



FCC Test Report

According to

47 CFR Part 24E

Equipment : PDA Phone
Model No. : DIAM100
FCC ID : NM8DMS
Tx Frequency Range : 1850.2 ~ 1909.8 MHz
Max. EIRP Power : main PA
PCS (GSM) : 1.07 W
PCS (EDGE) : 0.45 W
second PA
PCS (GSM) : 1.37 W
PCS (EDGE) : 0.59 W
Emission Designator : GSM : 300KGXW
EDGE : 300KG7W
Applicant : High Tech Computer Corp.
23 Xinghua Rd., Taoyuan 330, Taiwan

- 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 Apr. 02, 2008 at **Sporton International Inc. LAB.**
- Report No.: FG822609-01-B, Report Version: Rev. 01.

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Report Version: Rev. 01



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1. General Information

1.1. Applicant

High Tech Computer Corp.
23 Xinghua Rd., Taoyuan 330, Taiwan

1.2 Manufacturer

High Tech Computer Corp.
23 Xinghua Rd., Taoyuan 330, Taiwan

1.3 Basic Description of Equipment under Test

Equipment		PDA Phone
Model Name		DIAM100
FCC ID		NM8DMS
PDA Phone A		LCD Panel 1 + Photo Camera 1 + Video Camera 1 + main PA
PDA Phone B		LCD Panel 2 + Photo Camera 2 + Video Camera 2 + main PA
PDA Phone C		LCD Panel 2 + Photo Camera 2 + Video Camera 2 + second PA
AC Adapter A	Brand Name	DELTA
	Model Name	ADP-5FH B
	Power Rating	I/P: 100-240Vac, 50-60Hz, 0.2A; O/P: 5Vdc, 1A
	AC Power Cord Type	1.8 meter shielded cable without ferrite core
AC Adapter B	Brand Name	PHIHONG
	Model Name	PSAA05A-050
	Power Rating	I/P: 100-240Vac, 50-60Hz, 13-20VA; O/P: 5Vdc, 1A
	AC Power Cord Type	1.8 meter shielded cable without ferrite core
AC Adapter C	Brand Name	hTC
	Model Name	TC P300
	Power Rating	I/P: 100-240Vac, 50-60Hz, 0.2A; O/P: 5Vdc, 1A
	Power Cord Type	1.8 meter shielded cable without ferrite core
Car Charger	Brand Name	PHIHONG
	Model Name	CLA05D-050A
	Power Rating	I/P: 10V/30Vdc; O/P: 5Vdc, 1A
	Power Cord Type	1.8 meter shielded cable without ferrite core
Battery 1	Manufacturer	Total Wireless Solutions (Macao Commercial Offshore) Limited (TWS)
	Brand Name	hTC
	Model Name	DIAM160
	Power Rating	3.7Vdc, 900mA
	Type	Li-ion



Battery 2	Manufacturer	DESAY CORPORATION (Desay)
	Brand Name	hTC
	Model Name	DIAM160
	Power Rating	3.7Vdc, 900mA
	Type	Li-ion
Battery 3	Manufacturer	SAMSUNG SDI CO., LTD.
	Brand Name	hTC
	Model Name	DIAM160
	Power Rating	3.7Vdc, 900mA
	Type	Li-ion
Battery 4	Manufacturer	SIMPLO TECHNOLOGY CO., LTD.
	Brand Name	hTC
	Model Name	DIAM171
	Power Rating	3.7Vdc, 1340mA
	Type	Li-ion
Battery 5	Manufacturer	Total Wireless Solutions (Macao Commercial Offshore) Limited (TWS)
	Brand Name	hTC
	Model Name	DIAM171
	Power Rating	3.7Vdc, 1340mA
	Type	Li-ion
Battery 6	Manufacturer	WellDone Company
	Brand Name	hTC
	Model Name	DIAM160
	Power Rating	3.7Vdc, 900mA
	Type	Li-ion
Earphone A	Brand Name	COTRON
	Model Name	RC E100
	Signal Line Type	1.7 meter shielded cable without ferrite core
Earphone B	Brand Name	COTRON
	Model Name	HS S200
	Signal Line Type	1.6 meter shielded cable without ferrite core
Earphone C	Brand Name	COTRON
	Model Name	HS S300
	Signal Line Type	1.6 meter shielded cable without ferrite core
USB Cable A	Brand Name	MEC
	Model Name	DC U300
	Signal Line Type	1.4 meter shielded cable with ferrite core
USB Cable B	Brand Name	MEC
	Model Name	DC U100
	Signal Line Type	1.2 meter shielded cable with ferrite core
LCD Panel 1	Brand Name	Hitachi
	Model Name	DX07D05VM0AAA
LCD Panel 2	Brand Name	Sharp
	Model Name	LS028V7DX01



Photo Camera 1	Brand Name	Foxconn
	Model Name	CMHT-3A403D
Photo Camera 2	Brand Name	LiteOn
	Model Name	07PM12
Video Camera 1	Brand Name	Foxconn
	Model Name	CMHT-00M00D
Video Camera 2	Brand Name	LiteOn
	Model Name	07PC05
Holster	Brand Name	XIGMA
	Model Name	PO S400

Remark:

1. Above EUT's information was declared by manufacturer. Please refer to the specifications of manufacturer or User's Manual for more detailed features description.
2. ADP-5FH X (X=A, B, C, D or E) have the same circuit design, the difference between these models are plug, only ADP-5FH B used for testing.
3. PSAA05X-050 (X=A, C, E, K or S) have the same circuit design, the difference between these models are plug, only PSAA05A-05 used for testing.



1.4 Feature of Equipment under Test

Product Feature & Specification	
DUT Type :	PDA Phone
Model Name :	DIAM100
FCC ID :	NM8DMS
Tx Frequency :	PCS1900 : 1850 MHz ~1910 MHz
Rx Frequency :	PCS1900 : 1930 MHz ~ 1990 MHz
Channel Spacing :	PCS1900 : 200 KHz
Maximum Output Power to Antenna :	main PA PCS (GSM) : 30.02 dBm PCS (EDGE): 25.71 dBm second PA PCS (GSM) : 29.40 dBm PCS (EDGE): 25.70 dBm
Maximum EIRP :	main PA PCS (GSM) : 1.07 W (30.31 dBm) PCS (EDGE): 0.45 W (26.49 dBm) second PA PCS (GSM) : 1.37 W (31.38 dBm) PCS (EDGE): 0.59 W (27.68 dBm)
Type of Antenna Connector :	N/A
Antenna Type :	PCS1900 : PIFA Antenna
Type of Modulation :	GSM / GPRS : GMSK EDGE : 8PSK
Type of Emission :	GSM : 300KGXW EDGE : 300KG7W
DUT Stage :	Identical Prototype

1.5 Report Date

EUT Received : Feb. 26, 2008

Report Date : Apr. 30, 2008

2 Test Configuration of Equipment under Test

2.1 Test Manner

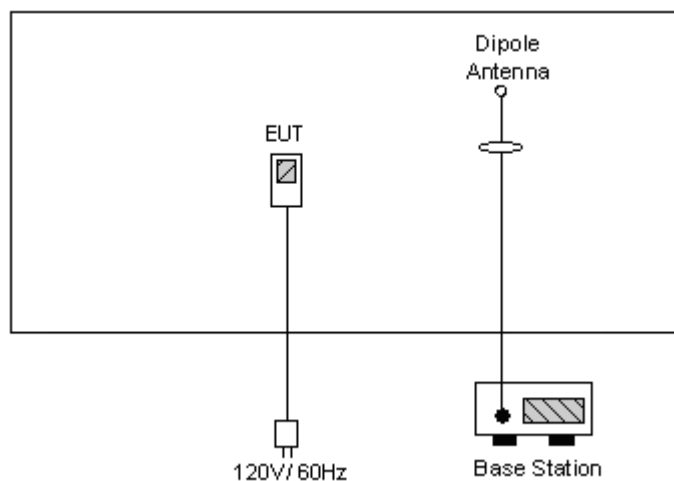
- a. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.
- b. During all testings, EUT is in link mode with base station emulator at maximum power level.
- c. Frequency range investigated: radiated emission 30MHz to 19000 MHz for PCS.
- d. All the test cases were tested on PDA phone A, and conducted power and EIRP were tested on PDA phone C.

2.2 Test Mode

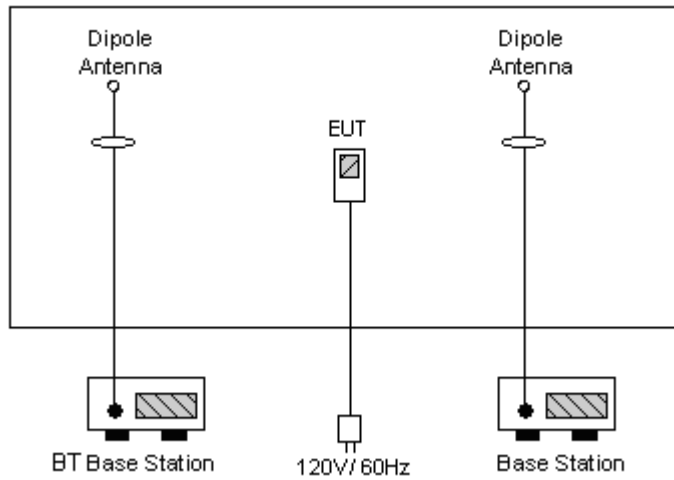
Application	PCS 1900
Radiated Emission	<input checked="" type="checkbox"/> Mode 1: PCS (GSM) Link Mode <input checked="" type="checkbox"/> Mode 2: PCS (EDGE) Link Mode <input checked="" type="checkbox"/> Mode 3: PCS (GSM) Link Mode + BT Link <input checked="" type="checkbox"/> Mode 4: PCS (GSM) Link Mode + WLAN Link
Conducted Measurement	<input checked="" type="checkbox"/> Mode 1: PCS (GSM) Link Mode <input checked="" type="checkbox"/> Mode 2: PCS (EDGE) Link Mode

2.3 Connection Diagram of Test System

<GSM and WLAN Link Mode>



<GSM and BT Link Mode>



2.4 Ancillary Equipment List

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable / Power Code
1.	Base Station	R&S	CMU200	N/A	Unshielded, 1.8m
2.	BT Base Station	Anritus	8852A	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

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 24E

3.3 Frequency Range

a. Radiation: from 30 MHz to 19000 MHz for PCS

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
§24.232	EIRP	Passed	4.3
§2.1049, § 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, §24.235	Frequency Stability vs. Temperature	Passed	4.7
§2.1055, §24.235	Frequency Stability vs. Voltage	Passed	4.8

4.2 RF Output Power

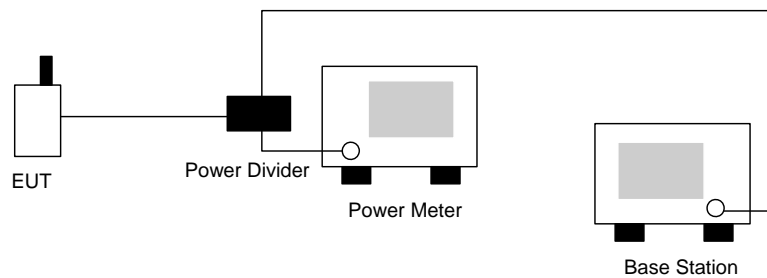
4.2.1 Measurement Instruments

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 PCL=0 for PCS maximum power through base station.
- c. Select lowest, middle, and highest channels for each band.

4.2.3 Test Setup Layout



4.2.4 Test Result

<main PA>

Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
PCS1900 (GSM)	512	1850.2 (Low)	29.90	1.127
	661	1880.0 (Mid)	30.02	1.107
	810	1909.8 (High)	29.98	1.064
PCS1900 (EDGE)	512	1850.2 (Low)	25.68	0.471
	661	1880.0 (Mid)	25.71	0.465
	810	1909.8 (High)	25.60	0.446



<second PA>

Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
PCS1900 (GSM)	512	1850.2 (Low)	29.40	0.871
	661	1880.0 (Mid)	29.40	0.871
	810	1909.8 (High)	29.40	0.871
PCS1900 (EDGE)	512	1850.2 (Low)	25.50	0.355
	661	1880.0 (Mid)	25.60	0.363
	810	1909.8 (High)	25.70	0.372



4.3 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 turntable 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 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 EIRP of the substitution antenna.
- i. $EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$

P_s (dBm) : Input power to substitution antenna.

G_s (dBi) : Substitution antenna Gain.

