

FCC TEST REPORT

for

47 CFR Part 22H and 24E

Equipment : **W11 GPRS with WLAN PCMCIA Card**

Model No. : **56W11**

FCC ID : **JVP56W11**

Filing Type : **Certification**

Applicant : **BENQ Corporation**
No. 157, Shan-Ying Road, Gueishan Taoyuan
333, Taiwan, R.O.C.

- 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.**

SPORTON International Inc.

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SPORTON International Inc.

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FCC ID JVP56W11

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Issued Date Mar. 11, 2004

The applicant has been cautioned as to the following:

15.21 Information to User.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) Special Accessories.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

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Required information per ISO/IEC Guide 25-1990, paragraph 13.2:

a) Test Report

b) Laboratory: Sporton International Inc.
No.52, Hwa-Ya 1st RD., Hwa Ya Technology Park, Kwei-Shan Hsiang,
TaoYuan Hsien, Taiwan, R.O.C.

c) Report Number: F422302

d) Client: BENQ Corporation
No. 157, Shan-Ying Road, Gueishan Taoyuan 333, Taiwan, R.O.C.

e) Identification: Model Name: 56W11
FCC ID : JVP56W11
Description: GSM/GPRS 850/1900 Radio

f) EUT Condition: Not required unless specified in individual tests.

g) Report Date: Mar. 11, 2004
EUT Received: Feb. 23, 2004

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with Sporton internal quality manual.

m) Supervised by:


Daniel Lee

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

Accessories Used During Testing:

Type	Model
EUT	56W11
Earpiece	N/A
Laptop	LOGITECH/M-BE58
	EPSON/STYLUS COLRO 680
	ACEEX/CM141
	GateWay/G9900H
	DELL/PP05L

List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and
22H, 24E, Confidentiality

Sub-Part 2.1033**(c)(1): Name and Address of Applicant:**

BENQ Corporation
No. 157, Shan-Ying Road, Gueishan Taoyuan 333,
Taiwan, R.O.C.

Manufacturer

As above

(c)(2): **FCC ID:** JVP56W11

Model Number: 56W11

(c)(3): Instruction Manual(s):

Please See Attached Exhibits

(c)(4): Type of Emission:**Test Mode:**

Mode 1	GSM/GPRS 850 CH189/ WLAN CH01
Mode 2	GSM/GPRS 850 CH189/ WLAN CH06
Mode 3	GSM/GPRS 850 CH189/ WLAN CH11
Mode 4	GSM/GPRS 1900 CH661/ WLAN CH01
Mode 5	GSM/GPRS 1900 CH661/ WLAN CH06
Mode 6	GSM/GPRS 1900 CH661/ WLAN CH11

(c)(5): **FREQUENCY RANGE, MHz:** 824.2 to 848.8 GSM/GPRS 850
1850.2 to 1909.8 GSM/GPRS 1900

(c)(6): **Power Rating, Watts:** 1.659 (GSM/GPRS 850)
0.832 (GSM/GPRS 1900)
Switchable x Variable N/A

(c)(7): **Maximum Power Rating, Watts:** 2 GSM/GPRS 850
1 GSM/GPRS 1900

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Subpart 2.1033 (continued)

(c)(8): Voltages & Currents in All Elements in Final RF Stage, Including Final Transistor or Solid State Device:

Collector Current, A = 0.5
Collector Voltage, Vdc = 5.0
Supply Voltage, Vdc = 5.0

(c)(9): **Tune-Up Procedure:**

Please See Attached Exhibits

(c)(10): **Circuit Diagram/Circuit Description:**

Please See Attached Exhibits

(c)(11): **Label Information:**

Please See Attached Exhibits

(c)(12): **Photographs:**

Please See Attached Exhibits


(c)(13): **Digital Modulation Description:**

☐ Attached Exhibits
☒ N/A

(c)(14): **Test and Measurement Data:**

Follows

Certificate of NVLAP Accreditation

United States Department of Commerce National Institute of Standards and Technology	
	
ISO/IEC 17025:1999 ISO 9002:1994	
Certificate of Accreditation	
SPORTON INTERNATIONAL, INC. TAIPEI HSIEN 221 TAIWAN	
<i>is recognized by the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria set forth in NIST Handbook 150:2001, all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994. Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:</i>	
ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS	
December 31, 2004 <i>Effective through</i>	 <i>For the National Institute of Standards and Technology</i> NVLAP Lab Code: 200079-0

NVLAP-01C (06-01)

Sub-part

2.1033(c)(14): Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts:

- 21 – Domestic Public Fixed Radio Services
- 22 – Public Mobile Services
- x 22 Subpart H - Cellular Radiotelephone Service
 - 22.901(d) - Alternative technologies and auxiliary services
- 23 – International Fixed Public Radio communication services
- x 24 – Personal Communications Services
 - 74 Subpart H - Low Power Auxiliary Stations
 - 80 – Stations in the Maritime Services
 - 80 Subpart E - General Technical Standards
 - 80 Subpart F - Equipment Authorization for Compulsory Ships
 - 80 Subpart K - Private Coast Stations and Marine Utility Stations
 - 80 Subpart S - Compulsory Radiotelephone Installations for Small Passenger Boats
 - 80 Subpart T - Radiotelephone Installation Required for Vessels on the Great Lakes
 - 80 Subpart U - Radiotelephone Installations Required by the Bridge-to-Bridge Act
 - 80 Subpart V - Emergency Position Indicating Radio beacons (EPIRB'S)
 - 80 Subpart W - Global Maritime Distress and Safety System (GMDSS)
 - 80 Subpart X - Voluntary Radio Installations
- 87 – Aviation Services
- 90 – Private Land Mobile Radio Services
- 94 – Private Operational-Fixed Microwave Service
- 95 Subpart A - General Mobile Radio Service (GMRS)
- 95 Subpart C - Radio Control (R/C) Radio Service
- 95 Subpart D - Citizens Band (CB) Radio Service
- 95 Subpart E - Family Radio Service
- 95 Subpart F - Interactive Video and Data Service (IVDS)
- 97 - Amateur Radio Service
- 101 – Fixed Microwave Services

General Information

Product Feature & Specification	
1. Host/Radio Interface	PCMCIA Card Type II
2. Type of Modulation	DBPSK, DQPSK, CCK/ WLAN; GMSK/ GPRS
3. Number of Channels	WLAN: 1 to 11 GSM/GPRS 850 : 128 to 251 GSM/GPRS 1900 : 512 to 810
4. Frequency Band , MHz	WLAN Tx/Rx : 2412~2462 GSM/GPRS 850 Tx : 824~849 GSM/GPRS 1900 Tx : 1850~1910 GSM/GPRS 850 Rx : 869~894 GSM/GPRS 1900 Rx : 1930~1990
5. Channel Bandwidth	WLAN: 5 MHz GSM/ GPRS: 200KHz
6. Maximum Output Power to Antenna	WLAN: 18 dBm GSM/GPRS 850: 33 dBm GSM/GPRS 1900: 30 dBm
7. Power Rating (DC/AC , Voltage)	DC 5V \pm 0.5V
8. Basic function of product	WLAN GPRS Multi-Slot Class 10
9. Temperature Range (Operating)	0°C ~ 55°C
10. Humidity	15%~85%, HR

**Standard Test Conditions
and
Engineering Practices**

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with TIA603, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst-case measurements.

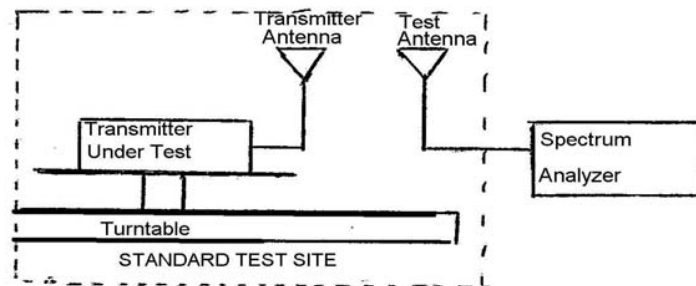
Name of Test: EIRP Carrier Power (Radiated)

Specification: TIA/EIA 603A (Substitution Method)

Definition: The average radiated power of device is the equivalent power required, when delivered to a substitution antenna, to produce at a distant point the same average received power as produced by the licensed device.

