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

RF Amplifier Certification

of

FCC ID: SKT-R308-0410
Model: MGR-308

to

Federal Communications Commission

Rule Part 22H

Date Of Report: October 1, 2004
(Amended January 5, 2005)

On the Behalf of the Applicant:

Maxus Technologies USA Inc.

At the Request of:

P.O. Deposit Check #1168

Maxus Technologies USA Inc.
1543 W. Olympic Blvd., #516
Los Angeles, CA 90015

Attention of:

Jay Lim
(310) 793-9000
email: jlim@maxustek.com

Supervised By:

David E. Lee,
Compliance Test Manager

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: d04a0004

d) Client: Maxus Technologies USA Inc.
1543 W. Olympic Blvd., #516
Los Angeles, CA 90015

e) Identification: MGR-308
Description: Cellular Phone Amplifier

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

g) Report Date: October 1, 2004 (Amended January 5, 2005)
EUT Received: September 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

15, 22H and Confidentiality

Sub-Part 2.1033

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

Maxus Technologies USA Inc.
1543 W. Olympic Blvd., #516
Los Angeles, CA 90015

Manufacturer:

Applicant

(c)(2): **FCC ID**: SKT-R308-0410

Model Number: MGR-308

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

Please See Attached Exhibits

(c)(4): **Type of Emission**: N/A

(c)(5): **Frequency Range, MHz**: 824 – 849MHz
869 – 894MHz

(c)(6): **Power Rating, Watts**: 0.010 (10mW, 10dBm)

____ Switchable ____ Variable _X_ N/A

(c)(7): **Maximum Power Rating, Watts**: 10

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	=	1.2
Collector Voltage, Vdc	=	5.1
Supply Voltage, Vdc	=	5.1

(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

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.

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/mra 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 301-975-3414. **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 301-975-5528. 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**

Page Number 5 of 69.

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
_____ 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: Carrier Output Power (Conducted)

Specification: 47 CFR 2.1046(a)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.1

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
(Worst case)

Power Setting	Frequency Range	RF Power, Watts
High – Saturated (Cut Off)	824 – 849MHz	0.010 (10dBm)
High – ALC Level (IMD Spec)	824 – 849MHz	0.005 (7dBm)
High – Saturated (Cut Off)	869 – 894MHz	0.010 (10dBm)
High – ALC Level (IMD Spec)	869 – 894MHz	0.005 (7dBm)

Both sections of the bi-directional amplifier contain an independent ALC circuit, which maintains the IMD specification level over a 30db dynamic input range. When the ALC limits are exceeded a cut-off circuit operates that shuts down the amplifier section until the input level is reduced preventing harmonics and spurious being transmitted by spikes or pulses at the amplifier input.

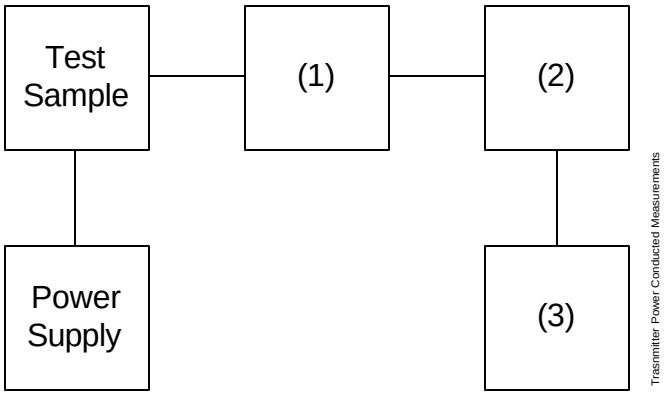
The operation of the ALC is described in the Theory of Operation accompanying this application.

Operation of the ALC between the low threshold and the cut-off point was verified in both directions and no anomalies, spurious oscillations or non linearity was detected.

Supervised By: David E. Lee,
Compliance Test Manager

Transmitter Power Conducted Measurements

Test 1: RF Power Output



	Asset (as applicable)	Description	s/n	Cycle	Last Cal
(1)	**Coaxial Attenuator**				
X	i00222	Pasternack 30dB	222	NCR	
	i00223	Pasternack 30dB	223	NCR	
(2)	**Power Meters**				
X	i00020	HP 8901A Power Mode	2105A01087	12 mo	Apr-04
(3)	**Frequency Counter**				
	i00020	HP 8901A Frequency Mode	2105A01087	12 mo	Apr-04

Name of Test: Unwanted Emissions (Transmitter Conducted)

Specification: 47 CFR 2.1051

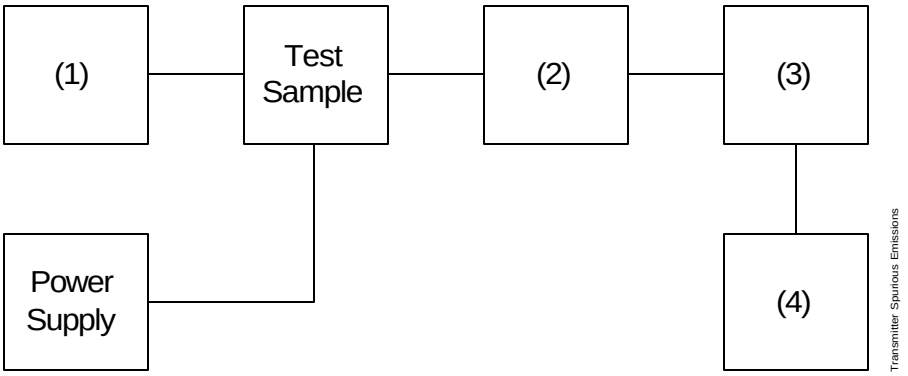
Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.13

Measurement Procedure

A) The emissions were measured for the worst case as follows:
   1). within a band of frequencies defined by the carrier frequency plus and minus one channel.
   2). from the lowest frequency generated in the EUT and to at least the 10th harmonic of the carrier frequency, or 40 GHz, whichever is lower.

B) The magnitude of spurious emissions that are attenuated more than 20 dB below the permissible value need not be specified.

Transmitter Test Set-Up: Spurious Emission



	Asset	Description	s/n		
(1) **Exciter/Driver**					
X	Rental	HP E4438C	MY42082921	24 mo.	Feb-04
X	Rental	HP E4438C	US41461197	24 mo.	Jul-03
X	i00257	R&S Signal Generator 301	-	12 mo.	Sep-04
X	i00154	4 x 25 Ω Combiner	154	NCR	
(2) **Coaxial Attenuator**					
X	i00231/2	PASTERNACK PE7021-30 (30 dB)	231 or 232	NCR	
	i0012/3	NARDA 766 (10 dB)	7802 or 7802A	NCR	
(3) **Filters; Notch, HP, LP, BP**					
		None required			
(4) **Spectrum Analyzer**					
X	i00048	HP 8566B Spectrum Analyzer	2511A01467	12 mo.	Oct-04
X	i00029	HP 8563E Spectrum Analyzer	3213A00104	12 mo.	May-04

Name of Test: Unwanted Emissions (Transmitter Conducted)

Measurement Results

Summary:

Frequency of carrier, MHz	=	Up Link 836, 824, 849 Down Link 881, 869, 894
Spectrum Searched, GHz	=	0 to 10 x F_C
All Other Emissions	=	= 20 dB Below Limit

Limit(s)

-(43+10xLOG P) = based on full power of 10dBm (10mW) -23dBc (-13dBm)

Tabulated Results follow:

Measurement Results

g0510039: 2005-Jan-05 Wed 11:40:00
State: 2: Up Link TDMA Ambient Temperature: 23°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
824.040000	1648.080000	-54.03	-64.03	41.03
836.000000	1672.000000	-59.81	-69.81	46.81
848.970000	1697.940000	-61.52	-71.52	48.52
824.040000	2472.120000	-54.37	-64.37	41.37
836.000000	2508.000000	-53.49	-63.49	40.49
848.970000	2546.910000	-61.36	-71.36	48.36
824.040000	3296.160000	-58.42	-68.42	45.42
836.000000	3344.000000	-61.79	-71.79	48.79
848.970000	3395.880000	-57.38	-67.38	44.38
824.040000	4120.200000	-57.02	-67.02	44.02
836.000000	4180.000000	-56.57	-66.57	43.57
848.970000	4244.850000	-61.84	-71.84	48.84
824.040000	4944.240000	-54.73	-64.73	41.73
836.000000	5016.000000	-55.35	-65.35	42.35
848.970000	5093.820000	-58.58	-68.58	45.58
824.040000	5768.280000	-60.19	-70.19	47.19
836.000000	5852.000000	-55.87	-65.87	42.87
848.970000	5942.790000	-57.77	-67.77	44.77
824.040000	6592.320000	-55.07	-65.07	42.07
836.000000	6688.000000	-60.62	-70.62	47.62
848.970000	6791.760000	-62.70	-72.70	49.70
824.040000	7416.360000	-58.94	-68.94	45.94
836.000000	7524.000000	-62.68	-72.68	49.68
848.970000	7640.730000	-59.05	-69.05	46.05
824.040000	8240.400000	-61.18	-71.18	48.18
836.000000	8360.000000	-55.67	-65.67	42.67
848.970000	8489.700000	-58.92	-68.92	45.92

g0510039: 2005-Jan-05 Wed 11:40:00
State: 2: Up Link CDMA Ambient Temperature: 23°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
824.730000	1649.460000	-58.48	-68.48	45.48
836.000000	1672.000000	-55.09	-65.09	42.09
848.190000	1696.380000	-58.81	-68.81	45.81
824.730000	2474.190000	-54.22	-64.22	41.22
836.000000	2508.000000	-56.28	-66.28	43.28
848.190000	2544.570000	-55.62	-65.62	42.62
824.730000	3298.920000	-57.48	-67.48	44.48
836.000000	3344.000000	-61.82	-71.82	48.82
848.190000	3392.760000	-58.56	-68.56	45.56
824.730000	4123.650000	-62.43	-72.43	49.43
836.000000	4180.000000	-59.06	-69.06	46.06
848.190000	4240.950000	-56.06	-66.06	43.06
824.730000	4948.380000	-56.61	-66.61	43.61
836.000000	5016.000000	-59.82	-69.82	46.82
848.190000	5089.140000	-61.84	-71.84	48.84
824.730000	5773.110000	-55.93	-65.93	42.93
836.000000	5852.000000	-58.92	-68.92	45.92
848.190000	5937.330000	-55.24	-65.24	42.24
824.730000	6597.840000	-62.28	-72.28	49.28
836.000000	6688.000000	-60.23	-70.23	47.23
848.190000	6785.520000	-61.06	-71.06	48.06
824.730000	7422.570000	-55.47	-65.47	42.47
836.000000	7524.000000	-56.62	-66.62	43.62
848.190000	7633.710000	-54.92	-64.92	41.92
824.730000	8247.300000	-58.48	-68.48	45.48
836.000000	8360.000000	-53.08	-63.08	40.08
848.190000	8481.900000	-58.02	-68.02	45.02

g0510039: 2005-Jan-05 Wed 11:40:00

State: 2: Up Link GSM Ambient Temperature: 23°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
824.250000	1648.500000	-57.29	-67.29	44.29
836.000000	1672.000000	-58.25	-68.25	45.25
848.750000	1697.500000	-59.99	-69.99	46.99
824.250000	2472.750000	-58.51	-68.51	45.51
836.000000	2508.000000	-53.80	-63.80	40.80
848.750000	2546.250000	-55.63	-65.63	42.63
824.250000	3297.000000	-57.31	-67.31	44.31
836.000000	3344.000000	-58.88	-68.88	45.88
848.750000	3395.000000	-57.26	-67.26	44.26
824.250000	4121.250000	-58.68	-68.68	45.68
836.000000	4180.000000	-59.33	-69.33	46.33
848.750000	4243.750000	-62.28	-72.28	49.28
824.250000	4945.500000	-54.28	-64.28	41.28
836.000000	5016.000000	-56.40	-66.40	43.40
848.750000	5092.500000	-58.78	-68.78	45.78
824.250000	5769.750000	-60.77	-70.77	47.77
836.000000	5852.000000	-55.20	-65.20	42.20
848.750000	5941.250000	-56.32	-66.32	43.32
824.250000	6594.000000	-62.71	-72.71	49.71
836.000000	6688.000000	-61.43	-71.43	48.43
848.750000	6790.000000	-58.62	-68.62	45.62
824.250000	7418.250000	-58.66	-68.66	45.66
836.000000	7524.000000	-61.45	-71.45	48.45
848.750000	7638.750000	-57.19	-67.19	44.19
824.250000	8242.500000	-57.75	-67.75	44.75
836.000000	8360.000000	-54.74	-64.74	41.74
848.750000	8487.500000	-61.23	-71.23	48.23

g0510040: 2005-Jan-05 Wed 12:50:00

State: 2: Down Link TDMA Ambient Temperature: 23°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
869.030000	1738.060000	-58.92	-68.92	45.92
881.400000	1762.800000	-59.31	-69.31	46.31
893.970000	1787.940000	-54.03	-64.03	41.03
869.030000	2607.090000	-56.88	-66.88	43.88
881.400000	2644.200000	-59.59	-69.59	46.59
893.970000	2681.910000	-58.30	-68.30	45.30
869.030000	3476.120000	-59.78	-69.78	46.78
881.400000	3525.600000	-61.88	-71.88	48.88
893.970000	3575.880000	-61.70	-71.70	48.70
869.030000	4345.150000	-61.22	-71.22	48.22
881.400000	4407.000000	-59.44	-69.44	46.44
893.970000	4469.850000	-61.08	-71.08	48.08
869.030000	5214.180000	-56.77	-66.77	43.77
881.400000	5288.400000	-55.75	-65.75	42.75
893.970000	5363.820000	-55.40	-65.40	42.40
869.030000	6083.210000	-60.31	-70.31	47.31
881.400000	6169.800000	-60.61	-70.61	47.61
893.970000	6257.790000	-55.13	-65.13	42.13
869.030000	6952.240000	-62.01	-72.01	49.01
881.400000	7051.200000	-60.31	-70.31	47.31
893.970000	7151.760000	-57.20	-67.20	44.20
869.030000	7821.270000	-60.05	-70.05	47.05
881.400000	7932.600000	-62.15	-72.15	49.15
893.970000	8045.730000	-59.01	-69.01	46.01
869.030000	8690.300000	-57.85	-67.85	44.85
881.400000	8814.000000	-59.79	-69.79	46.79
893.970000	8939.700000	-60.98	-70.98	47.98

g0510040: 2005-Jan-05 Wed 12:50:00

State: 2: Down Link CDMA Ambient Temperature: 23°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
869.730000	1739.460000	-55.35	-65.35	42.35
881.400000	1762.800000	-57.50	-67.50	44.50
893.170000	1786.340000	-53.60	-63.60	40.60
869.730000	2609.190000	-56.22	-66.22	43.22
881.400000	2644.200000	-60.94	-70.94	47.94
893.170000	2679.510000	-60.53	-70.53	47.53
869.730000	3478.920000	-62.61	-72.61	49.61
881.400000	3525.600000	-57.36	-67.36	44.36
893.970000	3575.880000	-60.22	-70.22	47.22
869.130000	4345.650000	-59.74	-69.74	46.74
881.400000	4407.000000	-54.67	-64.67	41.67
893.170000	4465.850000	-57.85	-67.85	44.85
869.730000	5218.380000	-55.03	-65.03	42.03
881.400000	5288.400000	-55.67	-65.67	42.67
893.170000	5359.020000	-59.71	-69.71	46.71
869.730000	6088.110000	-55.87	-65.87	42.87
881.400000	6169.800000	-60.84	-70.84	47.84
893.170000	6252.190000	-59.33	-69.33	46.33
869.730000	6957.840000	-61.59	-71.59	48.59
881.400000	7051.200000	-54.25	-64.25	41.25
893.170000	7145.360000	-60.18	-70.18	47.18
869.730000	7827.570000	-54.62	-64.62	41.62
881.400000	7932.600000	-57.20	-67.20	44.20
893.170000	8038.530000	-54.06	-64.06	41.06
869.730000	8697.300000	-61.15	-71.15	48.15
881.400000	8814.000000	-61.81	-71.81	48.81
893.170000	8931.700000	-59.48	-69.48	46.48

