M. Flom Associates, Inc.
International Compliance Testing Laboratory
3356 N. San Marcos Place, Suite 107
Chandler, AZ 85225
toll-free: (866) 311-3268
fax: (480) 926-3598
http://www.mflom.com
info@mflom.com

Date of Report: November 30, 2004
Date of Submission: January 21, 2005

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Vertu Ltd.
Equipment: Model: Ascent, Type RHV-3
FCC ID: P7QRHV-3
FCC Rules: 24E and Confidentiality

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

Filing fees are attached.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

David E. Lee,
Compliance Test Manager

enclosure(s)
cc: Applicant
DEL/ca

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Transmitter Certification

of

FCC ID: P7QRHV-3
Model: Ascent, Type RHV-3

to

Federal Communications Commission

Rule Parts 24E and Confidentiality

Date Of Report: November 30, 2004

On the Behalf of the Applicant:

Vertu Ltd.

At the Request of:

P.O. J93-4971588

Vertu Ltd.
Beacon Hill Road
Church Crookham, Hampshire GU52 8DY UK

Attention of:

Mark Pope, Certification and Compliance Manager
+44 1252 611135; FAX: -611302
Mobile: +44 7774 8158594
mark.pope@vertu.com

Supervised By:

David E. Lee,
Compliance Test Manager

List of Exhibits
(FCC **Certification** (PCS Transmitters) - Revised 9/28/98)

Applicant: Vertu Ltd.

FCC ID: P7QRHV-3

By Applicant:

1. Letter of Authorization

2. Identification Drawings, 2.1033(c)(11)
   - Id Label
   - Location of Label
   - Compliance Statement
   - Location of Compliance Statement

3. Photographs, 2.1033(c)(12)

4. Confidentiality Request: 0.457 And 0.459

5. Documentation: 2.1033(c)
   - (3) User Manual
   - (9) Tune Up Info
   - (10) Schematic Diagram
   - (10) Circuit Description
   - Block Diagram
   - Parts List
   - Active Devices

6. SAR Report

By M.F.A. Inc.

A. Testimonial & Statement of Certification

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.

Table of Contents

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

a)	**Test Report**
b) Laboratory: (FCC: 31040/SIT) (Canada: IC 2044)	M. Flom Associates, Inc. 3356 N. San Marcos Place, Suite 107 Chandler, AZ 85225
c) Report Number:	d04c0051
d) Client:	Vertu Ltd. Beacon Hill Road Church Crookham, Hampshire GU52 8DY UK
e) Identification: Description:	Model: Ascent, Type RHV-3 FCC ID: P7QRHV-3 S/N: 004400/31/171367/9 Cellular/PCS Phone
f) EUT Condition:	Not required unless specified in individual tests.
g) Report Date: EUT Received:	December 20, 2004 November 8, 2004
h, j, k):	As indicated in individual tests.
i) Sampling method:	No sampling procedure used.
l) Uncertainty:	In accordance with MFA internal quality manual.
m) Supervised by:	 David E. Lee, Compliance Test Manager
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.

List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to

24E and Confidentiality

Sub-Part 2.1033

(c)(1): **Name and Address of Applicant**:

Vertu Ltd.
Beacon Hill Road
Church Crookham, Hampshire GU52 8DY UK

Manufacturer:

Applicant

(c)(2): **FCC ID**: P7QRHV-3

Model Number: Ascent, Type RHV-3

The P7QRHV-3 Mobile phone combines PCS technology and performance with design and craftsmanship to produce a product available in a number of cosmetic finishes. As this is restricted to cosmetics all will have the same Model, Type and FCCID.

The Electrical design is particularly robust and incorporates a self-contained, multiplayer, double-sided screened board with screening of the digital, base band and RF circuitry.

Cosmetic finishing of the phone allows some variation of the Ceramic and Leather components, as well as levels of polishing and finishing and color, using these materials. Test results demonstrate the equivalence of products tested and the independence of these finishing components from electrical performance in any mix/match combination.

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

Please See Attached Exhibits

(c)(4): **Type of Emission**: 256KGXW

(c)(5): **Frequency Range, MHz**: 1850 - 1910

(c)(6): **Power Rating, Watts**: 1.096

____ Switchable X Variable ____ N/A

(c)(7): **Maximum Power Rating, Watts**: 2.0

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	=	per manual
Collector Voltage, Vdc	=	per manual
Supply Voltage, Vdc	=	4.0

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

Please See Attached Exhibits

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

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

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
_X_ N/A

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

Follows

THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

M. FLOM ASSOCIATES, INC.
Chandler, AZ

for technical competence in the field of

Electrical Testing

This accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration Laboratories" and any additional program requirements in the identified field of testing.

Presented this 16th day of June 2004.

President
For the Accreditation Council
Certificate Number 2152-01
Valid to August 31, 2006

For tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

A2LA

"A2LA has accredited M. Flom Associates, Inc. Chandler, AZ for technical competence in the field of Electrical Testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 – 1999 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Certificate Number: **2152-01**

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

September 15, 1999

Mr. Morton Flom
M. Flom Associates Inc.
3356 N. San Marcos Place, Suite 107
Chandler, AZ 85224

Dear Mr. Flom:

I am pleased to inform you that your laboratory has been validated by the Chinese Taipei Bureau of Standards, Metrology, and Inspection (BSMI) under the Asia Pacific Economic Cooperation Mutual Recognition Arrangement (APEC MRA). Your laboratory is now formally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA between the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office (TECRO) in the United States, covering equipment subject to Electro-Magnetic Compatibility (EMC) requirements. The names of all validated and nominated laboratories will be posted on the NIST website at http://ts.nist.gov/acs under the "Asia" category.

As of August 1, 1999, you may submit test data to BSMI to verify that the equipment to be imported into Chinese Taipei satisfies the applicable EMC requirements. **Your assigned BSMI number is SL2-IN-E-041R; you must use this number when sending test reports to BSMI.** Your designation will remain in force as long as your NVLAP and/or A2LA and/or BSMI accreditation remains valid for the CNS 13438.

