47 CFR PART 22 SUBPART H & 24 SUBPART E

TEST REPORT

of

HIC

Model Name:	Huawei
Brand Name:	vodafone
Report No.:	SH10110003B01
FCC ID:	QISEC-W820

prepared for

Huawei Technologies Co.,Ltd.
Bantian,Longgang District Shenzhen 518129,P.R.China

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

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 4

2. GENERAL INFORMATION 5

2.1 EUT Description 5

2.2 Test Standards and Results 7

2.3 Facilities and Accreditations 8

2.3.1 Facilities 8

2.3.2 Test Environment Conditions 8

3. 47 CFR PART 2, PART 22H &24E REQUIREMENTS 9

3.1 Frequencies 9

3.1.1 Requirement 9

3.1.2 Test Description 9

3.1.3 Test Result 10

3.2 Conducted RF Output Power 20

3.2.1 Requirement 20

3.2.2 Test Description 20

3.2.3 Test Result 20

3.3 20dB Occupied Bandwidth 34

3.3.1 Definition 34

3.3.2 Test Description 34

3.3.3 Test Verdict 34

3.4 Frequency Stability 48

3.4.1 Requirement 48

3.4.2 Test Description 48

3.4.3 Test Verdict 48

3.5 Conducted Out of Band Emissions 52

3.5.1 Requirement 52

3.5.2 Test Description 52

3.5.3 Test Result 52

3.6 Band Edge 66

3.6.1 Requirement 66

3.6.2 Test Description 66
3.6.3 Test Result 66
3.7 Transmitter Radiated Power (EIRP/ERP) 75
3.7.1 Requirement 75
3.7.2 Test Description 75
3.7.3 Test Result 77
3.8 Radiated Out of Band Emissions 91
3.8.1 Requirement 91
3.8.2 Test Description 91
3.8.3 Test Procedure 91
3.8.4 Test Result 92

1. TEST CERTIFICATION

Equipment under Test:	HIC
Brand Name:	vodafone
Model Name:	EC W820
FCC ID:	QISEC-W820
Applicant:	Huawei Technologies Co.,Ltd Bantian,Longgang District Shenzhen 518129,P.R.China
Manufacturer:	Shenzhen Ruide Electronic Industrial Co.,Ltd 2nd Floor,Block2,Minqi Scientific Zone, Honghualing, Xili,Nanshan District,Shenzhen ,China
Test Standards:	47 CFR Part 2 47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
Test Date(s):	Nov 27, 2010 –Dec 03, 2010
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: Huang yunlong Dated: 2010.12.6
Huang yunlong

Reviewed by: Zhang Jun Dated: 2010.12.6
Zhang Jun

Approved by: Wei Bei Dated: 2010.12.6
Wei Bei

2. GENERAL INFORMATION

2.1 EUT Description

EUT Type.....: HIC
Model Name .....: EC W820
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 Band V:
Tx: 826.40 – 846.60MHz (at intervals of 200kHz);
Rx: 871.40 – 891.00MHz (at intervals of 200kHz)
WCDMA Band II:
Tx: 1852.40 – 1907.60MHz (at intervals of 200kHz);
Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz)

Modulation Type.....: GMSK;BPSK,QPSK
Power Supply.....: Battery
Brand name: BYD
Mode Name.: BH61E
Capacitance: 2200mAh
Rated voltage: 3.7V
Charge limited: 4.2V
Manufacturer: BYD Company Limited
YAN AN RD,LONGGANG,KUICHONG, SHENZHEN, GUANGDONG 518119 CHINA

Ancillary Equipments.....: AC Adapter (Charger for Battery)
Brand name: Ruide
Mode Name.: RD1202500-C55-0OG
Rated Input: AC 100~240V, 1000mA, 50/60Hz
Rated Output: DC12V, 2500 mA，30W
Manufacturer: Shenzhen Ruide Electronic Industrial Co.
2nd Floor,Block 2,Minqi Scientific Zone, Honghualing,Xili, Nanshan District ,Shenzhen China

Note 1: The transmitter (Tx) frequency arrangement of the GSM 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).

The transmitter (Tx) frequency arrangement of the WCDMA Band Ⅴ used by the EUT can be represented with the formula F(n)=826.4+0.2*(n-4132), 4132<=n<=4233; the lowest, middle, highest channel numbers used and tested in this report are separately 4132 (826.4MHz), 4188 (836.6MHz) and 4233 (846.6MHz).

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).

The transmitter (Tx) frequency arrangement of the WCDMA Band Ⅱ used by the EUT can be represented with the formula F(n)=1852.4+0.2*(n-9400), 9262<=n<=9538; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880.0MHz) and 9538 (1907.6MHz).

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
4	ANSI/TIA/EIA-603-C (2004)	Land Mobile FM or PM - Communications Equipment - Measurement and Performance Standards
5	ANSI C63.4-2003	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

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 Service for Conformity Assessment (CNAS) 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 (℃):	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:

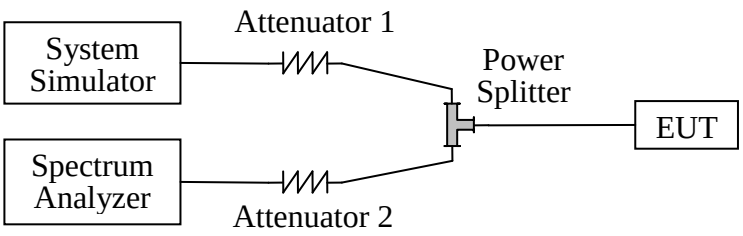
(a) Channel Block A:
Mobile 824 - 835MHz, Base 869 - 880MHz;
Mobile 845 - 846.5MHz, Base 890 - 891.5MHz
(b) Channel Block B:
Mobile 835 - 845 MHz, Base 880 - 890MHz;
Mobile 846.5 - 849 MHz, Base 891.5 - 894MHz

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	2010.9	1year
Spectrum Analyzer	R&S	FSP30	101020	2010.9	1year
Spectrum Analyzer	Agilent	E4440A	MY46187763	2010.9	1year
Spectrum Analyzer	Rohde Schwarz	FSP13	M-030176	2010.9	1year
Power Splitter	HP	11667B	00164	(n.a.)	(n.a.)
Attenuator 1	Resnet	6dB	(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 GSM 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).

The Tx frequency arrangement of the WCDMA Band Ⅴ employed by the EUT should be from 826.4MHz to 846.6MHz (the corresponding frequency block is from 826MHz to 847MHz), and Tx frequency arrangement of the WCDMA Band Ⅱ employed by the EUT should be from 1852.4MHz to 1907.6MHz (the corresponding frequency block is from 1852MHz to 1908MHz).

Here the lowest and highest channels are tested to verify the EUT's using the frequency block required.

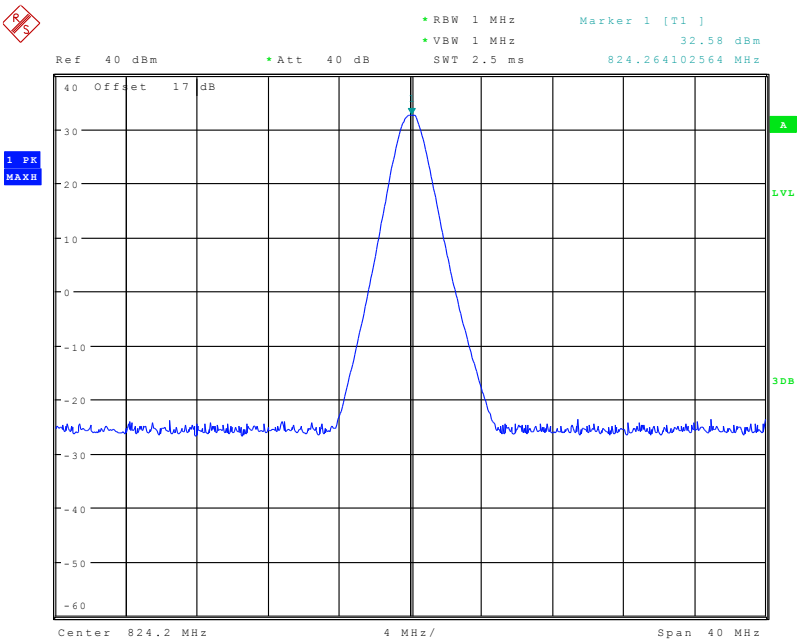
1. Test Verdict:

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

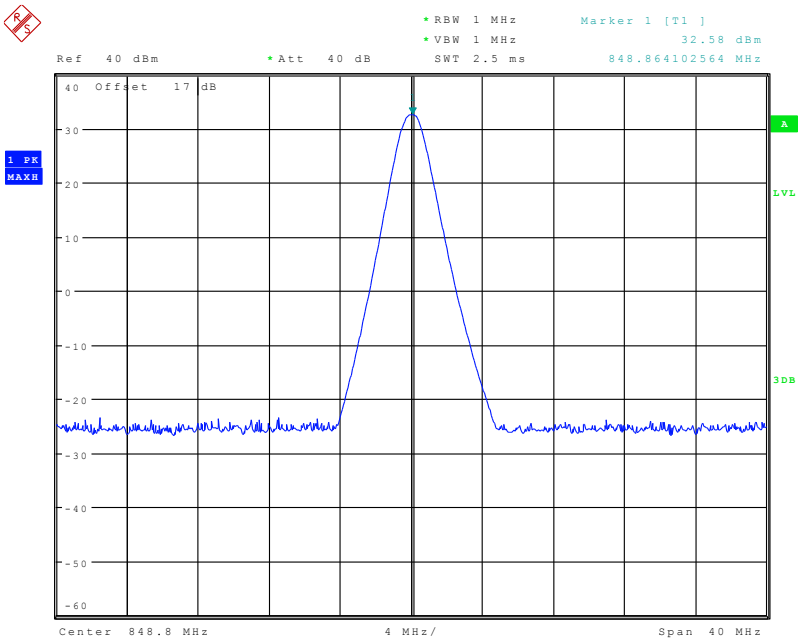
Band	Channel	Frequency (MHz)	Measured Carrier (dBm)	Refer to Plot
GSM 850MHz	128	824.26	32.58	Plot A1
	251	848.85	32.58	Plot B1
GSM 1900MHz	512	1850.26	29.88	Plot C1
	810	1909.86	29.89	Plot D1
GPRS 850MHz	128	824.14	32.44	Plot E1
	251	848.86	32.47	Plot F1
GPRS 1900MHz	512	1850.14	29.69	Plot G1
	810	1909.86	29.67	Plot H1

Band	Channel	Frequency (MHz)	Measured Carrier (dBm)	Refer to Plot
EGPRS 850MHz	128	824.14	32.19	Plot I1
	251	848.80	32.26	Plot J1
EGPRS 1900MHz	512	1850.26	29.56	Plot K1
	810	1909.86	29.51	Plot L1
WCDMA Band Ⅴ	4132	826.34	22.40	Plot M1
	4233	846.47	22.49	PlotN1
WCDMA Band Ⅱ	9262	1852.27	22.30	Plot O1
	9538	1907.60	22.29	Plot P1

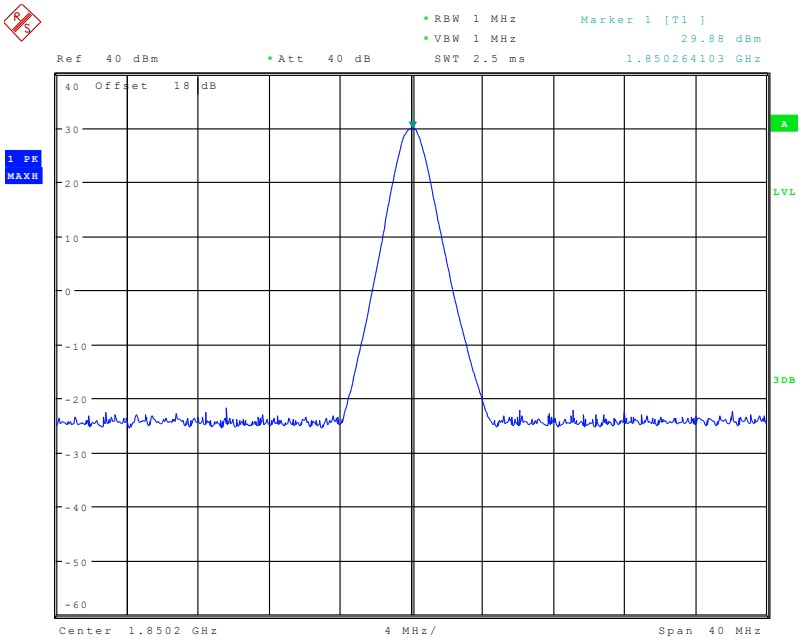
2. Test Plot:



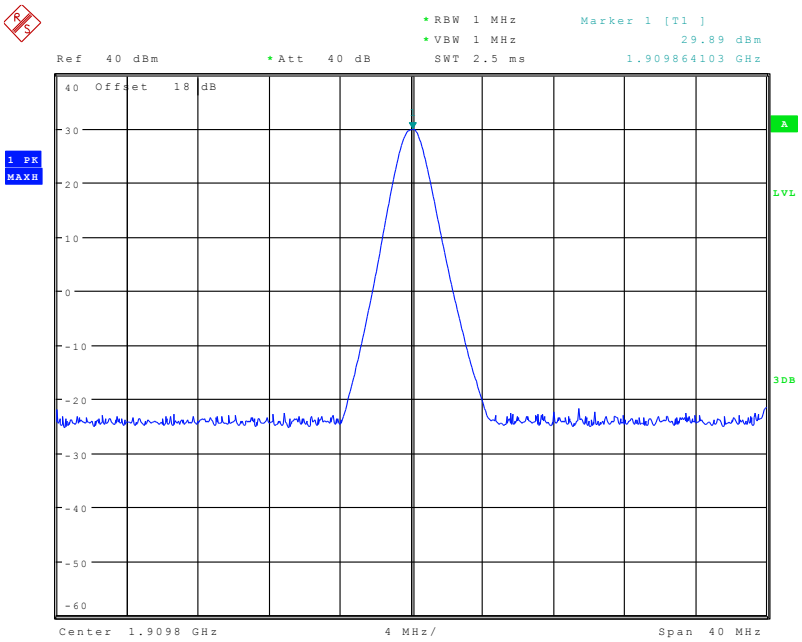
(Plot A1: GSM 850MHz Channel = 128)



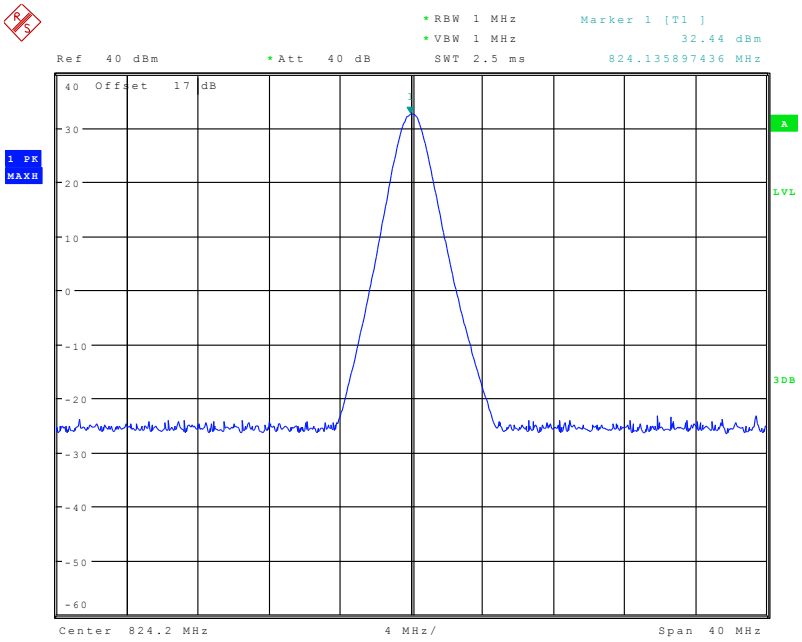
(Plot B1: GSM 850MHz Channel = 251)



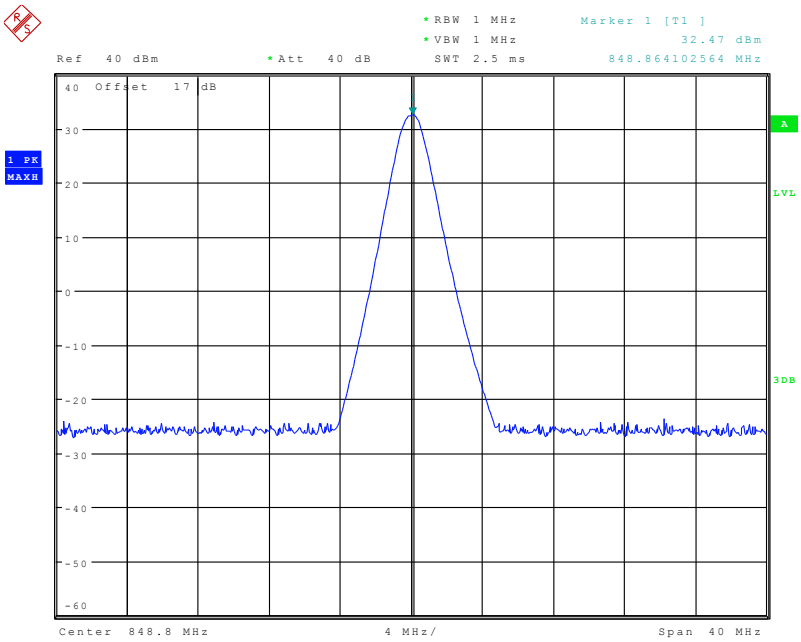
(Plot C1: GSM 1900MHz Channel = 512



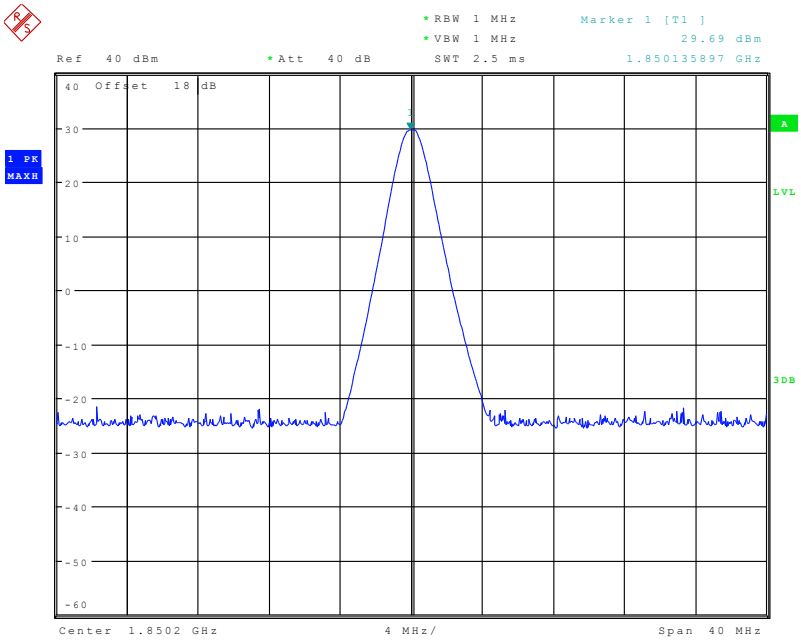
(Plot D1: GSM 1900MHz Channel = 810)



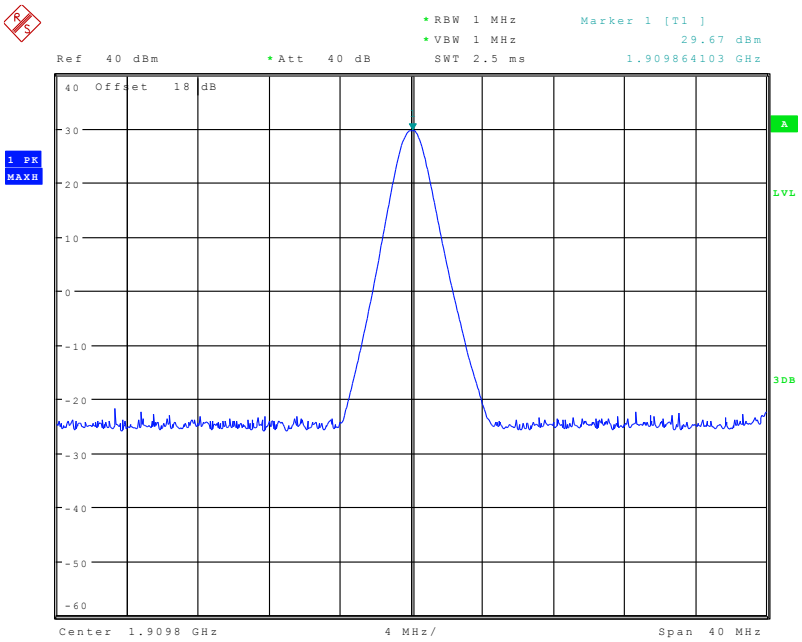
(Plot E1: GPRS 850MHz Channel = 128)



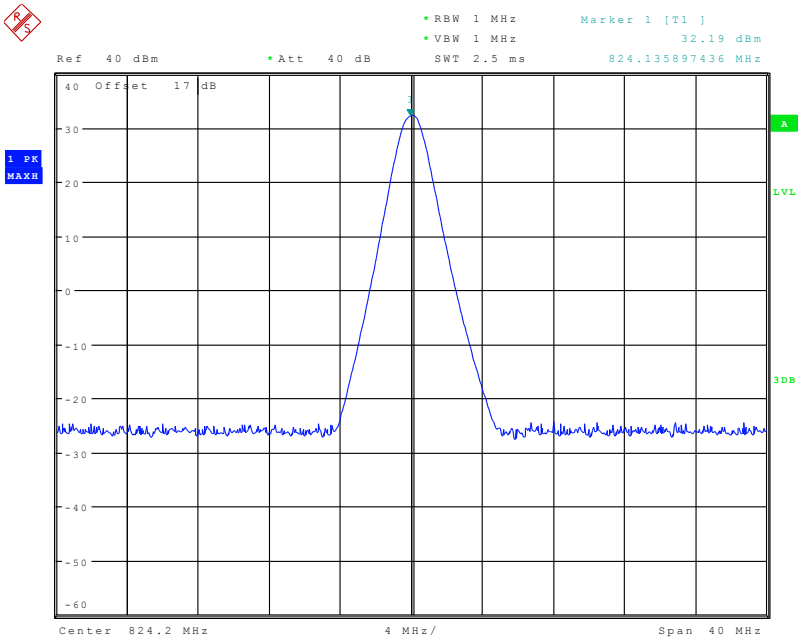
(Plot F1: GPRS 850MHz Channel = 251)



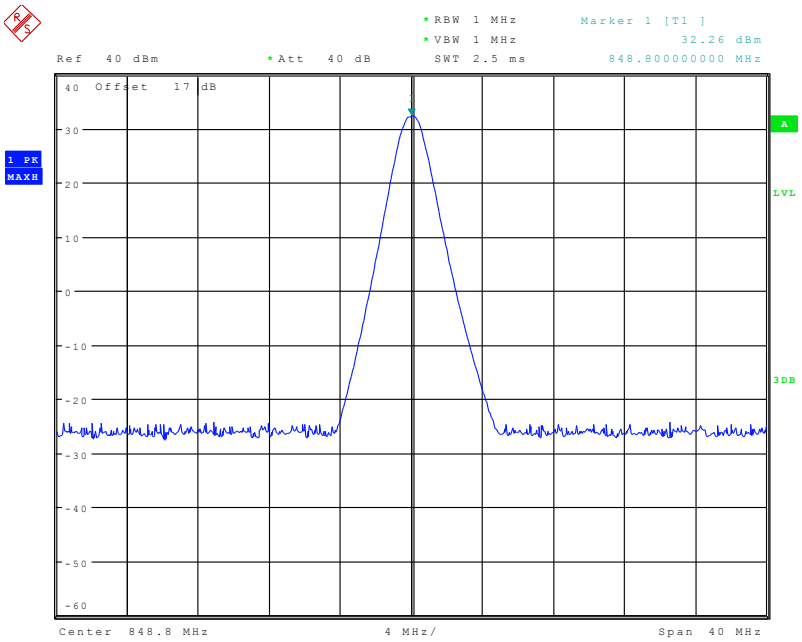
(Plot G1: GPRS 1900MHz Channel = 512)



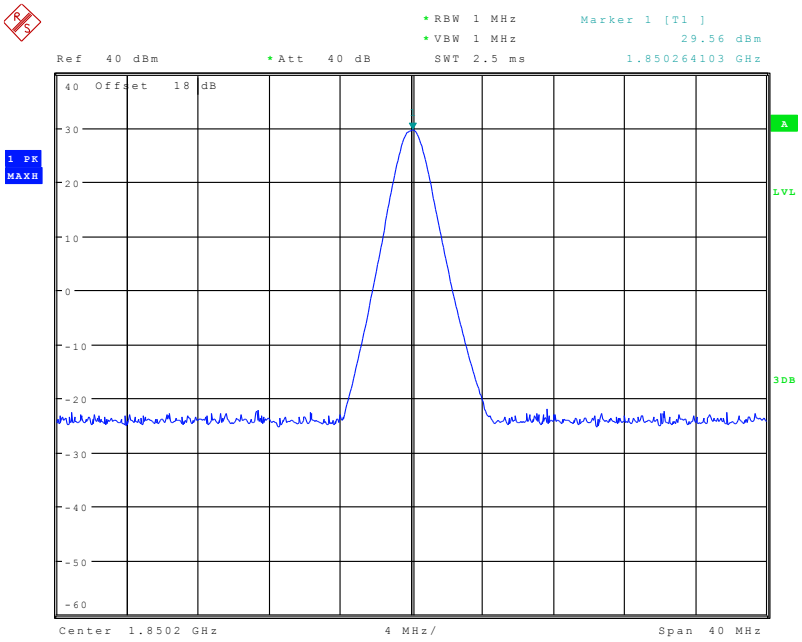
(Plot H1: GPRS 1900MHz Channel = 810)



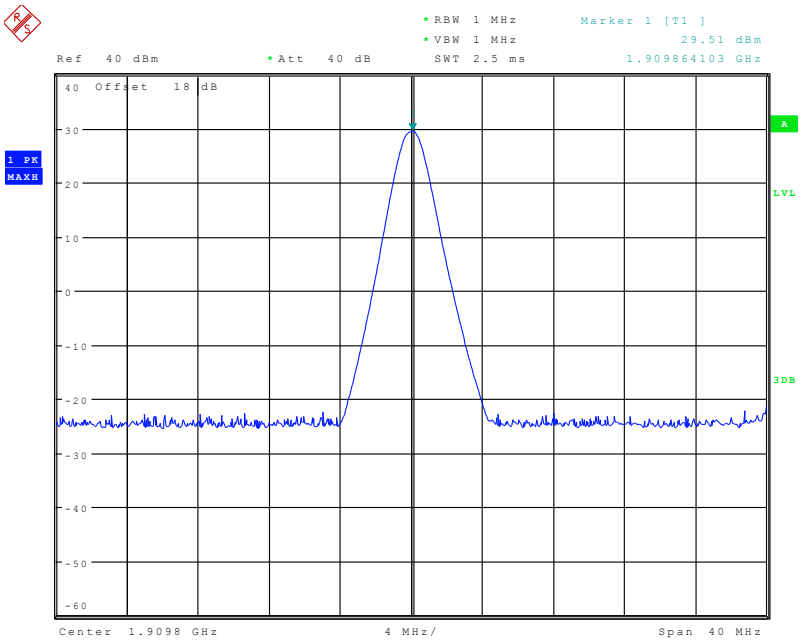
(Plot I1: EDGE 850MHz Channel = 128)



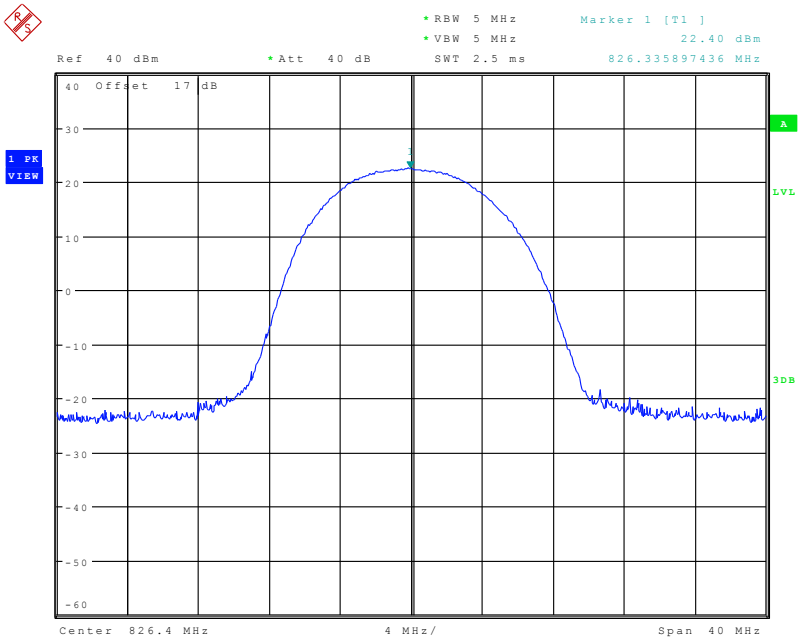
(Plot J1: EDGE 850MHz Channel = 251)



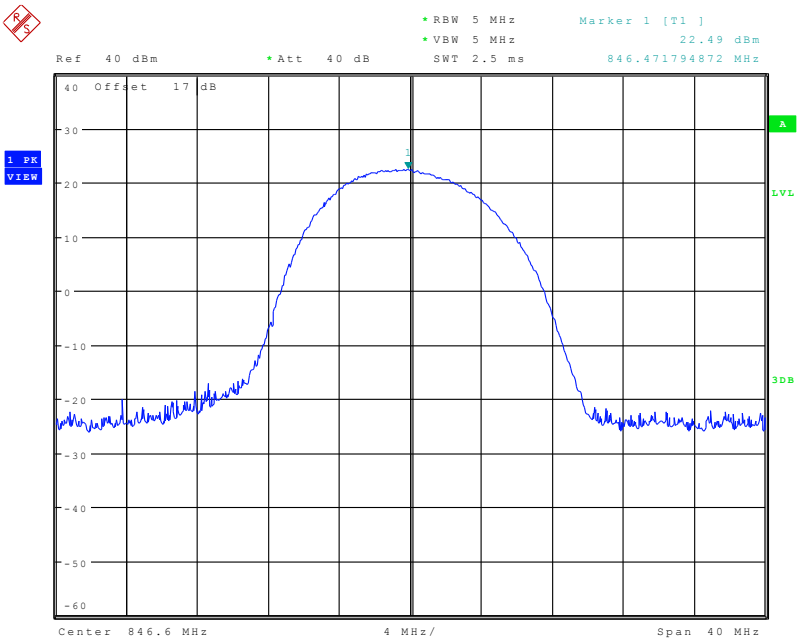
(Plot K1: EDGE 1900MHz Channel =512)



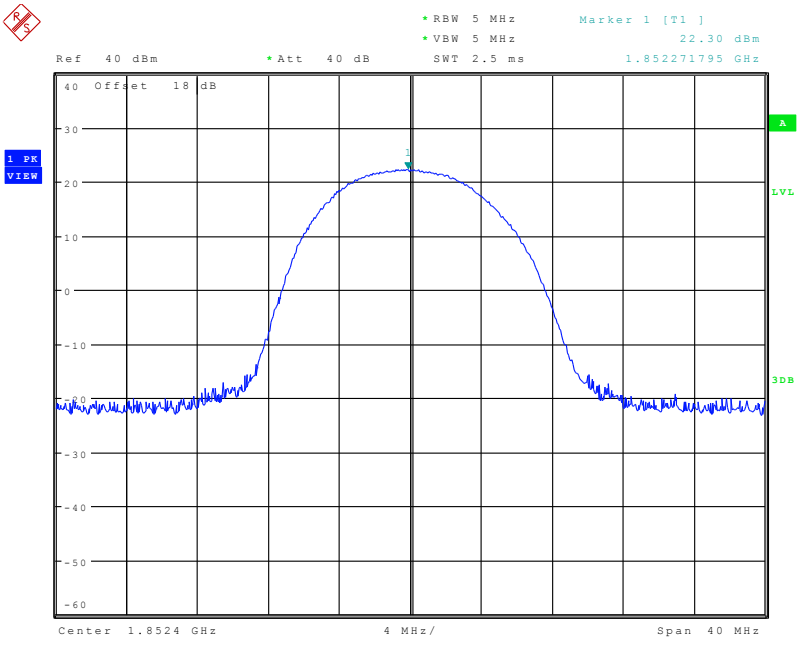
(Plot L1: EDGE 1900MHz Channel = 810)



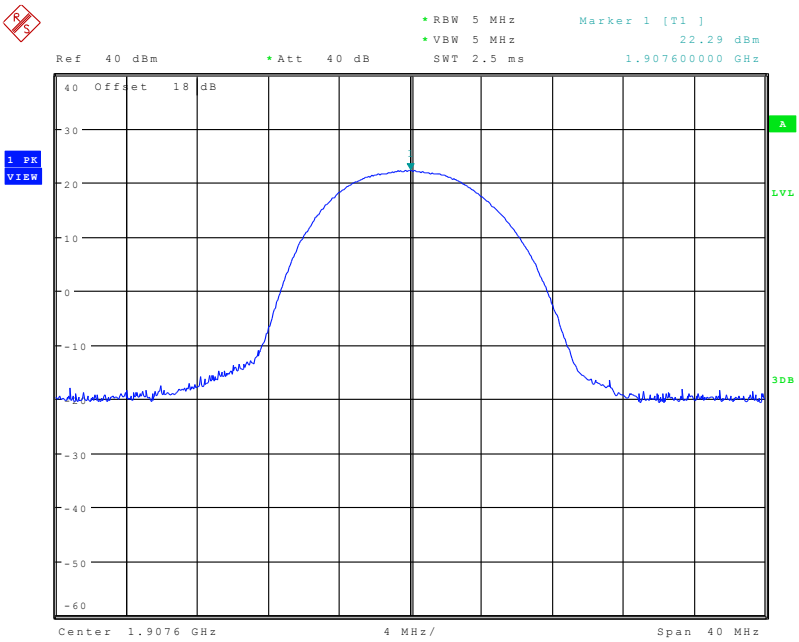
(Plot M1: WCDMA Band Ⅴ Channel = 4132)



(Plot N1: WCDMA Band Ⅴ Channel = 4233)



(Plot O1: WCDMA Band Ⅱ Channel = 9262)



(Plot P1: WCDMA Band Ⅱ Channel = 9538)

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

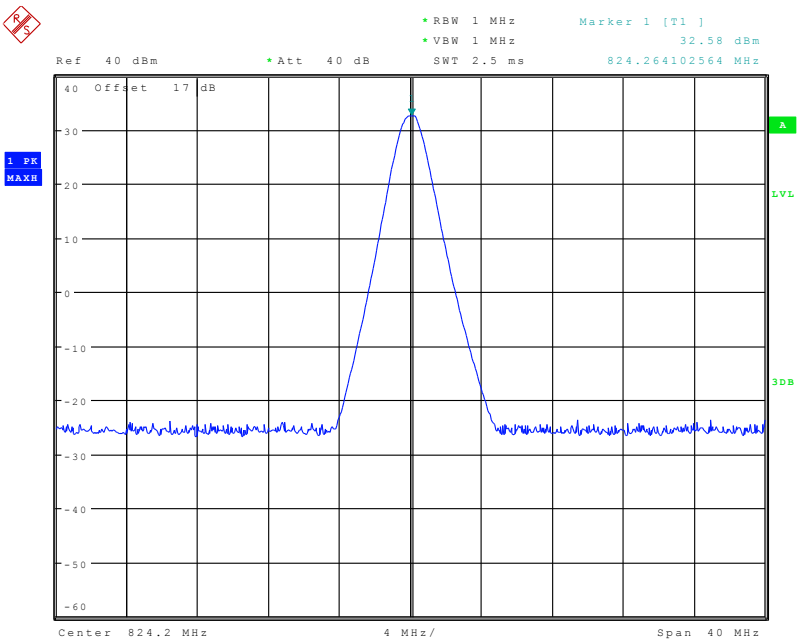
Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT. For the GSM 850MHz operates at PCL=5 (where Power Class is 4), the rated conducted RF output power is 33dBm within the tolerance of ±3dB, and For the GSM 1900MHz operates at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

1. Test Verdict:

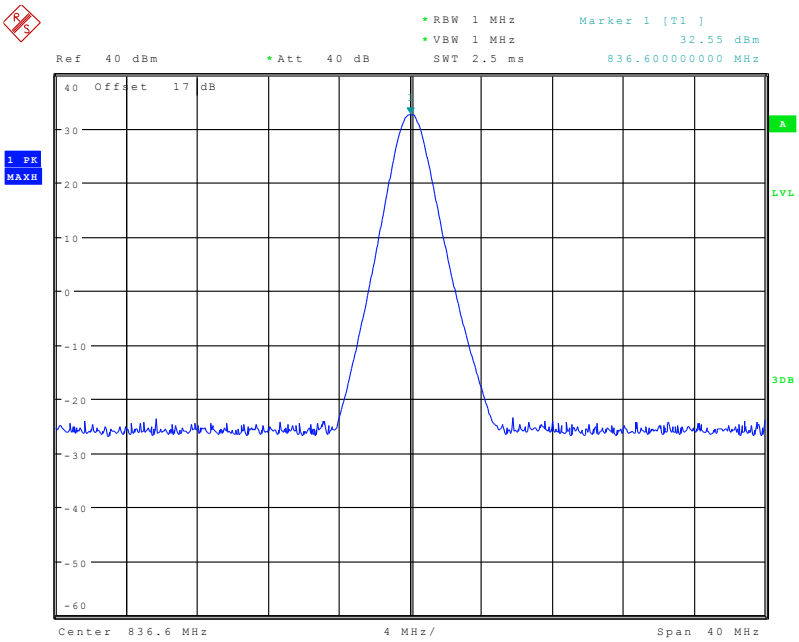
Band	Channel	Frequency (MHz)	Measured Output Power		Verdict
			dBm	Refer to Plot	
GSM 850MHz	128	824.26	32.58	Plot A2	PASS
	190	836.60	32.55	Plot B2	PASS
	251	848.86	32.58	Plot C2	PASS
GSM 1900MHz	512	1850.26	29.88	Plot D2	PASS
	661	1879.94	29.97	Plot E2	PASS
	810	1909.86	29.89	Plot F2	PASS
GPRS 850MHz	128	824.14	32.44	Plot G2	PASS
	190	836.60	32.46	Plot H2	PASS
	251	848.86	32.47	Plot I2	PASS
GPRS 1900MHz	512	1850.14	29.69	Plot J2	PASS
	661	1880.00	29.71	Plot K2	PASS
	810	1909.86	29.67	Plot L2	PASS

