M. Flom Associates, Inc. - Global Compliance Center
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

Date:	January 26, 2004
Applicant:	Nokia Corporation Elektroniikkatie 10 Fin-90570 Oulu, Finland
Attention of:	Kare Oksanen, R&D Type Approvals kare.oksanen@nokia.com 011 358 7180 08000; FAX: 011 358 7180 47222
Equipment:	RX-9
FCC ID:	LJPRX-9
P.O. Number:	K.O. 12/11/2003
FCC Rules:	22H, 22.901(d), 24E, Confidentiality

Gentlemen:

Enclosed please find your copy of the Engineering Test Report for which you are subject to the restrictions as listed on the attached summary.

As you know, the FCC, after a TCB issues a Grant, still has 30 days to review a submission and request added information. It is your decision whether or not to market the equipment subject to a possible recall before the end of the 30 days.

The invoice for services has already been sent to you to direct to your Accounts Payable Department. Please advise if you need another copy.

Should you need any clarification, just fax or phone. Thank you again for this order - it has been a pleasure to be of service.

Sincerely yours,

Morton Flom, P. Eng.

enclosure(s)
MF/cva

MFA **M. Flom Associates, Inc. - Global Compliance Center**
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

Memo

Date: December 19, 2003

Applicant: Nokia Corporation
Elektroniikkatie 10
Fin-90570
Oulu, Finland

Equipment: RX-9
FCC ID: LJPRX-9

Please note that the enclosed Reports reflect the results of tests performed to the currently published Federal Communications Commissions Rules and Regulations.

Should the FCC's Examiners' interpretations request new and unpublished requirements, we will be pleased to provide them. We will invoice you accordingly, i.e. for the time spent on re-testing, providing the amended pages and/or Reports and for the time necessary to be spent on electronic filing. We will of course provide you with copies of any of the additions.

We regret any added expense to the Applicants, but of late the FCC continues to change their requirements without any prior written publication and/or notices.

Sincerely yours,

Morton Flom, P. Eng.

MFA **M. Flom Associates, Inc. - Global Compliance Center**
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

Summary of Restrictions

1. All submissions to the FCC are subject to **their** Examiner's interpretation.

2. Please allow from 60 to 90 days before hearing from the FCC with regard to any submission.

3. The FCC can set aside any action; modify or set aside any action, within 30 days. (FCC Rule 1.108, 1.113).

4. Under Rule 2.803, if device is not type accepted/certificated then it must **not** be sold, leased, offered for sale, imported, shipped or distributed or advertised for sale.

5. FCC can revoke its certificates at any time if the equipment does not meet or **continue** to meet their Rules. (Rule Parts 2.927, 2.939).

6. FCC can request a sample at any time (2.936).

M. Flom Associates, Inc.

Morton Flom, P. Eng.

MFA **M. Flom Associates, Inc. - Global Compliance Center**
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

Transmitter Certification

of

FCC ID: LJPRX-9
Model: RX-9
Serial Numbers of units tested: 001004/00/139199/5

to

Federal Communications Commission

Rule Part(s) 22H, 24E, Confidentiality

Date Of Report: December 19, 2003

On the Behalf of the Applicant:

Nokia Corporation

At the Request of: P.O. K.O. 12/11/2003

Nokia Corporation
Elektroniikkatie 10
Fin-90570
Oulu, Finland

Attention of: Kare Oksanen, R&D Type Approvals
kare.oksanen@nokia.com
011 358 7180 08000; FAX: 011 358 7180 47222

Supervised By: Morton Flom, P. Eng.

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: M. Flom Associates, Inc.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044) Chandler, AZ 85225

c) Report Number: d03c0035

d) Client: Nokia Corporation
Elektroniikkatie 10
Fin-90570
Oulu, Finland

e) Identification: RX-9
FCC ID: LJPRX-9
Description: GSM Module

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

g) Report Date: December 19, 2003
EUT Received: December 11, 2003

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:

Morton Flom, P. Eng.

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:

Description/Model	**Serial Number**	**MFA Number**
Smarteq A-1140.27 MiniMag Dual Band Antenna	N/A	S01017
Evaluation Board Model 1CQ	UGT00370	S01015
Power Supply: ACW-60	N/A	S01016
Serial Cable AXS-3	N/A	S01019

List of General Information Required for Certification

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

22H, 24E, Confidentiality

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

Nokia Corporation
Elektroniikkatie 10
Fin-90570
Oulu, Finland

Manufacturer:

Elcoteq Tallinn AS
Peteriburi tee 67a
11415 Tallinn
Estonia

(c)(2): **FCC ID**: LJPRX-9

Model Number: RX-9

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

Please See Attached Exhibits

(c)(4): **Type of Emission**: 300KGXW (GSM)
300KG7W (EGPRS)

(c)(5): **Frequency Range, MHz**: 824.20 to 848.80
1850.2 to 1909.8

(c)(6): **Power Rating, Watts**: 33.0 ERP (GSM/GPRS850)
27.3 ERP (EGPRS 850)
29.1 EIRP (GSM/GPRS1900)
24.3 EIRP (EGPRS1900)

____ Switchable x Variable ___ N/A

FCC Grant Note: BC - The output power is continuously variable from the value listed in this entry to 5%-10% of the value listed.

(c)(7): **Maximum Power Rating, Watts**: 7, 2

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	=	1.5
Collector Voltage, Vdc	=	4.0
Supply Voltage, Vdc	=	3.9

(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

M. Flom Associates, Inc. is accredited by the American Association for Laboratory Association (A2LA) as shown in the scope below.

THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

M. FLOM ASSOCIATES, INC.
Chandler, AZ

for technical competence in the field of

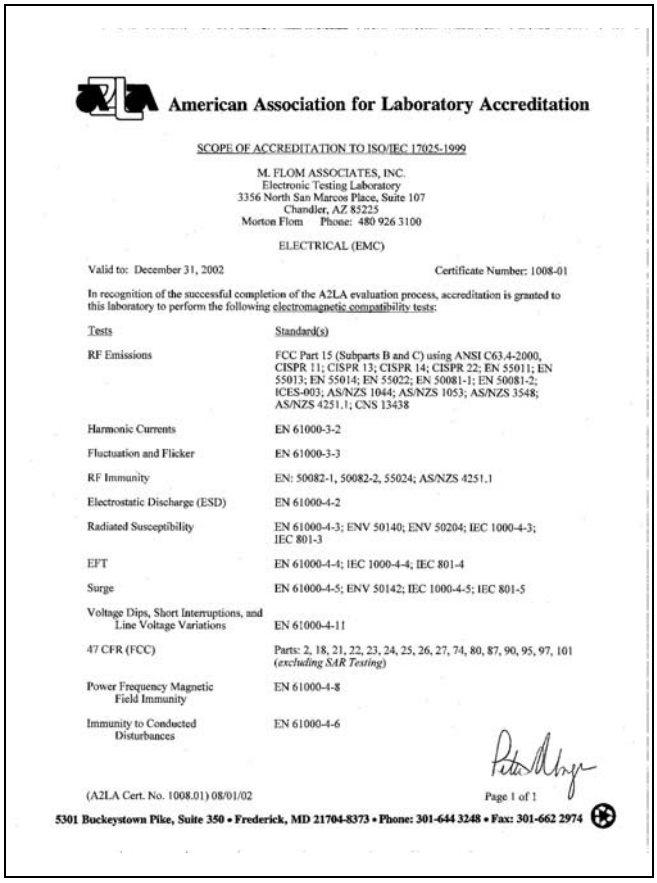
Electrical (EMC) Testing

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. Testing and calibration laboratories that comply with this International Standard also operate in accordance with ISO 9001 or ISO 9002.

Presented this 2nd day of March, 2001.

President
For the Accreditation Council
Certificate Number 1008.01
Valid to December 31, 2002

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



American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:1999

M. FLOM ASSOCIATES, INC.
Electronic Testing Laboratory
3356 North San Marcos Place, Suite 107
Chandler, AZ 85225
Morton Flom Phone: 480 926 3100

ELECTRICAL (EMC)

Valid to: December 31, 2002 Certificate Number: 1008-01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electromagnetic compatibility tests:

Tests	Standard(s)
RF Emissions	FCC Part 15 (Subparts B and C) using ANSI C63.4-2000, CISPR 11; CISPR 13; CISPR 14; CISPR 22; EN 55011; EN 55013; EN 55014; EN 55022; EN 50081-1; EN 50081-2; ICES-003; AS/NZS 1044; AS/NZS 1053; AS/NZS 3548; AS/NZS 4251.1; CNS 13438
Harmonic Currents	EN 61000-3-2
Fluctuation and Flicker	EN 61000-3-3
RF Immunity	EN: 50082-1, 50082-2, 55024; AS/NZS 4251.1
Electrostatic Discharge (ESD)	EN 61000-4-2
Radiated Susceptibility	EN 61000-4-3; ENV 50140; ENV 50204; IEC 1000-4-3; IEC 801-3
EFT	EN 61000-4-4; IEC 1000-4-4; IEC 801-4
Surge	EN 61000-4-5; ENV 50142; IEC 1000-4-5; IEC 801-5
Voltage Dips, Short Interruptions, and Line Voltage Variations	EN 61000-4-11
47 CFR (FCC)	Parts: 2, 18, 21, 22, 23, 24, 25, 26, 27, 74, 80, 87, 90, 95, 97, 101 *(excluding SAR Testing)*
Power Frequency Magnetic Field Immunity	EN 61000-4-8
Immunity to Conducted Disturbances	EN 61000-4-6

(A2LA Cert. No. 1008.01) 08/01/02 Page 1 of 1

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8373 • Phone: 301-644 3248 • Fax: 301-662 2974

"This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this report have been determined in accordance with the laboratory's terms of accreditation unless stated otherwise in the report."

Should this report contain any data for tests for which we are not accredited, or which have been undertaken by a subcontractor that is not A2LA accredited, such data would not covered by this laboratory's A2LA accreditation.

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 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

General Information

1. Prior to testing, the deviation for audio modulation and each of the respective SAT + ST tones were set as close as possible to the required limit.

2. Except for audio modulation, which was applied externally, Wideband Data SAT, ST and all other tones and operational modes were provided by a test control unit incorporating appropriate software. Worst case repetition rate for Wideband Data was 10 kb/s.

3. Spurious radiation was measured at three (3) meters.

4. The two cellular frequency bands are available to the user automatically. Please refer to the manual contained in the documentation.

5. The normal modes of modulation are:

   X (a) GSM 850
   X (b) GSM 1900
   X (c) EGPRS 850
   X (d) EGPRS 1900

Standard Test Conditions

and

Engineering Practices

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

In accordance with ANSI C63.4-1992/2000, 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.

Page Number 8 of 54.

Name of Test: Carrier Output Power (Conducted)

Specification: 47 CFR 2.1046(a)

Test Equipment: As per attached page

Measurement Procedure

1. The EUT was connected to a resistive coaxial attenuator of normal load impedance, and the unmodulated output power was measured by means of an R. F. Power Meter.