Please note that BSMI requires that the entity making application for the approval of regulated equipment must make such application in person at their Taipei office. BSMI also requires the names of the authorized signatories who are authorized to sign the test reports. You can send this information via fax to C-Taipei CAB Response Manager at 301-975-5414. **I am also enclosing a copy of the cover sheet that, according to BSMI requirements, must accompany every test report.**

NIST

If you have any questions, please contact Robert Gladhill at 301-975-4273 or Joe Dhillon at 301-975-5521. We appreciate your continued interest in our international conformity assessment activities.

Sincerely,

Belinda L. Collins, Ph.D.
Director, Office of Standards Services

Enclosure

NIST

I am pleased to inform you that your laboratory has been validated by the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Your laboratory is now formally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA between the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office (TECRO) in the United States, covering equipment subject to Electro-Magnetic Compatibility (EMC) requirements. The names of all validated and nominated laboratories will be posted on the NIST website at http://ts.nist.gov/mra under the 'Asia' category."

BSMI Number: **SL2-IN-E-041R**

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
_____ 22 Subpart H - Cellular Radiotelephone Service
_____ 22.901(d) - Alternative technologies and auxiliary services
_____ 23 – International Fixed Public Radiocommunication 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 Radiobeacons (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

Standard Test Conditions
and
Engineering Practices

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

In accordance with ANSI C63.4-1992/2001, section 6.1.9, 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: R. F. Power Output (Radiated)

Specification: 47 CFR 2.1046(a)

Measurement Procedure (Radiated)

1. The EUT was placed on an open-field site and its radiated field strength at a known distance was measured by means of a spectrum analyzer. Equivalent loading was calculated from the equation $P_t=((E \times R)^2/49.2)$ watts, where R = 3m.

2. Measurement accuracy is ±1.5 dB.

Test Equipment

	Asset	Description	s/n	Cycle	Last Cal
Transducer					
	i00088	EMCO 3109-B 25MHz-300MHz	2336	24 mo.	Sep-03
X	i00089	Aprel 2001 200MHz-1GHz	001500	24 mo.	Sep-03
X	i00103	EMCO 3115 1GHz-18GHz	9208-3925	24 mo.	Jan-04
Amplifier					
X	i00028	HP 8449A	2749A00121	12 mo.	May-04
Spectrum Analyzer					
X	i00029	HP 8563E	3213A00104	12 mo.	May-04
X	i00033	HP 85462A	3625A00357	12 mo.	Sep-04

Measurement Results

GSM / GPRS 1900 g04b0002: 2004-Nov-08 Mon 11:39:00

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	EIRP, dBm	EIRP, Watts
1850.200000	1850.113000	81.50	44.15	30.4	1.096
1880.000000	1879.913000	81.15	44.31	30.2	1.047
1909.800000	1909.713000	81.02	44.47	30.3	1.072

EGPRS 1900 g04b0003: 2004-Nov-08 Mon 16:48:00

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	EIRP, dBm	EIRP, Watts
1850.200000	1850.113000	78.11	44.15	27.0	0.501
1880.000000	1879.913000	77.08	44.31	26.2	0.417
1909.800000	1909.713000	77.86	44.47	27.1	0.513

Bluetooth g04b0008: 2004-Nov-08 Mon 11:39:00

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	EIRP, dBm	EIRP, Watts
2.402000	2401.950000	48.42	48.01	1.2	0.00132
2.441000	2440.950000	49.40	48.33	2.5	0.00178
2.480000	2479.950000	47.73	48.64	1.1	0.00129

Supervised By: David E. Lee,
Compliance Test Manager

Name of Test: Emission Masks (Occupied Bandwidth)

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

Measurement Procedure

A) The EUT and test equipment were set up as shown below

B) For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.

C) The Occupied Bandwidth was measured with the Spectrum Analyzer controls set as shown on the test results.

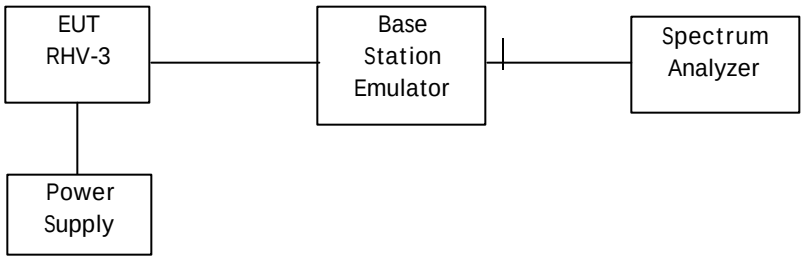
Transmitter Equipment

The relevant equipment used during the test is listed below.

Directional Coupler	Serial no. C-1530-10-U (0204)	
RLC Electronics	Calibration N/A	
Directional Coupler	Serial no. C-0510-10-U (0204)	
RLC Electronics	Calibration N/A	
Base Station Emulator	Serial no. 1100.0008.02	
Rohde & Schwarz CMU200	Calibrated 9 Dec, 2003	Due 09 Dec, 2004
Spectrum Analyser	Serial no. 3943A11206	
Agilent 8563E	Calibrated 29 Jun, 2003	Due 29 Jun, 2006

Test Set-Up

The measurement equipment is set up as shown below.



Measurement Procedure

1) The EUT is connected via a conducted connection and placed in a call with random (worst case) modulation against the base station emulator.

   a) For PCS mid channel 661, Tx Power Control level 0 (max power).

2) The spectrum analyser is connected via the coupled RF port on the base station emulator.

3) The maximum power in 1 MHz RBW is measured.

4) The Occupied Bandwidth is measured via the 99% Power BW function on the spectrum analyser.

5) The channel is changed to low channel PCS - CH512.

6) The band edge emissions limit is checked in 1% RBW for compliance.

7) The channel is changed to the next band edge channel.

8) The band edge emissions limit is checked in 1% RBW for compliance.