Band	Channel	Frequency (MHz)	Measured Output Power		Verdict
			dBm	Refer to Plot	
EDGE 850MHz	128	824.14	32.19	Plot M2	PASS
	190	836.66	32.26	Plot N2	PASS
	251	848.80	32.26	Plot O2	PASS
EDGE 1900MHz	512	1850.26	29.56	Plot P2	PASS
	661	1879.94	29.58	Plot Q2	PASS
	810	1909.86	29.51	Plot R2	PASS
WCDMA Band Ⅴ	4132	826.34	22.40	Plot S2	PASS
	4183	836.73	22.47	Plot T2	PASS
	4233	846.47	22.49	Plot U2	PASS
WCDMA Band Ⅱ	9262	1852.27	22.30	Plot V2	PASS
	9400	1879.74	21.73	Plot W2	PASS
	9538	1907.60	22.29	Plot X2	PASS

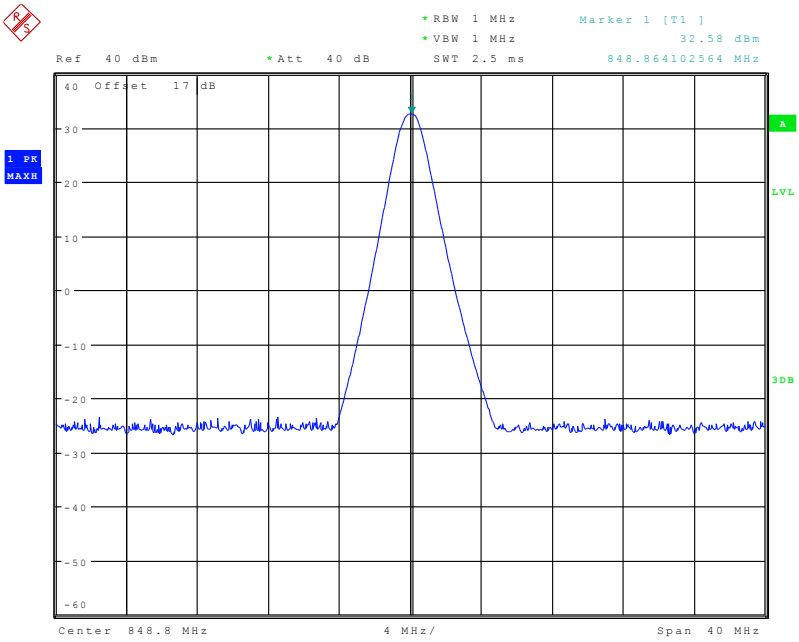
2. Test Plot:



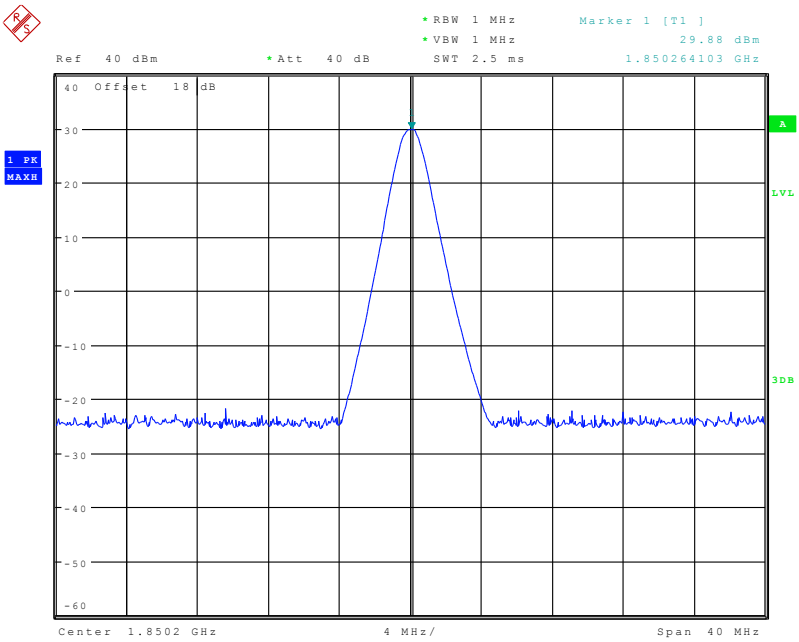
(Plot A2: GSM 850MHz Channel = 128)



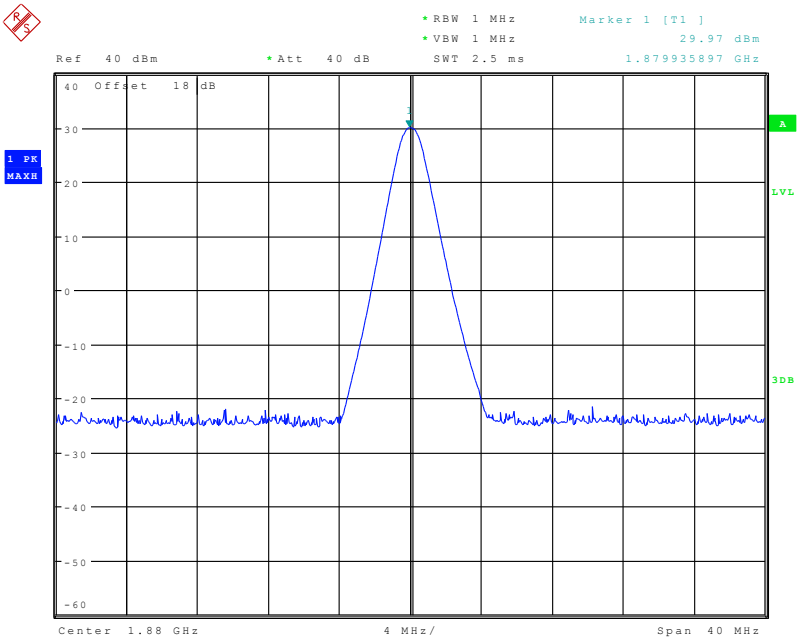
(Plot B2: GSM 850MHz Channel = 190)



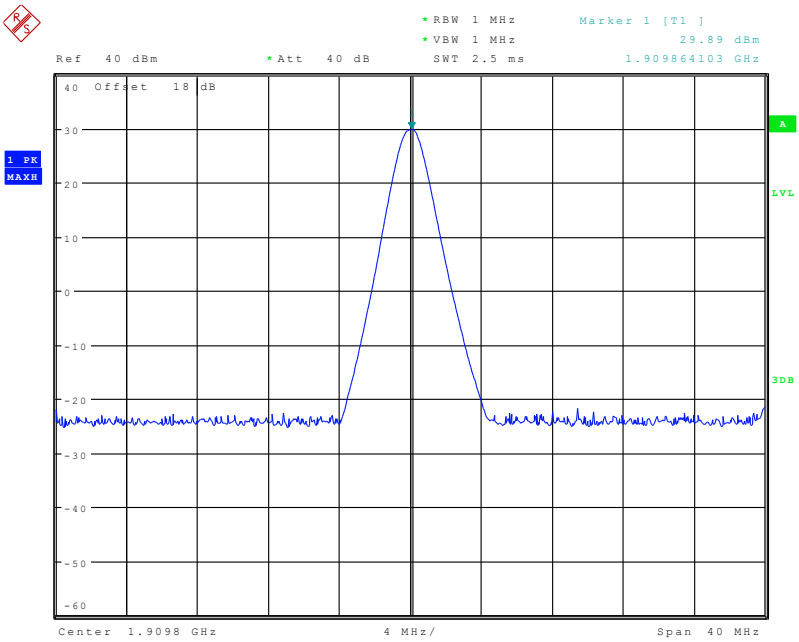
(Plot C2: GSM 850MHz Channel = 251)



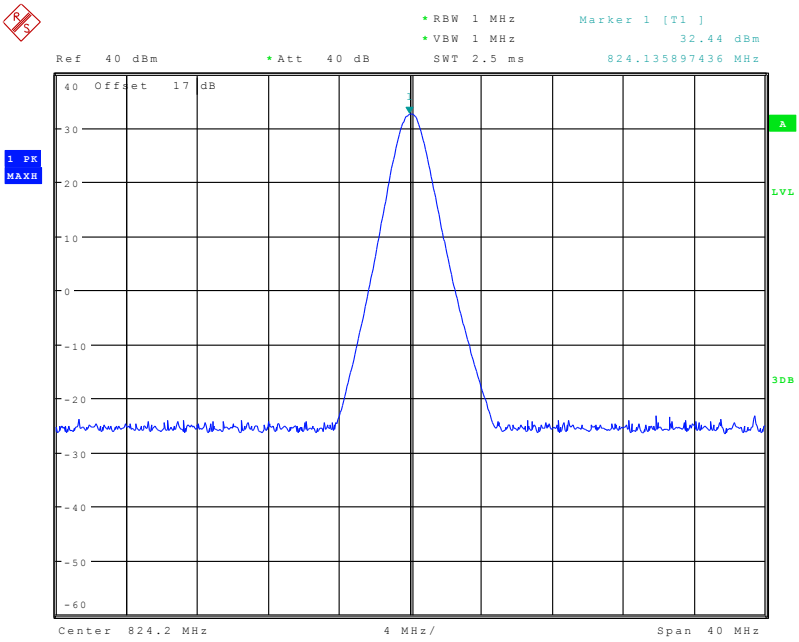
(Plot D2: GSM 1900MHz Channel = 512)



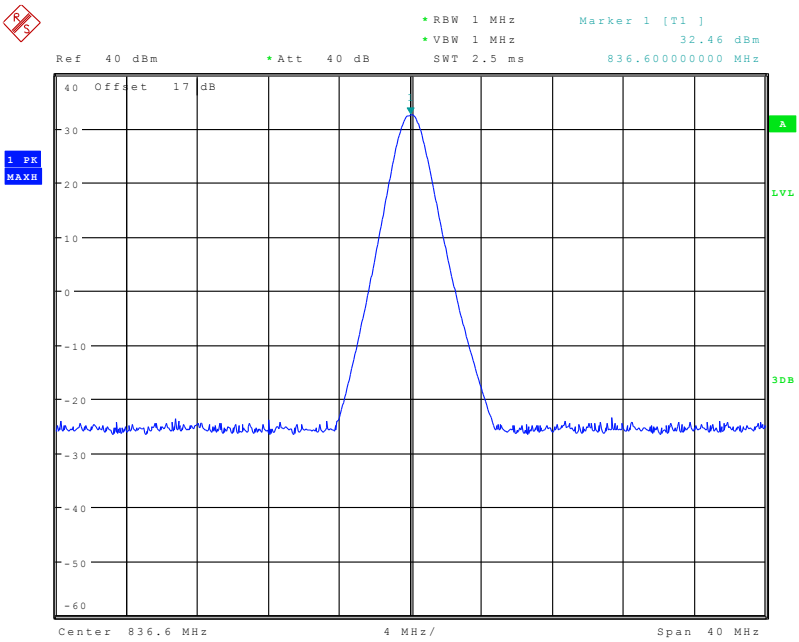
(Plot E2: GSM 1900MHz Channel = 661)



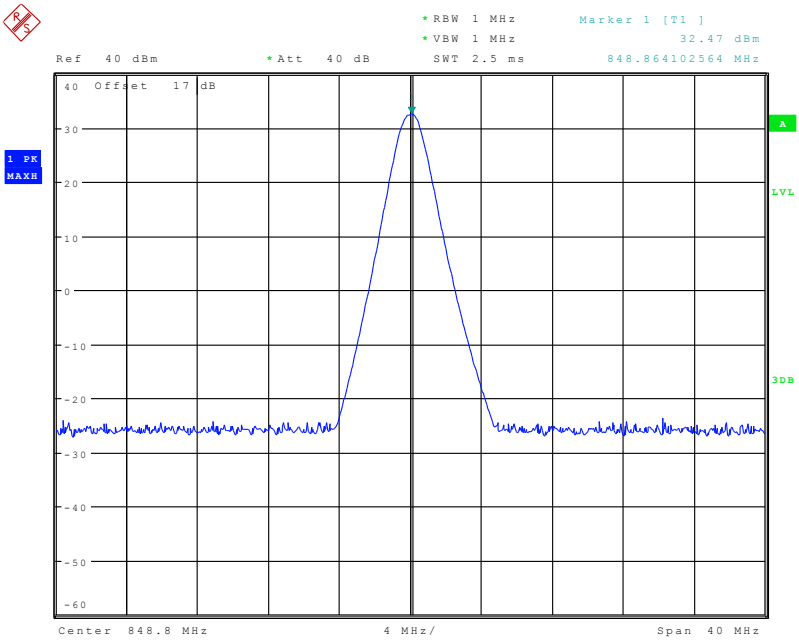
(Plot F2: GSM 1900MHz Channel = 810)



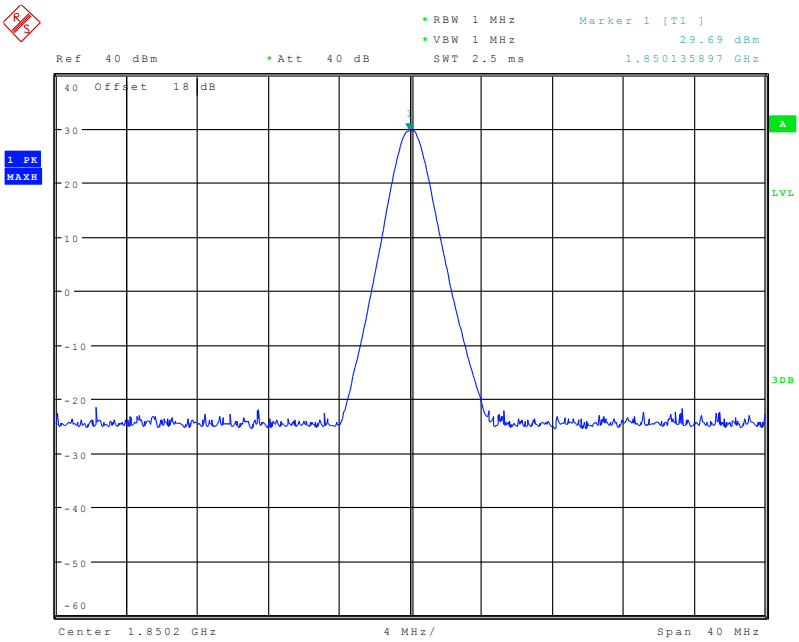
(Plot G2: GPRS 850MHz Channel = 128)



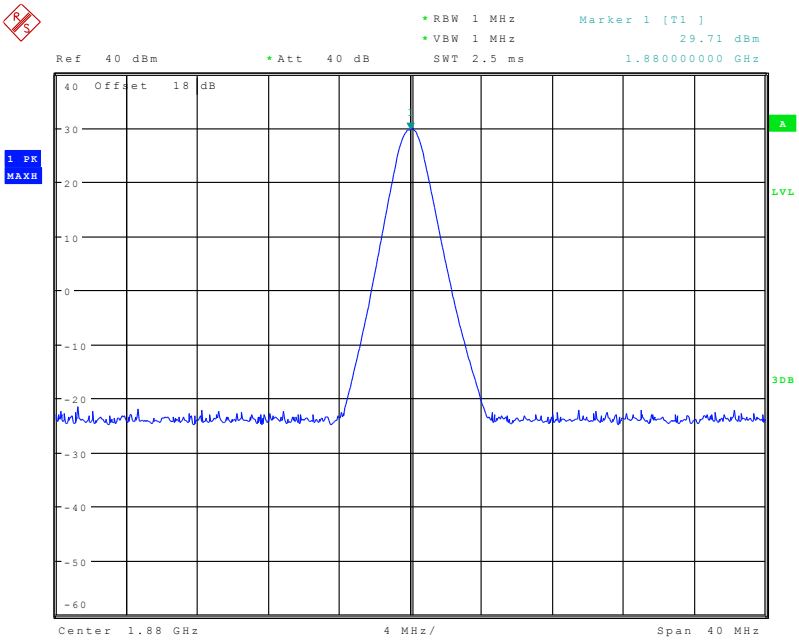
(Plot H2: GPRS 850MHz Channel = 190)



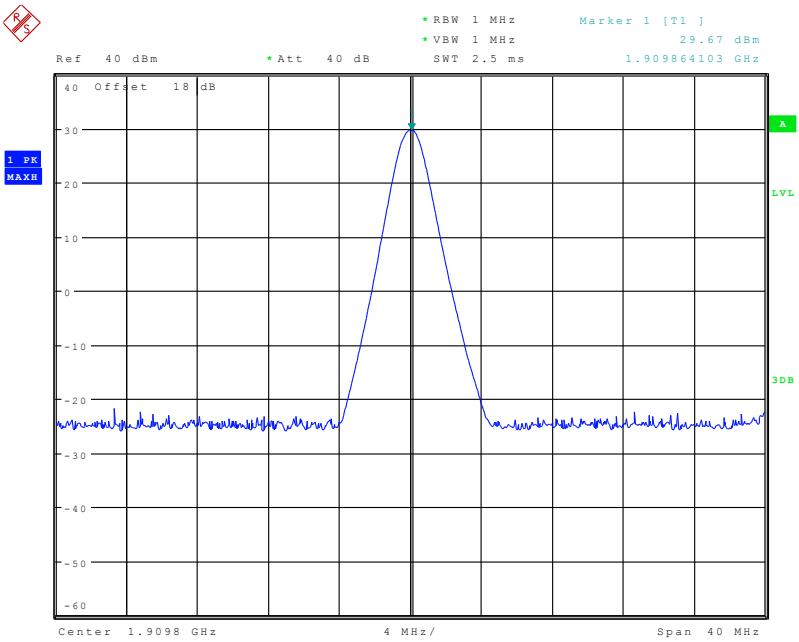
(Plot I2: GPRS 850MHz Channel = 251)



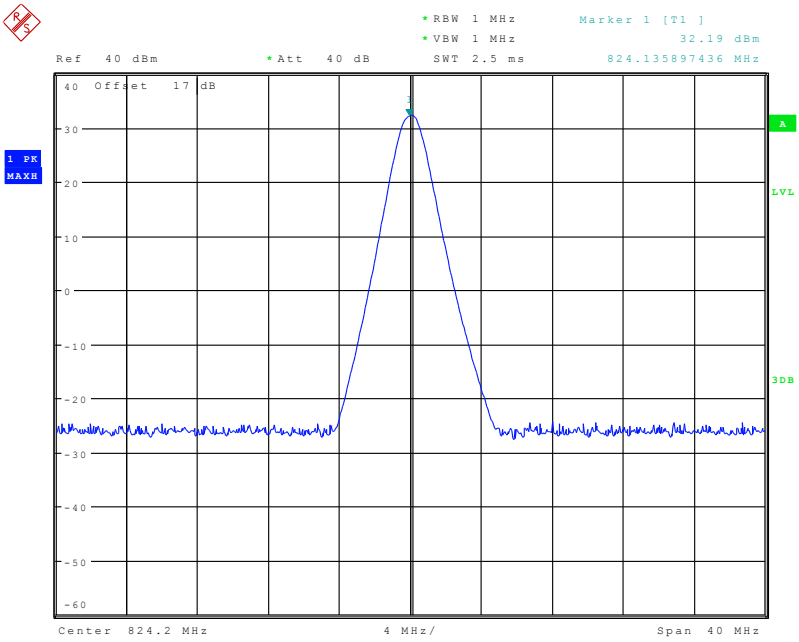
(Plot J2: GPRS 1900MHz Channel = 512)



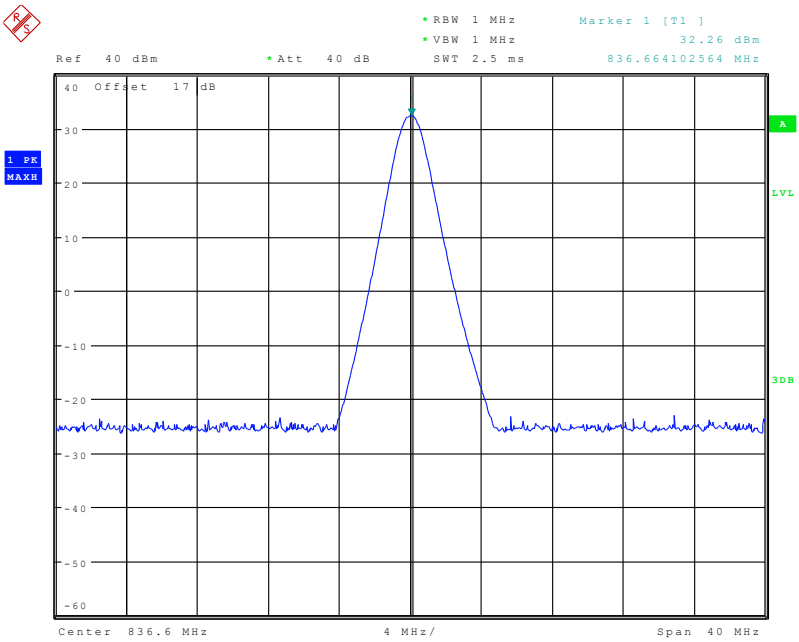
(Plot K2: GPRS 1900MHz Channel = 661)



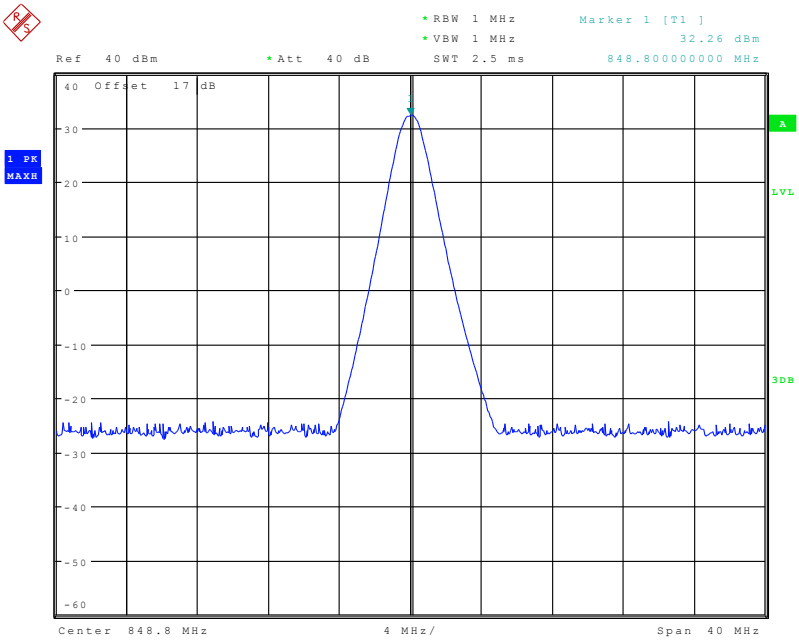
(Plot L2: GPRS 1900MHz Channel = 810)



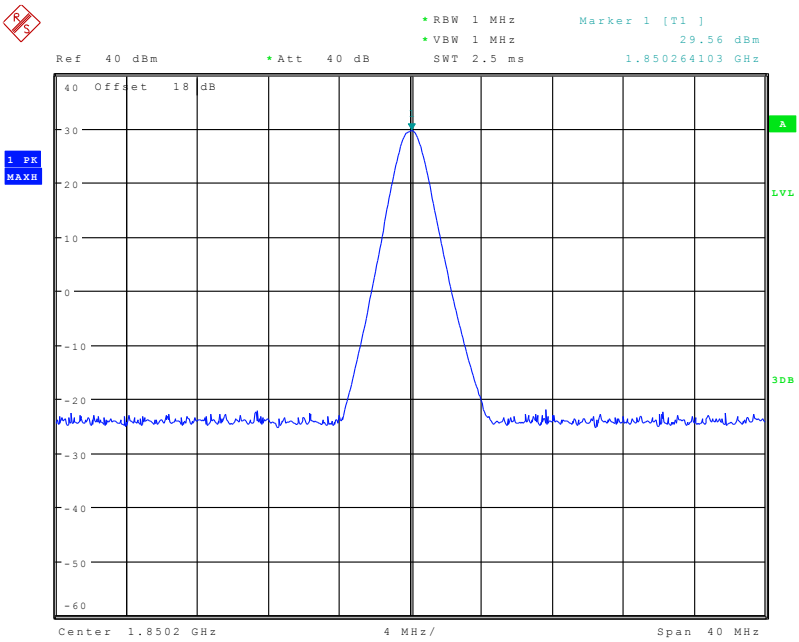
(Plot M2: EDGE 850MHz Channel = 128)



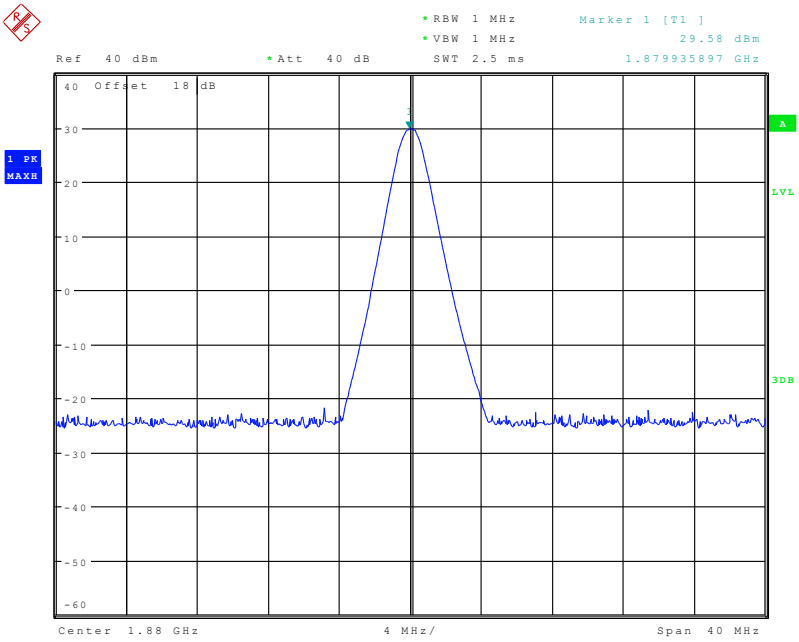
(Plot N2: EDGE 850MHz Channel = 190)



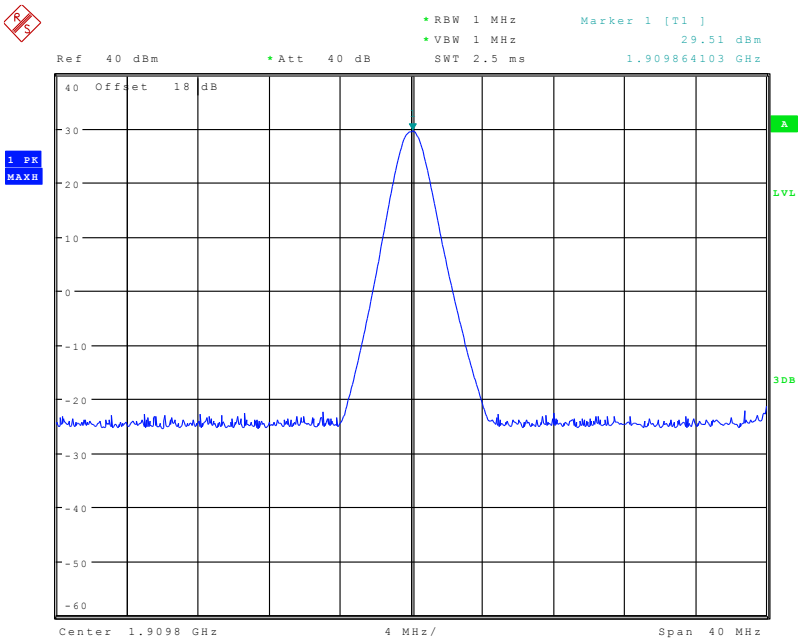
(Plot O2: EDGE 850MHz Channel = 251)



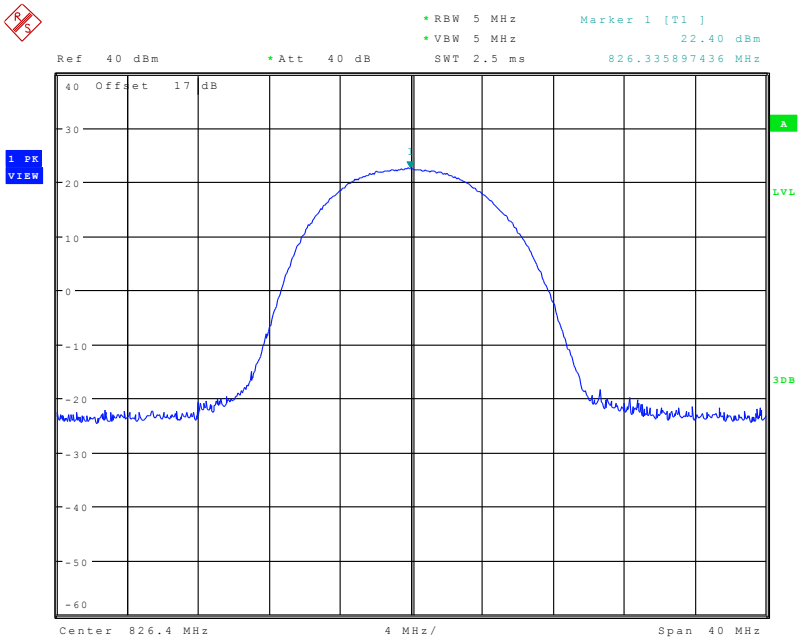
(Plot P2:EDGE 1900MHz Channel = 512)



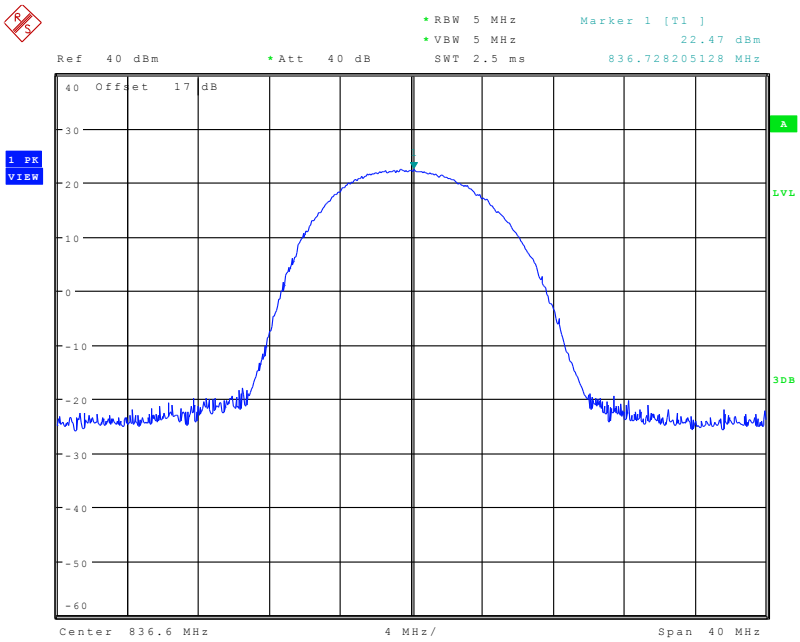
(Plot Q2: EDGE 1900MHz Channel = 661)



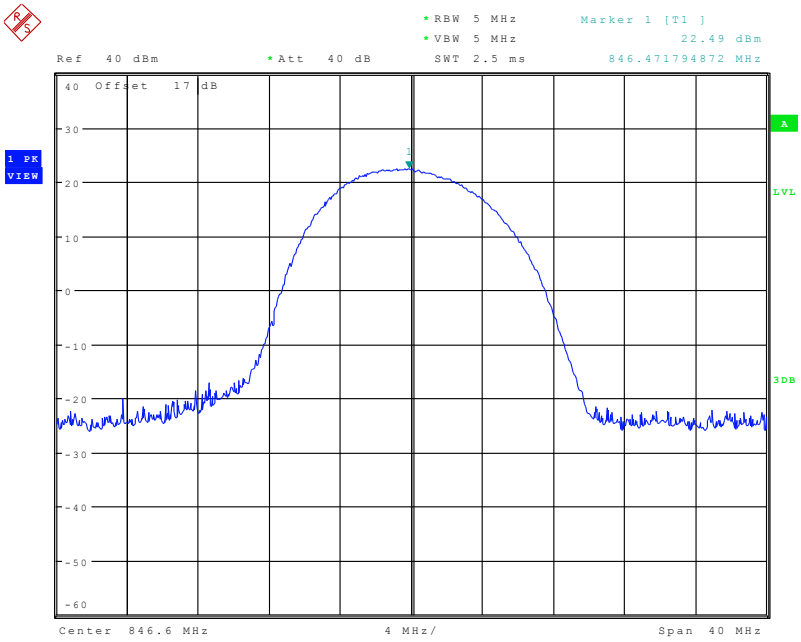
(Plot R2: EDGE 1900MHz Channel = 810)



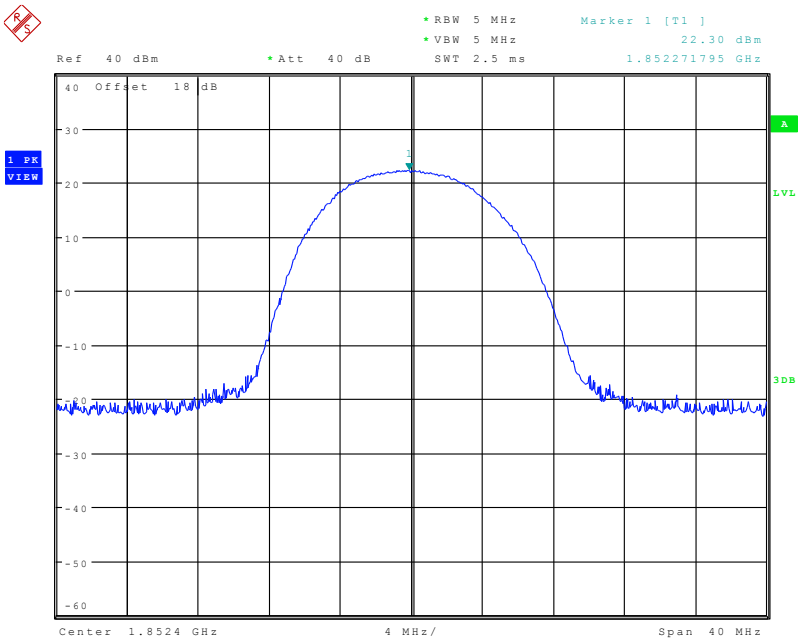
(Plot S2: WCDMA Ⅴ Channel = 4132)



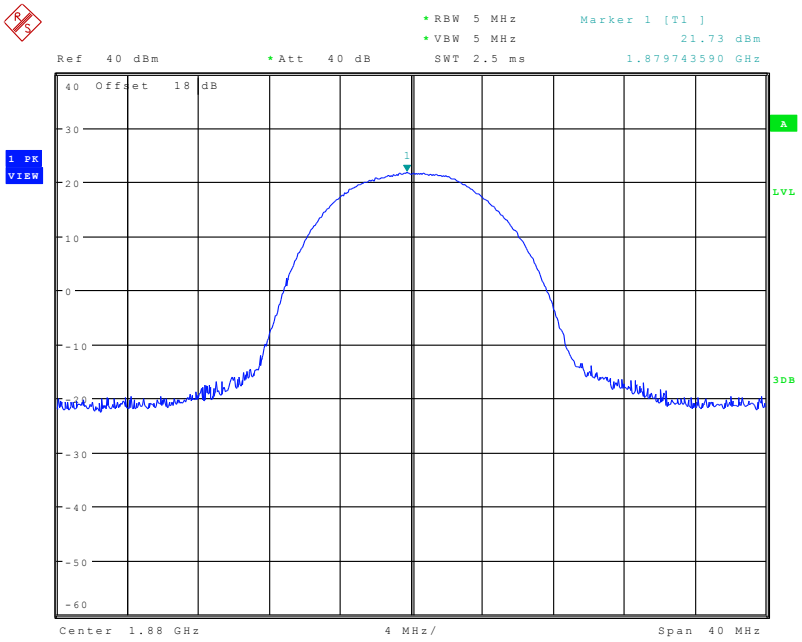
(Plot T2: WCDMA Ⅴ Channel = 4183)



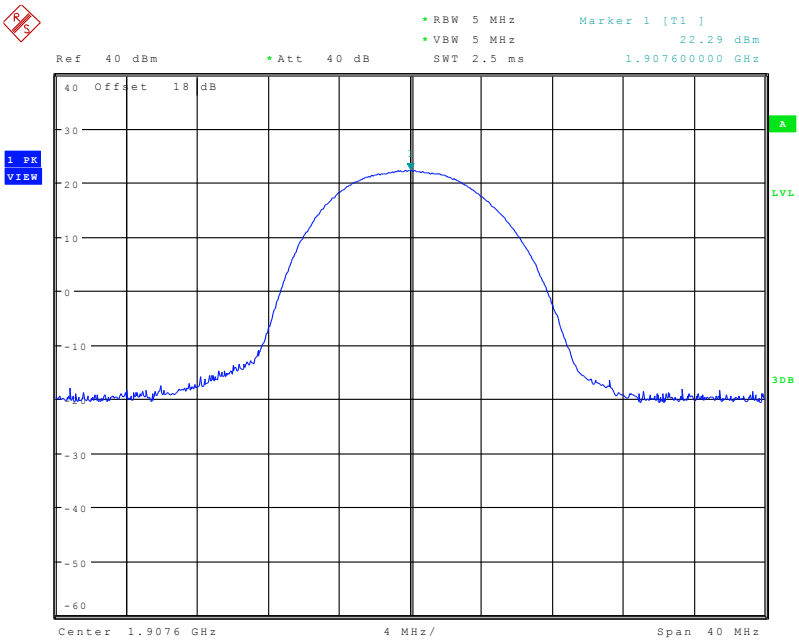
(Plot U2: WCDMA Ⅴ Channel = 4233)



(Plot V2: WCDMA Ⅱ Channel = 9262)



(Plot W2: WCDMA Ⅱ Channel = 9400)



(Plot X2: WCDMA Ⅱ Channel = 9538)

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

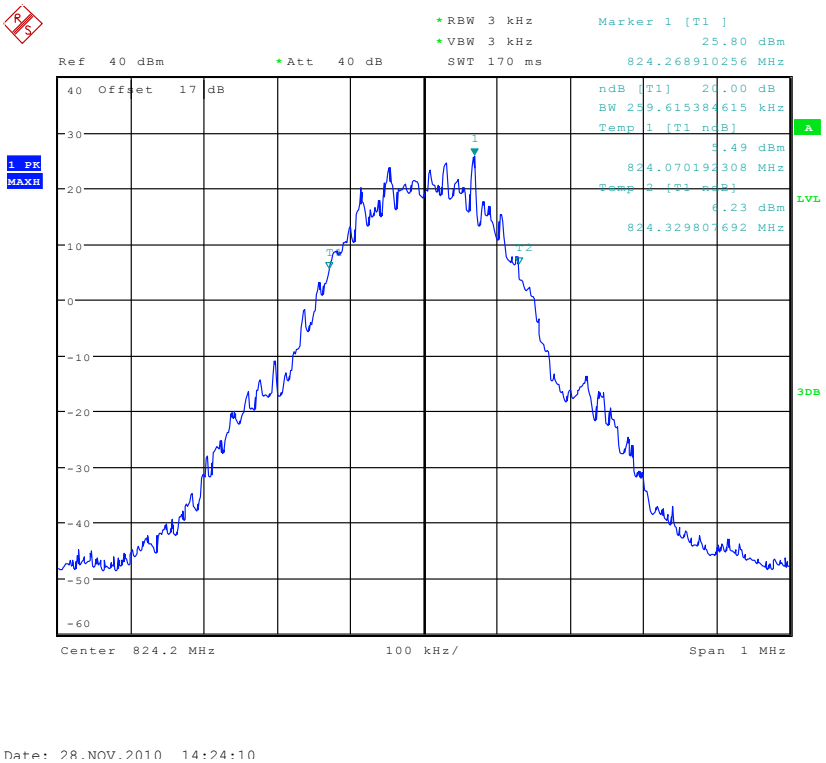
Here the lowest, middle and highest channels are tested to record the 20dB occupied bandwidth, it's about 300kHz. All modes are tested,including (GSM850 GPRS EDGE WCDMA Band Ⅴ and PCS1900 GPRS EDGE WCDMA Band Ⅱ).