2. Measurement accuracy is ±3%.

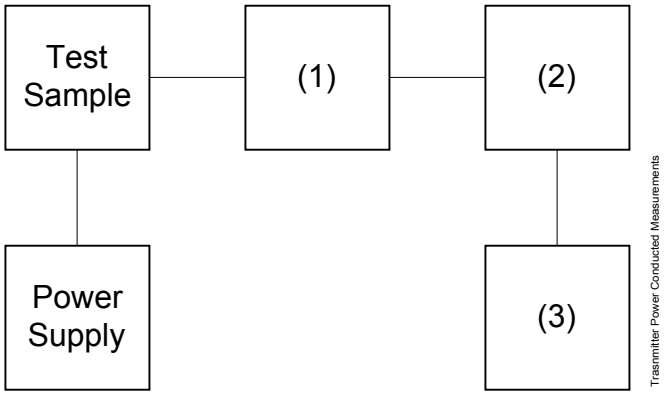
Measurement Results

Nominal, MHz	dBm		RF Power	
	Lo	Hi	Lo	Hi
GSM/GPRS850:				
836.4	5	32.7	3.16 mW	1.862 W
824.4	5.4	32.7	3.47 mW	1.862 W
848.8	4.5	32.8	2.82 mW	1.905 W
EGPRS 850				
836.4	4.8	26.7	3.02 mW	0.468 W
824.2	5.1	26.8	3.24 mW	0.479 W
848.8	5	26.7	3.16 mW	0.468 W
GSM/GPRS1900				
1880	0.1	29.6	1.02 mW	0.912 W
1850.2	0.5	29.9	1.12 mW	0.977 W
1909.8	0.3	29.8	1.07 mW	0.955 W
EGPRS 1900				
1880	-0.5	24.5	0.89 mW	0.282 W
1850.2	0.2	24.7	1.05 mW	0.295 W
1909.8	1.8	25	1.51 mW	0.316 W

Performed By: Daniel M. Dillon, Test Engineer

Transmitter Power Conducted Measurements

Test 1: RF Power Output
Test 2: Frequency Stability



Asset (as applicable)	Description	s/n
(1)	**Coaxial Attenuator**	
i00122	Narda 766-10	7802
i00123	Narda 766-10	7802A
i00231/2	Pasternack PE7021-30 (30 dB)	231 or 232
(2)	**Power Meters**	
i00014	HP 435A	1733A05836
i00039	HP 436A	2709A26776
i00020	HP 8901A Power Mode	2105A01087
i00288	HP E44118B	GB39512470
(3)	**Frequency Counter**	
i00042	HP 5383A	1628A00959
i00019	HP 5334B	2704A00347
i00020	HP 8901A Frequency Mode	2105A01087

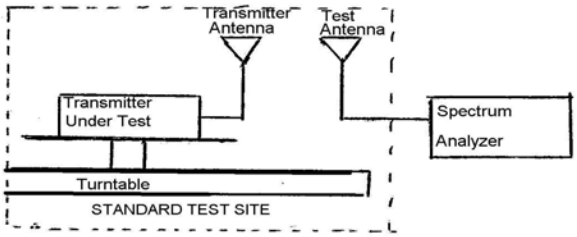
Page Number 10 of 54.

Name of Test: Carrier Power (Radiated)

Specification: TIA/EIA 603A (Substitution Method)

2.2.17.1 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.

2.2.17.2 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 in dB as E_T.

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 using the same modulation as with the transmitter. Raise and lower the test antenna like in step b) and record the highest received signal in dB as E_S.

d) Calculate radiated power as following:
Radiated power = Level + E_T – E_S + $Gain_{Ant}$

E_T Signal level received from transmitter
E_S Signal level received from substitution antenna

Results Attached

Page Number 11 of 54.

Name of Test: Carrier Power (Radiated)

Results

Freq MHz	Level dBm	Antenna Gain dBi	$E_T - E_S$ dBm	Ext. Cable Loss	Radiated P Out dbm	Radiated P Out Watts
GSM850/GPRS850						
824.2	30.3	-0.9dBd	98.8-99.6	2.4	31.0 ERP	1.259
836.4	30.3	-0.6dBd	97.9-98.7	2.4	31.3 ERP	1.349
848.8	30.2	-0.2dBd	98.7-98.1	2.4	33.0 ERP	1.995
EGPRS850						
824.2	24.5	-0.9dBd	95.9-96.9	2.4	25.0 ERP	0.316
836.4	24.5	-0.6dBd	94.5-96.4	2.4	24.4 ERP	0.275
848.8	24.4	-0.2dBd	96.1-95.4	2.4	27.3 ERP	0.537
GSM1900/GPRS1900						
1850.2	24.8	+0.2dBi	82.5-82.2	3.8	29.1 EIRP	0.813
1880.0	24.5	-0.5dBi	81.7-80.9	3.8	28.6 EIRP	0.724
1909.8	24.6	-0.8dBi	81.8-81.3	3.8	28.1 EIRP	0.646
EGPRS1900						
1850.2	19.4	+0.2dBi	80.8-79.9	3.8	24.3 EIRP	0.269
1880.0	19.3	-0.5dBi	79.9-78.8	3.8	23.7 EIRP	0.234
1909.8	19.7	-0.8dBi	79.8-79.6	3.8	22.9 EIRP	0.195

Sample Calculation:

P ANT OUT + ANT GAIN + $E_T - E_S$ + ECL = P.O. RADIATED

30.3 - 0.9 + 98.8 – 99.6 + 2.4 = 31.0 dbm ERP

= 1.259 W ERP

Antennas: EMCO 3125-870 dipole s/n 1017 cal. May 02
EMCO 3125-1880 dipole s/n 1010 cal. Oct 02

Name of Test: Emission Masks (Occupied Bandwidth)

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

Test Equipment: As per previous 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 audio modulation, the audio signal generator was adjusted to the frequency of maximum response and with output level set for ±2.5 kHz deviation (or 50% modulation). With level constant, the signal level was increased 16 dB.

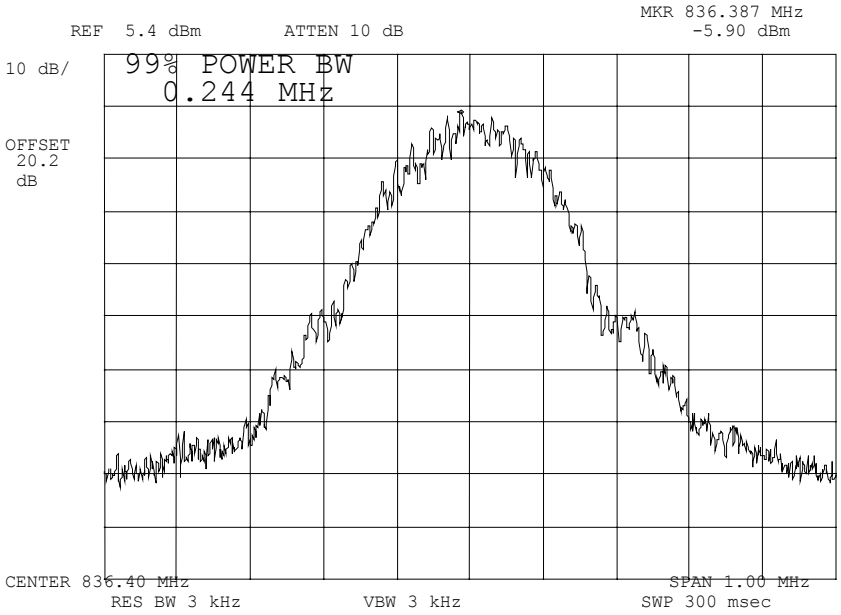
3. For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.

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

5. Measurement Results: Attached

Page Number 13 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0043: 2003-Dec-11 Thu 12:04:00
State: 1:Low Power

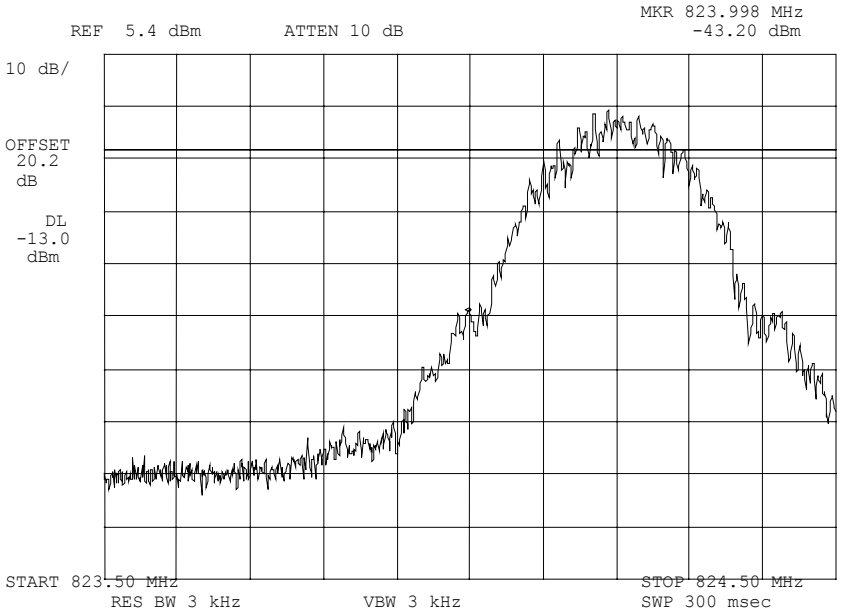


Power: LOW
Modulation: NONE
GSM/GPRS 850

Performed By: Daniel M. Dillon, Test Engineer

Page Number 14 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0046: 2003-Dec-11 Thu 12:07:00
State: 1:Low Power

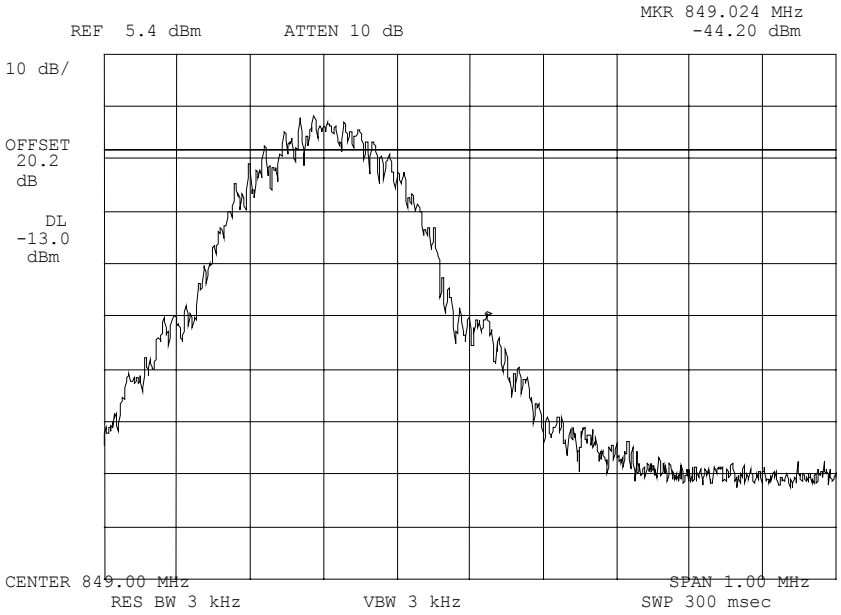


Power: LOW
Modulation: NONE
GSM/GPRS 850 LOW BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 15 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0047: 2003-Dec-11 Thu 12:08:00
State: 1:Low Power

