FCC Test Report

According to

47 CFR Part 22H, 24E

Equipment	:	**Notebook PC**
Trade Name	:	**MTC; GETAC**
Model No.	:	**E100 / E100N**
FCC ID	:	**MAUE03**
Tx Frequency Range	:	**GSM850 : 824.2 ~ 848.8 MHz** **GSM1900 : 1850.2 ~ 1909.8 MHz** **WCDMA Band V : 826.4 ~ 846.6 MHz** **WCDMA Band II : 1852.4 ~ 1907.6 MHz**
Max. ERP/EIRP Power	:	**GSM850(GSM) : 1.38 W** **GSM850(EDGE) : 0.48 W** **GSM1900(GSM) : 0.98 W** **GSM1900(EDGE) : 0.52 W** **WCDMA Band V : 0.22 W** **WCDMA Band V(HSUPA) : 0.18 W** **WCDMA Band II : 0.19 W** **WCDMA Band II(HSUPA) : 0.17 W**
Emission Designator	:	**GSM : 300KGXW** **EDGE : 300KG7W** **WCDMA : 4M22F9W**
Applicant	:	**MiTAC Technology Corp.** 9th. FL., No. 75, Ming Sheng E. Rd., Sec.3, Taipei, Taiwan

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- The data shown in this test report were carried out on Jun. 17, 2008 at **Sporton International Inc. LAB.**
- Report No.: FG841815A, Report Version: Rev. 03.

Roy Wu
Manager

SPORTON International Inc.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

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History of This Test Report

Report Issue Date: Sep. 17, 2008

Report No.	Description

1. General Information

1.1 Applicant

MiTAC Technology Corp.

9th. FL., No. 75, Ming Sheng E. Rd., Sec.3, Taipei, Taiwan

1.2 Manufacturer

GeTAC Technology(Kunshan) LTD.

No.269, 2nd Road, Export Processing Zone, Changjiang South Road, Kunshan, Jiangsu, P.R.C

1.3 Basic Description of Equipment under Test

Equipment		Notebook PC
Trade Name		MTC; GETAC
Model Name		E100 / E100N
FCC ID		MAUE03
AC Adapter	**Brand Name**	FSP
	Model Name	FSP050-1AD101C
	Power Rating	I/P:100-240Vac, 50-60Hz, 1.3A O/P: 12Vdc, 4.16A
	AC Power Cord Type	1.8 meter non-shielded cable without ferrite core
Battery	**Brand Name**	Sayno
	Model Name	BP2S2P2600(S)
	Power Rating	7.4Vdc, 5200mAh, 4cell
	Type	Li-ion

Remark:

1. E100 is almost the same as E100N. The differences between these models are panel and keyboard as follows:
   a. Panel of E100 is 8.4 inch, and E100N is 8.9 inch.
   b. E100N doesn't have the number key on the keyboard, but E100.
2. Above EUT's information was declared by manufacturer. Please refer to the specifications of manufacturer or User's Manual for more detailed features description.

1.1. Configuration of the Equipment

Model Name: E100 (Sample A)

Notebook Specification				
Item	**Brand**	**Model**	**P/N**	**Specification**
CPU	Intel Stealey	TDP 3W	---	800 MHz
LCD	AUO 8.4" SVGA	G084SN02 V0 for digitizer option	G084SN02 V0	8.4 inch SVGA Color TFT LCD Module 800x600
HDD	Toshiba	MK1011GAH	---	100GB
Memory	HYNIX	HYMP512S64CP8-Y5	---	DDR2 667 1GB
Adapter	FSP	PS050-1AD101C	---	---
Battery	Sayno	Sayno BP2S2P2600(S)	---	DC 7.4V, Li-ION/ Sayno cell - 5200mAH/4cell, (P)
WLAN	Billionton, MiniCard (USB I/F)	GMEWLGRL	---	802.11b/g
Bluetooth	Billionton (USB I/F)	GUBTCR42M	---	V2.0 + EDR
GPS	GlobalSat	ET-312	---	RS232
3G	SIERRA WIRELESS	MC8785V	---	---

Model Name: E100N (Sample B)

Notebook Specification				
Item	**Brand**	**Model**	**P/N**	**Specification**
CPU	Intel Stealey	TDP 3W	---	800 MHz
LCD	Toshiba	Toshiba 8.9 inch TFT-LCD MODULE LTD089EXYM 1024x768	LTD089EXYM	8.9 inch TFT-LCD Module 1024x768
HDD	Toshiba	MK1011GAH	---	100 GB
Memory	Qimonda	HYS64T128021EDL-3S-B2	---	DDR2 667 1GB
Adapter	FSP	PS050-1AD101C	---	---
Battery	Sayno	Sanyo BP2S2P2600(S)	---	DC 7.4V, Li-ION/ Sayno cell - 5200mAH/4cell,(P)
WLAN	Billionton, MiniCard (USB I/F)	GMEWLGRL	---	802.11b/g
Bluetooth	Billionton (USB I/F)	GUBTCR42M	---	V2.0 + EDR
GPS	GlobalSat	ET-312	---	RS232
3G	SIERRA WIRELESS	MC8785V	---	---

1.4 Feature of Equipment under Test

Product Feature & Specification	
DUT Type :	Notebook PC
Trade Name :	MTC; GETAC
Model Name :	E100 / E100N
FCC ID :	MAUE03
Tx Frequency :	GSM850 : 824 MHz ~ 849 MHz GSM1900 : 1850 MHz ~ 1910 MHz WCDMA Band V : 824 MHz ~ 849 MHz WCDMA Band II : 1850 MHz ~ 1910 MHz
Rx Frequency :	GSM850 : 869 MHz ~ 894 MHz GSM1900 : 1930 MHz ~ 1990 MHz WCDMA Band V : 869 MHz ~ 894 MHz WCDMA Band II : 1930 MHz ~ 1990 MHz
Maximum Output Power to Antenna :	GSM850 : 22.82 dBm GSM1900 : 28.76 dBm WCDMA Band V : 22.82 dBm WCDMA Band II : 23.22 dBm
Maximum ERP/EIRP :	GSM850(GSM) : 1.38 W (31.41 dBm) GSM850(EDGE) : 0.48 W (26.85 dBm) GSM1900(GSM) : 0.98 W (29.93 dBm) GSM1900(EDGE) : 0.52 W (27.16 dBm) WCDMA Band V : 0.22 W (23.46 dBm) WCDMA Band V(HSDPA) : 0.18 W (22.55 dBm) WCDMA Band II : 0.19 W (22.86 dBm) WCDMA Band II(HSDPA) : 0.17 W (22.34 dBm)
Antenna Type :	Fixed Internal
HW Version :	R03
SW Version :	R102 (BIOS)
Type of Modulation :	GSM / GPRS : GMSK EDGE : 8PSK WCDMA : QPSK HSDPA : QPSK / 16QAM HSUPA : BPSK
Type of Emission :	GSM : 300KGXW EDGE : 300KG7W WCDMA : 4M22F9W
DUT Stage :	Identical Prototype

1.5 Report Date

EUT Received : Apr. 18, 2008

Report Date : Sep. 17, 2008

2. Test Configuration of Equipment under Test

2.1 Test Manner

1. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.
2. During all testings, EUT is in link mode with base station emulator at maximum power level.
3. Frequency range investigated: radiated emission 30 MHz to 9000 MHz for GSM850 and WCDMA Band V; 30MHz to 19000 MHz for GSM1900 and WCDMA Band II.

2.2 Test Mode

Application	GSM850	GSM1900
Radiated Emission	☒ Mode 1: GSM Link for Sample A ☒ Mode 2: EDGE Link for Sample A ☒ Mode 9: GSM Link + WLAN Link	☒ Mode 3: GSM Link for Sample A ☒ Mode 4: EDGE Link for Sample A
Conducted Measurement	☒ Mode 1: GSM Link for Sample A ☒ Mode 2: EDGE Link for Sample A	☒ Mode 3: GSM Link for Sample A ☒ Mode 4: EDGE Link for Sample A

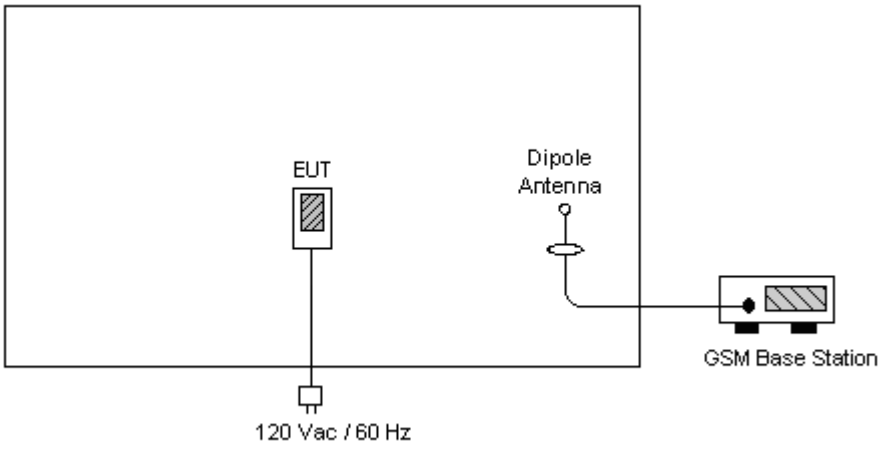
Application	WCDMA Band V	WCDMA Band II
Radiated Emission	☒ Mode 5: WCDMA Link for Sample A ☒ Mode 6: HSDPA Link for Sample A	☒ Mode 7: WCDMA Link for Sample A ☒ Mode 8: HSDPA Link for Sample A
Conducted Measurement	☒ Mode 5: WCDMA Link for Sample A ☒ Mode 6: HSDPA Link for Sample A	☒ Mode 7: WCDMA Link for Sample A ☒ Mode 8: HSDPA Link for Sample A

Remark :

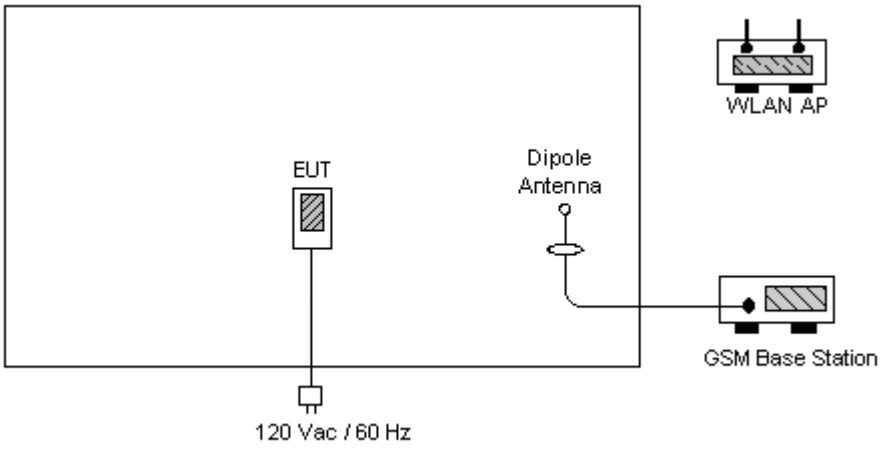
1. Sample A and Sample B is used the same RF module. All test cases were only performed on the sample A.
2. The radiated emission was test the worst of Sample A for Sample B and the result is almost the same. Only the test data of Sample A was reported in this report.

2.3 Connection Diagram of Test System

<GSM/WCDMA Link Mode>



<GSM/WCDMA with WLAN Link Mode>



2.4 Ancillary Equipment List

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Code
1.	GSM Base Station	R&S	CMU200	N/A	N/A	Unshielded, 1.8m
2.	GSM Base Station	Agilent	E5515C(8960)	N/A	N/A	Unshielded, 1.8m
3.	WLAN AP	SMC	SMC-100	HEDWG4005ACC	N/A	Unshielded, 1.8m

3. General Information of Test Site

Test Site Location	:	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-328-4978
Test Site No	:	03CH07-HY, TH02-HY
FCC Designation No	:	TW1022

The chamber meets the characteristics of ANSI C63.4-2003. This site is on file with the FCC.

3.1 Test Voltage

AC 120V / 60Hz

3.2 Test Compliance

47 CFR Part 22H, 24E, Part 2

Preliminary Guidance for Receiving Applications for Certification of 3G Device. May 9, 2006.

3.3 Frequency Range

a. Radiation: from 30MHz to 9000MHz for GSM850 and WCDMA Band V.
b. Radiation: from 30 MHz to 19000 MHz for GSM1900 and WCDMA Band II.

3.4 Test Distance

The test distance of radiated emission from antenna to EUT is 3 m.

4. Test Data and Test Result

4.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result	Section
§2.1046	RF Output Power	Passed	4.2
§22.913 §24.232	ERP / EIRP	Passed	4.3
§2.1049, §22.917, §24.238(b)	Occupied Bandwidth & Band Edge Measurement	Passed	4.4
§2.1051	Conducted Emission	Passed	4.5
§2.1053	Field Strength of Spurious Radiation	Passed	4.6
§2.1055, §22.355, §24.235	Frequency Stability vs. Temperature	Passed	4.7
§2.1055, §22.355, §24.235	Frequency Stability vs. Voltage	Passed	4.8

4.2 RF Output Power

4.2.1 Measurement Instruments

As described in chapter 5 of this test report.

4.2.2 Test Procedure

a. The transmitter output was connected to power meter and base station through power divider.

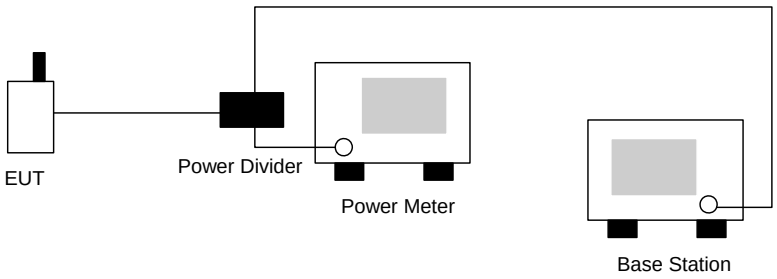
b. Set EUT at maximum power through base station as below

b1 : Set PCL=5 for GSM850 and/or PCL=0 for GSM1900

b2 : Set All Up Bits for WCDMA

c. Select lowest, middle, and highest channels for each band.

4.2.3 Test Setup Layout



4.2.4 Test Result

Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
GSM850 (GSM)	128	824.2 (Low)	31.88	1.542
	189	836.4 (Mid)	31.86	1.535
	251	848.8 (High)	31.75	1.496
GSM850 (EDGE)	128	824.2 (Low)	26.94	0.494
	189	836.4 (Mid)	26.93	0.493
	251	848.8 (High)	26.83	0.482
GSM1900 (GSM)	512	1850.2 (Low)	28.55	0.716
	661	1880.0 (Mid)	28.64	0.731
	810	1909.8 (High)	28.76	0.752
GSM1900 (EDGE)	512	1850.2 (Low)	25.55	0.359
	661	1880.0 (Mid)	25.65	0.367
	810	1909.8 (High)	25.80	0.380

Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
WCDMA Band V (12.2k bps)	4132	826.4 (Low)	22.23	0.17
	4182	836.4 (Mid)	22.82	0.19
	4233	846.6 (High)	22.22	0.17
WCDMA Band V (HSDPA Subtest1)	4132	826.4 (Low)	22.00	0.16
	4182	836.4 (Mid)	22.58	0.18
	4233	846.6 (High)	22.12	0.16
WCDMA Band V (HSDPA Subtest2)	4132	826.4 (Low)	21.60	0.14
	4182	836.4 (Mid)	22.08	0.16
	4233	846.6 (High)	21.69	0.15
WCDMA Band V (HSDPA Subtest3)	4132	826.4 (Low)	21.35	0.14
	4182	836.4 (Mid)	21.97	0.16
	4233	846.6 (High)	21.63	0.15
WCDMA Band V (HSDPA Subtest4)	4132	826.4 (Low)	20.92	0.12
	4182	836.4 (Mid)	21.55	0.14
	4233	846.6 (High)	21.10	0.13
WCDMA Band V (HSUPA Subtest1)	4132	826.4 (Low)	21.80	0.15
	4182	836.4 (Mid)	21.93	0.16
	4233	846.6 (High)	22.21	0.17
WCDMA Band V (HSUPA Subtest2)	4132	826.4 (Low)	19.62	0.09
	4182	836.4 (Mid)	20.17	0.10
	4233	846.6 (High)	19.84	0.10
WCDMA Band V (HSUPA Subtest3)	4132	826.4 (Low)	20.61	0.12
	4182	836.4 (Mid)	21.19	0.13
	4233	846.6 (High)	20.88	0.12
WCDMA Band V (HSUPA Subtest4)	4132	826.4 (Low)	20.06	0.10
	4182	836.4 (Mid)	20.67	0.12
	4233	846.6 (High)	20.33	0.11
WCDMA Band V (HSUPA Subtest5)	4132	826.4 (Low)	21.88	0.15
	4182	836.4 (Mid)	21.92	0.16
	4233	846.6 (High)	22.25	0.17

Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
WCDMA Band II (12.2k bps)	9262	1852.4 (Low)	22.74	0.19
	9400	1880.0 (Mid)	23.22	0.21
	9538	1907.6 (High)	23.16	0.21
WCDMA Band II (HSDPA Subtest1)	9262	1852.4 (Low)	22.89	0.19
	9400	1880.0 (Mid)	23.17	0.21
	9538	1907.6 (High)	23.03	0.20
WCDMA Band II (HSDPA Subtest2)	9262	1852.4 (Low)	22.29	0.17
	9400	1880.0 (Mid)	22.72	0.19
	9538	1907.6 (High)	22.48	0.18
WCDMA Band II (HSDPA Subtest3)	9262	1852.4 (Low)	22.37	0.17
	9400	1880.0 (Mid)	22.80	0.19
	9538	1907.6 (High)	22.60	0.18
WCDMA Band II (HSDPA Subtest4)	9262	1852.4 (Low)	21.84	0.15
	9400	1880.0 (Mid)	22.29	0.17
	9538	1907.6 (High)	22.14	0.16
WCDMA Band II (HSUPA Subtest1)	9262	1852.4 (Low)	22.23	0.17
	9400	1880.0 (Mid)	22.40	0.17
	9538	1907.6 (High)	22.23	0.17
WCDMA Band II (HSUPA Subtest2)	9262	1852.4 (Low)	20.48	0.11
	9400	1880.0 (Mid)	20.70	0.12
	9538	1907.6 (High)	20.46	0.11
WCDMA Band II (HSUPA Subtest3)	9262	1852.4 (Low)	21.34	0.14
	9400	1880.0 (Mid)	21.79	0.15
	9538	1907.6 (High)	21.60	0.14
WCDMA Band II (HSUPA Subtest4)	9262	1852.4 (Low)	20.88	0.12
	9400	1880.0 (Mid)	21.23	0.13
	9538	1907.6 (High)	20.97	0.13
WCDMA Band II (HSUPA Subtest5)	9262	1852.4 (Low)	22.05	0.16
	9400	1880.0 (Mid)	22.26	0.17
	9538	1907.6 (High)	22.13	0.16

4.3 ERP / EIRP Measurement

Equivalent isotropic radiated power measurements by substitution method according to ANSI/TIA/EIA-603-C.

4.3.1 Measurement Instruments

As described in chapter 5 of this test report.

4.3.2 Test Procedure

a. The EUT was placed on a tutntable with 1.0 meter height in an fully anechoic chamber.
b. The EUT was set 1.2 meters from the receiving antenna which was mounted on the antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiated power.
d. The height of the receiving antenna is also kept at 1.0M height.
e. Taking the record of maximum ERP/EIRP.
f. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
g. The conducted power at the terminal of the dipole antenna is measured.
h. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
i. ERP/EIRP = Ps + Et – Es + Gs = Ps + Rt – Rs + Gs

Ps (dBm)：Input power to substitution antenna.

Gs (dBi or dBd)：Substitution antenna Gain.

Et = Rt + AF

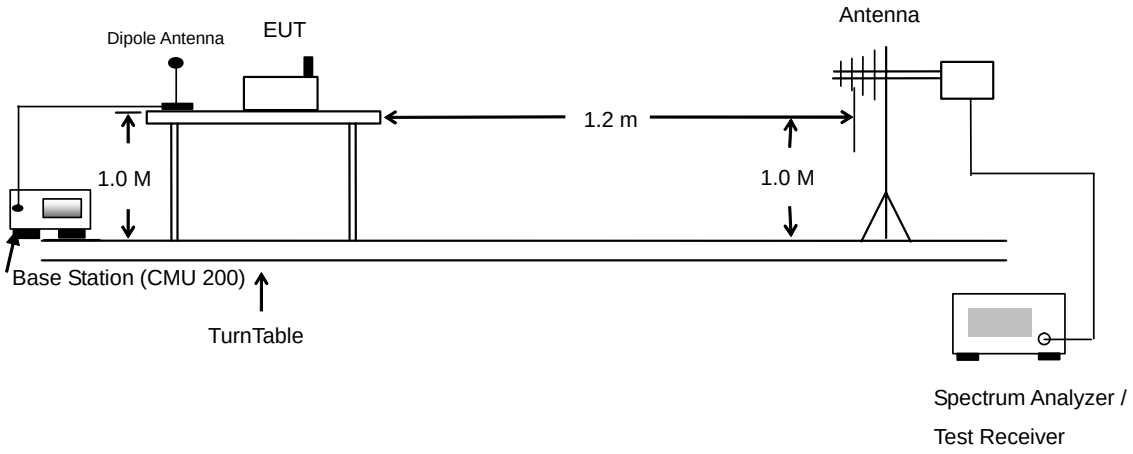
Es = Rs + AF

AF (dB/m)：Receive antenna factor

Rt：The highest received signal in Spectrum Analyzer for EUT.

Rs：The highest received signal in spectrum analyzer for substitution antenna.

4.3.3 Test Setup Layout of ERP/EIRP



4.3.4 Test Result

GSM850 (GSM) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-18.84	-48.12	0.00	-1.08	28.20	0.66
836.40	-19.33	-48.28	0.00	-0.93	28.02	0.63
848.80	-19.62	-48.35	0.00	-0.76	27.97	0.63
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-15.60	-47.97	0.00	-1.08	31.29	1.35
836.40	-15.78	-48.01	0.00	-0.93	31.30	1.35
848.80	-15.88	-48.05	0.00	-0.76	31.41	1.38

GSM850 (EDGE) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-23.36	-48.12	0.00	-1.08	23.68	0.23
836.40	-23.86	-48.28	0.00	-0.93	23.49	0.22
848.80	-24.23	-48.35	0.00	-0.76	23.36	0.22
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-20.17	-47.97	0.00	-1.08	26.72	0.47
836.40	-20.41	-48.01	0.00	-0.93	26.67	0.46
848.80	-20.44	-48.05	0.00	-0.76	26.85	0.48

GSM1900 (GSM) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-28.94	-51.88	0.00	1.96	24.90	0.31
1880.00	-32.27	-52.99	0.00	2.00	22.72	0.19
1909.80	-35.87	-54.28	0.00	1.98	20.39	0.11
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-24.16	-52.13	0.00	1.96	29.93	0.98
1880.00	-26.89	-53.17	0.00	2.00	28.28	0.67
1909.80	-28.84	-54.13	0.00	1.98	27.27	0.53

GSM1900 (EDGE) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-32.25	-51.88	0.00	1.96	21.59	0.14
1880.00	-36.57	-52.99	0.00	2.00	18.42	0.07
1909.80	-38.64	-54.28	0.00	1.98	17.62	0.06
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-26.93	-52.13	0.00	1.96	27.16	0.52
1880.00	-29.61	-53.17	0.00	2.00	25.56	0.36
1909.80	-31.53	-54.13	0.00	1.98	24.58	0.29

WCDMA Band V Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-27.04	-48.12	0.00	-1.08	20.00	0.10
836.40	-27.37	-48.28	0.00	-0.93	19.98	0.10
846.60	-27.68	-48.35	0.00	-0.76	19.91	0.10
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-23.78	-47.97	0.00	-1.08	23.11	0.20
836.40	-23.62	-48.01	0.00	-0.93	23.46	0.22
846.60	-23.83	-48.05	0.00	-0.76	23.46	0.22

WCDMA Band V (HSUPA) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-27.99	-48.12	0.00	-1.08	19.05	0.08
836.40	-27.99	-48.28	0.00	-0.93	19.36	0.09
846.60	-28.62	-48.35	0.00	-0.76	18.97	0.08
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-24.81	-47.97	0.00	-1.08	22.08	0.16
836.40	-24.53	-48.01	0.00	-0.93	22.55	0.18
846.60	-24.83	-48.05	0.00	-0.76	22.46	0.18

WCDMA Band II Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-36.46	-51.88	0.00	1.96	17.38	0.05
1880.00	-37.91	-52.99	0.00	2.00	17.08	0.05
1907.60	-40.86	-54.28	0.00	1.98	15.40	0.03
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-31.42	-52.13	0.00	1.96	22.67	0.18
1880.00	-32.31	-53.17	0.00	2.00	22.86	0.19
1907.60	-33.97	-54.13	0.00	1.98	22.14	0.16

WCDMA Band II (HSUPA) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-36.40	-51.88	0.00	1.96	17.44	0.06
1880.00	-37.26	-52.99	0.00	2.00	17.73	0.06
1907.60	-40.29	-54.28	0.00	1.98	15.97	0.04
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-32.46	-52.13	0.00	1.96	21.63	0.15
1880.00	-32.83	-53.17	0.00	2.00	22.34	0.17
1907.60	-34.34	-54.13	0.00	1.98	21.77	0.15

4.4 Occupied Bandwidth and Band Edge Measurement

4.4.1 Measurement Instruments

As described in chapter 5 of this test report.

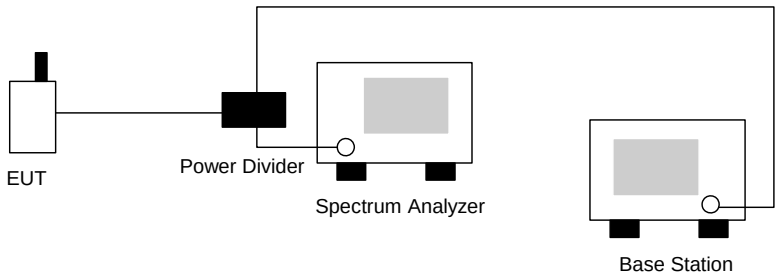
4.4.2 Test Procedure

a. The EUT was connected to Spectrum Analyzer and Base Station via power divider.

b. The 99% occupied bandwidth of middle channel for the highest and lowest RF powers were measured.

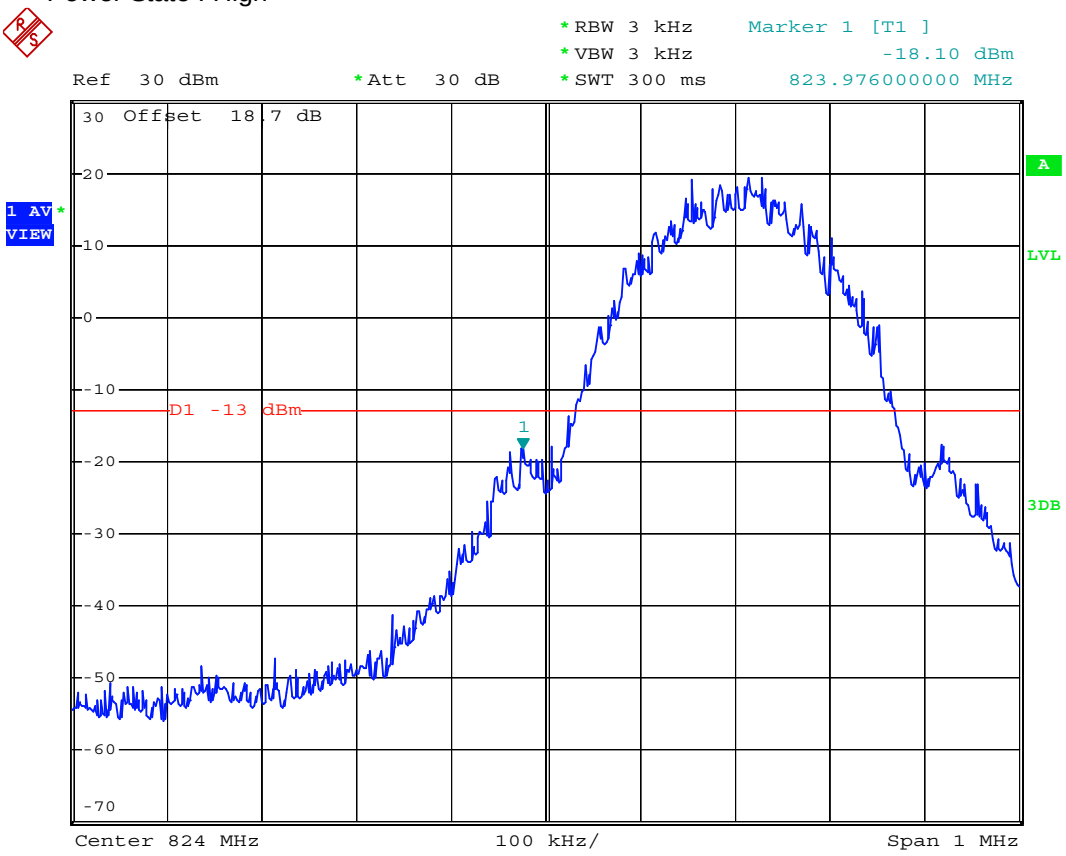
c. The bandedge of low and high channels for the highest RF powers within the transmitting frequency band were measured. Setting RBW as roughly BW/100.

