



M. Flom Associates, Inc.

International Compliance Testing Laboratory

3356 N. San Marcos Place, Suite 107
Chandler, AZ 85225

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Date: January 14, 2005

Federal Communications Commission
Via Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Maxus Technologies USA Inc.
Equipment: MGR-319H
FCC ID: SKT-R319H-0410
FCC Rules: 15, 24E, Confidentiality

Gentlemen:

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

Filing fees are attached.

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

Sincerely yours,

David E. Lee, Compliance Test Manager

enclosure(s)
cc: Applicant
DEL/del

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

Applicant: Maxus Technologies USA Inc.

FCC ID: SKT-R319H-0410

By Applicant:

1. Letter Of Authorization
2. Identification Drawings, 2.1033(c)(11)
 - Label
 - Location of Label
 - Compliance Statement
 - Location of Compliance Statement
3. Photographs, 2.1033(c)(12)
4. Documentation: 2.1033(c)
 - (3) User Manual
 - (9) Tune-Up/Alignment Procedure
 - (10) Schematic Diagram
 - (10) Operational Description
 - Block Diagram
 - Parts List

By M.F.A. Inc.

- A. Testimonial & Statement of Certification



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RF Amplifier Certification

of

FCC ID: SKT-R319H-0410

Model: MGR-319H

to

Federal Communications Commission

Rule Part(s) 24E

Date Of Report: January 13, 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.

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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-319H
FCC ID: SKT-R319H-0410
Description: PCS Signal Booster

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

g) Report Date: January 13, 2005
EUT Received: December 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.

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List of General Information Required for Certification

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

15, 24E 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-R319H-0410

Model Number:

MGR-319H

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

Please See Attached Exhibits

(c)(4): Type of Emission:

F9W, GXW, DXW

(c)(5): Frequency Range, MHz:

Up Link 1880 - 1910MHz
Down Link 1960 - 1990MHz

(c)(6): Power Rating, Watts:☐ Switchable☐ Variable

0.010 (10mW, 10dBm)

☒ N/A**(c)(7): Maximum Power Rating, Watts:**

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Subpart 2.1033 (continued)

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

Collector Current, A	=	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



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**



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**

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Sub-part

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

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

- ☐ 21 - Domestic Public Fixed Radio Services
- ☐ 22 - Public Mobile Services
- ☐ 22 Subpart H - Cellular Radiotelephone Service
- ☐ 22.901(d) - Alternative technologies and auxiliary services
- ☐ 23 - International Fixed Public Radiocommunication services
- ☒ 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.

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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 $\pm 3\%$.

Measurement Results (Worst case)

Power Setting	Frequency Range	RF Power, Watts
High - Saturated (Cut Off)	1880 - 1910MHz	0.010 (10dBm)
High - ALC Level (IMD Spec)	1880 - 1910MHz	0.005 (7dBm)
High - Saturated (Cut Off)	1960 - 1990MHz	0.010 (10dBm)
High - ALC Level (IMD Spec)	1960 - 1990MHz	0.005 (7dBm)

Both sections of the bi-directional amplifier contain an independent ALC circuit, which maintains the IMD specification level over a 25-30db 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.

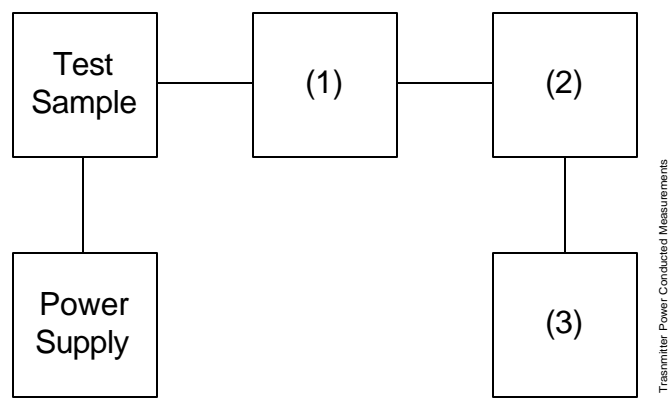
Supervised By:



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)

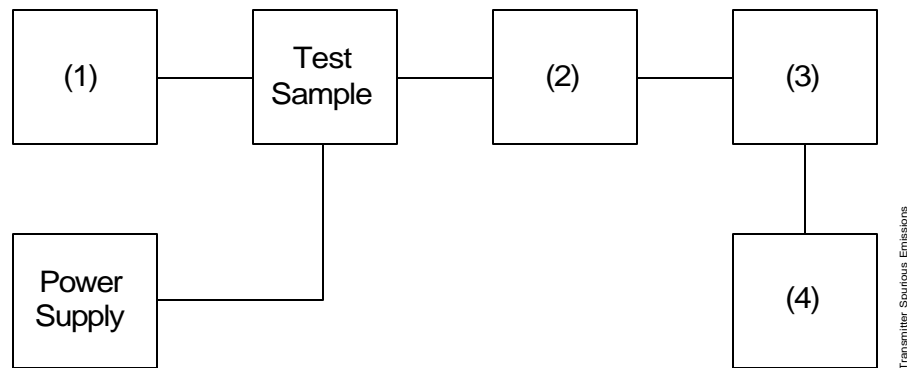
Specification: 47 CFR 2.1051

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 PASTERNAK 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 1880, 1895, 1910
Down Link 1960, 1975, 1990
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

g0510059: 2005-Jan-12 Wed 11:40:00

State: 2: Up Link TDMA

Ambient Temperature: 20°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
1880.000000	3760.000000	-61.97	-71.97	48.97
1895.000000	3790.000000	-58.78	-68.78	45.78
1909.920000	3819.840000	-55.91	-65.91	42.91
1880.000000	5640.000000	-56.46	-66.46	43.46
1895.000000	5685.000000	-61.98	-71.98	48.98
1909.920000	5729.760000	-58.77	-68.77	45.77
1880.000000	7520.000000	-56.10	-66.10	43.10
1895.000000	7580.000000	-59.42	-69.42	46.42
1909.920000	7639.680000	-57.82	-67.82	44.82
1880.000000	9400.000000	-56.82	-66.82	43.82
1895.000000	9475.000000	-56.48	-66.48	43.48
1909.920000	9549.600000	-61.32	-71.32	48.32
1880.000000	11280.000000	-59.92	-69.92	46.92
1895.000000	11370.000000	-54.93	-64.93	41.93
1909.920000	11459.520000	-58.14	-68.14	45.14
1880.000000	13160.000000	-53.82	-63.82	40.82
1895.000000	13265.000000	-54.85	-64.85	41.85
1909.920000	13369.440000	-55.97	-65.97	42.97
1880.000000	15040.000000	-54.19	-64.19	41.19
1895.000000	15160.000000	-54.03	-64.03	41.03
1909.920000	15279.360000	-60.73	-70.73	47.73
1880.000000	16920.000000	-55.97	-65.97	42.97
1895.000000	17055.000000	-53.33	-63.33	40.33
1909.920000	17189.280000	-58.73	-68.73	45.73

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State: 2: Up Link CDMA

Ambient Temperature: 20°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
1880.000000	3760.000000	-61.67	-71.67	48.67
1895.000000	3790.000000	-55.56	-65.56	42.56
1908.750000	3817.500000	-54.68	-64.68	41.68
1880.000000	5640.000000	-55.75	-65.75	42.75
1895.000000	5685.000000	-56.02	-66.02	43.02
1908.750000	5726.250000	-58.96	-68.96	45.96
1880.000000	7520.000000	-56.65	-66.65	43.65
1895.000000	7580.000000	-62.10	-72.10	49.10
1908.750000	7635.000000	-55.57	-65.57	42.57
1880.000000	9400.000000	-62.98	-72.98	49.98
1895.000000	9475.000000	-59.04	-69.04	46.04
1908.750000	9543.750000	-56.28	-66.28	43.28
1880.000000	11280.000000	-61.27	-71.27	48.27
1895.000000	11370.000000	-57.37	-67.37	44.37
1908.750000	11452.500000	-55.68	-65.68	42.68
1880.000000	13160.000000	-59.16	-69.16	46.16
1895.000000	13265.000000	-60.18	-70.18	47.18
1908.750000	13361.250000	-61.19	-71.19	48.19
1880.000000	15040.000000	-61.68	-71.68	48.68
1895.000000	15160.000000	-60.37	-70.37	47.37
1908.750000	15270.000000	-62.54	-72.54	49.54
1880.000000	16920.000000	-58.31	-68.31	45.31
1895.000000	17055.000000	-57.44	-67.44	44.44
1908.750000	17178.750000	-57.41	-67.41	44.41

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State: 2: Up Link GSM

Ambient Temperature: 20°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
1880.000000	3760.000000	-54.98	-64.98	41.98
1895.000000	3790.000000	-58.81	-68.81	45.81
1909.800000	3819.600000	-59.51	-69.51	46.51
1880.000000	5640.000000	-53.98	-63.98	40.98
1895.000000	5685.000000	-60.59	-70.59	47.59
1909.800000	5729.400000	-55.68	-65.68	42.68
1880.000000	7520.000000	-55.12	-65.12	42.12
1895.000000	7580.000000	-60.30	-70.30	47.30
1909.800000	7639.200000	-55.40	-65.40	42.40
1880.000000	9400.000000	-59.30	-69.30	46.30
1895.000000	9475.000000	-54.65	-64.65	41.65
1909.800000	9549.000000	-58.33	-68.33	45.33
1880.000000	11280.000000	-61.87	-71.87	48.87
1895.000000	11370.000000	-61.08	-71.08	48.08
1909.800000	11458.800000	-62.84	-72.84	49.84
1880.000000	13160.000000	-61.20	-71.20	48.20
1895.000000	13265.000000	-54.11	-64.11	41.11
1909.800000	13368.600000	-62.41	-72.41	49.41
1880.000000	15040.000000	-53.56	-63.56	40.56
1895.000000	15160.000000	-53.87	-63.87	40.87
1909.800000	15278.400000	-60.72	-70.72	47.72
1880.000000	16920.000000	-59.53	-69.53	46.53
1895.000000	17055.000000	-54.90	-64.90	41.90
1909.800000	17188.200000	-55.76	-65.76	42.76

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g0510060: 2005-Jan-12 Wed 12:50:00

State: 2: Down Link TDMA

Ambient Temperature: 20°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
1960.000000	3920.000000	-55.82	-65.82	42.82
1979.000000	3958.000000	-53.40	-63.40	40.40
1989.920000	3979.840000	-53.59	-63.59	40.59
1960.000000	5880.000000	-61.73	-71.73	48.73
1979.000000	5937.000000	-55.63	-65.63	42.63
1989.920000	5969.760000	-55.58	-65.58	42.58
1960.000000	7840.000000	-57.14	-67.14	44.14
1979.000000	7916.000000	-54.13	-64.13	41.13
1989.920000	7959.680000	-61.85	-71.85	48.85
1960.000000	9800.000000	-54.81	-64.81	41.81
1979.000000	9895.000000	-62.50	-72.50	49.50
1989.920000	9949.600000	-60.28	-70.28	47.28
1960.000000	11760.000000	-59.64	-69.64	46.64
1979.000000	11874.000000	-59.45	-69.45	46.45
1989.920000	11939.520000	-59.13	-69.13	46.13
1960.000000	13720.000000	-58.35	-68.35	45.35
1979.000000	13853.000000	-62.11	-72.11	49.11
1989.920000	13929.440000	-53.80	-63.80	40.80
1960.000000	15680.000000	-60.69	-70.69	47.69
1979.000000	15832.000000	-60.26	-70.26	47.26
1989.920000	15919.360000	-60.91	-70.91	47.91
1960.000000	17640.000000	-57.07	-67.07	44.07
1979.000000	17811.000000	-55.74	-65.74	42.74
1989.920000	17909.280000	-62.28	-72.28	49.28
1960.000000	19600.000000	-61.06	-71.06	48.06
1979.000000	19790.000000	-56.69	-66.69	43.69
1989.920000	19899.200000	-58.72	-68.72	45.72