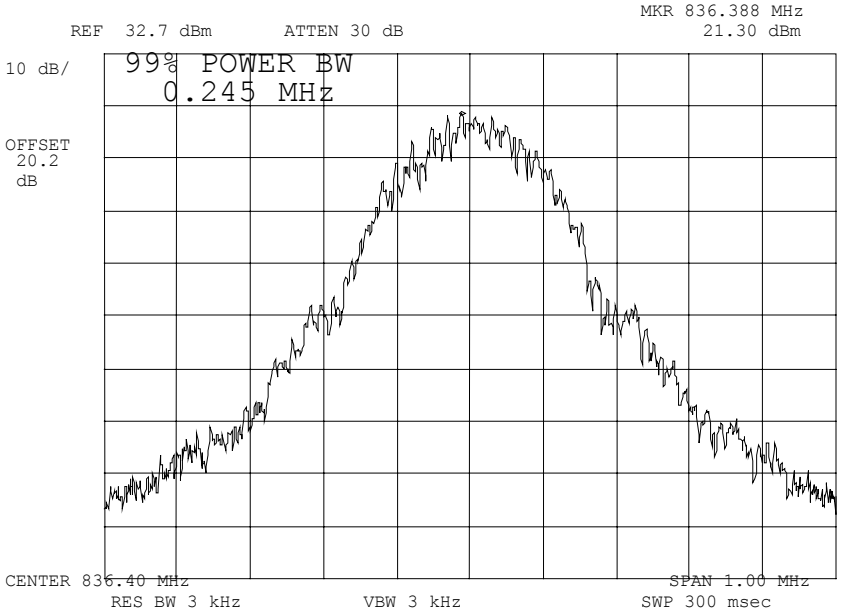


Power: LOW
Modulation: NONE
GSM/GPRS 850 HIGH BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 16 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0023: 2003-Dec-11 Thu 10:57:00
State: 2:High Power

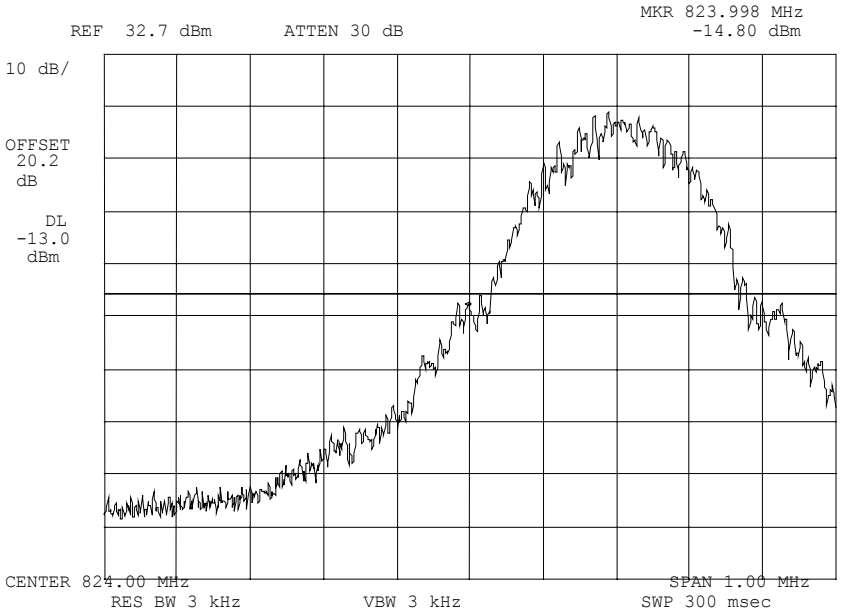


Power: HIGH
Modulation: NONE
GSM/GPRS 850

Performed By: Daniel M. Dillon, Test Engineer

Page Number 17 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0026: 2003-Dec-11 Thu 11:06:00
State: 2:High Power

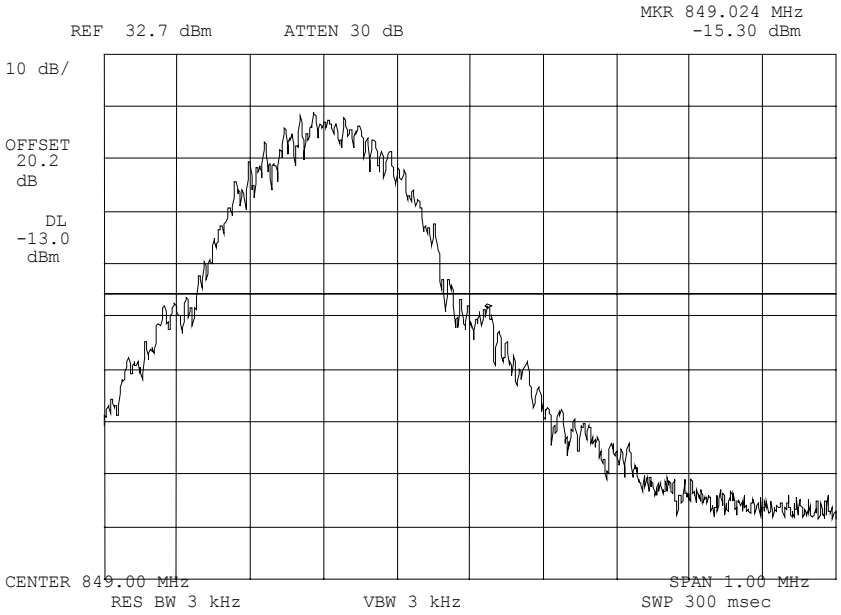


Power: HIGH
Modulation: NONE
GSM/GPRS 850 LOW BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 18 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0027: 2003-Dec-11 Thu 11:08:00
State: 2:High Power

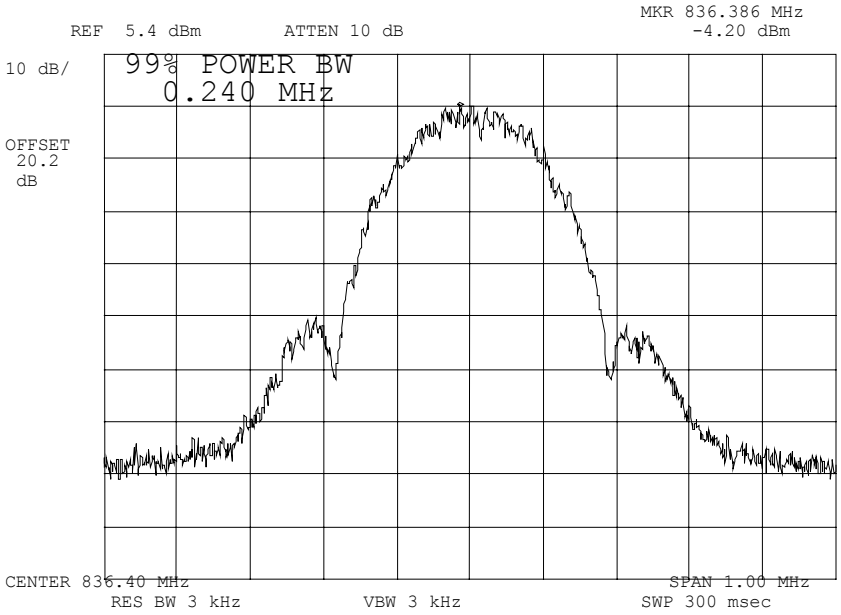


Power: HIGH
Modulation: NONE
GSM/GPRS 850 HIGH BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 19 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0044: 2003-Dec-11 Thu 12:05:00
State: 1:Low Power

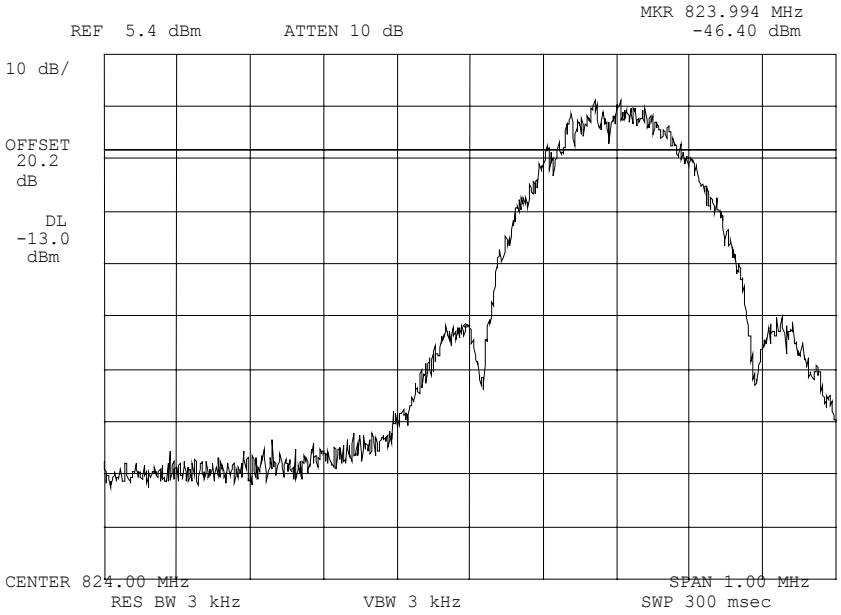


Power: LOW
Modulation: NONE
EGPRS 850

Performed By: Daniel M. Dillon, Test Engineer

Page Number 20 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0045: 2003-Dec-11 Thu 12:06:00
State: 1:Low Power

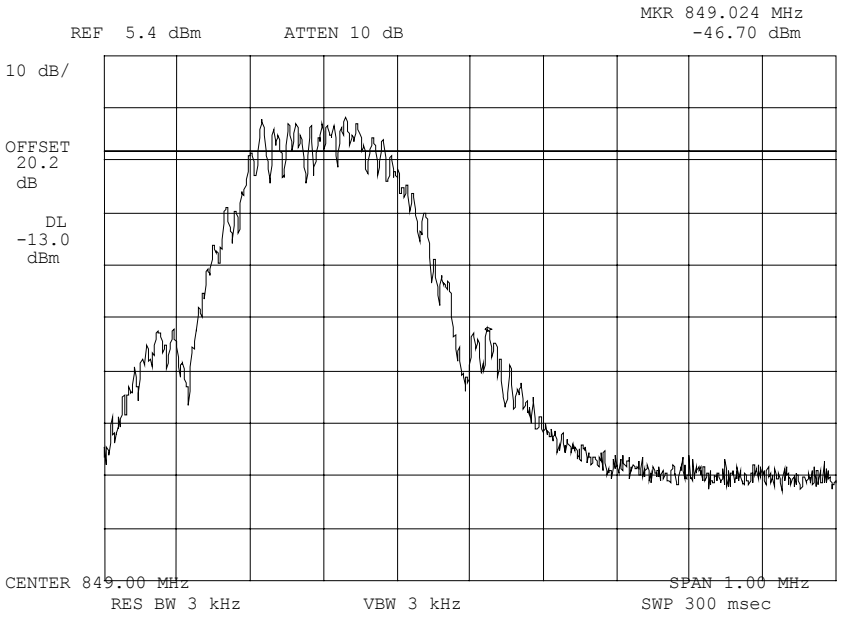


Power: LOW
Modulation: NONE
EGPRS 850 LOW BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 21 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0048: 2003-Dec-11 Thu 12:09:00
State: 1:Low Power