4.4.3 Test Setup Layout



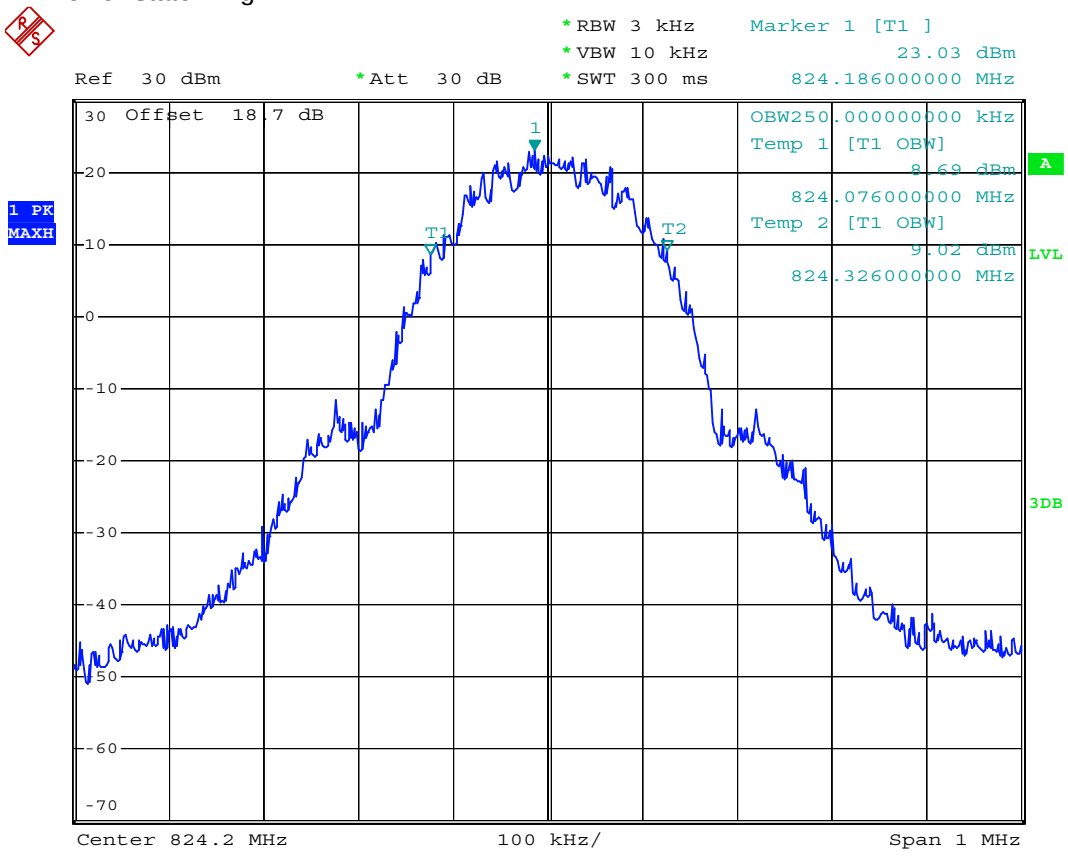
4.4.4 Test Result

- Mode 1
- Test Mode : GSM850 (GSM) CH128 Lower Band Edge
- Power State : High



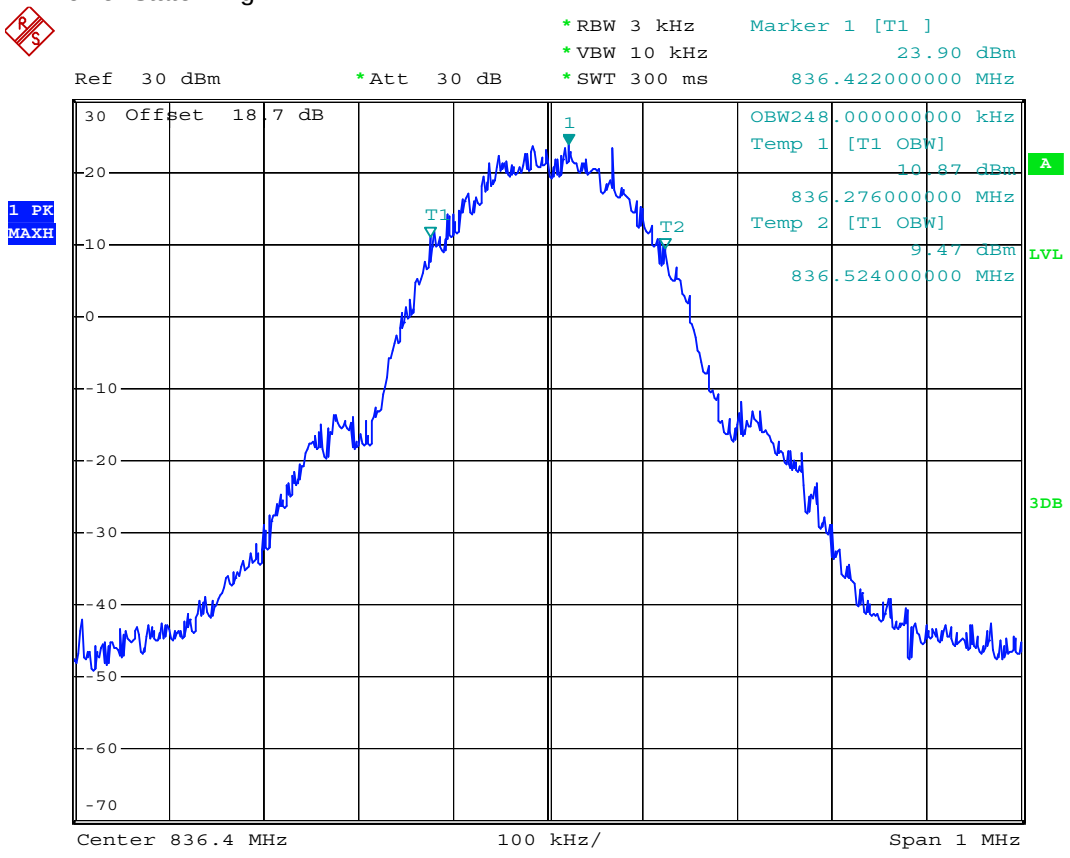
Date: 8.MAY.2008 11:55:34

- Test Mode : GSM850 (GSM) CH128 99% Occupid Bandwidth
- Power State : High



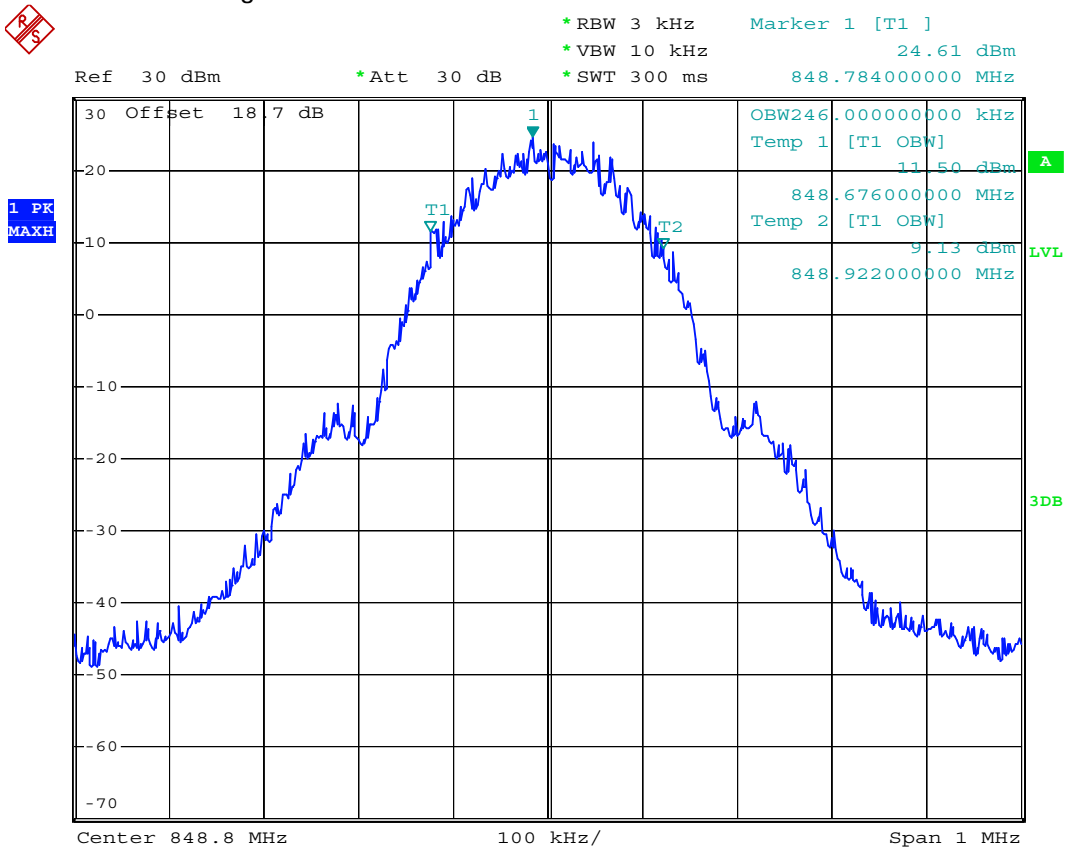
Date: 8.MAY.2008 11:52:53

- Test Mode : GSM850 (GSM) CH189 99% Occupid Bandwidth
- Power State : High

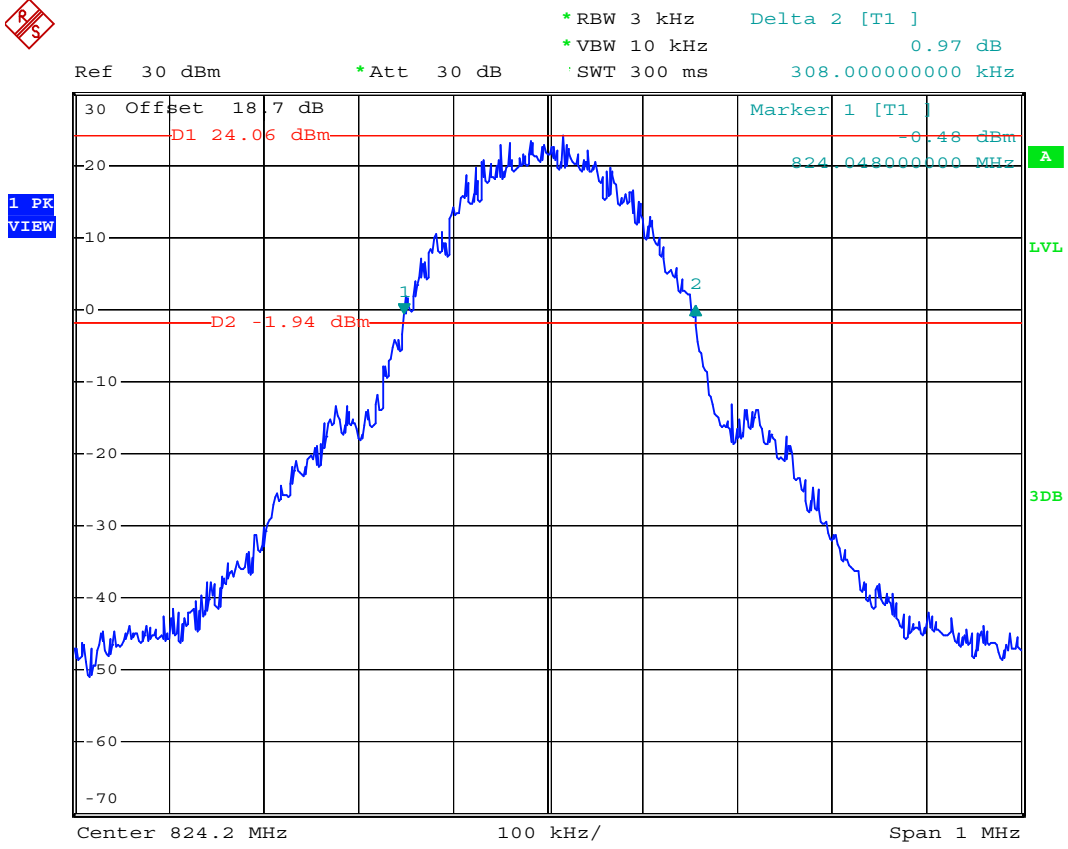


Date: 8.MAY.2008 11:53:36

- Test Mode : GSM850 (GSM) CH 251 99% Occupid Bandwidth
- Power State : High

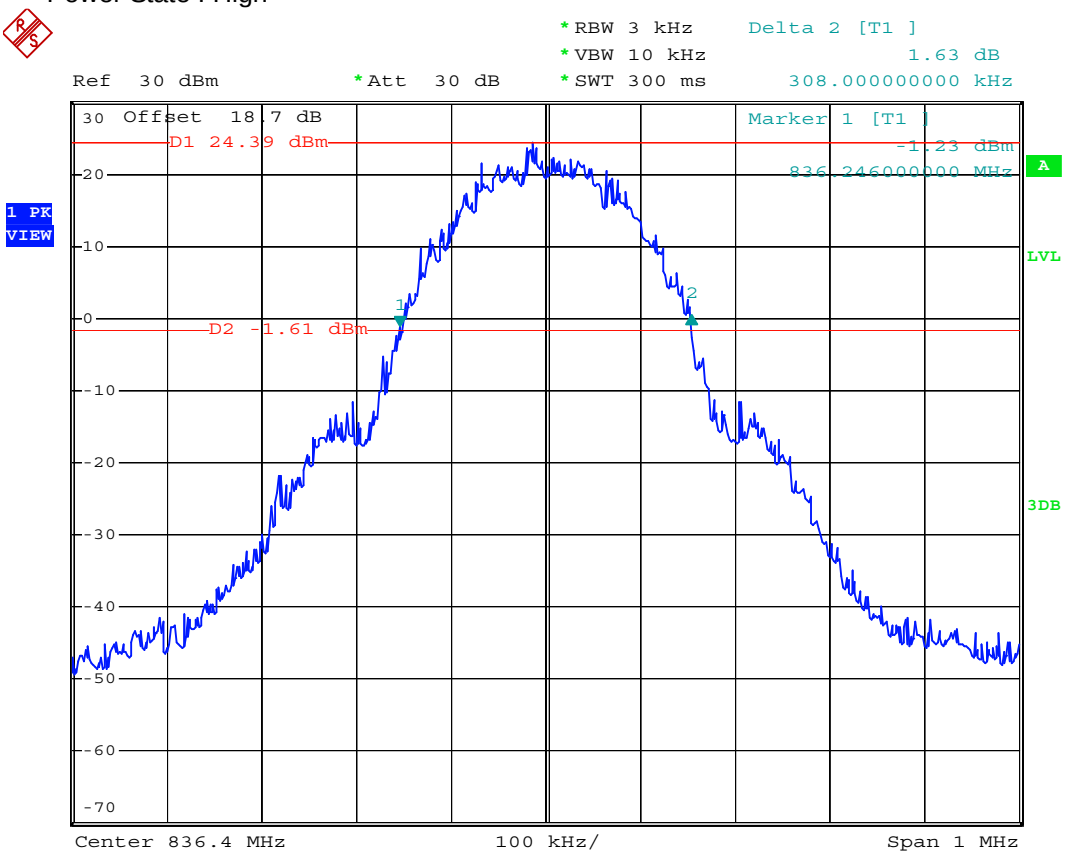


- Test Mode : GSM850 (GSM) CH128 26dB Bandwidth
- Power State : High



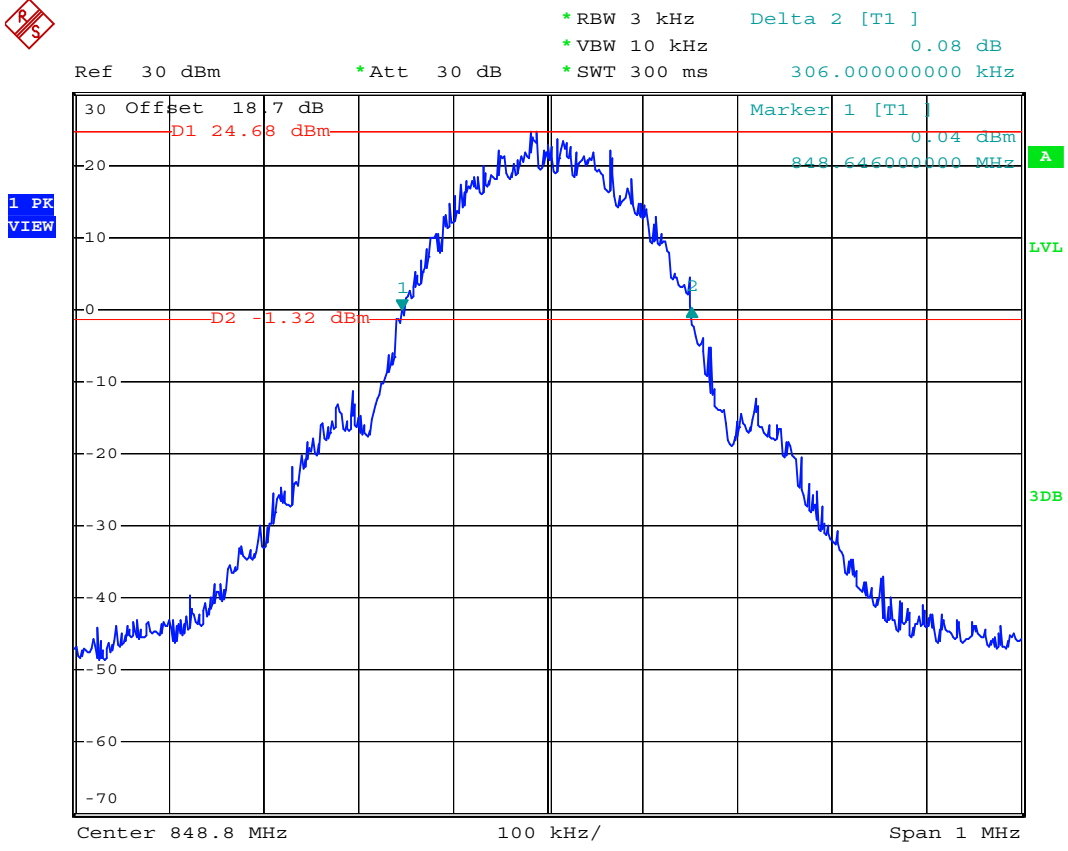
Date: 8.MAY.2008 11:49:22

- Test Mode : GSM850 (GSM) CH189 26dB Bandwidth
- Power State : High



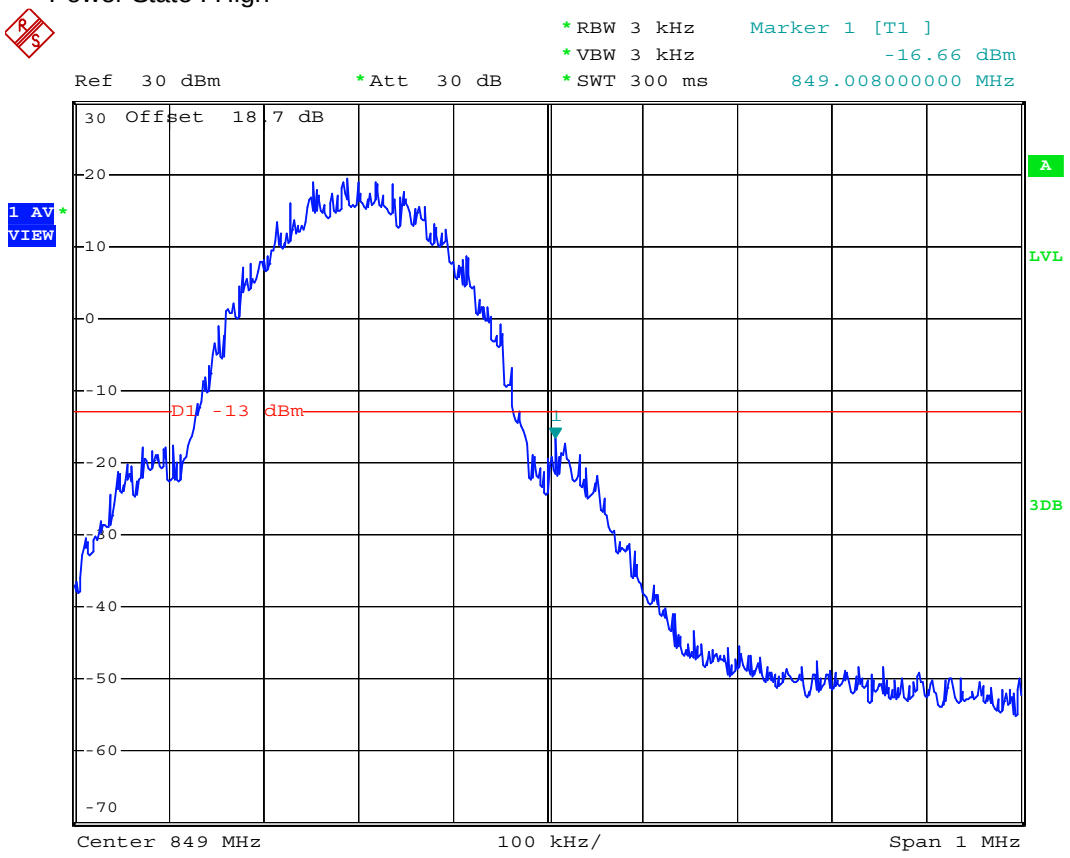
Date: 8.MAY.2008 11:50:56

- Test Mode : GSM850 (GSM) CH 251 26dB Bandwidth
- Power State : High



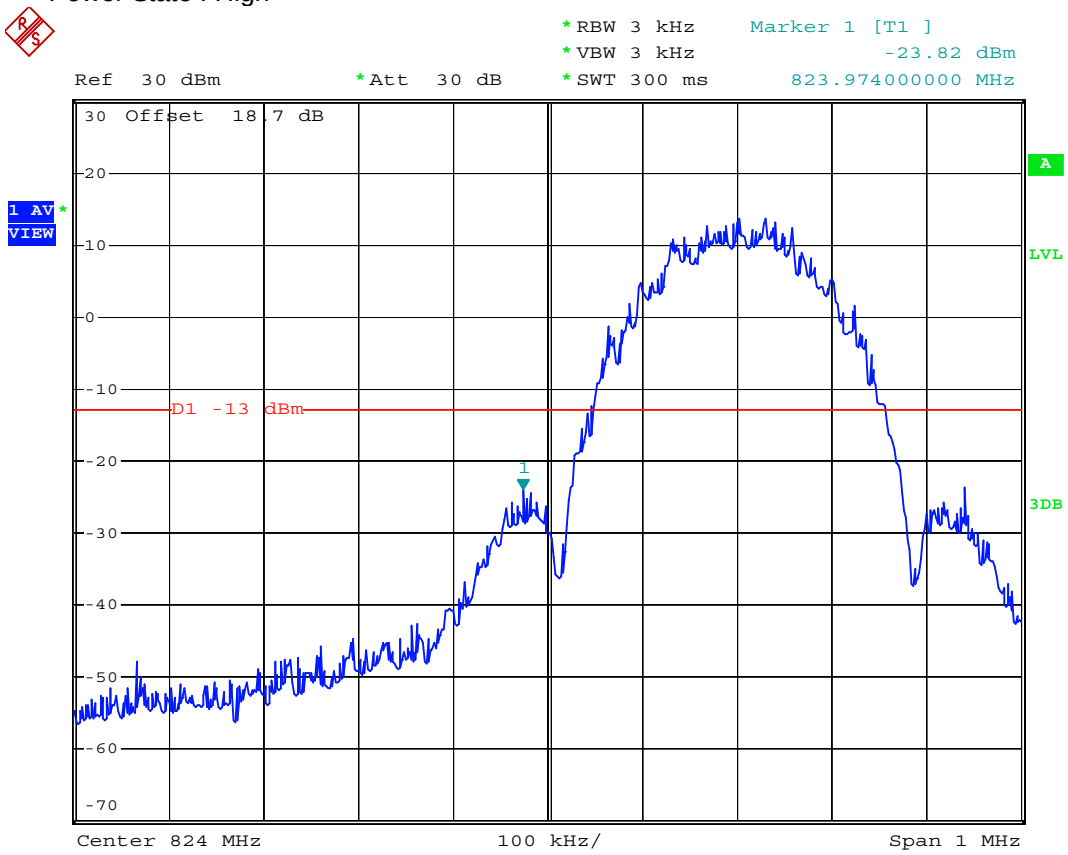
Date: 8.MAY.2008 11:51:48

- Test Mode : GSM850 (GSM) CH251 Higher Band Edge
- Power State : High



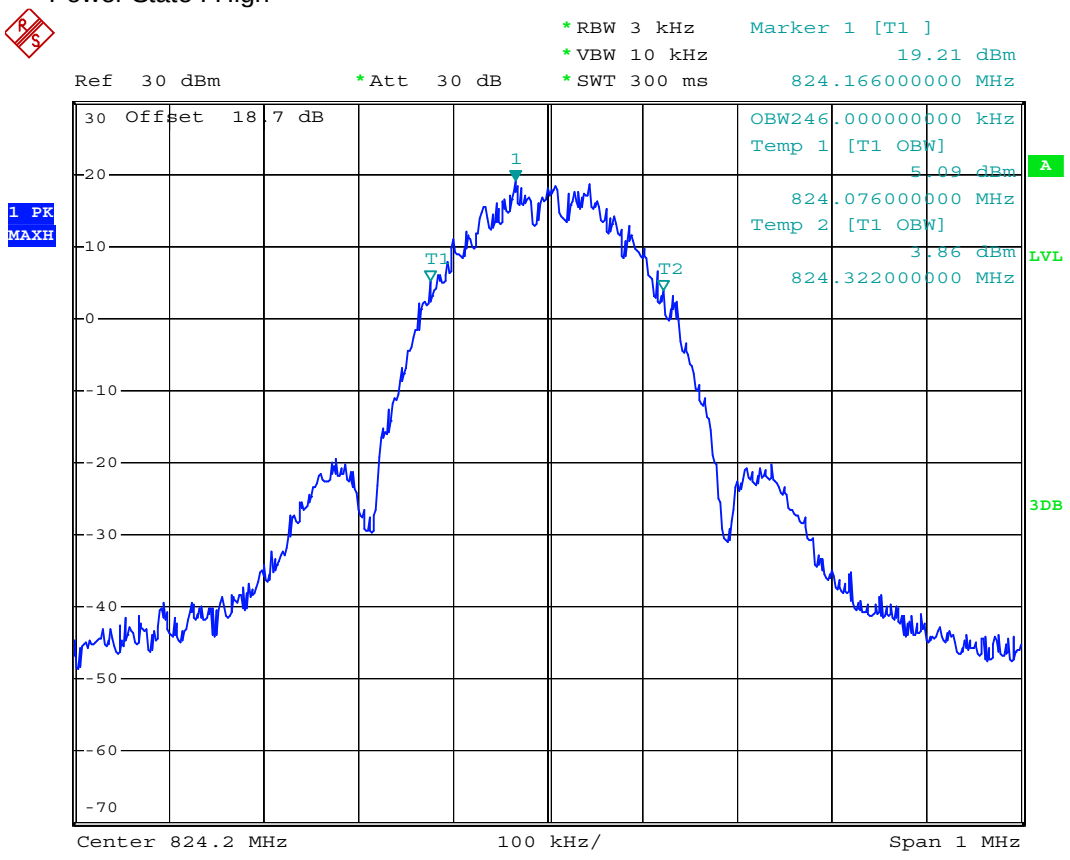
Date: 8.MAY.2008 11:58:29

- Mode 2
- Test Mode : GSM850 (EDGE) CH128 Lower Band Edge
- Power State : High



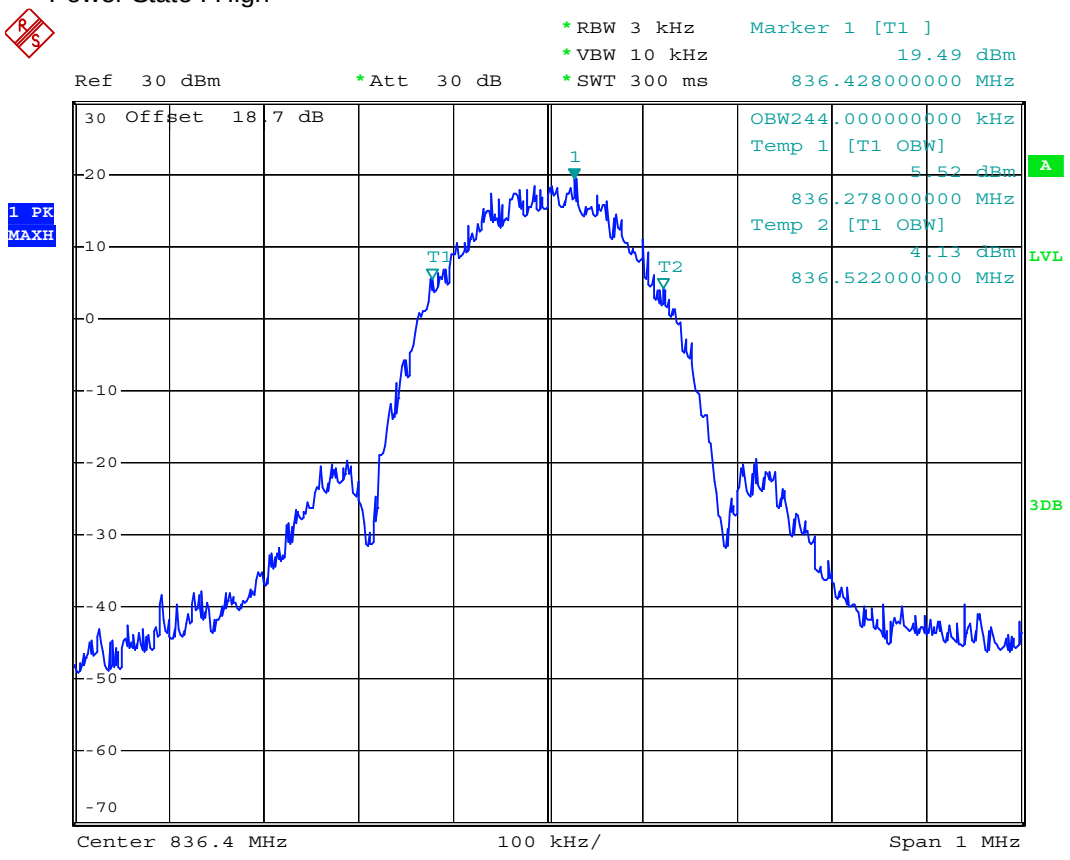
Date: 8.MAY.2008 14:58:57

- Test Mode : GSM850 (EDGE) CH128 99% Occupid Bandwidth
- Power State : High



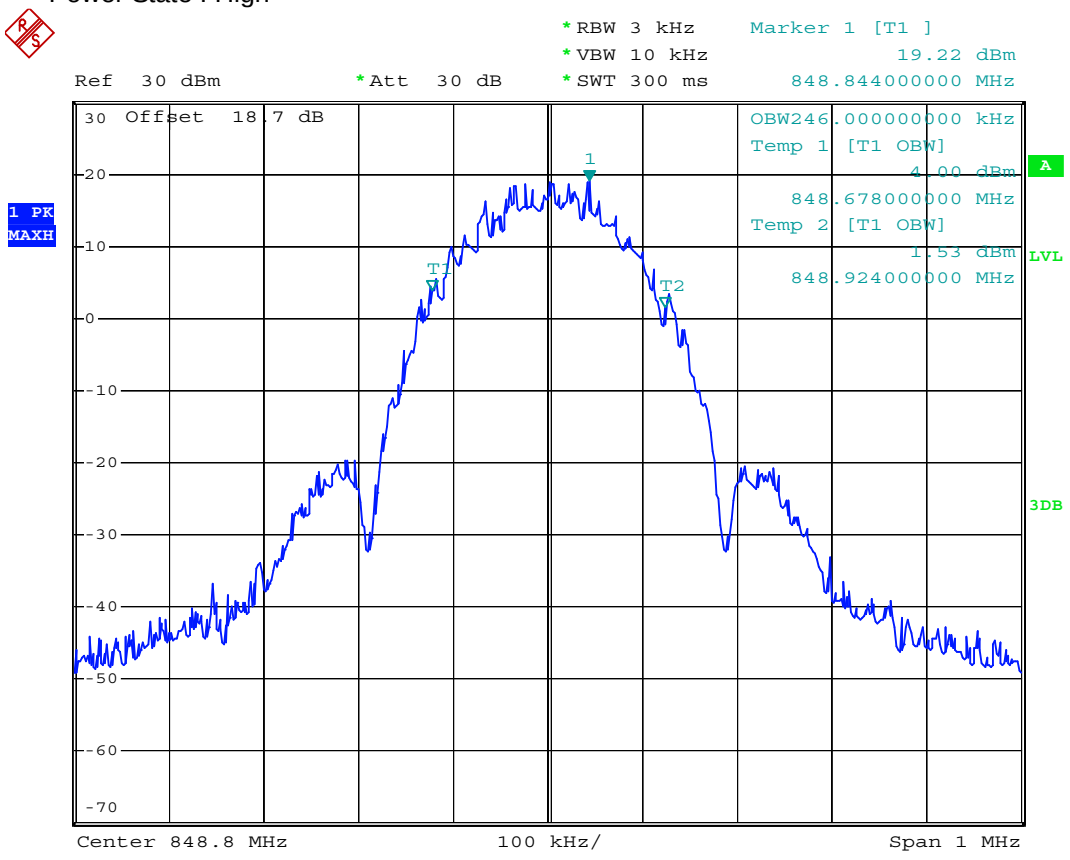
Date: 8.MAY.2008 14:50:05

- Test Mode : GSM850 (EDGE) CH189 99% Occupid Bandwidth
- Power State : High



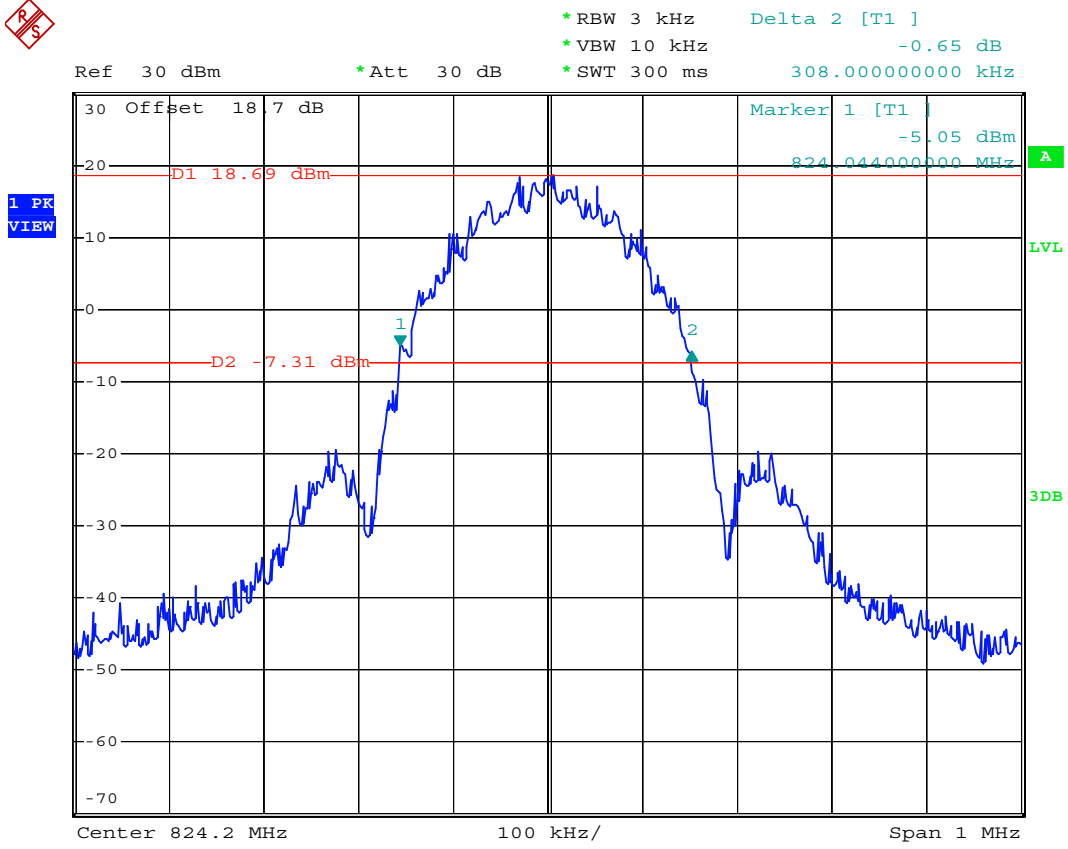
Date: 8.MAY.2008 14:49:13

- Test Mode : GSM850 (EDGE) CH 251 99% Occupid Bandwidth
- Power State : High



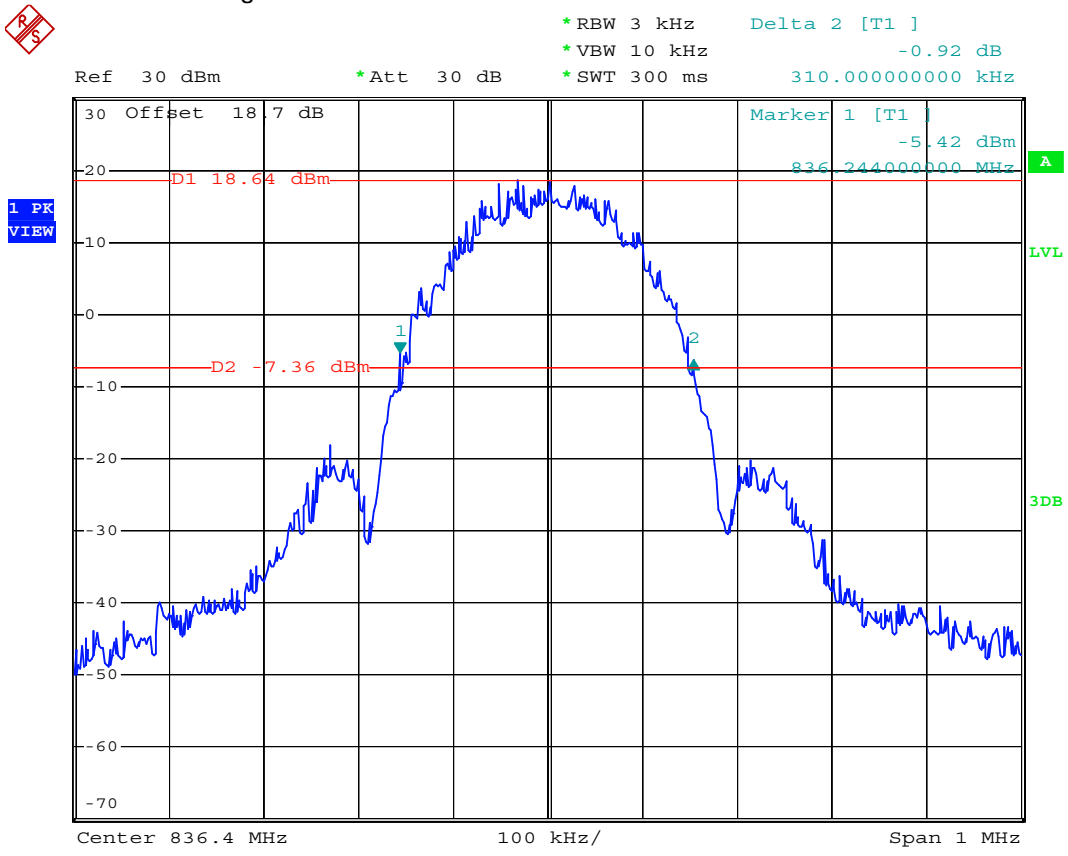
Date: 8.MAY.2008 14:48:40

- Test Mode : GSM850 (EDGE) CH128 26dB Bandwidth
- Power State : High



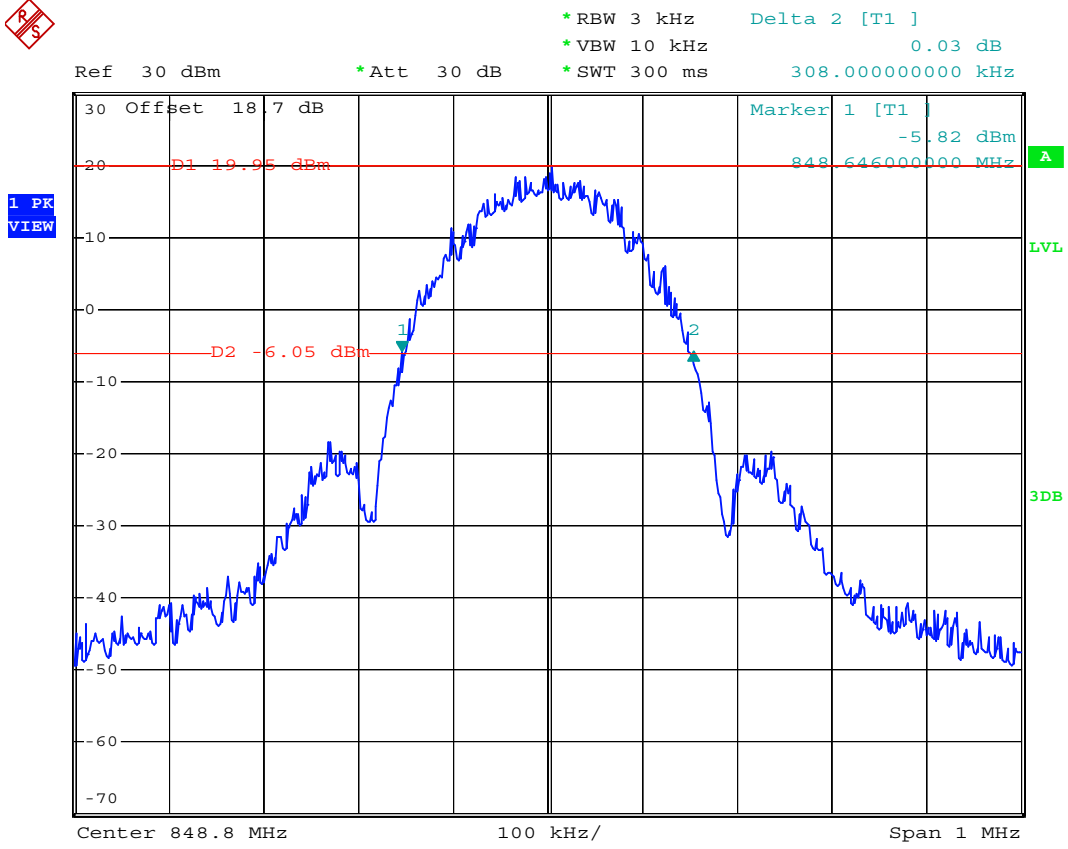
Date: 8.MAY.2008 14:45:43

- Test Mode : GSM850 (EDGE) CH189 26dB Bandwidth
- Power State : High



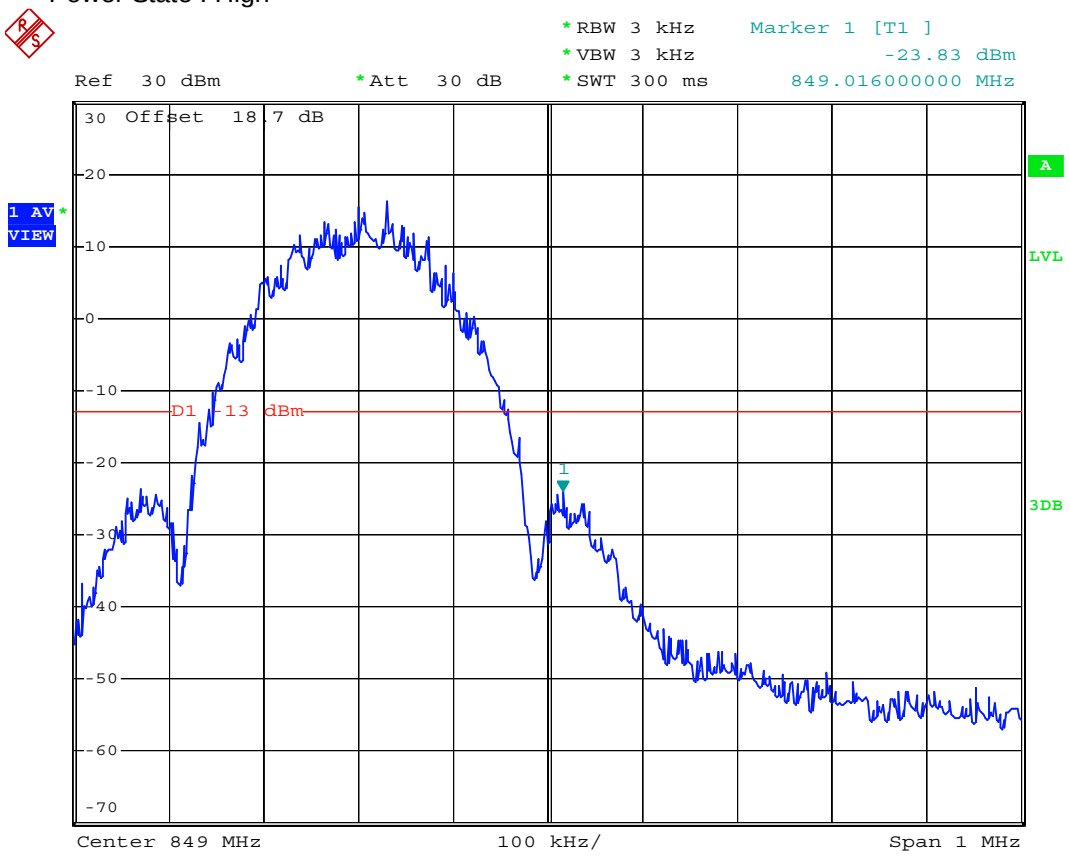
Date: 8.MAY.2008 14:46:36