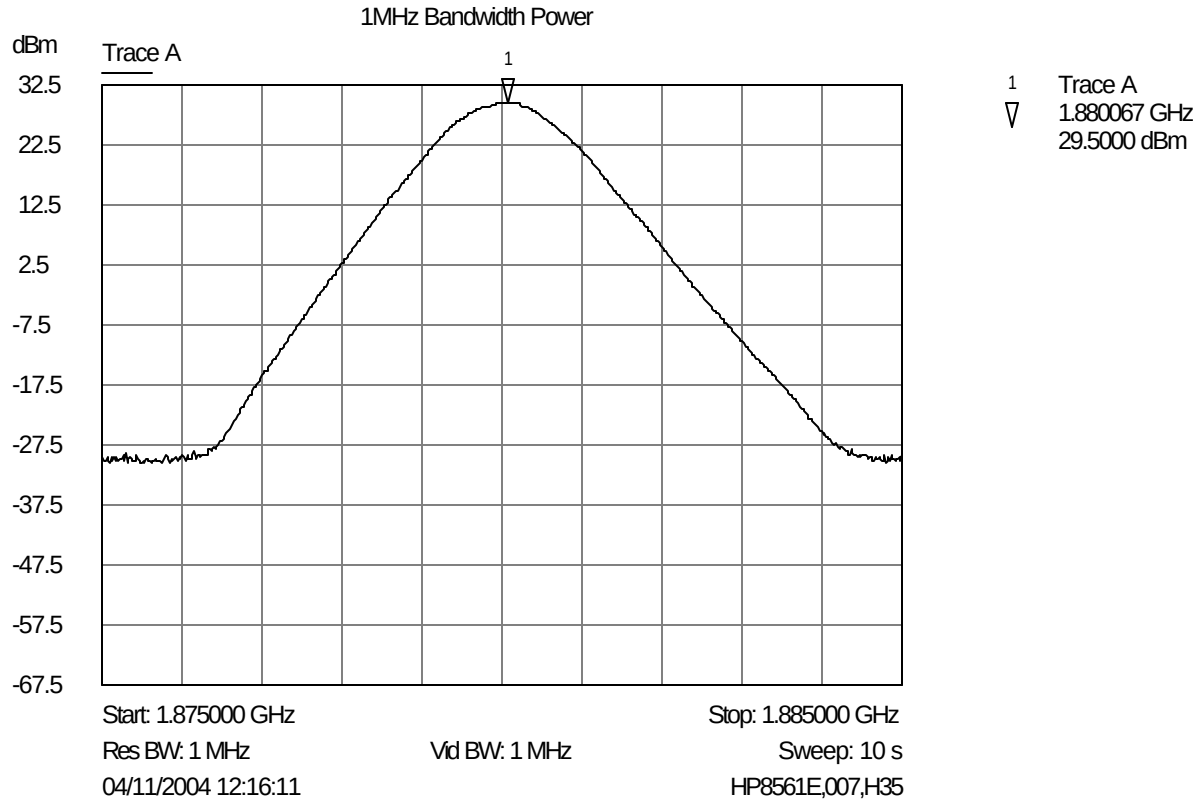
9) Repeat 7) & 8) up to the last band edge channel 810

10) The results are attached in the following pages.

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

Applicant Supplied Data



Power: HIGH POWER, REFERENCE IN 1MHz
Modulation: GSM 1900
MID CHANNEL

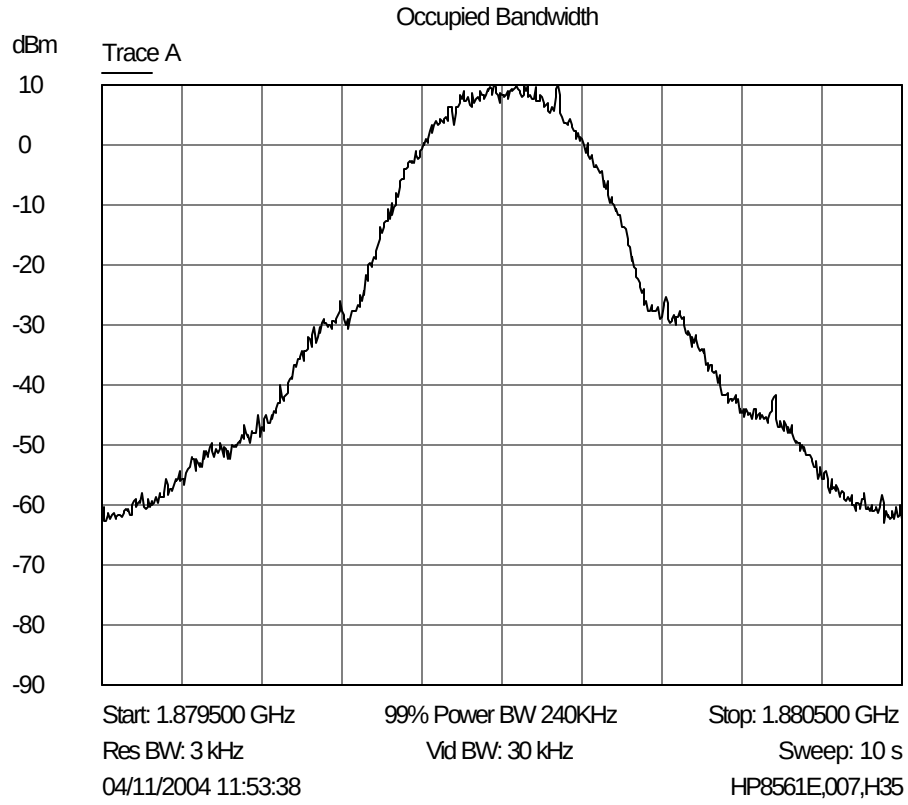
Verified by:

David E. Lee,
Compliance Test Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