$E_t = R_t + AF$

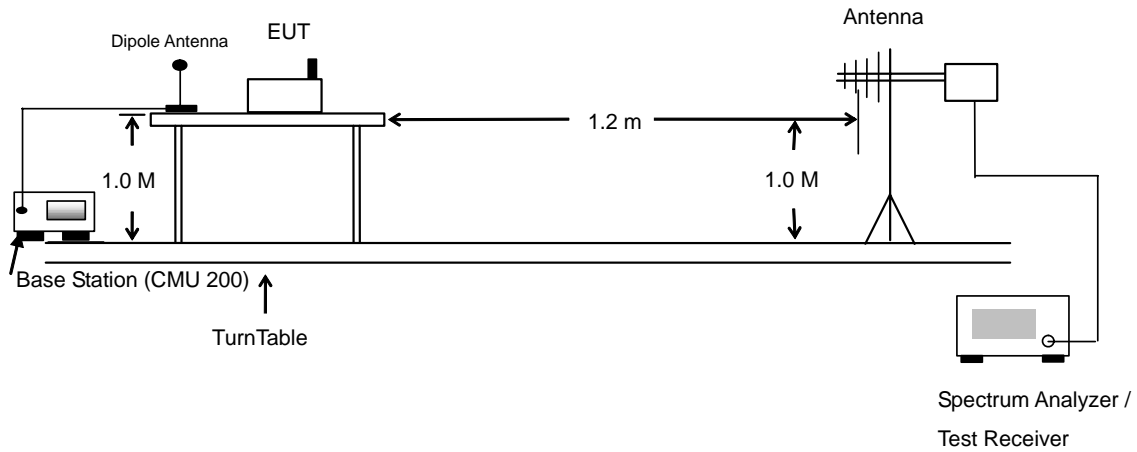
$E_s = R_s + AF$

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

<main PA>

PCS1900 (GSM) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-24.41	-51.88	0.00	1.96	29.43	0.88
1880.00	-26.04	-52.99	0.00	2.00	28.95	0.79
1909.80	-29.00	-54.28	0.00	1.98	27.26	0.53
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-23.78	-52.13	0.00	1.96	30.31	1.07
1880.00	-25.26	-53.17	0.00	2.00	29.91	0.98
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	-28.15	-51.88	0.00	1.96	25.69	0.37
1880.00	-29.81	-52.99	0.00	2.00	25.18	0.33
1909.80	-33.06	-54.28	0.00	1.98	23.20	0.21
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-27.60	-52.13	0.00	1.96	26.49	0.45
1880.00	-29.54	-53.17	0.00	2.00	25.63	0.37
1909.80	-32.04	-54.13	0.00	1.98	24.07	0.26



<second PA>

PCS1900 (GSM) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-23.79	-51.88	0.00	1.96	30.05	1.01
1880.00	-26.23	-52.99	0.00	2.00	28.76	0.75
1909.80	-28.15	-54.28	0.00	1.98	28.11	0.65
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-22.71	-52.13	0.00	1.96	31.38	1.37
1880.00	-24.70	-53.17	0.00	2.00	30.47	1.11
1909.80	-26.20	-54.13	0.00	1.98	29.91	0.98

PCS1900 (EDGE) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-27.63	-51.88	0.00	1.96	26.21	0.42
1880.00	-30.00	-52.99	0.00	2.00	24.99	0.32
1909.80	-32.11	-54.28	0.00	1.98	24.15	0.26
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-26.41	-52.13	0.00	1.96	27.68	0.59
1880.00	-28.75	-53.17	0.00	2.00	26.42	0.44
1909.80	-30.38	-54.13	0.00	1.98	25.73	0.37

4.4 Occupied Bandwidth and Band Edge Measurement

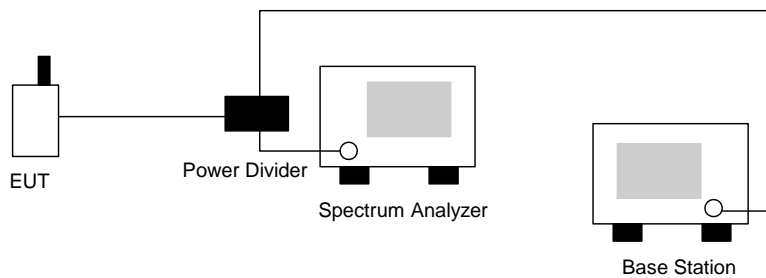
4.4.1 Measurement Instruments

As described in chapter 5 of this test report.

4.4.2 Test Procedure

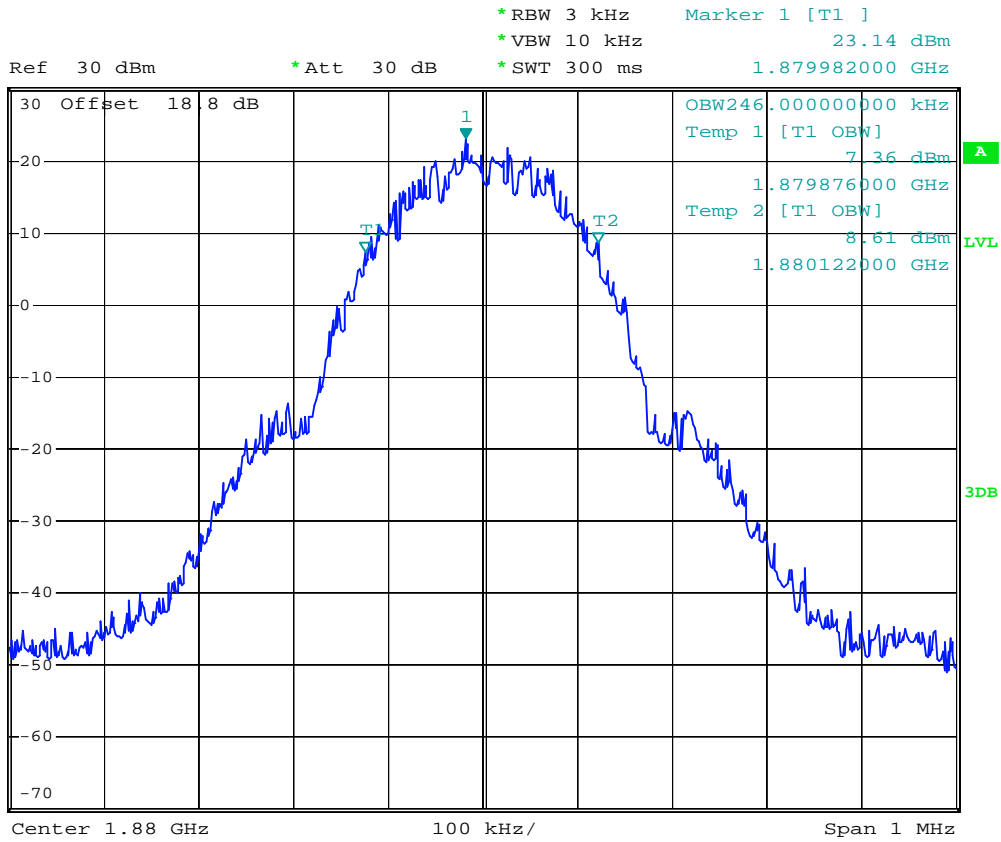
- a. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
- b. The 99% occupied bandwidth of middle channel for the highest and lowest RF powers were measured.
- c. The bandedge of low and high channels for the highest RF powers within the transmitting frequency band were measured. Setting RBW as roughly $BW/100$.

4.4.3 Test Setup Layout





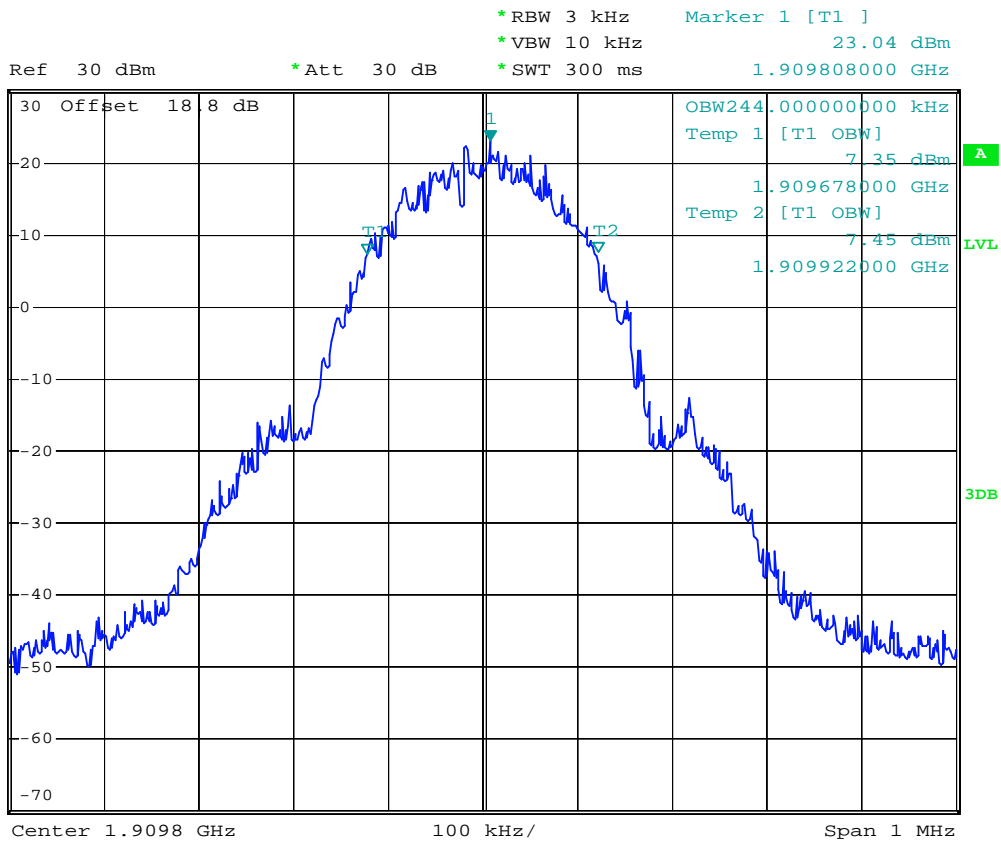
- Test Mode : PCS1900 (GSM) CH661 99% Occupied Bandwidth
- Power State : High



Date: 15.MAR.2008 21:07:10



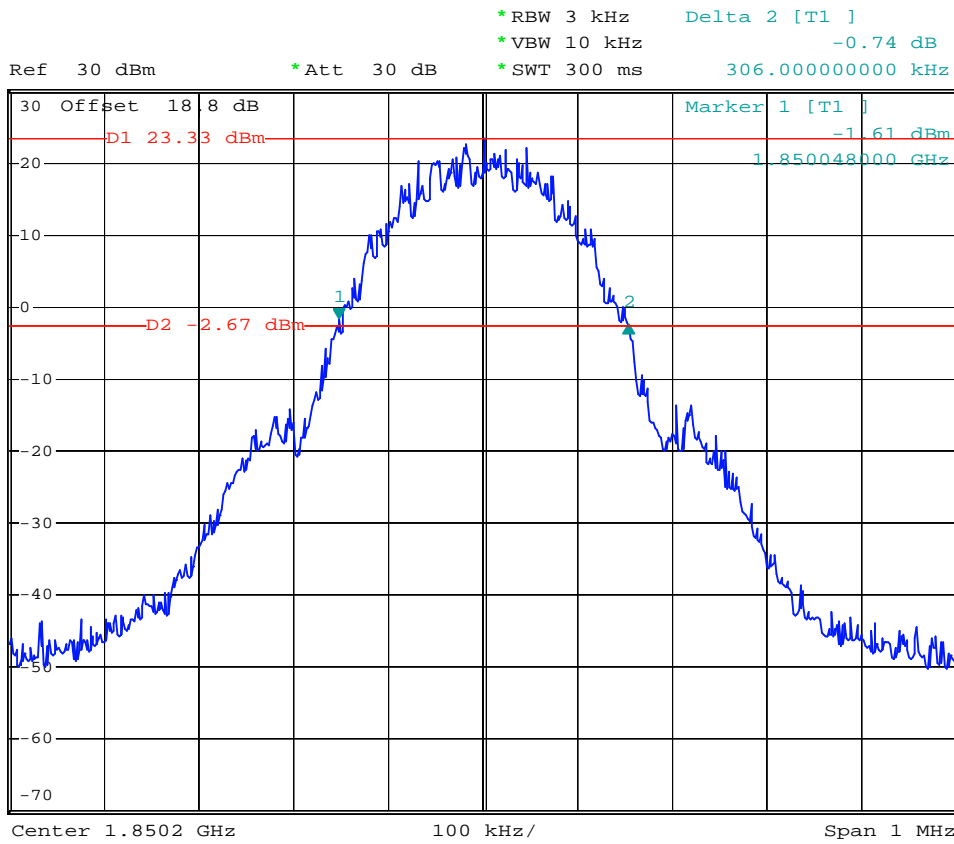
- Test Mode : PCS1900 (GSM) CH810 99% Occupied Bandwidth
- Power State : High



