



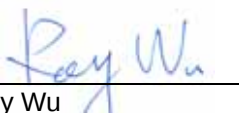
FCC / IC Test Report

According to

**47 CFR Part 22H, 24E
IC RSS-132 and RSS-133**

Equipment : Smartphone
Trade Name : Palm
Model No. : T850UNA
FCC ID : O8F-SKYG
IC ID : 3905A-SKYG
Tx Frequency Range : GSM850 : 824.2 ~ 848.8MHz
PCS1900 : 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) : 0.85 W
GSM850(EDGE) : 0.25 W
PCS1900(GSM) : 0.74 W
PCS1900(EDGE) : 0.36 W
WCDMA Band V : 0.09 W
WCDMA Band II : 0.22 W
Emission Designator : GSM : 248KGXW
EDGE : 244KG7W
WCDMA : 4M20F9W
Applicant : Palm, Inc.
950 W. Maude Ave. Sunnyvale, CA 94085

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
- Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.
- The data shown in this test report were carried out on June 20, 2008 at Sporton International Inc. LAB.
- Report No.: FG811107-02, Report Version: Rev. 01.


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.



Table of Contents

History of This Test Report	iii
1. General Information	1
1.1 Applicant.....	1
1.2 Manufacturer	1
1.3 Basic Description of Equipment under Test.....	1
1.4 Feature of Equipment under Test.....	2
1.5 Report Date	2
2. Test Configuration of Equipment under Test	3
2.1 Test Manner	3
2.2 Test Mode	3
2.3 Connection Diagram of Test System	4
2.4 Ancillary Equipment List	5
3. General Information of Test Site.....	6
3.1 Test Voltage	6
3.2 Test Compliance.....	6
3.3 Frequency Range.....	6
3.4 Test Distance.....	6
4. Test Data and Test Result	7
4.1 List of Measurements and Examinations.....	7
4.2 RF Output Power	8
4.3 ERP / EIRP Measurement.....	11
4.4 Occupied Bandwidth and Band Edge Measurement	16
4.5 Conducted Emission.....	65
4.6 Field Strength of Spurious Radiation	93
4.7 Frequency Stability (Temperature Variation)	110
4.8 Frequency Stability (Voltage Variation)	114
5. List of Measurement Equipments.....	116
6. Uncertainty Evaluation	117
Appendix A. - Photographs of EUT	
Appendix B. - Setup Photographs	



History of This Test Report

Report Issue Date: June 23, 2008

Report No.	Description



1. General Information

1.1 Applicant

Palm, Inc.
950 W. Maude Ave. Sunnyvale, CA 94085

1.2 Manufacturer

Palm, Inc.
950 W. Maude Ave. Sunnyvale, CA 94085

1.3 Basic Description of Equipment under Test

Smartphone 1		LCD Panel 1 + Photo Camera 1
Smartphone 2		LCD Panel 2 + Photo Camera 2
AC/DC Adapter	Brand Name / Model No.	Palm / 3387WW(PMG0501000P)
	Type No.	157-10107-00
	Power Rating	I/P: 100-240Vac, 47-63Hz; O/P: 5 Vdc,1000mA
Battery 1	Brand Name	Palm
	Model No.	157-10105-00
	P/N	35H00114-00M
	Power Rating	3.7Vdc, 1500mAh
	Type	Li-ion
Battery 2	Brand Name	Palm
	Model No.	157-10105-00
	P/N	35H00114-01M
	Power Rating	3.7Vdc, 1500mAh
	Type	Li-ion
Battery 3	Brand Name	Palm
	Model No.	157-10105-00
	P/N	35H00114-02M
	Power Rating	3.7Vdc, 1500mAh
	Type	Li-ion
Earphone	Brand Name / Model No.	Palm / 3363WW, P/N: 180-10611-00
	Signal Line Type	0.9 meter non-shielded cable without ferrite core
USB Cable	Brand Name / Model No.	Palm / 3403WW, P/N: 163-10274-00
	Signal Line Type	1.8 meter non-shielded cable without ferrite core

**1.4 Feature of Equipment under Test**

Product Feature & Specification	
DUT Type :	Smartphone
Trade Name :	Palm
Model Name :	T850UNA
FCC ID :	O8F-SKYG
IC ID :	3905A-SKYG
Tx Frequency :	GSM850 : 824 MHz ~ 849 MHz PCS1900 : 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 PCS1900 : 1930 MHz ~ 1990 MHz WCDMA Band V : 869 MHz ~ 894 MHz WCDMA Band II : 1930 MHz ~ 1990 MHz
Maximum Output Power to Antenna :	GSM850 : 33.14 dBm (GSM) / 27.84 dBm (EDGE8) PCS1900 : 30.23 dBm (GSM) / 26.86 dBm (EDGE8) WCDMA Band V : 23.47 dBm(12.2kbps) / 23.45 dBm(64kbps) / 23.42 dBm(144kbps) / 23.43 dBm(384kbps) / 23.40 dBm (AMR) / 23.13 dBm (HSDPA) WCDMA Band II : 23.28 dBm(12.2kbps) / 23.32 dBm(64kbps) / 23.35 dBm(144kbps) / 23.30 dBm(384kbps) / 23.32 dBm (AMR) / 23.00 dBm (HSDPA)
Maximum ERP/EIRP :	GSM850(GSM) : 0.85 W (29.31 dBm) GSM850(EDGE) : 0.25 W (23.96 dBm) PCS1900(GSM) : 0.74 W (28.67 dBm) PCS1900(EDGE) : 0.36 W (25.57 dBm) WCDMA Band V : 0.09 W (19.38 dBm) WCDMA Band II : 0.22 W (23.37 dBm)
Type of Antenna Connector :	N/A
Antenna Type :	GSM / WCDMA : PIFA Antenna
Type of Emission :	GSM : 248KGXW EDGE : 244KG7W WCDMA : 4M20F9W
DUT Stage :	Identical Prototype

1.5 Report Date

EUT Received : Mar. 21, 2008

Report Date : June 23, 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 PCS1900 and WCDMA Band II.

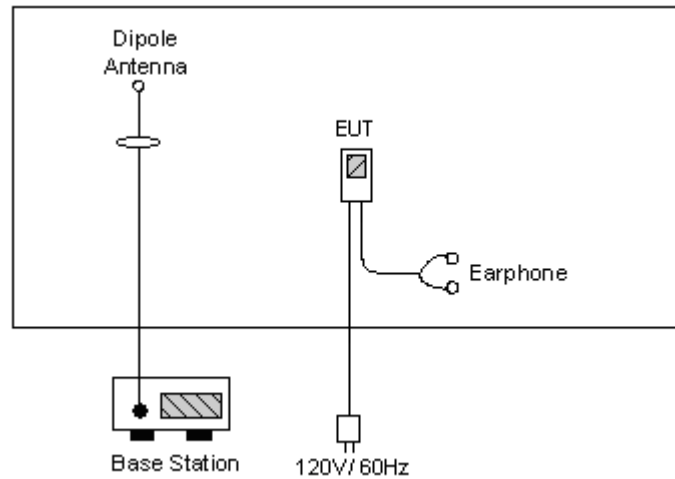
2.2 Test Mode

Application	GSM850	PCS1900	WCDMA Band V	WCDMA Band II
Conducted	☒ Mode 1: GSM Link	☒ Mode 3: GSM Link	☒ Mode 5: WCDMA Link	☒ Mode 7: WCDMA Link
Measurement	☒ Mode 2: EDGE Link	☒ Mode 4: EDGE Link		
Radiated	☒ Mode 1: GSM Link	☒ Mode 3: GSM Link	☒ Mode 5: WCDMA Link	☒ Mode 6: WCDMA Link
Emission for Tx	☒ Mode 2: EDGE Link	☒ Mode 4: EDGE Link		
Radiated	☒ Mode 1: Smartphone A + GSM850 Idle + BT Idle + WLAN Idle + GPS Rx + Adapter + Photo Camera 1 + Battery 1 + Earphone ☒ Mode 2: Smartphone A + PCS1900 Idle + BT Idle + WLAN Idle + GPS Rx + Adapter + MPEG 4 + Battery 1 + Earphone ☒ Mode 3: Smartphone A + EDGE850 Idle + BT Idle + WLAN Idle + GPS Rx + USB Link + Photo Camera 1 + Battery 1 + Earphone ☒ Mode 4: Smartphone A + WCDMA850 Idle + BT Idle + WLAN Idle + GPS Rx + USB Link + Photo Camera 1 + Battery 1 + Earphone ☒ Mode 5: Smartphone A + HSDPA850 Idle + BT Idle + WLAN Idle + GPS Rx + USB Link + Photo Camera 1 + Battery 1 + Earphone ☒ Mode 6: Smartphone B + HSDPA850 Idle + BT Idle + WLAN Idle + GPS Rx + USB Link + Photo Camera 2 + Battery 2 + Earphone ☒ Mode 7: Smartphone B + HSDPA850 Idle + BT Idle + WLAN Idle + GPS Rx + USB Link + Photo Camera 2 + Battery 3 + Earphone			
Emission for Rx				

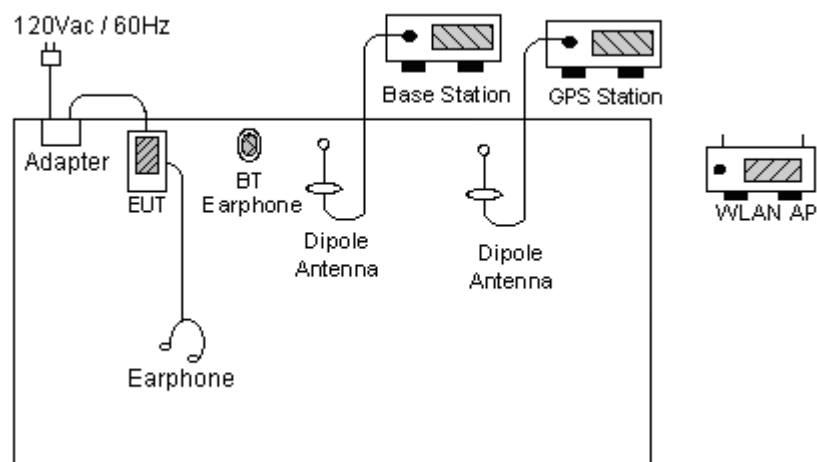
Remark : Only the worst modes, Tx mode 1, 3, and Rx mode 7, of radiated emission were reported, after tested above combinations for Tx (Transmitting), and Rx(Receiving).

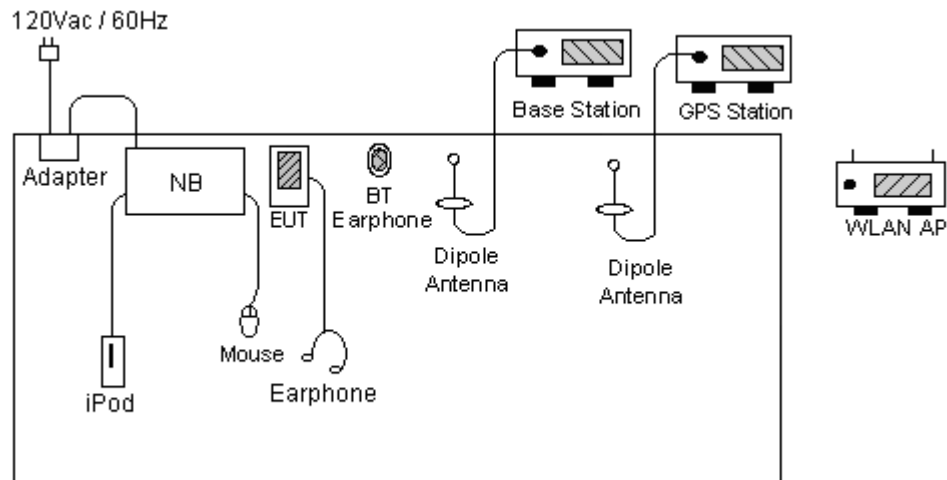
2.3 Connection Diagram of Test System

<EUT with Link Mode>



<EUT with Adapter Mode>



<EUT with USB Link Mode>

2.4 Ancillary Equipment List

The following support equipment was used to exercise the EUT during testing for radiated spurious unwanted emissions.

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Code
1.	Base Station	R&S	CMU200	N/A	N/A	Unshielded, 1.8m
2.	NOTE BOOK	DELL	D400	E2K24GBRL	N/A	Shielded, 1.8m
3.	GPS Base Station	T&E	GS-50	N/A	N/A	Shielded, 1.8 m
4.	Bluetooth Earphone	Engotech	ET-BH111	PQY471087	N/A	N/A
5.	(RS-232)Mouse	State	MS-303	Fcc DoC	Unshielded,1.2m	N/A
6.	WLAN AP	SMC	SMC-100	HEDWG4005ACC	N/A	Unshielded, 1.8m
7.	iPod	Apple	A1199	DoC	Shielded, 1.2m	N/A



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 : 03CH06-HY, 03CH07-HY, TH02-HY
FCC Designation No.: TW1022
IC Registration No. : 4086B-1

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
IC RSS-132 Issued 2, and RSS-133 Issued 4

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 PCS1900 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	IC Rule	Description of Test	Result	Section
§2.1046	RSS-132 §4.4 RSS-133 §6.4	RF Output Power	Passed	4.2
§ 22.913 §24.232	RSS-132 §4.4 RSS-133 §6.4	ERP / EIRP	Passed	4.3
§2.1049, § 22.917, § 24.238(b)	RSS-132 §4.5 RSS-133 §6.5	Occupied Bandwidth & Band Edge Measurement	Passed	4.4
§2.1051	RSS-132 §4.5 RSS-133 §6.5	Conducted Emission	Passed	4.5
§2.1053	RSS-132 §4.5 RSS-133 §6.5	Field Strength of Spurious Radiation	Passed	4.6
N/A	RSS-133 §6.6 RSS-132 §4.6	Receiver Spurious Emissions	Passed	4.6
§2.1055, § 22.355, §24.235	RSS-132 §4.3 RSS-133 §6.3	Frequency Stability vs. Temperature	Passed	4.7
§2.1055, §22.355, §24.235	RSS-132 §4.3 RSS-133 §6.3	Frequency Stability vs. Voltage	Passed	4.8

4.2 RF Output Power

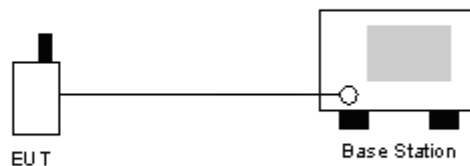
4.2.1 Measurement Instruments

As described in chapter 5 of this test report.

4.2.2 Test Procedure

- a. The transmitter output was connected to base station.
- b. Set the EUT at maximum power through base station by using below setting
 - b.1 PCL=5 for GSM850, PCL=0 for PCS1900.
 - b.2 TPC with 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)	32.70	1.86
	189	836.4 (Mid)	32.94	1.97
	251	848.8 (High)	33.14	2.06
GSM850 (EDGE8)	128	824.2 (Low)	27.29	0.54
	189	836.4 (Mid)	27.65	0.58
	251	848.8 (High)	27.84	0.61
PCS1900 (GSM)	512	1850.2 (Low)	29.84	0.96
	661	1880.0 (Mid)	30.22	1.05
	810	1909.8 (High)	30.23	1.05
PCS1900 (EDGE8)	512	1850.2 (Low)	26.54	0.45
	661	1880.0 (Mid)	26.86	0.49
	810	1909.8 (High)	26.86	0.49
WCDMA Band V (12.2k bps)	4132	826.4 (Low)	23.47	0.22
	4182	836.4 (Mid)	23.42	0.22
	4233	846.6 (High)	23.25	0.21
WCDMA Band V (64k bps)	4132	826.4 (Low)	23.45	0.22
	4182	836.4 (Mid)	23.41	0.22
	4233	846.6 (High)	23.30	0.21
WCDMA Band V (144k bps)	4132	826.4 (Low)	23.42	0.22
	4182	836.4 (Mid)	23.38	0.22
	4233	846.6 (High)	23.28	0.21
WCDMA Band V (384k bps)	4132	826.4 (Low)	23.43	0.22
	4182	836.4 (Mid)	23.39	0.22
	4233	846.6 (High)	23.29	0.21
WCDMA Band V (AMR)	4132	826.4 (Low)	23.40	0.22
	4182	836.4 (Mid)	23.09	0.20
	4233	846.6 (High)	23.38	0.22
WCDMA Band V (HSDPA)	4132	826.4 (Low)	23.10	0.20
	4182	836.4 (Mid)	23.00	0.20
	4233	846.6 (High)	23.13	0.21



Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
WCDMA Band II (12.2k bps)	9262	1852.4 (Low)	23.09	0.20
	9400	1880.0 (Mid)	23.28	0.21
	9538	1907.6 (High)	22.71	0.19
WCDMA Band II (64k bps)	9262	1852.4 (Low)	23.10	0.20
	9400	1880.0 (Mid)	23.32	0.21
	9538	1907.6 (High)	22.72	0.19
WCDMA Band II (144k bps)	9262	1852.4 (Low)	23.15	0.21
	9400	1880.0 (Mid)	23.35	0.22
	9538	1907.6 (High)	22.80	0.19
WCDMA Band II (384k bps)	9262	1852.4 (Low)	23.17	0.21
	9400	1880.0 (Mid)	23.30	0.21
	9538	1907.6 (High)	23.75	0.19
WCDMA Band II (AMR)	9262	1852.4 (Low)	23.31	0.21
	9400	1880.0 (Mid)	23.32	0.21
	9538	1907.6 (High)	23.31	0.21
WCDMA Band II (HSDPA)	9262	1852.4 (Low)	22.80	0.19
	9400	1880.0 (Mid)	23.00	0.20
	9538	1907.6 (High)	22.90	0.19

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 table 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. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$

P_s (dBm) : Input power to substitution antenna.

G_s (dBi or dBd) : Substitution antenna Gain.

$E_t = R_t + AF$

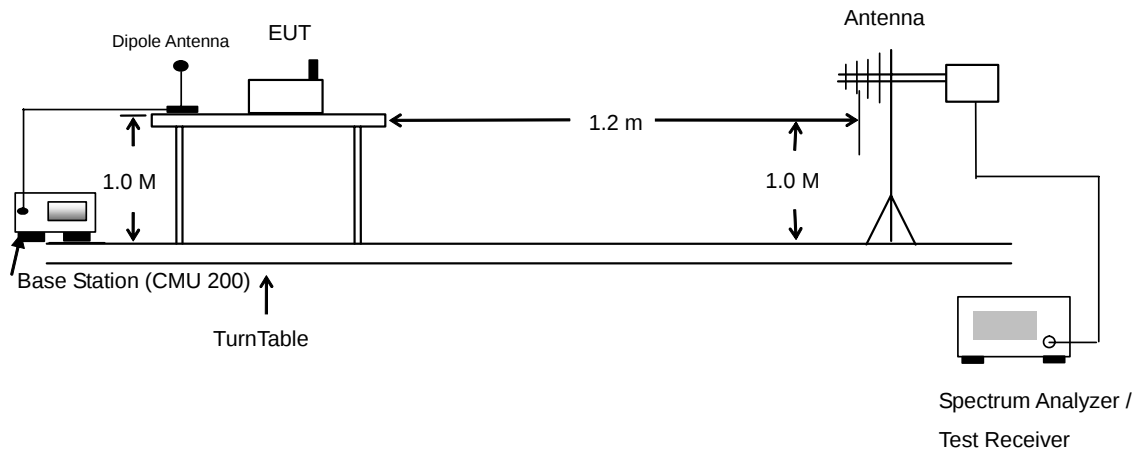
$E_s = R_s + AF$

AF (dB/m) : Receive antenna factor

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

R_s : 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	-30.82	-48.12	0.00	-1.08	16.22	0.04
836.40	-29.62	-48.28	0.00	-0.93	17.73	0.06
848.80	-29.35	-48.35	0.00	-0.76	18.24	0.07
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-19.77	-47.97	0.00	-1.08	27.12	0.52
836.40	-18.05	-48.01	0.00	-0.93	29.03	0.80
848.80	-17.98	-48.05	0.00	-0.76	29.31	0.85

GSM850 (EDGE) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-35.57	-48.12	0.00	-1.08	11.47	0.01
836.40	-34.74	-48.28	0.00	-0.93	12.61	0.02
848.80	-34.98	-48.35	0.00	-0.76	12.61	0.02
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-24.48	-47.97	0.00	-1.08	22.41	0.17
836.40	-23.15	-48.01	0.00	-0.93	23.93	0.25
848.80	-23.33	-48.05	0.00	-0.76	23.96	0.25



PCS1900 (GSM) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-28.16	-51.88	0.00	1.96	25.68	0.37
1880.00	-30.11	-52.99	0.00	2.00	24.88	0.31
1909.80	-31.01	-54.28	0.00	1.98	25.25	0.33
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-25.44	-52.13	0.00	1.96	28.65	0.73
1880.00	-27.15	-53.17	0.00	2.00	28.02	0.63
1909.80	-27.44	-54.13	0.00	1.98	28.67	0.74

PCS1900 (EDGE) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-31.38	-51.88	0.00	1.96	22.46	0.18
1880.00	-33.46	-52.99	0.00	2.00	21.53	0.14
1909.80	-34.55	-54.28	0.00	1.98	21.71	0.15
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-28.52	-52.13	0.00	1.96	25.57	0.36
1880.00	-30.39	-53.17	0.00	2.00	24.78	0.30
1909.80	-30.92	-54.13	0.00	1.98	25.19	0.33

WCDMA Band V Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-40.23	-48.12	0.00	-1.08	6.81	0.00
836.40	-39.79	-48.28	0.00	-0.93	7.56	0.01
846.60	-39.85	-48.35	0.00	-0.76	7.74	0.01
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-29.37	-47.97	0.00	-1.08	17.52	0.06
836.40	-28.70	-48.01	0.00	-0.93	18.38	0.07
846.60	-27.91	-48.05	0.00	-0.76	19.38	0.09

WCDMA Band II Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-35.46	-51.88	0.00	1.96	18.38	0.07
1880.00	-35.27	-52.99	0.00	2.00	19.72	0.09
1907.60	-36.05	-54.28	0.00	1.98	20.21	0.10
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-32.92	-52.13	0.00	1.96	21.17	0.13
1880.00	-32.60	-53.17	0.00	2.00	22.57	0.18
1907.60	-32.74	-54.13	0.00	1.98	23.37	0.22

4.4 Occupied Bandwidth and Band Edge Measurement

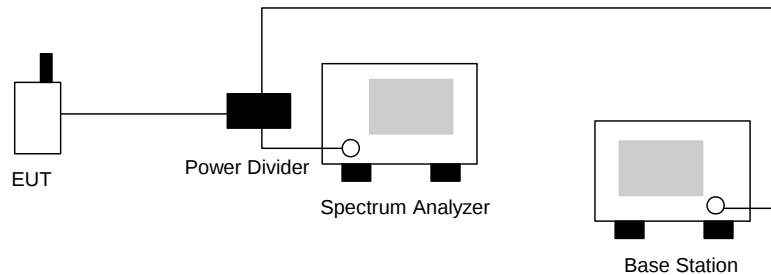
4.4.1 Measurement Instruments

As described in chapter 5 of this test report.

4.4.2 Test Procedure

- The EUT was connected to Spectrum Analyzer and Base Station via power divider.
- The 99% occupied bandwidth of middle channel for the highest and lowest RF powers were measured.
- 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

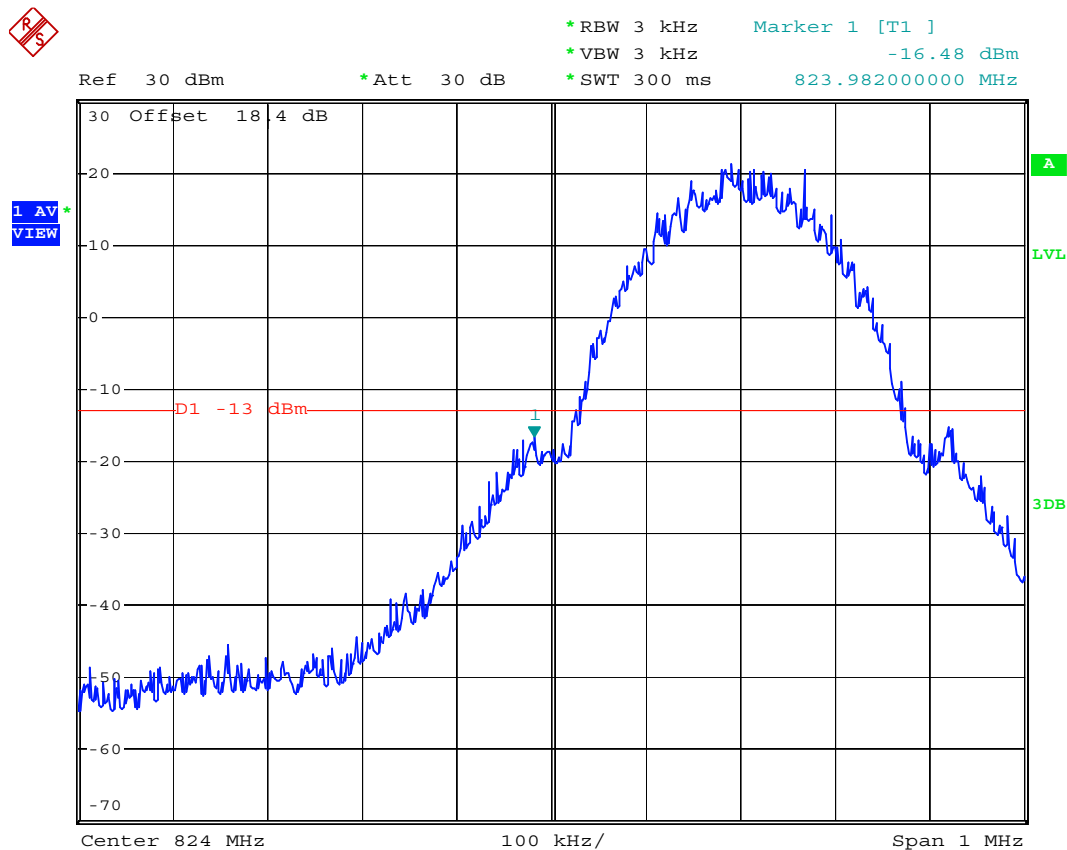


4.4.4 Test Summary

99% Bandwidth (KHz)				26dB Bandwidth (kHz)			
Channel	Ch 128	Ch 189	Ch 251	Channel	Ch 128	Ch 189	Ch 251
GSM850	246.00	242.00	248.00	GSM850	312.00	310.00	310.00
EDGE850	234.00	244.00	240.00	EDGE850	306.00	302.00	304.00
Channel	Ch 4132	Ch 4182	Ch 4233	Channel	Ch 4132	Ch 4182	Ch 4233
WCDMA850	4160.00	4180.00	4160.00	WCDMA850	4680.00	4680.00	4680.00
Channel	Ch 512	Ch 661	Ch 810	Channel	Ch 512	Ch 661	Ch 810
PCS1900	244.00	248.00	246.00	PCS1900	310.00	314.00	306.00
EDGE1900	244.00	238.00	244.00	EDGE1900	302.00	302.00	302.00
Channel	Ch 9262	Ch 9400	Ch 9538	Channel	Ch 4132	Ch 4182	Ch 4233
WCDMA1900	4200.00	4200.00	4180.00	WCDMA1900	4640.00	4660.00	4680.00