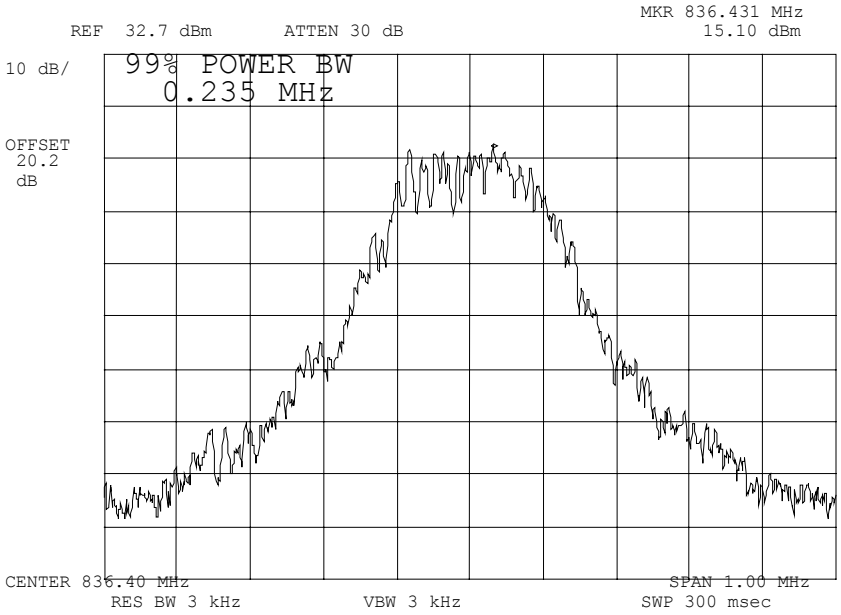


Power: LOW
Modulation: NONE
EGPRS 850 HIGH BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 22 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0024: 2003-Dec-11 Thu 11:02:00
State: 2:High Power

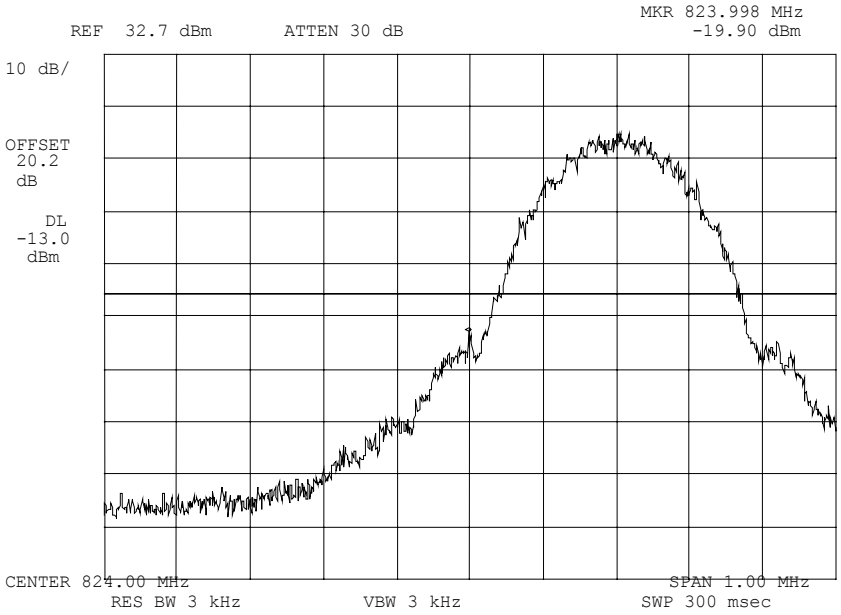


Power: HIGH
Modulation: NONE
EGPRS 850

Performed By: Daniel M. Dillon, Test Engineer

Page Number 23 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0029: 2003-Dec-11 Thu 11:13:00
State: 2:High Power

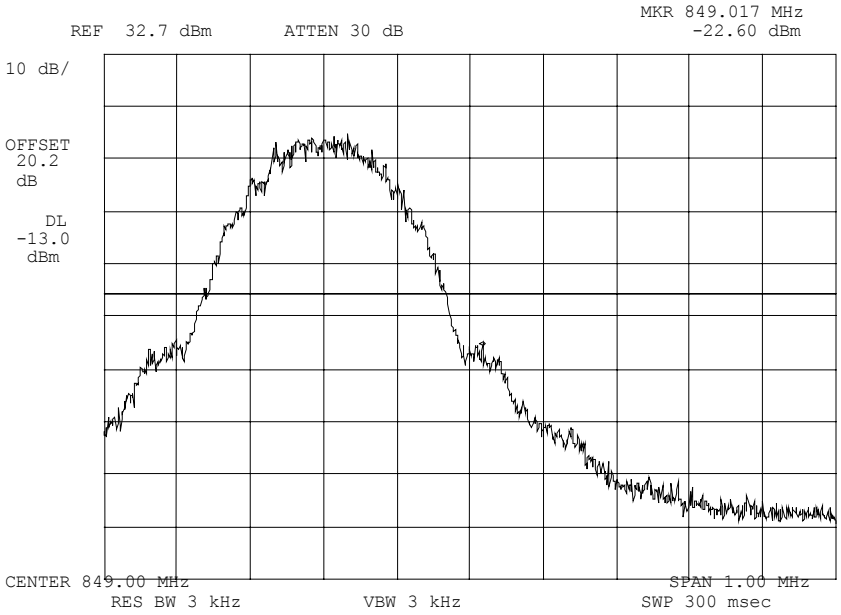


Power: HIGH
Modulation: NONE
EGPRS 850 LOW BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 24 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0028: 2003-Dec-11 Thu 11:11:00
State: 2:High Power



Power: HIGH
Modulation: NONE
EGPRS 850 HIGH BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

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.

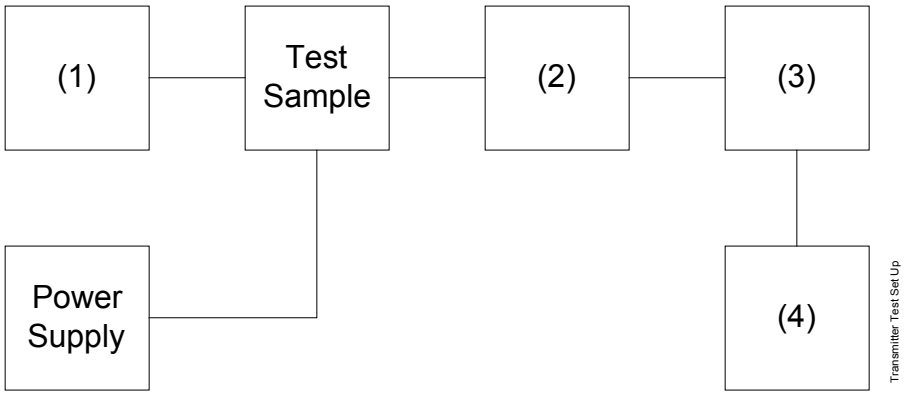
2. The low and high channels for all RF powers within the designated frequency block(s) were measured.

3. Measurement Results: Attached

Performed By: Daniel M. Dillon, Test Engineer

Transmitter Spurious Emission

Test A. Occupied Bandwidth (In-Band Spurious)
Test B. Out-of-Band Spurious

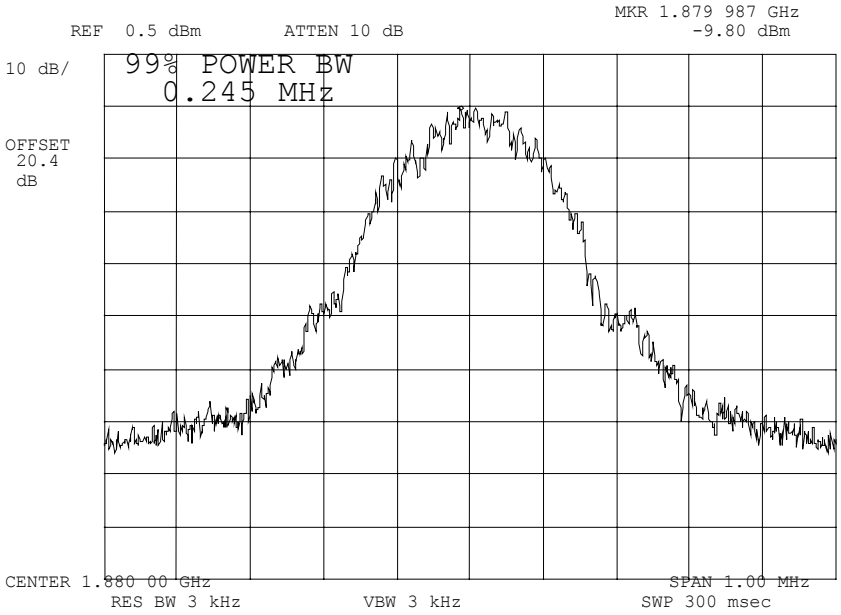


Transmitter Test Set Up

Asset (as applicable)	Description	s/n
(1) **Audio Oscillator/Generator**		
i00010	HP 204D	1105A04683
i00017	HP 8903A	2216A01753
i00012	HP 3312A	1432A11250
(2) **Coaxial Attenuator**		
i00122	Narda 766-10	7802
i00123	Narda 766-10	7802A
i00231/2	Pasternack PE7021-30 (30 dB)	231 or 232
(3) **Filters; Notch, HP, LP, BP**		
i00126	Eagle TNF-1	100-250
i00125	Eagle TNF-1	50-60
i00124	Eagle TNF-1	250-850
(4) **Spectrum Analyzer**		
i00048	HP 8566B	2511A01467
i00029	HP 8563E	3213A00104

Page Number 27 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0037: 2003-Dec-11 Thu 11:54:00
State: 1:Low Power

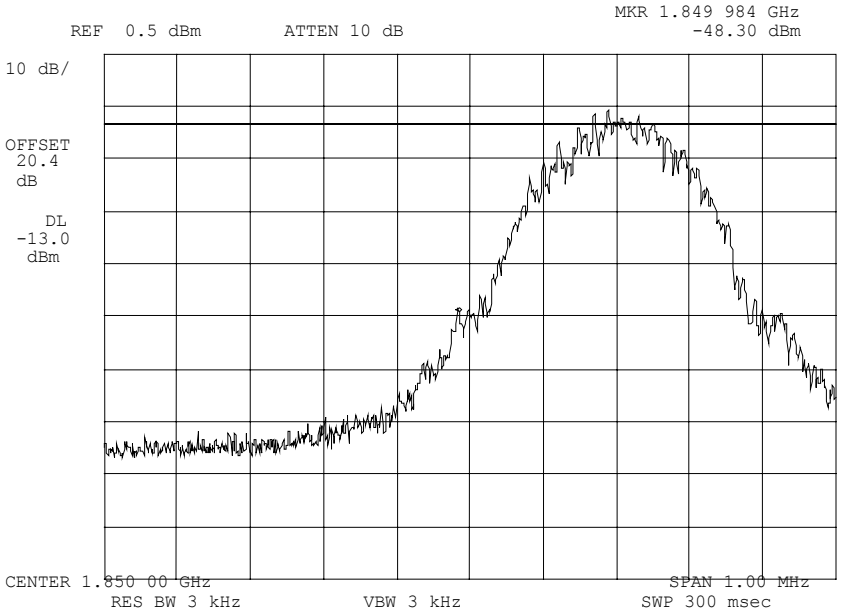


Power: LOW
Modulation: NONE
GSM/GPRS 1900

Performed By: Daniel M. Dillon, Test Engineer

Page Number 28 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0040: 2003-Dec-11 Thu 11:58:00
State: 1:Low Power