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State: 2: Down Link CDMA

Ambient Temperature: 20°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
1960.000000	3920.000000	-62.73	-72.73	49.73
1979.000000	3958.000000	-61.69	-71.69	48.69
1988.750000	3977.500000	-59.78	-69.78	46.78
1960.000000	5880.000000	-58.70	-68.70	45.70
1979.000000	5937.000000	-60.18	-70.18	47.18
1988.750000	5966.250000	-58.10	-68.10	45.10
1960.000000	7840.000000	-62.85	-72.85	49.85
1979.000000	7916.000000	-56.12	-66.12	43.12
1988.750000	7955.000000	-61.31	-71.31	48.31
1960.000000	9800.000000	-60.74	-70.74	47.74
1979.000000	9895.000000	-61.00	-71.00	48.00
1988.750000	9943.750000	-57.62	-67.62	44.62
1960.000000	11760.000000	-59.12	-69.12	46.12
1979.000000	11874.000000	-58.32	-68.32	45.32
1988.750000	11932.500000	-54.47	-64.47	41.47
1960.000000	13720.000000	-53.18	-63.18	40.18
1979.000000	13853.000000	-60.26	-70.26	47.26
1988.750000	13921.250000	-58.44	-68.44	45.44
1960.000000	15680.000000	-62.21	-72.21	49.21
1979.000000	15832.000000	-59.56	-69.56	46.56
1988.750000	15910.000000	-59.66	-69.66	46.66
1960.000000	17640.000000	-54.66	-64.66	41.66
1979.000000	17811.000000	-56.63	-66.63	43.63
1988.750000	17898.750000	-56.64	-66.64	43.64

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g0510060: 2005-Jan-12 Wed 12:50:00

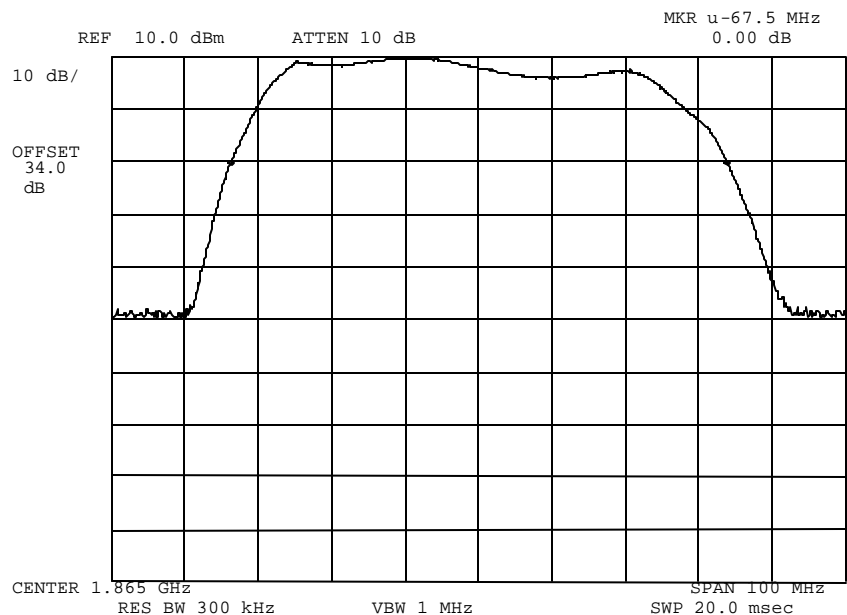
State: 2: Down Link GSM

Ambient Temperature: 20°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc	Margin, dB
1960.000000	3920.000000	-61.15	-71.15	48.15
1979.000000	3958.000000	-60.66	-70.66	47.66
1989.800000	3979.600000	-56.31	-66.31	43.31
1960.000000	5880.000000	-54.65	-64.65	41.65
1979.000000	5937.000000	-57.61	-67.61	44.61
1989.800000	5969.400000	-58.45	-68.45	45.45
1960.000000	7840.000000	-60.90	-70.90	47.90
1979.000000	7916.000000	-56.72	-66.72	43.72
1989.800000	7959.200000	-56.97	-66.97	43.97
1960.000000	9800.000000	-53.97	-63.97	40.97
1979.000000	9895.000000	-61.23	-71.23	48.23
1989.800000	9949.000000	-57.96	-67.96	44.96
1960.000000	11760.000000	-62.23	-72.23	49.23
1979.000000	11874.000000	-57.60	-67.60	44.60
1989.800000	11938.800000	-61.06	-71.06	48.06
1960.000000	13720.000000	-57.34	-67.34	44.34
1979.000000	13853.000000	-54.02	-64.02	41.02
1989.800000	13928.600000	-57.22	-67.22	44.22
1960.000000	15680.000000	-58.19	-68.19	45.19
1979.000000	15832.000000	-62.45	-72.45	49.45
1989.800000	15918.400000	-56.67	-66.67	43.67
1960.000000	17640.000000	-57.02	-67.02	44.02
1979.000000	17811.000000	-59.86	-69.86	46.86
1989.800000	17908.200000	-53.64	-63.64	40.64

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Name of Test: Swept Band Width
g0510097: 2005-Jan-14 Fri 16:00:00
State: 2:High Power

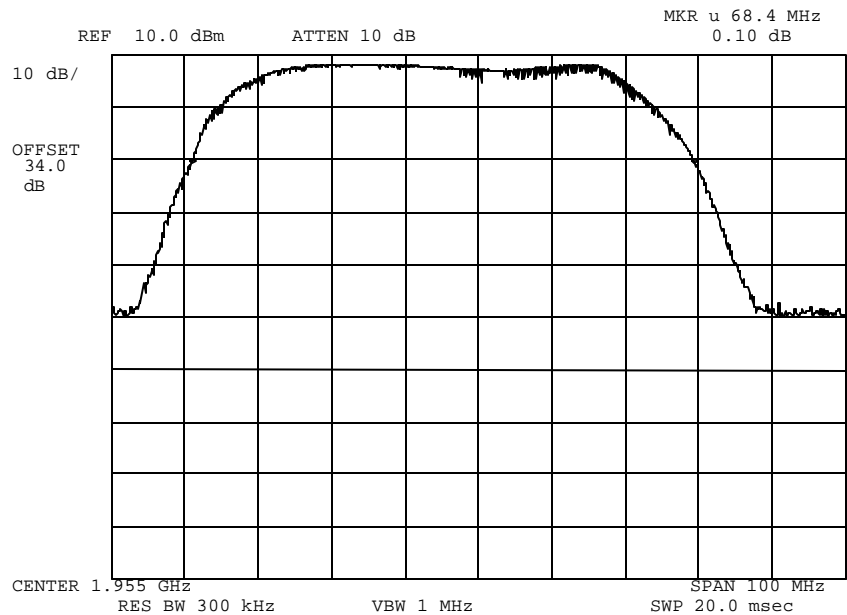


Power: HIGH
Modulation: BAND WIDTH (20dB)

Supervised By: David E. Lee, Compliance Test Manager

Page Number 17 of 65.

Name of Test: Swept Band Width
g0510098: 2005-Jan-14 Fri 16:14:00
State: 2:High Power



Power: HIGH
Modulation: BAND WIDTH (20dB)

Supervised By: David E. Lee, Compliance Test Manager

Page Number 18 of 65.

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 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

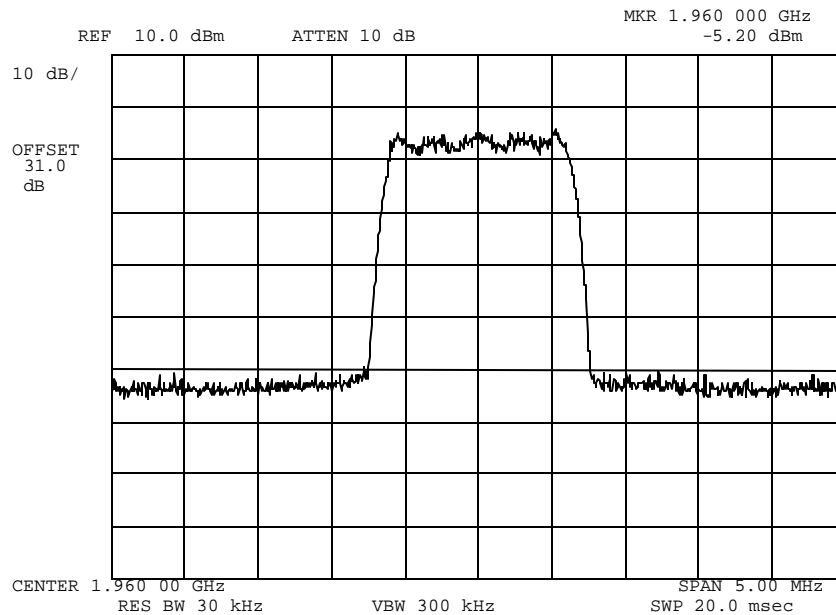
Page Number 19 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

g0510116: 2005-Jan-16 Sun 14:30:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
DOWN LINK CDMA LO

Supervised By:

David E. Lee, Compliance Test Manager

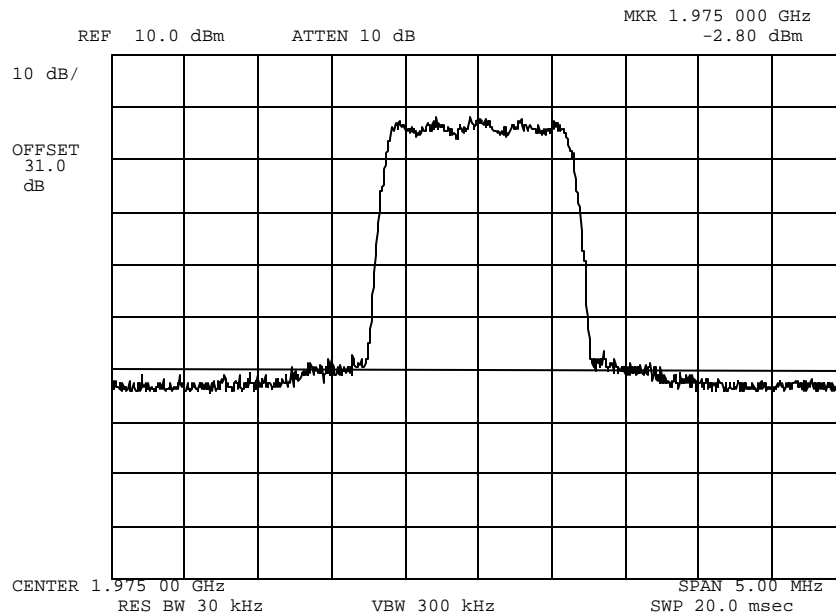
Page Number 20 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

g0510117: 2005-Jan-16 Sun 14:32:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
DOWN LINK CDMA MID

