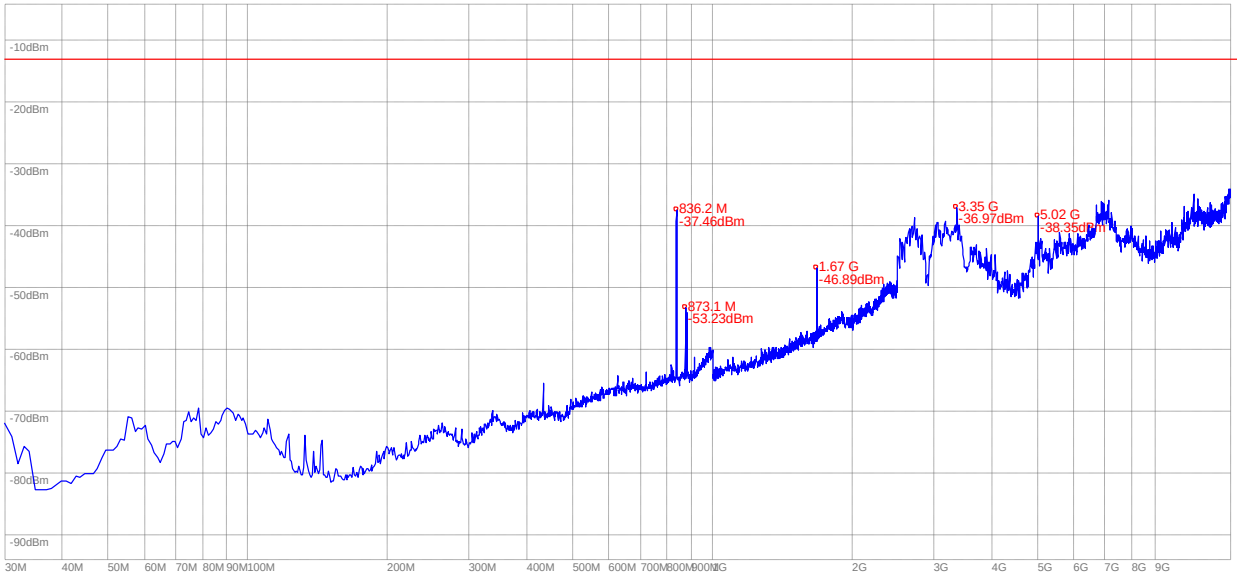
Note: the power of the EUT transmitting frequency should be ignored.



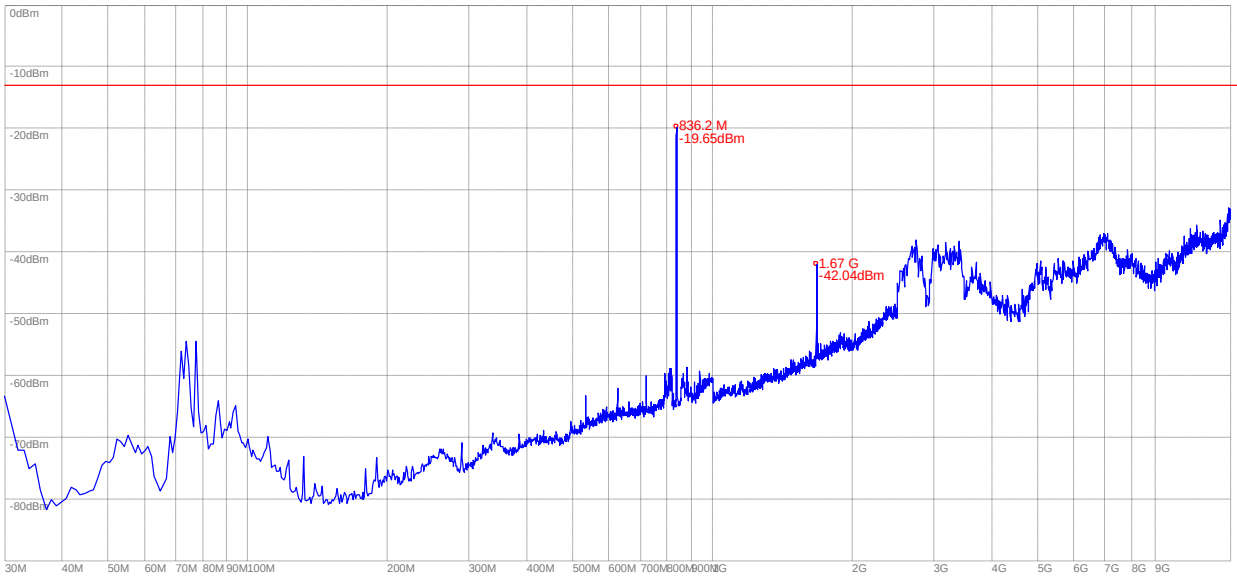
(Plot A.1: GSM 850MHz Channel = 128, Test Antenna Horizontal)



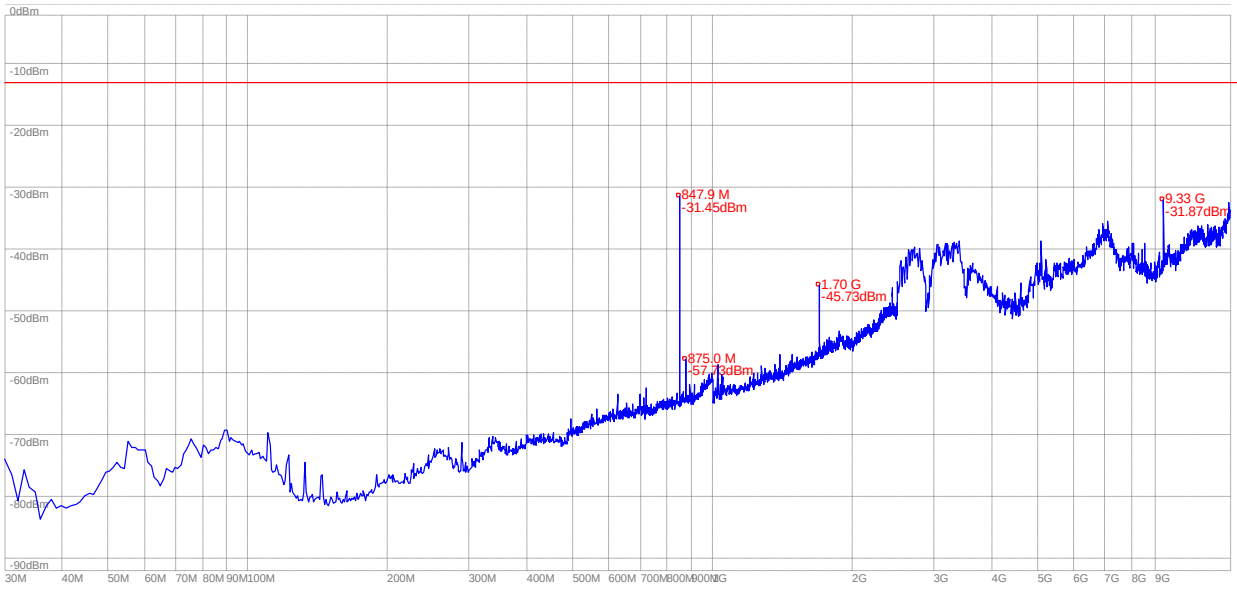
(Plot A.2: GSM 850MHz Channel = 128, Test Antenna Vertical)



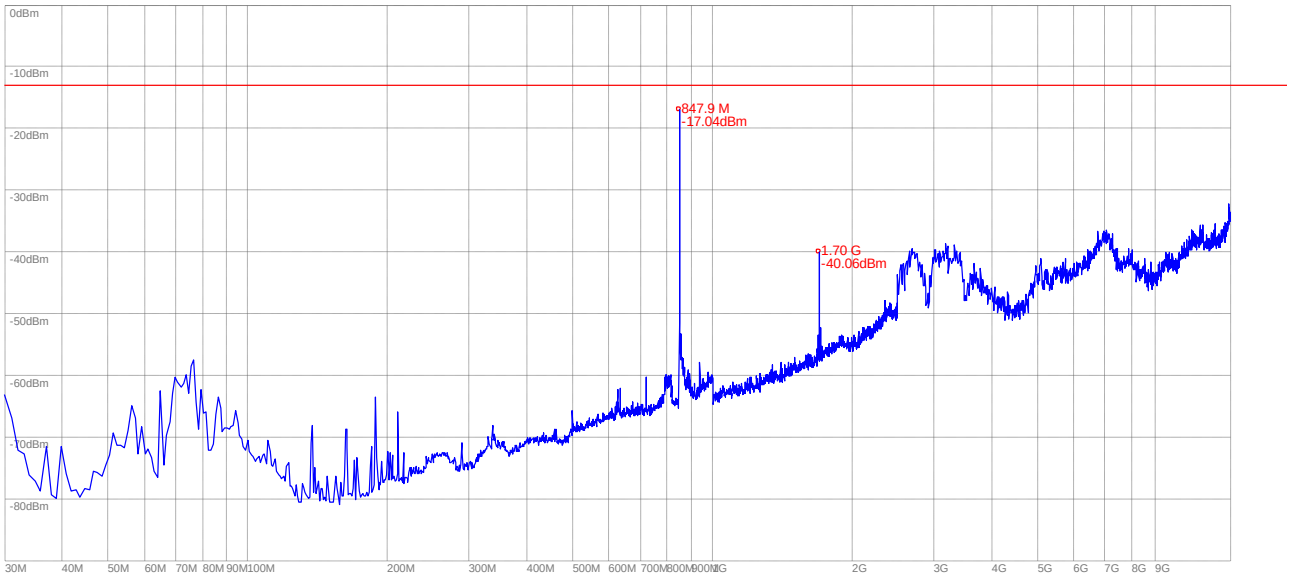
(Plot B.1: GSM 850MHz Channel = 190, Test Antenna Horizontal)