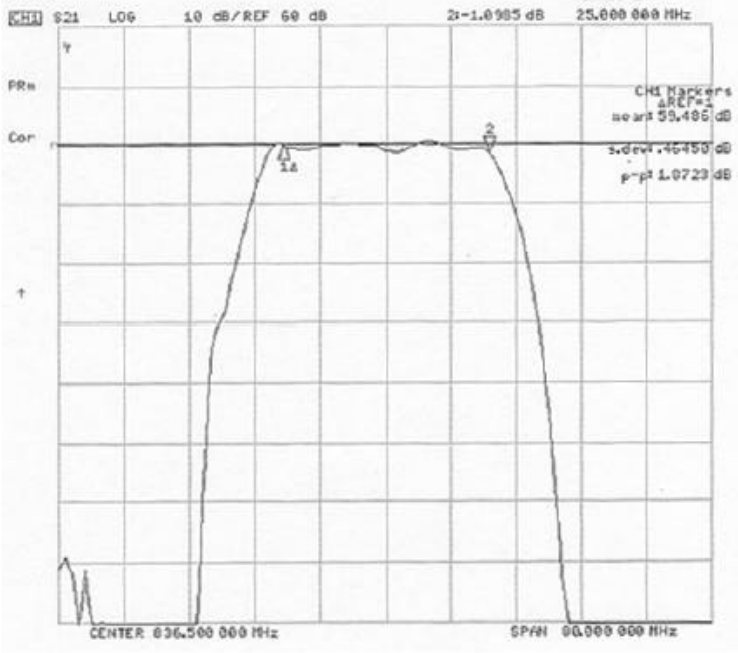
g0510040: 2005-Jan-05 Wed 12:50:00

State: 2: Down Link GSM Ambient Temperature: 23°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
869.250000	1738.500000	-57.97	-67.97	44.97
881.400000	1762.800000	-53.19	-63.19	40.19
893.750000	1787.500000	-59.58	-69.58	46.58
869.250000	2607.750000	-60.76	-70.76	47.76
881.400000	2644.200000	-57.03	-67.03	44.03
893.750000	2681.250000	-54.92	-64.92	41.92
869.250000	3477.000000	-56.24	-66.24	43.24
881.400000	3525.600000	-54.50	-64.50	41.50
893.750000	3575.000000	-53.93	-63.93	40.93
869.250000	4346.250000	-58.41	-68.41	45.41
881.400000	4407.000000	-54.05	-64.05	41.05
893.750000	4468.750000	-53.39	-63.39	40.39
869.250000	5215.500000	-60.98	-70.98	47.98
881.400000	5288.400000	-54.66	-64.66	41.66
893.750000	5362.500000	-55.87	-65.87	42.87
869.250000	6084.750000	-53.53	-63.53	40.53
881.400000	6169.800000	-58.94	-68.94	45.94
893.750000	6256.250000	-59.24	-69.24	46.24
869.250000	6954.000000	-57.54	-67.54	44.54
881.400000	7051.200000	-59.09	-69.09	46.09
893.750000	7150.000000	-62.99	-72.99	49.99
869.250000	7823.250000	-61.22	-71.22	48.22
881.400000	7932.600000	-56.01	-66.01	43.01
893.750000	8043.750000	-53.58	-63.58	40.58
869.250000	8692.500000	-54.65	-64.65	41.65
881.400000	8814.000000	-59.67	-69.67	46.67
893.750000	8937.500000	-54.56	-64.56	41.56

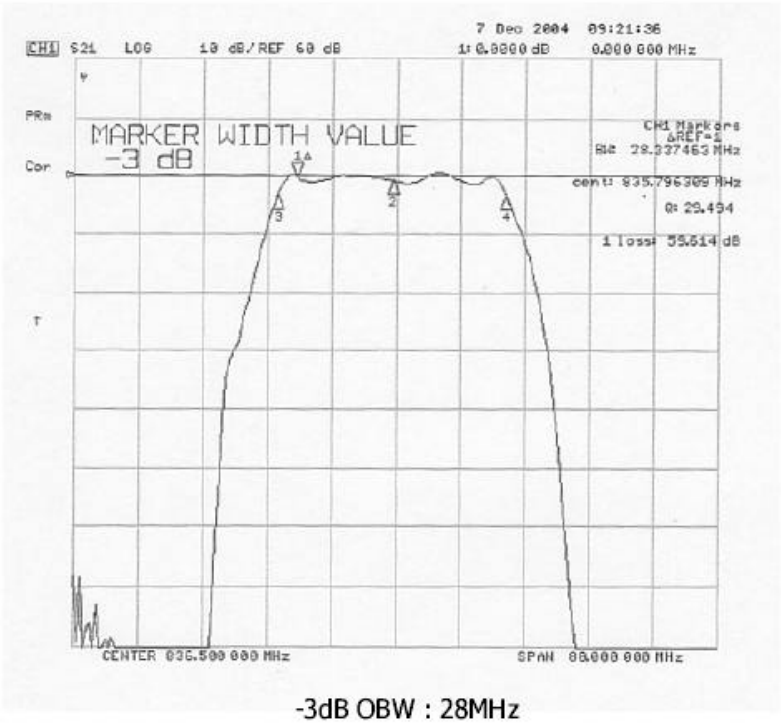
Applicant Supplied Data
State: 2: Up Link Gain, Flatness and Occupied Bandwidth

1. Uplink
   1) Gain and flatness



Gain: 59.4dB / Flatness: 1.8dB

   2) –3dB OBW

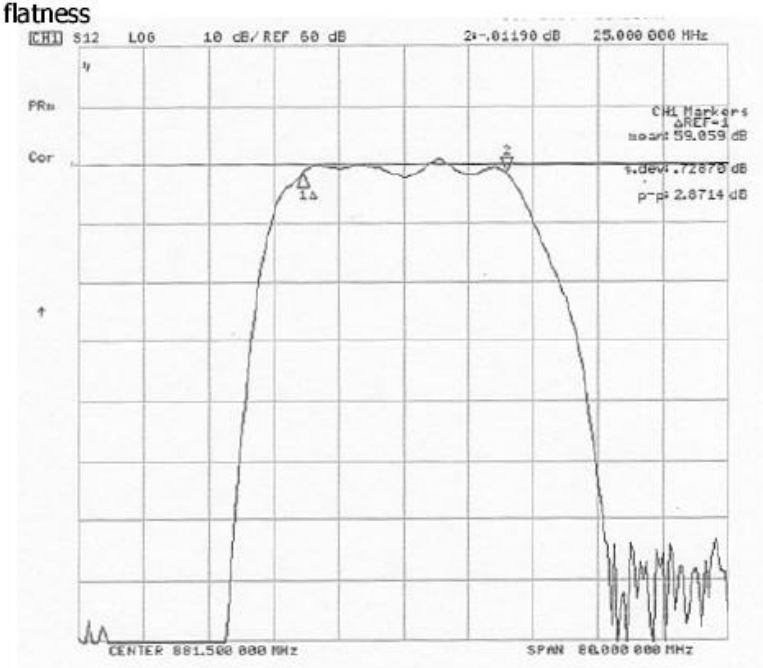


-3dB OBW : 28MHz

Applicant Supplied Data
State: 2: Down Link Gain, Flatness and Occupied Bandwidth

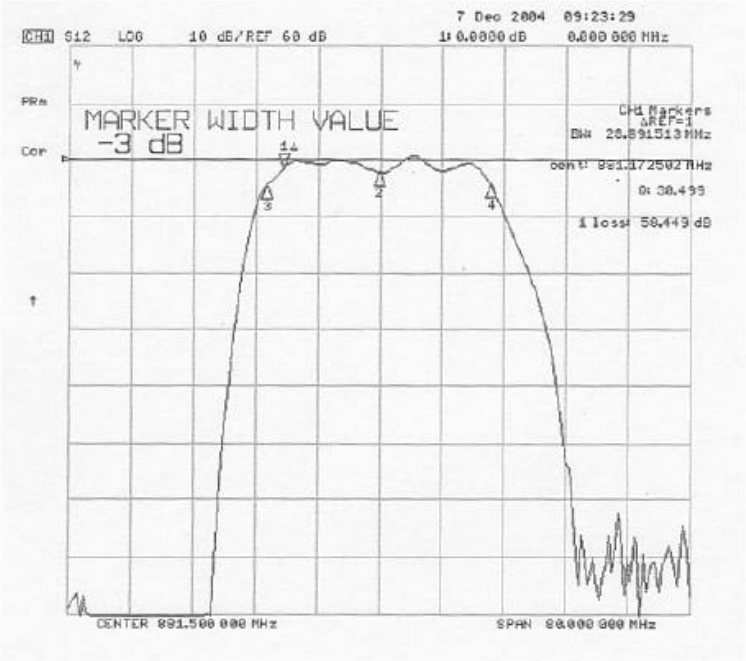
2. Downlink

1) Gain and flatness



Gain: 59dB / Flatness: 2.8dB

2) –3dB OBW



-3dB OBW : 28MHz

Name of Test: Emission Masks (Occupied Bandwidth)

Specification: 47 CFR 2.1049(c)(1)

Guide: ANSI/TIA/EIA-603-1992, Paragraph 2.2.11

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.

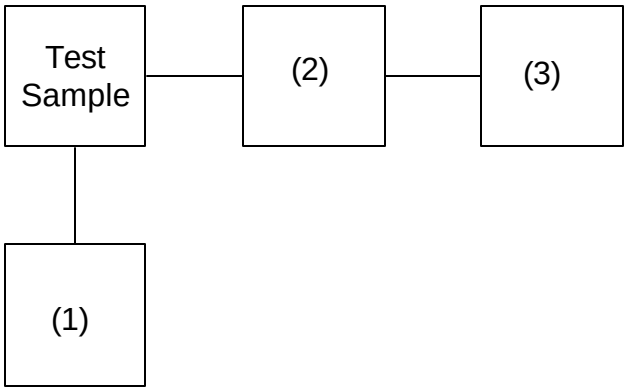
2. For EUTs supporting digital modulation, the digital modulation mode was operated to its maximum extent.

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

4. Measurement Results: Attached

Power Amplifier Test Set-Up

Test A. Occupied Bandwidth (In-Band Spurious)



	Asset (as applicable)	Description	s/n	Cycle	Last Cal
(1)	**Exciter/Driver**				
X	Rental	HP E4438C	MY42082921	24 mo.	Feb-04
X	Rental	HP E4438C	US41461197	24 mo.	Jul-03
X	i00257	R&S Signal Generator 301	-	12 mo.	Sep-04
X	i00154	4 x 25 Ω Combiner	154	NCR	
(2)	**Coaxial Attenuator**				
X	i00222	Pasternack 30dB	222	NCR	
	i00223	Pasternack 30dB	223	NCR	
(3)	**Output Analyzer**				
X	i00048	HP 8566B Spectrum Analyzer	2511A01467	12 mo.	July-04
	i00029	HP 8563E Spectrum Analyzer	3213A00104	12 mo.	Mar-04
X	i00207	HP 8753D Network Analyzer	3410A08514	12 mo.	Jun-04

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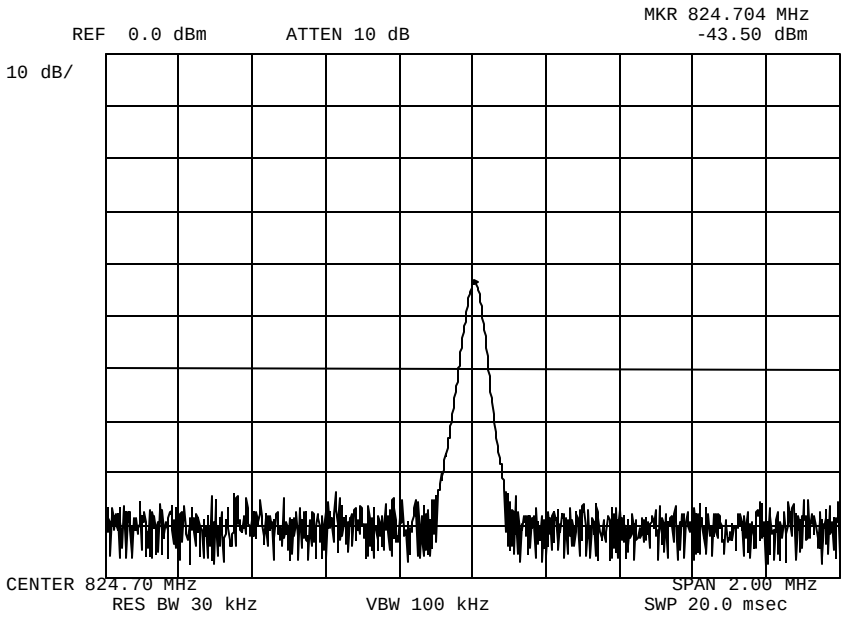
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510001: 2005-Jan-03 Mon 14:11:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: NONE
PATH LOSS GEN 1
COMBINER = 13.5DB; ATTEN = 30dB)