1. Test Verdict:

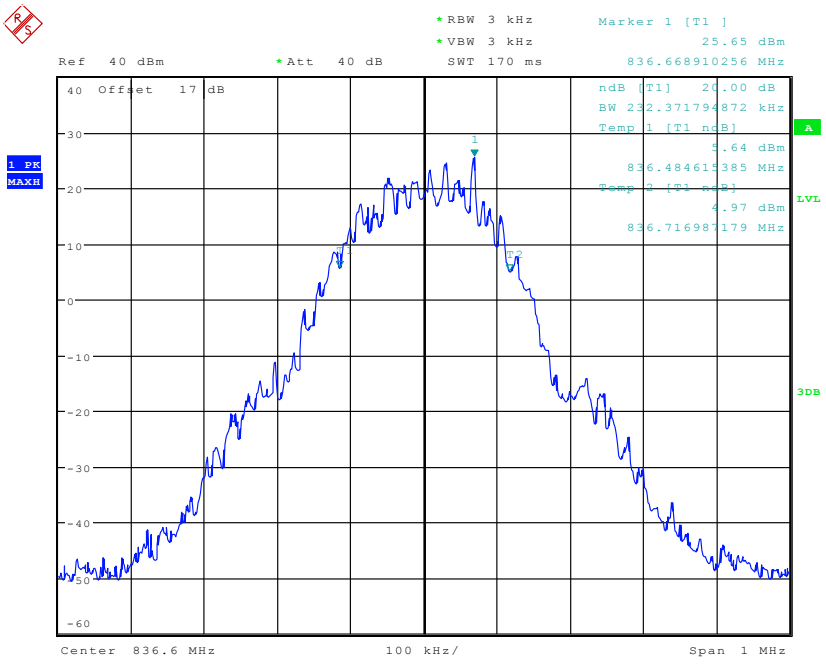
Band	Channel	Measured 20dB Occupied Bandwidth (kHz)	Refer to Plot
GSM 850MHz	128	259.6154	Plot A3
	190	232.3718	Plot B3
	251	246.7949	Plot C3
GSM 1900MHz	512	230.7692	Plot D3
	661	245.1920	Plot E3
	810	229.1667	Plot F3
GPRS 850MHz	128	272.4359	Plot G3
	190	270.8333	Plot H3
	251	269.2308	Plot I3
GPRS 1900MHz	512	272.4359	Plot J3
	661	275.6410	Plot K3
	810	275.6410	Plot L3
EDGE 850MHz	128	283.6538	Plot M3
	190	275.6410	Plot N3
	251	280.4487	Plot O3

Band	Channel	Measured 20dB Occupied Bandwidth (kHz)	Refer to Plot
EDGE 1900MHz	512	266.0256	PlotP3
	661	283.6538	Plot Q3
	810	280.4487	Plot R3
WCDMA Band Ⅴ	4132	4567.3	Plot S3
	4183	4567.3	Plot T3
	4233	4567.3	PlotU3
WCDMA Band Ⅱ	9262	4583.3	Plot V3
	9400	4599.3	Plot W3
	9538	4567.3	Plot X3

2. Test Plot:

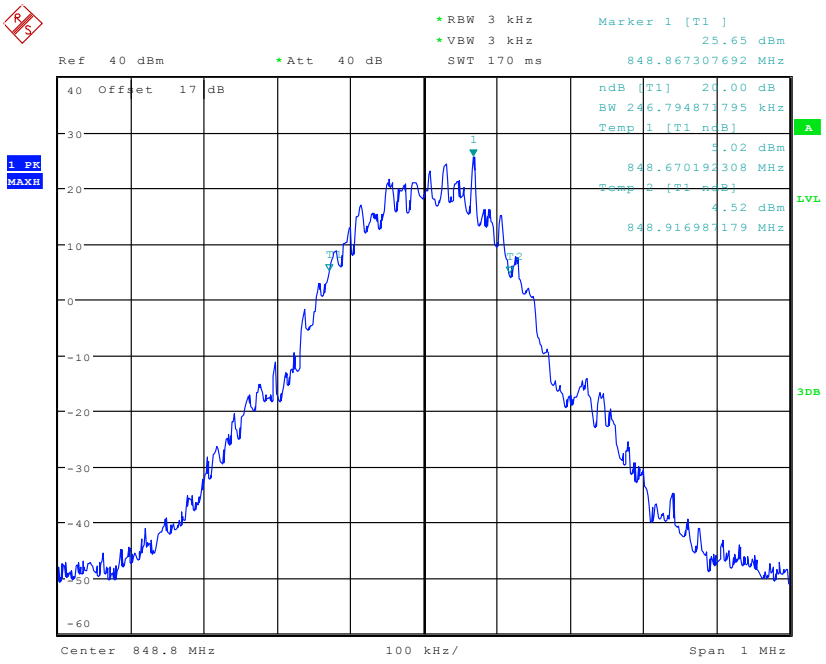


(Plot A3: GSM 850MHz Channel = 128)



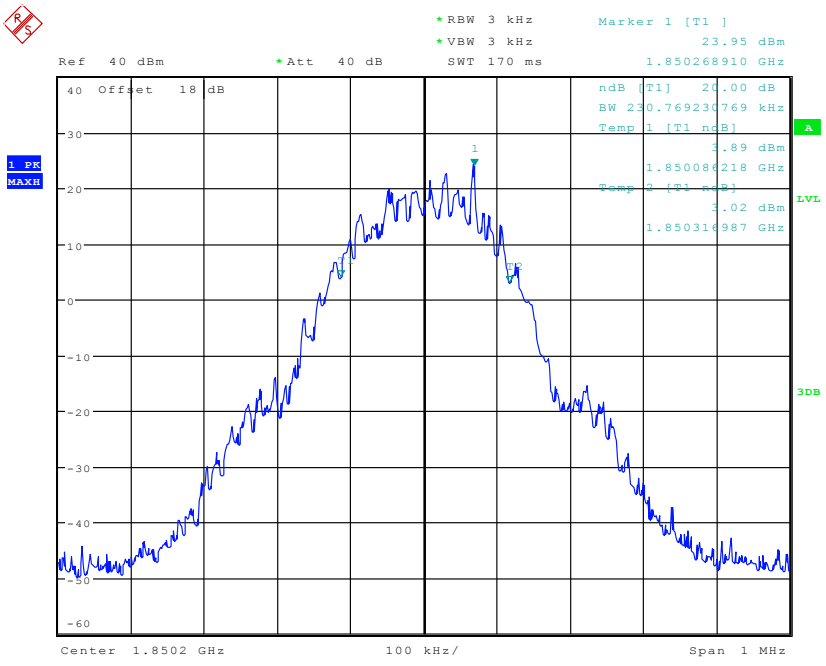
Date: 28.NOV.2010 14:25:00

(Plot B3: GSM 850MHz Channel = 190)



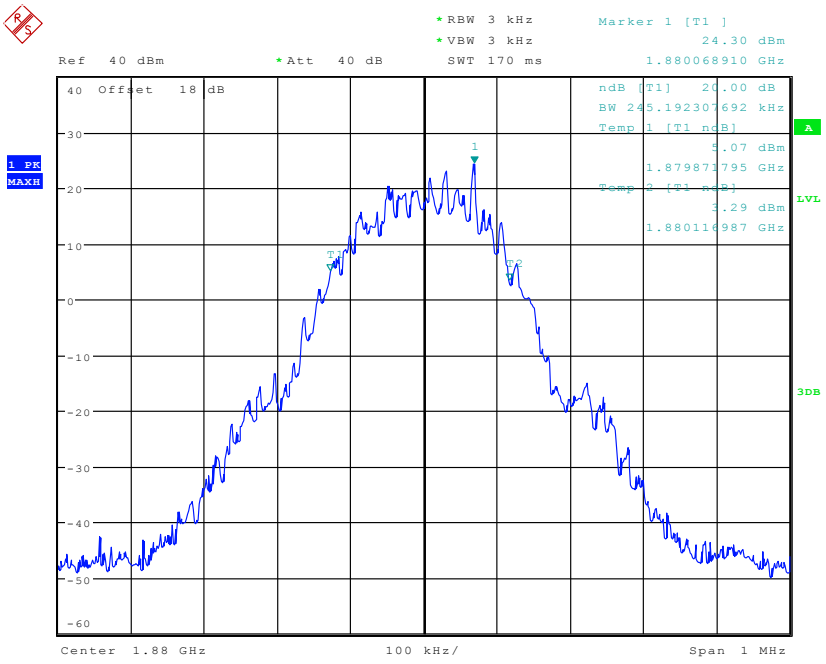
Date: 28.NOV.2010 14:25:38

(Plot C3: GSM 850MHz Channel = 251)



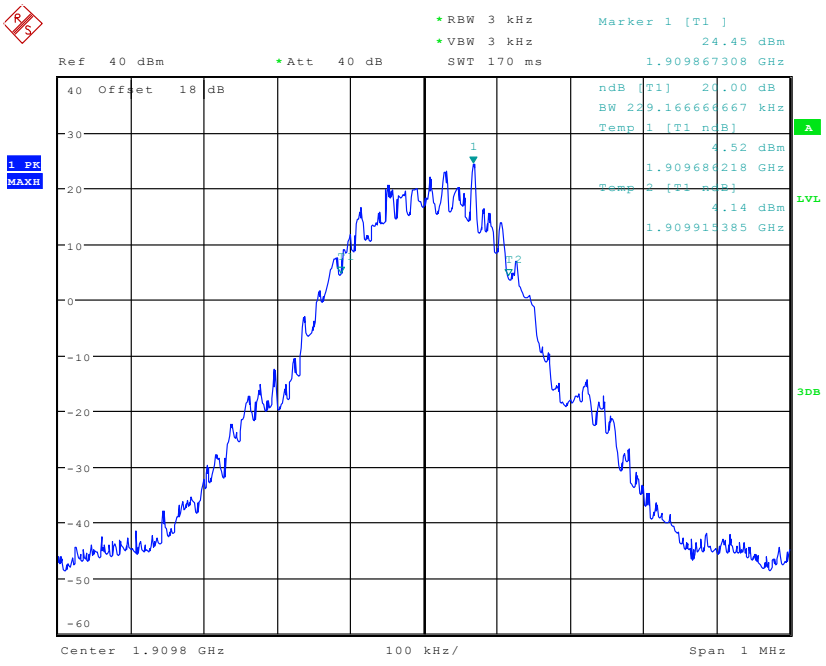
Date: 28.NOV.2010 14:26:34

(Plot D3: GSM 1900MHz Channel = 512)



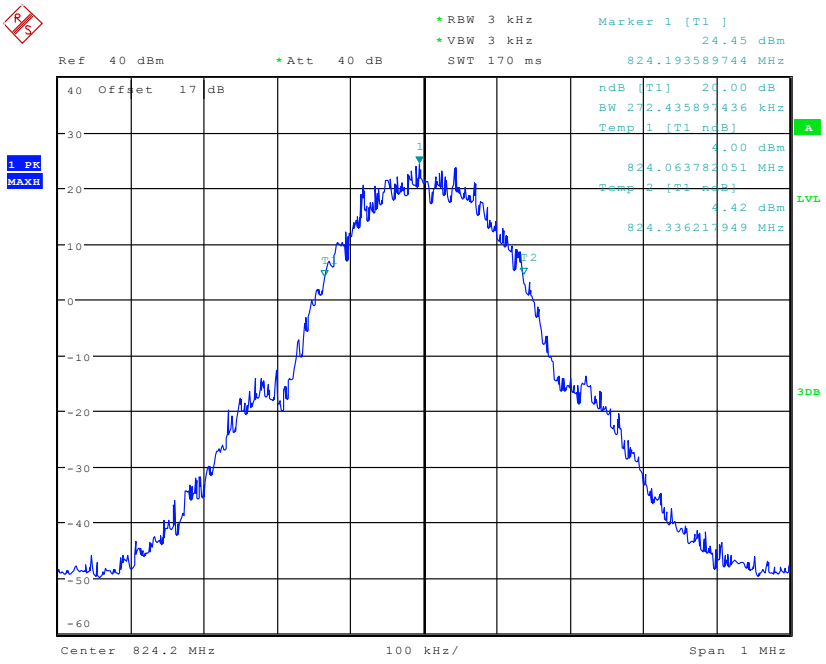
Date: 28.NOV.2010 14:27:09

(Plot E3: GSM 1900MHz Channel = 661)



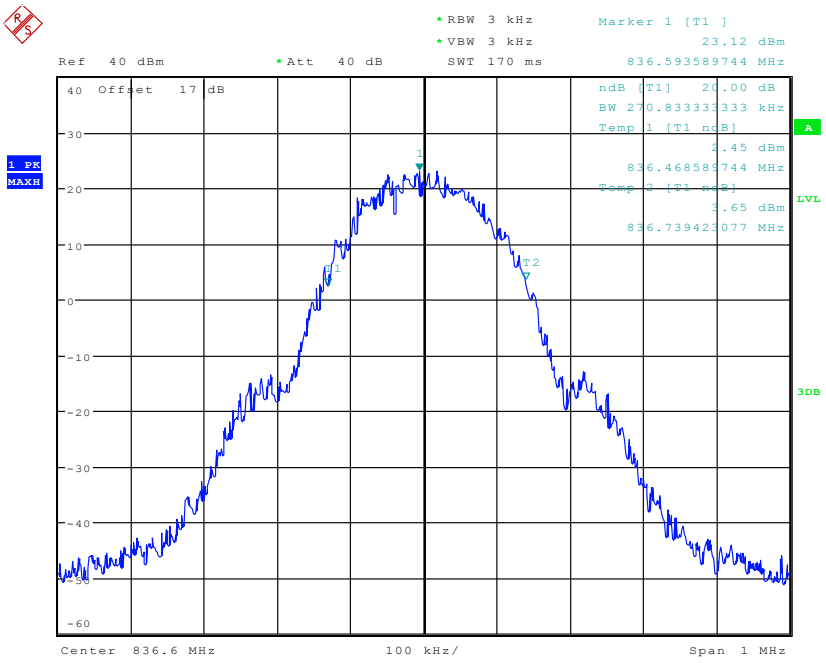
Date: 28.NOV.2010 14:27:55

(Plot F3: GSM 1900MHz Channel = 810)



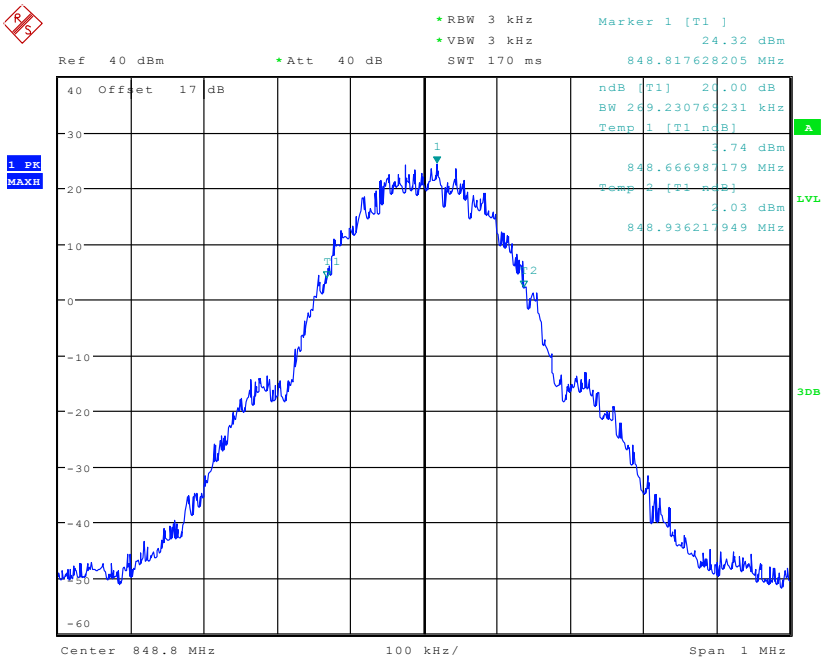
Date: 28.NOV.2010 14:45:18

(Plot G3: GPRS 850MHz Channel = 128)



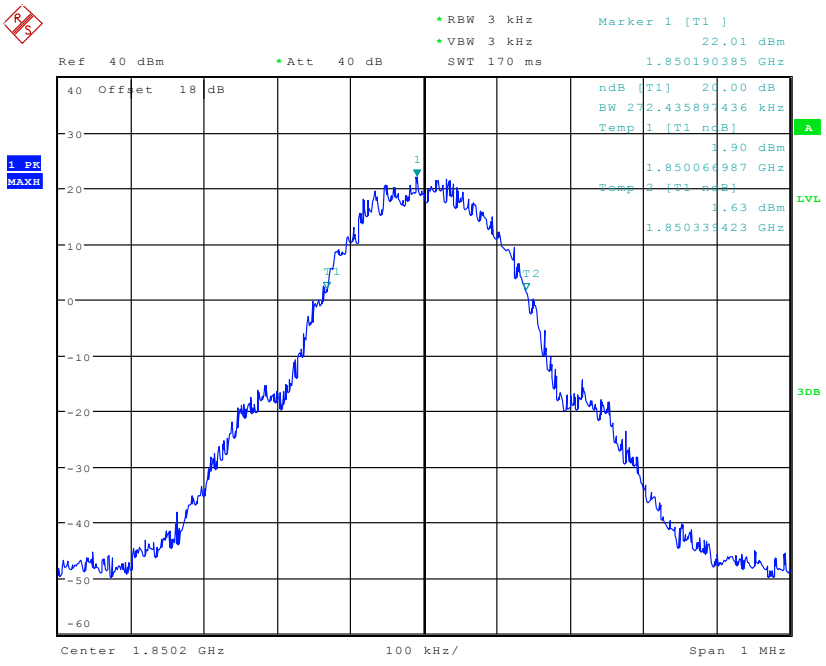
Date: 28.NOV.2010 14:45:45

(Plot H3: GPRS 850MHz Channel = 190)

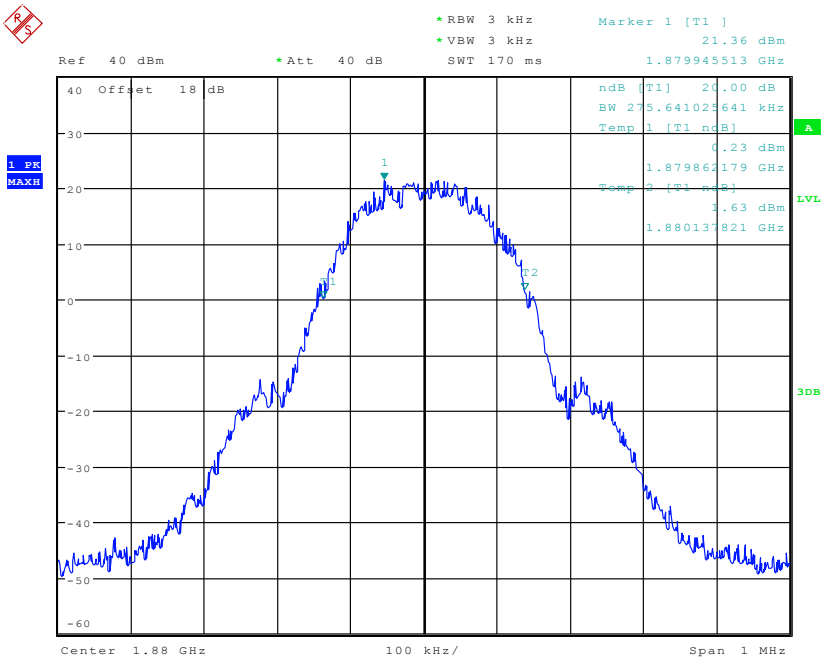


Date: 28.NOV.2010 14:46:15

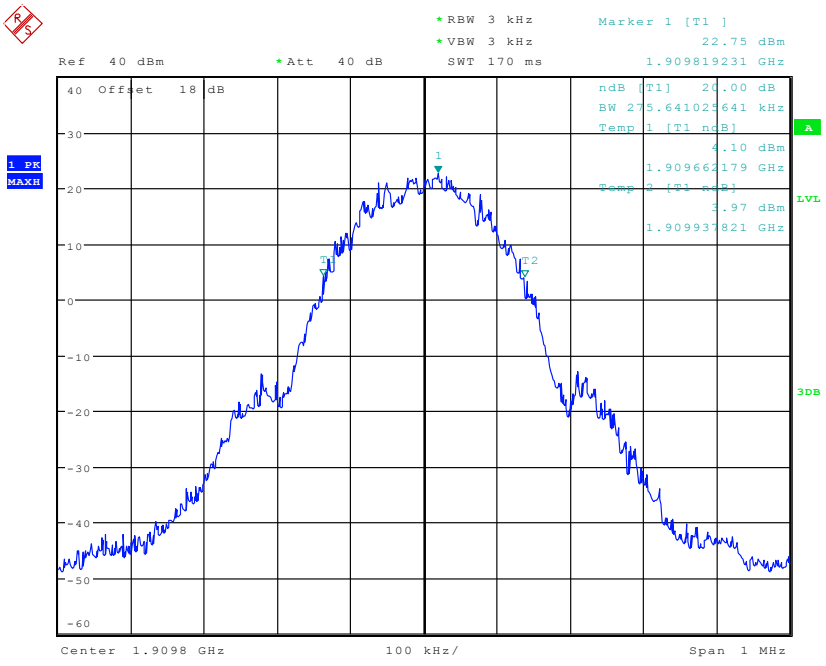
(Plot I3: GPRS 850MHz Channel = 251)



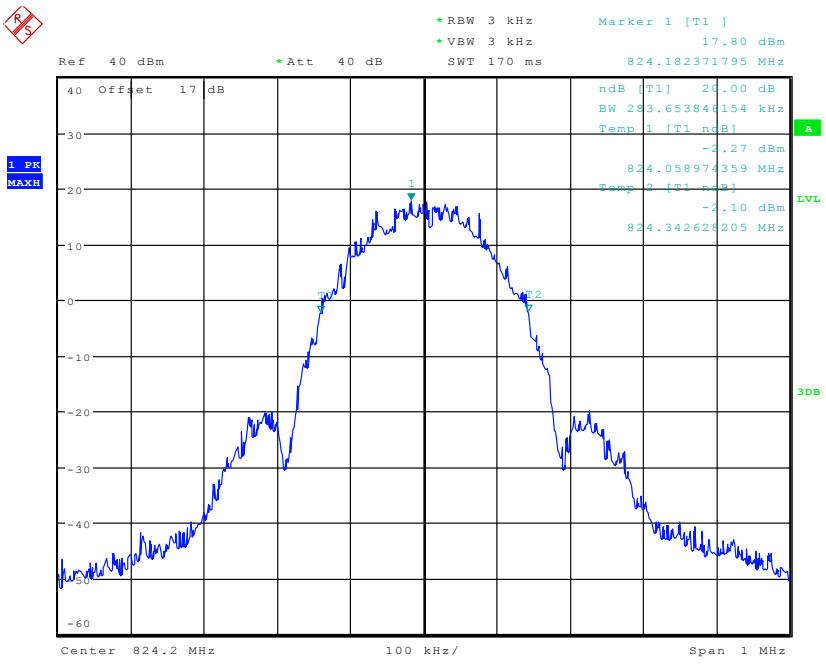
(Plot J3: GPRS 1900MHz Channel = 512)



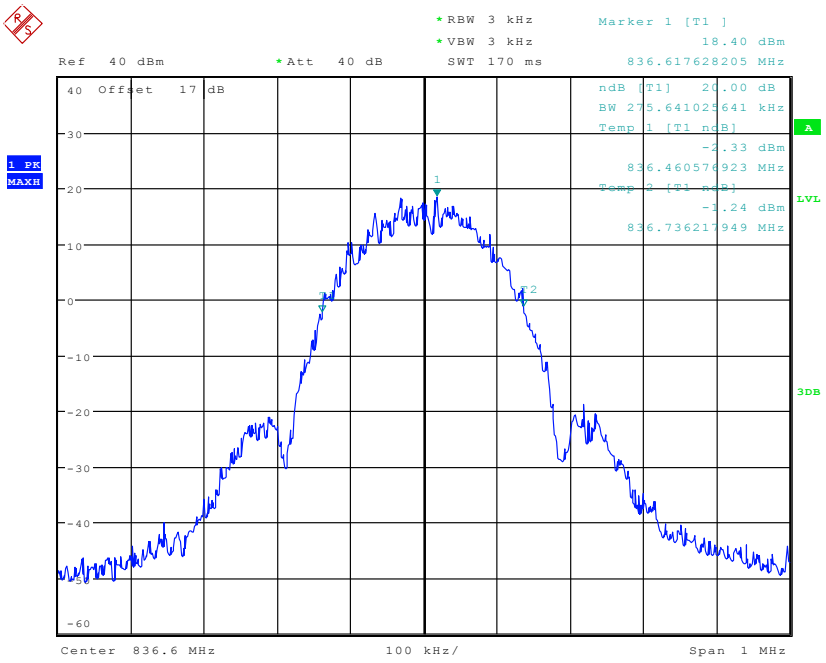
(Plot K3: GPRS 1900MHz Channel = 661)



(Plot L3: GPRS 1900MHz Channel = 810)

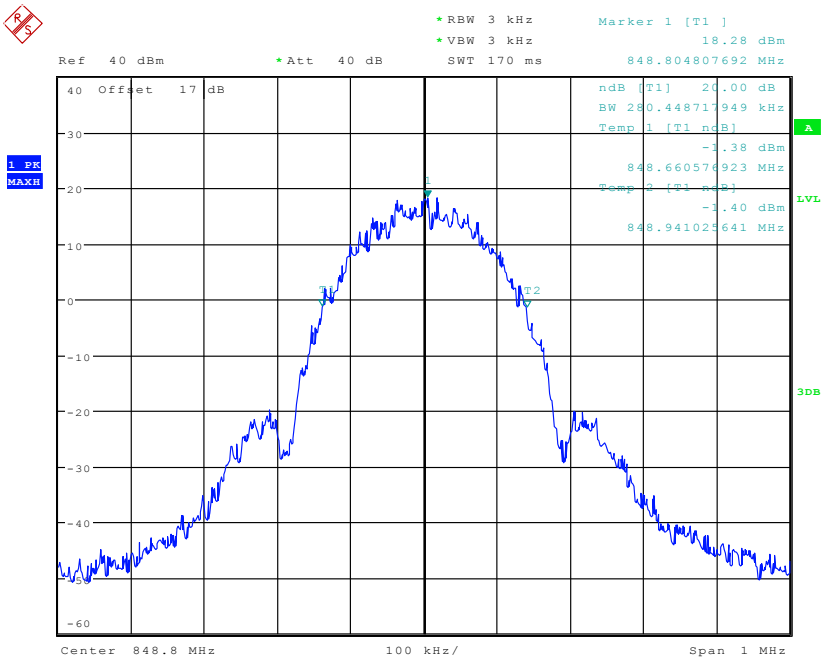


(Plot M3: EDGE 850MHz Channel = 128)



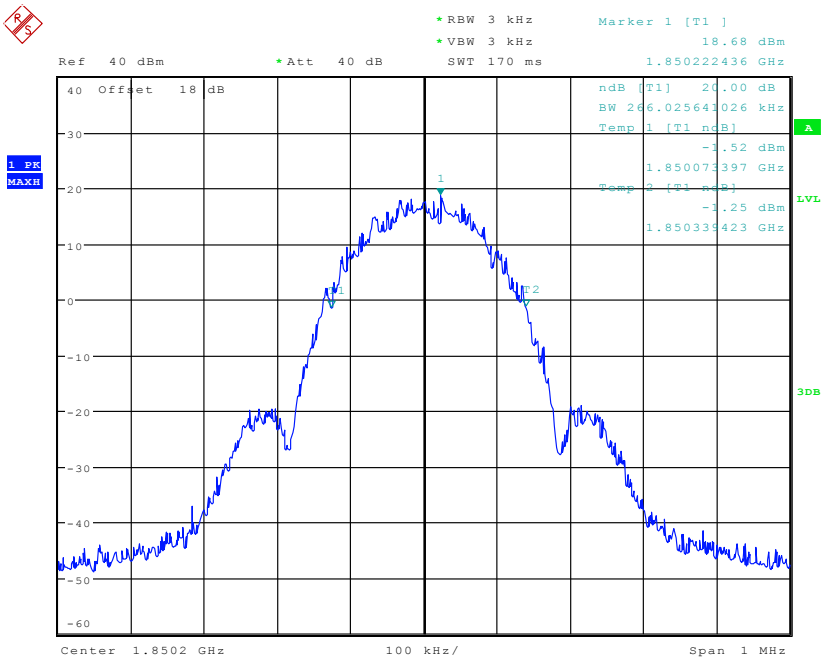
Date: 28.NOV.2010 14:50:21

(Plot N3: GPRS 850MHz Channel = 190)

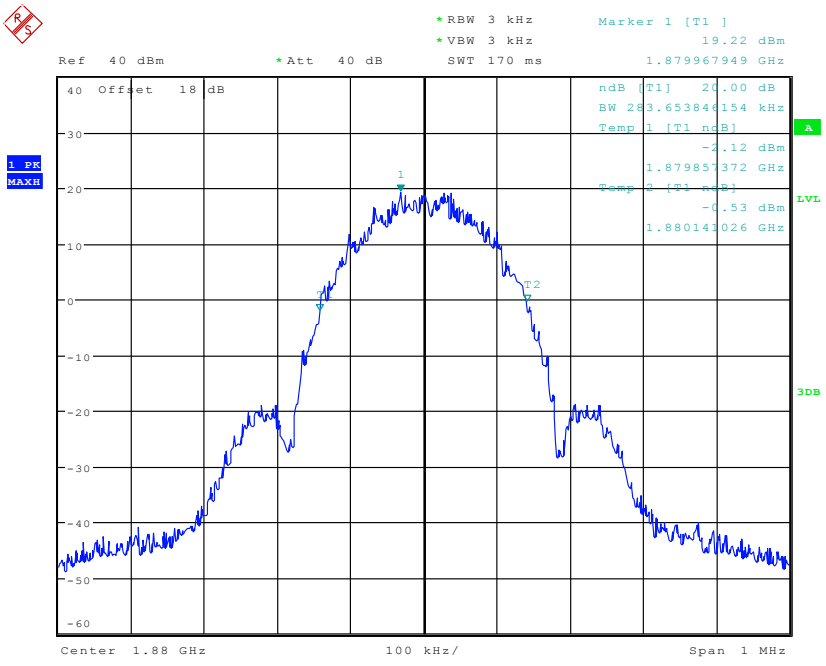


Date: 28.NOV.2010 14:51:06

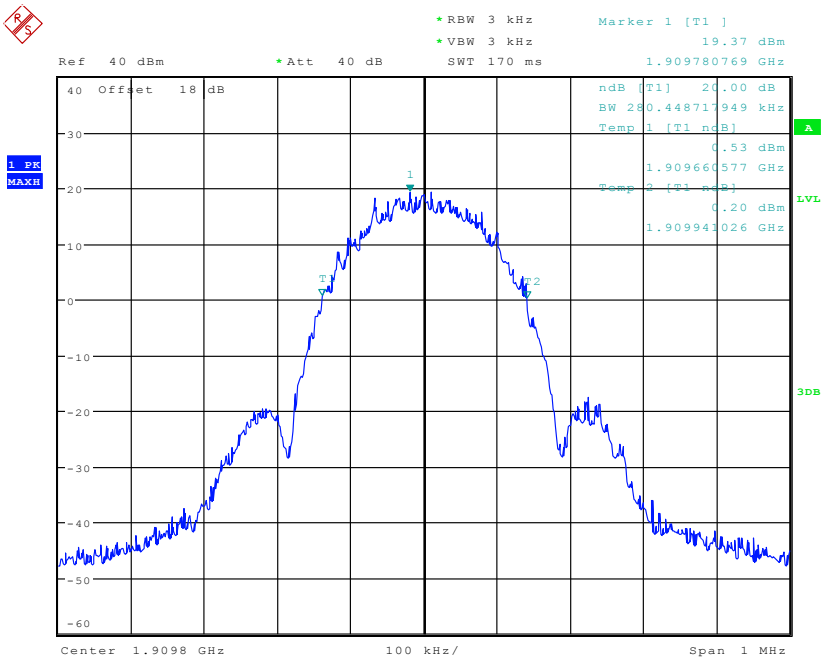
(Plot O3: GPRS 850MHz Channel = 251)



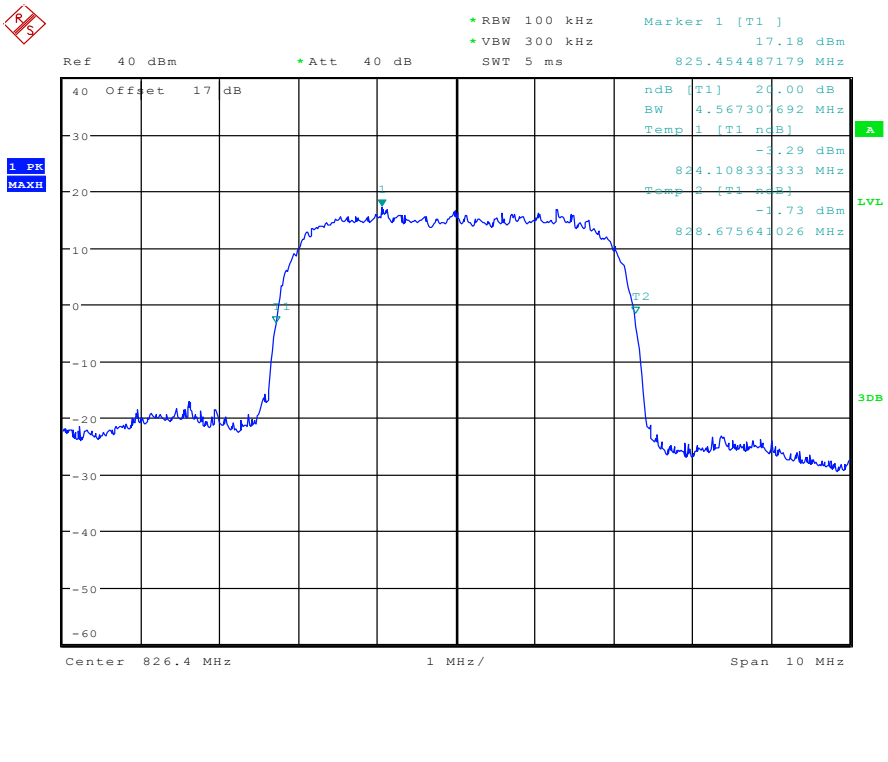
(Plot P3: GPRS 1900MHz Channel = 512)