Method Of Measurement:

a) Connect the equipment as illustrated. Place the transmitter to be tested on the turntable in the standard test site.



b) Raise and lower the test antenna from 1m to 4m and rotate turntable from 0° to 360°. Record the highest received signal showed in spectrum analyzer as R_t . Calculate electric field strength in receive antenna as E_t .

$$E_t = R_t + AF$$

AF (dB/m): Receive Antenna Factor

c) Replace the transmitter under test with a substitution antenna. The center of the antenna should be at the same location as the transmitter under test. Connect the antenna to a signal generator with a known output power level P_s . Raise and lower the test antenna like in step b) and record the highest received signal showed in spectrum analyzer as R_s . Calculate electric field strength in receive antenna as E_s .

$$E_s = R_s + AF$$

AF (dB/m): Receive Antenna Factor

d) Calculate radiated power as following:

$$\text{EIRP} = P_s + E_t - E_s + G_s$$

P_s (dBm): Input Power to Substitution Antenna

G_s (dBi): Substitution Antenna Gain

Results Attached

FCC TEST REPORT

Report No. : F422302

Test Results For: EIRP Carrier Power (Radiated)**Conducted Power**

GSM/GPRS 850

Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
GSM850	128	824.2 (Low)	31.8	1.513
	189	836.4 (Mid)	32.0	1.585
	251	848.8 (High)	32.2	1.659

GSM/GPRS 1900

Bands	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
GSM1900	512	1850.2 (Low)	29.2	0.832
	661	1880.0 (Mid)	29.1	0.813
	810	1909.8 (High)	28.2	0.661

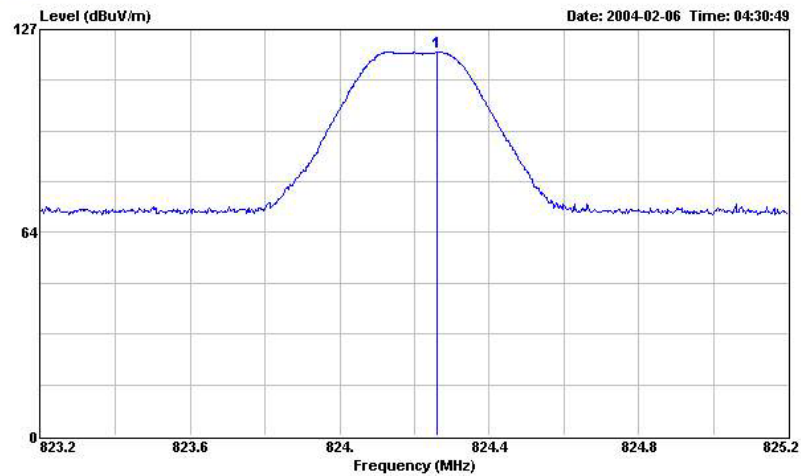
EIRP**GSM/GPRS 850 EIRP**

Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBd	Et dBuV/m	Es dBuV/m	Et - Es dB	Radiated Power dBm	Radiated Power Watts
824.26	V	-2.49	0.53	119.9	92.90	27.00	25.05	0.320
836.47	V	-2.49	0.61	119.41	93.19	26.22	24.34	0.272
848.73	V	-2.48	0.69	121.4	93.52	27.88	26.09	0.407
824.13	H	-2.49	0.53	131.09	93.62	37.47	35.51	3.557
836.33	H	-2.49	0.61	131.02	93.85	37.17	35.29	3.383
848.73	H	-2.48	0.69	130.11	94.09	36.02	34.23	2.651

GSM/GPRS 1900 EIRP

Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBi	Et dBuV/m	Es dBuV/m	Et - Es dB	Radiated Power dBm	Radiated Power Watts
1850.18	V	-3.76	6.64	119.74	101.70	18.04	20.93	0.124
1880.04	V	-3.78	6.65	120.91	101.64	19.27	22.14	0.164
1909.82	V	-3.81	6.66	120.91	101.58	19.33	22.18	0.165
1850.24	H	-3.76	6.64	123.74	101.70	22.04	24.93	0.311
1879.96	H	-3.78	6.65	125.16	101.64	23.52	26.39	0.436
1909.66	H	-3.81	6.66	127.44	101.58	25.86	28.71	0.744

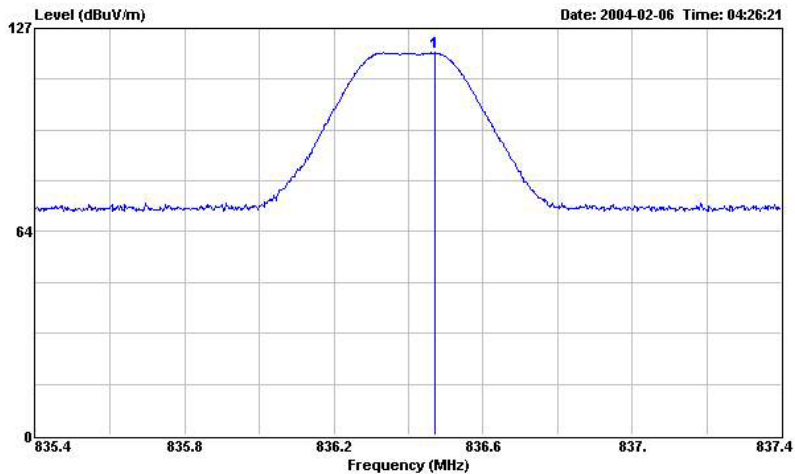
GSM/GPRS 850 CH128 Vertical Polarization



Site : 03CH03-HY
 Condition : 3m LOG-9111-221 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH128

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 824.260	119.90	-----	-----	97.74	20.62	1.54	0.00	Peak	100	286

GSM/GPRS 850 CH189 Vertical Polarization



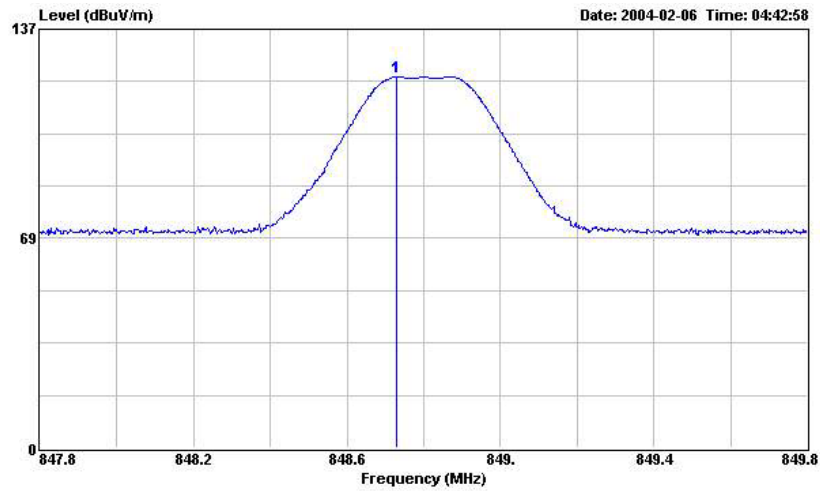
Site : 03CH03-HY
 Condition : 3m LOG-9111-221 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 836.470	119.41	-----	-----	96.88	20.74	1.79	0.00	Peak	102	282

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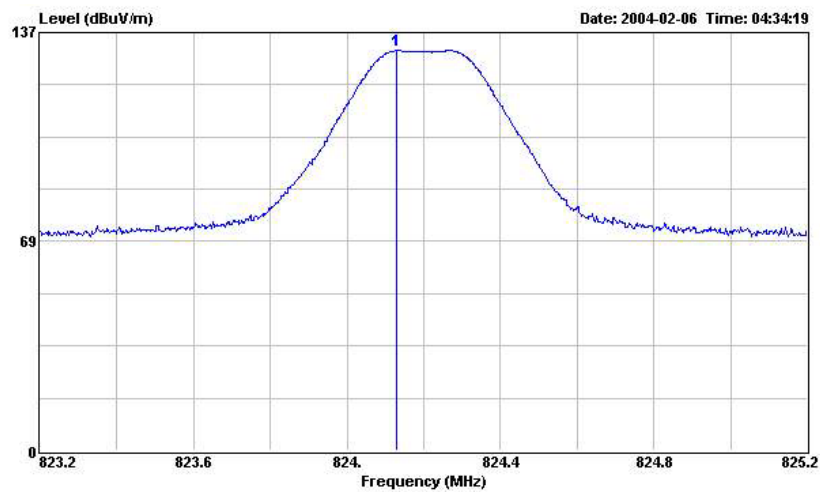
GSM 850/GPRS CH251 Vertical Polarization



Site : 03CH03-HY
Condition : 3m LOG-9111-221 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM850 CH251

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
			dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	848.730	121.40	-----	-----	98.99	20.86	1.55	0.00	Peak	100	285

GSM/GPRS 850 CH128 Horizontal Polarization



Site : 03CH03-HY
Condition : 3m LOG-9111-221 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM850 CH128

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
			dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	824.130	131.09	-----	-----	108.93	20.62	1.54	0.00	Peak	119	18

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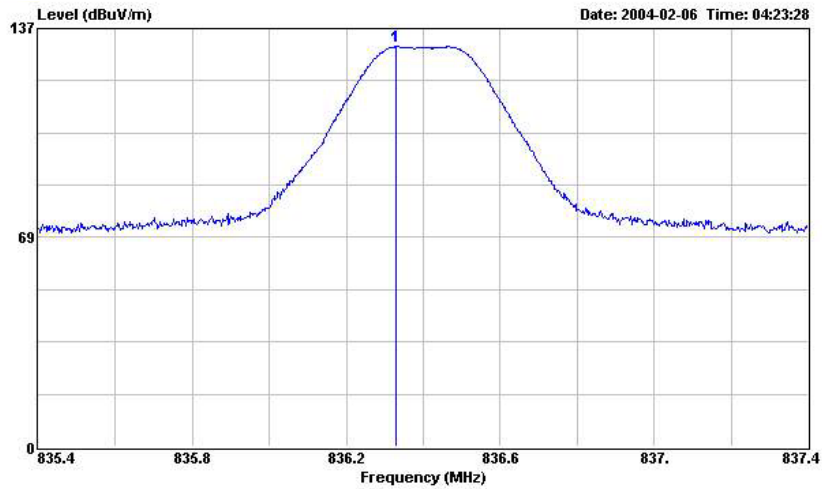
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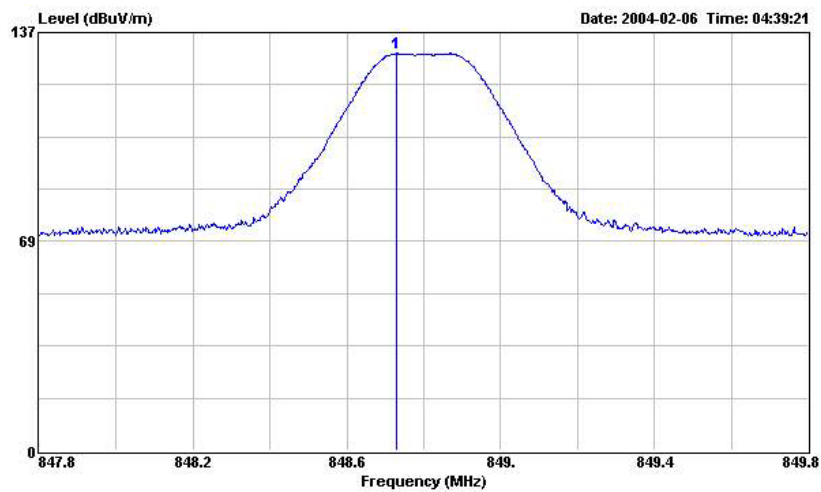
GSM/GPRS 850 CH189 Horizontal Polarization