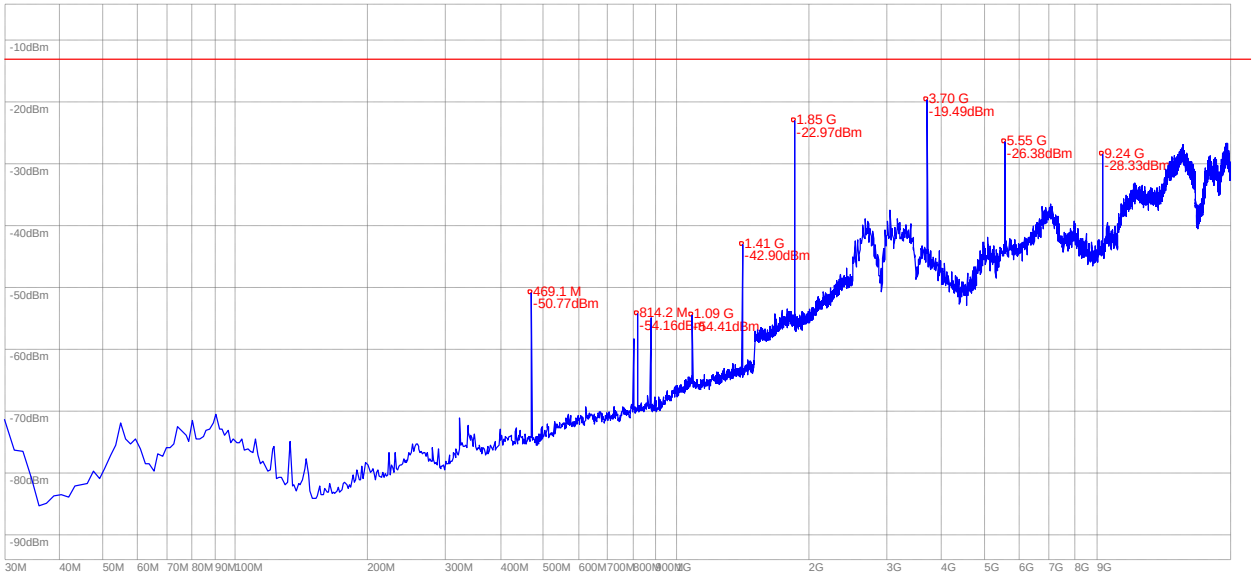
(Plot B.2: GSM 850MHz Channel = 190, Test Antenna Vertical)



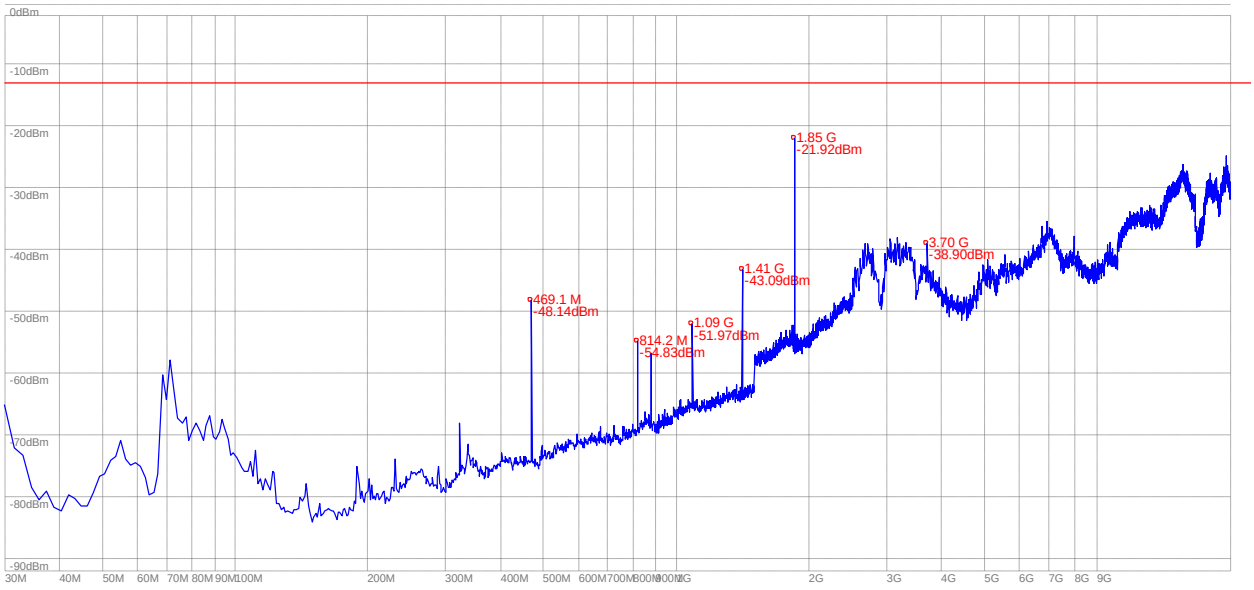
(Plot C.1: GSM 850MHz Channel = 251, Test Antenna Horizontal)



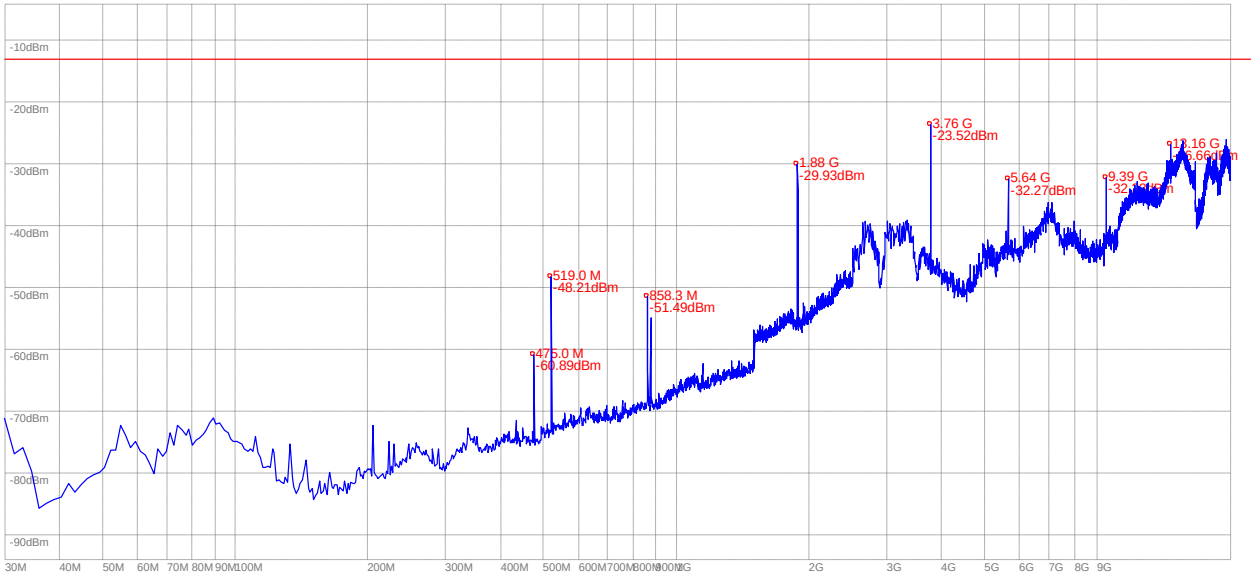
(Plot C.2: GSM 850MHz Channel = 251, Test Antenna Vertical)



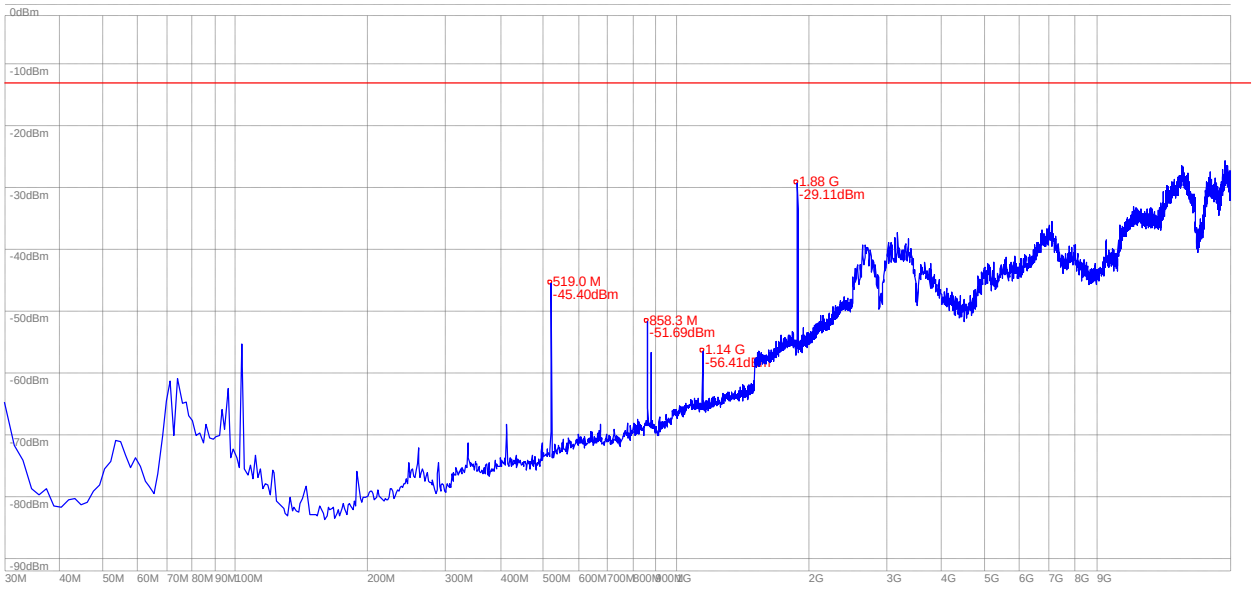
(Plot D.1: GSM 1900MHz Channel = 512, Test Antenna Horizontal)