Supervised By:

David E. Lee, Compliance Test Manager

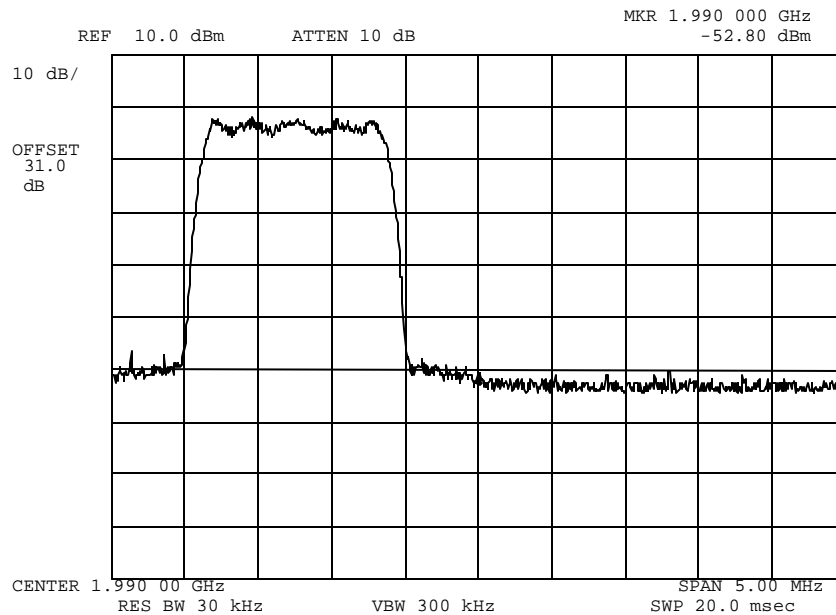
Page Number 21 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

g0510115: 2005-Jan-16 Sun 14:29:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
DOWN LINK CDMA HI

Supervised By:

David E. Lee, Compliance Test Manager

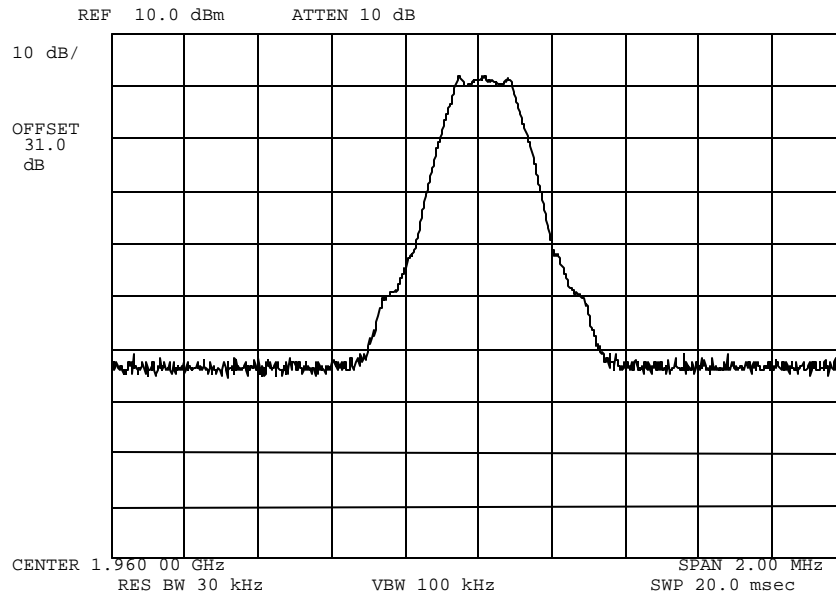
Page Number 22 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

g0510129: 2005-Jan-16 Sun 15:04:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:
Modulation:

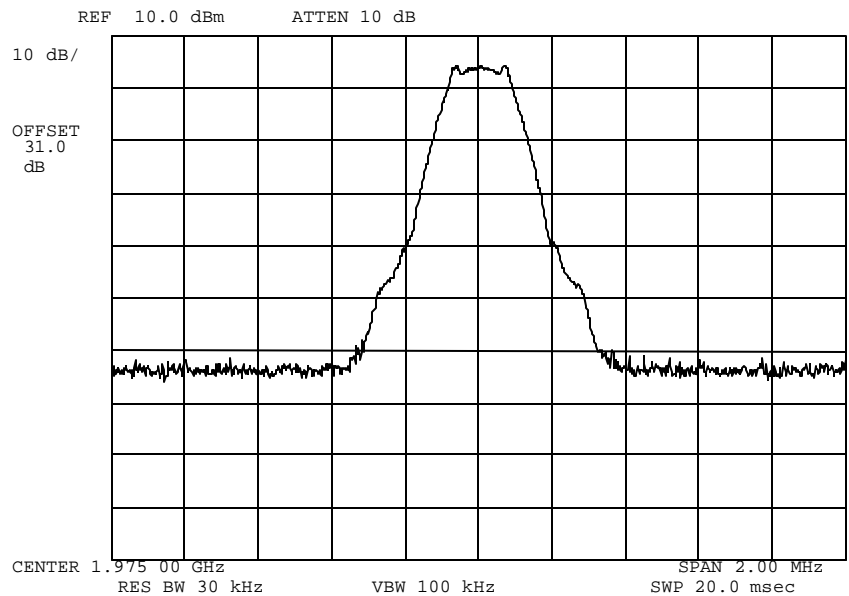
HIGH
DOWN LINK GSM LO

Supervised By:

David E. Lee, Compliance Test Manager

Page Number 23 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)
g0510128: 2005-Jan-16 Sun 15:02:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: DOWN LINK GSM MID

Supervised By: David E. Lee, Compliance Test Manager

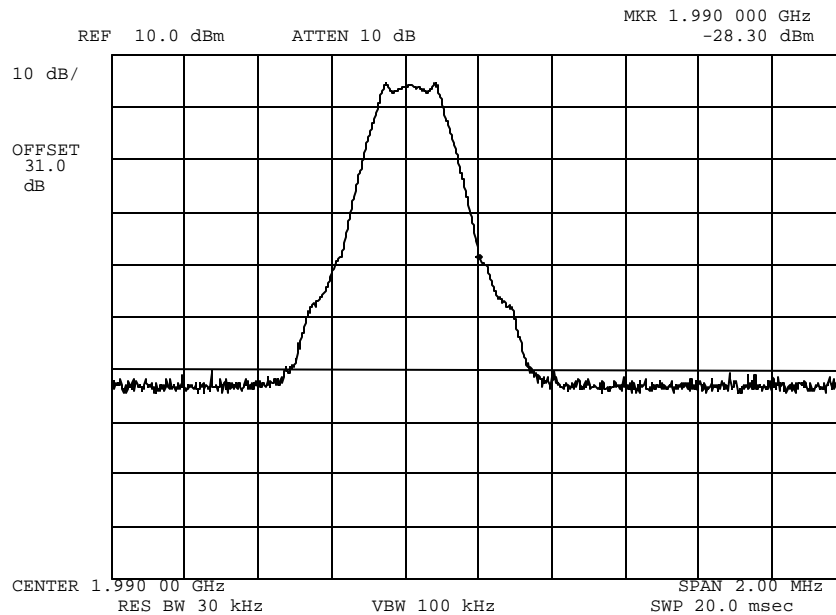
Page Number 24 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

g0510130: 2005-Jan-16 Sun 15:05:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
DOWN LINK GSM HI

Supervised By:

David E. Lee, Compliance Test Manager

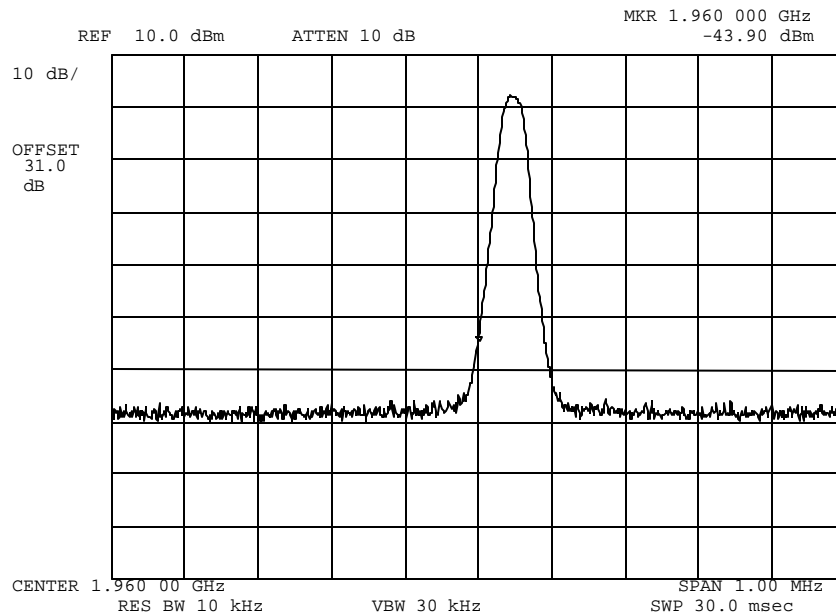
Page Number 25 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

g0510113: 2005-Jan-16 Sun 14:24:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
DOWN LINK TDMA LO

Supervised By:

David E. Lee, Compliance Test Manager

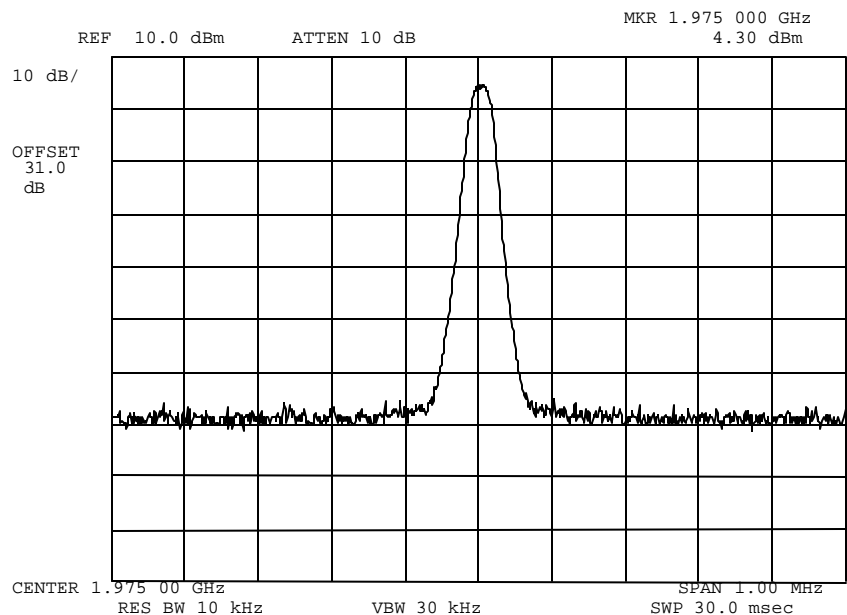
Page Number 26 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

g0510112: 2005-Jan-16 Sun 14:22:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:
Modulation:

HIGH
DOWN LINK TDMA MID

Supervised By:

David E. Lee, Compliance Test Manager

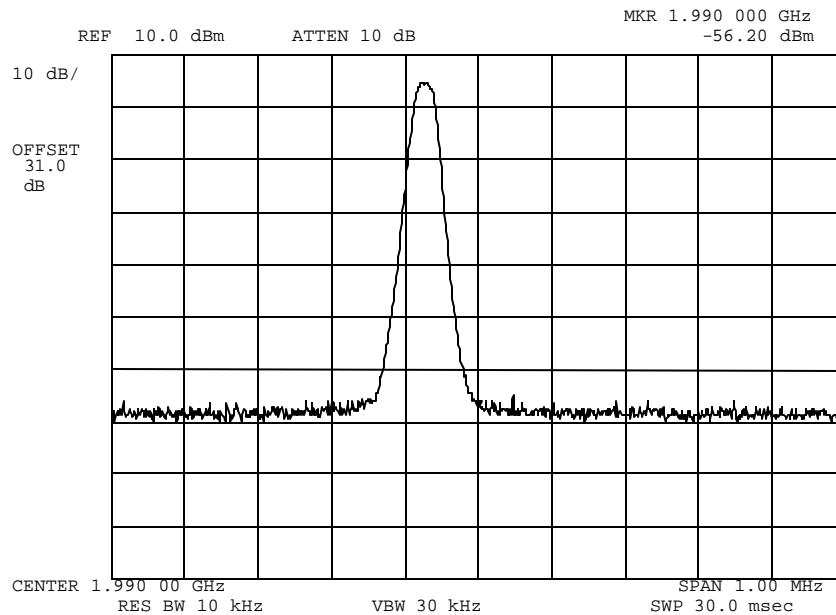
Page Number 27 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

g0510114: 2005-Jan-16 Sun 14:25:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
DOWN LINK TDMA HI

Supervised By:

David E. Lee, Compliance Test Manager

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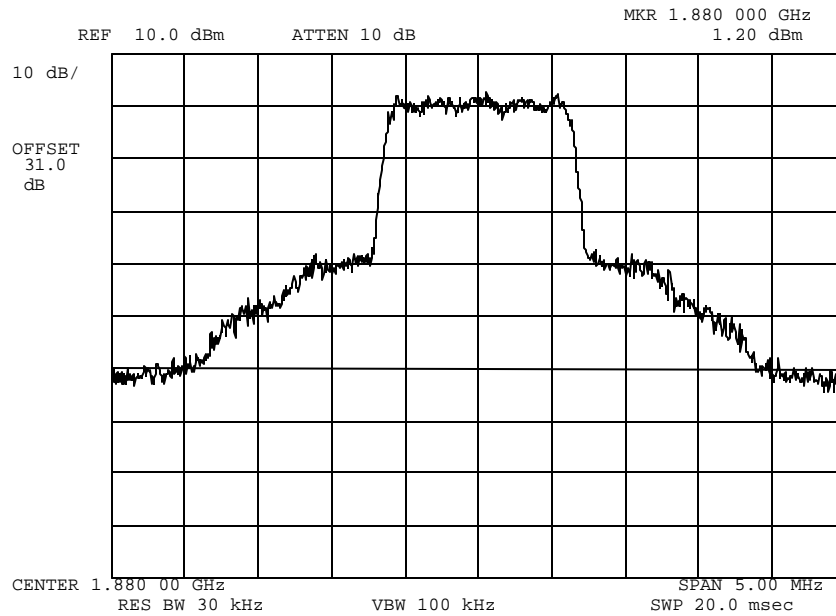
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510121: 2005-Jan-16 Sun 14:43:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:

HIGH

Modulation:

CDMA UPLINK LO

Performed by:

David E. Lee, Compliance Test Manager

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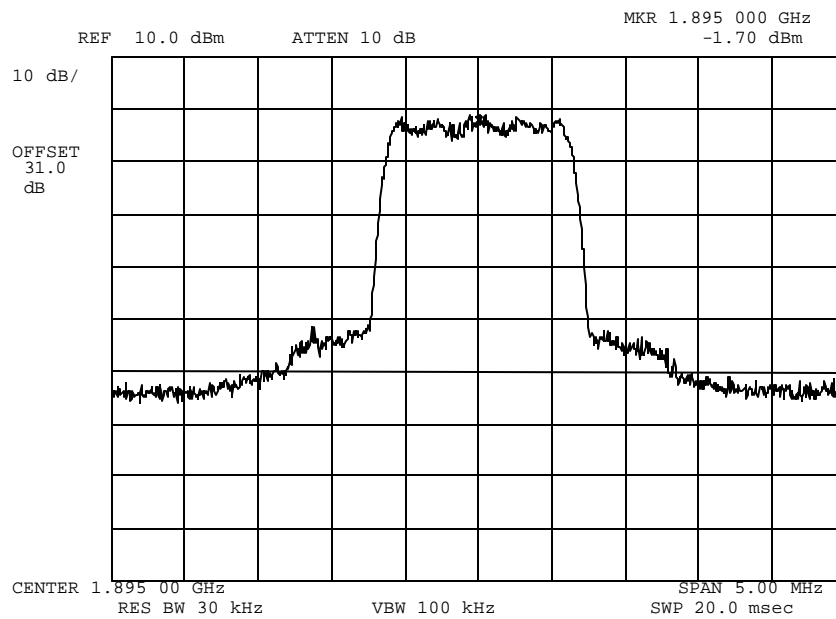
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510120: 2005-Jan-16 Sun 14:41:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
CDMA UPLINK MID

Performed by:

David E. Lee, Compliance Test Manager

Page Number 30 of 65.

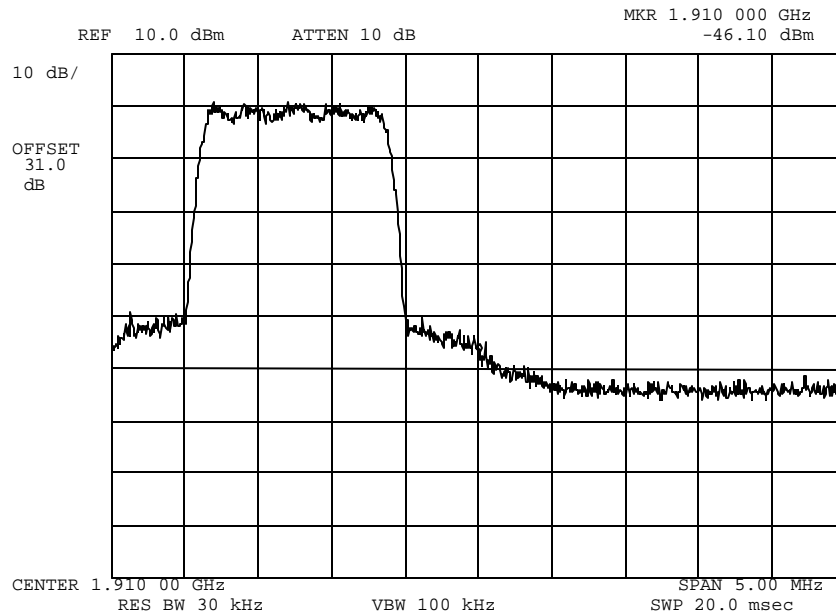
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510122: 2005-Jan-16 Sun 14:45:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
CDMA UPLINK HI

Performed by:

David E. Lee, Compliance Test Manager

Page Number 31 of 65.

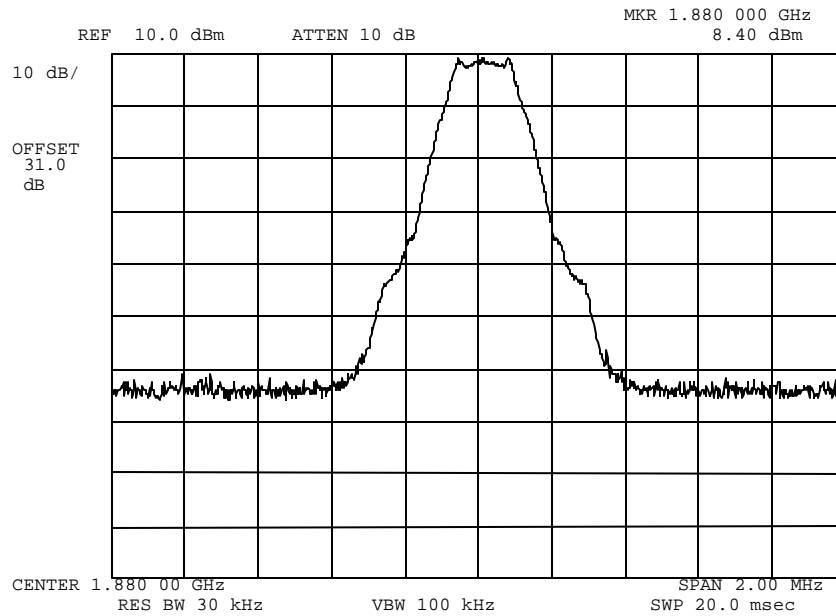
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510124: 2005-Jan-16 Sun 14:49:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
GSM UPLINK LO

Performed by:

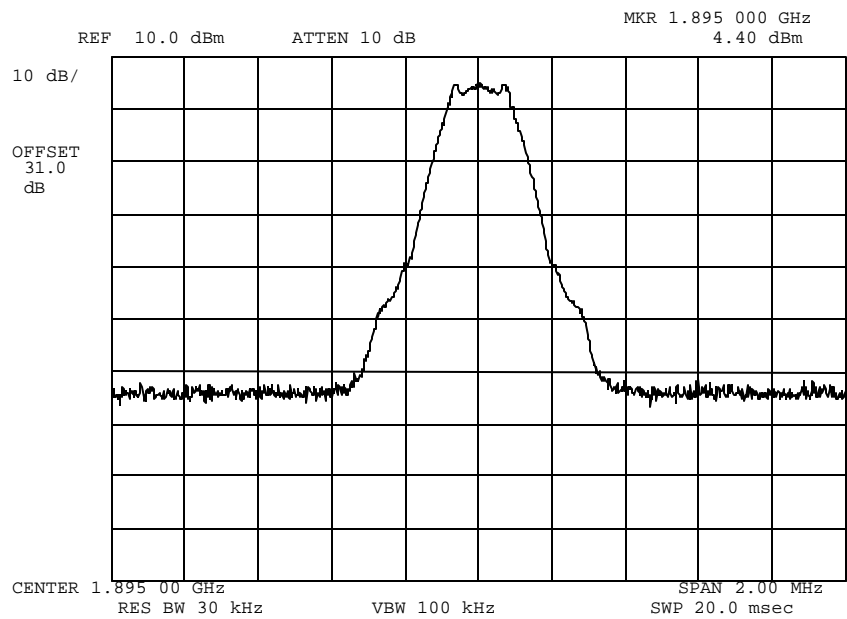
David E. Lee, Compliance Test Manager

Page Number 32 of 65.

Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510125: 2005-Jan-16 Sun 14:52:00
State: 2:High Power Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: GSM UPLINK MID

Performed by: David E. Lee, Compliance Test Manager

Page Number 33 of 65.