Site : 03CH03-HY
 Condition : 3m LOG-9111-221 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
		dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	836.330	131.02	-----	108.49	20.74	1.79	0.00	Peak	118	7

GSM/GPRS 850 CH251 Horizontal Polarization



Site : 03CH03-HY
 Condition : 3m LOG-9111-221 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH251

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
		dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	848.730	130.11	-----	107.70	20.86	1.55	0.00	Peak	113	30

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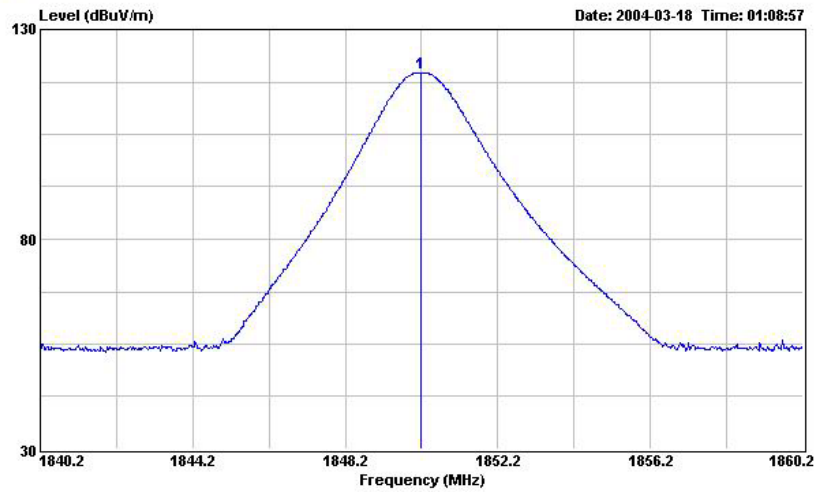
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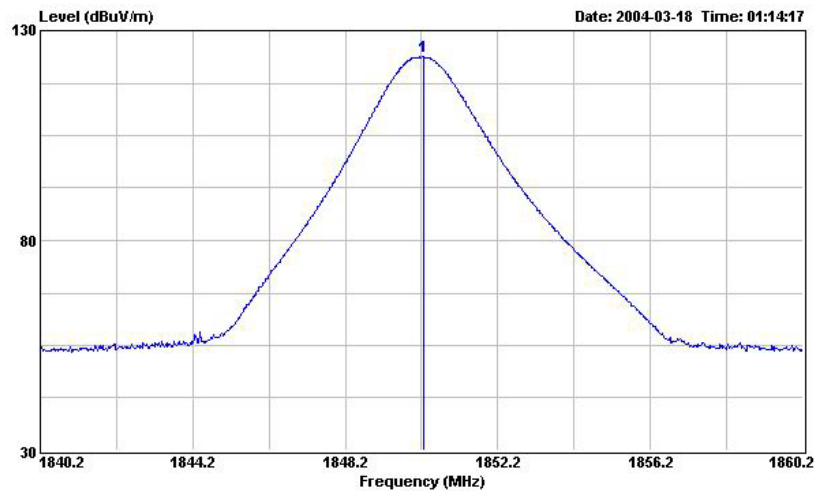
GSM/GPRS 1900 CH512 Vertical Polarization



Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH512

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	Remark	Pos	Pos
1 1850.180	119.74	-----	-----	91.28	26.81	1.65	0.00	Peak	---	---

GSM/GPRS 1900 CH661 Vertical Polarization



Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH512

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	Remark	Pos	Pos
1 1850.240	123.74	-----	-----	95.28	26.81	1.65	0.00	Peak	---	---

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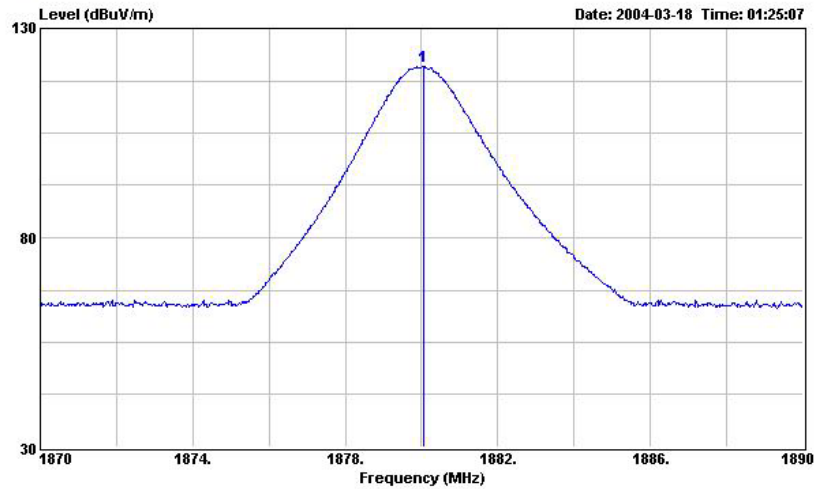
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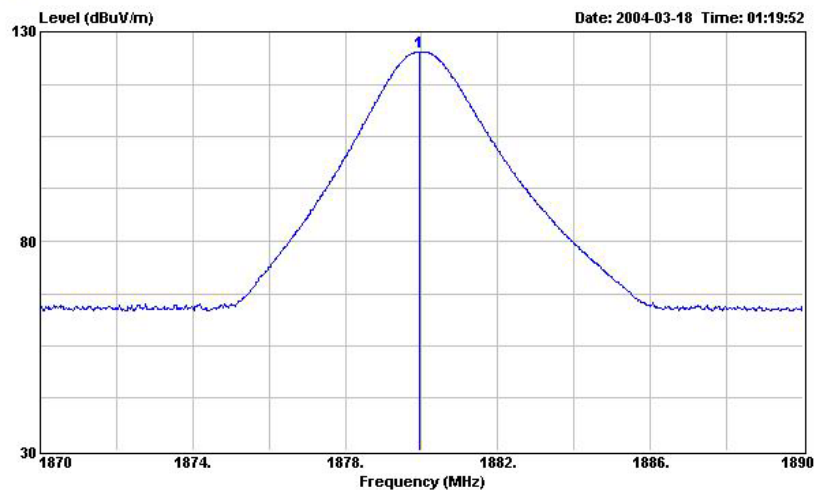
GSM/GPRS 1900 CH810 Vertical Polarization



Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1880.040	120.91	-----	92.41	26.91	1.59	0.00	Peak	---	---

GSM/GPRS 1900 CH512 Horizontal Polarization



Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1879.960	125.16	-----	96.66	26.91	1.59	0.00	Peak	---	---

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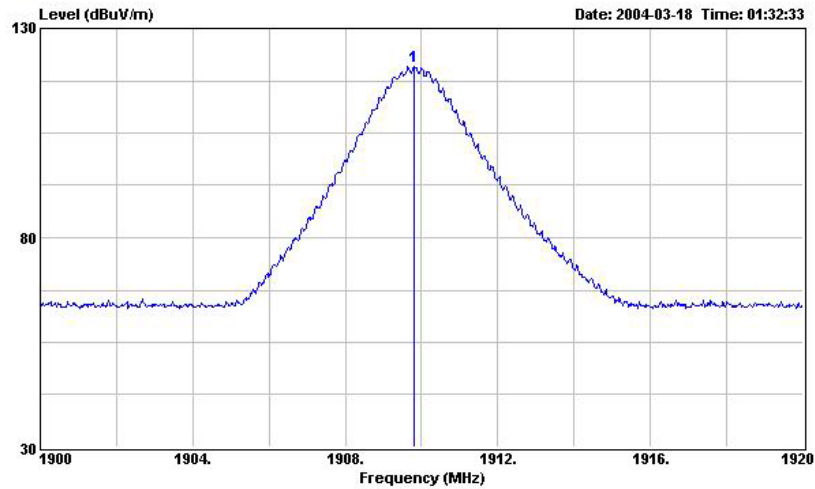
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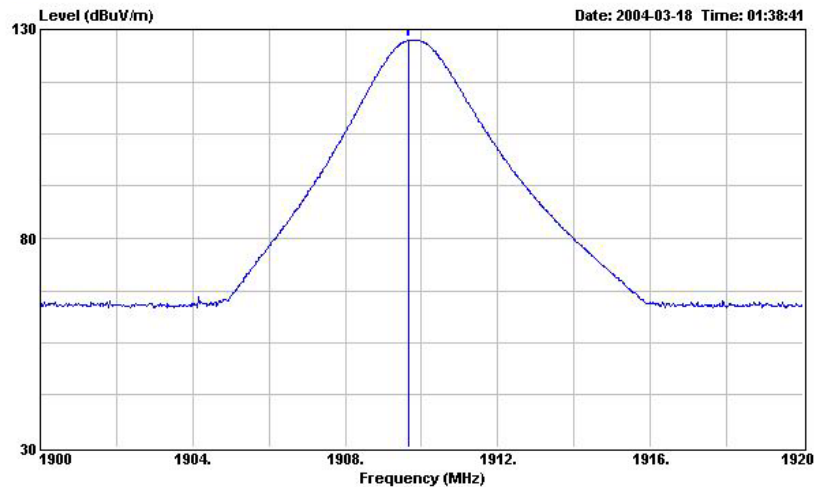
GSM/GPRS 1900 CH661 Horizontal Polarization



Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH810

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 1909.820	120.91	-----	-----	92.29	27.05	1.57	0.00	Peak	---	---

GSM/GPRS 1900 CH810 Horizontal Polarization



Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH810

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 1909.660	127.44	-----	-----	98.82	27.05	1.57	0.00	Peak	---	---

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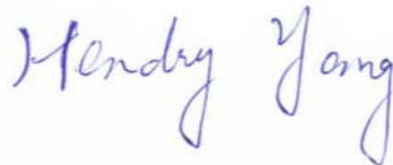
Name of Test: Emission Masks (Occupied Bandwidth)

Specification: 47 CFR 2.1049(c)(1), 22

Test Equipment: As per attached page

Measurement Procedure

1. The EUT and test equipment were set up as shown on the following page with the Spectrum Analyzer connected.
2. For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.
3. The occupied bandwidth was measured with the Spetrum Analyzer controls set as shown on the test results.
4. Measurement Results: Attached



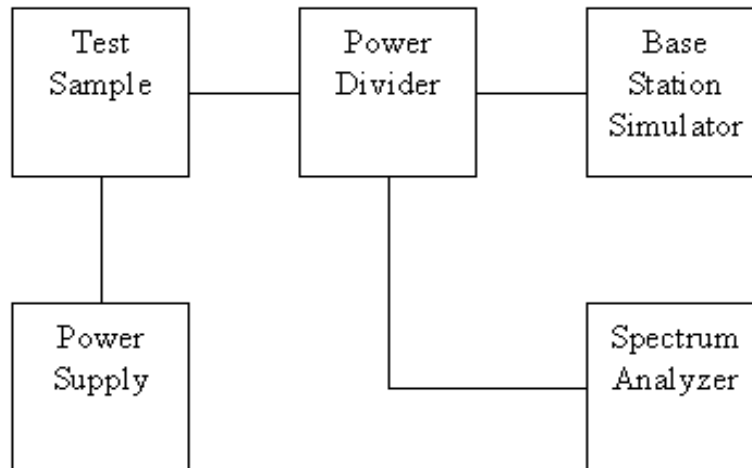
Performed By:

Hendry Yang

Transmitter Spurious Emission

Test A. Occupied Bandwidth (In-Band Spurious)

Test B. Out-of-Band Spurious

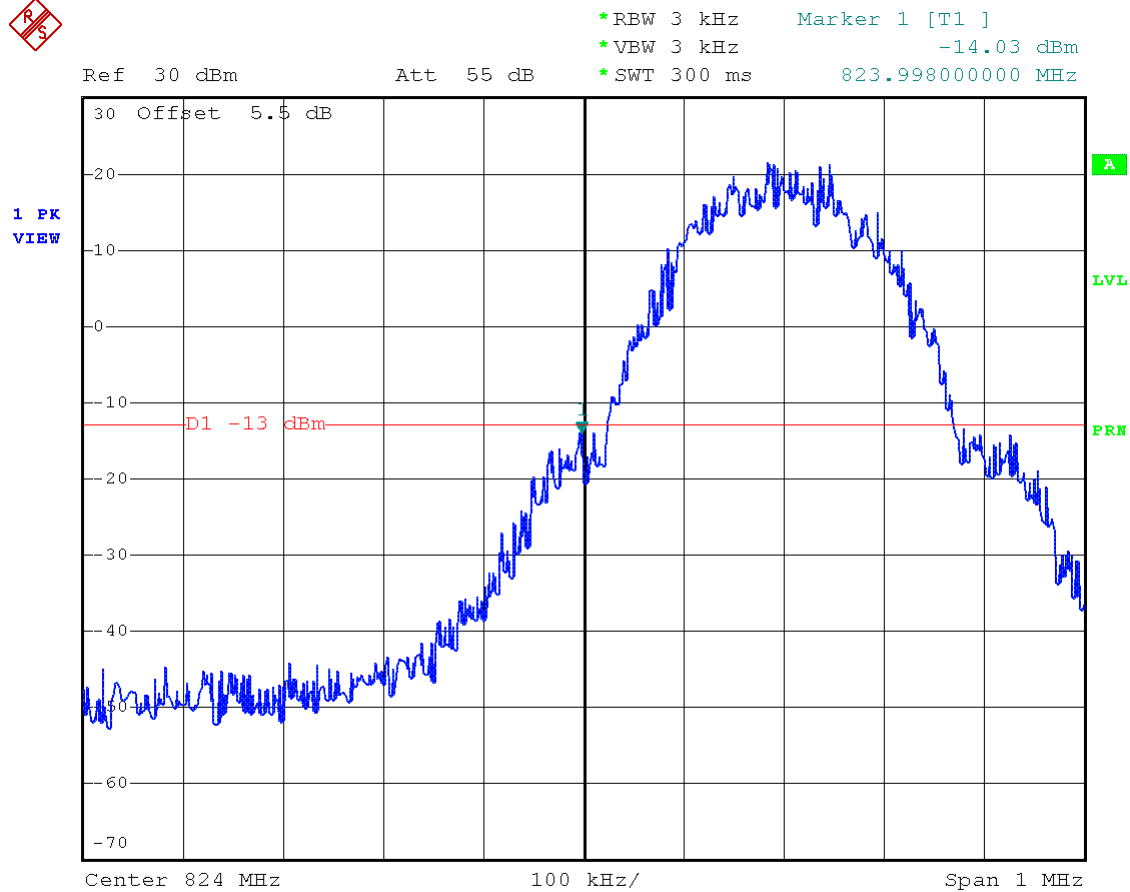


Asset	Model Name	S/N
Base Station Simulator	CMU200	102278
Spectrum Analyzer	FSP30	838858/014
AC/DC Power Source	HPA-500W	HPA0100024

FCC TEST REPORT

Report No. : F422302

Name of Test: Emission Masks (Occupied Bandwidth)
State 2:High Power



Date: 7.FEB.2004 15:11:14

Power: HIGH
Modulation: GSM/GPRS 850
LOWER BAND EDGE

Hendry Yang

Performed By: Hendry Yang

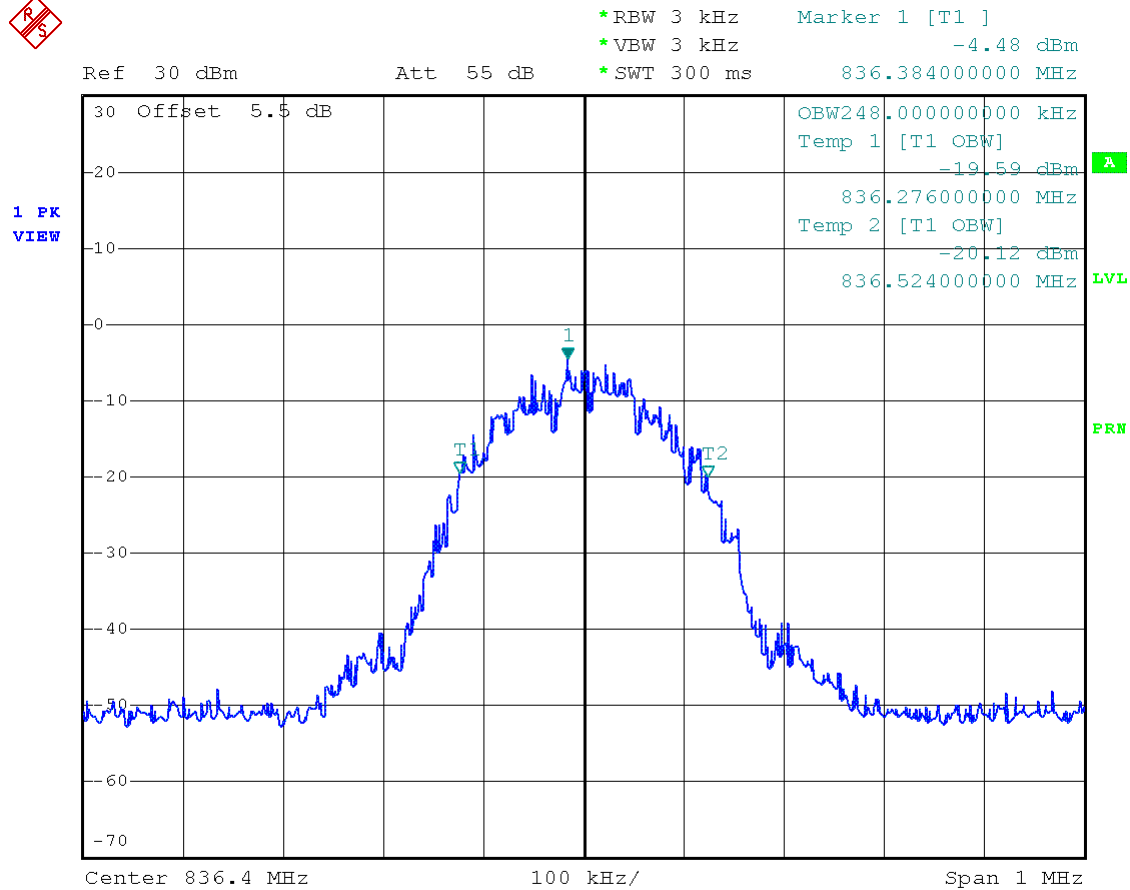
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FCC TEST REPORT

