FCC Test Report

for

47 CFR Part 22H, 24E

Equipment	:	**Neo 1973**
Trade Name	:	**FIC**
Model No.	:	**GTA02**
FCC ID	:	**EUNGTA02**
Tx Frequency Range	:	**GSM850 : 824.2 ~ 848.8 MHz** **PCS1900 : 1850.2 ~1909.8 MHz**
Max. ERP/EIRP Power	:	**GSM850 : 1.05 W** **PCS1900 : 0.83 W**
Emission Designator	:	**300KGXW**
Applicant	:	**FIC (First International Computer, Inc.)** 1-9F., No. 300, Yang Guang, NeiHu, Taipei, Taiwan, 114

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- The data shown in this test report were carried out on Dec. 25, 2007 at **Sporton International Inc. LAB.**
- Report No.: FG7O1101, Report Version: Rev. 01.

Jones Tsai
Manager

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History of this test report

Report Issue Date: Jan. 02, 2008

Report No.	Description

1. General Information

1.1 Applicant

FIC (First International Computer, Inc.)
1-9F., No. 300, Yang Guang, NeiHu, Taipei, Taiwan, 114

1.2 Manufacturer

First International Computer (Suzhou) Inc.
No. 200, Central Suhong Road, SuZhou Industrial Park, China

1.3 Basic Description of Equipment under Test

Equipment		Neo 1973
Trade Name		FIC
Model Name		GTA02
FCC ID :		EUNGTA02
AC Adapter	**Manufacture**	AKII TECHNOLOGY CO., LTD.
	Brand Name	AKII Technology
	Model Name	A10P1-05MP
	Power Rating	I/P:100-240 Vac, 47-63 Hz, 0.3A; O/P: 5Vdc, 2.0A
	AC Power Cord Type	1.49 meter non-shielded cable without ferrite core
Battery	**Manufacture**	WELLDONE COMPANY
	Brand Name	FIC
	Model Name	GTC-01 / GTA-01
	Rating	3.7Vdc, 1200mAh
	Type	Li-ion
Earphone	**Brand Name**	Xport
	Model Name	Ko-11-1020a
	Signal line Type	1.42 meter non-shielded cable without ferrite core
USB Cable	**Brand Name**	Golden Bridge
	Model Name	AS52-0607007
	Signal Line Type	1.29 meter non-shielded cable without ferrite core

Remark: Above EUT's information was declared by manufacturer. Please refer to the specifications of manufacturer or User's Manual for more detailed features description.

1.4 Feature of Equipment under Test

Product Feature & Specification	
DUT Type :	Neo 1973
Trade Name :	FIC
Model Name :	GTA02
FCC ID :	EUNGTA02
Tx Frequency :	GSM850 : 824 ~ 849 MHz DCS1800 : 1710 ~ 1785 MHz PCS1900 : 1850 ~1910 MHz Bluetooth : 2400 ~ 2483.5 MHz WLAN : 2400 ~ 2483.5 MHz
Rx Frequency :	GSM850 : 869 ~ 894 MHz DCS1800 : 1805 ~ 1880 MHz PCS1900 : 1930 ~ 1990 MHz Bluetooth : 2400 ~ 2483.5 MHz WLAN : 2400 ~ 2483.5 MHz GPS : 1575.42 MHz
Number of Channels :	Bluetooth : 79 WLAN : 11
Carrier Frequency of Each Channel :	Bluetooth : 2402+n*1 MHz; n=0~78 WLAN : 2412+(n-1)*5 MHz; n=1~11
Channel Spacing	GSM : 200 KHz Bluetooth : 1 MHz WLAN : 5 MHz
Maximum Output Power to Antenna :	GSM850 : 32.20 dBm (GSM) PCS1900 : 29.27 dBm (GSM) Bluetooth : 2.25 dBm (1Mbps) Bluetooth EDR : 2.4 dBm (2Mbps) / 2.53 dBm (3Mbps) WLAN : 14.02 dBm (802.11b) / 14.89 dBm (802.11g)
Maximum ERP/EIRP :	GSM850 : 1.05 W (30.22 dBm) PCS1900 : 0.83 W (29.18 dBm)
Type of Antenna Connector	N/A
Antenna Type :	GSM : Monopole Antenna GPS : Ceramic Antenna Bluetooth : Chip Antenna WLAN : Chip Antenna
Antenna Gain :	GSM : 0.07 dBi GPS : 0.5 dBi Bluetooth : -4.84 dBi WLAN : -3 dBi
HW Version :	A5
SW Version :	Moko5
Power Rating :	DC 3.4V
Type of Modulation :	GSM : GMSK Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : π/4-DQPSK Bluetooth EDR (3Mbps) : 8-DPSK WLAN : DSSS / OFDM
Type of Emission :	GSM : 300KGXW
DUT Stage :	Identical Prototype

1.5 Report Date

EUT Received : Oct. 11, 2007

Report Date : Jan. 02, 2008

2. Test Configuration of Equipment under Test

2.1 Test Manner

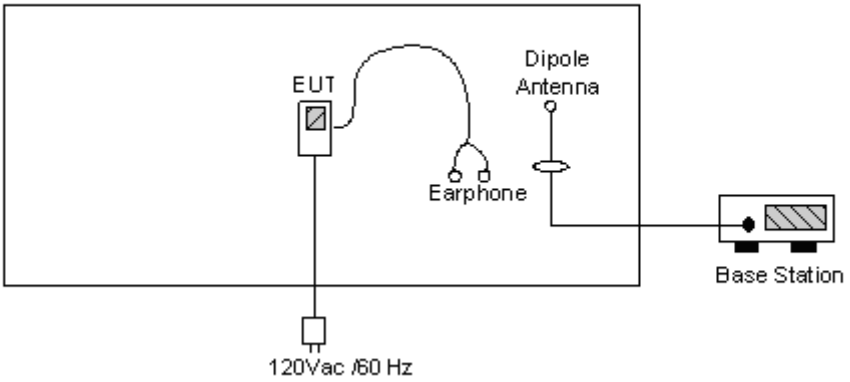
1. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.
2. During all testings, EUT is in link mode with base station emulator at maximum power level.
3. Frequency range investigated: radiated emission 30 MHz to 9000 MHz for GSM850; 30MHz to 19000 MHz for PCS1900.

2.2 Test Mode

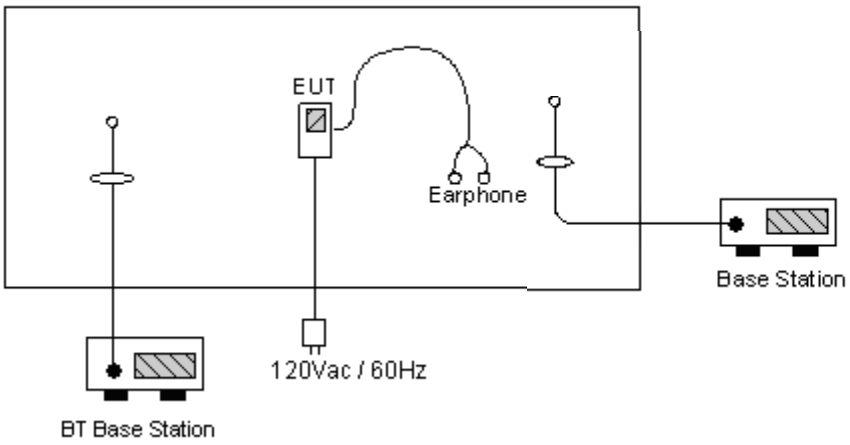
Application	GSM850	PCS1900
Radiated Emission	☒ Mode 1: GSM Link	☒ Mode 2: GSM Link
	☒ Mode 3: GSM Link + BT Link	
Conducted Measurement	☒ Mode 1: GSM Link	☒ Mode 2: GSM Link

2.3 Radiation Diagram of Test System

<GSM Link>



<GSM Link + BT Link>



2.4 Ancillary Equipment List

Item	Equipment	Trade Name	Model No.	FCC ID	Cable Cord / 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	:	03CH06-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 22H, 24E, Part 2

3.3 Frequency Range

a. Radiation: from 30MHz to 9000MHz for GSM850.
b. Radiation: from 30 MHz to 19000 MHz for PCS1900.

3.4 Test Distance

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

4. Test Data and Test Result

4.1 List of Measurements and Examinations

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

4.2 RF Output Power

4.2.1 Measurement Instruments

As described in chapter 5 of this test report.

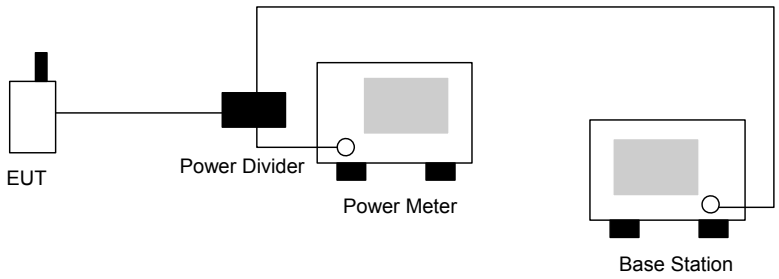
4.2.2 Test Procedure

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

b. Set EUT at PCL=5 for GSM850 and/or PCL=0 for PCS1900 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

Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
GSM850	128	824.2 (Low)	32.10	1.622
	189	836.4 (Mid)	32.20	1.660
	251	848.8 (High)	32.10	1.622
PCS1900	512	1850.2 (Low)	28.85	0.767
	661	1880.0 (Mid)	29.27	0.845
	810	1909.8 (High)	29.25	0.841

4.3 ERP / EIRP Measurement

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

4.3.1 Measurement Instruments

As described in chapter 5 of this test report.

4.3.2 Test Procedure

a. The EUT was placed on a tutntable with 1.0 meter height in an fully anechoic chamber.

b. The EUT was set 1.2 meters from the receiving antenna which was mounted on the antenna tower.

c. The table was rotated 360 degrees to determine the position of the highest radiated power.

d. The height of the receiving antenna is also kept at 1.0M height.

e. Taking the record of maximum ERP/EIRP.

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

g. The conducted power at the terminal of the dipole antenna is measured.

h. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.

i. ERP/EIRP = Ps + Et – Es + Gs = Ps + Rt – Rs + Gs

Ps (dBm)：Input power to substitution antenna.

Gs (dBi or dBd)：Substitution antenna Gain.

Et = Rt + AF

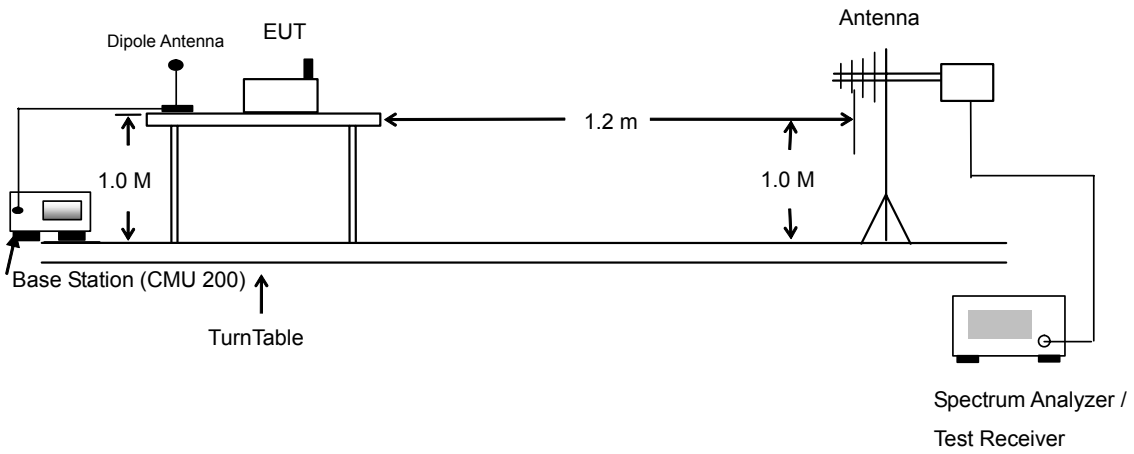
Es = Rs + AF

AF (dB/m)：Receive antenna factor

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

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

4.3.3 Test Setup Layout of ERP/EIRP



4.3.4 Test Result

GSM850 Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-16.84	-48.12	0.00	-1.08	30.20	1.05
836.40	-17.13	-48.28	0.00	-0.93	30.22	1.05
848.80	-17.52	-48.35	0.00	-0.76	30.07	1.02
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-28.63	-47.97	0.00	-1.08	18.26	0.07
836.40	-28.67	-48.01	0.00	-0.93	18.41	0.07
848.80	-29.03	-48.05	0.00	-0.76	18.26	0.07

PCS1900 Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
824.20	-24.71	-51.88	0.00	1.96	29.13	0.82
836.40	-25.81	-52.99	0.00	2.00	29.18	0.83
848.80	-28.19	-54.28	0.00	1.98	28.07	0.64
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
824.20	-27.29	-52.13	0.00	1.96	26.80	0.48
836.40	-28.10	-53.17	0.00	2.00	27.07	0.51
848.80	-30.25	-54.13	0.00	1.98	25.86	0.39

4.4 Occupied Bandwidth and Band Edge Measurement

4.4.1 Measurement Instruments

As described in chapter 5 of this test report.

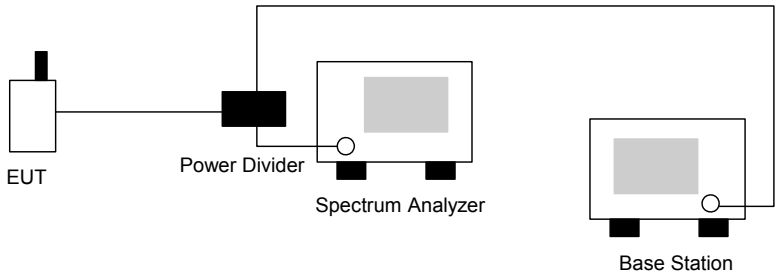
4.4.2 Test Procedure

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

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

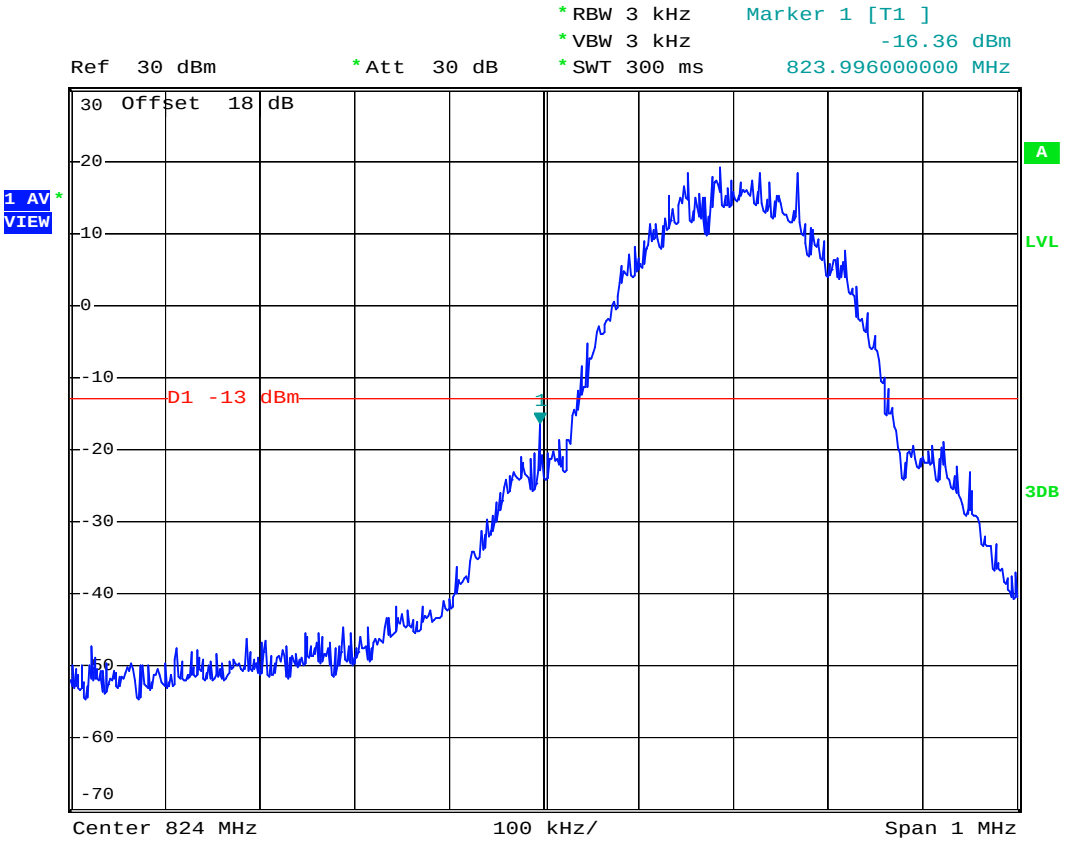
c. The bandedge of low and high channels for the highest RF powers within the transmitting frequency band were measured. Setting RBW as roughly BW/100.

4.4.3 Test Setup Layout



4.4.4 Test Result

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



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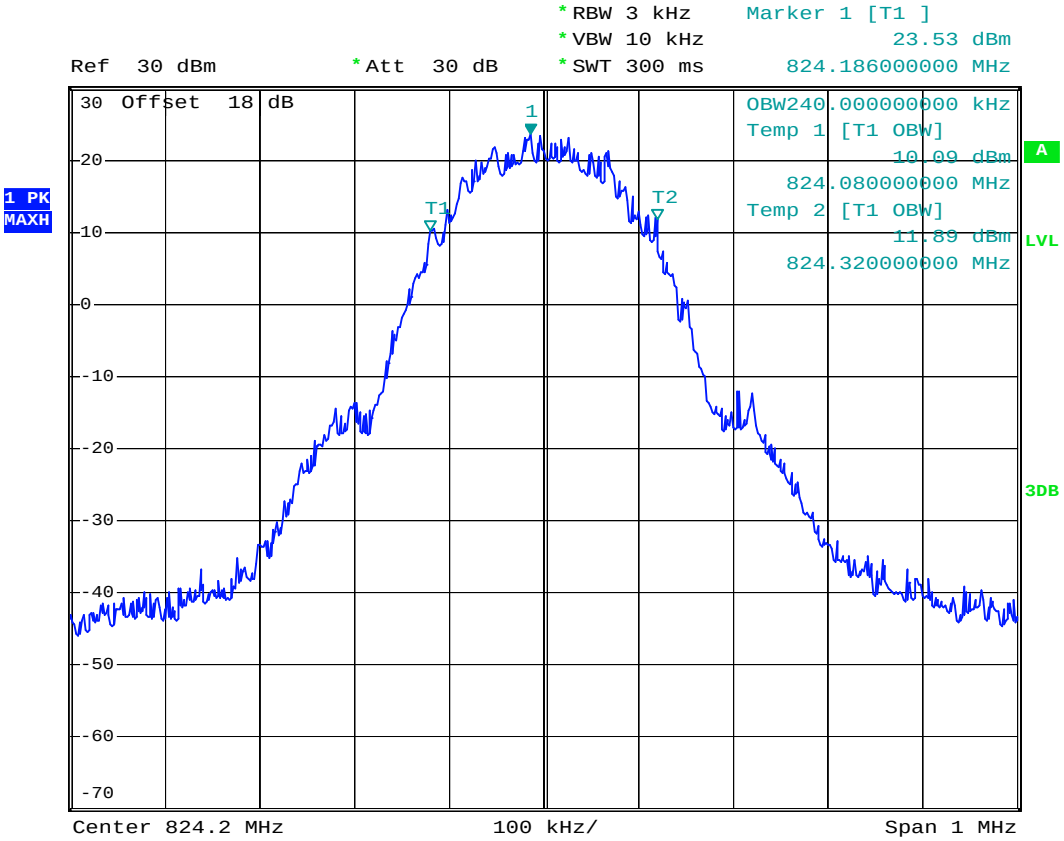
- Test Mode : GSM850 CH128 99% Occupid Bandwidth
- Power State : High



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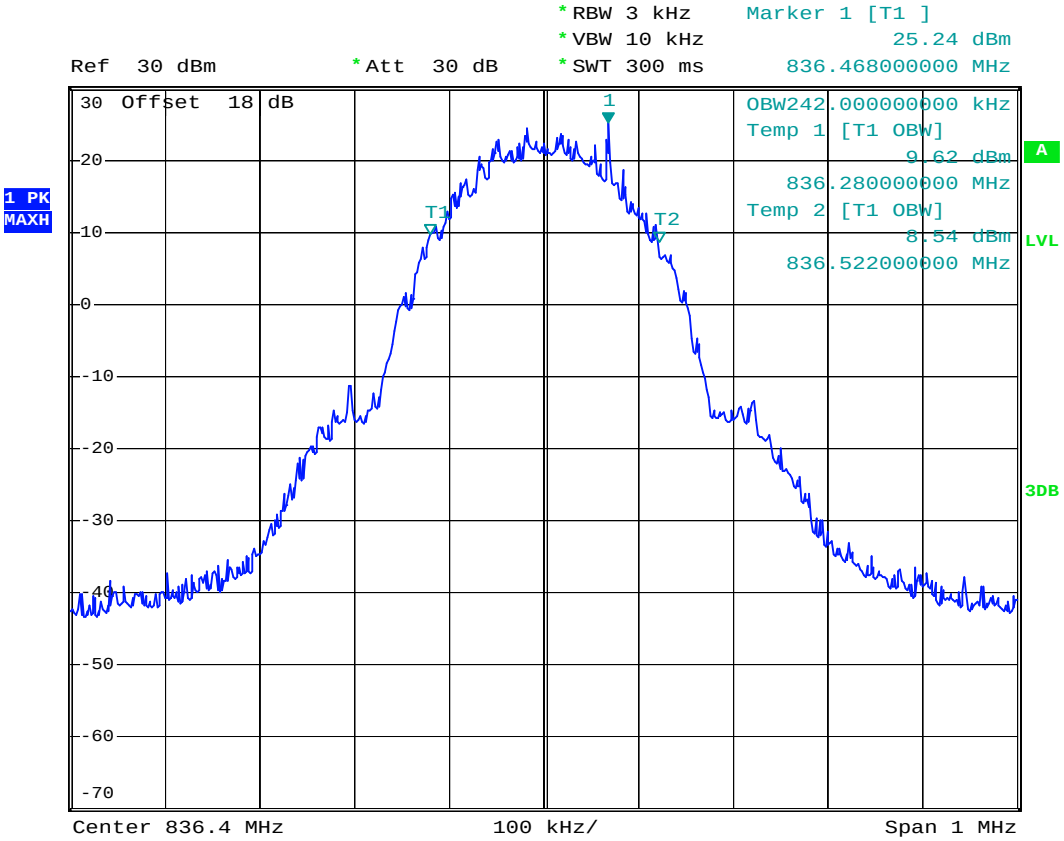
- Test Mode : GSM850 CH189 99% Occupid Bandwidth
- Power State : High