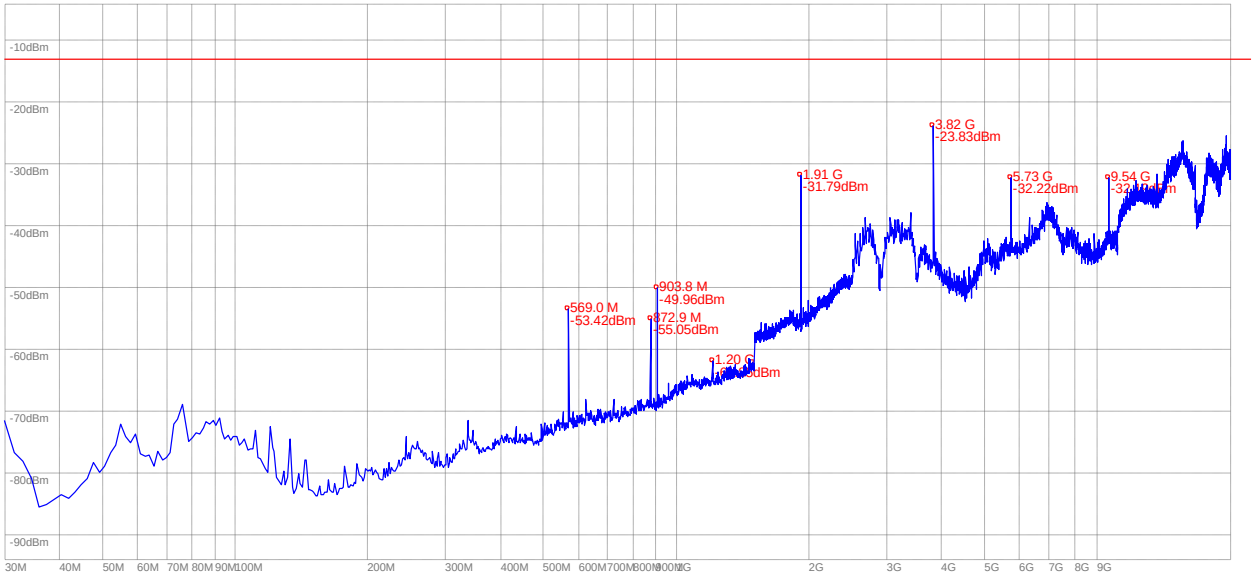
(Plot D.2: GSM 1900MHz Channel = 512, Test Antenna Vertical)



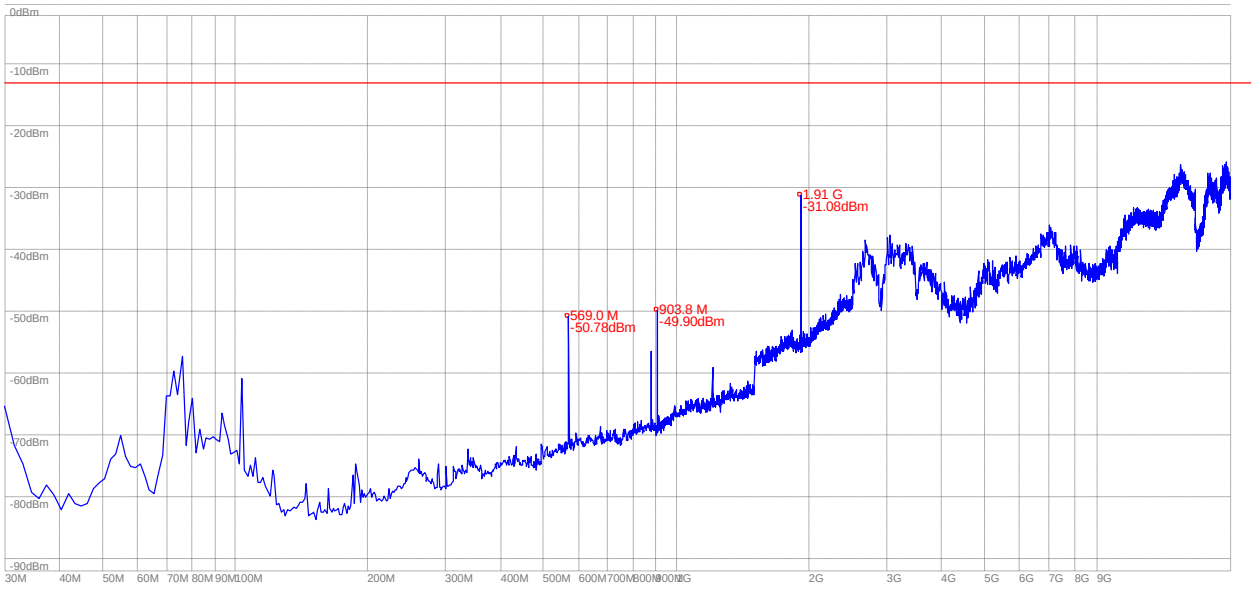
(Plot E.1: GSM 1900MHz Channel = 661, Test Antenna Horizontal)



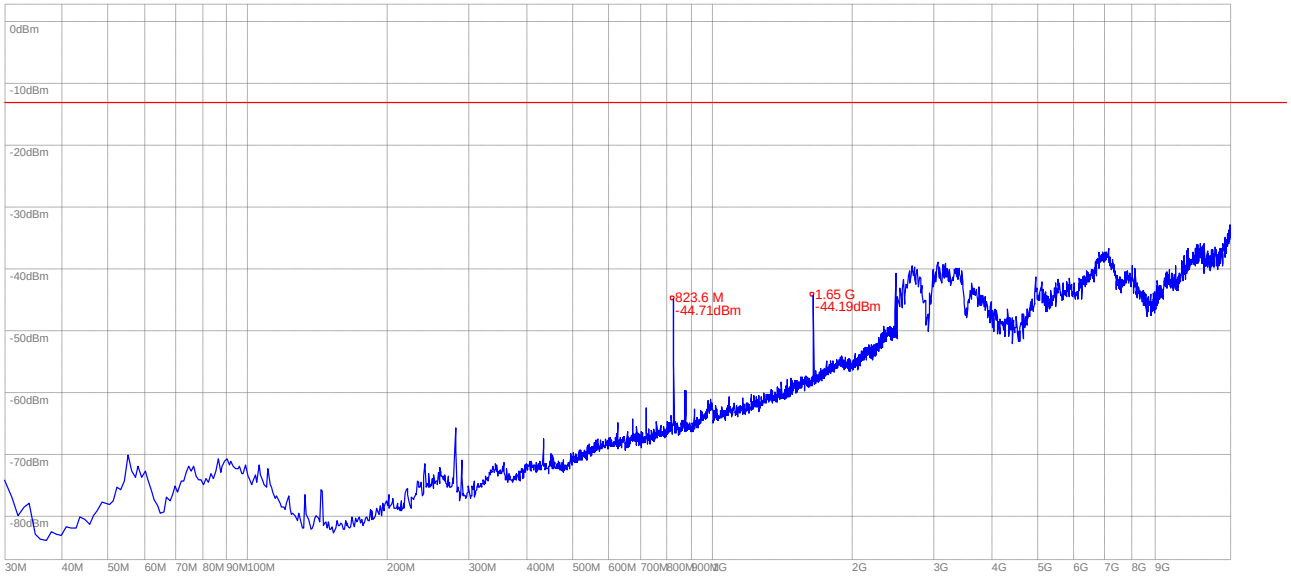
(Plot E.2: GSM 1900MHz Channel = 661, Test Antenna Vertical)



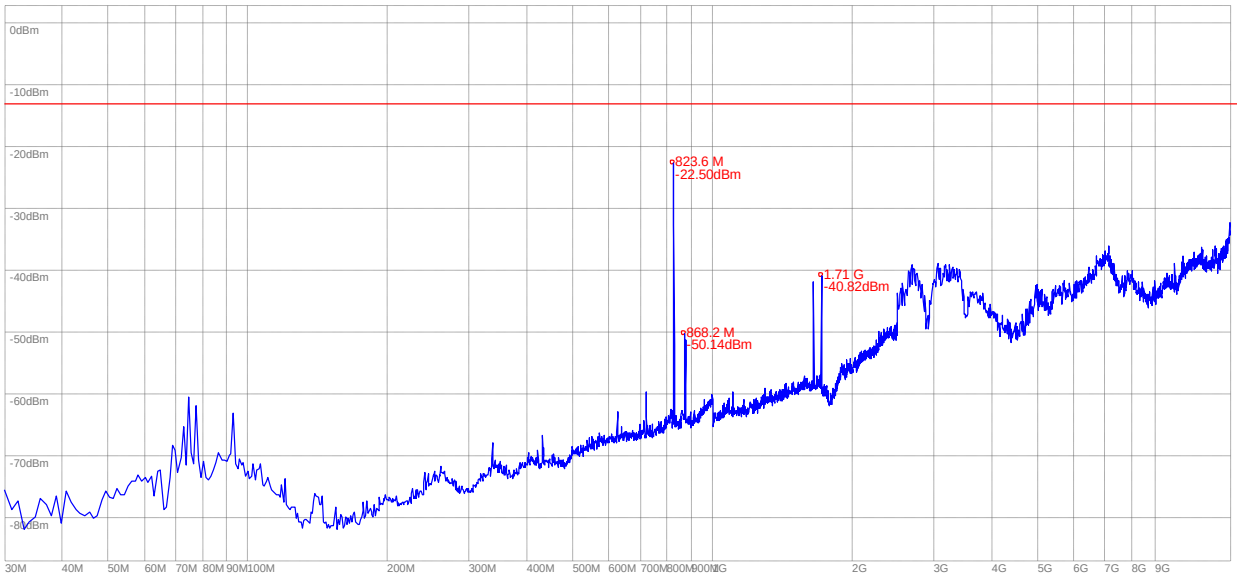
(Plot F.1: GSM 1900MHz Channel = 810, Test Antenna Horizontal)



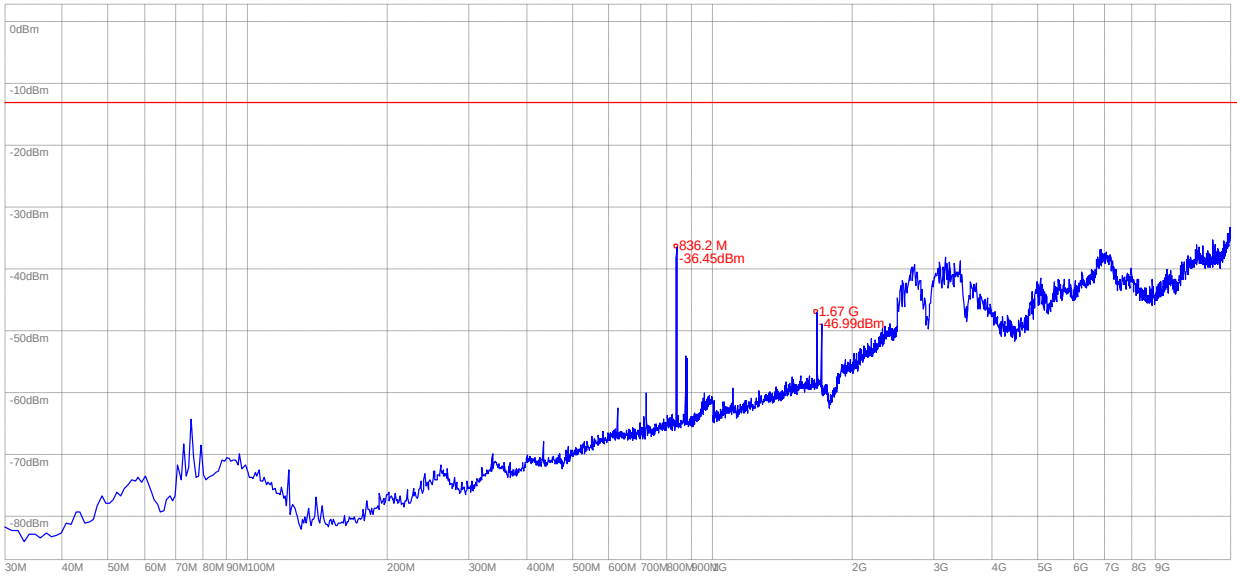
(Plot F.2: GSM 1900MHz Channel = 810, Test Antenna Vertical)