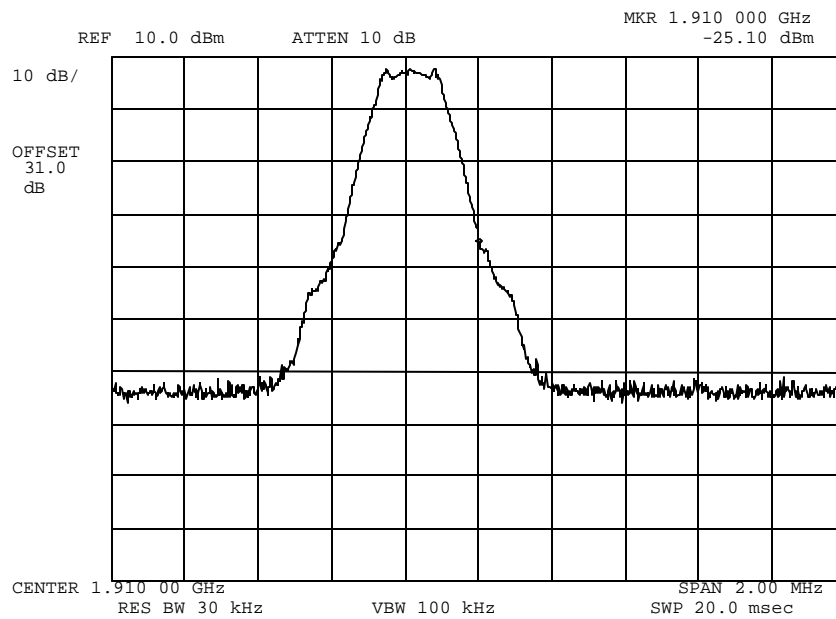
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510123: 2005-Jan-16 Sun 14:47:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
GSM UPLINK HI

Performed by:

David E. Lee, Compliance Test Manager

Page Number 34 of 65.

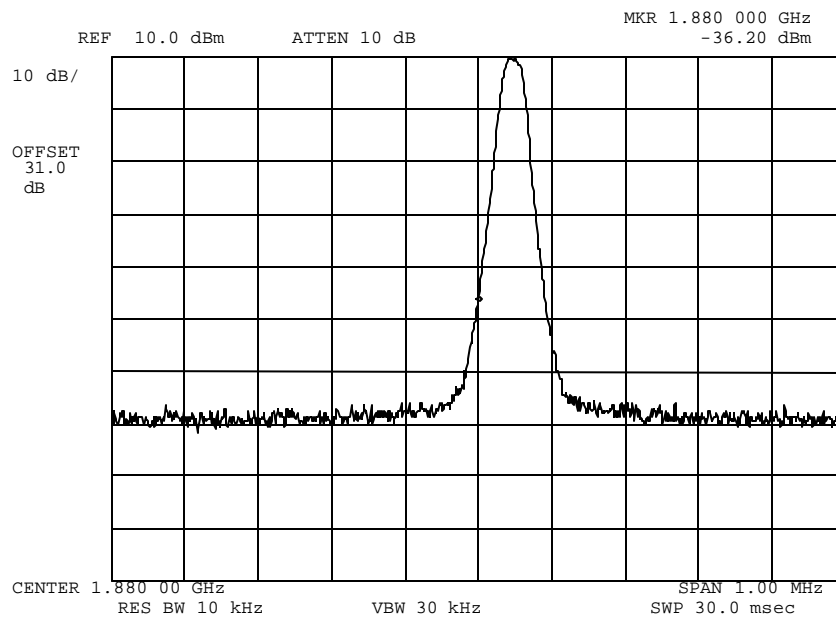
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510107: 2005-Jan-16 Sun 13:03:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:

HIGH

Modulation:

TDMA UPLINK LO

Performed by:

David E. Lee, Compliance Test Manager

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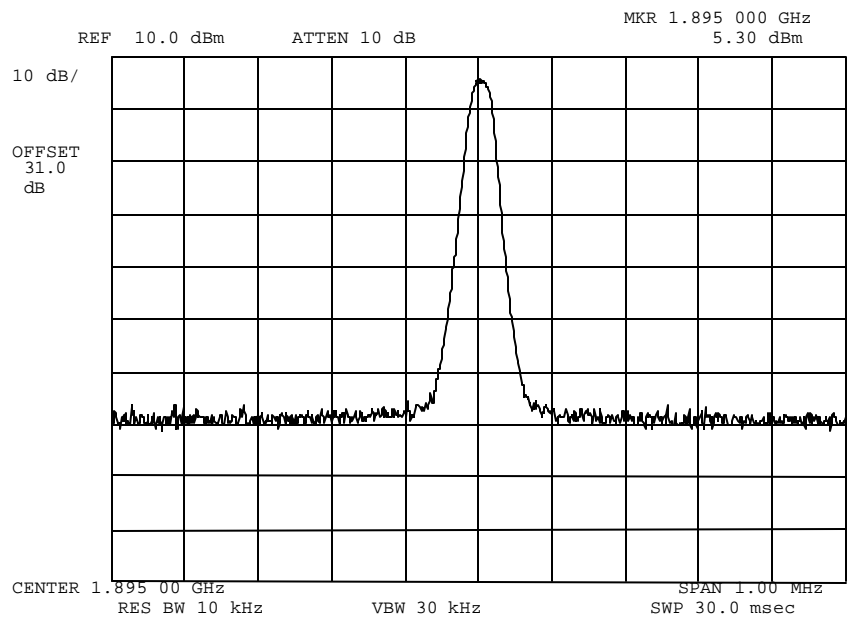
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510109: 2005-Jan-16 Sun 13:06:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: TDMA UPLINK MID

Performed by: David E. Lee, Compliance Test Manager

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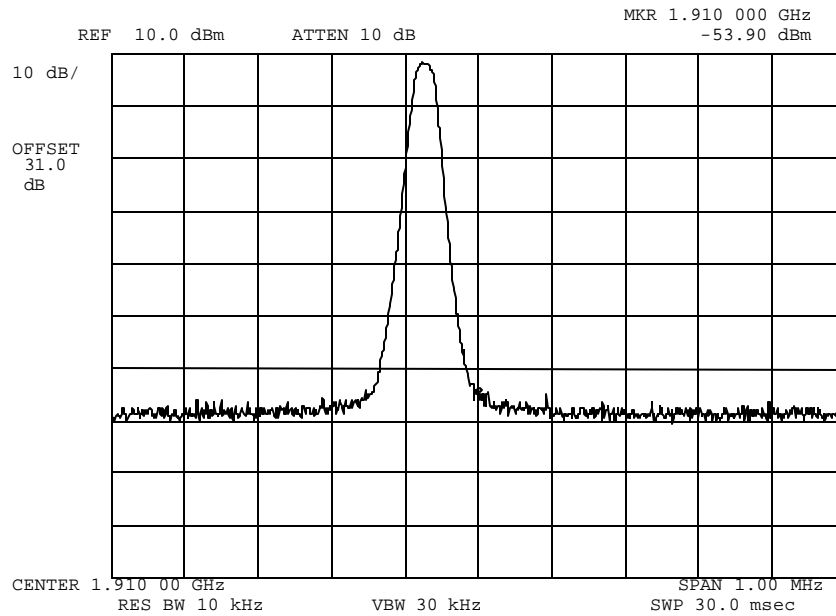
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510108: 2005-Jan-16 Sun 13:04:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:

HIGH

Modulation:

TDMA UPLINK HI

Performed by:

David E. Lee, Compliance Test Manager

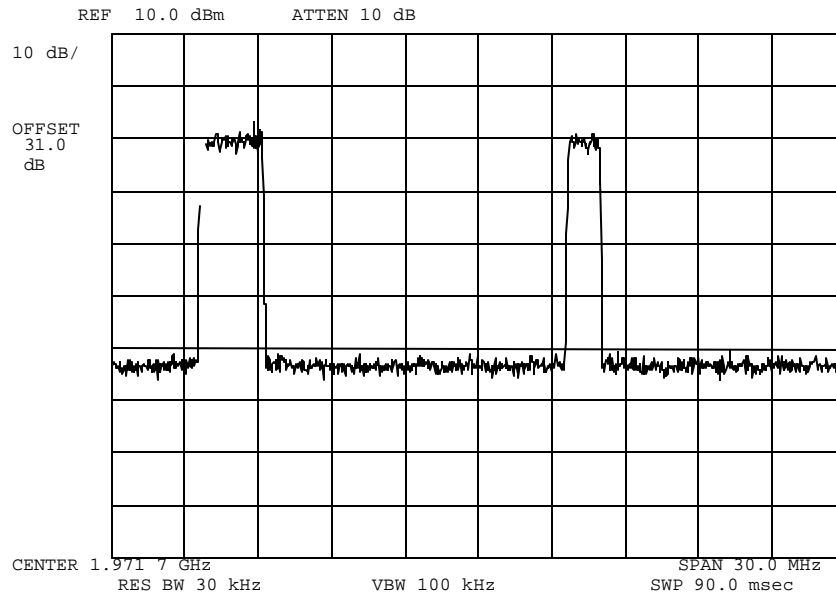
Page Number 37 of 65.

Name of Test: Multi Carrier IMD Products

g0510146: 2005-Jan-16 Sun 16:47:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
3 TONE CDMA DOWN LINK
1 of 2

Supervised By:

David E. Lee, Compliance Test Manager

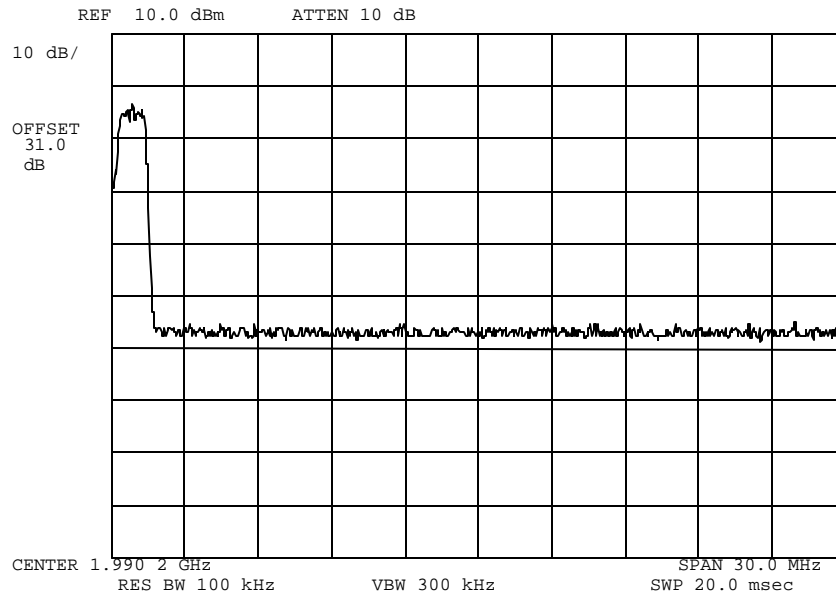
Page Number 38 of 65.