Performed by: Bobby Leanio

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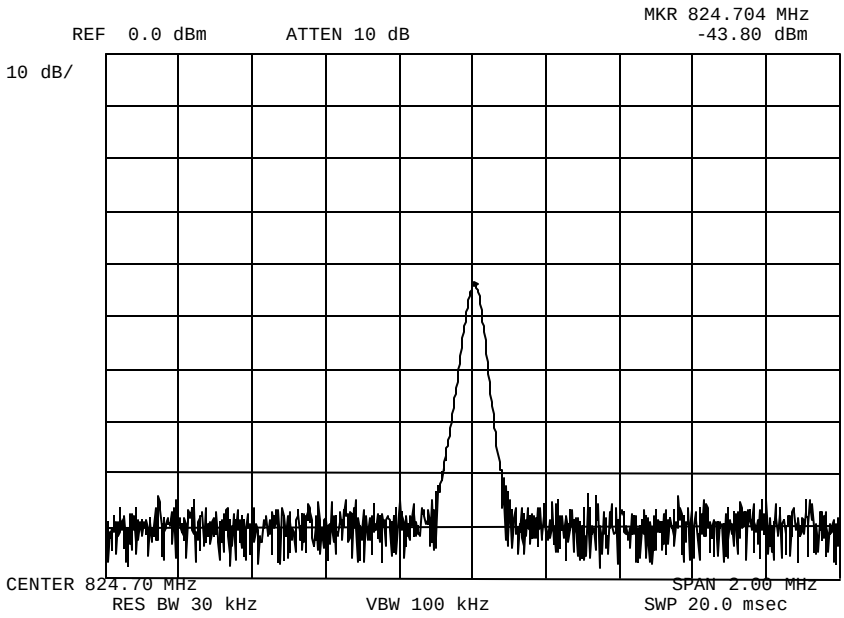
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510002: 2005-Jan-03 Mon 14:12:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: NONE
PATH LOSS GEN 2
(COMBINER = 13.5DB; ATTEN = 30dB)

Performed by: Bobby Leanio

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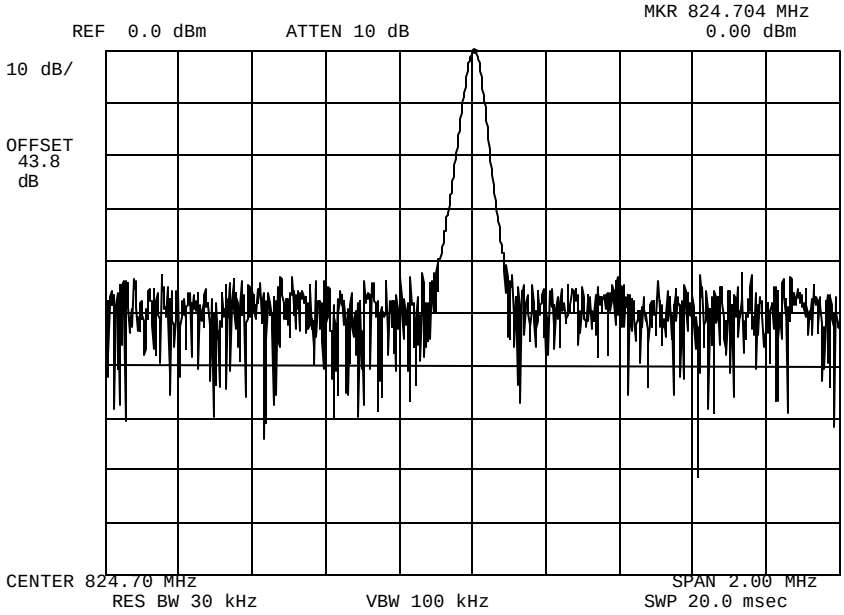
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510003: 2005-Jan-03 Mon 14:22:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: NONE
ADJUSTED FOR WORST CASE (43.8DB)

Performed by: Bobby Leanio

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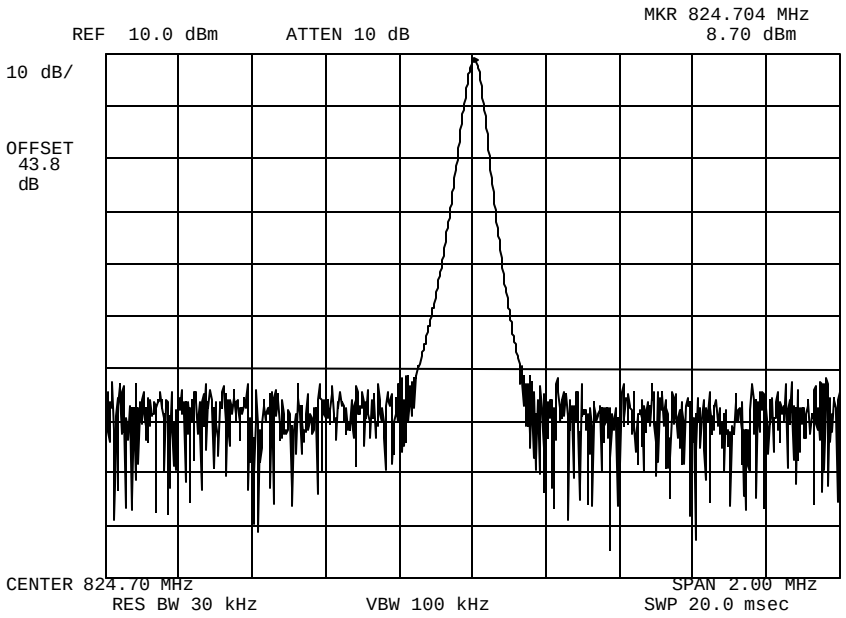
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510005: 2005-Jan-03 Mon 14:31:00
State: 2:High Power (UP LINK) Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: NONE
-23DBM SET AT GEN 1 FOR MAX OUT
(COMBINER = 13.5DB; DRIVE LEVEL –36.5dBM)

Performed by: Bobby Leanio

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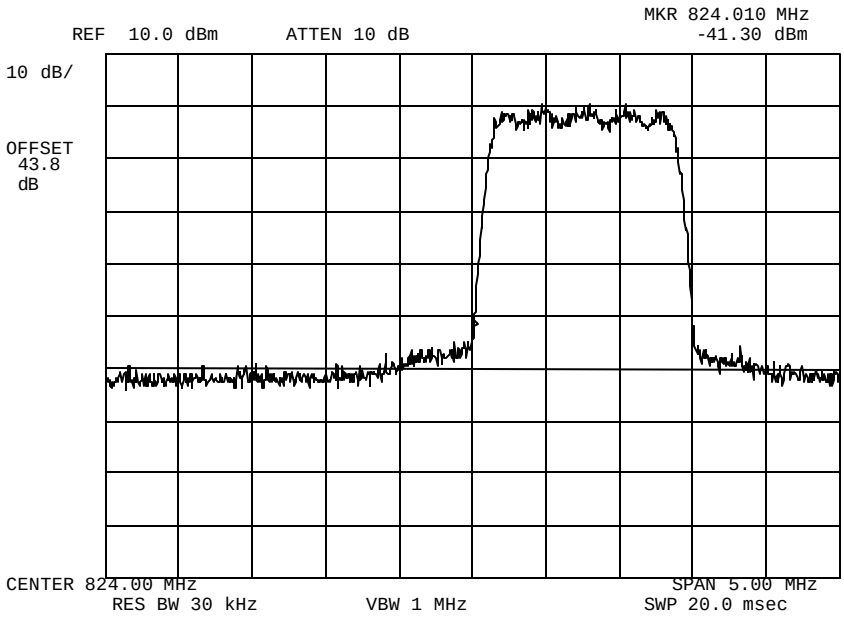
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510006: 2005-Jan-03 Mon 14:35:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: CDMA UPLINK
LOW CHANNEL CONDUCTED SPURS
BAND EDGE PLOT

Performed by: Bobby Leanio

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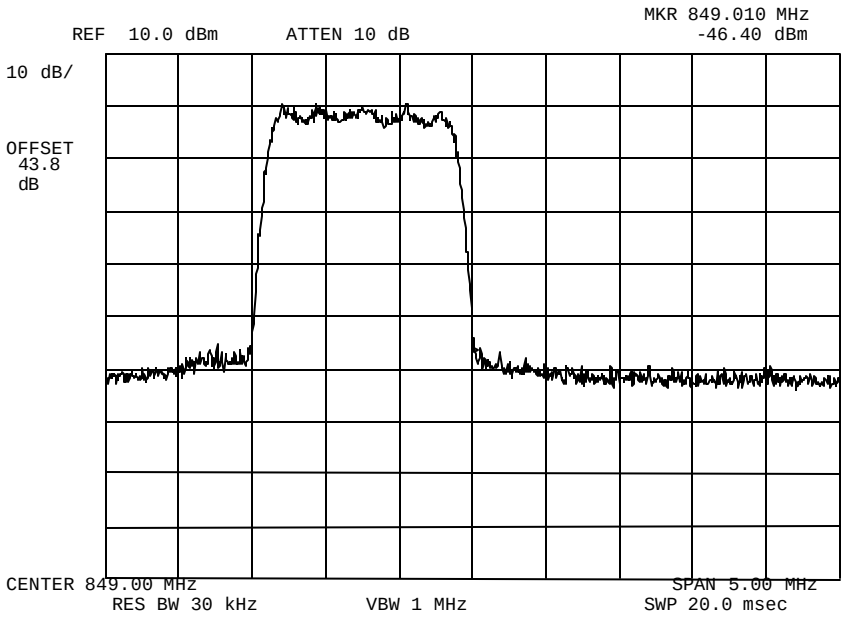
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510007: 2005-Jan-03 Mon 14:41:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: CDMA UPLINK
HIGH CHANNEL CONDUCTED SPURS
BAND EDGE PLOT

Performed by: Bobby Leanio

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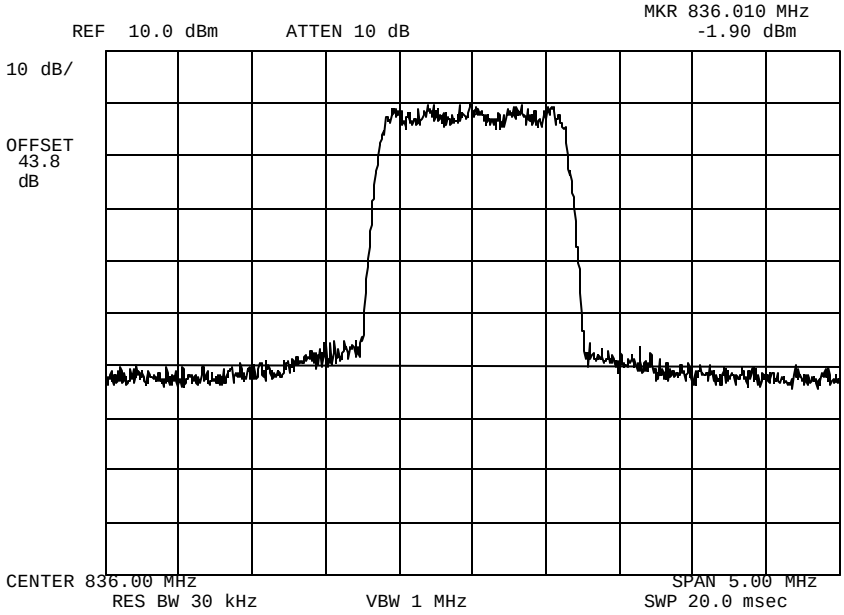
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510008: 2005-Jan-03 Mon 14:45:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: CDMA UPLINK
MID CHANNEL CONDUCTED SPURS

Performed by: Bobby Leanio

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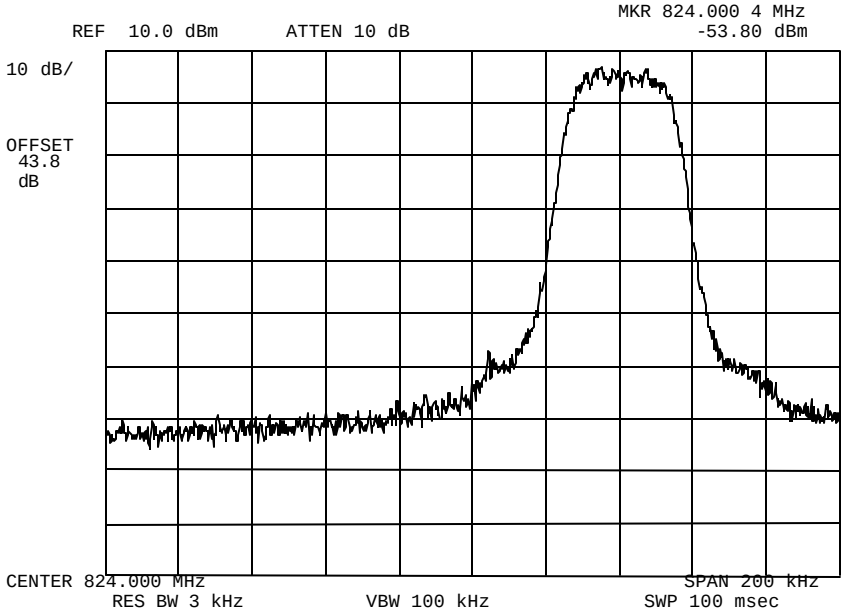
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510010: 2005-Jan-03 Mon 14:49:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA UPLINK
LOW CHANNEL CONDUCTED SPURS
BAND EDGE PLOT

Performed by: Bobby Leanio

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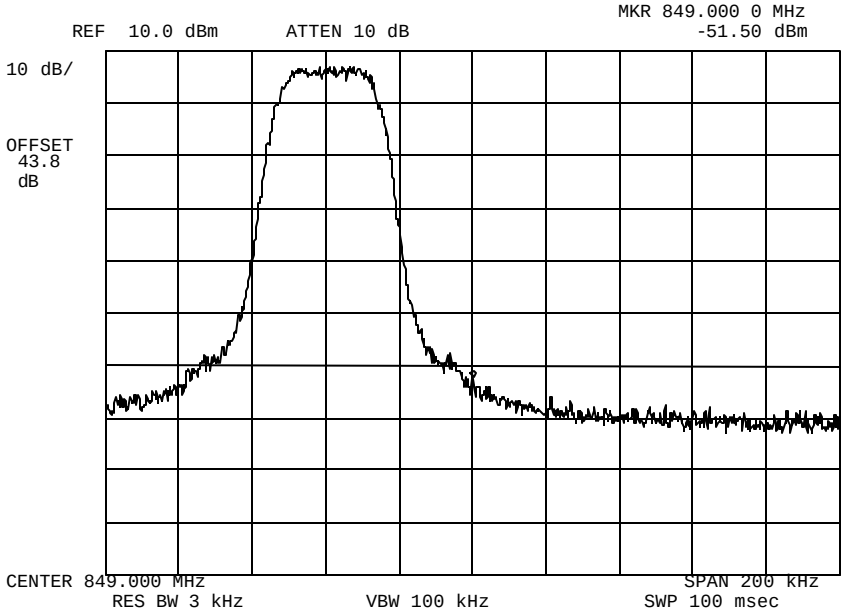
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510011: 2005-Jan-03 Mon 14:58:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA UPLINK
HIGH CHANNEL CONDUCTED SPURIOUS
BAND EDGE PLOT