- Test Mode : GSM850 (EDGE) CH 251 26dB Bandwidth
- Power State : High



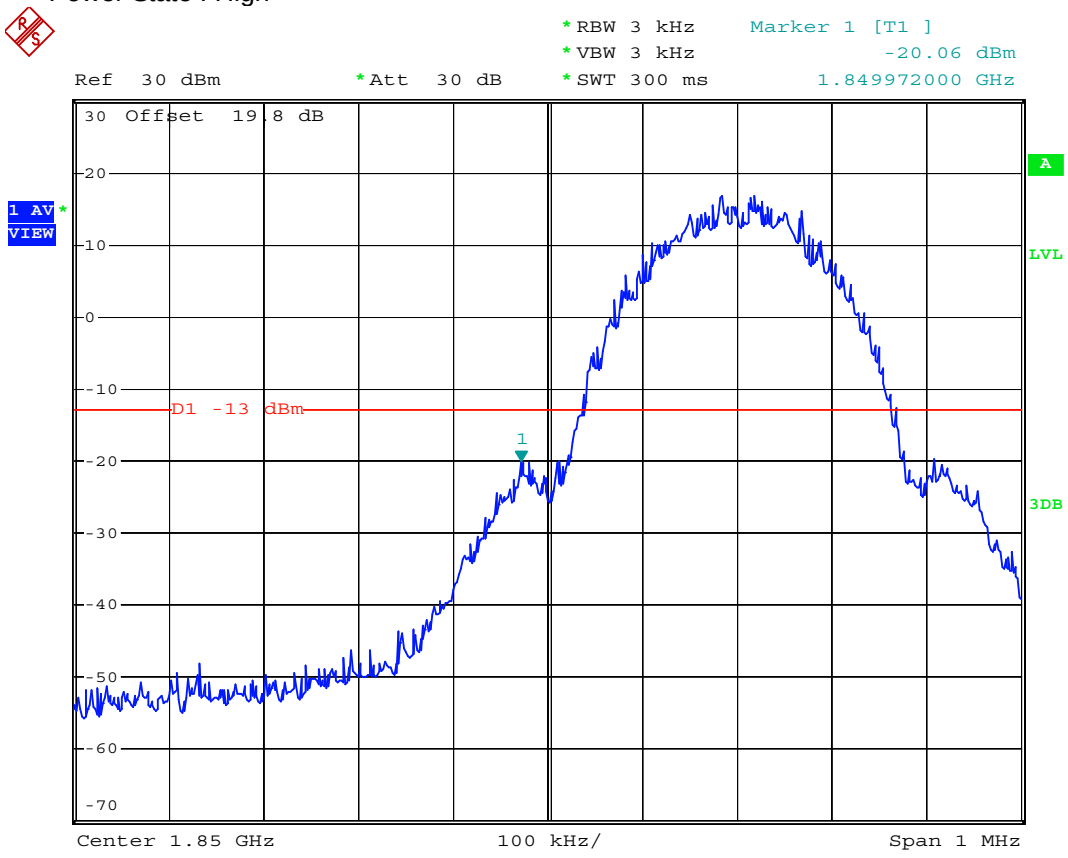
Date: 8.MAY.2008 14:47:39

- Test Mode : GSM850 (EDGE) CH251 Higher Band Edge
- Power State : High



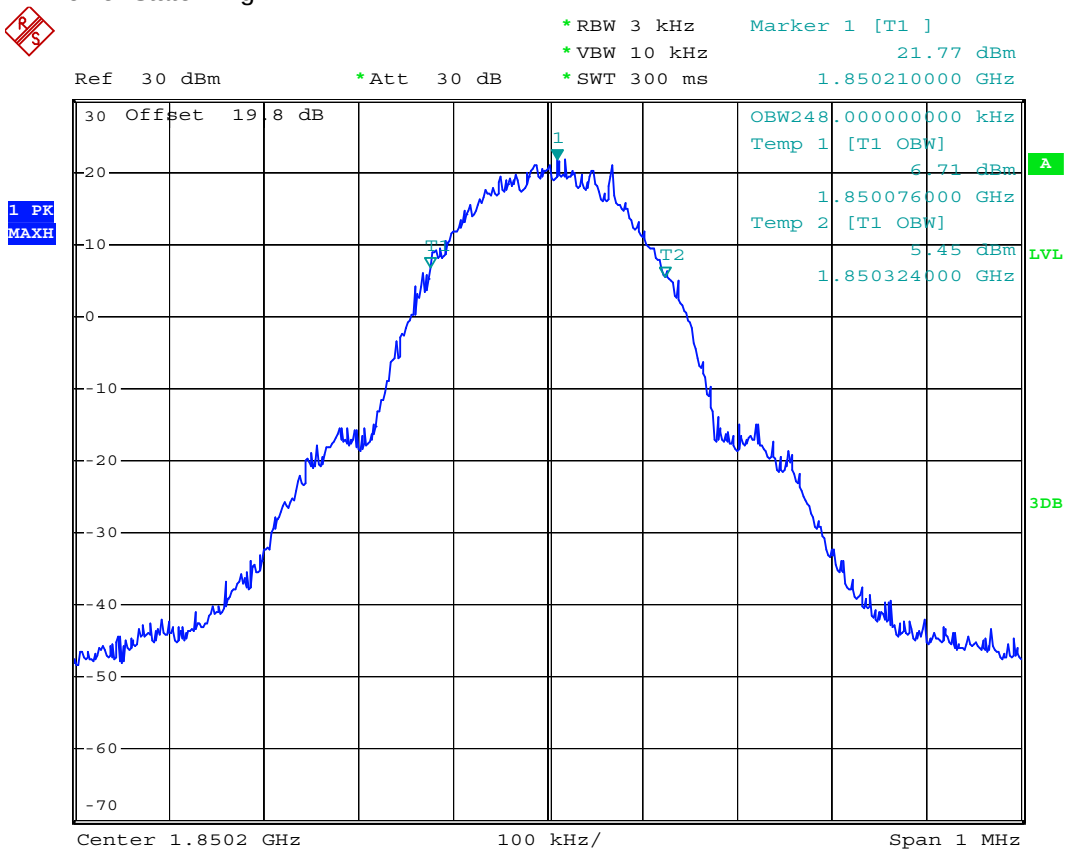
Date: 8.MAY.2008 15:01:58

- Mode 3
- Test Mode : GSM1900 (GSM) CH512 Lower Band Edge
- Power State : High



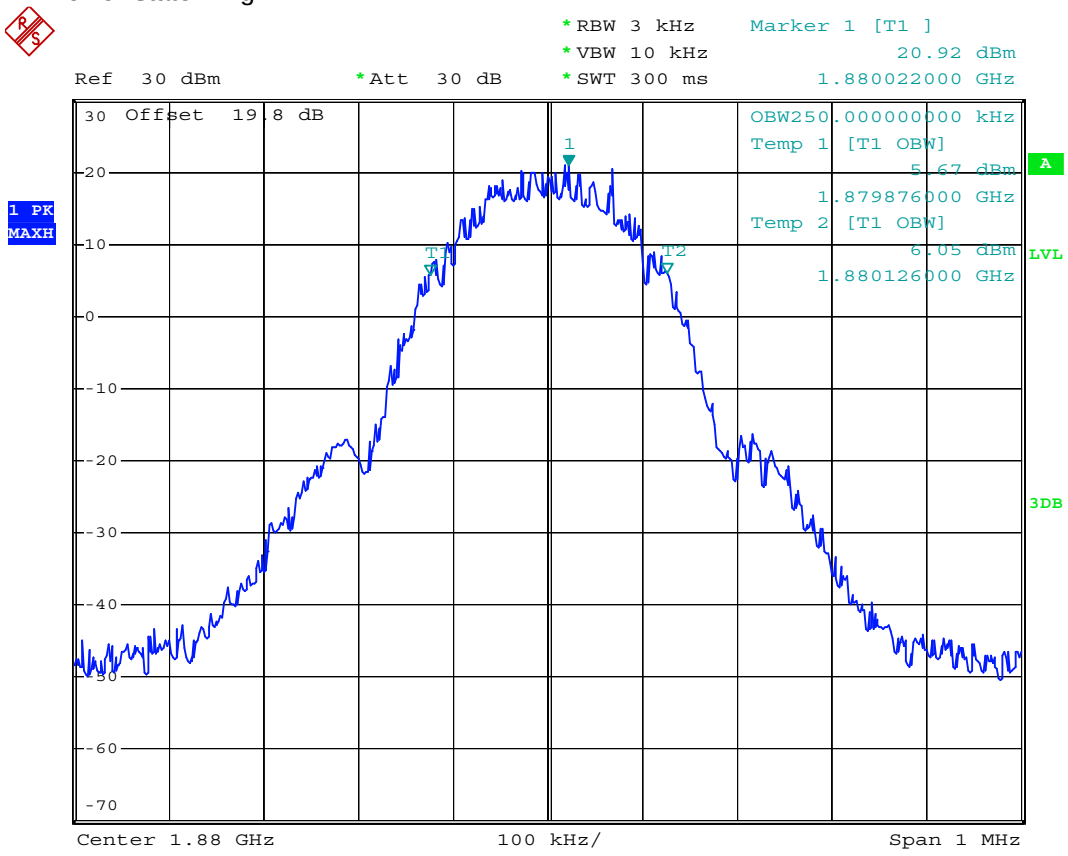
Date: 8.MAY.2008 12:12:33

- Test Mode : GSM1900 (GSM) CH512 99% Occupid Bandwidth
- Power State : High

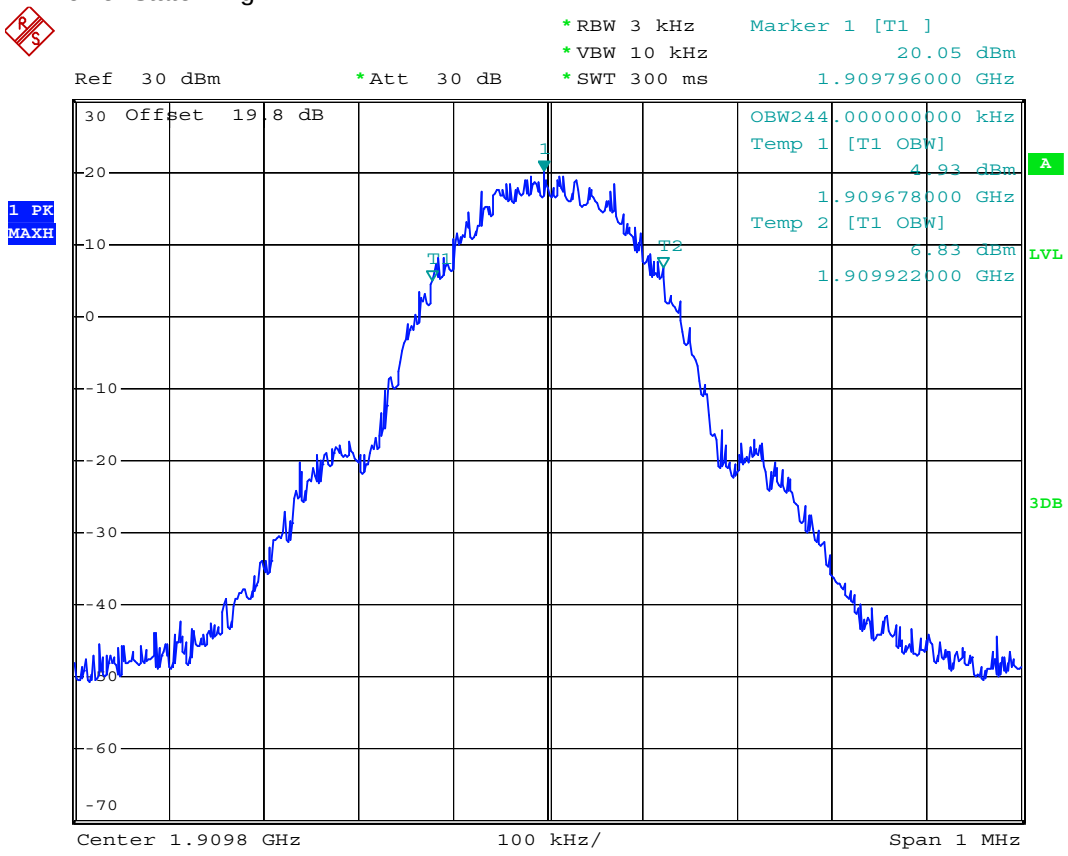


Date: 8.MAY.2008 12:07:54

- Test Mode : GSM1900 (GSM) CH661 99% Occupid Bandwidth
- Power State : High

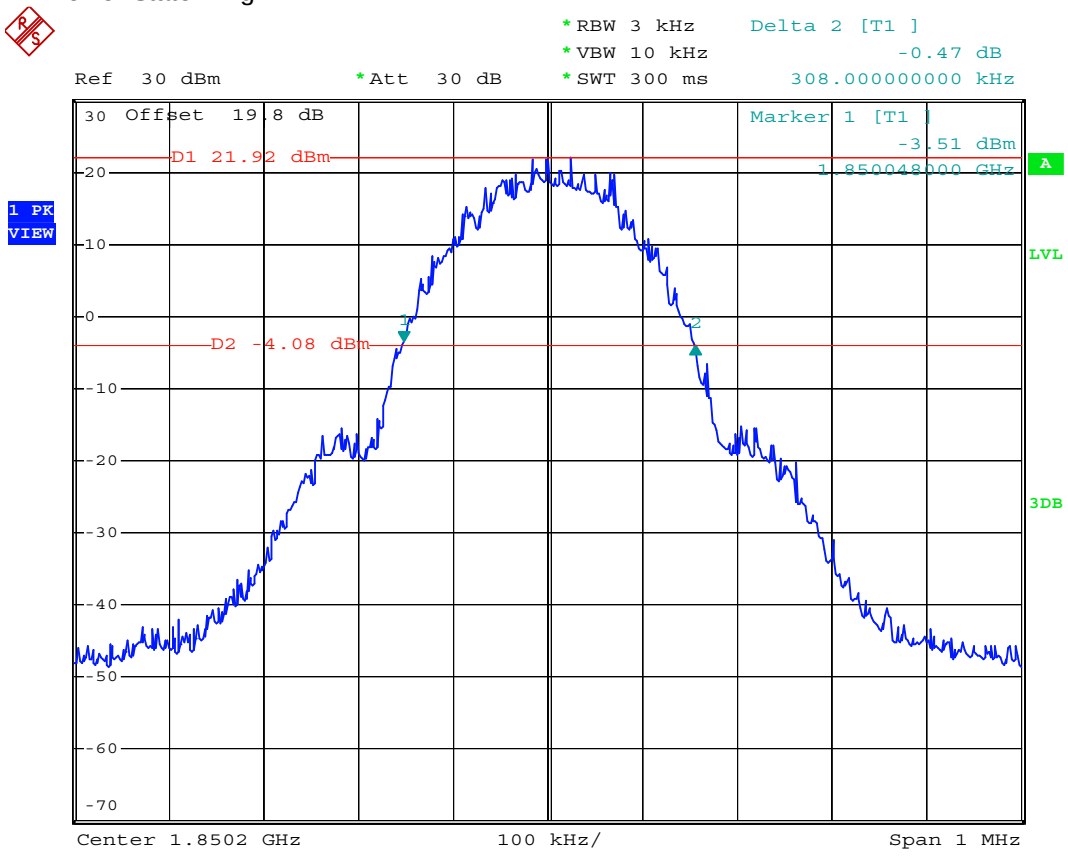


- Test Mode : GSM1900 (GSM) CH810 99% Occupid Bandwidth
- Power State : High



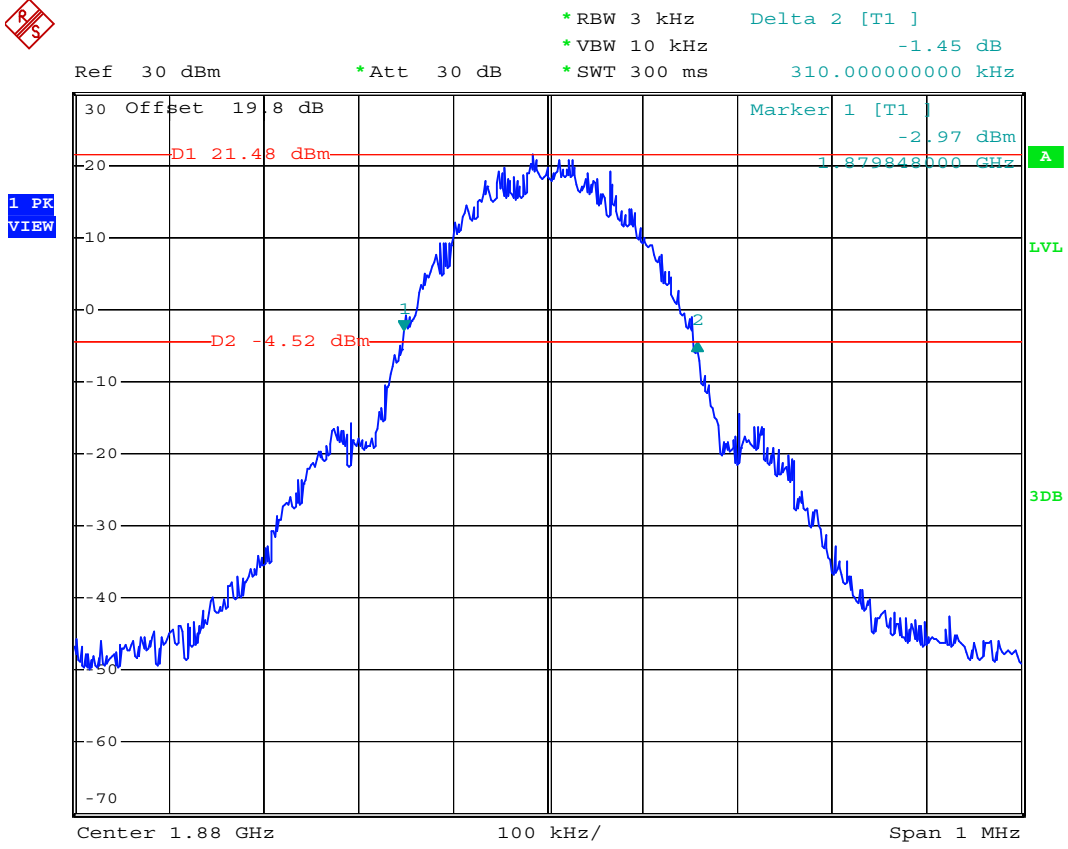
Date: 8.MAY.2008 12:08:26

- Test Mode : GSM1900 (GSM) CH512 26dB Bandwidth
- Power State : High



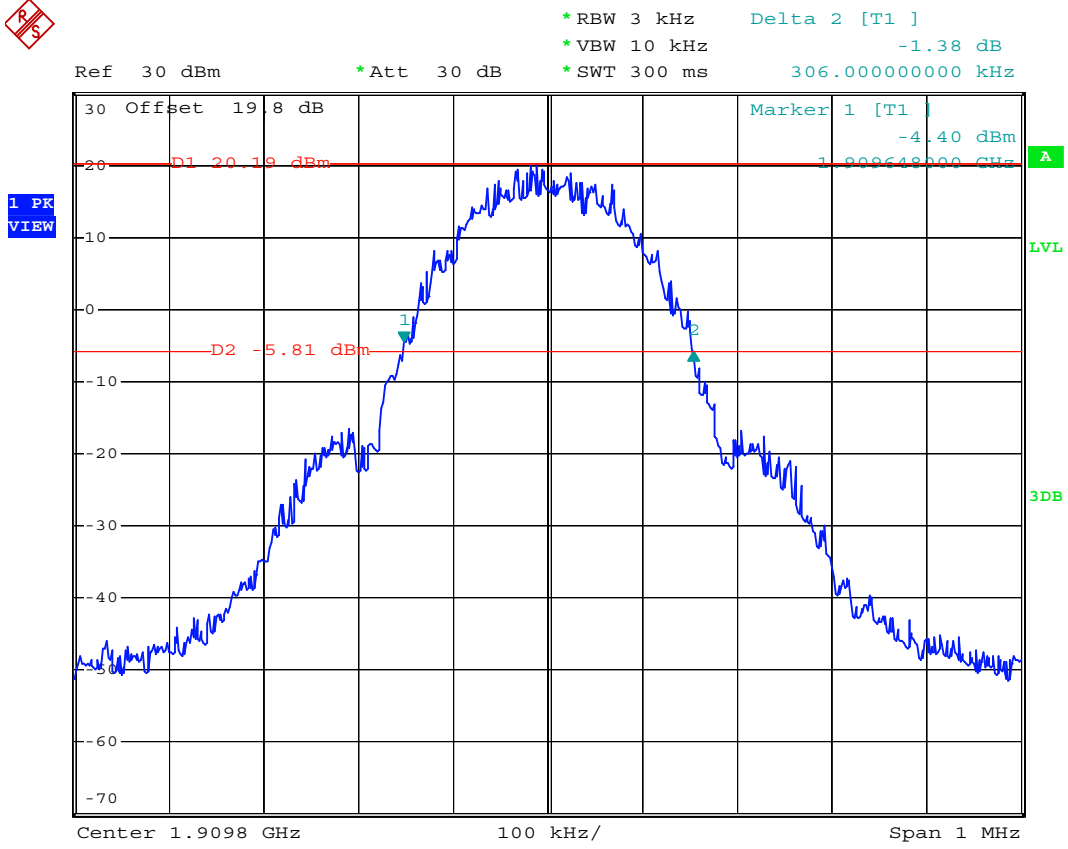
Date: 8.MAY.2008 12:06:02

- Test Mode : GSM1900 (GSM) CH661 26dB Bandwidth
- Power State : High



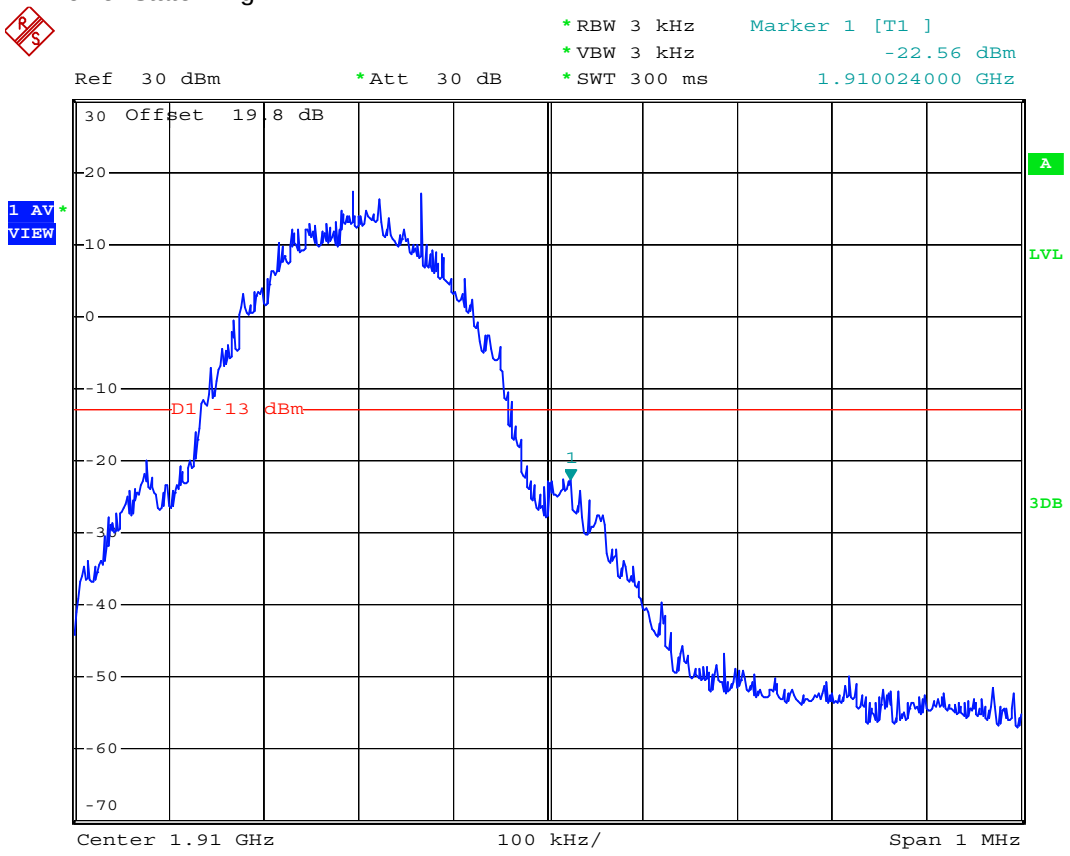
Date: 8.MAY.2008 12:04:51

- Test Mode : GSM1900 (GSM) CH810 26dB Bandwidth
- Power State : High



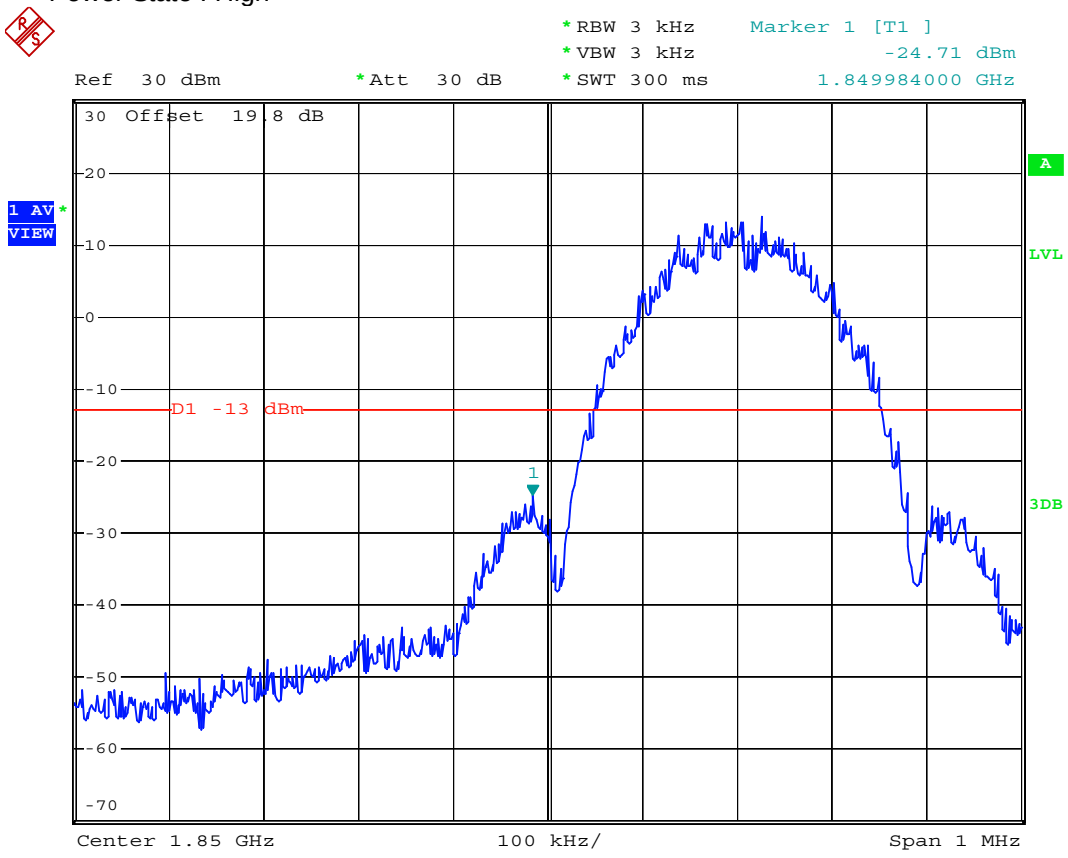
Date: 8.MAY.2008 12:03:39

- Test Mode : GSM1900 (GSM) CH810 Higher Band Edge
- Power State : High



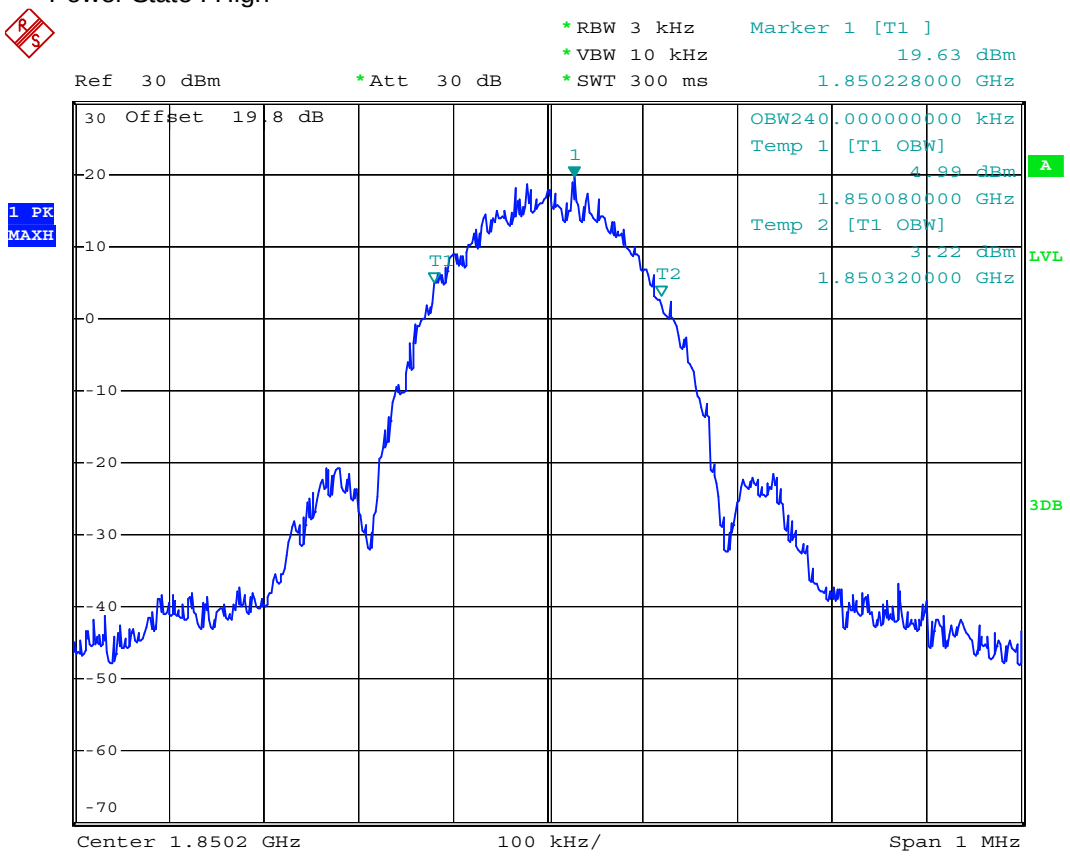
Date: 8.MAY.2008 13:56:57

- Mode 4
- Test Mode : GSM1900 (EDGE) CH512 Lower Band Edge
- Power State : High

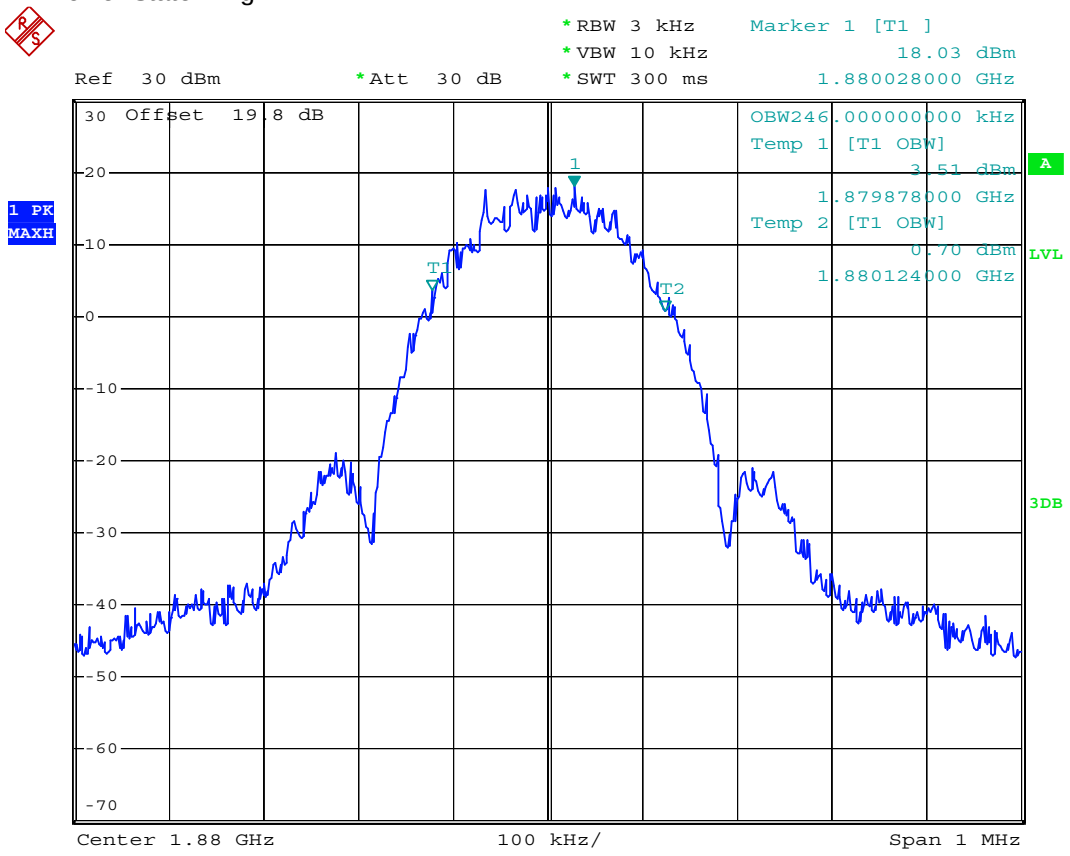


Date: 8.MAY.2008 14:01:43

- Test Mode : GSM1900 (EDGE) CH512 99% Occupid Bandwidth
- Power State : High

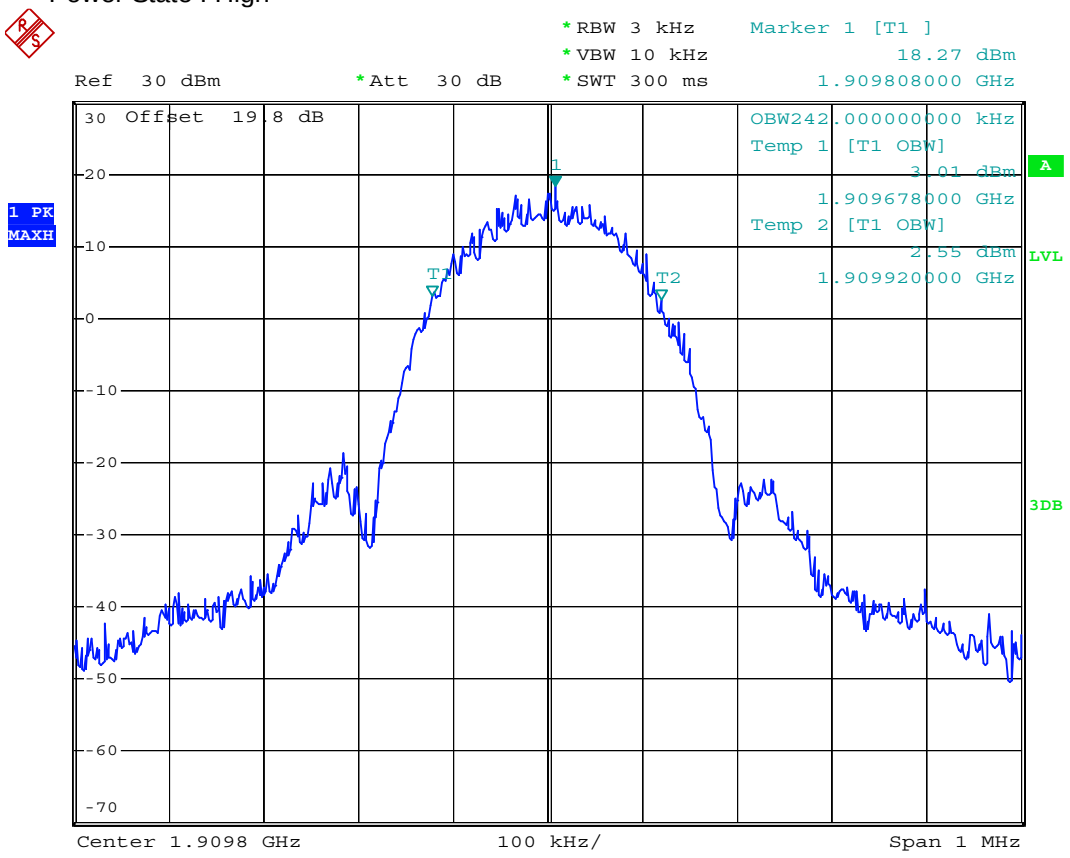


- Test Mode : GSM1900 (EDGE) CH661 99% Occupid Bandwidth
- Power State : High



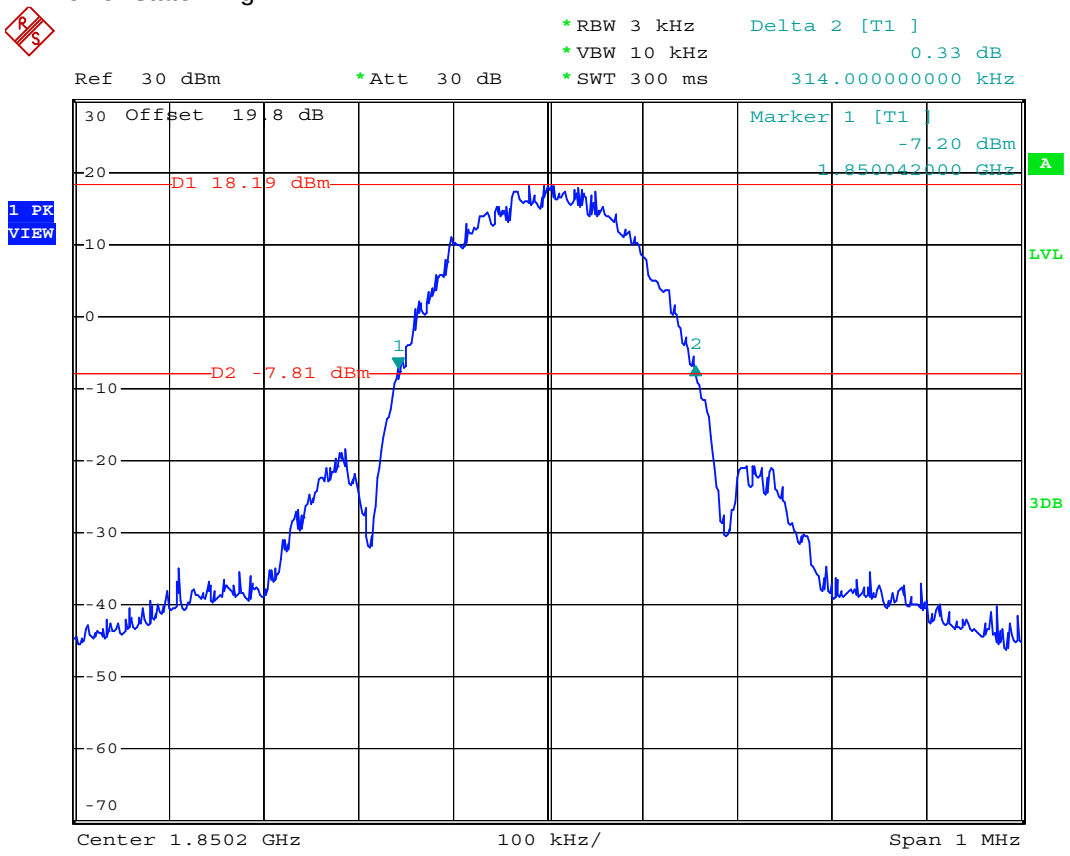
Date: 8.MAY.2008 14:32:15

- Test Mode : GSM1900 (EDGE) CH810 99% Occupid Bandwidth
- Power State : High



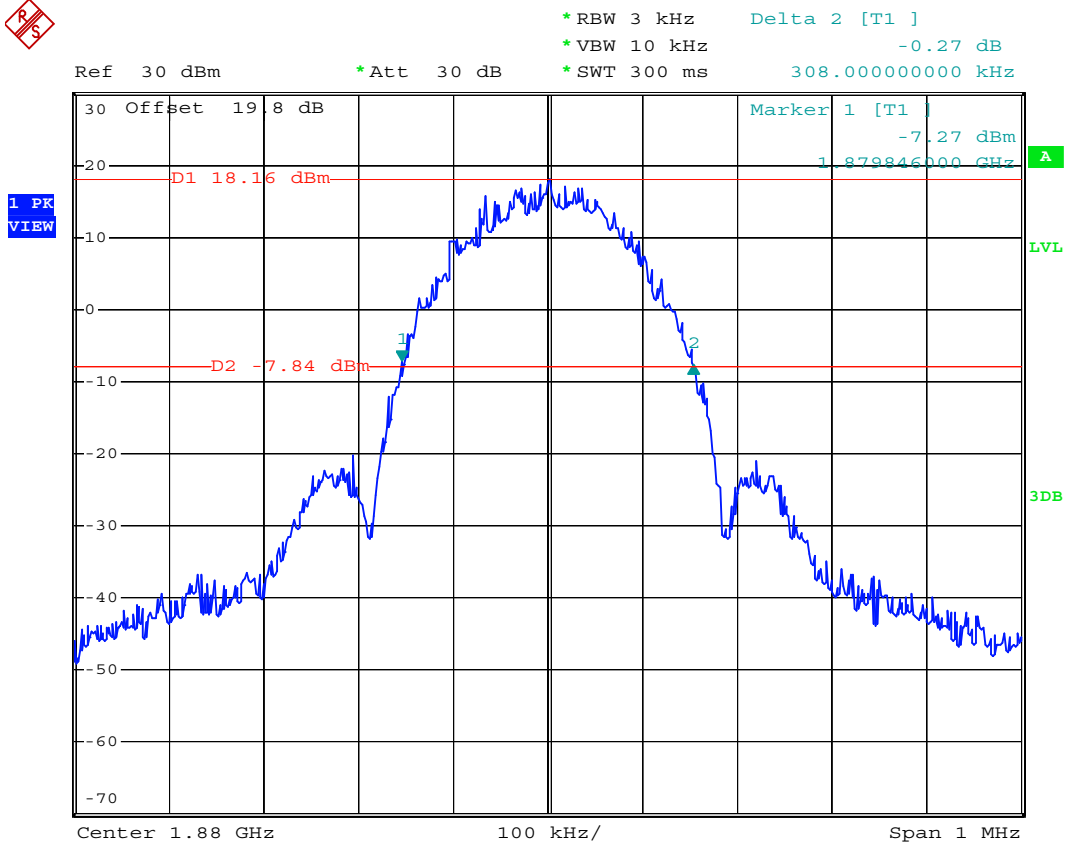
Date: 8.MAY.2008 14:30:50

- Test Mode : GSM1900 (EDGE) CH512 26dB Bandwidth
- Power State : High



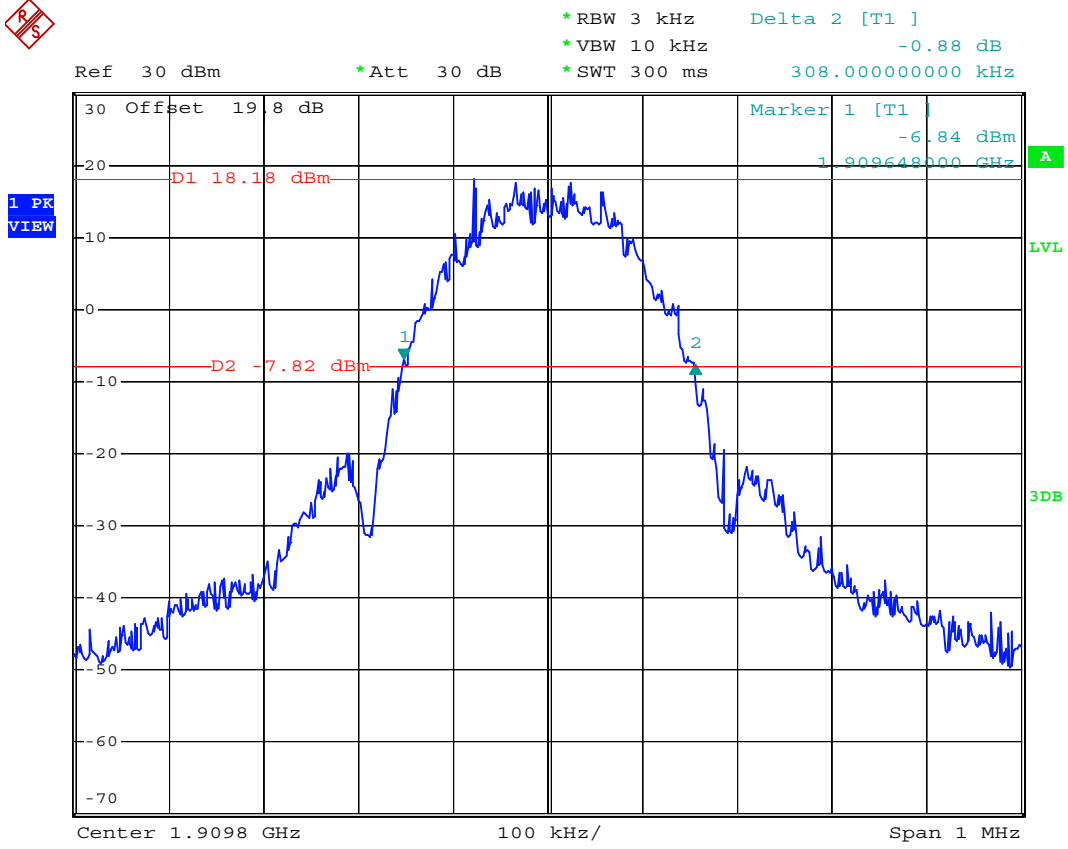
Date: 8.MAY.2008 14:11:13