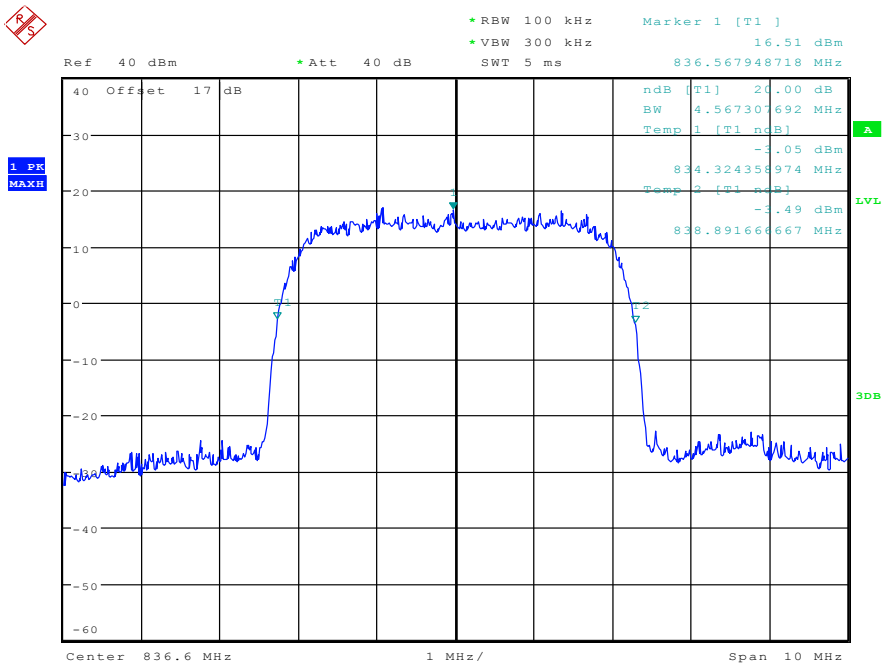
(Plot Q3: EDGE 1900MHz Channel = 661)



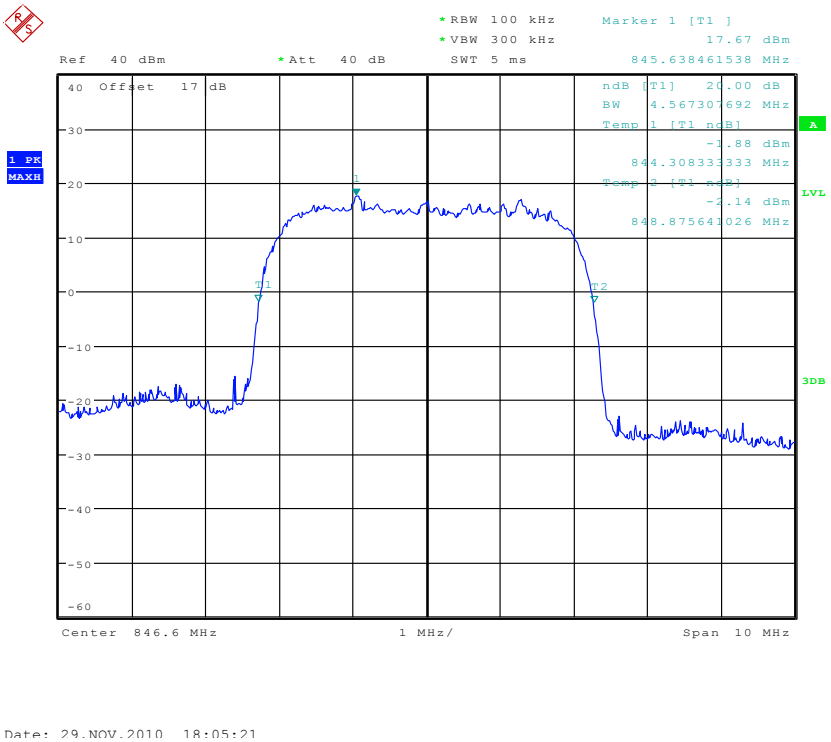
(Plot R3: EDGE 1900MHz Channel = 810)



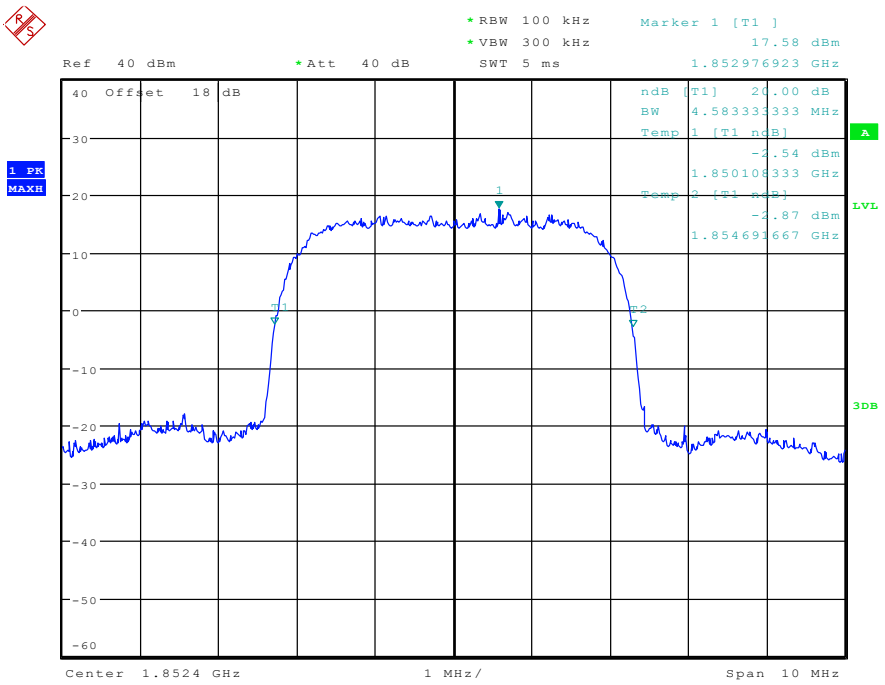
(Plot S3: WCDMA Ⅴ Channel = 4132)



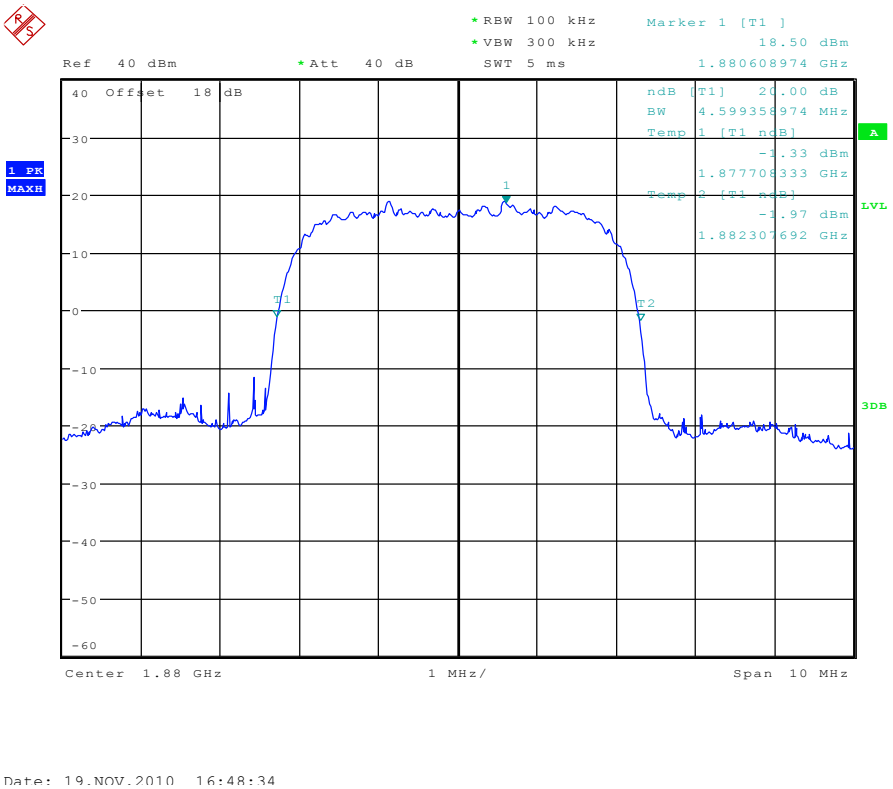
(Plot T3: WCDMA Ⅴ Channel = 4183)



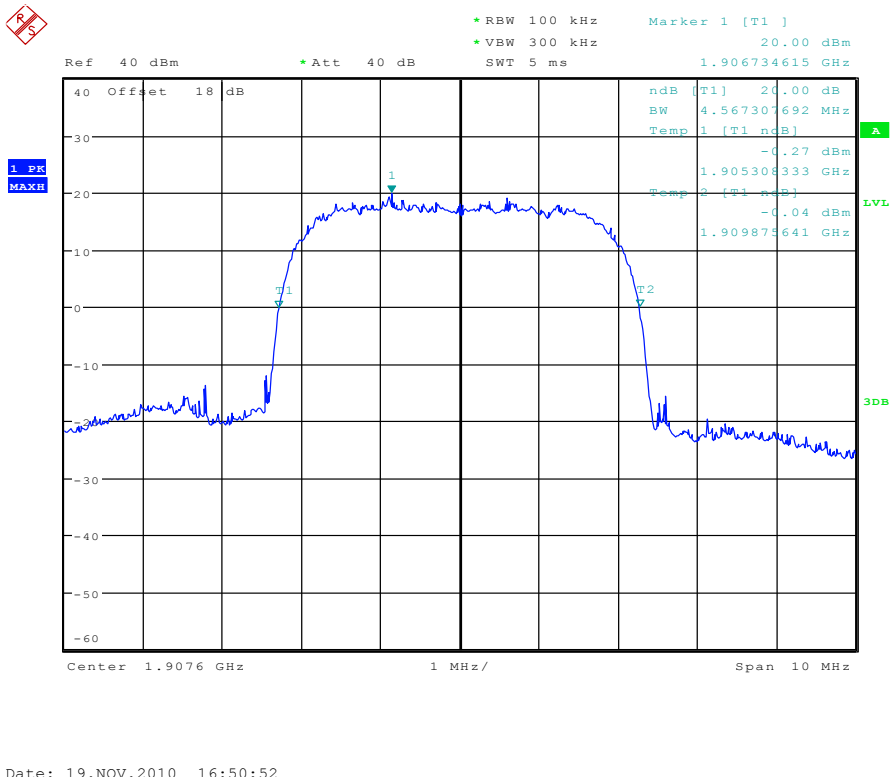
(Plot U3: WCDMA Ⅴ Channel = 4233)



(Plot V3: WCDMA Ⅱ Channel = 9262)



(Plot W3: WCDMA Ⅱ Channel = 9400)



(Plot X3: WCDMA Ⅱ Channel = 9538)

3.4 Frequency Stability

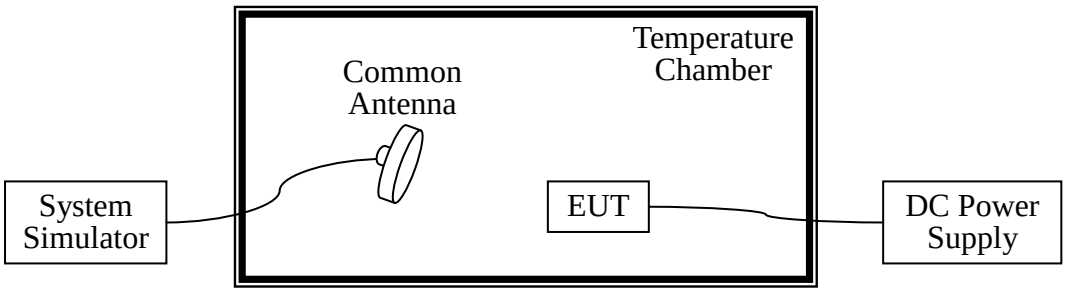
3.4.1 Requirement

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 ℃ 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.

3.4.2 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
System Simulator	Rohde&Schwarz	CMU200	105571	2010.9	1year
System Simulator	Agilent	E5515C	GB46040102	2010.9	1year
DC Power Supply	Good Will	GPS-3030DD	EF920938	2009.10	2year
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2010.9	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℃. The frequency deviation limit is ±2.5ppm. All modes are tested,including (GSM850 GPRS EDGE WCDMA Band Ⅴ and PCS1900 GPRS EDGE WCDMA Band Ⅱ).

Band	Test Conditions		Frequency Deviation						Verdict
			Low Channel		Middle Channel		High Channel		
	Power (VDC)	Temperature (℃)	Dev. Freq. Hz	Deviation (ppm)	Dev. Freq. Hz	Deviation (ppm)	Dev. Freq. Hz	Deviation (ppm)	Limit ±2.5ppm (ppm)
GSM 850MHz	3.7	-30	-	-	-	-	-	-	PASS
		-20	-	-	-	-	-	-	
		-10	-	-	-	-	-	-	
		0	-7	0	-5	0	3	0	
		+10	7	0	-3	0	-4	0	
		+20	-2	0	-2	0	-1	0	
		+30	8	0	-2	0	-3	0	
		+40	4	0	-6	0	5	0	
		+50	-	-	-	-	-	-	
	4.2	+25	6	0	4	0	-5	0	
	3.6	+25	-5	0	2	0	4	0	
GSM 1900MHz	3.7	-30	-	-	-	-	-	-	PASS
		-20	-	-	-	-	-	-	
		-10	-	-	-	-	-	-	
		0	-8	0	-3	0	-7	0	
		+10	4	0	4	0	1	0	
		+20	-6	0	4	0	2	0	
		+30	-3	0	-5	0	4	0	
		+40	-5	0	7	0	5	0	
		+50	-	-	-	-	-	-	
	4.2	+25	1	0	-7	0	-9	0	
	3.6	+25	-3	0	-4	0	-6	0	
GPRS 850MHz	3.7	-30	-	-	-	-	-	-	PASS
		-20	-	-	-	-	-	-	
		-10	-	-	-	-	-	-	
		0	-7	0	-2	0	6	0	
		+10	4	0	5	0	-2	0	
		+20	-5	0	-2	0	3	0	

Band	Test Conditions		Frequency Deviation						Verdict
			Low Channel		Middle Channel		High Channel		
	Power (VDC)	Temperature (℃)	Dev. Freq. Hz	Deviation (ppm)	Dev. Freq. Hz	Deviation (ppm)	Dev. Freq. Hz	Deviation (ppm)	Limit ±2.5ppm (ppm)
		+30	5	0	4	0	-5	0	
		+40	-3	0	-1	0	5	0	
		+50	-	-	-	-	-	-	
	4.2	+25	7	0	-7	0	-7	0	
	3.6	+25	-4	0	4	0	-5	0	
GPRS 1900MHz	3.7	-30	-	-	-	-	-	-	PASS
		-20	-	-	-	-	-	-	
		-10	-	-	-	-	-	-	
		0	9	0	7	0	-6	0	
		+10	-3	0	-1	0	-6	0	
		+20	-4	0	-2	0	-7	0	
		+30	-4	0	-8	0	-8	0	
		+40	7	0	-3	0	9	0	
		+50	-	-	-	-	-	-	
	4.2	+25	-2	0	-7	0	-3	0	
	3.6	+25	-1	0	3	0	-6	0	
EGPRS 850MHz	3.7	-30	5	0	4	0	4	0	PASS
		-20	-	-	-	-	-	-	
		-10	6	0	7	0	7	0	
		0	-2	0	-3	0	-8	0	
		+10	-1	0	-1	0	-8	0	
		+20	-4	0	6	0	-4	0	
		+30	-3	0	7	0	3	0	
		+40	8	0	2	0	7	0	
		+50	4	0	-1	0	3	0	
	4.2	+25	5	0	-6	0	9	0	
	3.6	+25	-6	0	-4	0	2	0	
EGPRS 1900MHz	3.7	-30	-	-	-	-	-	-	PASS
		-20	-	-	-	-	-	-	
		-10	-	-	-	-	-	-	
		0	-4	0	-4	0	-6	0	
		+10	-3	0	-2	0	-6	0	

Band	Test Conditions		Frequency Deviation						Verdict
			Low Channel		Middle Channel		High Channel		
	Power (VDC)	Temperature (℃)	Dev. Freq. Hz	Deviation (ppm)	Dev. Freq. Hz	Deviation (ppm)	Dev. Freq. Hz	Deviation (ppm)	Limit ±2.5ppm (ppm)
		+20	4	0	4	0	-2	0	
		+30	8	0	-5	0	-5	0	
		+40	-3	0	7	0	-7	0	
		+50	-	-	-	-	-	-	
	4.2	+25	1	0	4	0	-5	0	
	3.6	+25	-5	0	-6	0	-7	0	
WCDMA Band Ⅴ	3.7	-30	-	-	-	-	-	-	PASS
		-20	-	-	-	-	-	-	
		-10	-	-	-	-	-	-	
		0	-1	0	8	0	-4	0	
		+10	-7	0	-4	0	-2	0	
		+20	11	0	-3	0	4	0	
		+30	5	0	4	0	-5	0	
		+40	-9	0	8	0	7	0	
		+50	-	-	-	-	-	-	
	4.2	+25	6	0	6	0	4	0	
	3.6	+25	-5	0	1	0	-6	0	
WCDMA Band Ⅱ	3.7	-30	-	-	-	-	-	-	PASS
		-20	-	-	-	-	-	-	
		-10	-	-	-	-	-	-	
		0	-8	0	7	0	-3	0	
		+10	-4	0	6	0	4	0	
		+20	9	0	-5	0	8	0	
		+30	7	0	5	0	-3	0	
		+40	-7	0	12	0	6	0	
		+50	-	-	-	-	-	-	
	4.2	+25	9	0	5	0	5	0	
	3.6	+25	-5	0	-9	0	-9	0	

Note:

1. The EUT stops transmitting at temperatures -10 ℃, -20 ℃, -30 ℃ and -50 ℃.

2. The manufacturer declared that the EUT could work properly between temperatures 0 ℃~40 ℃.

3.5 Conducted Out of Band Emissions

3.5.1 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.

3.5.2 Test Description

See section 3.1.2 of this report.

3.5.3 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. All modes are tested,including (GSM850 GPRS EDGE WCDMA Band Ⅴ and PCS1900 GPRS EDGE WCDMA Band Ⅱ).

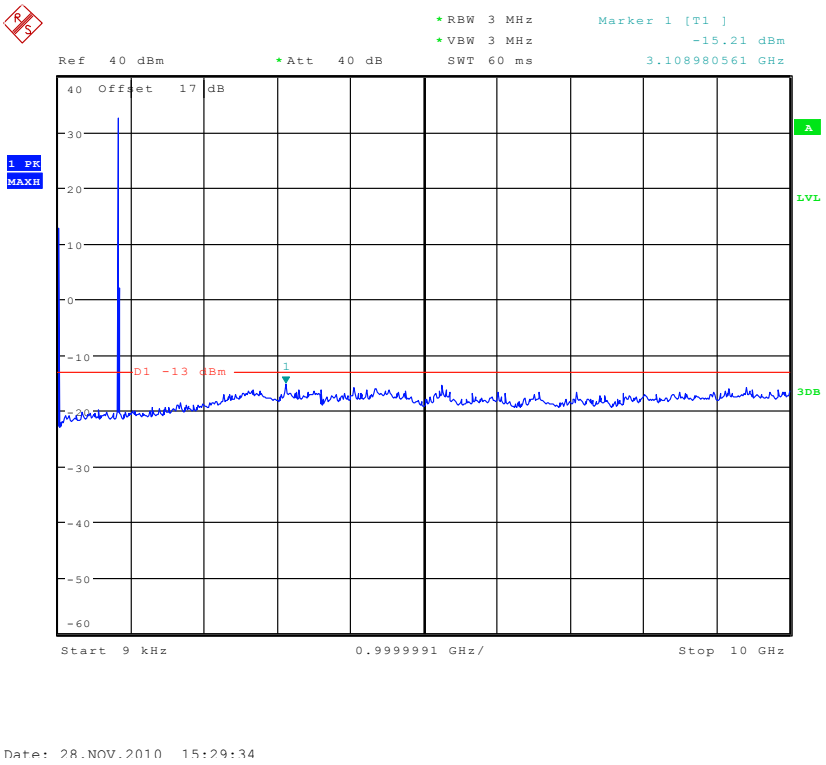
Test Verdict:

Band	Channel	Frequency (GHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	3.109	-15.21	Plot A4	-13	PASS
	190	3.590	-15.30	Plot B4		PASS
	251	3.542	-14.89	Plot C4		PASS
GSM 1900MHz	512	16.154	-17.92	Plot D4	-13	PASS
	661	18.654	-18.51	Plot E4		PASS
	810	16.122	-18.50	Plot F4		PASS
GPRS 850MHz	128	3.590	-14.97	Plot G4	-13	PASS
	190	3.590	-15.80	Plot H4		PASS
	251	3.397	-14.58	Plot I4		PASS
GPRS 1900MHz	512	17.340	-18.20	Plot J4	-13	PASS
	661	16.442	-18.14	Plot K4		PASS
	810	17.436	-18.48	Plot L4		PASS
EDGE 850MHz	128	3.510	-15.48	Plot M4	-13	PASS
	190	3.125	-15.08	Plot N4		PASS
	251	9.520	-15.03	Plot O4		PASS

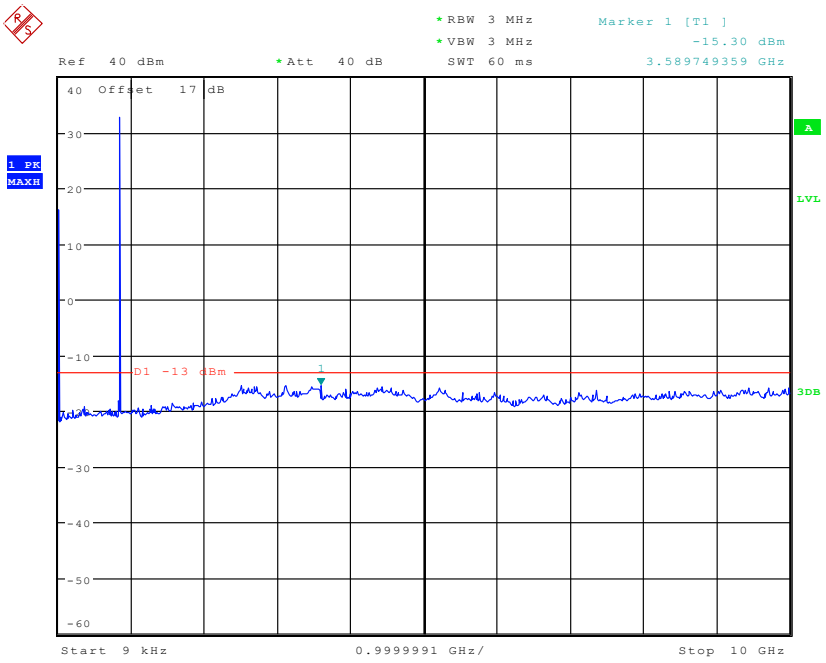
Band	Channel	Frequency (GHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
EDGE 1900MHz	512	16.186	-18.23	Plot P4	-13	PASS
	661	17.404	-18.46	Plot Q4		PASS
	810	18.590	-18.64	Plot R4		PASS
WCDMA Band Ⅴ	4132	16.31	-18.58	Plot S4	-13	PASS
	4183	19.39	-18.64	Plot T4		PASS
	4233	16.19	-18.22	Plot U4		PASS
WCDMA Band Ⅱ	9262	5.21	-15.01	Plot V4	-13	PASS
	9400	3.51	-14.98	Plot W4		PASS
	9538	4.46	-15.12	Plot X4		PASS

3. Test Plot for the Whole Measurement Frequency Range:

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

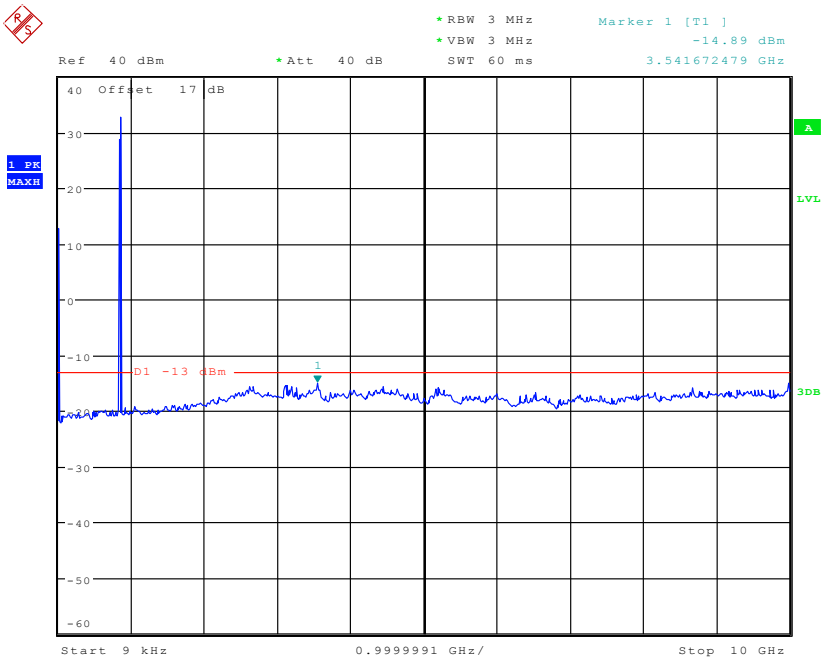


(Plot A4: GSM 850MHz Channel = 128, 9KHz to 10GHz)



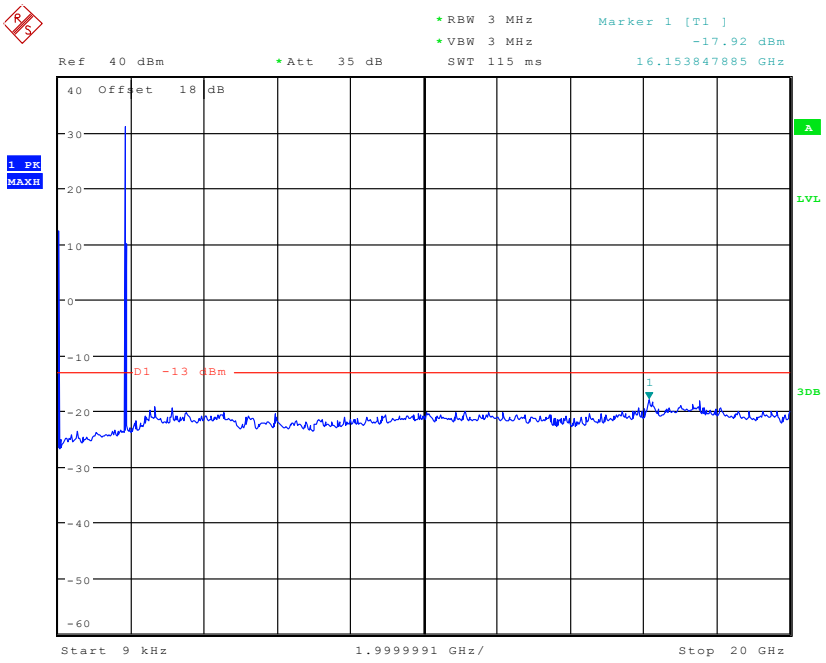
Date: 28.NOV.2010 15:31:19

(Plot B4: GSM 850MHz Channel = 190, 9KHz to 10GHz)

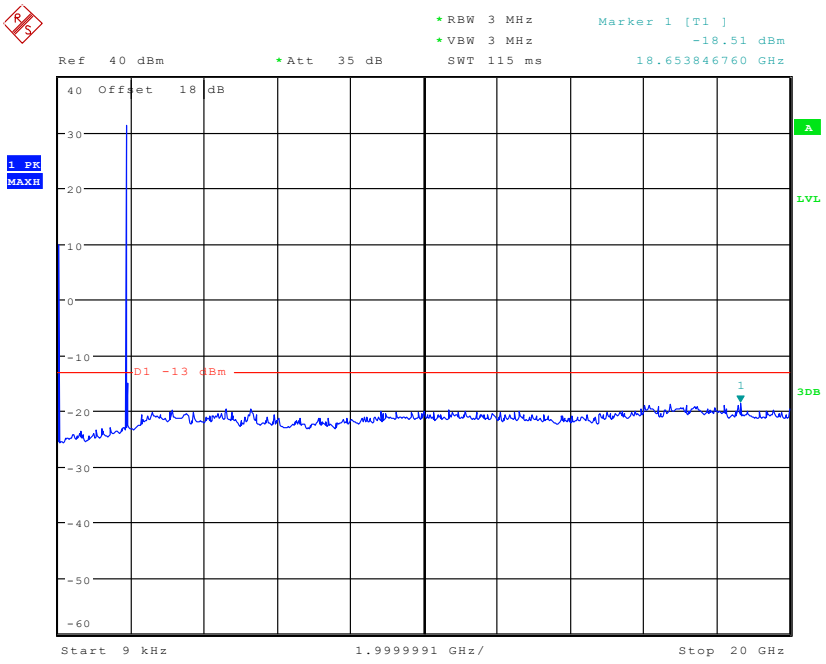


Date: 28.NOV.2010 15:32:25

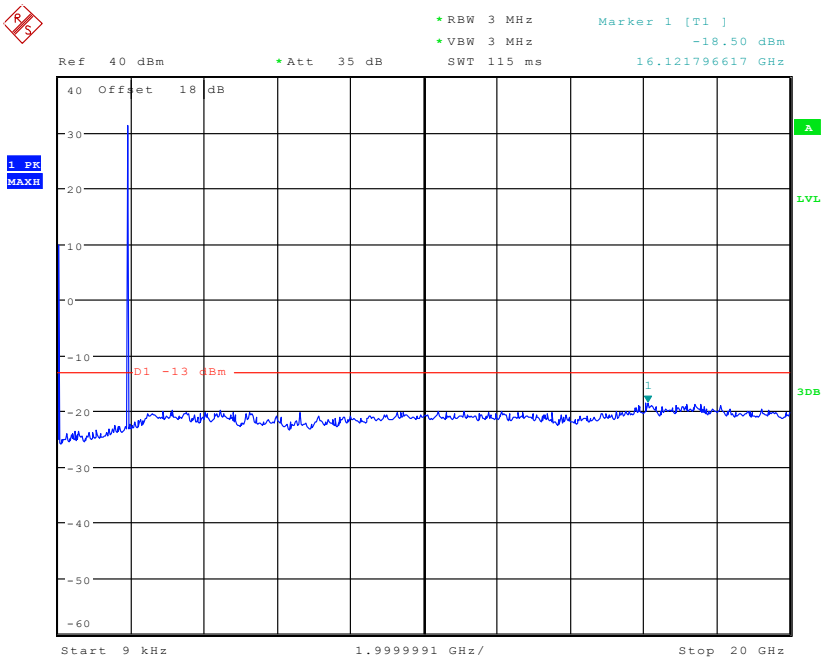
(Plot C4: GSM 850MHz Channel = 251, 9KHz to 10GHz)



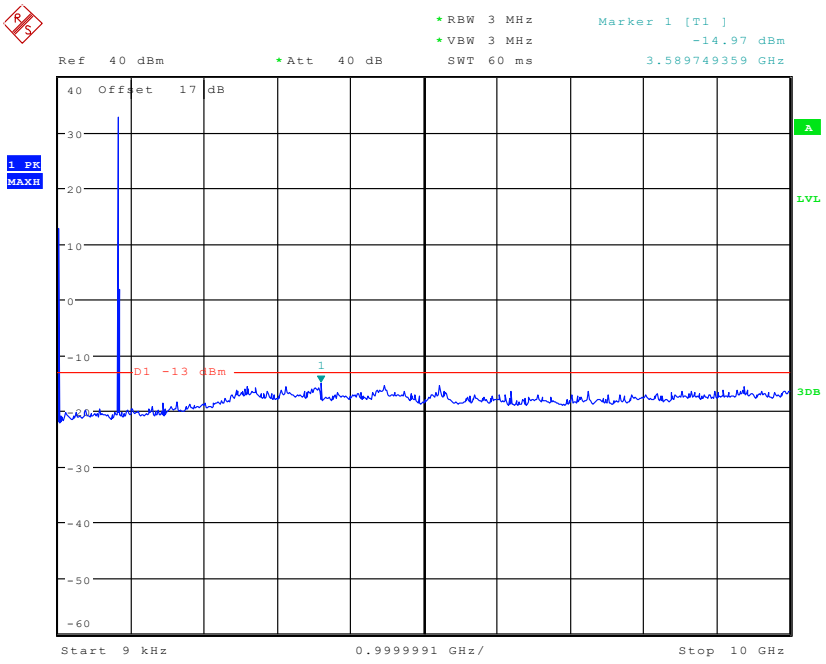
(Plot D4: GSM 1900MHz Channel = 512, 9KHz to 20GHz)



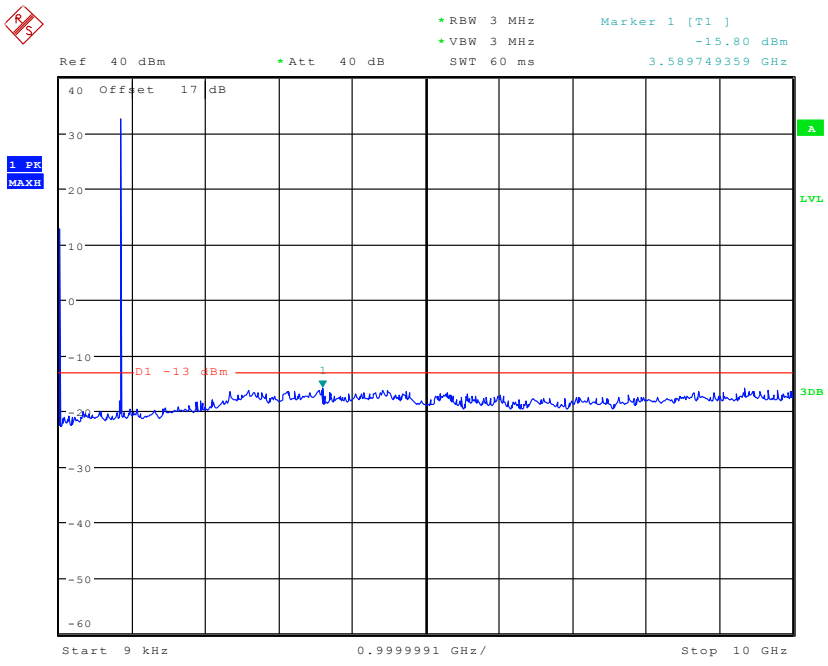
(Plot E4: GSM 1900MHz Channel = 661, 9KHz to 20GHz)



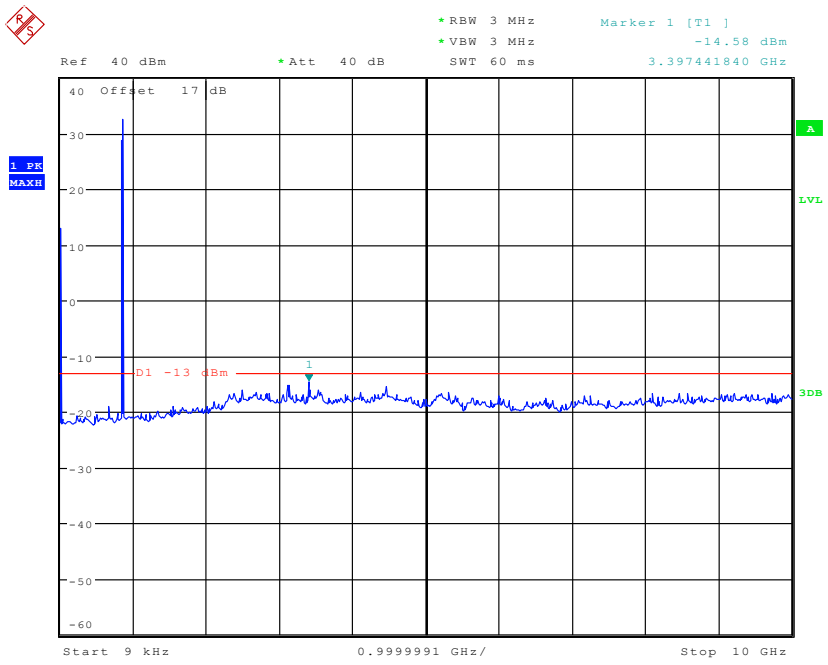
(Plot F4: GSM 1900MHz Channel = 810, 9KHz to 20GHz)



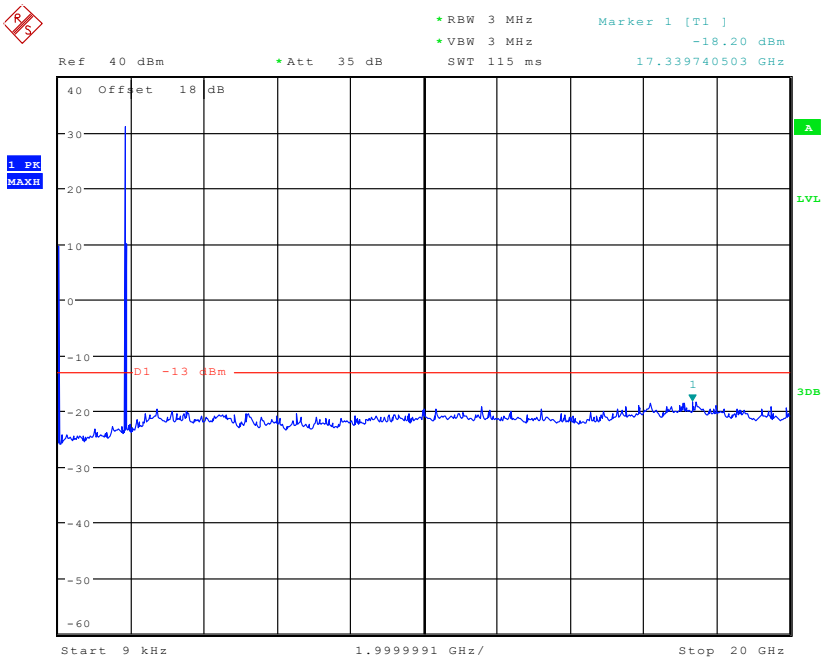
(Plot G4: GPRS 850MHz Channel = 128, 9KHz to 10GHz)