Performed by: Bobby Leanio

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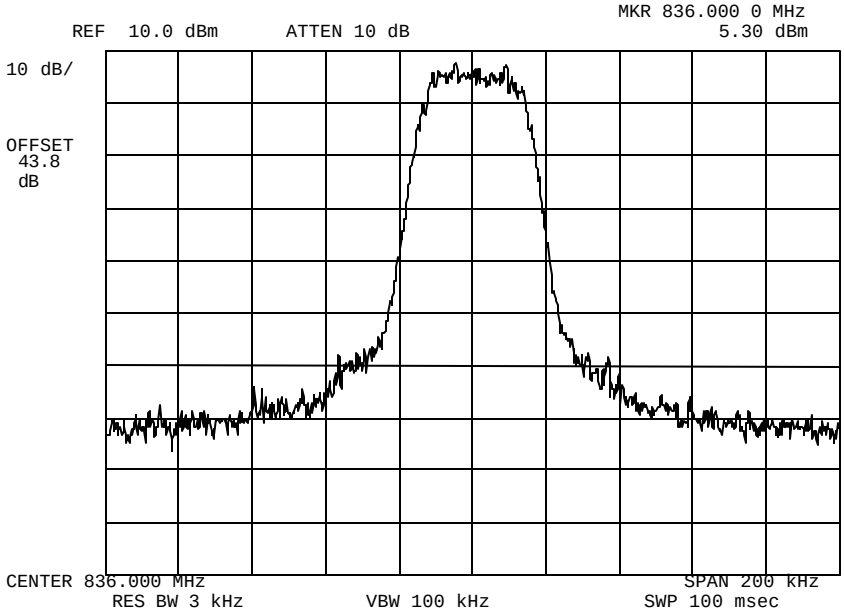
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510012: 2005-Jan-03 Mon 14:59:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA UPLINK
MID CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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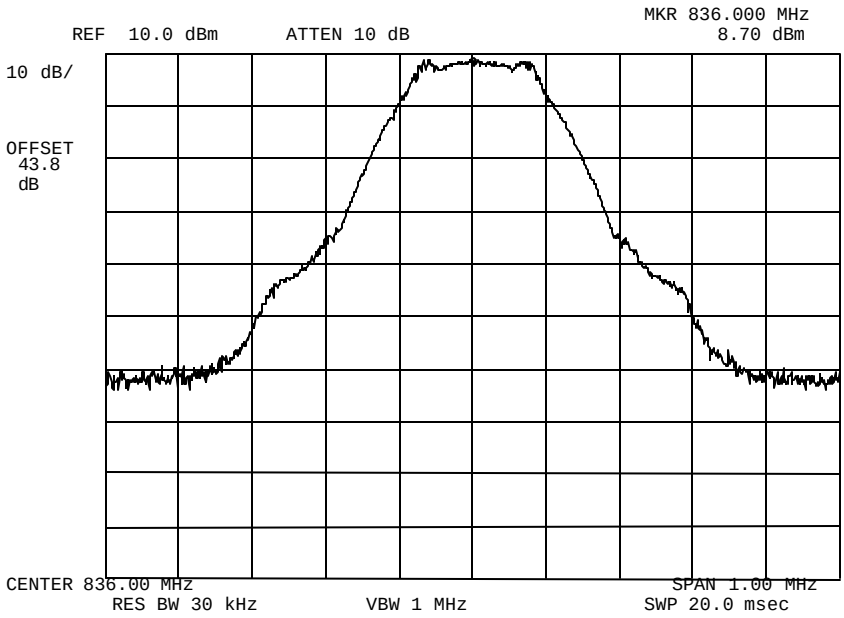
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510013: 2005-Jan-03 Mon 15:02:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM UPLINK
MID CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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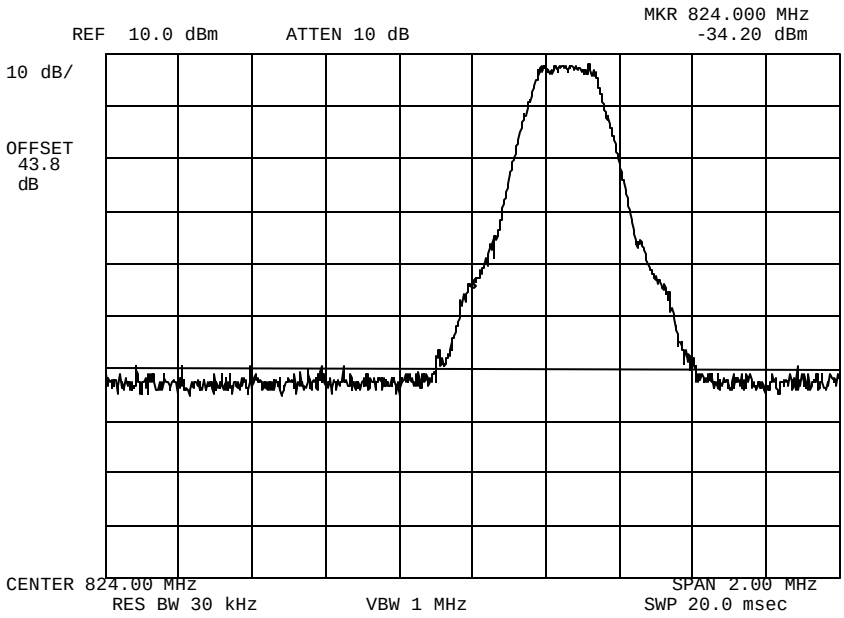
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510014: 2005-Jan-03 Mon 15:07:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM UPLINK
LOW CHANNEL CONDUCTED SPURIOUS
BAND EDGE PLOT

Performed by: Bobby Leanio

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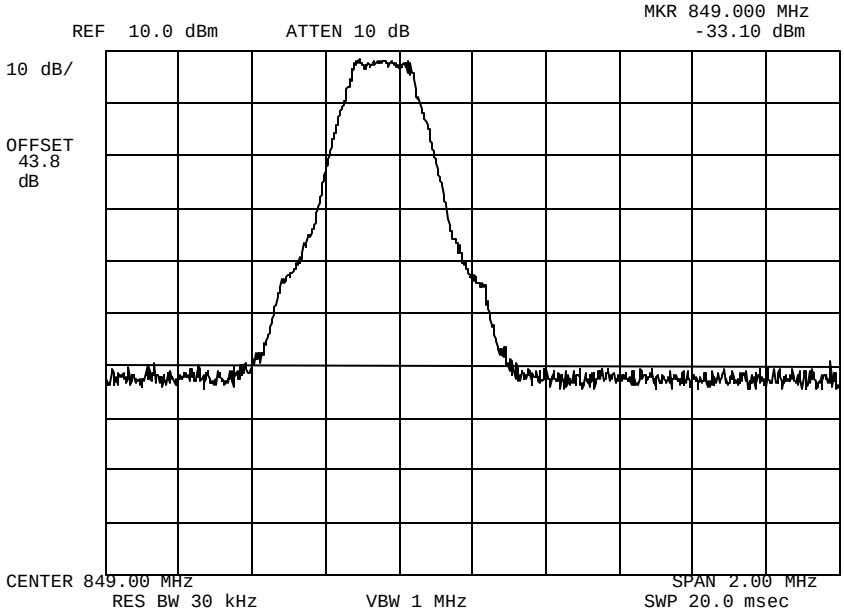
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510015: 2005-Jan-03 Mon 15:08:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM UPLINK
HIGH CHANNEL CONDUCTED SPURIOUS
BAND EDGE PLOT

Performed by: Bobby Leanio

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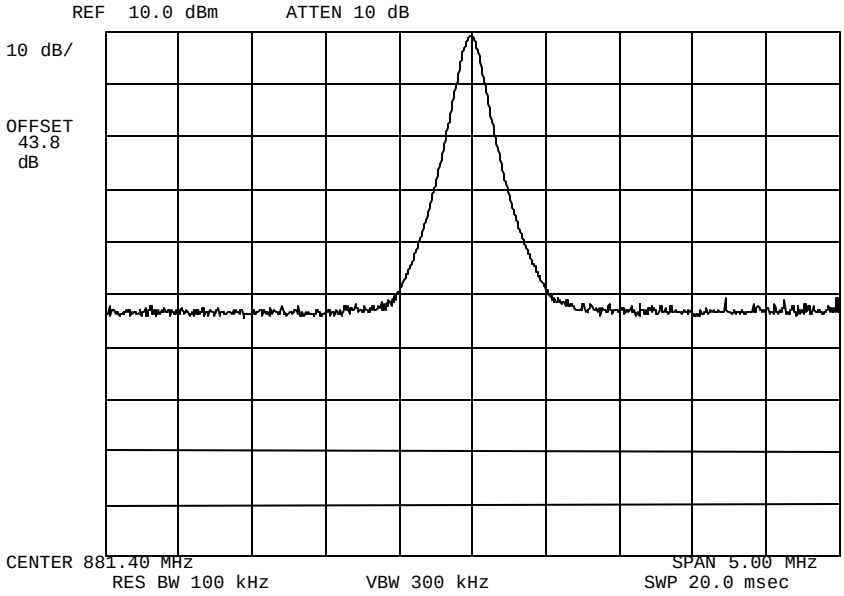
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510029: 2005-Jan-05 Wed 08:26:00
State: 2:High Power (DOWN LINK) Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: NONE
-38DBM SET AT GEN 1 FOR MAX OUTPUT
(COMBINER = 13.5DB; DRIVE LEVEL –51.5dBM)