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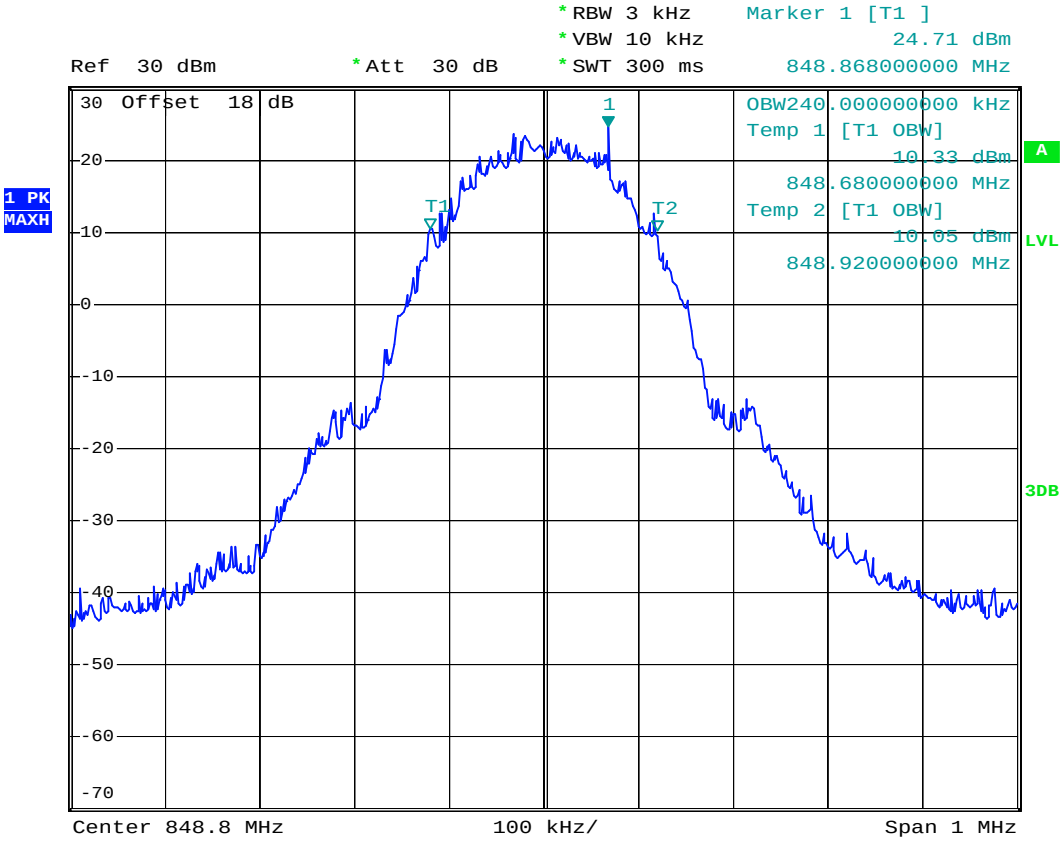
- Test Mode : GSM850 CH 251 99% Occupid Bandwidth
- Power State : High



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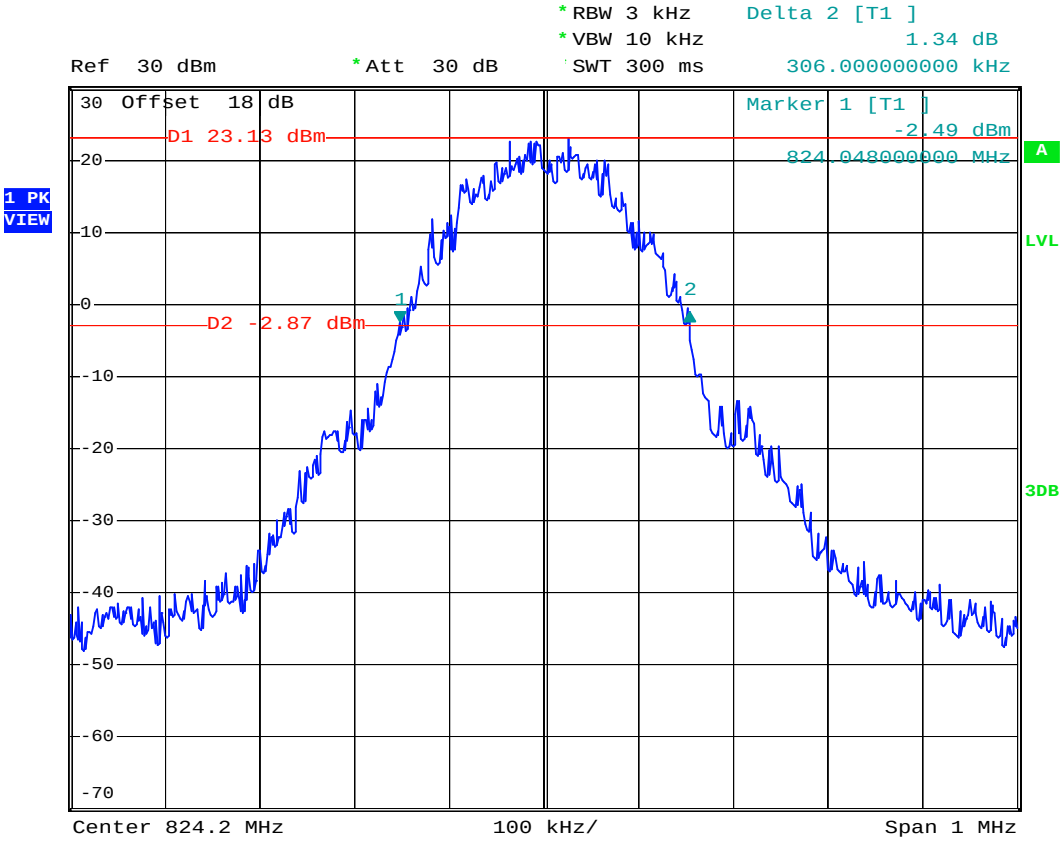
- Test Mode : GSM850 CH128 26dB Bandwidth
- Power State : High



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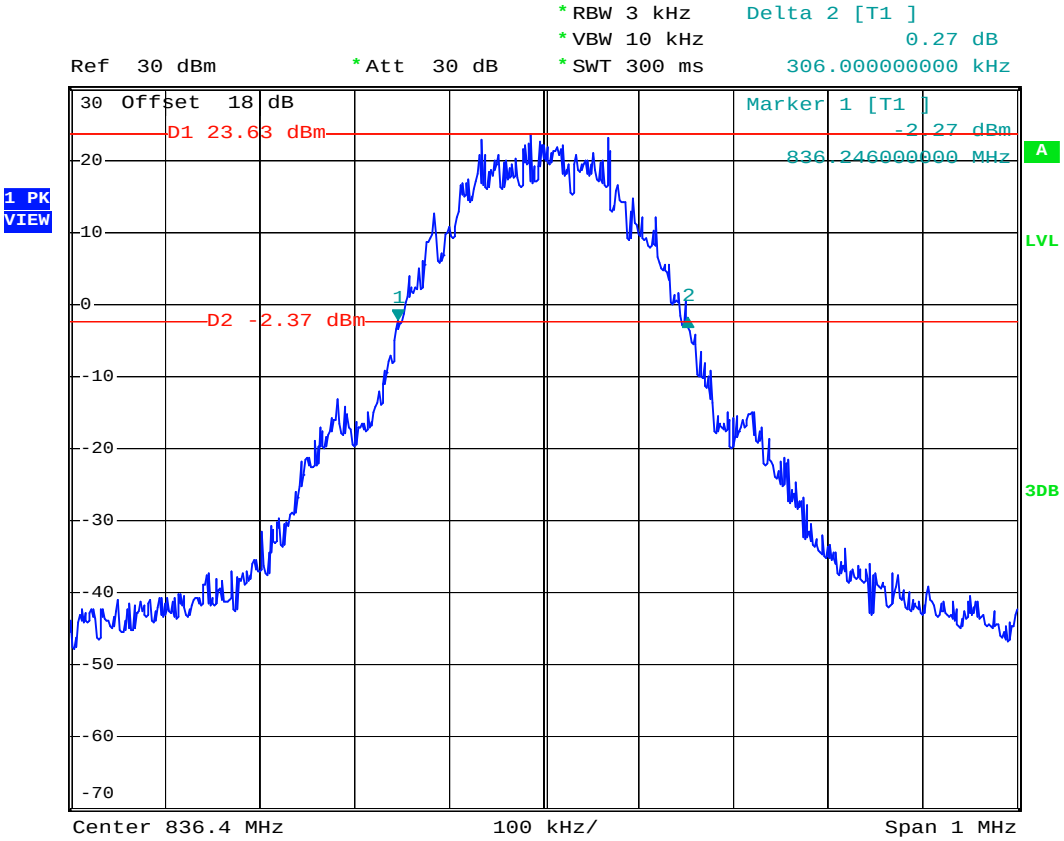
- Test Mode : GSM850 CH189 26dB Bandwidth
- Power State : High



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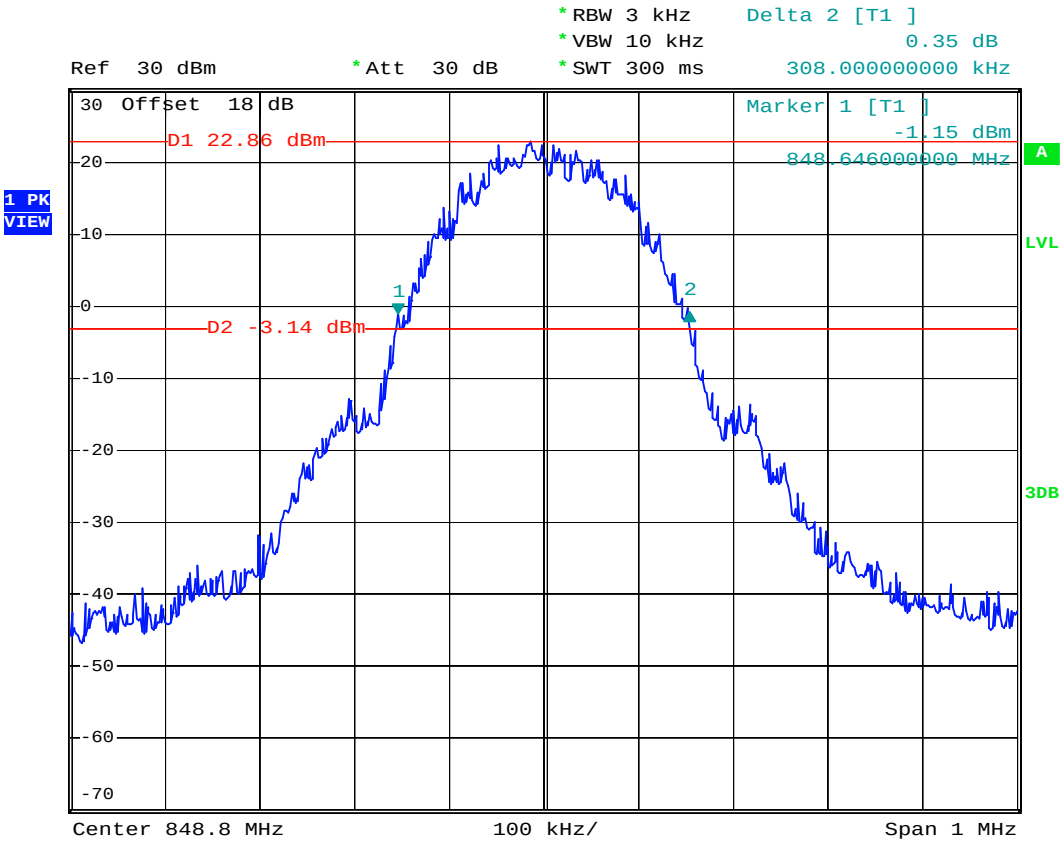
- Test Mode : GSM850 CH 251 26dB Bandwidth
- Power State : High



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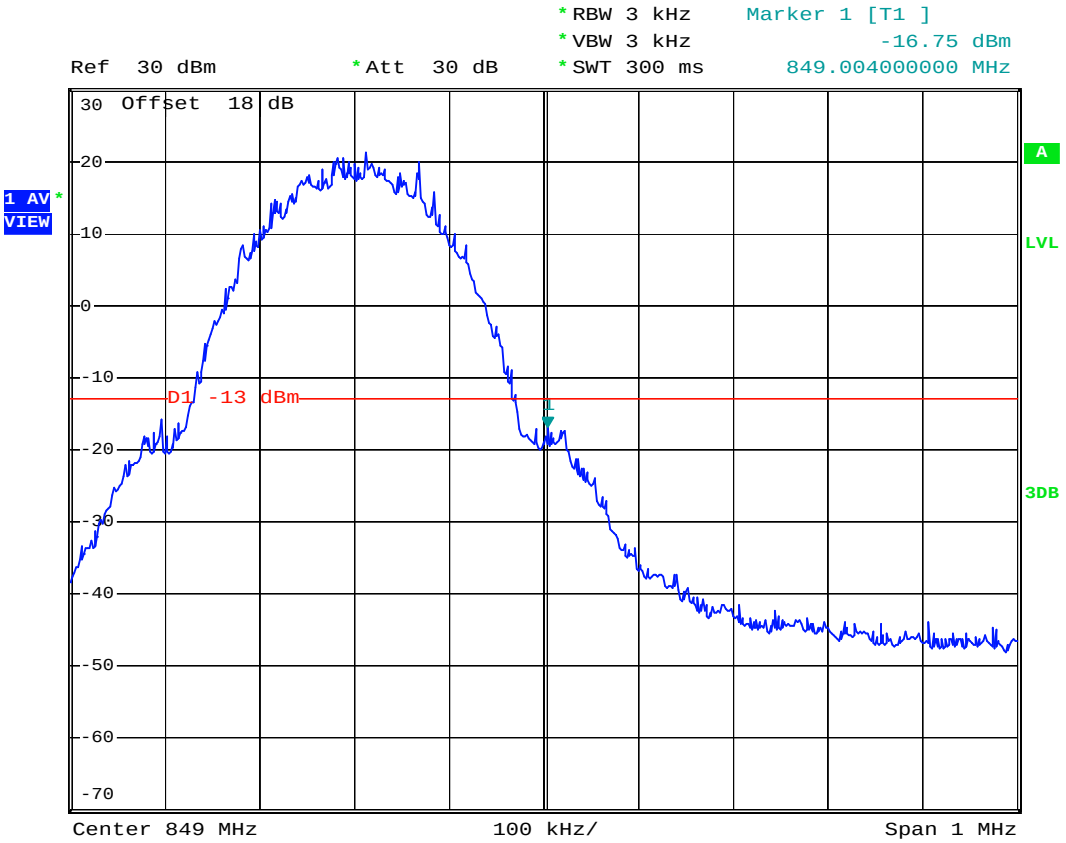
- Test Mode : GSM850 (GSM) CH251 Higher Band Edge
- Power State : High



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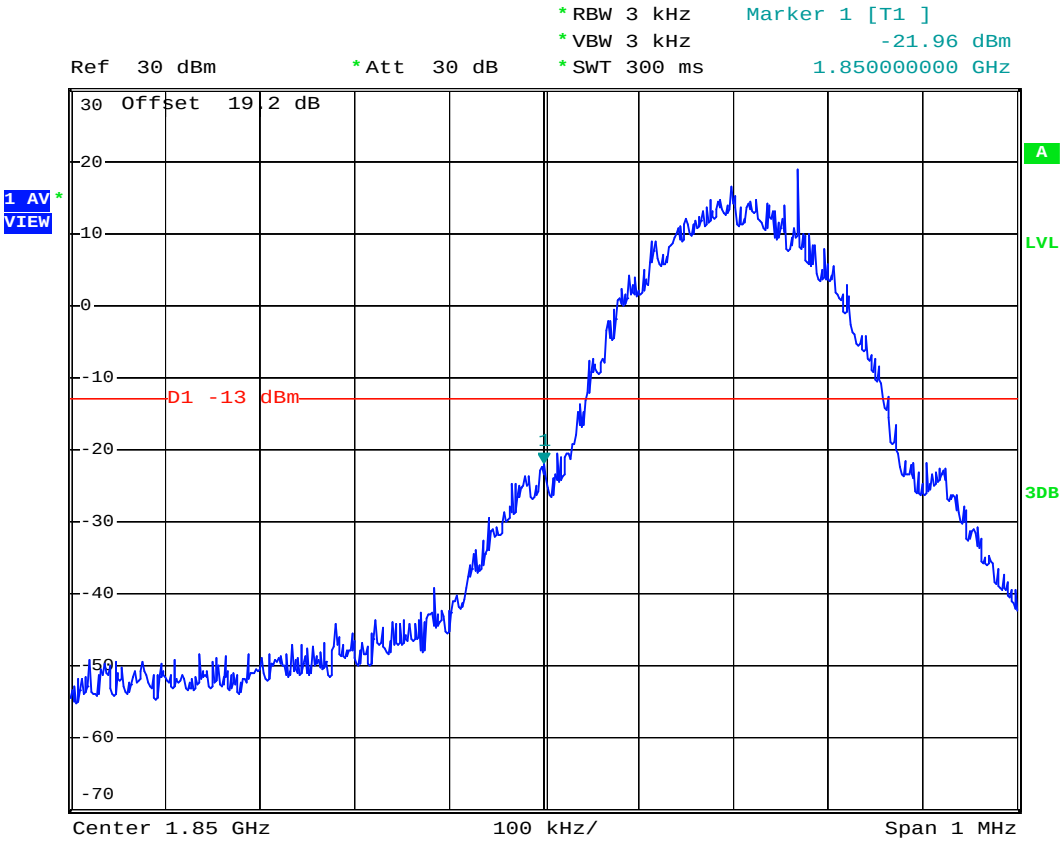
- Mode 2
- Test Mode : PCS1900 CH512 Lower Band Edge
- Power State : High



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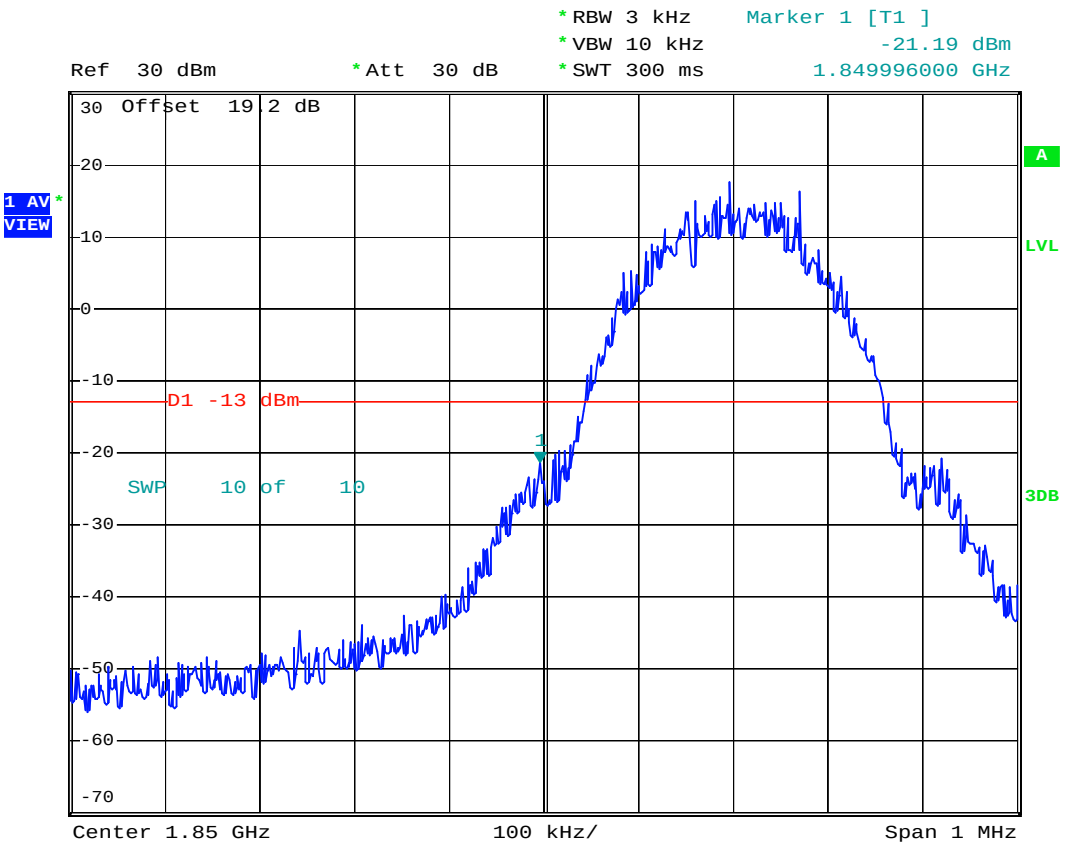

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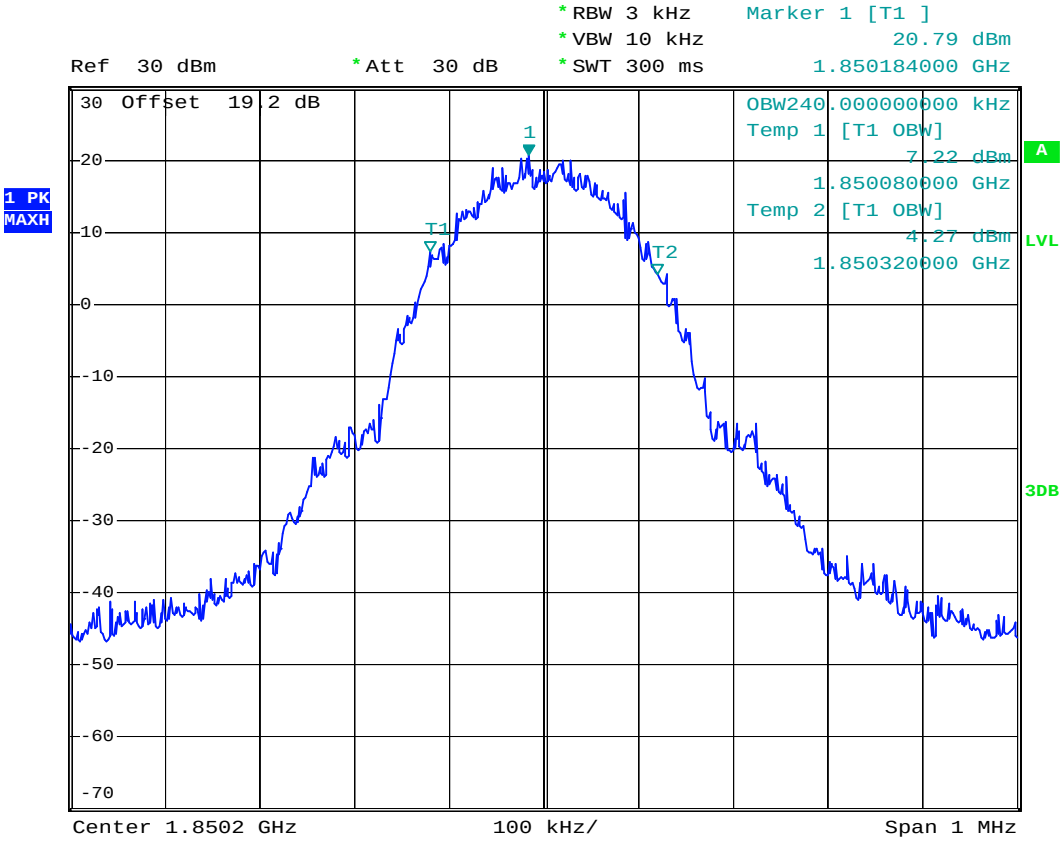
- Test Mode : PCS1900 CH512 99% Occupid Bandwidth
- Power State : High