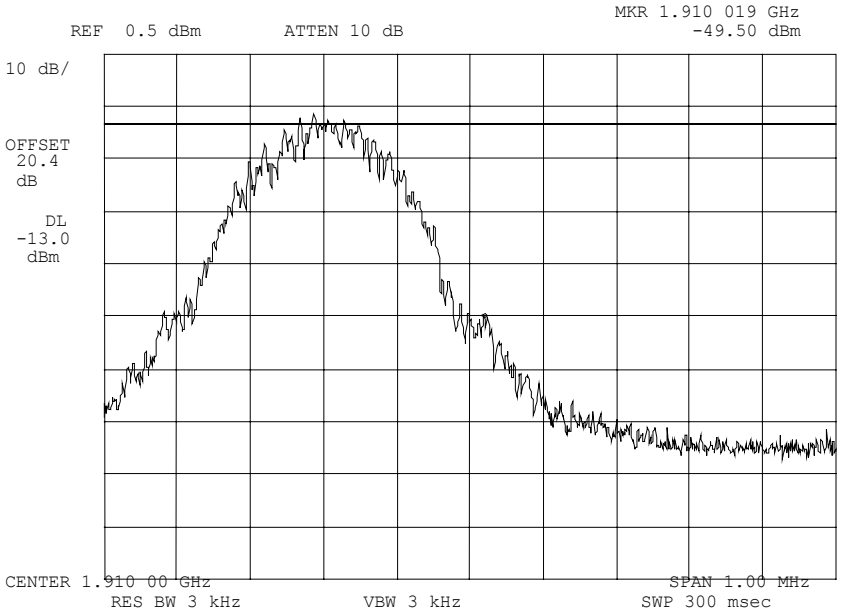


Power: LOW
Modulation: NONE
GSM/GPRS 1900 LOW BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 29 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0041: 2003-Dec-11 Thu 11:59:00
State: 1:Low Power

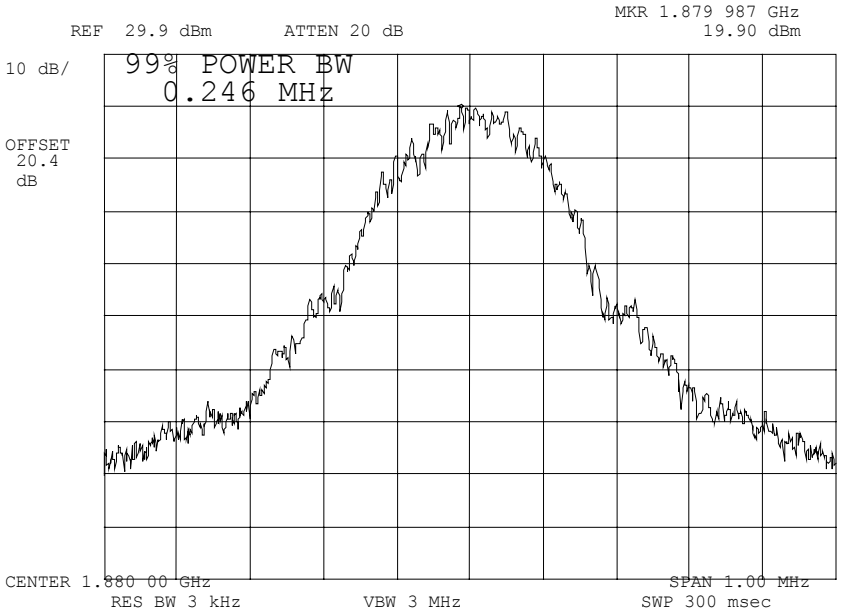


Power: LOW
Modulation: NONE
GSM/GPRS 1900 HIGH BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 30 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0030: 2003-Dec-11 Thu 11:17:00
State: 2:High Power

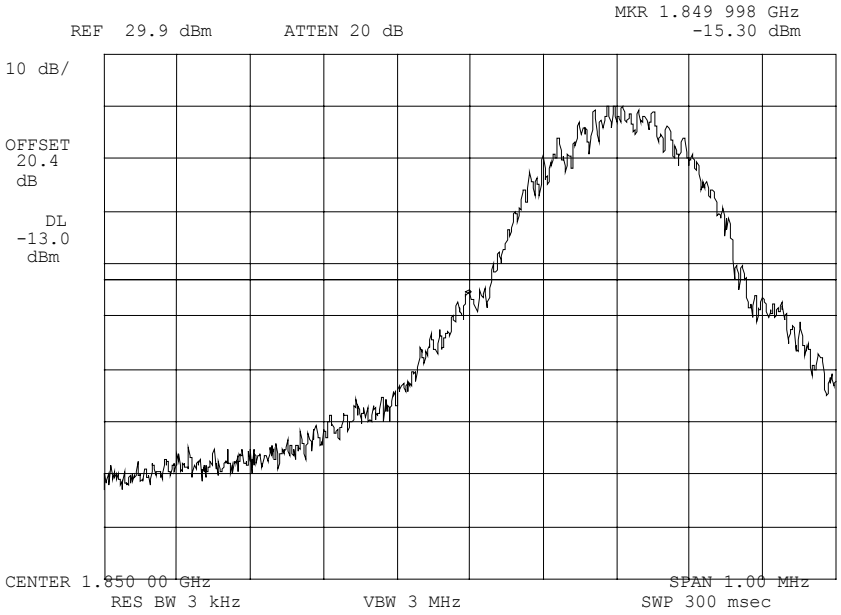


Power: HIGH
Modulation: NONE
GSM/GPRS 1900

Performed By: Daniel M. Dillon, Test Engineer

Page Number 31 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0036: 2003-Dec-11 Thu 11:28:00
State: 2:High Power

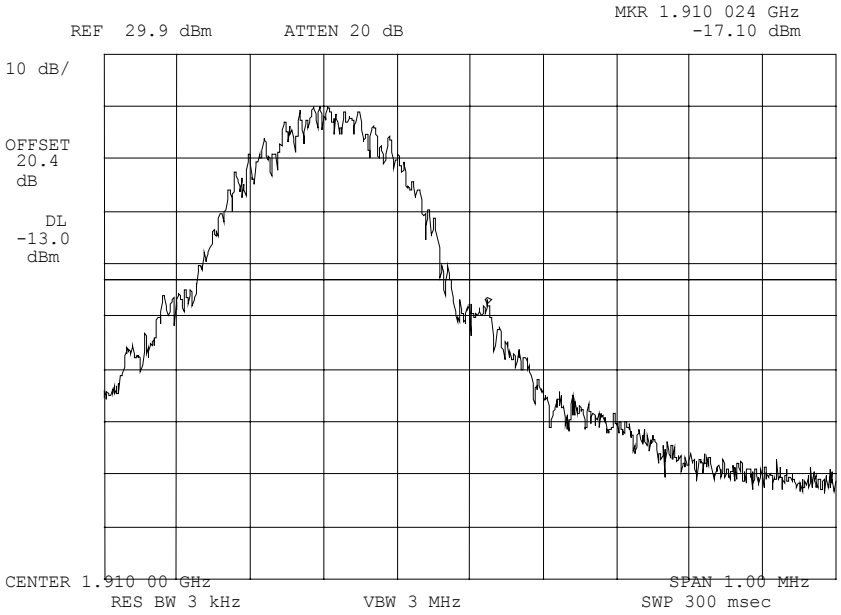


Power: HIGH
Modulation: NONE
GSM/GPRS 1900 LOW BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 32 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0035: 2003-Dec-11 Thu 11:26:00
State: 2:High Power

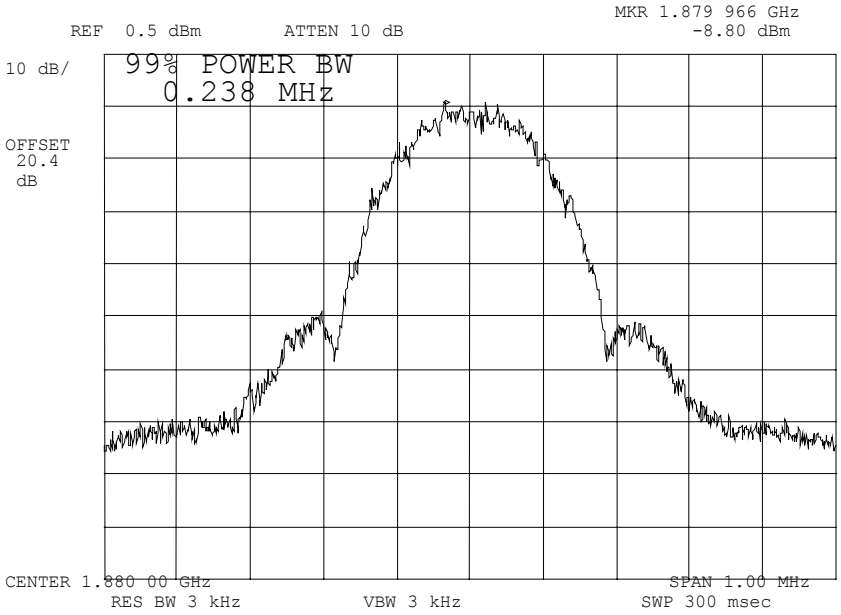


Power: HIGH
Modulation: NONE
GSM/GPRS 1900 HIGH BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 33 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0038: 2003-Dec-11 Thu 11:55:00
State: 1:Low Power

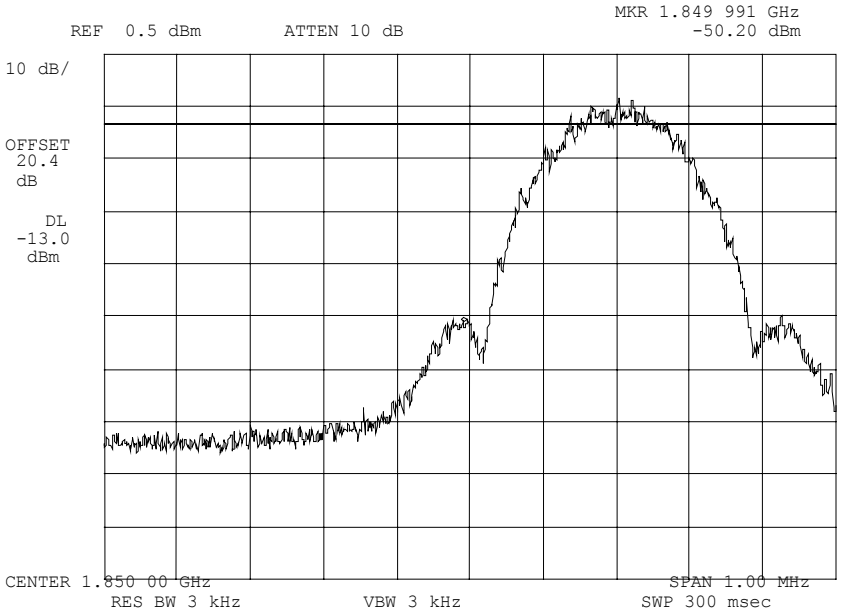


Power: LOW
Modulation: NONE
EGPRS 1900

Performed By: Daniel M. Dillon, Test Engineer

Page Number 34 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0039: 2003-Dec-11 Thu 11:57:00
State: 1:Low Power