Applicant Supplied Data



Power: HIGH POWER
Modulation: GSM 1900
MID CHANNEL, 99% POWER BANDWIDTH

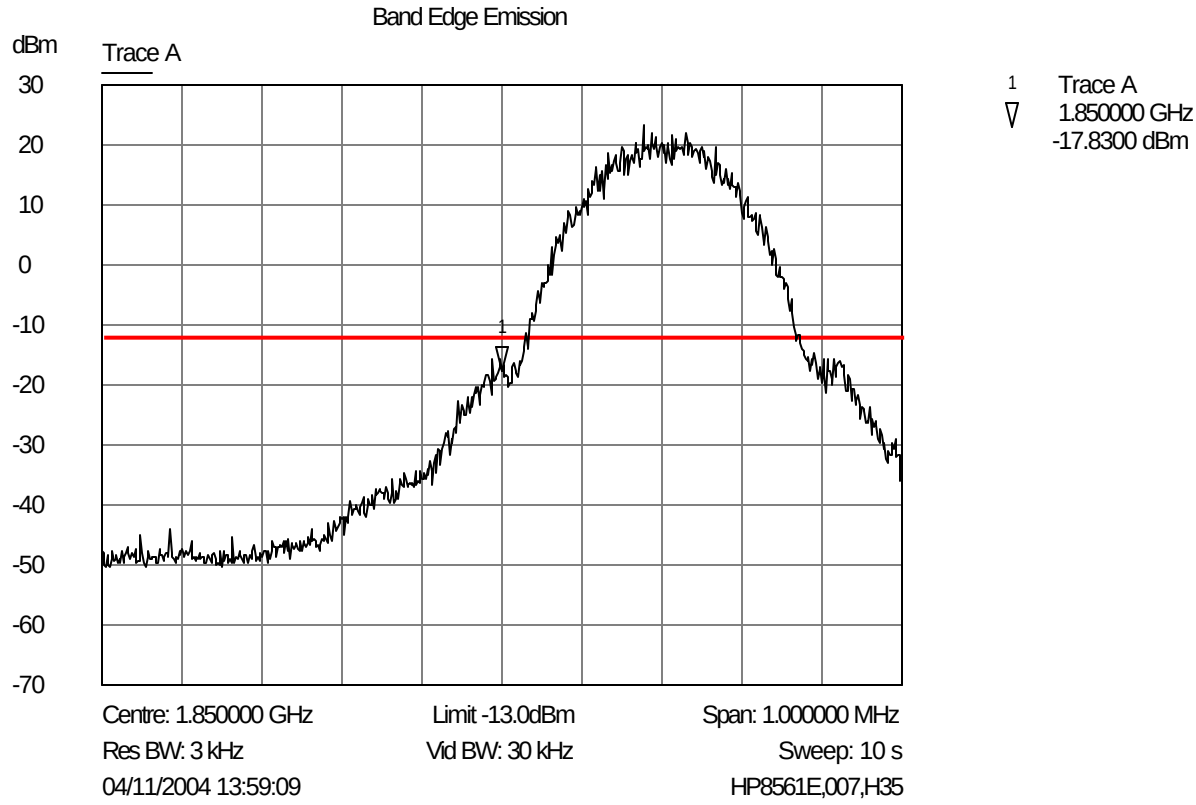
Verified by:

David E. Lee,
Compliance Test Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

Applicant Supplied Data



Power: HIGH POWER
Modulation: GSM 1900
LOW CHANNEL, LOWER BAND EDGE

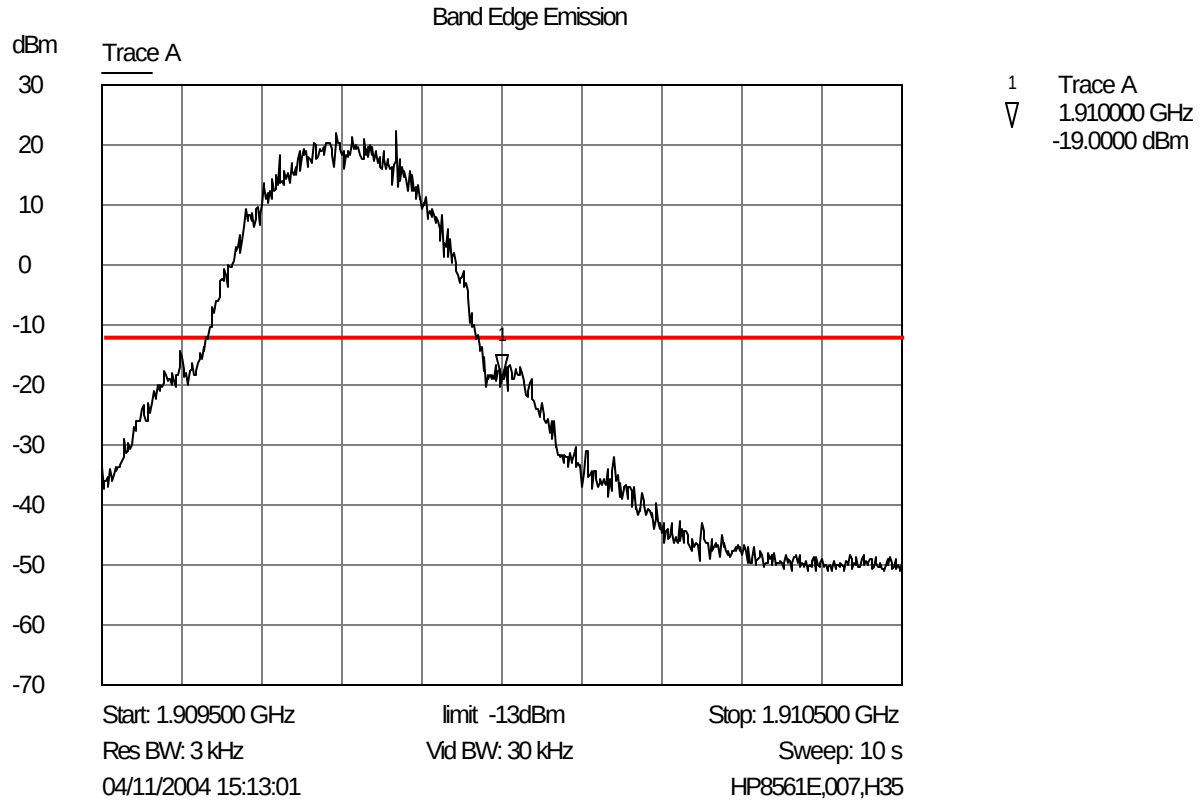
Verified by:

David E. Lee,
Compliance Test Manager

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

Applicant Supplied Data



Power: HIGH POWER
Modulation: GSM 1900
HIGH CHANNEL, UPPER BAND EDGE

Verified by:

David E. Lee,
Compliance Test Manager

Name of Test: Emission Masks (Occupied Bandwidth)