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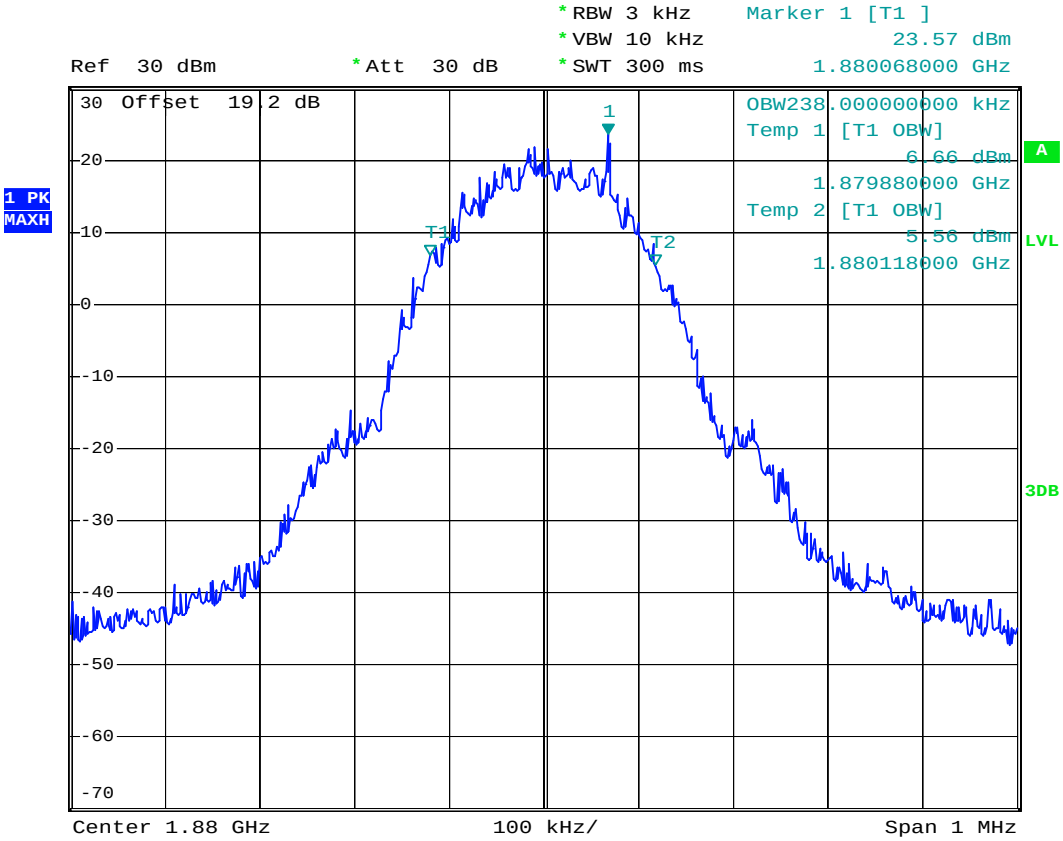
- Test Mode : PCS1900 CH661 99% Occupid Bandwidth
- Power State : High



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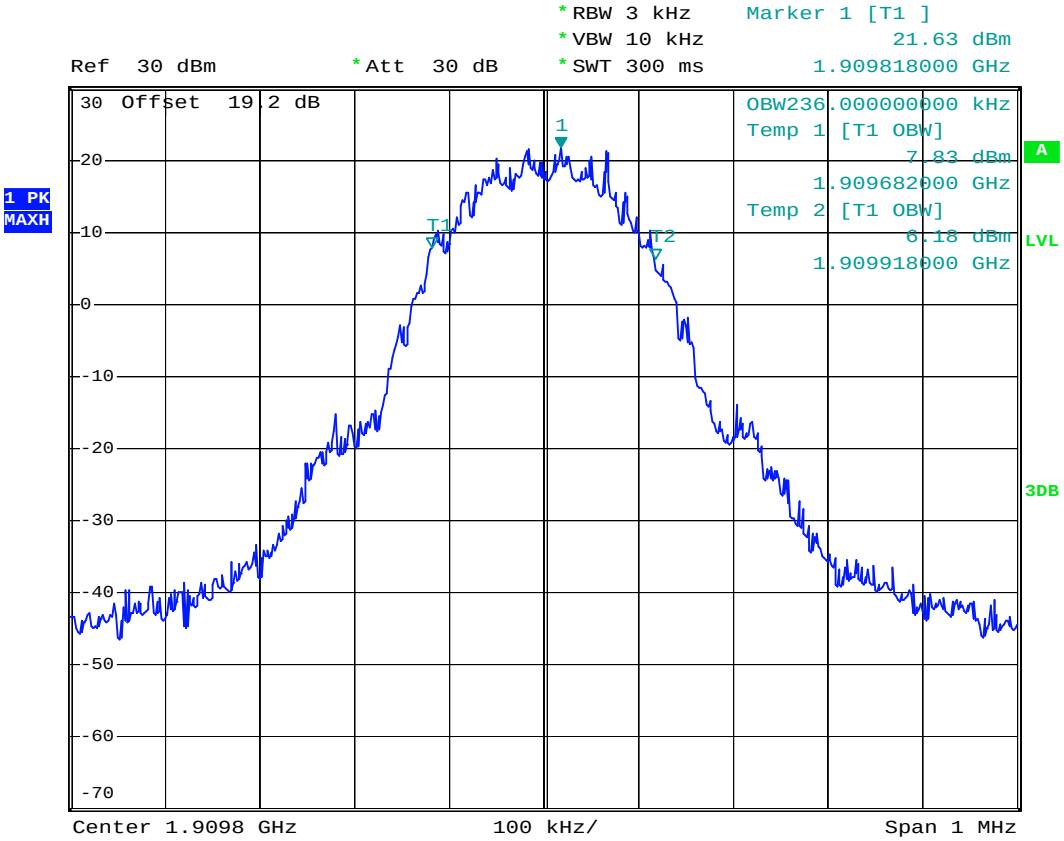
- Test Mode : PCS1900 CH810 99% Occupid Bandwidth
- Power State : High



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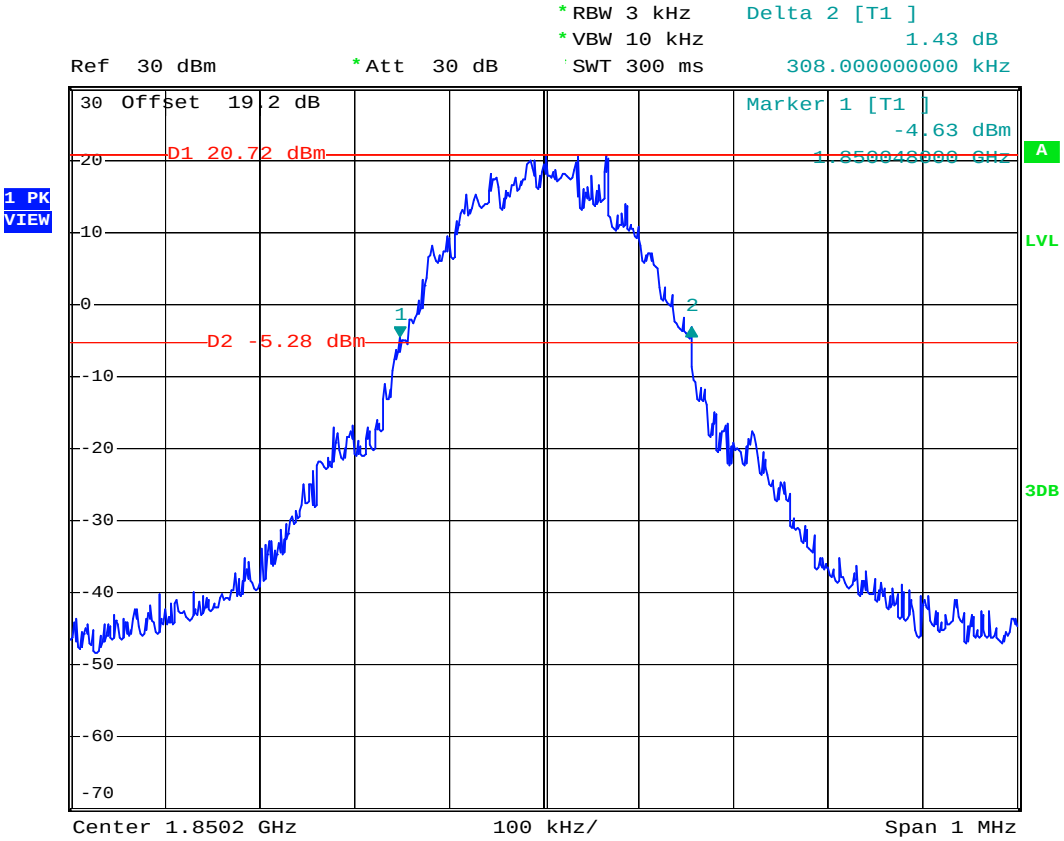
- Test Mode : PCS1900 CH512 26dB Bandwidth
- Power State : High



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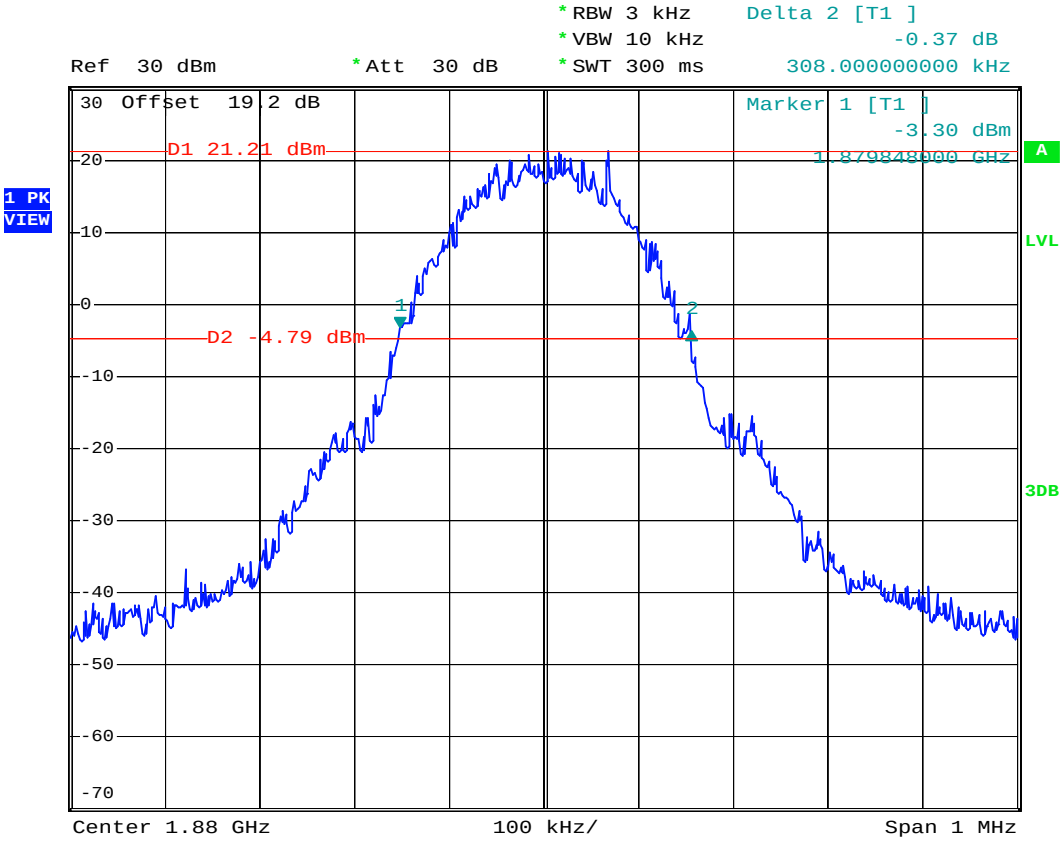
- Test Mode : PCS1900 CH661 26dB Bandwidth
- Power State : High



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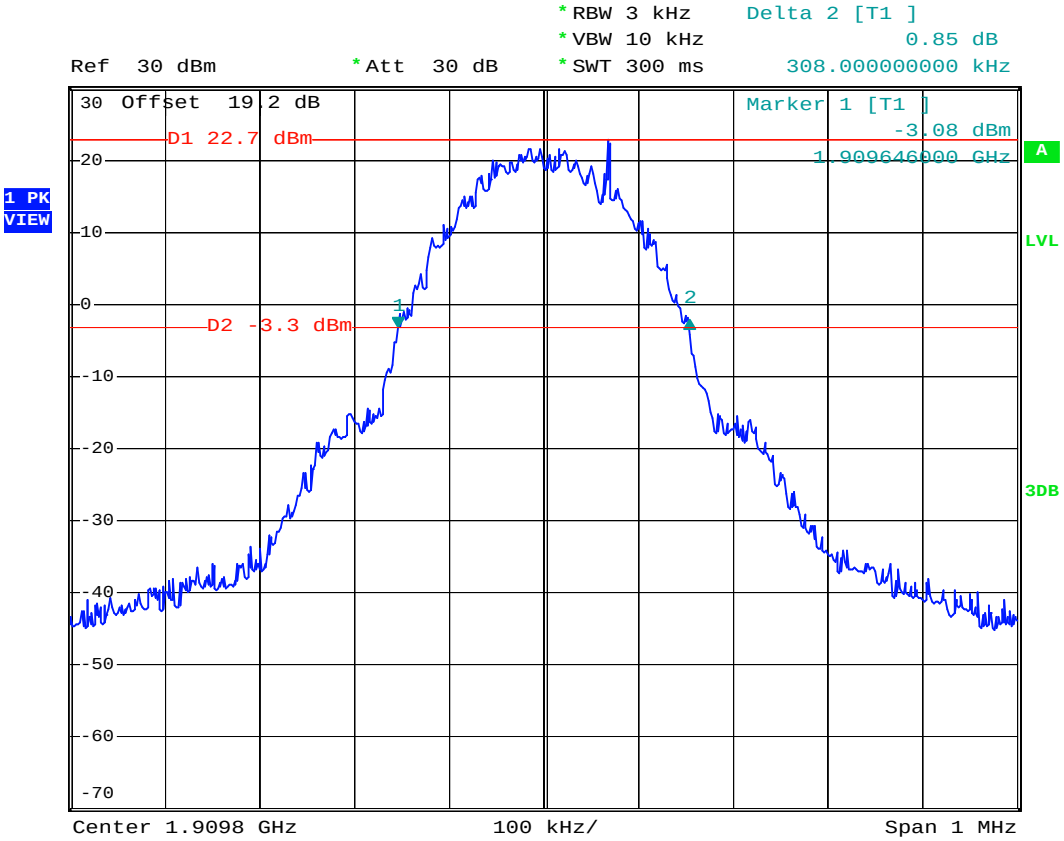
- Test Mode : PCS1900 CH810 26dB Bandwidth
- Power State : High



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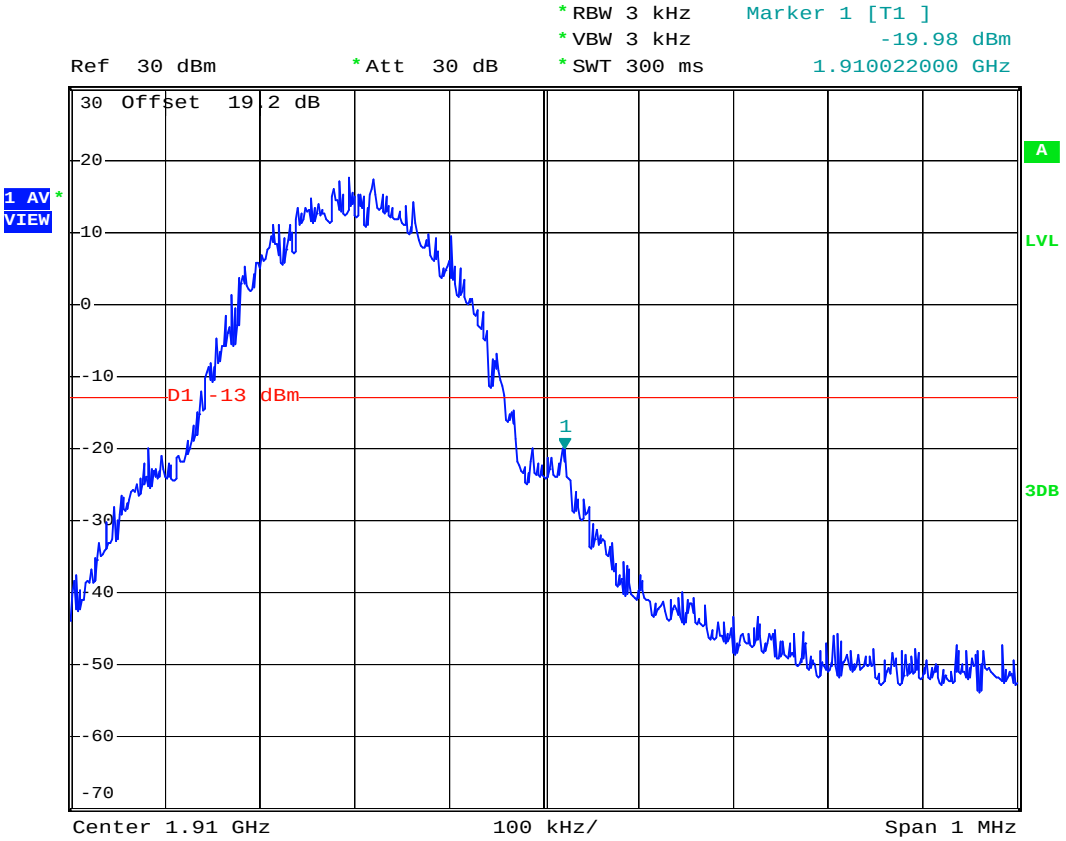
- Test Mode : PCS1900 CH810 Higher Band Edge
- Power State : High



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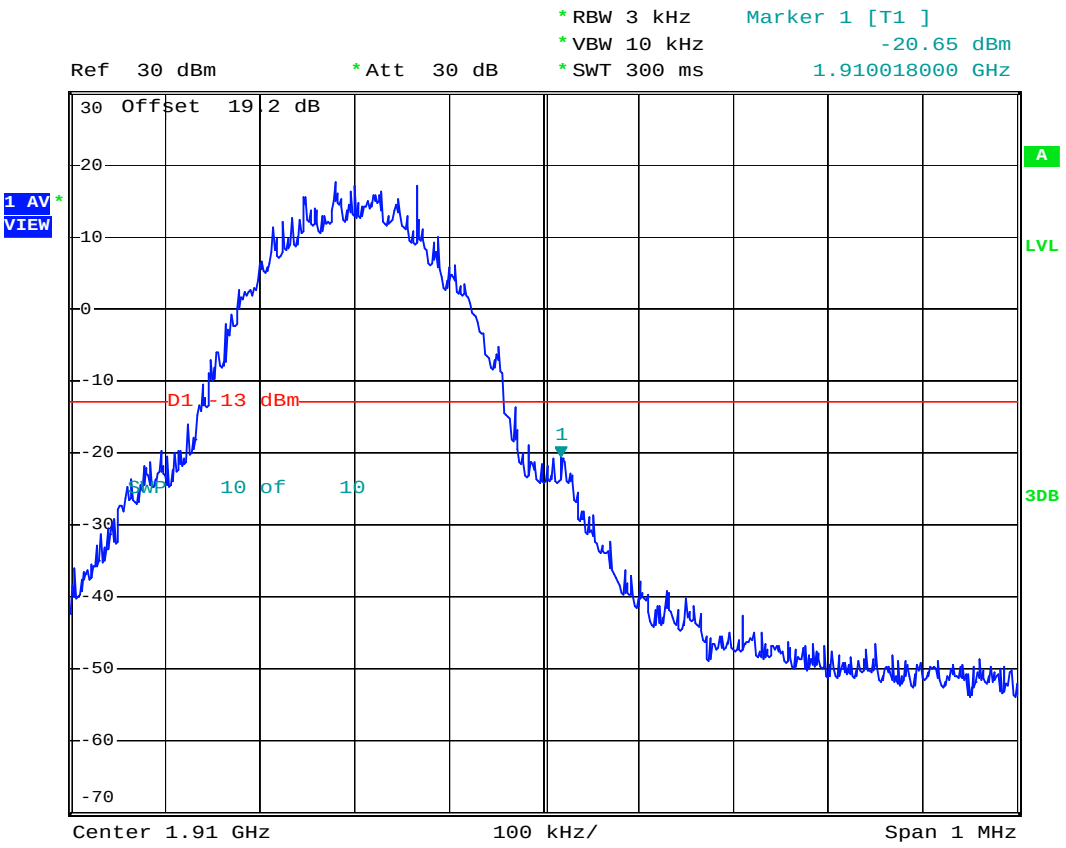


Date: 13.DEC.2007 02:01:28

4.5 Conducted Emission

4.5.1 Measurement Instruments

As described in chapter 5 of this test report.

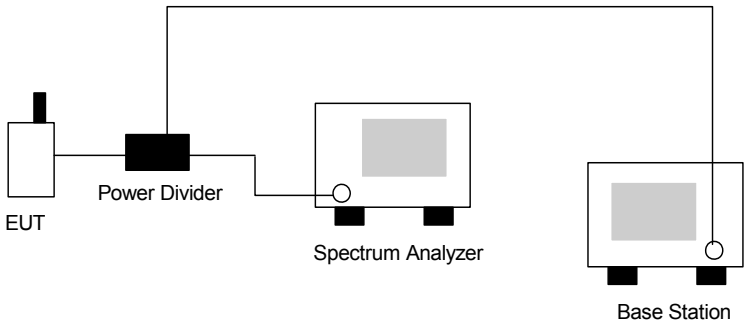
4.5.2 Test Procedure

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.

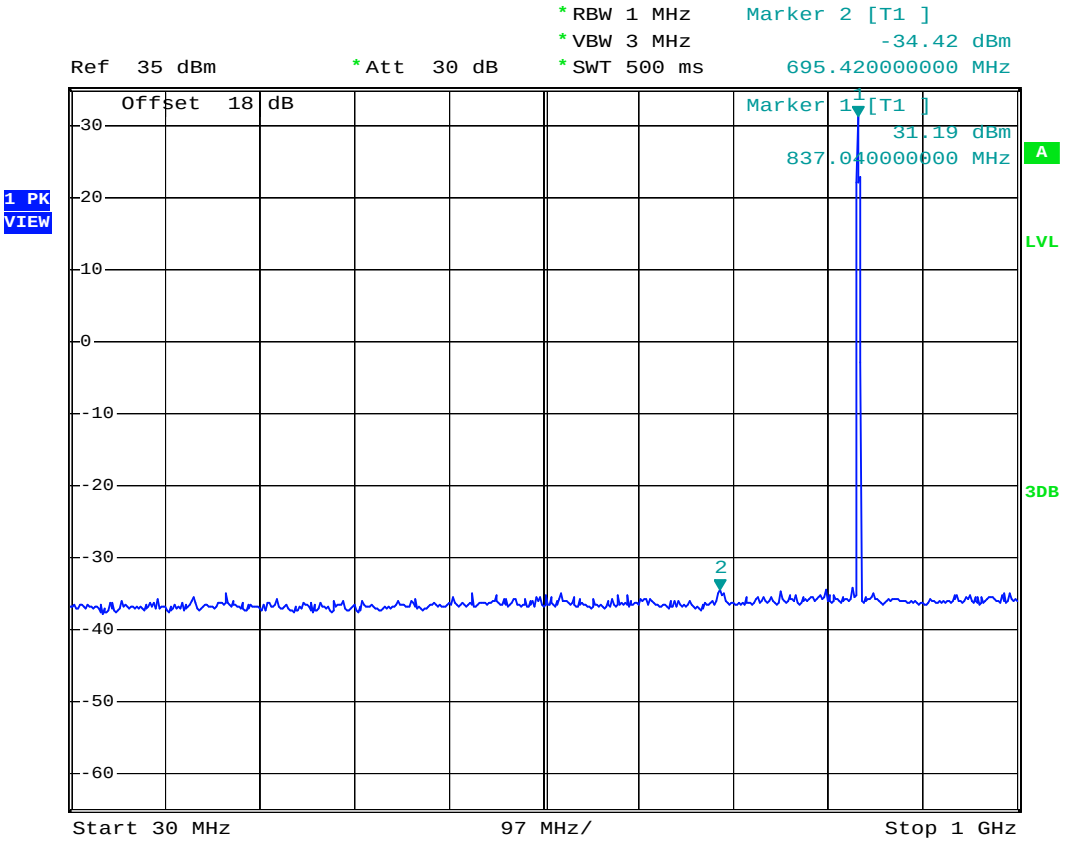
c. The conducted spurious emission for the whole frequency range was taken.