Name of Test: Multi Carrier IMD Products)

g0510147: 2005-Jan-16 Sun 16:49:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:

HIGH

Modulation:

3 TONE CDMA DOWN LINK

2 of 2

Supervised By:

David E. Lee, Compliance Test Manager

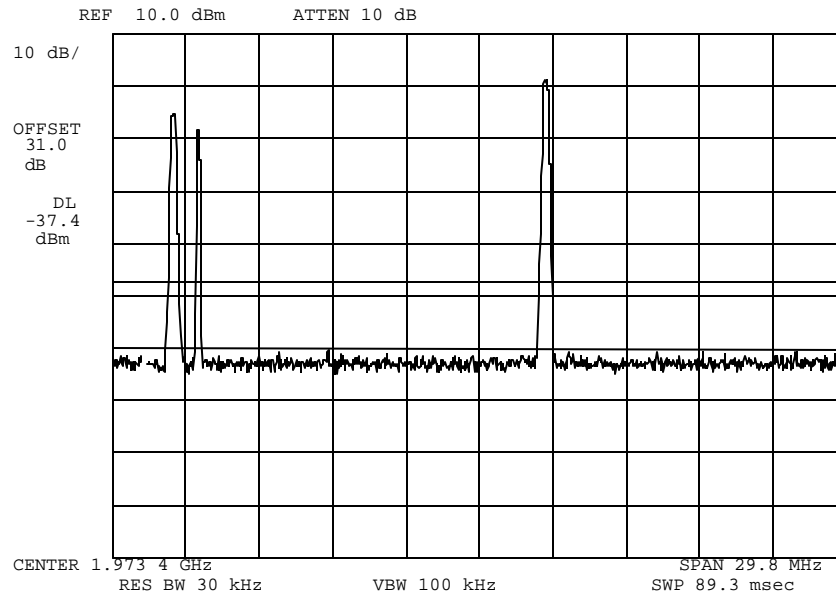
Page Number 39 of 65.

Name of Test: Multi Carrier IMD Products

g0510142: 2005-Jan-16 Sun 16:39:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:

HIGH

Modulation:

3 TONE GSM DOWN LINK

1 of 2

Supervised By:

David E. Lee, Compliance Test Manager

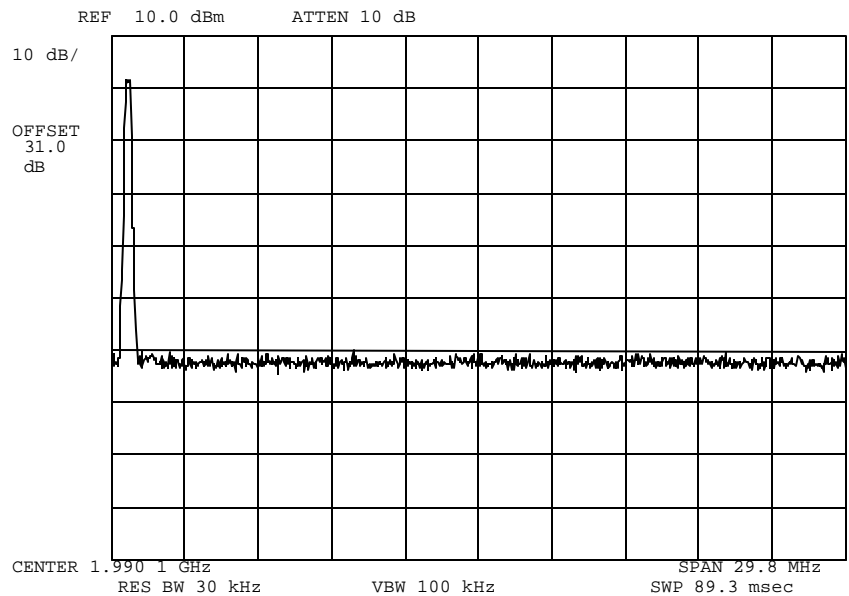
Page Number 40 of 65.

Name of Test: Multi Carrier IMD Products

g0510143: 2005-Jan-16 Sun 16:40:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 3 TONE GSM DOWN LINK
2 of 2

Supervised By:

David E. Lee, Compliance Test Manager

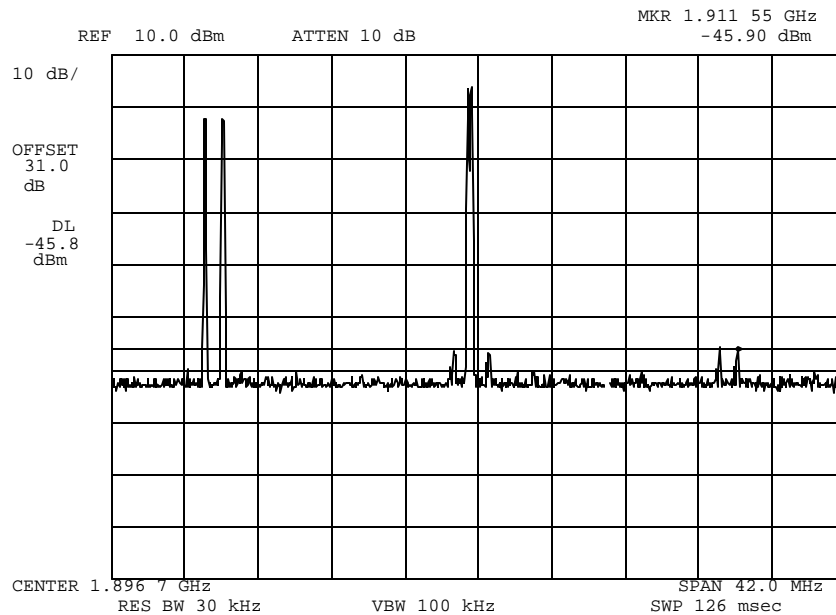
Page Number 41 of 65.

Name of Test: Multi Carrier IMD Products

g0510136: 2005-Jan-16 Sun 16:25:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
3 TONE TDMA DOWN LINK
1 of 2

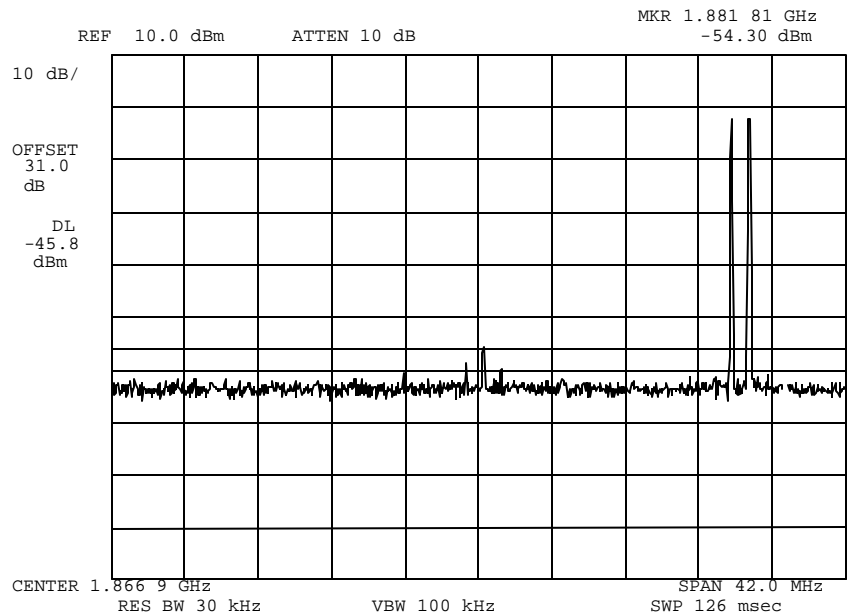
Supervised By:

David E. Lee, Compliance Test Manager

Page Number 42 of 65.

Name of Test: Multi Carrier IMD Products
g0510137: 2005-Jan-16 Sun 16:27:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 3 TONE TDMA DOWN LINK
2 of 2

Supervised By: David E. Lee, Compliance Test Manager

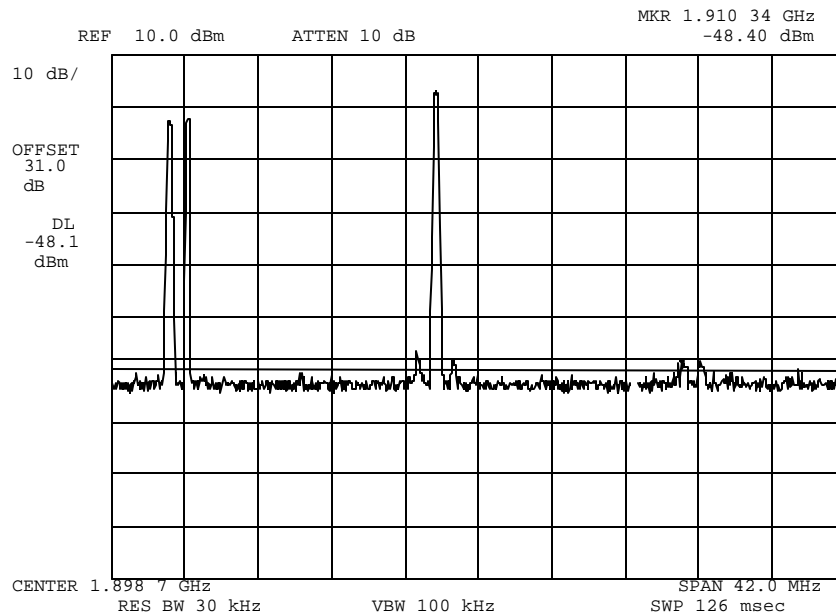
Page Number 43 of 65.

Name of Test: Multi Carrier IMD Products

g0510139: 2005-Jan-16 Sun 16:31:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
3 TONE TDMA UPLINK
1 of 2

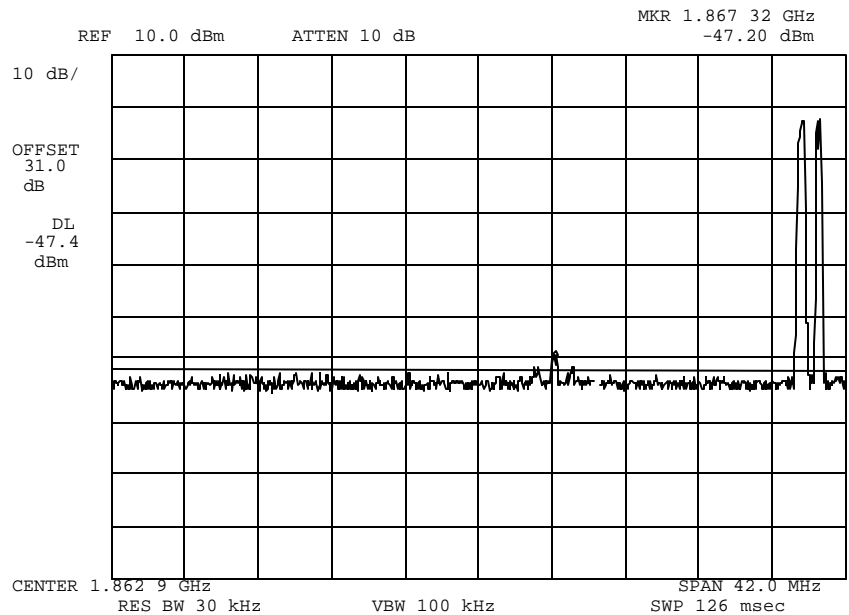
Supervised By:

David E. Lee, Compliance Test Manager

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Name of Test: Multi Carrier IMD Products
g0510140: 2005-Jan-16 Sun 16:32:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 3 TONE TDMA UPLINK
2 of 2

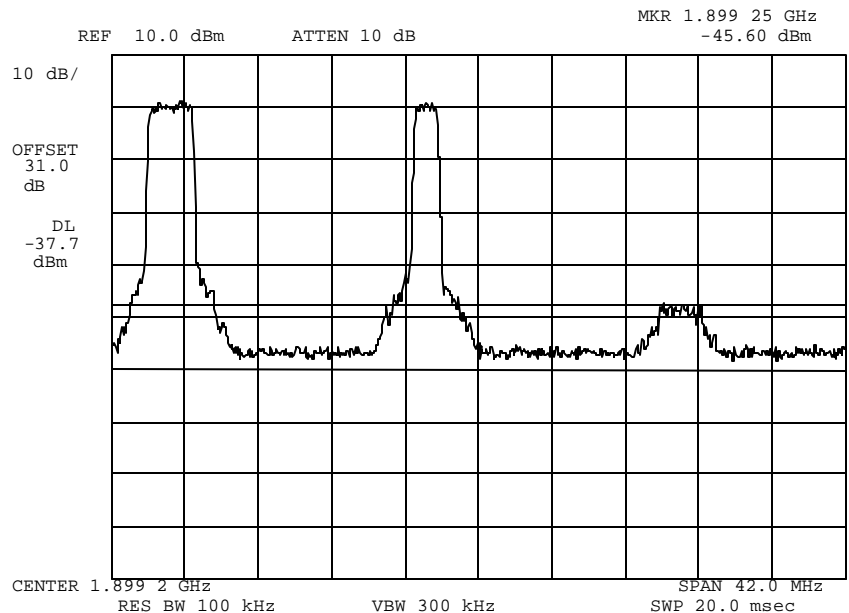
Supervised By:

David E. Lee, Compliance Test Manager

Page Number 45 of 65.