Report No. : F422302

Name of Test: Emission Masks (Occupied Bandwidth)
State 1:Low Power



Date: 7.FEB.2004 15:28:16

Power: LOW
Modulation: GSM/GPRS 850
99% BANDWIDTH

Hendry Yang

Performed By: Hendry Yang

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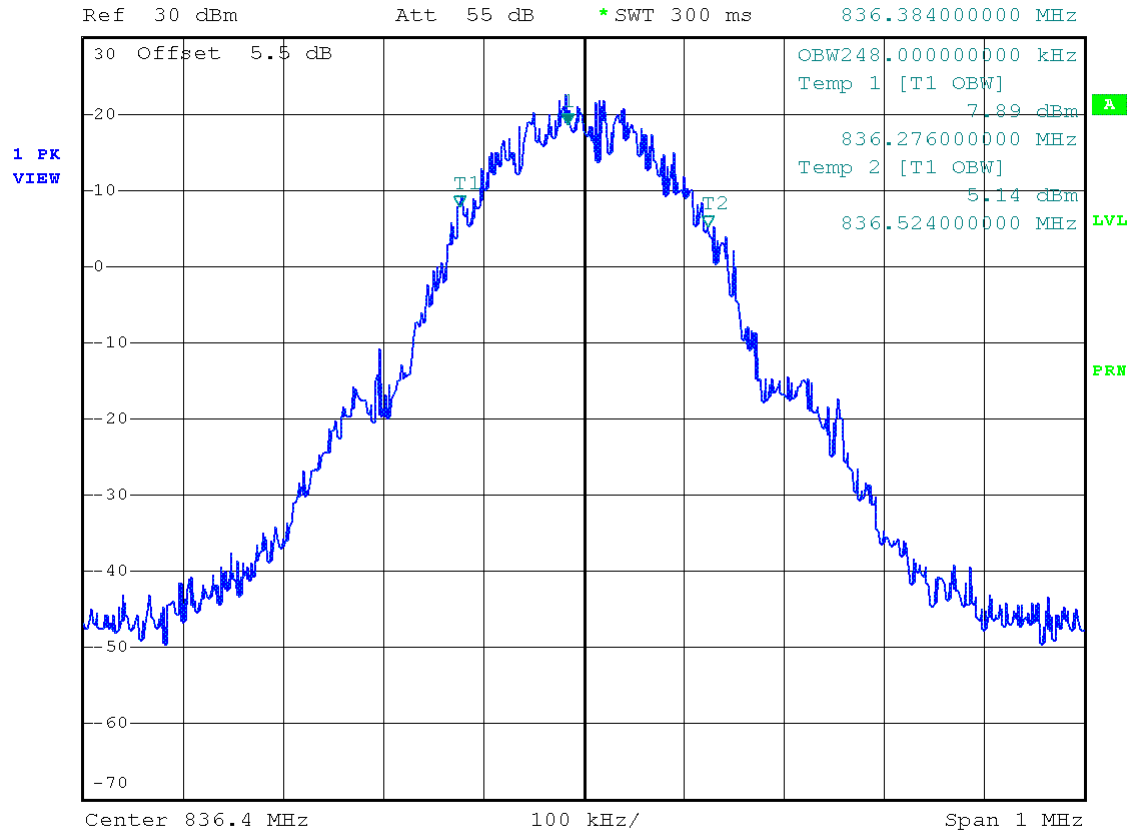
FCC TEST REPORT

Report No. : F422302

Name of Test: Emission Masks (Occupied Bandwidth)
State 2:High Power



*RBW 3 kHz Marker 1 [T1]
*VBW 3 kHz 18.57 dBm
*SWT 300 ms 836.384000000 MHz



Date: 7.FEB.2004 15:23:01

Power: HIGH
Modulation: GSM/GPRS 850
99% BANDWIDTH

Hendry Yang

Performed By: Hendry Yang

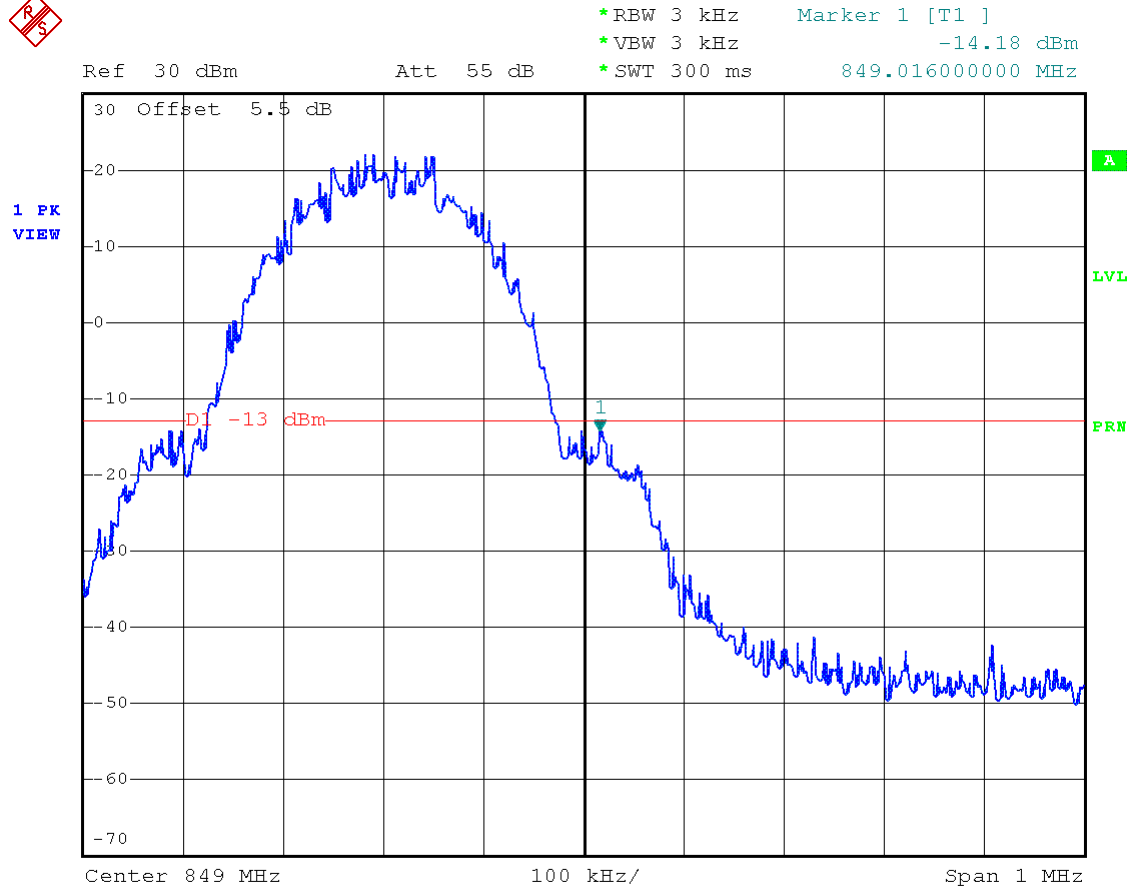
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FCC TEST REPORT

Report No. : F422302

Name of Test: Emission Masks (Occupied Bandwidth)
State 2:High Power



Date: 7.FEB.2004 15:17:18

Power: HIGH
Modulation: GSM/GPRS 850
UPPER BAND EDGE

Hendry Yang

Performed By: Hendry Yang

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FCC TEST REPORT

Report No. : F422302

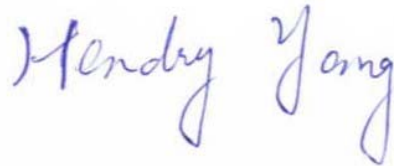
Name of Test: Transmitter Conducted Measurements

Specification: 47 CFR 2.1051: Unwanted (spurious) Emissions
2.1049(c), 24.238(b): Occupied Bandwidth
24: Emissions at Band Edges

Test Equipment: As per attached page

Measurement Procedure

1. The EUT and test equipment were set up as shown on the following page with the Spectrum Analyzer connected.
2. The low and high channels for all RF powers within the Transmitting frequency band were measured.
3. Measurement Results: Attached



Performed By:

Hendry Yang

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FCC ID JVP56W11

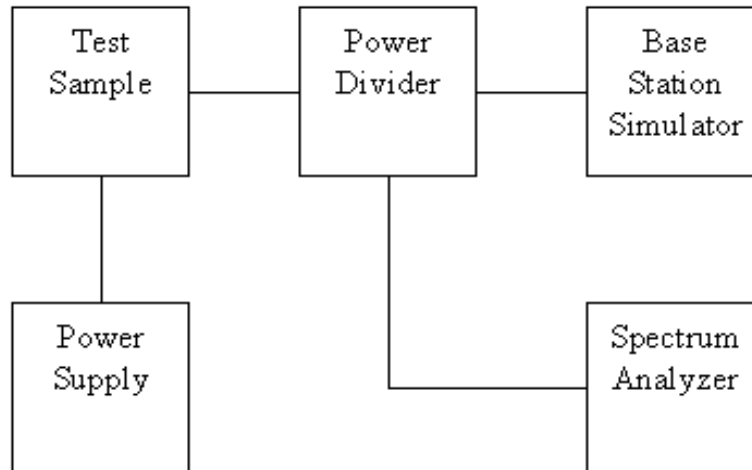
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Transmitter Spurious Emission

Test A. Occupied Bandwidth (In-Band Spurious)