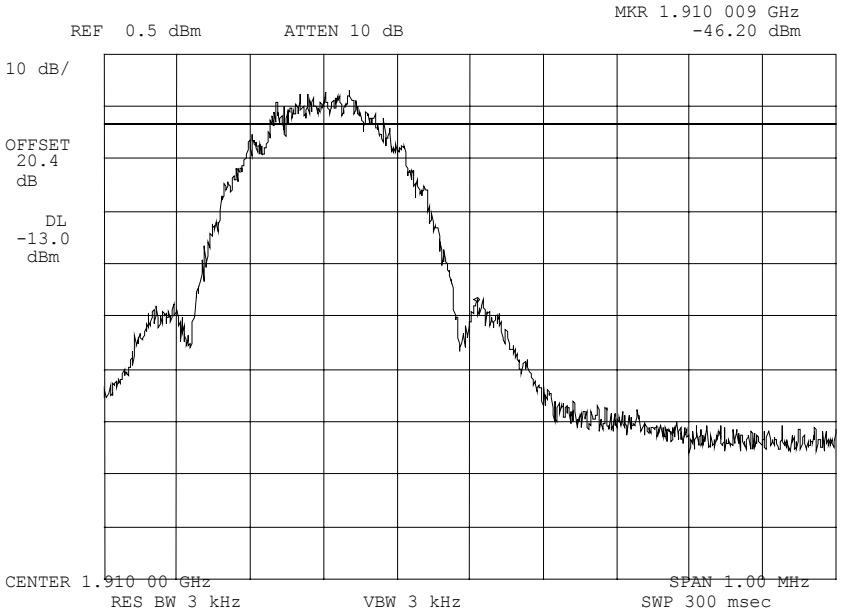


Power: LOW
Modulation: NONE
EGPRS 1900 LOW BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 35 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0042: 2003-Dec-11 Thu 12:01:00
State: 1:Low Power

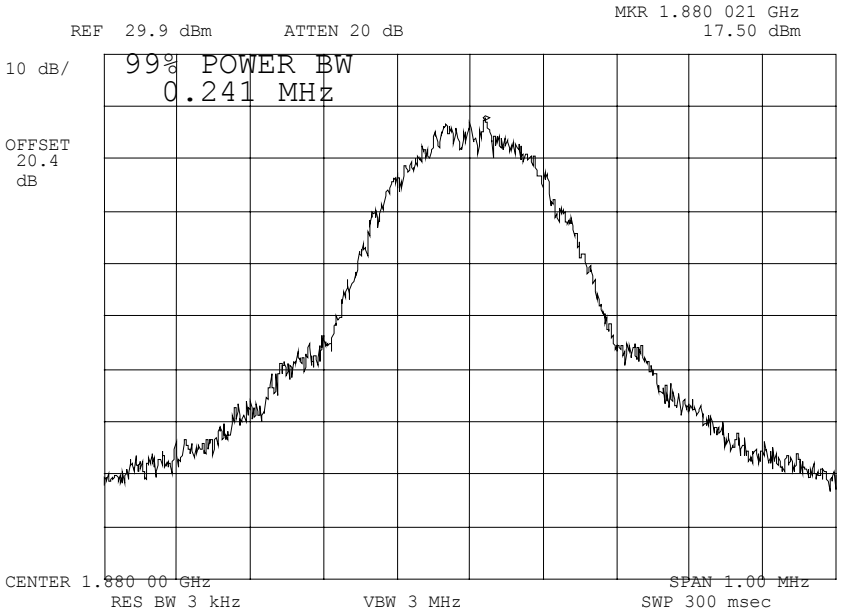


Power: LOW
Modulation: NONE
EGPRS 1900 HIGH BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 36 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0033: 2003-Dec-11 Thu 11:23:00
State: 2:High Power

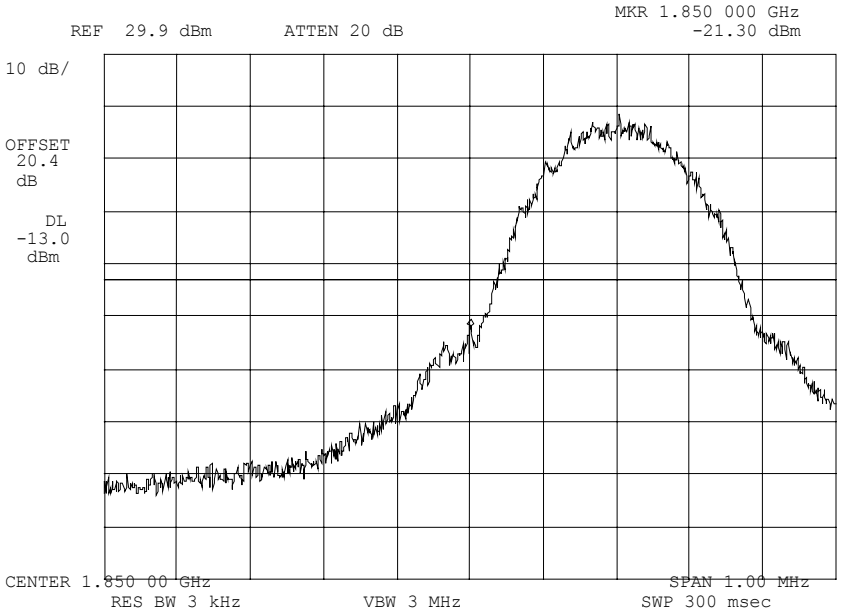


Power: HIGH
Modulation: NONE
EGPRS 1900

Performed By: Daniel M. Dillon, Test Engineer

Page Number 37 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0032: 2003-Dec-11 Thu 11:22:00
State: 2:High Power

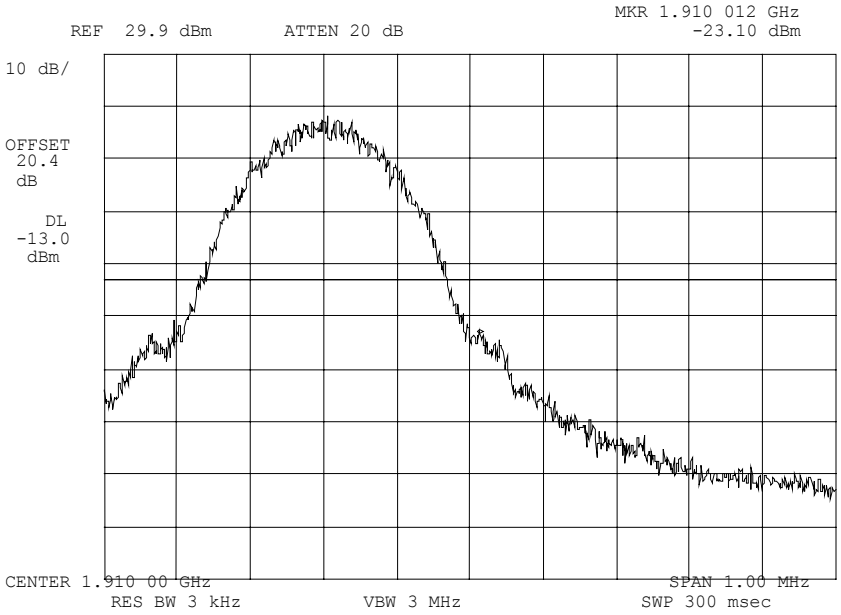


Power: HIGH
Modulation: NONE
EGPRS 1900 LOW BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 38 of 54.

Name of Test: Emission Masks (Occupied Bandwidth)
g03c0034: 2003-Dec-11 Thu 11:25:00
State: 2:High Power



Power: HIGH
Modulation: NONE
EGPRS 1900 HIGH BAND EDGE

Performed By: Daniel M. Dillon, Test Engineer

Page Number 39 of 54.

Name of Test: Spurious Emissions at Antenna Terminals

Specification: 47 CFR 2.1051, 22.917

Test Equipment: As per attached page

Measurement Procedure

1. The EUT was connected to a coaxial attenuator and then to a Spectrum Analyzer.

2. A notch filter was introduced to reduce or eliminate spurious emission which could be generated internally in the spectrum analyzer.

3. Measurements were made over the range from 45 kHz to 10 GHz for the worst case modulation so both the highest and lowest R.F. power settings.

4. All other emissions were 20 dB or more below the limit.

5. Spectrum analyzer bandwidth was set to section 22.917(h) as applicable.

6. Measurement Results: Attached

Name of Test: Unwanted Emissions (Transmitter Conducted)
g03c0086: 2003-Dec-15 Mon 15:14:00
GSM

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
824.200000	25.458333	-37.8	-50.8	-24.8
824.200000	1648.385000	-46.5	-59.5	-33.5
836.000000	1671.919167	-52.2	-65.2	-39.2
848.800000	1697.572500	-44.8	-57.8	-31.8
824.200000	2472.530833	-51.8	-64.8	-38.8
836.000000	2507.784167	-52	-65	-39
848.800000	2546.262500	-51.7	-64.7	-38.7
824.200000	3296.935000	-51.5	-64.5	-38.5
836.000000	3343.876667	-53.5	-66.5	-40.5
848.800000	3395.315833	-52.7	-65.7	-39.7
824.200000	4120.905833	-53.2	-66.2	-40.2
836.000000	4179.975000	-53.3	-66.3	-40.3
848.800000	4244.217500	-52.7	-65.7	-39.7
824.200000	4945.110000	-53.2	-66.2	-40.2
836.000000	5015.763333	-54	-67	-41
848.800000	5092.635833	-52.8	-65.8	-39.8
824.200000	5769.212500	-53.2	-66.2	-40.2
836.000000	5852.065000	-54	-67	-41
848.800000	5941.350833	-53.3	-66.3	-40.3
824.200000	6593.468333	-52.2	-65.2	-39.2
836.000000	6687.810000	-51.2	-64.2	-38.2
848.800000	6790.201667	-50.7	-63.7	-37.7
824.200000	7418.035833	-51.2	-64.2	-38.2
836.000000	7524.191667	-51.3	-64.3	-38.3
848.800000	7639.112500	-51.7	-64.7	-38.7
824.200000	8242.110000	-52	-65	-39
836.000000	8359.956667	-52.2	-65.2	-39.2
848.800000	8487.946667	-52	-65	-39
824.200000	9066.025833	-52.2	-65.2	-39.2
836.000000	9195.813333	-52	-65	-39
848.800000	9336.595000	-52.5	-65.5	-39.5
824.200000	9890.258333	-52.2	-65.2	-39.2
836.000000	10031.903333	-52.3	-65.3	-39.3
848.800000	10185.357500	-51.7	-64.7	-38.7
824.200000	10714.636667	-52	-65	-39
836.000000	10867.875000	-52.5	-65.5	-39.5
848.800000	11034.492500	-52.2	-65.2	-39.2
824.200000	11538.798333	-51.3	-64.3	-38.3
836.000000	11704.128333	-52.2	-65.2	-39.2
848.800000	11883.278333	-52.2	-65.2	-39.2
824.200000	12363.095000	-52.3	-65.3	-39.3
836.000000	12539.801667	-52.2	-65.2	-39.2
848.800000	12731.992500	-51.3	-64.3	-38.3