- Test Mode : GSM1900 (EDGE) CH661 26dB Bandwidth
- Power State : High



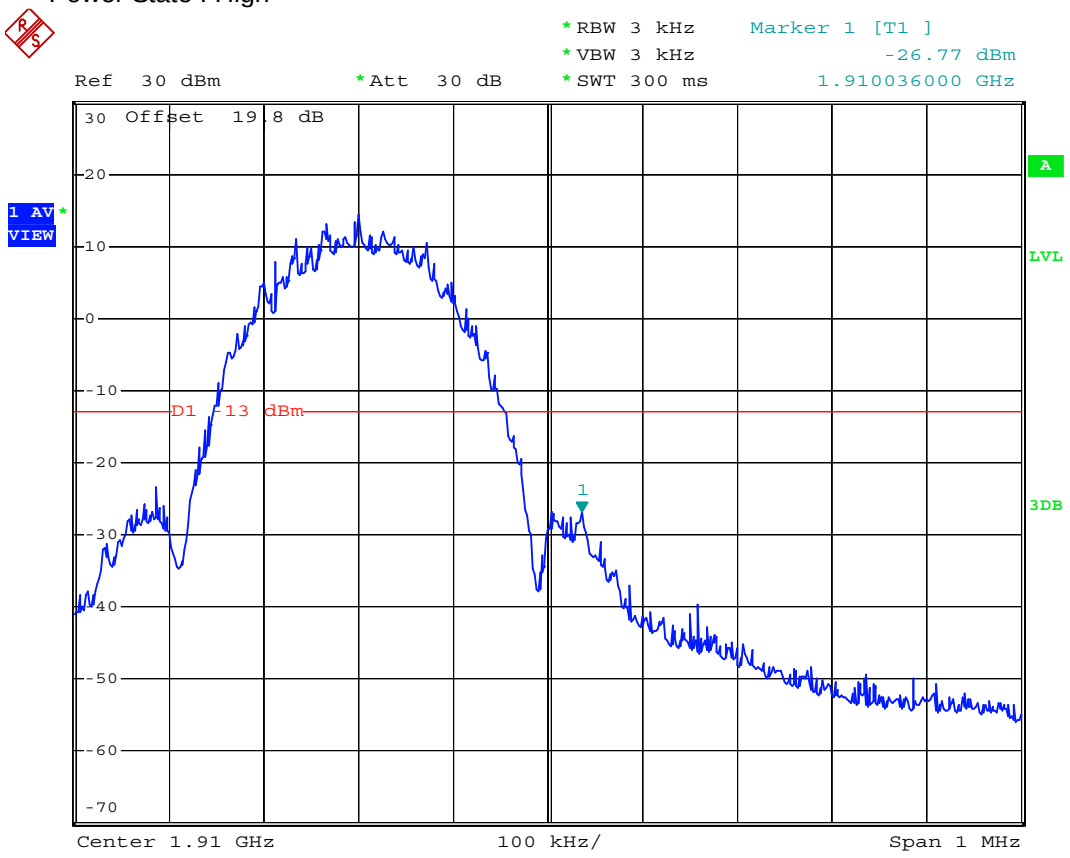
Date: 8.MAY.2008 14:29:00

- Test Mode : GSM1900 (EDGE) CH810 26dB Bandwidth
- Power State : High



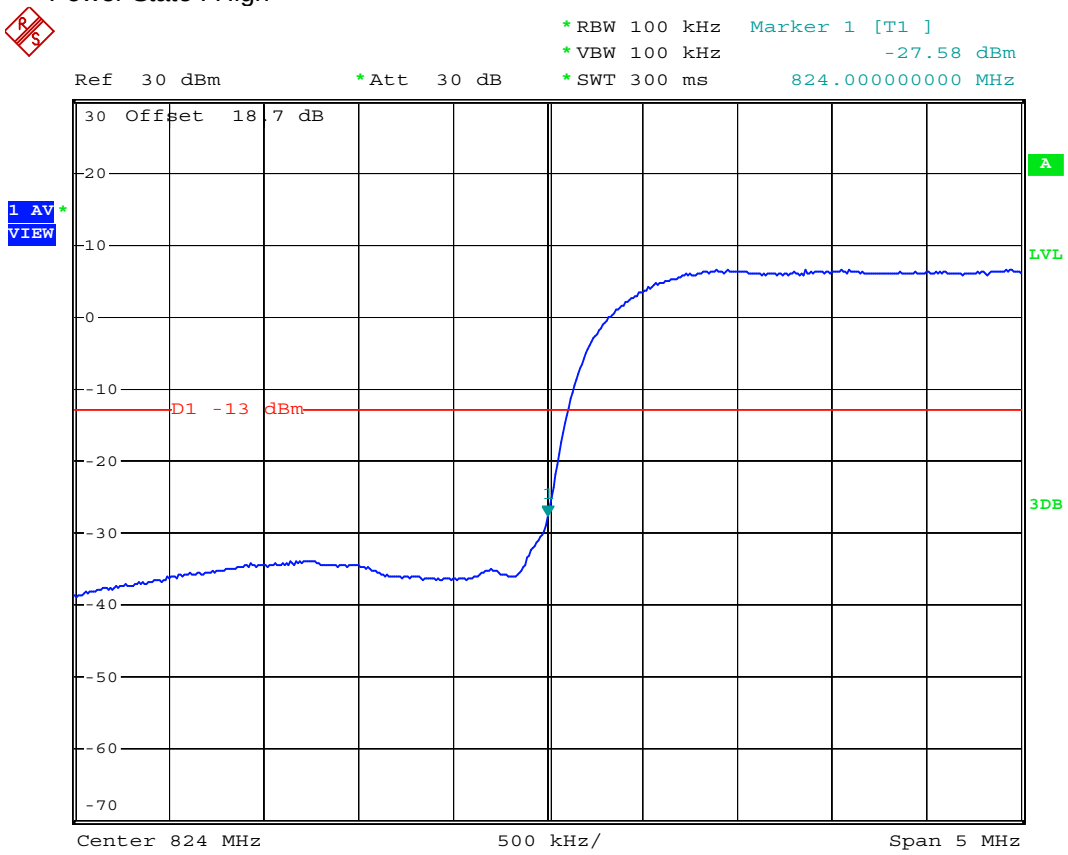
Date: 8.MAY.2008 14:30:14

- Test Mode : GSM1900(EDGE) CH810 Higher Band Edge
- Power State : High



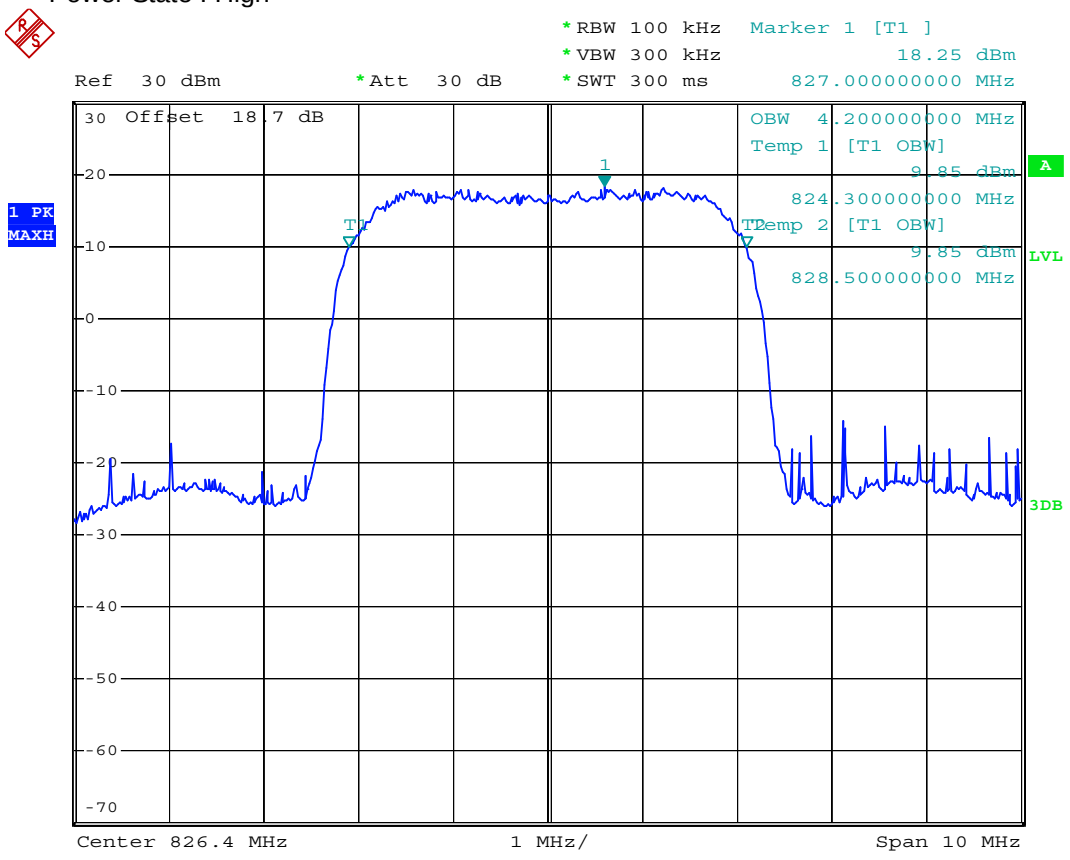
Date: 8.MAY.2008 13:58:59

- Mode 5
- Test Mode : WCDMA Band V CH4132 Lower Band Edge
- Power State : High



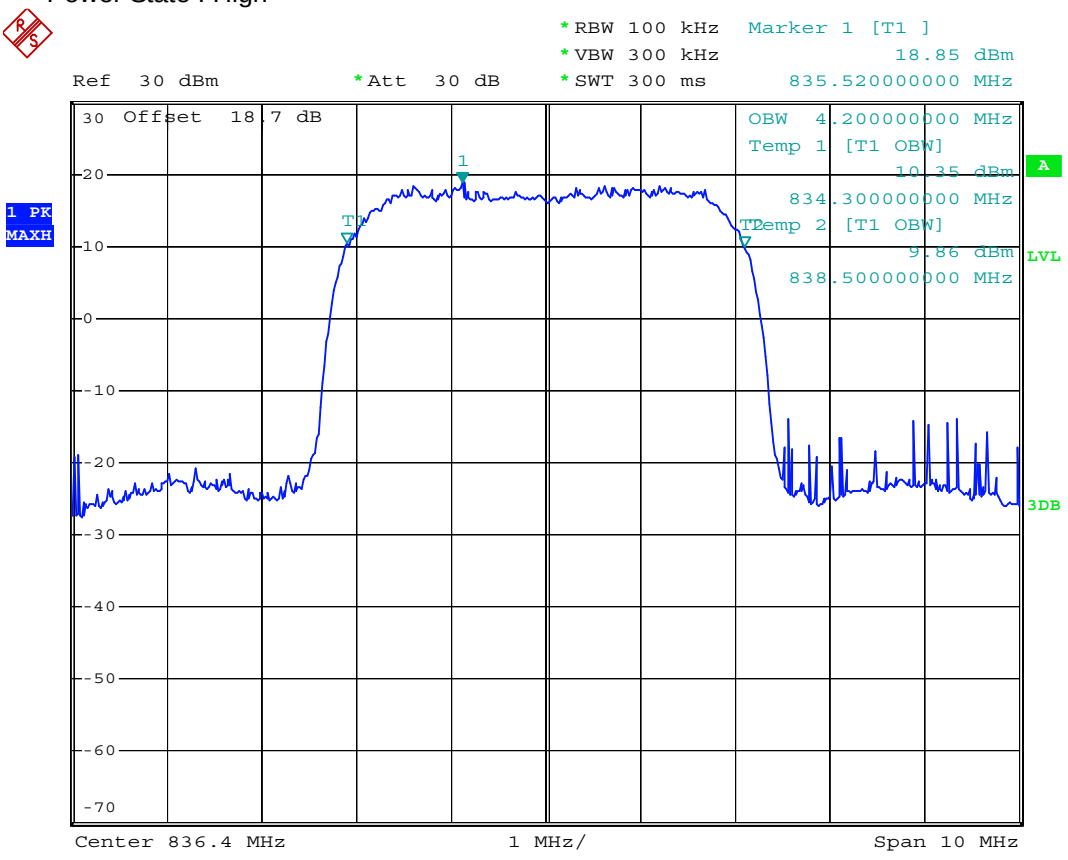
Date: 13.MAY.2008 14:35:45

- Test Mode : WCDMA Band V CH4132 99% Occupid Bandwidth
- Power State : High

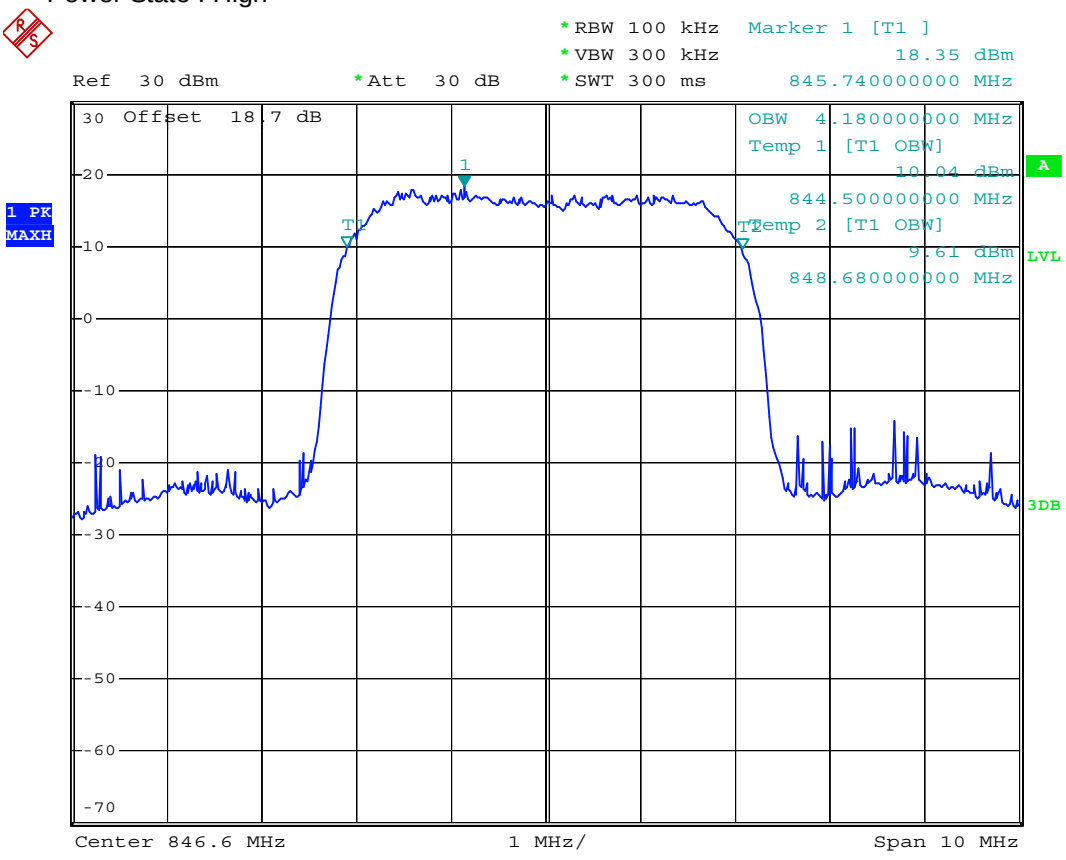


Date: 13.MAY.2008 14:30:55

- Test Mode : WCDMA Band V CH4182 99% Occupid Bandwidth
- Power State : High

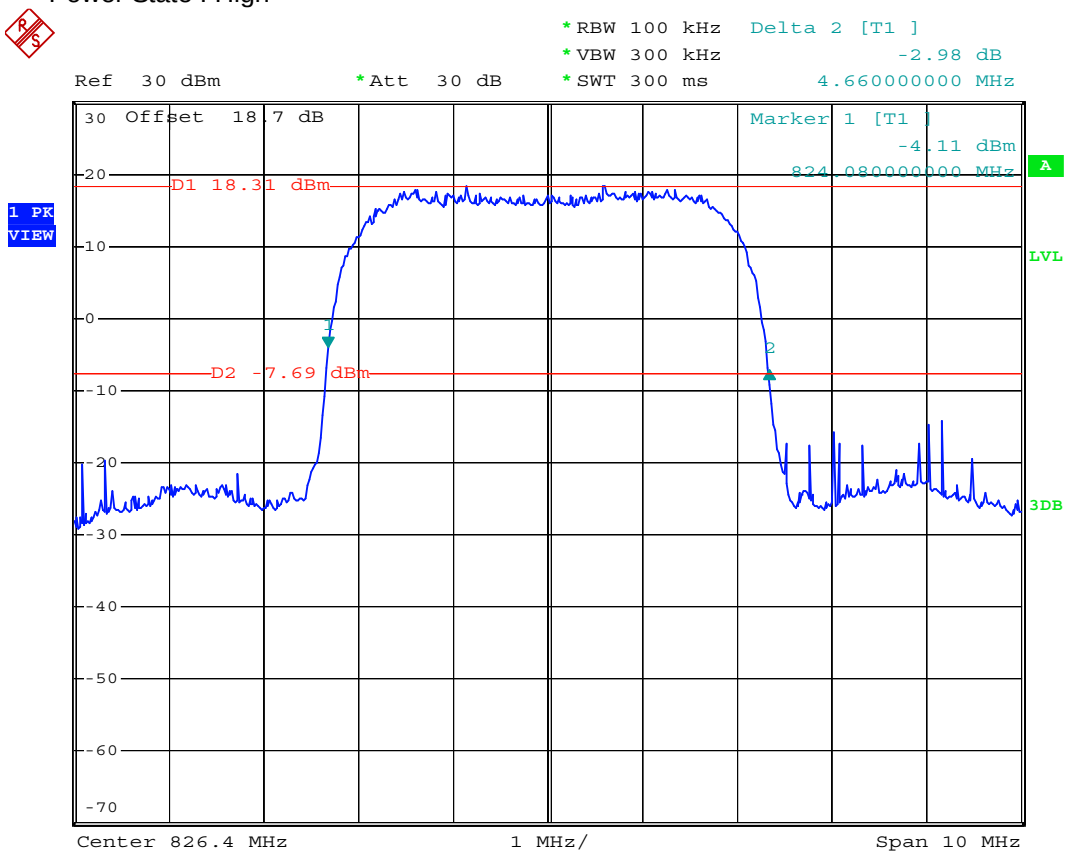


- Test Mode : WCDMA Band V CH4233 99% Occupid Bandwidth
- Power State : High



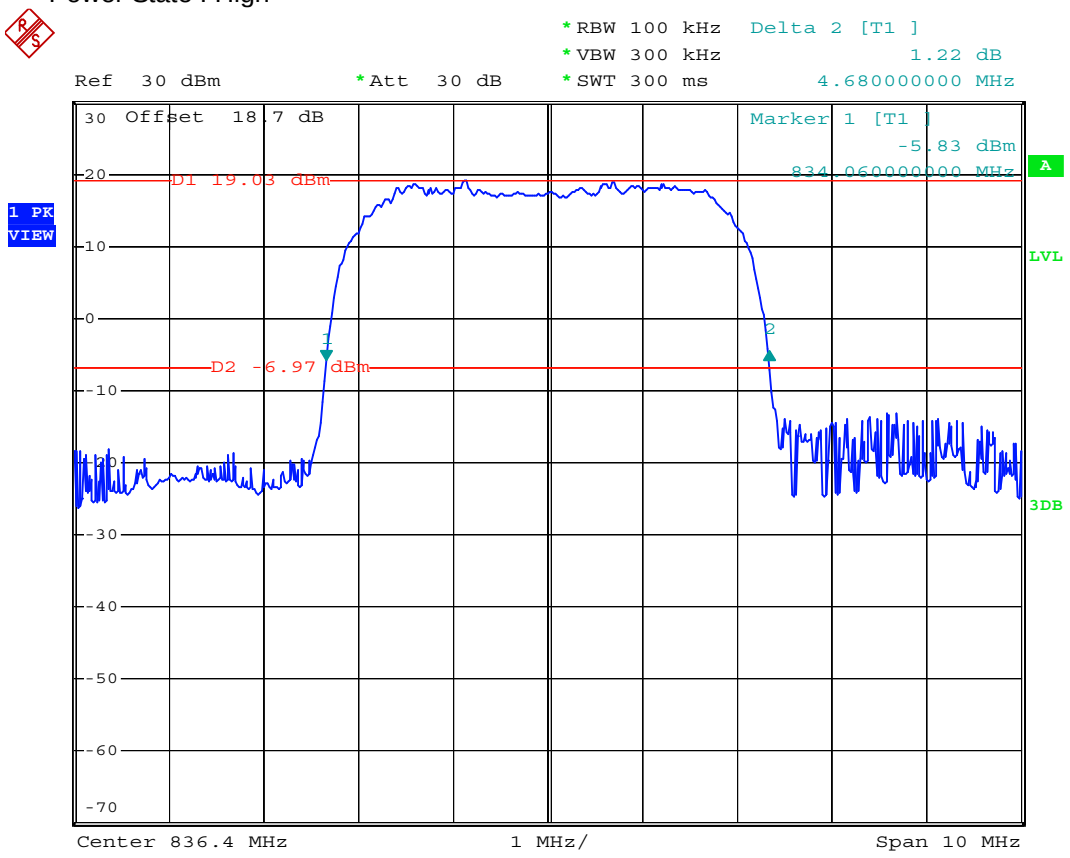
Date: 13.MAY.2008 14:31:36

- Test Mode : WCDMA Band V CH4132 26dB Bandwidth
- Power State : High



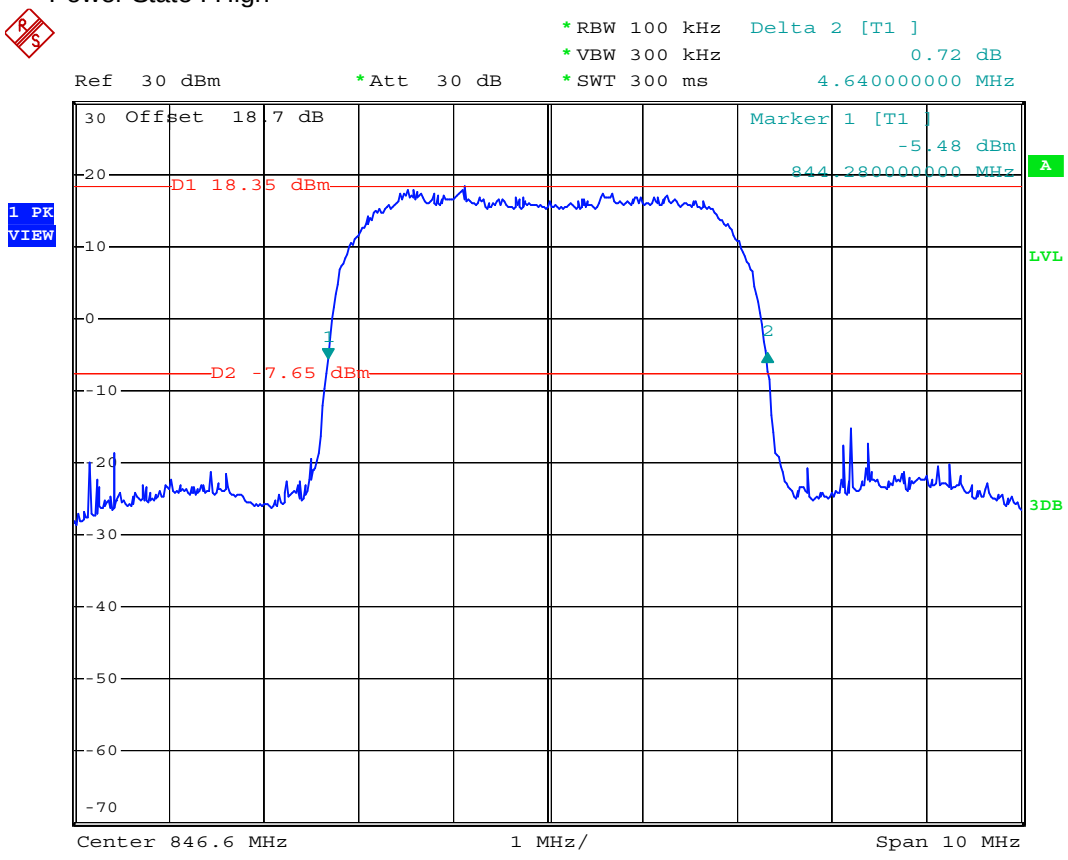
Date: 13.MAY.2008 14:24:15

- Test Mode : WCDMA Band V CH4182 26dB Bandwidth
- Power State : High



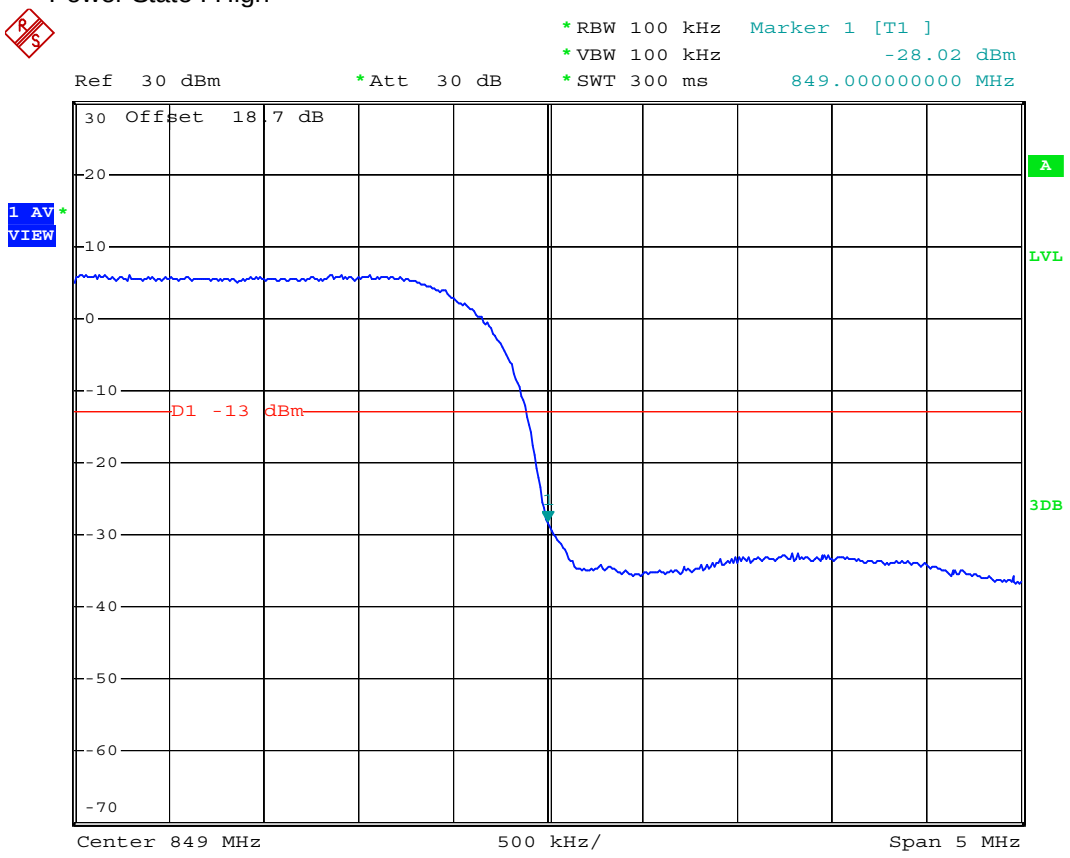
Date: 13.MAY.2008 14:29:12

- Test Mode : WCDMA Band V CH4233 26dB Bandwidth
- Power State : High



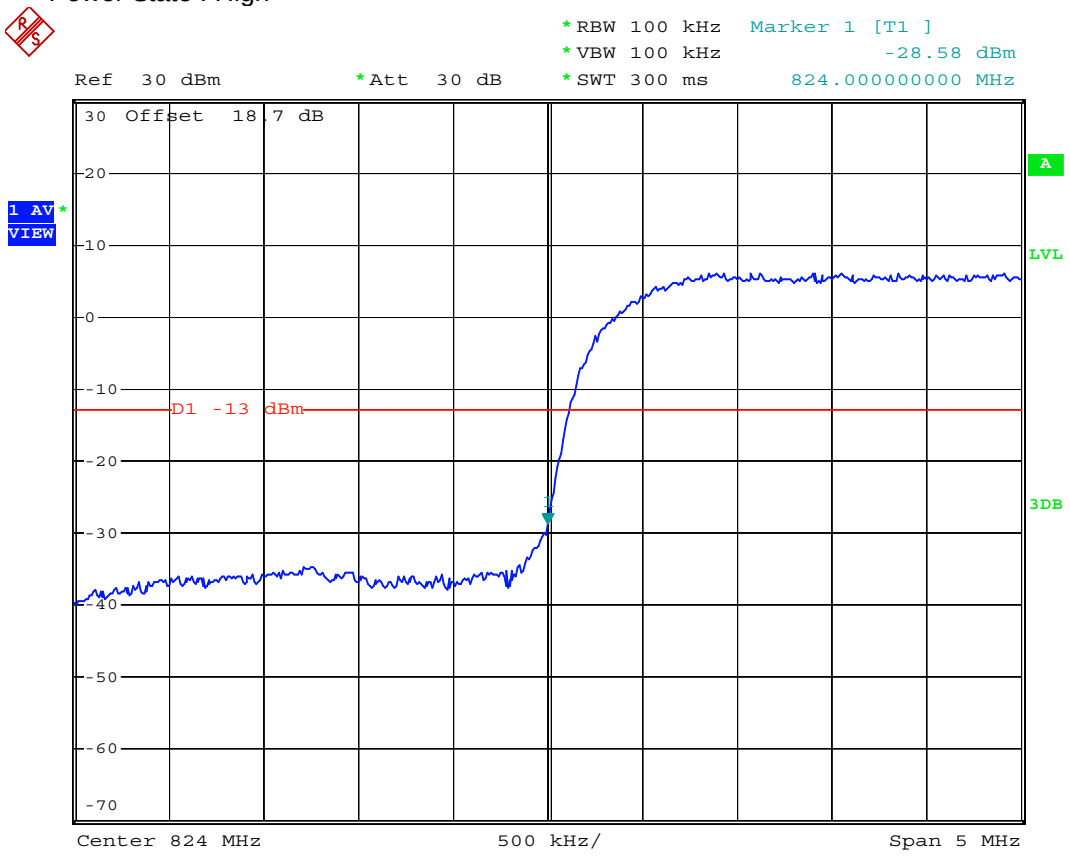
Date: 13.MAY.2008 14:30:10

- Test Mode : WCDMA Band V CH4233 Higher Band Edge
- Power State : High

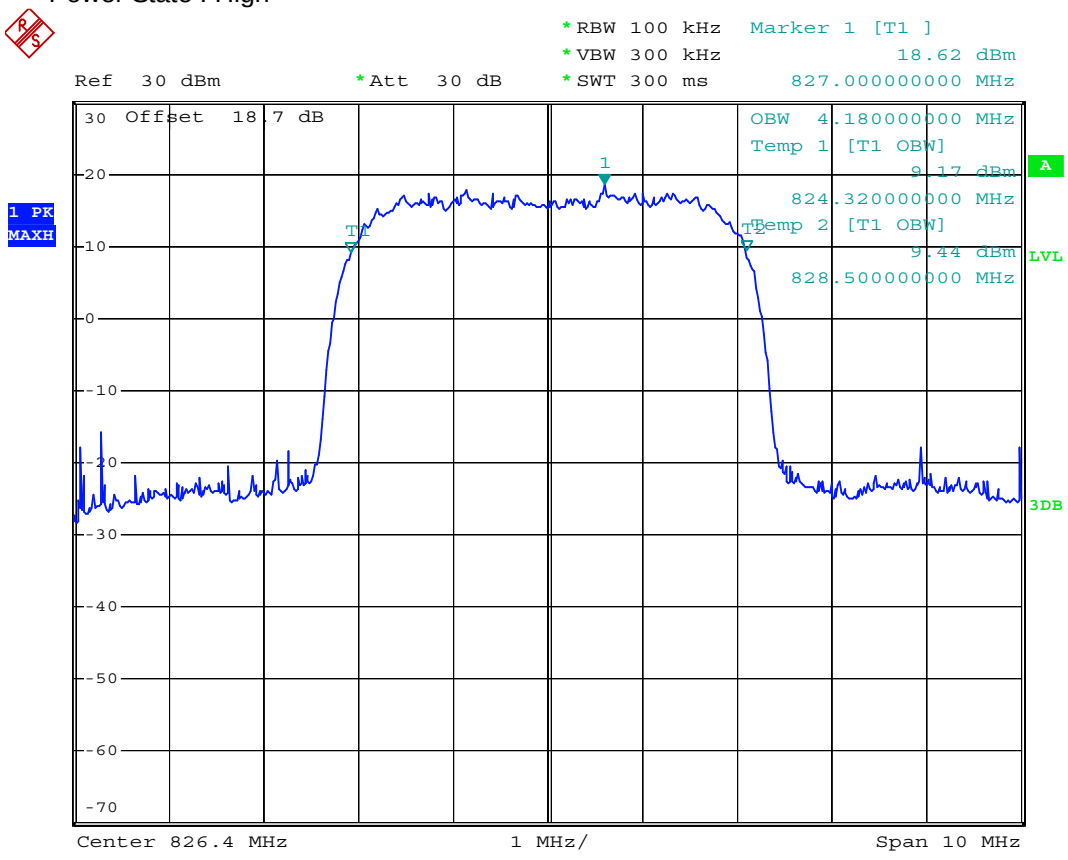


Date: 13.MAY.2008 14:42:02

- Mode 6
- Test Mode : WCDMA Band V (HSUPA) CH4132 Lower Band Edge
- Power State : High

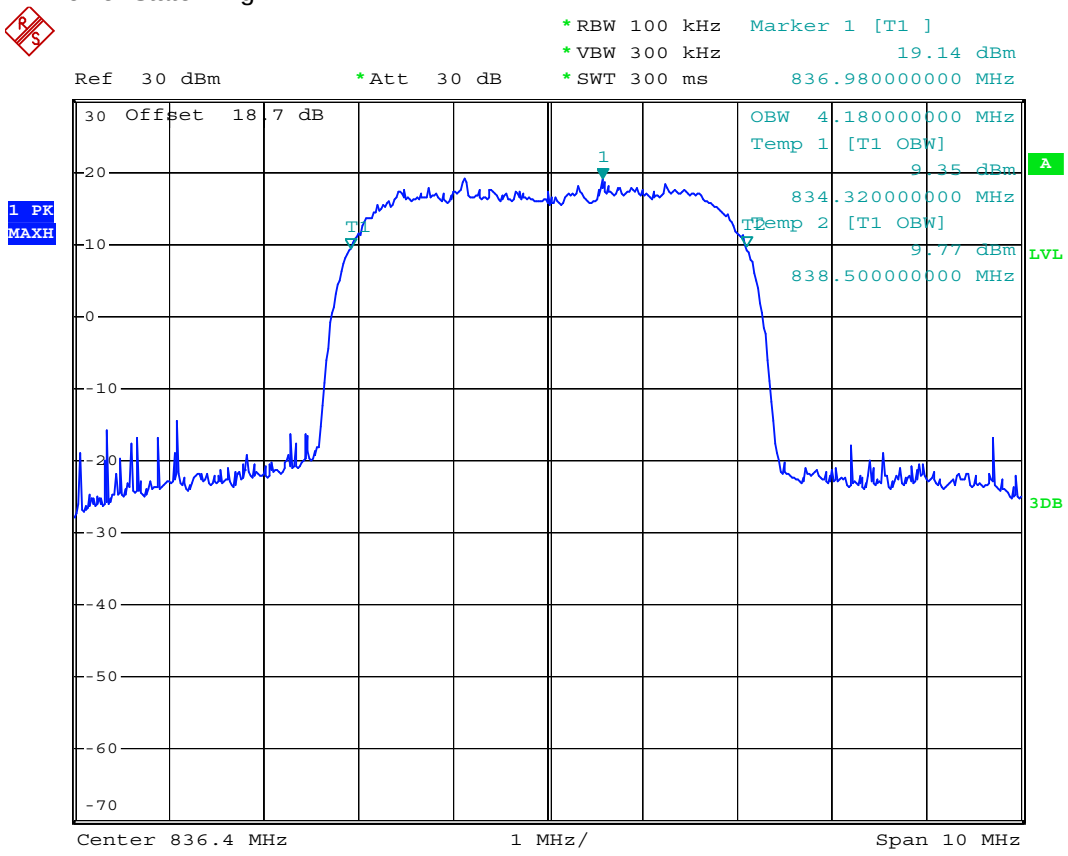


- Test Mode : WCDMA Band V (HSUPA) CH4132 99% Occupid Bandwidth
- Power State : High



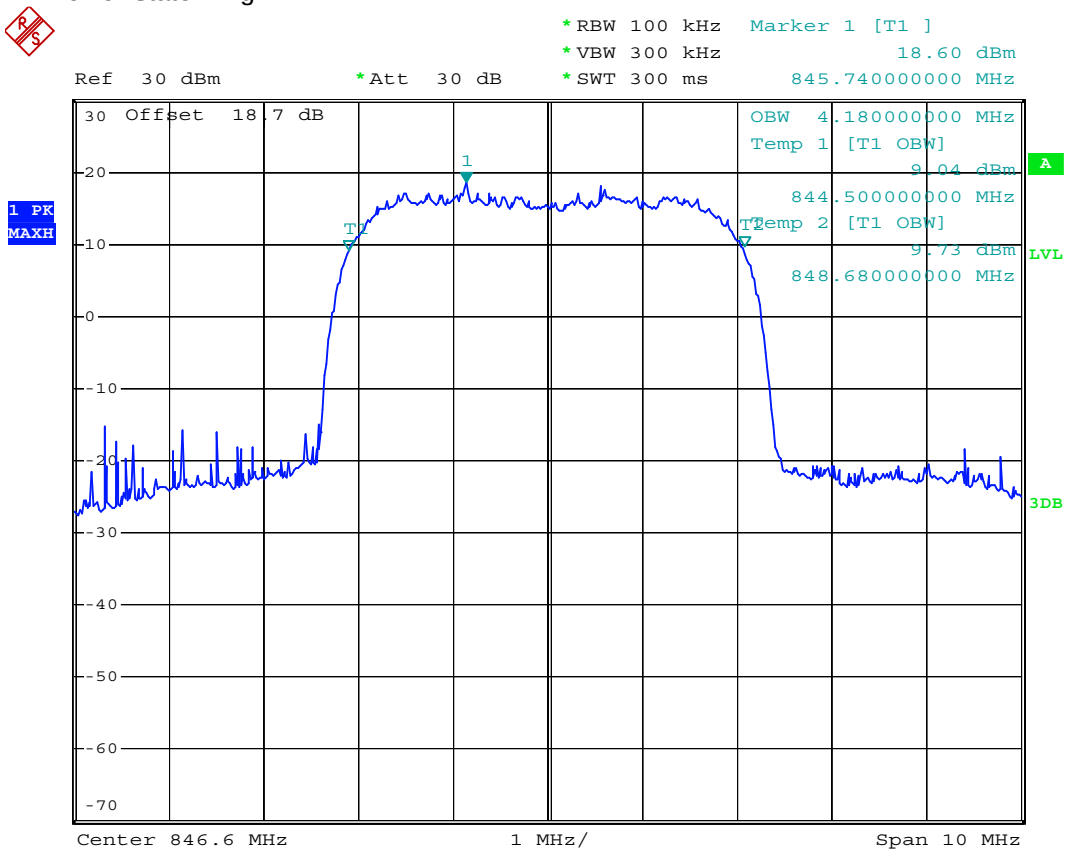
Date: 13.MAY.2008 16:11:00

- Test Mode : WCDMA Band V (HSUPA) CH4182 99% Occupid Bandwidth
- Power State : High

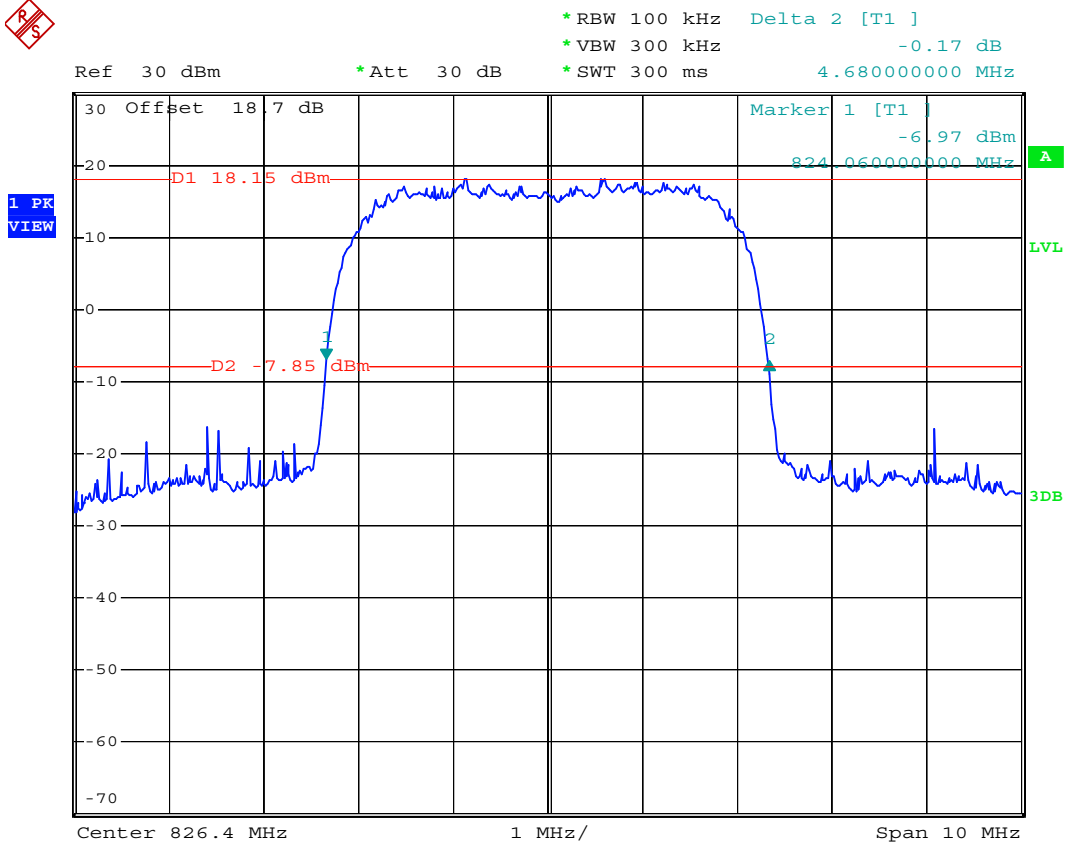


Date: 13.MAY.2008 16:12:28

- Test Mode : WCDMA Band V (HSUPA) CH4233 99% Occupid Bandwidth
- Power State : High