Date: 15.MAR.2008 21:06:15



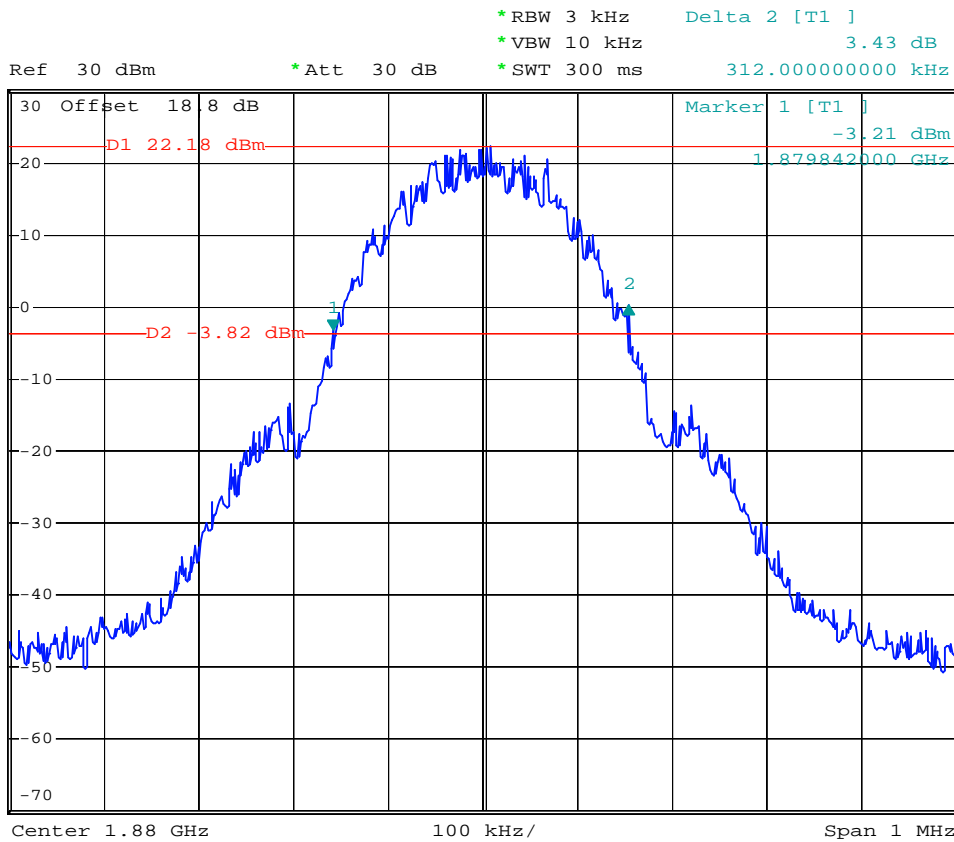
- Test Mode : PCS1900 (GSM) CH512 26dB Bandwidth
- Power State : High



Date: 15.MAR.2008 21:03:56



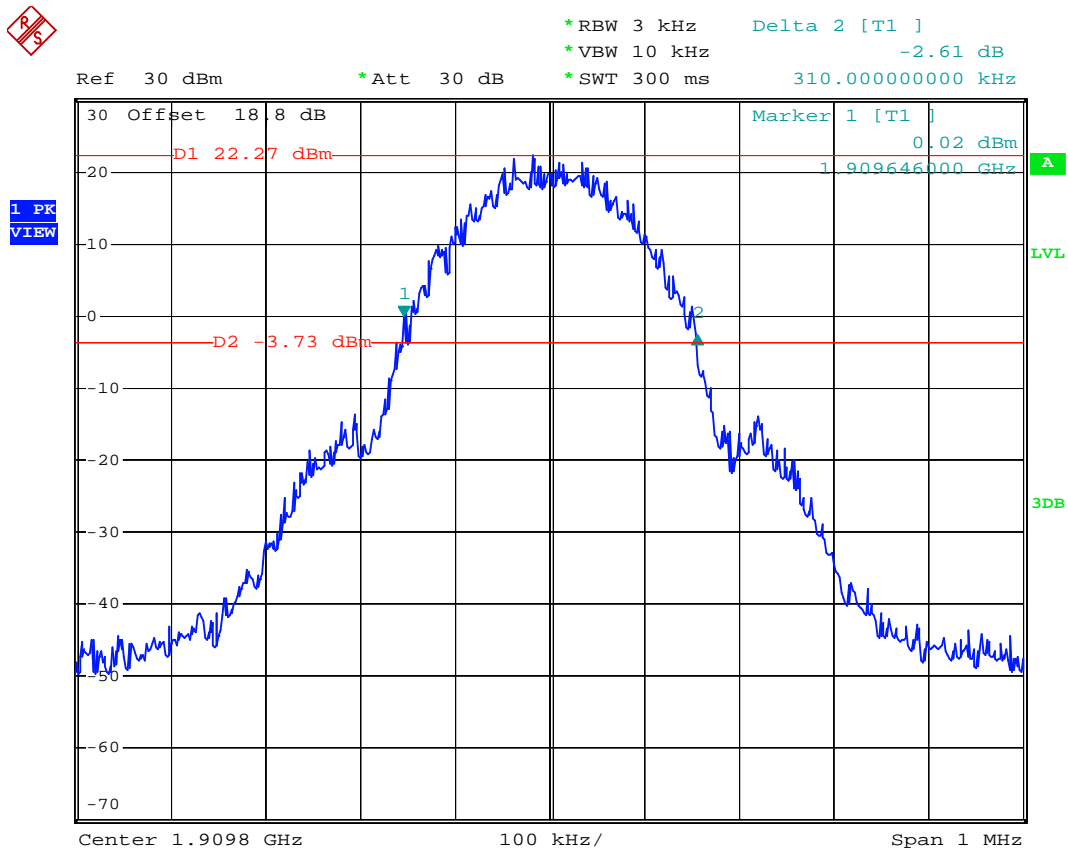
- Test Mode : PCS1900 (GSM) CH661 26dB Bandwidth
- Power State : High



Date: 15.MAR.2008 21:04:44



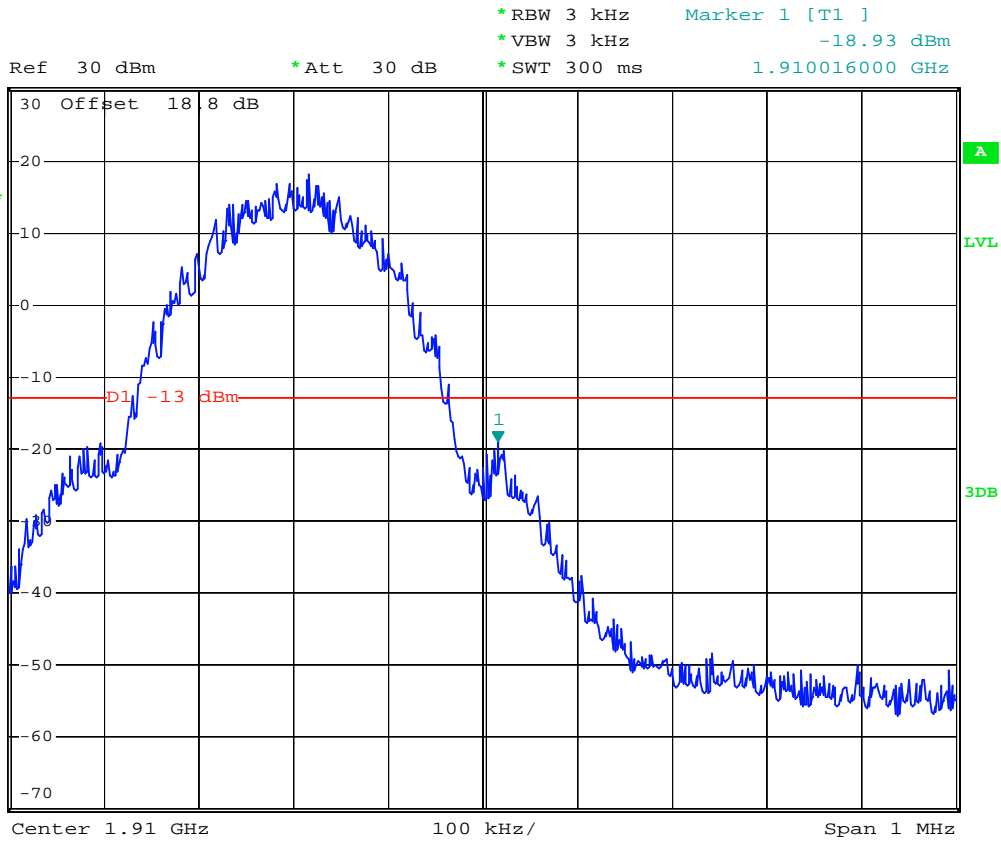
- Test Mode : PCS1900 (GSM) CH810 26dB Bandwidth
- Power State : High



Date: 15.MAR.2008 21:05:41



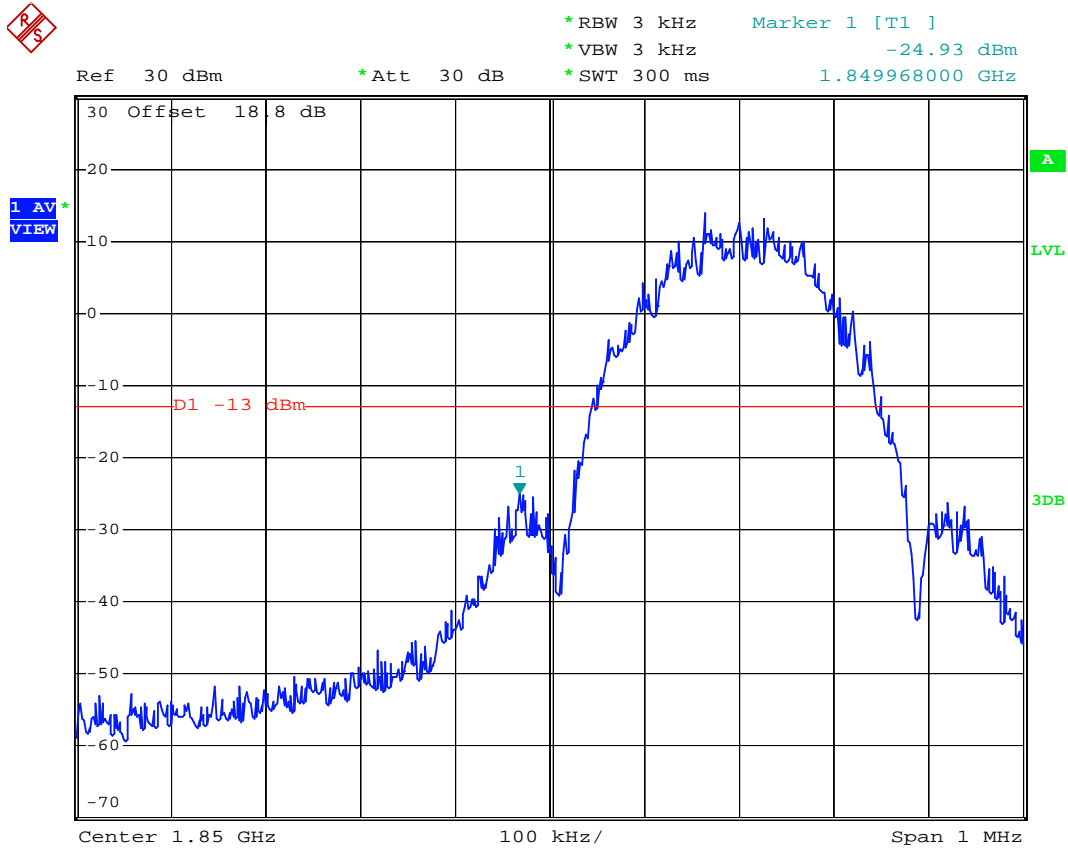
- Test Mode : PCS1900 (GSM) CH810 Higher Band Edge
- Power State : High



Date: 15.MAR.2008 21:11:03



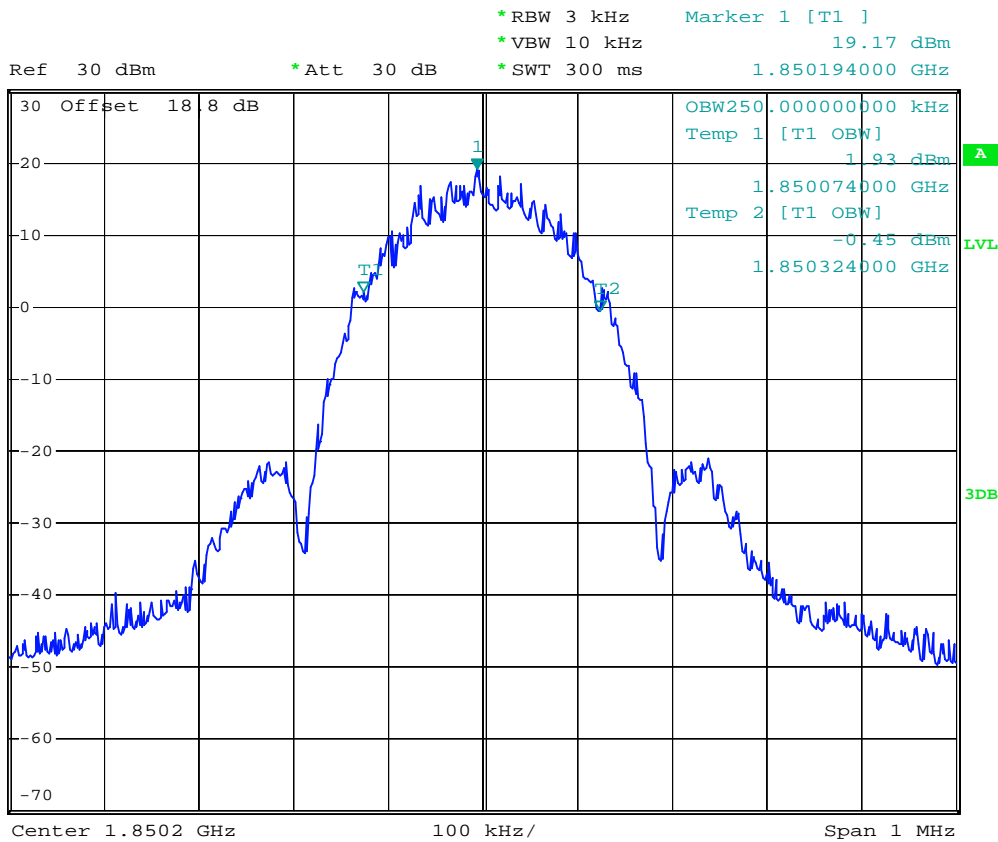
- Mode 2
- Test Mode : PCS1900 (EDGE) CH512 Lower Band Edge
- Power State : High