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

Test Equipment: As per previous page

Measurement Procedure

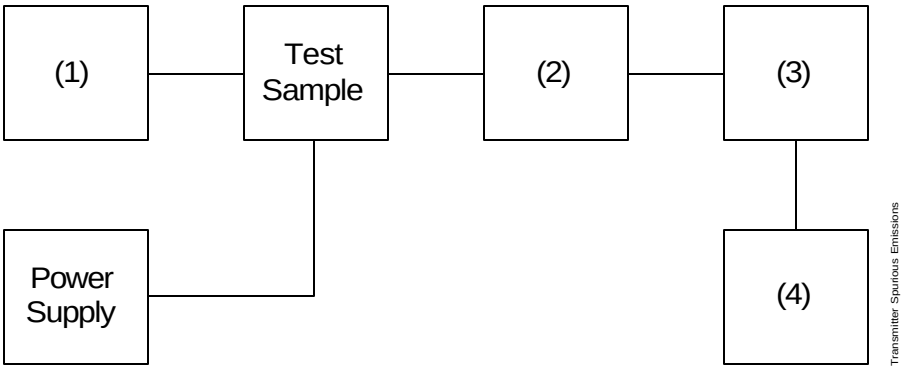
A) The EUT and test equipment were set up as shown below

B) For EUTs supporting audio modulation, the audio signal generator was adjusted to the frequency of maximum response and with output level set for ±2.5/±1.25 kHz deviation (or 50% modulation). With level constant, the signal level was increased 16 dB.

C) For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.

D) The Occupied Bandwidth was measured with the Spectrum Analyzer controls set as shown on the test results.

Transmitter Test Set-Up: Occupied Bandwidth



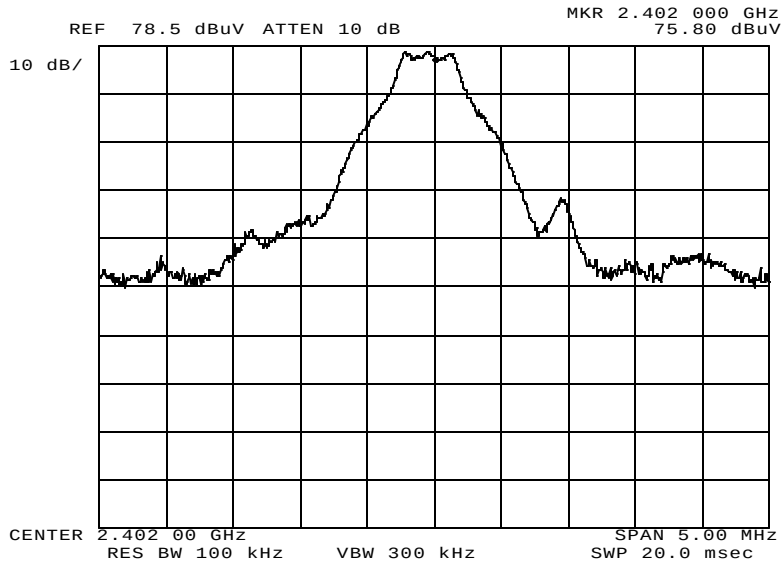
	Asset	Description	s/n	Cycle	Last Cal
(1) **Audio Oscillator/Generator**					
	i00017	HP 8903A Modulation Meter	2216A01753	12 mo.	Apr-04
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i00123	NARDA 766 (10 dB)	7802A	NCR	
(3) **Interface**					
X	i00021	HP 8954A Transceiver Interface	2146A00159	NCR	
(4) **Spectrum Analyzer**					
X	i00048	HP 8566B Spectrum Analyzer	2511A01467	12 mo.	Oct-04
	i00029	HP 8563E Spectrum Analyzer	3213A00104	12 mo.	May-04

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g04b0019: 2004-Nov-10 Wed 09:26:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



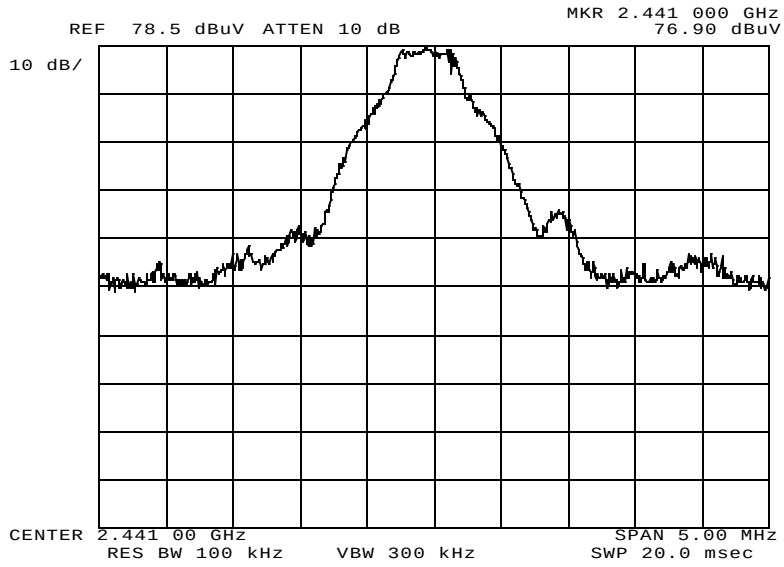
Power: HIGH
Modulation: BLUETOOTH
LOW CHANNEL

Performed by: Samir Mahmoud, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g04b0020: 2004-Nov-10 Wed 09:31:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



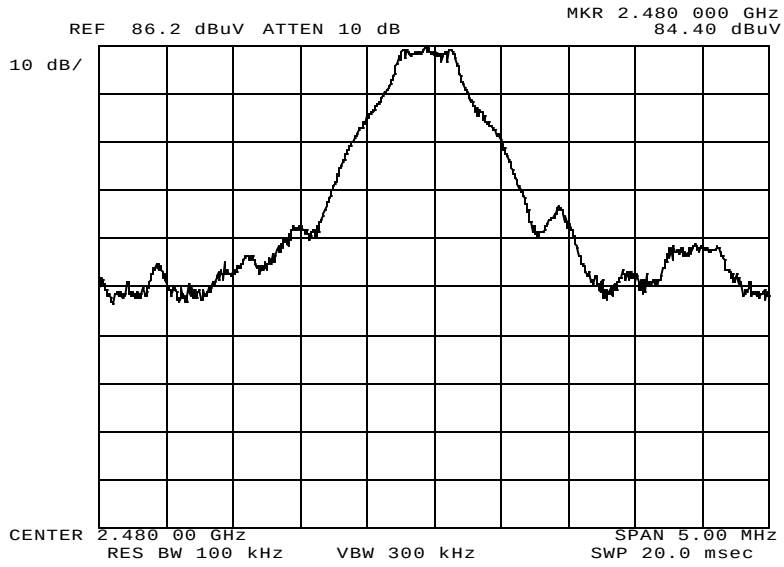
Power: HIGH
Modulation: BLUETOOTH
MID CHANNEL