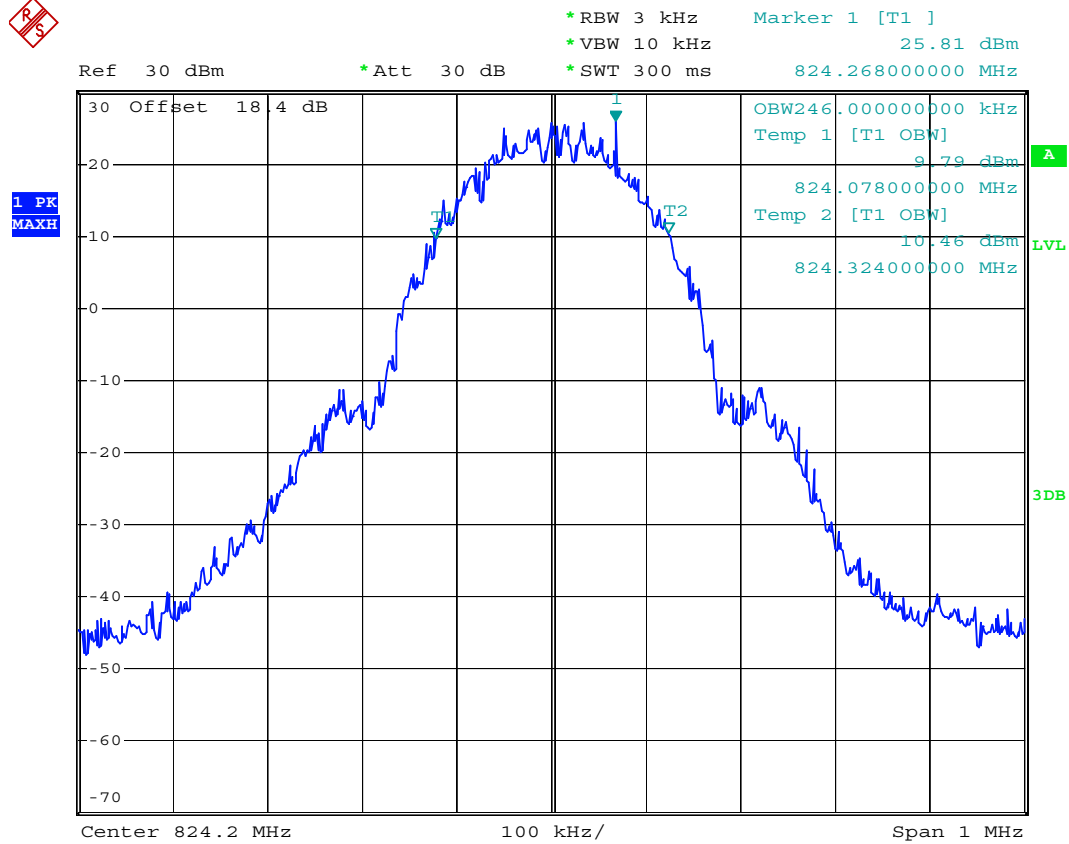
**4.4.5 Test Result**

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



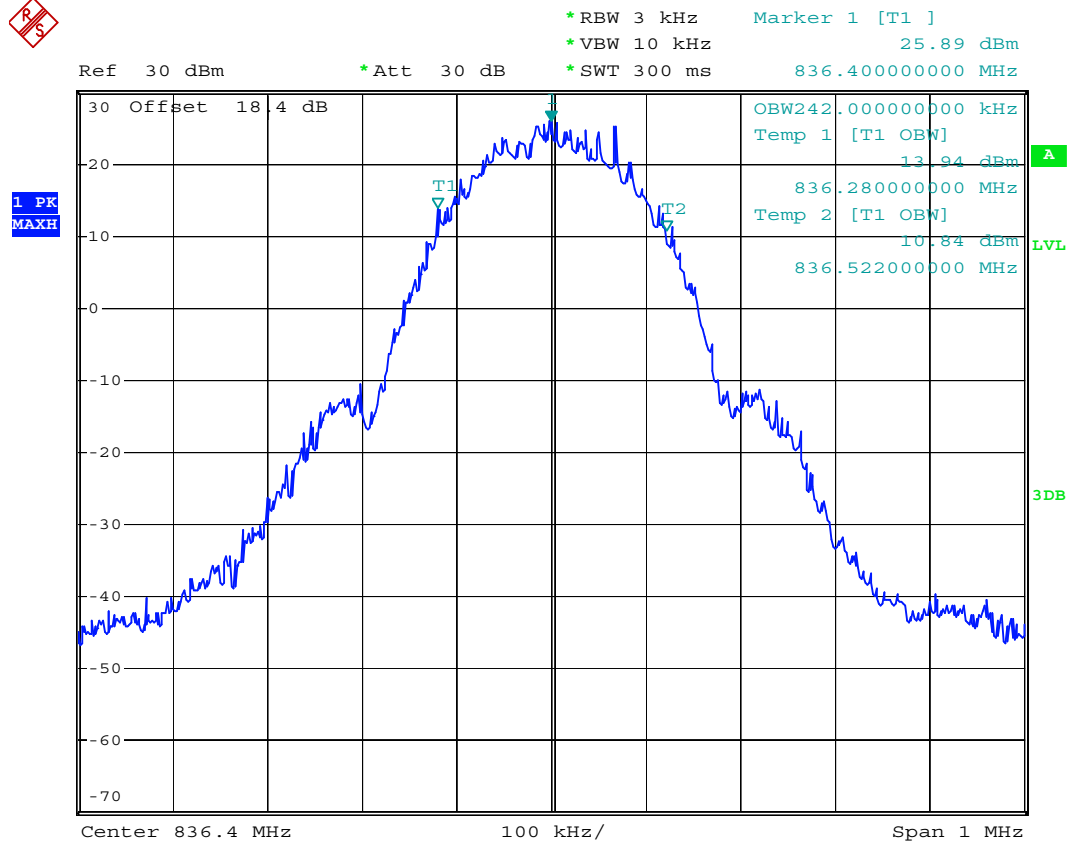


- Test Mode : GSM850 (GSM) CH128 99% Occupied Bandwidth
- Power State : High

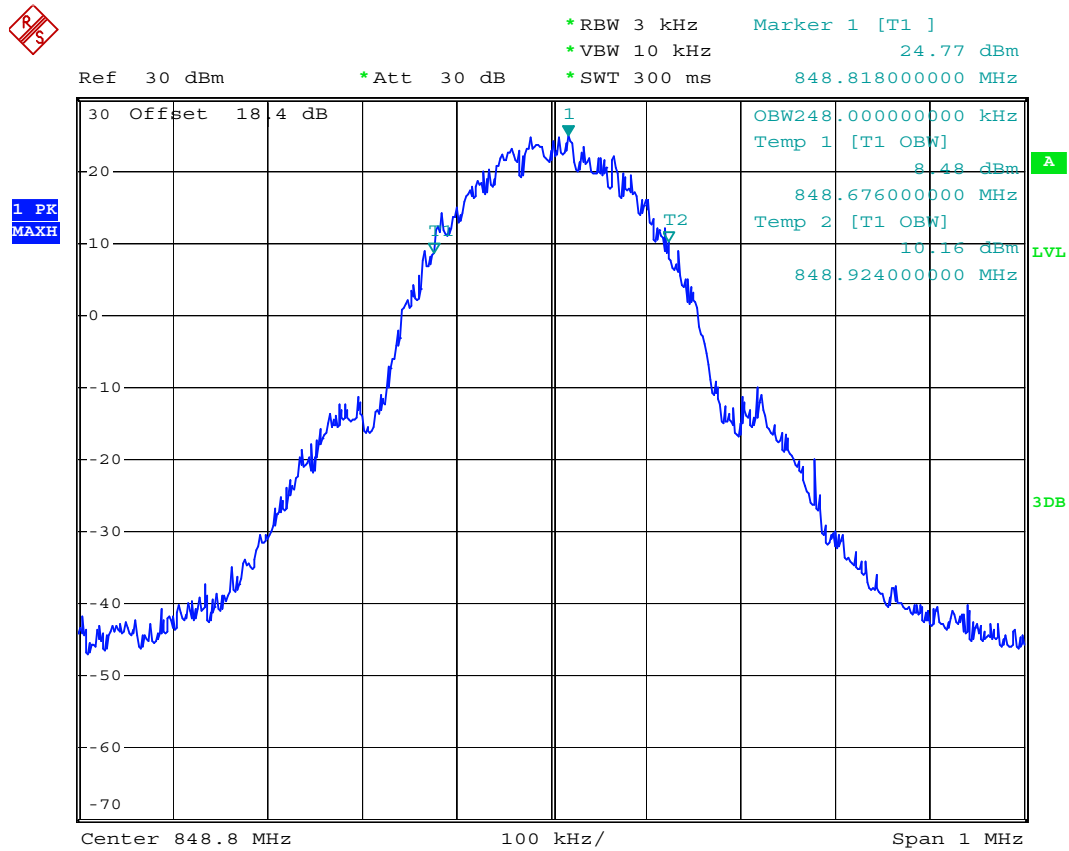




- Test Mode : GSM850 (GSM) CH189 99% Occupied Bandwidth
- Power State : High

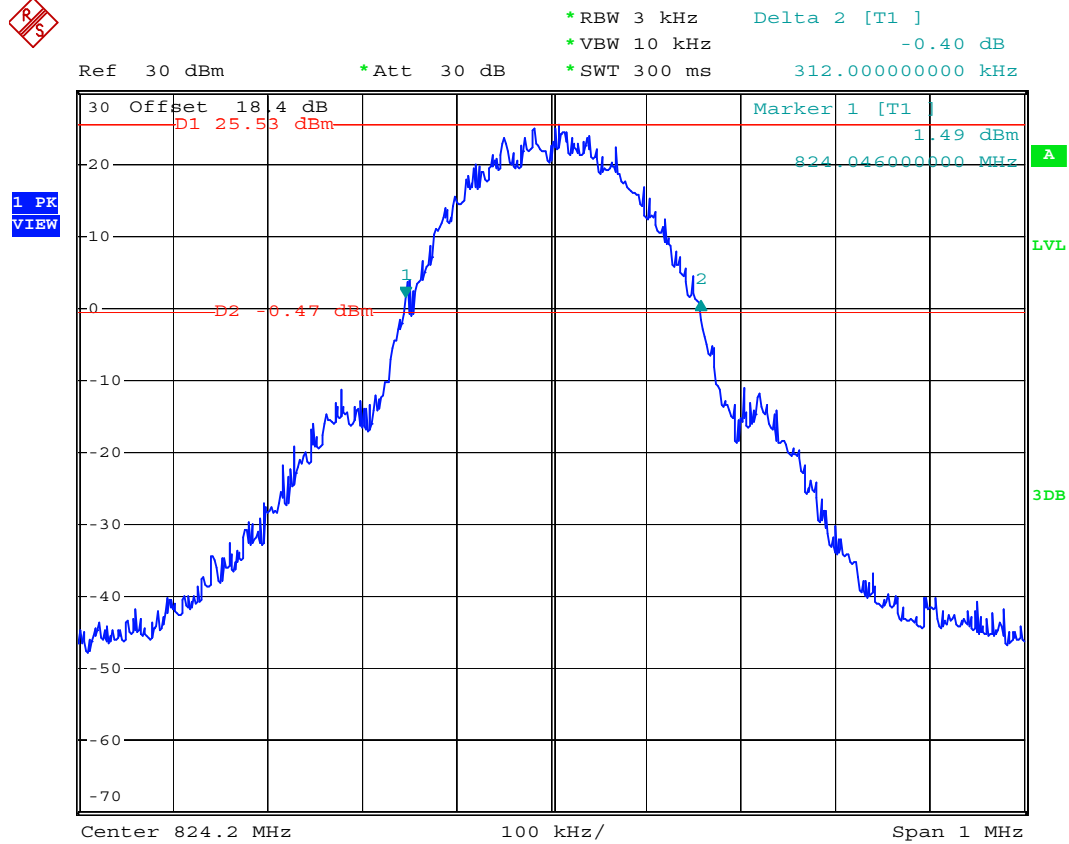


- Test Mode : GSM850 (GSM) CH 251 99% Occupied Bandwidth
- Power State : High



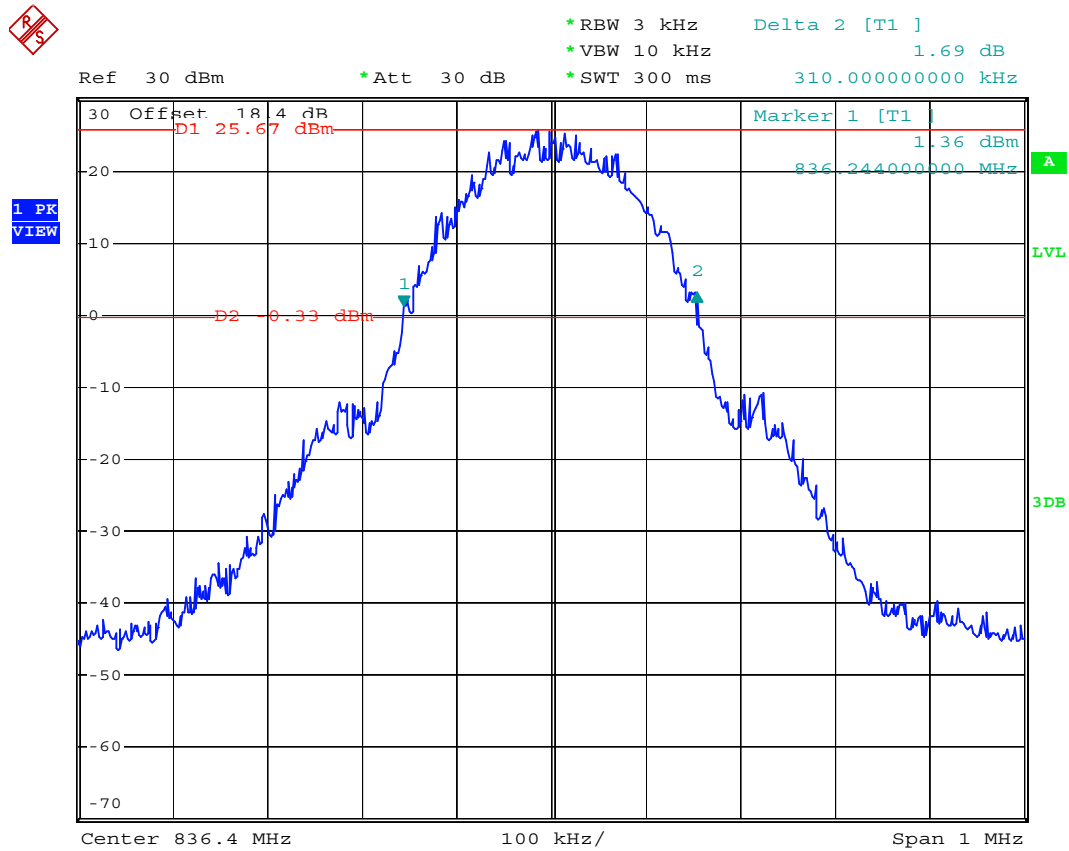


- Test Mode : GSM850 (GSM) CH128 26dB Bandwidth
- Power State : High



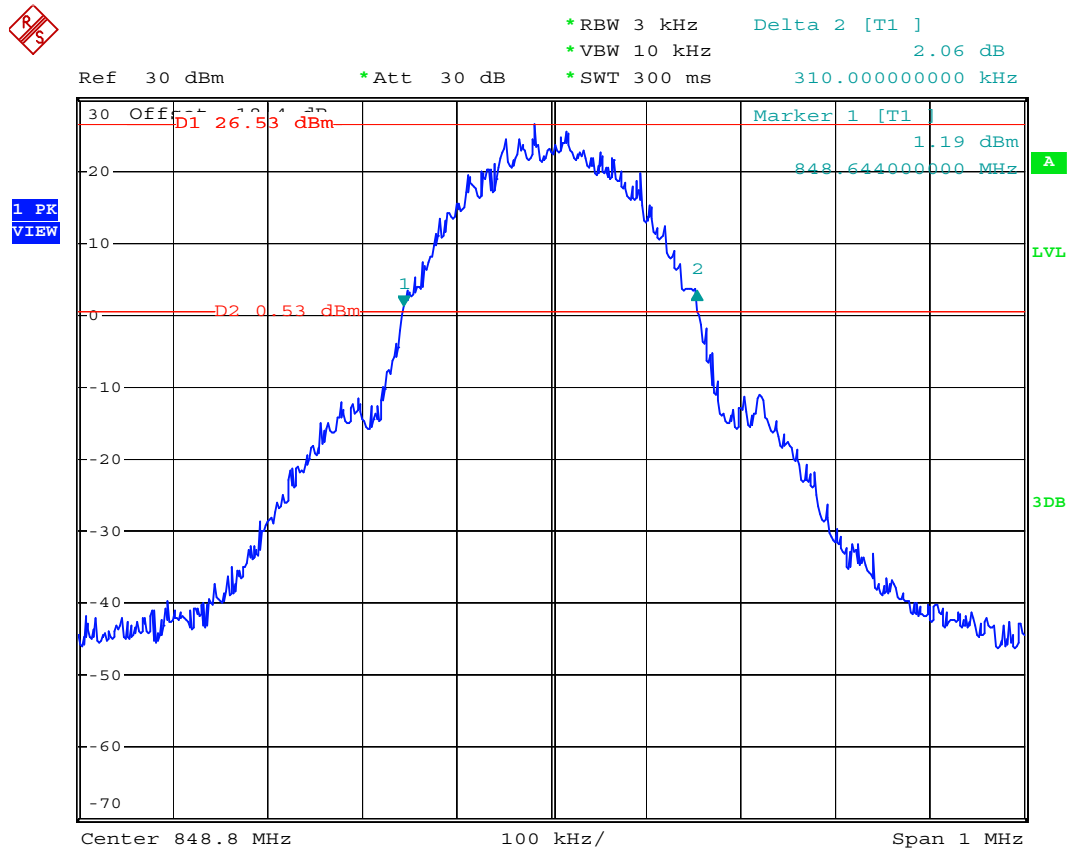


- Test Mode : GSM850 (GSM) CH189 26dB Bandwidth
- Power State : High



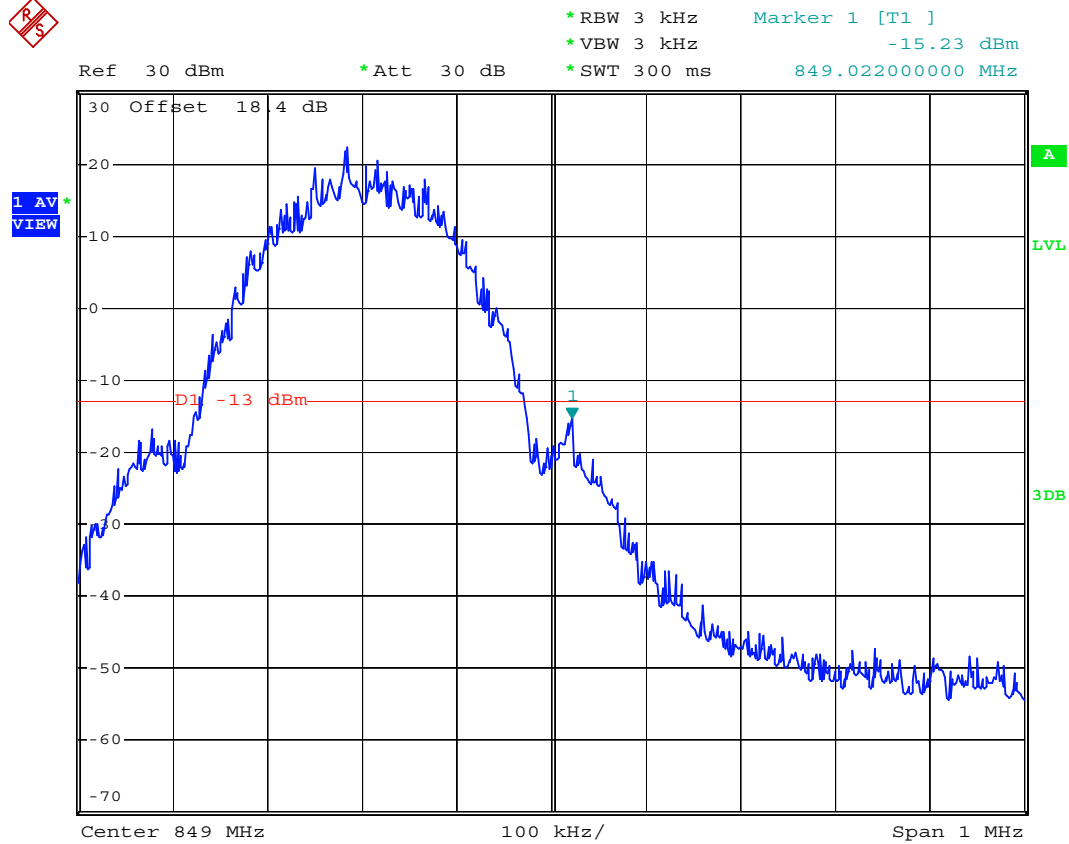


- Test Mode : GSM850 (GSM) CH 251 26dB Bandwidth
- Power State : High



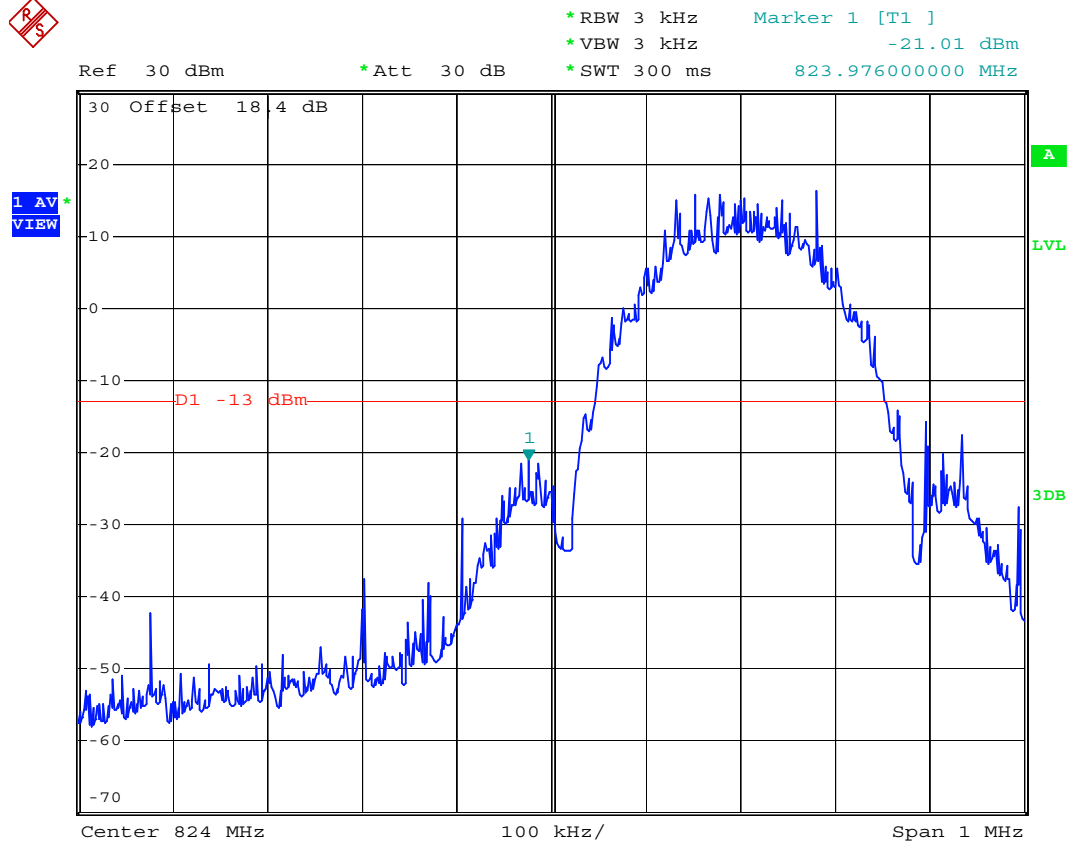


- Test Mode : GSM850 (GSM) CH251 Higher Band Edge
- Power State : High



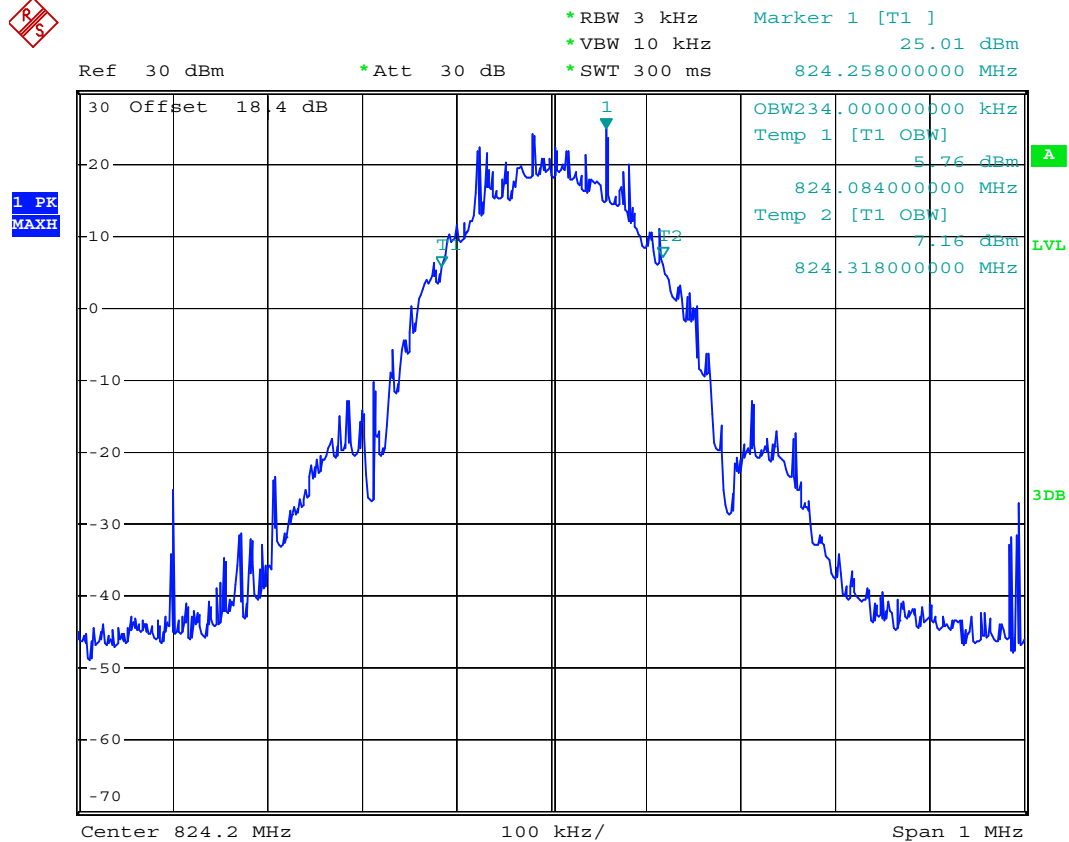


- Mode 2
- Test Mode : GSM850 (EDGE) CH128 Lower Band Edge
- Power State : High



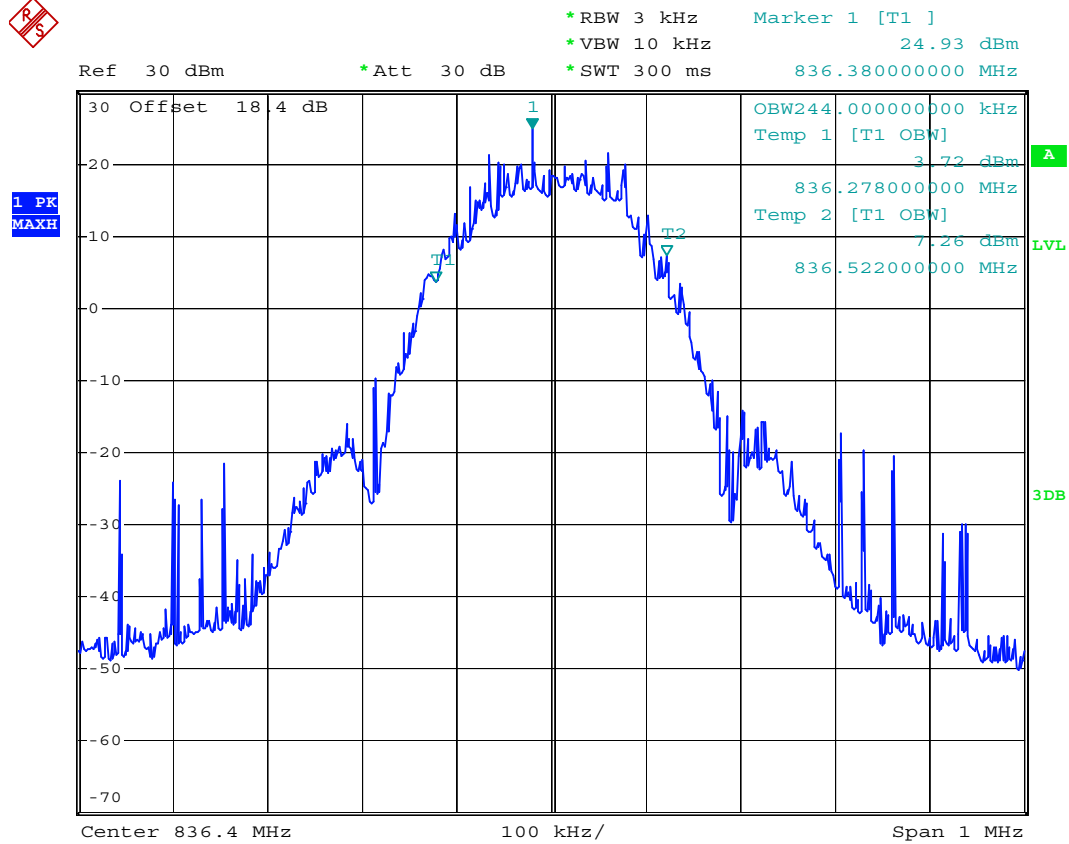


- Test Mode : GSM850 (EDGE) CH128 99% Occupied Bandwidth
- Power State : High



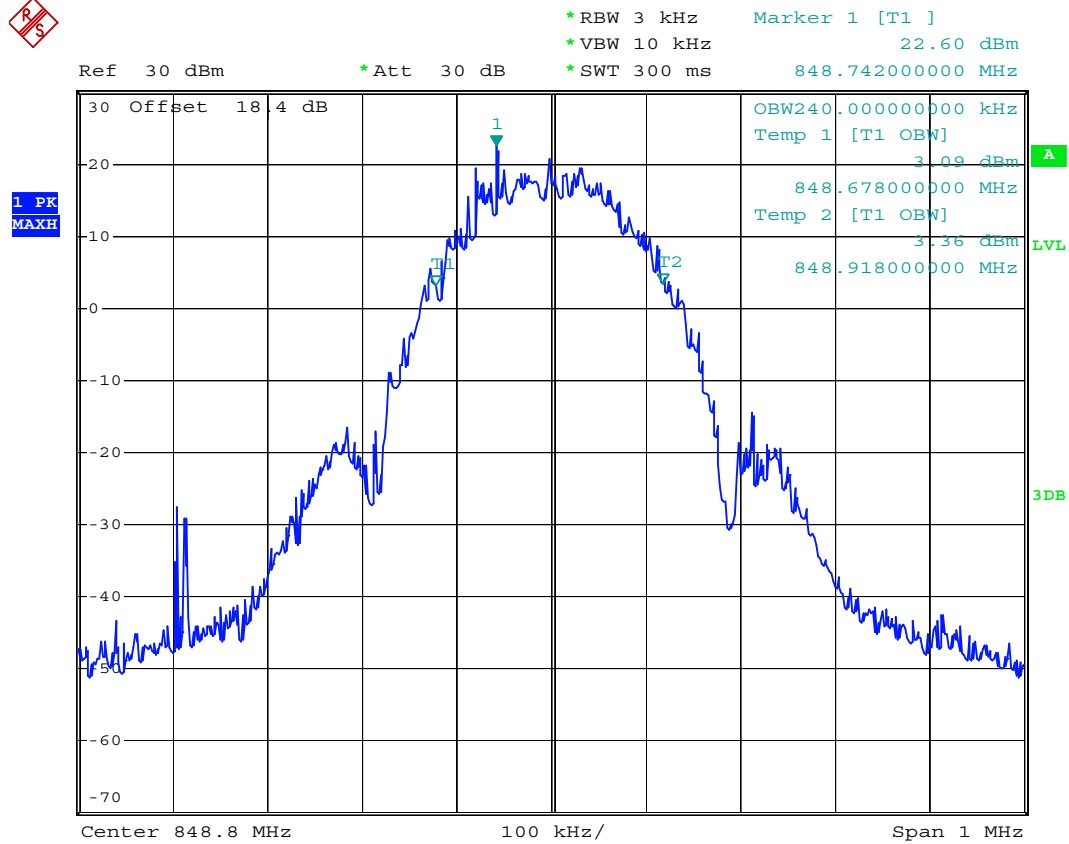


- Test Mode : GSM850 (EDGE) CH189 99% Occupied Bandwidth
- Power State : High



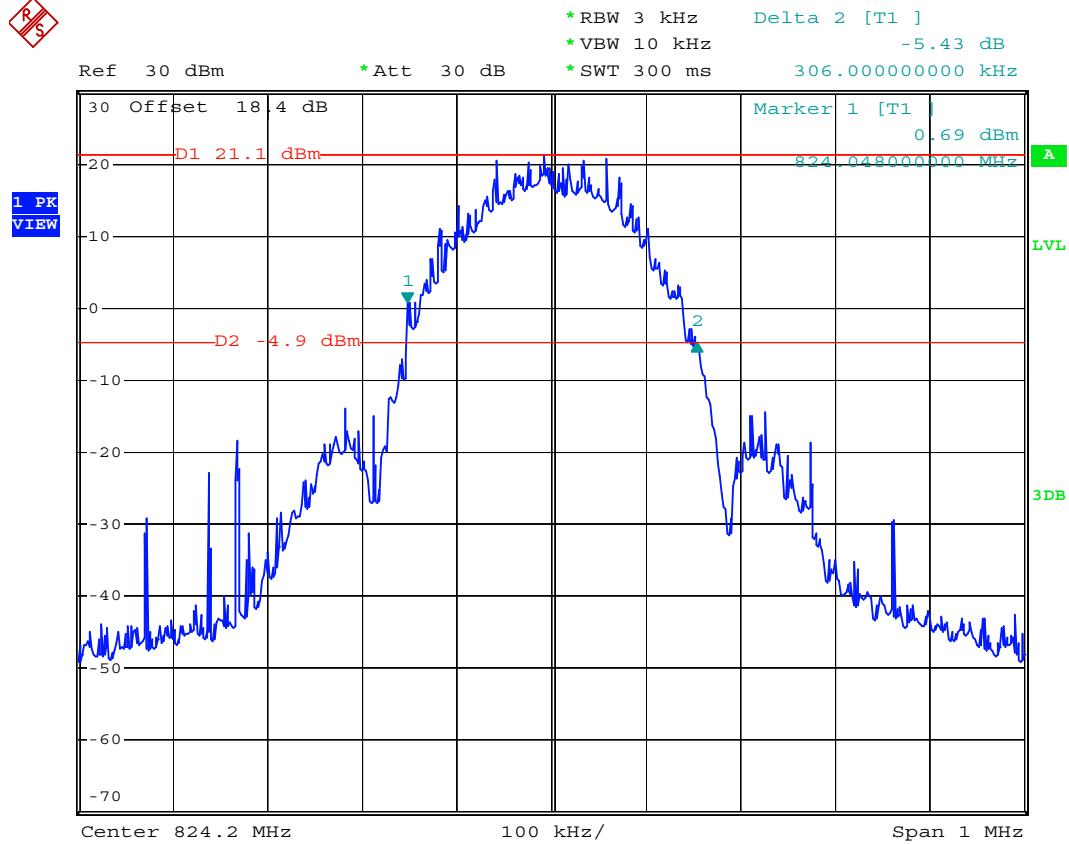


- Test Mode : GSM850 (EDGE) CH 251 99% Occupied Bandwidth
- Power State : High