Date: 15.MAR.2008 21:30:38



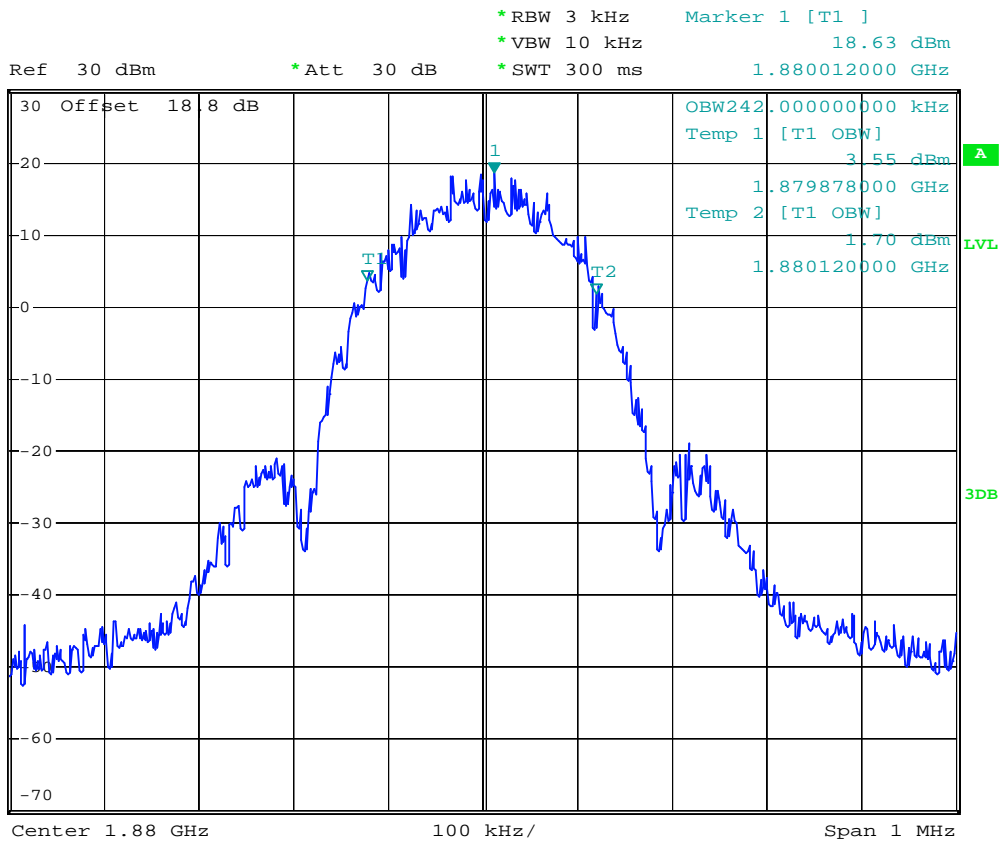
- Test Mode : PCS1900 (EDGE) CH512 99% Occupied Bandwidth
- Power State : High



Date: 15.MAR.2008 21:26:49



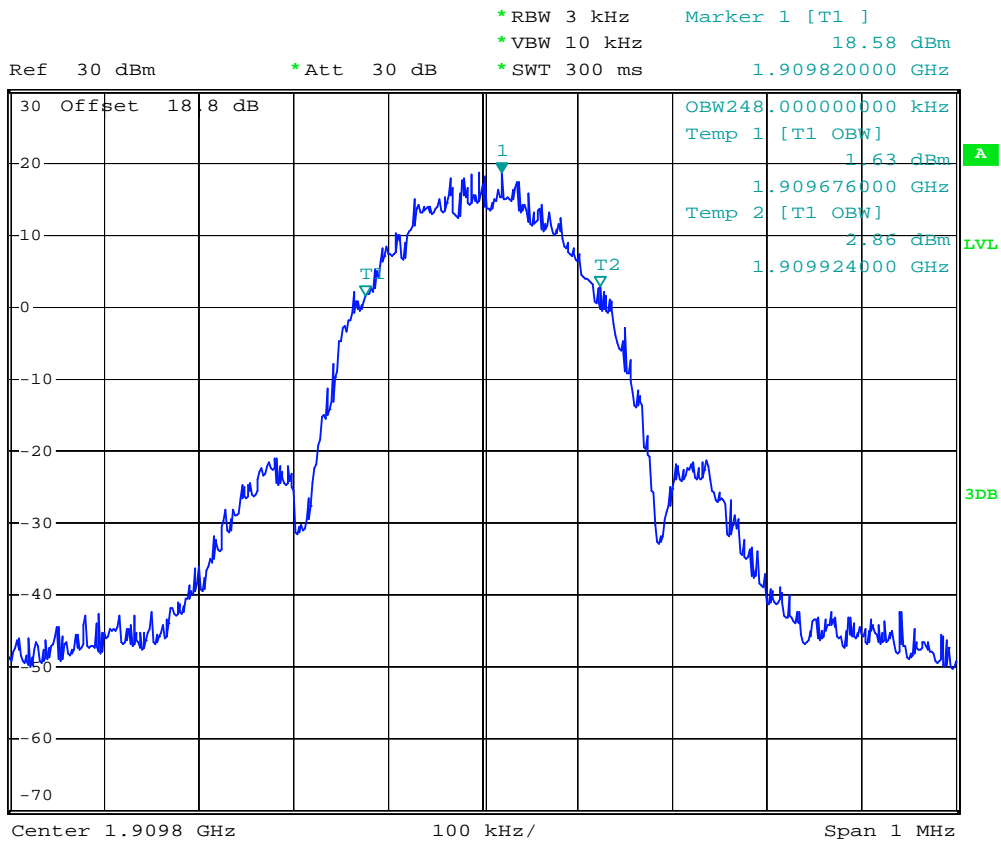
- Test Mode : PCS1900 (EDGE) CH661 99% Occupied Bandwidth
- Power State : High



Date: 15.MAR.2008 21:27:12



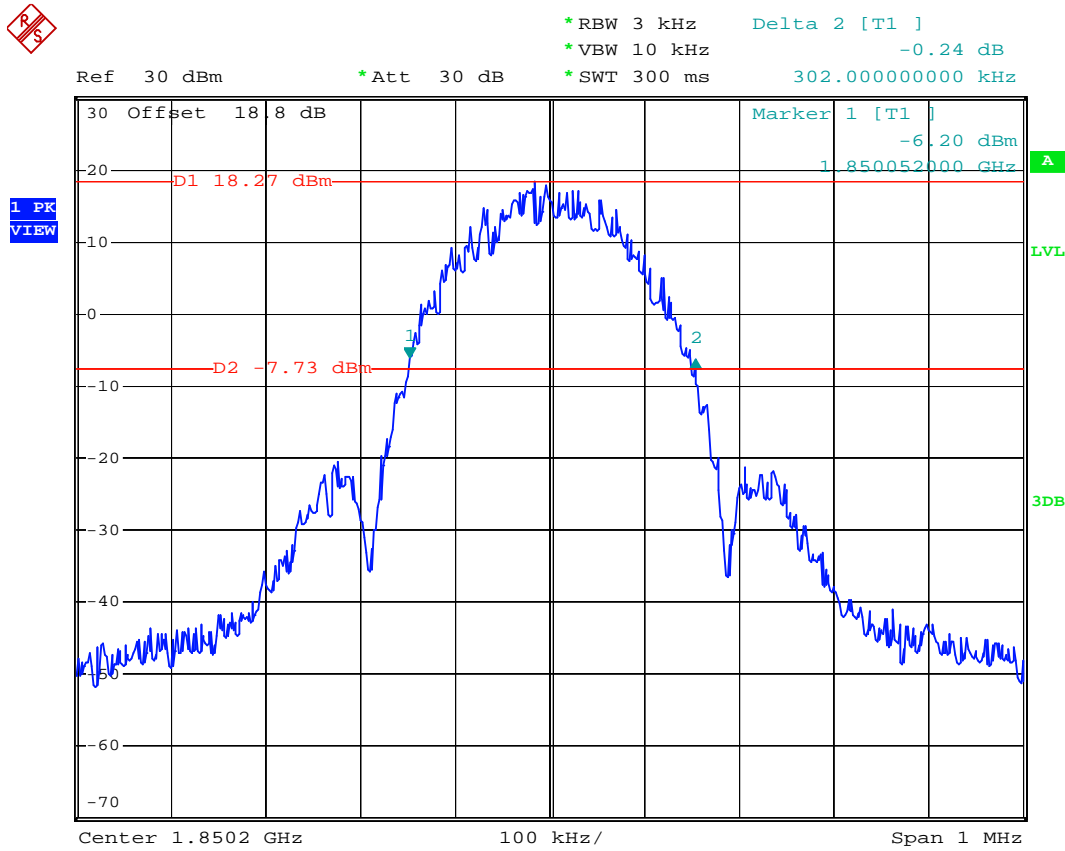
- Test Mode : PCS1900 (EDGE) CH810 99% Occupied Bandwidth
- Power State : High



Date: 15.MAR.2008 21:27:42



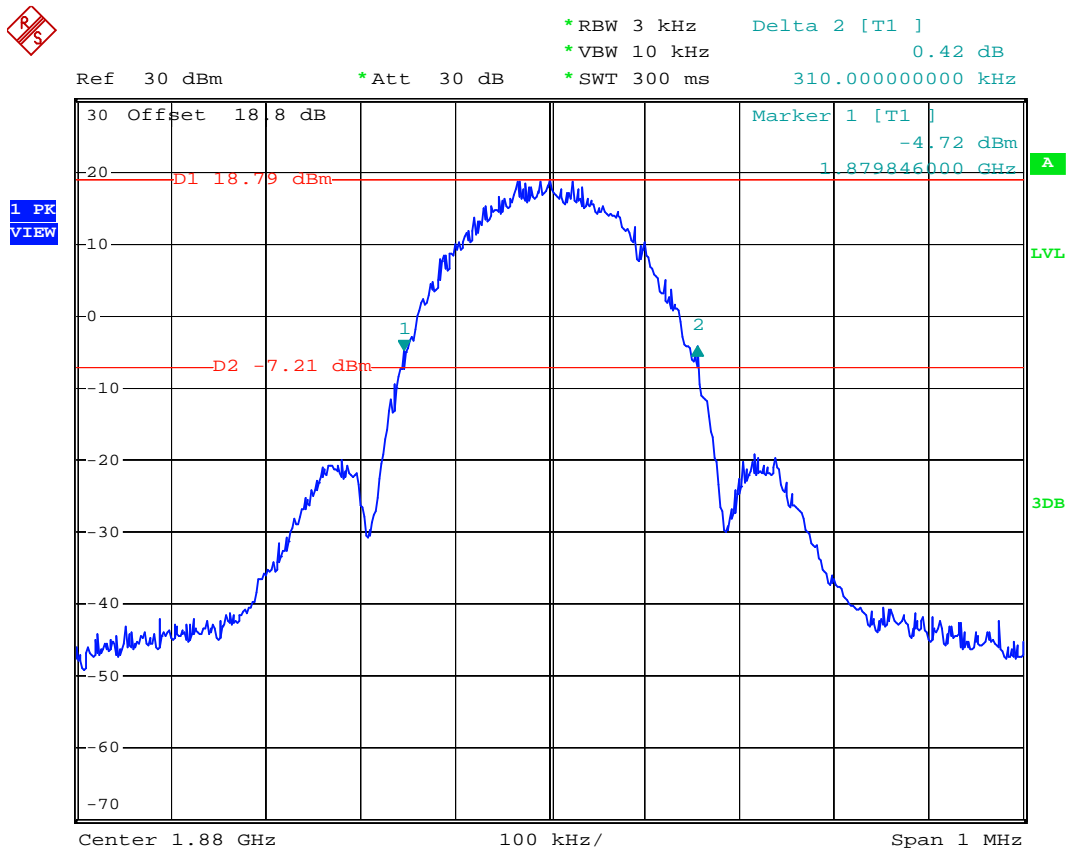
- Test Mode : PCS1900 (EDGE) CH512 26dB Bandwidth
- Power State : High