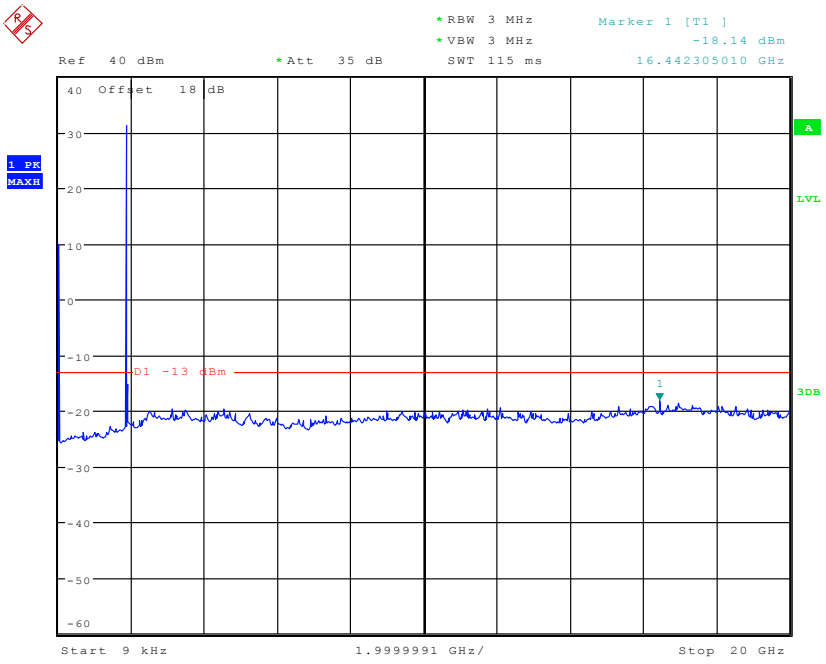
(Plot H4: GPRS 850MHz Channel = 190, 9KHz to 10GHz)



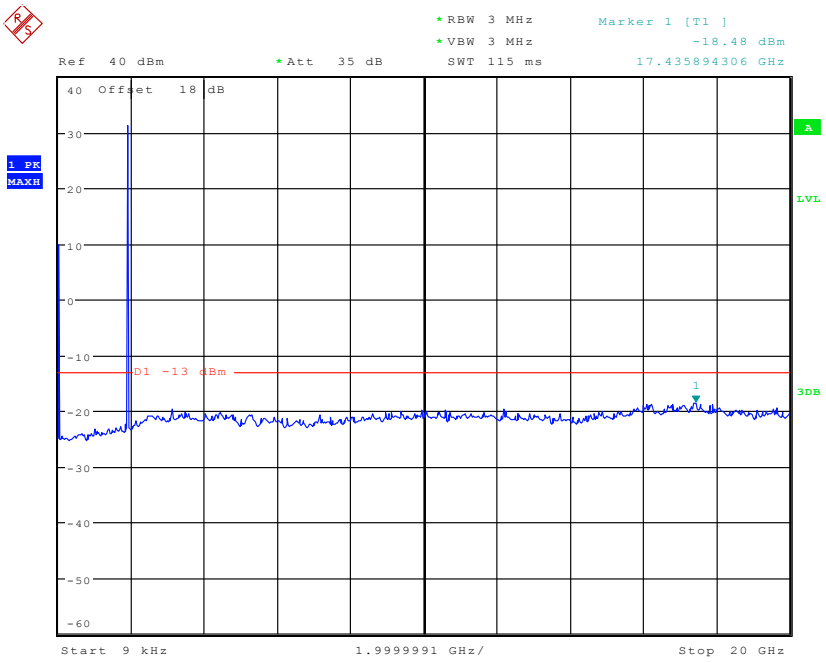
(Plot I4: GPRS 850MHz Channel = 251, 9KHz to 10GHz)



(Plot J4: GPRS 1900MHz Channel = 512, 9KHz to 20GHz)

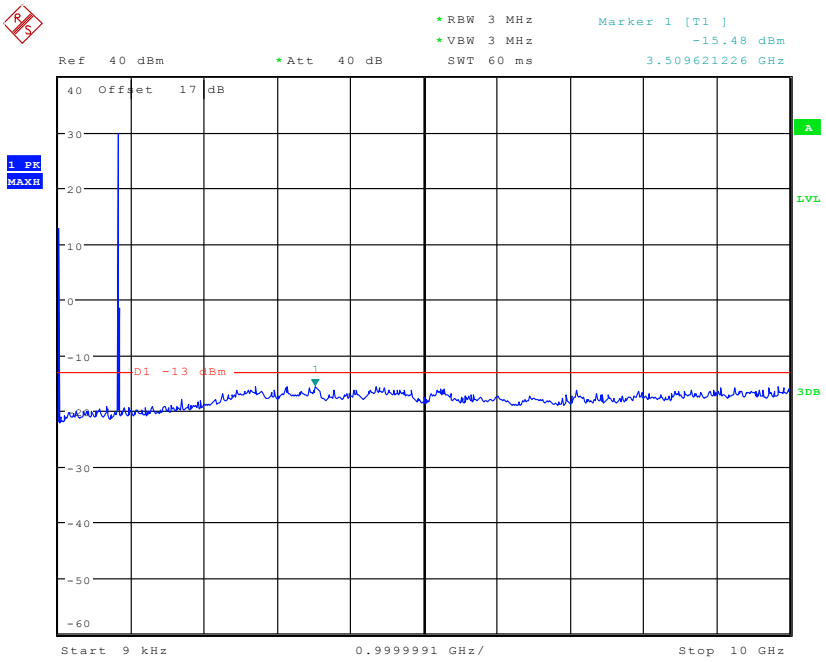


(Plot K4: GPRS 1900MHz Channel = 661, 9KHz to 20GHz)



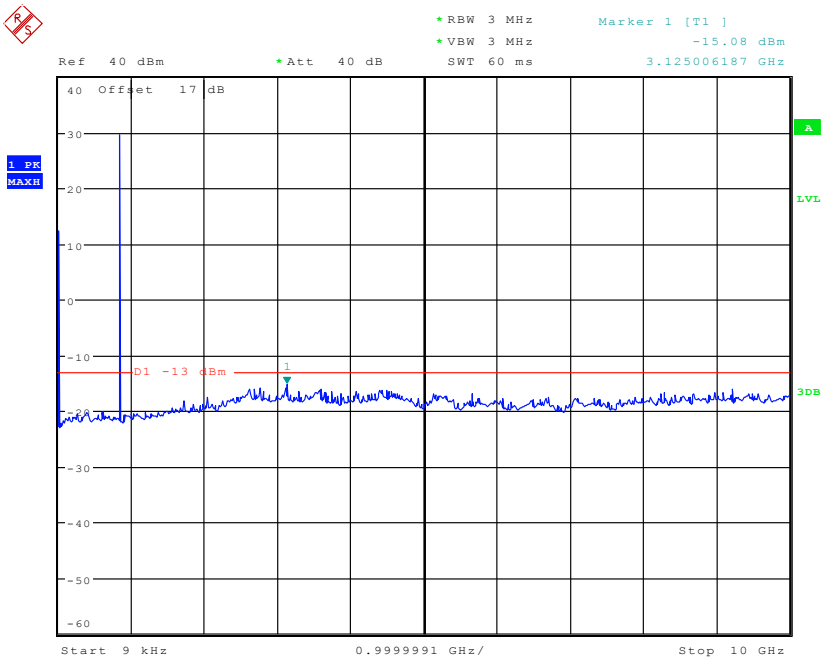
Date: 28.NOV.2010 15:48:20

(Plot L4: GPRS 1900MHz Channel = 810, 9KHz to 20GHz)



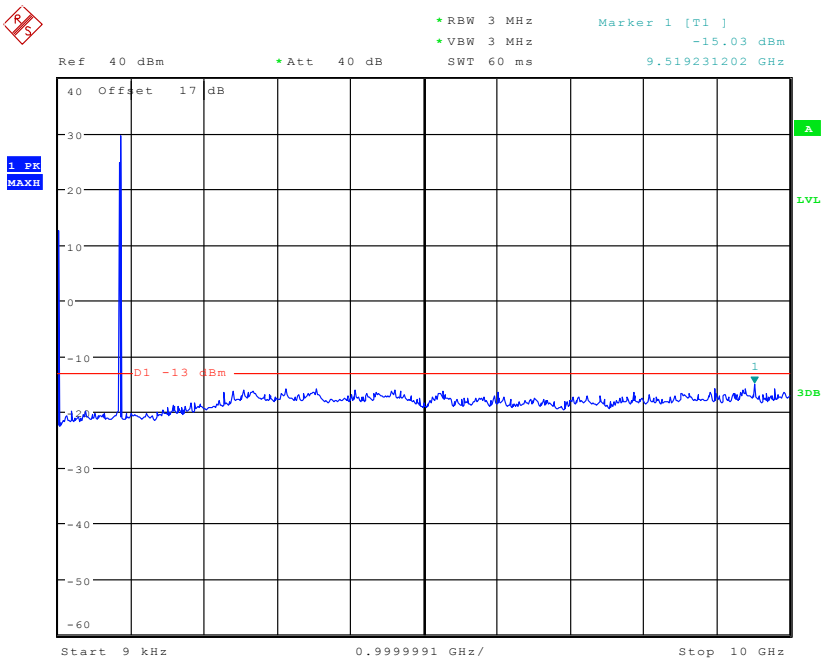
Date: 28.NOV.2010 15:39:15

(Plot M4: EDGE 850MHz Channel = 128, 9KHz to 10GHz)



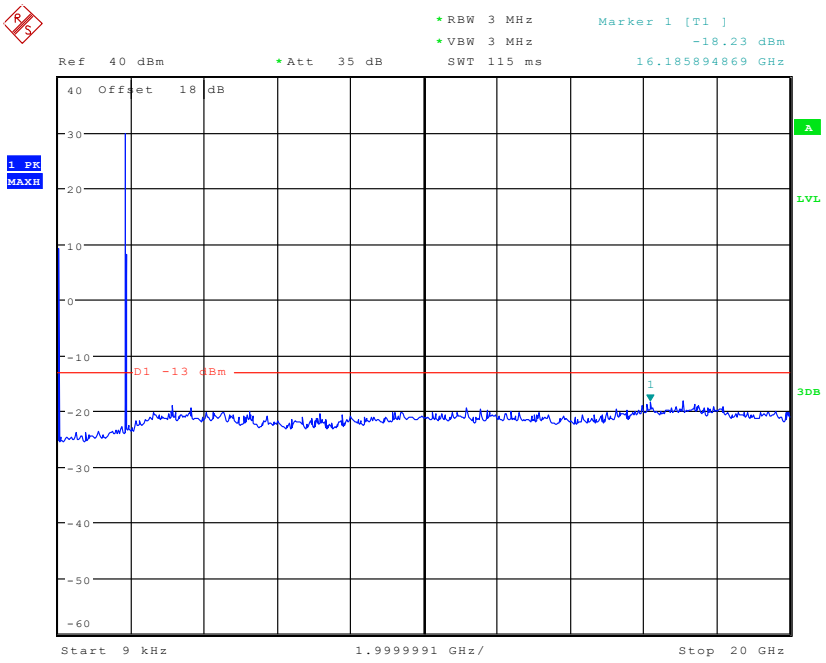
Date: 28.NOV.2010 15:39:32

(Plot N4: EDGE 850MHz Channel = 190, 9KHz to 10GHz)



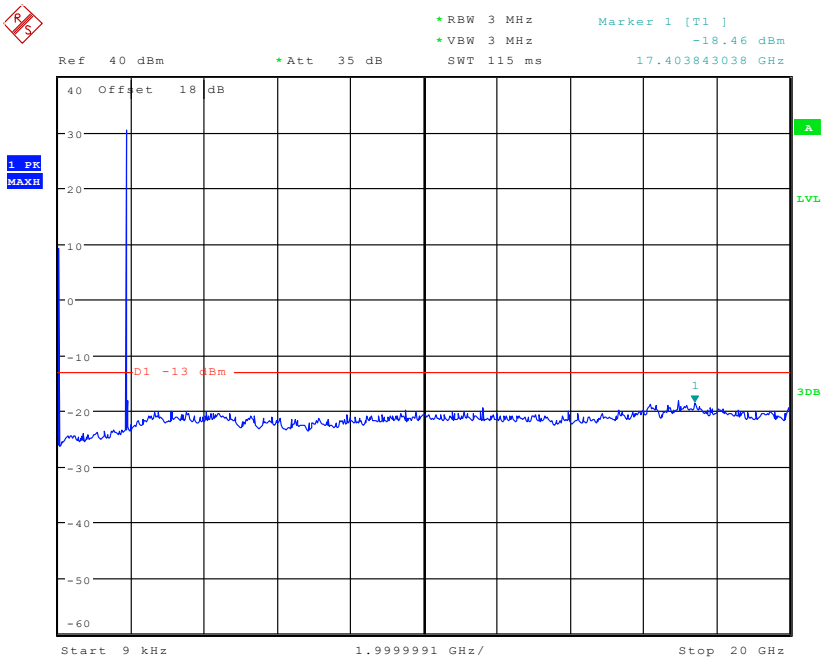
Date: 28.NOV.2010 15:40:03

(Plot O4: EDGE 850MHz Channel = 251, 9KHz to 10GHz)



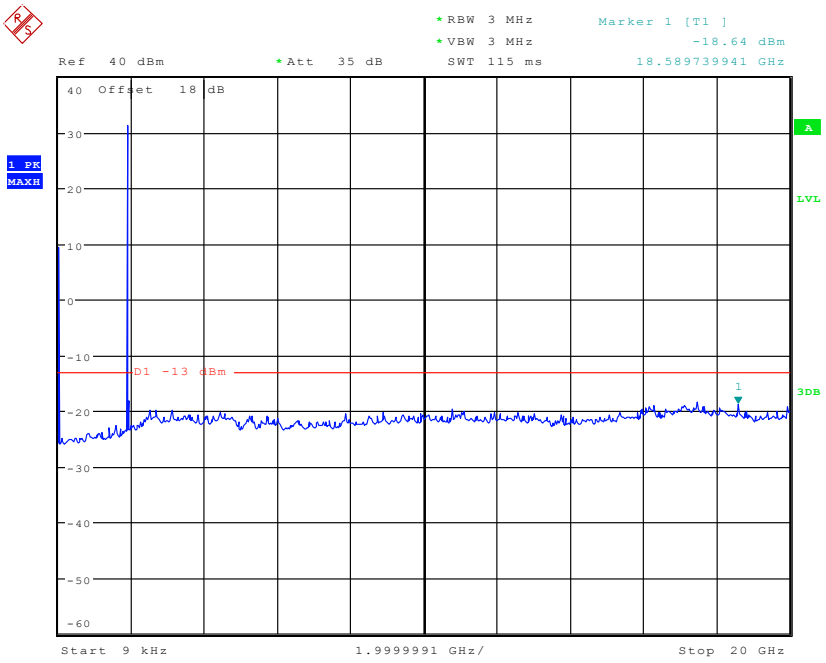
Date: 28.NOV.2010 15:43:48

(Plot P4: EDGE 1900MHz Channel = 512, 9KHz to 20GHz)



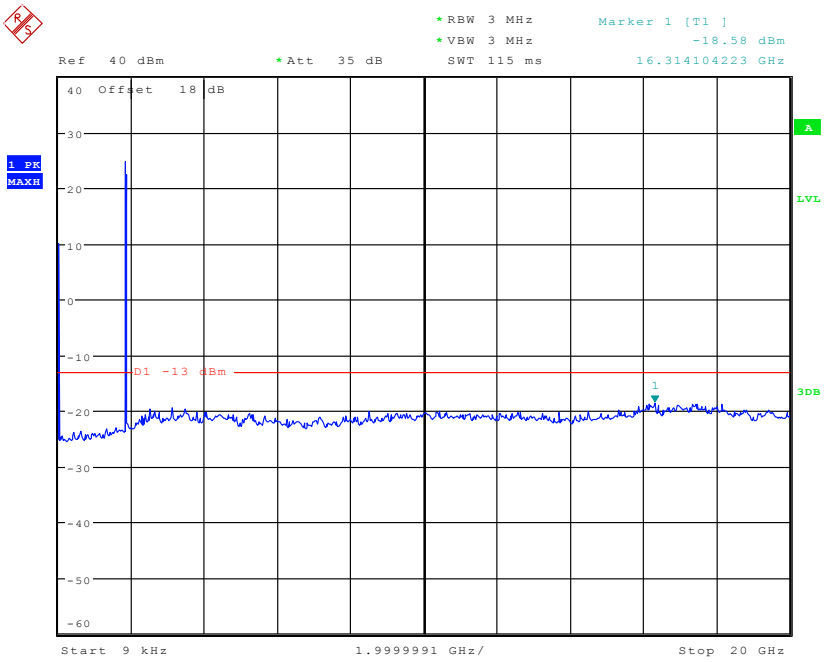
Date: 28.NOV.2010 15:44:25

(Plot Q4: EDGE 1900MHz Channel = 661, 9KHz to 20GHz)



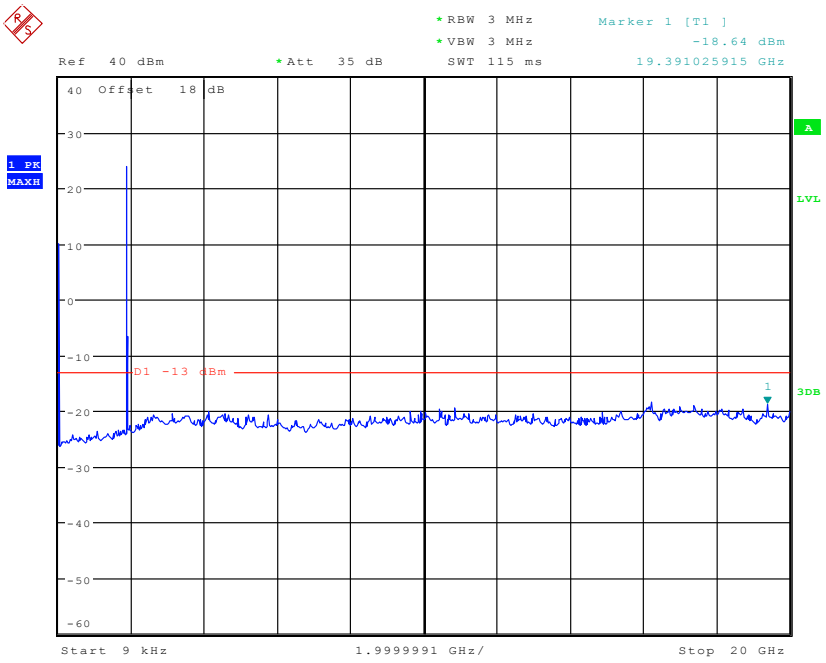
Date: 28.NOV.2010 15:44:50

(Plot R4: EDGE 1900MHz Channel = 810, 9KHz to 20GHz)



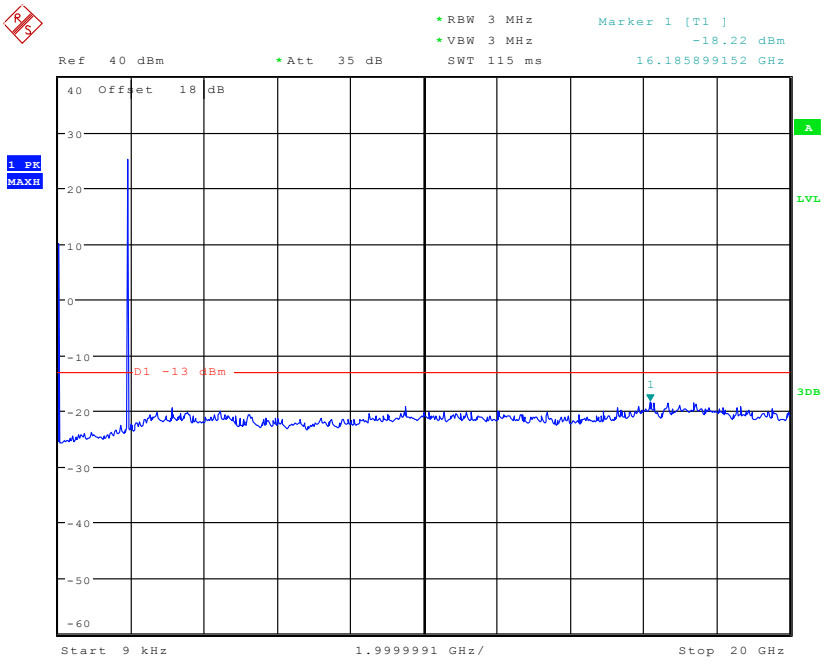
Date: 28.NOV.2010 15:55:13

(Plot S4: WCDMA Ⅴ Channel = 4132, 9KHz to 10GHz)



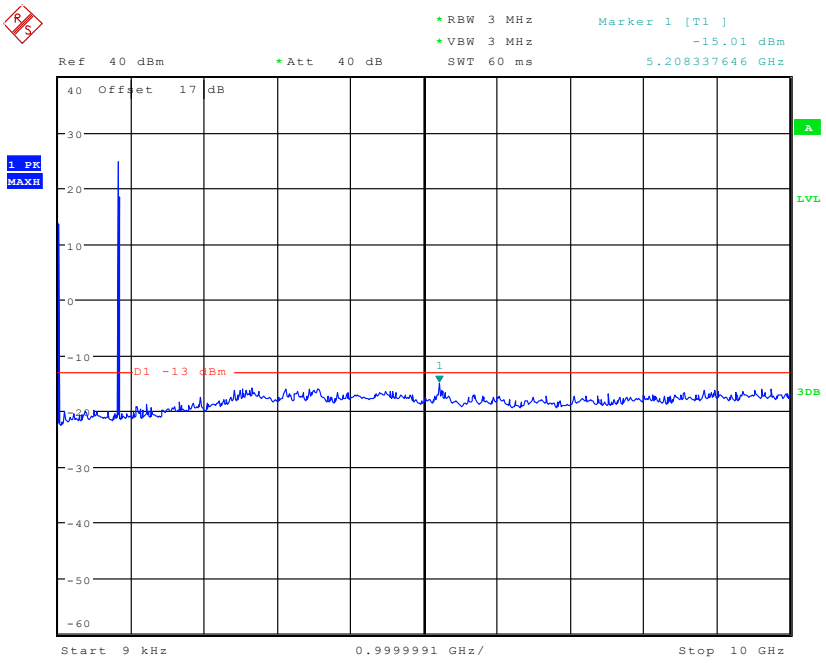
Date: 28.NOV.2010 15:55:41

(Plot T4: WCDMA Ⅴ Channel = 4183, 9KHz to 10GHz)



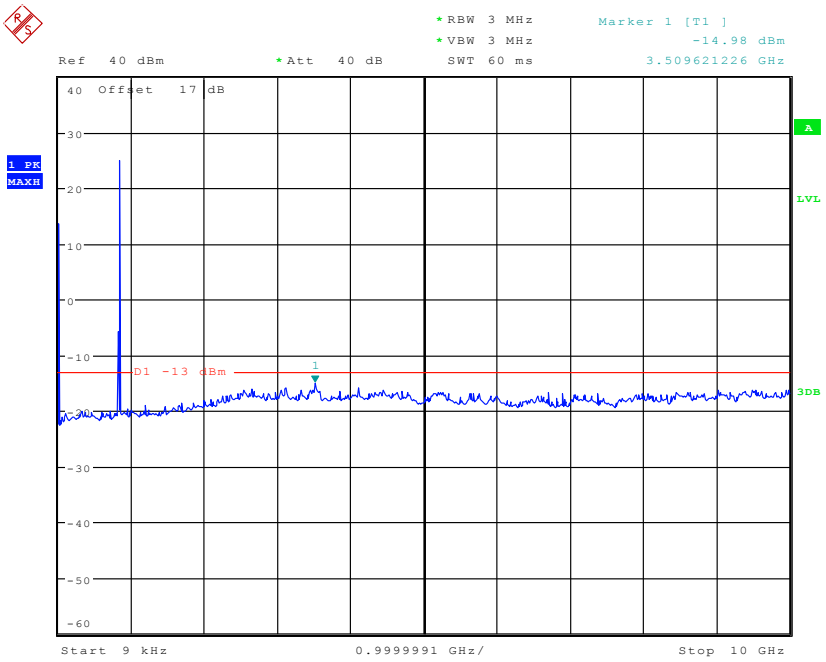
Date: 28.NOV.2010 15:56:20

(Plot U4: WCDMA Ⅴ Channel = 4233, 9KHz to 10GHz)



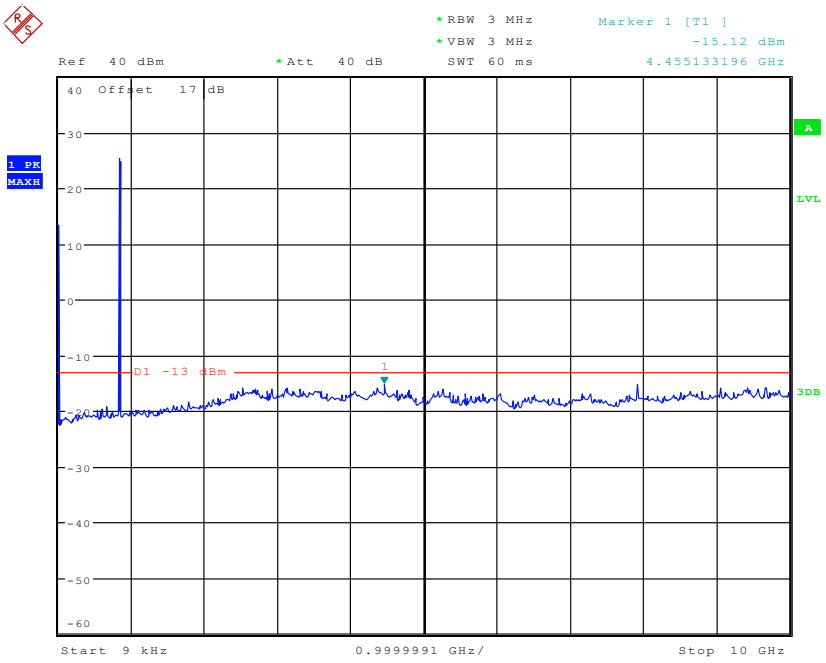
Date: 28.NOV.2010 15:57:54

(Plot V4: WCDMA Ⅴ Channel = 9262, 9KHz to 20GHz)



Date: 28.NOV.2010 15:58:42

(Plot W4: WCDMA Ⅱ Channel = 9400, 9KHz to 20GHz)



(Plot X4: WCDMA Ⅱ Channel = 9538, 9KHz to 20GHz)

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.

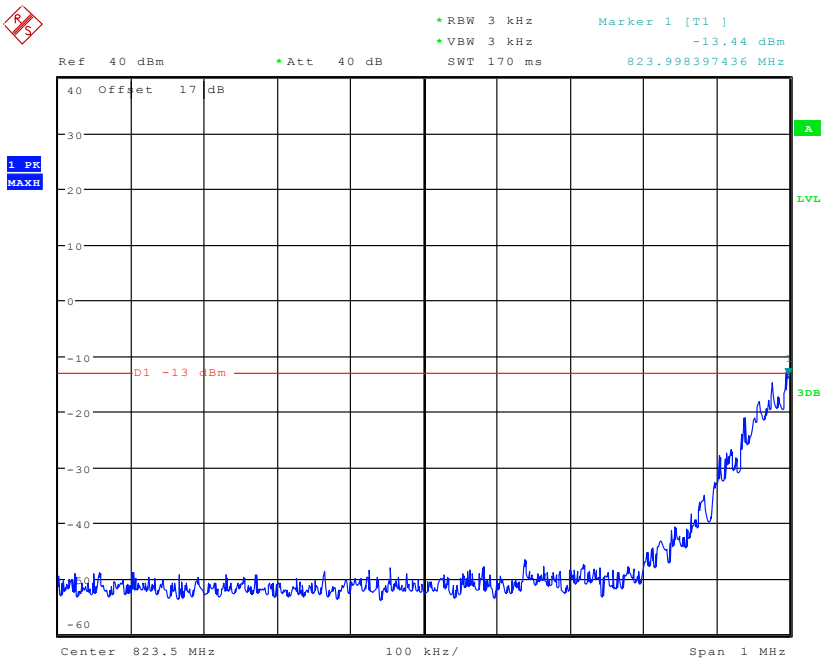
3.6.3 Test Result

The lowest and highest channels are tested to verify the band edge emissions. All modes are tested, including (GSM850 GPRS EDGE WCDMA Band Ⅴ and PCS1900 GPRS EDGE WCDMA Band Ⅱ).

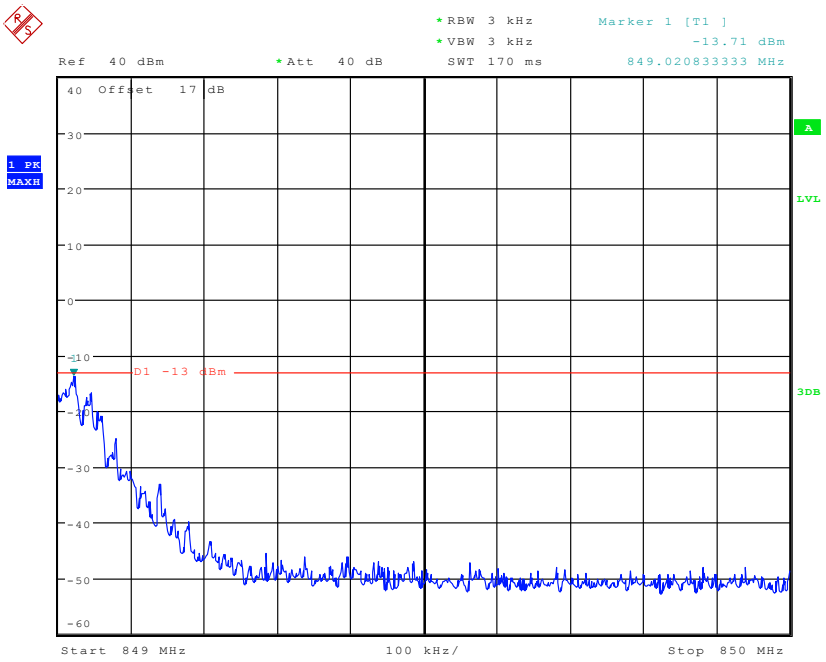
Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	823.998	-13.44	Plat A5	-13	PASS
	251	849.021	-13.71	Plot B5		PASS
GSM 1900MHz	512	1849.997	-13.55	Plat C5		PASS
	810	1910.022	-15.20	Plot D5		PASS
GPRS 850MHz	128	823.984	-14.20	Plat E5		PASS
	251	849.018	-14.53	Plot F5		PASS
GPRS 1900MHz	512	1849.984	-15.20	Plat G5		PASS
	810	1910.000	-15.51	Plot H5		PASS
EDGE 850MHz	128	823.962	-20.78	Plat I5		PASS
	251	849.018	-20.40	Plot J5		PASS
EDGE 1900MHz	512	1849.986	-19.58	Plat K5		PASS
	810	1910.000	-17.75	Plot L5		PASS
WCDMA Band Ⅴ	4132	824.000	-18.55	Plat M5		PASS
	4233	849.000	-19.84	Plot N5		PASS
WCDMA Band Ⅱ	9262	1850.000	-18.52	Plat O5		PASS
	9538	1910.000	-17.71	Plot P5		PASS

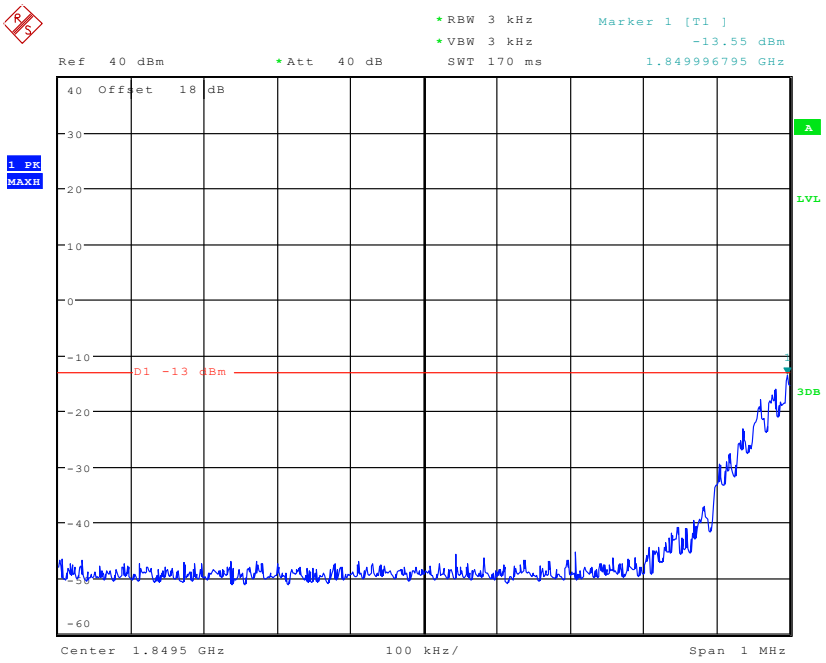
4. Test Plot:



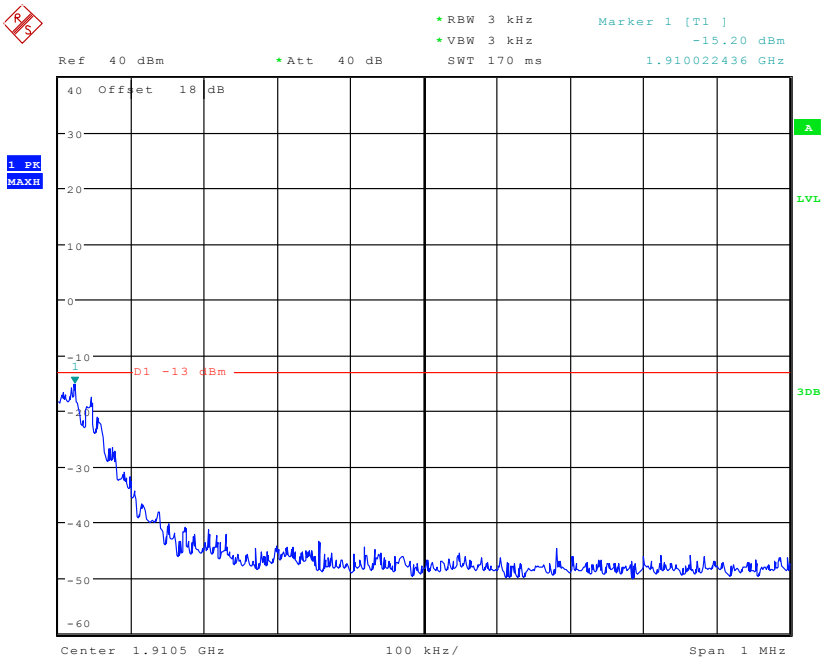
(Plot A5: GSM 850MHz Channel = 128)



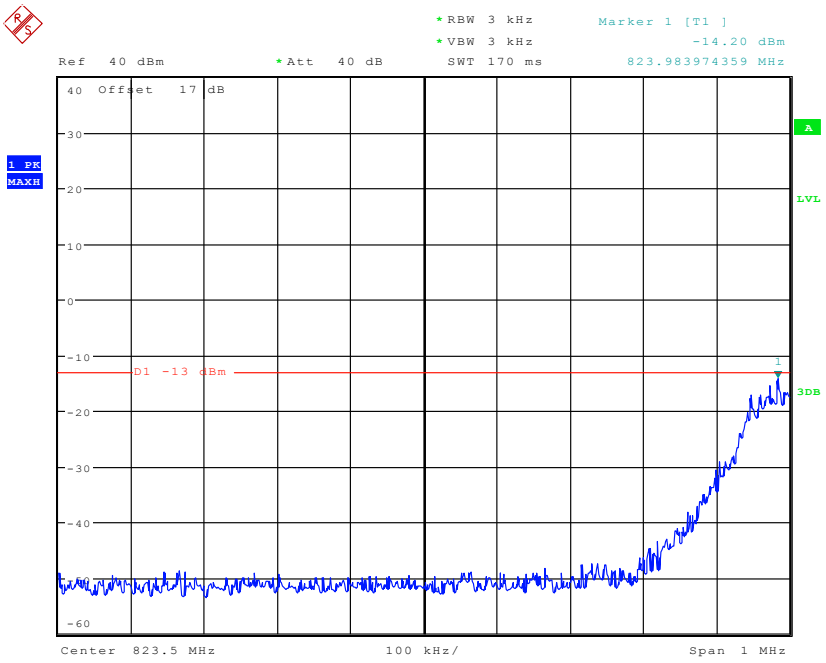
(Plot B5: GSM 850MHz Channel = 251)