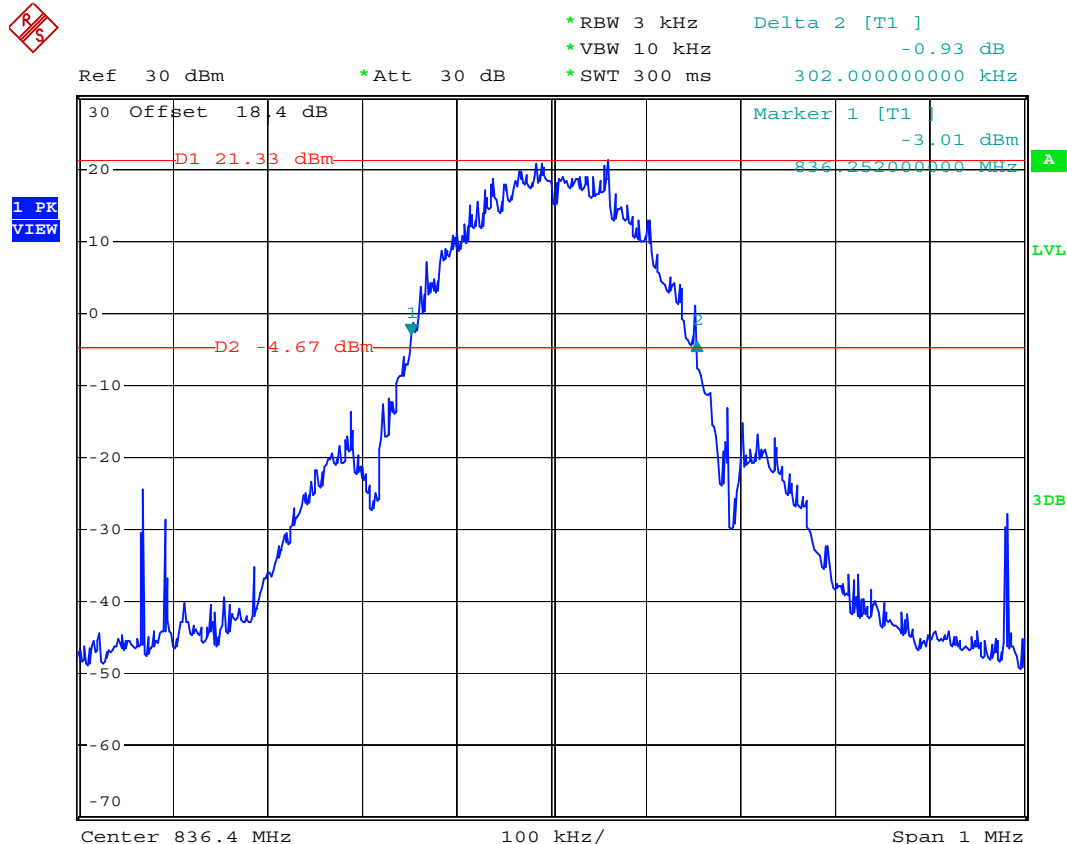


- Test Mode : GSM850 (EDGE) CH128 26dB Bandwidth
- Power State : High



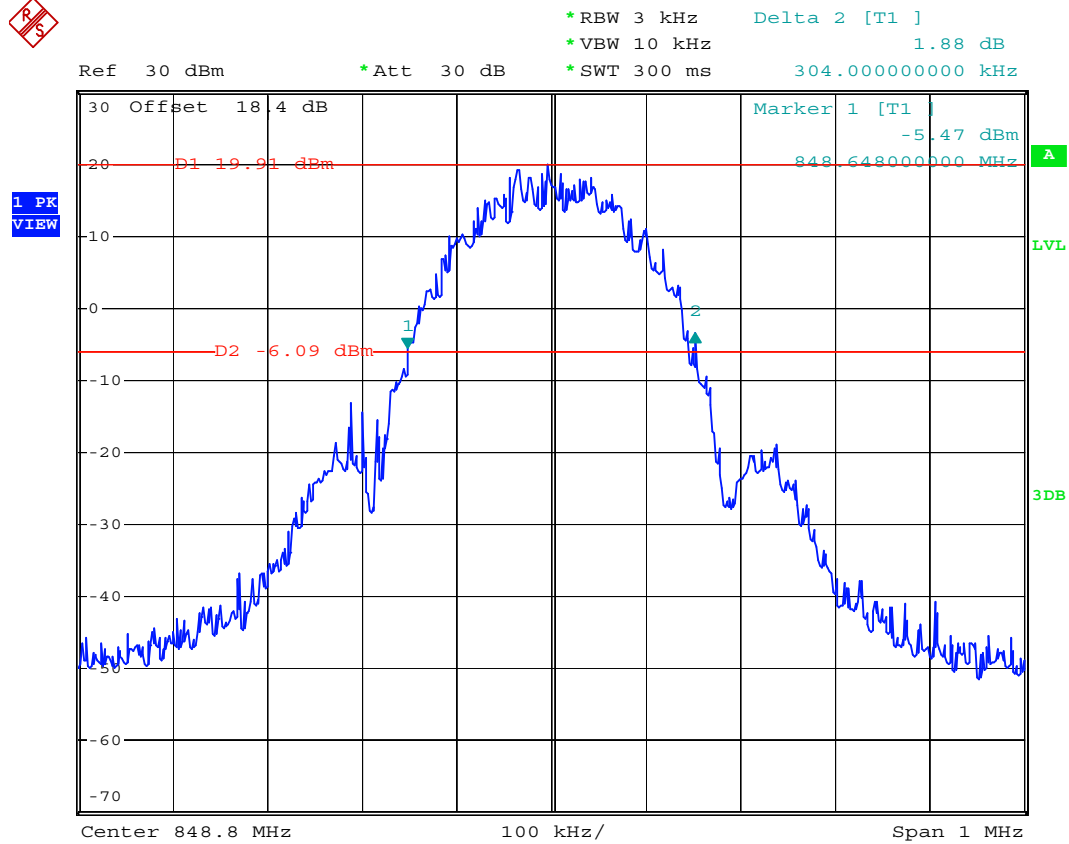


- Test Mode : GSM850 (EDGE) CH189 26dB Bandwidth
- Power State : High



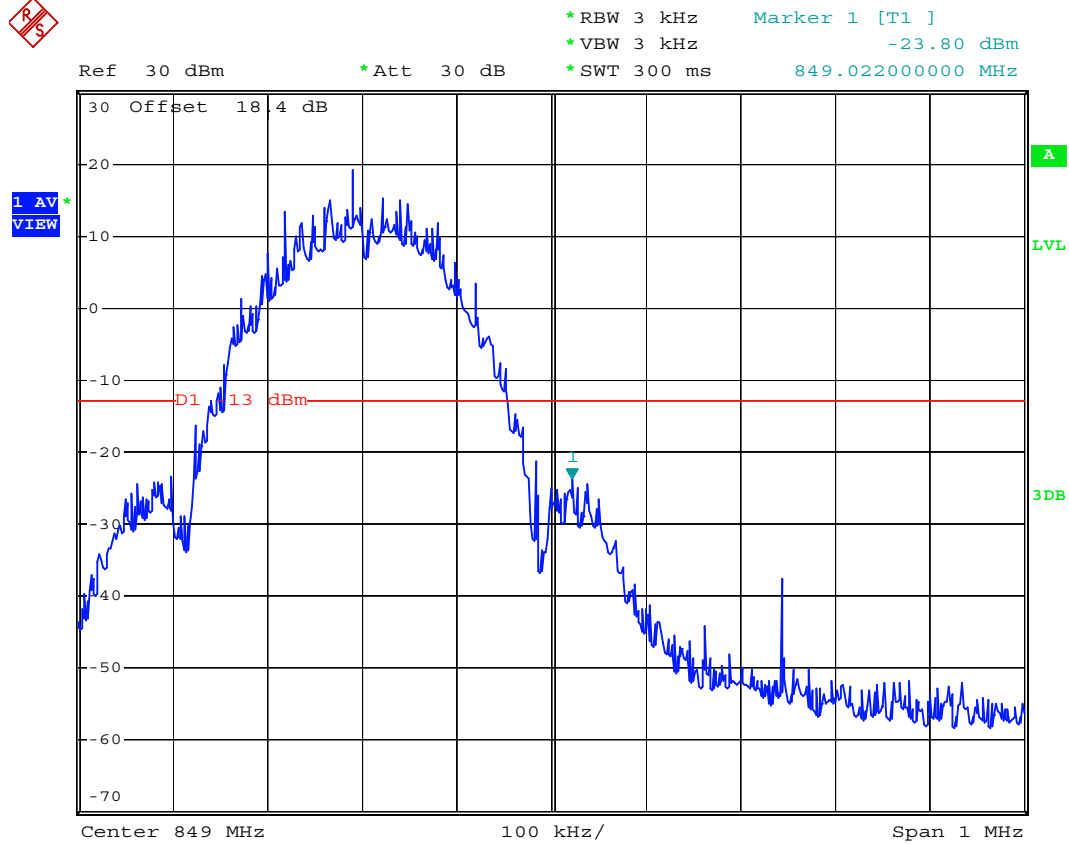


- Test Mode : GSM850 (EDGE) CH 251 26dB Bandwidth
- Power State : High



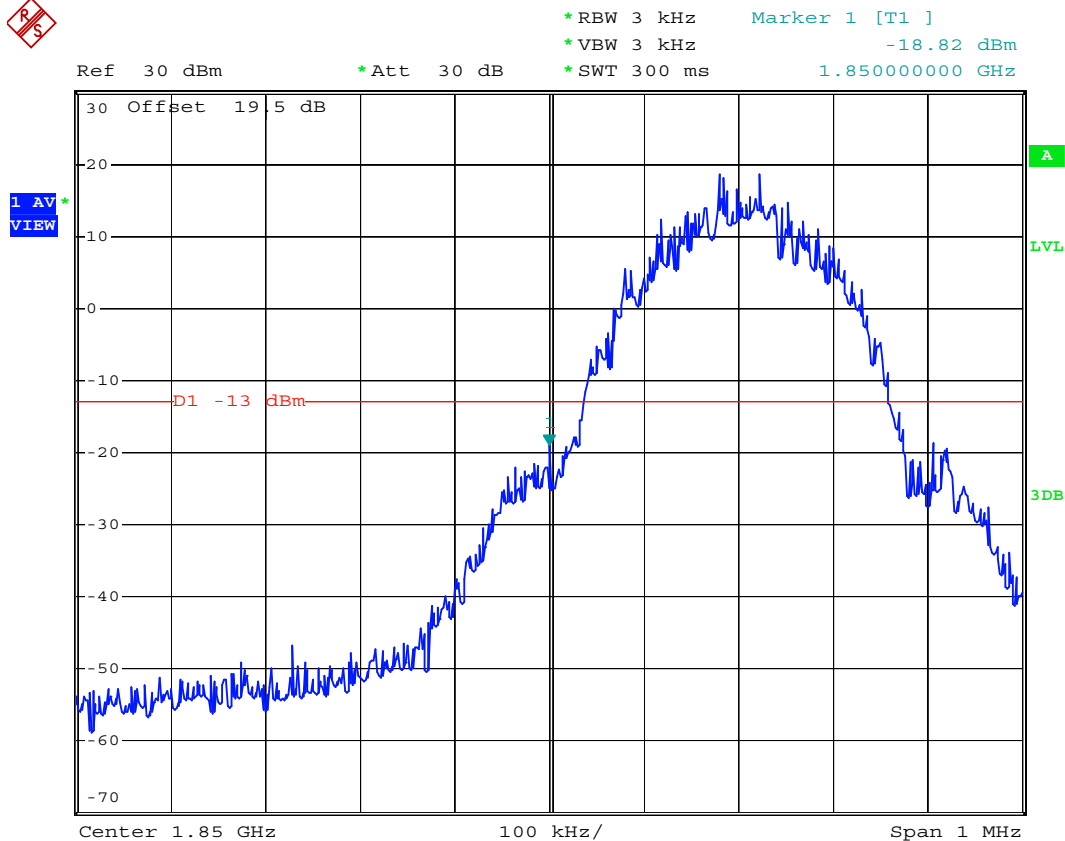


- Test Mode : GSM850 (EDGE) CH251 Higher Band Edge
- Power State : High



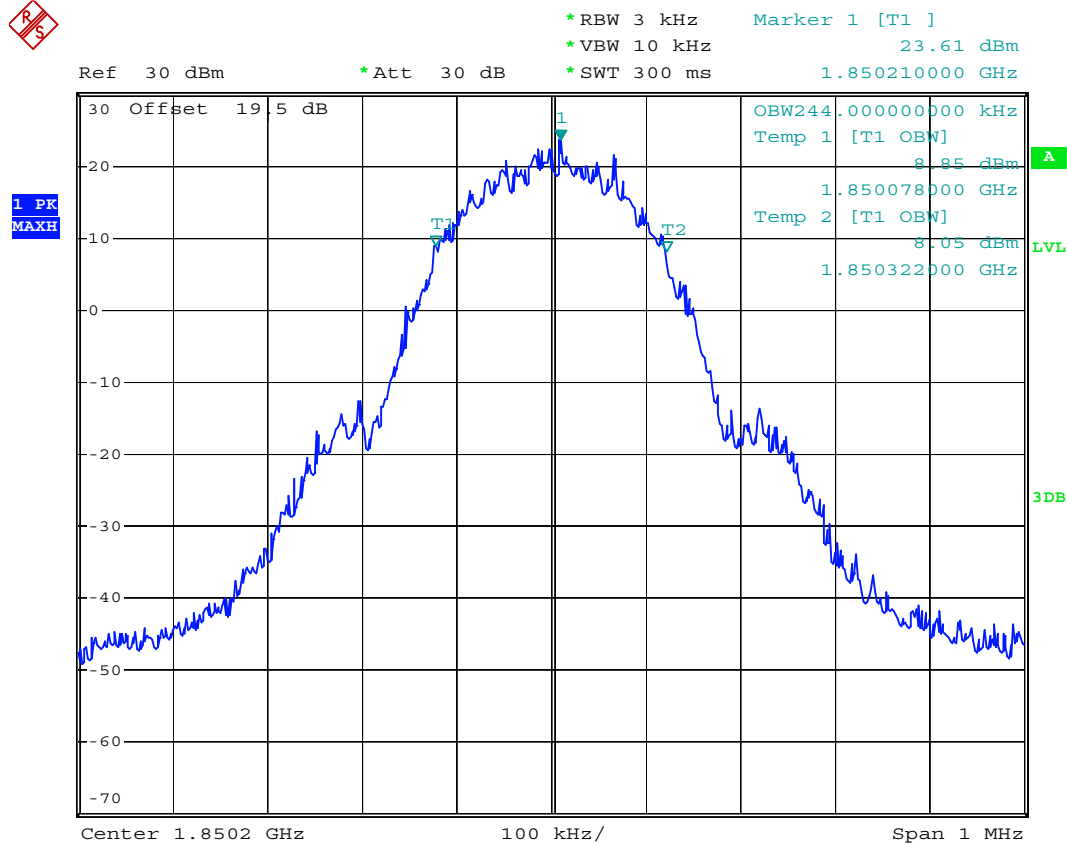


- Mode 3
- Test Mode : PCS1900 (GSM) CH512 Lower Band Edge
- Power State : High



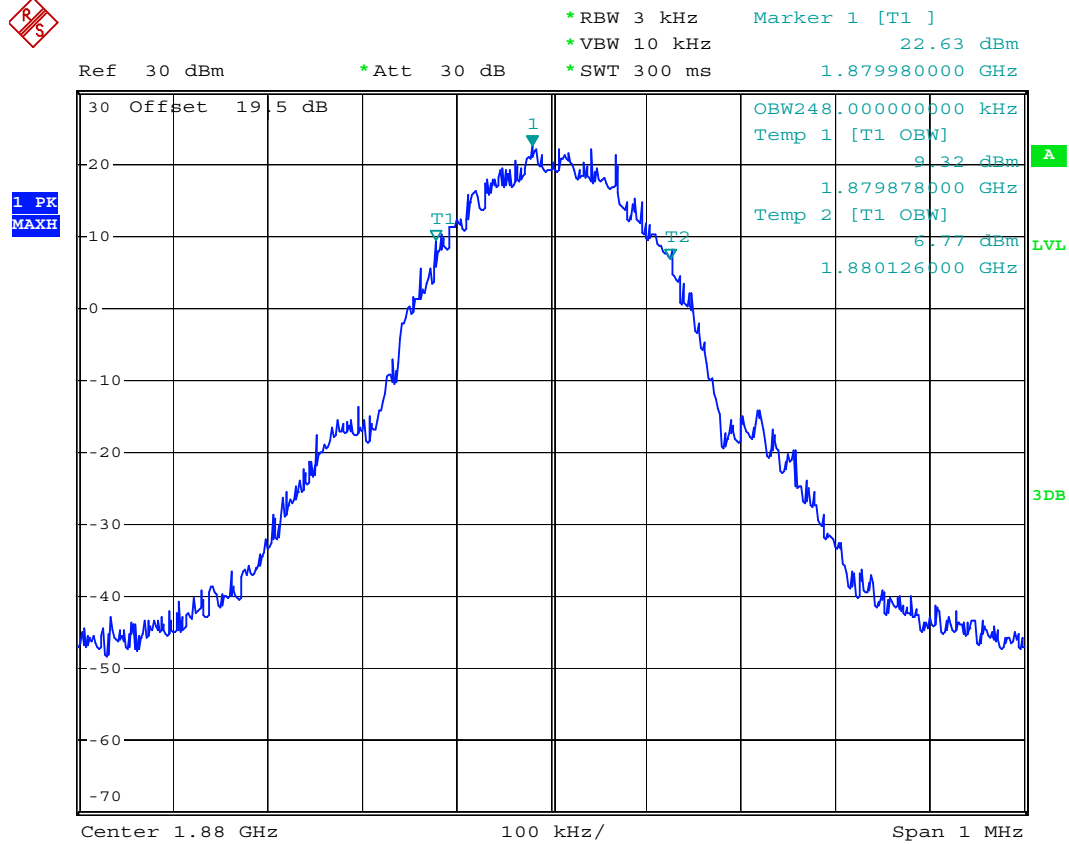


- Test Mode : PCS1900 (GSM) CH512 99% Occupied Bandwidth
- Power State : High



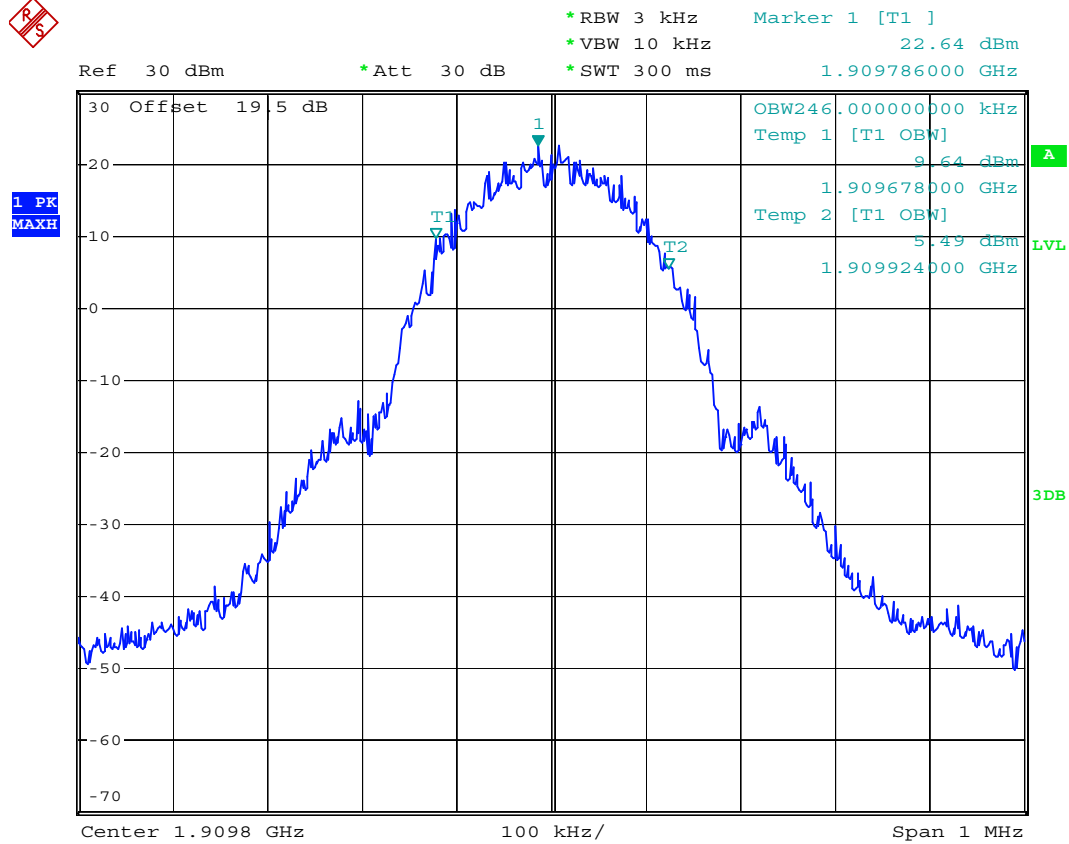


- Test Mode : PCS1900 (GSM) CH661 99% Occupied Bandwidth
- Power State : High



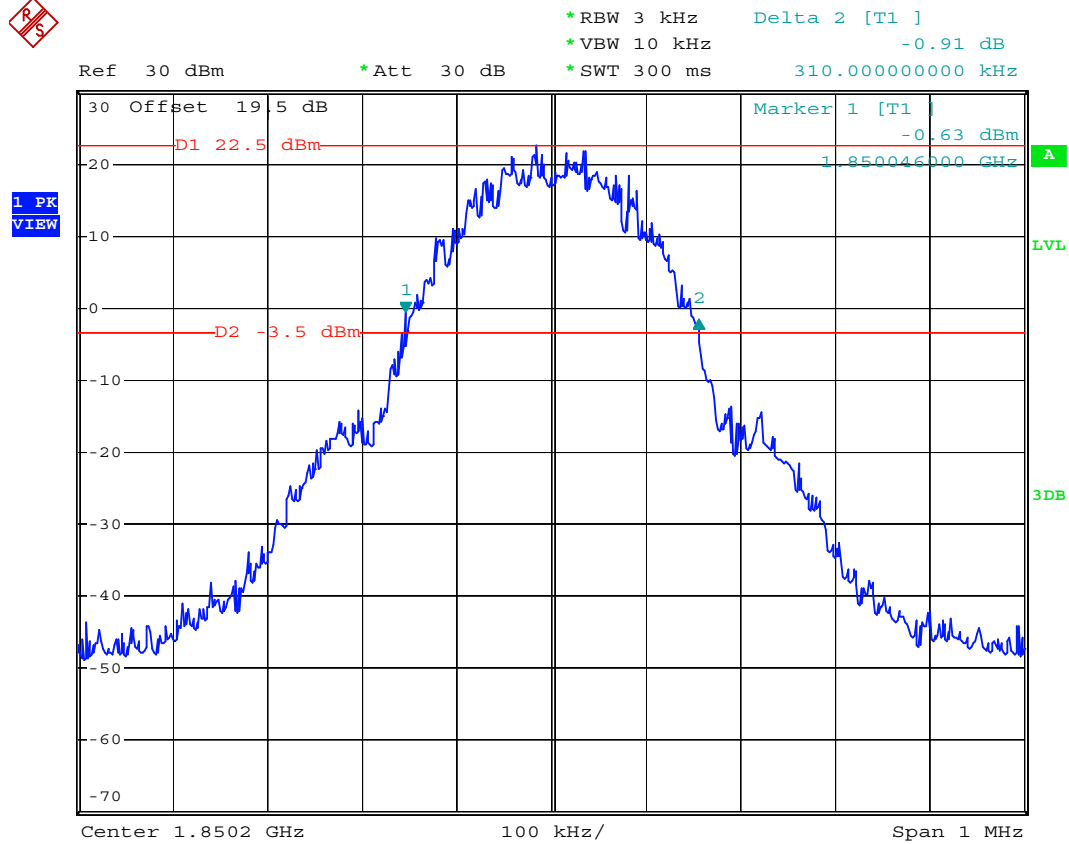


- Test Mode : PCS1900 (GSM) CH810 99% Occupied Bandwidth
- Power State : High



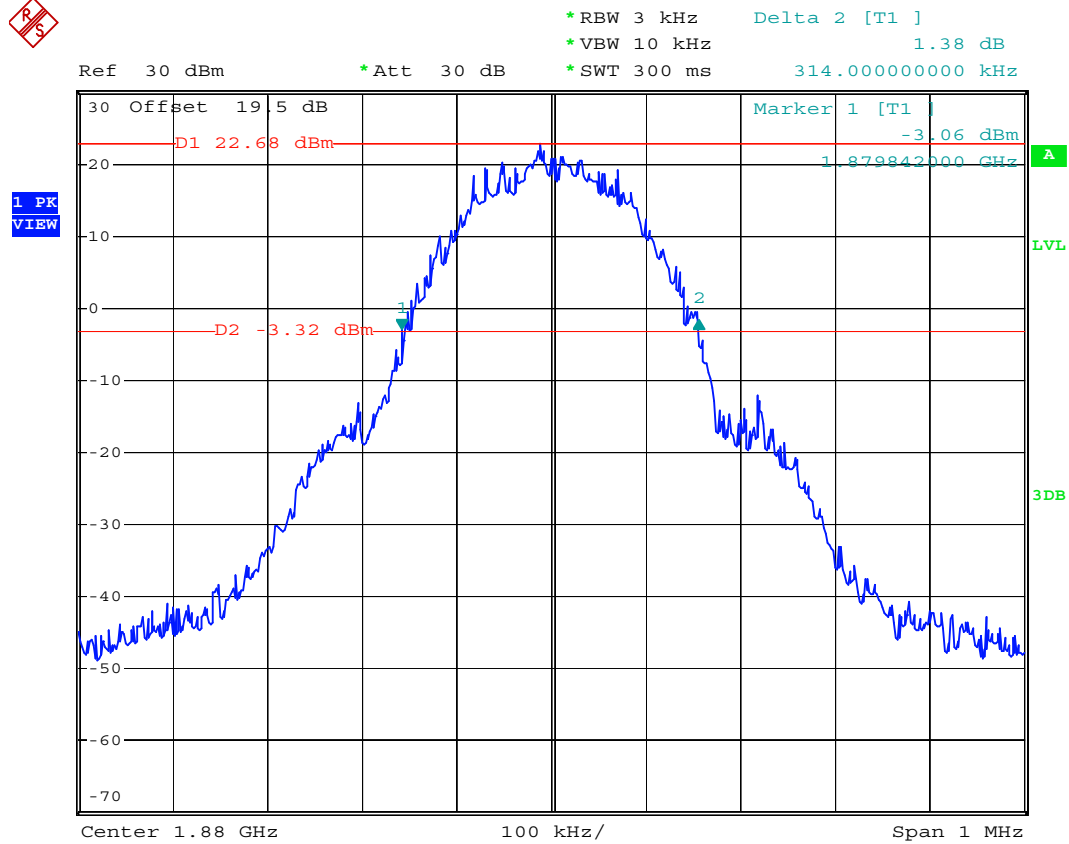


- Test Mode : PCS1900 (GSM) CH512 26dB Bandwidth
- Power State : High



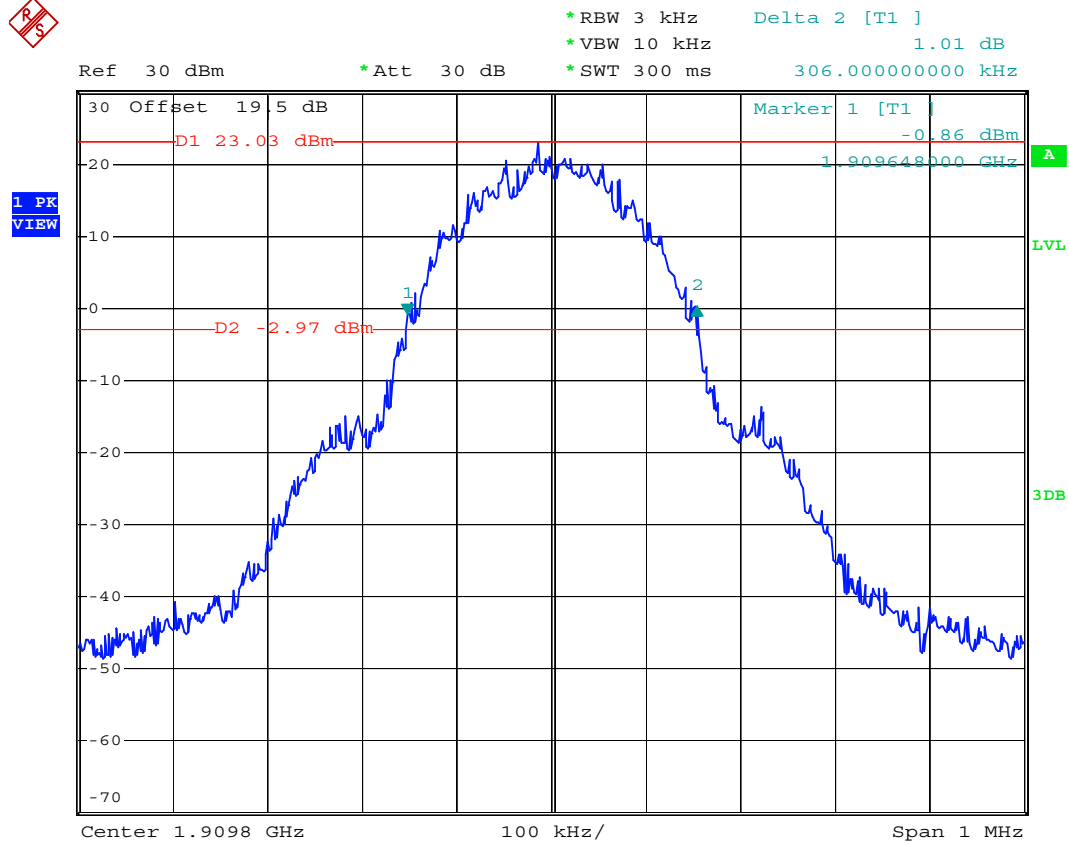


- Test Mode : PCS1900 (GSM) CH661 26dB Bandwidth
- Power State : High



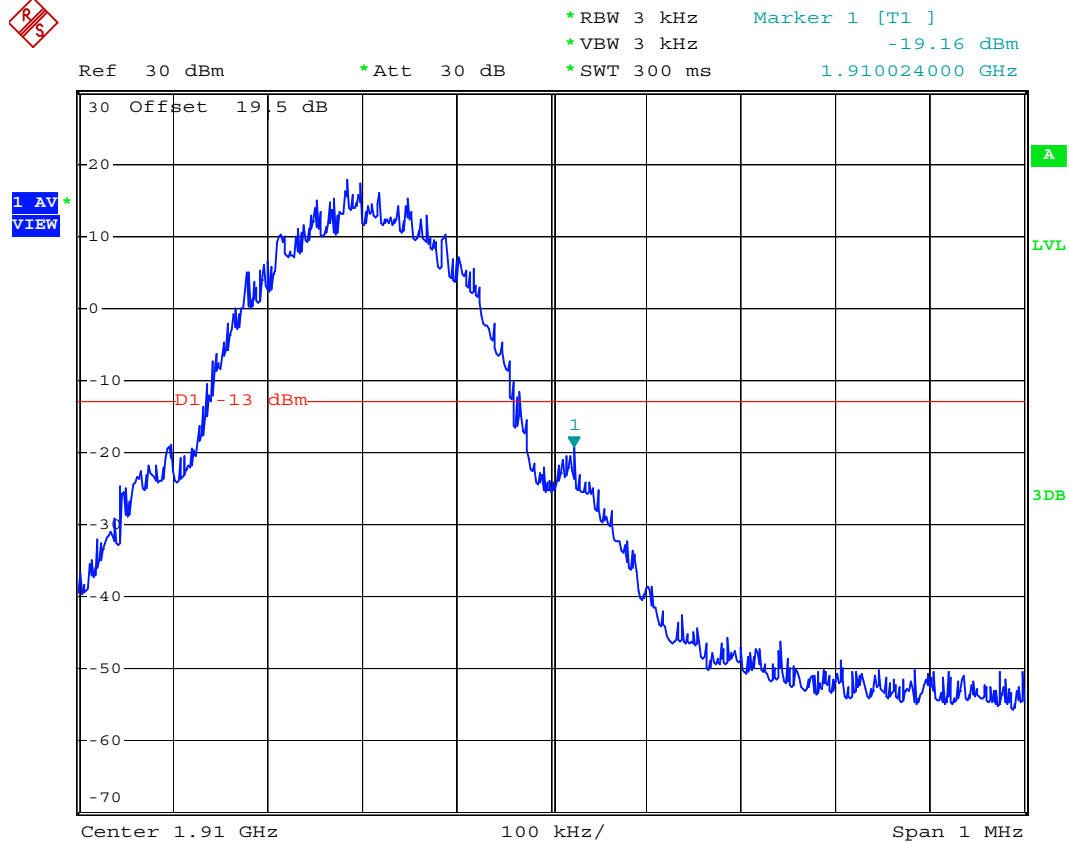


- Test Mode : PCS1900 (GSM) CH810 26dB Bandwidth
- Power State : High



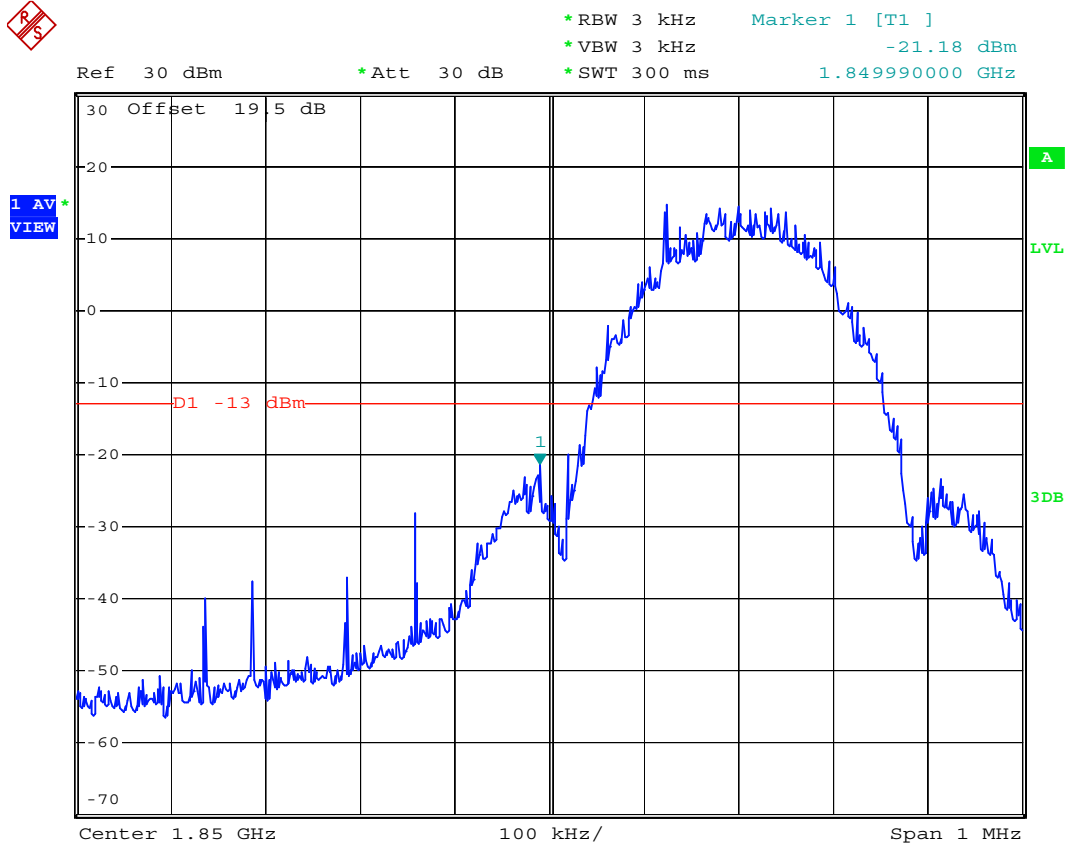


- Test Mode : PCS1900 (GSM) CH810 Higher Band Edge
- Power State : High



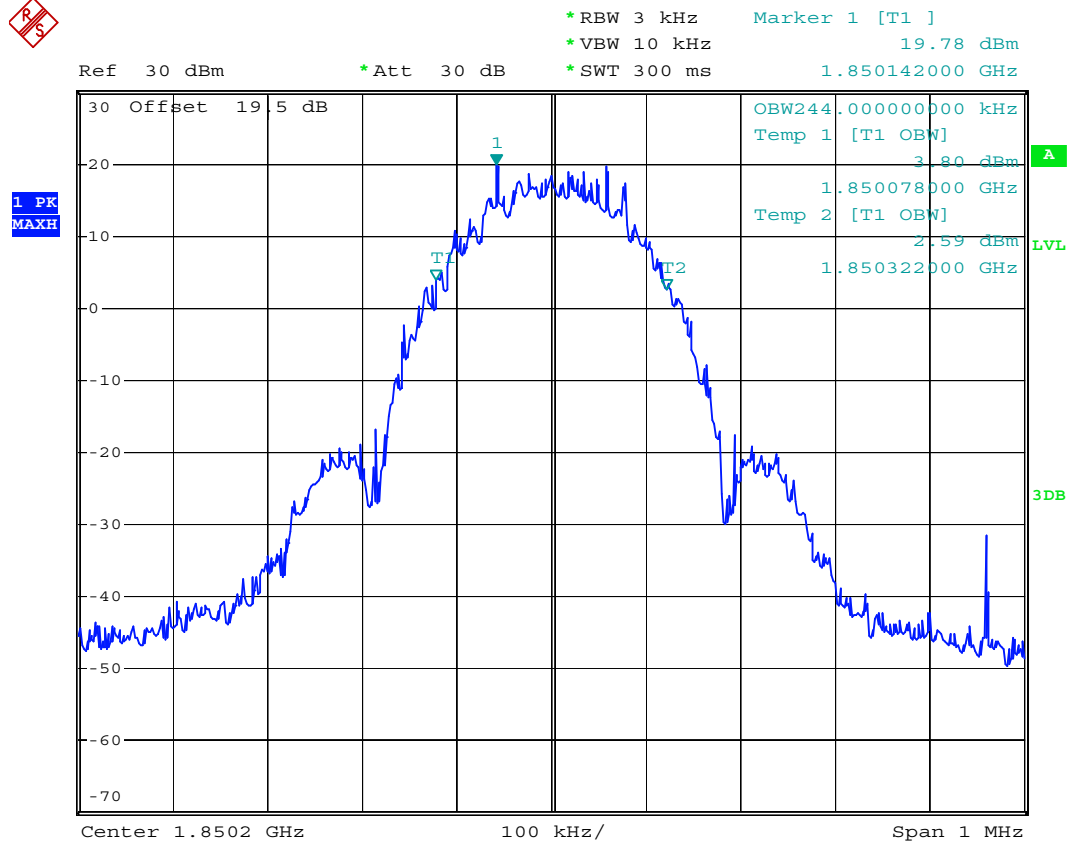


- Mode 4