Performed By: Daniel M. Dillon, Test Engineer

Name of Test: Unwanted Emissions (Transmitter Conducted)
g03c0088: 2003-Dec-15 Mon 16:03:00
GSM

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
1850.200000	3700.564167	-26.3	-56.3	-13.3
1880.000000	3760.209167	-36	-66	-23
1909.800000	3819.525000	-26.8	-56.8	-13.8
1850.200000	5550.492500	-27.1	-57.1	-14.1
1880.000000	5640.035000	-36.8	-66.8	-23.8
1909.800000	5729.353333	-26.3	-56.3	-13.3
1850.200000	7400.651667	-25.1	-55.1	-12.1
1880.000000	7519.818333	-35.2	-65.2	-22.2
1909.800000	7639.239167	-24.5	-54.5	-11.5
1850.200000	9251.090833	-25.3	-55.3	-12.3
1880.000000	9400.180000	-35.2	-65.2	-22.2
1909.800000	9548.770000	-25.5	-55.5	-12.5
1850.200000	11101.039167	-25.8	-55.8	-12.8
1880.000000	11279.899167	-35.3	-65.3	-22.3
1909.800000	11458.860000	-25.8	-55.8	-12.8
1850.200000	12951.587500	-25.6	-55.6	-12.6
1880.000000	13159.873333	-35.7	-65.7	-22.7
1909.800000	13368.399167	-22.3	-52.3	-9.3
1850.200000	14801.657500	-21.8	-51.8	-8.8
1880.000000	15039.883333	-32.3	-62.3	-19.3
1909.800000	15278.631667	-21.8	-51.8	-8.8
1850.200000	16651.599167	-22	-52	-9
1880.000000	16920.181667	-32.7	-62.7	-19.7
1909.800000	17188.044167	-22.6	-52.6	-9.6
1850.200000	18502.030000	-22.5	-52.5	-9.5
1880.000000	18800.013333	-33.2	-63.2	-20.2
1909.800000	19097.755000	-23.1	-53.1	-10.1
1850.200000	20352.195000	-21.6	-51.6	-8.6
1880.000000	20679.764167	-33.2	-63.2	-20.2
1909.800000	21007.745833	-21.5	-51.5	-8.5

Performed By: Daniel M. Dillon, Test Engineer

Name of Test: Unwanted Emissions (Transmitter Conducted)
g03c0089: 2003-Dec-15 Mon 16:21:00
EGPRS

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
824.200000	1648.208333	-25.5	-55.5	-12.5
836.000000	1671.802500	-25.5	-55.5	-12.5
848.800000	1697.604167	-25	-55	-12
824.200000	2472.445000	-24.5	-54.5	-11.5
836.000000	2508.088333	-24.8	-54.8	-11.8
848.800000	2546.164167	-25	-55	-12
824.200000	3296.989167	-26	-56	-13
836.000000	3343.869167	-26.1	-56.1	-13.1
848.800000	3395.297500	-26.3	-56.3	-13.3
824.200000	4120.962500	-26.1	-56.1	-13.1
836.000000	4179.974167	-26.1	-56.1	-13.1
848.800000	4244.062500	-26.3	-56.3	-13.3
824.200000	4945.191667	-26.3	-56.3	-13.3
836.000000	5016.221667	-26.6	-56.6	-13.6
848.800000	5092.907500	-26.3	-56.3	-13.3
824.200000	5769.586667	-27.3	-57.3	-14.3
836.000000	5851.779167	-27	-57	-14
848.800000	5941.729167	-27	-57	-14
824.200000	6593.724167	-25.3	-55.3	-12.3
836.000000	6687.907500	-24.1	-54.1	-11.1
848.800000	6790.605833	-24.8	-54.8	-11.8
824.200000	7417.942500	-25	-55	-12
836.000000	7524.051667	-25.1	-55.1	-12.1
848.800000	7639.109167	-24.5	-54.5	-11.5
824.200000	8242.049167	-24.8	-54.8	-11.8
836.000000	8359.839167	-25.3	-55.3	-12.3
848.800000	8488.095000	-25.3	-55.3	-12.3
824.200000	9066.235000	-25.3	-55.3	-12.3
836.000000	9196.091667	-25.1	-55.1	-12.1
848.800000	9336.803333	-25	-55	-12
824.200000	9890.456667	-25.5	-55.5	-12.5
836.000000	10031.870000	-25.5	-55.5	-12.5
848.800000	10185.397500	-25.3	-55.3	-12.3
824.200000	10714.363333	-25.5	-55.5	-12.5
836.000000	10867.837500	-25.3	-55.3	-12.3
848.800000	11034.233333	-25.8	-55.8	-12.8
824.200000	11538.567500	-24.6	-54.6	-11.6
836.000000	11703.910000	-25	-55	-12
848.800000	11883.200000	-25	-55	-12
824.200000	12362.876667	-24.6	-54.6	-11.6
836.000000	12539.915000	-25.3	-55.3	-12.3
848.800000	12732.105000	-25.1	-55.1	-12.1

Performed By: Daniel M. Dillon, Test Engineer

Name of Test: Unwanted Emissions (Transmitter Conducted)
g03c0089: 2003-Dec-15 Mon 16:21:00
EGPRS

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
1850.200000	3700.358333	-25.8	-55.8	-12.8
1880.000000	3760.171667	-36.3	-66.3	-23.3
1909.800000	3819.351667	-26.6	-56.6	-13.6
1850.200000	5550.748333	-27	-57	-14
1880.000000	5640.100000	-36.5	-66.5	-23.5
1909.800000	5729.601667	-26.1	-56.1	-13.1
1850.200000	7400.774167	-25	-55	-12
1880.000000	9399.874167	-35	-65	-22
1909.800000	9548.798333	-25.8	-55.8	-12.8
1850.200000	11101.346667	-25.3	-55.3	-12.3
1880.000000	11280.015000	-35.7	-65.7	-22.7
1909.800000	11458.971667	-25.6	-55.6	-12.6
1850.200000	12951.483333	-25	-55	-12
1880.000000	13159.835833	-34.7	-64.7	-21.7
1909.800000	13368.640000	-22	-52	-9
1850.200000	14801.615833	-22	-52	-9
1880.000000	15039.815000	-32.7	-62.7	-19.7
1909.800000	15278.427500	-21.6	-51.6	-8.6
1850.200000	16651.875000	-22.8	-52.8	-9.8
1880.000000	16919.792500	-32.7	-62.7	-19.7
1909.800000	17188.328333	-22.1	-52.1	-9.1
1850.200000	18502.083333	-22.8	-52.8	-9.8
1880.000000	18800.228333	-33.7	-63.7	-20.7
1909.800000	19098.170833	-22.8	-52.8	-9.8
1850.200000	20352.080000	-21.8	-51.8	-8.8
1880.000000	20680.083333	-32.3	-62.3	-19.3
1909.800000	21007.625833	-21	-51	-8

Performed By: Daniel M. Dillon, Test Engineer

Page Number 44 of 54.

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

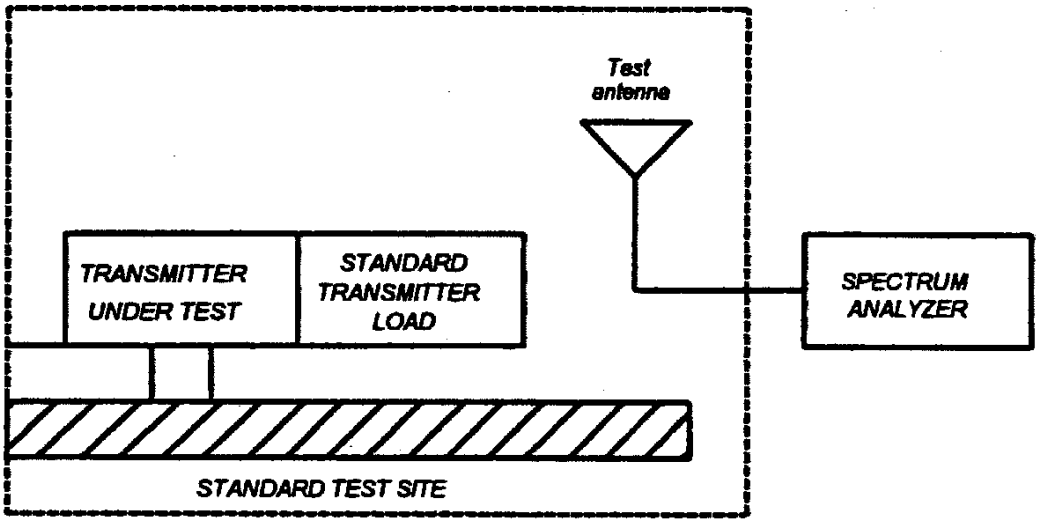
1.2.12.1 Definition: Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

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, 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 which is placed on the turntable. The RF cable to this load should be of minimum length.

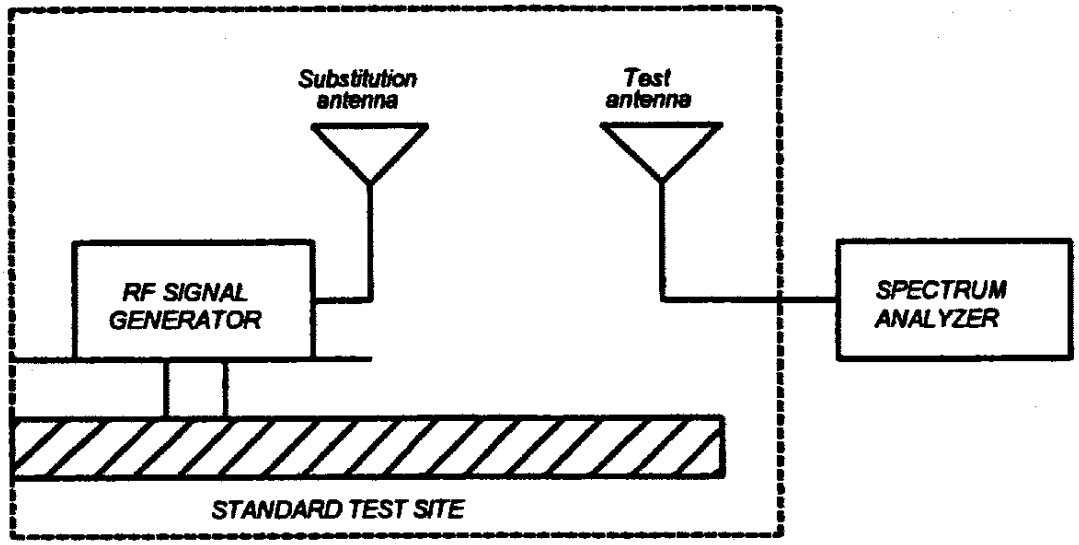


Name of Test: Field Strength of Spurious Radiation (Cont.)