4.5.3 Test Setup Layout



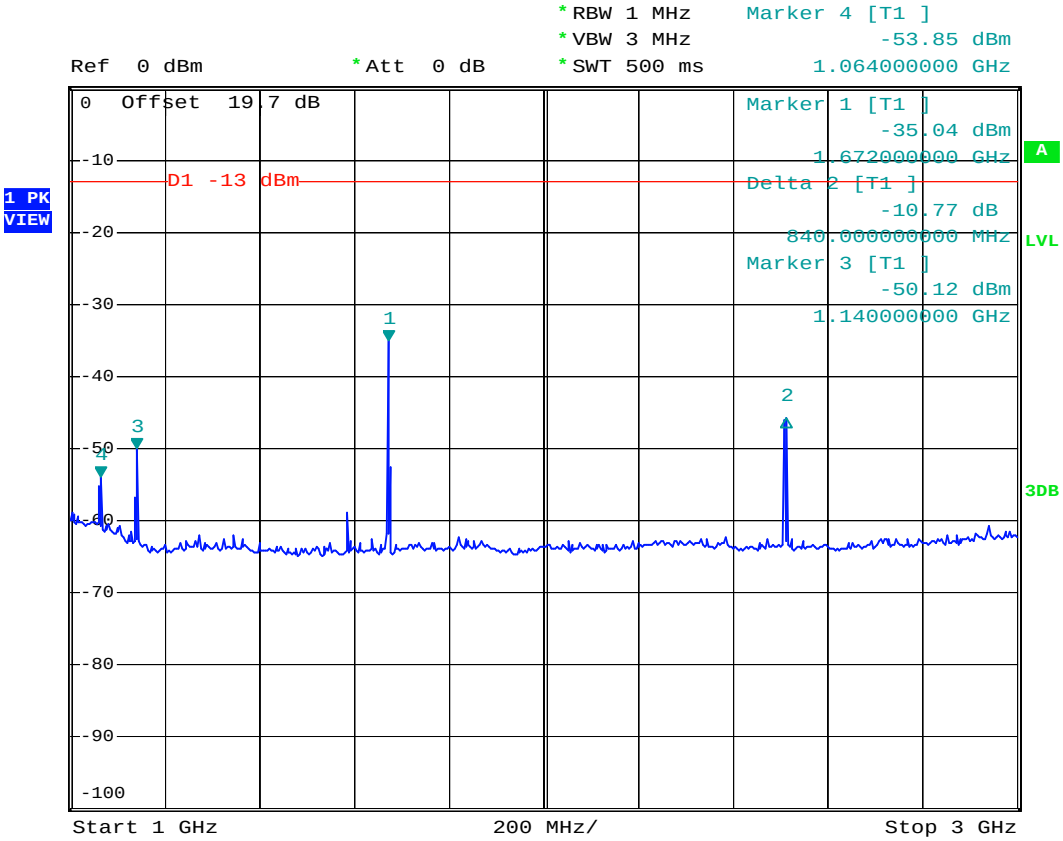
4.5.4 Test Result

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



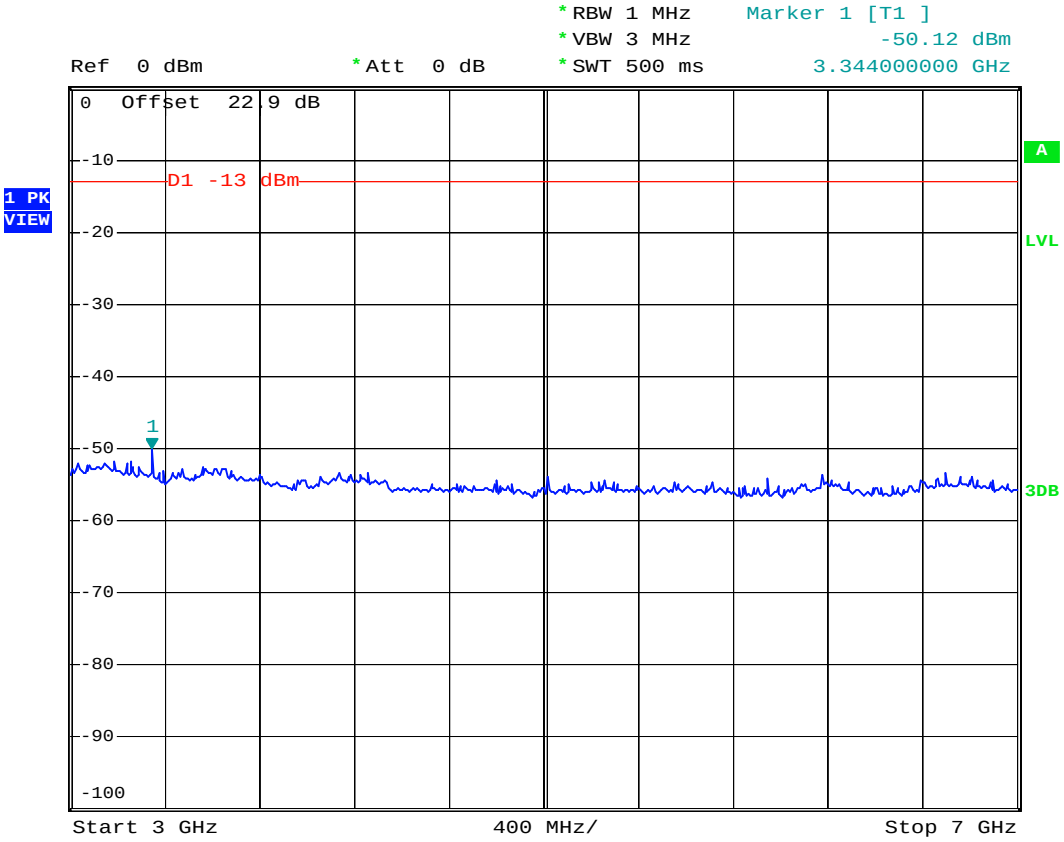
Date: 19.DEC.2007 10:17:37

- Test Mode : GSM850 CH189
- Frequency Range : 1G-3G



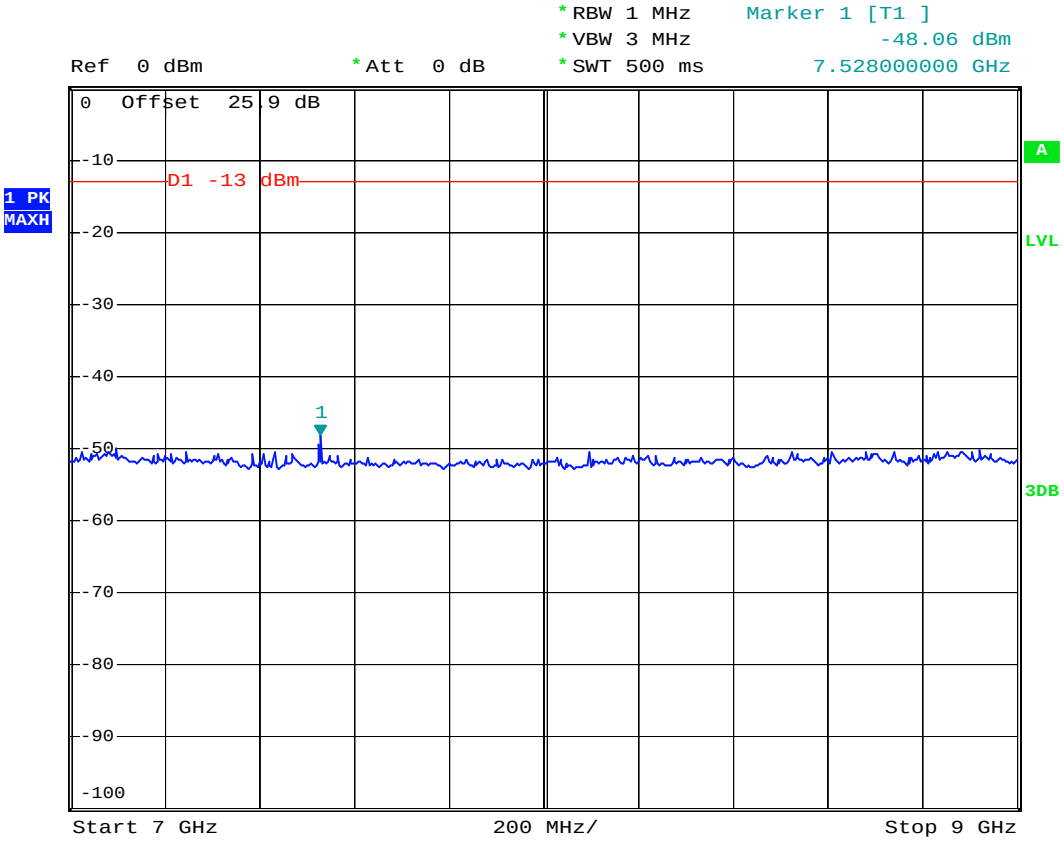
Date: 19.DEC.2007 10:36:49

- Test Mode : GSM850 CH189
- Frequency Range : 3G-7G



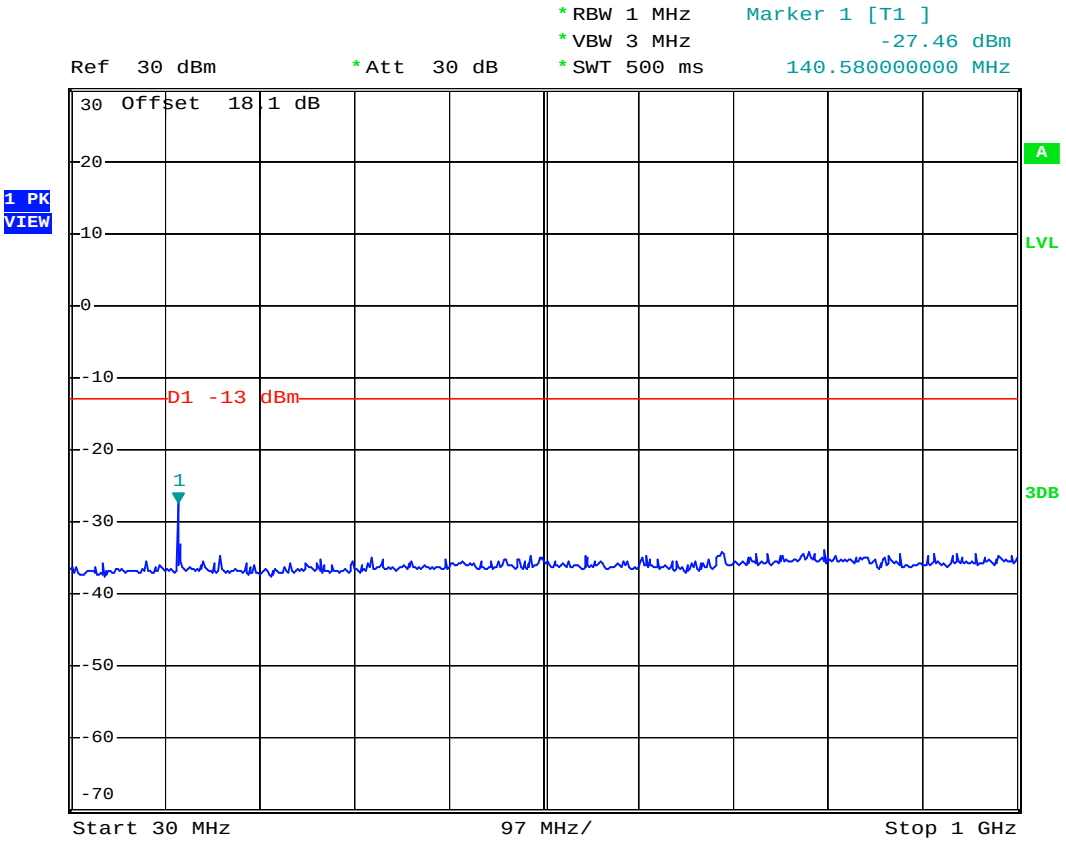
Date: 19.DEC.2007 10:29:42

- Test Mode : GSM850 CH189
- Frequency Range : 7G-9G



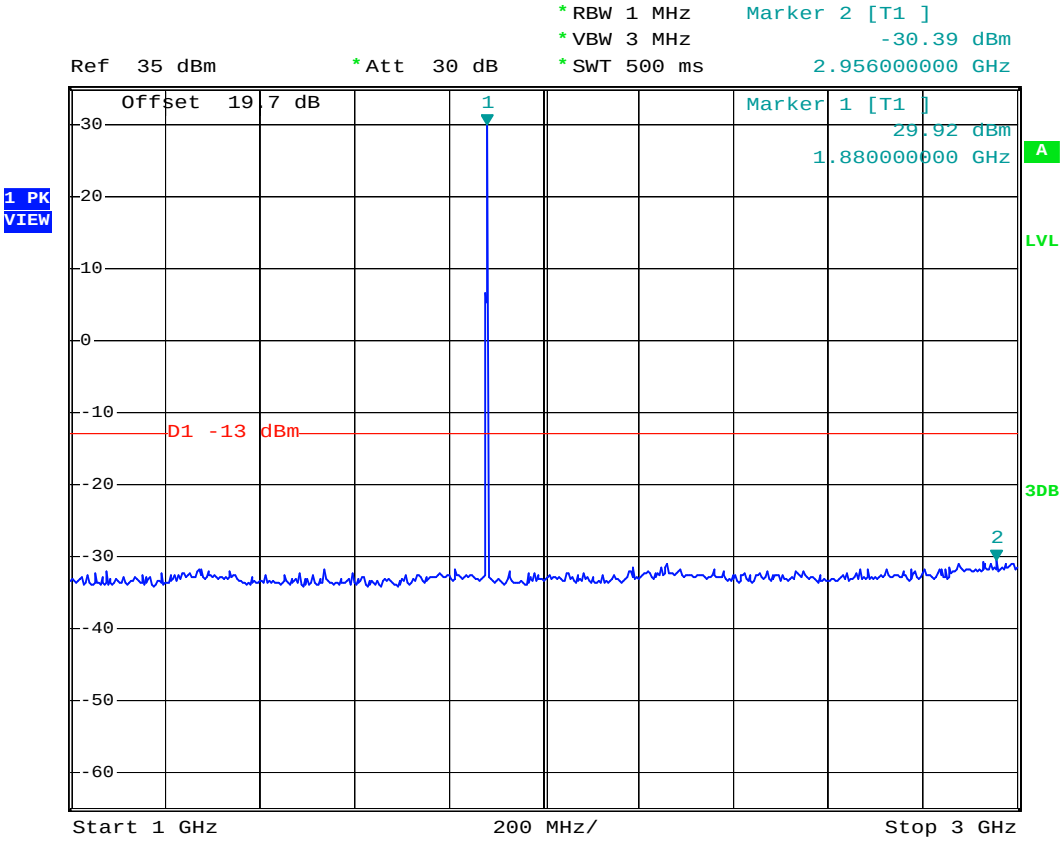
Date: 19.DEC.2007 11:00:25

- Mode 2
- Test Mode : PCS1900 CH661
- Frequency Range : 30M-1G



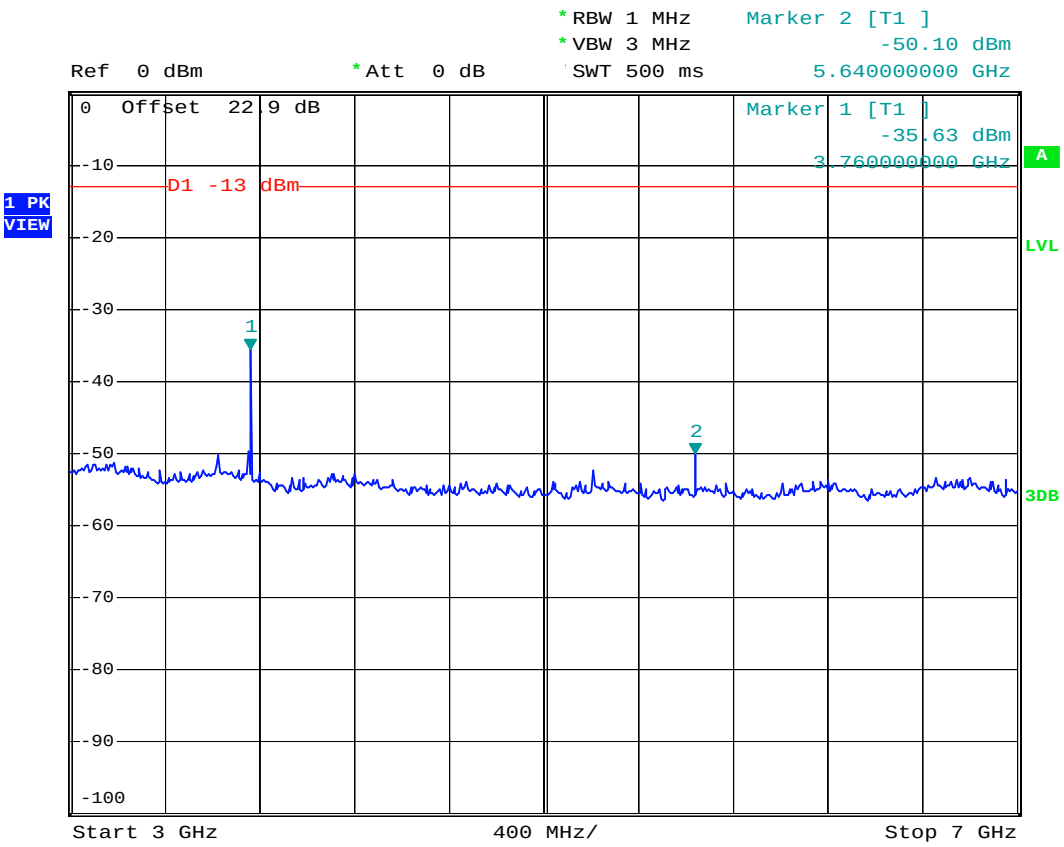
Date: 13.DEC.2007 02:23:46

- Test Mode : PCS1900 CH661
- Frequency Range : 1G-3G



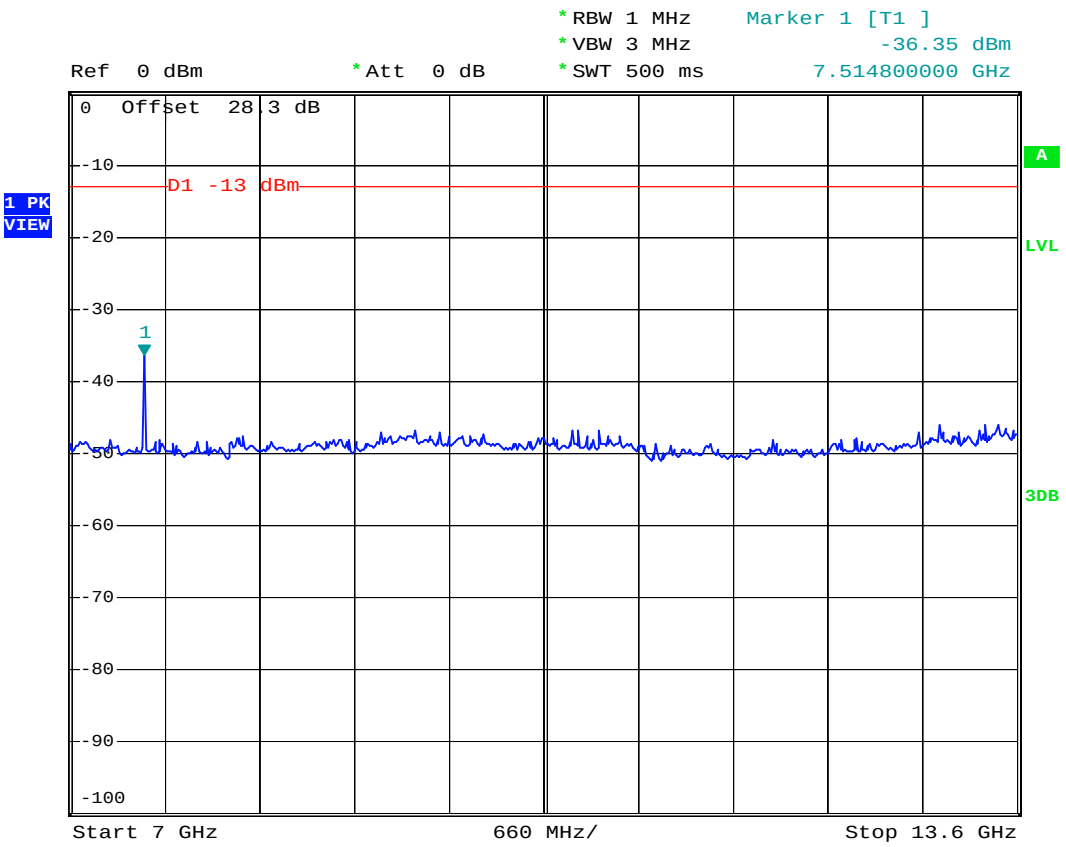
Date: 13.DEC.2007 02:13:53

- Test Mode : PCS1900 CH661
- Frequency Range : 3G-7G



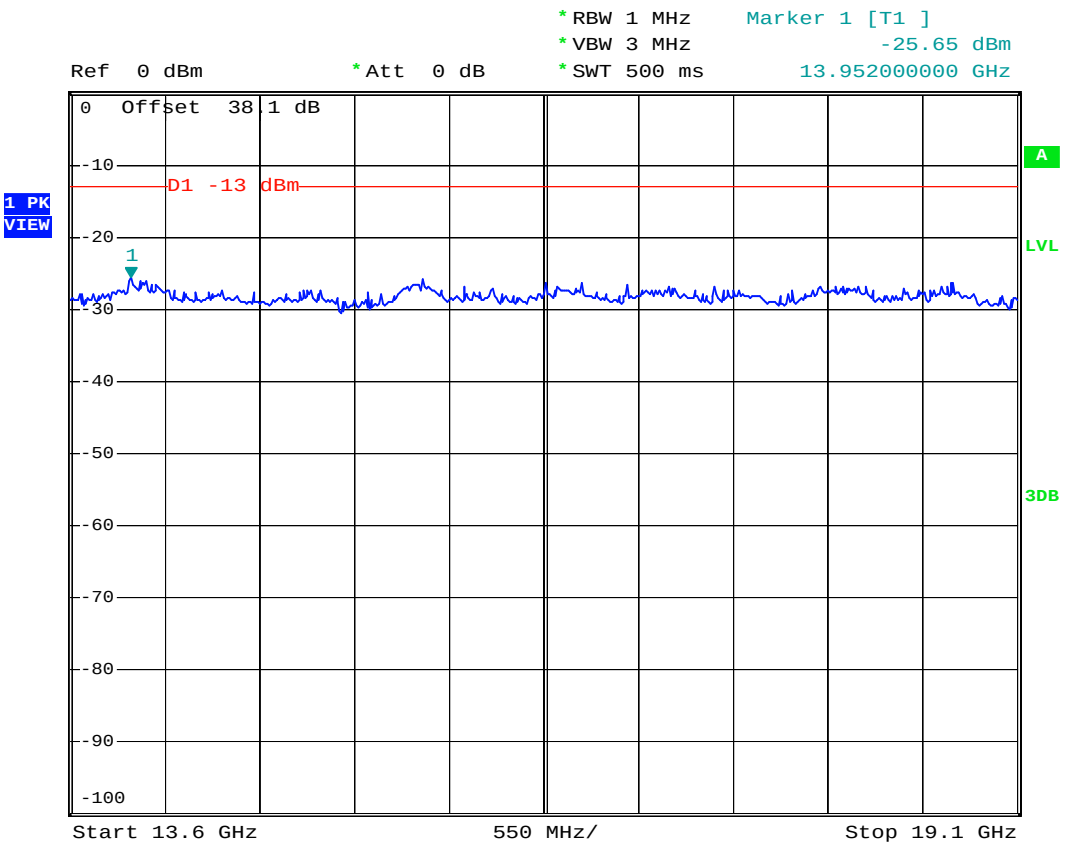
Date: 13.DEC.2007 02:17:38

- Test Mode : PCS1900 CH661
- Frequency Range : 7G-13.6G



Date: 13.DEC.2007 02:18:52

- Test Mode : PCS1900 CH661
- Frequency Range : 13.6G-19.1G



Date: 13.DEC.2007 02:19:38

4.6 Field Strength of Spurious Radiation

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

4.6.1 Measurement Instruments

As described in chapter 5 of this test report.