Test B. Out-of-Band Spurious

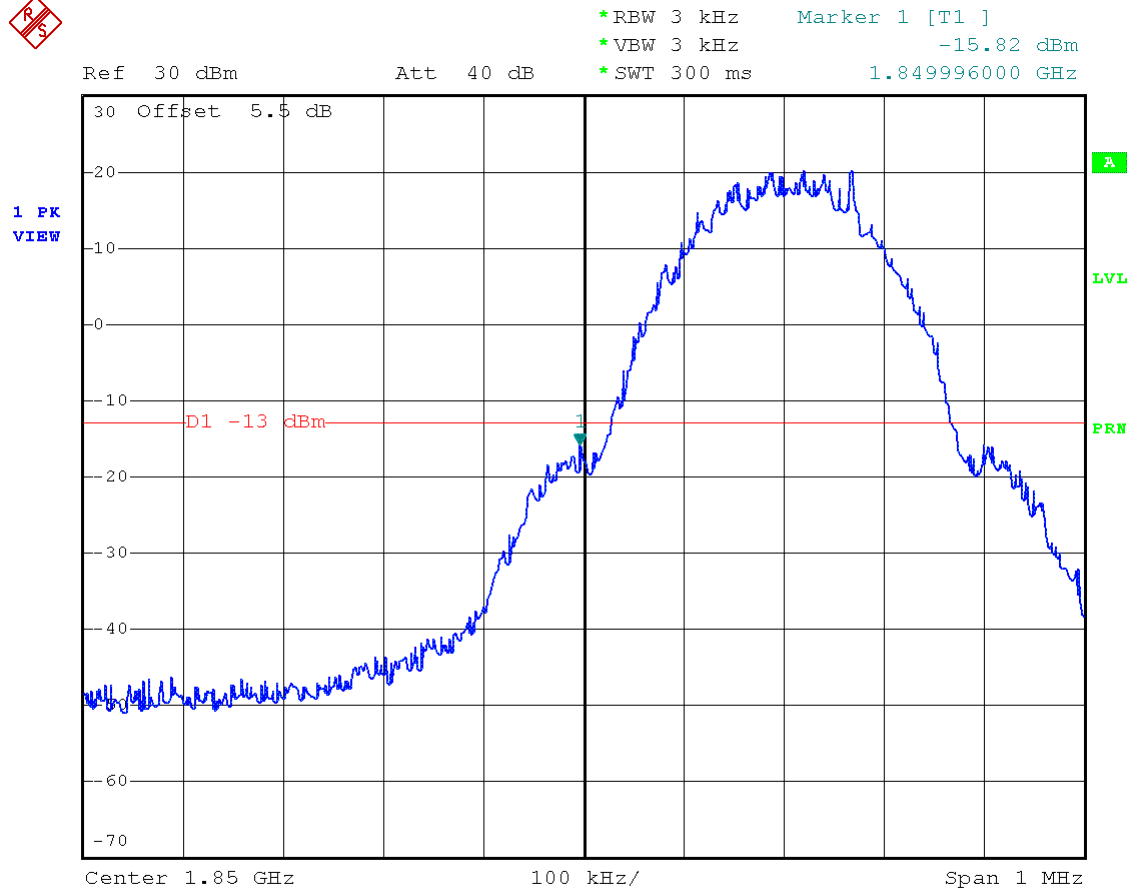


Asset	Model Name	S/N
Base Station Simulator	CMU200	102278
Spectrum Analyzer	FSP30	838858/014
AC/DC Power Source	HPA-500W	HPA0100024

FCC TEST REPORT

Report No. : F422302

Name of Test: Emission Masks (Occupied Bandwidth)
State 2:High Power



Date: 7.FEB.2004 15:37:43

Power: HIGH
Modulation: GSM/GPRS 1900
LOWER BAND EDGE

Hendry Yang

Performed By: Hendry Yang

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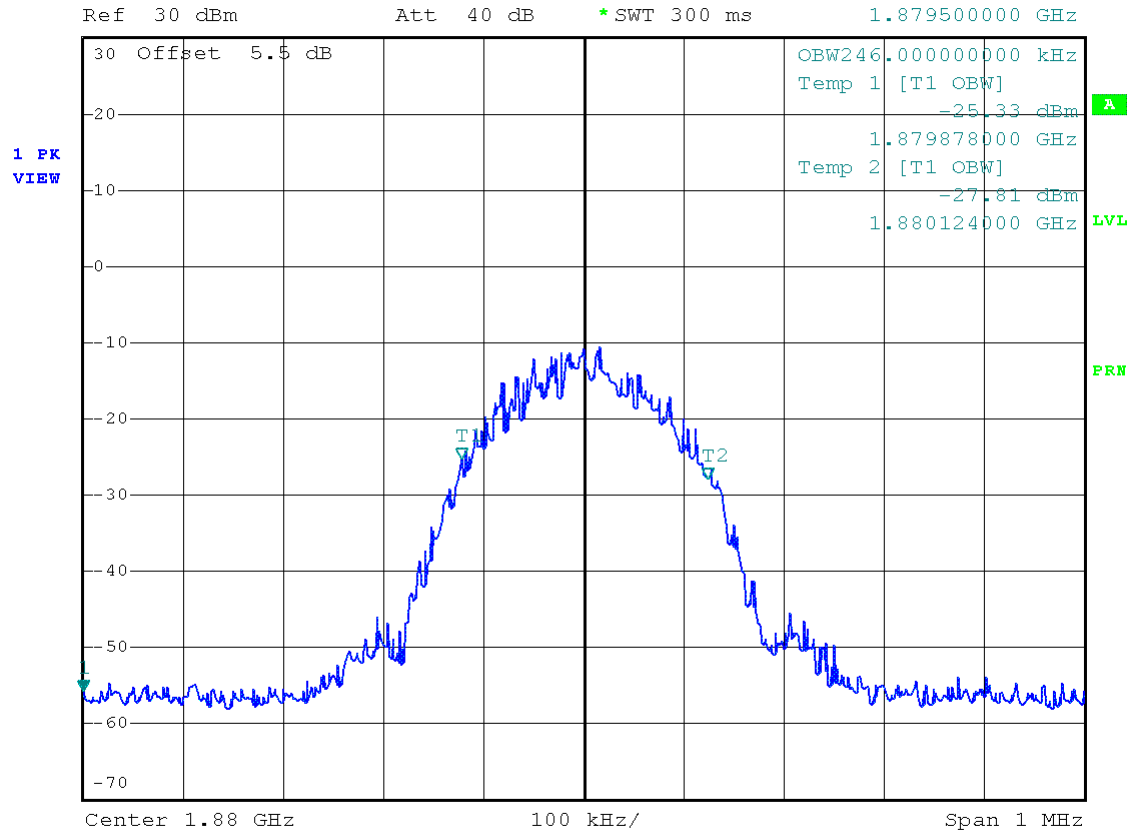
FCC TEST REPORT