Date: 15.MAR.2008 21:25:58



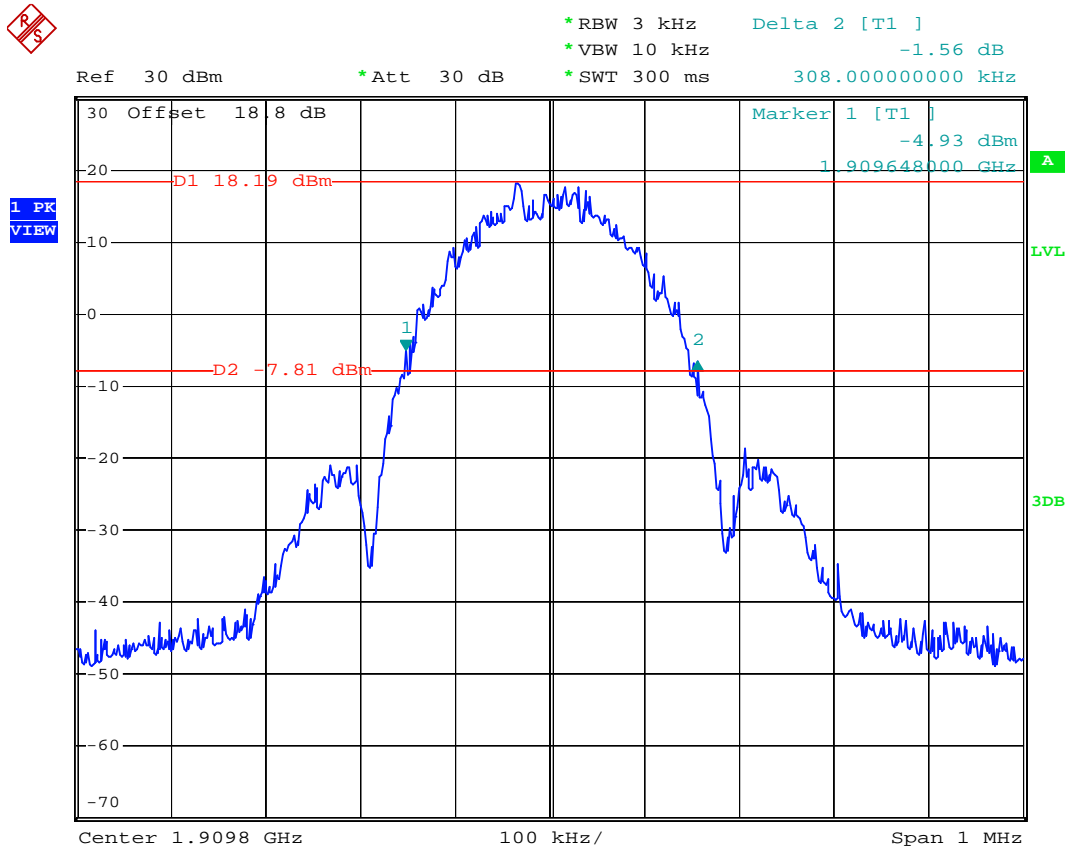
- Test Mode : PCS1900 (EDGE) CH661 26dB Bandwidth
- Power State : High



Date: 15.MAR.2008 21:25:07



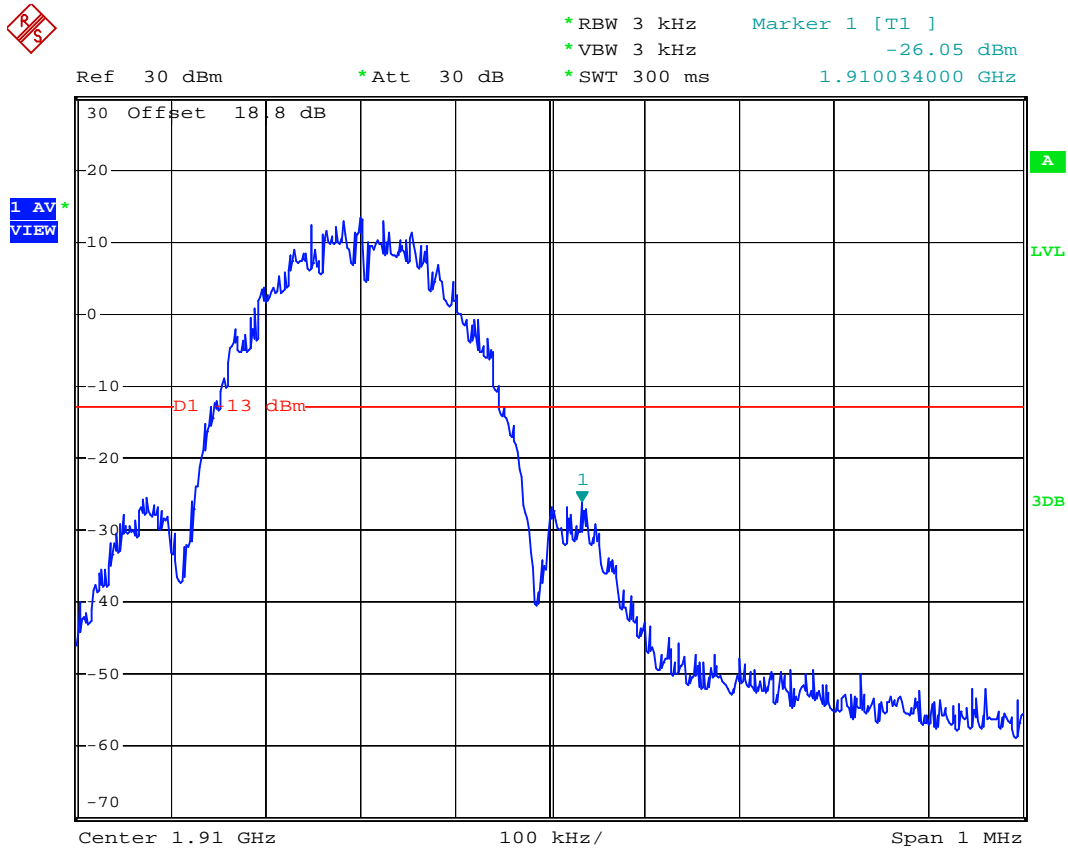
- Test Mode : PCS1900 (EDGE) CH810 26dB Bandwidth
- Power State : High



Date: 15.MAR.2008 21:19:57



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



Date: 15.MAR.2008 21:33:36

4.5 Conducted Emission

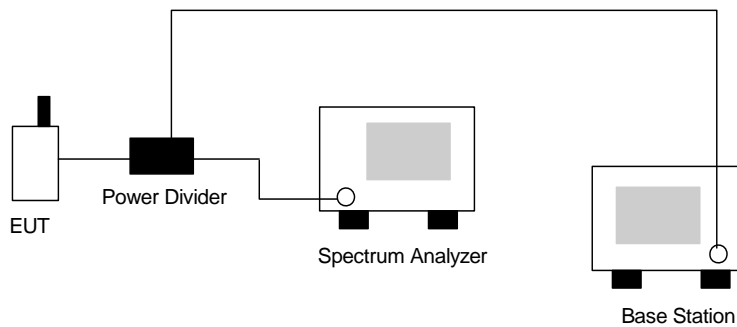
4.5.1 Measurement Instruments

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.

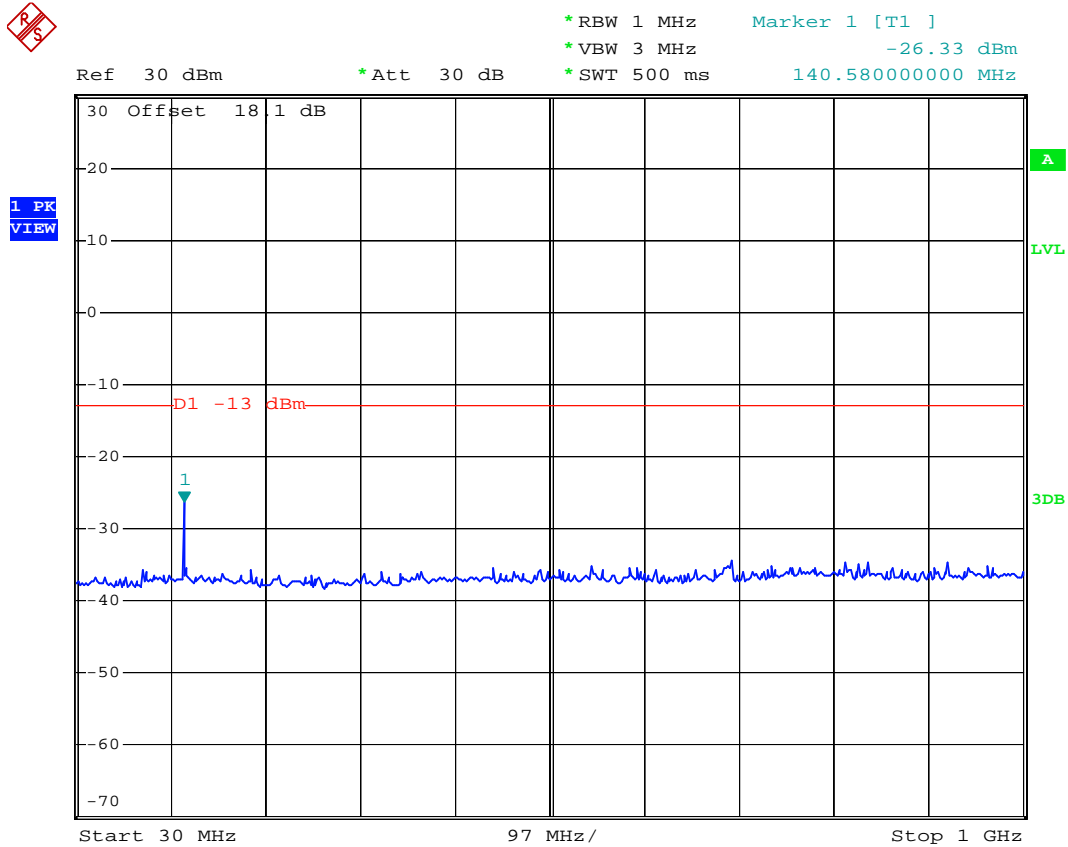
4.5.3 Test Setup Layout





4.5.4 Test Result

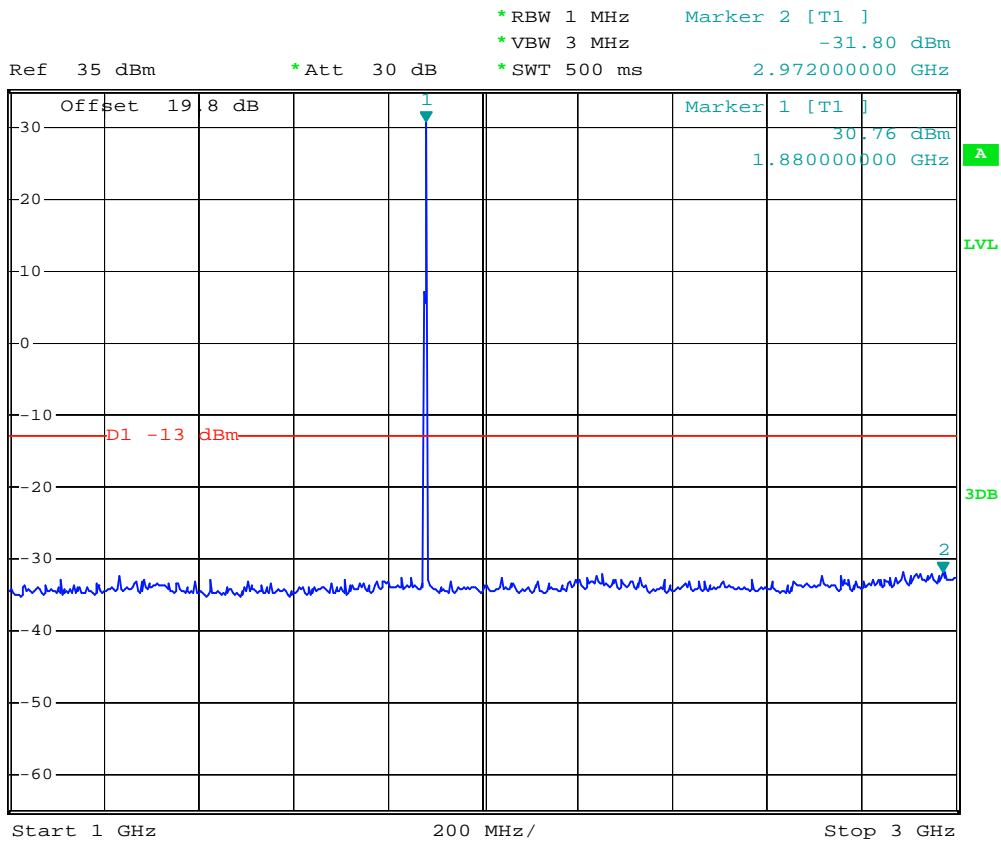
- Mode 1
- Test Mode : PCS (GSM) CH661
- Frequency Range : 30M-1G