Performed by: Bobby Leanio

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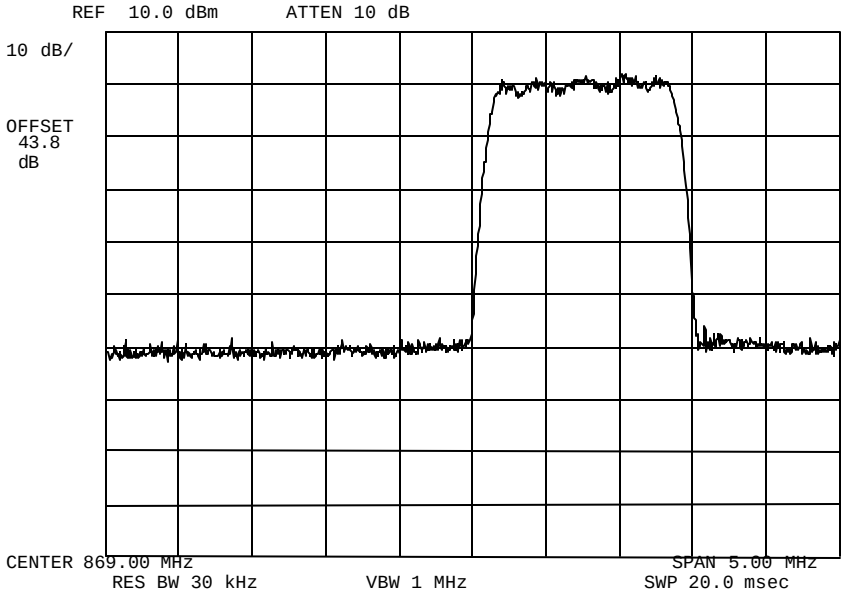
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510030: 2005-Jan-05 Wed 08:33:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: CDMA DOWNLINK
LOW CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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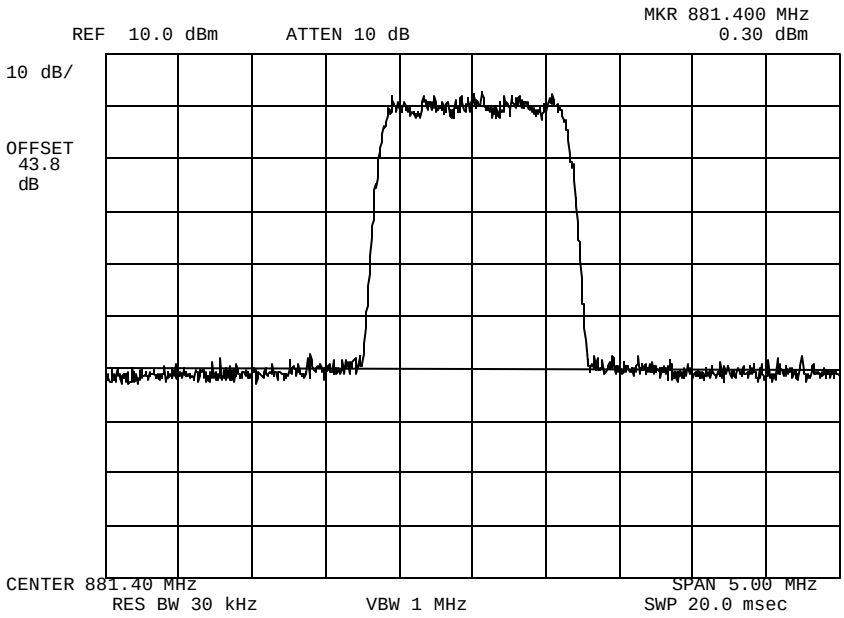
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510031: 2005-Jan-05 Wed 08:37:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: CDMA DOWNLINK
MID CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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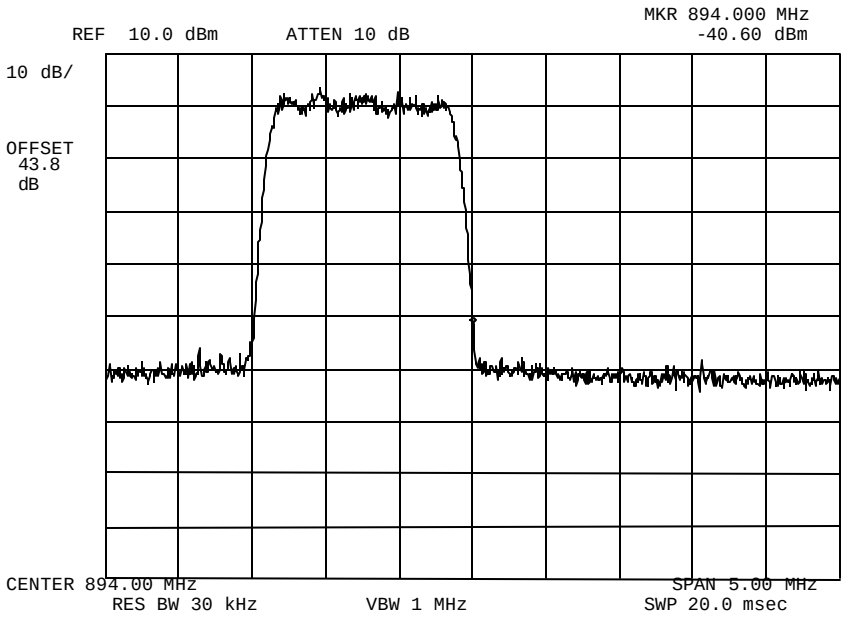
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510032: 2005-Jan-05 Wed 08:38:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: CDMA DOWNLINK
HIGH CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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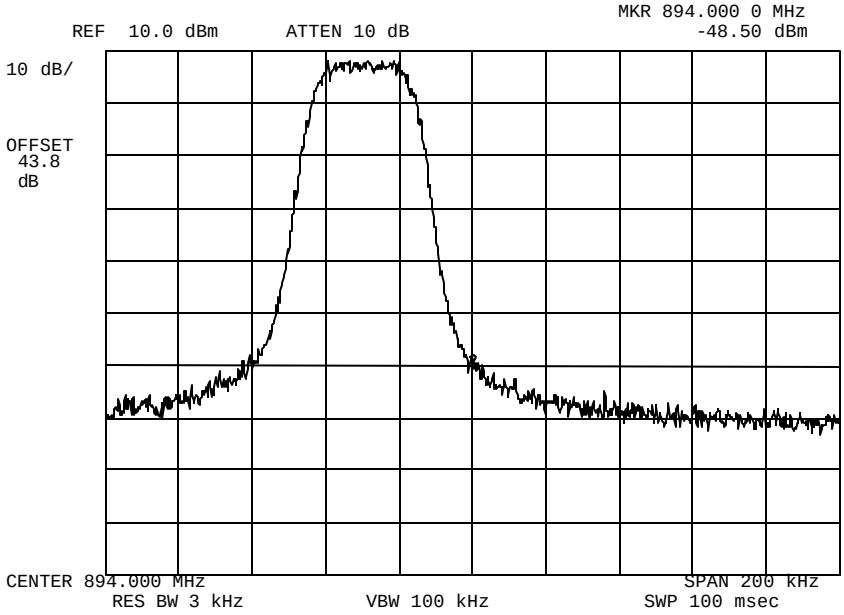
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510033: 2005-Jan-05 Wed 08:43:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA DOWNLINK
HIGH CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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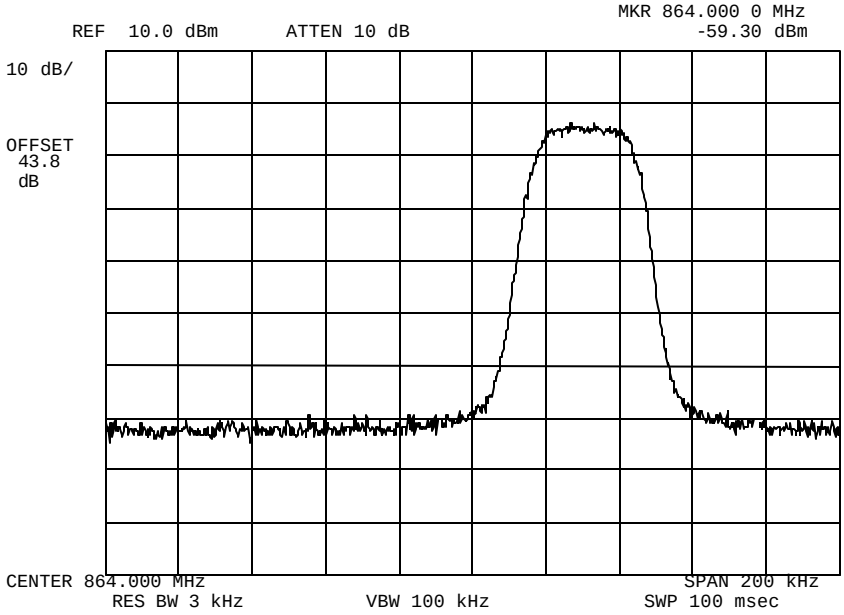
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510034: 2005-Jan-05 Wed 08:45:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA DOWNLINK
LOW CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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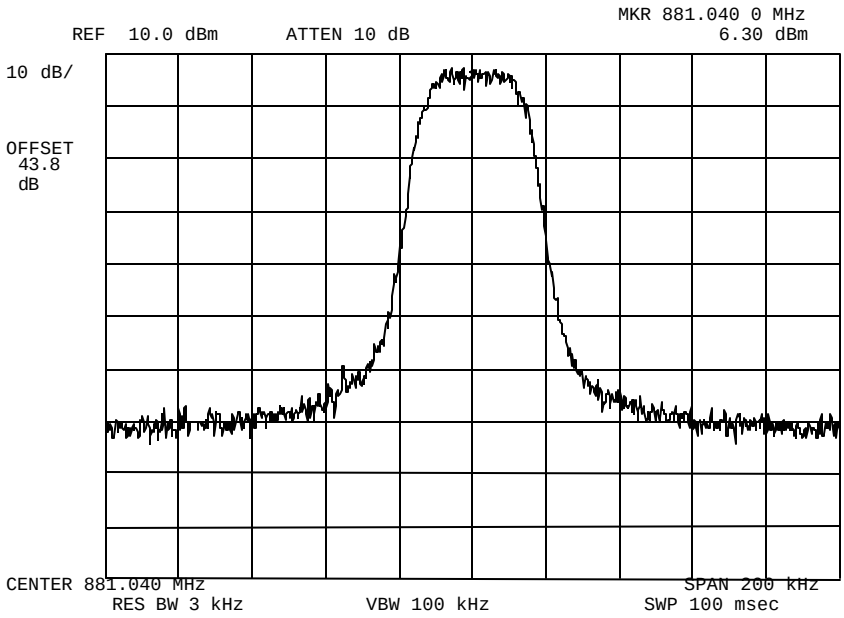
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510035: 2005-Jan-05 Wed 08:46:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA DOWNLINK
MID CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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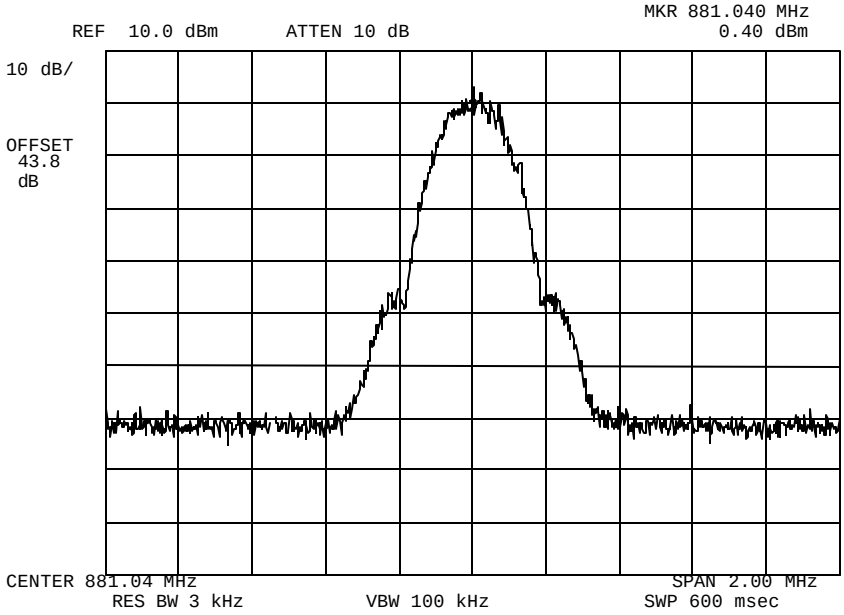
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510036: 2005-Jan-05 Wed 08:47:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM DOWNLINK
MID CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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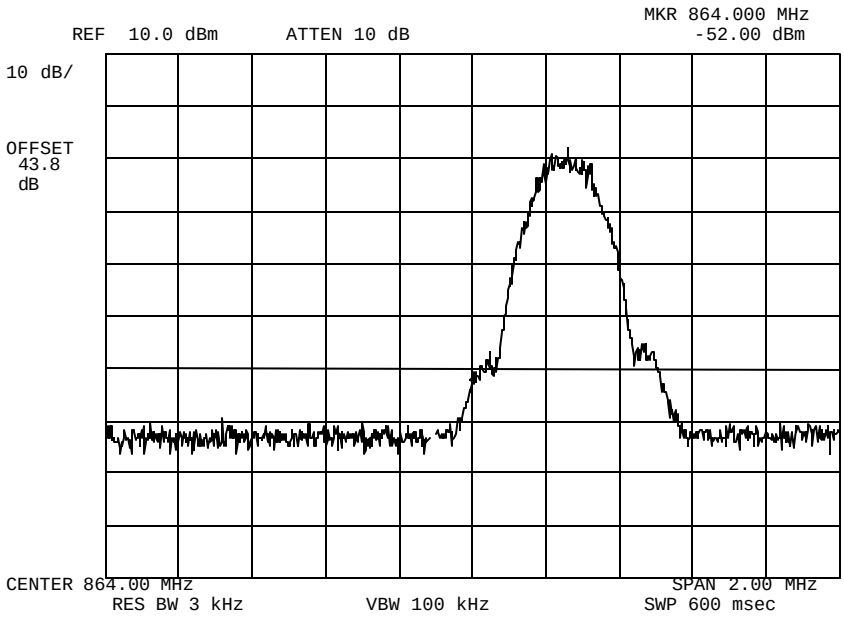
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510037: 2005-Jan-05 Wed 08:48:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM DOWNLINK
LOW CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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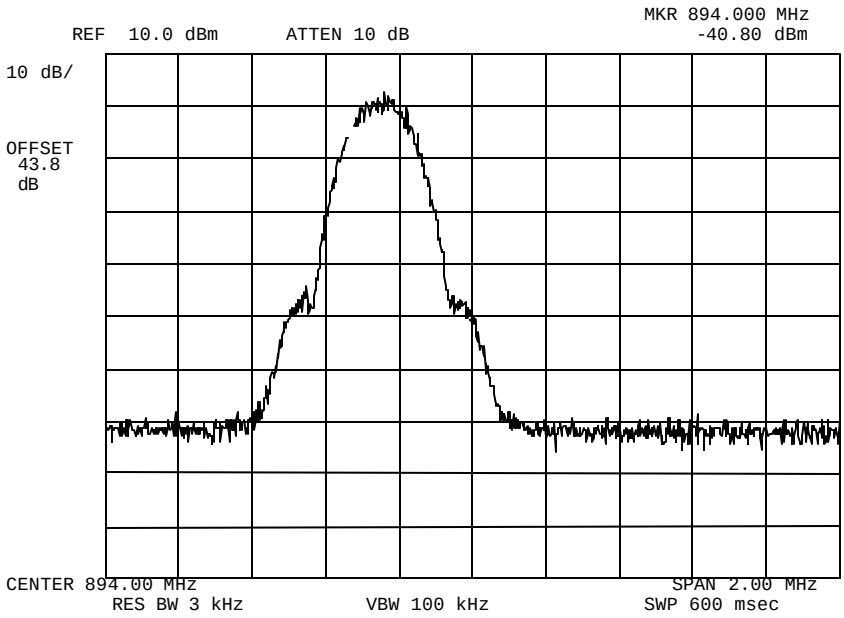
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510038: 2005-Jan-05 Wed 08:51:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM DOWNLINK
HIGH CHANNEL CONDUCTED SPURIOUS

Performed by: Bobby Leanio

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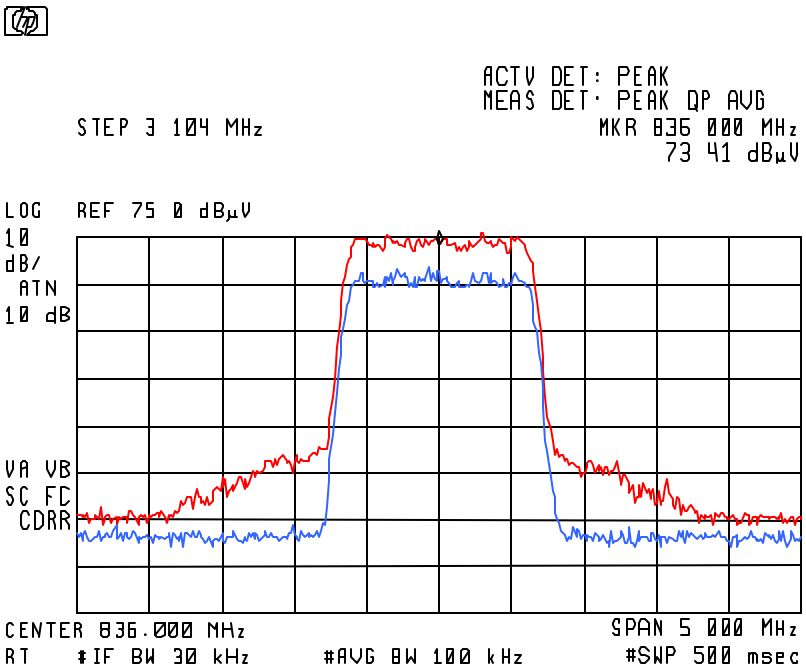
Name of Test: Emission Masks (Spectral Distortion)

Measurement Results

g0510023: 2005-Jan-05 Wed 06:23:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: CDMA UPLINK
SPECTRAL DISTORTION
(BLUE INPUT DIRECT, RED OUTPUT AFTER AMP AND 30dB ATTENUATOR)

Performed by: Bobby Leanio

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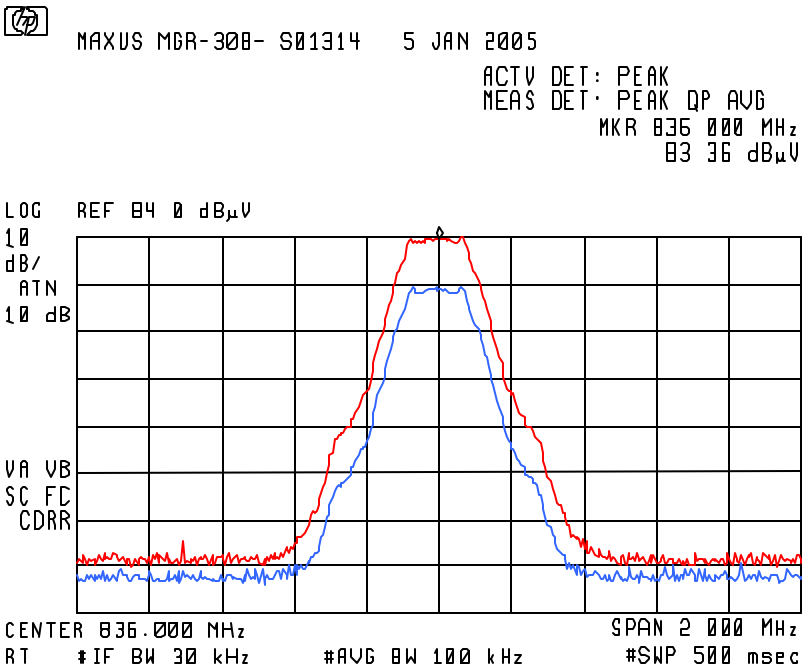
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510024: 2005-Jan-05 Wed 07:39:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM UPLINK
SPECTRAL DISTORTION
(BLUE INPUT DIRECT, RED OUTPUT AFTER AMP AND 30dB ATTENUATOR)

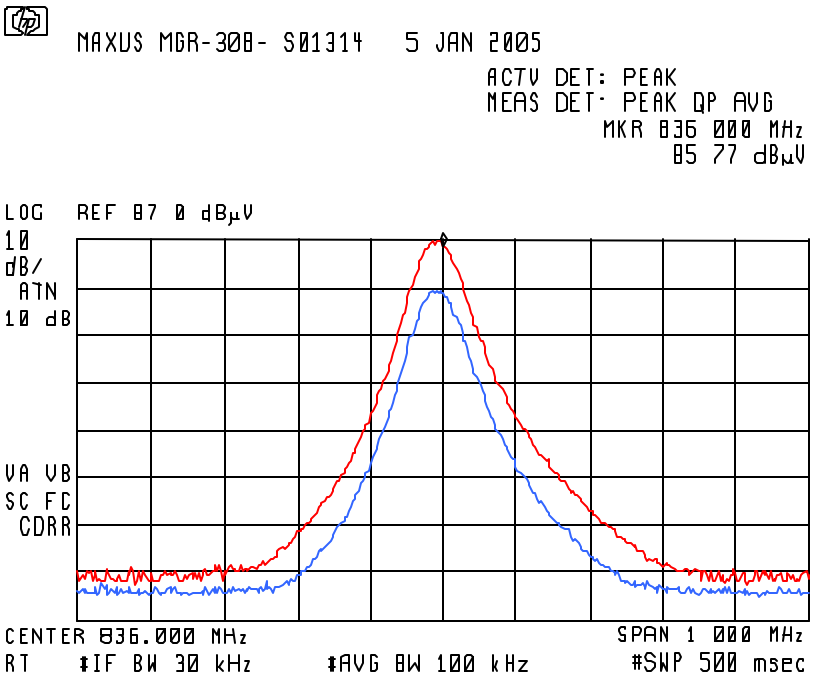
Performed by: Bobby Leanio

Page Number 45 of 69.