Report No. : F422302

Name of Test: Emission Masks (Occupied Bandwidth)
State 1:Low Power



*RBW 3 kHz Marker 1 [T1]
*VBW 3 kHz -55.61 dBm
*SWT 300 ms 1.879500000 GHz



Date: 7.FEB.2004 15:31:31

Power: LOW
Modulation: GSM/GPRS 1900
99% BANDWIDTH

Hendry Yang

Performed By: Hendry Yang

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Issued Date Mar. 11, 2004

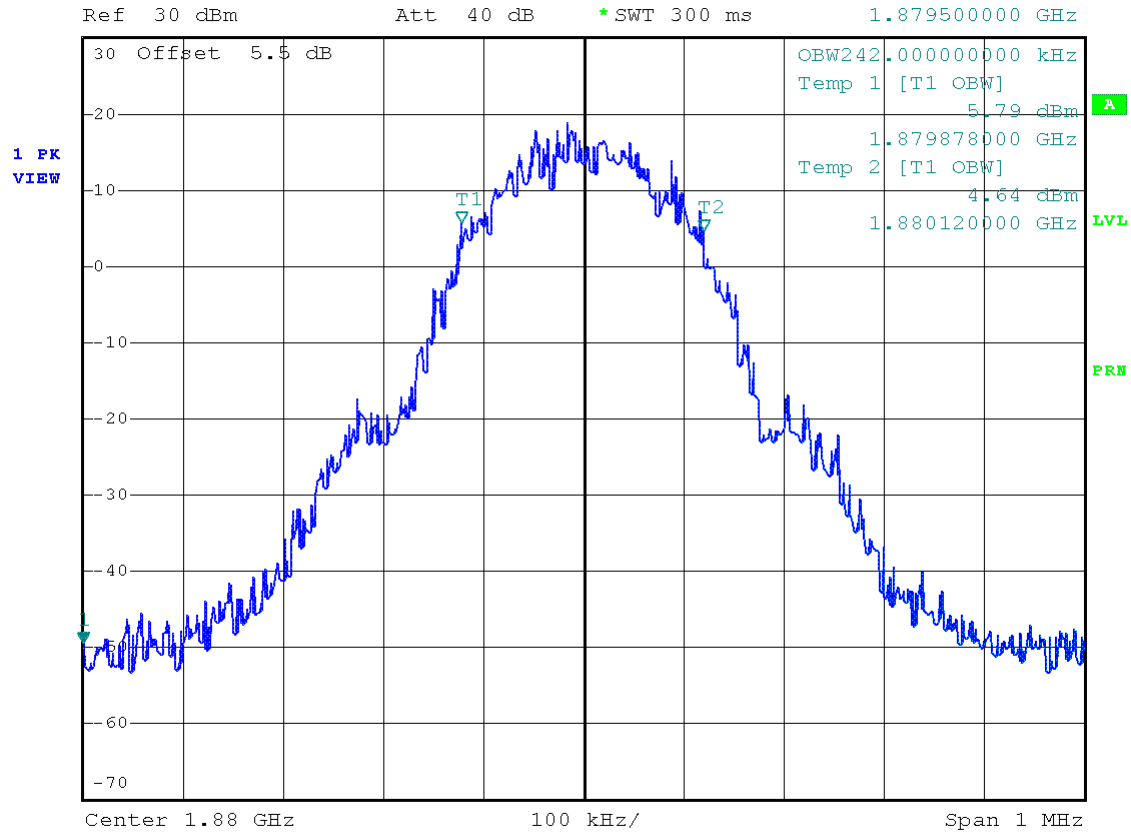
FCC TEST REPORT

Report No. : F422302

Name of Test: Emission Masks (Occupied Bandwidth)
State 2:High Power



*RBW 3 kHz Marker 1 [T1]
*VBW 3 kHz -49.45 dBm
*SWT 300 ms 1.879500000 GHz



Date: 7.FEB.2004 15:33:36

Power: HIGH
Modulation: GSM/GPRS 1900
99% BANDWIDTH

Hendry Yang

Performed By: Hendry Yang

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FCC ID JVP56W11
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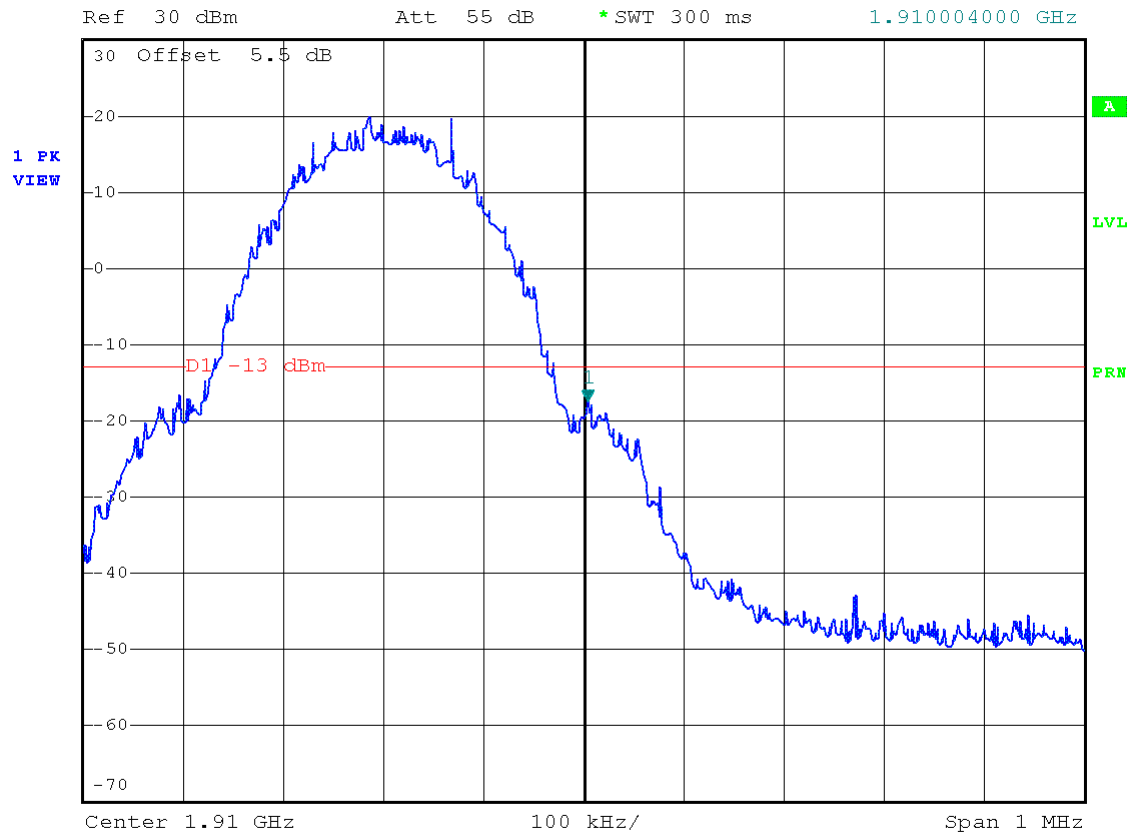
FCC TEST REPORT

Report No. : F422302

Name of Test: Emission Masks (Occupied Bandwidth)
State 2:High Power



*RBW 3 kHz Marker 1 [T1]
*VBW 3 kHz -17.25 dBm
*SWT 300 ms 1.910004000 GHz



Date: 7.FEB.2004 15:42:35

Power: HIGH
Modulation: GSM/GPRS 1900
UPPER BAND EDGE

Hendry Yang

Performed By: Hendry Yang

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Name of Test: Field Strength of Spurious Radiation

Specification: 47 CFR 2.1053(a)

Guide: ANSI/TIA/EIA-603-1992/2001, Paragraph 1.2.12 and Table 16

Measurement Procedure

1.2.12.1 Definition: Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

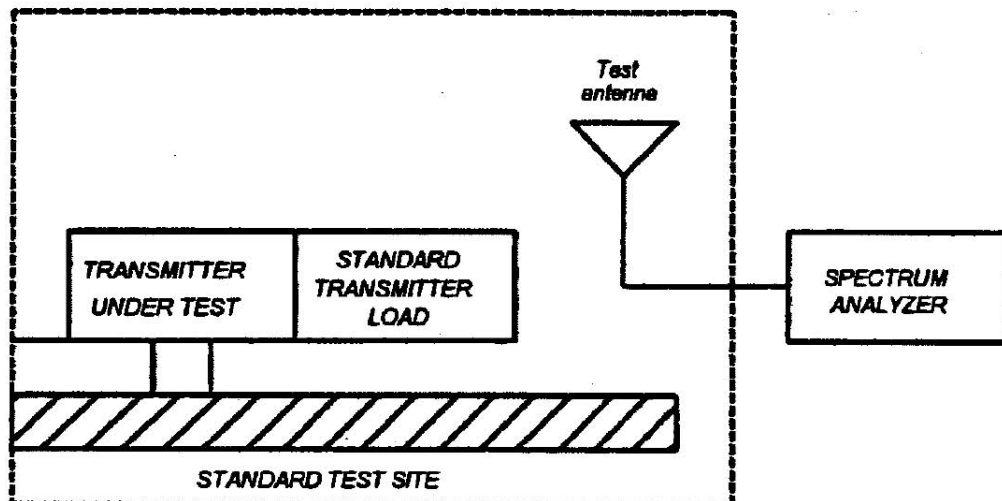
1.2.12.2 Method of Measurement

A) Connect the equipment as illustrated

B) Adjust the spectrum analyzer for the following settings:

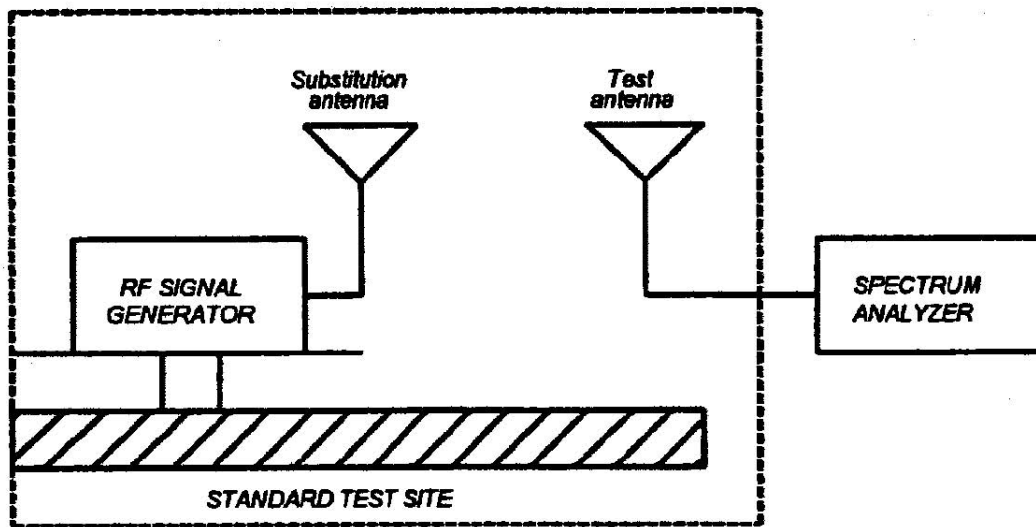
- 1) Resolution Bandwidth 100 kHz (<1 GHz), 1 MHz (> 1GHz).
- 2) Video Bandwidth ≥ 3 times Resolution Bandwidth
- 3) Sweep Speed ≤ 2000 Hz/second
- 4) Detector Mode = Mean or Average Power

C) Place the transmitter to be tested on the turntable in the standard test site. If the antenna is detachable, The transmitter is transmitting into a non-radiating load which is placed on the turntable. The RF cable to this load should be of minimum length.



Name of Test: Field Strength of Spurious Radiation (Cont.)

- D) For each spurious measurement the test antenna should cover the measured frequency. Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier, except for the region close to the carrier equal to \pm the test bandwidth (see section 1.3.4.4).
- E) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.
- F) Repeat step E) for each spurious frequency with the test antenna polarized vertically.



- G) Reconnect the equipment as illustrated.
- H) Keep the spectrum analyzer adjusted as in step B).
- I) Remove the transmitter and replace it with a substitution antenna. The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.

Name of Test: Field Strength of Spurious Radiation (Cont.)

- J) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.
- K) Repeat step J) with both antennas vertically polarized for each spurious frequency.
- L) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps J) and K) by the power loss in the cable between the generator and the antenna and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna.

NOTE: It is permissible that other antennas provided can be referenced to a dipole.