4.6.2 Test Procedure

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

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

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

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

e. Taking the record of maximum spurious emission.

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

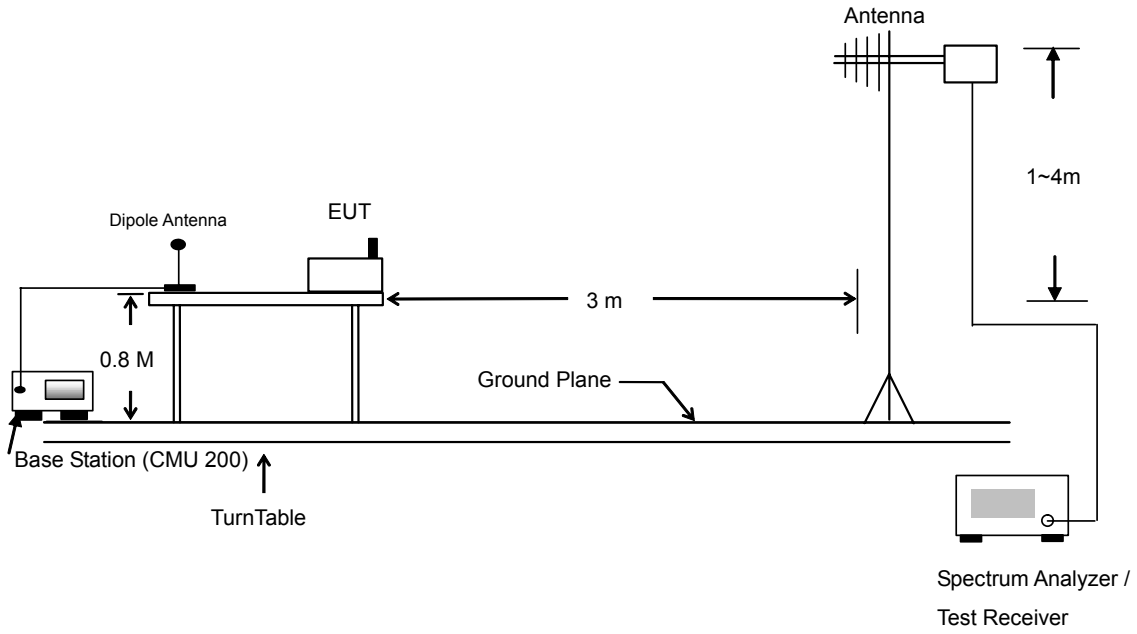
g. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.

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

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

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

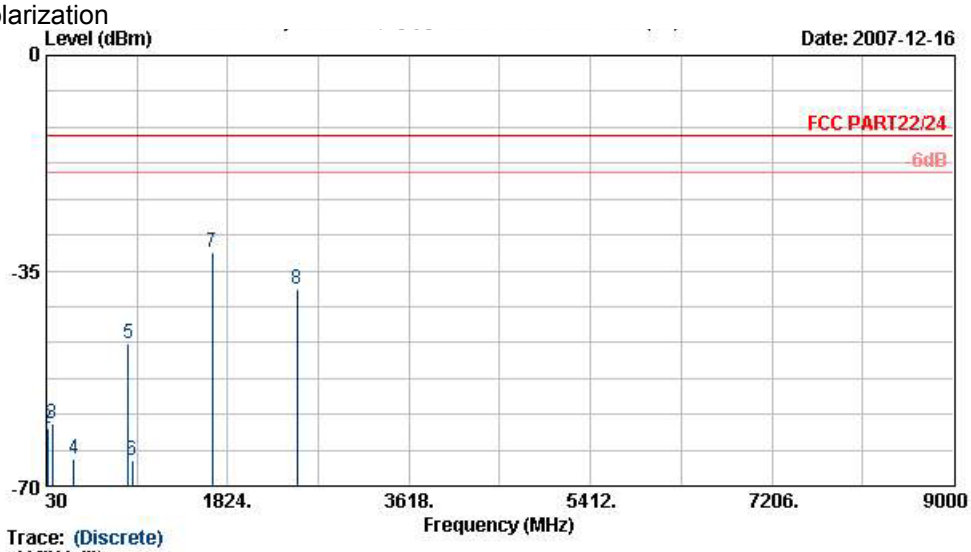
4.6.3 Test Setup Layout



4.6.4 Test Data

4.6.4.1 Mode 1

Horizontal Polarization



Site : 03CH06-HY
Condition : FCC PART22/24 ETRP-071107 HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 701101
Mode : GSM850 Link ; Ch189 + Adaptor + Earphone
Plane : H

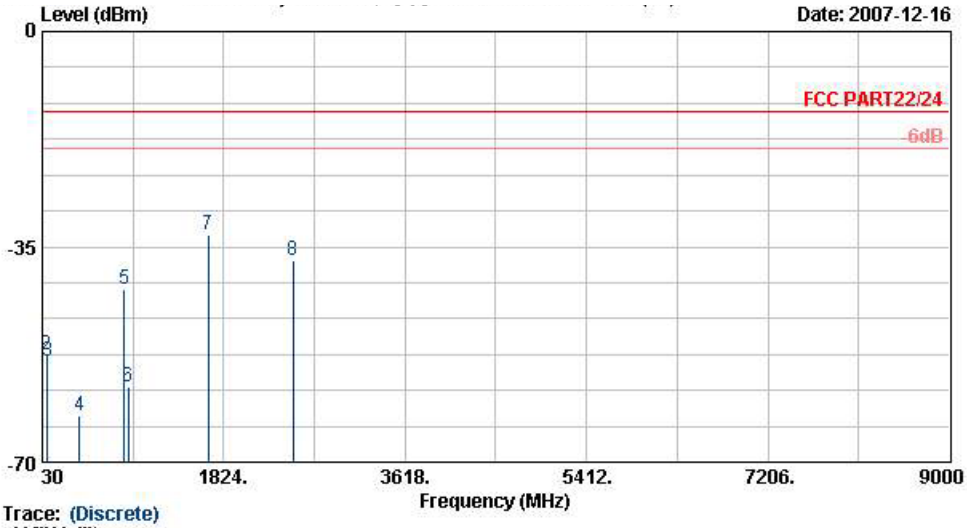
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBm	dB	dBm	dBm	dB	dB	dB	cm	deg	
1	30.00	-50.94	-37.94	-13.00	-51.30	0.36	0.00	0.00	---	---	Peak
2	43.23	-60.74	-47.74	-13.00	-52.58	-8.17	0.00	0.00	---	---	Peak
3	90.48	-59.76	-46.76	-13.00	-47.48	-12.28	0.00	0.00	---	---	Peak
4	300.00	-65.53	-52.53	-13.00	-55.59	-9.95	0.00	0.00	---	---	Peak
5	836.90	-46.86			-45.53	-1.33	0.00	0.00	---	---	Peak
6	880.30	-65.94			-65.03	-0.91	0.00	0.00	---	---	Peak
7 @	1672.00	-31.90	-18.90	-13.00	-37.34	5.43	0.00	0.00	---	---	Peak
8	2509.00	-37.88	-24.88	-13.00	-48.11	10.23	0.00	0.00	---	---	Peak

Remark:

1. #5: MS Signal
2. #6: BS Signal

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
1672	-34.95	-13	-37.34	-34.1	5.05	6.35	H	Pass
2509	-43.85	-13	-48.11	-43.9	5.93	8.13	H	Pass

Vertical Polarization



Site : 03CH06-HY
Condition : FCC PART22/24 ETRP-071107 VERTICAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 701101
Mode : GSM850 Link ; Ch189 + Adaptor + Earphone
Plane : H

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBm	dB	dBm	dBm	dB	dB	dB	cm	deg	
1	30.00	-55.57	-42.57	-13.00	-46.50	-9.07	0.00	0.00	---	---	Peak
2	75.63	-52.68	-39.68	-13.00	-41.50	-11.19	0.00	0.00	---	---	Peak
3	81.84	-53.67	-40.67	-13.00	-43.33	-10.35	0.00	0.00	---	---	Peak
4	400.80	-62.37	-49.37	-13.00	-58.05	-4.32	0.00	0.00	---	---	Peak
5	836.90	-41.85			-43.21	1.36	0.00	0.00	---	---	Peak
6	880.30	-57.68			-59.40	1.71	0.00	0.00	---	---	Peak
7 @	1672.00	-33.18	-20.18	-13.00	-38.61	5.43	0.00	0.00	---	---	Peak
8	2509.00	-37.19	-24.19	-13.00	-47.42	10.23	0.00	0.00	---	---	Peak

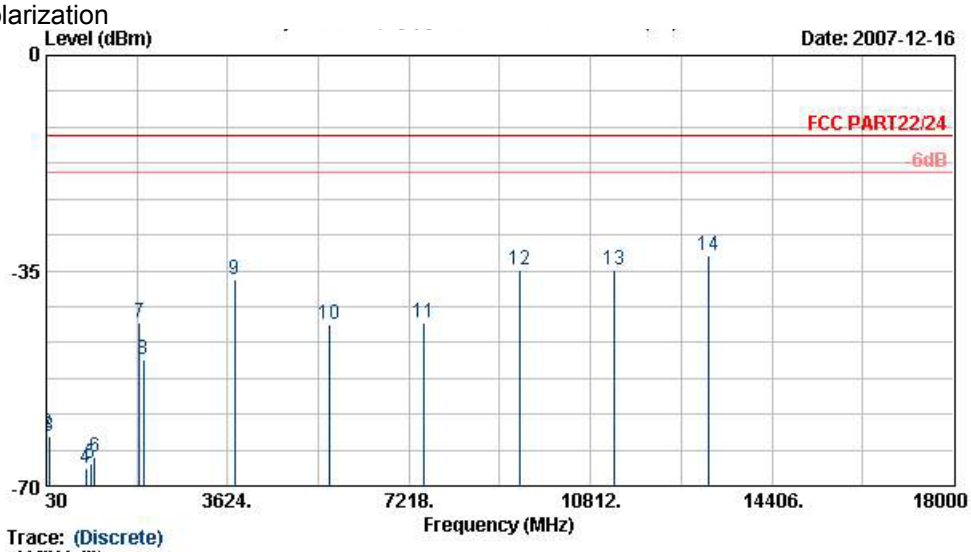
Remark:

1. #5: MS Signal
2. #6: BS Signal

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
1672	-35.85	-13	-38.61	-35	5.05	6.35	V	Pass
2509	-38.75	-13	-47.42	-38.8	5.93	8.13	V	Pass

4.6.4.2 Mode 2

Horizontal Polarization

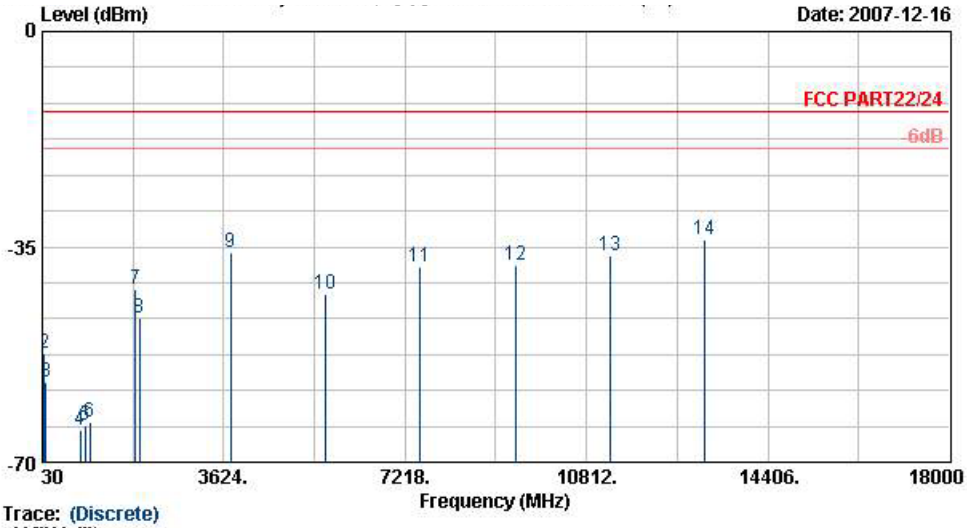


Site : 03CH06-HY
Condition : FCC PART22/24 ETRP-071107 HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 701101
Mode : PCS1900 Link ; Ch661 +Adaptor + Earphone
Plane : H

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBm	dB	dBm	dBm	dB	dB	dB	cm	deg	
1	30.00	-53.45	-40.45	-13.00	-53.81	0.36	0.00	0.00	---	---	Peak
2	44.04	-61.32	-48.32	-13.00	-53.16	-8.17	0.00	0.00	---	---	Peak
3	91.83	-62.05	-49.05	-13.00	-49.78	-12.27	0.00	0.00	---	---	Peak
4	819.40	-67.23	-54.23	-13.00	-65.73	-1.50	0.00	0.00	---	---	Peak
5	904.80	-66.33	-53.33	-13.00	-65.66	-0.68	0.00	0.00	---	---	Peak
6	994.40	-65.39	-52.39	-13.00	-65.58	0.18	0.00	0.00	---	---	Peak
7	1878.00	-43.46	-30.46	-13.00	-50.47	7.01	0.00	0.00	---	---	Peak
8	1958.00	-49.32	-36.32	-13.00	-56.85	7.54	0.00	0.00	---	---	Peak
9	3760.00	-36.43	-23.43	-13.00	-49.75	13.32	0.00	0.00	---	---	Peak
10	5640.00	-43.73	-30.73	-13.00	-60.76	17.03	0.00	0.00	---	---	Peak
11	7520.00	-43.46	-30.46	-13.00	-60.88	17.42	0.00	0.00	---	---	Peak
12	9400.00	-34.96	-21.96	-13.00	-53.75	18.79	0.00	0.00	---	---	Peak
13	11280.00	-34.77	-21.77	-13.00	-56.59	21.82	0.00	0.00	---	---	Peak
14 @	13160.00	-32.40	-19.40	-13.00	-56.48	24.08	0.00	0.00	---	---	Peak

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	-41.77	-13	-49.75	-45.7	7.17	11.1	H	Pass
5640	-53.31	-13	-60.76	-55.1	8.77	10.56	H	Pass
7520	-53.11	-13	-60.88	-50.3	10.21	7.4	H	Pass
9400	-37.85	-13	-53.75	-36	11.61	9.76	H	Pass
11280	-38.79	-13	-56.59	-35.8	13.32	10.33	H	Pass
13160	-32.74	-13	-56.48	-29.7	13.81	10.77	H	Pass

Vertical Polarization



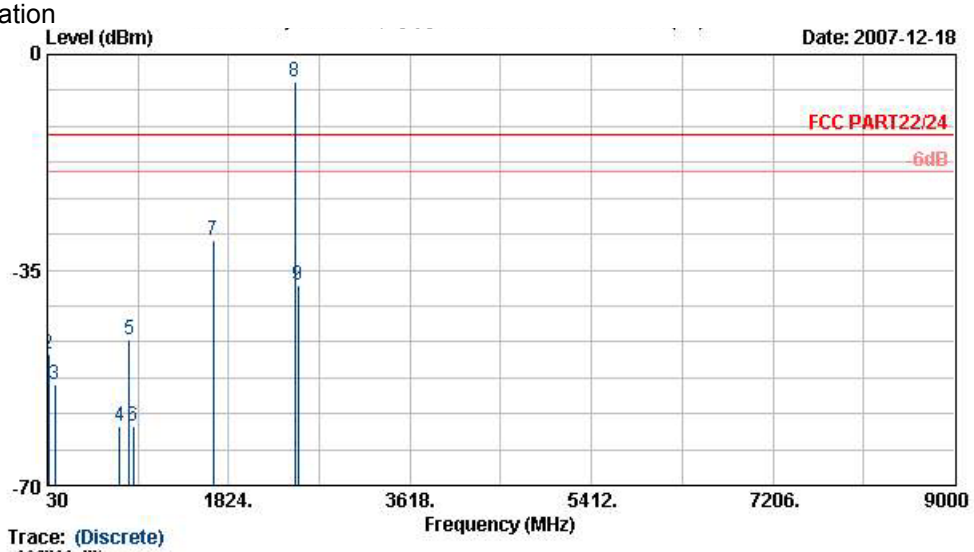
Site : 03CH06-HY
Condition : FCC PART22/24 ETRP-071107 VERTICAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 701101
Mode : PCS1900 Link ; Ch661 +Adaptor + Earphone
Plane : H

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBm	dB	dBm	dBm	dB	dB	dB	cm	deg	
1	30.00	-55.99	-42.99	-13.00	-46.92	-9.07	0.00	0.00	---	---	Peak
2	75.09	-52.21	-39.21	-13.00	-40.89	-11.32	0.00	0.00	---	---	Peak
3	106.68	-57.06	-44.06	-13.00	-49.31	-7.75	0.00	0.00	---	---	Peak
4	780.90	-64.91	-51.91	-13.00	-65.69	0.78	0.00	0.00	---	---	Peak
5	878.90	-64.04	-51.04	-13.00	-65.73	1.70	0.00	0.00	---	---	Peak
6	974.80	-63.44	-50.44	-13.00	-65.90	2.46	0.00	0.00	---	---	Peak
7	1878.00	-41.96	-28.96	-13.00	-48.97	7.01	0.00	0.00	---	---	Peak
8	1958.00	-46.49	-33.49	-13.00	-54.03	7.54	0.00	0.00	---	---	Peak
9	3760.00	-35.87	-22.87	-13.00	-49.19	13.32	0.00	0.00	---	---	Peak
10	5640.00	-42.66	-29.66	-13.00	-59.69	17.03	0.00	0.00	---	---	Peak
11	7520.00	-38.34	-25.34	-13.00	-55.76	17.42	0.00	0.00	---	---	Peak
12	9400.00	-37.91	-24.91	-13.00	-56.70	18.79	0.00	0.00	---	---	Peak
13	11280.00	-36.38	-23.38	-13.00	-58.20	21.82	0.00	0.00	---	---	Peak
14 @	13160.00	-33.72	-20.72	-13.00	-57.80	24.08	0.00	0.00	---	---	Peak

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	-38.07	-13	-49.19	-42	7.17	11.1	V	Pass
5640	-51.91	-13	-59.69	-53.7	8.77	10.56	V	Pass
7520	-44.11	-13	-55.76	-41.3	10.21	7.4	V	Pass
9400	-43.65	-13	-56.7	-41.8	11.61	9.76	V	Pass
11280	-42.49	-13	-58.2	-39.5	13.32	10.33	V	Pass
13160	-37.54	-13	-57.8	-34.5	13.81	10.77	V	Pass

4.6.4.3 Mode 3

Horizontal Polarization



Site : 03CH06-HY
Condition : FCC PART22/24 ETRP-071107 HORIZONTAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 701101
Memo : GSM850 Link ; Ch189 + Adaptor + Earphone
Memo : +BT Tx_Ch78;2480MHz
Plane : H

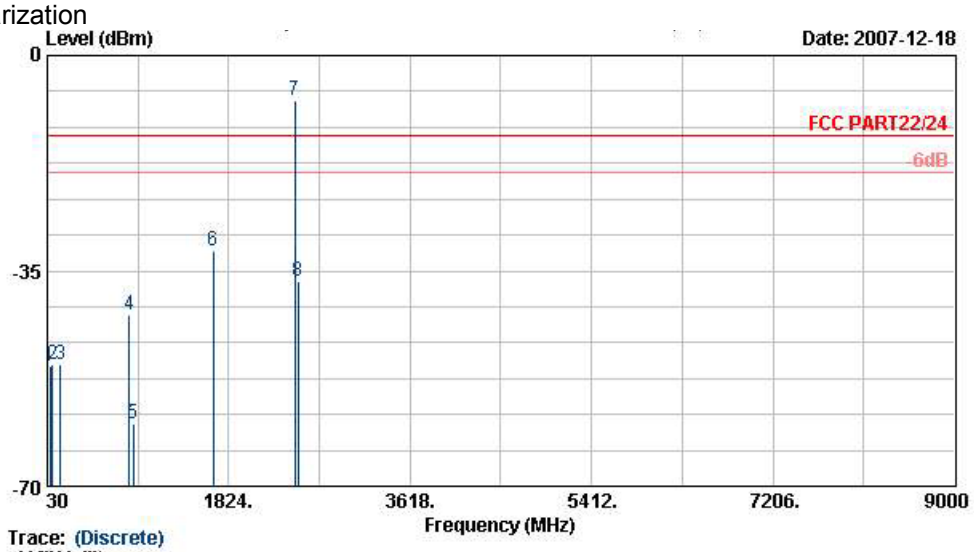
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBm	dB	dBm	dBm	dB	dB	dB	cm	deg	
1	37.83	-50.98	-37.98	-13.00	-46.46	-4.51	0.00	0.00	---	---	Peak
2	42.69	-48.61	-35.61	-13.00	-41.05	-7.56	0.00	0.00	---	---	Peak
3	106.68	-53.73	-40.73	-13.00	-41.41	-12.32	0.00	0.00	---	---	Peak
4	743.80	-60.27	-47.27	-13.00	-58.00	-2.27	0.00	0.00	---	---	Peak
5	836.90	-46.21			-44.88	-1.33	0.00	0.00	---	---	Peak
6	880.30	-60.50			-59.58	-0.91	0.00	0.00	---	---	Peak
7	1672.00	-30.22	-17.22	-13.00	-35.65	5.43	0.00	0.00	---	---	Peak
8 @	2476.00	-4.55			-14.66	10.11	0.00	0.00	---	---	Peak
9	2509.00	-37.48	-24.48	-13.00	-47.71	10.23	0.00	0.00	---	---	Peak

Remark:

1. #5: MS Signal
2. #6: BS Signal
3. #8: BT Signal

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
1672	-33.65	-13	-35.65	-32.8	5.05	6.35	H	Pass
2509	-43.25	-13	-47.71	-43.3	5.93	8.13	H	Pass

Vertical Polarization



Site : 03CH06-HY
Condition : FCC PART22/24 ERP-071107 VERTICAL
EUT : Smart Phone
Power : 120Vac/60Hz
Model : FG 701101
Memo : GSM850 Link ; Ch189 + Adaptor + Earphone
Memo : +BT Tx_Ch78;2480MHz
Plane : H

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBm	dB	dBm	dBm	dB	dB	dB	cm	deg	
1	57.54	-50.41	-37.41	-13.00	-36.57	-13.84	0.00	0.00	---	---	Peak
2	82.38	-50.24	-37.24	-13.00	-40.03	-10.21	0.00	0.00	---	---	Peak
3	164.19	-50.22	-37.22	-13.00	-41.96	-8.27	0.00	0.00	---	---	Peak
4	836.90	-42.09			-43.45	1.36	0.00	0.00	---	---	Peak
5	880.30	-59.84			-61.55	1.71	0.00	0.00	---	---	Peak
6	1672.00	-31.83	-18.83	-13.00	-37.26	5.43	0.00	0.00	---	---	Peak
7 X	2476.00	-7.41			-17.53	10.11	0.00	0.00	---	---	Peak
8	2509.00	-36.71	-23.71	-13.00	-46.94	10.23	0.00	0.00	---	---	Peak

Remark:

1. #4: MS Signal
2. #5: BS Signal
3. #7: BT Signa

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
1672	-34.75	-13	-37.26	-33.9	5.05	6.35	V	Pass
2509	-38.05	-13	-46.94	-38.1	5.93	8.13	V	Pass

4.7 Frequency Stability (Temperature Variation)

4.7.1 Measurement Instrument

As decribed in chapter 5 of this test report.