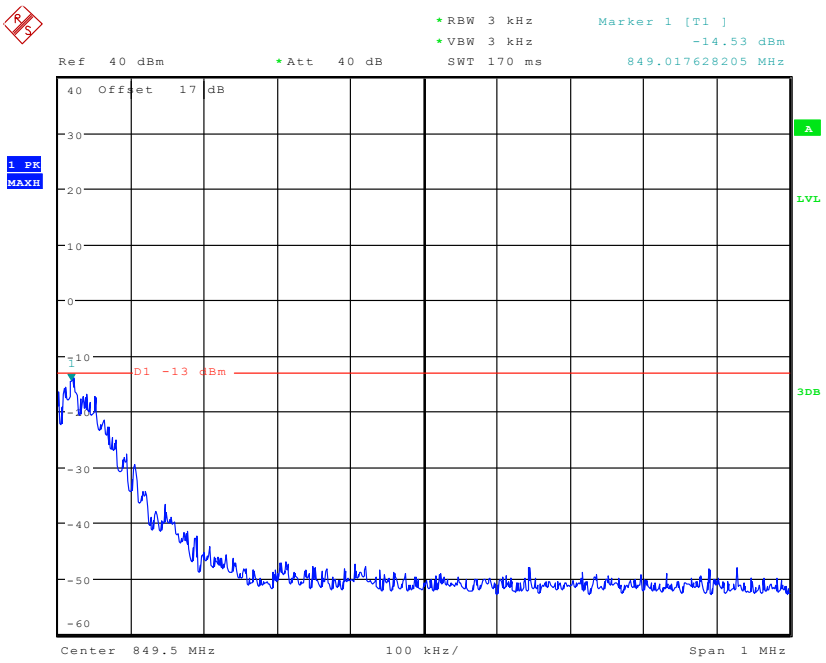
(Plot C5: GSM 1900MHz Channel = 512)



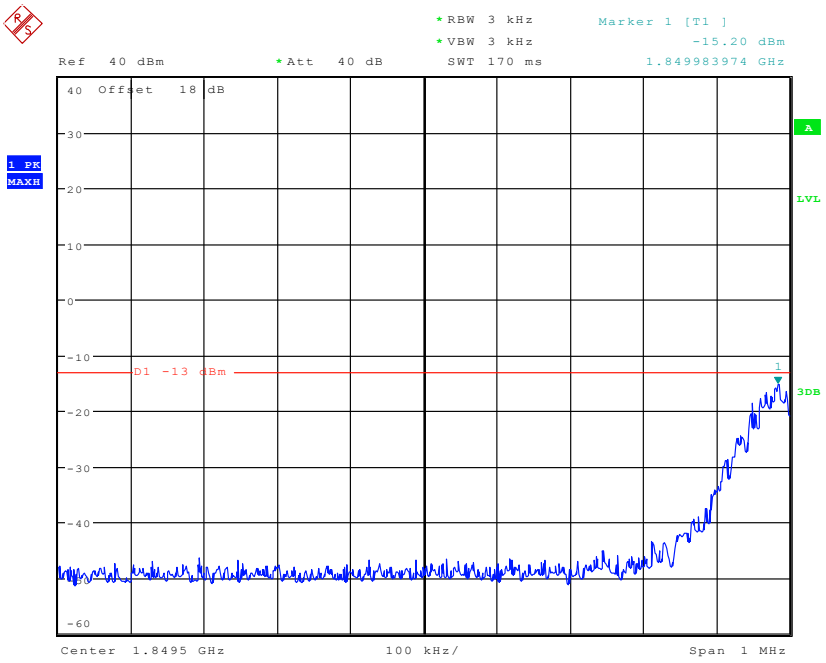
(Plot D5: GSM 1900MHz Channel = 810)



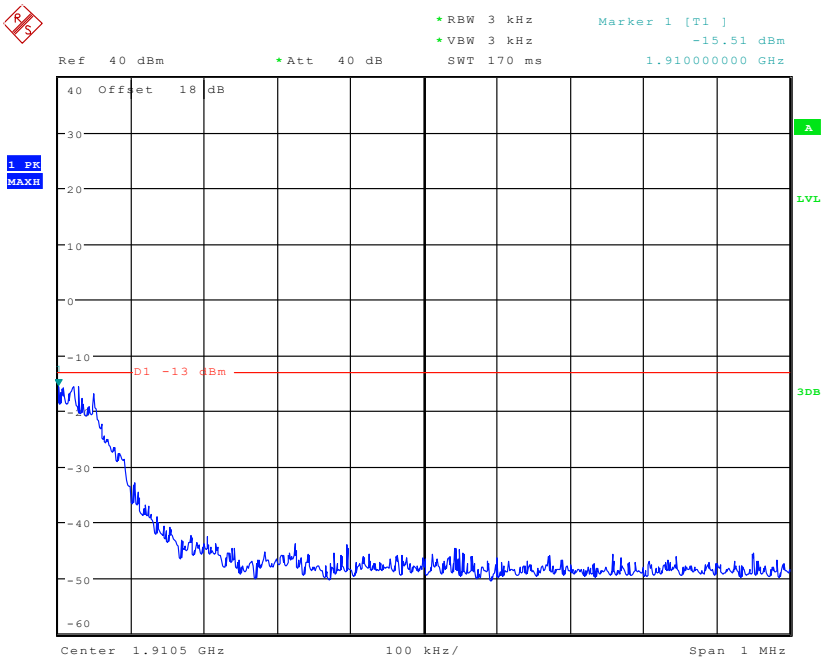
(Plot E5: GPRS 850MHz Channel = 128)



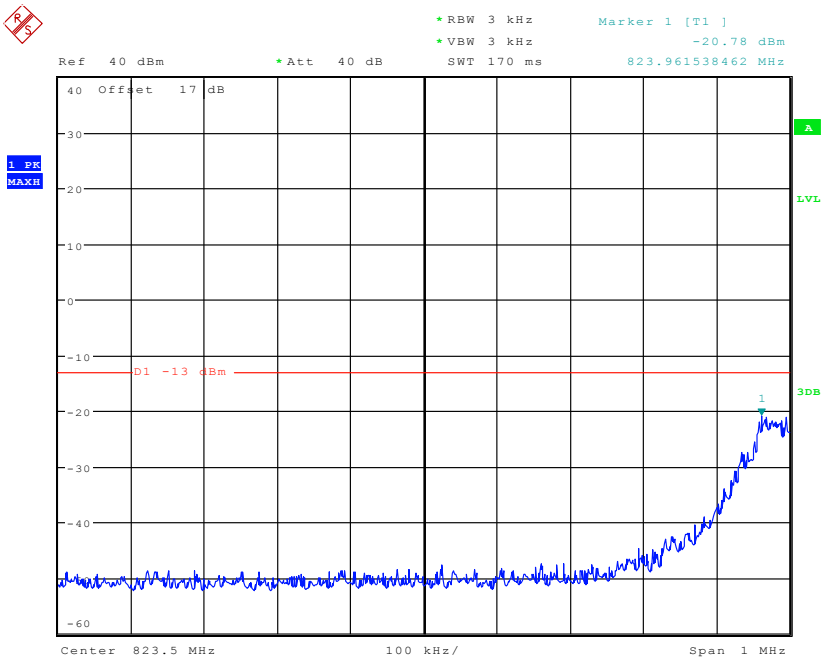
(Plot F5: GPRS 850MHz Channel = 251)



(Plot G5: GPRS 1900MHz Channel = 512)

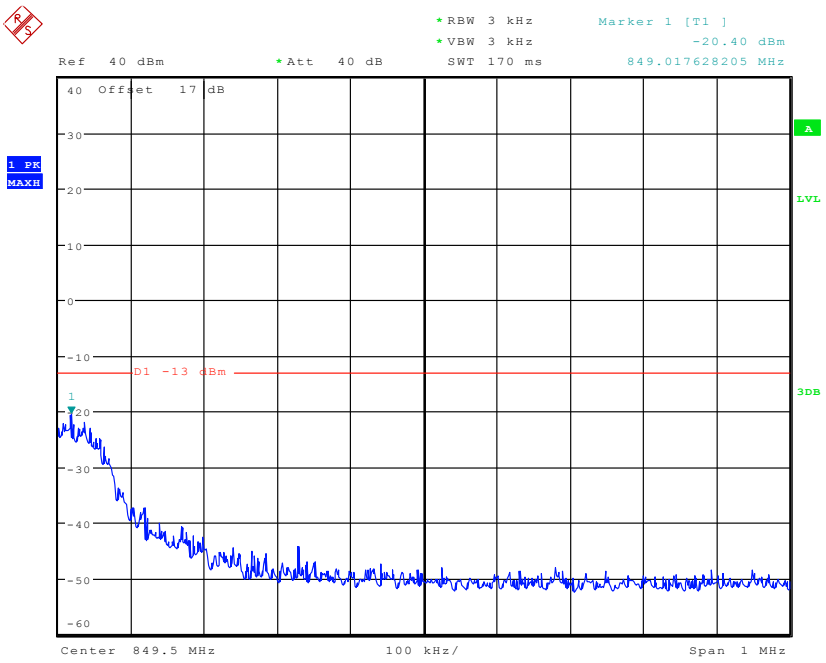


(Plot H5: GPRS 1900MHz Channel = 810)



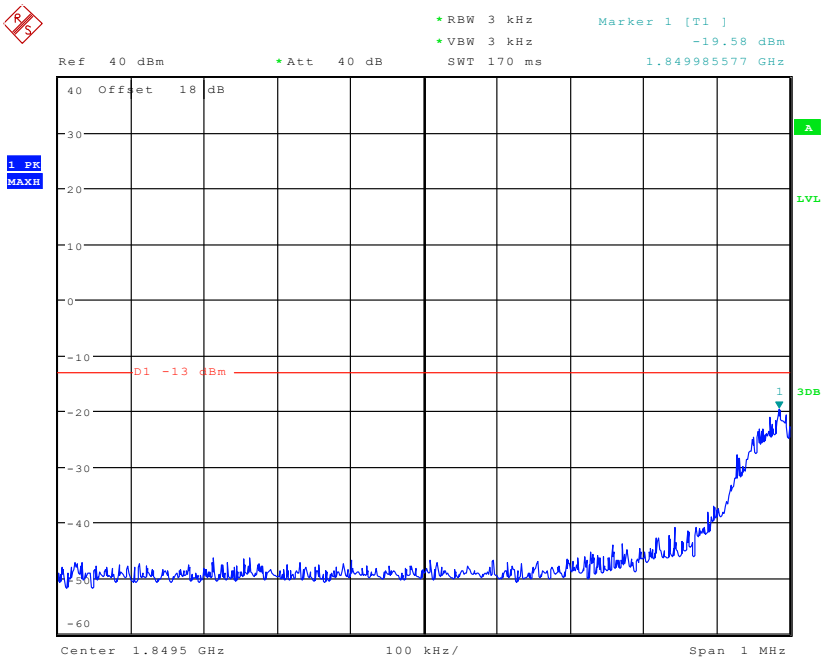
Date: 28.NOV.2010 16:16:33

(Plot I5: EDGE 850MHz Channel = 128)

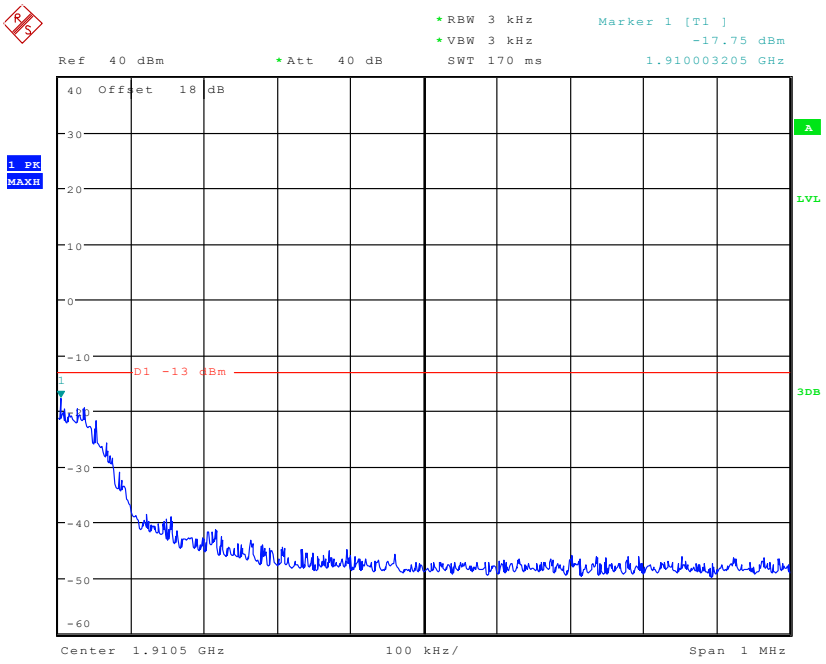


Date: 28.NOV.2010 16:17:28

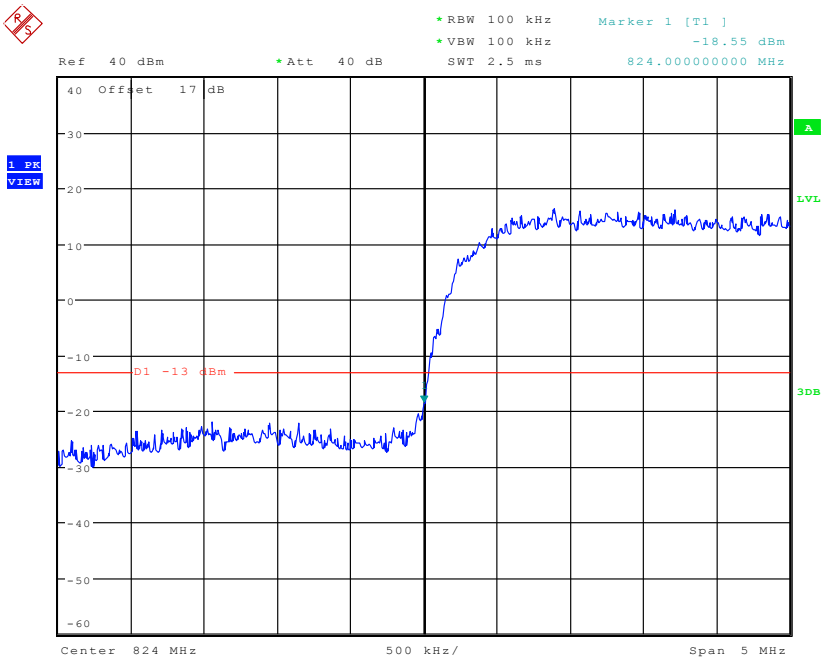
(Plot J5: EDGE 850MHz Channel = 251)



(Plot K5: EDGE 1900MHz Channel = 512)

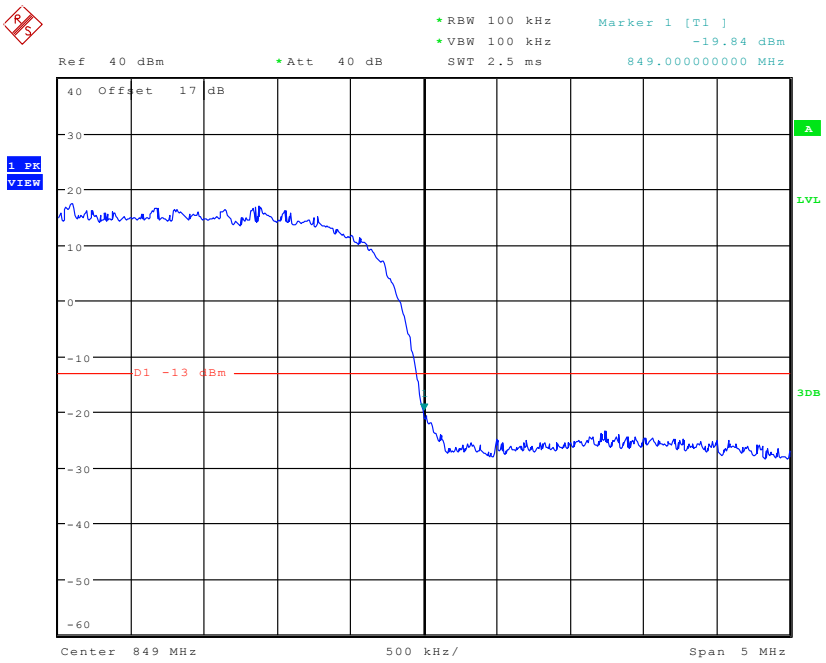


(Plot L5: EDGE 1900MHz Channel = 810)



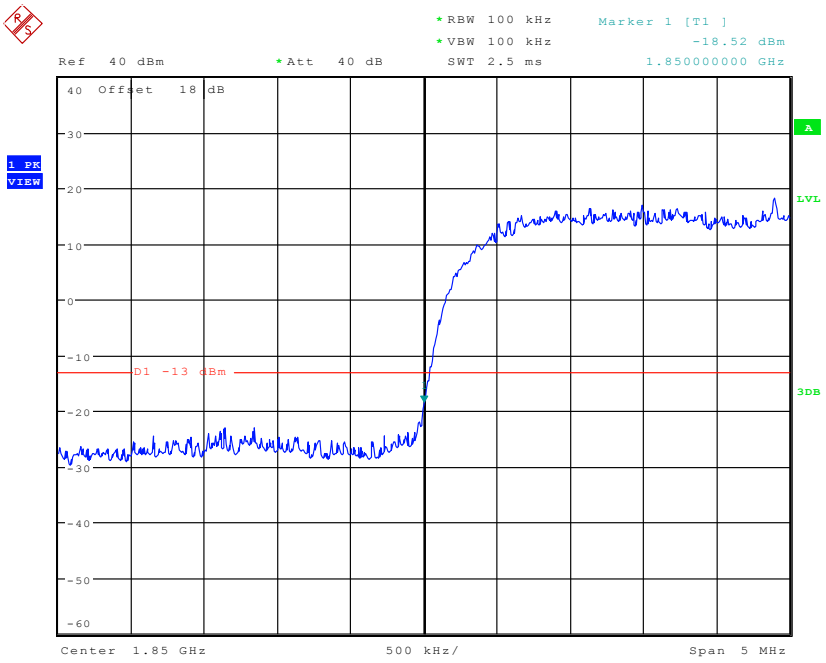
Date: 28.NOV.2010 16:24:50

(Plot M5: WCDMA Band Ⅴ Channel = 4132)



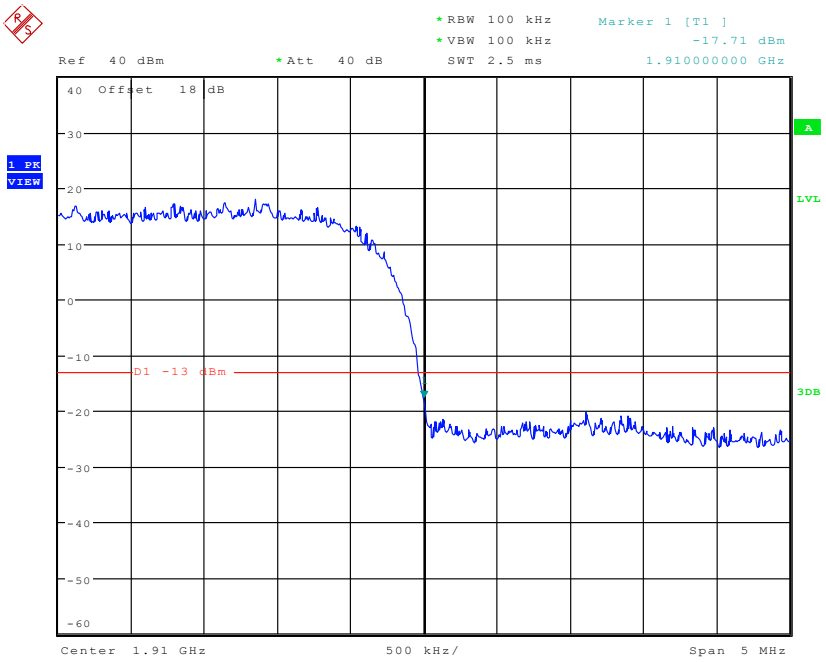
Date: 28.NOV.2010 16:26:06

(Plot N5: WCDMA Band Ⅴ Channel = 4233)



Date: 28.NOV.2010 16:28:39

(Plot O5: WCDMA Band Ⅱ Channel = 9262)



Date: 28.NOV.2010 16:29:49

(Plot P5: WCDMA Band Ⅱ Channel = 9538)

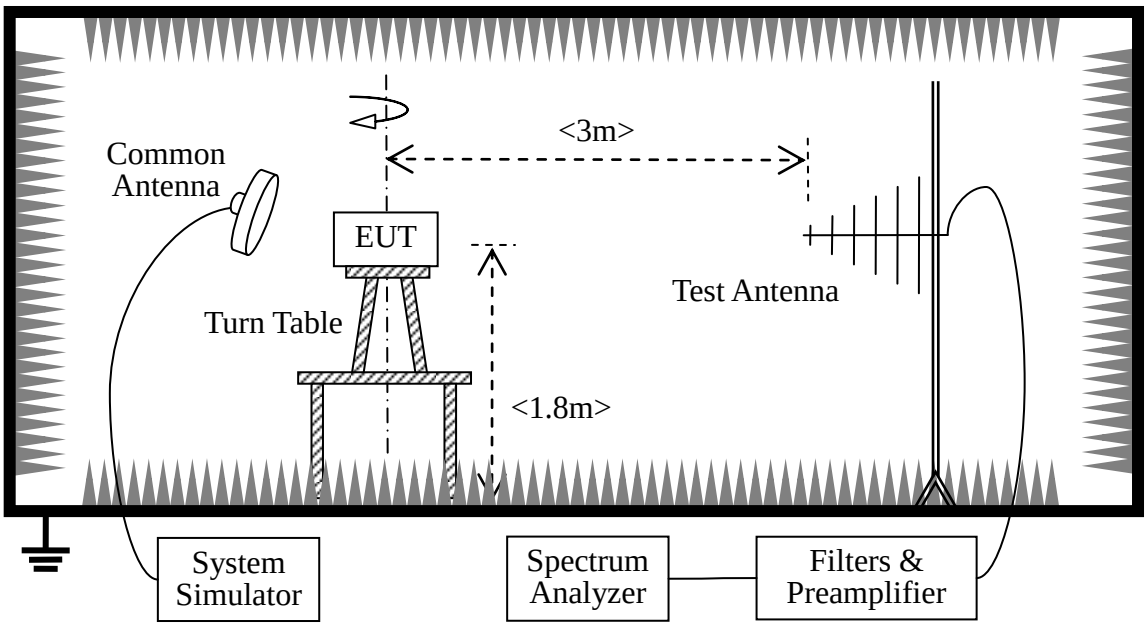
3.7 Transmitter Radiated Power (EIRP/ERP)

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.

According to FCC §22.913, the ERP of Cellular mobile transmitters must not exceed 7 Watts (38.5dBm).

The measurements procedures in TIA-603C-2004 are used.

1. In an anechoic antenna test chamber, a half-wave dipole antenna for the frequency band of interest is placed at the reference centre of the chamber. An RF Signal source for the frequency band of interest is connected to the dipole with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A known (measured) power (P_{in}) is applied to the input of the dipole, and the power received (P_r) at the chamber's probe antenna is recorded.
2. The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established as $A_{Rpl} = P_{in} – P_r$. The A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the cable loss and the air loss.

   The measurement results are obtained as described below:

   Power(EIRP) = $P_{Mea} + A_{Rpl}$
3. The EUT is substituted for the dipole at the reference centre of the chamber and a scan is performed to obtain the radiation pattern.
4. From the radiation pattern, the co-ordinates where the maximum antenna gain occurs are identified.
5. The EUT is then put into continuously transmitting mode at its maximum power level.
6. Power mode measurements are performed with the receiving antenna placed at the coordinates determined in Step 3 to determine the output power as defined in Rule 24.232 (b) and (c). The "reference path loss" from Step 1 is added to this result.
7. This value is EIRP since the measurement is calibrated using a half-wave dipole antenna of known gain (2.15 dBi) and known input power (P_{in})
8. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP – 2.15dBi.
9. The test system should be checked before test by a standard comb signal source. The signal source put on the position, instead of the EUT. The test result should be compared with the test result before. If the test result is similar with the initial one, then the test system can work stably.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
SS	Agilent	E5515C	GB46040102	2010.9	1year
Spectrum Analyzer	Agilent	E4440A	MY46187763	2010.9	1year
Spectrum Analyzer	R&S	FSP30	101020	2010.9	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2009.10	2year
Test Antenna - Bi-Log	Rohde&Schwarz	HL562	100385	2010.9	1year
Test Antenna - Horn	Rohde&Schwarz	HF906	100565	2010.9	1year

3.7.3 Test Result

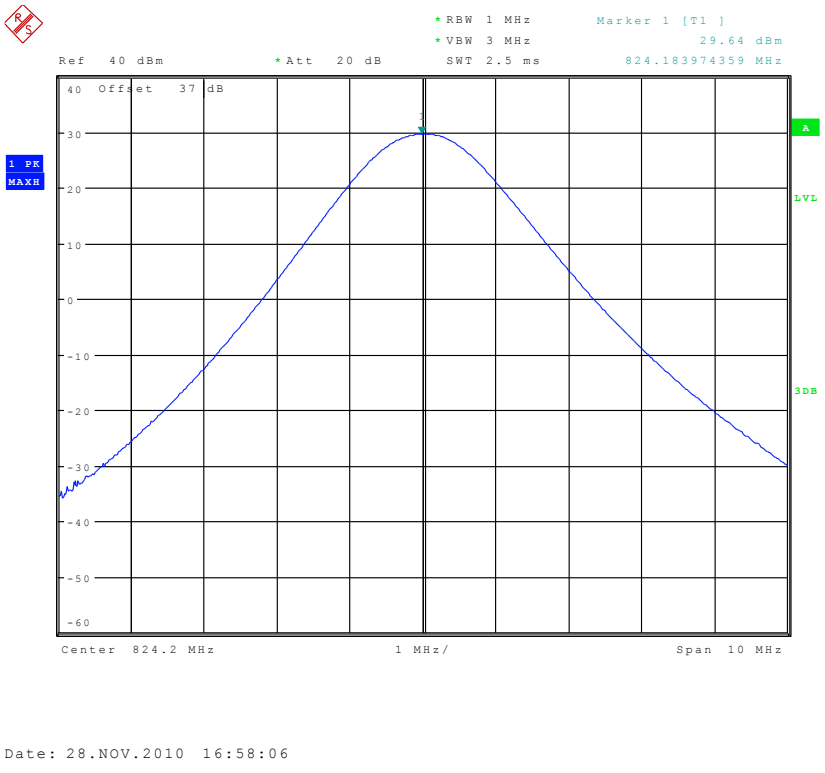
The Turn Table is actuated to turn from 0 ° to 360 °, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested. All modes are tested,including (GSM850 GPRS EDGE WCDMA Band Ⅴ and PCS1900 GPRS EDGE WCDMA Band Ⅱ).

Test Verdict:

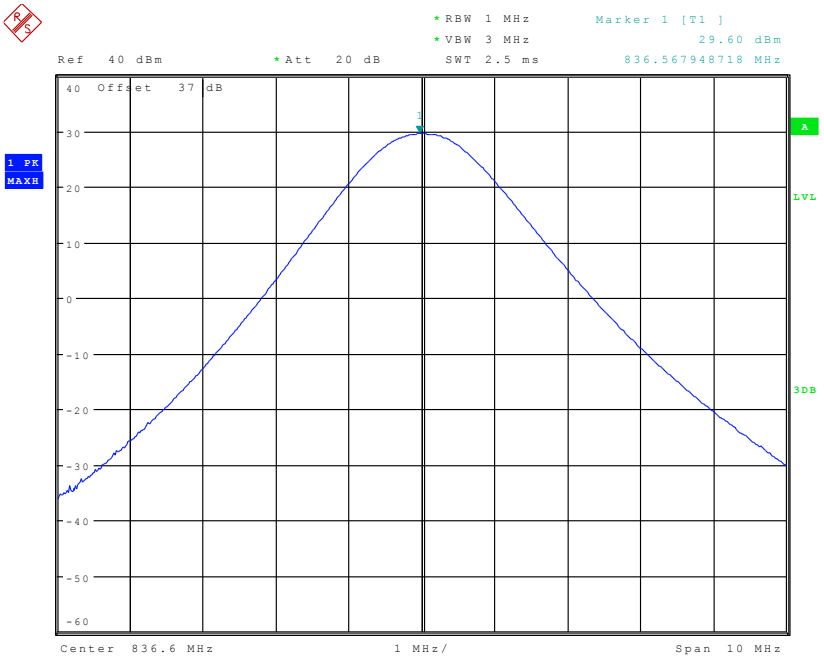
Band	Channel	Measured			Limit		Verdict
		dBm	W	Refer to Plot	dBm	W	
GSM 850MHz	128	29.64	0.920	Plot A6	<38.5	<7	PASS
	190	29.60	0.912	Plot B6			PASS
	251	29.45	0.881	Plot C6			PASS
GSM 1900MHz	512	26.67	0.465	Plot D6	<33.0	<2	PASS
	661	27.46	0.557	Plot E6			PASS
	810	28.17	0.656	Plot F6			PASS
GPRS 850MHz	128	29.60	0.912	Plot G6	<38.5	<7	PASS
	190	29.44	0.879	Plot H6			PASS
	251	29.58	0.908	Plot I6			PASS
GPRS 1900MHz	512	26.67	0.465	Plot J6	<33.0	<2	PASS
	661	27.56	0.570	Plot K6			PASS
	810	28.19	0.659	Plot L6			PASS
EDGE 850MHz	128	24.57	0.286	Plot M6	<38.5	<7	PASS
	190	24.59	0.288	Plot N6			PASS
	251	24.61	0.289	Plot O6			PASS
EDGE 1900MHz	512	26.87	0.486	Plot P6	<33.0	<2	PASS
	661	27.57	0.571	Plot Q6			PASS
	810	28.19	0.659	Plot R6			PASS

Band	Channel	Measured			Limit		Verdict
		dBm	W	Refer to Plot	dBm	W	
WCDMA Band Ⅴ	4132	17.91	0.062	Plot S6	<38.5	<7	PASS
	4183	17.83	0.061	Plot T6			PASS
	4233	18.23	0.067	Plot U6			PASS
WCDMA Band Ⅱ	9262	18.48	0.070	Plot V6	<33.0	<2	PASS
	9400	17.97	0.063	Plot W6			PASS
	9538	18.75	0.075	Plot X6			PASS

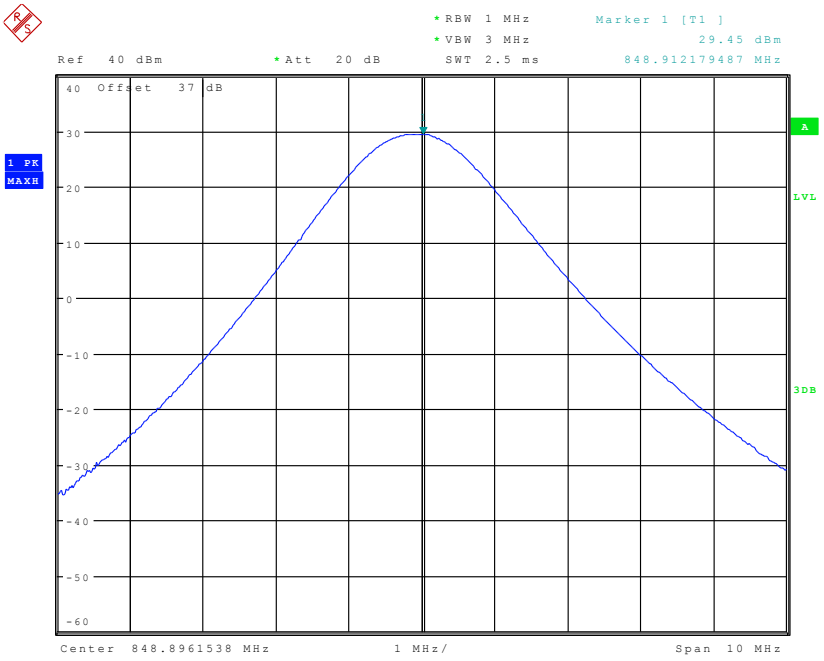
3. Test Plot



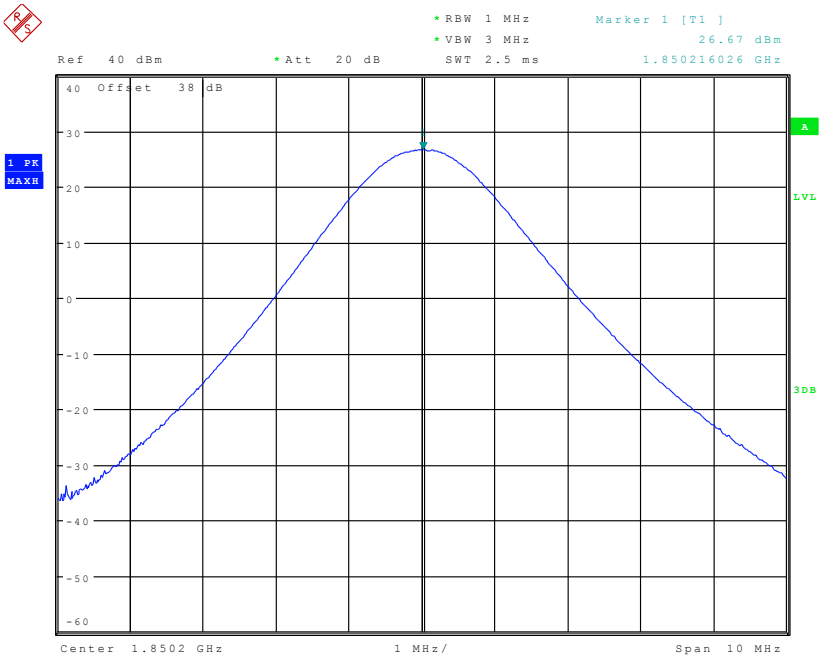
(Plot A6: GSM 850MHz Channel = 128)



(Plot B6: GSM 850MHz Channel = 190)

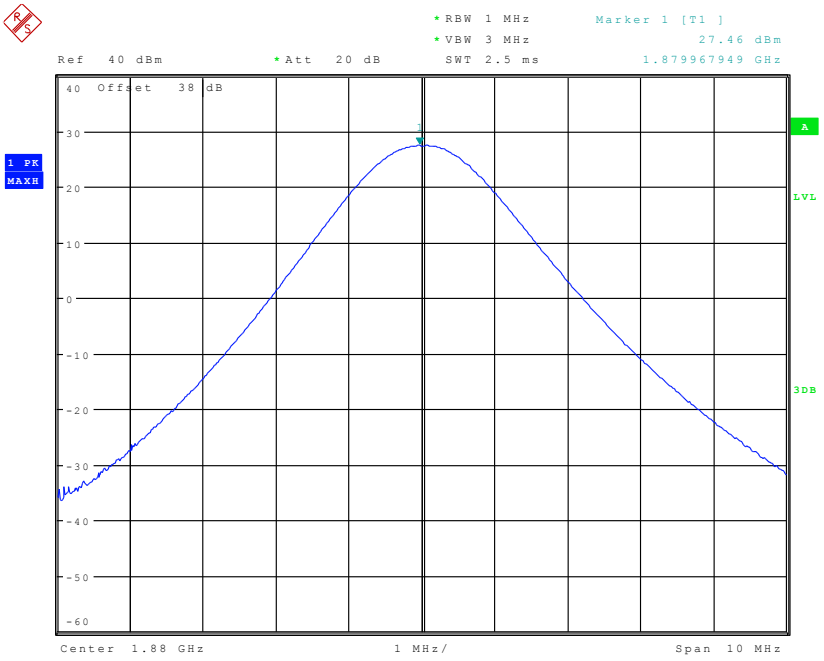


(Plot C6: GSM 850MHz Channel = 251)



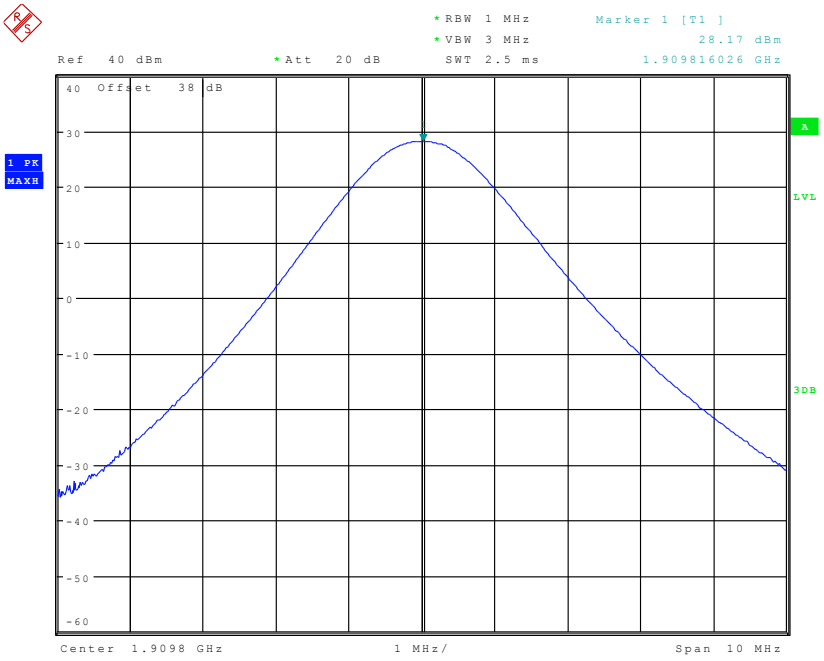
Date: 28.NOV.2010 17:00:57

(Plot D6: GSM 1900MHz Channel = 512)