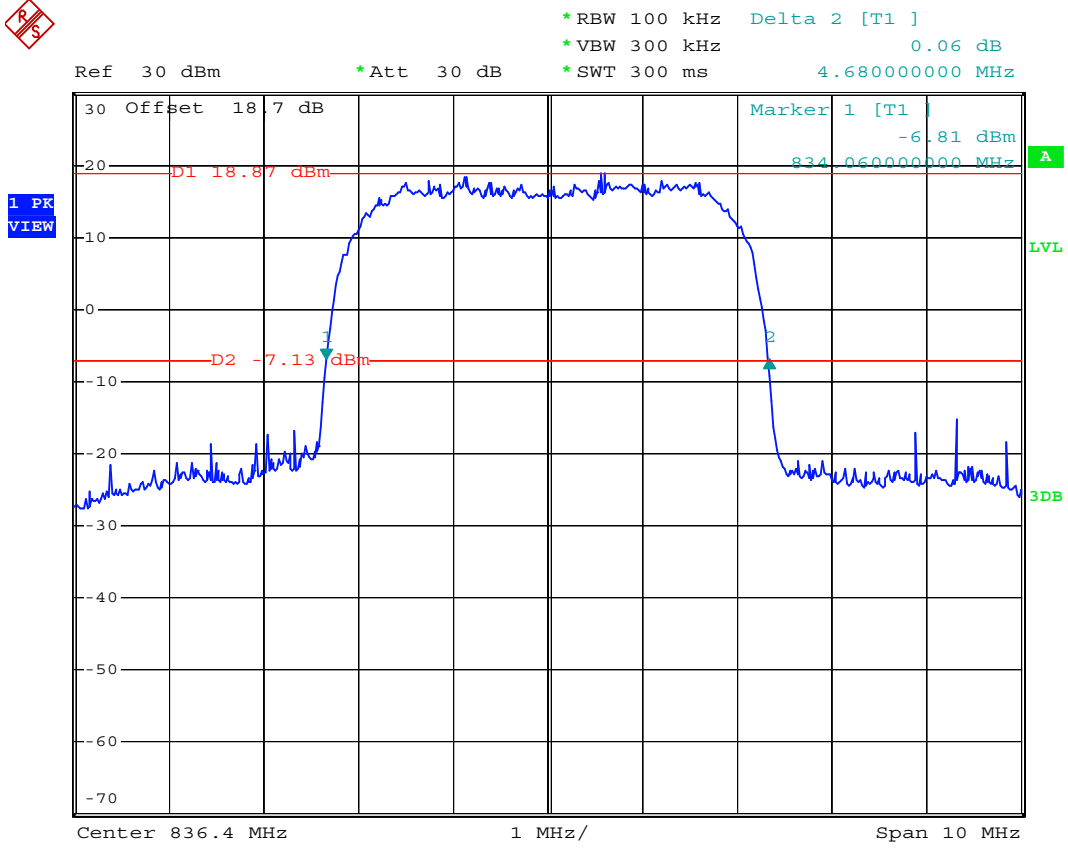


- Test Mode : WCDMA Band V (HSUPA) CH4132 26dB Bandwidth
- Power State : High



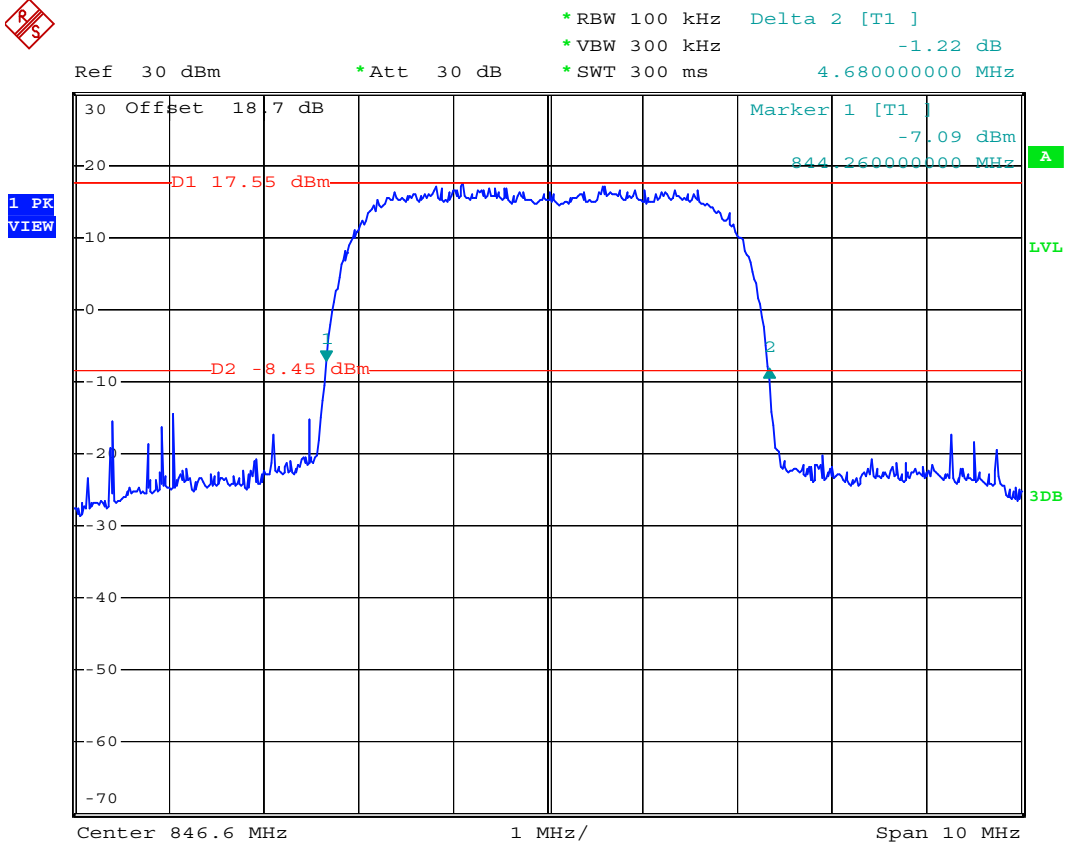
Date: 13.MAY.2008 16:10:33

- Test Mode : WCDMA Band V (HSUPA) CH4182 26dB Bandwidth
- Power State : High



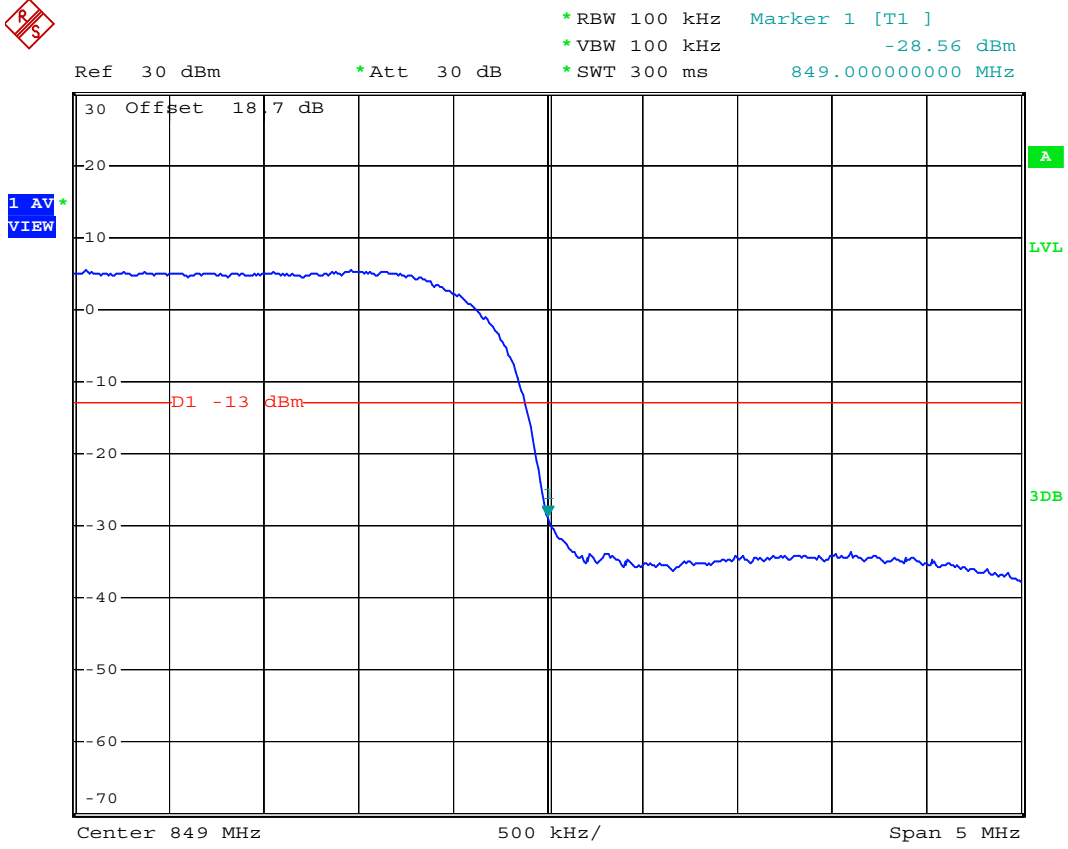
Date: 13.MAY.2008 16:09:31

- Test Mode : WCDMA Band V (HSUPA) CH4233 26dB Bandwidth
- Power State : High



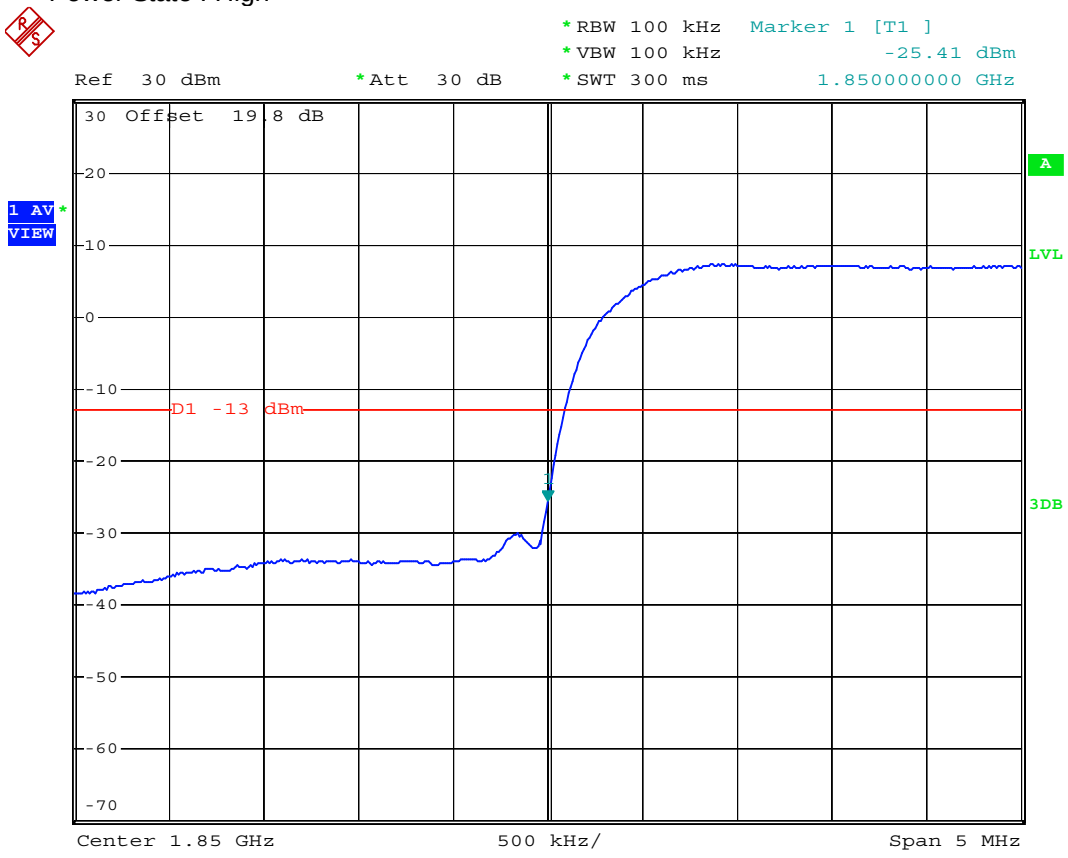
Date: 13.MAY.2008 16:08:06

- Test Mode : WCDMA Band V (HSUPA) CH4233 Higher Band Edge
- Power State : High



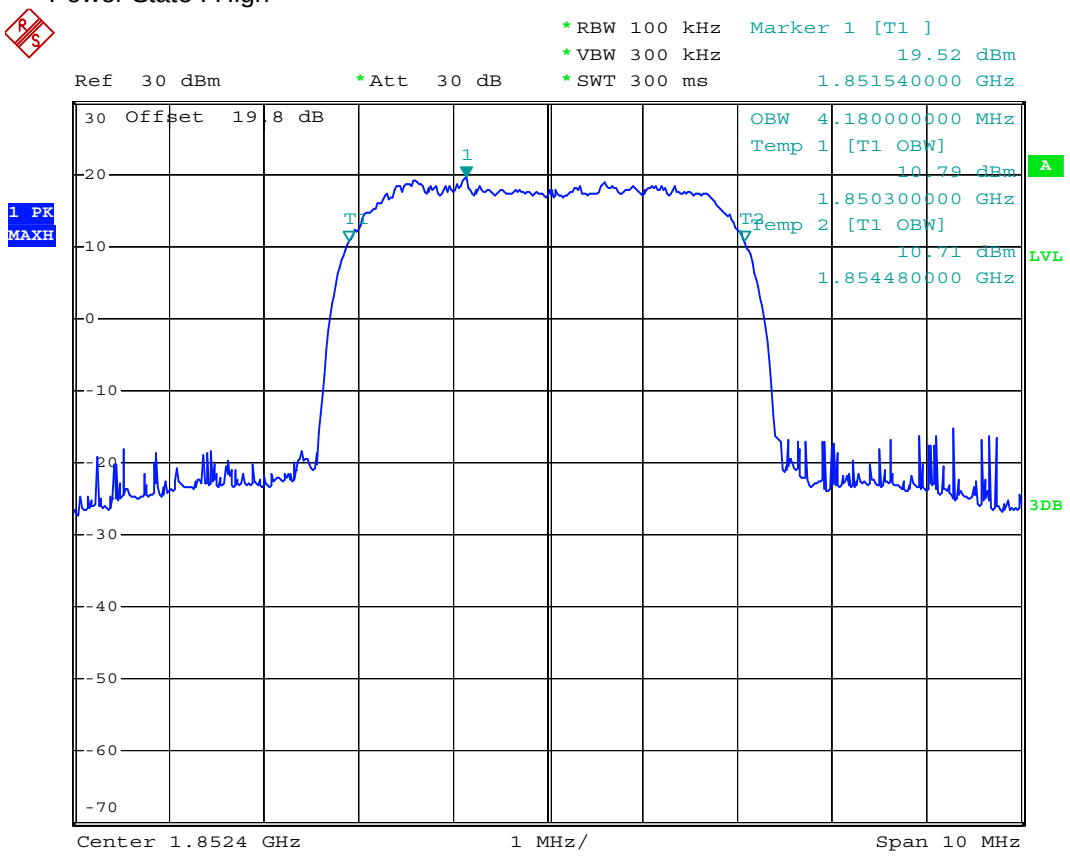
Date: 13.MAY.2008 16:16:41

- Mode 7
- Test Mode : WCDMA Band II CH9262 Lower Band Edge
- Power State : High



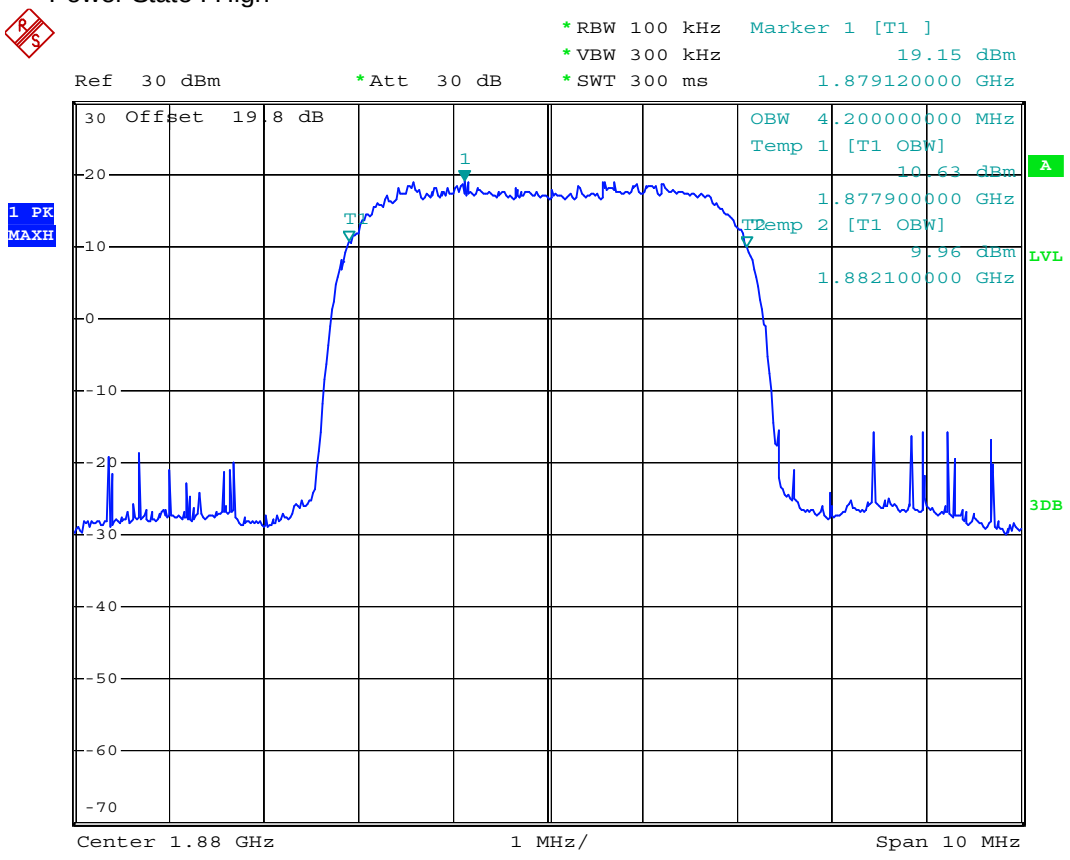
Date: 13.MAY.2008 15:12:22

- Test Mode : WCDMA Band II CH9262 99% Occupid Bandwidth
- Power State : High



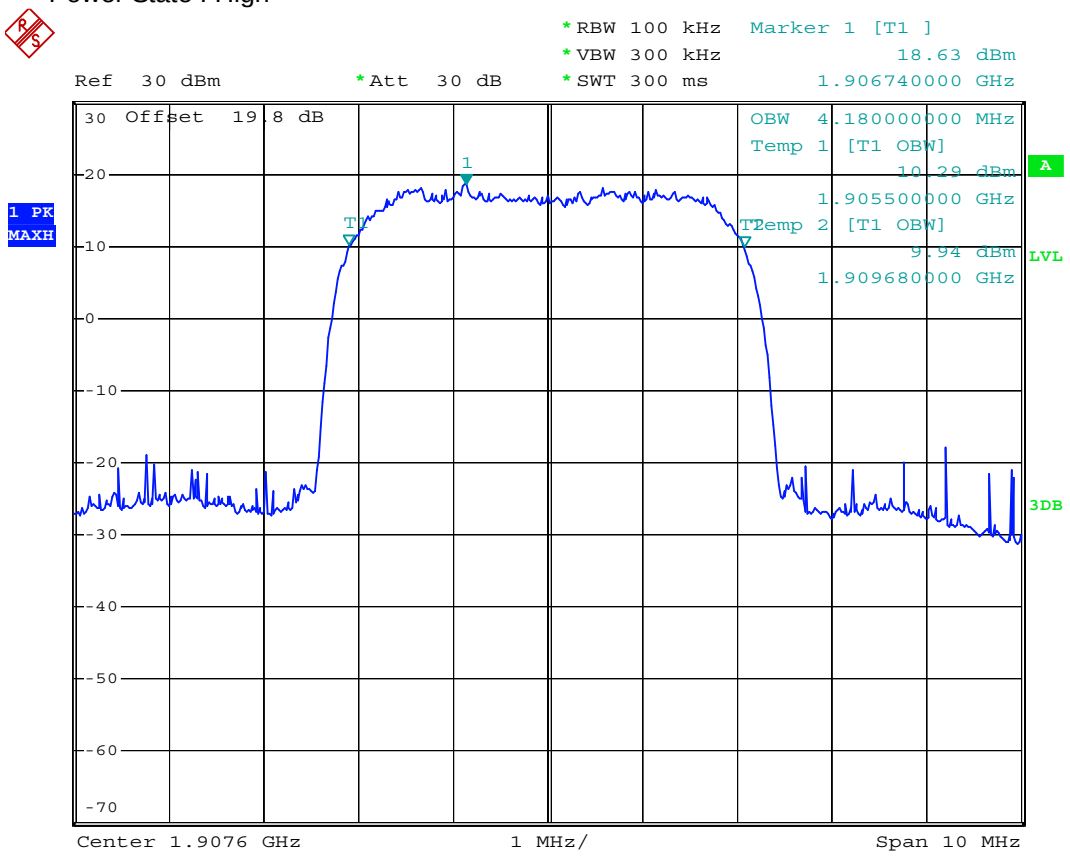
Date: 13.MAY.2008 15:07:51

- Test Mode : WCDMA Band II CH9400 99% Occupid Bandwidth
- Power State : High

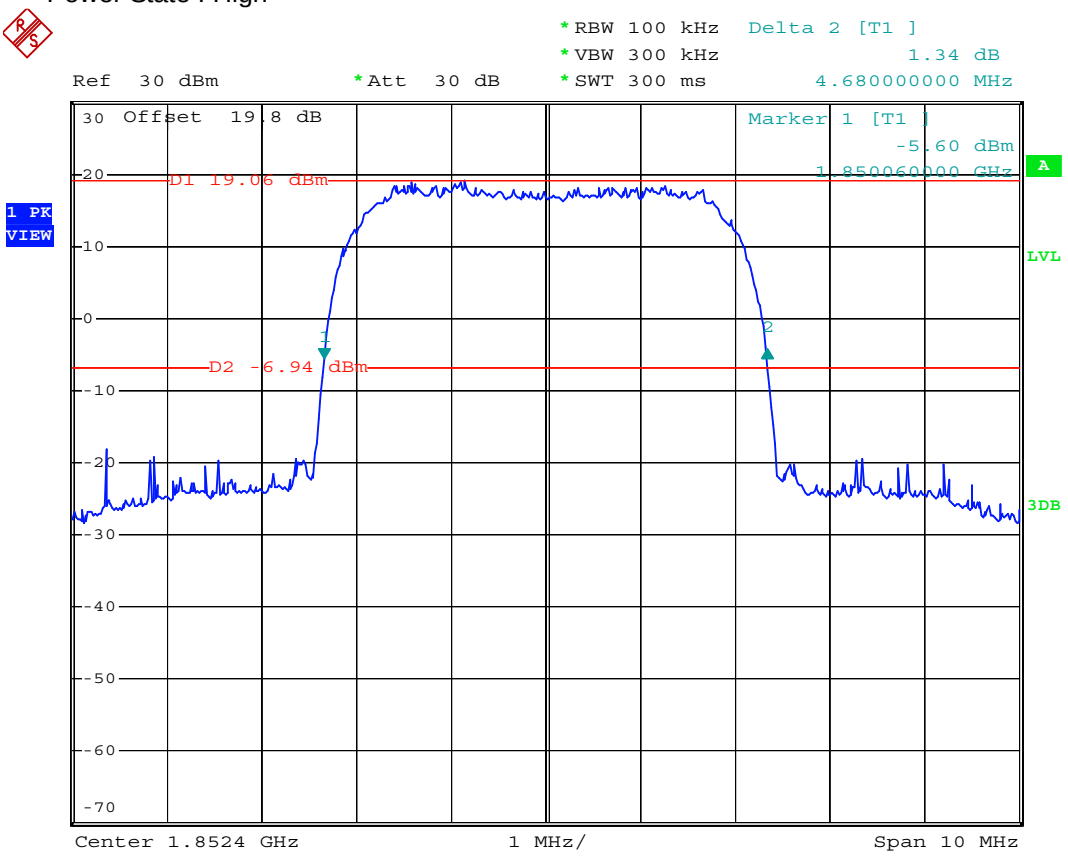


Date: 13.MAY.2008 15:09:05

- Test Mode : WCDMA Band II CH9538 99% Occupid Bandwidth
- Power State : High

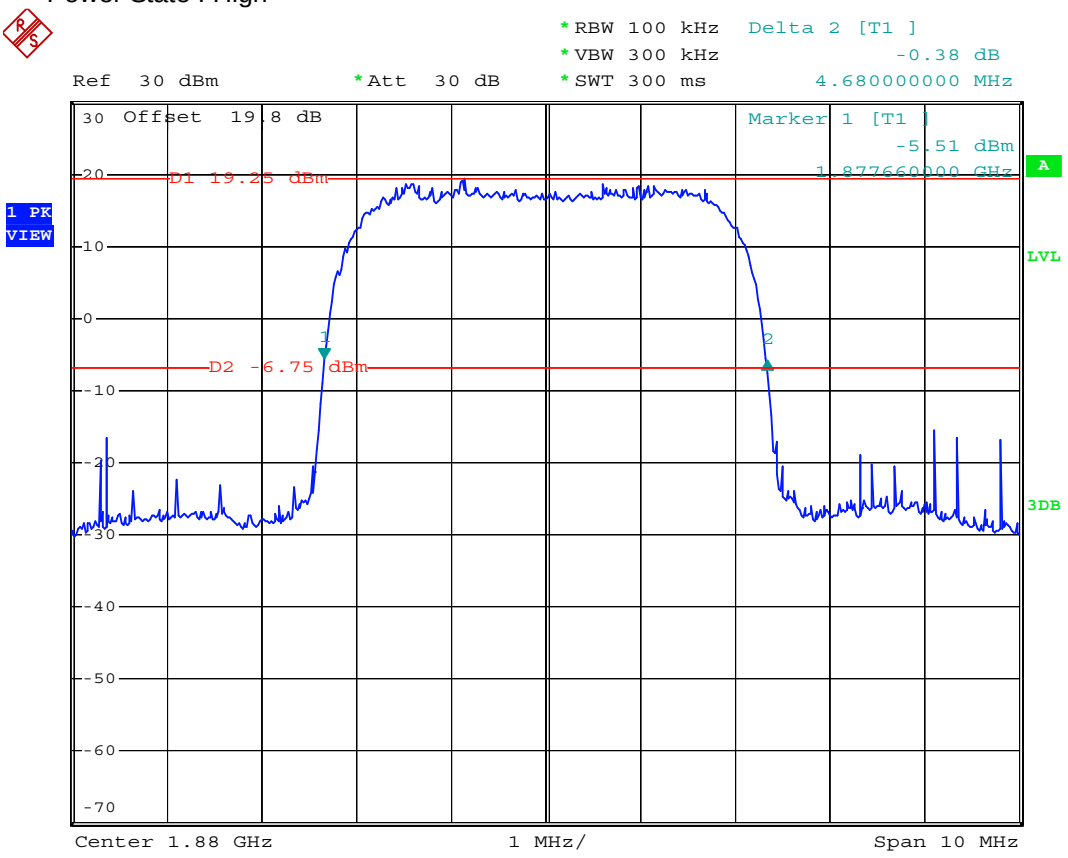


- Test Mode : WCDMA Band II CH9262 26dB Bandwidth
- Power State : High



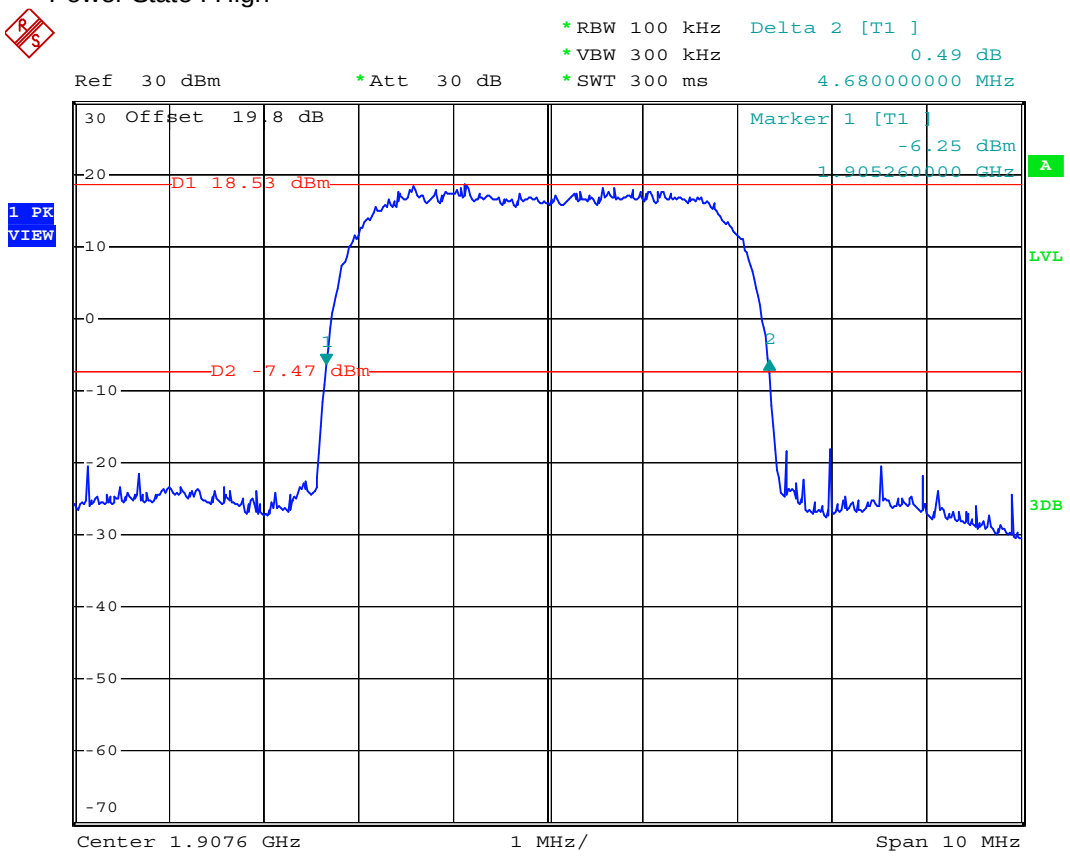
Date: 13.MAY.2008 15:06:39

- Test Mode : WCDMA Band II CH9400 26dB Bandwidth
- Power State : High



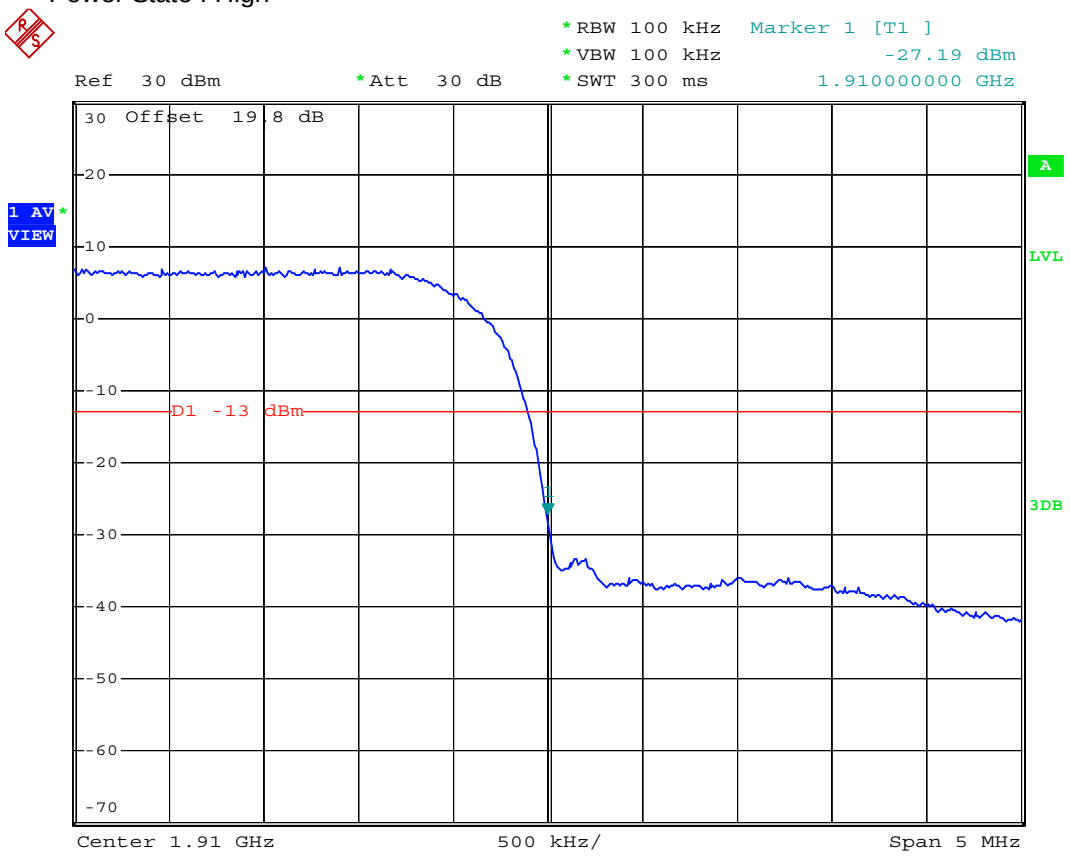
Date: 13.MAY.2008 15:05:21

- Test Mode : WCDMA Band II CH9538 26dB Bandwidth
- Power State : High



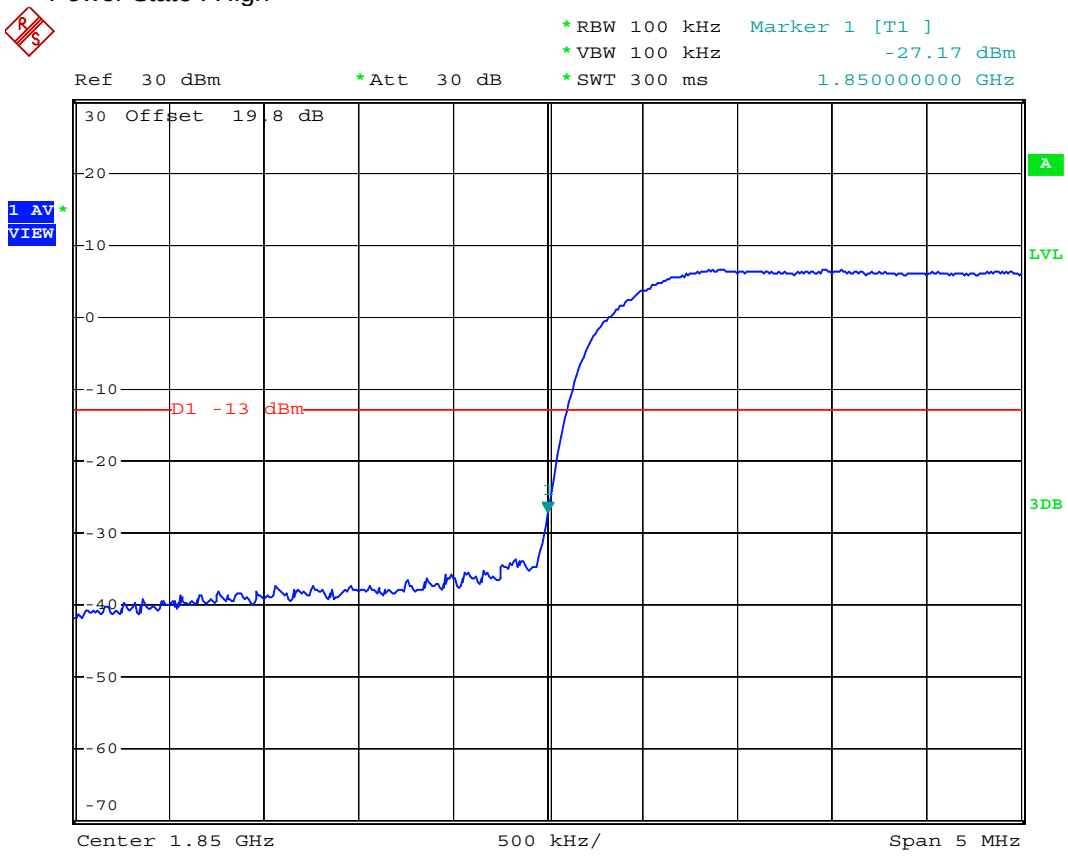
Date: 13.MAY.2008 15:04:23

- Test Mode : WCDMA Band II CH9538 Higher Band Edge
- Power State : High



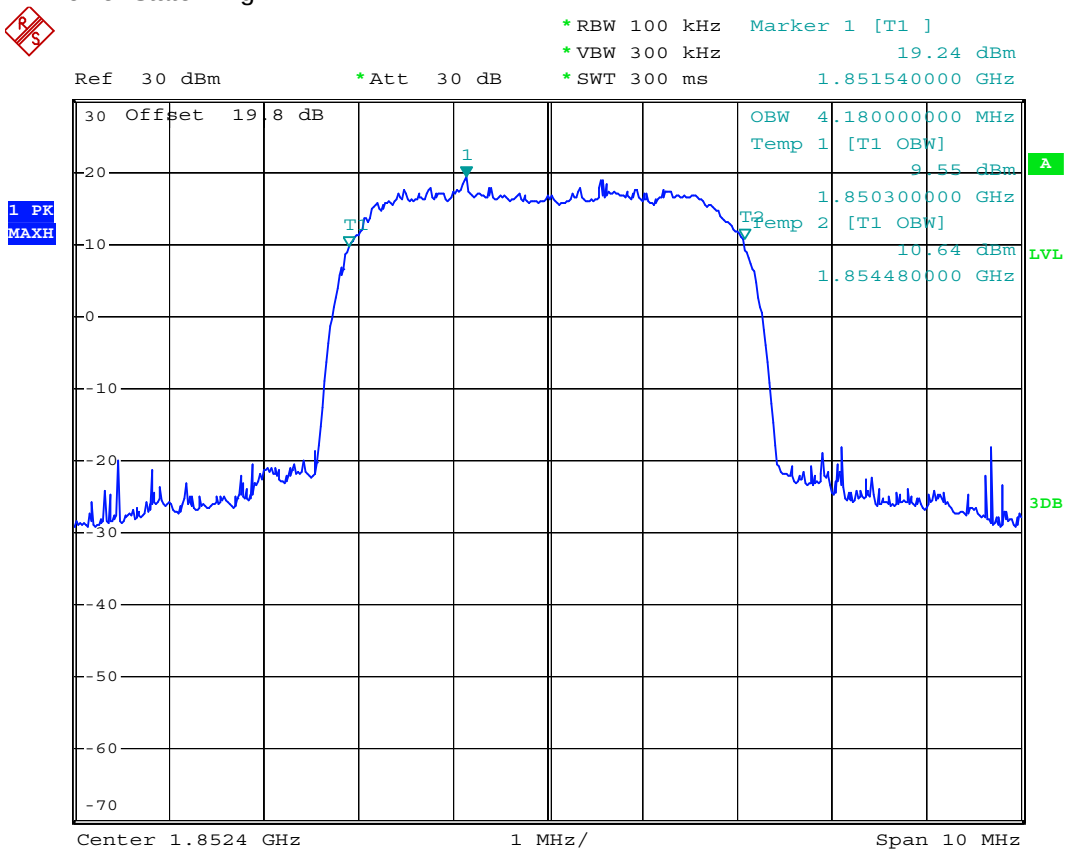
Date: 13.MAY.2008 15:18:07

- Mode 8
- Test Mode : WCDMA Band II (HSUPA) CH9262 Lower Band Edge
- Power State : High



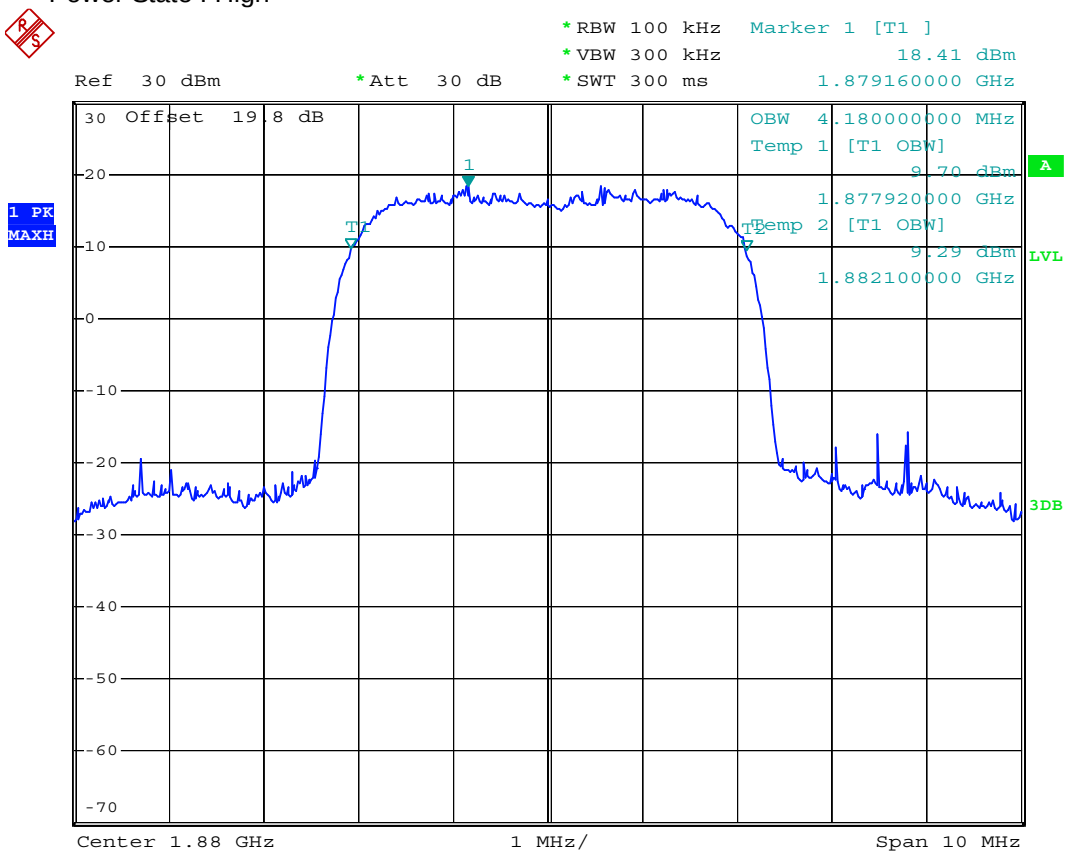
Date: 13.MAY.2008 15:52:29

- Test Mode : WCDMA Band II (HSUPA) CH9262 99% Occupid Bandwidth
- Power State : High



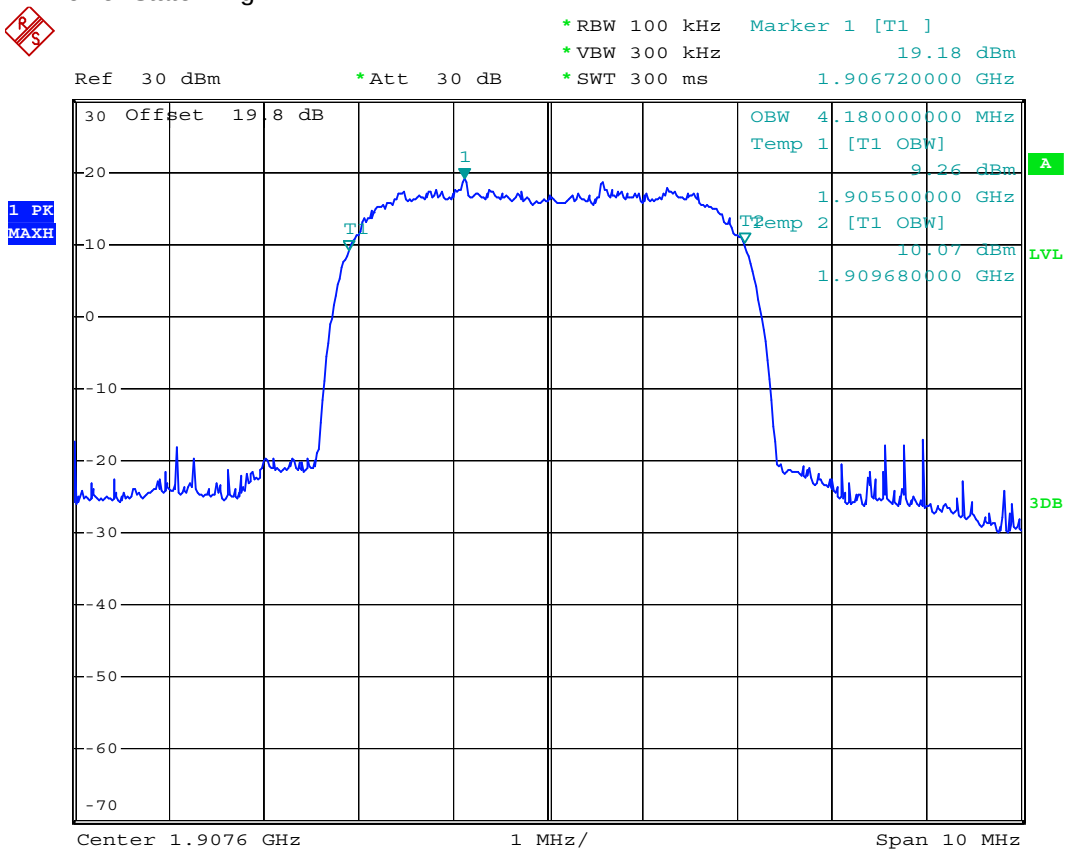
Date: 13.MAY.2008 15:51:05

- Test Mode : WCDMA Band II (HSUPA) CH9400 99% Occupid Bandwidth
- Power State : High



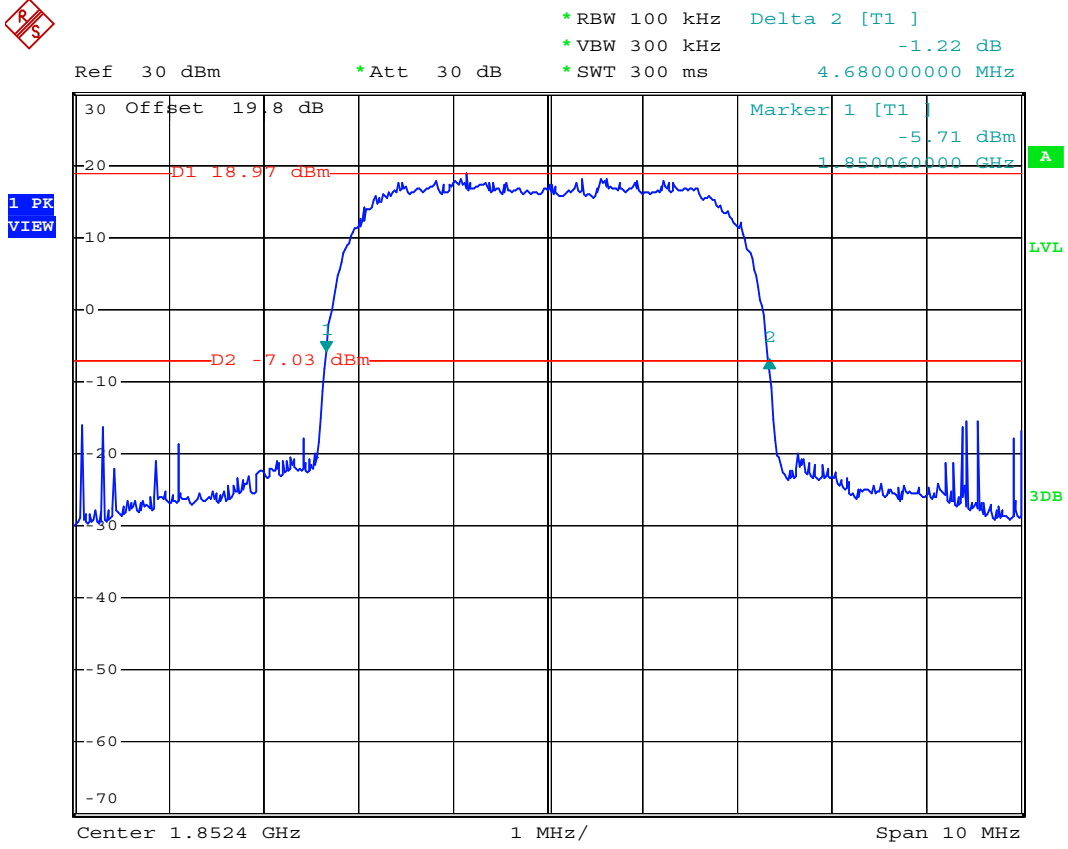
Date: 13.MAY.2008 15:49:46

- Test Mode : WCDMA Band II (HSUPA) CH9538 99% Occupid Bandwidth
- Power State : High



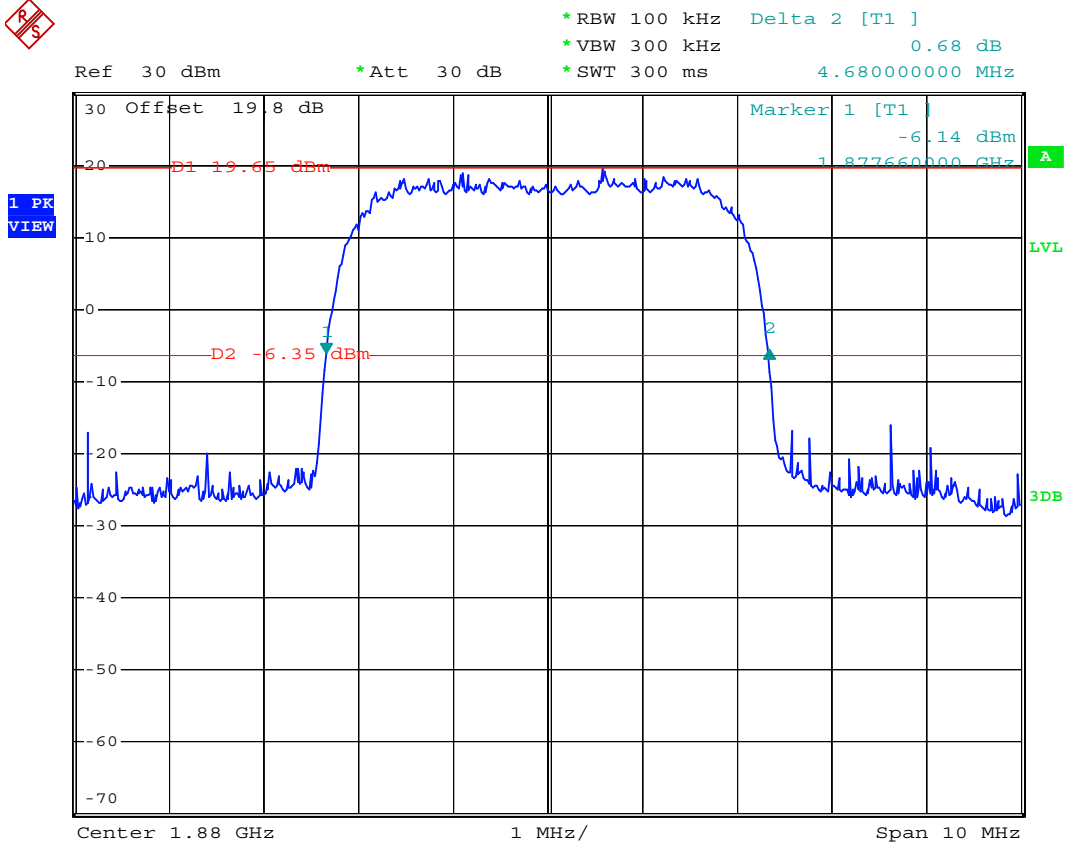
Date: 13.MAY.2008 15:41:04

- Test Mode : WCDMA Band II (HSUPA) CH9262 26dB Bandwidth
- Power State : High



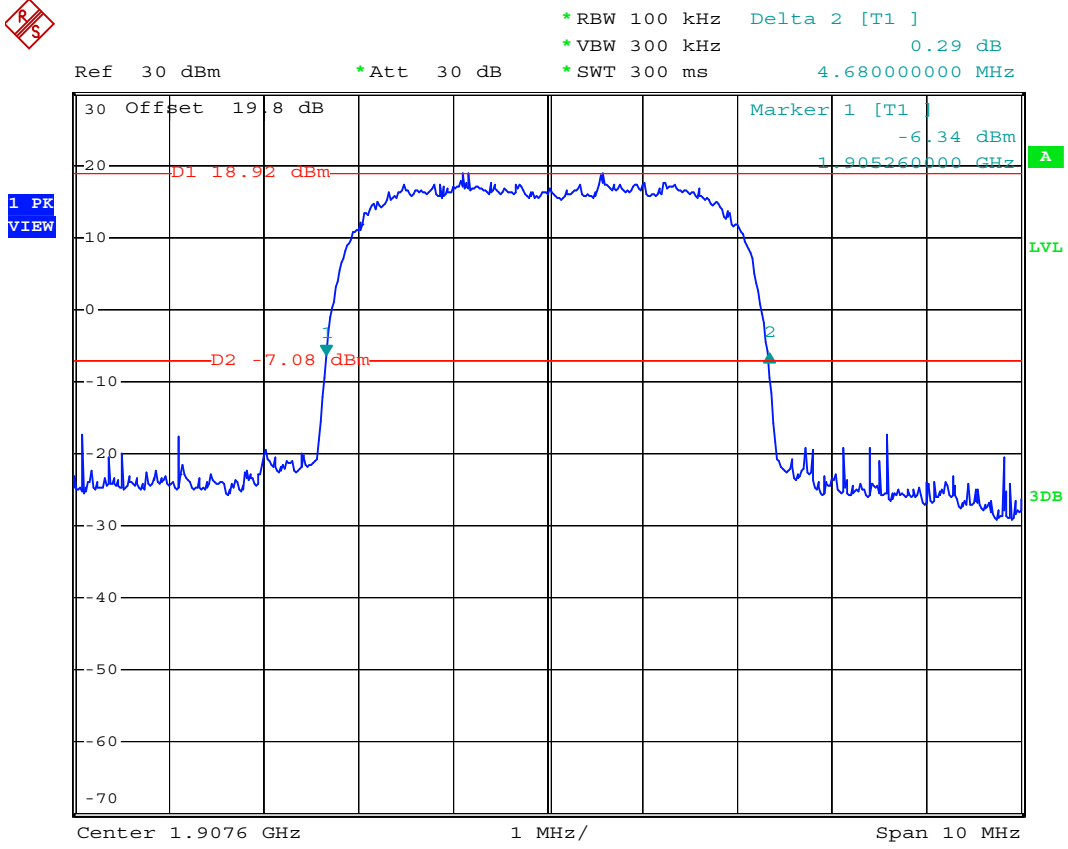
Date: 13.MAY.2008 15:38:03

- Test Mode : WCDMA Band II (HSUPA) CH9400 26dB Bandwidth
- Power State : High



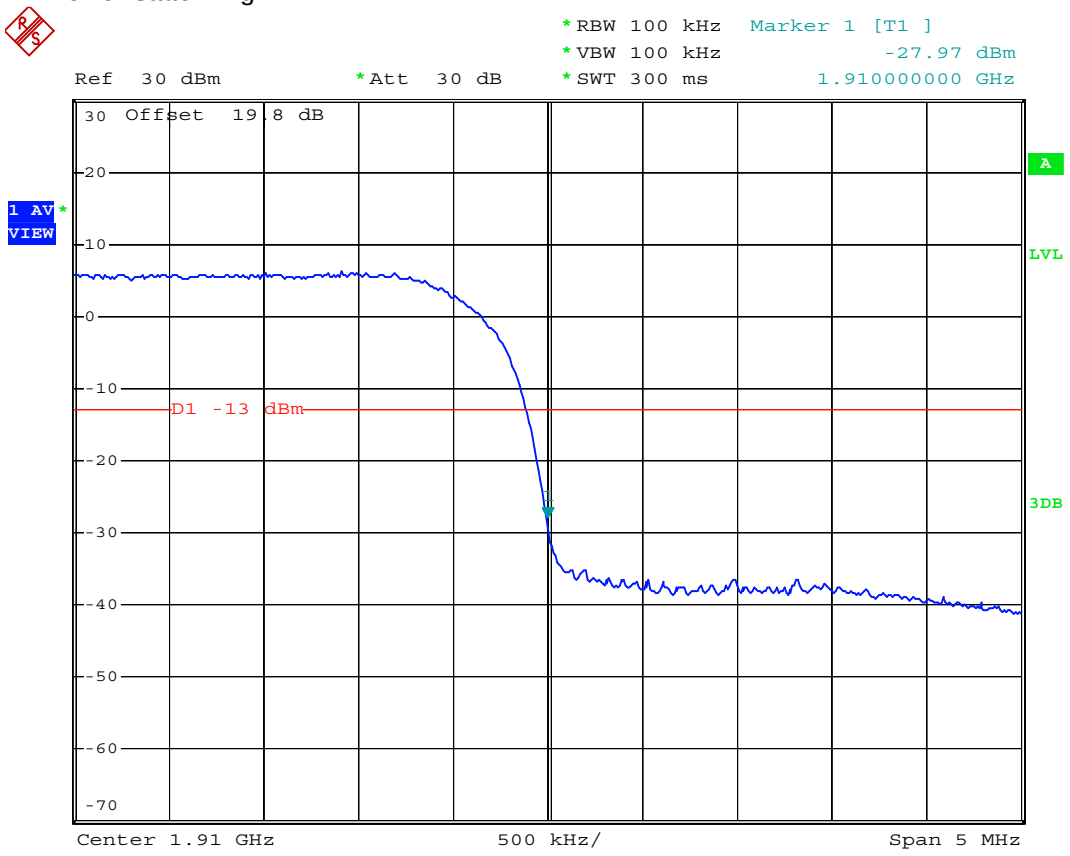
Date: 13.MAY.2008 15:39:31

- Test Mode : WCDMA Band II (HSUPA) CH9538 26dB Bandwidth
- Power State : High



Date: 13.MAY.2008 15:40:27

- Test Mode : WCDMA Band II (HSUPA) CH9538 Higher Band Edge
- Power State : High



Date: 13.MAY.2008 15:53:53

4.5 Conducted Emission

4.5.1 Measurement Instruments

As described in chapter 5 of this test report.

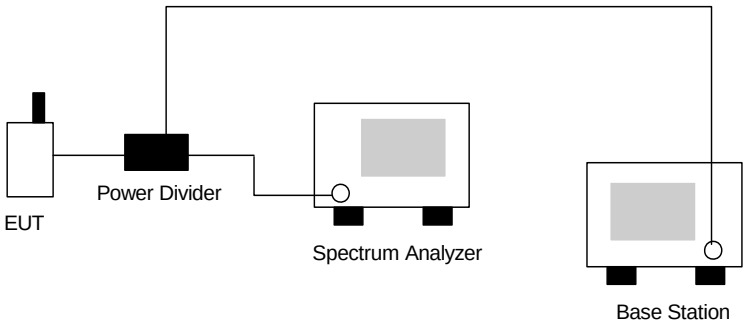
4.5.2 Test Procedure

a. The EUT was connected to Spectrum Analyzer and Base Station via power divider.

b. The middle channel for the highest RF power within the transmitting frequency was measured.

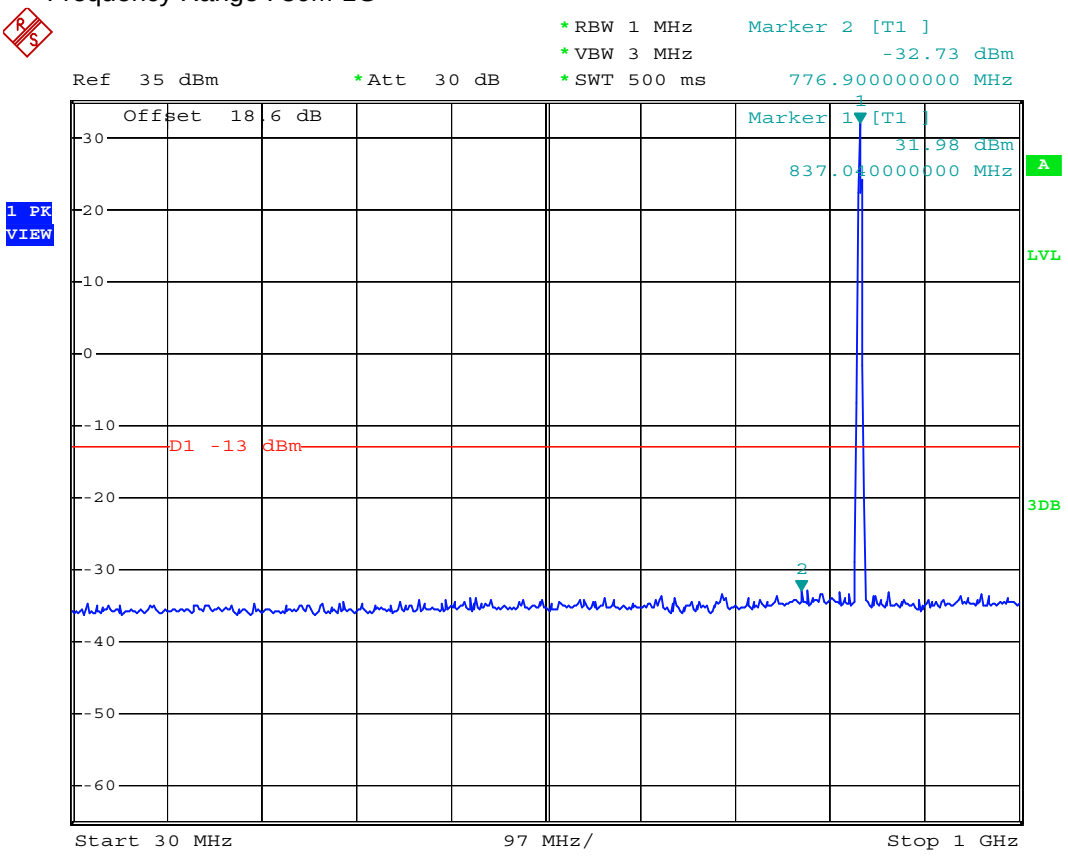
c. The conducted spurious emission for the whole frequency range was taken.