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510025: 2005-Jan-05 Wed 07:41:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA UPLINK
SPECTRAL DISTORTION
(BLUE INPUT DIRECT, RED OUTPUT AFTER AMP AND 30dB ATTENUATOR)

Performed by: Bobby Leanio

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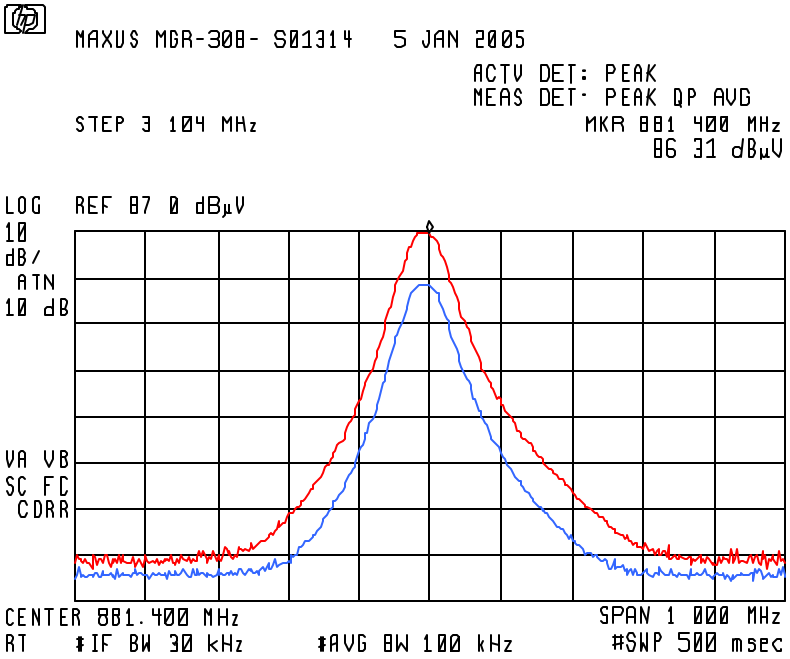
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510026: 2005-Jan-05 Wed 07:45:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA DOWNLINK
SPECTRAL DISTORTION
(BLUE INPUT DIRECT, RED OUTPUT AFTER AMP AND 30dB ATTENUATOR)

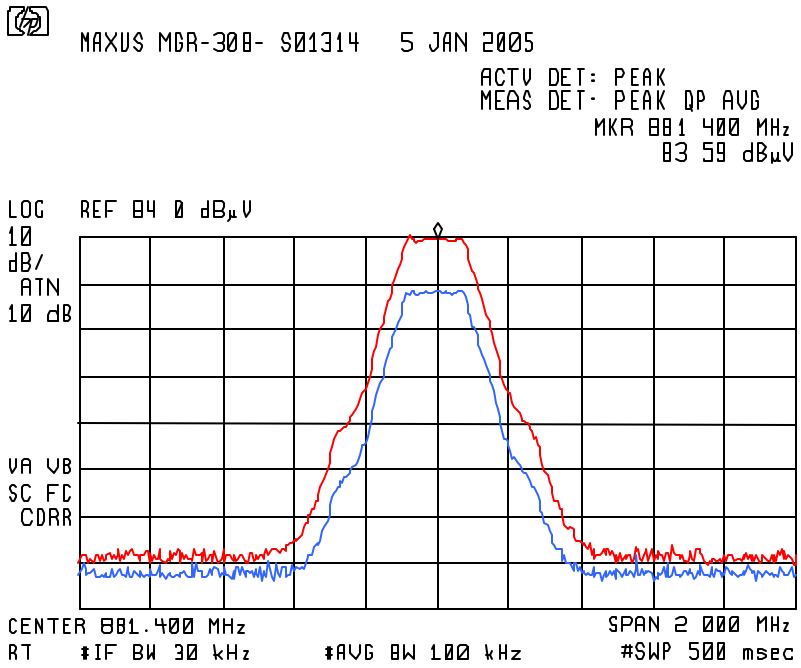
Performed by: Bobby Leanio

Page Number 47 of 69.

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510027: 2005-Jan-05 Wed 07:48:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM DOWNLINK
SPECTRAL DISTORTION
(BLUE INPUT DIRECT, RED OUTPUT AFTER AMP AND 30dB ATTENUATOR)

Performed by: Bobby Leanio

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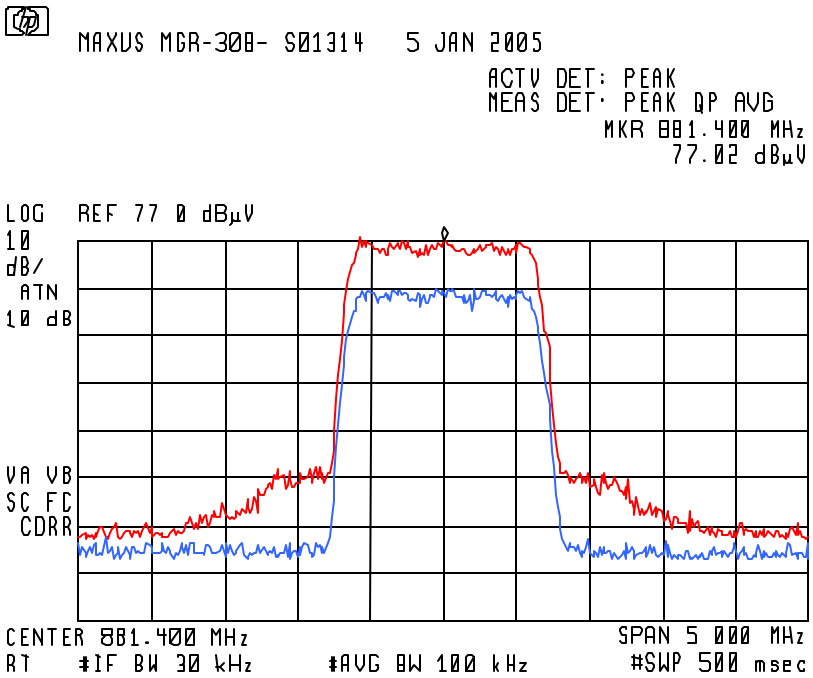
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510028: 2005-Jan-05 Wed 07:51:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: CDMA DOWNLINK
SPECTRAL DISTORTION
(BLUE INPUT DIRECT, RED OUTPUT AFTER AMP AND 30dB ATTENUATOR)

Performed by: Bobby Leanio

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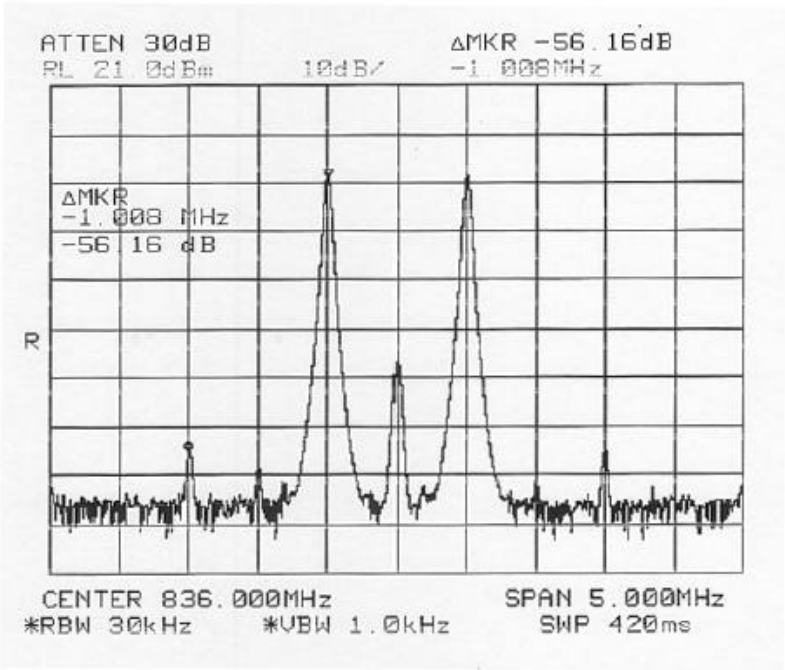
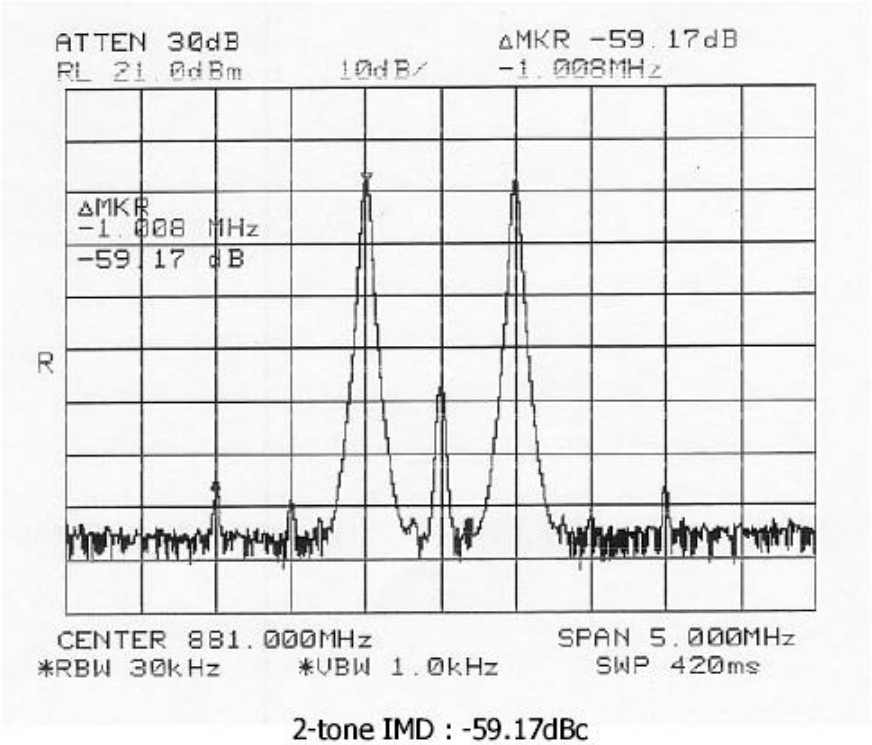
Name of Test: Two Tone IMD Products FM (F1D + GSM))

Up Link



2-tone IMD : -56.16dBc

Down Link



2-tone IMD : -59.17dBc

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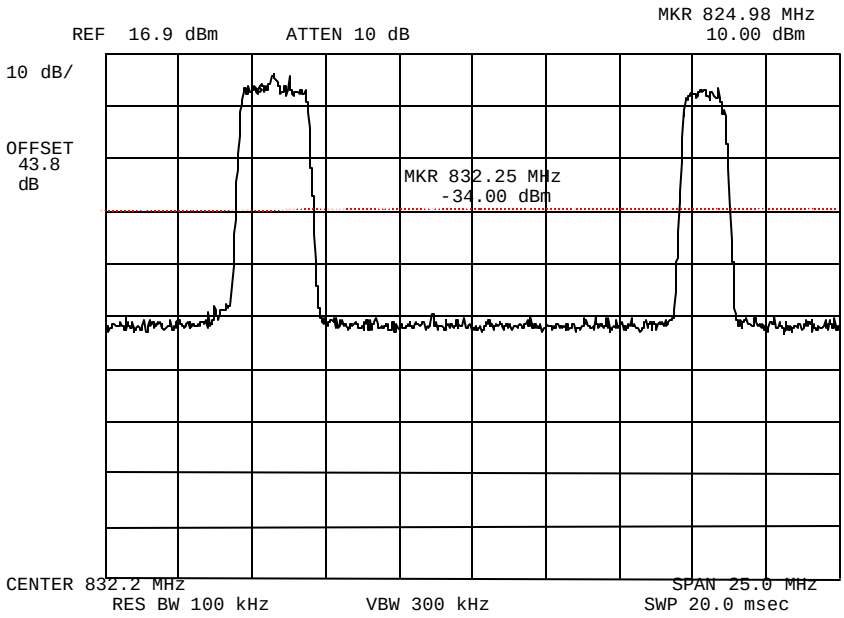
Name of Test: Multi Carrier IMD Products

Measurement Results

g0510041: 2005-Jan-06 Thu 10:14:00
State: 2:High Power Up Link Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER CDMA F1 = 825.000MHz F2 = 826.000MHz F3 = 840.000MHz
In Band IM Products	Below –44dBc (-34dBm) Limit –13dBm

Performed by: Bobby Leanio

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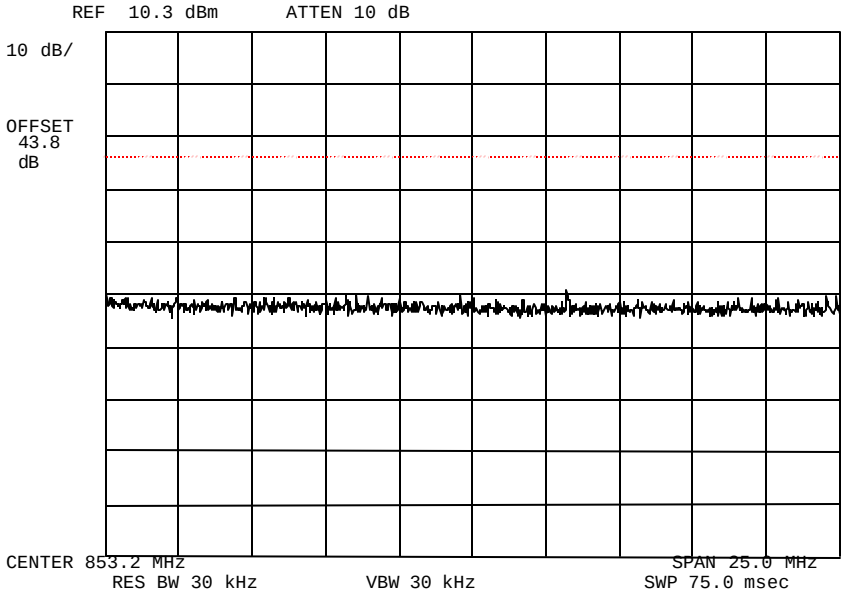
Name of Test: Multi Carrier IMD Products