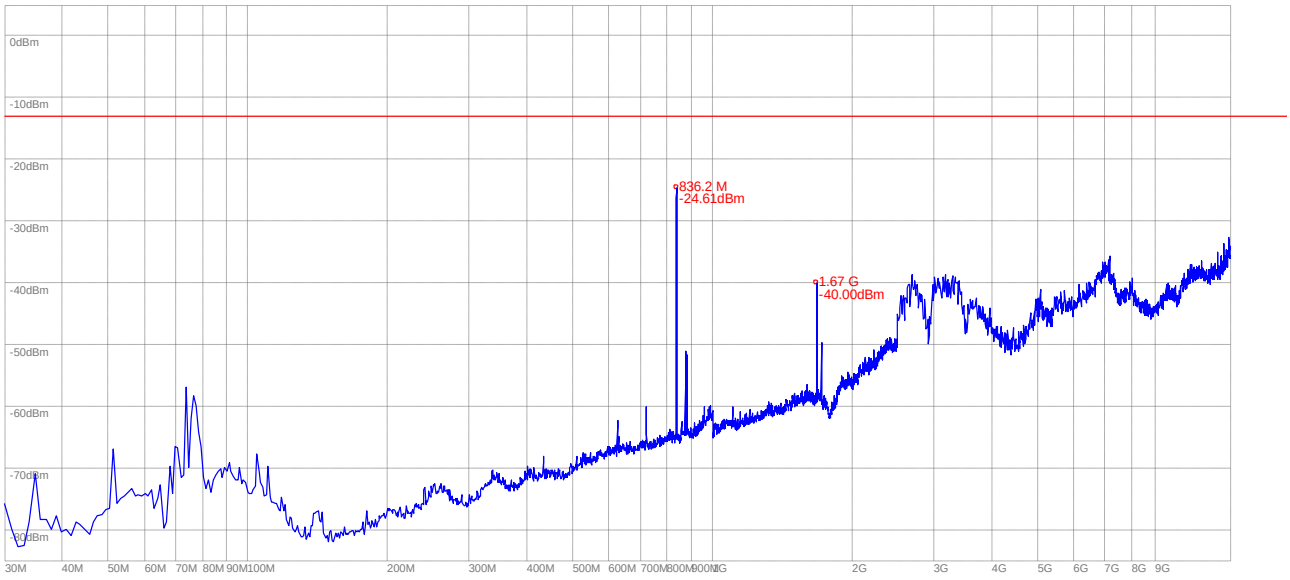
(Plot G.1: EDGE 850MHz Channel = 128, Test Antenna Horizontal)



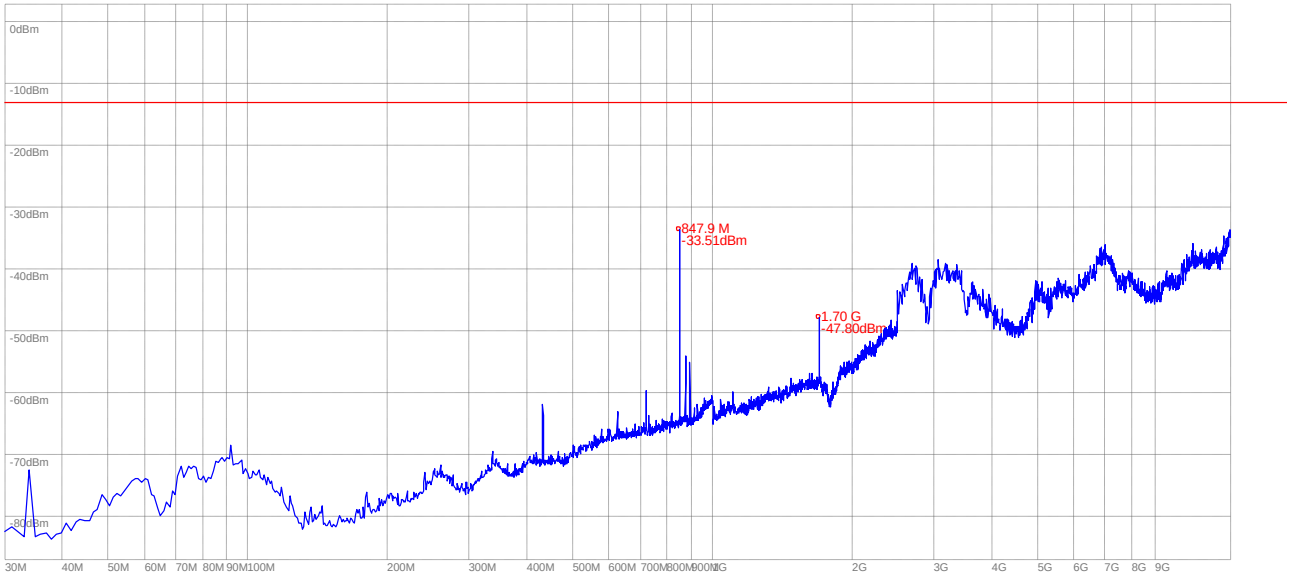
(Plot G.2: EDGE 850MHz Channel = 128, Test Antenna Vertical)



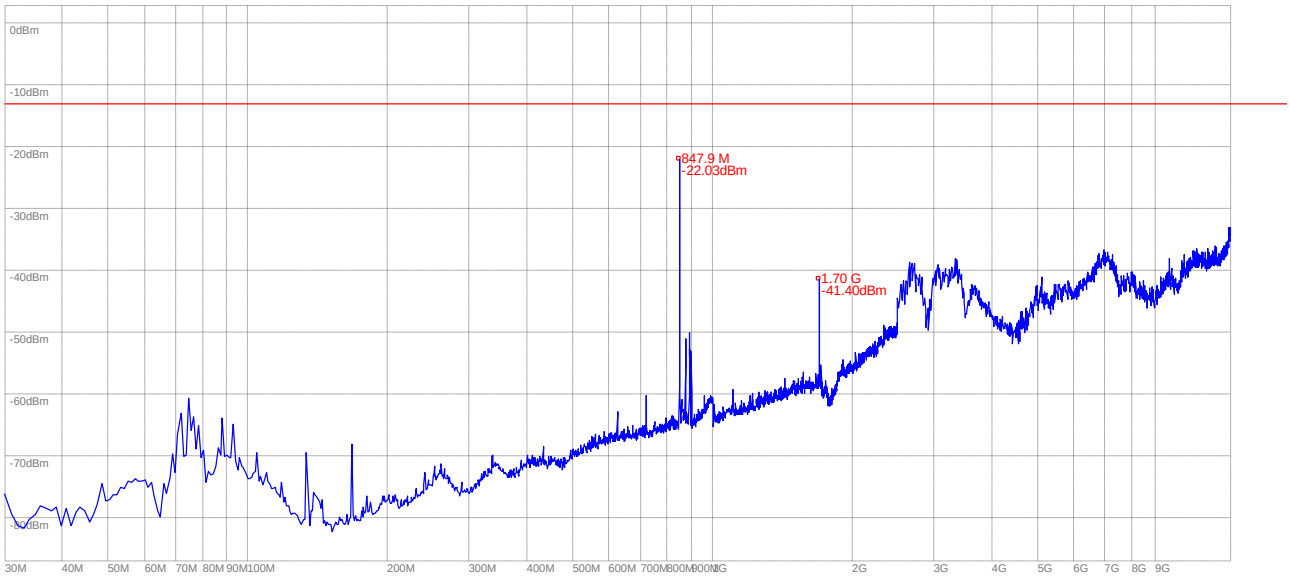
(Plot H.1: EDGE 850MHz Channel = 190, Test Antenna Horizontal)



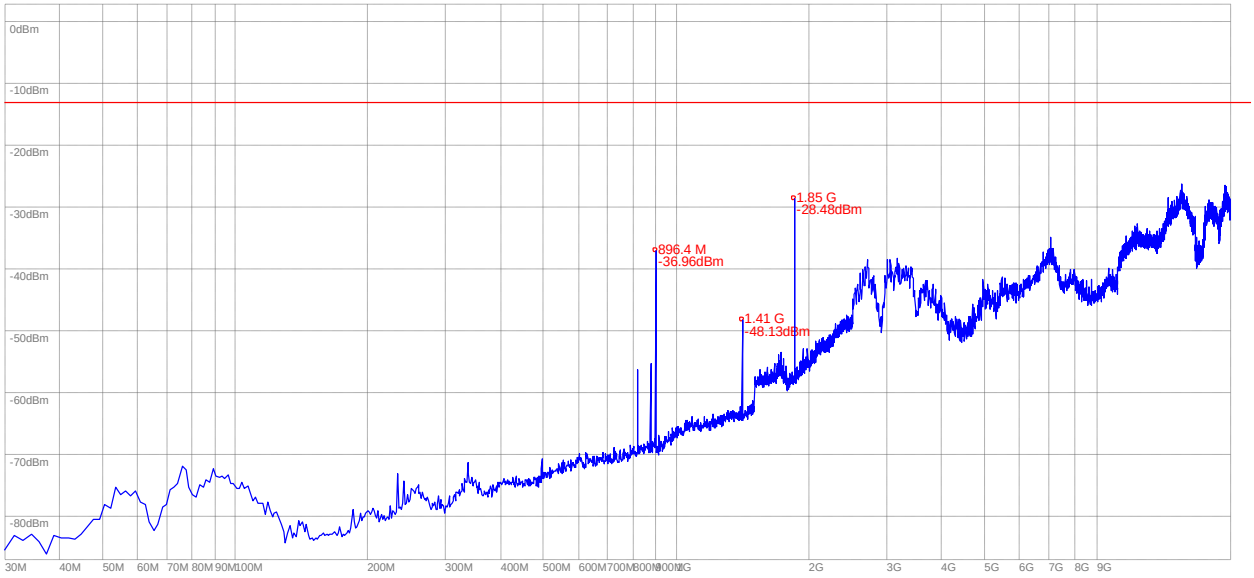
(Plot H.1: EDGE 850MHz Channel = 190, Test Antenna Horizontal)