FCC TEST REPORT

Report No. : F422302

Name of Test: Field Strength of Spurious Radiation

Test Mode: Mode 1

GSM850 / WLAN CH01 HF									
Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBd	Et dBuV/m	Es dBuV/m	Et - Es dB	ERP, dBm	Limit (dBm)	Margin (dB)
1674.00	V	-3.60	4.42	57.25	102.05	-44.80	-43.98	-13.0	-30.98
2390.00	V	-4.49	5.17	47.91	98.62	-50.71	-50.03	-13.0	-37.03
2483.50	V	-4.63	5.32	48.18	97.95	-49.77	-49.08	-13.0	-36.08
2510.00	V	-4.67	5.35	51.38	97.87	-46.49	-45.81	-13.0	-32.81
1674.00	H	-3.60	4.42	54.79	102.05	-47.26	-46.44	-13.0	-33.44
2390.00	H	-4.49	5.17	48.55	98.62	-50.07	-49.38	-13.0	-36.38
2483.50	H	-4.63	5.32	57.83	97.95	-40.12	-39.43	-13.0	-26.43
2510.00	H	-4.67	5.35	52.23	97.87	-45.64	-44.96	-13.0	-31.96

Test Mode: Mode 2

GSM850 / WLAN CH06 HF									
Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBd	Et dBuV/m	Es dBuV/m	Et - Es dB	ERP, dBm	Limit (dBm)	Margin (dB)
1674.00	V	-3.60	4.42	57.45	102.05	-44.60	-43.78	-13.0	-30.78
2390.00	V	-4.49	5.17	48.31	98.62	-50.31	-49.63	-13.0	-36.63
2483.50	V	-4.63	5.32	47.73	97.95	-50.22	-49.53	-13.0	-36.53
2510.00	V	-4.67	5.35	53.64	97.87	-44.23	-43.55	-13.0	-30.55
1674.00	H	-3.60	4.42	53.57	102.05	-48.48	-47.66	-13.0	-34.66
2390.00	H	-4.49	5.17	48.46	98.62	-50.16	-49.47	-13.0	-36.47
2483.50	H	-4.63	5.32	48.69	97.95	-49.26	-48.57	-13.0	-35.57
2510.00	H	-4.67	5.35	51.55	97.87	-46.32	-45.64	-13.0	-32.64

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FCC TEST REPORT

Report No. : F422302

Test Mode: Mode 3

GSM850 / WLAN CH11 LF									
Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBd	Et dBuV/m	Es dBuV/m	Et - Es dB	ERP, dBm	Limit (dBm)	Margin (dB)
66.38	V	-0.94	-1.37	33.18	84.19	-51.01	-53.32	-13.0	-40.32
132.51	V	-1.07	-1.13	37.75	90.07	-52.32	-54.52	-13.0	-41.52
166.34	V	-1.02	-0.48	37.71	88.89	-51.18	-52.68	-13.0	-39.68
363.20	V	-1.58	-0.74	32.59	91.74	-59.15	-61.46	-13.0	-48.46
665.60	V	-2.15	-0.80	35.28	92.26	-56.98	-59.93	-13.0	-46.93
957.60	V	-2.58	-1.48	37.43	91.14	-53.71	-57.77	-13.0	-44.77
65.87	H	-0.94	-1.40	37.07	84.05	-46.98	-49.32	-13.0	-36.32
133.19	H	-1.07	-1.12	41.11	90.05	-48.94	-51.13	-13.0	-38.13
166.49	H	-1.02	-0.48	41.28	88.88	-47.60	-49.10	-13.0	-36.10
265.60	H	-1.39	-0.39	40.24	90.81	-50.57	-52.35	-13.0	-39.35
363.99	H	-1.58	-0.74	38.87	91.75	-52.88	-55.20	-13.0	-42.20
432.00	H	-1.71	-0.38	39.47	92.91	-53.44	-55.52	-13.0	-42.52

GSM850 / WLAN CH11 HF									
Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBd	Et dBuV/m	Es dBuV/m	Et - Es dB	ERP, dBm	Limit (dBm)	Margin (dB)
1194.00	V	-2.96	3.06	49.78	99.44	-49.66	-49.56	-13.0	-36.56
1594.00	V	-3.52	4.39	48.87	102.21	-53.34	-52.48	-13.0	-39.48
1672.66	V	-3.60	4.42	57.88	102.05	-44.17	-43.35	-13.0	-30.35
2390.00	V	-4.49	5.17	46.70	98.62	-51.92	-51.44	-13.0	-38.44
2483.50	V	-4.63	5.32	47.78	97.95	-50.17	-49.48	-13.0	-36.48
2510.00	V	-4.67	5.35	51.84	97.87	-46.03	-45.35	-13.0	-32.35
1674.00	H	-3.60	4.42	49.62	102.05	-52.43	-51.61	-13.0	-38.61
2390.00	H	-4.49	5.17	47.83	98.62	-50.79	-50.10	-13.0	-37.10
2483.50	H	-4.63	5.32	48.63	97.95	-49.32	-48.63	-13.0	-35.63
2510.00	H	-4.67	5.35	52.37	97.87	-45.50	-44.82	-13.0	-31.82

FCC TEST REPORT

Report No. : F422302

Test Mode: Mode 4

GSM1900 / WLAN CH01 HF									
Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBi	Et dBuV/m	Es dBuV/m	Et - Es dB	EIRP, dBm	Limit (dBm)	Margin (dB)
2390.00	V	-4.49	7.32	58.10	98.62	-40.52	-37.69	-13.0	-24.69
2483.50	V	-4.63	7.47	58.54	97.95	-39.41	-36.57	-13.0	-23.57
3758.00	V	-5.25	7.45	47.73	99.07	-51.34	-49.14	-13.0	-36.14
4828.00	V	-6.14	8.37	46.54	98.83	-52.29	-50.06	-13.0	-37.06
2390.00	H	-4.49	7.32	58.70	98.62	-39.92	-37.08	-13.0	-24.08
2483.50	H	-4.63	7.47	58.66	97.95	-39.29	-36.45	-13.0	-23.45
3758.00	H	-5.25	7.45	47.73	99.07	-51.34	-49.14	-13.0	-36.14
4828.00	H	-6.14	8.37	46.54	98.83	-52.29	-50.06	-13.0	-37.06

Test Mode: Mode 5

GSM1900 / WLAN CH06 HF									
Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBi	Et dBuV/m	Es dBuV/m	Et - Es dB	EIRP, dBm	Limit (dBm)	Margin (dB)
2390.00	V	-4.49	7.32	57.75	98.62	-40.87	-38.04	-13.0	-25.04
2483.50	V	-4.63	7.47	58.41	97.95	-39.54	-36.7	-13.0	-23.7
3758.00	V	-5.25	7.45	48.12	99.07	-50.95	-48.75	-13.0	-35.75
4876.00	V	-6.14	8.38	48.73	98.67	-49.94	-47.70	-13.0	-34.70
2390.00	H	-4.49	7.32	58.08	98.62	-40.54	-37.70	-13.0	-24.70
2483.50	H	-4.63	7.47	58.39	97.95	-39.56	-36.72	-13.0	-23.72
3758.00	H	-5.25	7.45	48.61	99.07	-50.46	-48.26	-13.0	-35.26
4870.00	H	-6.14	8.37	47.28	98.69	-51.41	-49.18	-13.0	-36.18

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FCC TEST REPORT

Report No. : F422302

Test Mode: Mode 6

GSM1900 / WLAN CH11 LF									
Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBi	Et dBuV/m	Es dBuV/m	Et - Es dB	EIRP, dBm	Limit (dBm)	Margin (dB)
34.42	V	-0.63	0.59	31.76	68.93	-37.17	-37.21	-13.0	-24.21
132.34	V	-1.07	1.02	29.62	92.23	-62.61	-62.66	-13.0	-49.66
198.47	V	-1.28	1.18	37.90	90.54	-52.64	-52.74	-13.0	-39.74
700.80	V	-2.35	1.40	34.52	94.89	-60.37	-61.32	-13.0	-48.32
800.00	V	-2.41	0.37	34.78	93.20	-58.42	-60.46	-13.0	-47.46
905.60	V	-2.67	0.96	36.22	92.94	-56.72	-58.43	-13.0	-45.43
133.02	H	-1.07	1.03	30.01	92.20	-62.19	-62.23	-13.0	-49.23
165.66	H	-1.03	1.66	36.82	91.05	-54.23	-53.59	-13.0	-40.59
198.47	H	-1.28	1.18	40.43	90.54	-50.11	-50.21	-13.0	-37.21
265.60	H	-1.39	1.76	36.87	92.96	-56.09	-55.72	-13.0	-42.72
332.80	H	-1.58	1.56	37.16	93.54	-56.38	-56.39	-13.0	-43.39
906.40	H	-2.67	0.96	37.18	92.94	-55.76	-57.47	-13.0	-44.47

GSM1900 / WLAN CH11 HF									
Freq MHz	Pol	Substitution Antenna Input Power dBm	Substitution Antenna Gain dBi	Et dBuV/m	Es dBuV/m	Et - Es dB	EIRP, dBm	Limit (dBm)	Margin (dB)
2390.00	V	-4.49	7.32	58.25	98.62	-40.37	-37.54	-13.0	-24.54
2483.50	V	-4.63	7.47	58.71	97.95	-39.24	-36.4	-13.0	-23.4
3758.00	V	-5.25	7.45	48.11	99.07	-50.96	-48.76	-13.0	-35.76
4926.00	V	-6.15	8.39	49.96	98.51	-48.55	-46.3	-13.0	-33.3
2390.00	H	-4.49	7.32	57.29	98.62	-41.33	-38.49	-13.0	-25.49
2483.50	H	-4.63	7.47	58.42	97.95	-39.53	-36.69	-13.0	-23.69
3758.00	H	-5.25	7.45	49.04	99.07	-50.03	-47.83	-13.0	-34.83
4926.00	H	-6.15	8.39	48.00	98.51	-50.51	-48.27	-13.0	-35.27