Date: 15.MAR.2008 21:36:15



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



Date: 15.MAR.2008 21:37:48



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

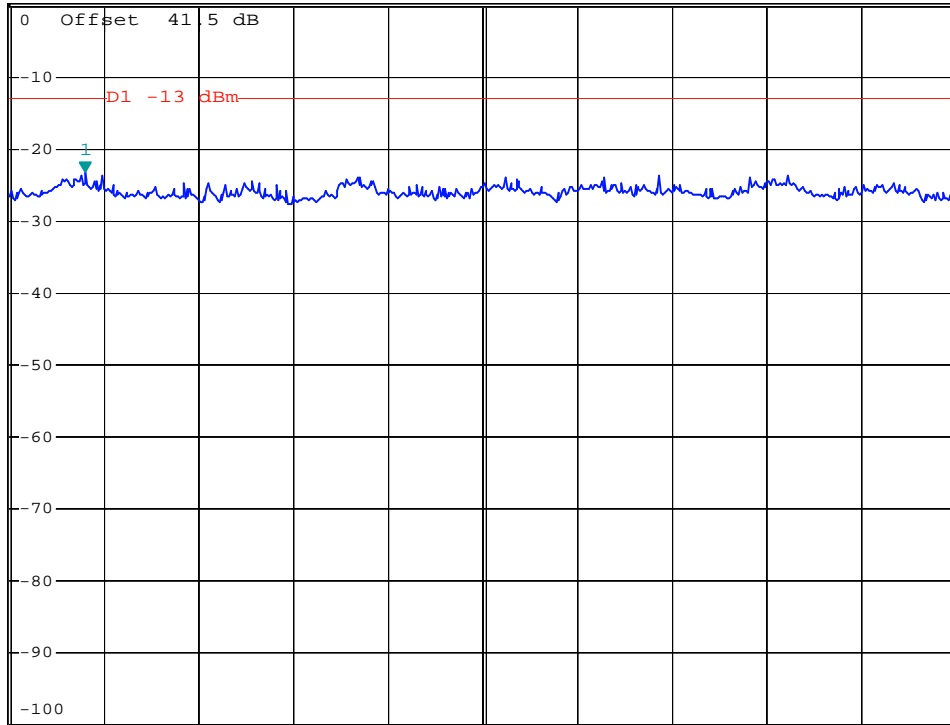


*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz -23.19 dBm
 *SWT 500 ms 14.04000000 GHz

Ref 0 dBm

*Att 0 dB

1 PK
VIEW



Start 13.6 GHz

550 MHz/

Stop 19.1 GHz

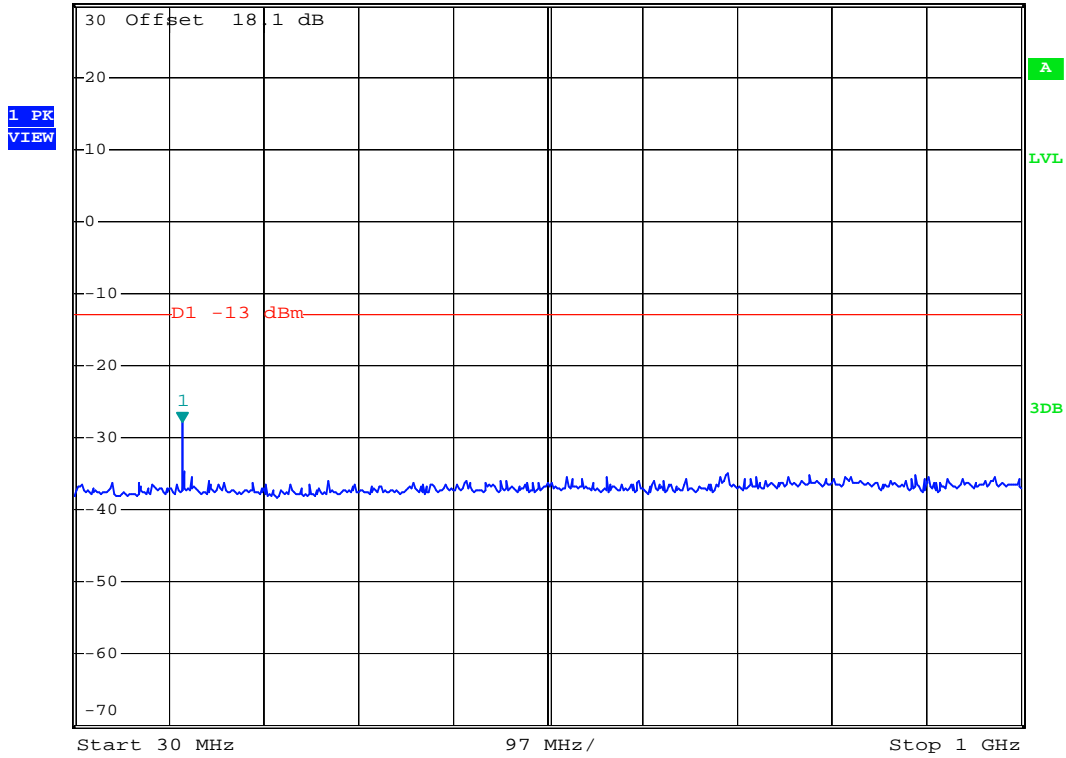
Date: 15.MAR.2008 21:43:51



- Mode 2
- Test Mode : PCS (EDGE) CH661
- Frequency Range : 30M-1G



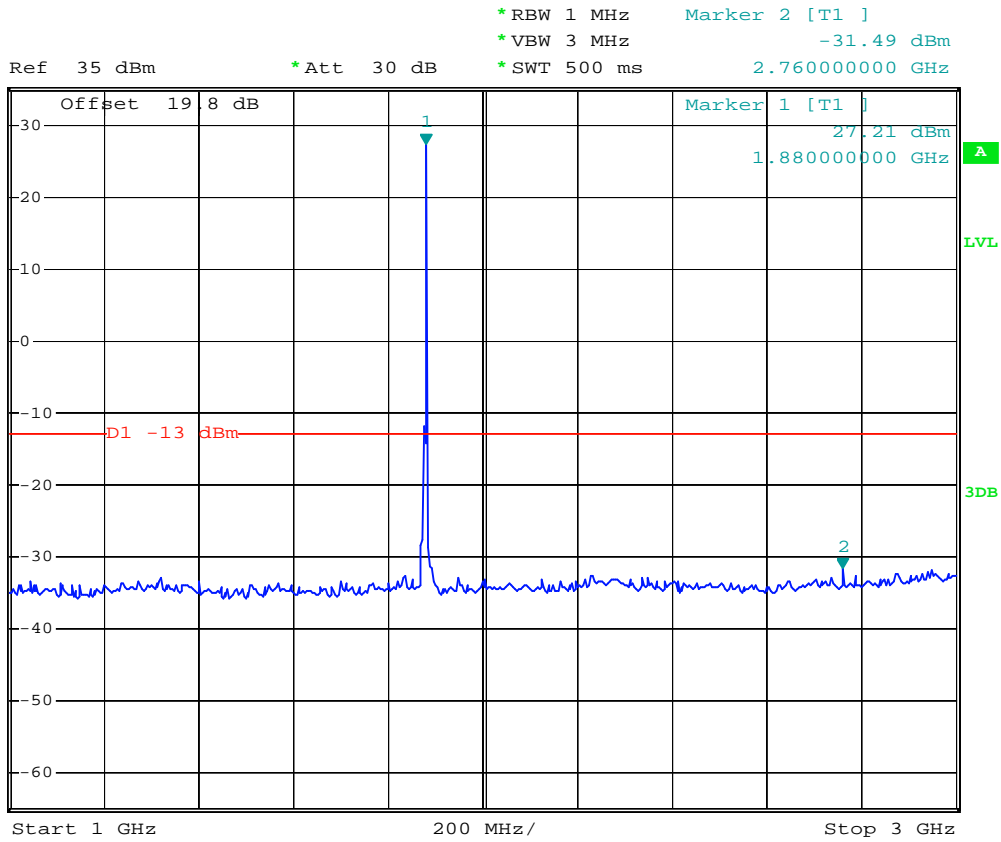
Ref 30 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz -27.95 dBm
 *SWT 500 ms 140.58000000 MHz



Date: 15.MAR.2008 21:35:44



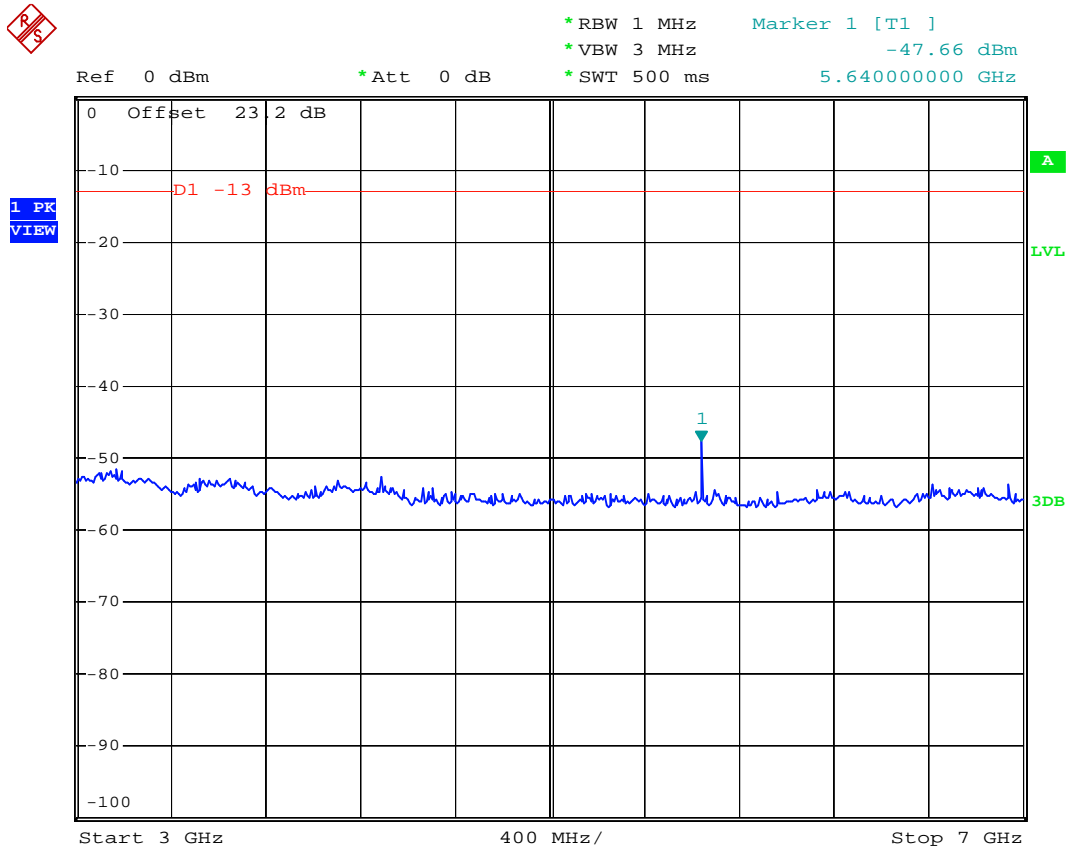
- Test Mode : PCS (EDGE) CH661
- Frequency Range : 1G-3G



Date: 15.MAR.2008 21:39:36



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



Date: 15.MAR.2008 21:40:44



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

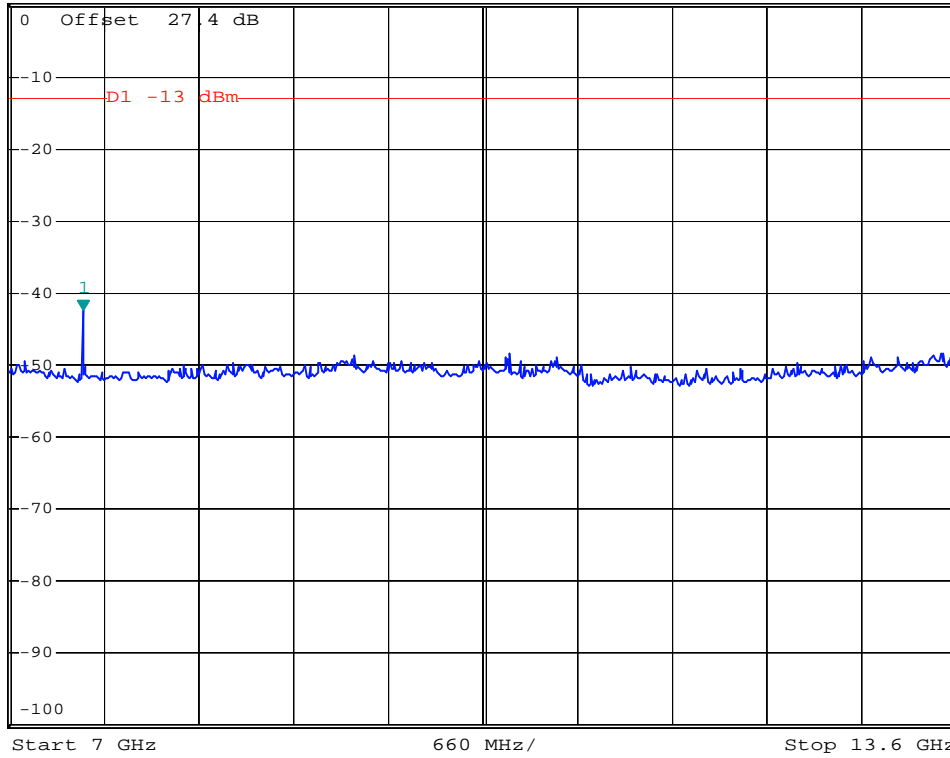


*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz -42.46 dBm
 *SWT 500 ms 7.514800000 GHz