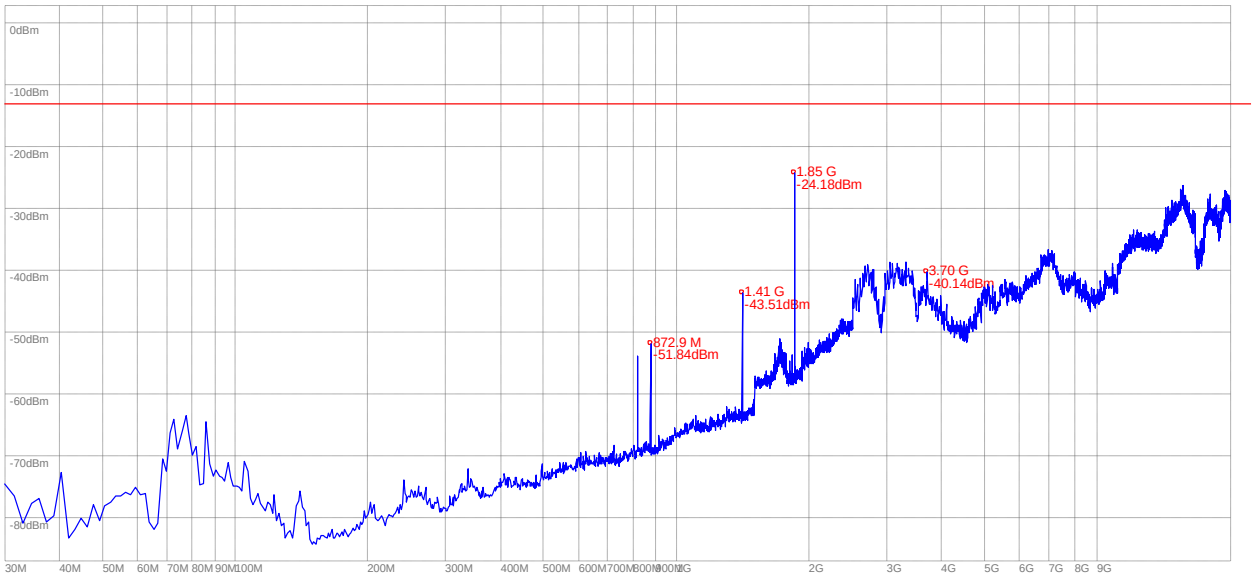
(Plot I.1: EDGE 850MHz Channel = 251, Test Antenna Horizontal)



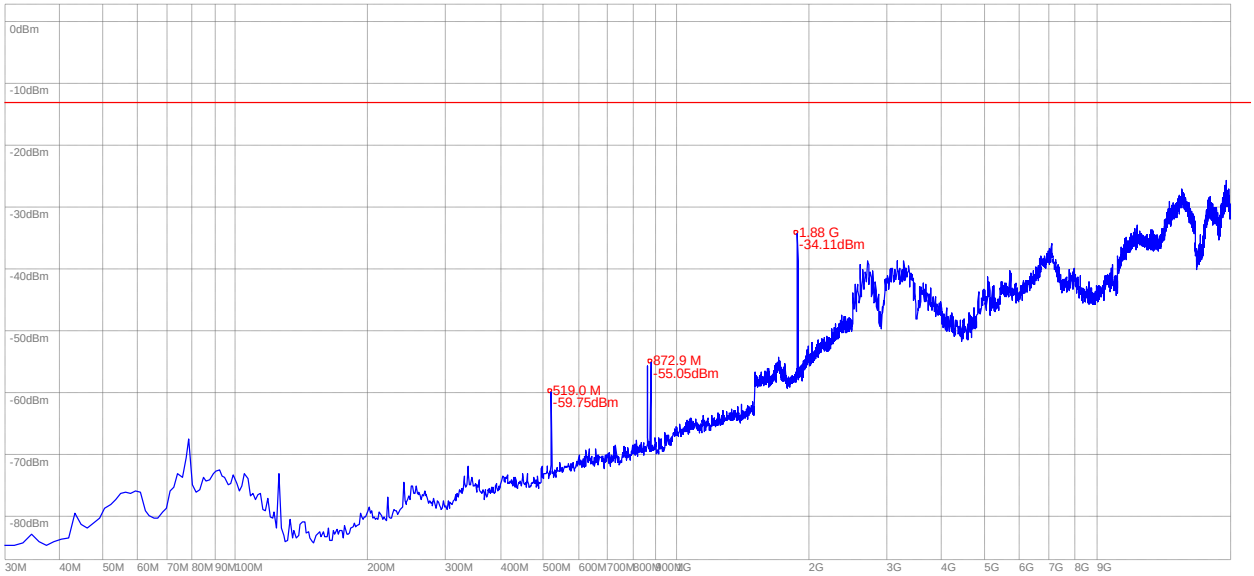
(Plot I.2: EDGE 850MHz Channel = 251, Test Antenna Vertical)



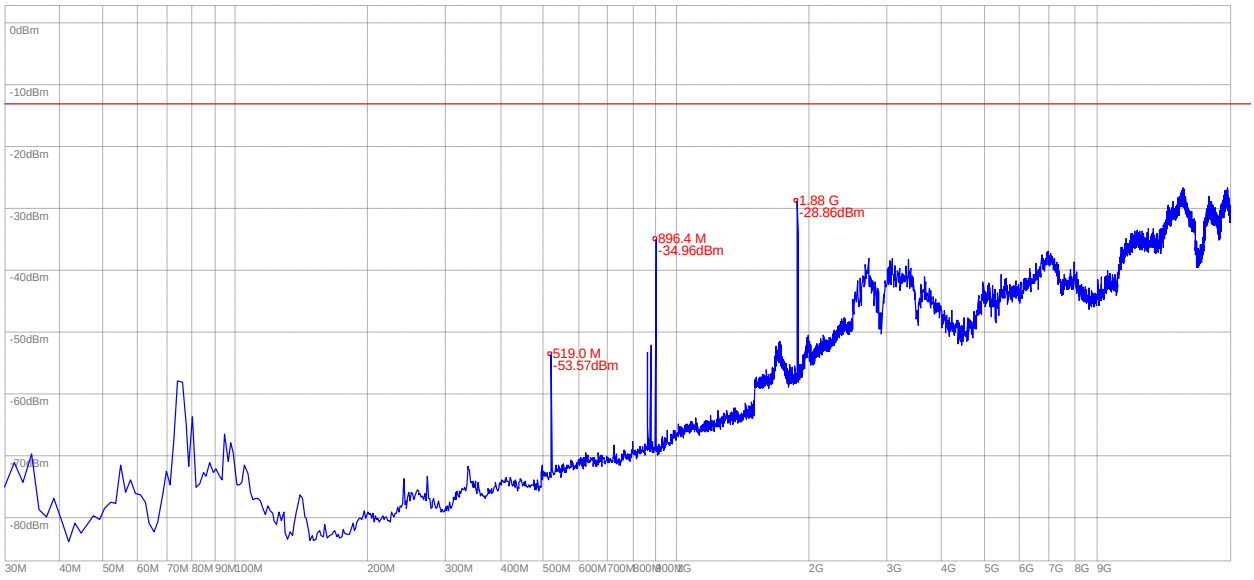
(Plot J.1: EDGE 1900MHz Channel = 512, Test Antenna Horizontal)



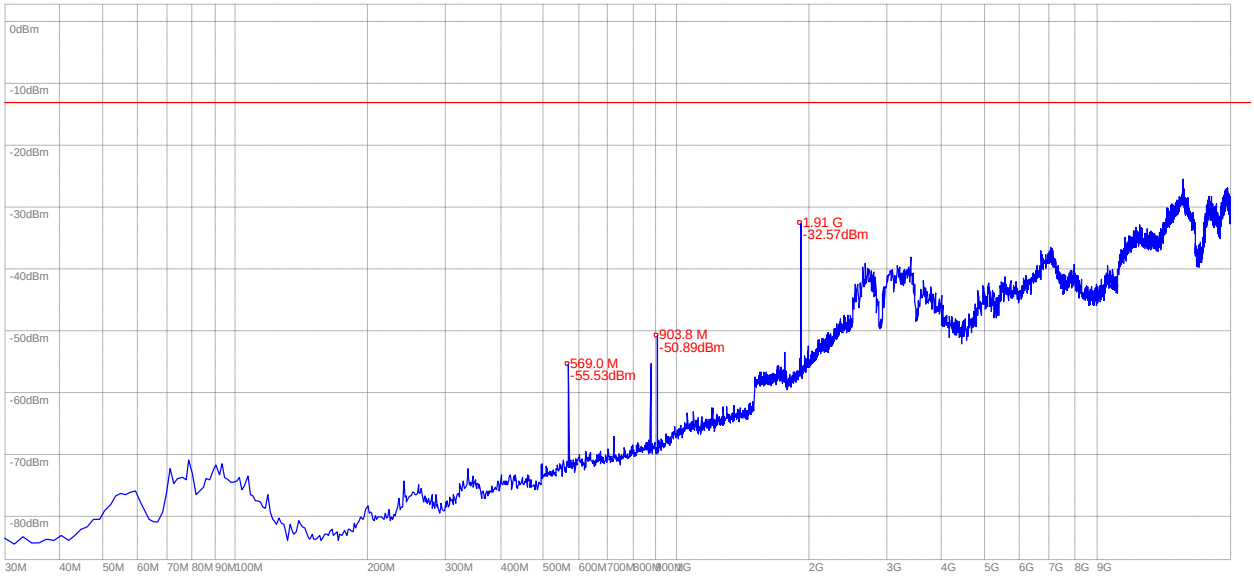
(Plot J.2: EDGE 1900MHz Channel = 512, Test Antenna Vertical)