4.5.3 Test Setup Layout



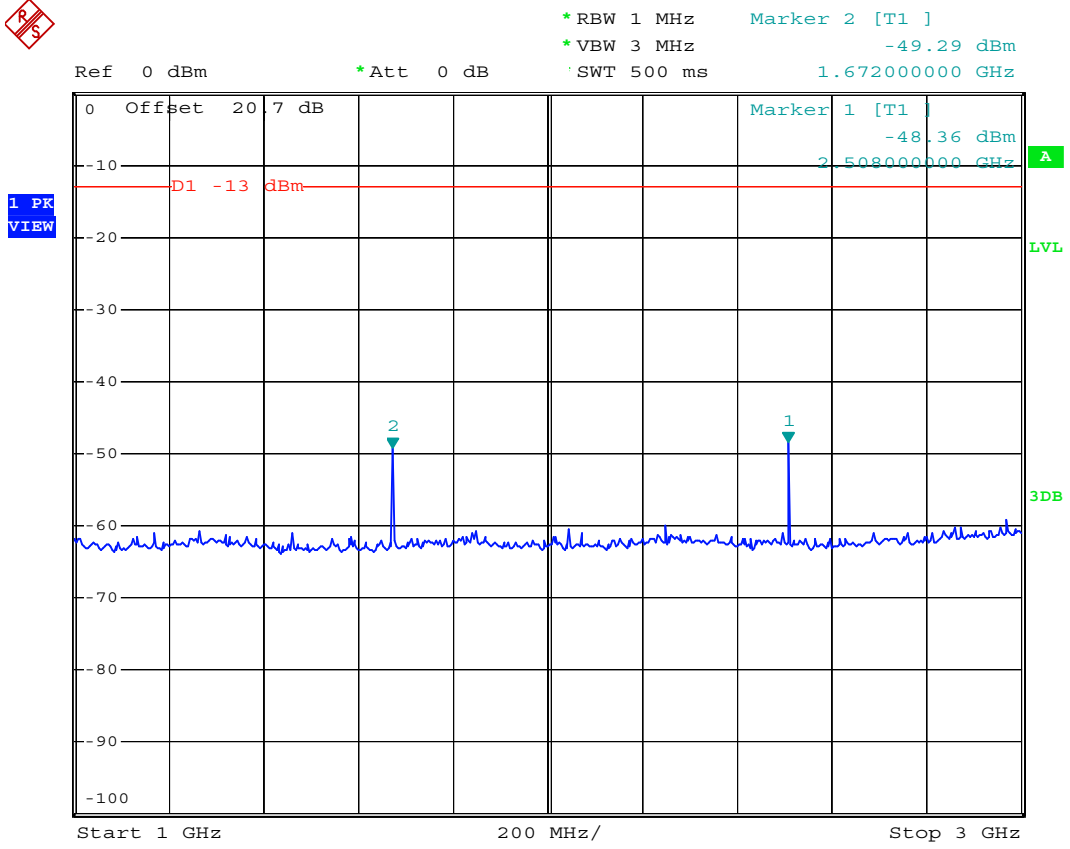
4.5.4 Test Result

- Mode 1
- Test Mode : GSM850 (GSM) CH189
- Frequency Range : 30M-1G



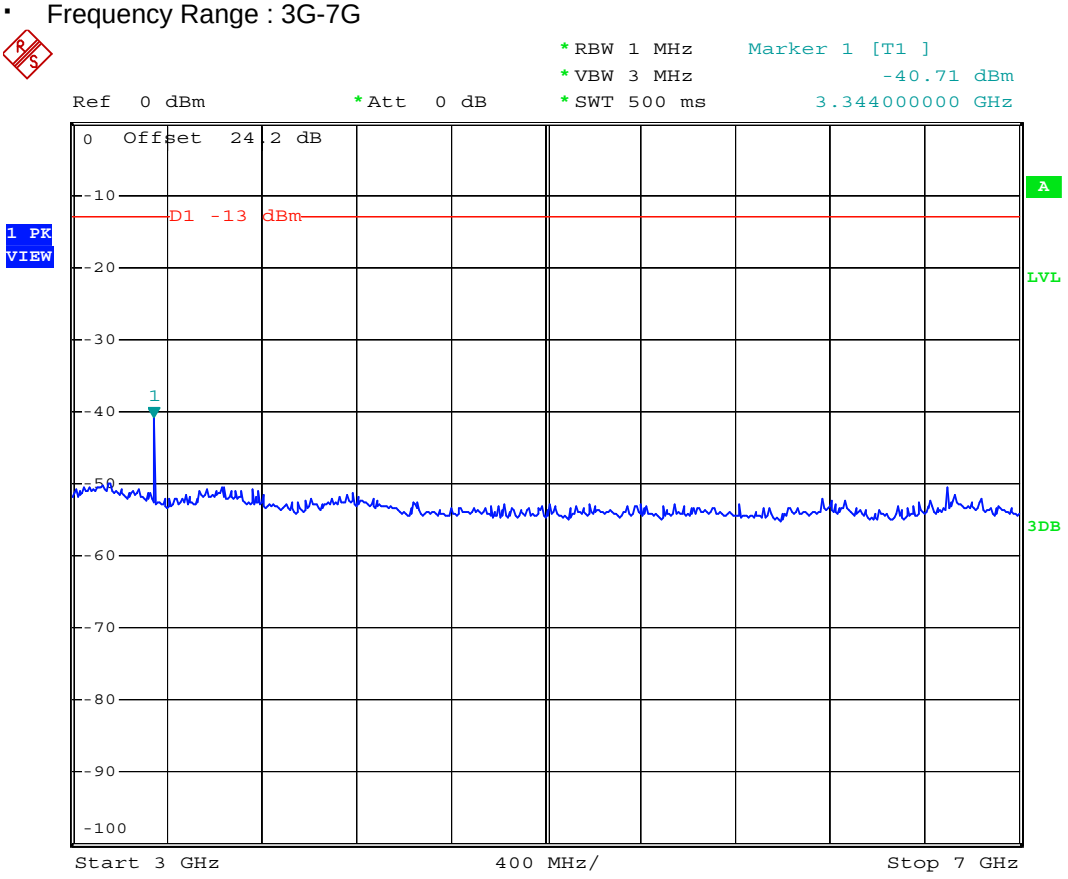
Date: 8.MAY.2008 15:43:38

- Test Mode : GSM850 (GSM) CH189
- Frequency Range : 1G-3G



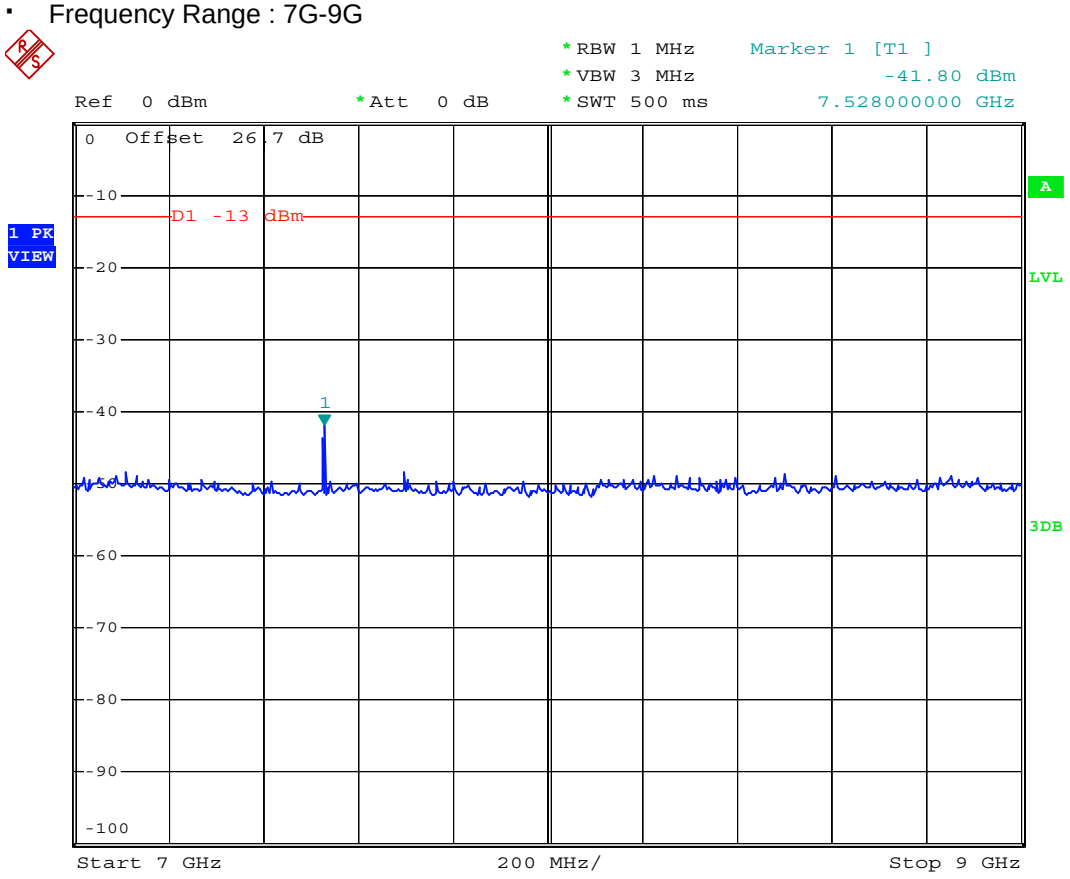
Date: 8.MAY.2008 15:57:34

- Test Mode : GSM850 (GSM) CH189
- Frequency Range : 3G-7G



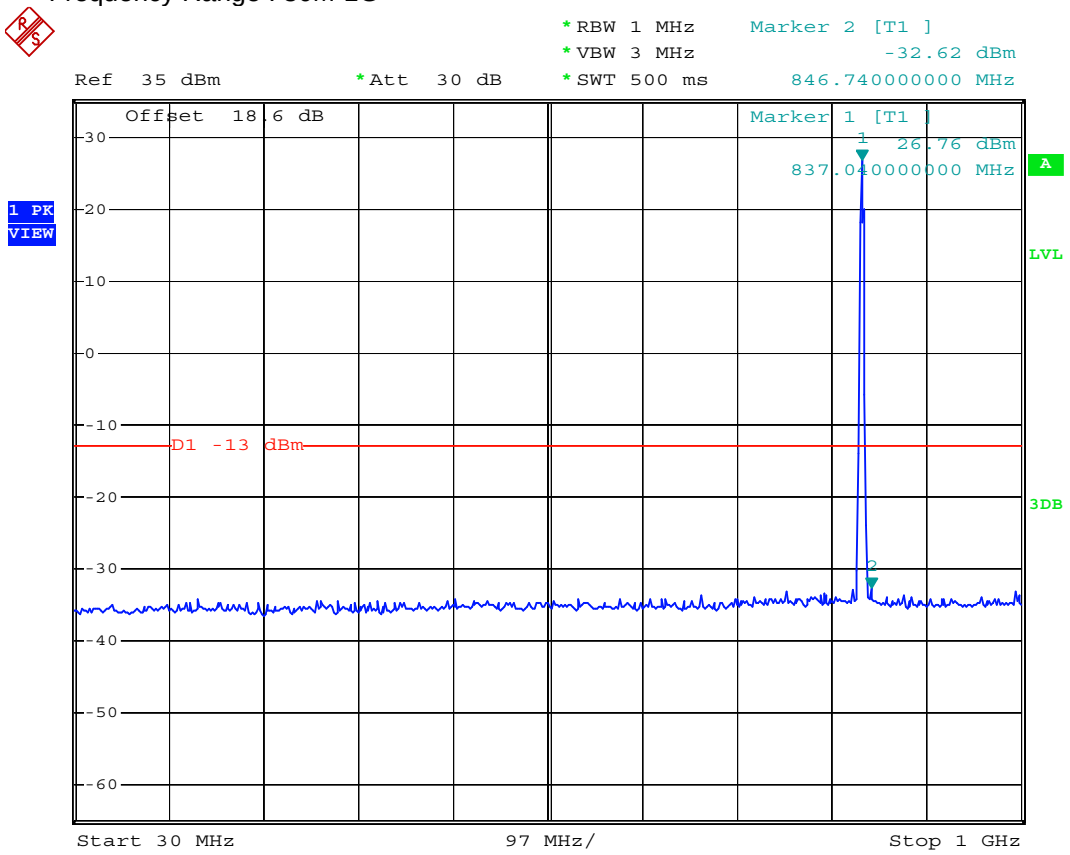
Date: 8.MAY.2008 16:00:41

- Test Mode : GSM850 (GSM) CH189
- Frequency Range : 7G-9G



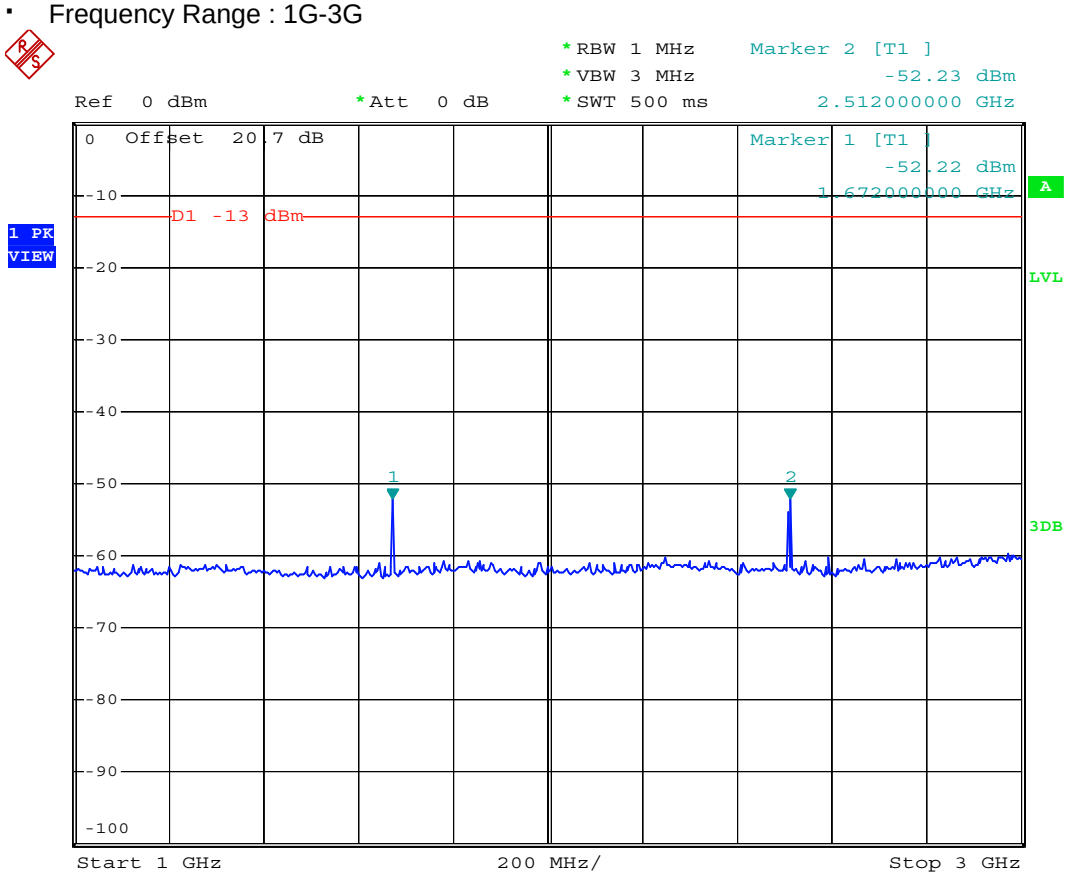
Date: 8.MAY.2008 16:02:03

- Mode 2
- Test Mode : GSM850 (EDGE) CH189
- Frequency Range : 30M-1G



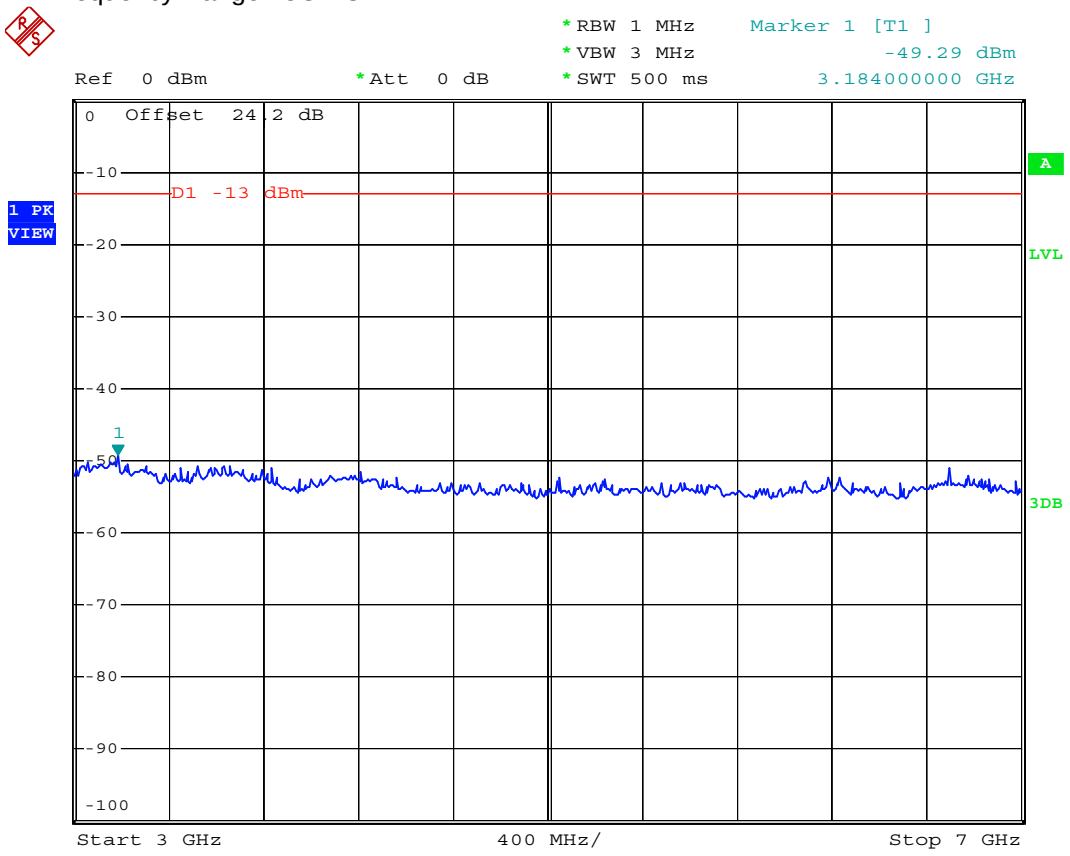
Date: 5.JUN.2008 01:07:37

- Test Mode : GSM850 (EDGE) CH189
- Frequency Range : 1G-3G



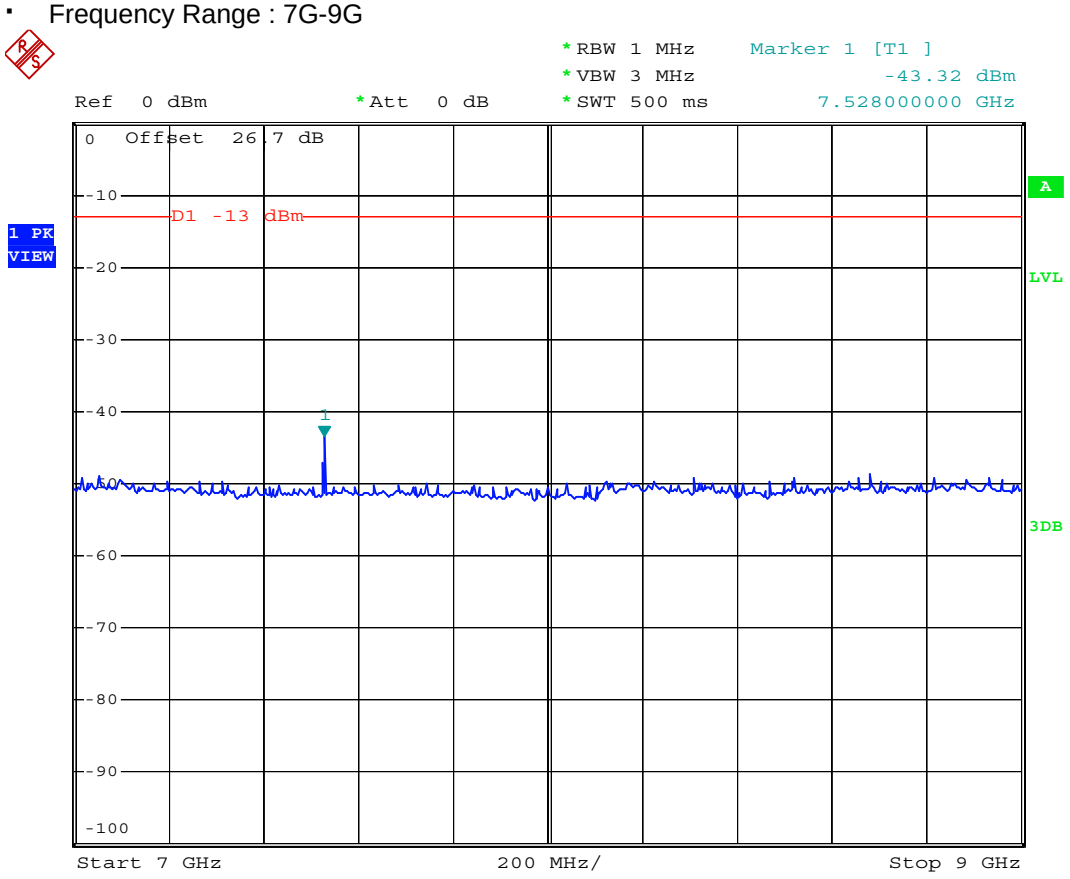
Date: 8.MAY.2008 15:58:30

- Test Mode : GSM850 (EDGE) CH189
- Frequency Range : 3G-7G



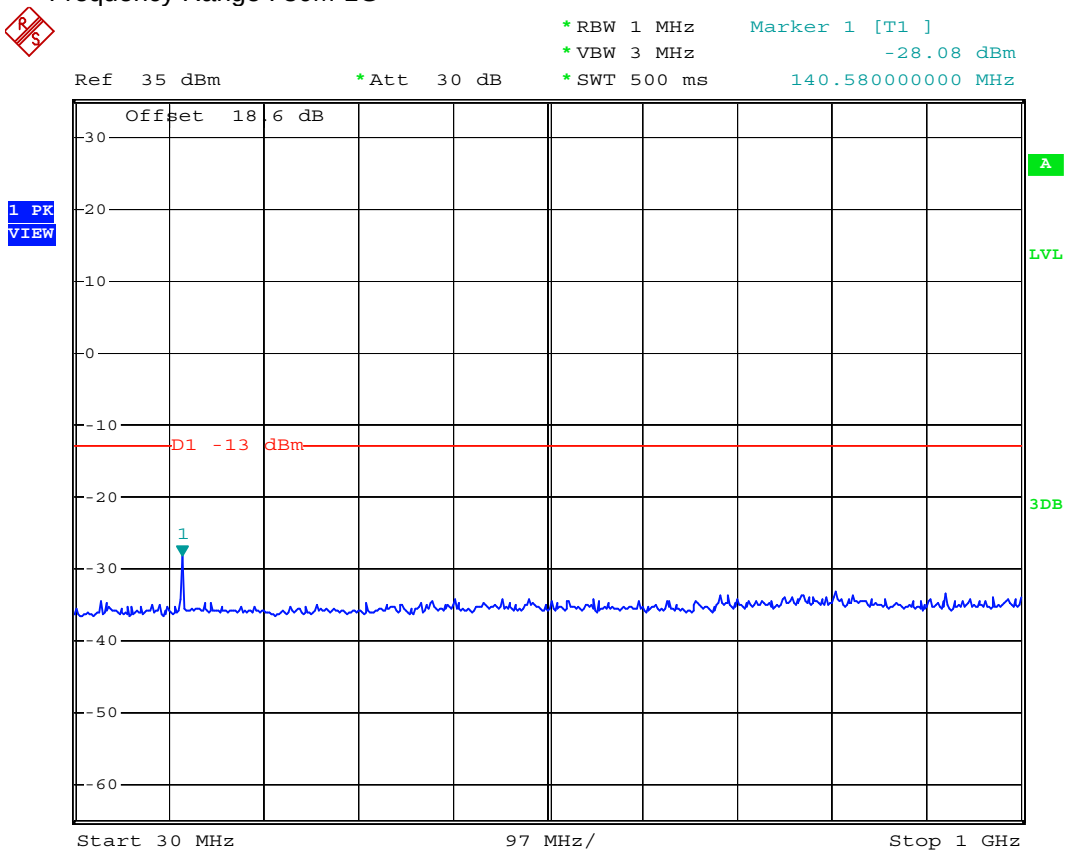
Date: 8.MAY.2008 15:59:08

- Test Mode : GSM850 (EDGE) CH189
- Frequency Range : 7G-9G



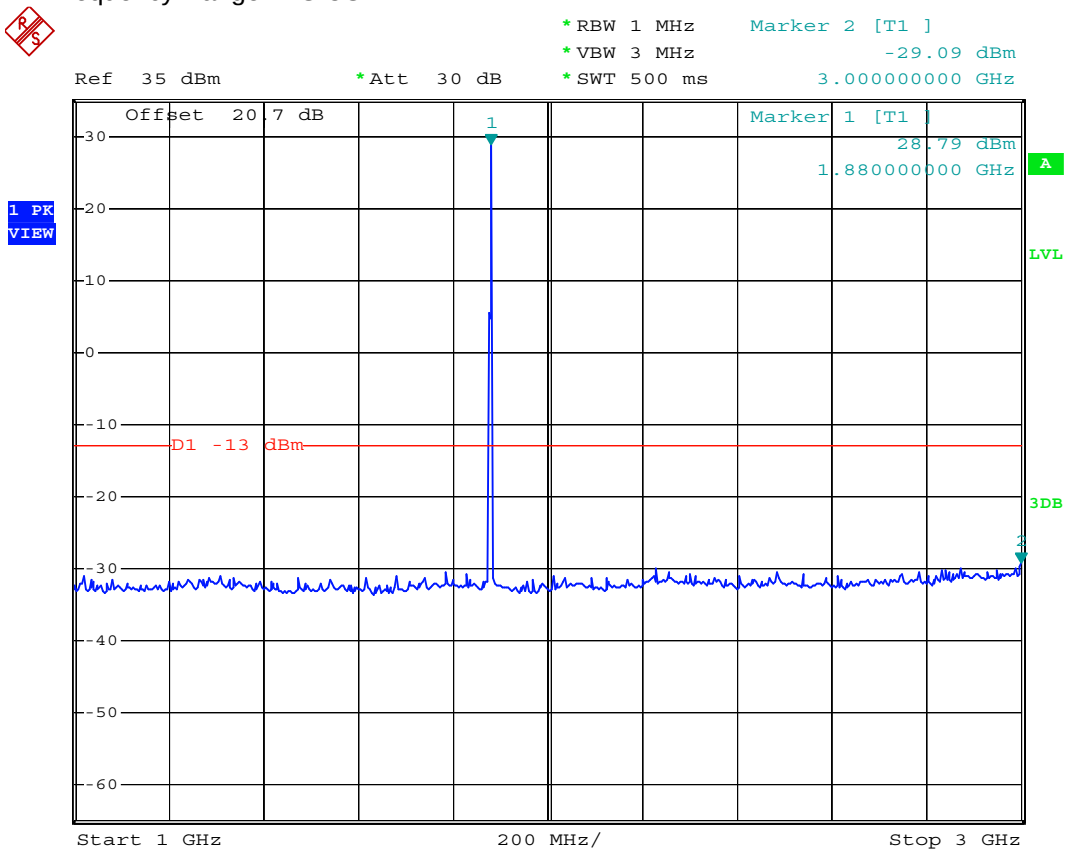
Date: 8.MAY.2008 16:03:46

- Mode 3
- Test Mode : GSM1900 (GSM) CH661
- Frequency Range : 30M-1G



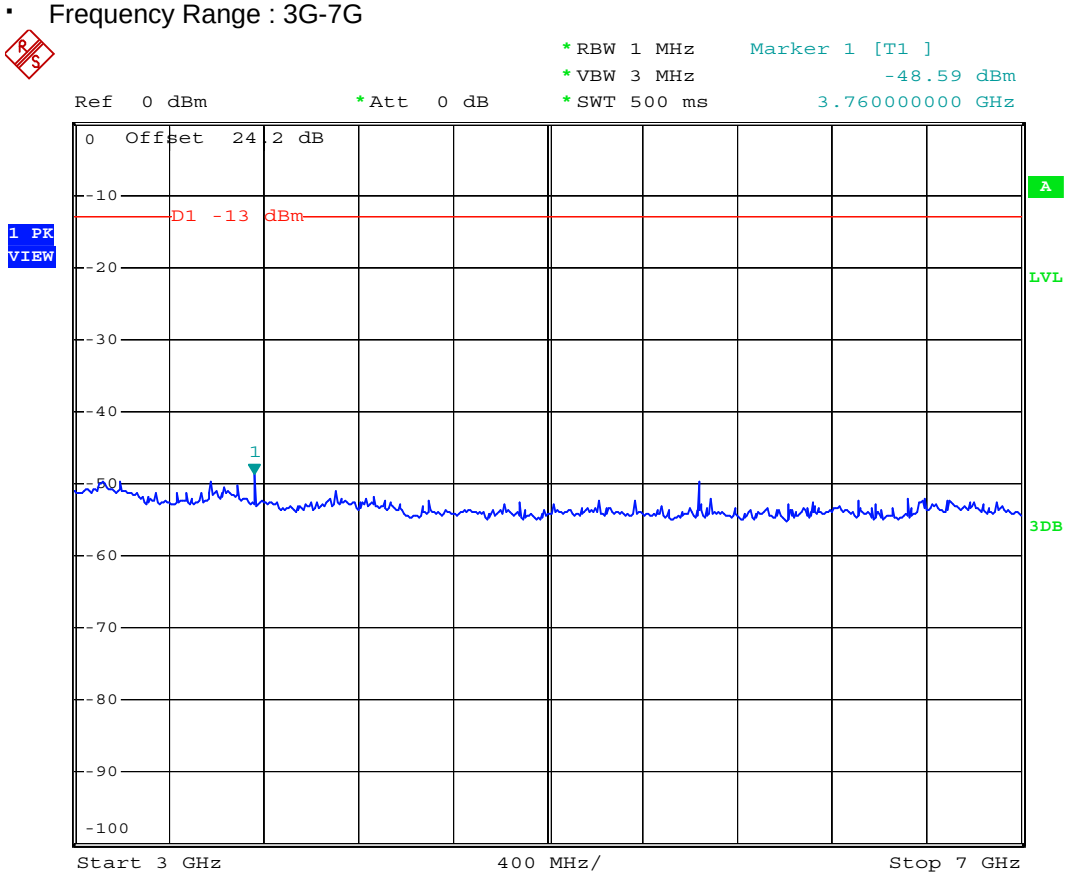
Date: 8.MAY.2008 15:42:31

- Test Mode : GSM1900 (GSM) CH661
- Frequency Range : 1G-3G



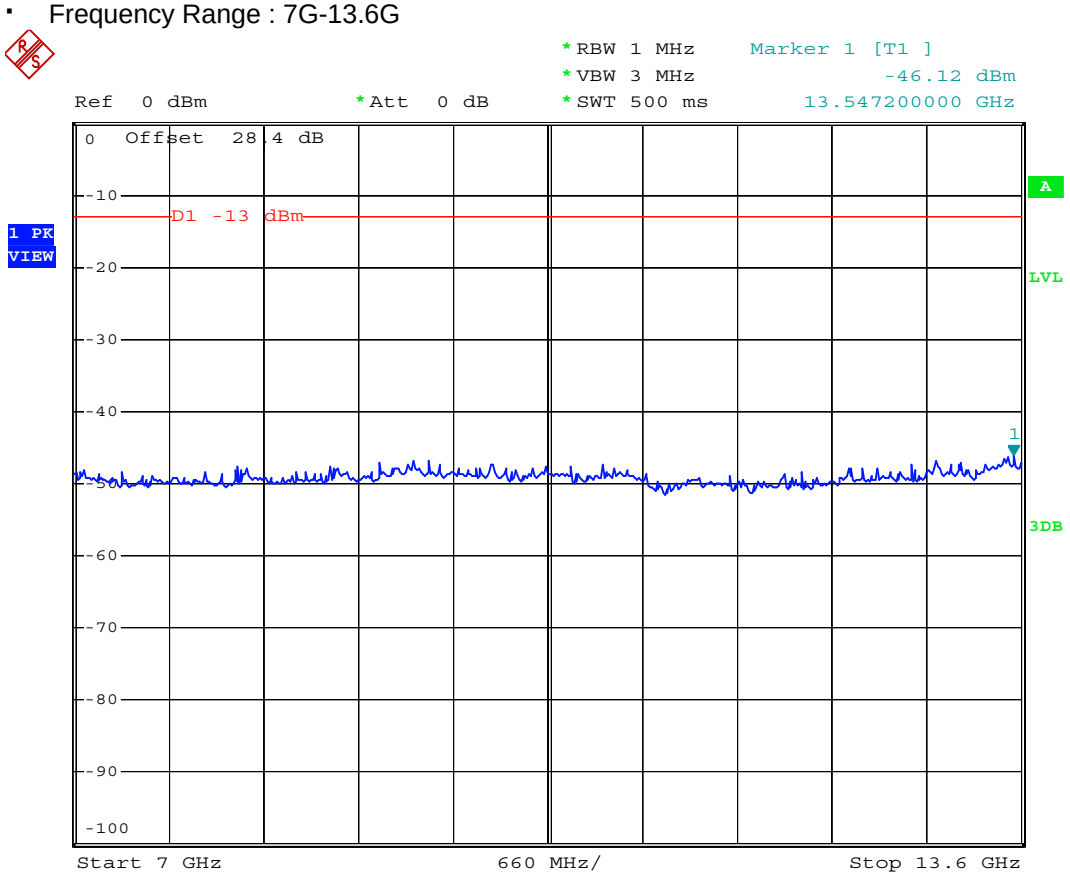
Date: 8.MAY.2008 15:54:19

- Test Mode : GSM1900 (GSM) CH661
- Frequency Range : 3G-7G



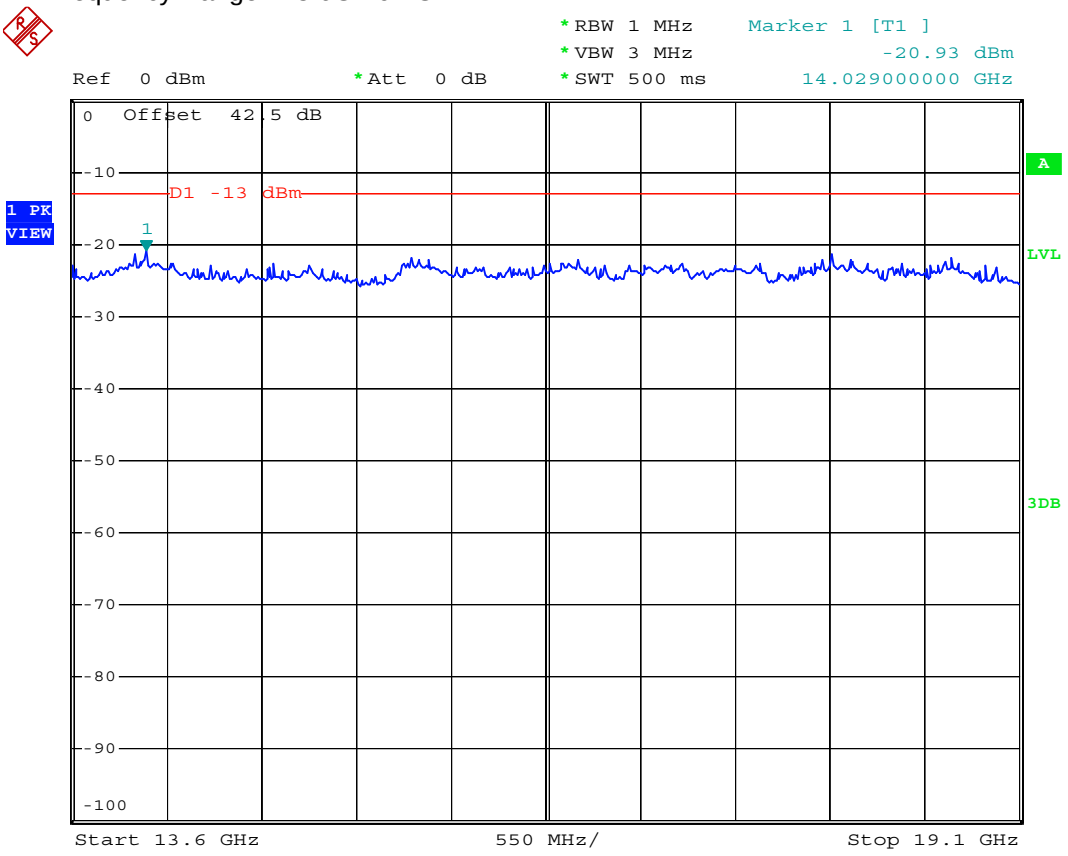
Date: 8.MAY.2008 16:01:09

- Test Mode : GSM1900 (GSM) CH661
- Frequency Range : 7G-13.6G



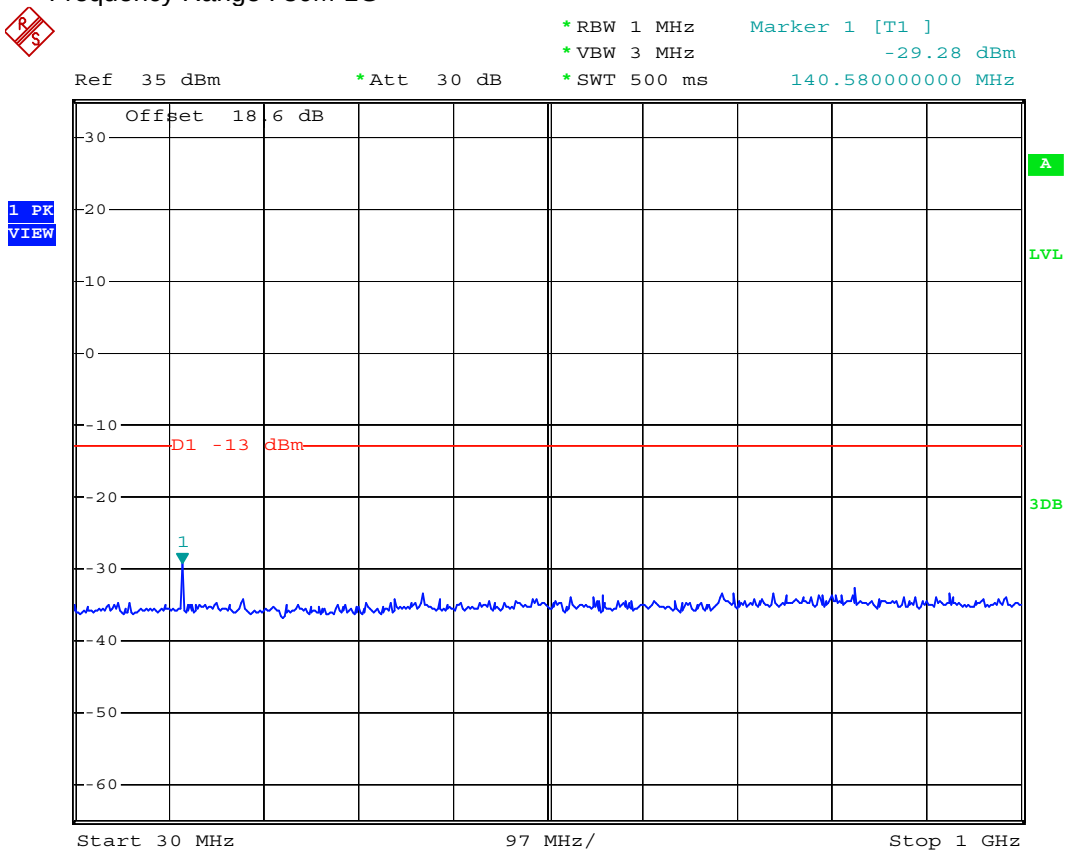
Date: 8.MAY.2008 16:05:32

- Test Mode : GSM1900 (GSM) CH661
- Frequency Range : 13.6G-19.1G



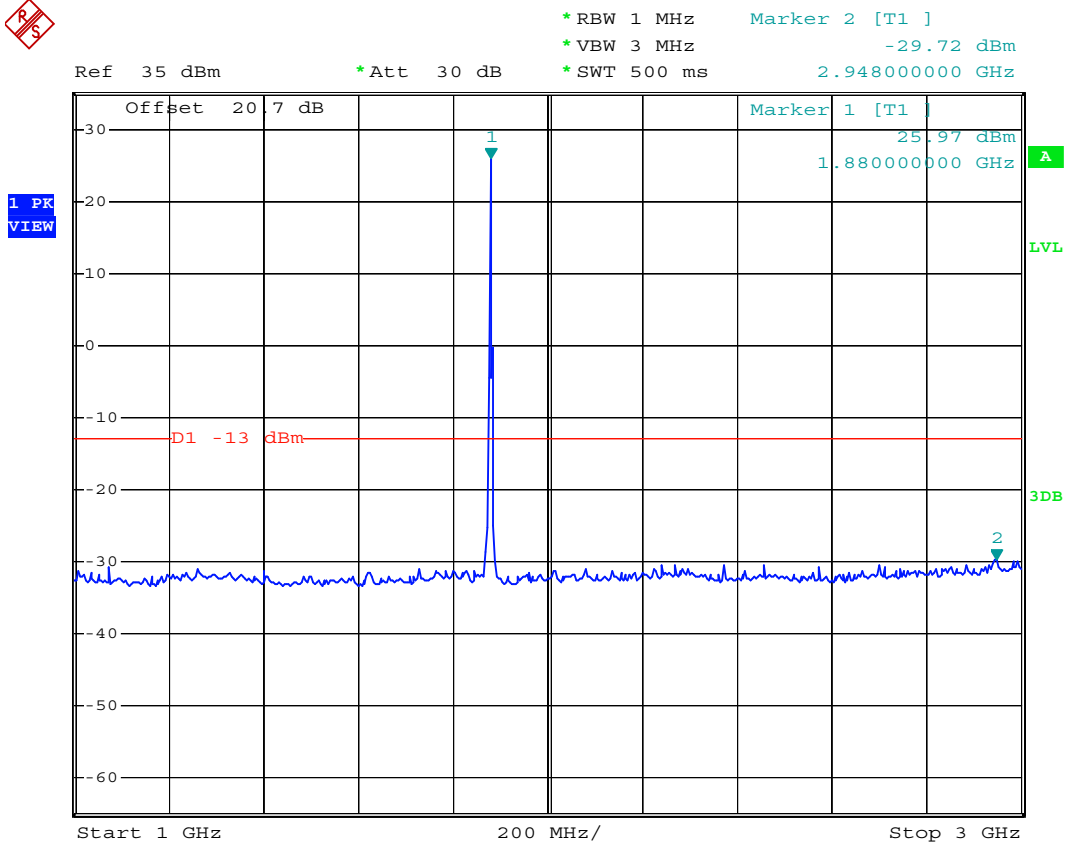
Date: 8.MAY.2008 16:07:48

- Mode 4
- Test Mode : GSM1900 (EDGE) CH661
- Frequency Range : 30M-1G



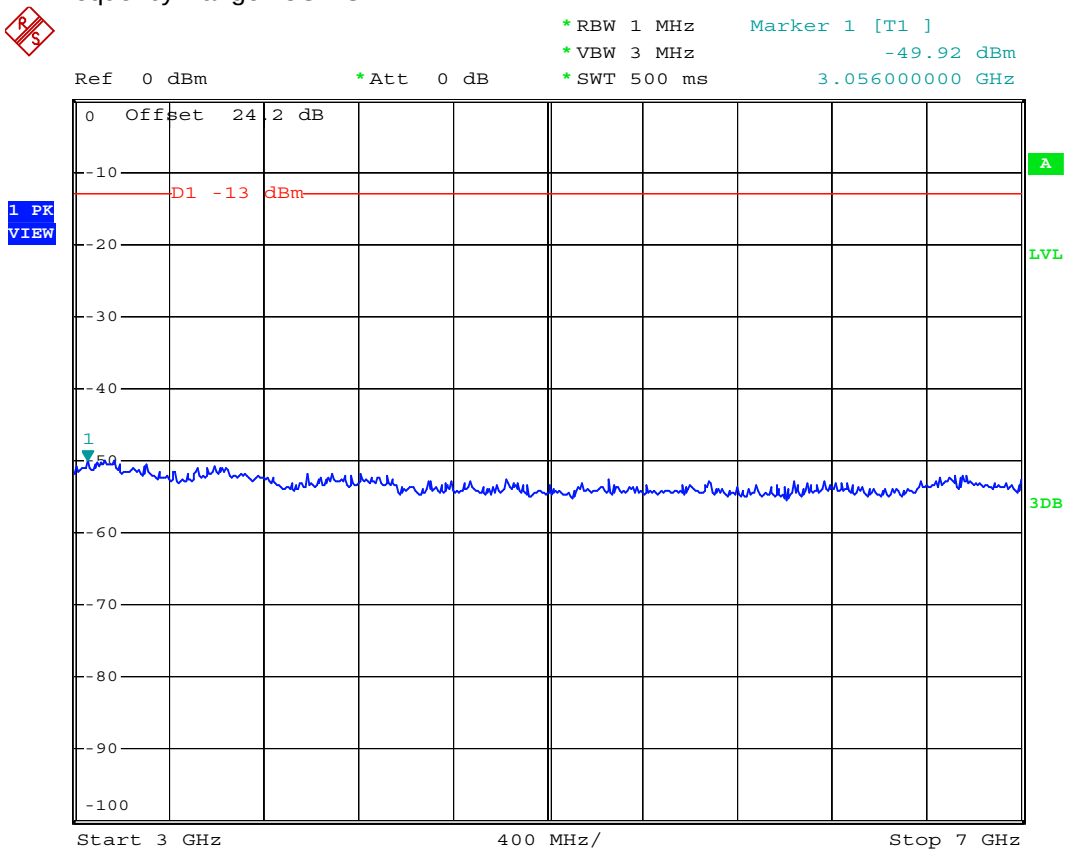
Date: 8.MAY.2008 15:45:41

- Test Mode : GSM1900 (EDGE) CH661
- Frequency Range : 1G-3G



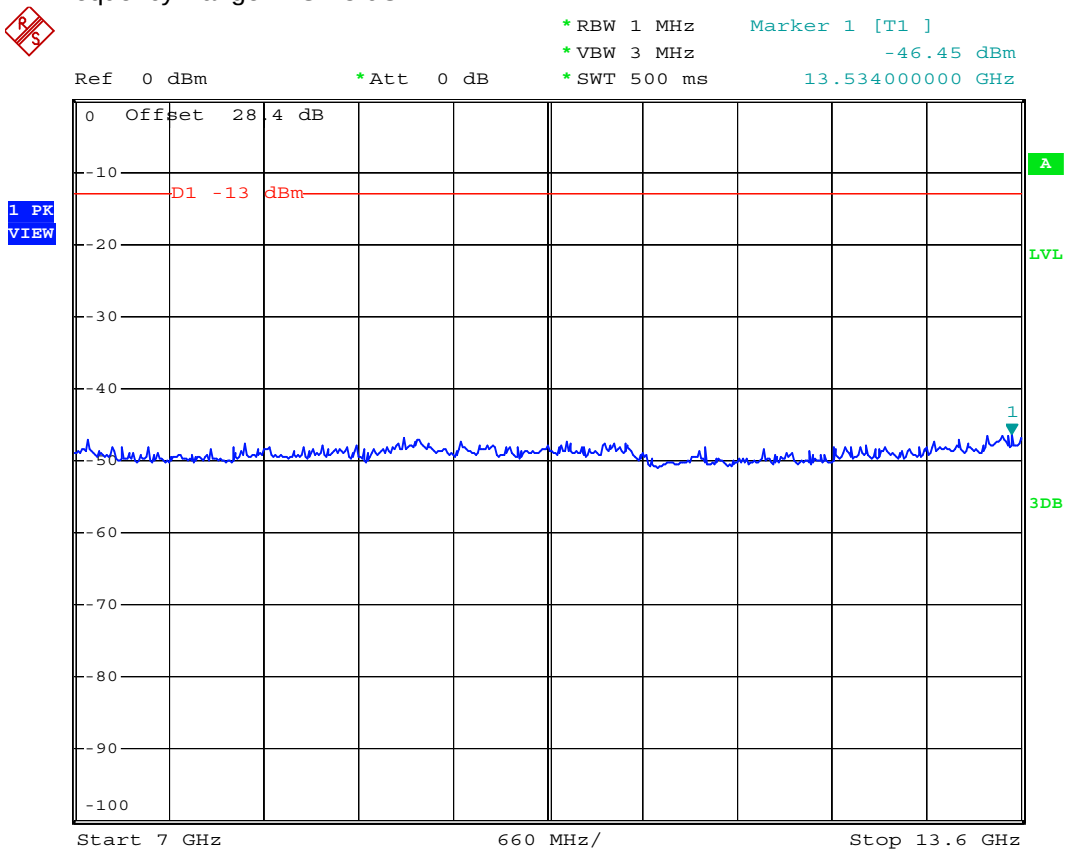
Date: 8.MAY.2008 15:48:22

- Test Mode : GSM1900 (EDGE) CH661
- Frequency Range : 3G-7G



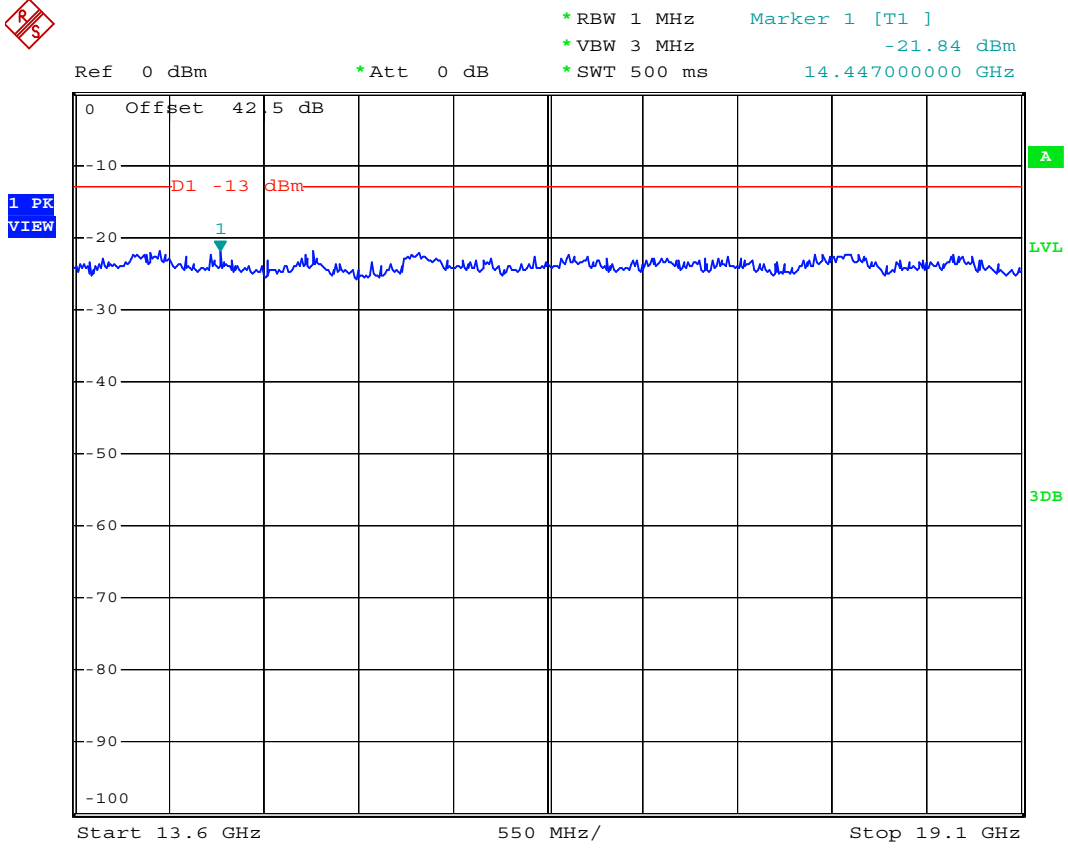
Date: 8.MAY.2008 16:00:10

- Test Mode : GSM1900 (EDGE) CH661
- Frequency Range : 7G-13.6G



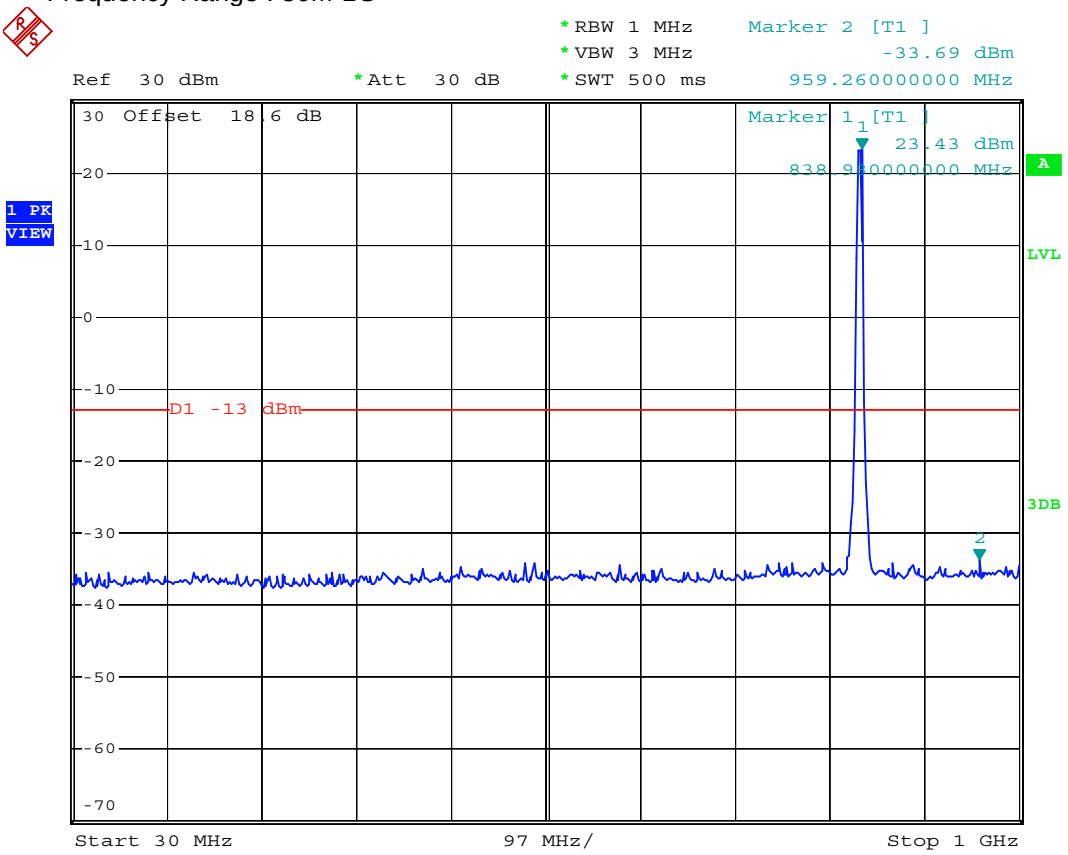
Date: 8.MAY.2008 16:05:58

- Test Mode : GSM1900 (EDGE) CH661
- Frequency Range : 13.6G-19.1G



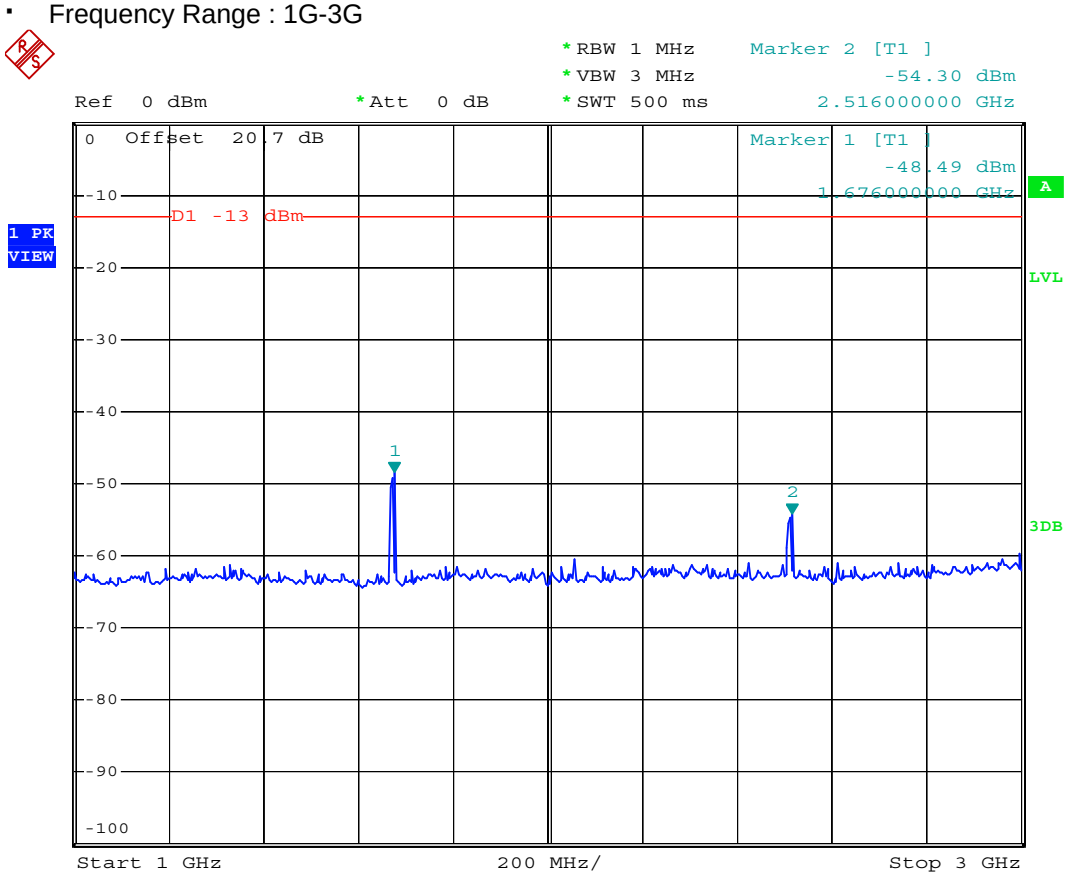
Date: 8.MAY.2008 16:07:20

- Mode 5
- Test Mode : WCDMA Band V CH4182