Performed by: Samir Mahmoud, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g04b0021: 2004-Nov-10 Wed 09:47:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: BLUETOOTH
HIGH CHANNEL

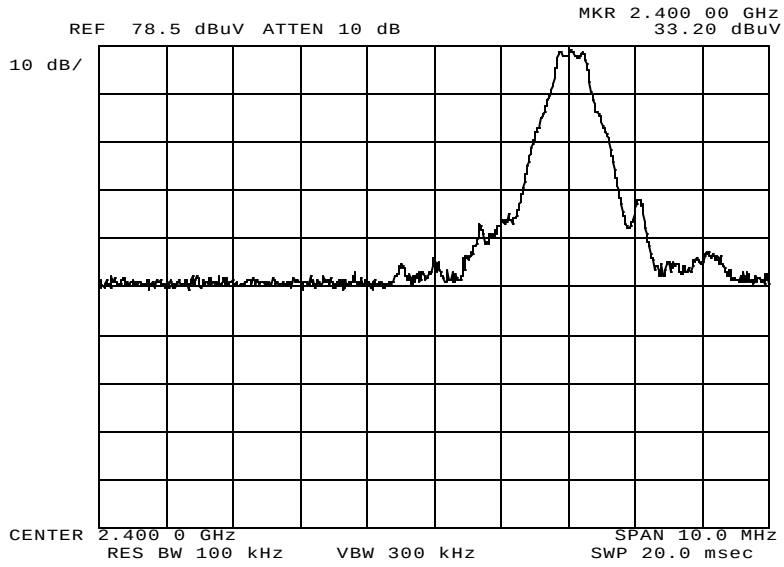
Performed by: Samir Mahmoud, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g04b0018: 2004-Nov-10 Wed 09:25:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: BLUETOOTH
LOW BAND EDGE

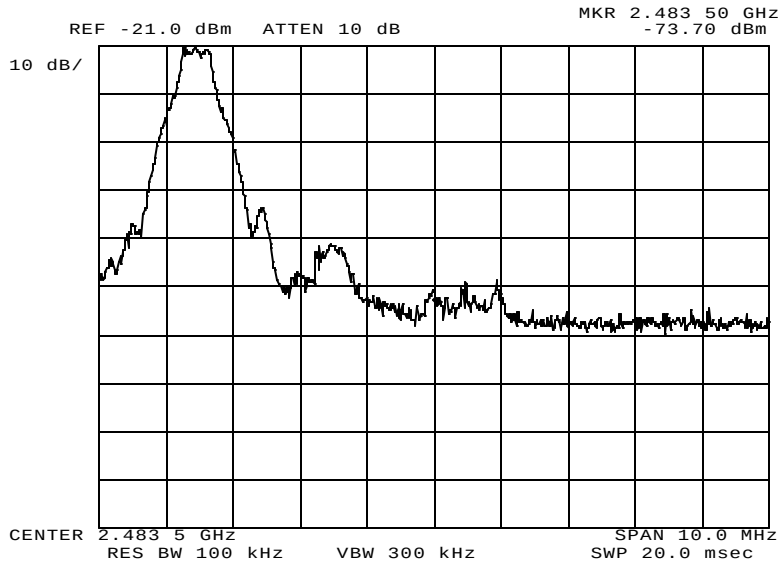
Performed by: Samir Mahmoud, Test Technician

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g04b0022: 2004-Nov-10 Wed 09:54:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: BLUETOOTH
UPPER BAND EDGE

Performed by: Samir Mahmoud, Test Technician

Name of Test: Field Strength of Spurious Radiation

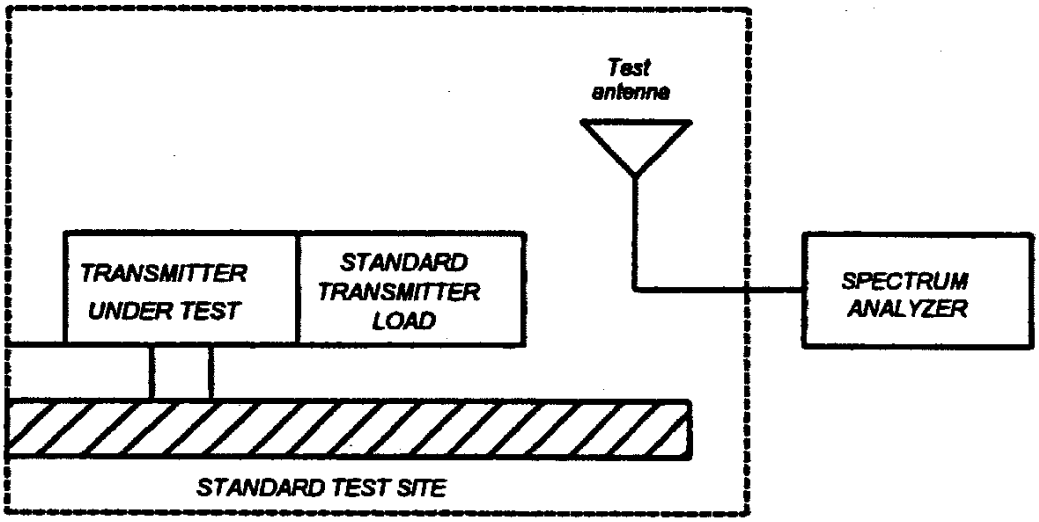
Specification: 47 CFR 2.1053(a)

Guide: ANSI/TIA/EIA-603-1992/2001, Paragraph 1.2.12 and Table 16, 47 CFR 22.917

Measurement Procedure

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.

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, or 30 kHz (22.917)
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. The transmitter is transmitting into a non-radiating load that is placed on the turntable. The RF cable to this load should be of minimum length.