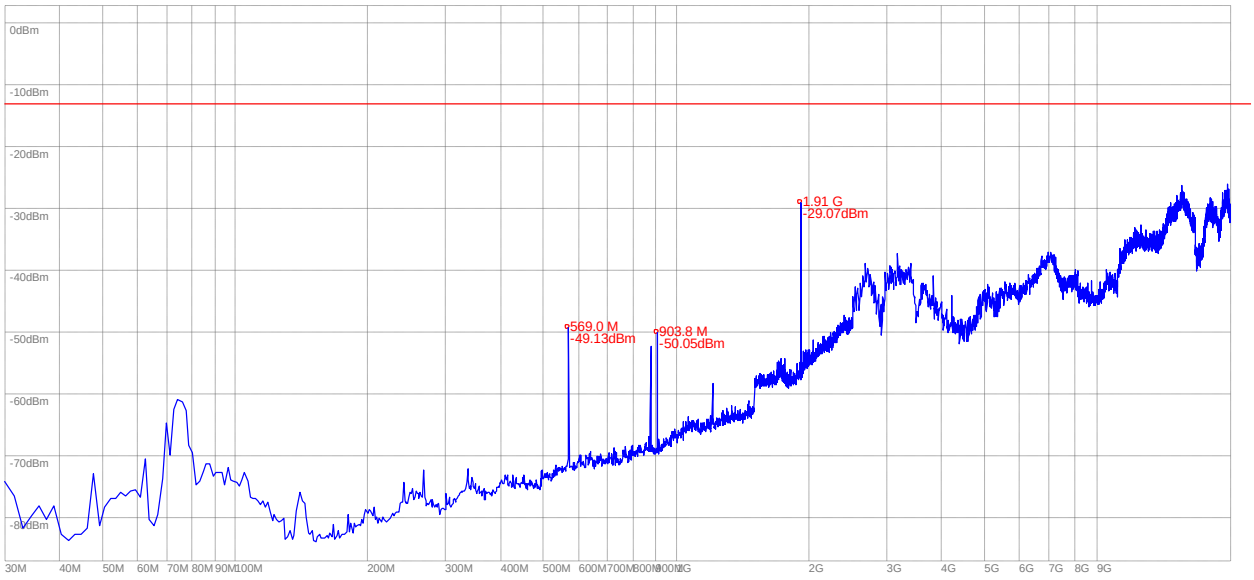
(Plot K.1: EDGE 1900MHz Channel = 661, Test Antenna Horizontal)



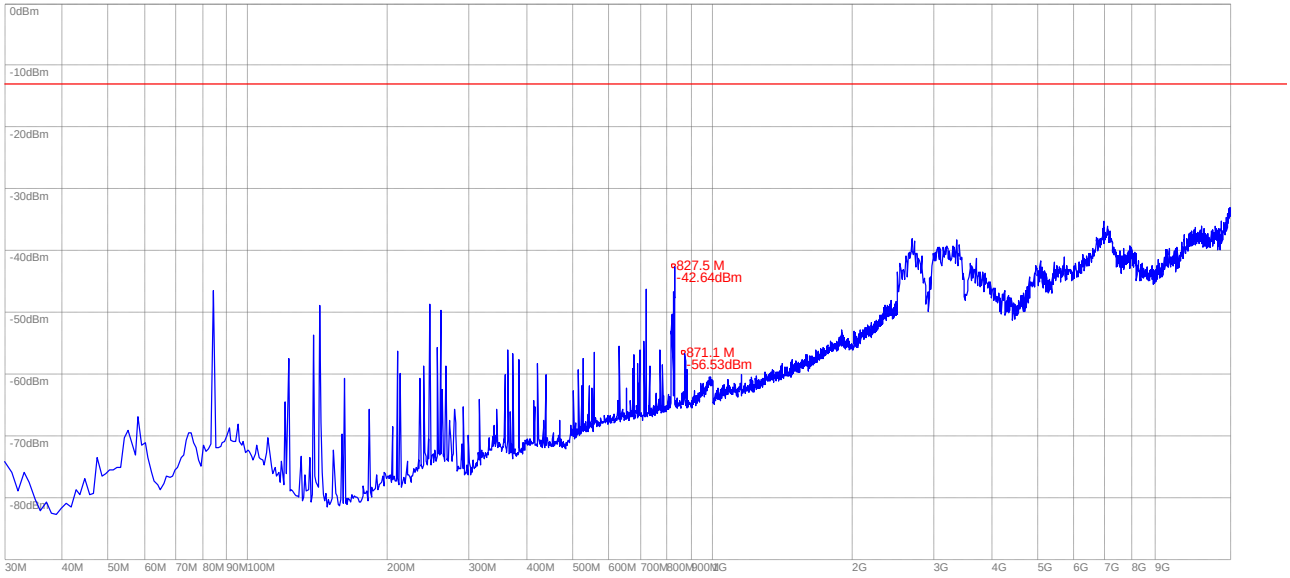
(Plot K.2: EDGE 1900MHz Channel = 661, Test Antenna Vertical)



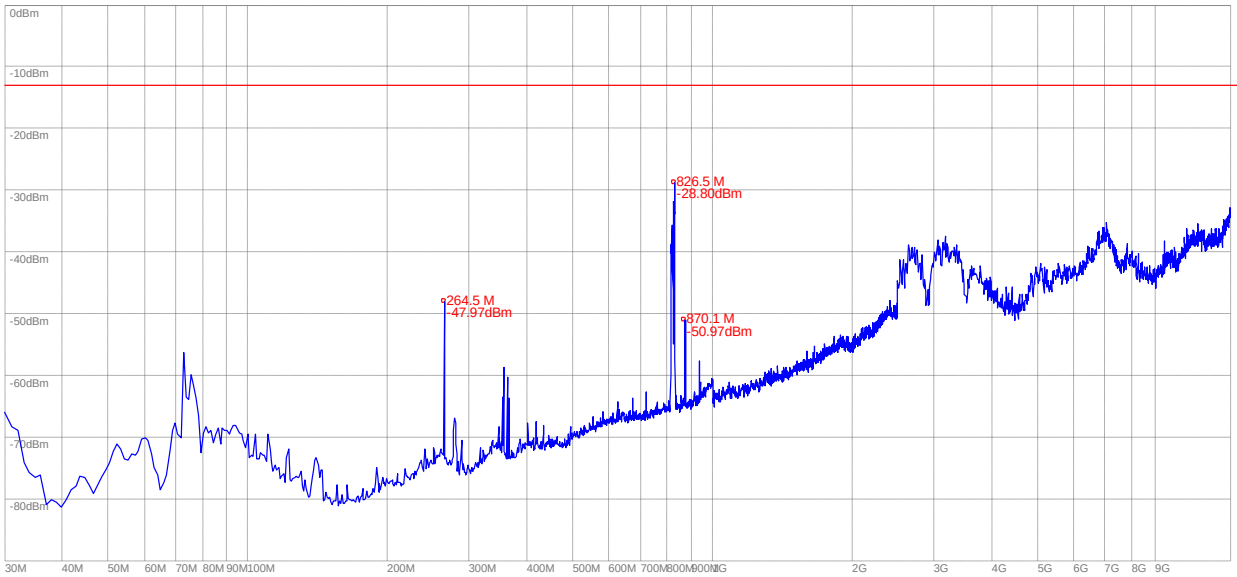
(Plot L.1: EDGE 1900MHz Channel = 810, Test Antenna Horizontal)



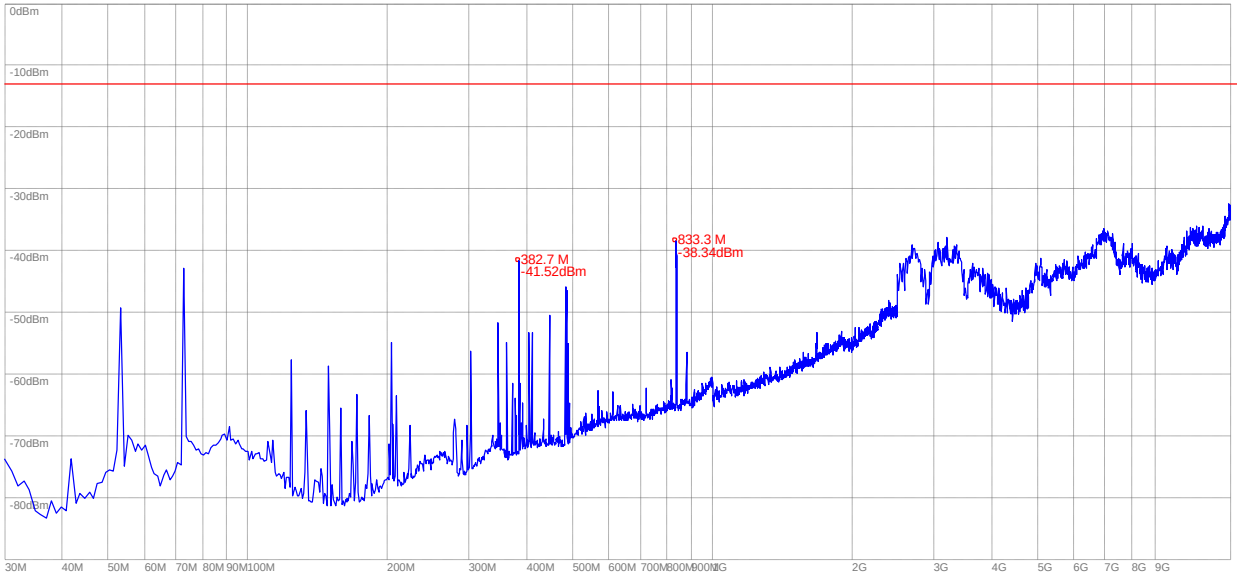
(Plot L.2: EDGE 1900MHz Channel = 810, Test Antenna Vertical)



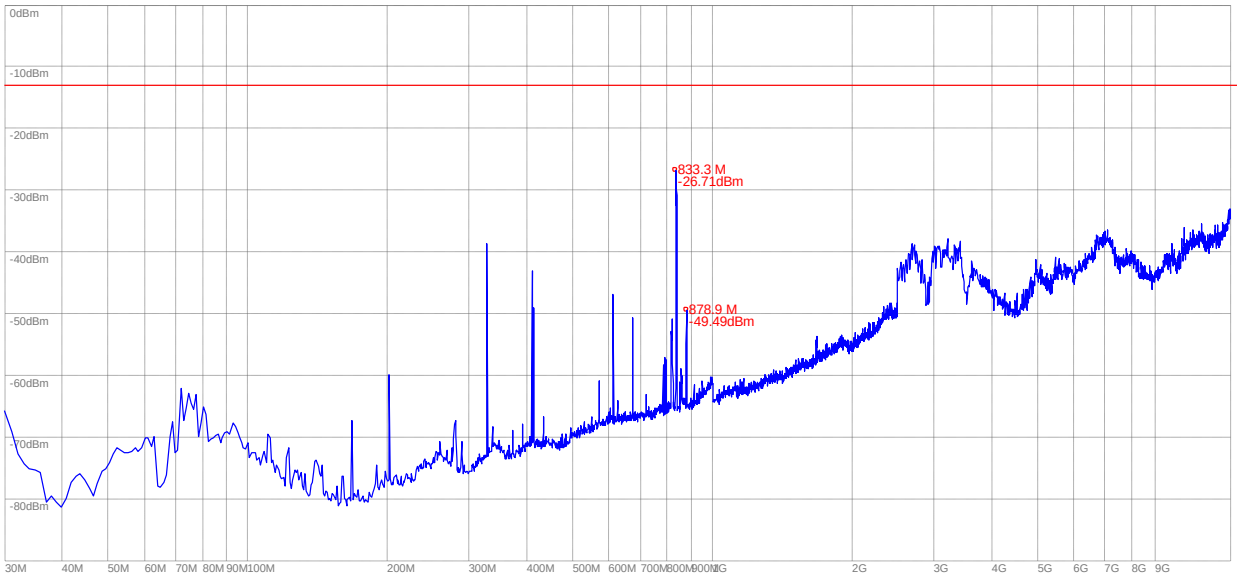
(Plot M.1: WCDMA 850MHz Channel = 4357, Test Antenna Horizontal)