- Frequency Range : 30M-1G



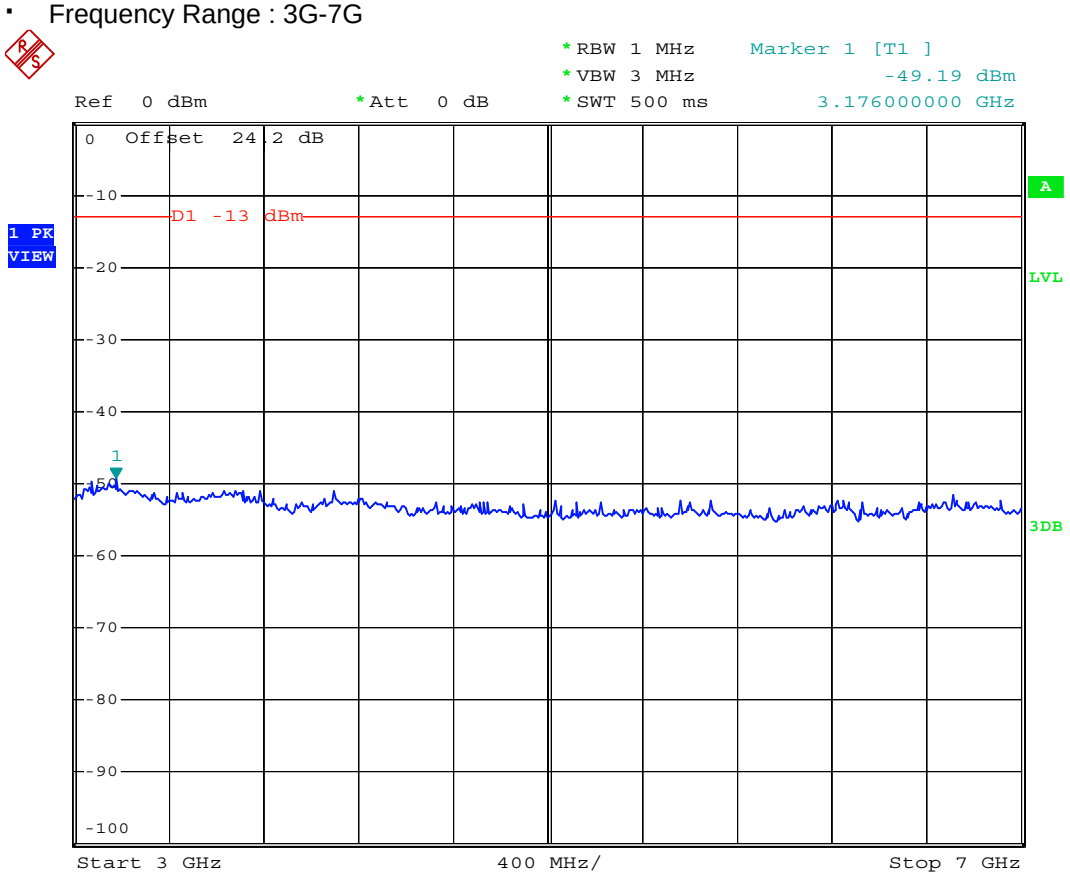
Date: 13.MAY.2008 16:30:22

- Test Mode : WCDMA Band V CH4182
- Frequency Range : 1G-3G



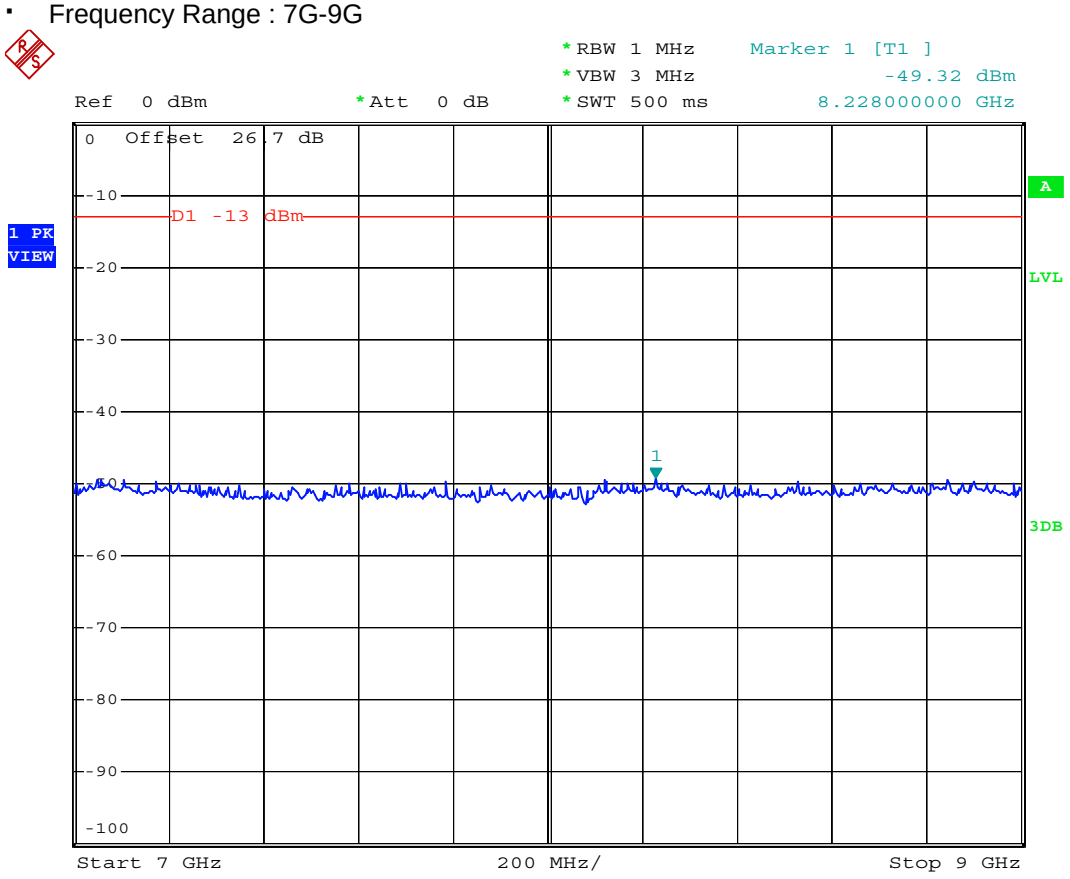
Date: 13.MAY.2008 16:54:46

- Test Mode : WCDMA Band V CH4182
- Frequency Range : 3G-7G



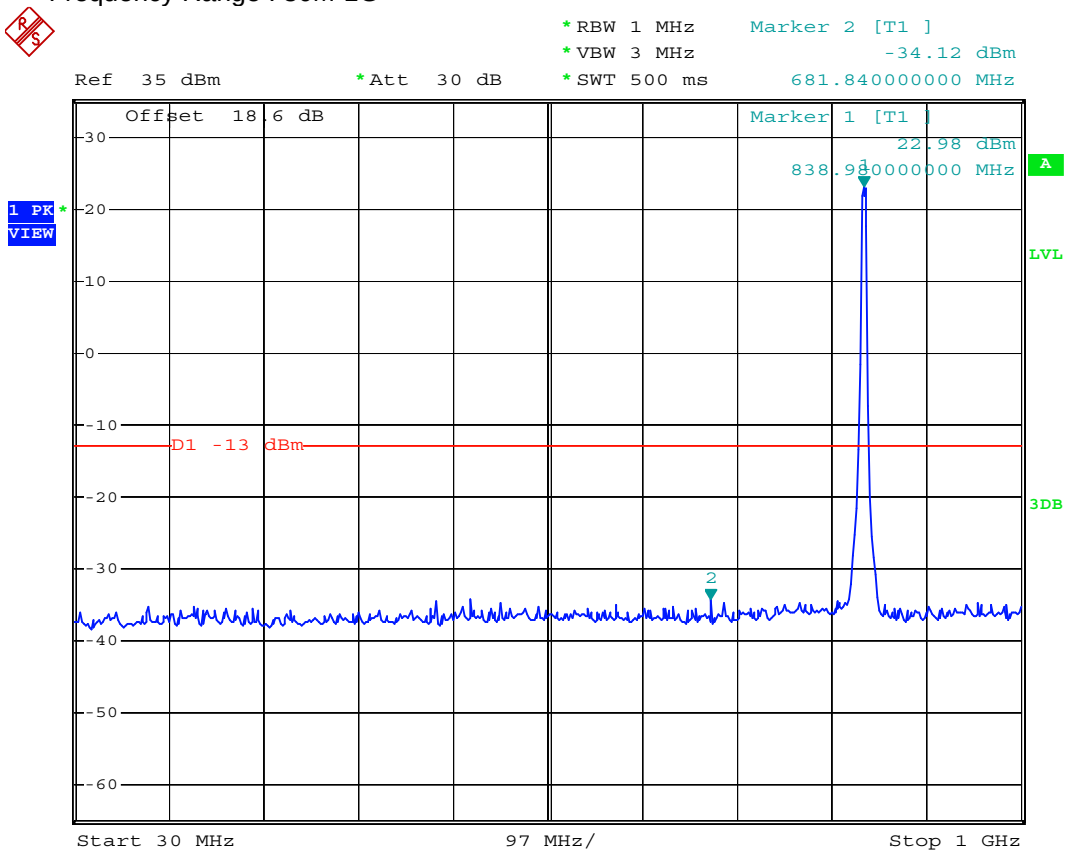
Date: 13.MAY.2008 16:57:14

- Test Mode : WCDMA Band V CH4182
- Frequency Range : 7G-9G



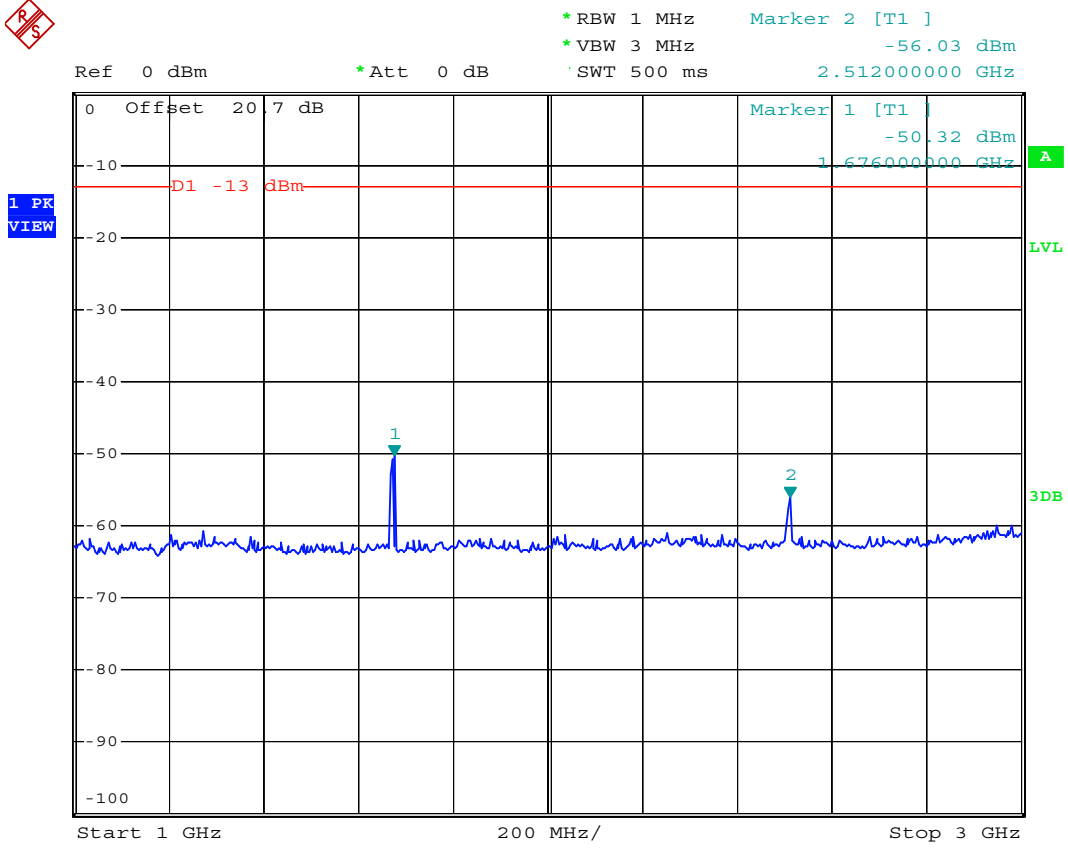
Date: 13.MAY.2008 17:00:50

- Mode 6
- Test Mode : WCDMA Band V (HSUPA) CH4182
- Frequency Range : 30M-1G



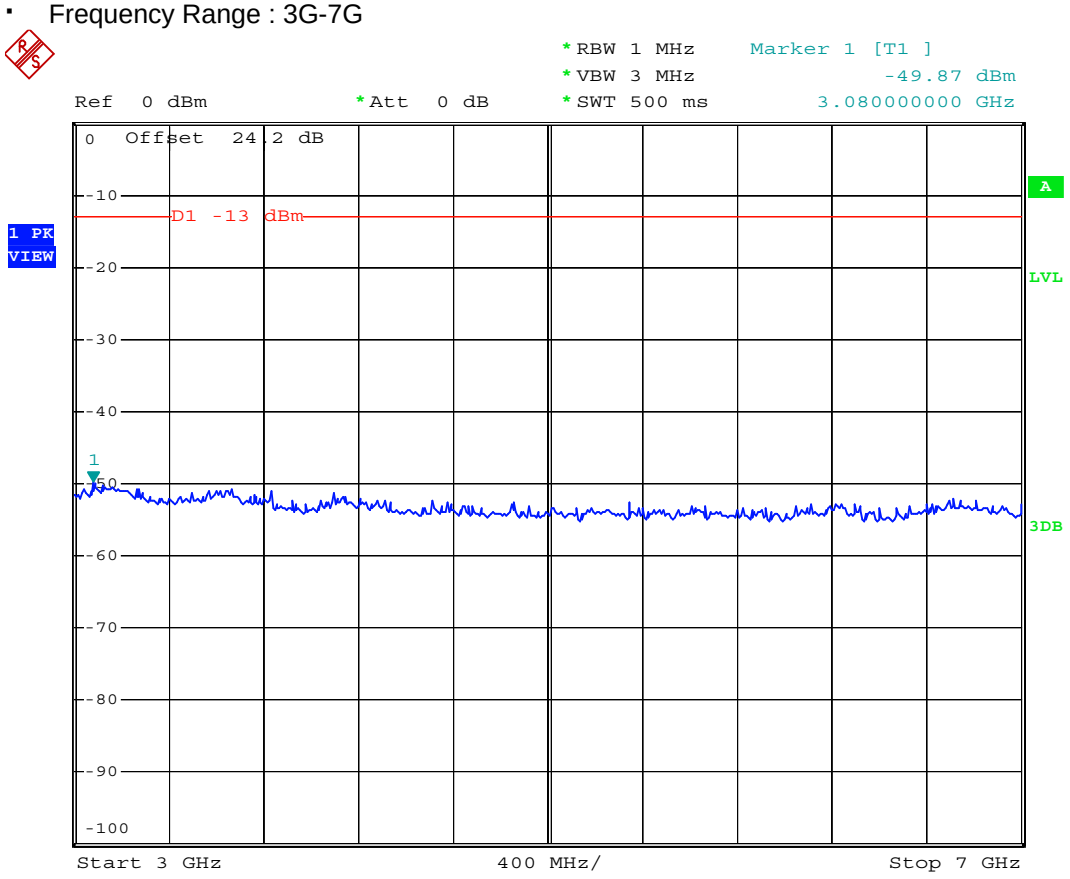
Date: 5.JUN.2008 01:18:44

- Test Mode : WCDMA Band V (HSUPA) CH4182
- Frequency Range : 1G-3G



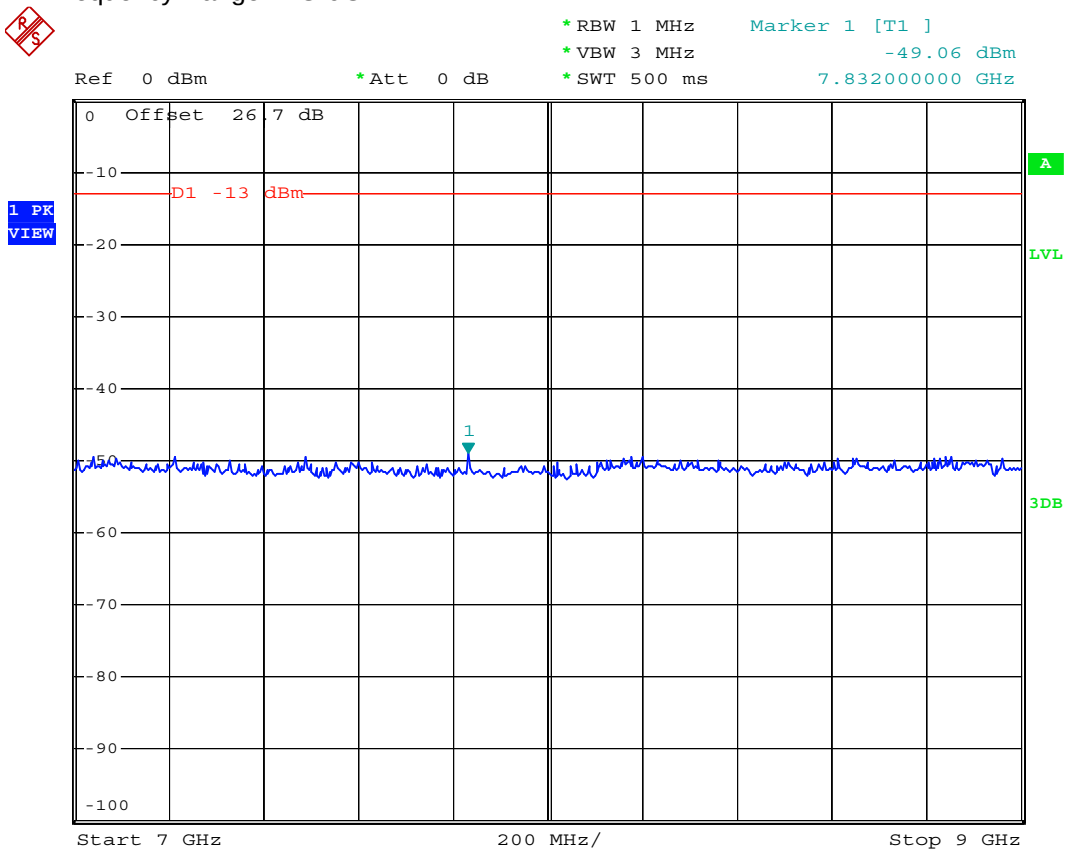
Date: 13.MAY.2008 16:52:35

- Test Mode : WCDMA Band V (HSUPA) CH4182
- Frequency Range : 3G-7G



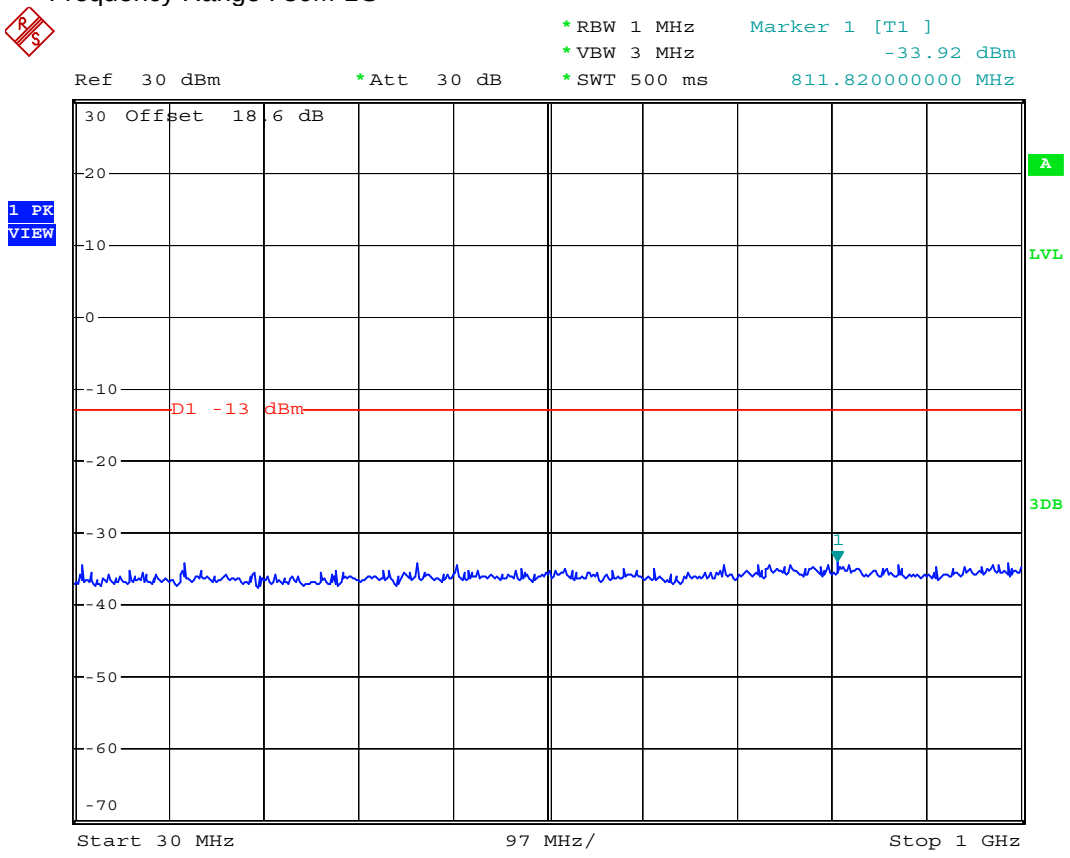
Date: 13.MAY.2008 16:59:32

- Test Mode : WCDMA Band V (HSUPA) CH4182
- Frequency Range : 7G-9G



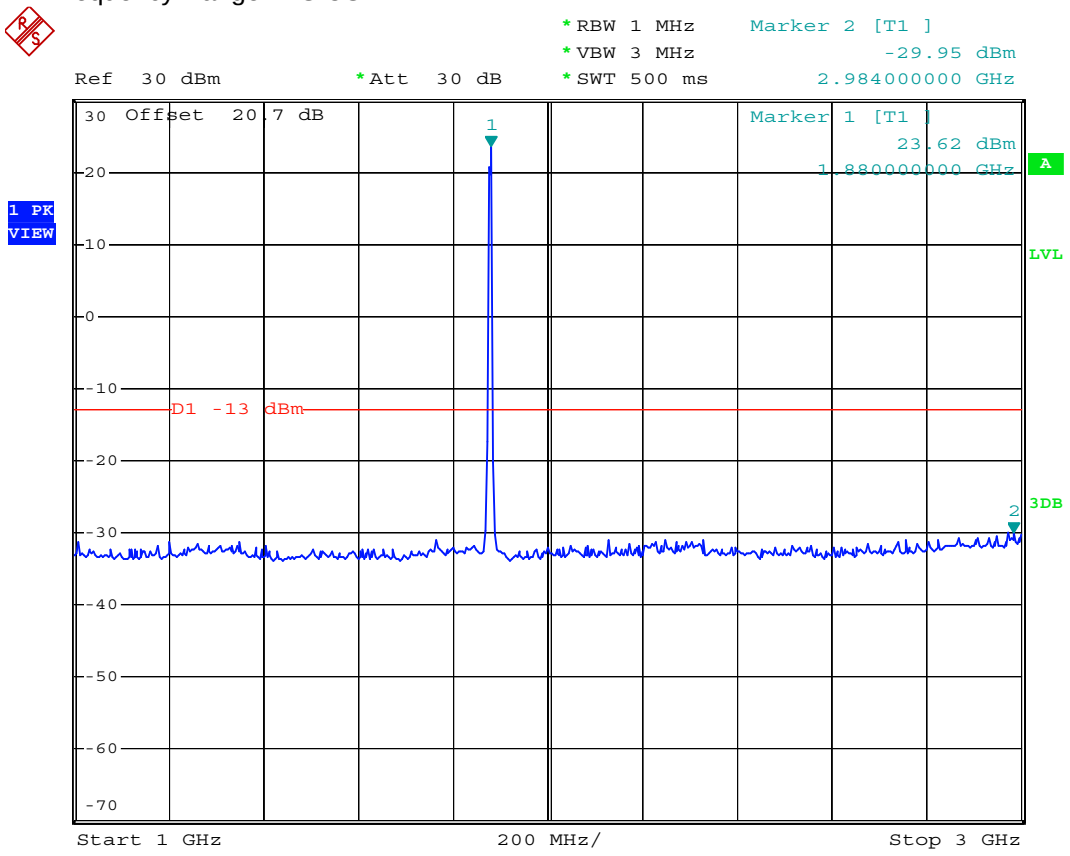
Date: 13.MAY.2008 17:00:15

- Mode 7
- Test Mode : WCDMA Band II CH9400
- Frequency Range : 30M-1G



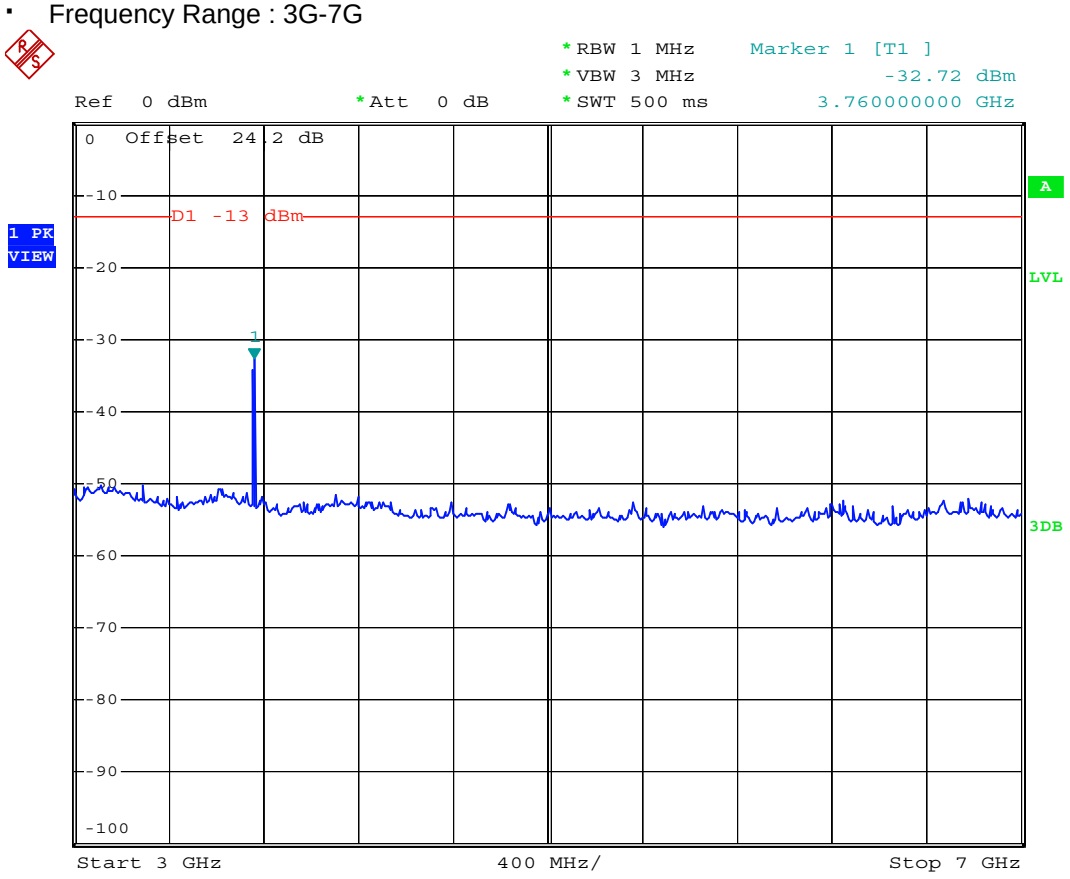
Date: 13.MAY.2008 16:31:20

- Test Mode : WCDMA Band II CH9400
- Frequency Range : 1G-3G



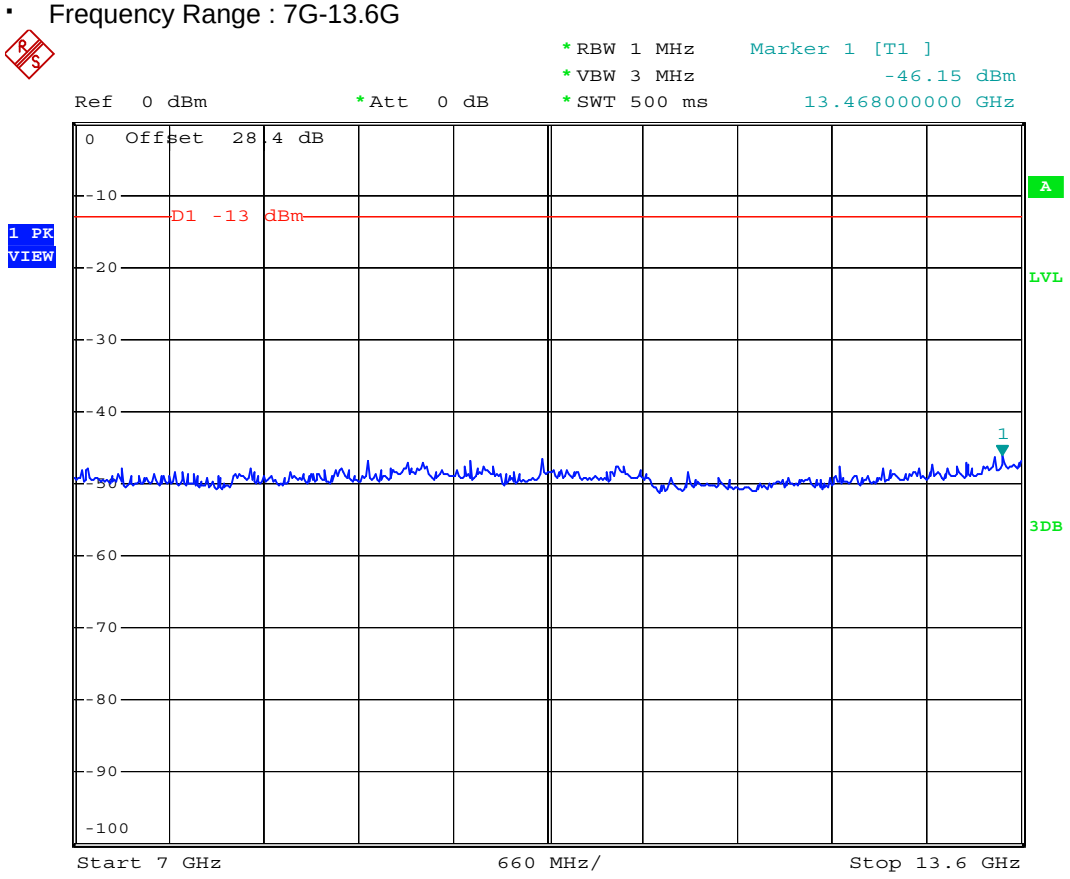
Date: 13.MAY.2008 16:49:28

- Test Mode : WCDMA Band II CH9400
- Frequency Range : 3G-7G



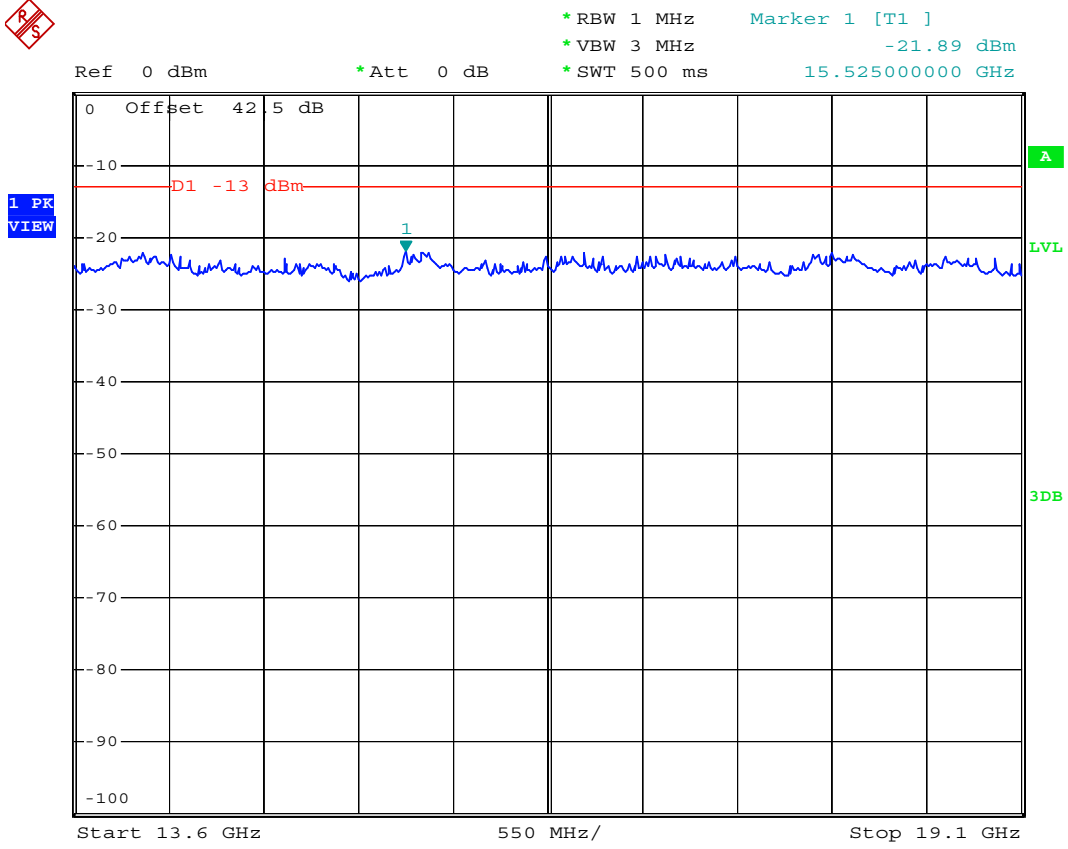
Date: 13.MAY.2008 16:57:39

- Test Mode : WCDMA Band II CH9400
- Frequency Range : 7G-13.6G



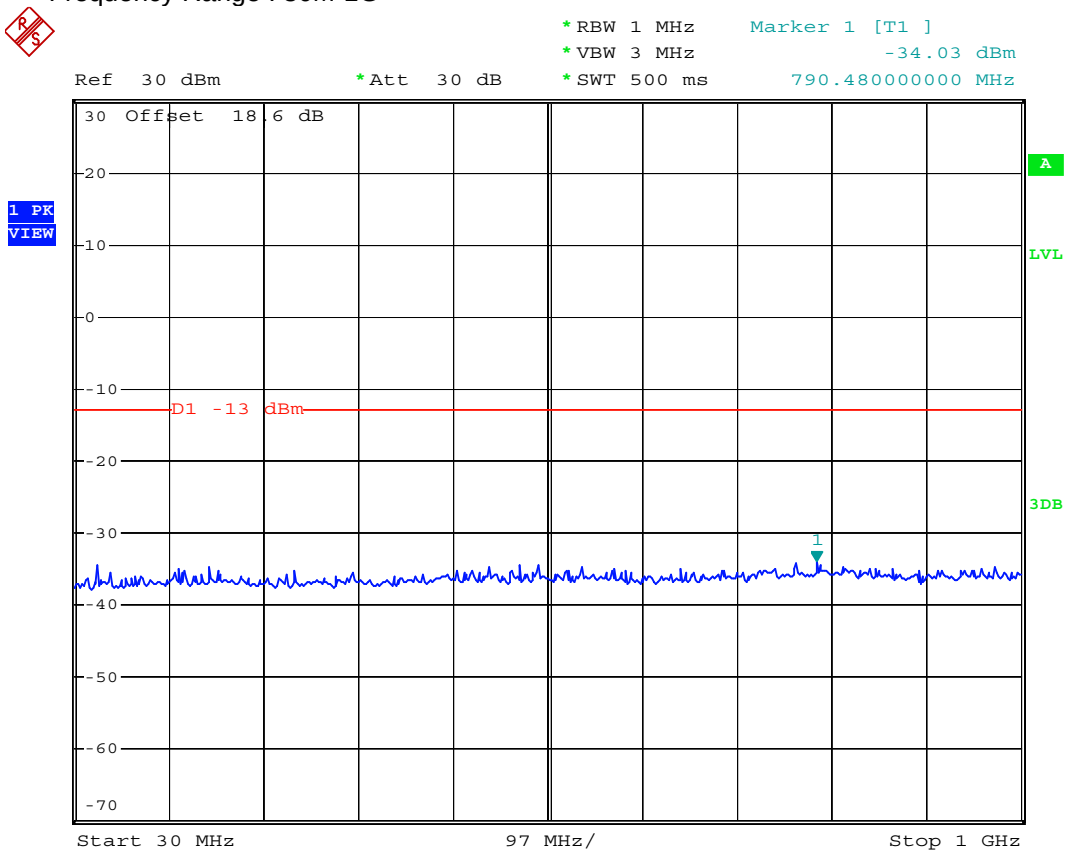
Date: 13.MAY.2008 17:02:04

- Test Mode : WCDMA Band II CH9400
- Frequency Range : 13.6G-19.1G



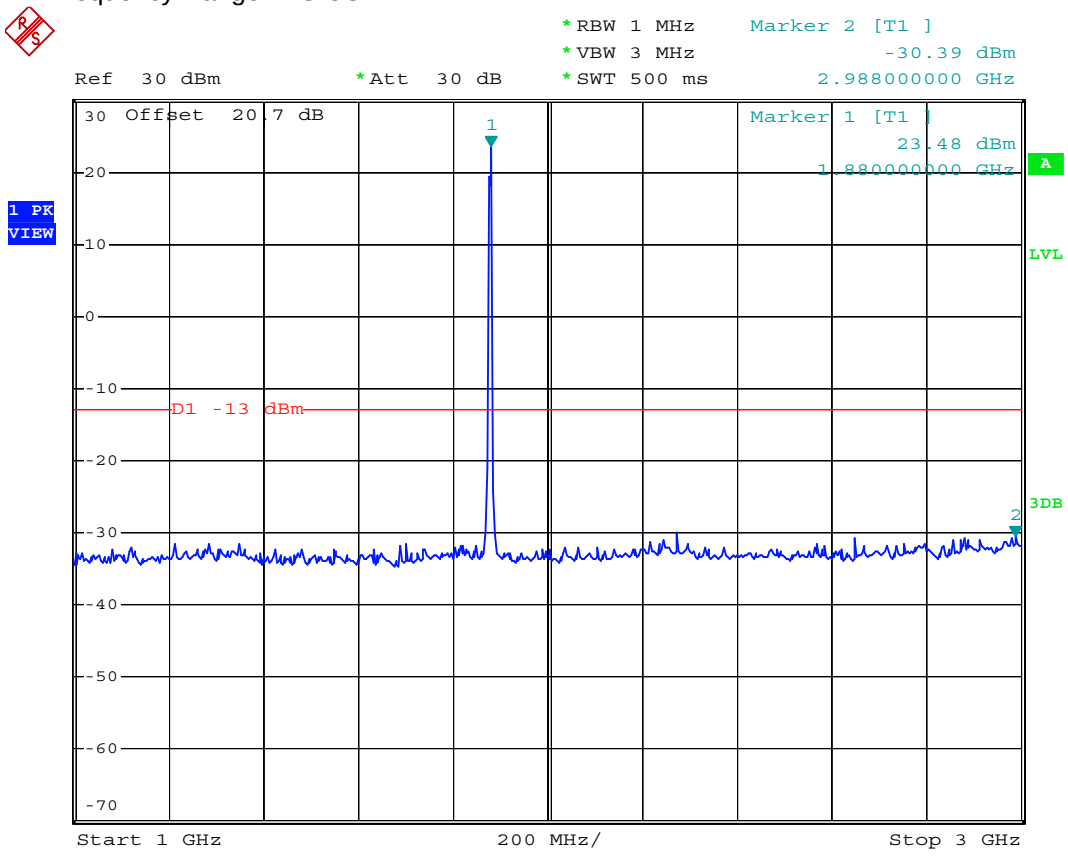
Date: 13.MAY.2008 17:04:09

- Mode 8
- Test Mode : WCDMA Band II (HSUPA) CH9400
- Frequency Range : 30M-1G



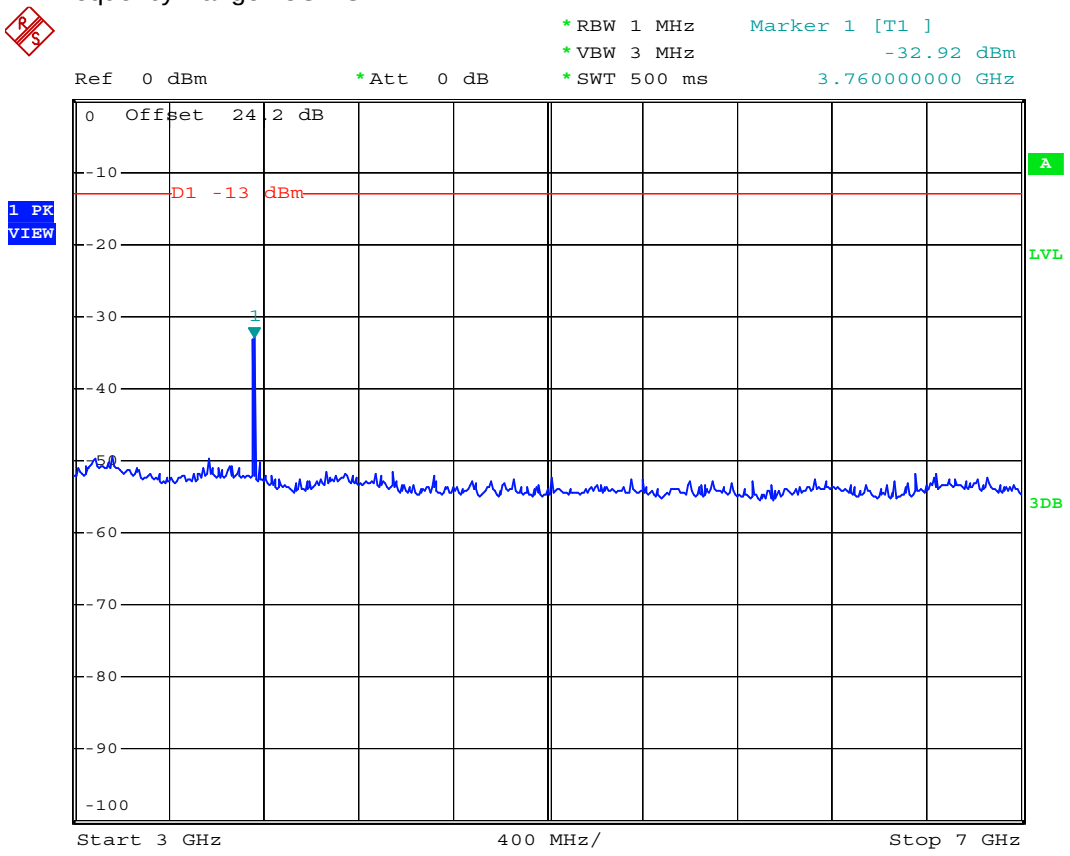
Date: 13.MAY.2008 16:33:36

- Test Mode : WCDMA Band II (HSUPA) CH9400
- Frequency Range : 1G-3G



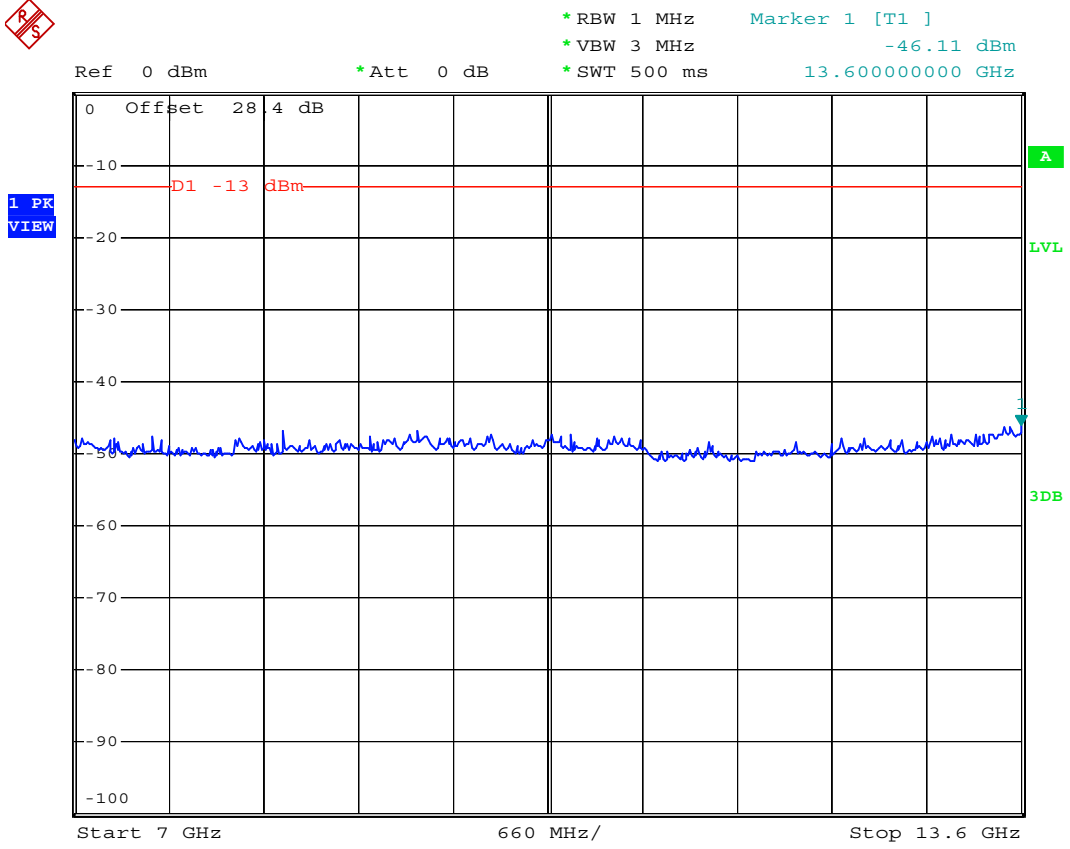
Date: 13.MAY.2008 16:50:46

- Test Mode : WCDMA Band II (HSUPA) CH9400
- Frequency Range : 3G-7G



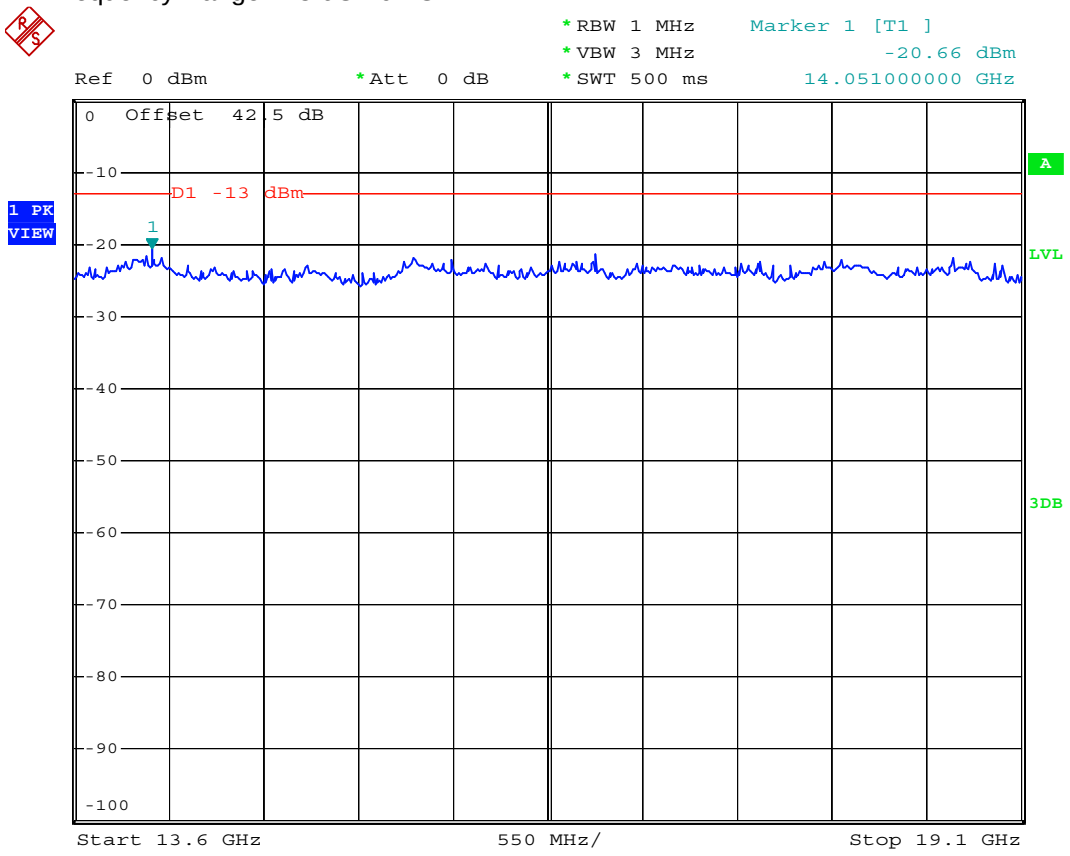
Date: 13.MAY.2008 16:59:03

- Test Mode : WCDMA Band II (HSUPA) CH9400
- Frequency Range : 7G-13.6G



Date: 13.MAY.2008 17:02:54

- Test Mode : WCDMA Band II (HSUPA) CH9400
- Frequency Range : 13.6G-19.1G



Date: 13.MAY.2008 17:03:44

4.6 Field Strength of Spurious Radiation

Equivalent isotropic radiated Power Measurements by substitution method according to ANSI/TIA/EIA-603-C.