- Test Mode : PCS1900 (EDGE) CH512 Lower Band Edge
- Power State : High



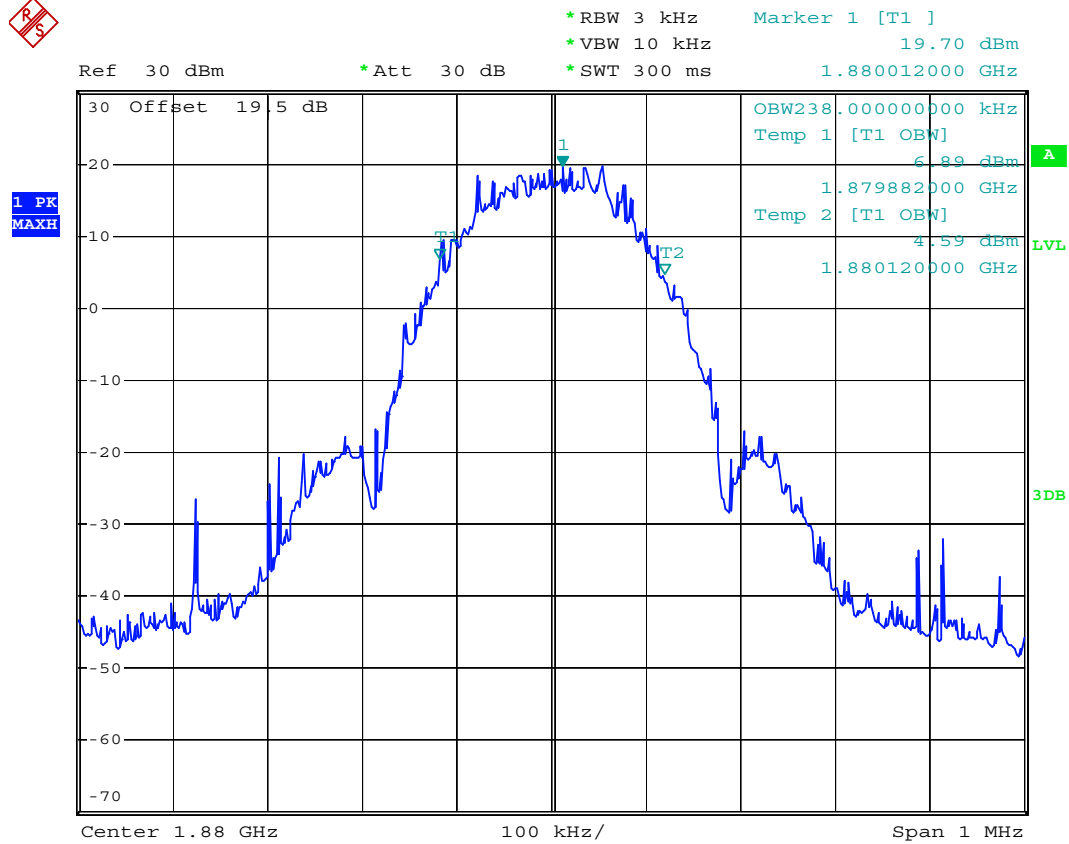


- Test Mode : PCS1900 (EDGE) CH512 99% Occupied Bandwidth
- Power State : High



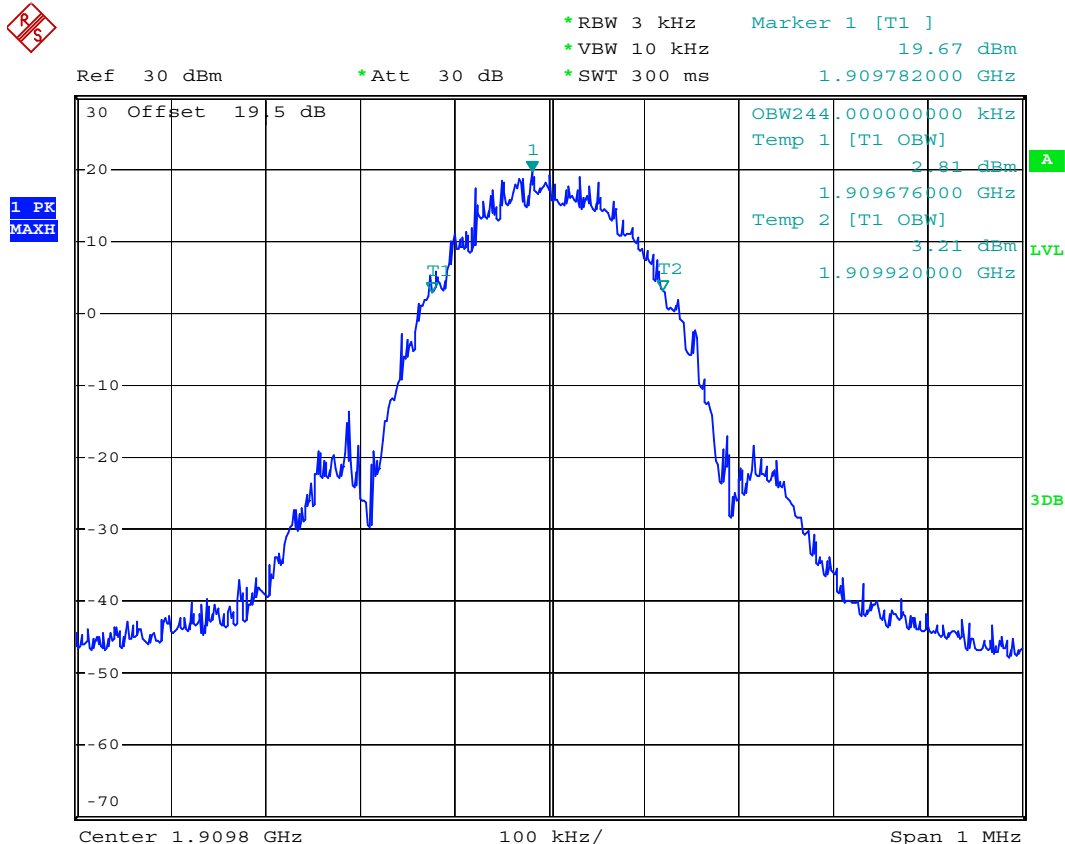


- Test Mode : PCS1900 (EDGE) CH661 99% Occupied Bandwidth
- Power State : High



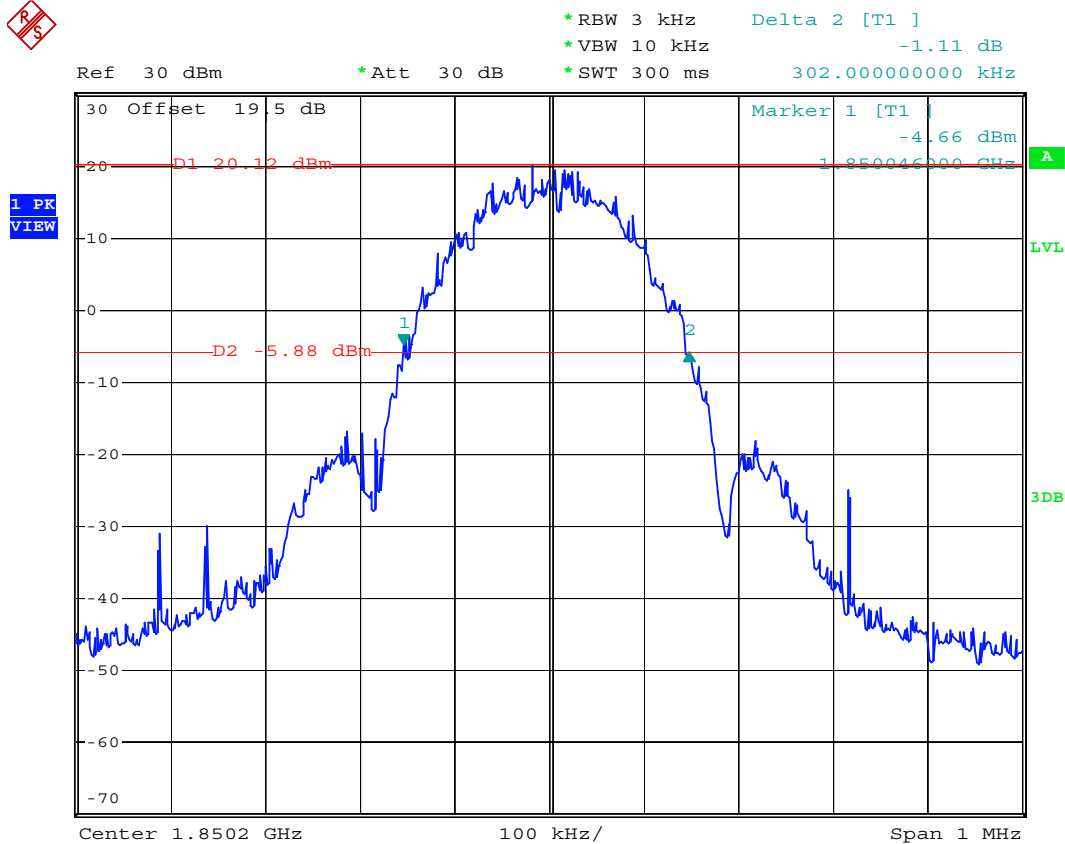


- Test Mode : PCS1900 (EDGE) CH810 99% Occupied Bandwidth
- Power State : High



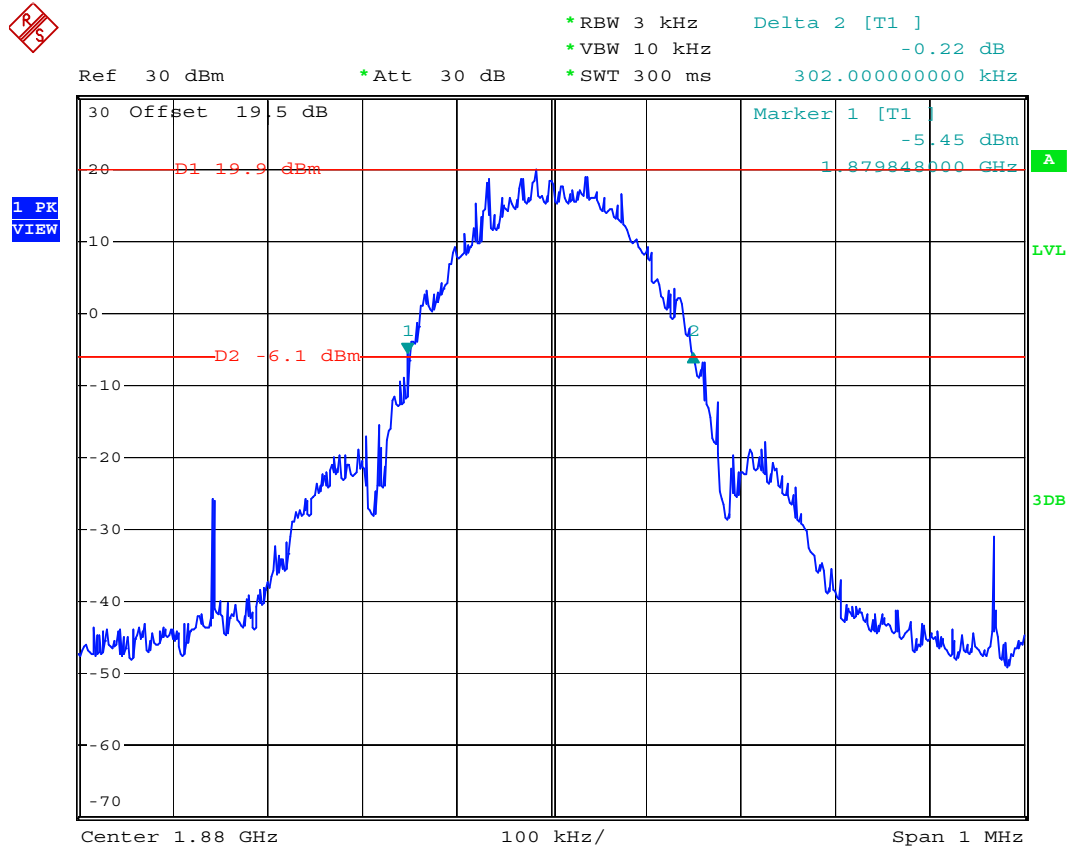


- Test Mode : PCS1900 (EDGE) CH512 26dB Bandwidth
- Power State : High



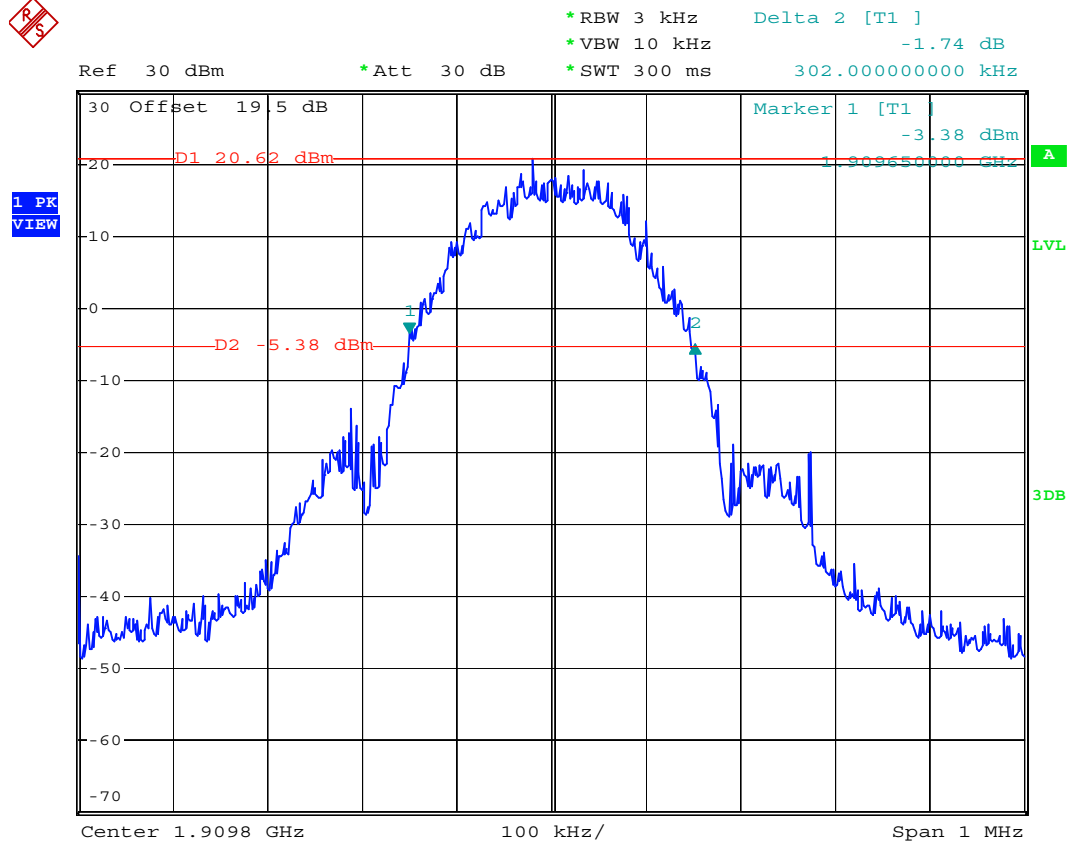


- Test Mode : PCS1900 (EDGE) CH661 26dB Bandwidth
- Power State : High



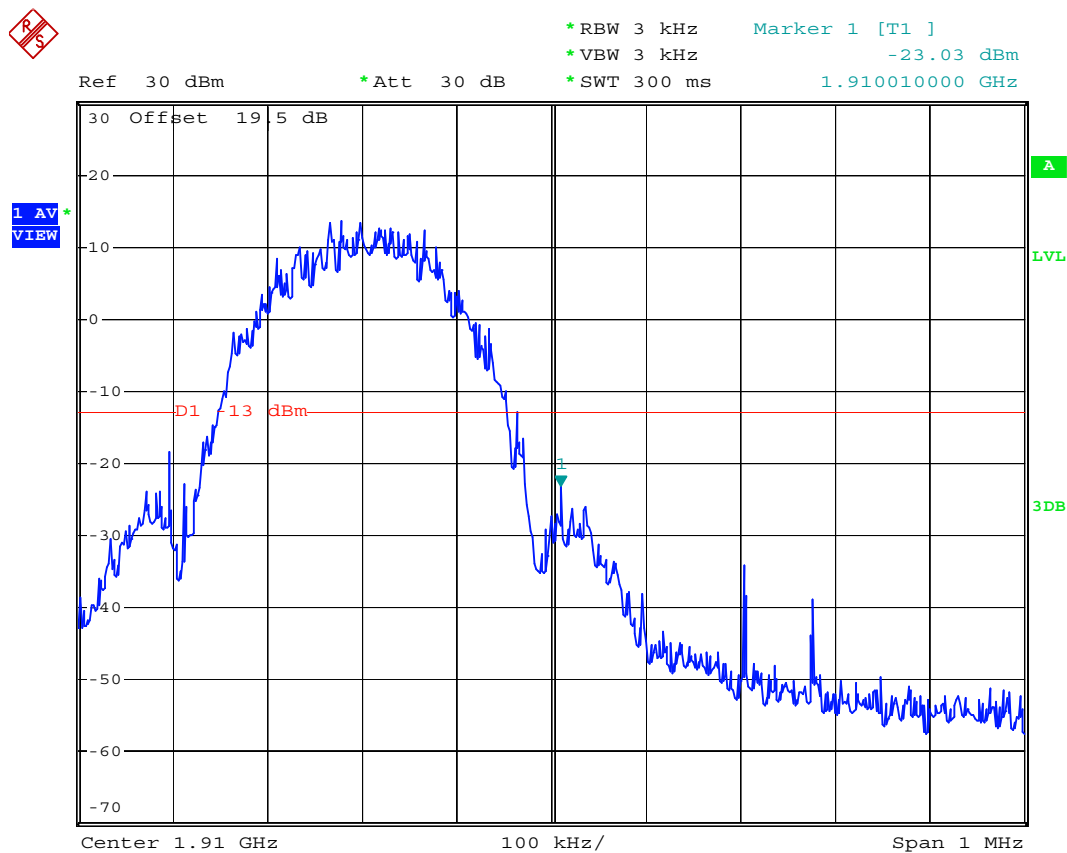


- Test Mode : PCS1900 (EDGE) CH810 26dB Bandwidth
- Power State : High



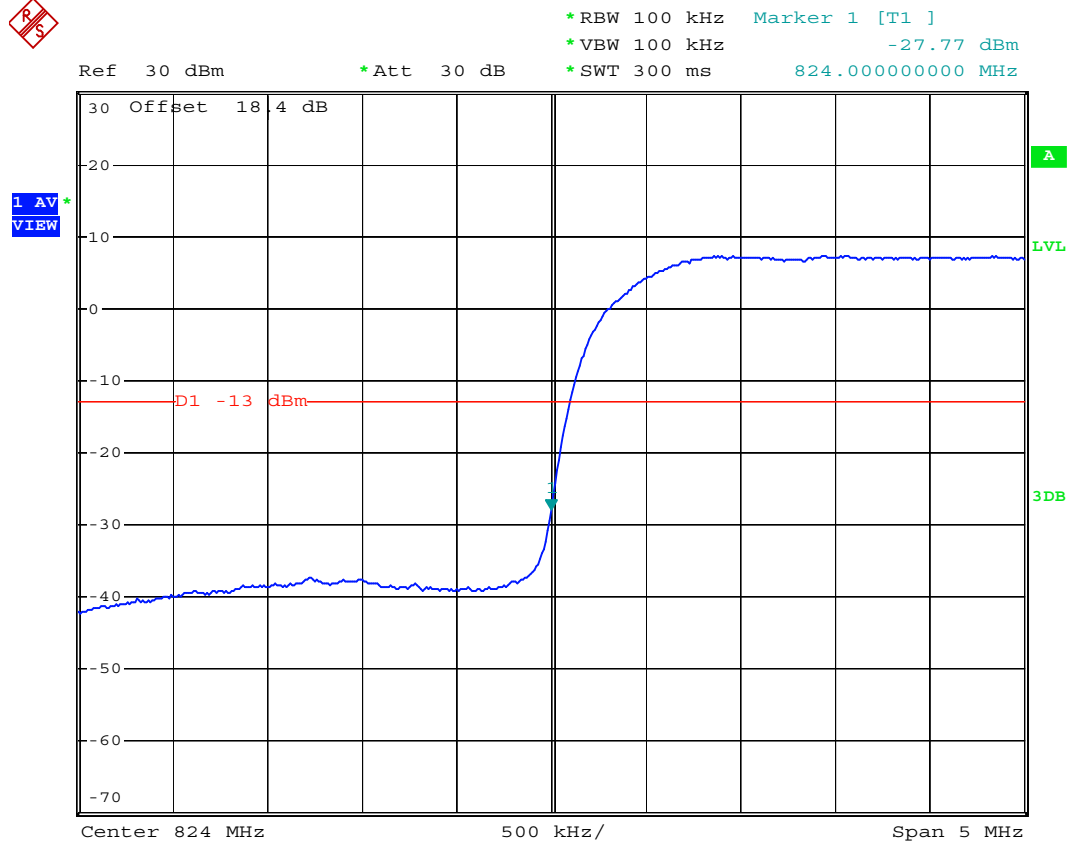


- Test Mode : PCS1900(EDGE) CH810 Higher Band Edge
- Power State : High



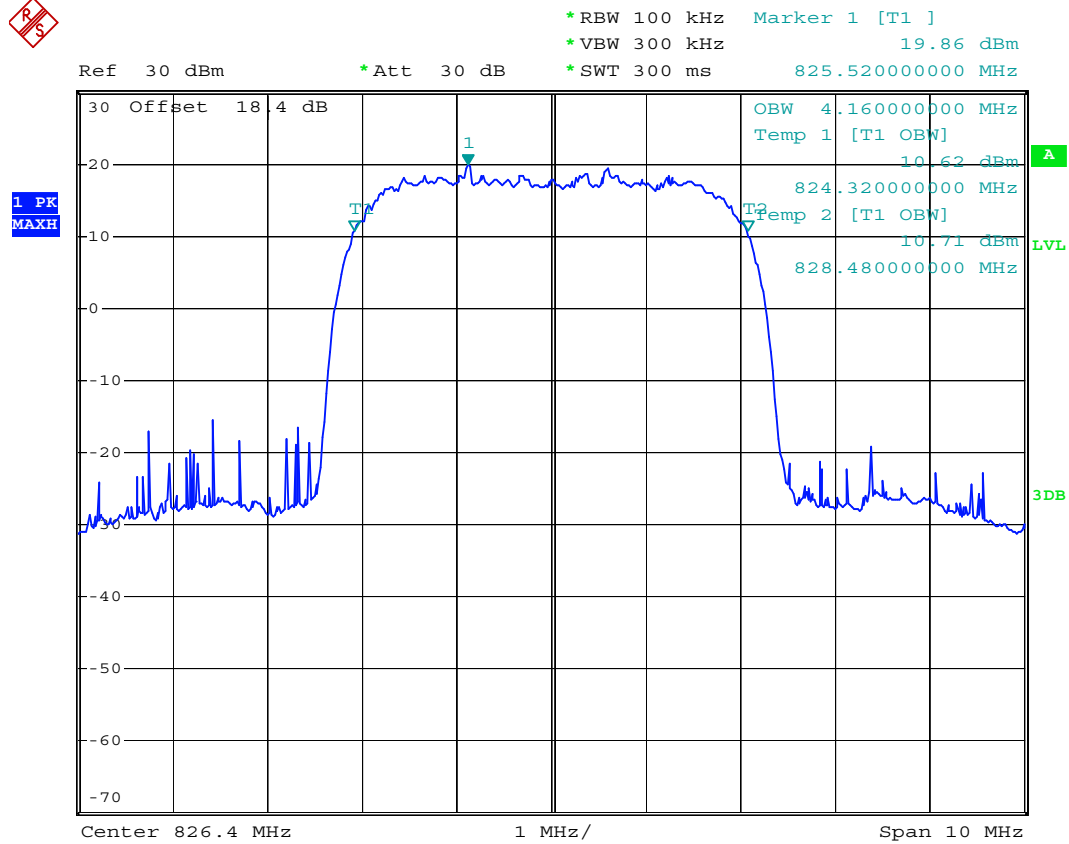


- Mode 5
- Test Mode : WCDMA Band V CH4132 Lower Band Edge
- Power State : High



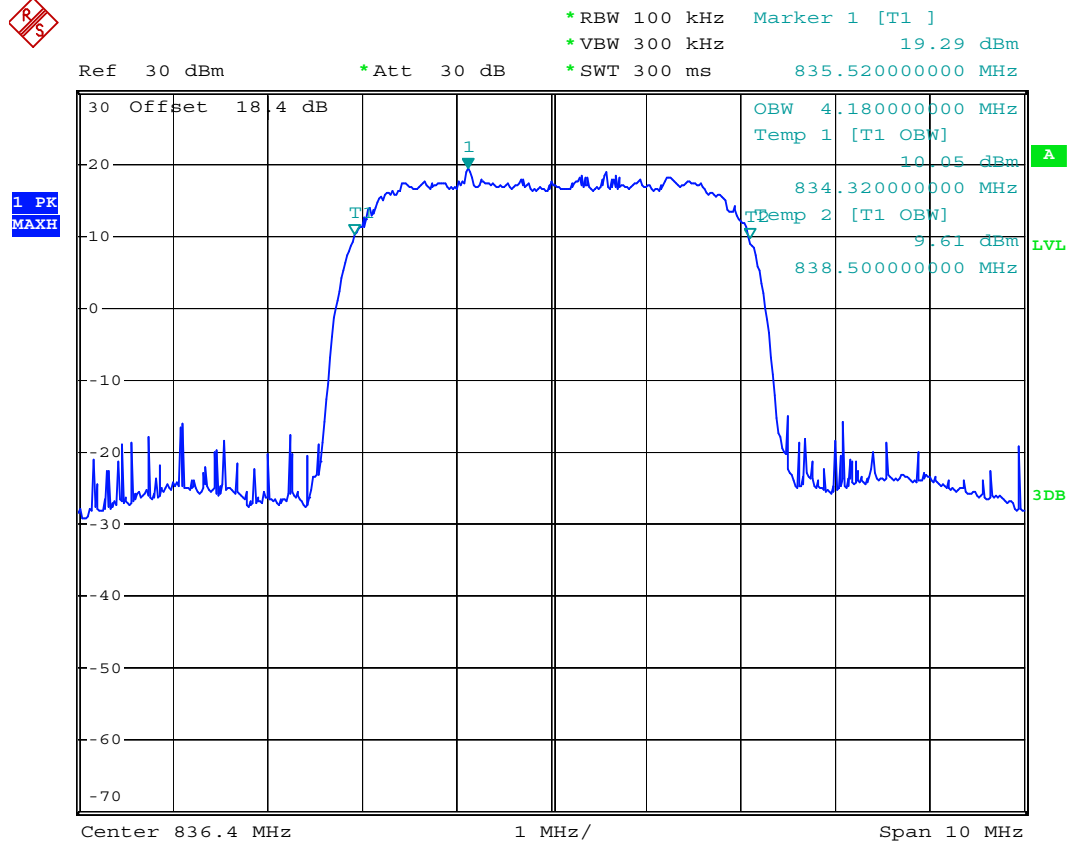


- Test Mode : WCDMA Band V CH4132 99% Occupied Bandwidth
- Power State : High



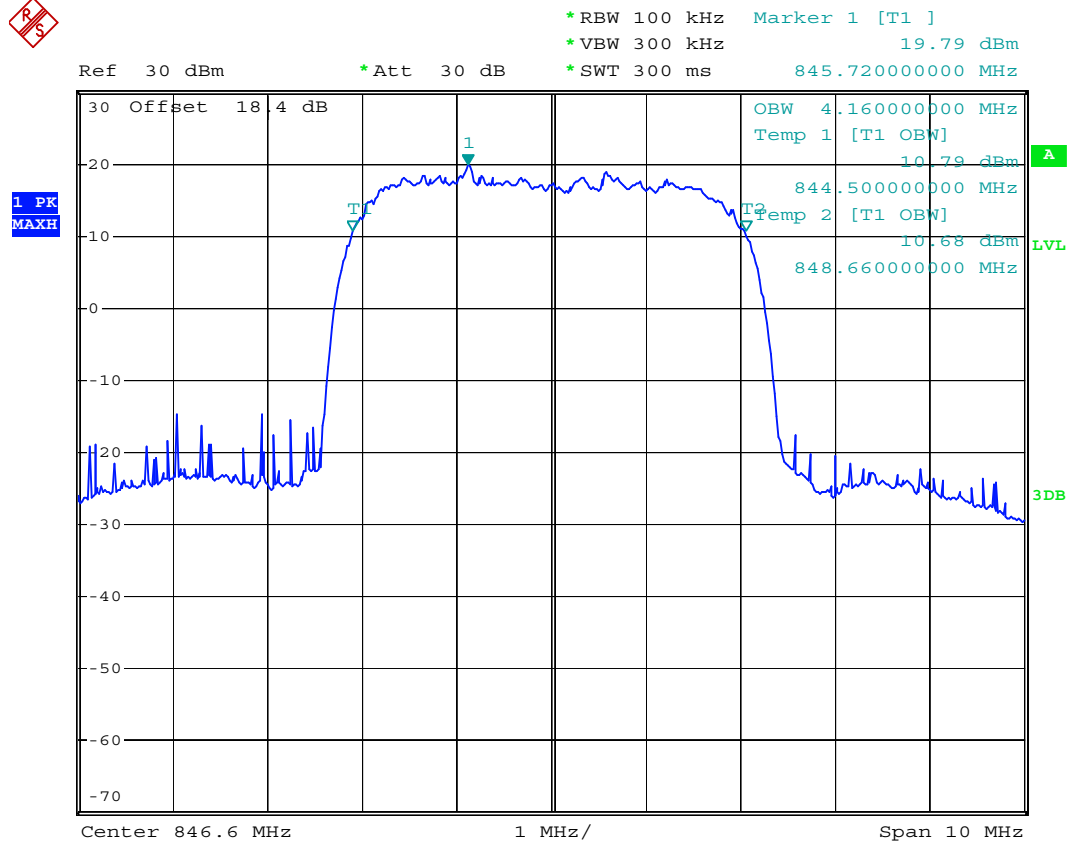


- Test Mode : WCDMA Band V CH4182 99% Occupied Bandwidth
- Power State : High



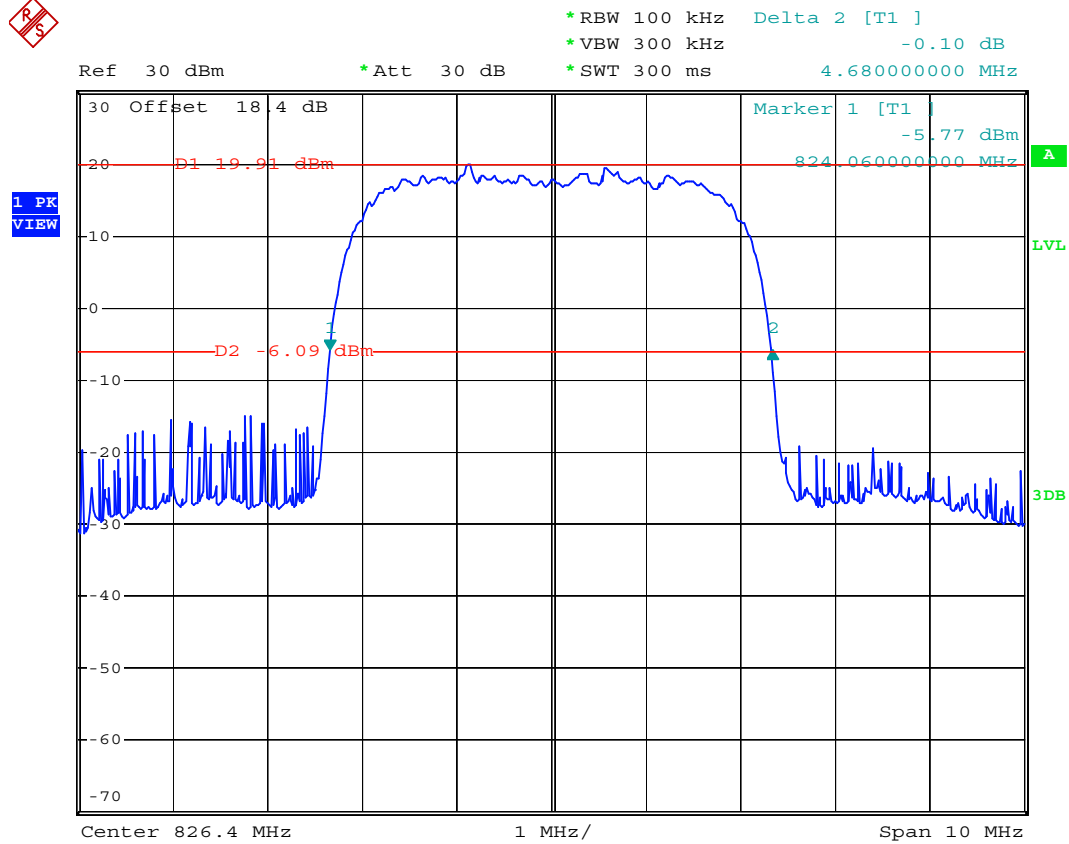


- Test Mode : WCDMA Band V CH4233 99% Occupied Bandwidth
- Power State : High



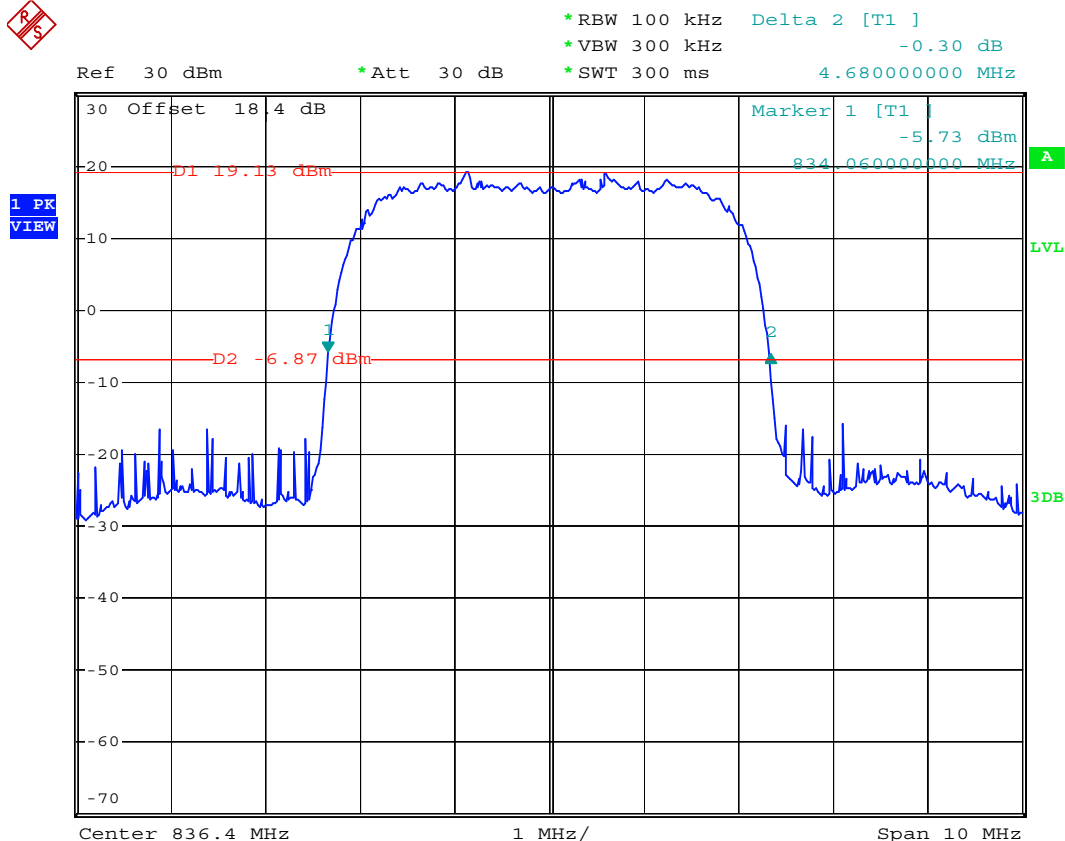