Name of Test: Multi Carrier IMD Products
g0510133: 2005-Jan-16 Sun 16:18:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power: HIGH
Modulation: 3 TONE CDMA UPLINK
1 of 2

Supervised By: David E. Lee, Compliance Test Manager

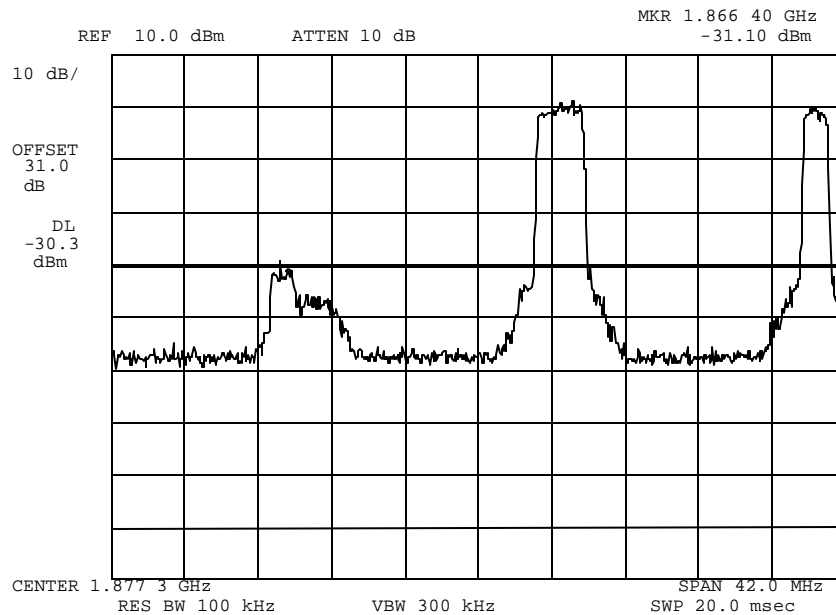
Page Number 46 of 65.

Name of Test: Multi Carrier IMD Products

g0510135: 2005-Jan-16 Sun 16:20:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
3 TONE CDMA UPLINK
2 of 2

Supervised By:

David E. Lee, Compliance Test Manager

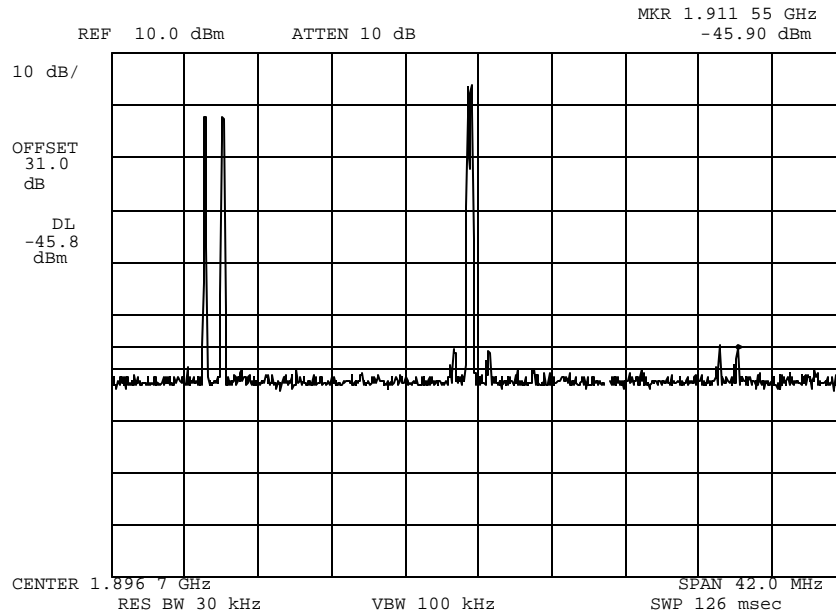
Page Number 47 of 65.

Name of Test: Multi Carrier IMD Products

g0510136: 2005-Jan-16 Sun 16:25:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

Power:
Modulation:HIGH
3 TONE GSM UPLINK
1 of 2

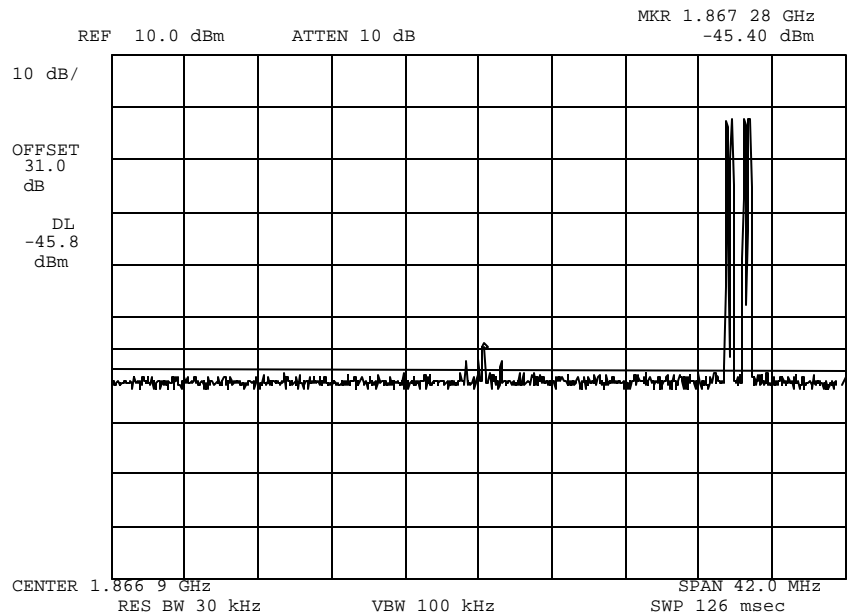
Supervised By:

David E. Lee, Compliance Test Manager

Page Number 48 of 65.

Name of Test: Multi Carrier IMD Products
g0510138: 2005-Jan-16 Sun 16:28:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C



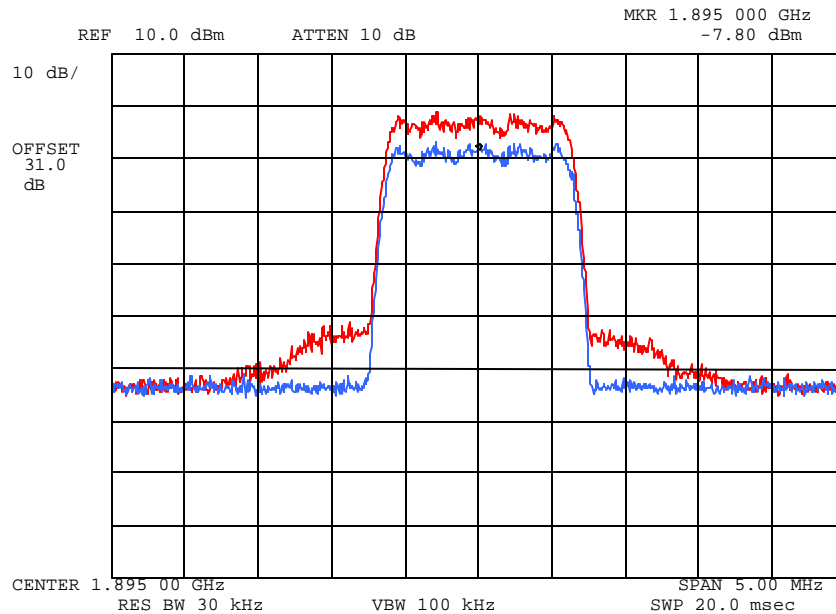
Power: HIGH
Modulation: 3 TONE GSM UPLINK
2 of 2

Supervised By: David E. Lee, Compliance Test Manager

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Name of Test: Emission Masks (Spectral Distortion)
Measurement Resultsg0510119: 2005-Jan-16 Sun 14:39:00
State: 2:High Power

Ambient Temperature: 23°C ± 3°C

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

Performed by:


Bobby Leanio

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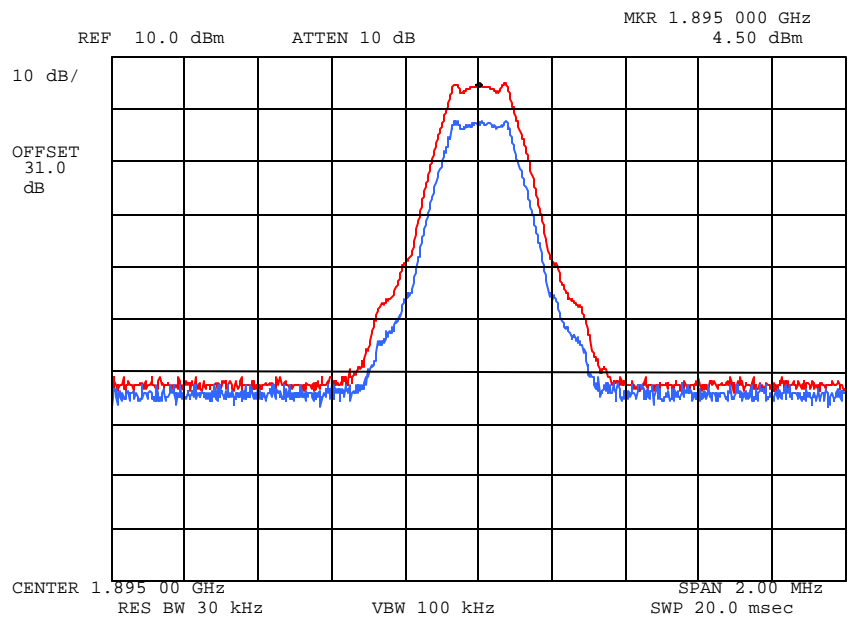
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510126: 2005-Jan-16 Sun 14:53:00