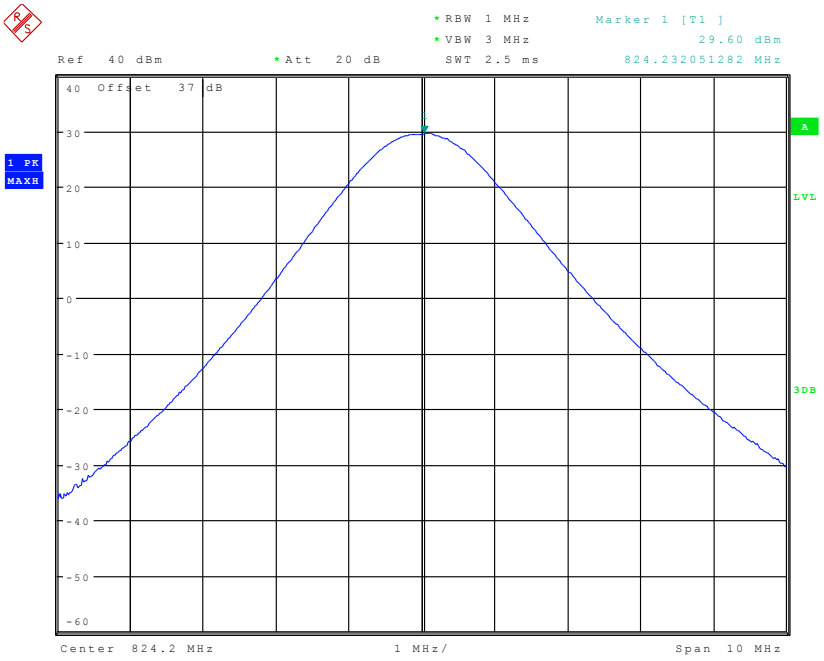
Date: 28.NOV.2010 17:01:26

(Plot E6: GSM 1900MHz Channel = 661)



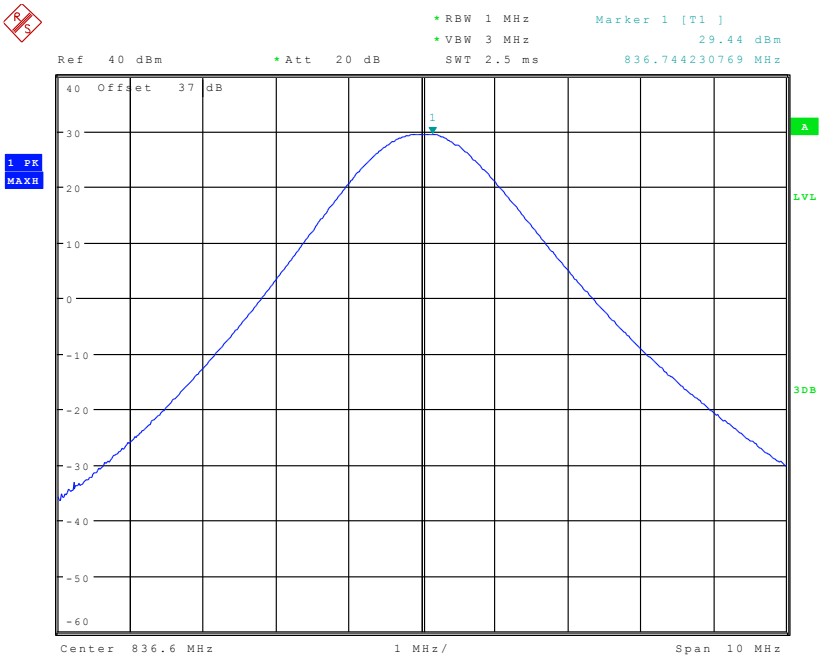
Date: 28.NOV.2010 17:01:50

(Plot F6: GSM 1900MHz Channel = 810)



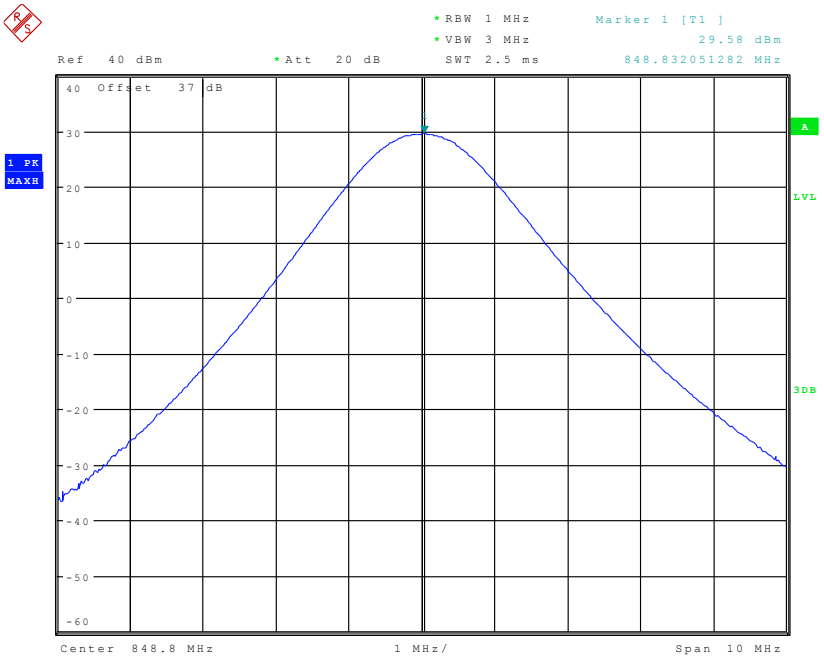
Date: 28.NOV.2010 17:05:42

(Plot G6: GPRS 850MHz Channel = 128)



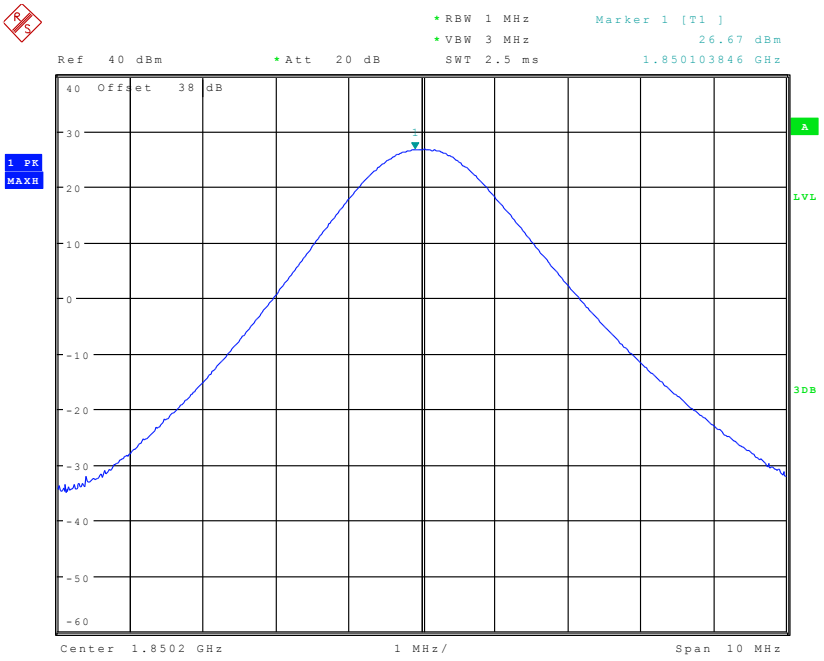
Date: 28.NOV.2010 17:06:01

(Plot H6: GPRS 850MHz Channel = 190)



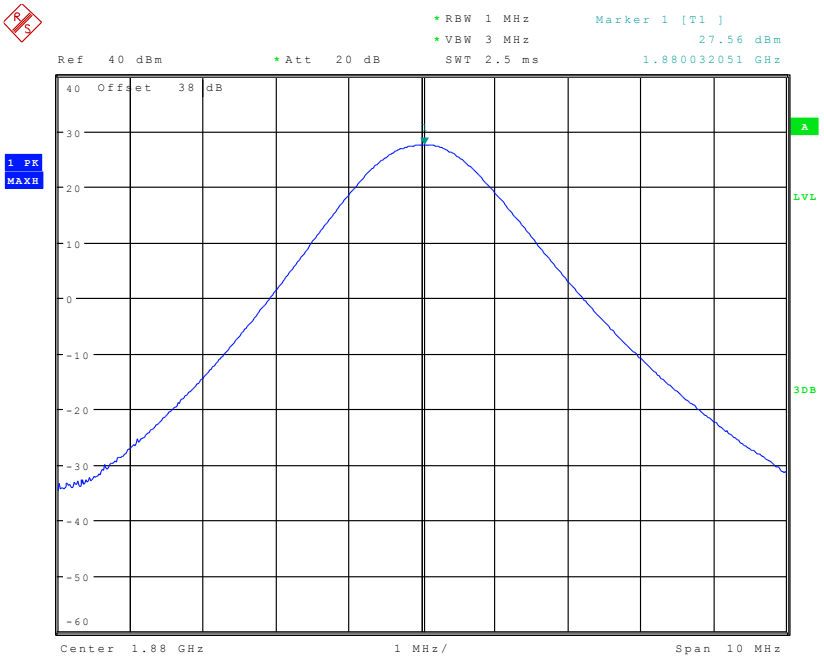
Date: 28.NOV.2010 17:06:11

(Plot I6: GPRS 850MHz Channel = 251)



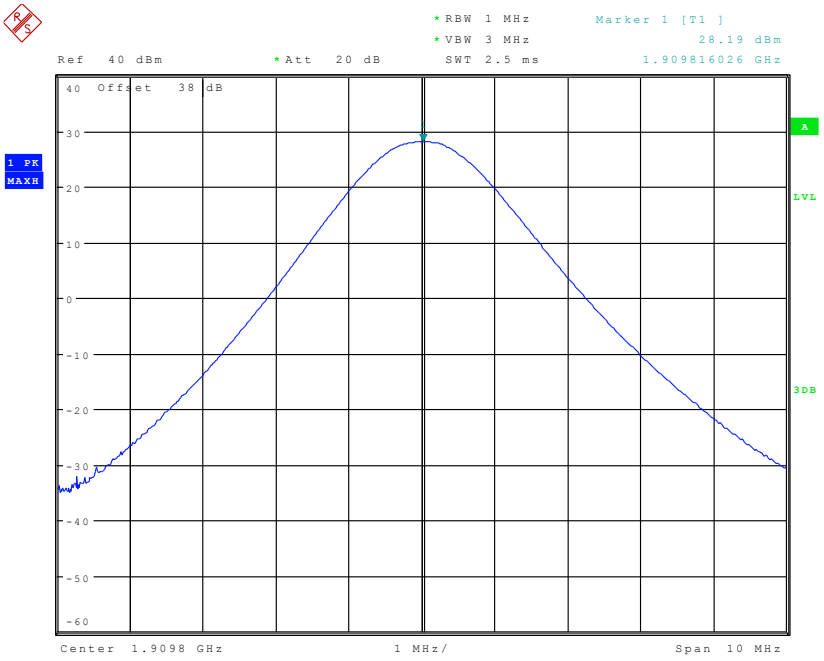
Date: 28.NOV.2010 17:08:41

(Plot J6: GPRS 1900MHz Channel = 512)



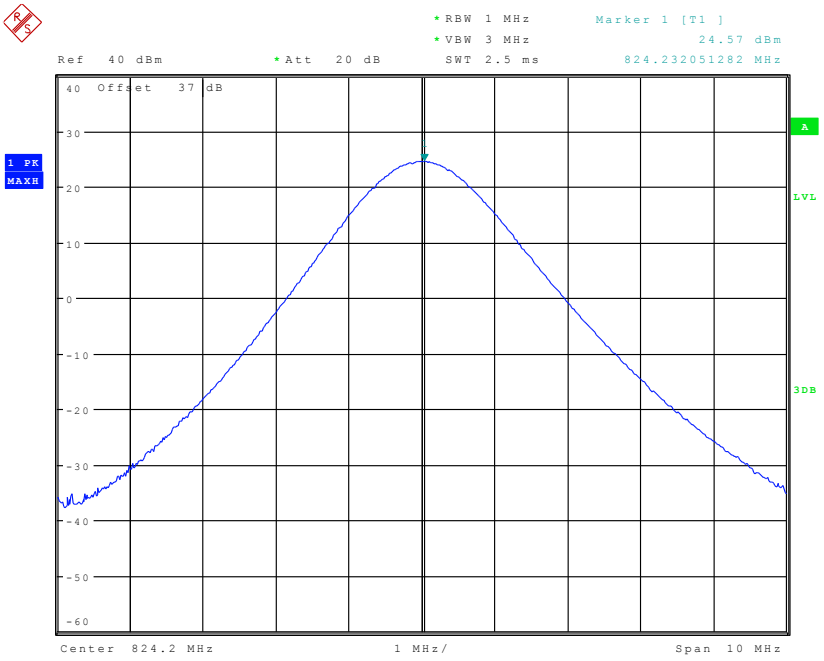
Date: 28.NOV.2010 17:09:05

(Plot K6: GPRS 1900MHz Channel = 661)



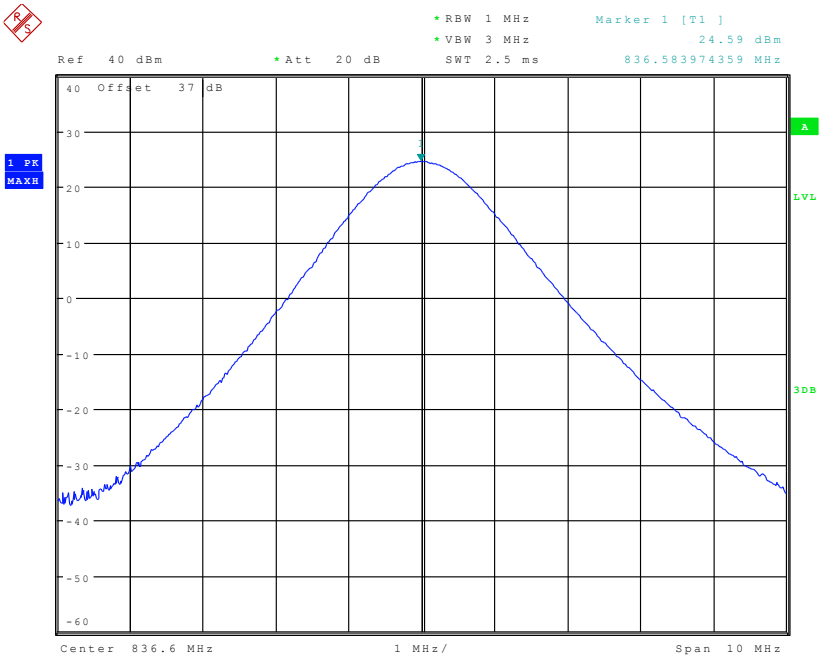
Date: 28.NOV.2010 17:09:57

(Plot L6: GPRS 1900MHz Channel = 810)



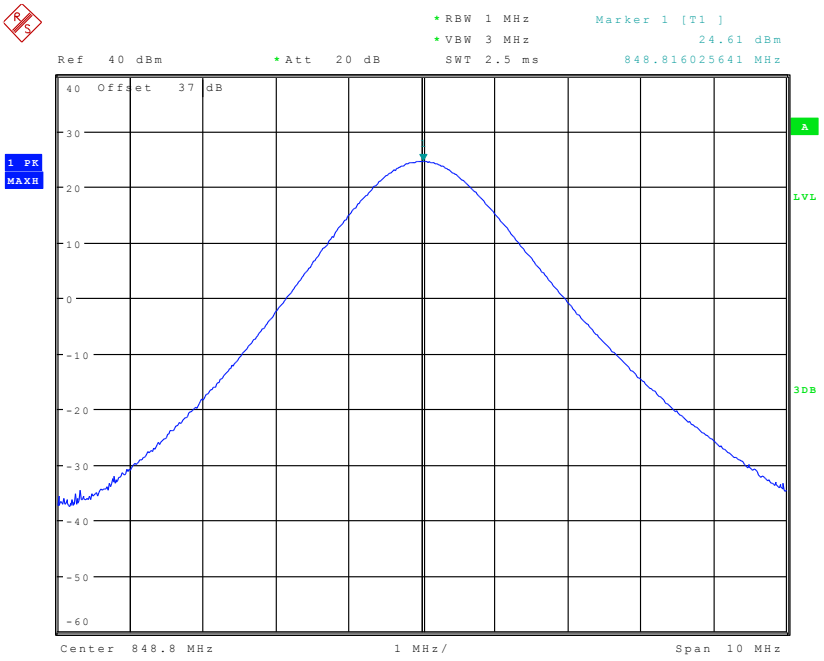
Date: 28.NOV.2010 17:12:57

(Plot M6: EDGE 850MHz Channel = 128)



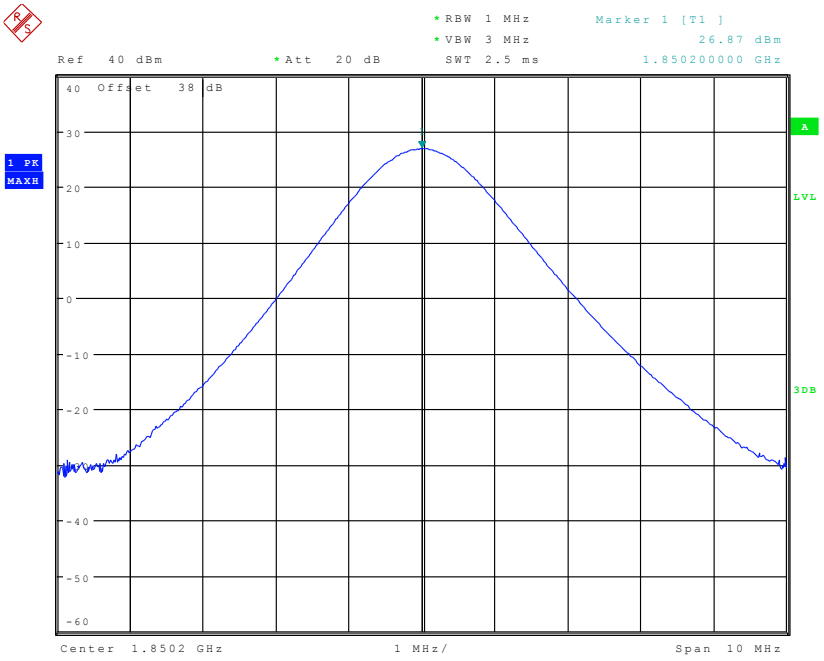
Date: 28.NOV.2010 17:13:12

(Plot N6: EDGE 850MHz Channel = 190)



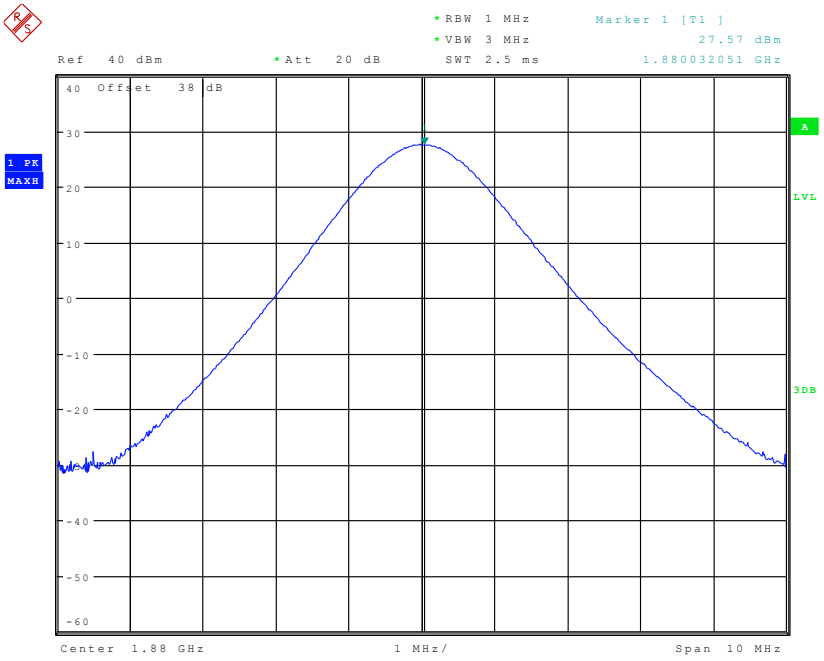
Date: 28.NOV.2010 17:13:30

(Plot O6: EDGE 850MHz Channel = 251)



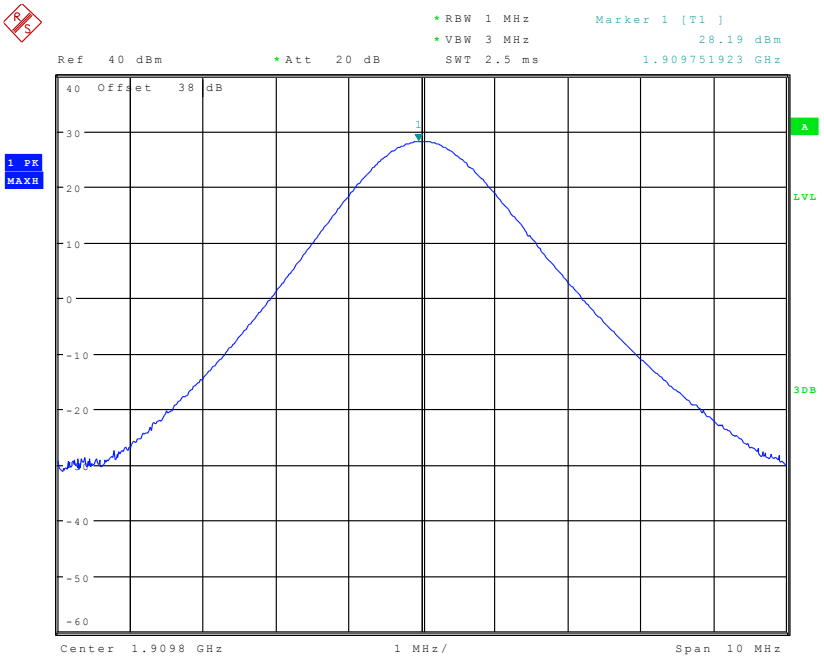
Date: 28.NOV.2010 17:16:42

(Plot P6: EDGE 1900MHz Channel = 512)



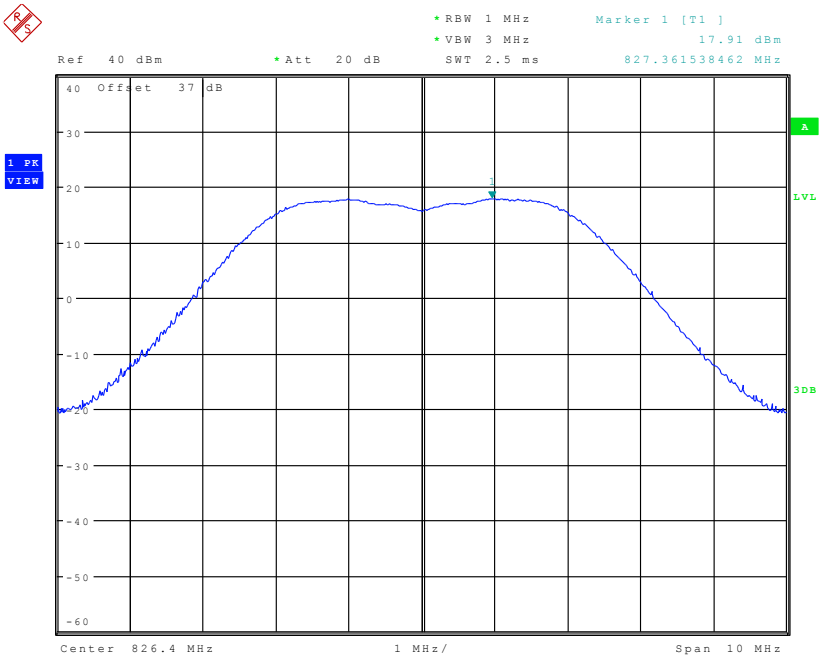
Date: 28.NOV.2010 17:17:08

(Plot Q6: EDGE 1900MHz Channel = 661)



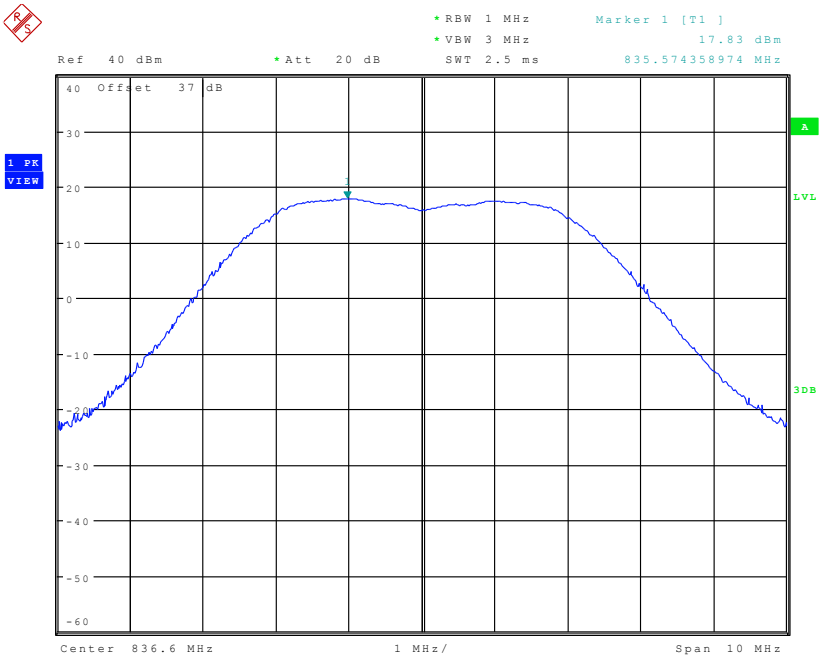
Date: 28.NOV.2010 17:17:34

(Plot R6: EDGE 1900MHz Channel = 810)



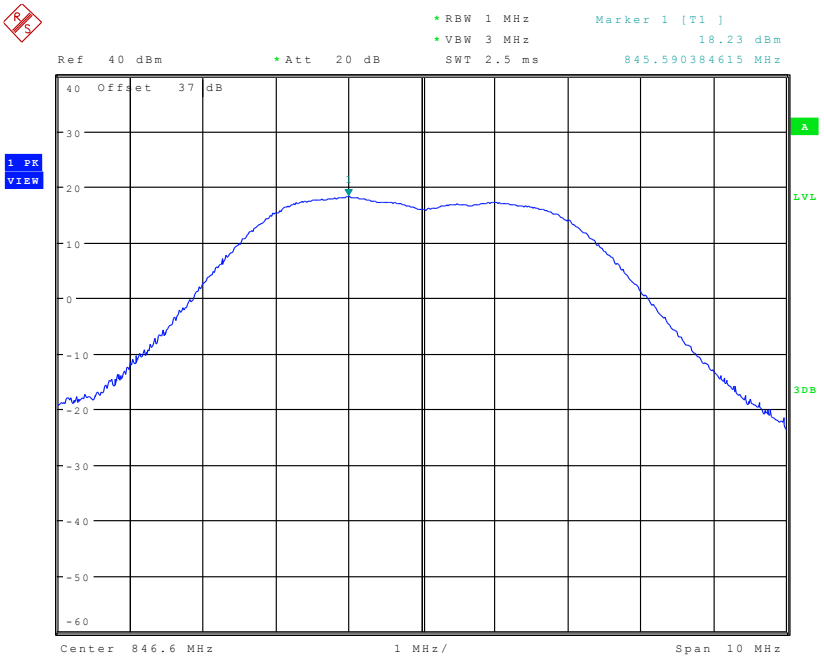
Date: 28.NOV.2010 16:41:47

(Plot S6: WCDMA Band Ⅴ Channel = 9262)



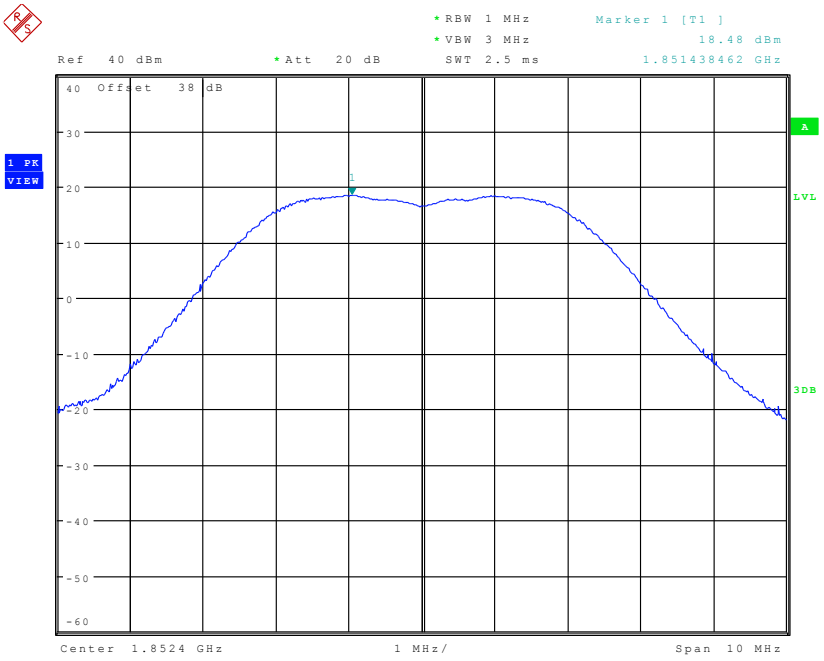
Date: 28.NOV.2010 16:42:30

(Plot T6: WCDMA Band Ⅴ Channel = 9400)



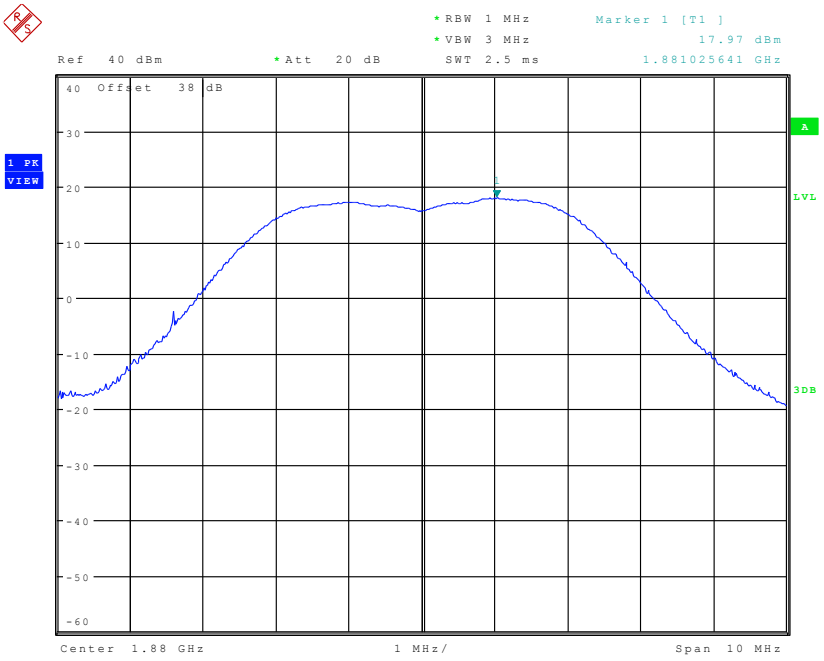
Date: 28.NOV.2010 16:43:06

(Plot U6: WCDMA Band Ⅴ Channel = 9583)



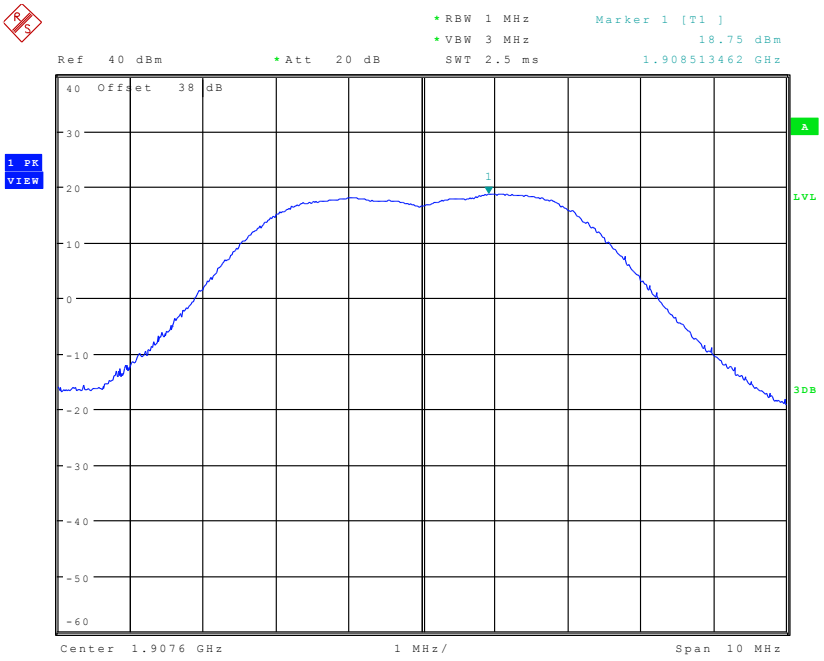
Date: 28.NOV.2010 16:43:45

(Plot V6: WCDMA Band Ⅱ Channel = 4132)



Date: 28.NOV.2010 16:44:16

(Plot W6: WCDMA Band Ⅱ Channel = 4183)



(Plot X6: WCDMA Band Ⅱ Channel = 4233)

3.8 Radiated Out of Band Emissions

3.8.1 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.

3.8.2 Test Description

See section 3.7.2 of this report.

3.8.3 Test Procedure

1. Perform test system setup as section 2.4.2
2. Make a limit line whose value is -13dBm on the Spectrum Analyzer, and set the RBW of the Spectrum Analyzer to 1MHz.
3. The lowest and the highest channel were selected to perform tests respectively.
4. Employ the bi-log Test Antenna as the test system receiving antenna and set the frequency range of the Spectrum Analyzer from 30MHz to 3GHz.
5. The measurement is performed with the Test Antenna at both horizontal and vertical polarization respectively. Set the polarization of the Test Antenna to be horizontal.
6. Actuate the Turn Table to turn from 0 degrees to 360 degrees to find the maximum reading via the Spectrum Analyzer, mark the fundamental frequency and the harmonics thereof, after then record the harmonics and the plot.
7. Set the polarization of the Test Antenna to be vertical, then repeat step 6.
8. Employ the horn Test Antenna as the test system receiving antenna and set the frequency range of the Spectrum Analyzer from 3GHz to 10^{th} harmonic of the fundamental frequency (here used 10GHz), then repeat step 5 to 7.
9. Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak and mark it; finally record the peak and the plot.

3.8.4 Test Result

Table for the Harmonics

NOTE: "---" in the table following means that the emission power was too small to be measured and was at least 12dB below the limit. All modes are tested,including (GSM850 GPRS EDGE WCDMA Band V and PCS1900 GPRS EDGE WCDMA Band II).