Measurement Results

g0510042: 2005-Jan-06 Thu 10:22:00
State: 2:High Power Up Link Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER CDMA F1 = 825.000MHz F2 = 826.000MHz F3 = 840.000MHz
Out of Band IM Products	Below –44dBc (-34dBm) Limit –13dBm

Performed by: Bobby Leanio

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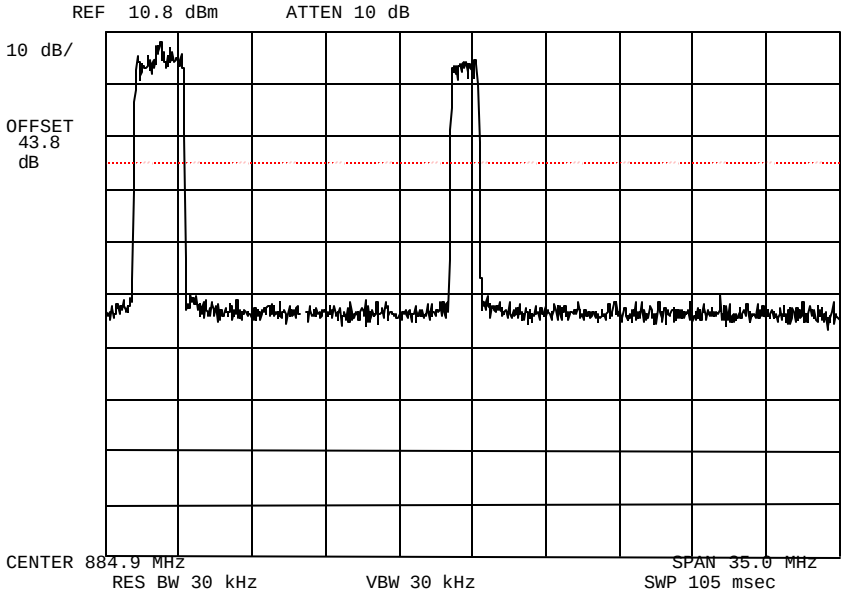
Name of Test: Multi Carrier IMD Products

Measurement Results

g0510043: 2005-Jan-06 Thu 10:37:00
State: 2:High Power Down Link Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER CDMA F1 = 869.500MHz F2 = 870.500MHz F3 = 884.000MHz
In Band IM Products	Below –49dBc (-39dBm) Limit –13dBm

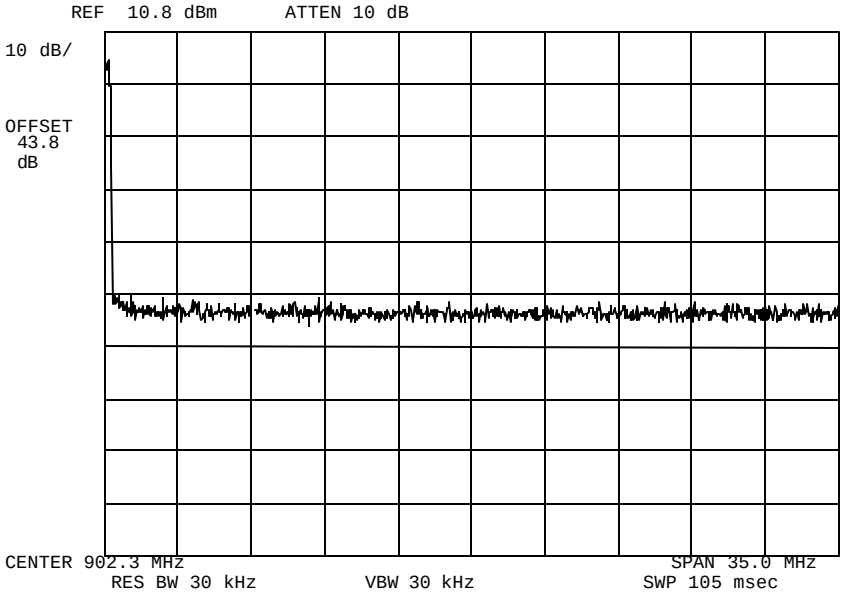
Performed by: Bobby Leanio

Page Number 53 of 69.

Name of Test: Multi Carrier IMD Products

Measurement Results

g0510044: 2005-Jan-06 Thu 10:37:00
State: 2:High Power Down Link Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER CDMA F1 = 869.500MHz F2 = 870.500MHz F3 = 884.000MHz
Out of Band IM Products	Below –49dBc (-39dBm) Limit –13dBm

Performed by: Bobby Leanio

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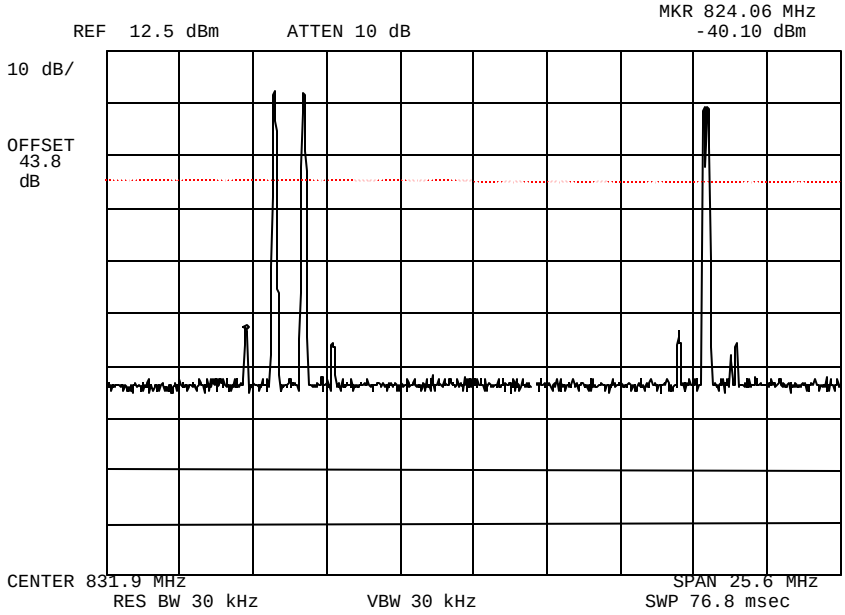
Name of Test: Multi Carrier IMD Products

Measurement Results

g0510050: 2005-Jan-06 Thu 12:35:00
State: 2:High Power Up Link Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER TDMA F1 = 825.000MHz F2 = 826.000MHz F3 = 840.000MHz
In Band IM Products	Below –50dBc (-40dBm) Limit –13dBm

Performed by: Bobby Leanio

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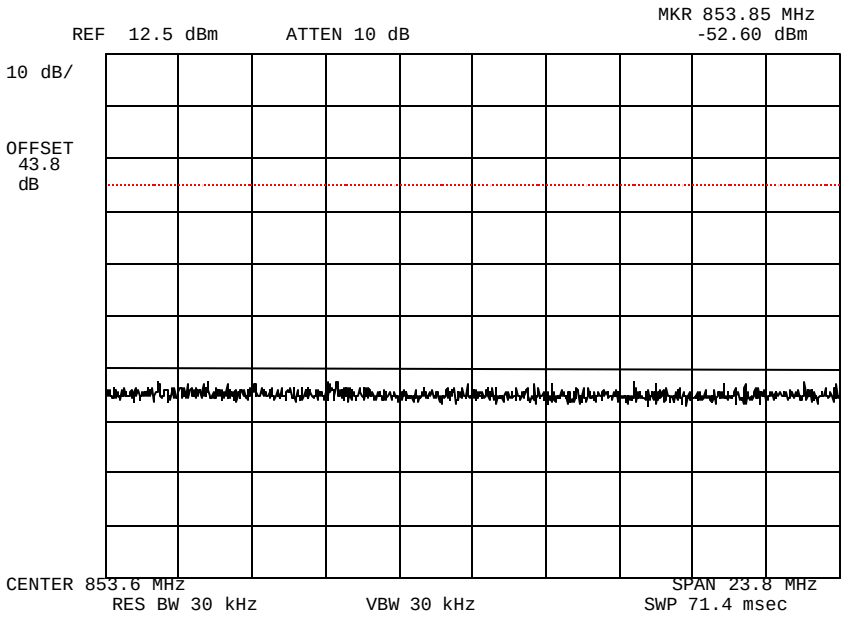
Name of Test: Multi Carrier IMD Products

Measurement Results

g0510051: 2005-Jan-06 Thu 12:38:00
State: 2:High Power Up Link Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER TDMA F1 = 825.000MHz F2 = 826.000MHz F3 = 840.000MHz
Out of Band IM Products	Below –62dBc (-52dBm) Limit –13dBm

Performed by: Bobby Leanio

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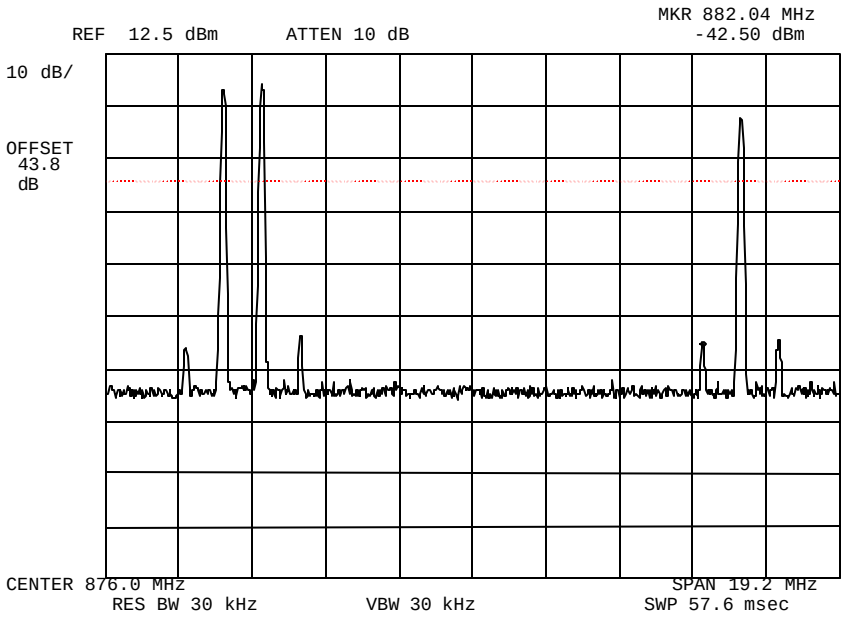
Name of Test: Multi Carrier IMD Products

Measurement Results

g0510046: 2005-Jan-06 Thu 10:54:00
State: 2:High Power Down Link Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER TDMA F1 = 869.500MHz F2 = 870.500MHz F3 = 884.000MHz
In Band IM Products	Below –52dBc (-42dBm) Limit –13dBm

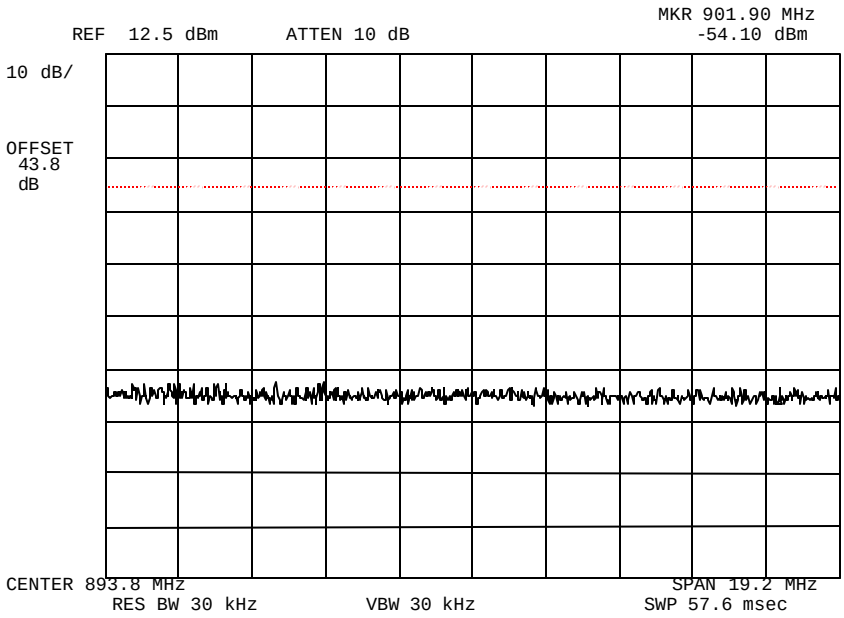
Performed by: Bobby Leanio

Page Number 57 of 69.

Name of Test: Multi Carrier IMD Products

Measurement Results

g0510048: 2005-Jan-06 Thu 10:56:00
State: 2:High Power Down Link Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER TDMA F1 = 869.500MHz F2 = 870.500MHz F3 = 884.000MHz
Out of Band IM Products	Below –64dBc (-54dBm) Limit –13dBm

Performed by: Bobby Leanio

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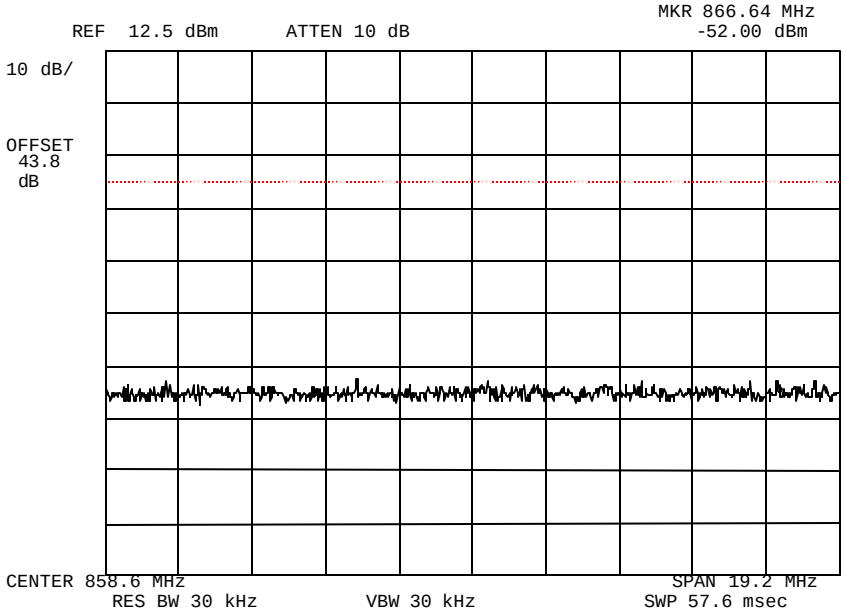
Name of Test: Multi Carrier IMD Products

Measurement Results

g0510049: 2005-Jan-06 Thu 10:56:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power:	HIGH
Modulation:	3 CARRIER TDMA F1 = 869.500MHz F2 = 870.500MHz F3 = 884.000MHz
Out of Band IM Products	Below –62dBc (-52dBm) Limit –13dBm

Performed by: Bobby Leanio

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Name of Test: RF Power Output (Radiated)

Specification: 47 CFR 2.1046(a)

Test Equipment: As per attached page

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.