4.7.2 Test Procedure

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

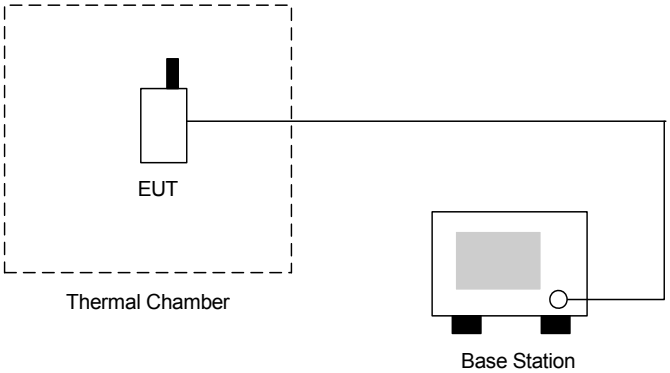
b. With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.

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

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

e. Test data was recorded.

4.7.3 Test Setup Layout



4.7.4 Test Result

- Test Mode : GSM850 CH189

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	n/a	n/a	2.5	Passed
-20	n/a	n/a		
-10	-1260	-1.48		
0	-32	-0.04		
10	-21	-0.02		
20	-19	-0.02		
30	-20	-0.02		
40	-15	-0.02		
50	18	0.02		

Remark : The EUT can not be turn on at -20 and -30℃.

- Test Mode : PCS1900 CH661

Temperature(℃)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	38	0.02	2.5	Passed
-20	49	0.03		
-10	28	0.01		
0	37	0.02		
10	44	0.02		
20	43	0.02		
30	46	0.02		
40	45	0.02		
50	41	0.02		

4.8 Frequency Stability (Voltage Variation)

4.8.1 Measurement Instrument

As described in chapter 5 of this test report.

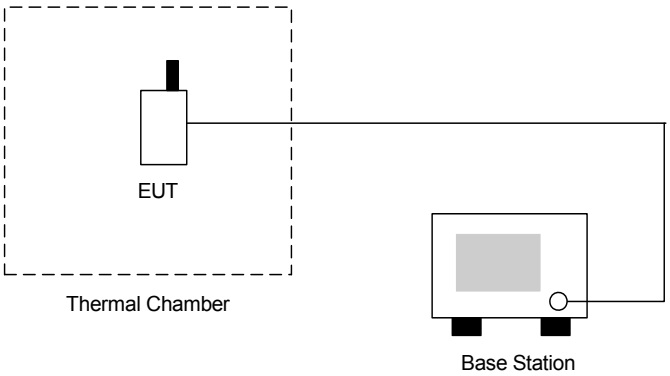
4.8.2 Test Procedure

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

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

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

4.8.3 Test Setup Layout



4.8.4 Test Result

- Test Mode : GSM850 CH189

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-27.0	-0.03	2.5	Passed
BEP	2043.0	2.4		
4.2	-20.0	-0.02		

- Test Mode : PCS1900 CH661

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-39.0	-0.02	2.5	Passed
BEP	-37.0	-0.02		
4.2	38.0	0.02		

Remark:
1. Normal Voltage=3.7V.
2. 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	Agilent	E4408B	MY44211028	9KHz-26.5GHz	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul. 26, 2007	Jul. 25, 2008	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Dec. 01, 2007	Nov. 30, 2008	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Com-Power	AH118	071025	1G~18G	Jun. 04, 2007	Jun. 03, 2008	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-249	14G - 40G	Nov. 20, 2006	Nov. 19, 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	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. 08, 2007	Feb. 07, 2008	Conduction (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 08, 2007	Feb. 07, 2008	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		$u(x_i)$	Ci	$Ci*u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1= 0.197 Antenna VSWR Γ2= 0.194 Uncertainty=20log(1-Γ1*Γ2*Γ3)	+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

NE01973

openmoko

NEOL973
30
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NE01973

openmoko

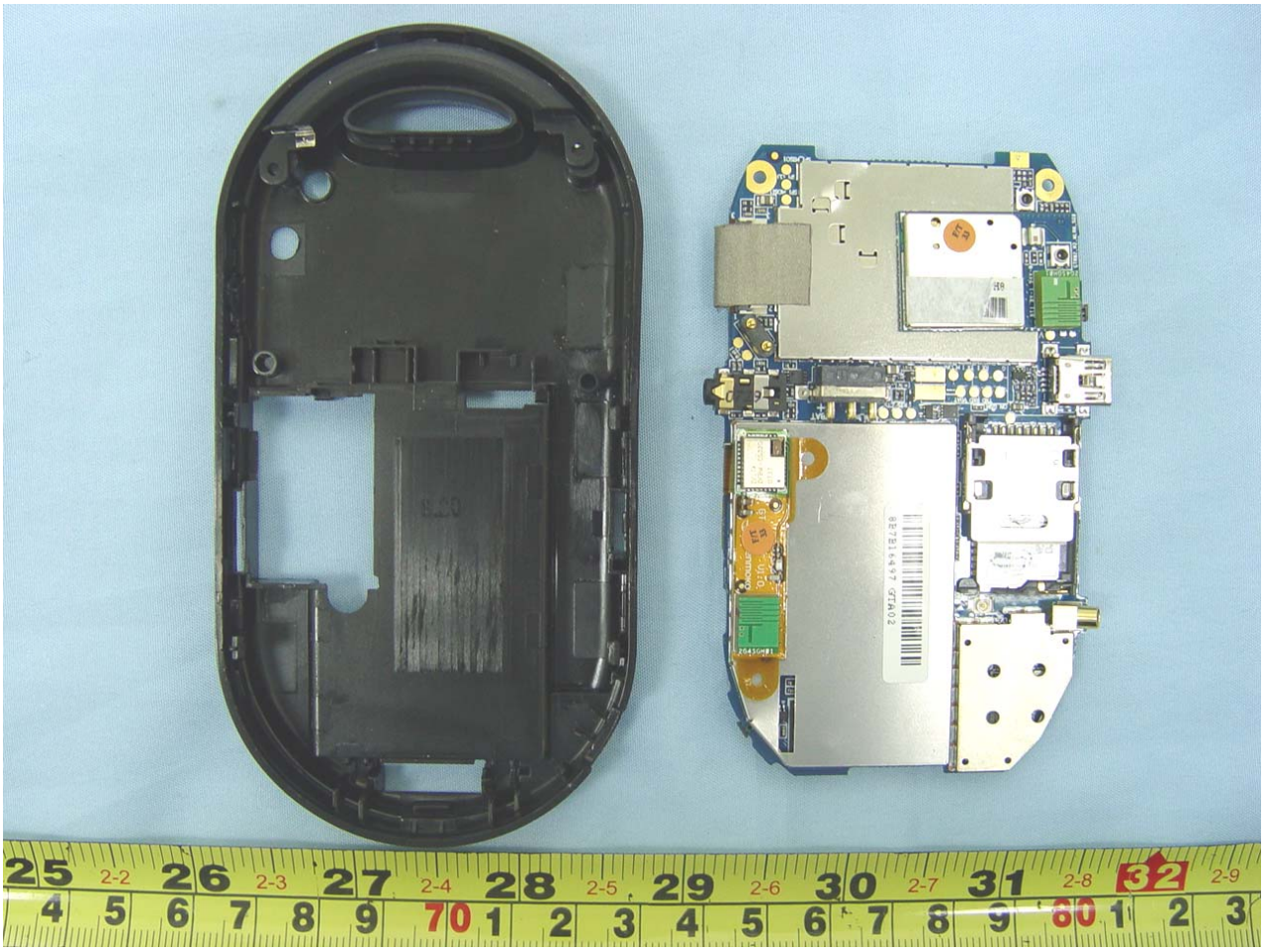
First International Computer, Inc.
Model: GTC-01/GTA-01
Standard Battery Pack
1200mAh Li-ion
Rechargeable Battery: 3.7V
Caution:
1. Do not incinerate.
2. Do not disassembly.
3. Do not short circuit.
4. Do not expose to high temperatures (140°F/60°C).
5. Dispose of properly.
6. Use specified charger only.
7. Battery must be fully charged before initial use.
WDMA070200260
Manufactured in Taiwan

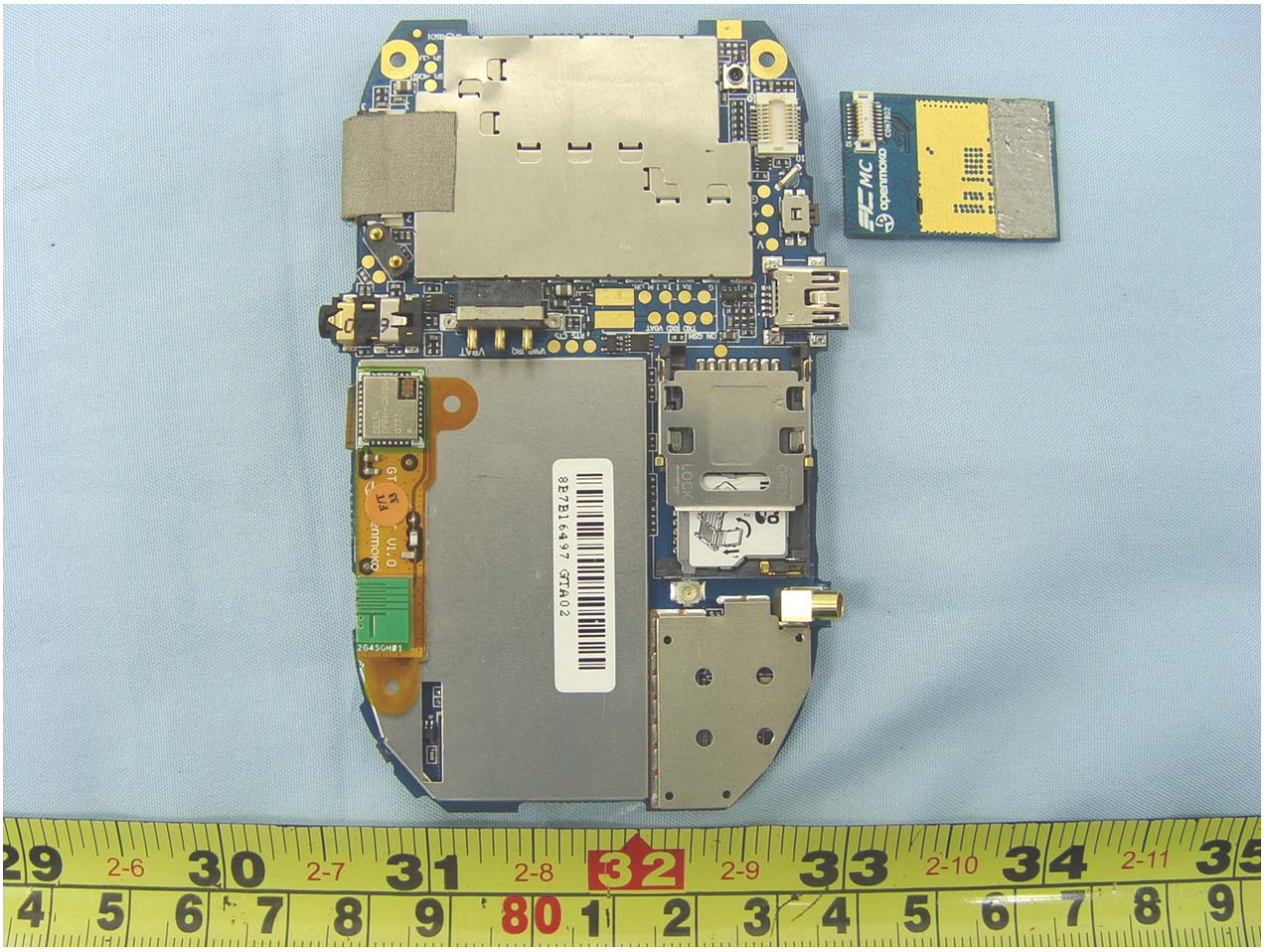
openmoko
TECHNOLOGY
GP
MODEL NO.:A10P1-05MP
INPUT:100-240V~/0.3A,
47-63Hz
OUTPUT :+5V 2.0A
LISTED I.T.E
POWER SUPPLY
CLASS II
E123986
1Z22
N136
LPS
EL
IV
BS EN 60950-1
P1
P5
Made In China