- Test Mode : WCDMA Band V CH4132 26dB Bandwidth
- Power State : High



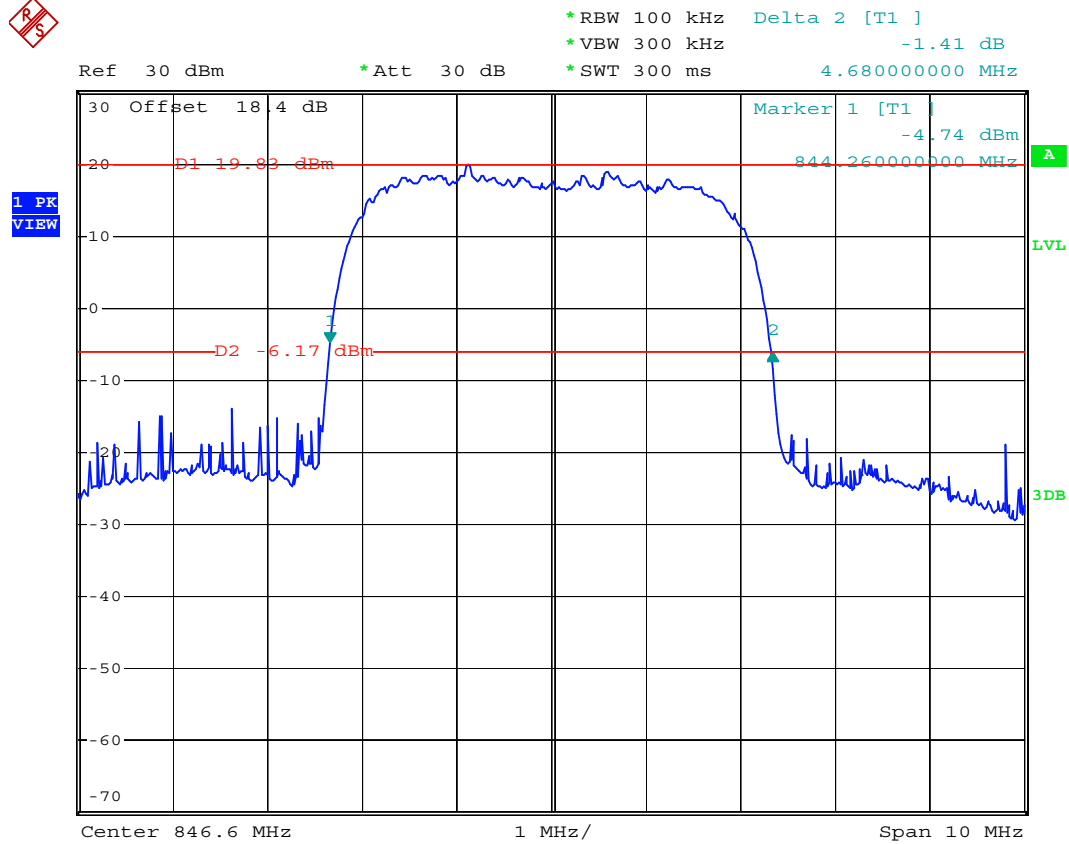


- Test Mode : WCDMA Band V CH4182 26dB Bandwidth
- Power State : High



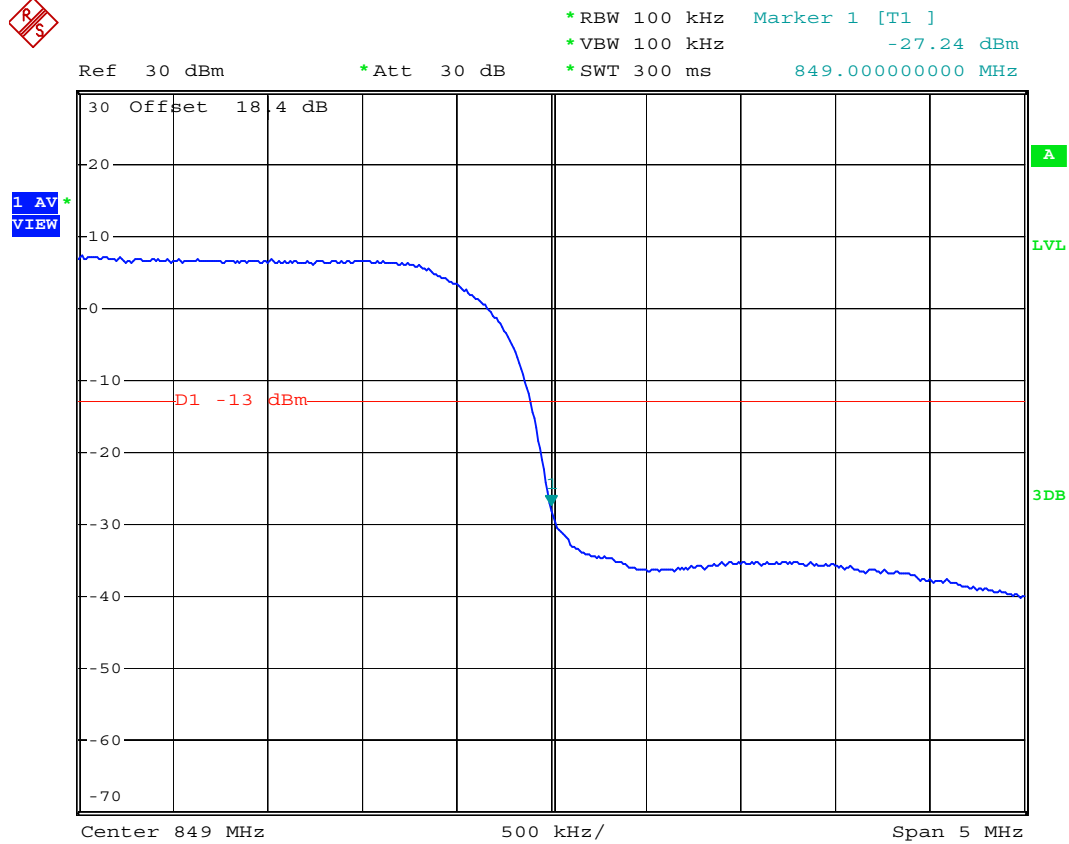


- Test Mode : WCDMA Band V CH4233 26dB Bandwidth
- Power State : High



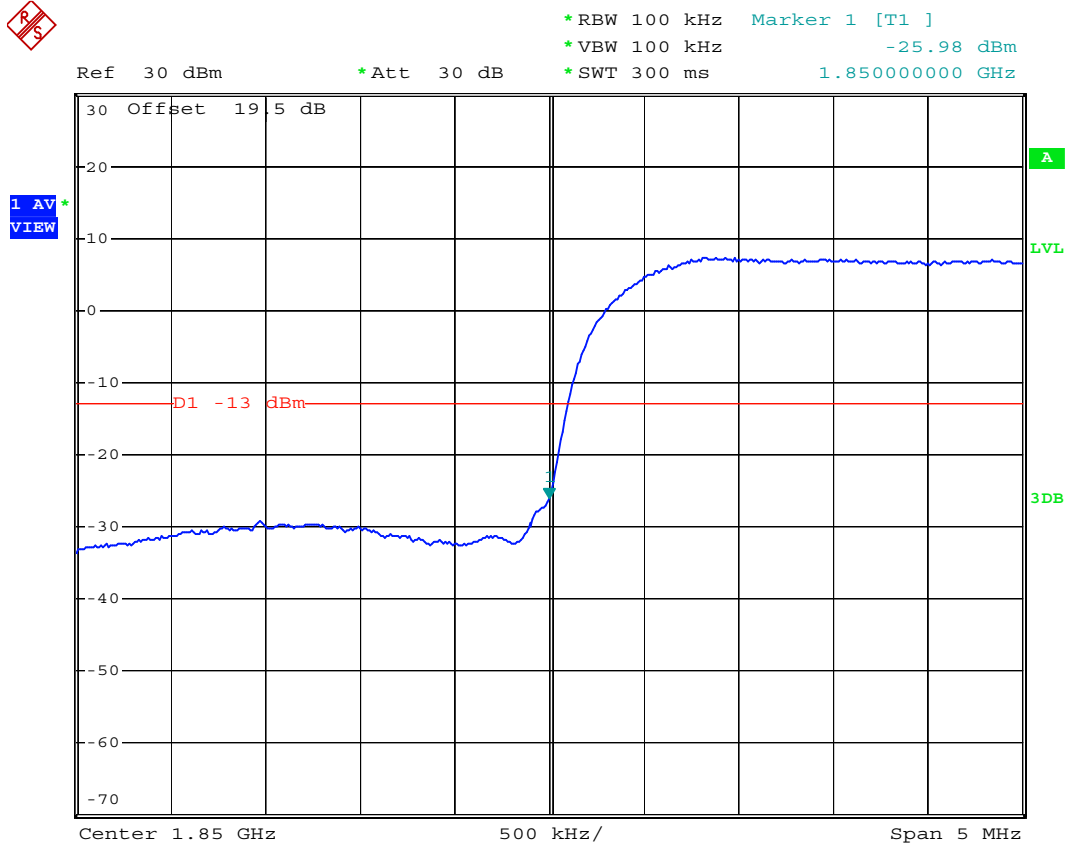


- Test Mode : WCDMA Band V CH4233 Higher Band Edge
- Power State : High



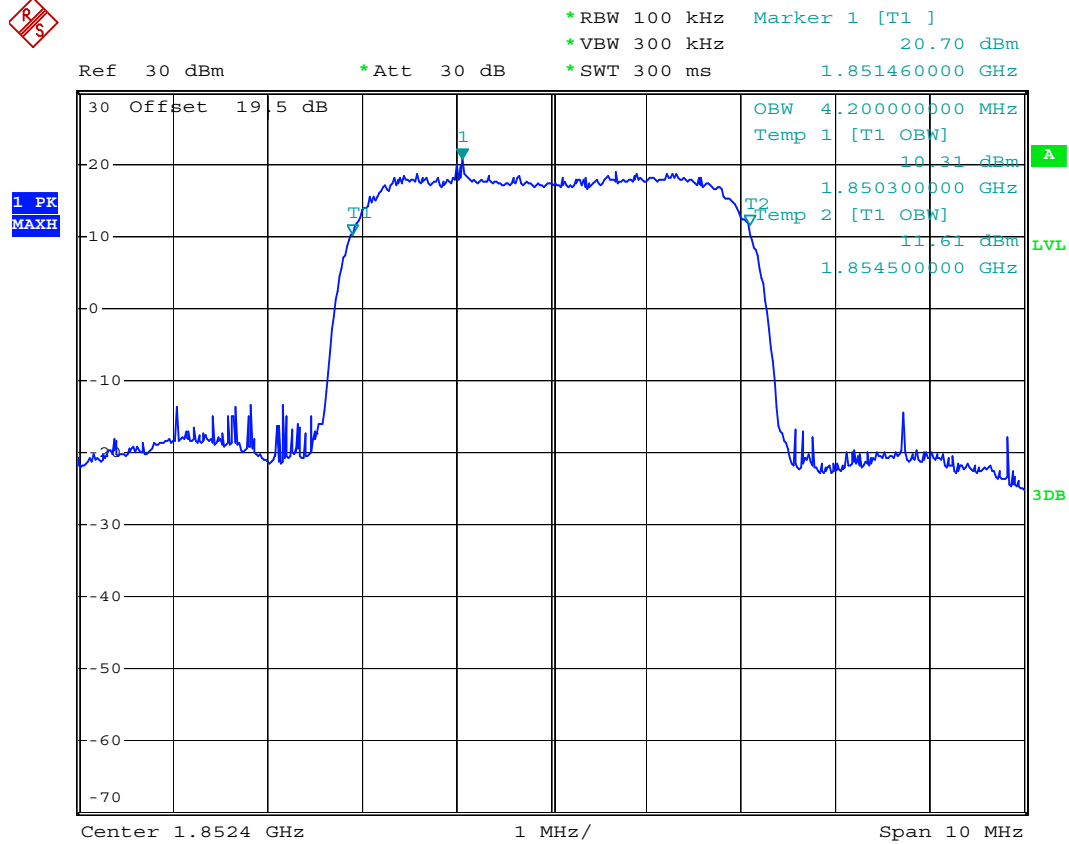


- Mode 6
- Test Mode : WCDMA Band II CH9262 Lower Band Edge
- Power State : High



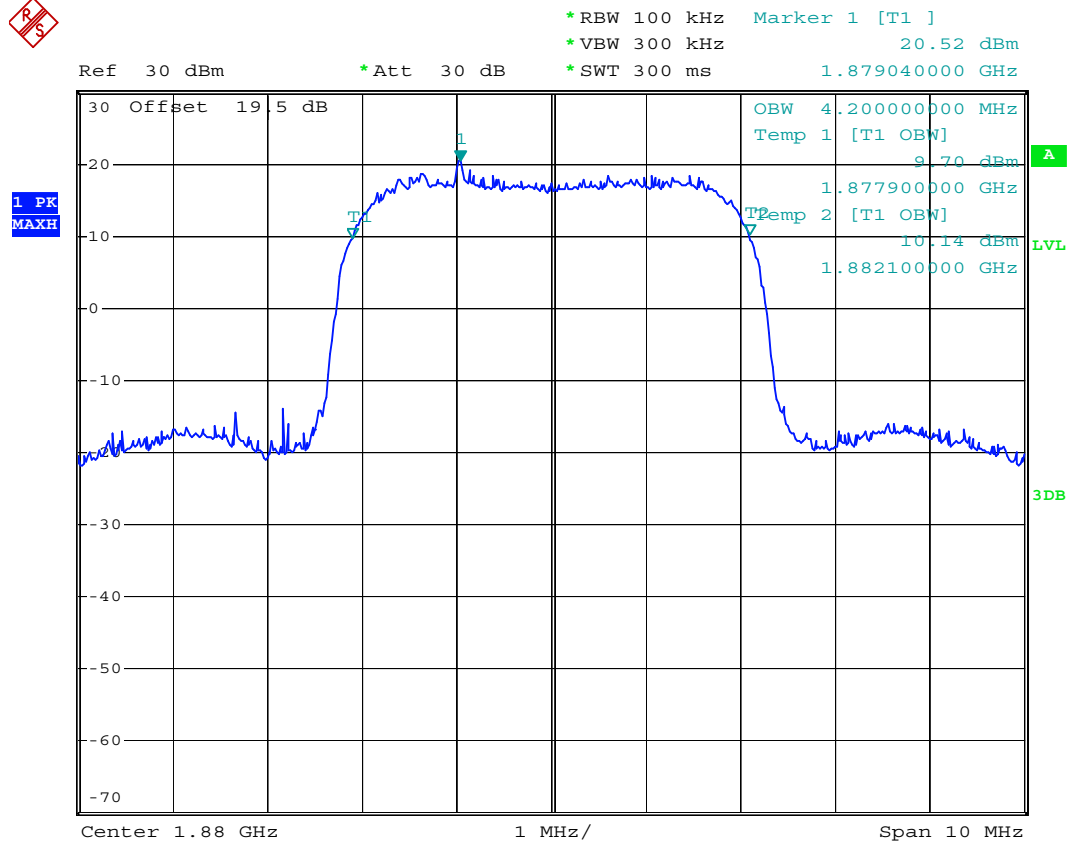


- Test Mode : WCDMA Band II CH9262 99% Occupied Bandwidth
- Power State : High



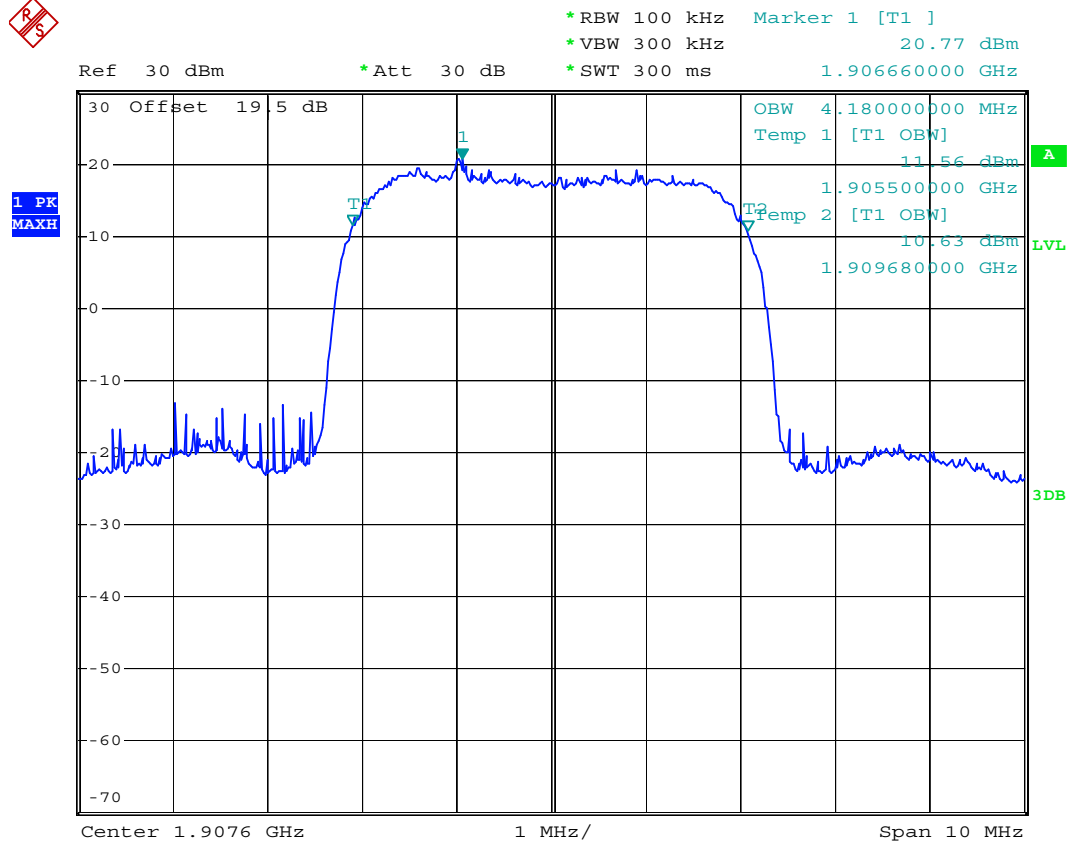


- Test Mode : WCDMA Band II CH9400 99% Occupied Bandwidth
- Power State : High



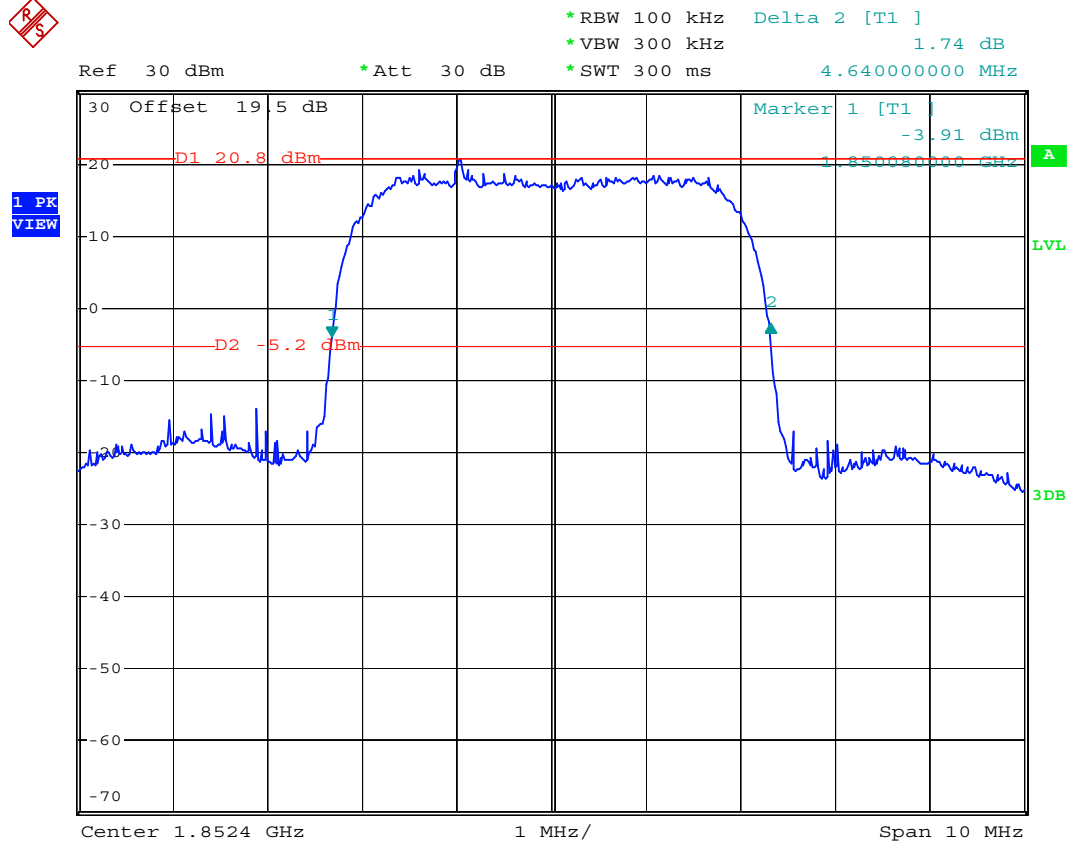


- Test Mode : WCDMA Band II CH9538 99% Occupied Bandwidth
- Power State : High



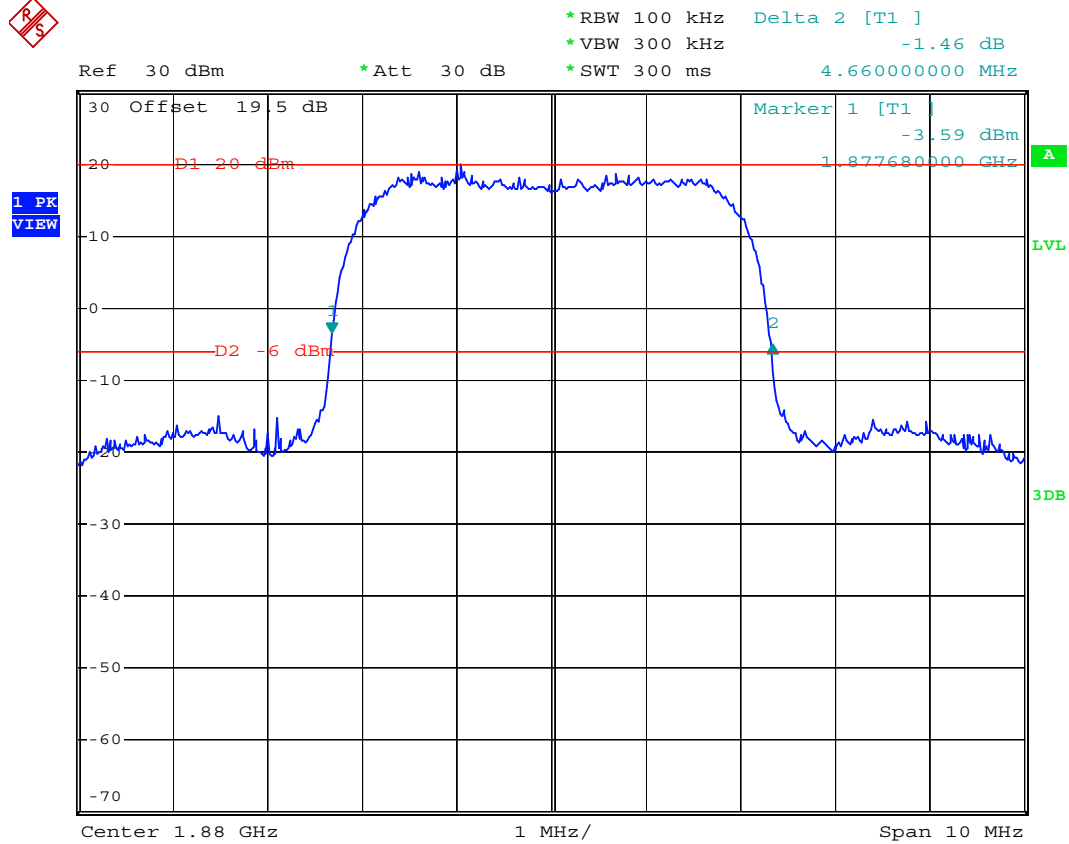


- Test Mode : WCDMA Band II CH9262 26dB Bandwidth
- Power State : High



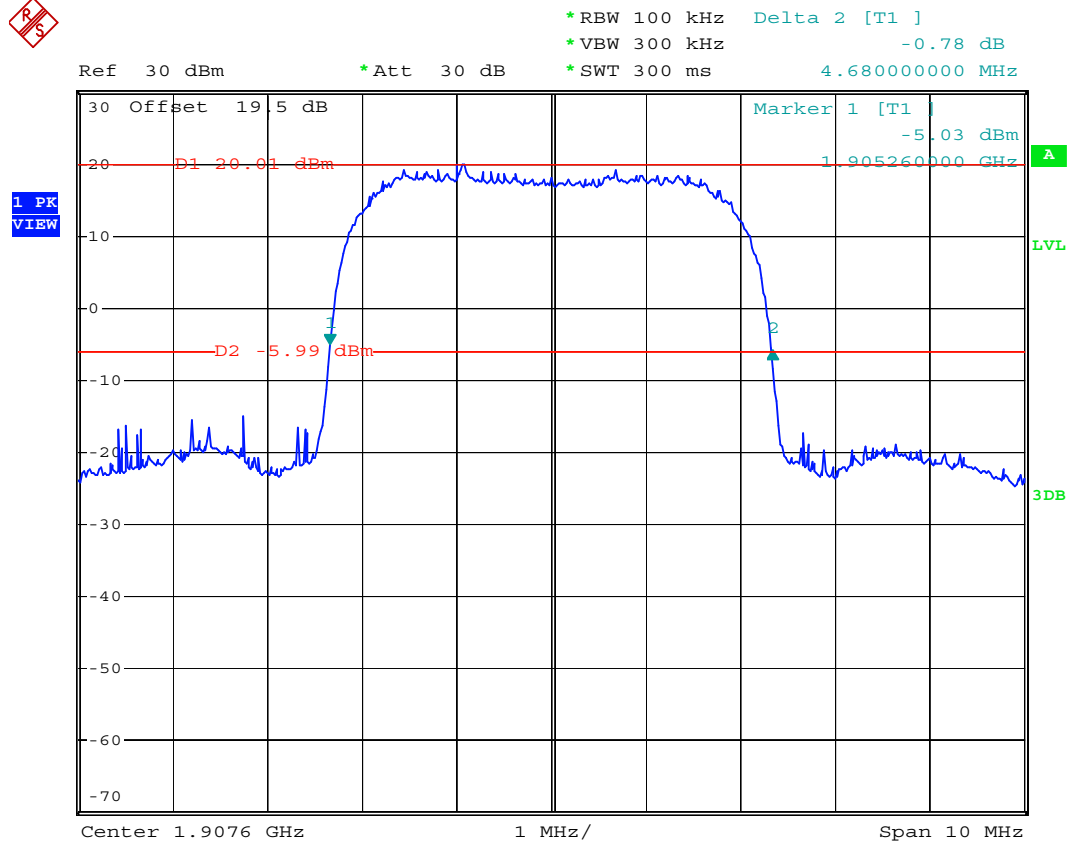


- Test Mode : WCDMA Band II CH9400 26dB Bandwidth
- Power State : High



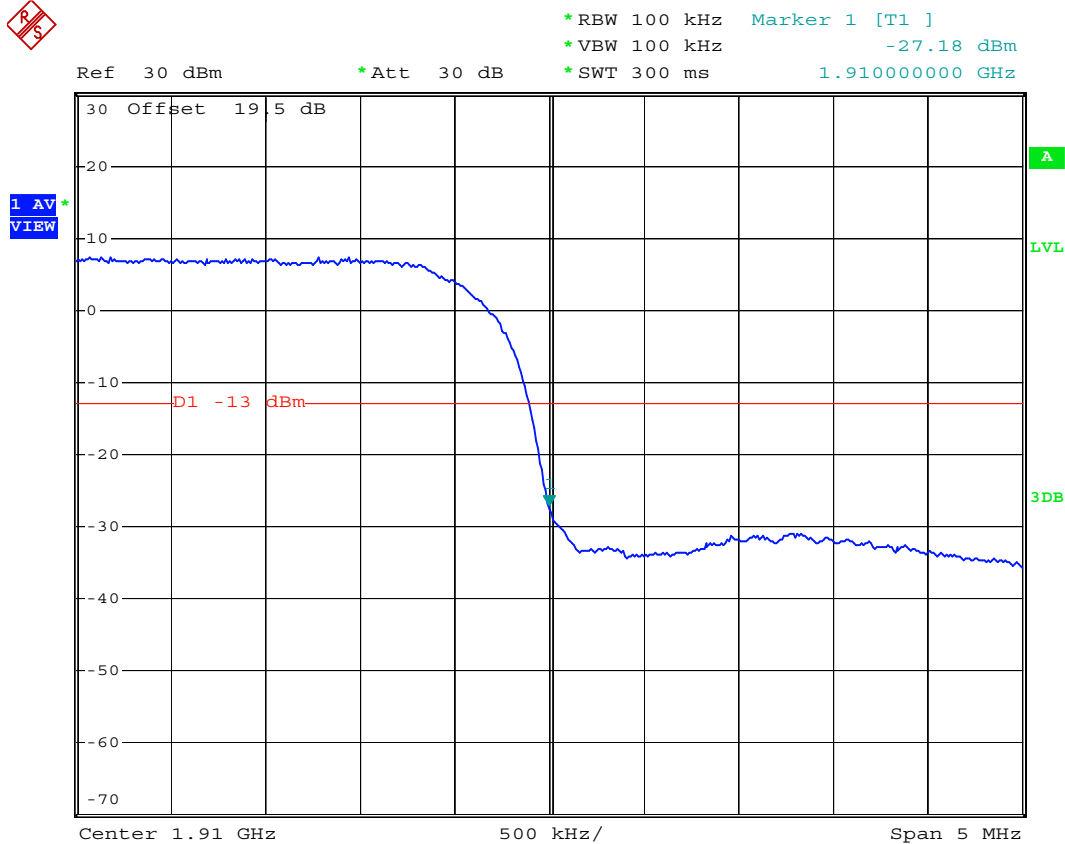


- Test Mode : WCDMA Band II CH9538 26dB Bandwidth
- Power State : High





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



4.5 Conducted Emission

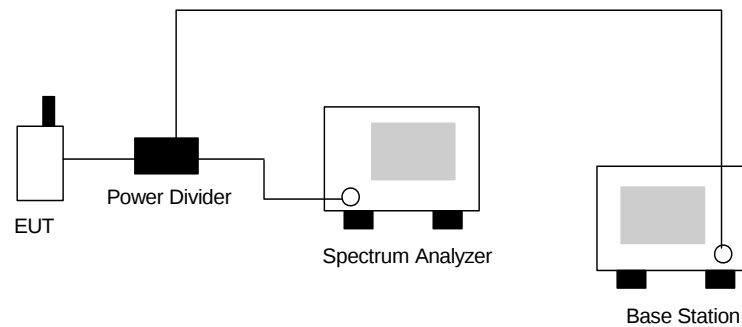
4.5.1 Measurement Instruments

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.