4.6.1 Measurement Instruments

As described in chapter 5 of this test report.

4.6.2 Test Procedure

a. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.

b. The EUT was set 3 meters from the receiving antenna which was mounted on the antenna tower.

c. The table was rotated 360 degrees to determine the position of the highest spurious emission.

d. The height of the receiving antenna is varied between one meter and four meters to reach the maximum spurious emission for both horizontal and vertical polarizations.

e. Taking the record of maximum spurious emission.

f. A Horn antenna was substituted in place of the EUT and was driven by a signal generator.

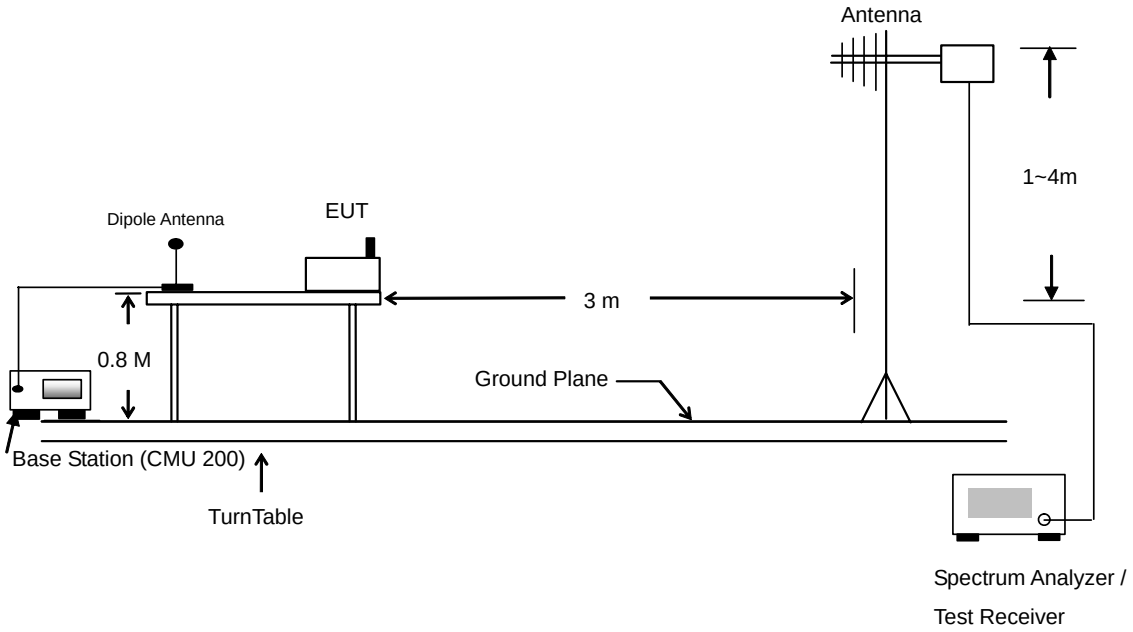
g. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.

h. Taking the recored of output power at antenna port.

i. Repeat step 7 to step 8 for another polarization.

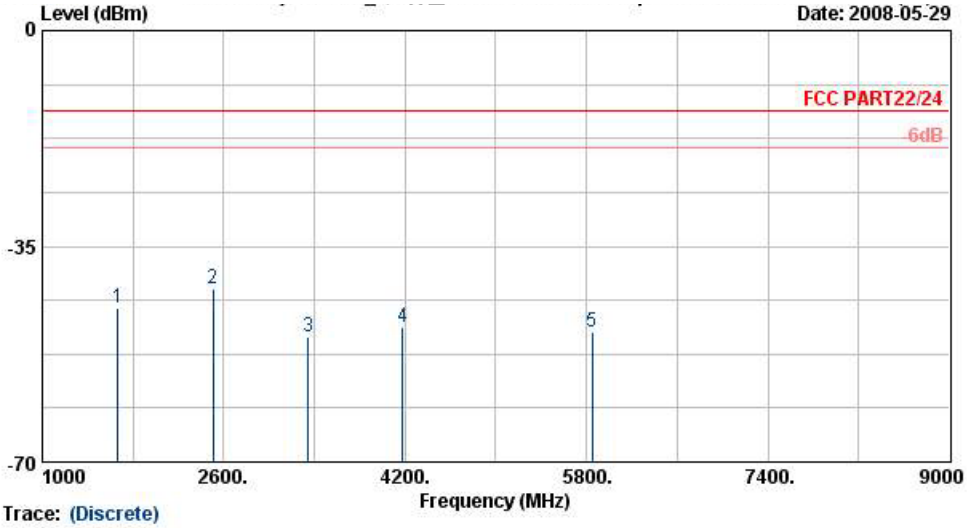
j. Emission level (dBm) = output power + substitution Gain.

4.6.3 Test Setup Layout



4.6.4 Test Data

- Mode 1
- Horizontal Polarization

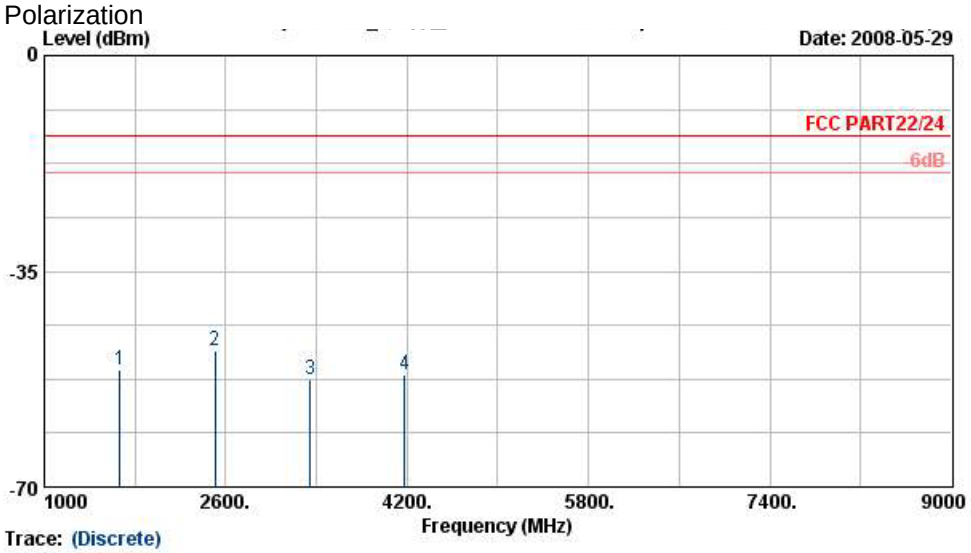


Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : GSM 850 Link; Ch189 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-45.09	-13	-32.09	-52.80	-44.1	3.39	4.55	H	Pass
2509	-42.00	-13	-29.00	-50.18	-42.06	3.71	5.92	H	Pass
3346	-49.78	-13	-36.78	-60.73	-51.71	3.13	7.21	H	Pass
4175	-48.11	-13	-35.11	-61.21	-50.52	3.01	7.57	H	Pass
5850	-48.86	-13	-35.86	-67.26	-51.31	4.38	8.98	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Vertical Polarization

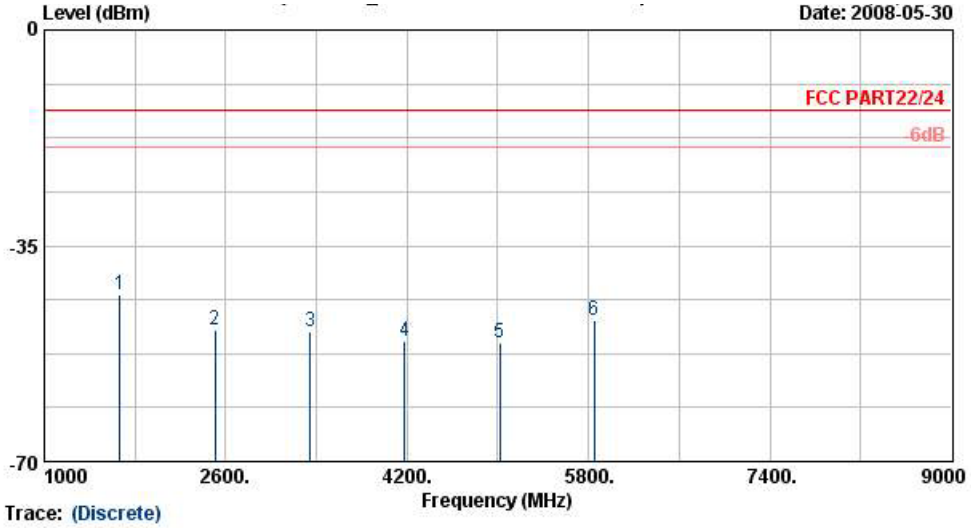


Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : GSM 850 Link; Ch189 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-51.00	-13	-38.00	-55.54	-49.62	3.39	4.16	V	Pass
2506	-48.00	-13	-35.00	-57.72	-47.86	3.71	5.72	V	Pass
3346	-52.58	-13	-39.58	-65.02	-54.78	3.13	7.48	V	Pass
4175	-51.90	-13	-38.90	-65.83	-55.02	3.01	8.28	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Mode 2
- Horizontal Polarization



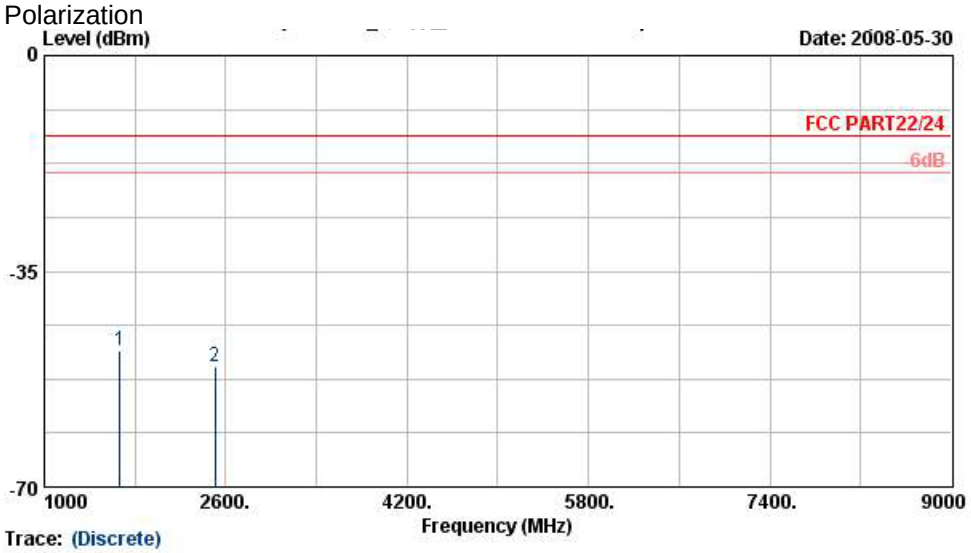
Trace: (Discrete)

Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : EDGE Link; Ch189 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-43.00	-13	-30.00	-50.51	-42.01	3.39	4.55	H	Pass
2506	-48.68	-13	-35.68	-58.82	-48.74	3.71	5.92	H	Pass
3346	-48.98	-13	-35.98	-59.93	-50.91	3.13	7.21	H	Pass
4175	-50.56	-13	-37.56	-63.66	-52.97	3.01	7.57	H	Pass
5015	-50.78	-13	-37.78	-65.54	-54.53	2.61	8.51	H	Pass
5850	-47.14	-13	-34.14	-65.98	-49.59	4.38	8.98	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Vertical Polarization

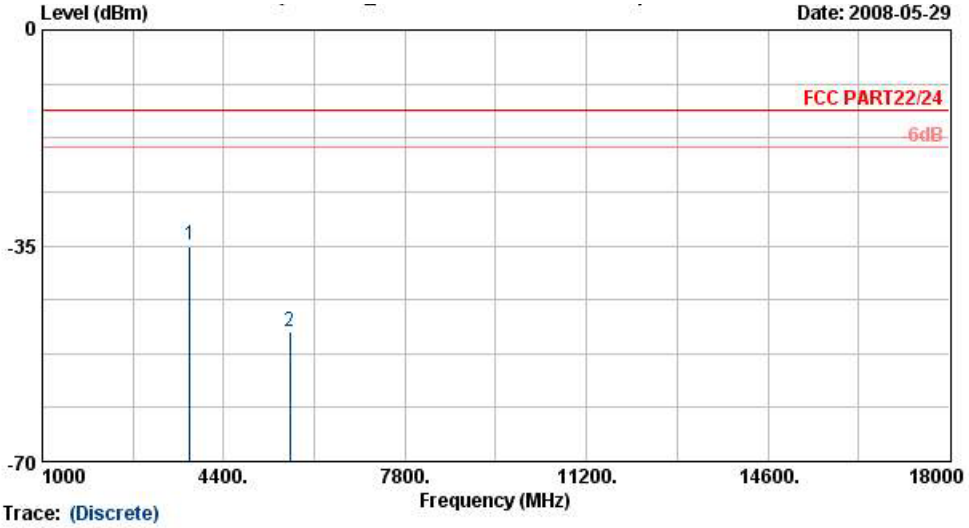


Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : EDGE Link; Ch189 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-48.00	-13	-35.00	-53.8	-46.62	3.39	4.16	V	Pass
2509	-50.46	-13	-37.46	-61.05	-50.32	3.71	5.72	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Mode 3
- Horizontal Polarization



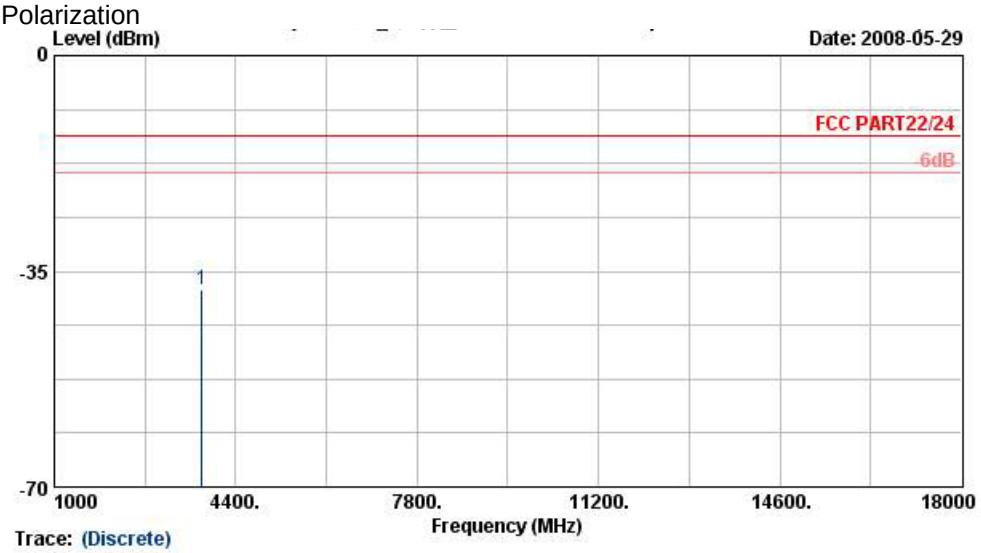
Trace: (Discrete)

Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : PCS 1900 Link; Ch661 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-35.00	-13	-22.00	-50.01	-38.37	4.03	7.40	H	Pass
5636	-49.00	-13	-36.00	-66.04	-53.94	3.87	8.81	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Vertical Polarization

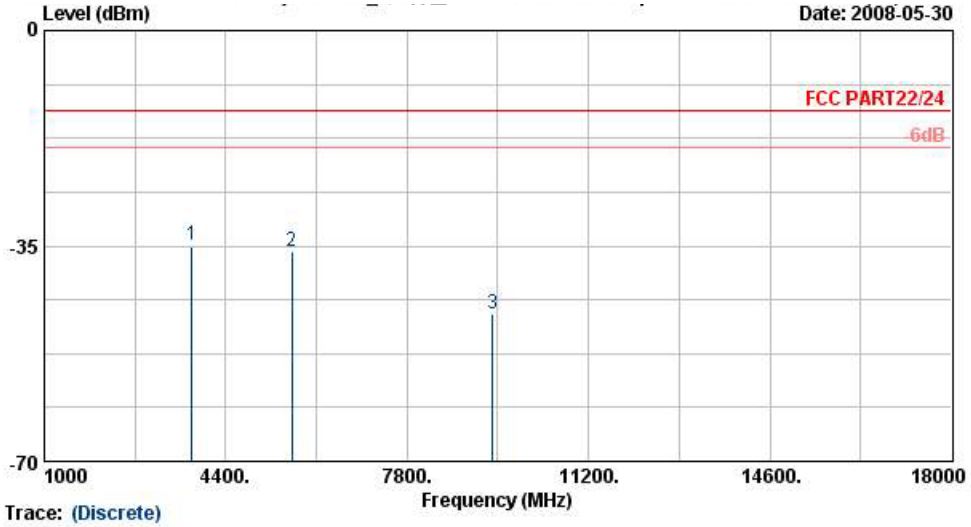


Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : PCS 1900 Link; Ch661 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-38.00	-13	-25.00	-55.56	-41.88	4.03	7.91	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Mode 4
- Horizontal Polarization



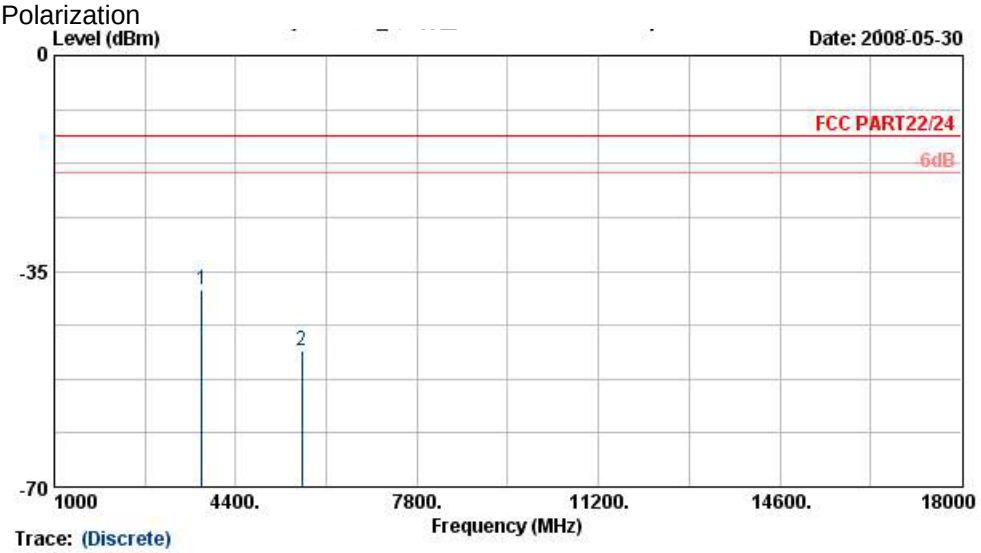
Trace: (Discrete)

Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : EDGE Link; Ch661 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-35.00	-13	-22.00	-50.65	-38.37	4.03	7.40	H	Pass
5636	-36.00	-13	-23.00	-57.08	-40.94	3.87	8.81	H	Pass
9396	-46.00	-13	-33.00	-66.53	-50.7	6.02	10.72	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Vertical Polarization

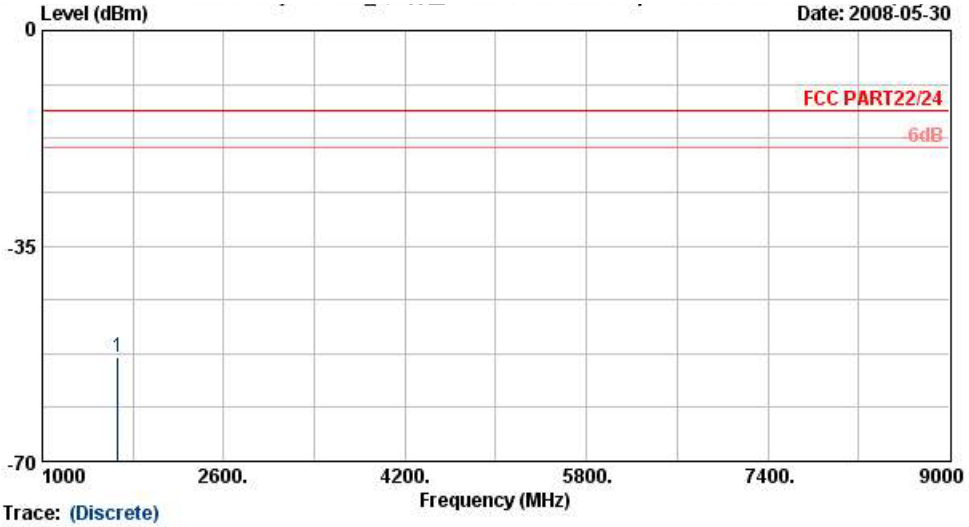


Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : EDGE Link; Ch661 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-38.00	-13	-25.00	-55.1	-41.88	4.03	7.91	V	Pass
5636	-48.00	-13	-35.00	-66.33	-53.9	3.87	9.77	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Mode 5
- Horizontal Polarization

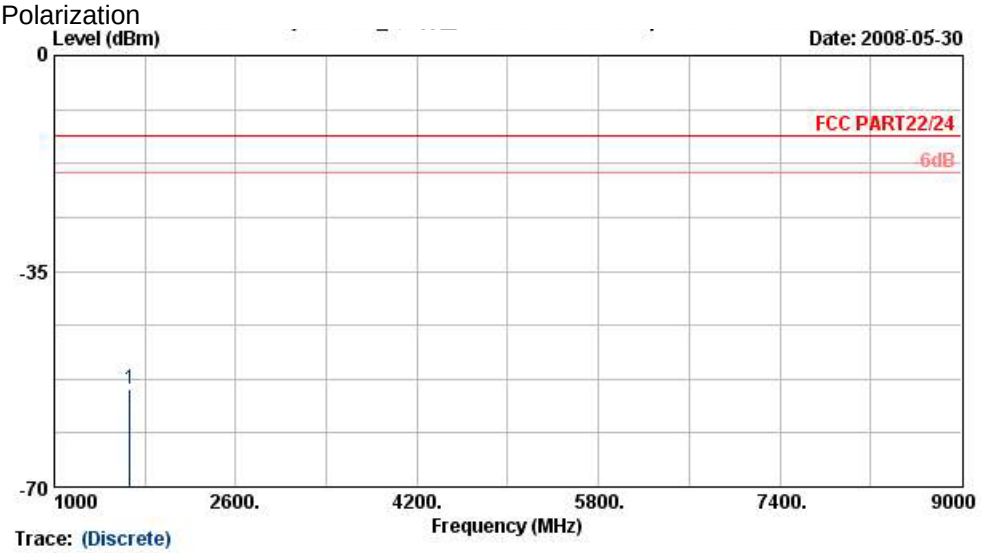


Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : WCDMA Link; Ch4182 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-53.00	-13	-40.00	-58.03	-52.01	3.39	4.55	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Vertical Polarization

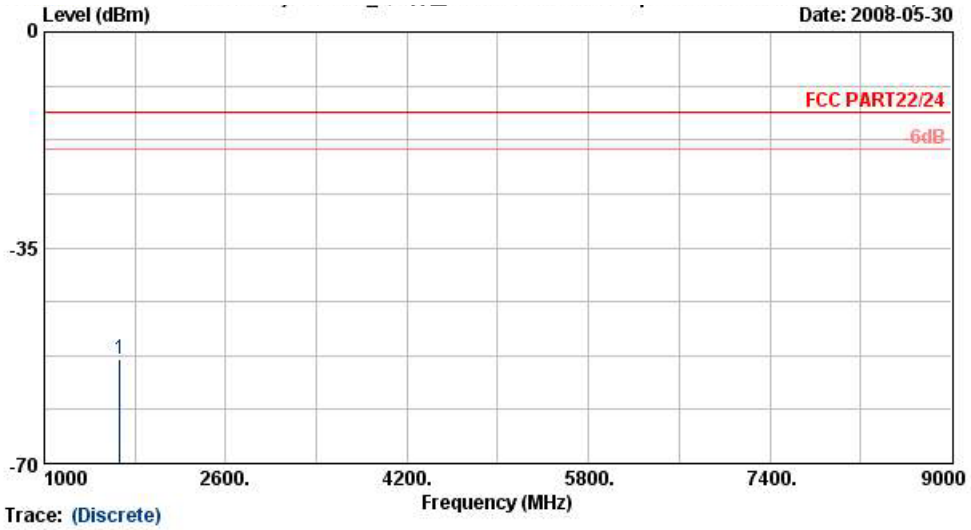


Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : WCDMA Link; Ch4182 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-54.00	-13	-41.00	-58.86	-52.62	3.39	4.16	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Mode 6
- Horizontal Polarization

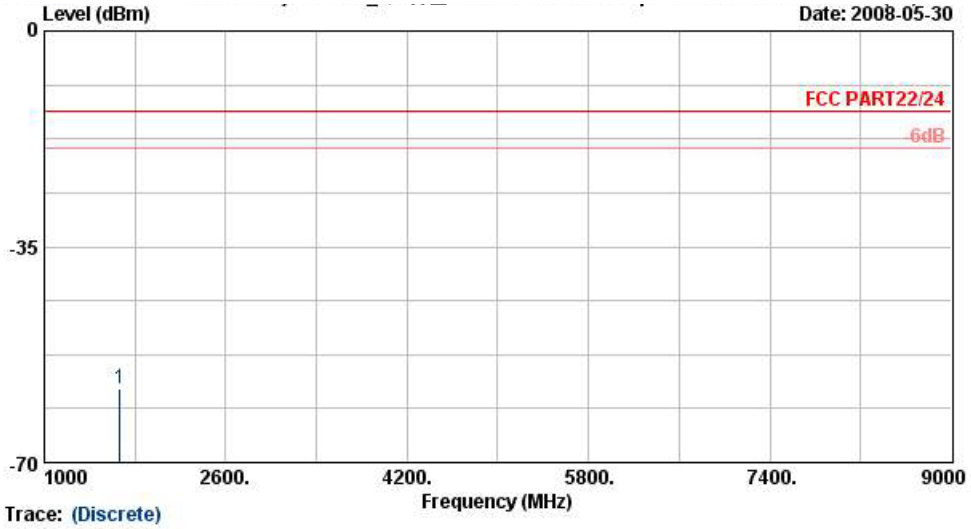


Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : HSUPA Link; Ch4182 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-53.00	-13	-40.00	-58.5	-52.01	3.39	4.55	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Vertical Polarization

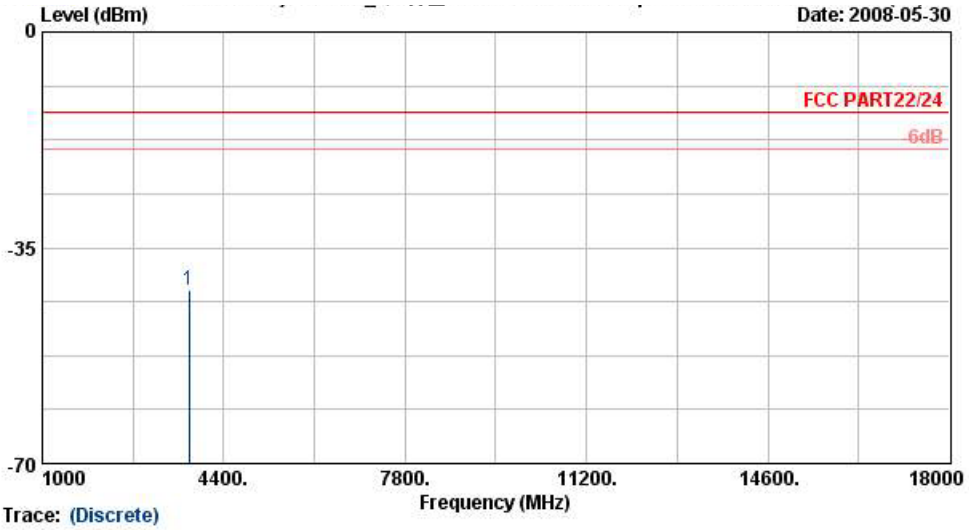


Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : HSUPA Link; Ch4182 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-58.00	-13	-45.00	-60.16	-56.62	3.39	4.16	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Mode 7
- Horizontal Polarization

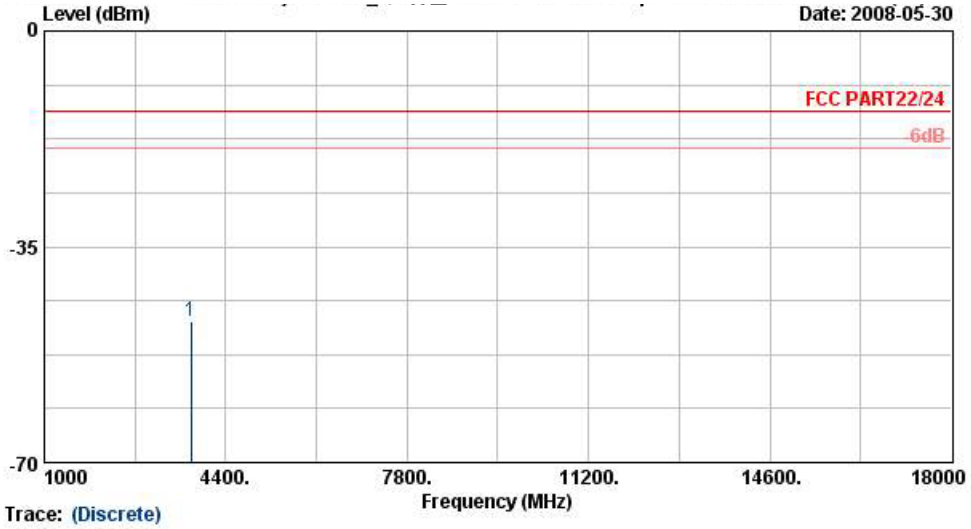


Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : WCDMA Link; Ch9400 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3748	-42.00	-13	-29.00	-56.99	-45.37	4.03	7.40	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Vertical Polarization

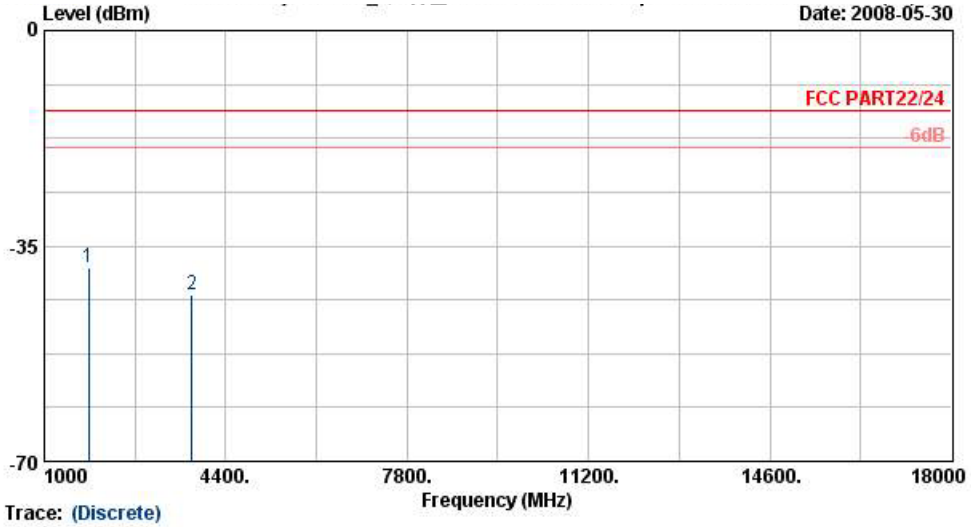


Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : WCDMA Link; Ch9400 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3748	-47.00	-13	-34.00	-62.35	-50.88	4.03	7.91	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Mode 8
- Horizontal Polarization



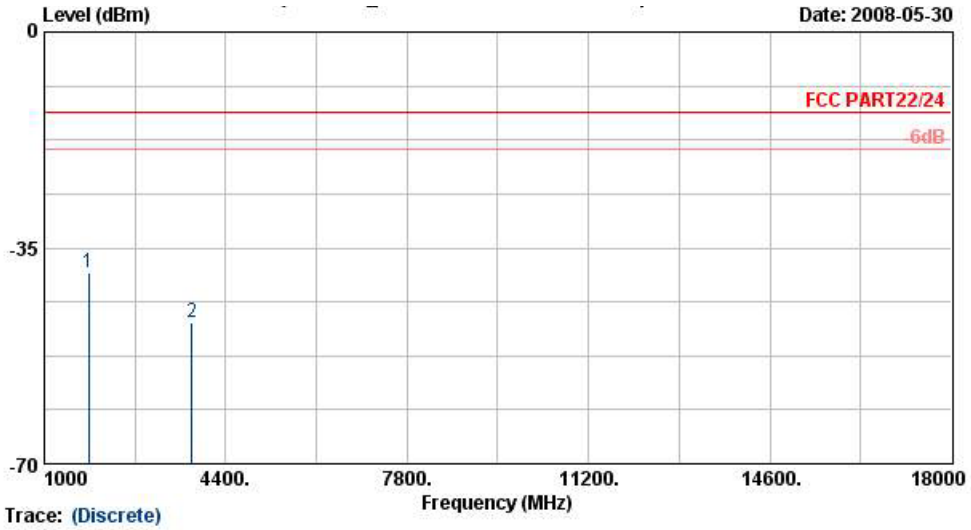
Trace: (Discrete)

Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : HSUPA Link; Ch9400 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1836	-38.41	-13	-25.41	-47.11	-40.56	2.25	4.4	H	Pass
3760	-43.00	-13	-30.00	-57.09	-46.37	4.03	7.40	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Vertical Polarization

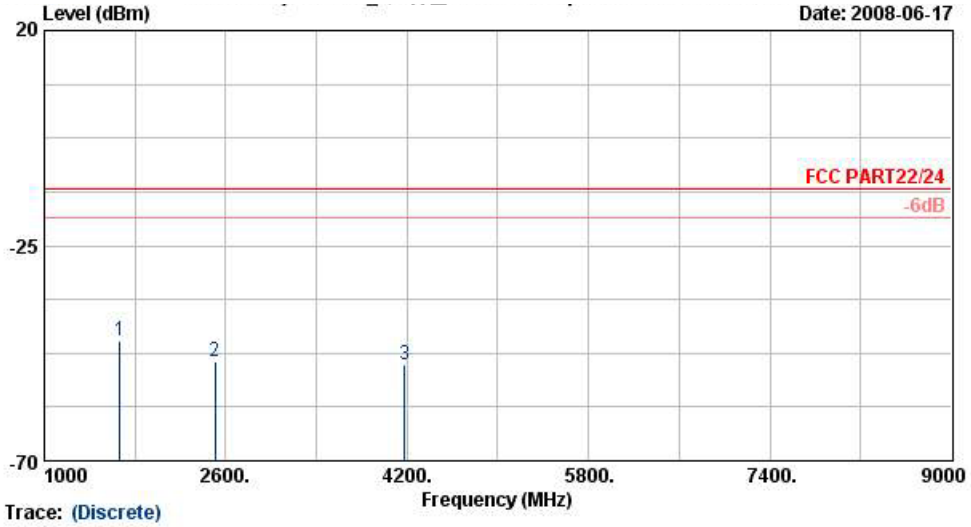


Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : HSUPA Link; Ch9400 + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1836	-39.09	-13	-26.09	-50.09	-40.99	2.25	4.15	V	Pass
3760	-47.00	-13	-34.00	-62.12	-50.88	4.03	7.91	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

- Mode 9
- Horizontal Polarization



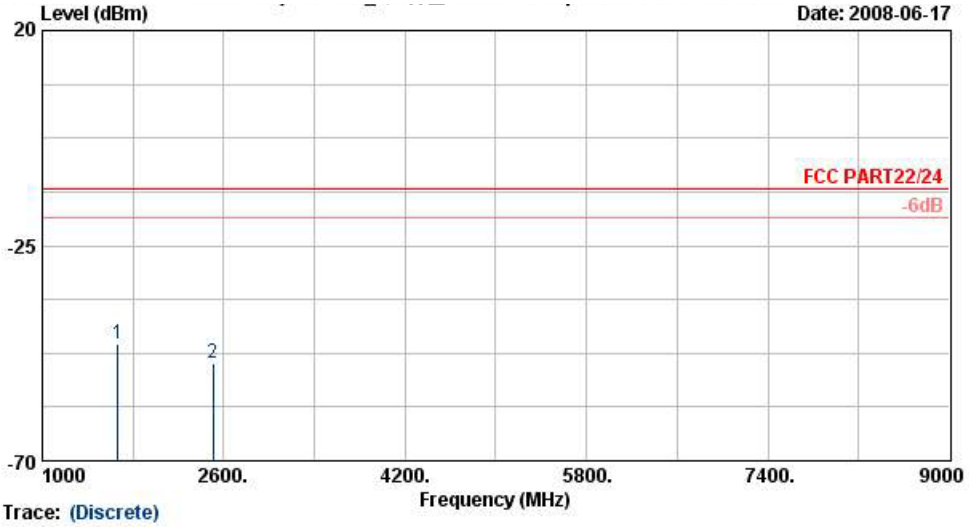
Trace: (Discrete)

Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : GSM 850 Link; Ch189 + 11b Tx_CH01
: + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-45.00	-13	-32.00	-52.53	-44.01	3.39	4.55	H	Pass
2509	-49.32	-13	-36.32	-59.46	-49.38	3.71	5.92	H	Pass
4175	-49.95	-13	-36.95	-63.05	-52.36	3.01	7.57	H	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Vertical Polarization



Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Notebook PC
Power : 120Vac/60Hz
Model : FG841815
Mode : GSM 850 Link; Ch189 + 11b Tx_CH01
: + Adaptor
Plane : E1
IMEI : 351532020021553

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-45.54	-13	-32.54	-53.46	-44.16	3.39	4.16	V	Pass
2509	-49.65	-13	-36.65	-60.24	-49.51	3.71	5.72	V	Pass

Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

4.7 Frequency Stability (Temperature Variation)

4.7.1 Measurement Instrument

As decribed in chapter 5 of this test report.

4.7.2 Test Procedure

a. The EUT and test equipment were set up as shown on the following section.

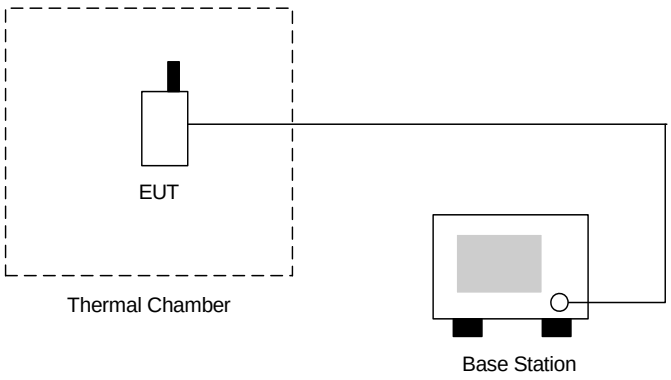
b. With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.

c. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change ws noted within one minute.

d. The temperature tests were performed for the worst case.

e. Test data was recorded.

4.7.3 Test Setup Layout



4.7.4 Test Result

- Test Mode : GSM850 (GSM) CH189

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-29	-0.02	2.5	Passed
-20	-37	-0.04		
-10	-44	-0.05		
0	-39	-0.05		
10	-41	-0.05		
20	-46	-0.05		
30	-42	-0.05		
40	-45	-0.05		
50	-35	-0.04		

- Test Mode : GSM850 (EDGE) CH189

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-26	-0.01	2.5	Passed
-20	-23	-0.03		
-10	-20	-0.02		
0	-24	-0.03		
10	-30	-0.04		
20	-28	-0.03		
30	-21	-0.02		
40	-25	-0.03		
50	-39	-0.05		

- Test Mode : GSM1900 (GSM) CH661

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-85	-0.04	2.5	Passed
-20	-73	-0.04		
-10	-76	-0.04		
0	-71	-0.04		
10	-86	-0.05		
20	-82	-0.04		
30	-94	-0.05		
40	-89	-0.05		
50	-99	-0.05		

- Test Mode : GSM1900 (EDGE) CH661

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-90	-0.05	2.5	Passed
-20	-76	-0.04		
-10	-66	-0.03		
0	-70	-0.04		
10	-68	-0.04		
20	-70	-0.04		
30	-87	-0.05		
40	-92	-0.05		
50	-84	-0.04		

- Test Mode : WCDMA Band V CH4182

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	13	0.02	2.5	Passed
-20	-14	-0.02		
-10	19	0.02		
0	-20	-0.02		
10	-22	-0.03		
20	17	0.02		
30	24	0.03		
40	14	0.02		
50	16	0.02		

- Test Mode : WCDMA Band V (HSUPA) CH4182

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-12	-0.01	2.5	Passed
-20	-17	-0.02		
-10	-19	-0.02		
0	-14	-0.02		
10	-11	-0.01		
20	20	0.02		
30	16	0.02		
40	12	0.01		
50	18	0.02		

- Test Mode : WCDMA Band II CH9400

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-32	-0.017	2.5	Passed
-20	-30	-0.016		
-10	-20	-0.011		
0	-15	-0.008		
10	24	0.013		
20	-29	-0.015		
30	-17	-0.009		
40	25	0.013		
50	-21	-0.011		

- Test Mode : WCDMA Band II (HSUPA) CH9400

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	19	0.010	2.5	Passed
-20	33	0.017		
-10	22	0.012		
0	-32	-0.017		
10	20	0.011		
20	-25	-0.013		
30	-28	-0.015		
40	-23	-0.012		
50	31	0.016		

4.8 Frequency Stability (Voltage Variation)

4.8.1 Measurement Instrument

As described in chapter 5 of this test report.

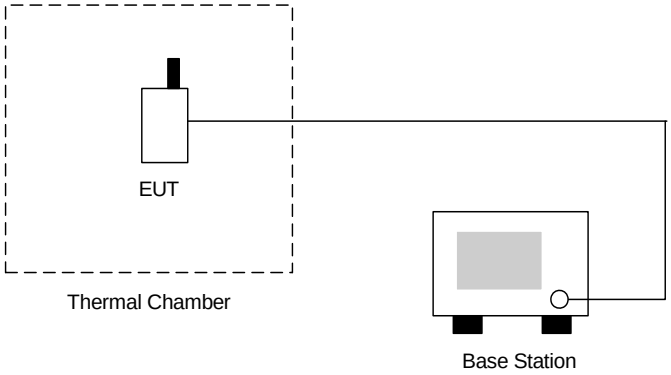
4.8.2 Test Procedure

a. The EUT was placed in a temperature chamber at 25±5 °C and connected as the following section.

b. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.

c. The variation in frequency was measured for the worst case.

4.8.3 Test Setup Layout



4.8.4 Test Result

- Test Mode : GSM850 (GSM) CH189

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
120	-48.0	-0.06	2.5	Passed
BEP	-42.0	-0.05		
132	-53.0	-0.06		

- Test Mode : GSM850 (EDGE) CH189

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
120	-37.0	-0.04	2.5	Passed
BEP	-17.0	-0.02		
132	-15.0	-0.02		

- Test Mode : GSM1900 (GSM) CH661

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
120	-66.0	-0.03	2.5	Passed
BEP	-57.0	-0.03		
132	-85.0	-0.04		

- Test Mode : GSM1900 (EDGE) CH661

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
120	-58.0	-0.03	2.5	Passed
BEP	-78.0	-0.04		
132	-66.0	-0.03		

- Test Mode : WCDMA Band V CH4182

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
120	15	0.02	2.5	Passed
BEP	14	0.02		
132	11	0.01		

- Test Mode : WCDMA Band V (HSUPA) CH4182

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
120	-10	-0.01	2.5	Passed
BEP	-13	-0.02		
132	-11	-0.01		

- Test Mode : WCDMA Band II CH9400

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
120	-18	-0.009	2.5	Passed
BEP	-13	-0.007		
132	-15	-0.008		

- Test Mode : WCDMA Band II (HSUPA) CH9400

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
120	-35	-0.018	2.5	Passed
BEP	-26	-0.014		
132	-29	-0.015		

Remark:

1. Normal Voltage= 120V.
2. Battery End Point (BEP)= 108 V.

5. List of Measurement Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY44211028	9KHz-26.5GHz	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH07-HY)
EMI Test Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul. 26, 2007	Jul. 25, 2008	Radiation (03CH07-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Dec. 01, 2007	Nov. 30, 2008	Radiation (03CH07-HY)
Double Ridge Horn Antenna	EMCO	3117	00075962	1G~18G	Aug. 29, 2007	Aug. 28, 2008	Radiation (03CH07-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-251	14G - 40G	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G - 26.5G	Nov. 22, 2007	Nov. 21, 2008	Radiation (03CH07-HY)
Pre Amplifier	EMEC	PA303	PA303-SMA-059	100K~3GHz	Nov. 26, 2007	Nov. 25, 2008	Radiation (03CH07-HY)
Base Station Simulator	R & S	CMU200	103937	Third-Band	Oct. 19, 2007	Oct. 18, 2008	Radiation (03CH07-HY)
Thermal Chamber	Tenyi technology	TTH-D35P	TBN-930701	N/A	Aug. 02, 2007	Aug. 01, 2008	Conducted (TH02-HY)
Spectrum	R&S	FSP40	100055	9KHz~40GHz	Jun. 25, 2007	Jun. 24, 2008	Conducted (TH02-HY)
Bluetooth Test	ANRITSU	MT8852A	6K00003939	N/A	N/A	N/A	Conducted (TH02-HY)
Power Divider	ARRA	5200-1	3871	N/A	Oct. 01, 2007	Sep. 30, 2008	Conducted (TH02-HY)
DC Power Supply	TOPWARD	3303D	740889	N/A	May 25, 2007	May 24, 2009	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 21, 2008	Feb. 20, 2009	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 21, 2008	Feb. 20, 2009	Conducted (TH02-HY)

6. Uncertainty Evaluation

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
Combined standard uncertainty Uc(y)	**1.27**		
Measuring uncertainty for a level of Confidence of 95% U=2Uc(y)	**2.54**		

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	Ci	$Ci*u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1= 0.197 Antenna VSWR Γ2= 0.194 Uncertainty=20log(1-Γ1*Γ2)	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	**2.36**				
Measuring uncertainty for a level of Confidence of 95% U=2Uc(y)	**4.72**				

END OF TEST REPORT

Appendix A. Photographs of EUT

Please refer to Sporton report number EP841815 as below.