2-3
2-4
2-5
2-6

2-5
2-6
2-7
2-8

Appendix B. Internal Photographs of EUT

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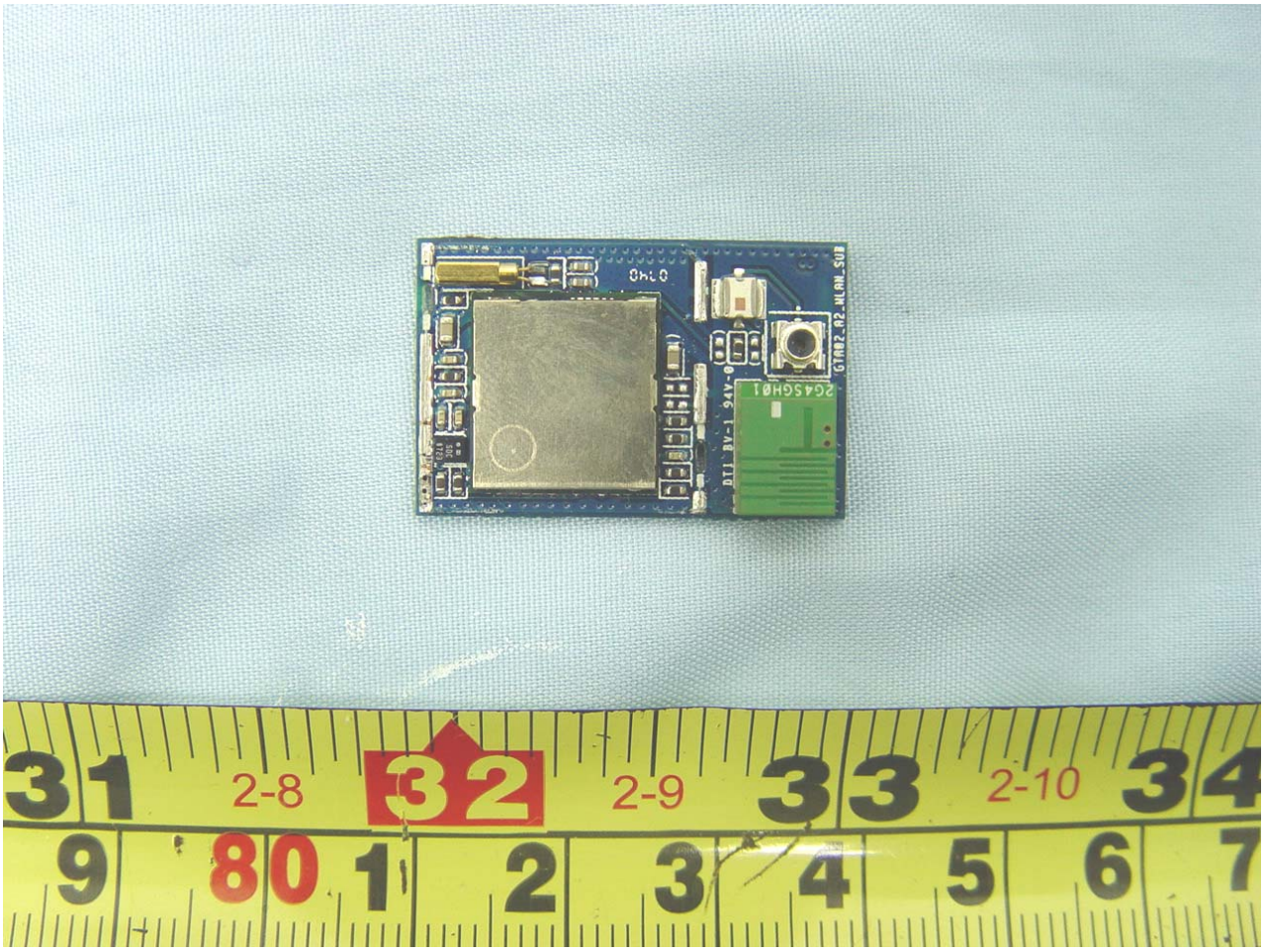
openmoko
FCMC
openmoko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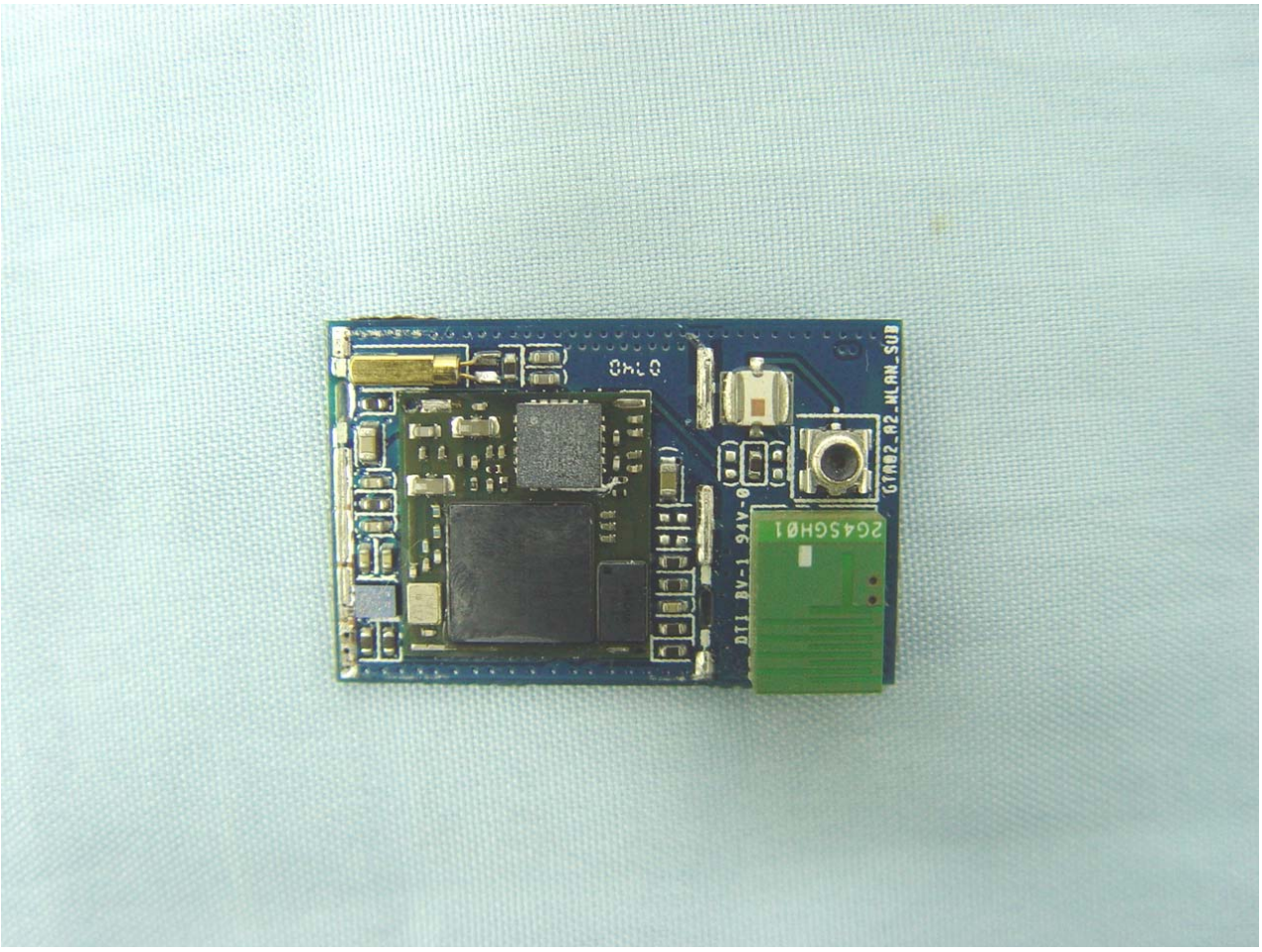
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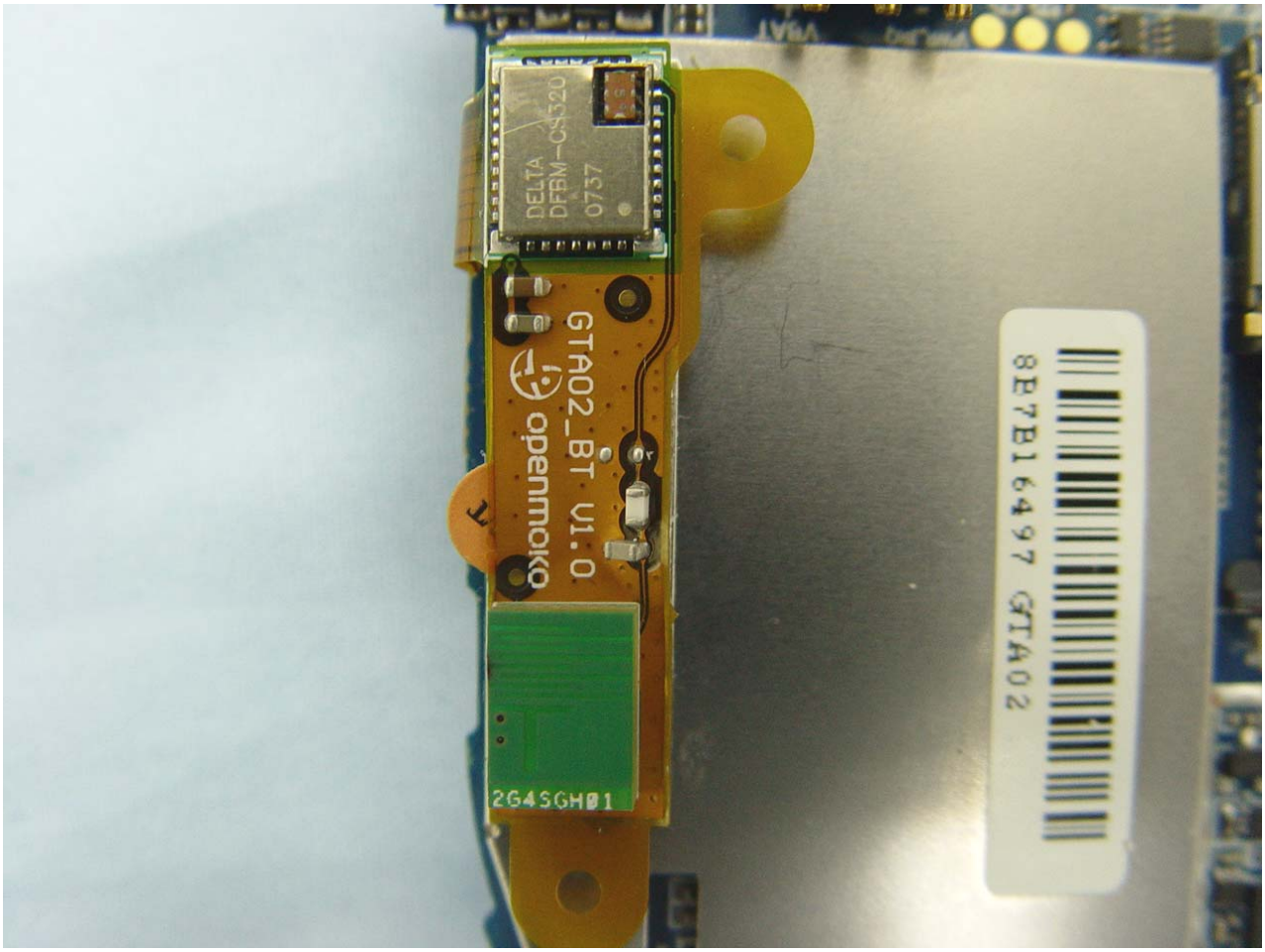
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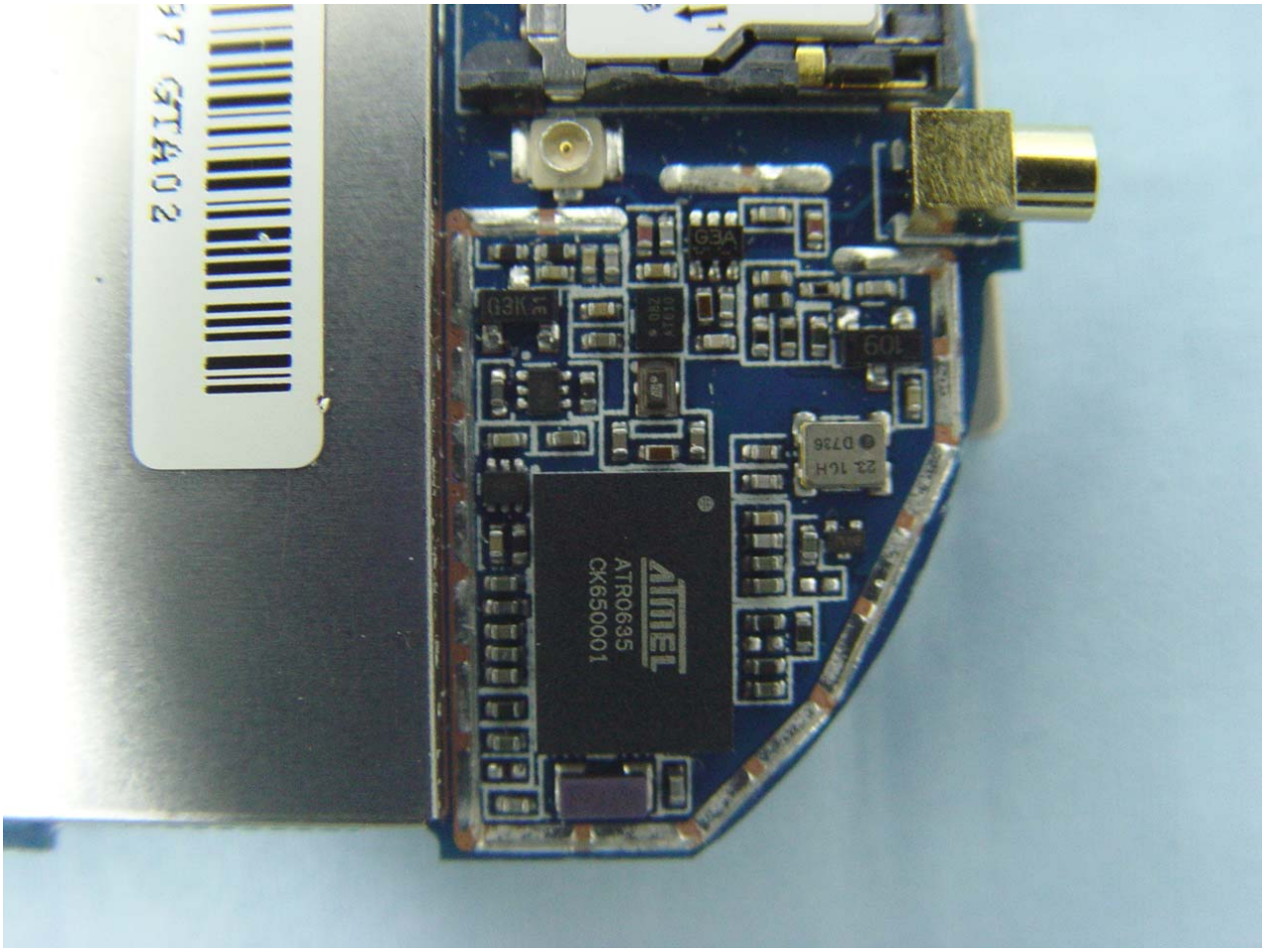
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D736
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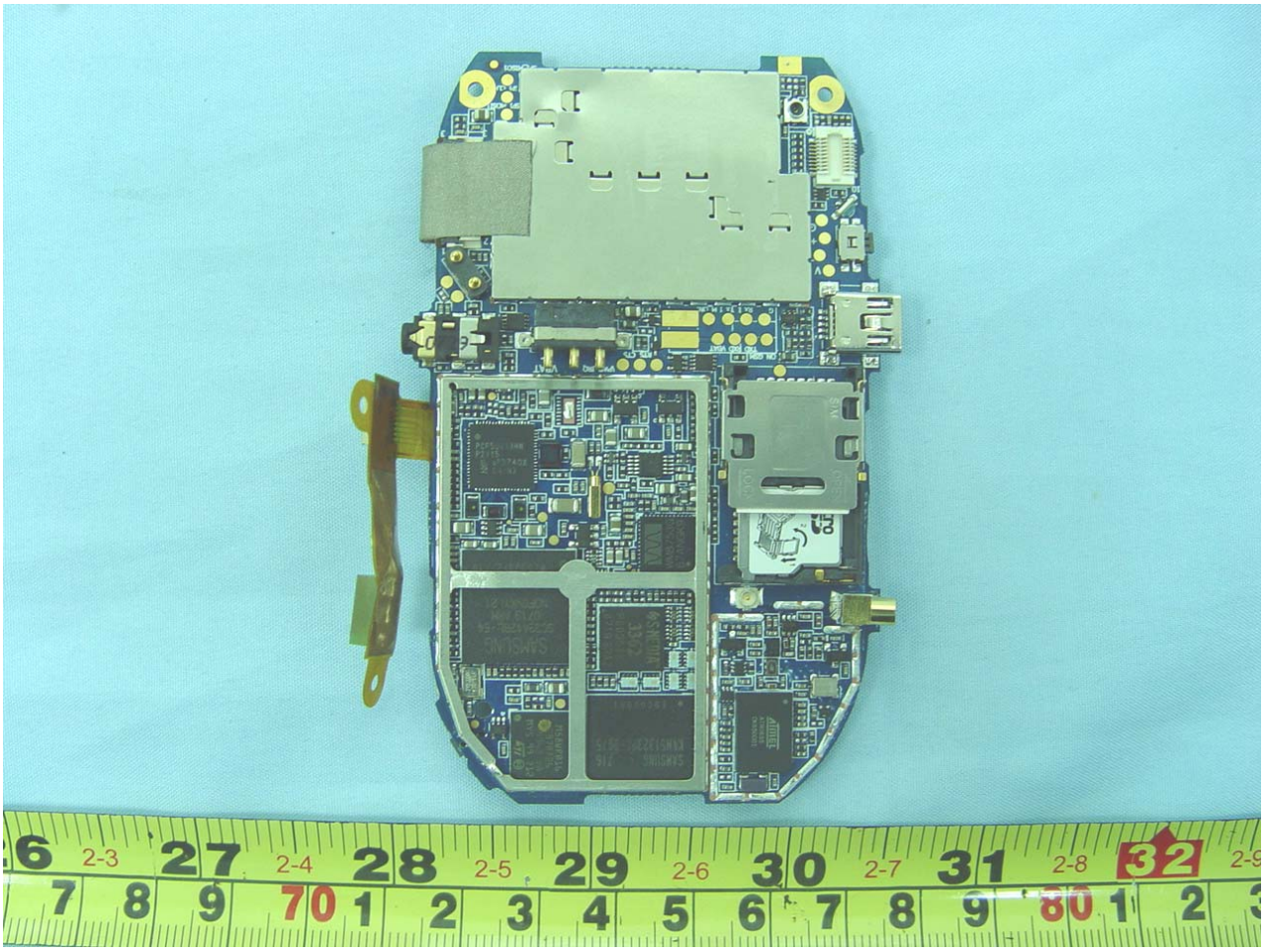