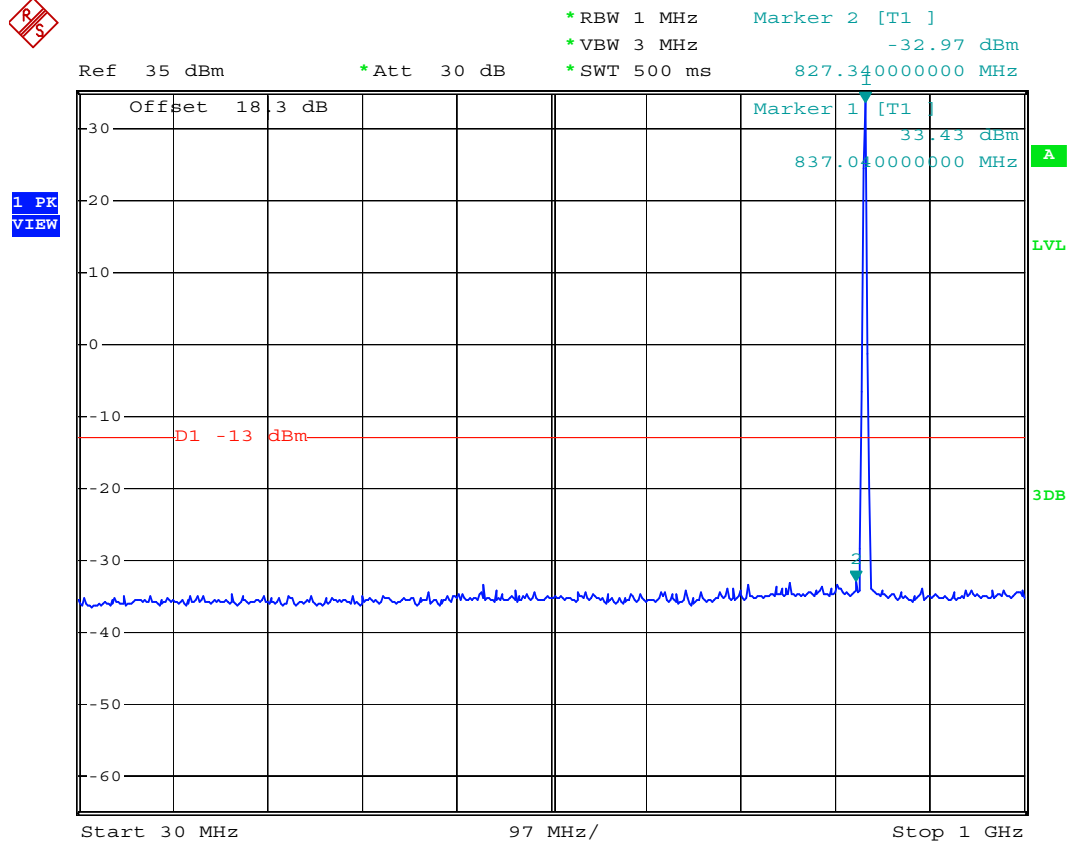
4.5.3 Test Setup Layout





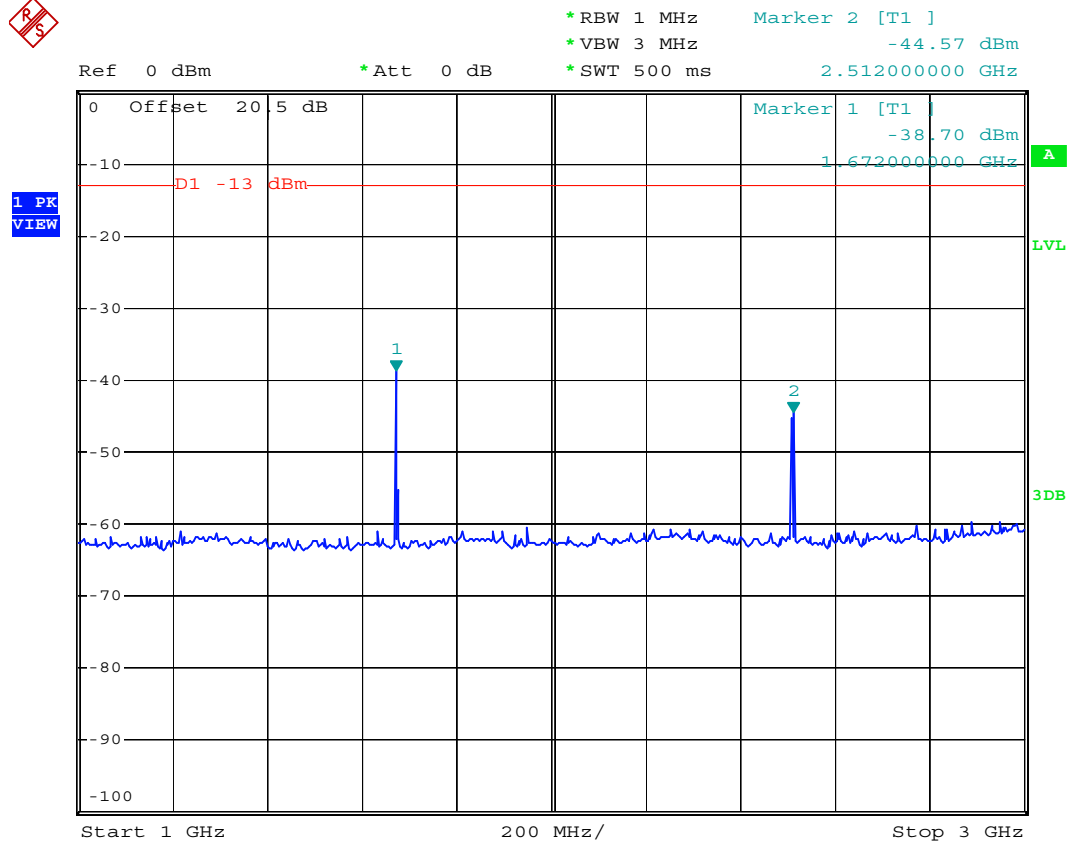
4.5.4 Test Result

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



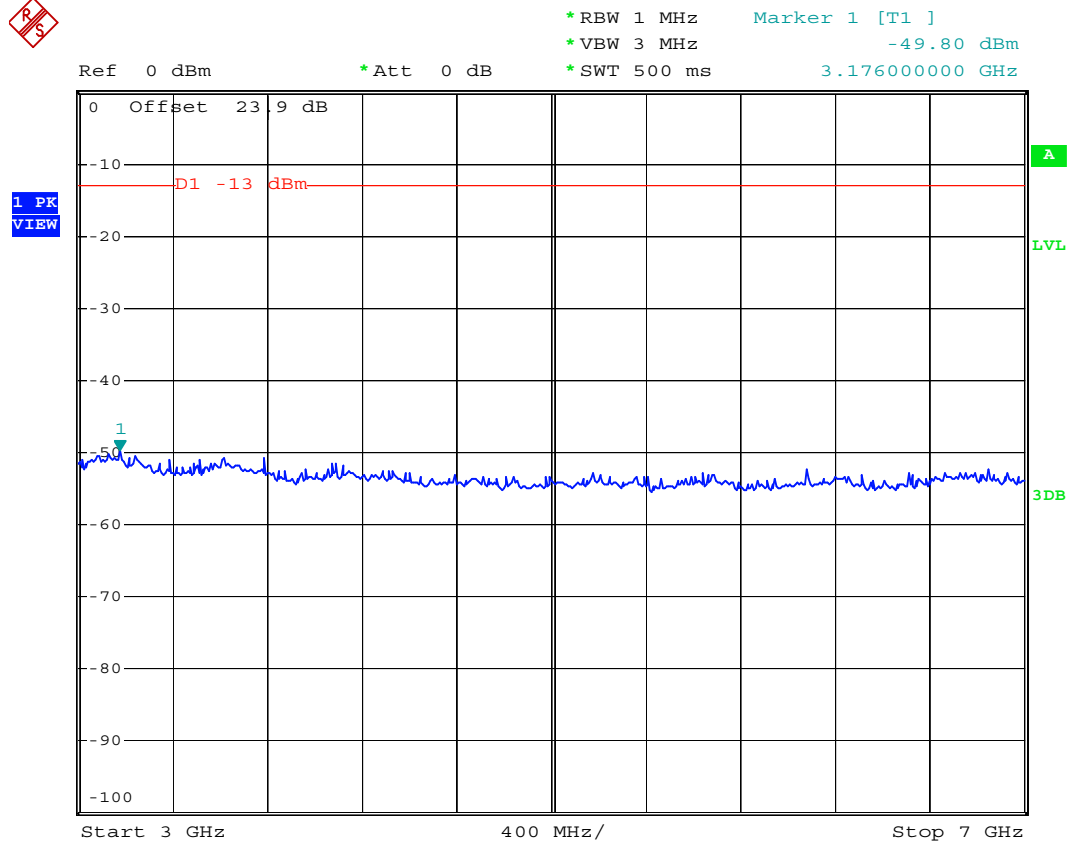


- Test Mode : GSM850 (GSM) CH189
- Frequency Range : 1G-3G



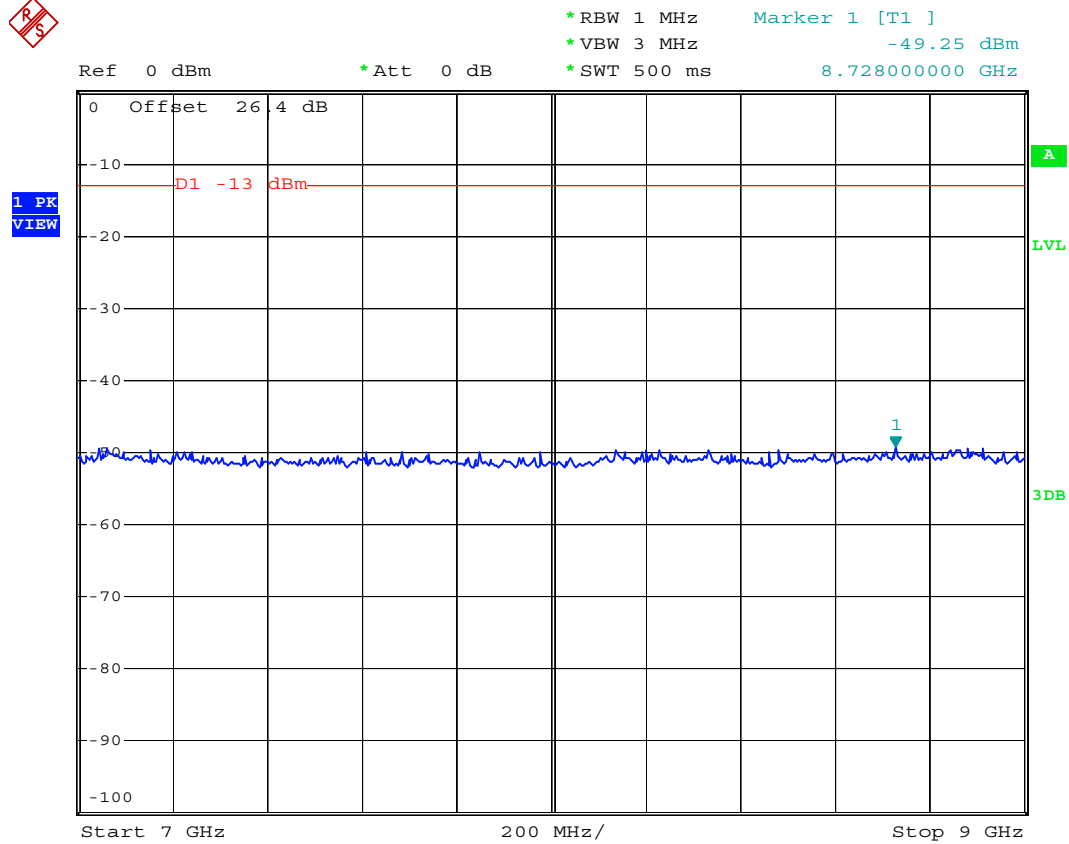


- Test Mode : GSM850 (GSM) CH189
- Frequency Range : 3G-7G



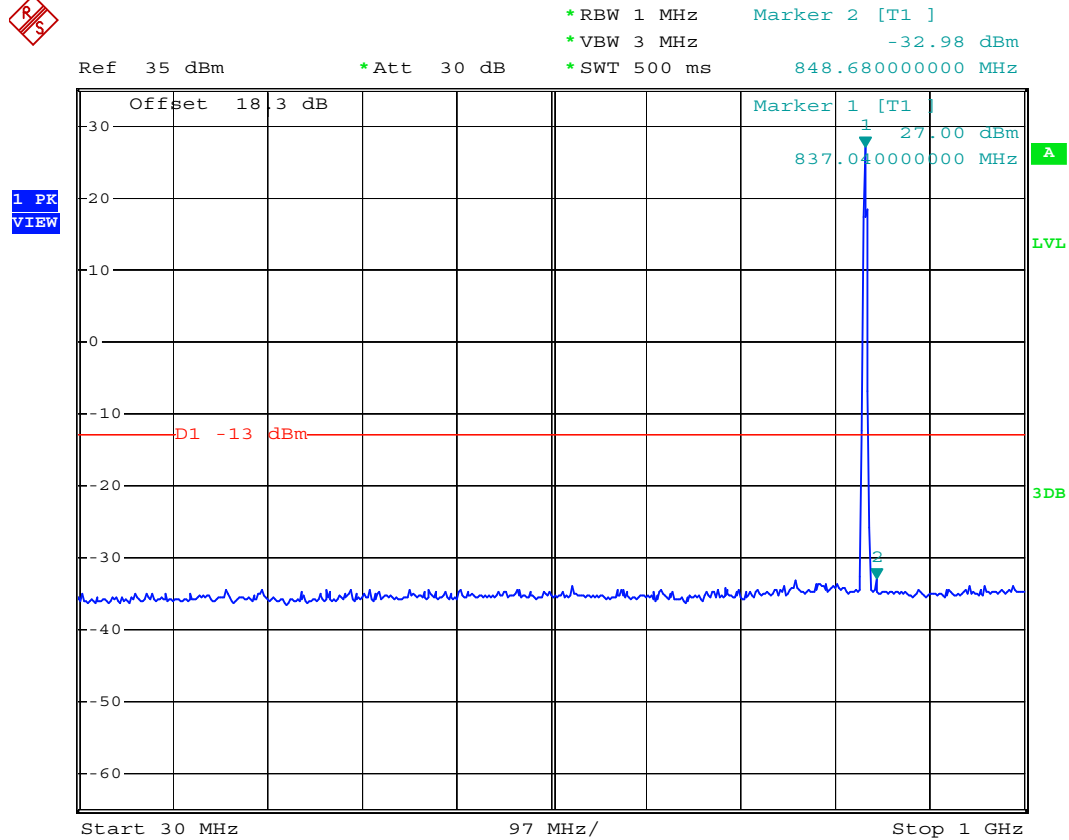


- Test Mode : GSM850 (GSM) CH189
- Frequency Range : 7G-9G



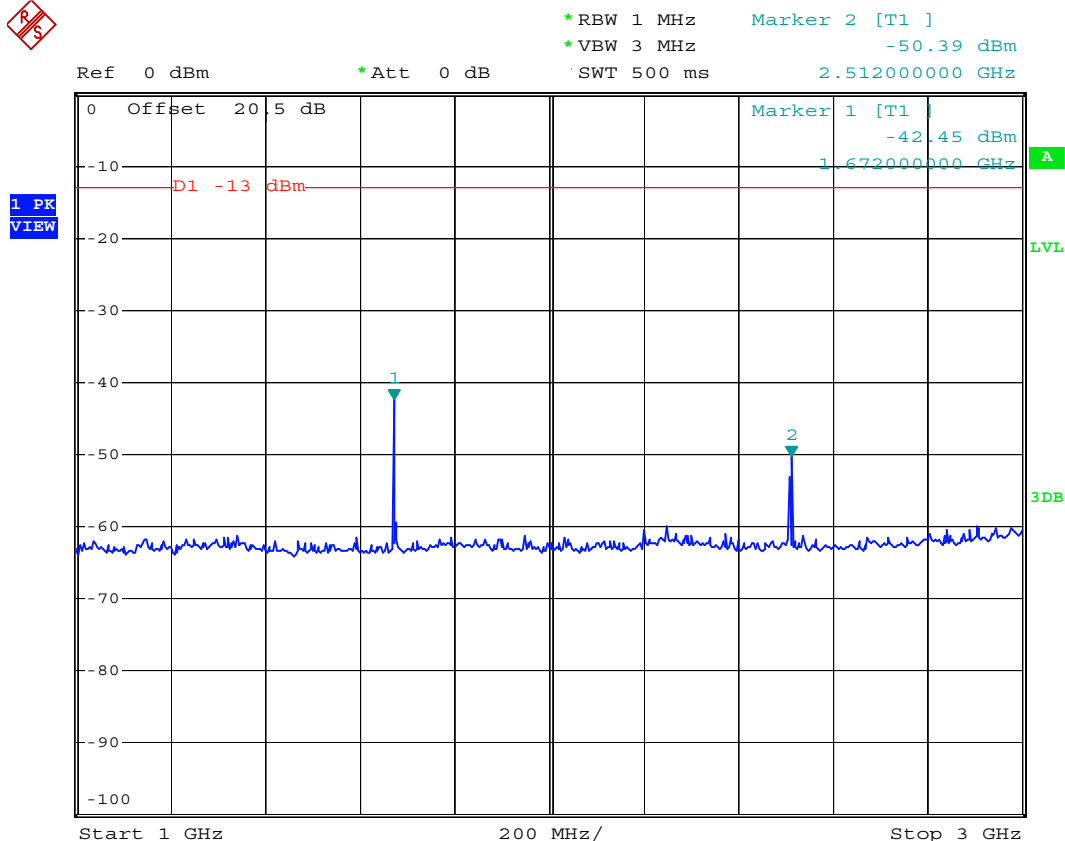


- Mode 2
- Test Mode : GSM850 (EDGE) CH189
- Frequency Range : 30M-1G

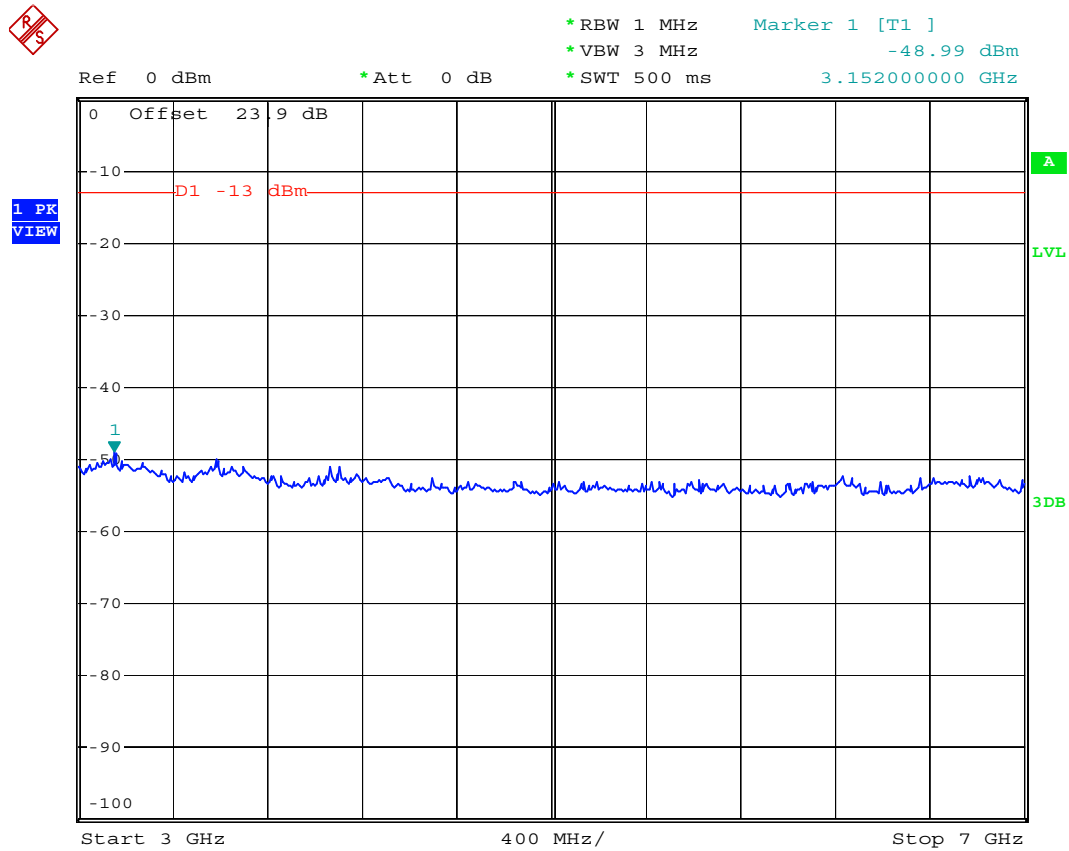




- Test Mode : GSM850 (EDGE) CH189
- Frequency Range : 1G-3G

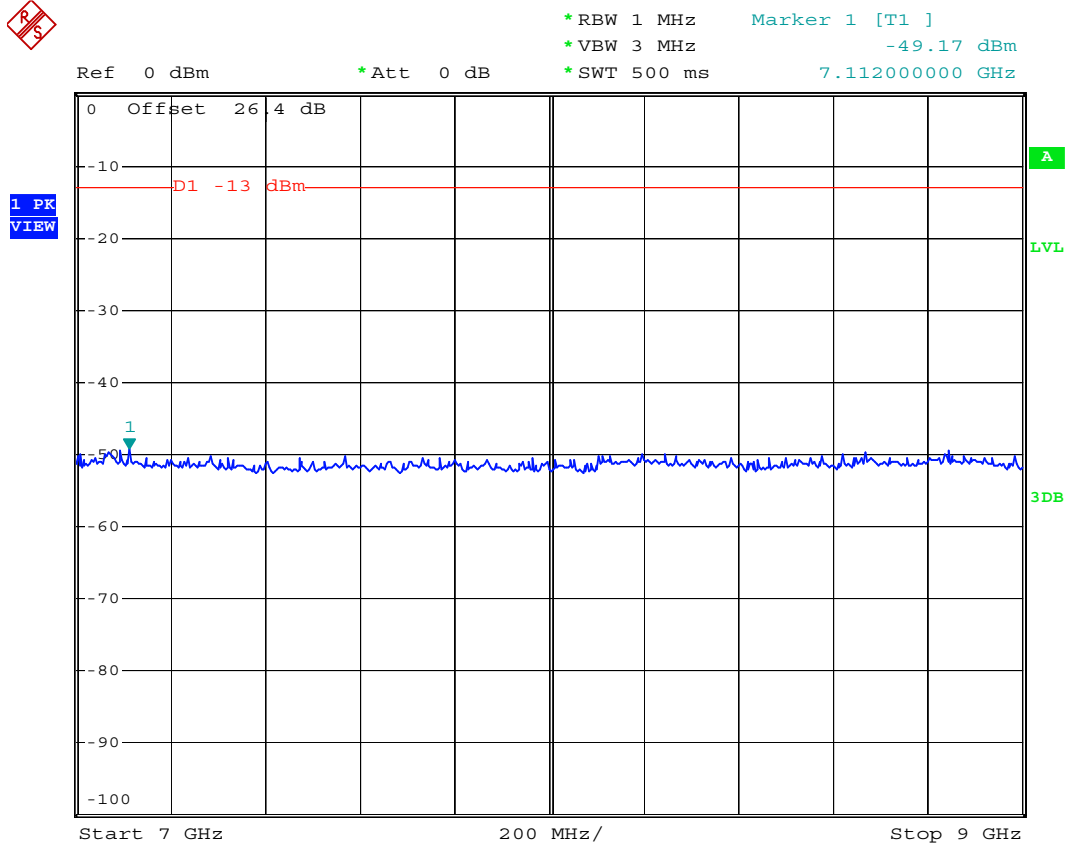


- Test Mode : GSM850 (EDGE) CH189
- Frequency Range : 3G-7G



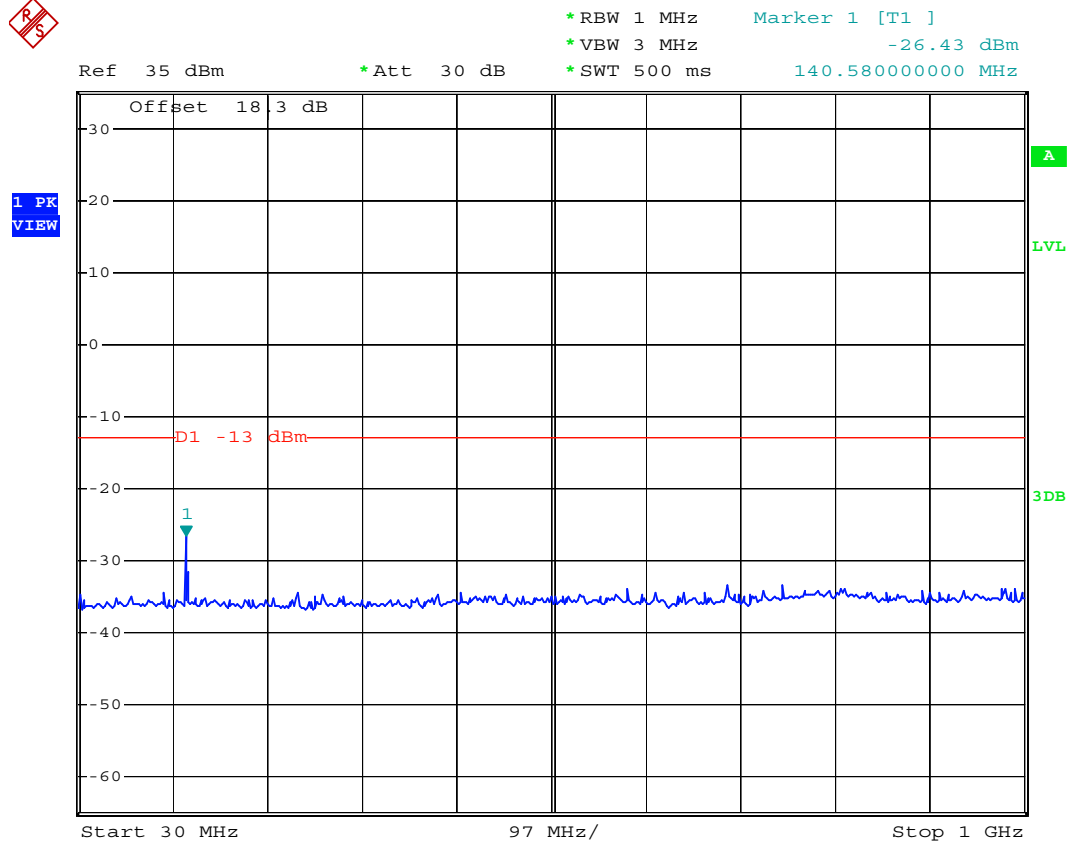


- Test Mode : GSM850 (EDGE) CH189
- Frequency Range : 7G-9G



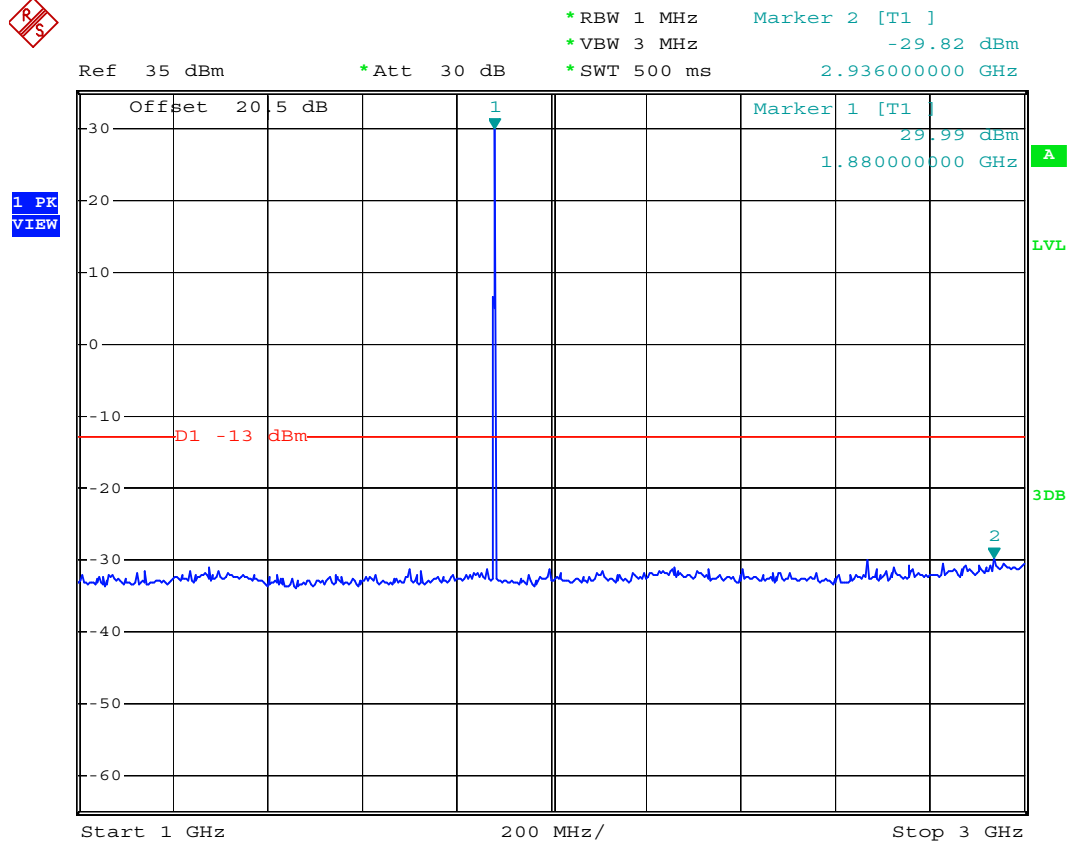


- Mode 3
- Test Mode : PCS1900 (GSM) CH661
- Frequency Range : 30M-1G



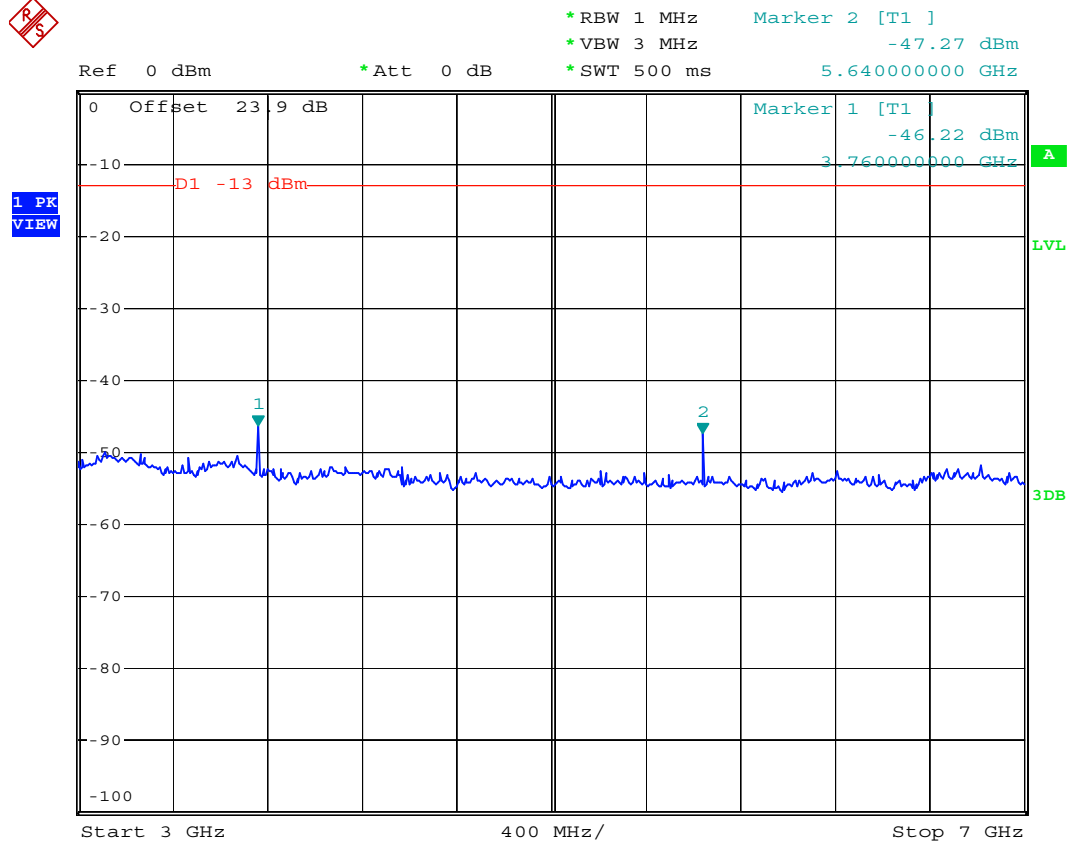


- Test Mode : PCS1900 (GSM) CH661
- Frequency Range : 1G-3G



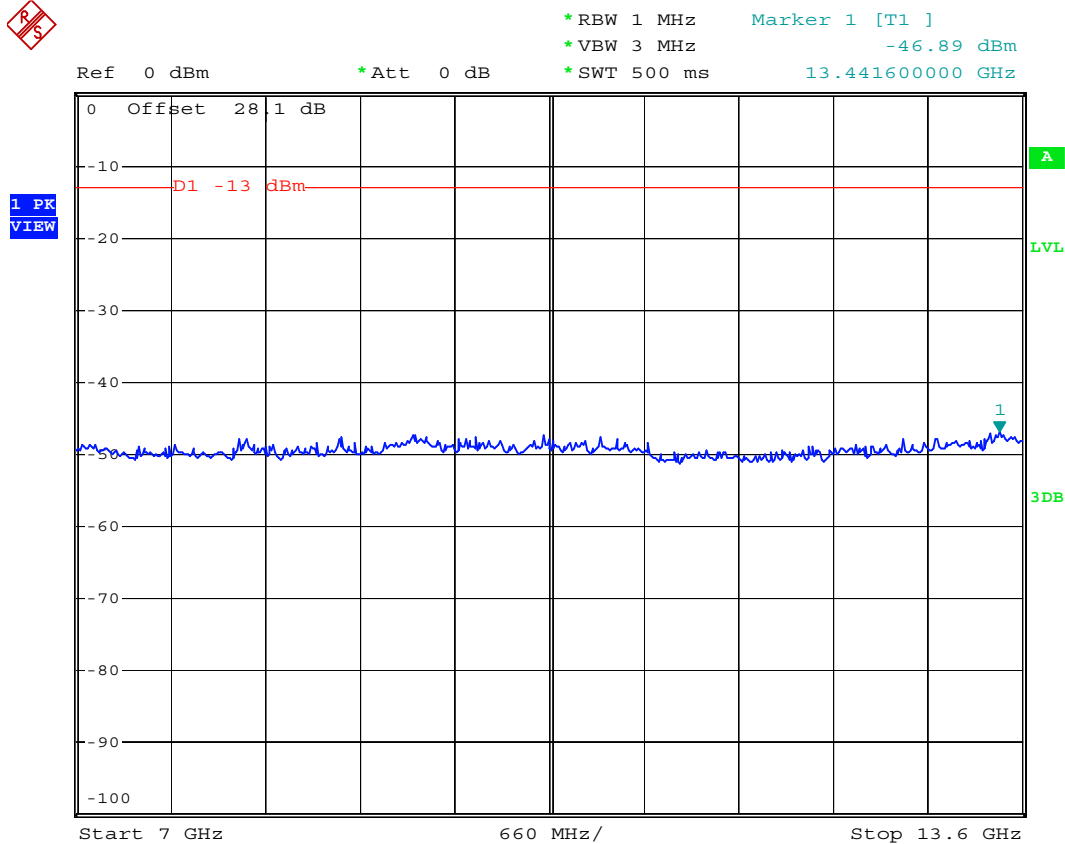


- Test Mode : PCS1900 (GSM) CH661
- Frequency Range : 3G-7G



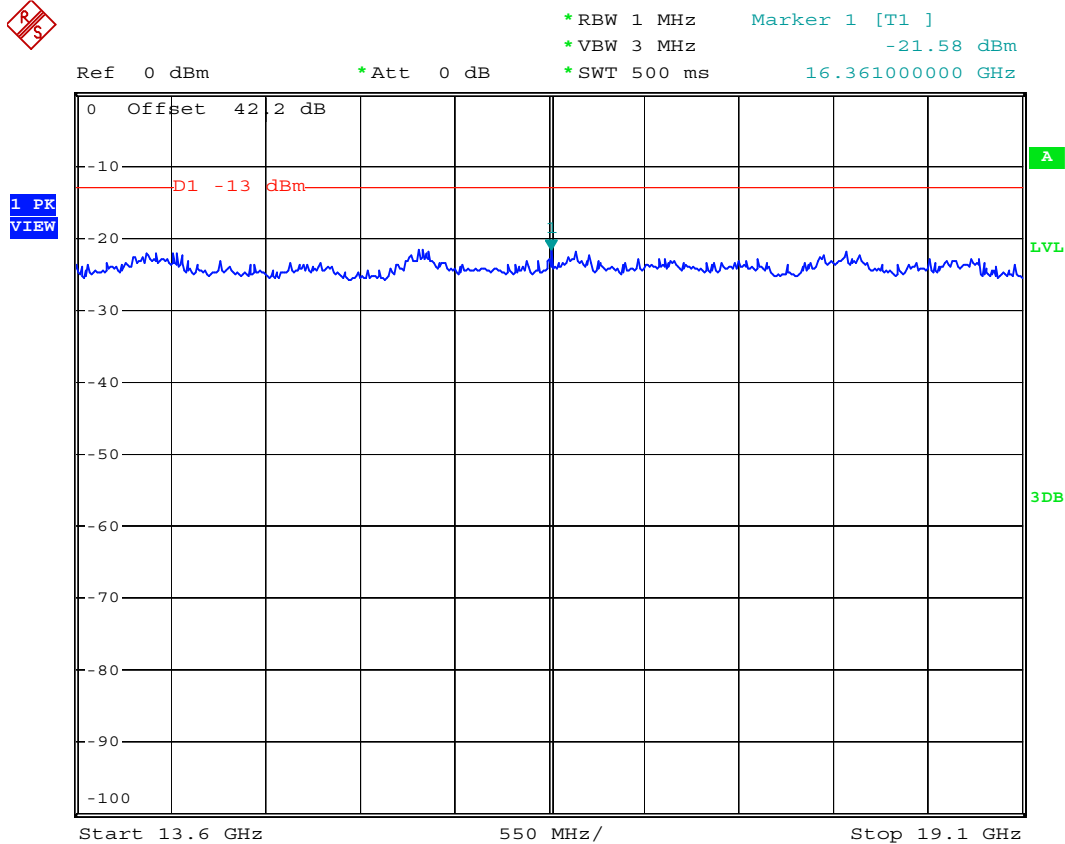


- Test Mode : PCS1900 (GSM) CH661
- Frequency Range : 7G-13.6G



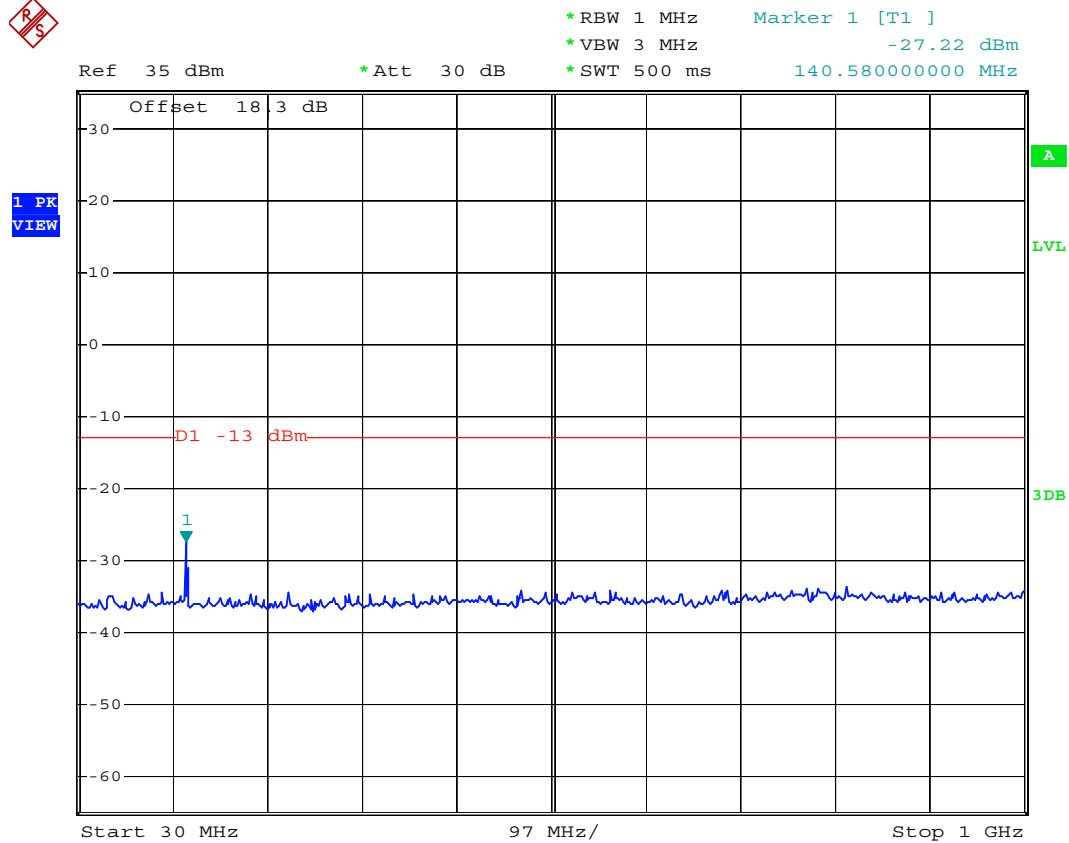


- Test Mode : PCS1900 (GSM) CH661
- Frequency Range : 13.6G-19.1G



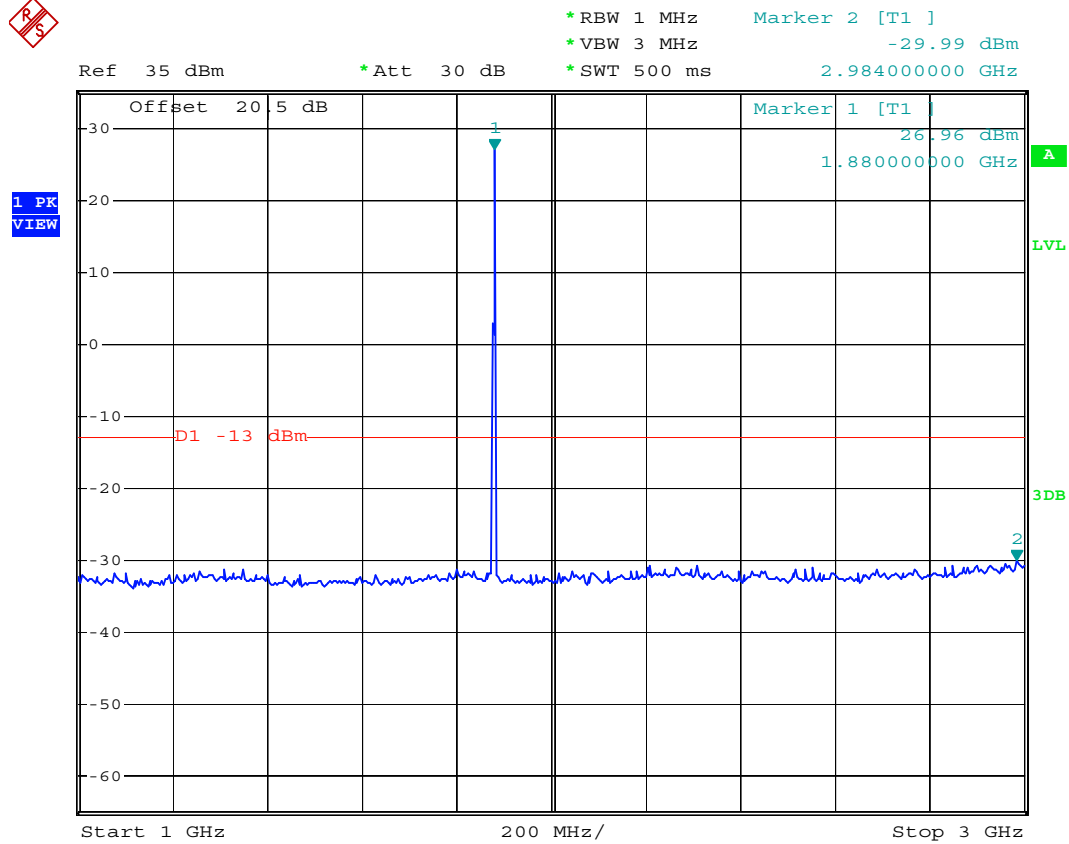


- Mode 4
- Test Mode : PCS1900 (EDGE) CH661
- Frequency Range : 30M-1G



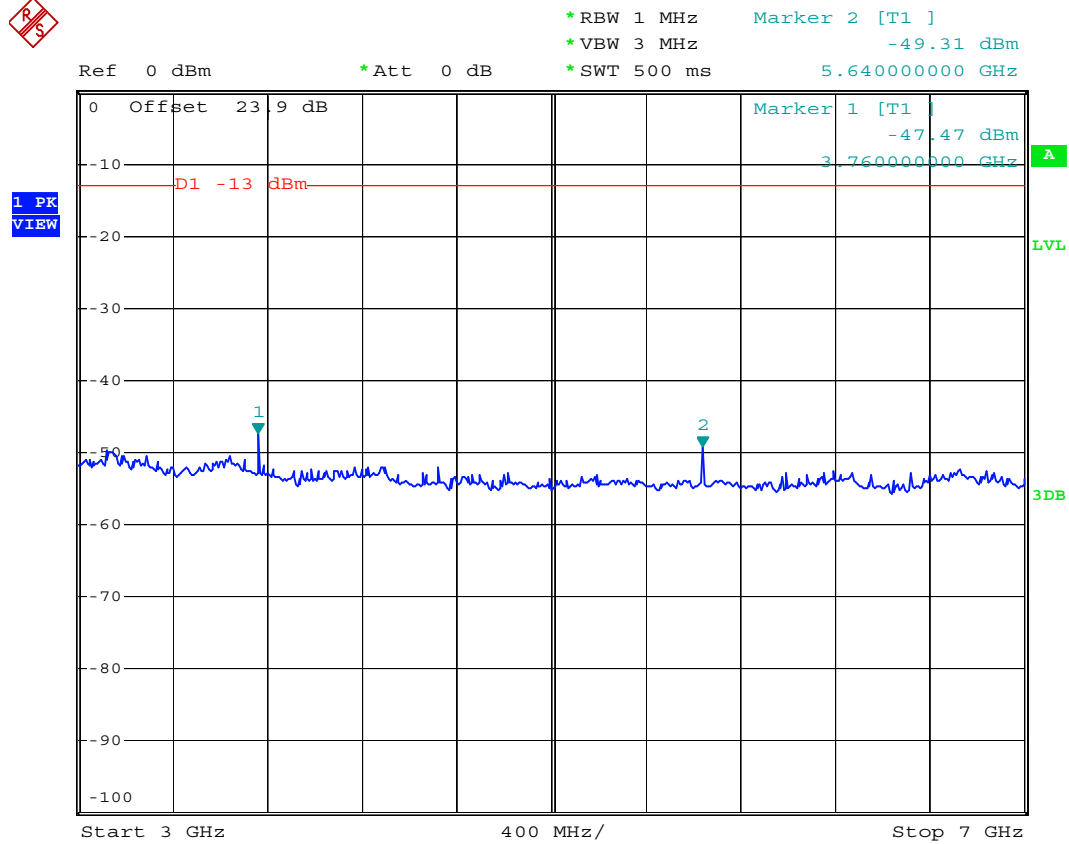


- Test Mode : PCS1900 (EDGE) CH661
- Frequency Range : 1G-3G



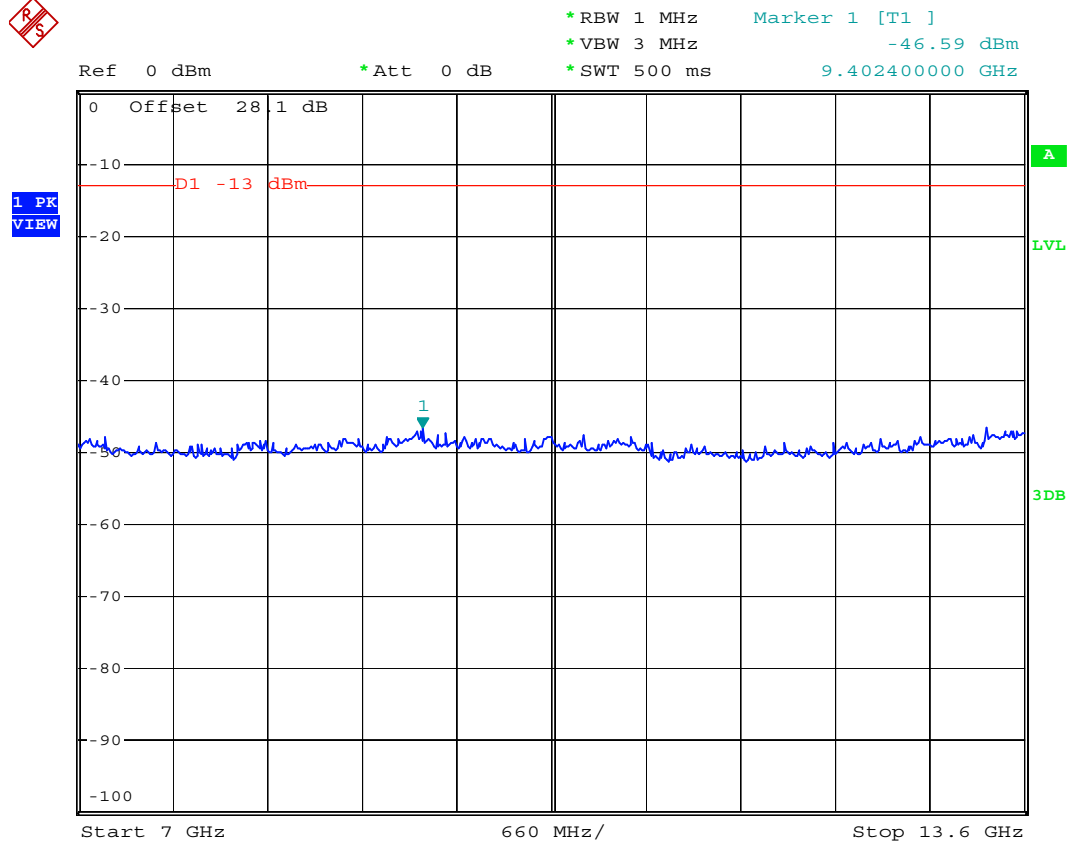


- Test Mode : PCS1900 (EDGE) CH661
- Frequency Range : 3G-7G



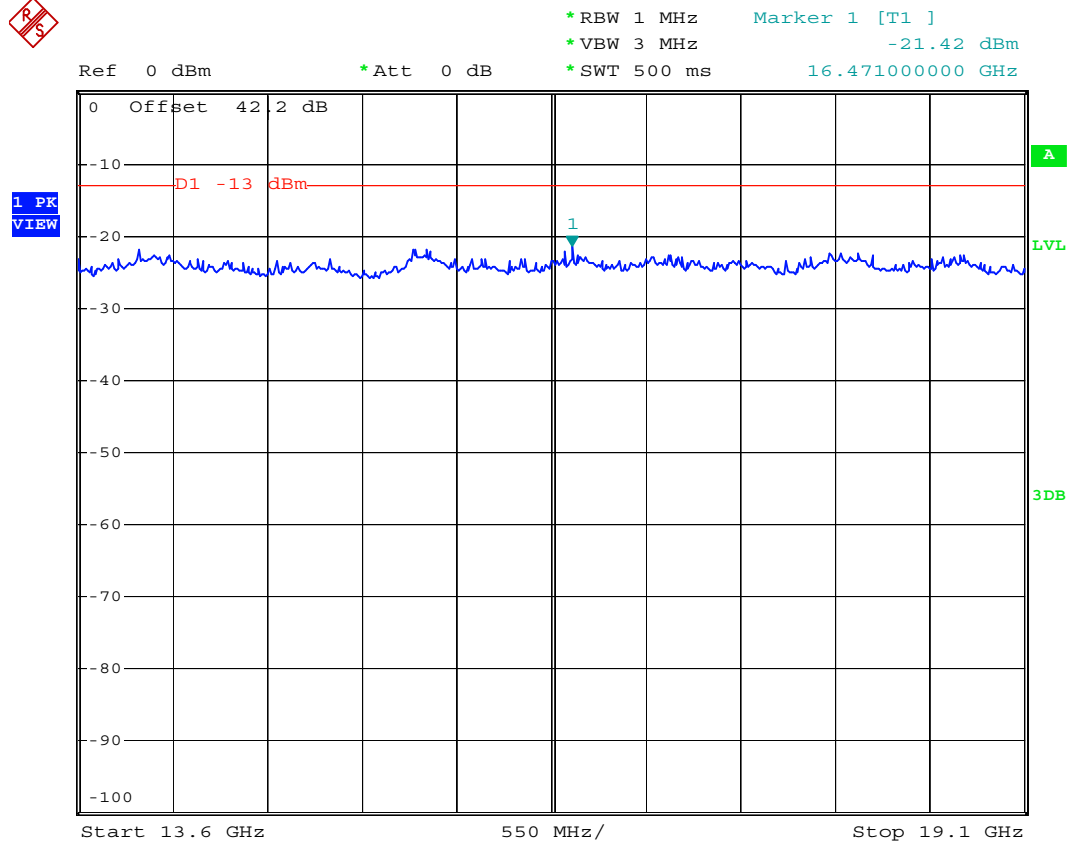


- Test Mode : PCS1900 (EDGE) CH661
- Frequency Range : 7G-13.6G



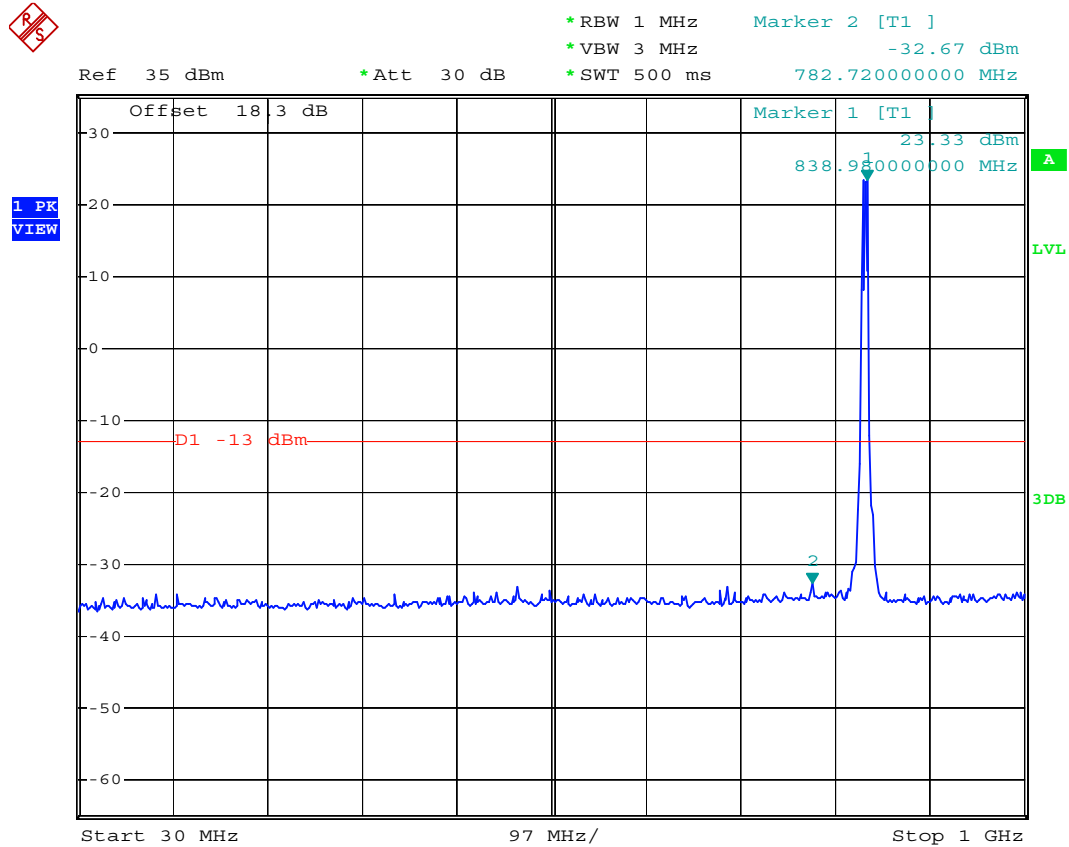


- Test Mode : PCS1900 (EDGE) CH661