Ref 0 dBm

*Att 0 dB

1 PK
VIEW



Date: 15.MAR.2008 21:42:27



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

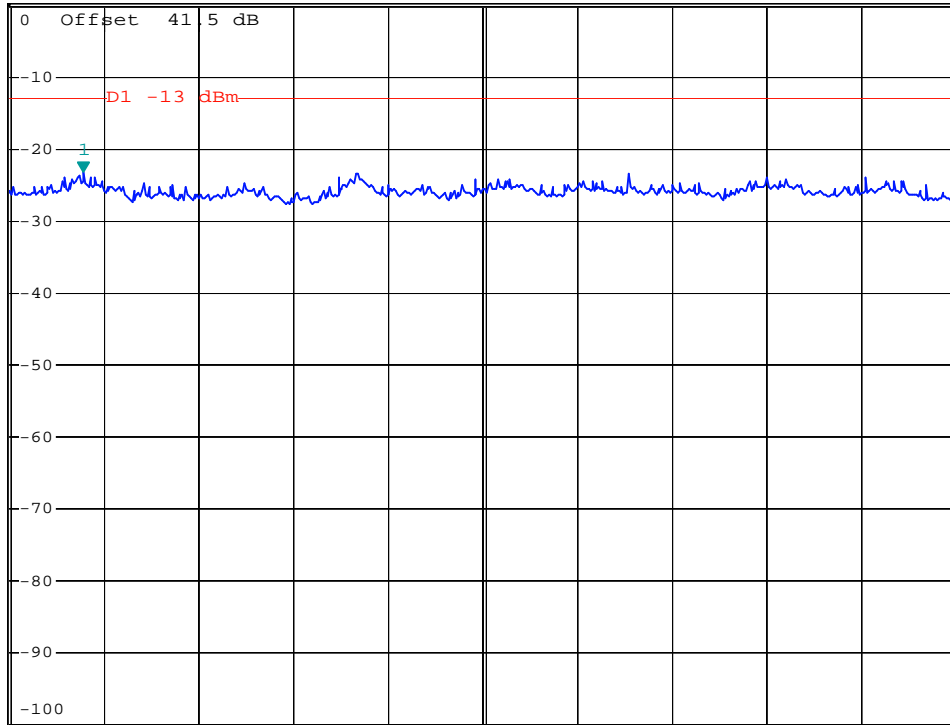


*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz -23.35 dBm
 *SWT 500 ms 14.029000000 GHz

Ref 0 dBm

*Att 0 dB

1 PK
VIEW



Start 13.6 GHz

550 MHz/

Stop 19.1 GHz

Date: 15.MAR.2008 21:43:30



4.6 Field Strength of Spurious Radiation

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

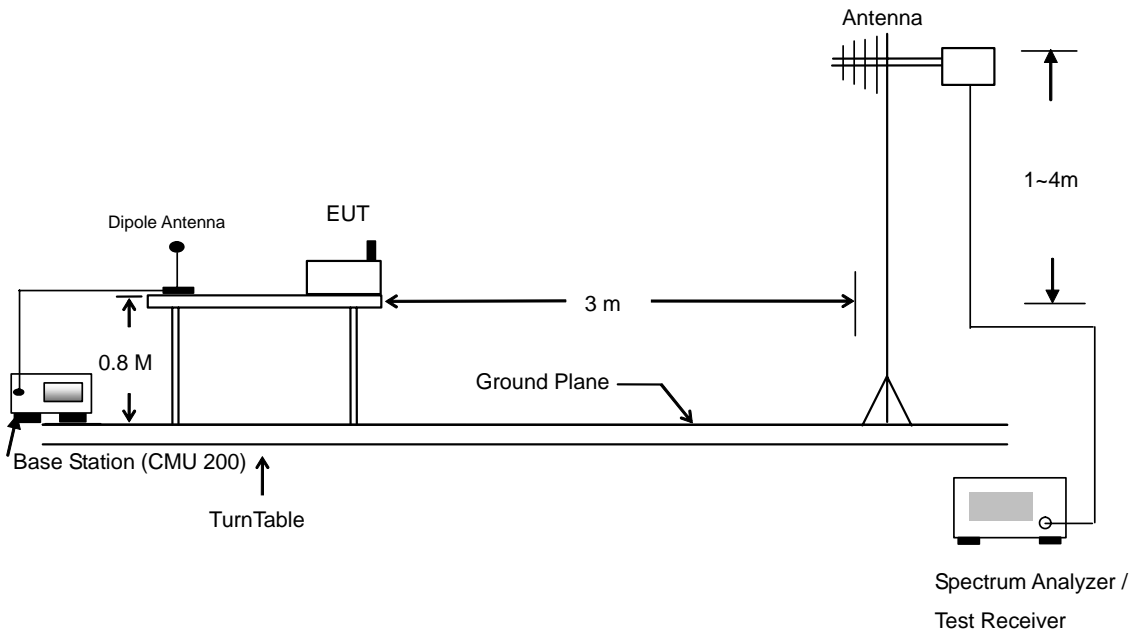
4.6.1 Measurement Instruments

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 recorded 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

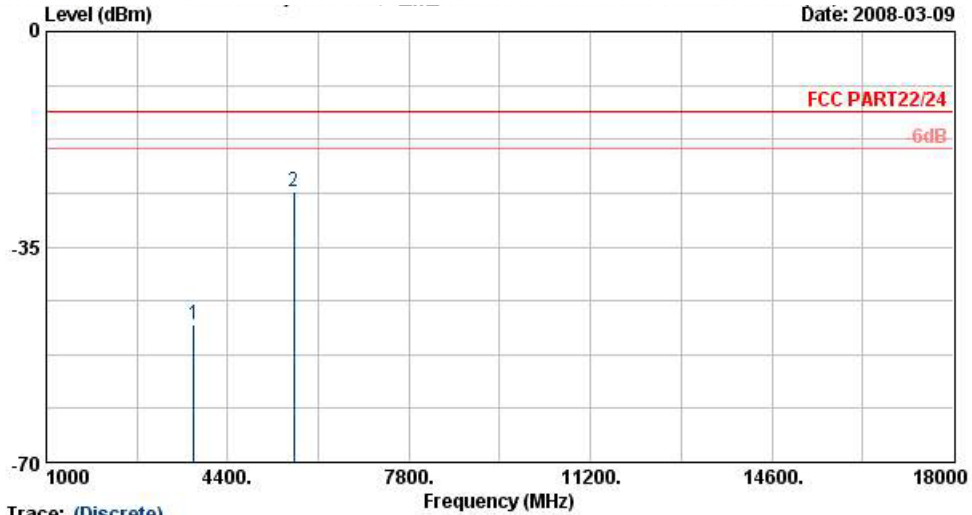




4.6.4 Test Data

4.6.4.1 Mode 1

Horizontal Polarization



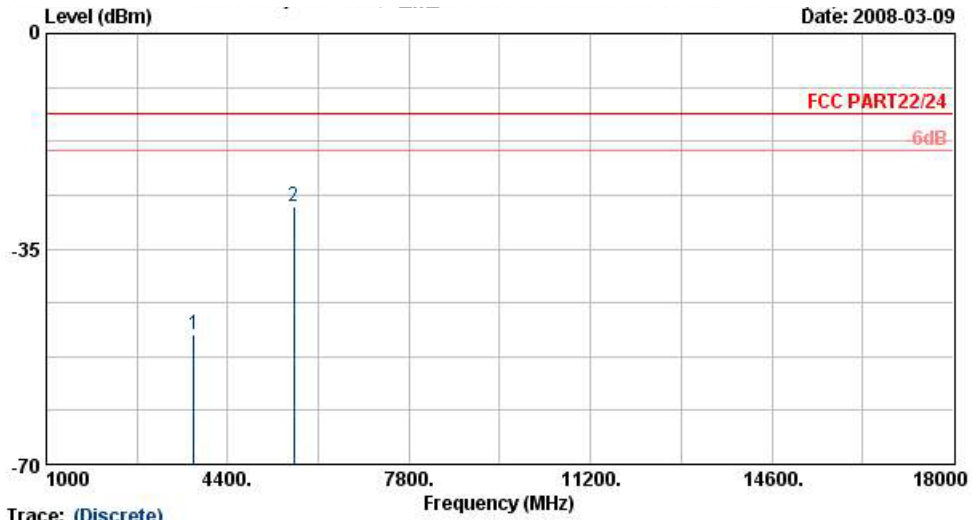
Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 EUT : PDA Phone
 Power : 120Vac/60Hz
 Model : FG 822609-01
 Mode : PCS 1900 Link ; Ch661 + Adaptor B
 IMEI : 35755901001656001
 Plane : E2

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
3760	-47.63	-13	-57.56	-51	4.03	7.40	H	Pass
5636	-26.06	-13	-46.31	-31	3.87	8.81	H	Pass

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



Vertical Polarization



Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 EUT : PDA Phone
 Power : 120Vac/60Hz
 Model : FG 822609-01
 Mode : PCS 1900 Link ; Ch661 + Adaptor B
 IMEI : 35755901001656001
 Plane : E2

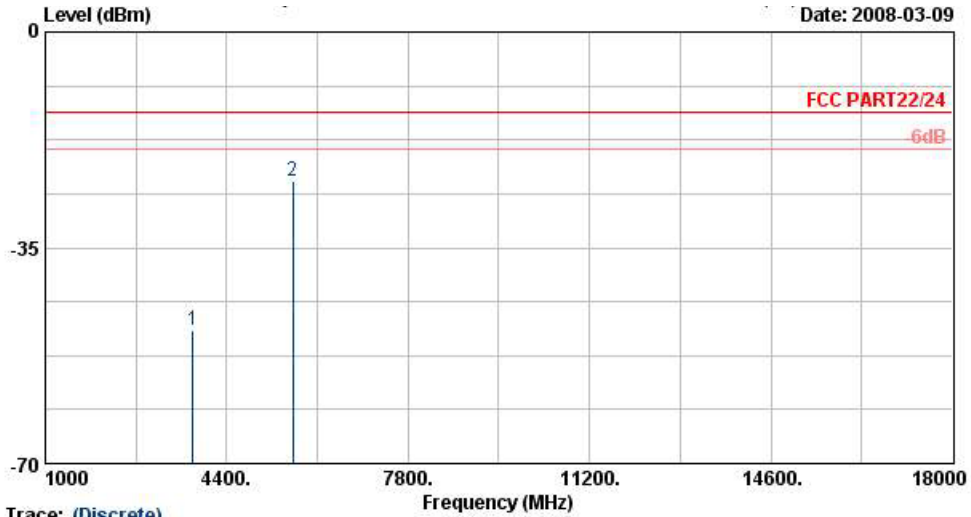
Frequency (MHz)	ERP (dBm)	Limit (dBm)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-49.02	-13	-60.3	-52.9	4.03	7.91	V	Pass
5636	-28.00	-13	-47.08	-33.9	3.87	9.77	V	Pass

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



4.6.5 Mode 2

Horizontal Polarization



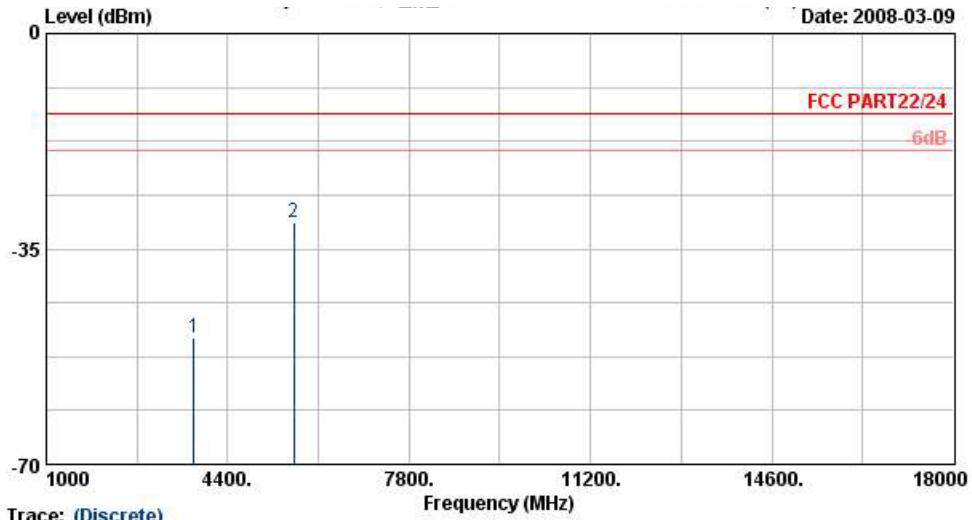
Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 EUT : PDA Phone
 Power : 120Vac/60Hz
 Model : FG 822609-01
 Mode : EDGE Link ; Ch661 + Adaptor B
 IMEI : 35755901001656001
 Plane : E2