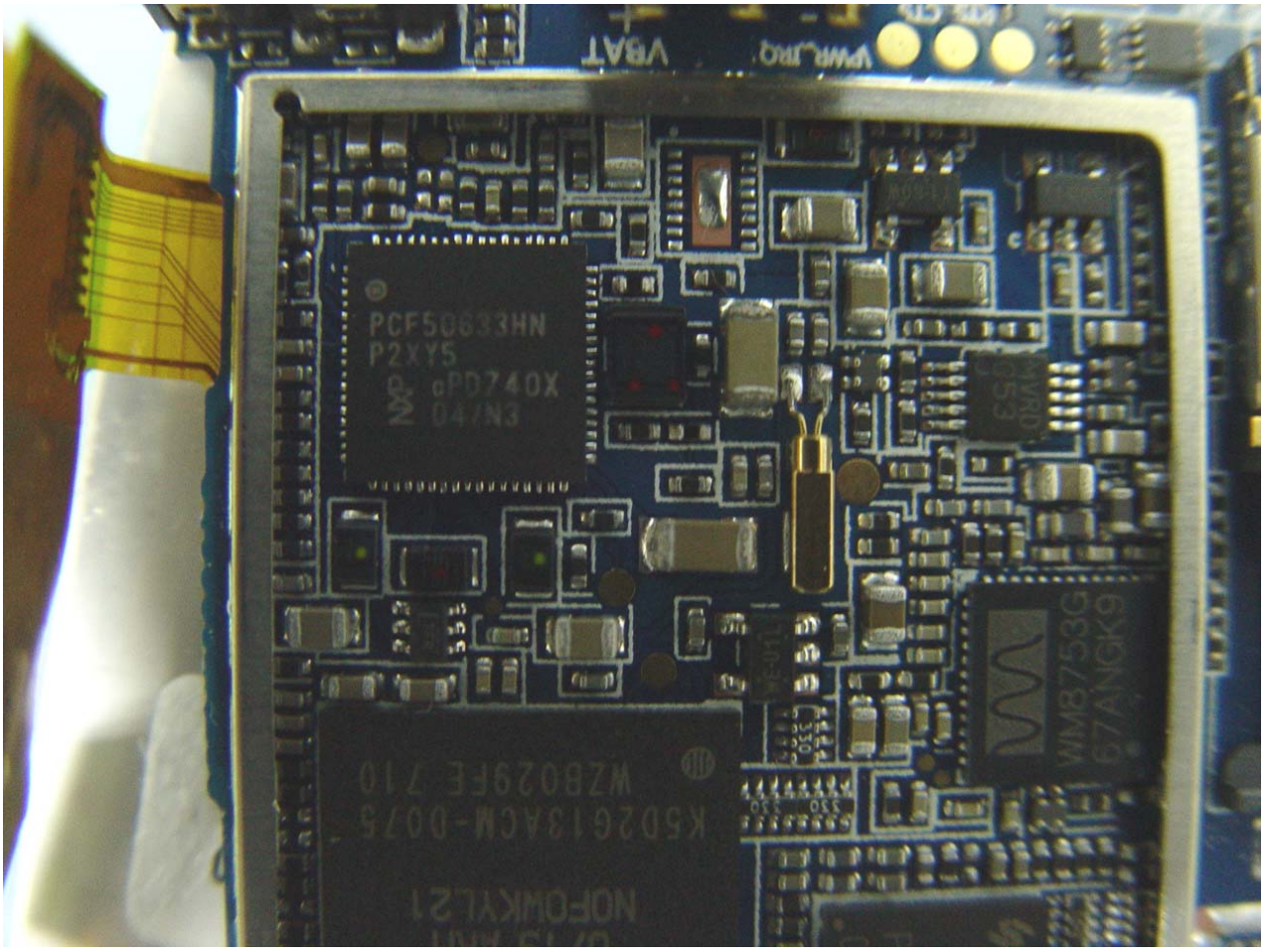
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WZ8029FE 710
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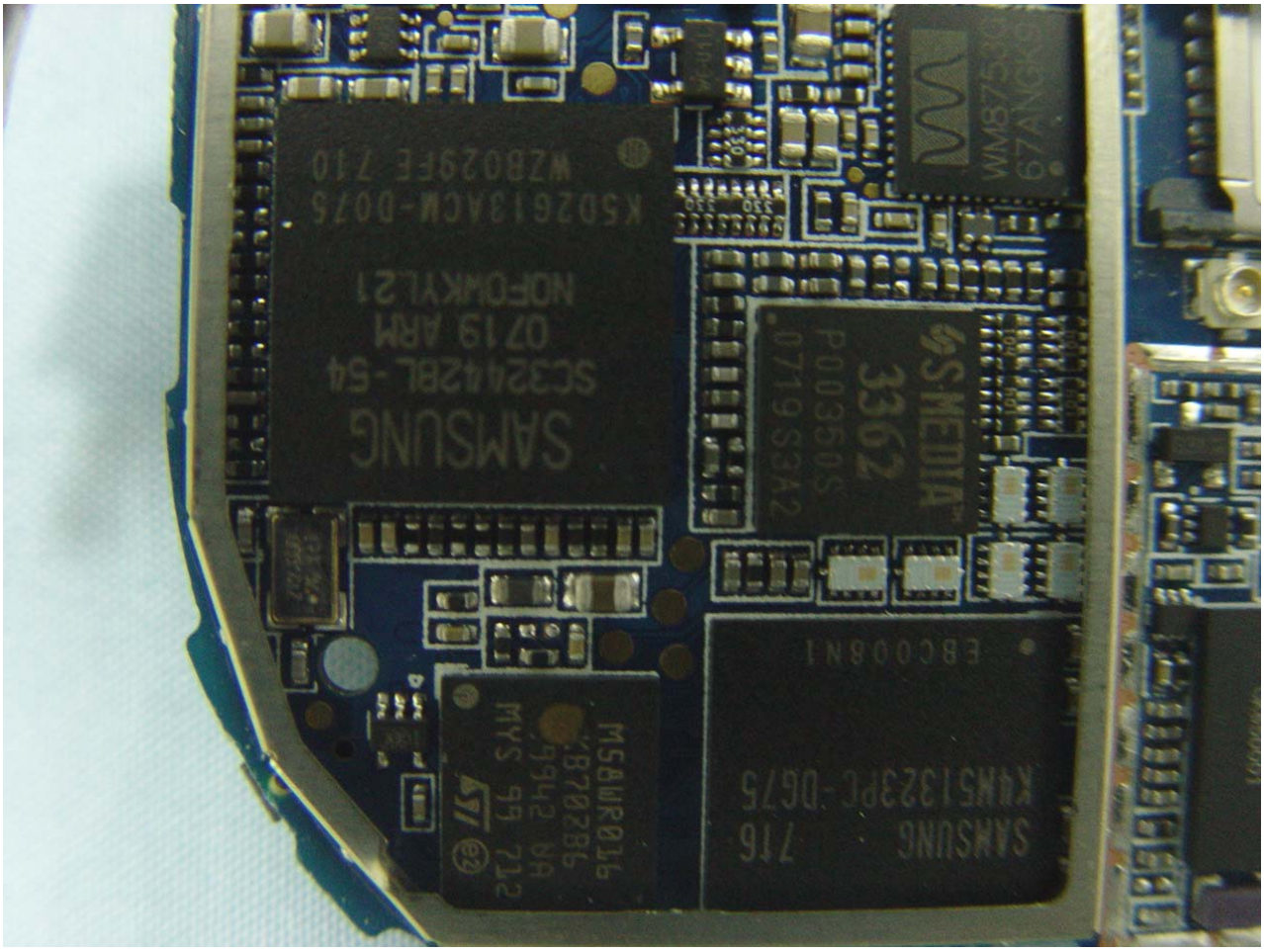
VBAT
VPWR_IRQ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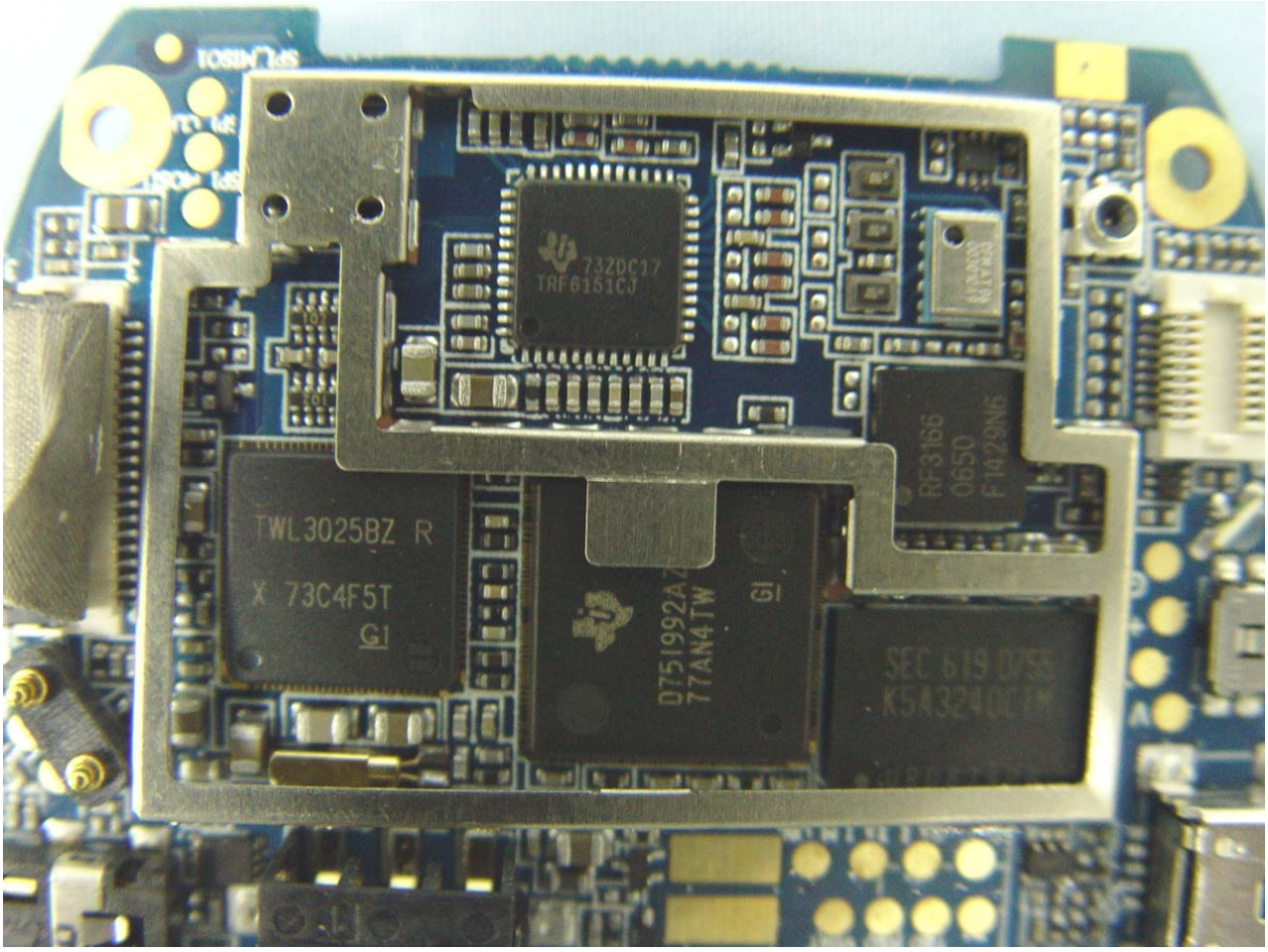
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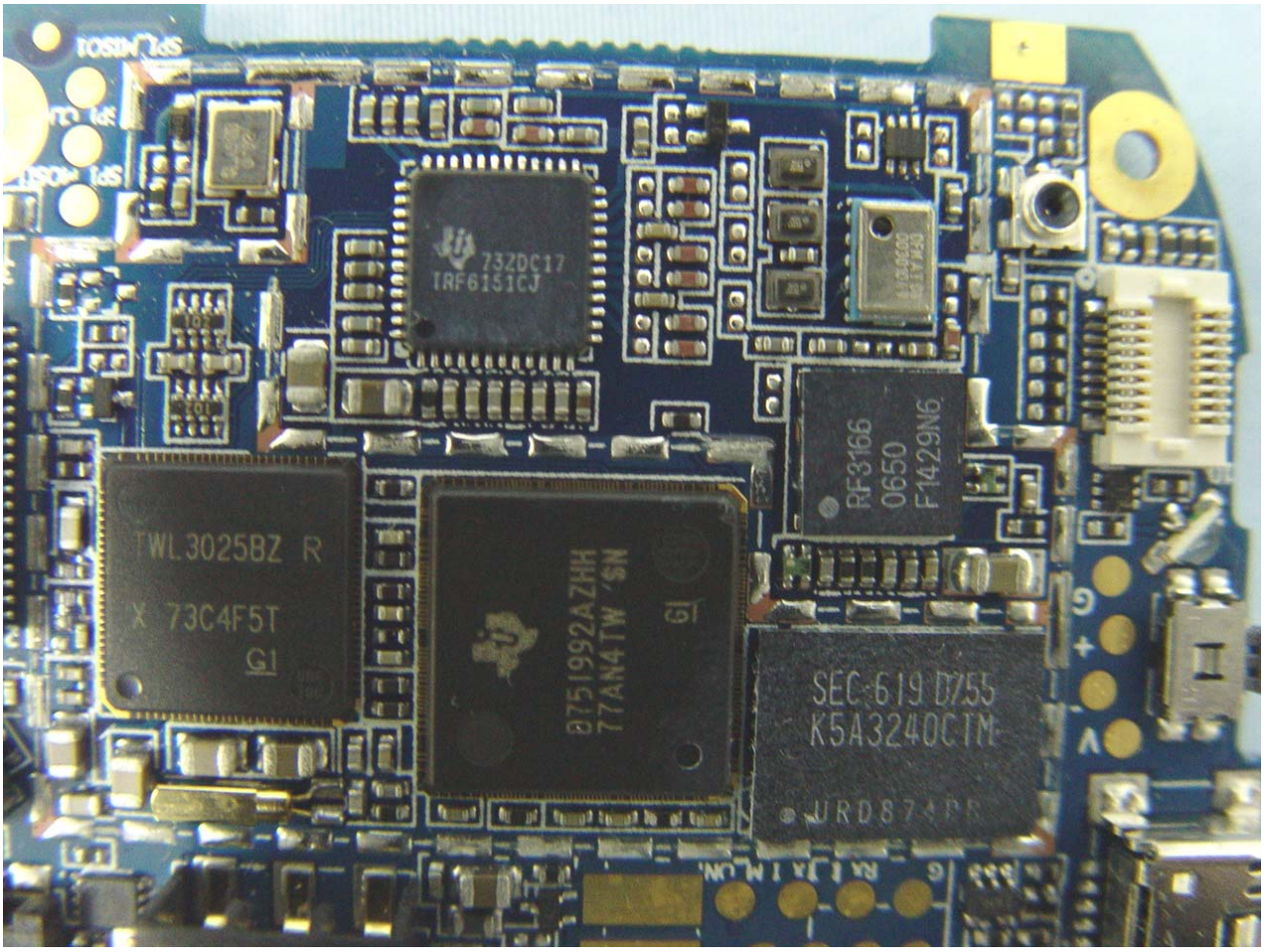
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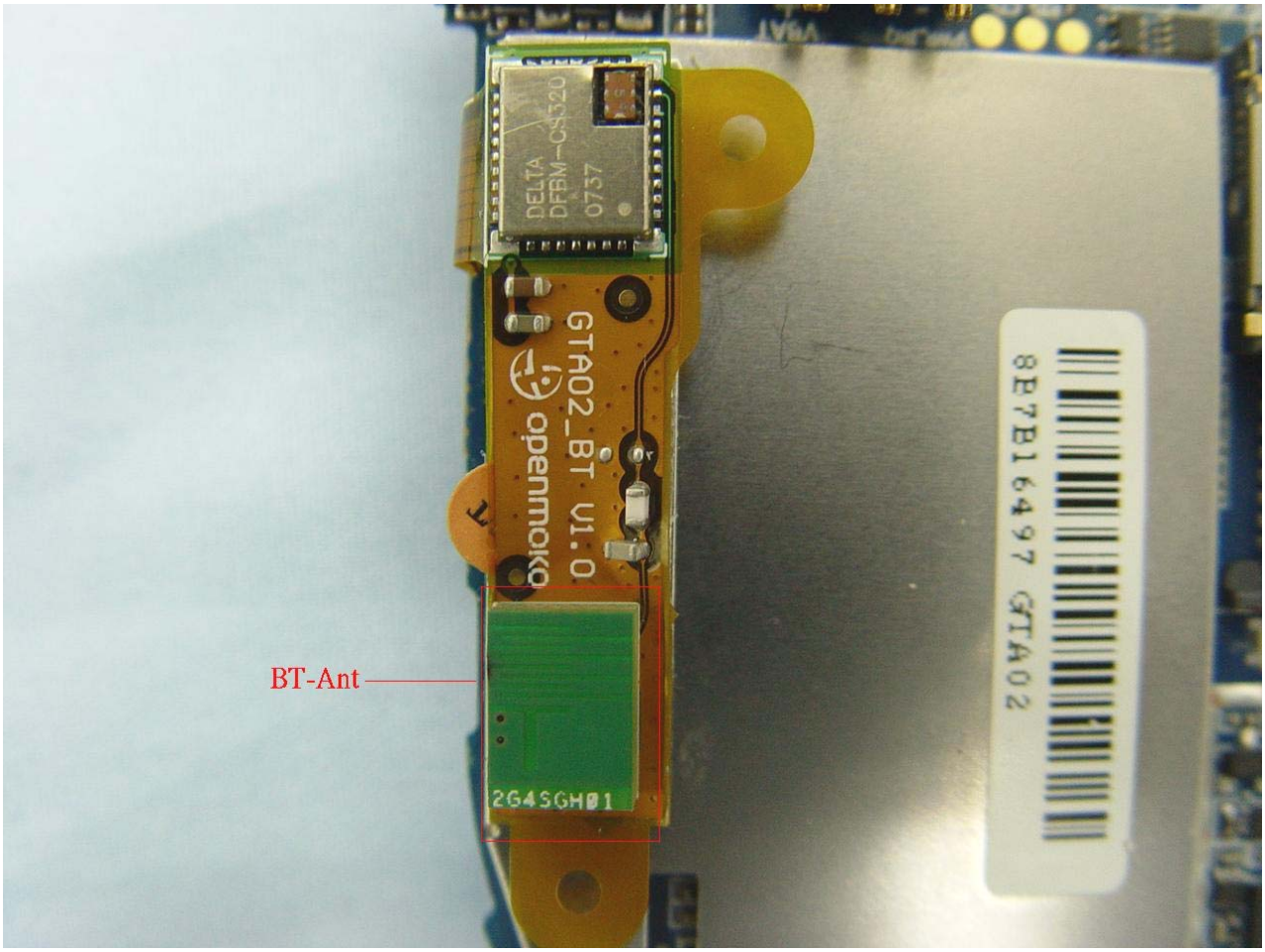
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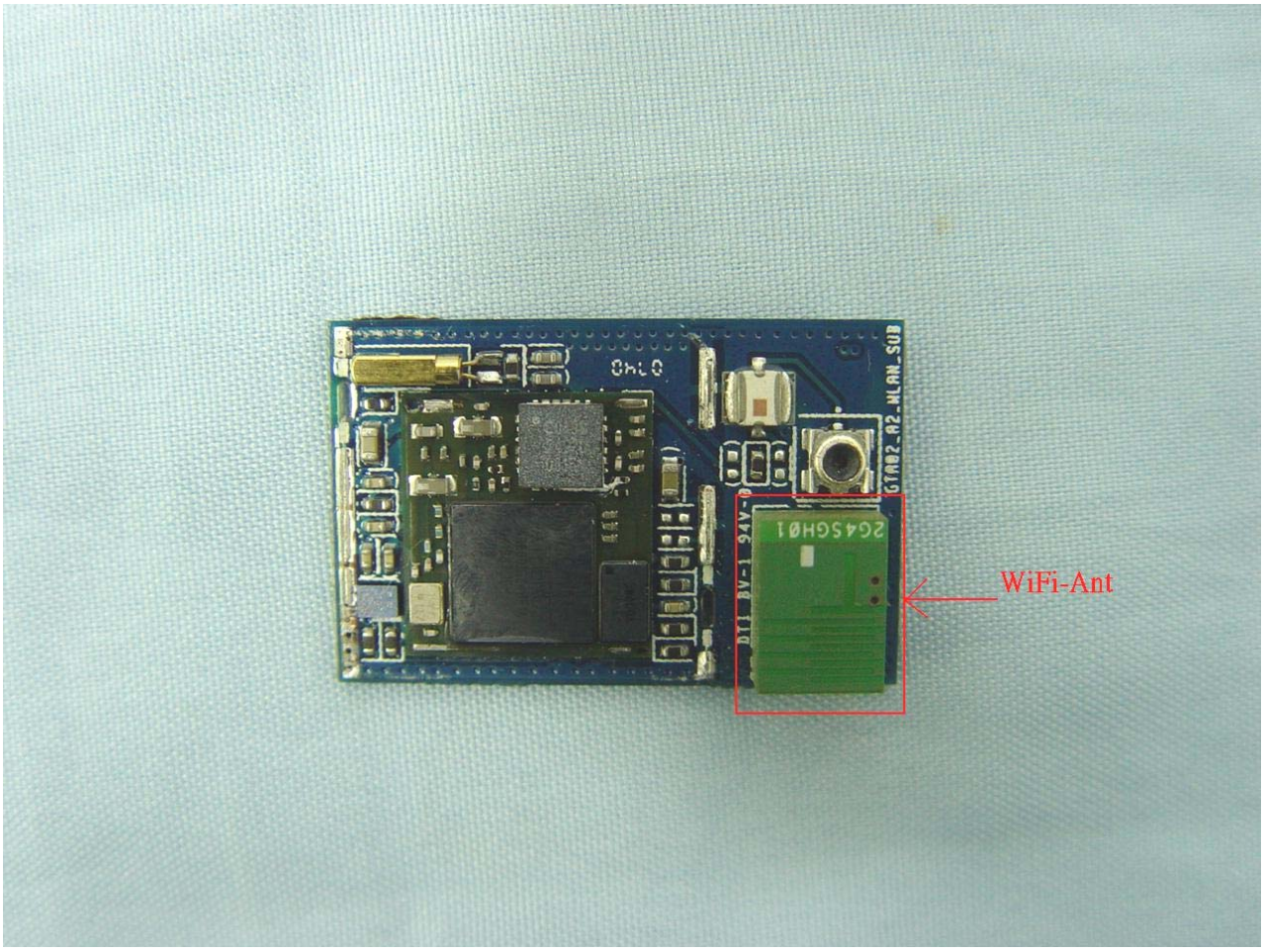
openmoko
2G4SGH01
8E7B16497 GTA02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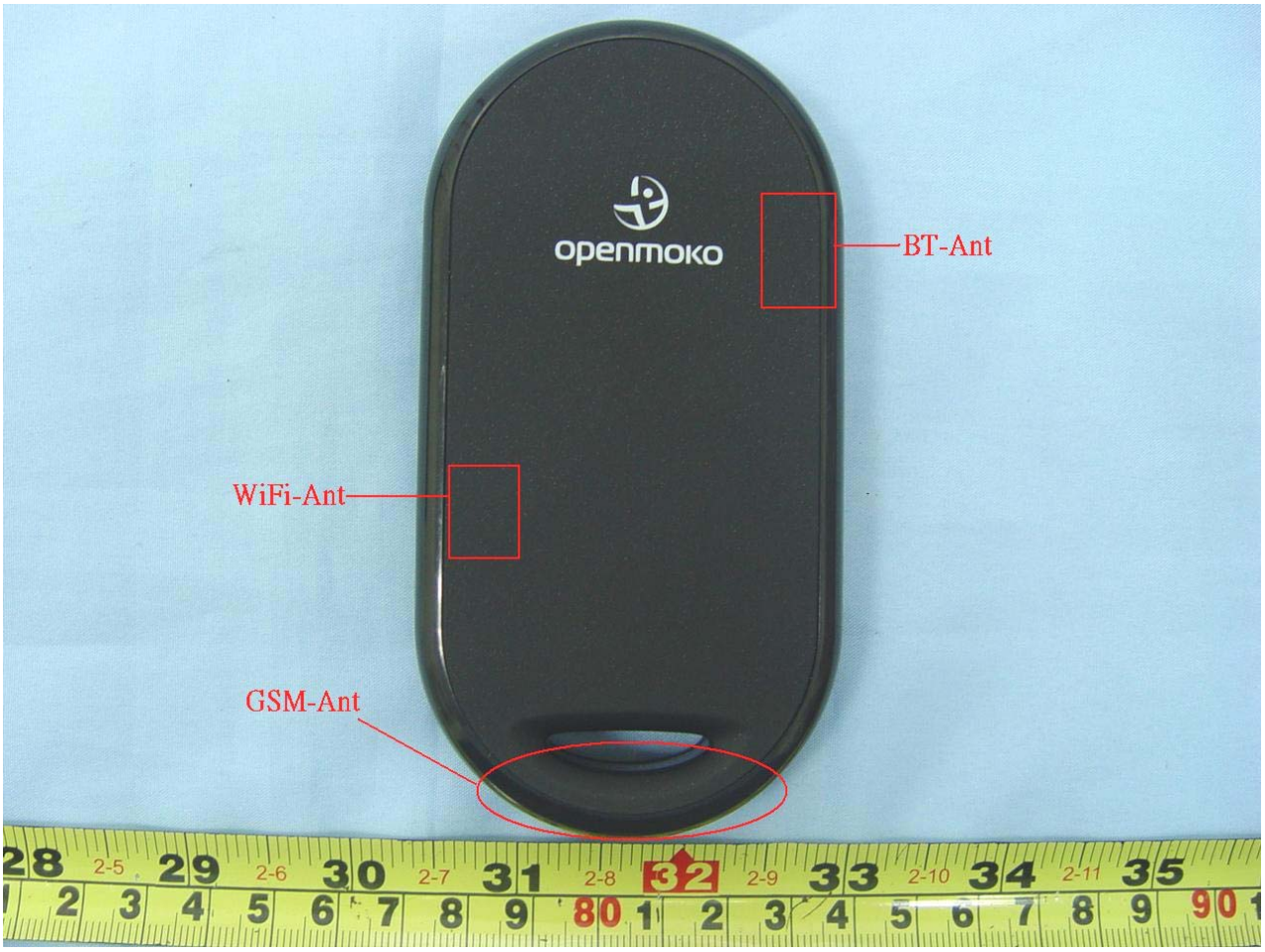
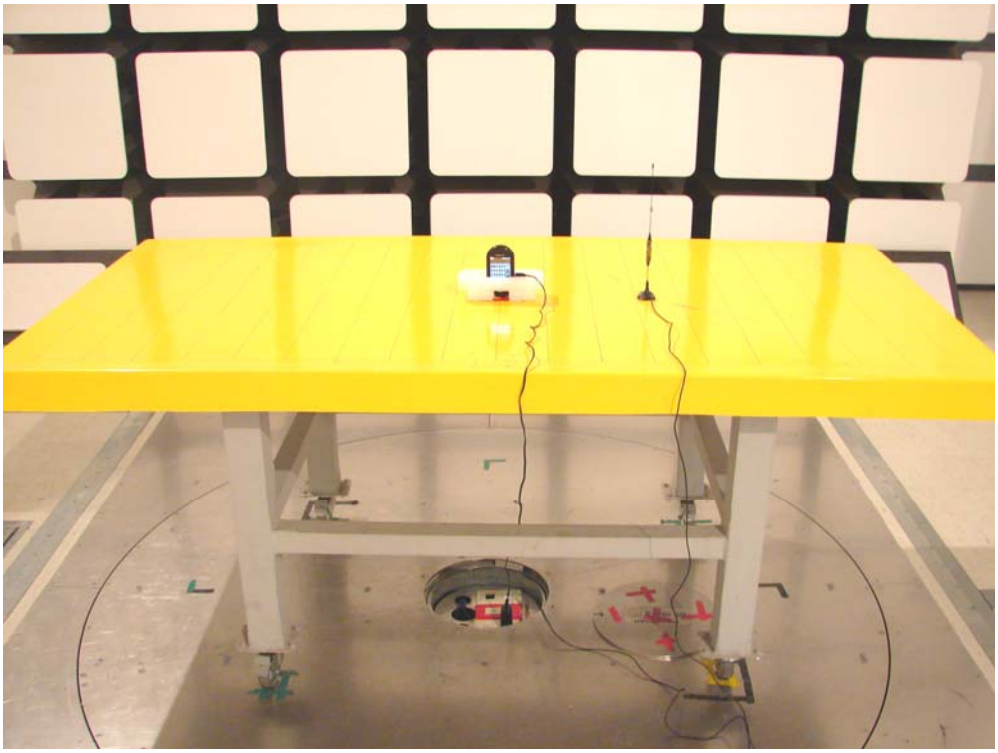

openmoko
BT-Ant
WiFi-Ant
GSM-Ant

Appendix C. Setup Photographs

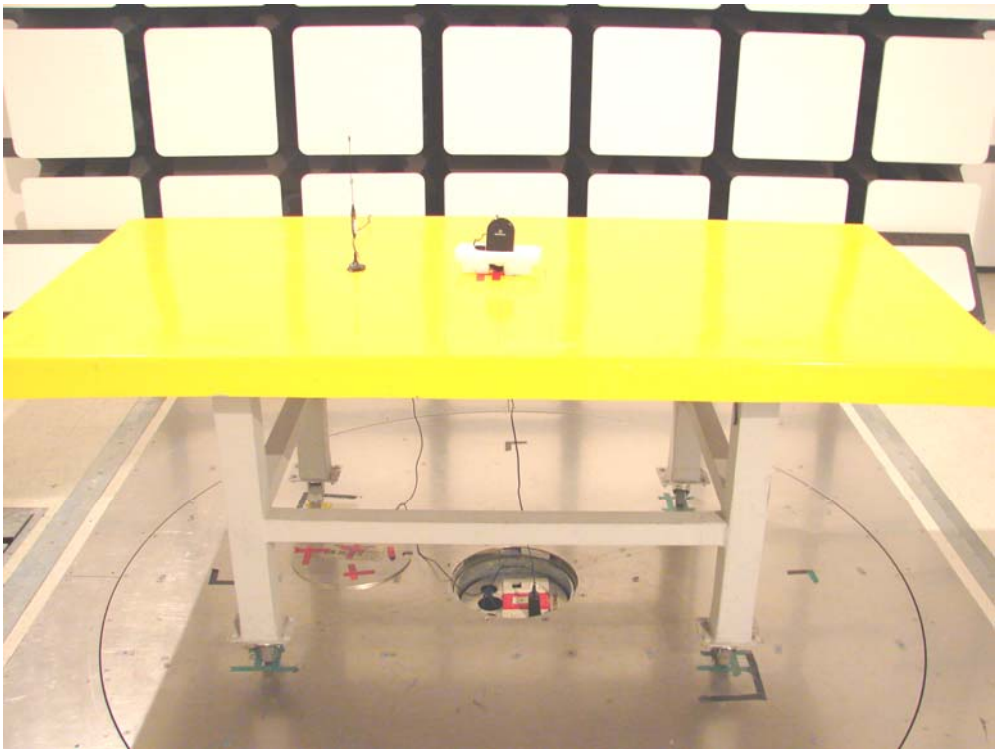
Spurious Radiation

Mode 1~2

FRONT VIEW

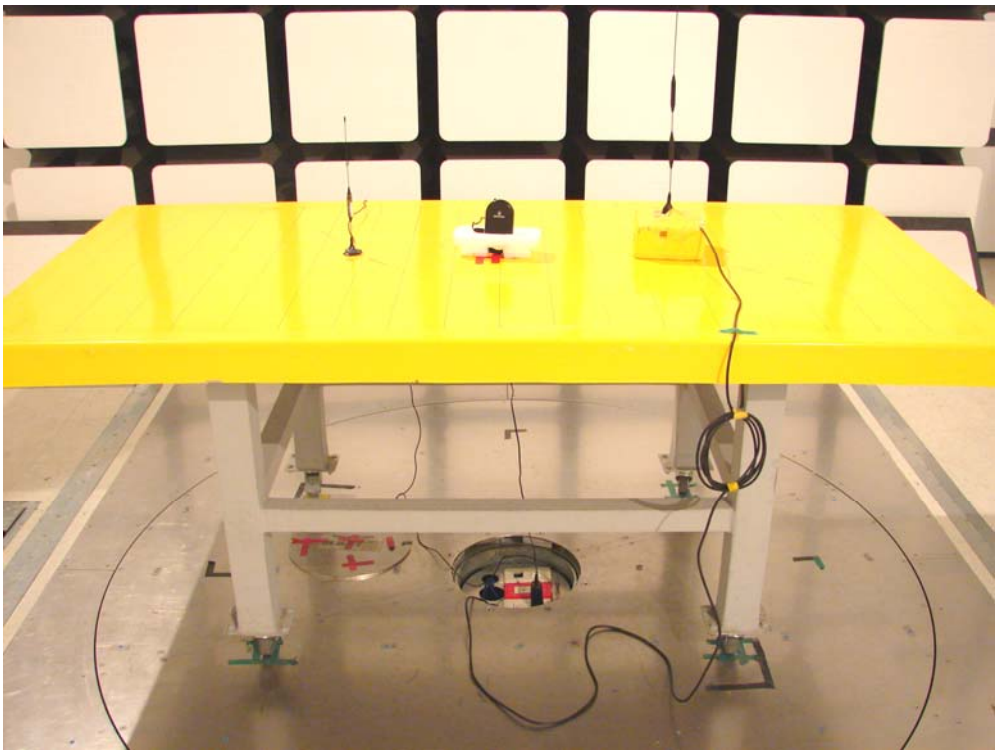
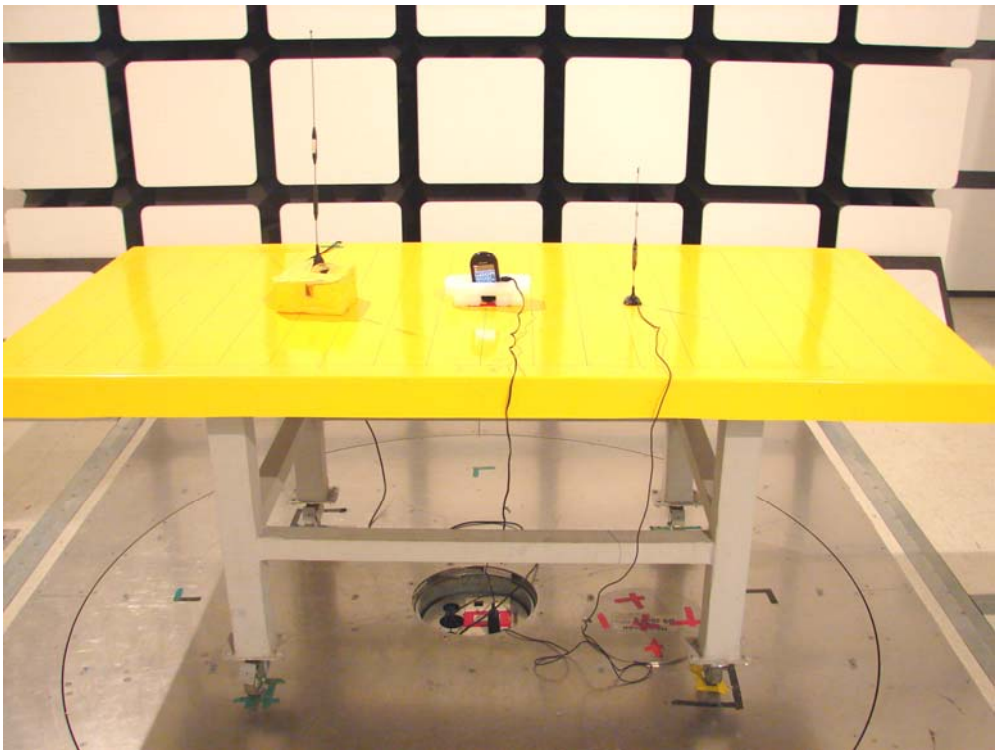


REAR VIEW



Mode 3

FRONT VIEW



REAR VIEW