- Frequency Range : 13.6G-19.1G



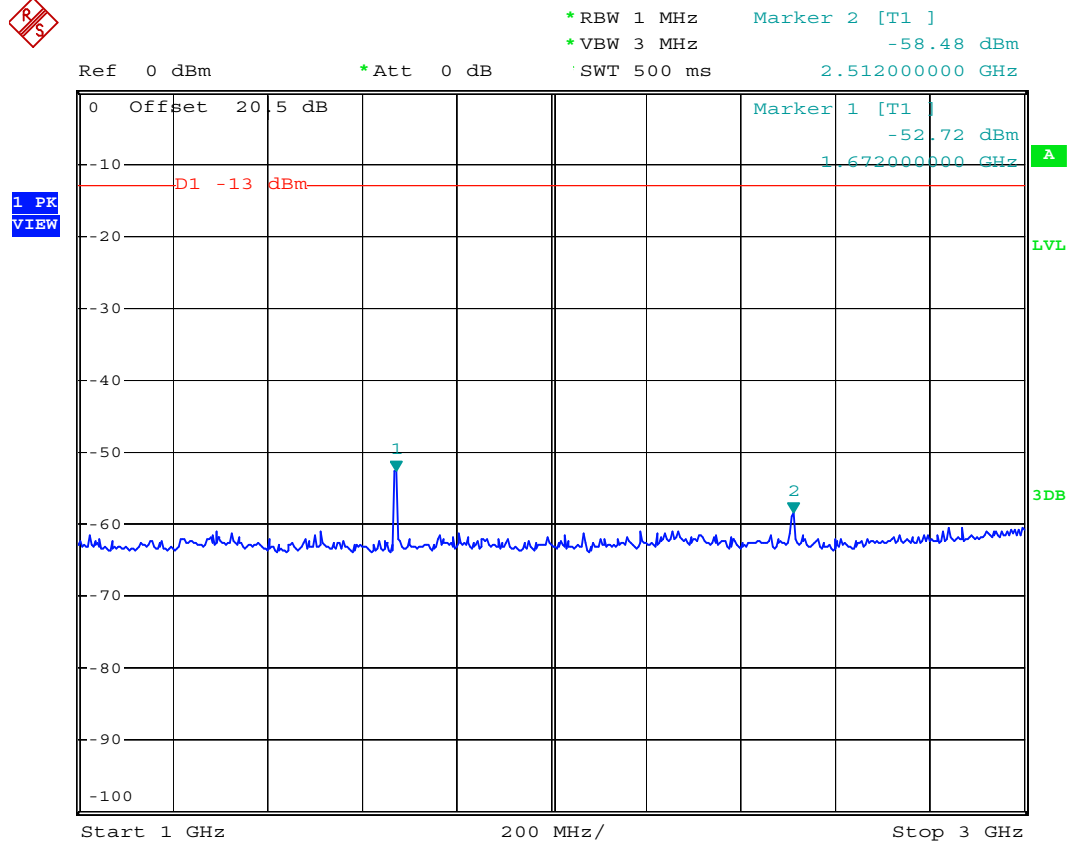


- Mode 5
- Test Mode : WCDMA Band V CH4182
- Frequency Range : 30M-1G



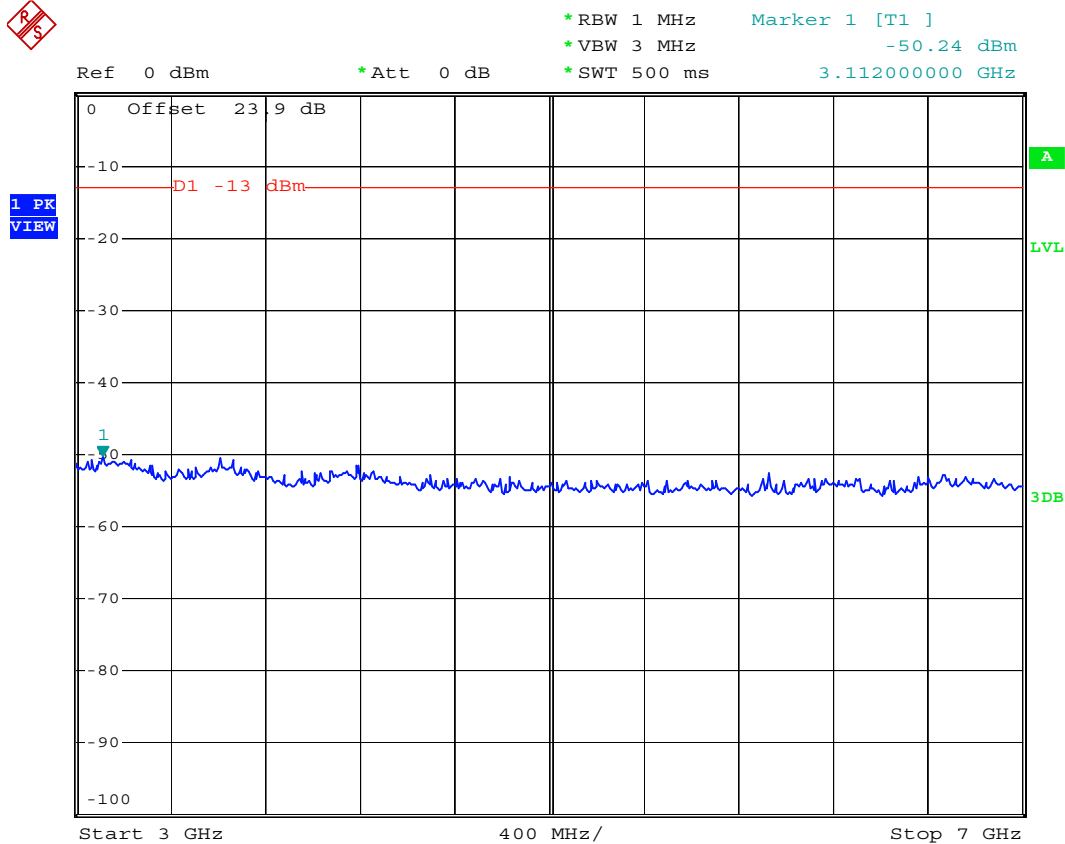


- Test Mode : WCDMA Band V CH4182
- Frequency Range : 1G-3G



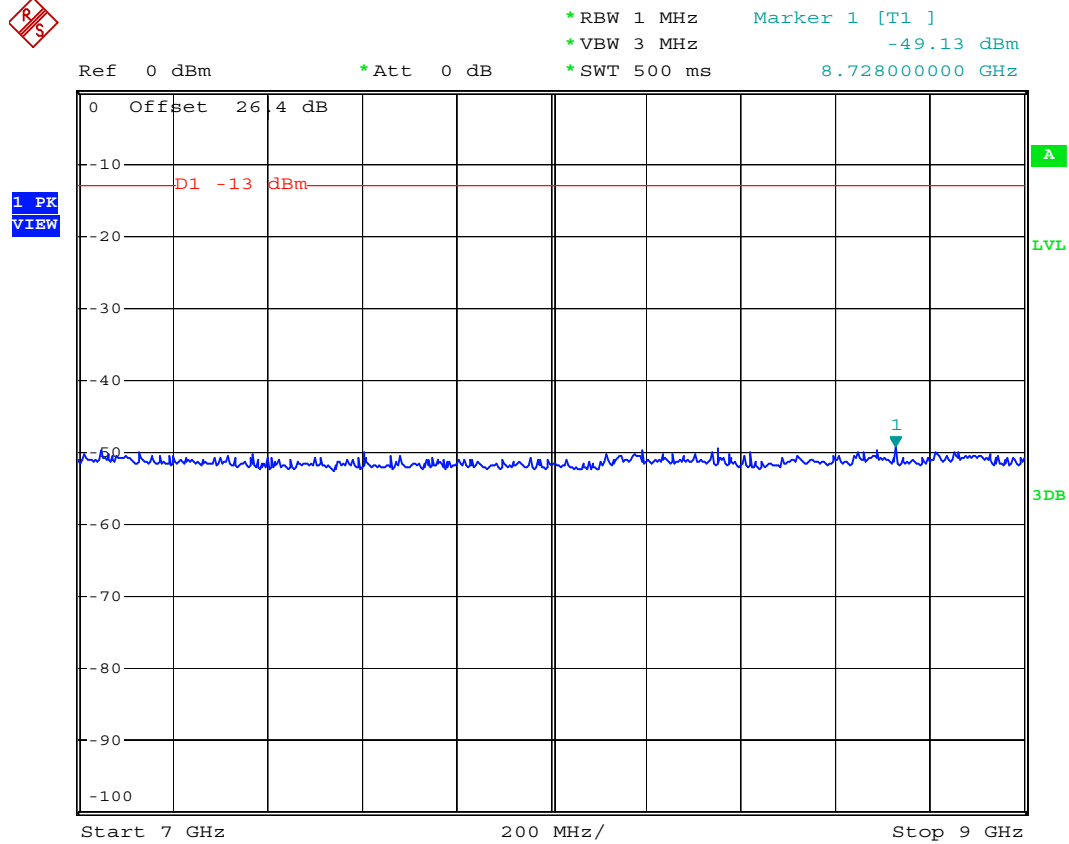


- Test Mode : WCDMA Band V CH4182
- Frequency Range : 3G-7G



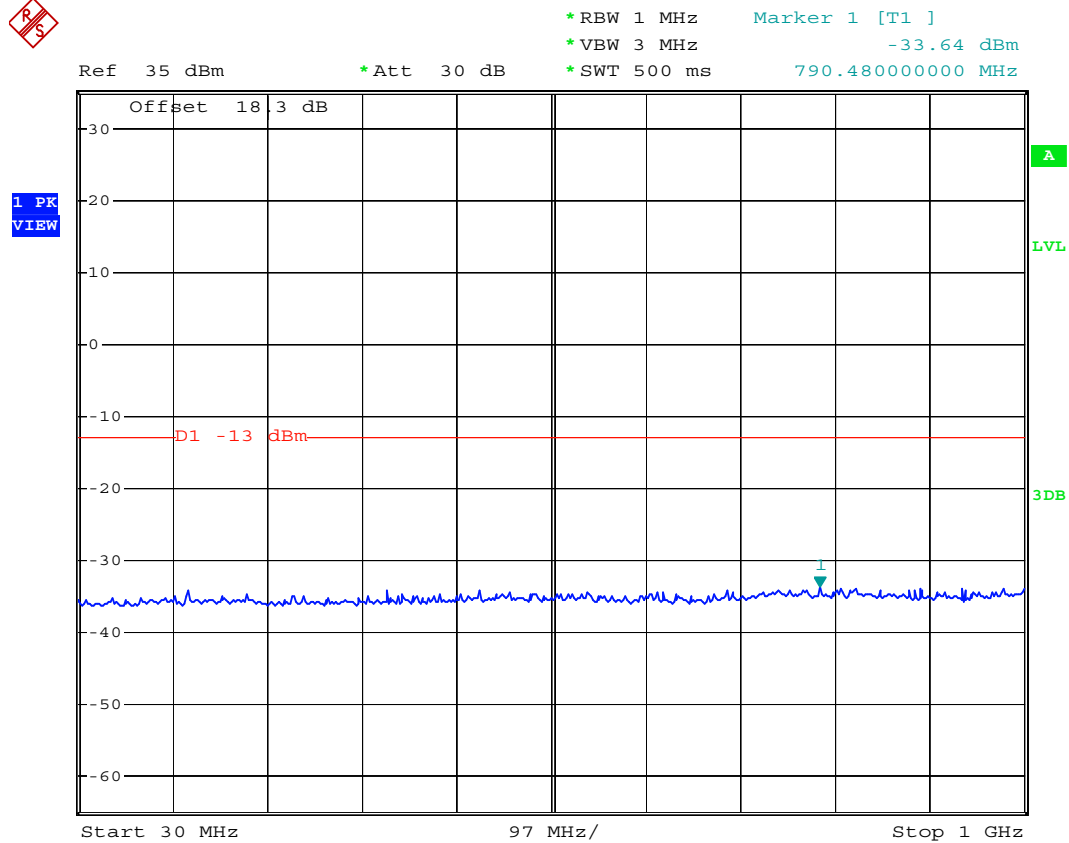


- Test Mode : WCDMA Band V CH4182
- Frequency Range : 7G-9G



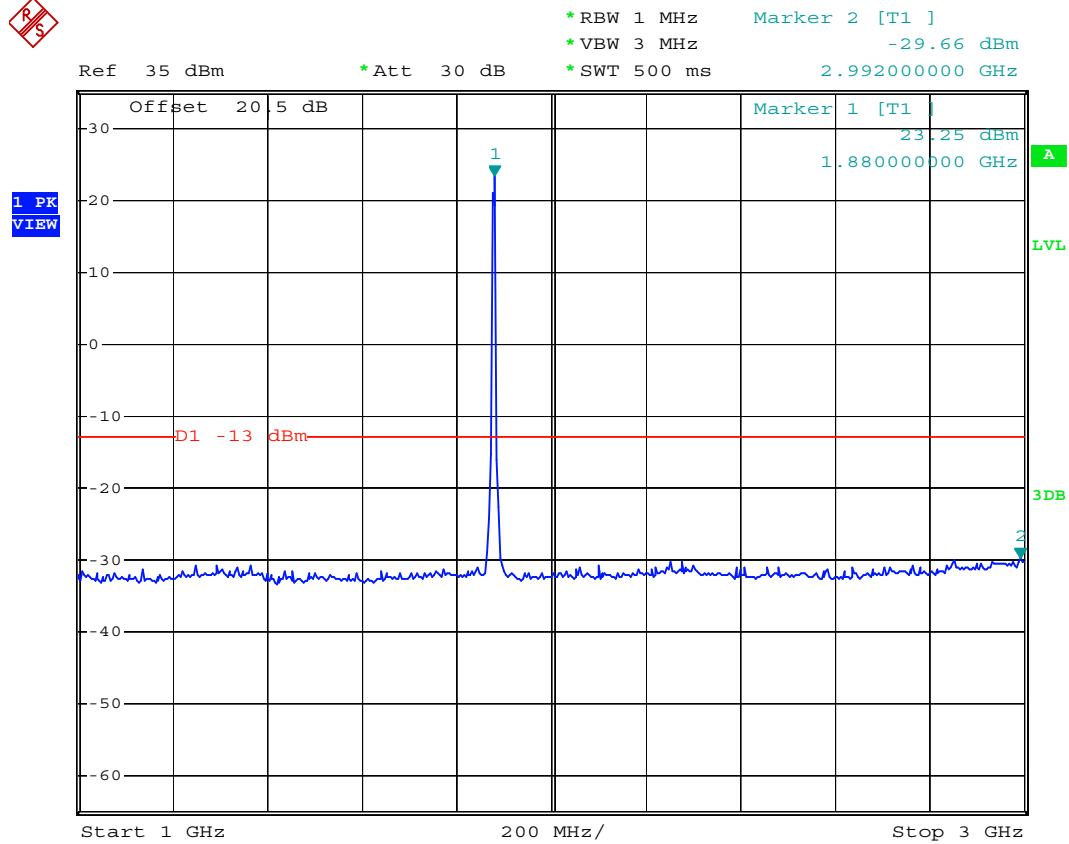


- Mode 6
- Test Mode : WCDMA Band II CH9400
- Frequency Range : 30M-1G



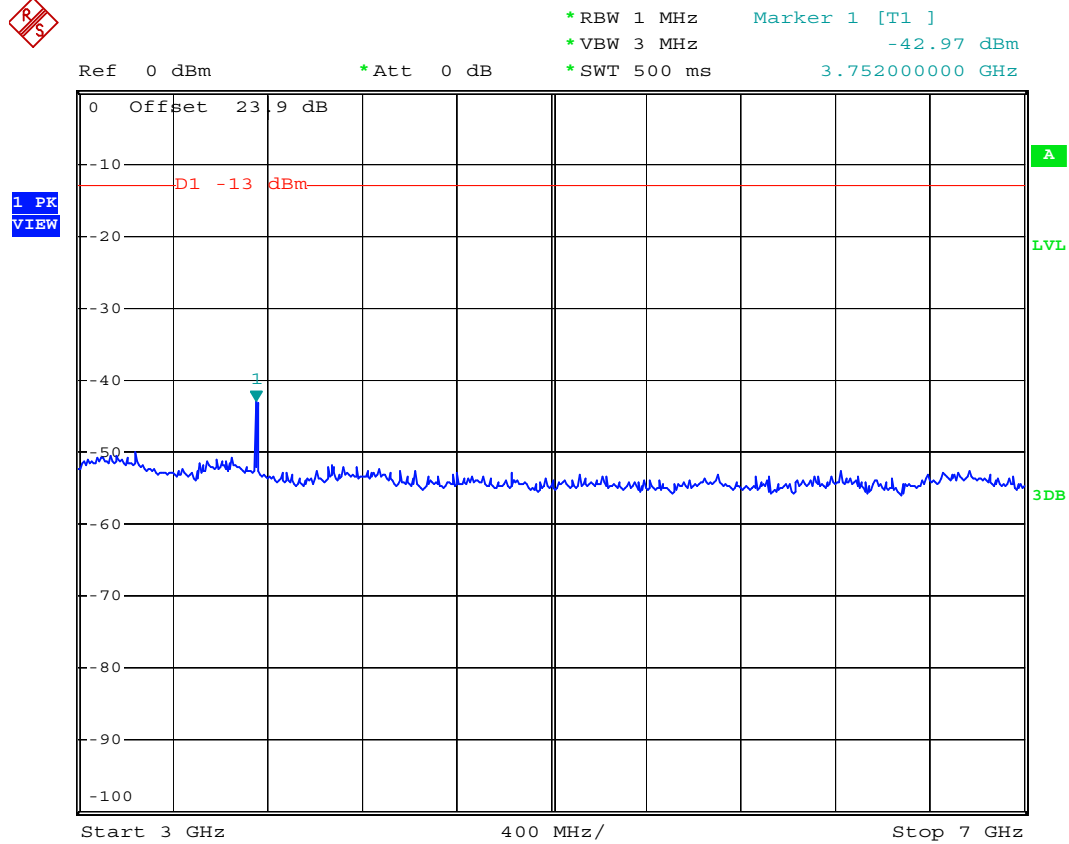


- Test Mode : WCDMA Band II CH9400
- Frequency Range : 1G-3G



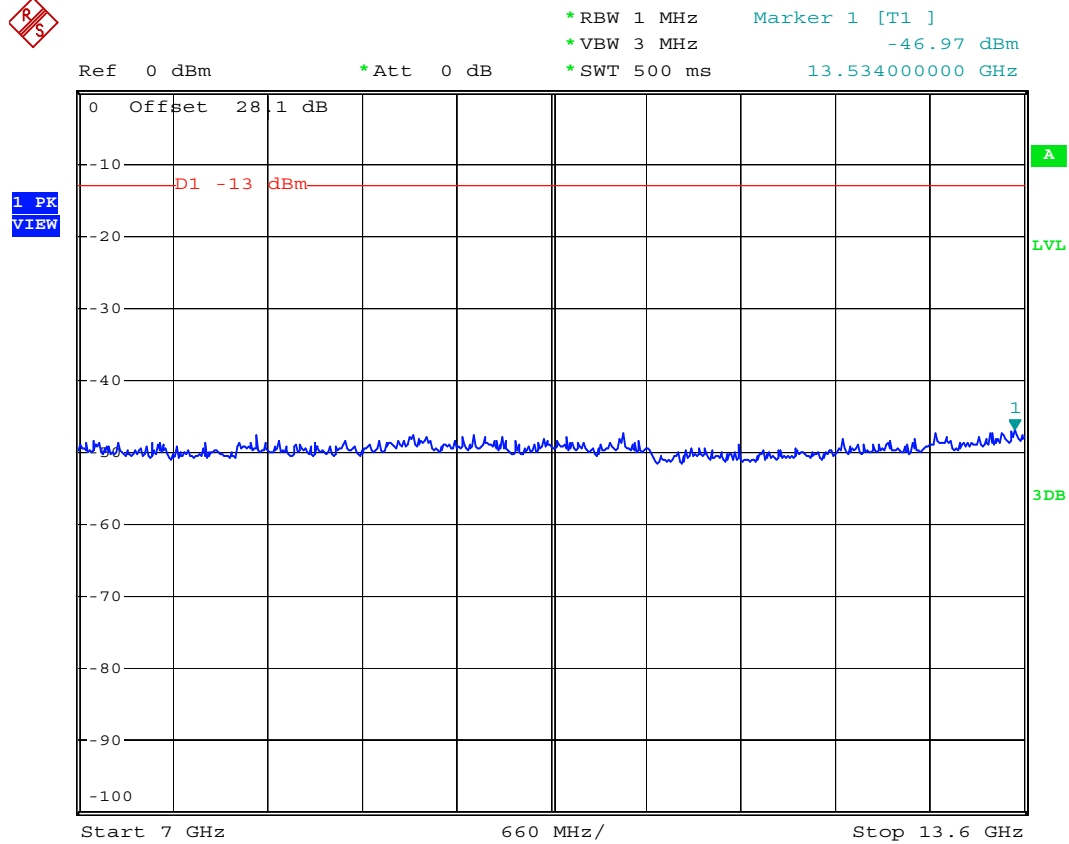


- Test Mode : WCDMA Band II CH9400
- Frequency Range : 3G-7G



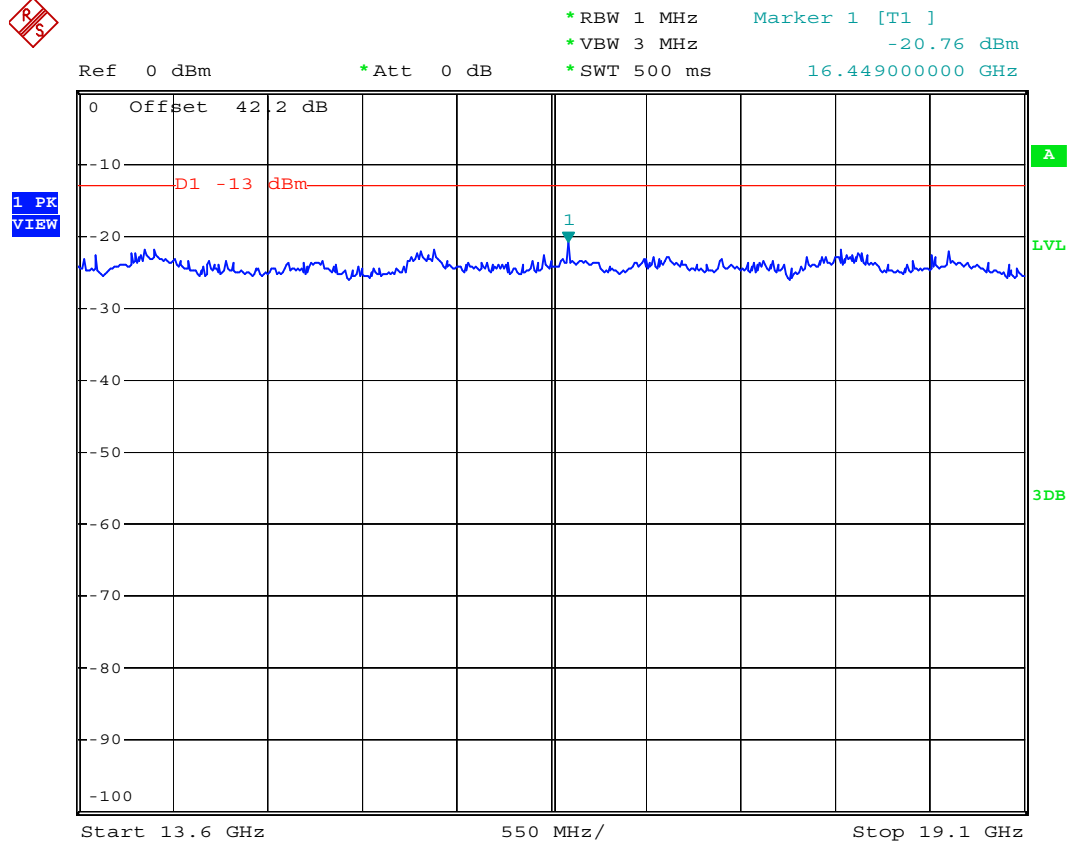


- Test Mode : WCDMA Band II CH9400
- Frequency Range : 7G-13.6G





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



4.6 Field Strength of Spurious Radiation

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

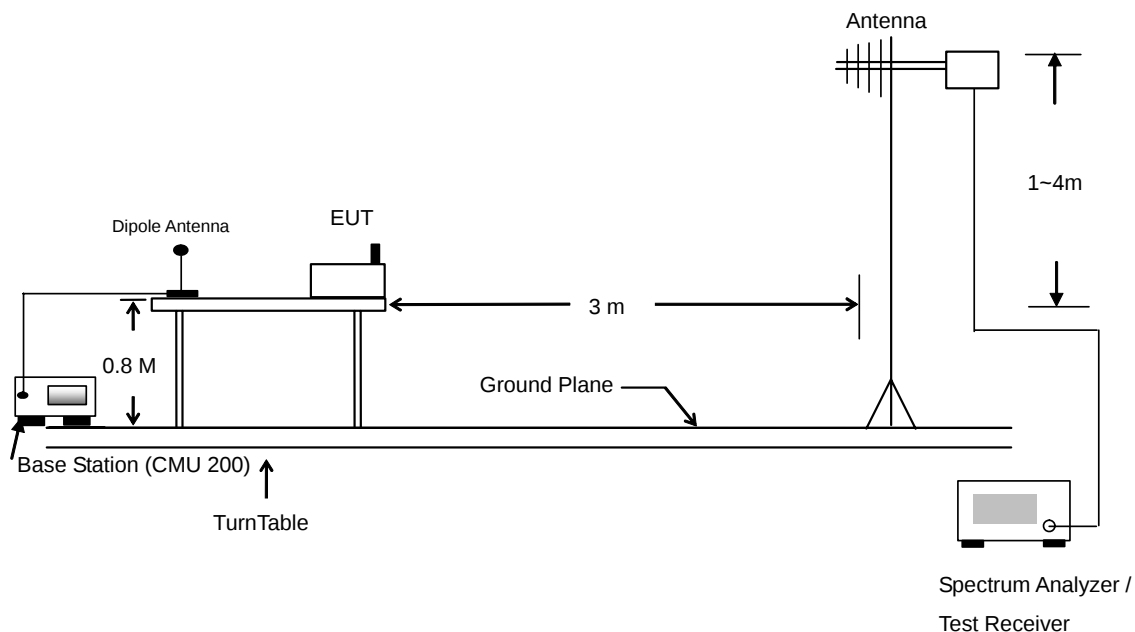
4.6.1 Measurement Instruments

As described in chapter 5 of this test report.

4.6.2 Test Procedure

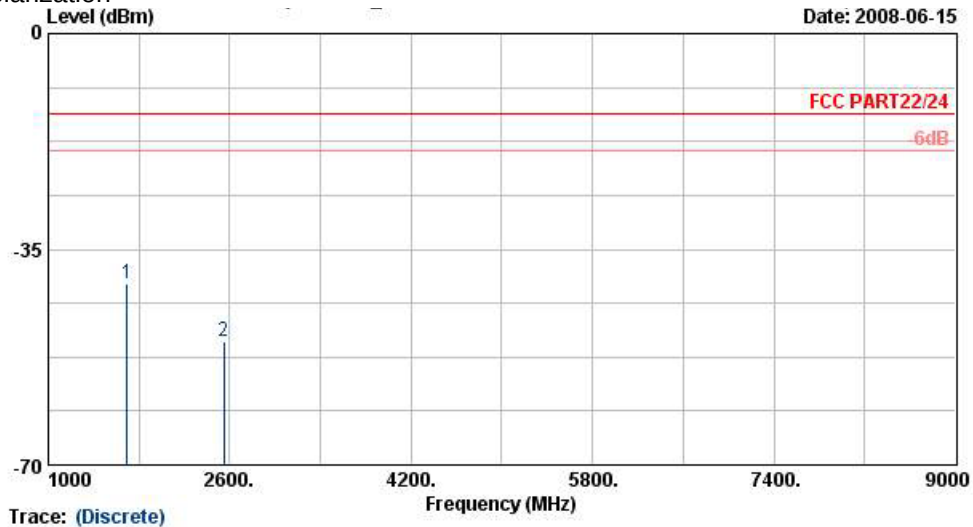
- The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
- The EUT was set 3 meters from the receiving antenna which was mounted on the antenna tower.
- The table was rotated 360 degrees to determine the position of the highest spurious emission.
- The height of the receiving antenna is varied between one meter and four meters to reach the maximum spurious emission for both horizontal and vertical polarizations.
- Taking the record of maximum spurious emission.
- A Horn antenna was substituted in place of the EUT and was driven by a signal generator.
- Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- Taking the record of output power at antenna port.
- Repeat step g to step h for another polarization.
- Emission level (dBm) = output power + substitution gain.