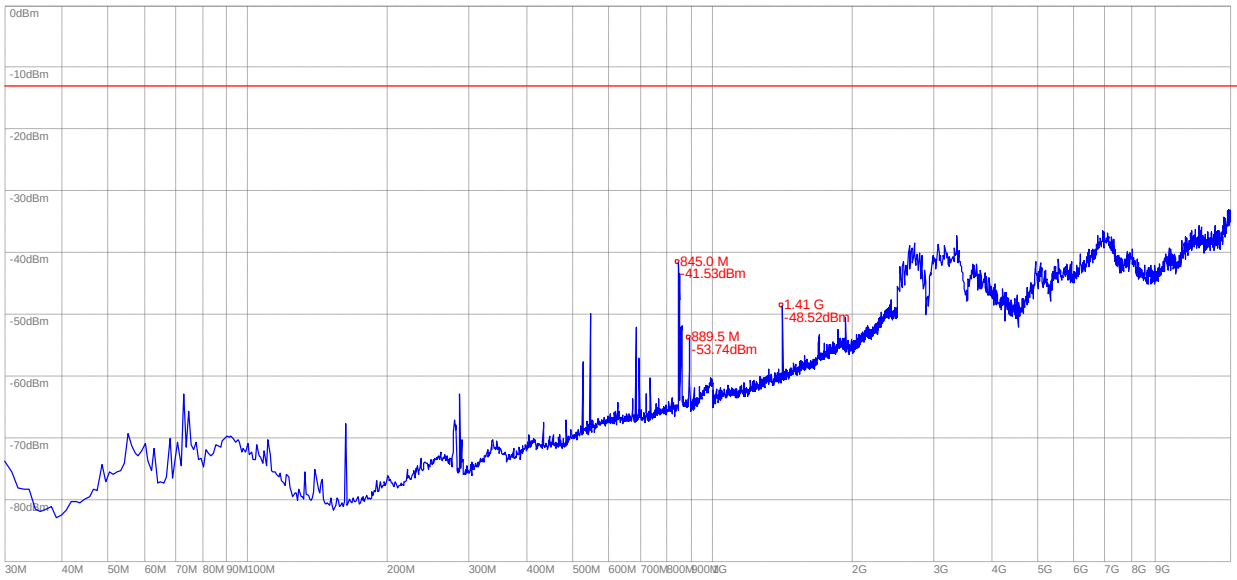
(Plot M.2: WCDMA 850MHz Channel = 4357, Test Antenna Vertical)



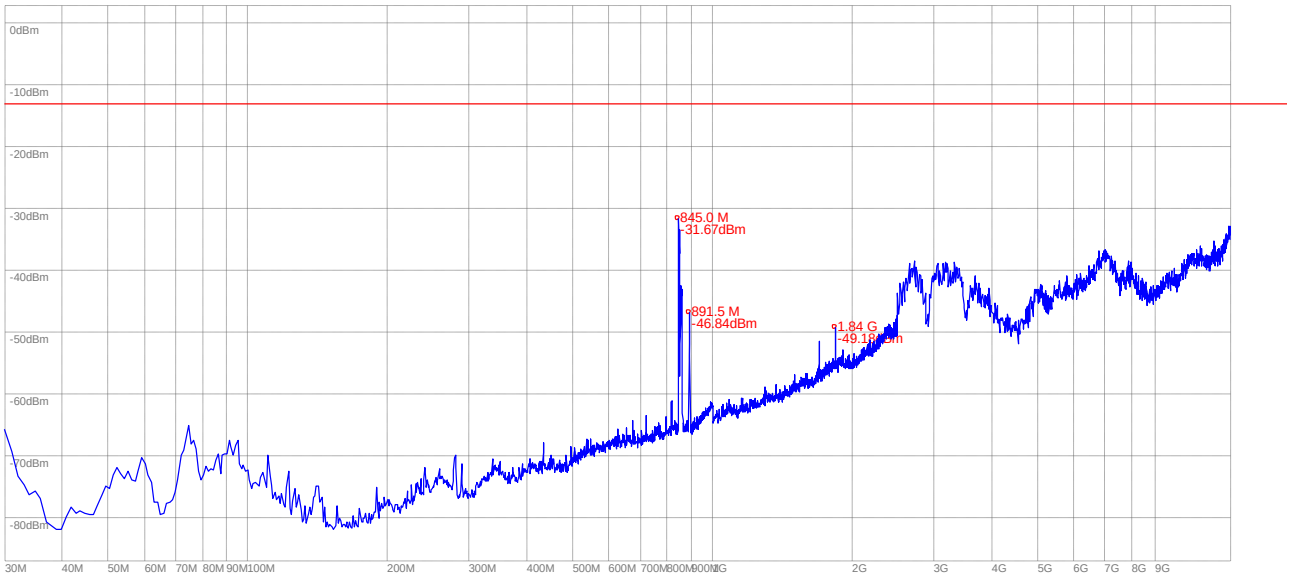
(Plot N.1: WCDMA 850MHz Channel = 4400, Test Antenna Horizontal)



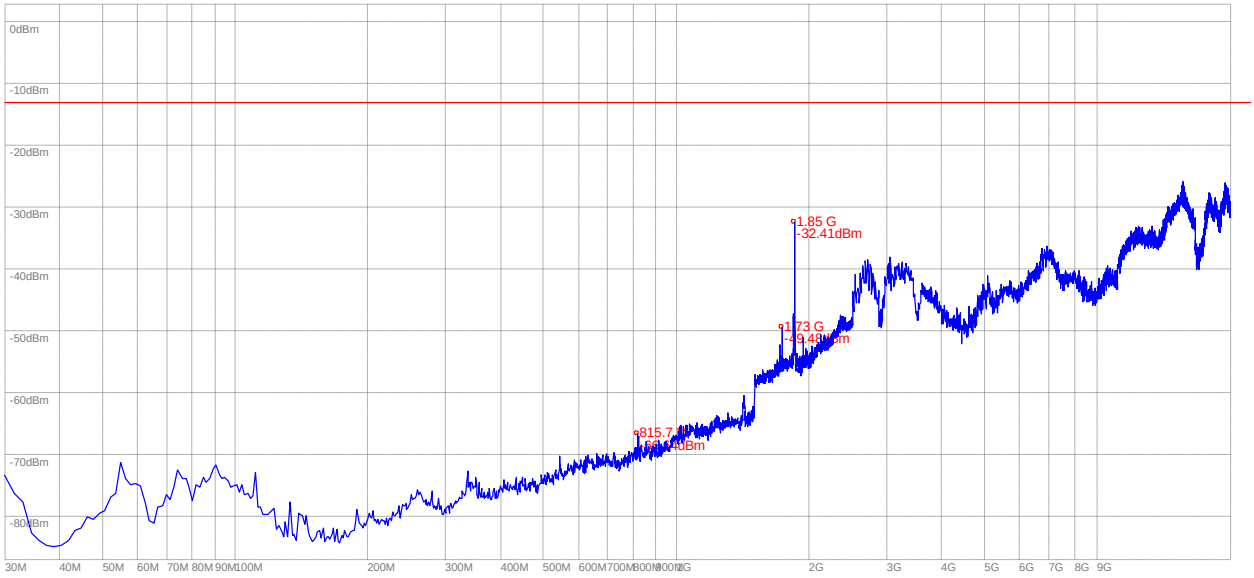
(Plot N.2: WCDMA 850MHz Channel = 4400, Test Antenna Vertical)



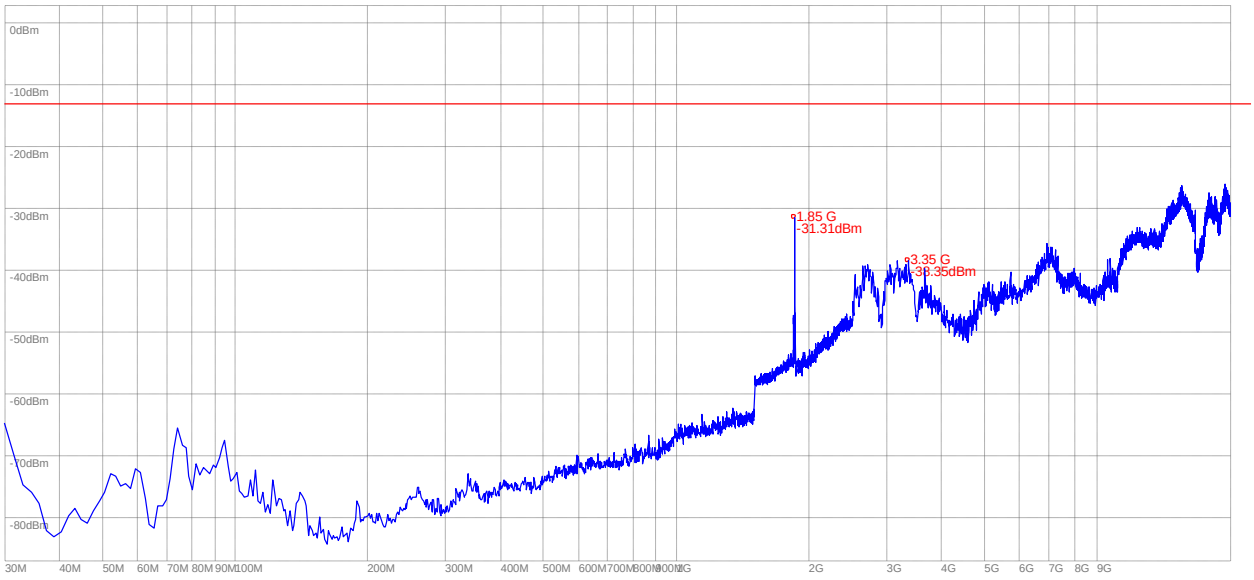
(Plot O.1: WCDMA 850MHz Channel = 4458, Test Antenna Horizontal)