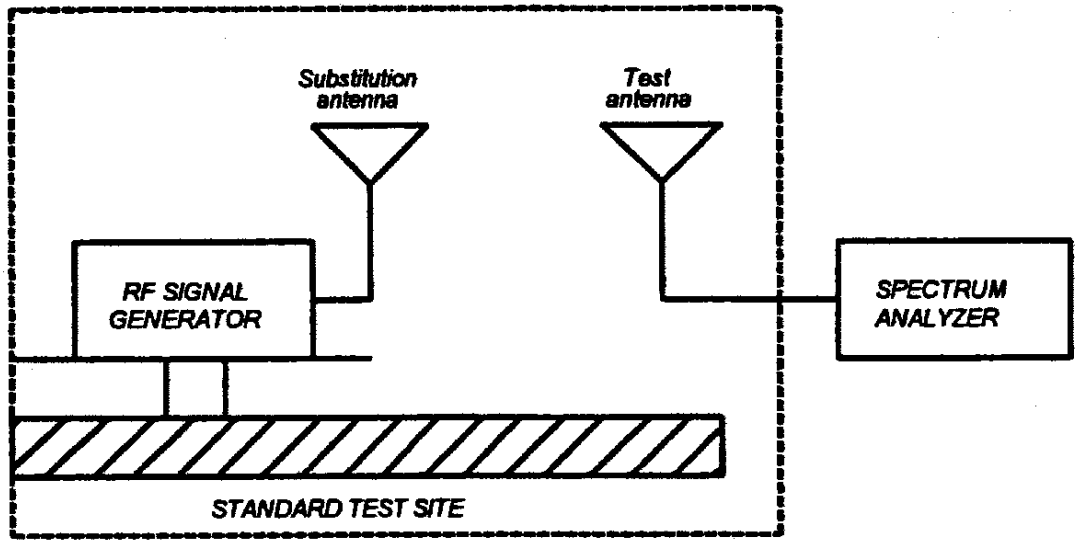


Name of Test: Field Strength of Spurious Radiation (Cont.)

D) For each spurious measurement the test antenna should be adjusted to the correct length for the frequency involved. This length may be determined from a calibration ruler supplied with the equipment. 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 ± 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 antenna should be half-wavelength for each frequency involved). 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.

M) The levels recorded in step L) are absolute levels of radiated spurious emissions in dBm. The radiated spurious emissions in dB can be calculated by the following:

Radiated spurious emissions dB =

$10\log_{10}$(TX power in watts/0.001) – the levels in step I)

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

Test Equipment

	Asset	Description	s/n	Cycle	Last Cal
Transducer					
	i00088	EMCO 3109-B 25MHz-300MHz	2336	24 mo.	Sep-03
X	i00089	Aprel 2001 200MHz-1GHz	001500	24 mo.	Sep-03
X	i00103	EMCO 3115 1GHz-18GHz	9208-3925	24 mo.	Jan-04
Amplifier					
X	i00028	HP 8449A	2749A00121	12 mo.	May-04
Spectrum Analyzer					
X	i00029	HP 8563E	3213A00104	12 mo.	May-04
X	i00033	HP 85462A	3625A00357	12 mo.	Sep-04
Substitution Generator					
X	i00067	HP 8920A Communication TS	3345U01242	12 mo.	Jun-04
	i00207	HP 8753D Network Analyzer	3410A08514	12 mo.	Jul-04

Name of Test: Field Strength of Spurious Radiation

GSM / GPRS 1900
g04b0010: 2004-Nov-09 Tue 10:21:00
STATE: 2:High Power

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV	CF, dB	EIRP, dBm	Margin, dB
1850.200000	3701.306667	37.17	10.00	-48.1	-37.2
1880.000000	3760.483333	36.33	10.53	-48.4	-37.5
1909.800000	3819.536667	36.50	11.04	-47.7	-36.9
1850.200000	5549.980000	35.00	12.47	-47.8	-36.9
1880.000000	5639.666667	35.50	12.84	-46.9	-36.1
1909.800000	5728.450000	35.17	13.20	-46.9	-36.0
1850.200000	7400.313333	35.67	15.17	-44.4	-33.6
1880.000000	7519.453333	35.50	15.69	-44.0	-33.2
1909.800000	7638.350000	35.50	16.20	-43.5	-32.7
1850.200000	9250.073333	36.17	16.73	-42.3	-31.5
1880.000000	9399.626667	35.83	18.74	-40.7	-29.8
1909.800000	9548.716667	36.33	20.05	-38.8	-28.0
1850.200000	11101.956667	36.67	25.59	-33.0	-22.1
1880.000000	11279.850000	36.50	27.75	-31.0	-20.2
1909.800000	11459.796667	36.67	29.89	-28.7	-17.8
1850.200000	12951.556667	35.67	12.77	-46.8	-36.0
1880.000000	13159.346667	36.67	13.63	-44.9	-34.1
1909.800000	13368.480000	38.17	14.66	-42.4	-31.6
1850.200000	14801.093333	38.17	14.82	-42.2	-31.4
1880.000000	15040.100000	37.83	16.77	-40.6	-29.8
1909.800000	15279.060000	38.83	14.66	-41.7	-30.9
1850.200000	16651.780000	37.50	10.76	-47.0	-36.1
1880.000000	16920.316667	37.83	7.49	-49.9	-39.1
1909.800000	17187.896667	36.67	8.46	-50.1	-39.3

Performed By: Samir Mahmoud, Test Technician

Name of Test: Field Strength of Spurious Radiation

EGPRS 1900
g04b0011: 2004-Nov-09 Tue 11:27:00
STATE: 2:High Power

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV	CF, dB	EIRP, dBm	Margin, dB
1850.200000	3699.493333	36.83	9.99	-48.4	-37.6
1880.000000	3760.070000	37.17	10.53	-47.5	-36.7
1909.800000	3820.140000	37.00	11.05	-47.2	-36.4
1850.200000	5550.223333	35.17	12.48	-47.6	-36.8
1880.000000	5639.546667	36.00	12.84	-46.4	-35.6
1909.800000	5730.010000	36.00	13.20	-46.0	-35.2
1850.200000	7400.490000	36.67	15.17	-43.4	-32.6
1880.000000	7520.740000	35.83	15.70	-43.7	-32.9
1909.800000	7640.033333	35.83	16.21	-43.2	-32.4
1850.200000	9251.543333	36.67	16.75	-41.8	-31.0
1880.000000	9400.233333	37.00	18.75	-39.5	-28.7
1909.800000	9549.483333	37.50	20.05	-37.7	-26.9
1850.200000	11100.790000	36.50	25.57	-33.2	-22.3
1880.000000	11280.280000	36.00	27.75	-31.5	-20.7
1909.800000	11457.913333	36.67	29.87	-28.7	-17.9
1850.200000	12951.286667	35.67	12.77	-46.8	-36.0
1880.000000	13159.566667	36.83	13.63	-44.8	-33.9
1909.800000	13367.780000	38.17	14.66	-42.4	-31.6
1850.200000	14800.786667	38.33	14.82	-42.1	-31.3
1880.000000	15040.076667	38.00	16.77	-40.5	-29.6
1909.800000	15277.683333	38.00	14.67	-42.6	-31.7
1850.200000	16652.640000	38.00	10.75	-46.5	-35.7
1880.000000	16919.130000	37.83	7.50	-49.9	-39.1
1909.800000	17188.363333	37.17	8.47	-49.6	-38.8