I GSM 850MHz

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 190 (836.6MHz)				
10	1672.87	-47.59	-42.9	-13
11	2509.87	---	-51.26	-13
12	2944.51	---	---	-13
13	3915.14	---	---	-13
14	5177.00	---	---	-13
15	5770.25	---	---	-13
16	6691.87	-42.64	---	-13
17	7456.48	---	---	-13
18	8054.48	---	---	-13

II GSM 1900MHz

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 661 (1880.2MHz)				
10	3759.37	-39.22	-41.39	-13
11	5640.00	---	-45.84	-13
12	7400.63	---	---	-13
13	9423.00	---	---	-13
14	11101.88	---	---	-13
15	13160.60	-32.89	-33.77	-13
16	14803.13	---	---	-13
17	16926.00	---	---	-13
18	18800.00	---	---	-13

III GPRS 850MHz

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 190 (836.6MHz)				
10	1673.06	-49.05	-42.47	-13
11	2421.00	---	---	-13
12	2944.51	---	---	-13
13	3296.63	---	---	-13
14	4183	---	---	-13
15	5769.38	---	---	-13
16	6691.87	---	---	-13
17	7456.48	---	---	-13
18	8054.48	---	---	-13

IV GPRS 1900MHz

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 661 (1880.2MHz)				
10	3759.37	-44.26	-41.90	-13
11	5500	---	---	-13
12	7400.63	---	---	-13
13	9423.00	---	---	-13
14	11101.68	---	---	-13
15	13168.00	-35.47	---	-13
16	1442.62	---	---	-13
17	16920.00	-33.73	---	-13
18	18800.00	---	---	-13

V EGPRS 850MHz

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 190 (836.6MHz)				
10	1673.25	-53.14	-51.04	-13
11	2510.00	---	---	-13
12	3760.37	---	-48.48	-13
13	4183.00	---	---	-13
14	5326.63	-	-	-13
15	5954.56	---	---	-13
16	6691.87	---	---	-13
17	7438.88	-43.93	-43.93	-13
18	7918.38	---	-	-13

VI EGPRS 1900MHz

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 661 (1880.2MHz)				
10	3759.37	-44.12	-46.41	-13
11	5550.00	-	-	-13
12	7400.63	-	-	-13
13	9423.00	---	---	-13
14	11101.88	-	-	-13
15	13160.60	-33.11	---	-13
16	14473.12		-33.46	-13
17	16926.00	---	---	-13
18	18800.00	---	---	-13

VII WCDMA Band V

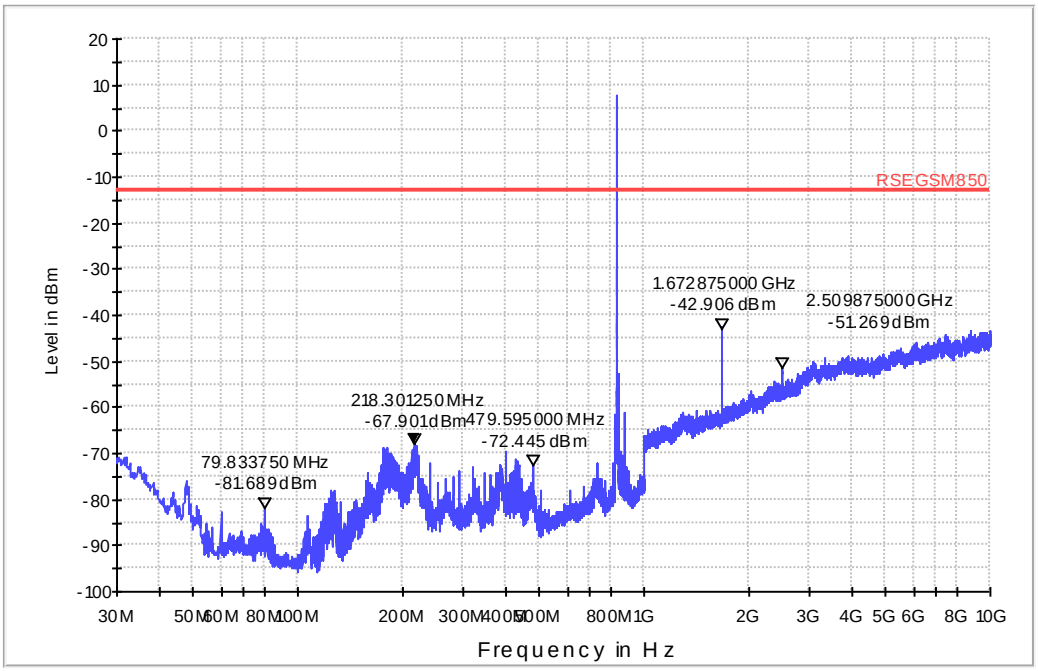
No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 190 (836.6MHz)				
10	1673.25	-44.44	-53.22	-13
11	2510.00	---	---	-13
12	3296.63	---	-	-13
13	4336.12	-48.13	---	-13
14	5326.63	-	-	-13
15	5954.56	---	---	-13
16	6693.37	-44.29	---	-13
17	7456.48	---	---	-13
18	8752.25	---	-43.82	-13

VIII WCDMA Band II

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 661 (1880.2MHz)				
10	3759.37	-42.60	-44.51	-13
11	5640.00	-45.80	-	-13
12	7447.50	-43.52	-	-13
13	9423.00	---	---	-13
14	11101.88	-	-	-13
15	13168.00	---	---	-13
16	1442.62			-13
17	16926.00	---	---	-13
18	18800.00	---	---	-13

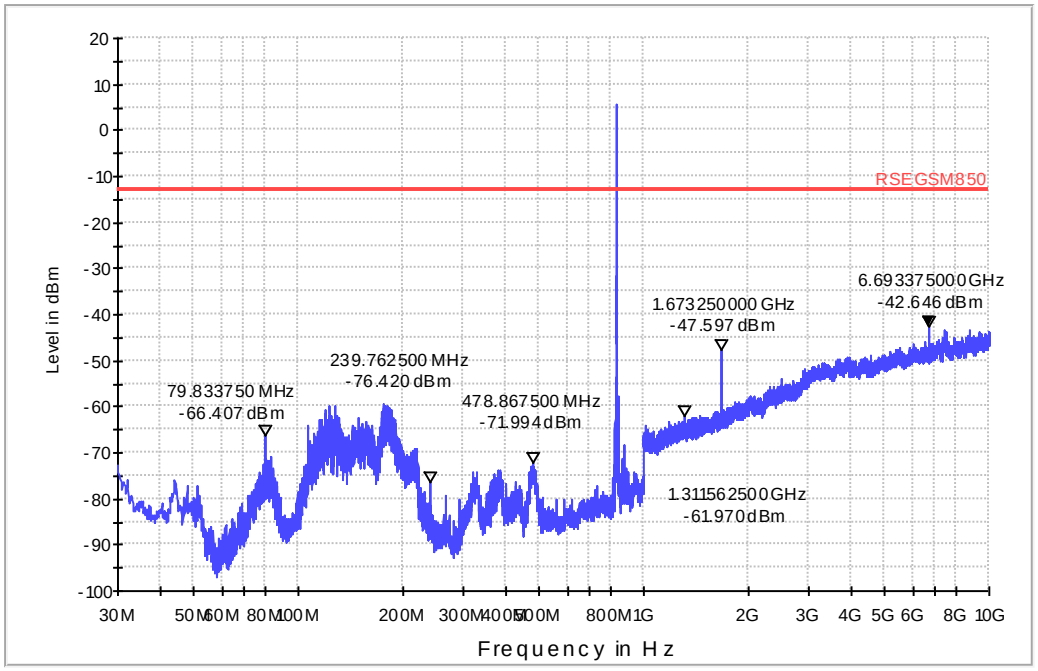
Test Plot

MORLAB-RSE-FCC-GSM850 30M-18G

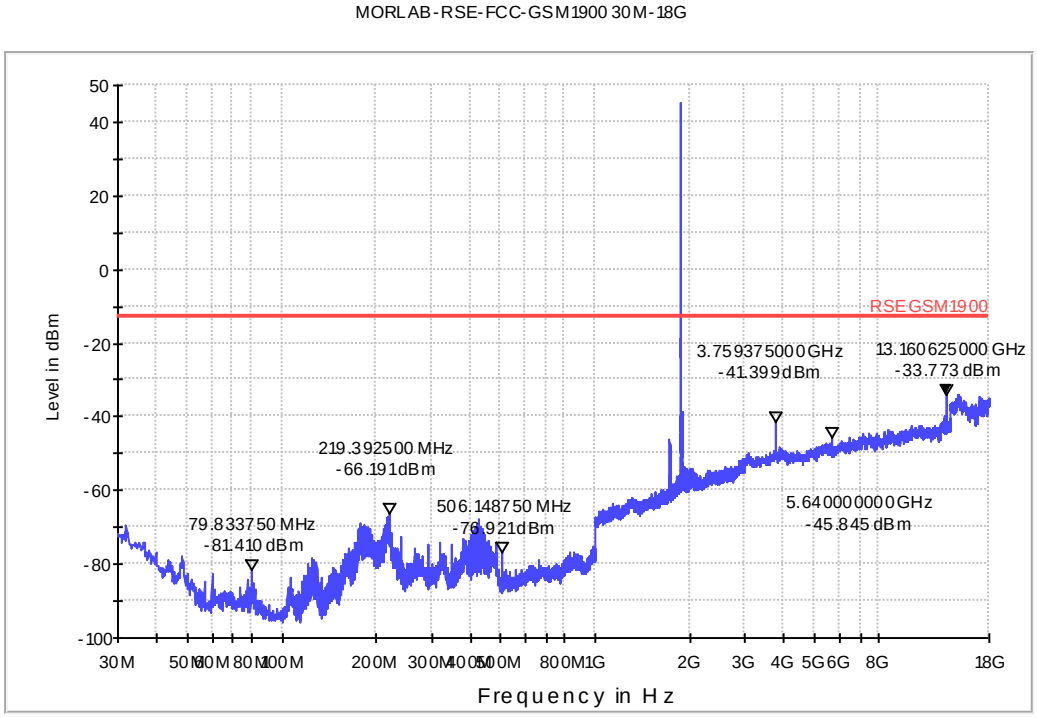


GSM850 CH190-H 30M-10G

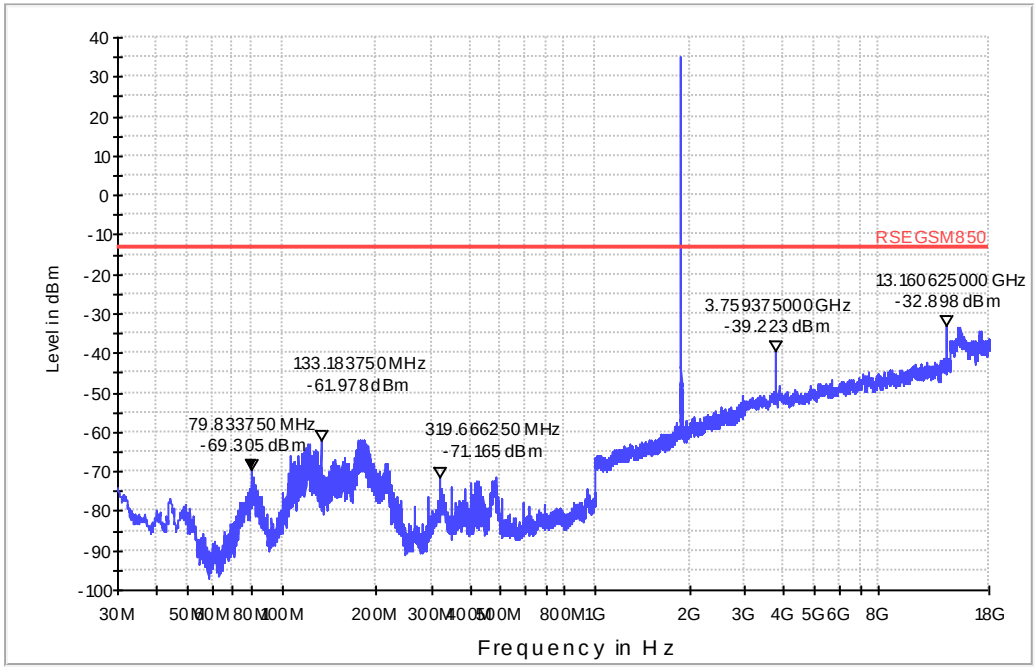
MORLAB-RSE-FCC-GSM850 30M-18G



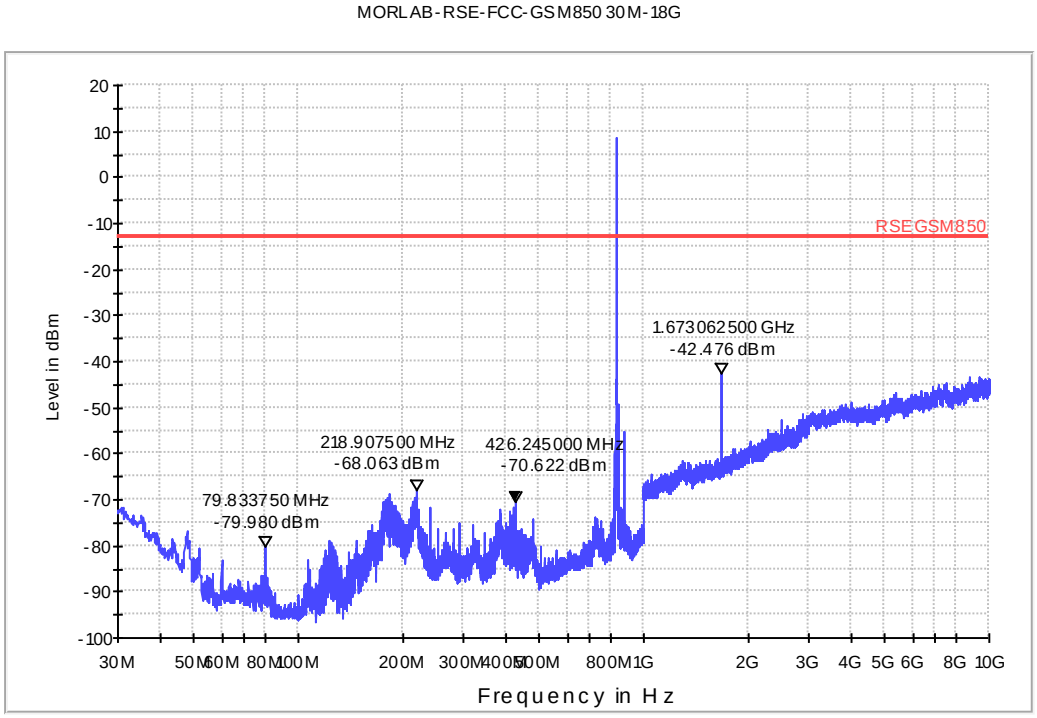
GSM850 CH190-V 30M-10G



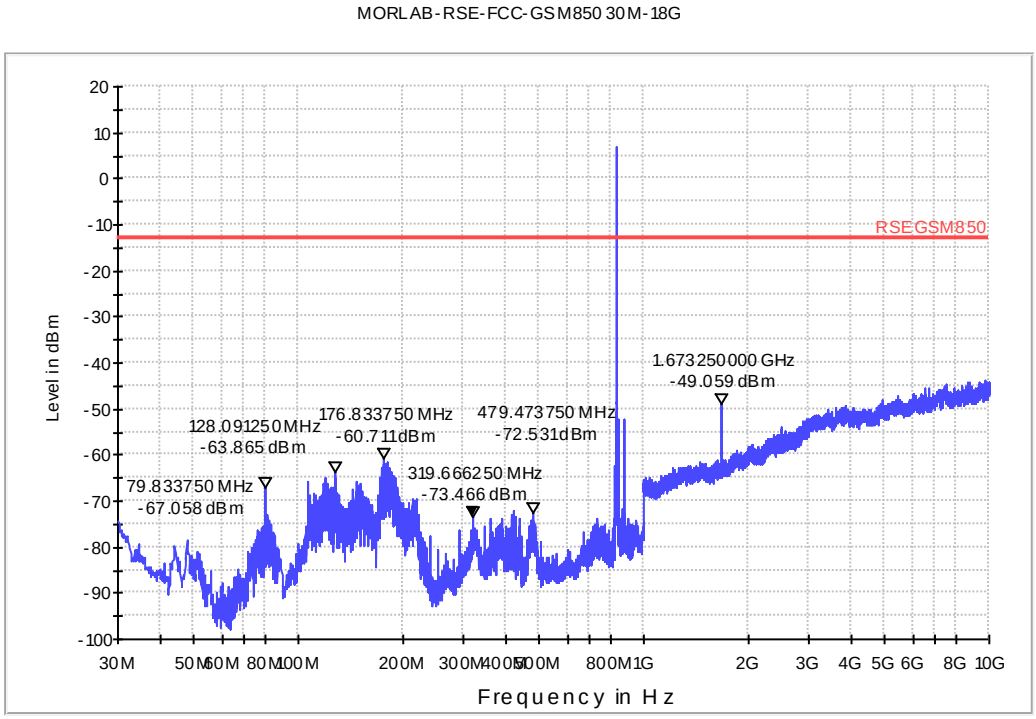
GSM1900 CH661-H 30M-18G



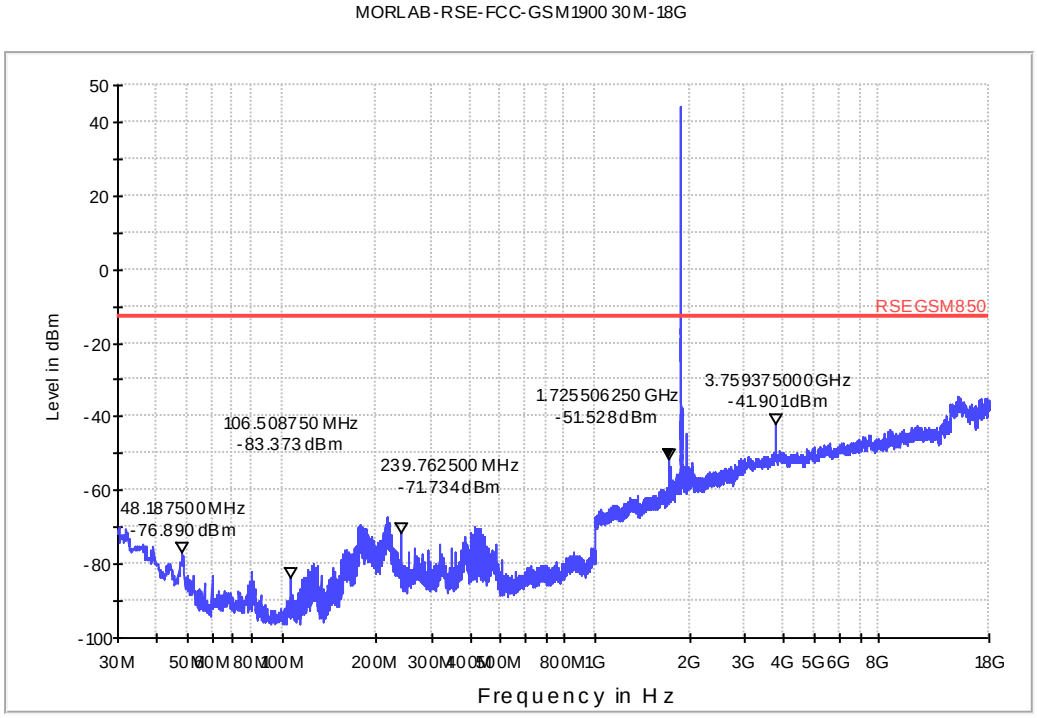
GSM1900 CH661-H 3G-18G



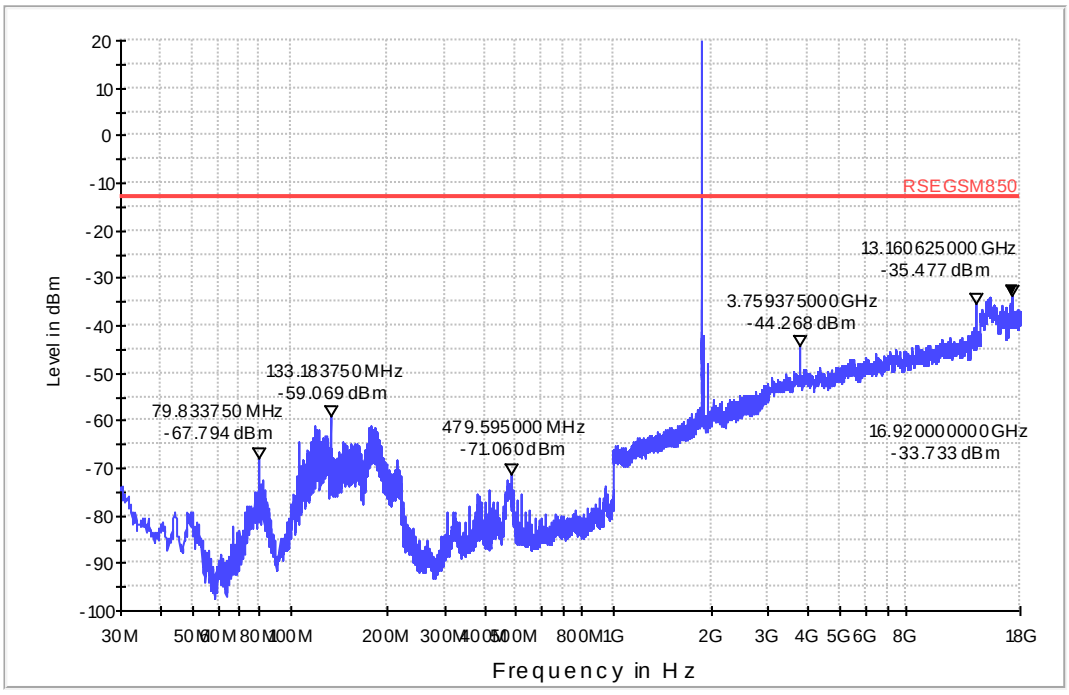
GPRS850 CH190-H 30M-10G



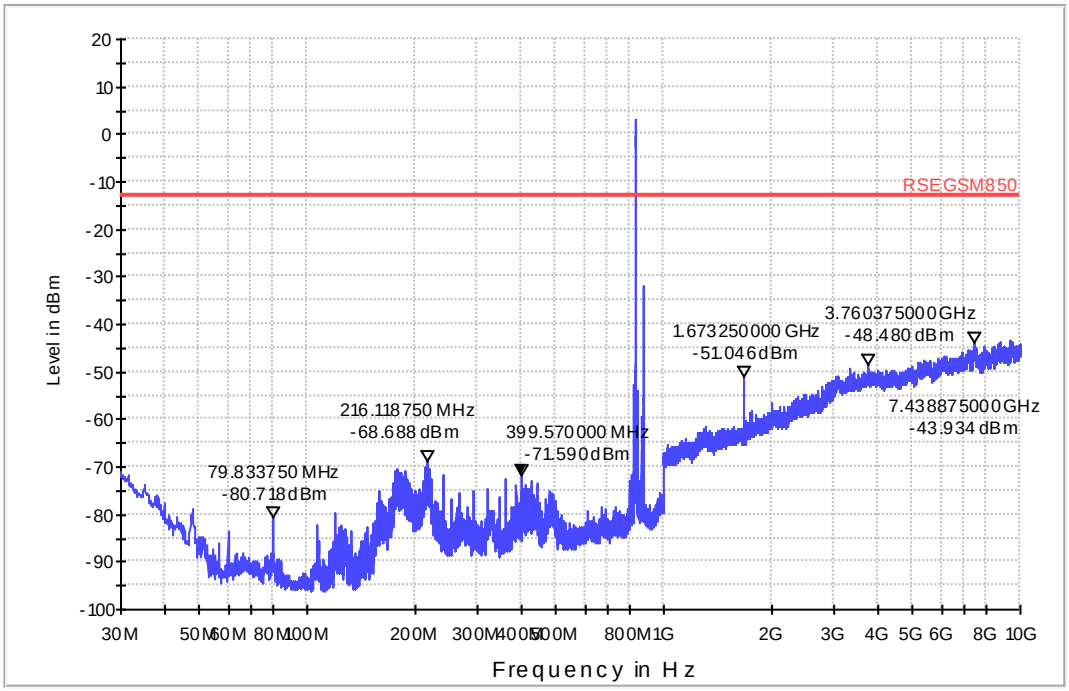
GPRS850 CH190-V 30M-10G



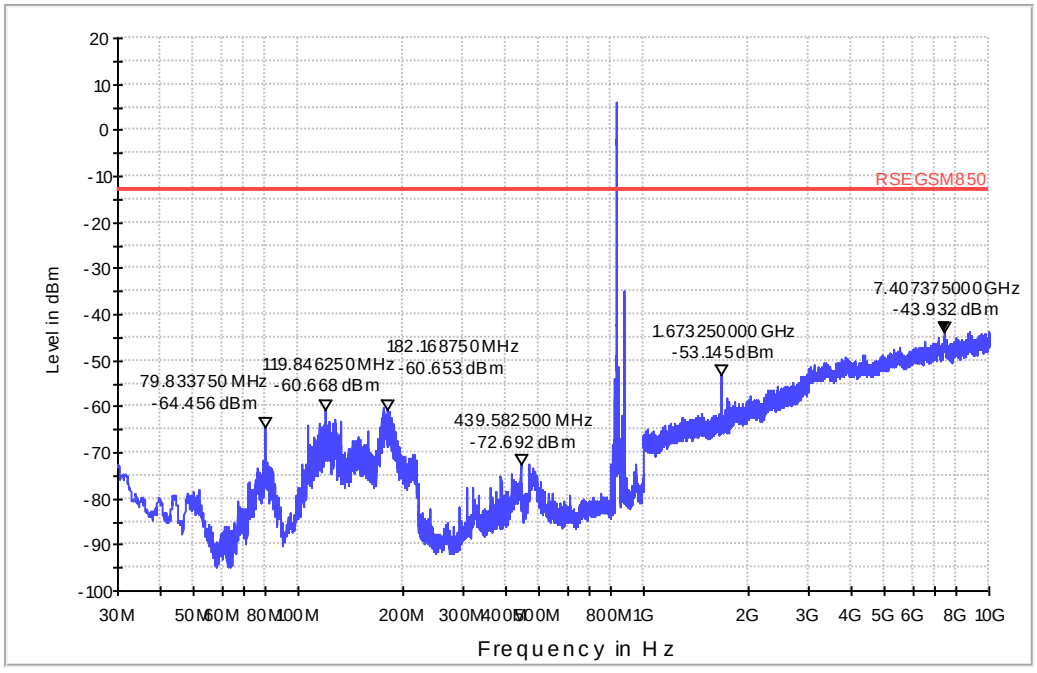
GPRS1900 CH661-H 30M-18G



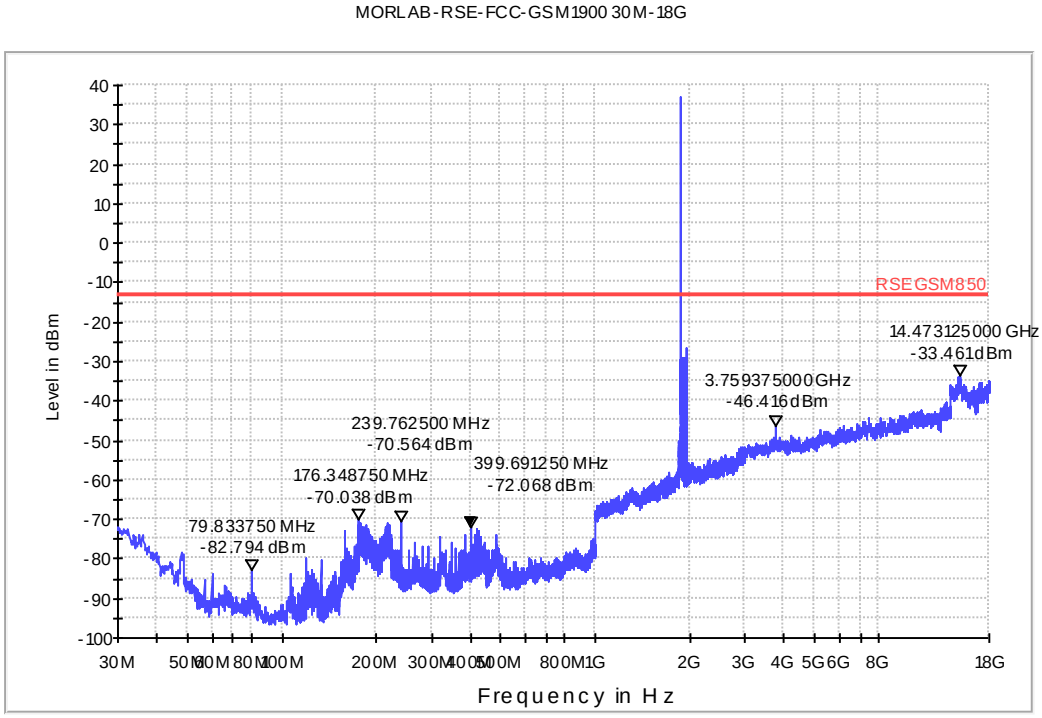
GPRS1900 CH661-V 30M-18G



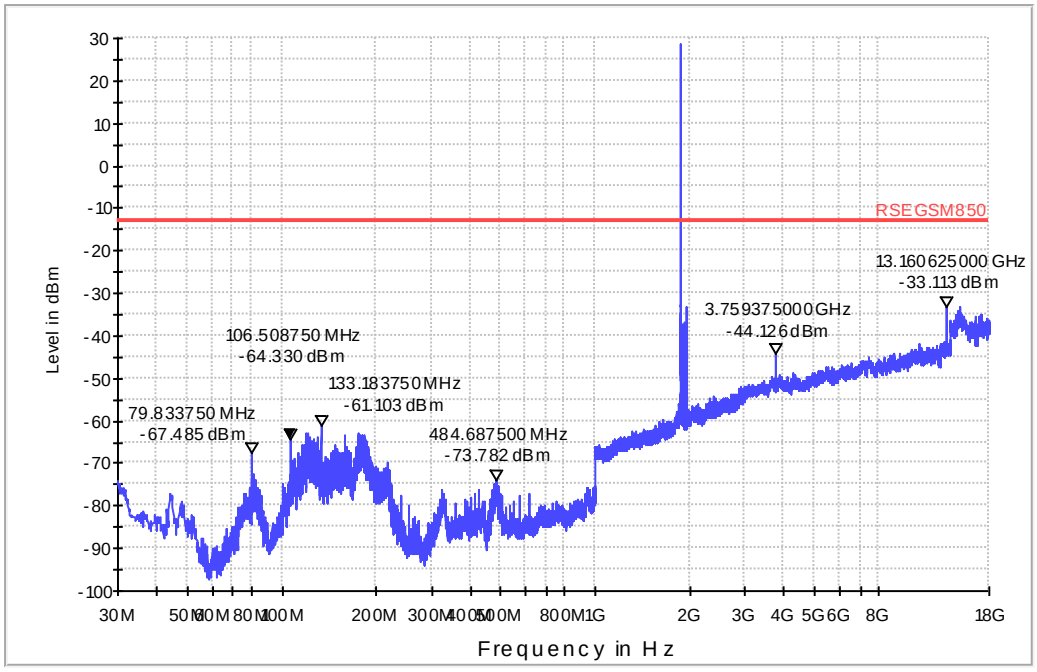
EGPRS850 CH190-H 30M-10G



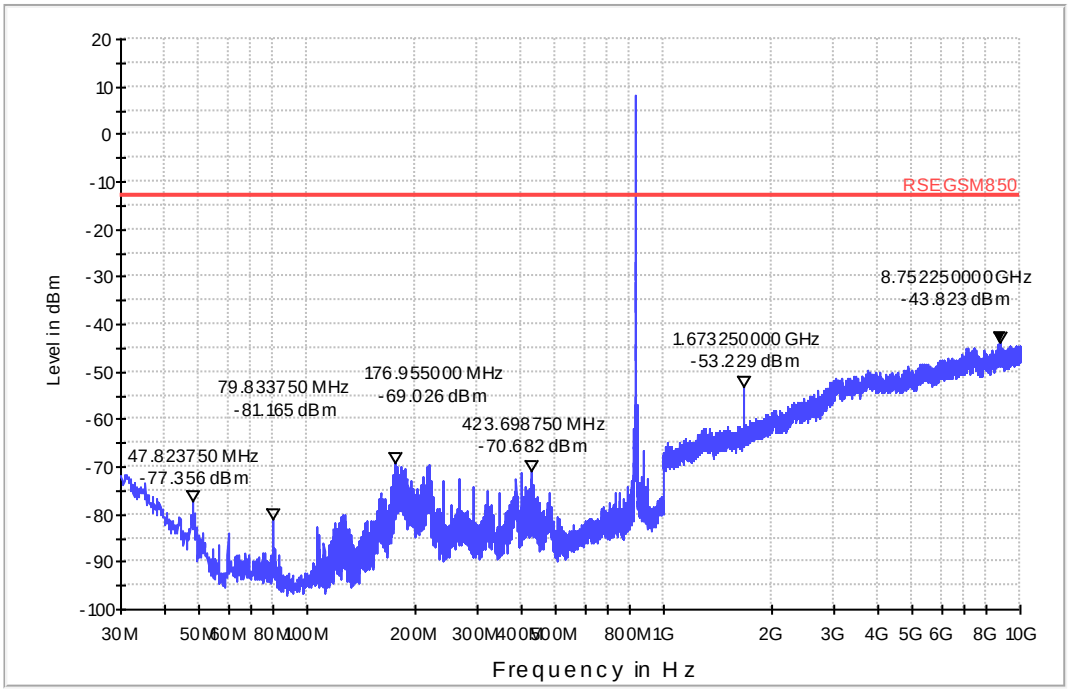
EGPRS850 CH190-V 30M-10G



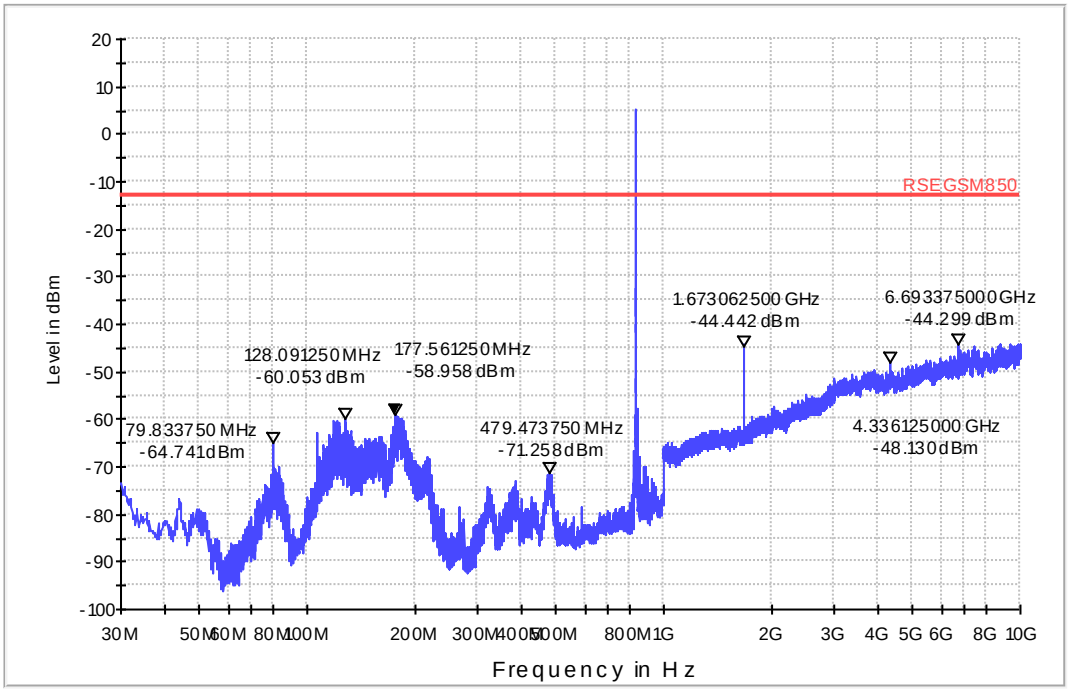
EGPRS1900 CH661-H 30M-18G



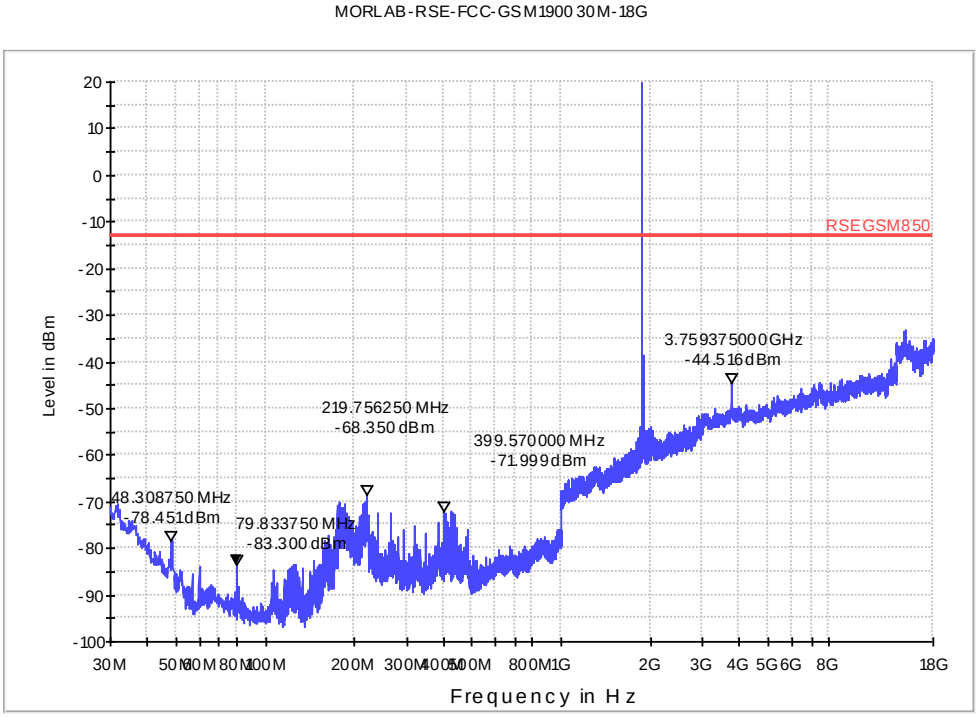
EGPRS1900 CH661-V 30M-18G



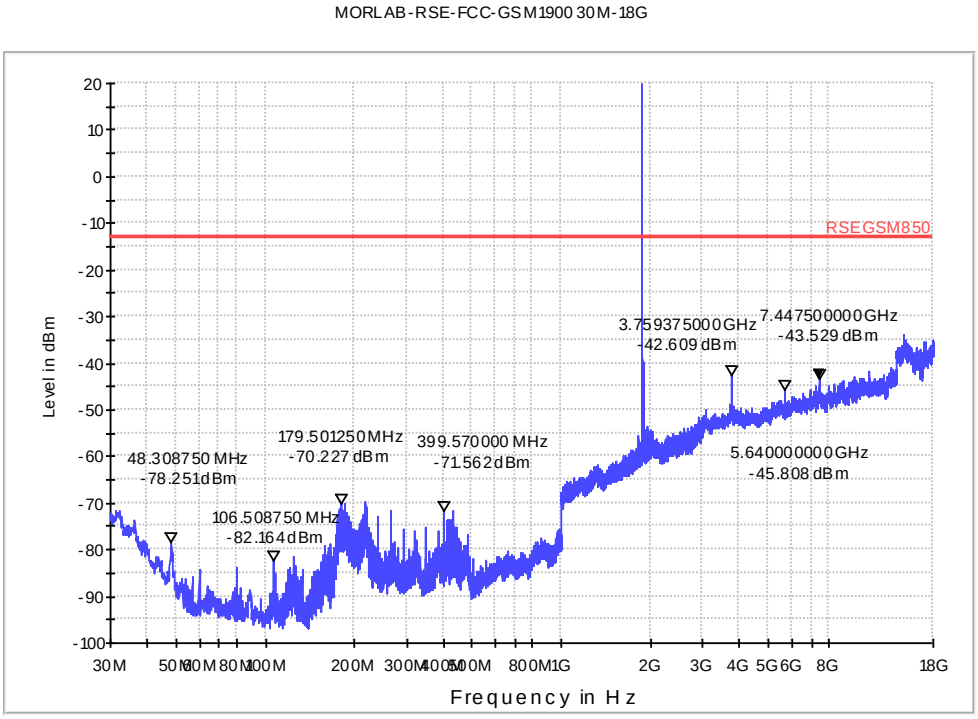
WCDMA Band V CH4183-H 30M-10G



WCDMA Band V CH4183-V 30M-10G



WCDMA Band II CH9400-H 30M-18G



WCDMA Band II CH9400-V 30M-18G

** END OF REPORT **