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
3760	-48.33	-13	-58.02	-51.7	4.03	7.40	H	Pass
5636	-24.16	-13	-43.95	-29.1	3.87	8.81	H	Pass

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



Vertical Polarization



Trace: (Discrete)

Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 EUT : PDA Phone
 Power : 120Vac/60Hz
 Model : FG 822609-01
 Mode : EDGE Link ; Ch661 + Adaptor B
 IMEI : 35755901001656001
 Plane : E2

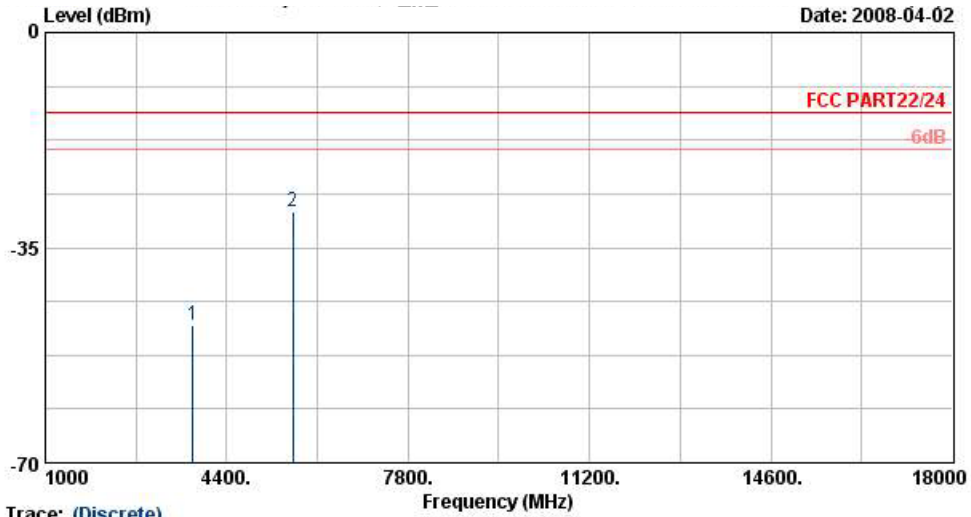
Frequency (MHz)	ERP (dBm)	Limit (dBm)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-49.52	-13	-60.74	-53.4	4.03	7.91	V	Pass
5636	-30.70	-13	-49.67	-36.6	3.87	9.77	V	Pass

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



4.6.6 Mode 3

Horizontal Polarization



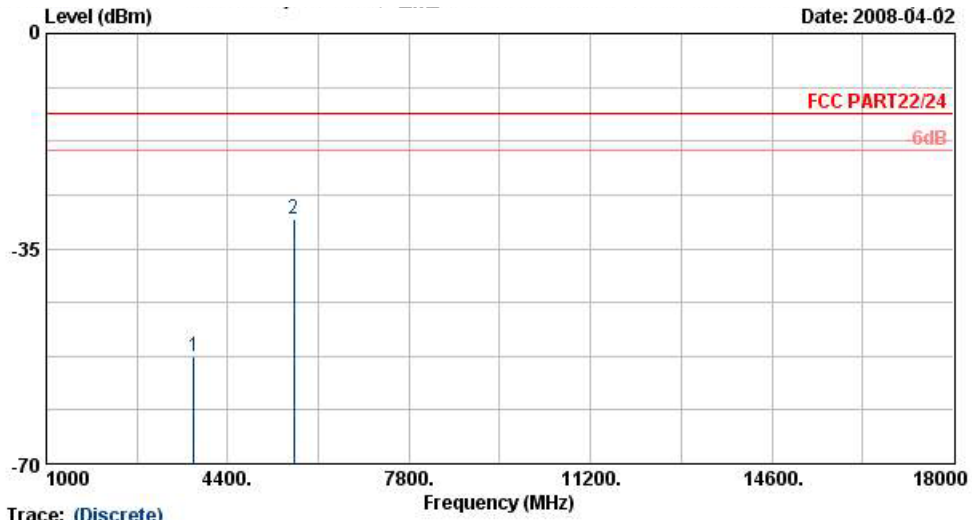
Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 EUT : PDA Phone
 Power : 120Vac/60Hz
 Model : FG 822609-01
 Mode : PCS 1900 Link ; Ch661+BT Tx_Ch00
 : + Adaptor B
 IMEI : 35755901001656001
 Plane : E2

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
3760	-47.53	-13	-60.24	-50.9	4.03	7.40	H	Pass
5636	-29.16	-13	-48.48	-34.1	3.87	8.81	H	Pass

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



Vertical Polarization



Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 EUT : PDA Phone
 Power : 120Vac/60Hz
 Model : FG 822609-01
 Mode : PCS 1900 Link ; Ch661+BT Tx_Ch00
 : + Adaptor B
 IMEI : 35755901001656001
 Plane : E2

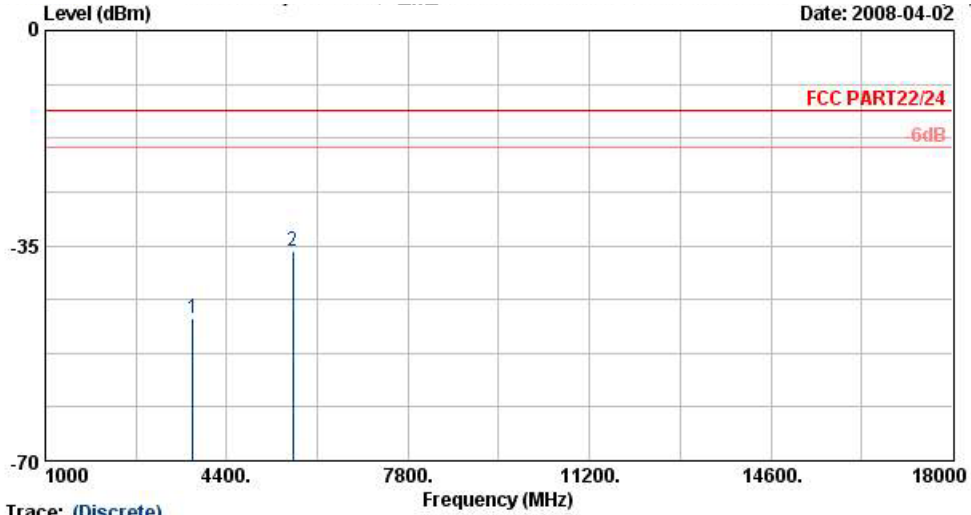
Frequency (MHz)	ERP (dBm)	Limit (dBm)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-52.52	-13	-64.76	-56.4	4.03	7.91	V	Pass
5636	-30.20	-13	-50.24	-36.1	3.87	9.77	V	Pass

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



Mode 4

Horizontal Polarization



Trace: (Discrete)

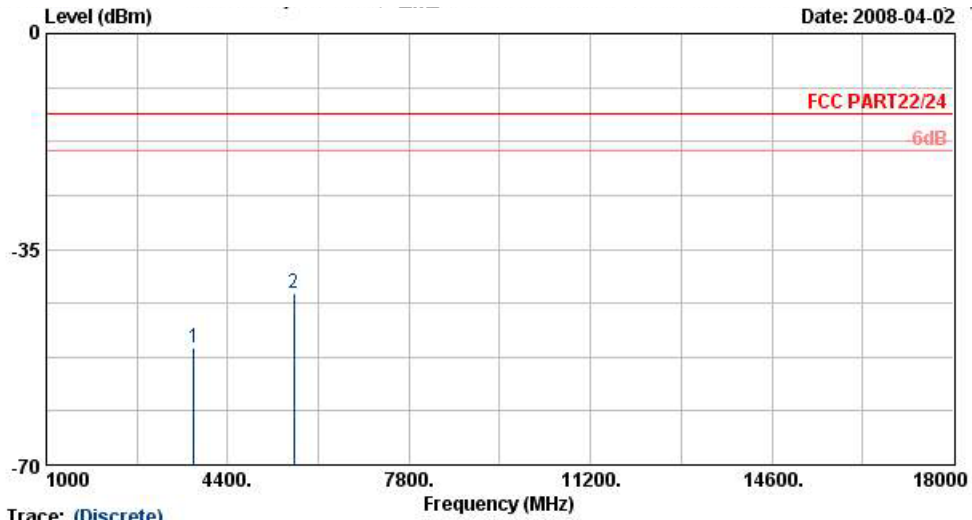
Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 EUT : PDA Phone
 Power : 120Vac/60Hz
 Model : FG 822609-01
 Mode : PCS 1900 Link ; Ch661+11g Tx_Ch01
 : + Adaptor B
 IMEI : 35755901001656001
 Plane : E2

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
3760	-46.73	-13	-60.12	-50.1	4.03	7.40	H	Pass
5636	-35.96	-13	-54.79	-40.9	3.87	8.81	H	Pass

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



Vertical Polarization



Trace: (Discrete)

Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 EUT : PDA Phone
 Power : 120Vac/60Hz
 Model : FG 822609-01
 Mode : PCS 1900 Link ; Ch661+11g Tx_Ch01
 : + Adaptor B
 IMEI : 35755901001656001
 Plane : E2

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
3760	-51.12	-13	-64.02	-55	4.03	7.91	V	Pass
5636	-42.20	-13	-61.03	-48.1	3.87	9.77	V	Pass

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

4.7 Frequency Stability (Temperature Variation)

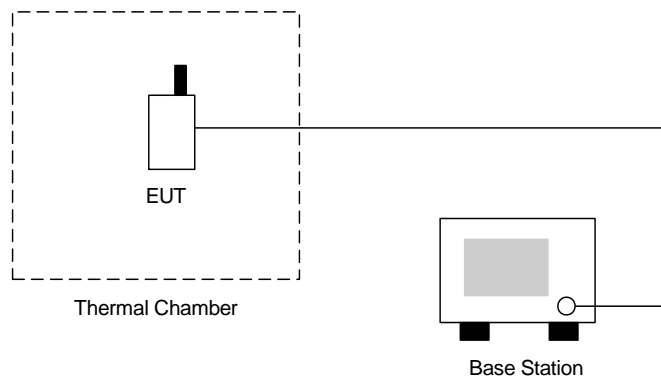
4.7.1 Measurement Instrument

As 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 : PCS1900 (GSM) CH661

Temperature(°C)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-37	-0.02	2.5	Passed
-20	-57	-0.03		
-10	-74	-0.04		
0	-53	-0.03		
10	-77	-0.04		
20	-73	-0.04		
30	-76	-0.04		
40	-43	-0.02		
50	17	0.01		

• Test Mode : PCS1900 (EDGE) CH661

Temperature(°C)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	-43	-0.02	2.5	Passed
-20	-33	-0.02		
-10	-21	-0.01		
0	38	0.02		
10	-33	-0.02		
20	-67	-0.04		
30	-88	-0.05		
40	-29	-0.02		
50	11	0.01		

4.8 Frequency Stability (Voltage Variation)

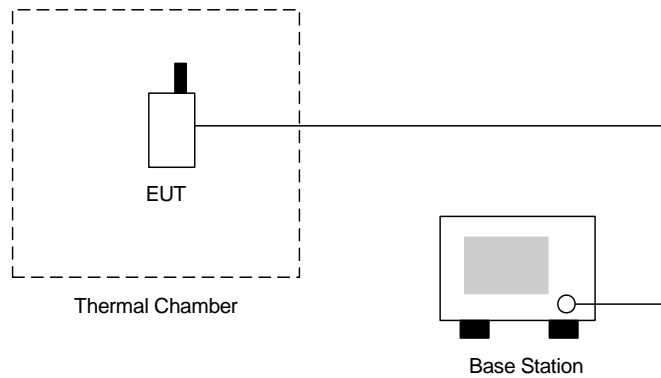
4.8.1 Measurement Instrument

As described in chapter 5 of this test report.

4.8.2 Test Procedure

- The EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ 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 : PCS1900 (GSM) CH661

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-13.0	-0.01	2.5	Passed
BEP	34.0	0.02		
4.2	14.0	0.01		

- Test Mode : PCS1900 (EDGE) CH661

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-29.0	-0.02	2.5	Passed
BEP	-12.0	-0.01		
4.2	17.0	0.01		

Remark:

1. Normal Voltage= 3.7V.
2. Battery End Point (BEP)= 3.5 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	Com-Power	AH118	071025	1G~18G	Jun. 04, 2007	Jun. 03, 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	Conduction (TH02-HY)
Spectrum	R&S	FSP40	100055	9KHz~40GHz	Jun. 25, 2007	Jun. 24, 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