Measurement Results

g0510017: 2005-Jan-03 Mon 15:14:00
State: 2:High Power – Fully Driven - Uplink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
TDMA	848.970000	848.975000	69.51	33.12	5.3
CDMA	848.130000	848.098800	69.21	33.12	5.0
GSM	848.750000	848.698800	69.94	33.12	5.7

g0510018: 2005-Jan-03 Mon 15:16:00
State: 2:High Power– Fully Driven - Uplink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
TDMA	836.400000	836.397500	71.73	32.91	7.3
CDMA	836.400000	836.398800	72.46	32.91	8.0
GSM	836.400000	836.398800	71.61	32.91	7.1

g0510019: 2005-Jan-03 Mon 15:18:00
State: 2:High Power– Fully Driven – Uplink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
TDMA	824.130000	824.125000	66.65	32.73	2.0
CDMA	824.970000	824.960000	66.40	32.73	1.8
GSM	824.250000	824.227500	66.68	32.73	2.0

g0510020: 2005-Jan-03 Mon 15:21:00
State: 2:High Power– Fully Driven - Downlink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
TDMA	881.400000	881.400000	74.53	33.66	10.8
CDMA	881.400000	881.400000	72.30	33.66	8.6
GSM	881.400000	881.400300	73.08	33.66	9.4

g0510021: 2005-Jan-03 Mon 15:23:00
State: 2:High Power– Fully Driven - Downlink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
TDMA	869.130000	869.150000	73.98	33.46	10.1
CDMA	869.970000	869.970000	72.59	33.46	8.7
GSM	869.250000	869.240000	71.37	33.46	7.5

g0510022: 2005-Jan-03 Mon 15:27:00
State: 2:High Power– Fully Driven - Downlink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
TDMA	893.970000	893.950000	73.01	33.85	9.5
CDMA	893.130000	893.150000	72.71	33.85	9.2
GSM	893.750000	893.742500	72.22	33.85	8.7

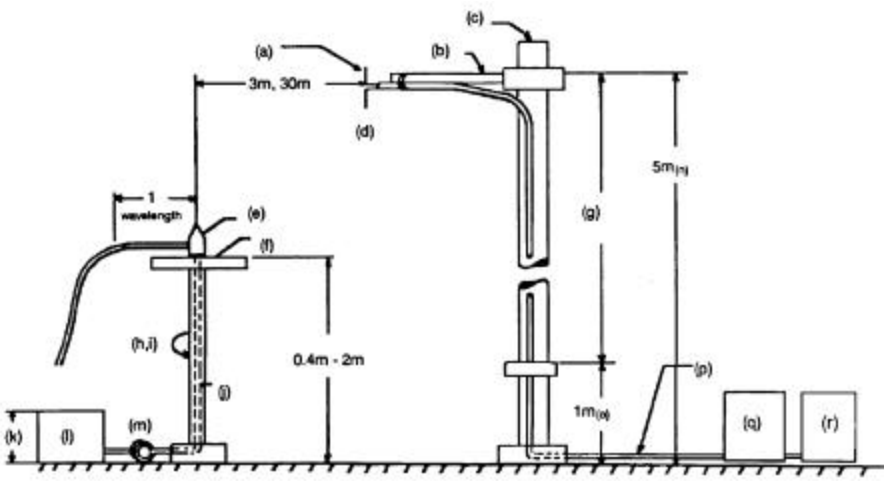
CDMA/TDMA/NAMPS (As Appropriate) Mode:

The emission bandwidth exceeds the measurement bandwidth of the test receiver.

Supervised By:

David E. Lee,
Compliance Test Manager

Radiated Test Setup



NOTES:

(a) Search Antenna - Rotatable on boom
(b) Non-metallic boom
(c) Non-metallic mast
(d) Adjustable horizontally
(e) Equipment Under Test
(f) Turntable
(g) Boom adjustable in height.
(h) External control cables routed horizontally at least one wavelength.
(i) Rotatable
(j) Cables routed through hollow turntable center
(k) 30 cm or less
(l) External power source
(m) 10 cm diameter coil of excess cable
(n) 25 cm (V), 1 m-7 m (V, H)
(o) 25 cm from bottom end of 'V', 1m normally
(p) Calibrated Cable at least 10m in length
(q) Amplifier (optional)
(r) Spectrum Analyzer

	Asset (as applicable)	Description	s/n	Cycle	Last Cal (Per ANSI C63.4-1992/2000 Draft, 10.1.4)
Transducer					
X	i00088	EMCO 3109-B 25MHz-300MHz	2336	24 mo.	Sep-03
X	i00089	Aprel 2001 200MHz-1GHz	001500	24 mo.	Sep-03
	i00103	EMCO 3115 1GHz-18GHz	9208-3925	24 mo.	Sep-03
Amplifier					
	i00028	HP 8449A	2749A00121	12 mo.	Mar-04
Spectrum Analyzer					
	i00029	HP 8563E	3213A00104	12 mo.	Mar-04
X	i00033	HP 85462A	3625A00357	12 mo.	Sep-04

Miscellaneous

Microphone	N/A
Antenna	Yes
All Ports Terminated	Yes

Test Setup: Radiated Emissions

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Name of Test: Field Strength of Spurious Radiation

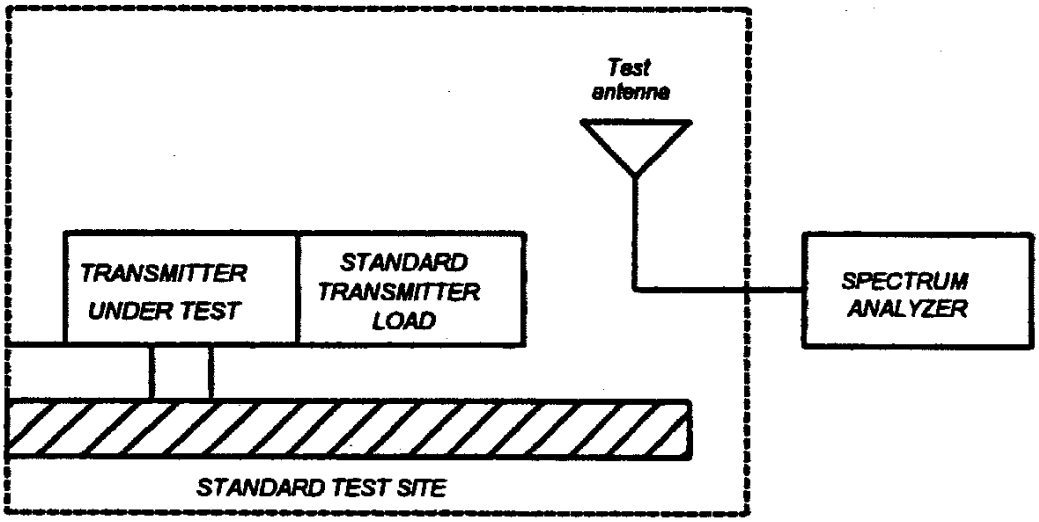
Specification: 47 CFR 2.1053(a)

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



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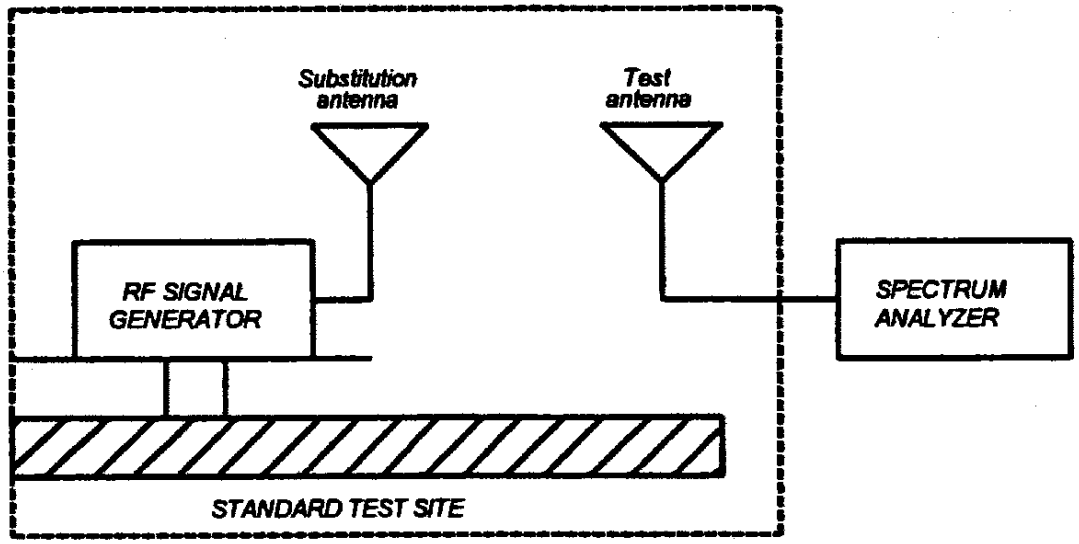
Name of Test: Field Strength of Spurious Radiation (Cont.)

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.

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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.	May-04
	i00207	HP 8753D Network Analyzer	3410A08514	12 mo.	Jun-04

Microphone, Antenna Port, and Cabling

Microphone	N	Cable Length		Meters
Antenna Port Terminated	Y	Load	Y	Antenna Gain N/A
All Ports Terminated by Load	Y	Peripheral	N	

Name of Test: Field Strength of Spurious Radiation

Measurement Results

All Other Emissions (Worst Case Combinations) = -13dBm limit

Name of Test: Field Strength of Spurious Radiation
g0490090: 2004-Sep-16 Thu 13:49:00
State: 2:High Power Down Link (FM)

Frequency Tuned, MHz	Frequency Emission, MHz	Generator, dBm	Limit, dBm	Margin, dB
869.000000	1738.000000	-26.8		-13.8
869.000000	2607.000000	-30.5		-17.5
869.000000	3476.000000	-29.2		-16.2
869.000000	4345.000000	-38.6		-25.6
869.000000	5214.000000	-44.2	-13dBm	-31.2
869.000000	6083.000000	-37.4		-24.5
869.000000	6952.000000	-46.5		-33.6
869.000000	7821.000000	-44.4		-31.5
869.000000	8690.000000	-49.9		-37.0

Name of Test: Field Strength of Spurious Radiation
g0490091: 2004-Sep-16 Thu 14:44:00
State: 2:High Power Up Link (FM)

Frequency Tuned, MHz	Frequency Emission, MHz	Generator, dBm	Limit, dBm	Margin, dB
824.040000	1648.080000	-60.8		-47.8
824.040000	2472.120000	-58.3		-45.4
824.040000	3296.160000	-55.4		-42.5
824.040000	4120.200000	-51.2		-38.3
824.040000	4944.240000	-50.6	-13dBm	-37.6
824.040000	5768.280000	-56.2		-43.2
824.040000	6592.320000	-50.3		-37.3
824.040000	7416.360000	-48.6		-35.7
824.040000	8240.400000	-47.1		-34.1

Supervised By: David E. Lee,
Compliance Test Manager

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Name of Test: A/C Powerline Conducted Emissions

Specification: FCC: 47 CFR 15.107

Guide: IEEE Standard 213

Test Conditions: S. T. & H.

Test Equipment: As per attached page

Measurement Procedure

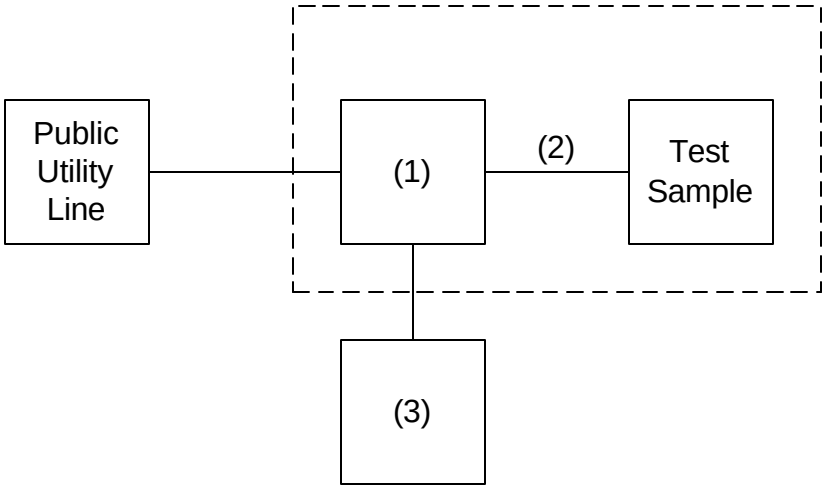
1. A test sample was connected to the Public Utility lines through a LISN (50 μH).

2. A reference level of 250 μV was set on the Spectrum Analyzer. The spectrum was searched over the range of 150 kHz to 30 MHz.

3. All other emissions were 20 dB or more below limit.

4. ____ The test sample used a charger.
   X The test sample does not use a charger.

AC Powerline Conducted Measurements



	Asset	Description	s/n	Cycle	Last Cal (Per ANSI C63.4-1992/2000 Draft, 10.1.4)
(1) **Line Impedance Stabilization Network**					
X	i00244	Fischer 50-20-2-01	2047	NCR	
(2) **Screen Room**					
X	I00170	Lindgren LG170	4999	NCR	
(3) **Spectrum Analyzer**					
X	i00033	HP 85462A	3625A00357	12 mo.	Sep-04
	i00048	HP 8566B	2511AD1467	12 mo.	Jul-04

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Name of Test: A/C Powerline Conducted Emissions

Results: Power Line Conducted

g0490082: 2004-Sep-15 Wed 16:00:00
State: 0:Line Side

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBuV	C.F., dB	µV/m
0.000000	0.509833	21.87	0.59	13.27
0.000000	1.359550	20.03	0.50	10.63
0.000000	2.059317	22.70	0.52	14.49
0.000000	3.858717	15.53	0.64	6.43
0.000000	22.652450	12.03	1.68	4.85
0.000000	23.102300	11.70	1.66	4.66

g0490083: 2004-Sep-15 Wed 16:02:00
State: 0:Neutral Side

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBuV	C.F., dB	µV/m
0.000000	0.259917	25.37	0.73	20.18
0.000000	0.959683	20.70	0.59	11.60
0.000000	2.009333	22.53	0.58	14.31
0.000000	4.508500	13.87	0.67	5.33
0.000000	22.702433	15.03	1.69	6.85
0.000000	24.151950	11.87	1.57	4.70

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