D) For each spurious measurement the test antenna should 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 l)

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

Test Equipment:

Asset (as applicable)	Description	s/n	Cycle Per ANSI C63.4-1992/2000 Draft, 10.1.4	Last Cal
Transducer				
i00088	EMCO 3109-B 25MHz-300MHz	2336	12 mo.	Sep-03
i00065	EMCO 3301-B Active Monopole	2635	12 mo.	Sep-03
i00103	EMCO 3115 1GHz-18GHz	9208-3925	12 mo.	Sep-03
Amplifier				
i00028	HP 8449A	2749A00121	12 mo.	Mar-03
Spectrum Analyzer				
i00029	HP 8563E	3213A00104	12 mo.	Jan-03
i00033	HP 85462A	3625A00357	12 mo.	Jan-03

Name of Test: Field Strength of Spurious Radiation
g03c0074: 2003-Dec-12 Fri 13:54:00
STATE: 2:High Power

Frequency Tuned, MHz	Frequency Emission, MHz	ERP, dBm	ERP, dBc
824.200000	1648.400000	-34.1	-67.1
824.200000	1648.400000	-37.4	-70.4
836.000000	1672.800000	-28.4	-61.4
836.000000	1672.800000	-28.7	-61.7
848.800000	1697.600000	-33.7	-66.7
848.800000	1697.600000	-36.3	-69.3
824.200000	2472.600000	-69.3	-102.3
824.200000	2472.600000	-66.3	-99.3
836.000000	2509.200000	-57.7	-90.7
836.000000	2509.200000	-57.7	-90.7
848.800000	2546.400000	-58.4	-91.4
848.800000	2546.400000	-59.4	-92.4
824.200000	3296.800000	-57	-90
824.200000	3296.800000	-64.7	-97.7
836.000000	3345.600000	-66.8	-99.8
836.000000	3345.600000	-66.4	-99.4
848.800000	3395.200000	-67.6	-100.6
848.800000	3395.200000	-66	-99
824.200000	4121.000000	-66	-99
824.200000	4121.000000	-65.2	-98.2
836.000000	4182.000000	-65.9	-98.9
836.000000	4182.020000	-66.8	-99.8
848.800000	4244.000000	-66.1	-99.1
848.800000	4244.000000	-67.1	-100.1
824.200000	4945.200000	-63.1	-96.1
824.200000	4945.200000	-64.8	-97.8
836.000000	5018.400000	-64.5	-97.5
836.000000	5018.420000	-65.2	-98.2
848.800000	5092.800000	-65.5	-98.5
848.800000	5092.800000	-63.7	-96.7
824.200000	5769.400000	-64.7	-97.7
824.200000	5769.400000	-64.2	-97.2
836.000000	5854.800000	-62.1	-95.1
836.000000	5854.820000	-63.9	-96.9
848.800000	5941.600000	-64.3	-97.3
824.200000	6593.600000	-62.5	-95.5
824.200000	6593.600000	-62.5	-95.5
836.000000	6691.200000	-61.6	-94.6
836.000000	6691.220000	-61.4	-94.4
848.800000	6790.400000	-61.9	-94.9
848.800000	6790.400000	-61.8	-94.8
824.200000	7417.800000	-60.6	-93.6
824.200000	7417.800000	-61.1	-94.1
836.000000	7527.600000	-62	-95
836.000000	7527.620000	-60.5	-93.5
848.800000	7639.200000	-61.6	-94.6
848.800000	7639.200000	-60.7	-93.7
824.200000	8242.000000	-60.4	-93.4

Page Number 48 of 54.

Name of Test: Field Strength of Spurious Radiation (Continued)
g03c0074: 2003-Dec-12 Fri 13:54:00
STATE: 2:High Power

Frequency Tuned, MHz	Frequency Emission, MHz	ERP, dBm	ERP, dBc
824.200000	8242.000000	-59.5	-92.5
836.000000	8364.000000	-60.5	-93.5
836.000000	8364.000000	-59.8	-92.8
848.800000	8488.000000	-61.3	-94.3
848.800000	8488.000000	-61.2	-94.2

Page Number 49 of 54.

Name of Test: Field Strength of Spurious Radiation
G03c0075: 2003-Dec-15 Mon 08:34:00
STATE: 2:High Power

Frequency Tuned, MHz	Frequency Emission, MHz	ERP, dBm	ERP, dBc
1850.200000	3700.400000	-63	-92.9
1850.200000	3700.400000	-65.3	-95.2
1880.000000	3760.000000	-62.8	-92.7
1880.000000	3760.000000	-65.7	-95.6
1909.800000	3819.600000	-62.9	-92.8
1909.800000	3819.600000	-64.4	-94.3
1850.200000	5550.600000	-62.1	-92
1850.200000	5550.600000	-62.3	-92.2
1880.000000	5640.000000	-62.6	-92.5
1880.000000	5640.000000	-63	-92.9
1909.800000	5729.400000	-61.2	-91.1
1909.800000	5729.400000	-61.2	-91.1
1850.200000	7400.800000	-57	-86.9
1850.200000	7400.800000	-57.2	-87.1
1880.000000	7520.000000	-57	-86.9
1880.000000	7520.000000	-57.4	-87.3
1909.800000	7639.200000	-57.9	-87.8
1909.800000	7639.200000	-58.6	-88.5
1850.200000	9251.000000	-56.2	-86.1
1850.200000	9251.000000	-55.5	-85.4
1880.000000	9400.000000	-54.3	-84.2
1880.000000	9400.000000	-54.6	-84.5
1909.800000	9549.000000	-54.1	-84
1909.800000	9549.000000	-54.5	-84.4
1850.200000	11101.200000	-55.8	-85.7
1850.200000	11101.200000	-54	-83.9
1880.000000	11280.000000	-50.6	-80.5
1880.000000	11280.000000	-54.9	-84.8
1909.800000	11458.800000	-54.3	-84.2
1909.800000	11458.800000	-55.2	-85.1
1850.200000	12951.400000	-52.8	-82.7
1850.200000	12951.400000	-52.1	-82
1880.000000	13160.000000	-50.5	-80.4
1880.000000	13160.000000	-52	-81.9
1909.800000	13368.600000	-47.7	-77.6
1909.800000	13368.600000	-48	-77.9
1850.200000	14801.600000	-52.8	-82.7
1850.200000	14801.600000	-52.6	-82.5
1880.000000	15040.000000	-53.4	-83.3
1880.000000	15040.000000	-53.4	-83.3
1909.800000	15278.400000	-51.1	-81
1909.800000	15278.400000	-51.6	-81.5
1850.200000	16651.800000	-46.6	-76.5
1850.200000	16651.800000	-48.6	-78.5
1880.000000	16920.000000	-47	-76.9
1880.000000	16920.000000	-48	-77.9
1909.800000	17188.200000	-46.9	-76.8
1909.800000	17188.200000	-46.4	-76.3

Name of Test: Frequency Stability (Temperature Variation)

Specification: 47 CFR 2.1055(a)(1)

Test Conditions: As Indicated

Test Equipment: As per previous page

Measurement Procedure

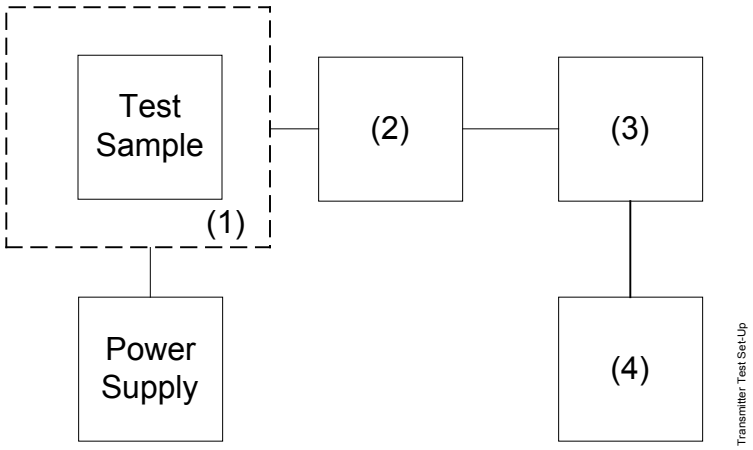
1. The EUT and test equipment were set up as shown.

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

3. With power OFF, the temperature was raised in 10°C steps up to 50°C. 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.

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

Transmitter Test Set-Up



	Equipment	Serial Number	Last cal
(1)	Temperature Change Heraus-Vötsch HT4002		
(2)	Telecommunications Test Set Anritsu 8801B	MW07191	11-03

Page Number 52 of 54.

Name of Test: Frequency Stability (Temperature Variation)

GSM/GPRS/EGPRS CELLULAR BAND

°C	Change, Hz	Change, ppm
-30	16.0	0.0
-20	-7.3	0.0
-10	-15.5	0.0
0	-13.4	0.0
10	16.9	0.0
20	-12.8	0.0
30	-19.2	0.0
40	-22.2	0.0
50	-14.5	0.0

GSM/GPRS/EGPRS PCS BAND

°C	Change, Hz	Change, ppm
-30	6.1	0.0
-20	24.1	0.0
-10	20.6	0.0
0	19.1	0.0
10	17.7	0.0
20	-30.2	0.0
30	-21.0	0.0
40	-21.4	0.0
50	16.6	0.0

*Data supplied by Applicant

Page Number 53 of 54.

Name of Test: Frequency Stability (Voltage Variation)

Specification: 47 CFR 2.1055 (b)(1)

Test Equipment: As per previous page

Measurement Procedure

1. The EUT was placed in a temperature chamber at 20°C and connected as for "Frequency Stability - Temperature Variation" test.

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

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

Results: Frequency Stability (Voltage Variation)

GSM/GPRS/EGPRS CELLULAR BAND

% of STV	Voltage	Frequency, MHz	Change, Hz	Change, ppm
85	3.3	836.3999827	-25.4	0.0
100	3.9	836.3999872	-12.8	0.0
115	4.5	836.4000196	19.6	0.0

GSM/GPRS/EGPRS PCS BAND

% of STV	Voltage	Frequency, MHz	Change, Hz	Change, ppm
85	3.3	1879.9999732	-26.8	0.0
100	3.9	1879.9999698	-30.2	0.0
115	4.5	1880.0000194	19.4	0.0

*Data supplied by Applicant

Page Number 54 of 54.

Name of Test: Necessary Bandwidth and Emission Bandwidth

Specification: 47 CFR 2.202(g)

Modulation = 300KGXW (GSM)

Necessary Bandwidth:

Necessary Bandwidth (B_N), kHz = 300
(measured at the 99.75% power bandwidth)

Modulation = 300KG7W (EGPRS)

Necessary Bandwidth:

Necessary Bandwidth (B_N), kHz = 300
(measured at the 99.75% power bandwidth)

Performed By: Daniel M. Dillon, Test Engineer

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: Morton Flom, P. Eng.