Performed By: Samir Mahmoud, Test Technician

Name of Test: Frequency Stability (Temperature Variation)

Specification: 47 CFR 2.1055(a)(1)

Measurement Procedure

A) The EUT and test equipment were set up as shown on the following page.

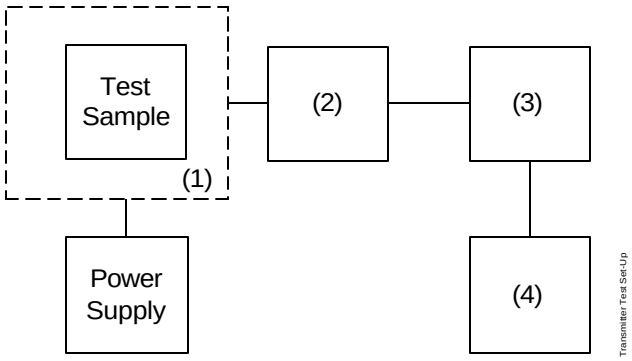
B) With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute.

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.

FCC Requirements: +/- 1ppm

GSM Requirements: +/- 0.1 ppm

Transmitter Test Set-Up



Test Equipment

The relevant equipment used during the test is listed below.

Environmental Chamber Thermotron S1.2	Serial no. 30913 Calibrated 7 Aug 04	NMP Asset reg. 7672	Due 7 Aug 05
Base Station Emulator Rohde & Schwarz CMU200	Serial no. 100715 Calibrated 9 April 04	NMP Asset reg. 7937	Due 9 April 05
Power Supply Agilent 6632A	Serial no. 2924A-02342 Calibrated 20 Aug 04	NMP Asset reg. 458	Due 20 Aug 05

Name of Test: Frequency Stability (Temperature Variation)

Measurement Results

Applicant Supplied Data

Temperature (°C)	GSM1900 Frequency Error (Hz) Limit = +/- 185 Hz		
	ch 512	ch 661	ch 810
-30	-24.54	-35.93	-47.92
-20	-25.08	32.00	-31.73
-10	-26.17	32.81	29.36
0	-33.90	-31.59	26.17
10	30.17	-34.44	28.75
20	31.32	31.46	-27.33
30	33.02	-35.05	23.39
40	34.10	-31.79	-37.56
50	-33.97	31.53	-35.26

Verified by:

David E. Lee,
Compliance Test Manager

Name of Test: Frequency Stability (Voltage Variation)

Specification: 47 CFR 2.1055(d)(1)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.2

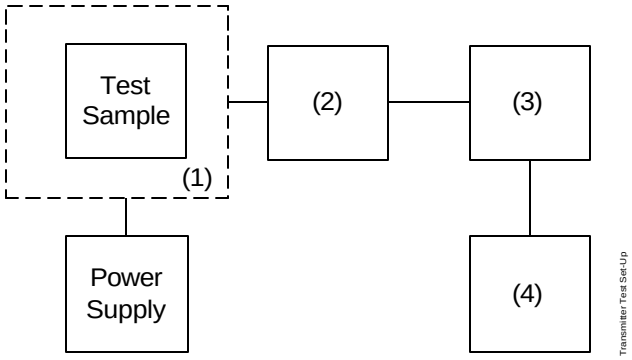
Measurement Procedure

A) The EUT was placed in a temperature chamber (if required) at 25±5°C and connected as shown below.

B) The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.

C) The variation in frequency was measured for the worst case.

Transmitter Test Set-Up: Voltage Variation



	Asset	Description	s/n	Cycle	Last Cal
(1) **Temperature, Humidity, Vibration**					
	i00027	Tenney Temp. Chamber	9083-765-234	NCR	
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i00122/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) **RF Power**					
X	i00020	HP 8901A Power Mode	2105A01087	12 mo.	Apr-04
(4) **Frequency Counter**					
X	i00020	HP 8901A Frequency Mode	2105A01087	12 mo.	Apr-04

Results: Frequency Stability (Voltage Variation)

Applicant Supplied Data

FCC Requirements: +/- 1ppm

GSM Requirements: +/- 0.1 ppm

Voltage (%)	Voltage (V)	GSM1900 Frequency Error (Hz) Limit = +/- 185 Hz		
		ch 512	ch 661	ch 810
End Point	<3.4	Tx off	Tx off	Tx off
Nominal	4.0	27.81	23.80	22.58
115% Nominal	4.6	25.66	22.51	21.86
85% Nominal	3.4	-47.02	21.72	23.65

The transmit power amplifier supply is disabled below 3.3 V and phone powers off at 3.2 V.

Verified by:

David E. Lee,
Compliance Test Manager

Name of Test: Necessary Bandwidth and Emission Bandwidth

Specification: 47 CFR 2.202(g)

Modulation =

Necessary Bandwidth:

Necessary Bandwidth (B_N),	=	256kHz
(measured at the 99% power bandwidth)		240kHz

Supervised By: David E. Lee,
Compliance Test Manager

END OF TEST REPORT

Testimonial
and
Statement of Certification

This is to certify that:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.

2. **That** the technical data supplied with the application was taken under my direction and supervision.

3. **That** the data was obtained on representative units, randomly selected.

4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

Certifying Engineer:

David E. Lee,
Compliance Test Manager

M. Flom Associates, Inc.
3356 N. San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(480) 926-3100 phone, fax (480) 926-3598