4.6.3 Test Setup Layout



**4.6.4 Test Data for Tx****4.6.5 Mode 1****4.6.6 (High channel)**

Horizontal Polarization



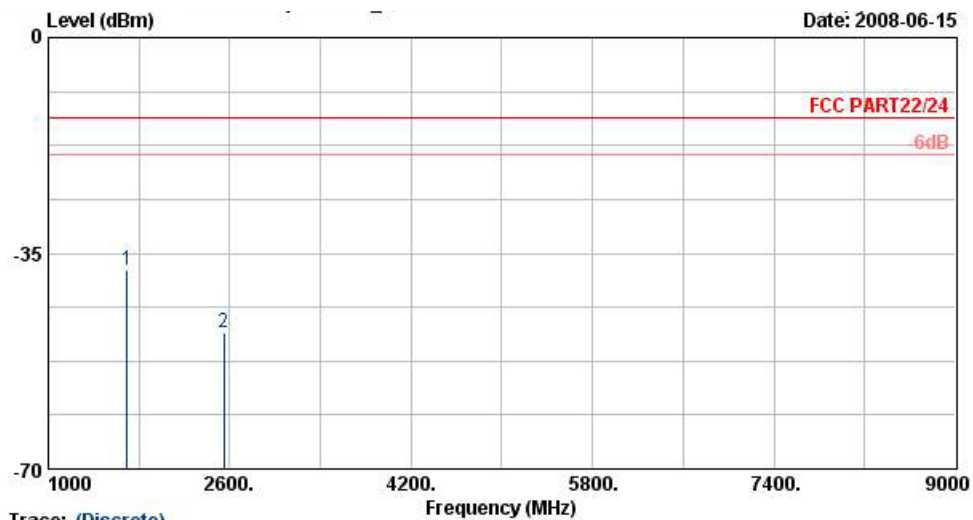
Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : GSM 850 Link ; Ch 251 + Adaptor
 + Earphone
Plane : E2
IMEI :

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
1693	-40.68	-13	-27.68	-49.15	-40.01	3.02	4.50	H	Pass
2545	-49.94	-13	-36.94	-56.11	-50.06	3.73	6.00	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 : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : GSM 850 Link ; Ch 251 + Adaptor
+ Earphone
Plane : E2
IMEI : -----

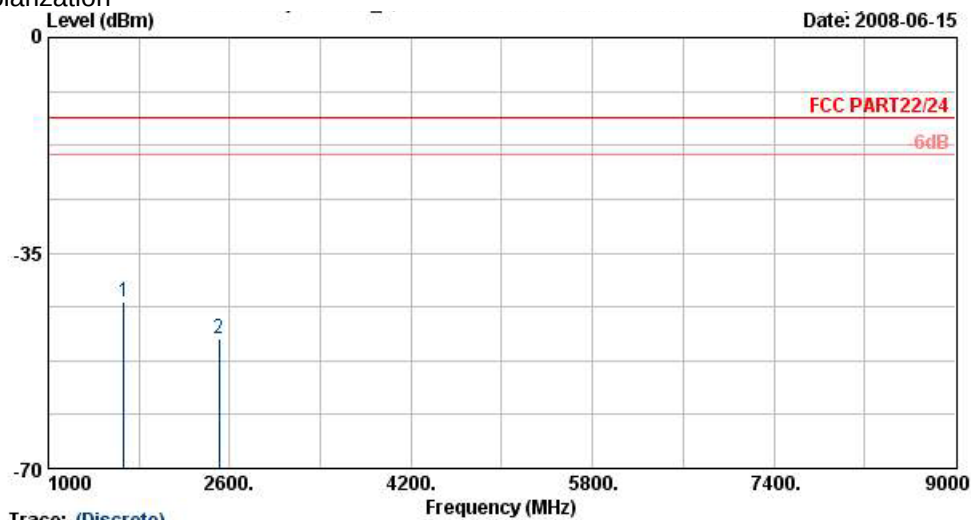
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1693	-37.67	-13	-24.67	-43.98	-36.62	3.02	4.12	V	Pass
2545	-47.92	-13	-34.92	-57.7	-47.86	3.73	5.82	V	Pass

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



4.6.7 (Middle Channel)

Horizontal Polarization



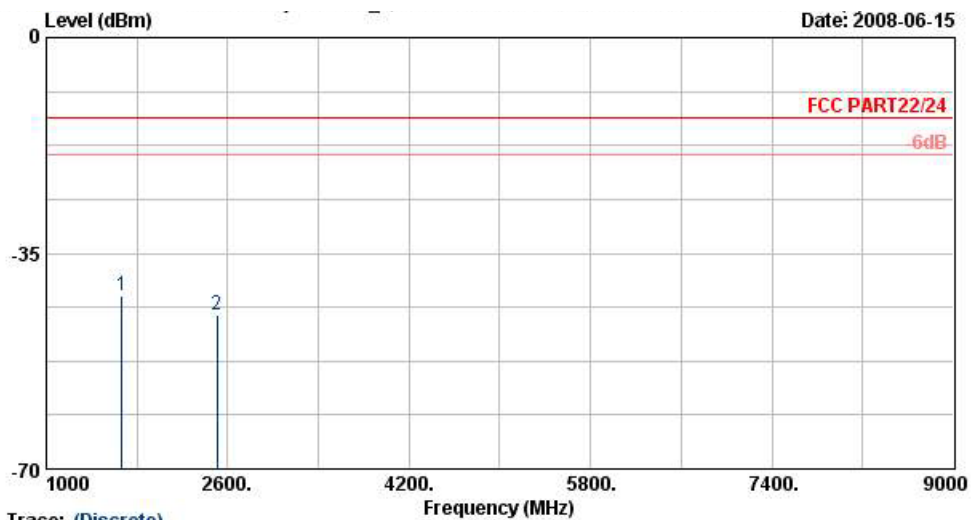
Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : GSM 850 Link ; Ch 189 + Adaptor
+ Earphone
Plane : E2
IMEI :

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	-50.71	-42.01	3.39	4.55	H	Pass
2509	-49.00	-13	-36.00	-55.42	-49.06	3.71	5.92	H	Pass

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



Vertical Polarization



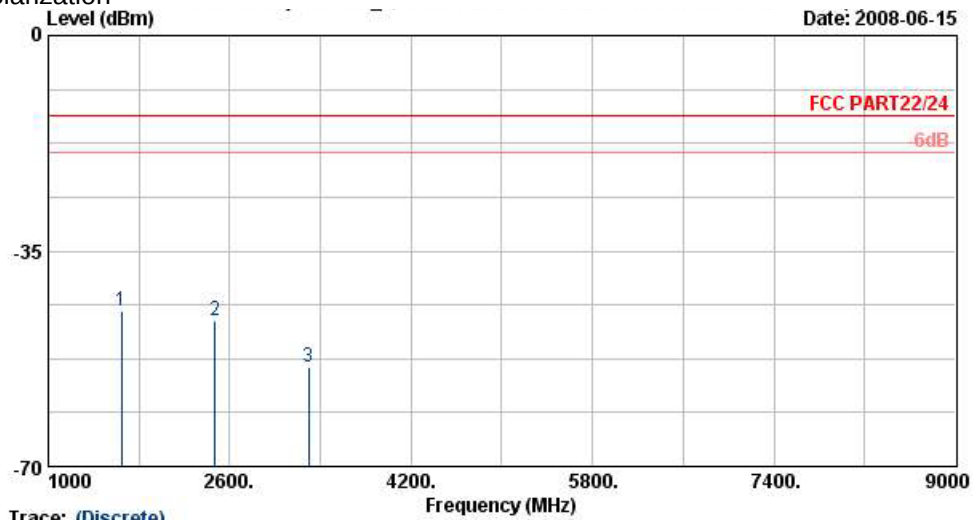
Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : GSM 850 Link ; Ch 189 + Adaptor
+ Earphone
Plane : E2
IMEI : -----

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	-42.00	-13	-29.00	-47.91	-40.62	3.39	4.16	V	Pass
2509	-45.00	-13	-32.00	-55.12	-44.86	3.71	5.72	V	Pass

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

**4.6.8 (Low channel)**

Horizontal Polarization



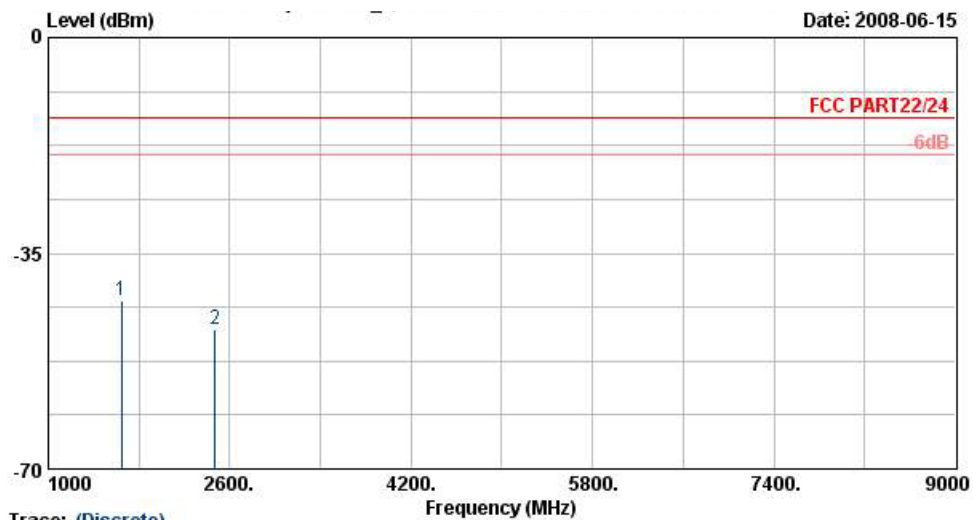
Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : GSM 850 Link ; Ch 128 + Adaptor
+ Earphone
Plane : E2
IMEI :

Frequency (MHz)	ERP (dBm)	Limit (dBm)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1645	-44.66	-13	-31.66	-52.11	-44.01	3.1	H	Pass
2470	-46.31	-13	-33.31	-53.93	-46.06	3.89	H	Pass
3298	-53.87	-13	-40.87	-64.73	-54.74	4.16	H	Pass

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



Vertical Polarization



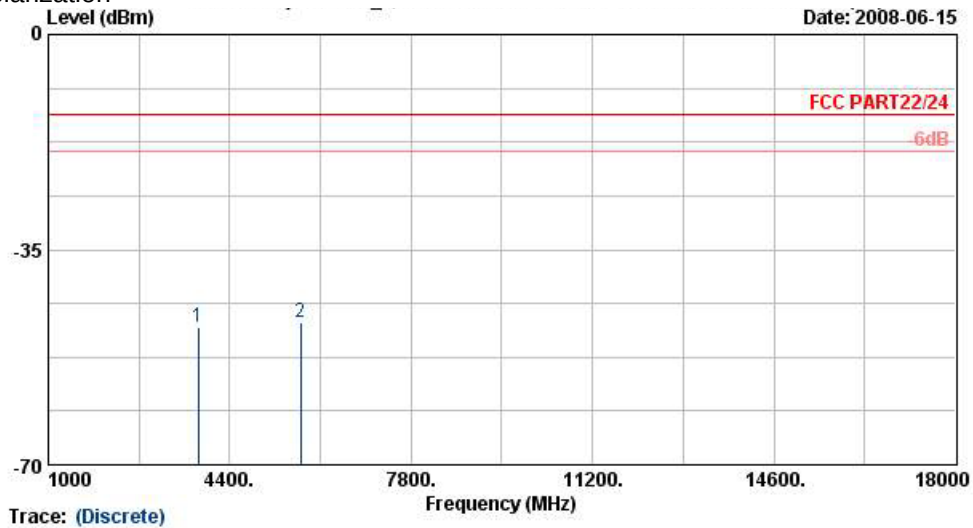
Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : GSM 850 Link ; Ch 128 + Adaptor
 + Earphone
Plane : E2
IMEI : -----

Frequency	ERP	Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Reading	Power	loss	Gain	(H/V)	
1645	-42.68	-13	-29.68	-48.3	-41.62	3.1	V	Pass
2470	-47.31	-13	-34.31	-57.05	-46.86	3.89	V	Pass

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

**4.6.9 Mode 3****4.6.10 (High channel)**

Horizontal Polarization



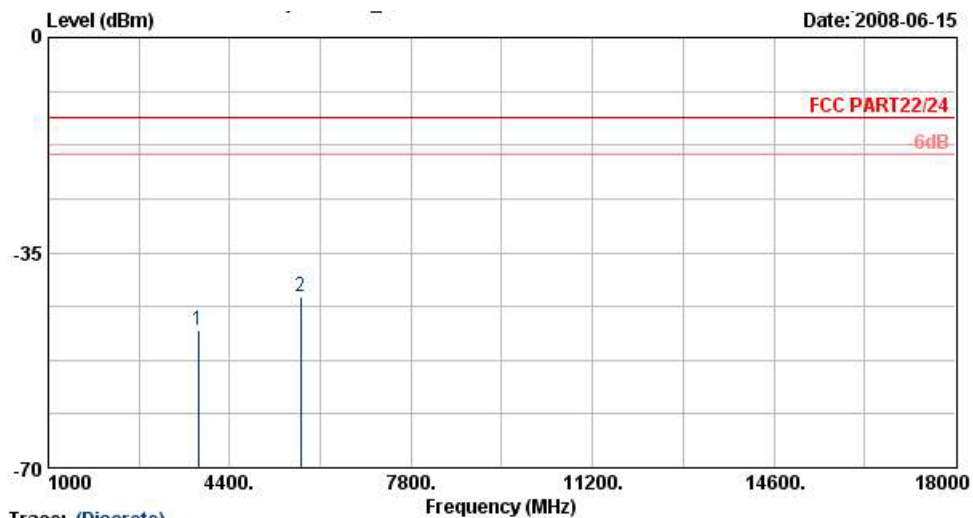
Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : PCS 1900 Link ; Ch 810 + Adaptor
+ Earphone
Plane : E2
IMEI :

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
3812	-47.72	-13	-34.72	-60.5	-50.37	4.78	7.43	H	Pass
5728	-46.72	-13	-33.72	-64.26	-49.94	5.66	8.88	H	Pass

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



Vertical Polarization



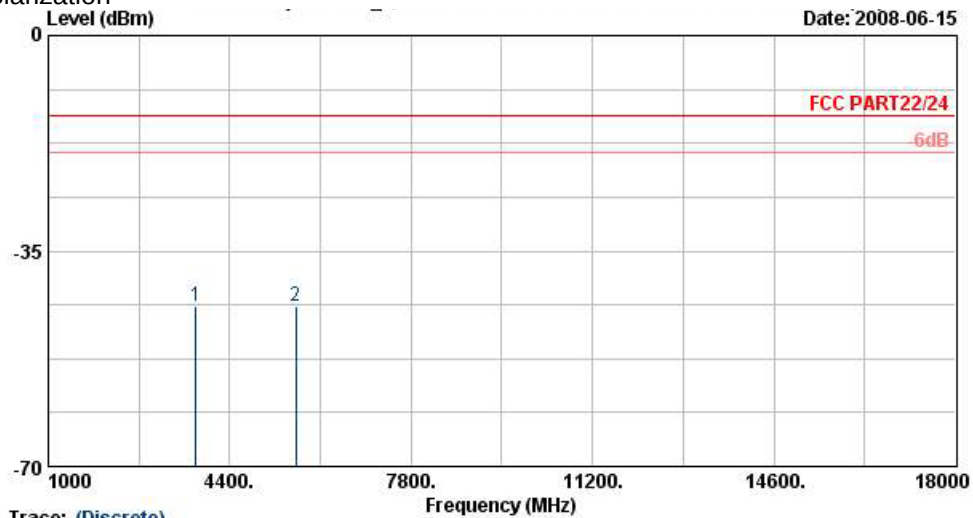
Site : 03CH07-HY
Condition : HF-EIRP(080306) VERTICAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : PCS 1900 Link ; Ch 810 + Adaptor
+ Earphone
Plane : E2
IMEI :

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
3812	-47.70	-13	-34.70	-62.61	-50.88	4.78	7.96	V	Pass
5728	-42.19	-13	-29.19	-61.65	-46.4	5.66	9.87	V	Pass

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

**4.6.11 (Middle Channel)**

Horizontal Polarization



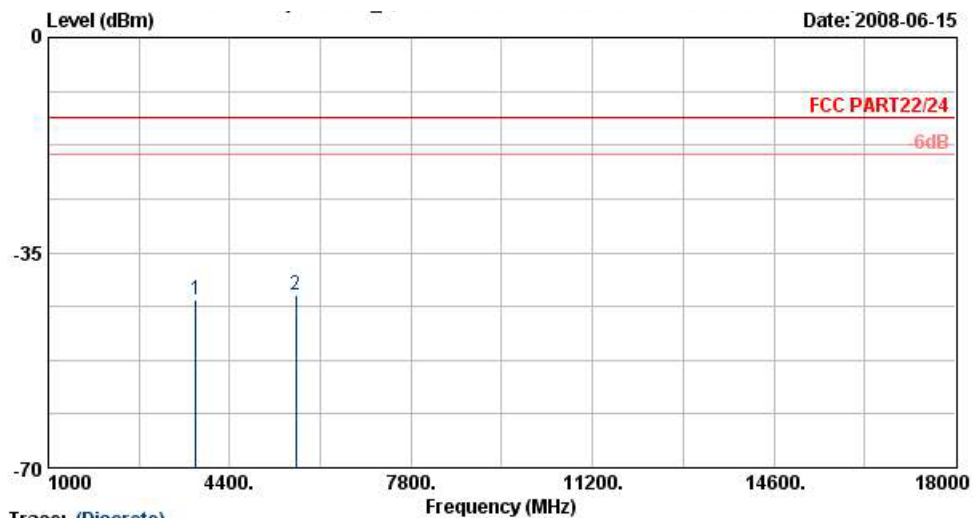
Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : PCS 1900 Link ; Ch 661 + Adaptor
+ Earphone
Plane : E2
IMEI :

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	-44.08	-13	-31.08	-58.38	-47.45	4.03	7.40	H	Pass
5636	-43.93	-13	-30.93	-62.98	-48.87	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 : Smart Phone
Power : 120Wac/60Hz
Model : FG 811107-02
Mode : PCS 1900 Link ; Ch 661 + Adaptor
+ Earphone
Plane : E2
IMEI :

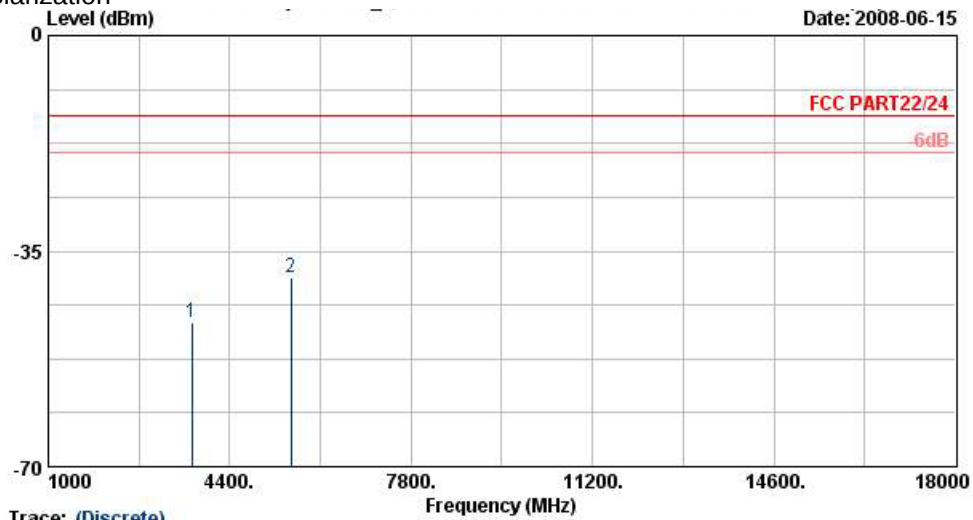
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-42.80	-13	-29.80	-59.59	-46.68	4.03	7.91	V	Pass
5636	-41.86	-13	-28.86	-62.52	-47.76	3.87	9.77	V	Pass

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



4.6.12 (Low channel)

Horizontal Polarization



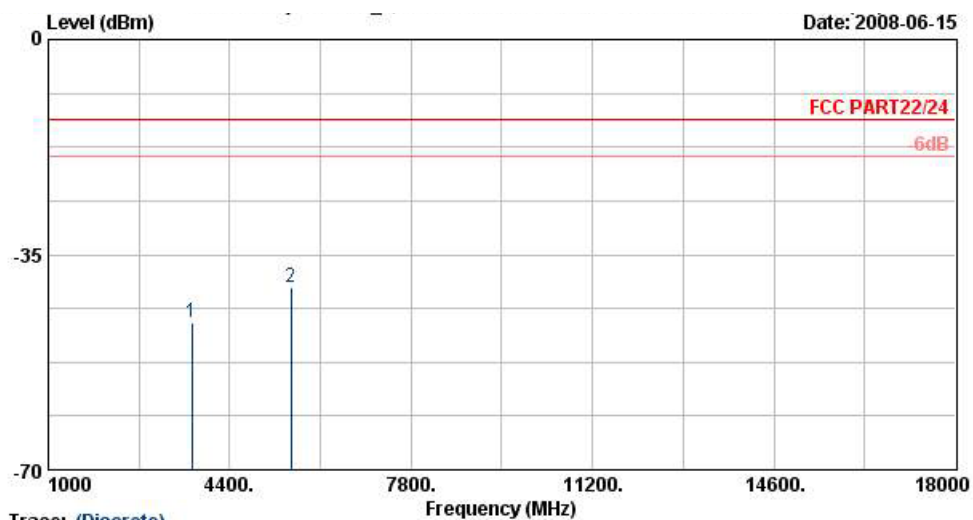
Site : 03CH07-HY
Condition : HF-EIRP(080306) HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 811107-02
Mode : PCS 1900 Link ; Ch 512 + Adaptor
Plane : E2
IMEI :

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3696	-46.51	-13	-33.51	-59.55	-49.37	4.52	H	Pass
5552	-39.40	-13	-26.40	-59.01	-42.94	5.2	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 : Smart Phone
Power : 120Wac/60Hz
Model : FG 811107-02
Mode : PCS 1900 Link ; Ch 512 + Adaptor
+ Earphone
Plane : E2
IMEI :

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3696	-46.17	-13	-33.17	-59.14	-49.51	4.52	V	Pass
5552	-40.44	-13	-27.44	-60.49	-44.9	5.2	V	Pass

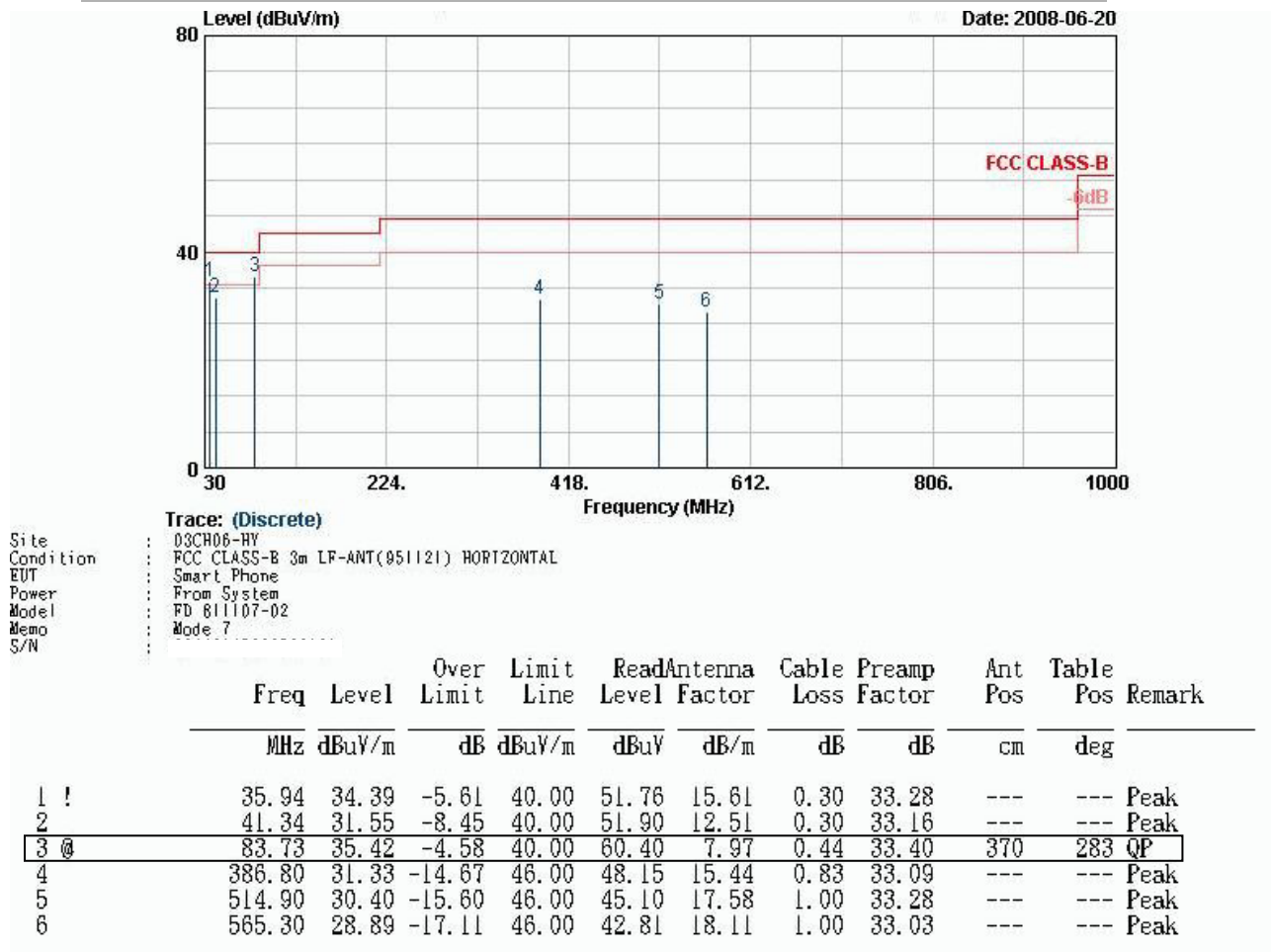
Remark : Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

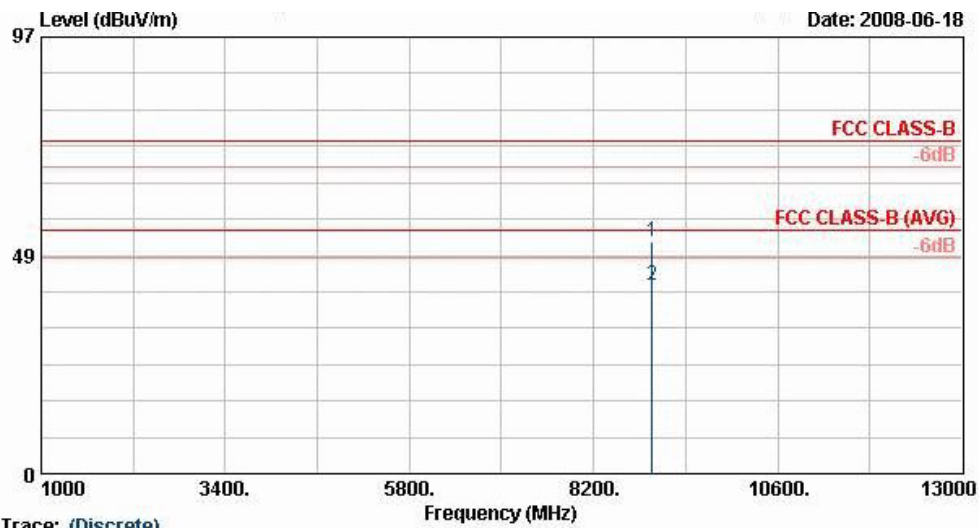
4.6.13 Test Mode for Rx

Test Mode: Mode 7

- Test Distance: 3m
- Temperature: 錯誤! 找不到參照來源。
- Relative Humidity: 錯誤! 找不到參照來源。
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Test Engineer: 錯誤! 找不到參照來源。
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

■ The test that passed at the minimum margin was marked by a frame in the following data

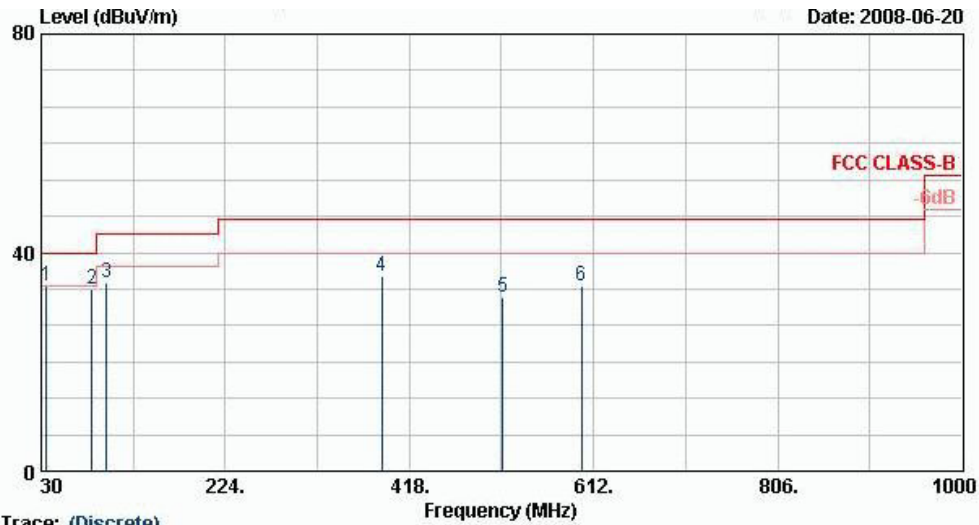




Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m HF-ANT(8-18)-060918 HORIZONTAL
EUT : PDA Phone
Power : From System
Model : FD 811107-02
Memo : Mode 7
S/N :

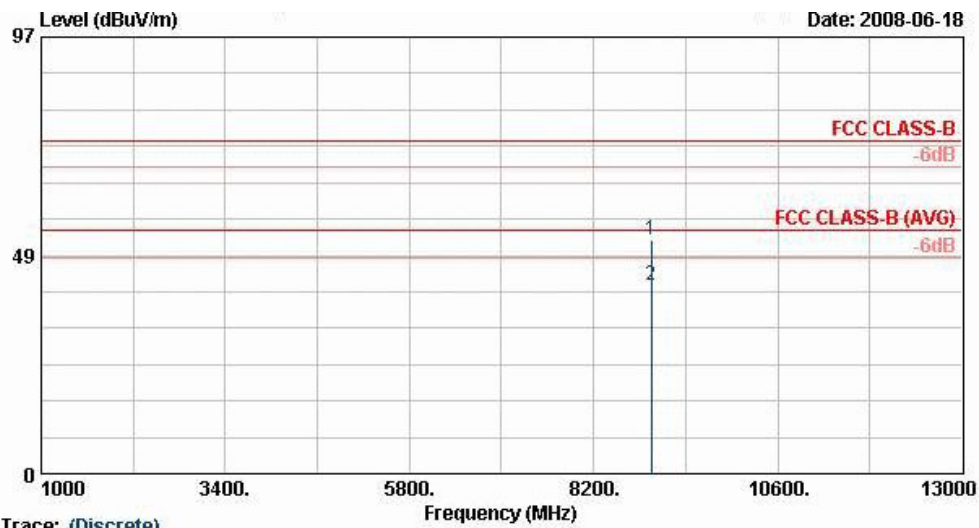
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	8968.00	51.59	-22.41	74.00	43.94	36.45	7.77	36.57	100	0 Peak
2	8968.00	41.69	-12.31	54.00	34.04	36.45	7.77	36.57	100	64 Average



Trace: (Discrete)

Site : D3CH06-RY
 Condition : FCC CLASS-B 3m LF-ANT(051121) VERTICAL
 EUT : Smart Phone
 Power : From System
 Model : FD 811107-02
 Memo : Mode 7
 S/N :

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	35.94	33.89	-6.11	40.00	51.26	15.61	0.30	33.28	100	152 Peak
2 @	83.73	33.28	-6.72	40.00	58.27	7.97	0.44	33.40	---	Peak
3	98.58	34.48	-9.02	43.50	56.43	10.79	0.50	33.25	---	Peak
4	388.90	35.72	-10.28	46.00	52.50	15.49	0.81	33.08	---	Peak
5	516.30	31.84	-14.16	46.00	46.52	17.59	1.00	33.27	---	Peak
6	598.90	33.82	-12.18	46.00	47.24	18.45	1.00	32.87	---	Peak



Trace: (Discrete)

Site : 03CH06-RY
Condition : FCC CLASS-B 3m HF-ANT(8-18)-060918 VERTICAL
EUT : PDA Phone
Power : From System
Model : FD 811107-02
Memo : Mode 7
S/N :

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	8948.00	51.79	-22.21	74.00	44.19	36.43	7.74	36.57	100	0 Peak
2	8948.00	41.79	-12.21	54.00	34.19	36.43	7.74	36.57	100	42 Average

4.7 Frequency Stability (Temperature Variation)

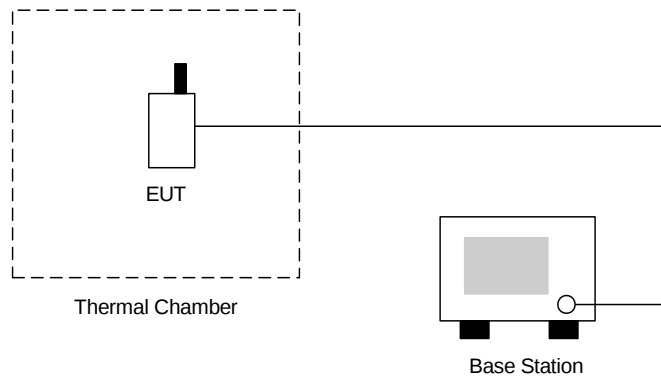
4.7.1 Measurement Instrument

As described 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 noted 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 was 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	11	0.01	2.5	Passed
-20	-27	-0.03		
-10	-25	-0.03		
0	-32	-0.04		
10	-28	-0.03		
20	-24	-0.03		
30	-31	-0.04		
40	-36	-0.04		
50	-23	-0.03		

• Test Mode : GSM850 (EDGE) CH189

Temperature()	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-41	-0.02	2.5	Passed
-20	-34	-0.04		
-10	-37	-0.04		
0	-33	-0.04		
10	-31	-0.04		
20	-38	-0.04		
30	-36	-0.04		
40	-39	-0.05		
50	-32	-0.04		



▪ Test Mode : PCS1900 (GSM) CH661

Temperature()	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-32	-0.02	2.5	Passed
-20	-68	-0.04		
-10	-57	-0.03		
0	-49	-0.03		
10	-51	-0.03		
20	-58	-0.03		
30	-47	-0.02		
40	-52	-0.03		
50	-63	-0.03		

▪ Test Mode : PCS1900 (EDGE) CH661

Temperature()	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-123	-0.06	2.5	Passed
-20	-71	-0.04		
-10	-68	-0.04		
0	-56	-0.03		
10	-61	-0.03		
20	-48	-0.03		
30	-59	-0.03		
40	-62	-0.03		
50	-67	-0.04		



- Test Mode : WCDMA Band V CH4182

Temperature()	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	13	0.02	2.5	Passed
-20	18	0.02		
-10	15	0.02		
0	14	0.02		
10	17	0.02		
20	19	0.02		
30	20	0.02		
40	18	0.02		
50	15	0.02		

- Test Mode : WCDMA Band II CH9400

Temperature()	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-37	-0.02	2.5	Passed
-20	29	0.02		
-10	-33	-0.02		
0	38	0.02		
10	32	0.02		
20	-41	-0.02		
30	-37	-0.02		
40	34	0.02		
50	27	0.01		

4.8 Frequency Stability (Voltage Variation)

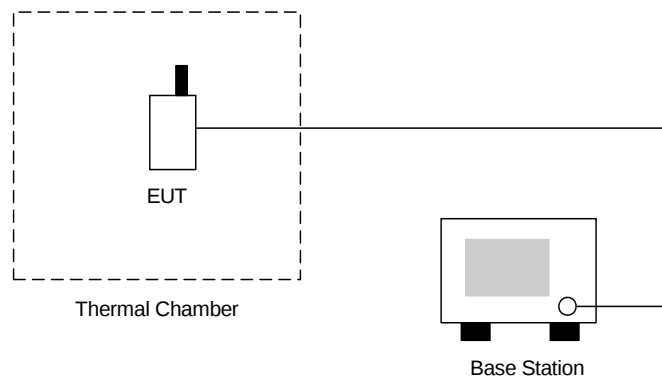
4.8.1 Measurement Instrument

As described in chapter 5 of this test report.

4.8.2 Test Procedure

- The EUT was placed in a temperature chamber at $25\pm5^{\circ}\text{C}$ and connected as the following section.
- The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
- 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
3.7	-30	-0.04	2.5	Passed
BEP	-34	-0.04		
4.2	-27	-0.03		

- Test Mode : GSM850 (EDGE) CH189

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-42	-0.05	2.5	Passed
BEP	-39	-0.05		
4.2	-34	-0.04		

- Test Mode : PCS1900 (GSM) CH661

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-58	-0.03	2.5	Passed
BEP	-60	-0.03		
4.2	-52	-0.03		

- Test Mode : PCS1900 (EDGE) CH661

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-54	-0.03	2.5	Passed
BEP	-53	-0.03		
4.2	-49	-0.03		

- Test Mode : WCDMA Band V CH4182

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	15	0.02	2.5	Passed
BEP	19	0.02		
4.2	18	0.02		

- Test Mode : WCDMA Band II CH9400

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-37	-0.02	2.5	Passed
BEP	-42	-0.02		
4.2	-32	-0.02		

Remark:

- Normal Voltage = 3.7V.
- Battery End Point (BEP) = 3.3V.

5. List of Measurement Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum Analyzer	R & S	FSP30	101067	9KHz-40GHz	Nov. 30, 2007	Nov. 29, 2008	Radiation (03CH07-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz -1GHz	Dec. 01, 2007	Nov. 30, 2008	Radiation (03CH07-HY)
Double Ridge Horn Antenna	EMCO	3117	00075962	1G~18G	Dec. 20, 2007	Dec. 19, 2008	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1G - 26.5G	Dec. 18, 2007	Dec. 17, 2008	Radiation (03CH07-HY)
Pre Amplifier	COM - POWER	PA-103	161069	10M~1GHz	Mar. 31, 2008	Mar. 30, 2009	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211028	9KHz-26.5GHz	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Dec. 01, 2007	Nov. 30, 2008	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	000666583	1G~18G	Aug. 29, 2007	Aug. 28, 2008	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-251	14G - 40G	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G - 26.5G	Nov. 22, 2007	Nov. 21, 2008	Radiation (03CH06-HY)
Pre Amplifier	EMEC	PA303	PA303-SMA-059	100K~3GHz	Nov. 26, 2007	Nov. 25, 2008	Radiation (03CH06-HY)
Thermal Chamber	Tenyi technology	TTH-D35P	TBN-930701	N/A	Aug. 02, 2007	Aug. 01, 2008	Conduction (TH02-HY)
Spectrum	R&S	FSP40	100057	9KHz~40GHz	Aug. 09, 2007	Aug. 09, 2008	Conduction (TH02-HY)
Bluetooth Test	ANRITSU	MT8852A	6K00003939	N/A	N/A	N/A	Conduction (TH02-HY)
Power Divider	ARRA	5200-1	3871	N/A	Oct. 01, 2007	Sep. 30, 2008	Conduction (TH02-HY)
DC Power Supply	TOPWARD	3303D	740889	N/A	May 25, 2007	May 24, 2009	Conduction (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 21, 2008	Feb. 20, 2009	Conduction (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 21, 2008	Feb. 20, 2009	Conduction (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		$u(x_i)$	C_i	$C_i * u(x_i)$
	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 $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+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 EP811107-02 as below.