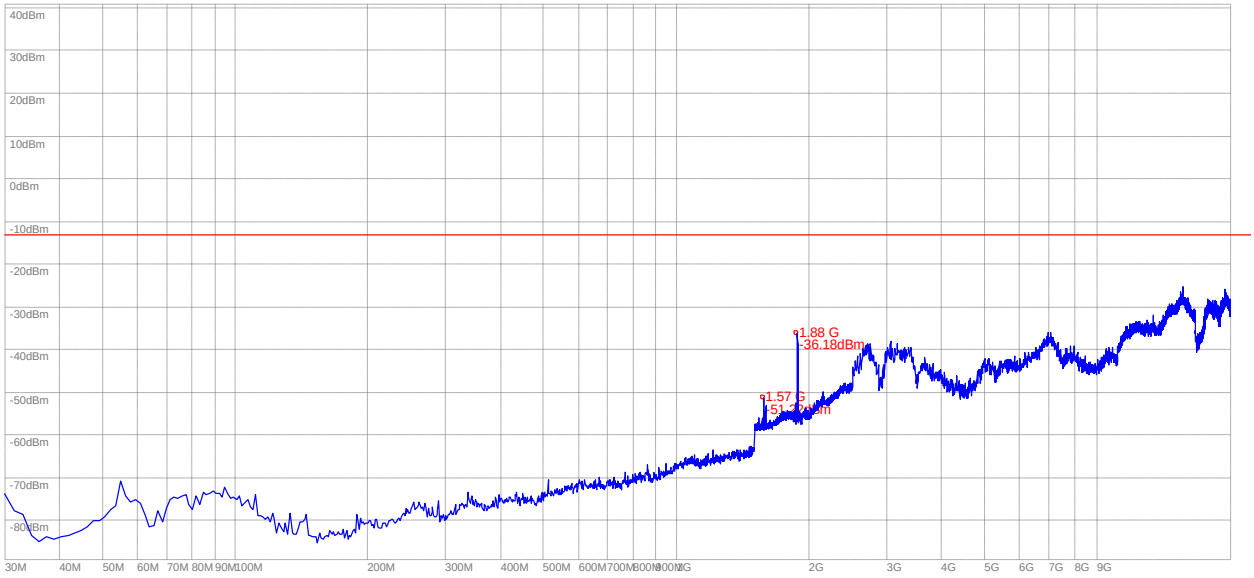
(Plot O.2: WCDMA 850MHz Channel = 4458, Test Antenna Vertical)



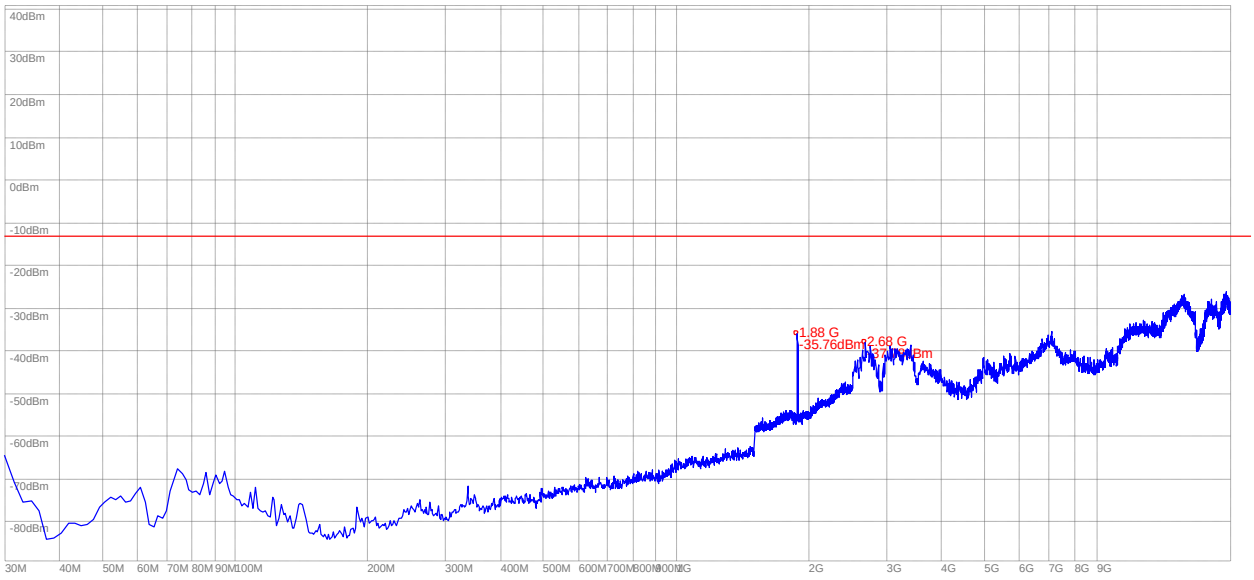
(Plot P.1: WCDMA 1900MHz Channel = 9662, Test Antenna Horizontal)



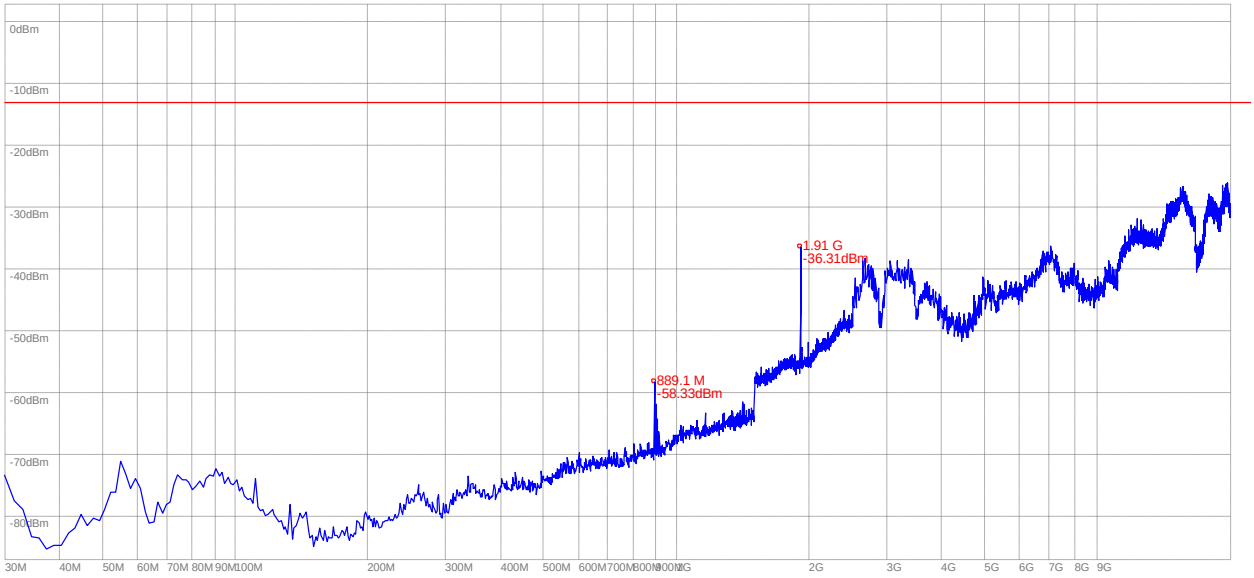
(Plot P.2: WCDMA 1900MHz Channel = 9662, Test Antenna Vertical)



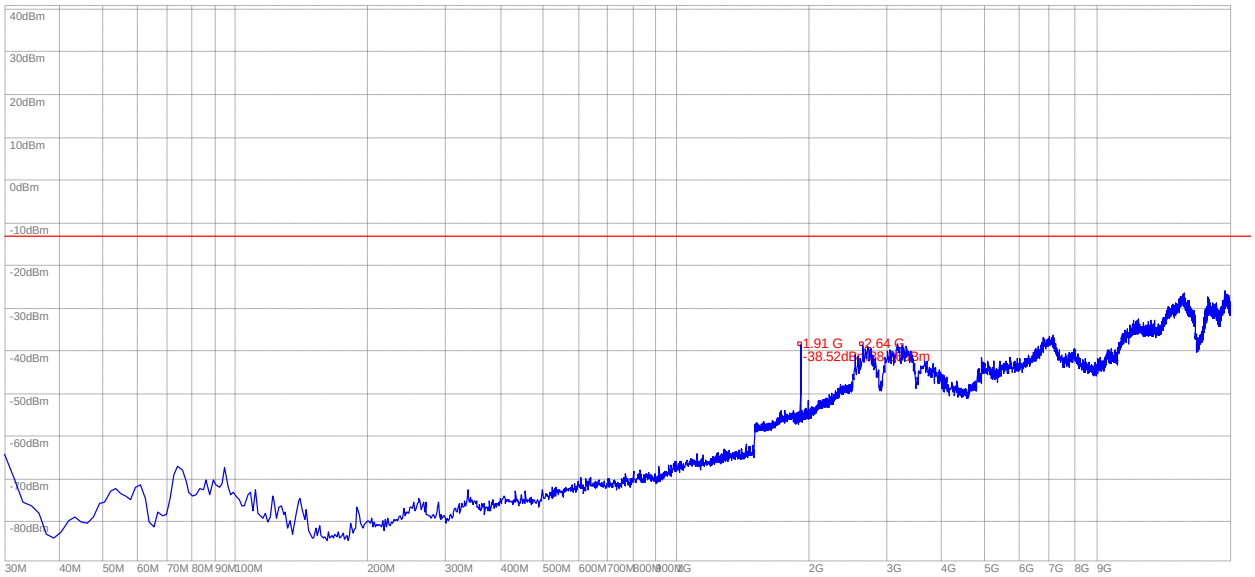
(Plot Q.1: WCDMA 1900MHz Channel = 9800, Test Antenna Horizontal)



(Plot Q.2: WCDMA 1900MHz Channel = 9800, Test Antenna Vertical)



(Plot R.1: WCDMA 1900MHz Channel = 9938, Test Antenna Horizontal)



(Plot R.2: WCDMA 1900MHz Channel = 9938, Test Antenna Vertical)

** END OF REPORT **