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

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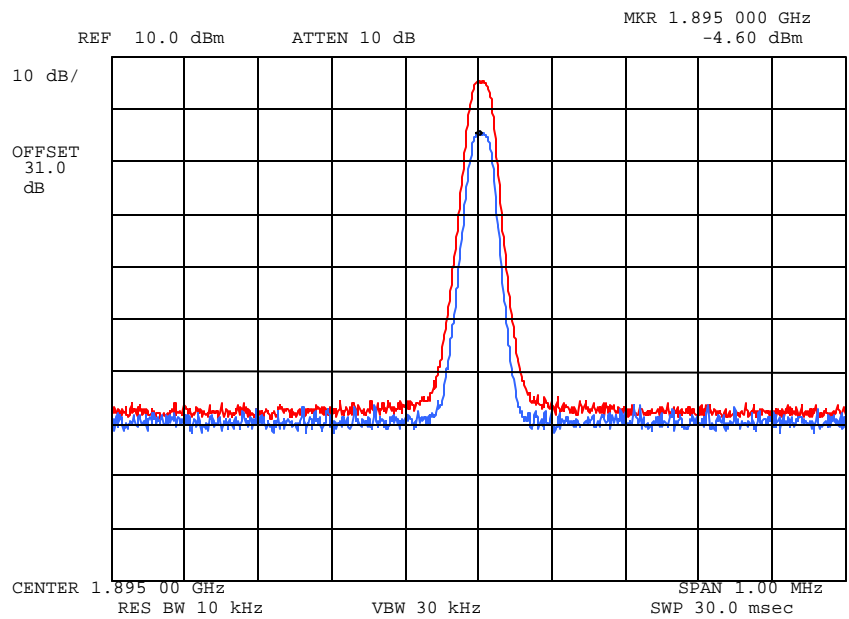
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510110: 2005-Jan-16 Sun 13:07:00

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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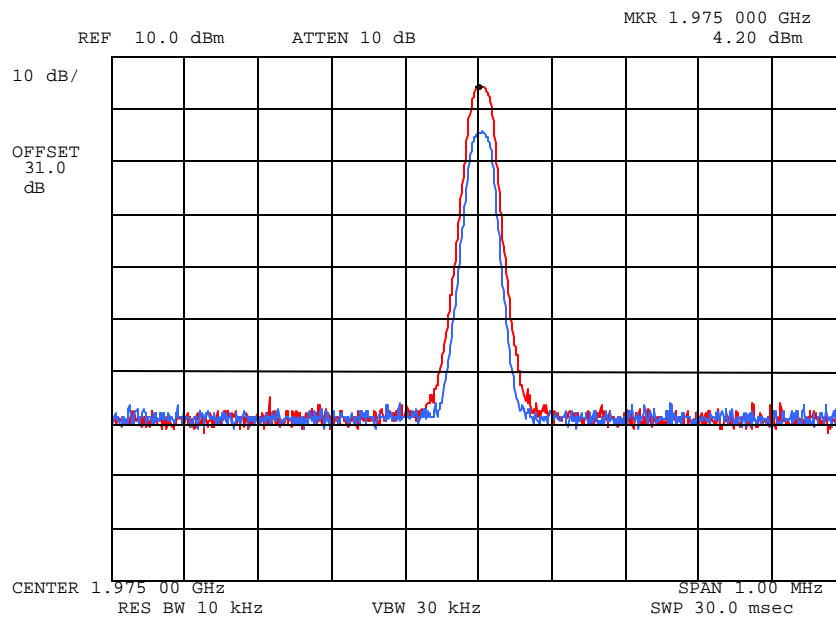
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510111: 2005-Jan-16 Sun 14:21:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:

Modulation:

HIGH

TDMA DOWNLINK

SPECTRAL DISTORTION

(BLUE INPUT DIRECT, RED OUTPUT AFTER
AMP AND 30dB ATTENUATOR)

Performed by:


Bobby Leanio

Page Number 53 of 65.

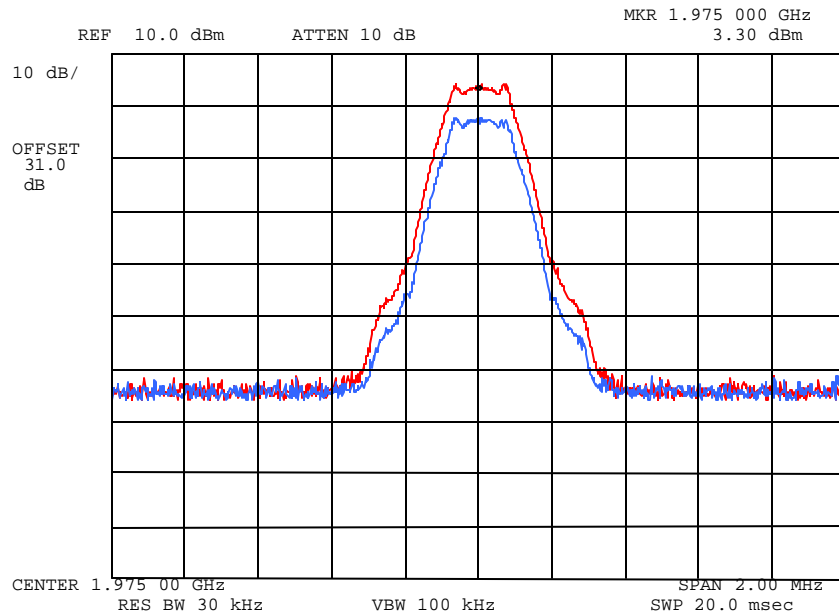
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510127: 2005-Jan-16 Sun 14:58:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C



Power:

Modulation:

HIGH

GSM DOWNLINK

SPECTRAL DISTORTION

(BLUE INPUT DIRECT, RED OUTPUT AFTER
AMP AND 30dB ATTENUATOR)

Performed by:

Bobby Leanio
Bobby Leanio

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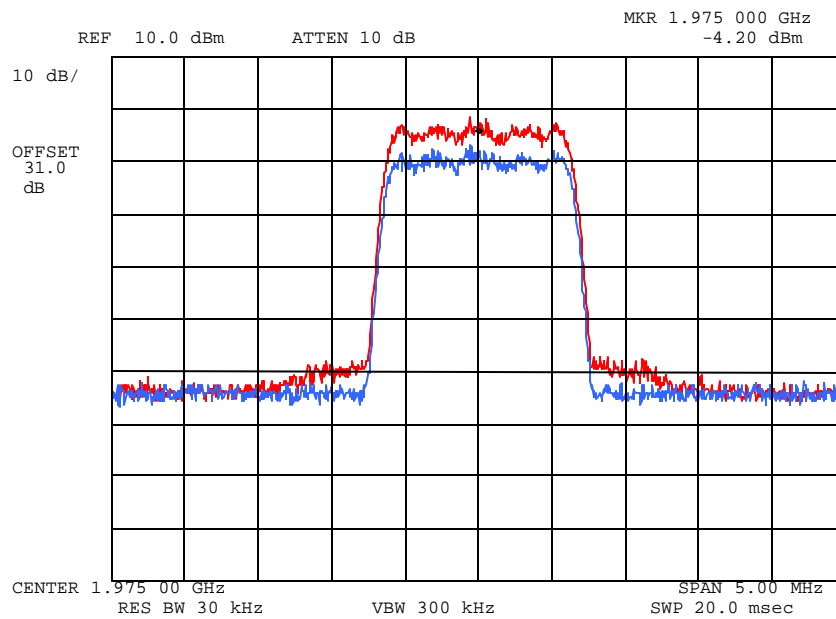
Name of Test: Emission Masks (Occupied Bandwidth)

Measurement Results

g0510118: 2005-Jan-16 Sun 14:34:00

State: 2:High Power

Ambient Temperature: 23°C ± 3°C

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

Performed by:

Bobby Leanio

Page Number 55 of 65.

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

g0510054: 2005-Jan-13 Thu 10:27:00
State: 2:High Power - Fully Driven - Uplink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
GSM	1880.000000	1880.013000	61.22	41.96	5.8
TDMA	1880.000000	1880.013000	61.50	41.96	6.1
CDMA	1880.000000	1880.013000	58.47	41.96	3.1

g0510054: 2005-Jan-13 Thu 10:27:00
State: 2:High Power- Fully Driven - Uplink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
CDMA	1895.000000	1895.013000	57.93	42.15	2.7
TDMA	1895.000000	1895.013000	61.20	42.15	6.0
GSM	1895.000000	1895.013000	61.33	42.15	6.1

g0510054: 2005-Jan-13 Thu 10:27:00
State: 2:High Power- Fully Driven - Uplink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
CDMA	1908.750000	1908.763000	62.13	42.33	7.1
GSM	1909.800000	1909.813000	63.95	42.33	8.9
TDMA	1909.920000	1909.933000	63.46	42.34	8.4

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g0510055: 2005-Jan-13 Thu 11:07:00
 State: 2:High Power- Fully Driven - Downlink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
GSM	1960.000000	1960.013000	57.85	42.96	3.4
TDMA	1960.000000	1960.013000	58.01	42.96	3.6
CDMA	1960.000000	1960.013000	54.83	42.96	0.4

g0510055: 2005-Jan-13 Thu 11:07:00
 State: 2:High Power- Fully Driven - Downlink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
GSM	1979.000000	1979.013000	57.64	43.18	3.4
TDMA	1979.000000	1979.013000	57.81	43.18	3.6
CDMA	1979.000000	1979.013000	56.29	43.18	2.1

g0510055: 2005-Jan-13 Thu 11:07:00
 State: 2:High Power- Fully Driven - Downlink

Mode	Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	ERP, dBm
CDMA	1988.750000	1988.763000	52.11	43.3	-2.0
GSM	1989.800000	1989.813000	54.05	43.31	0.0
TDMA	1989.920000	1989.933000	55.95	43.31	1.9

CDMA/TDMA/NAMPS (As Appropriate) Mode:

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



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 Compliance Test Manager

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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

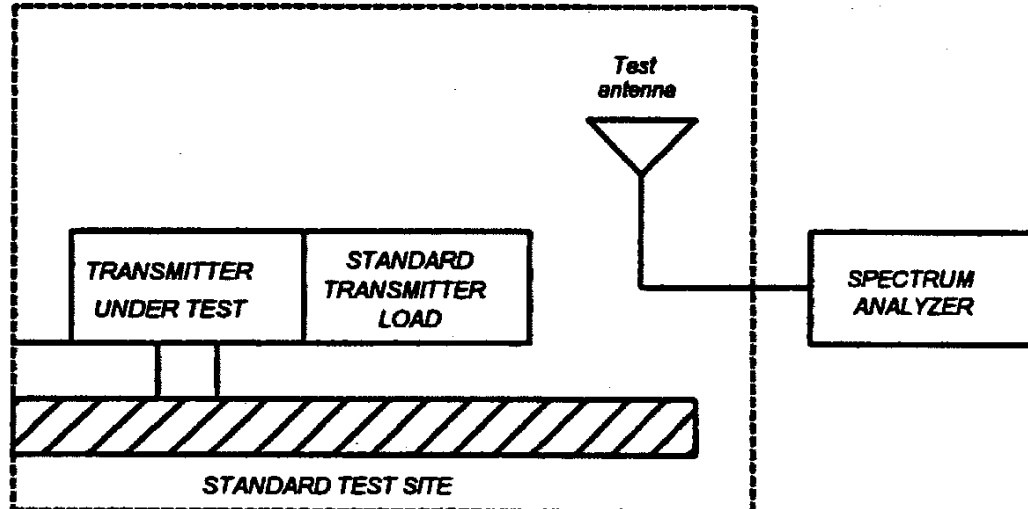
Measurement Procedure

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.

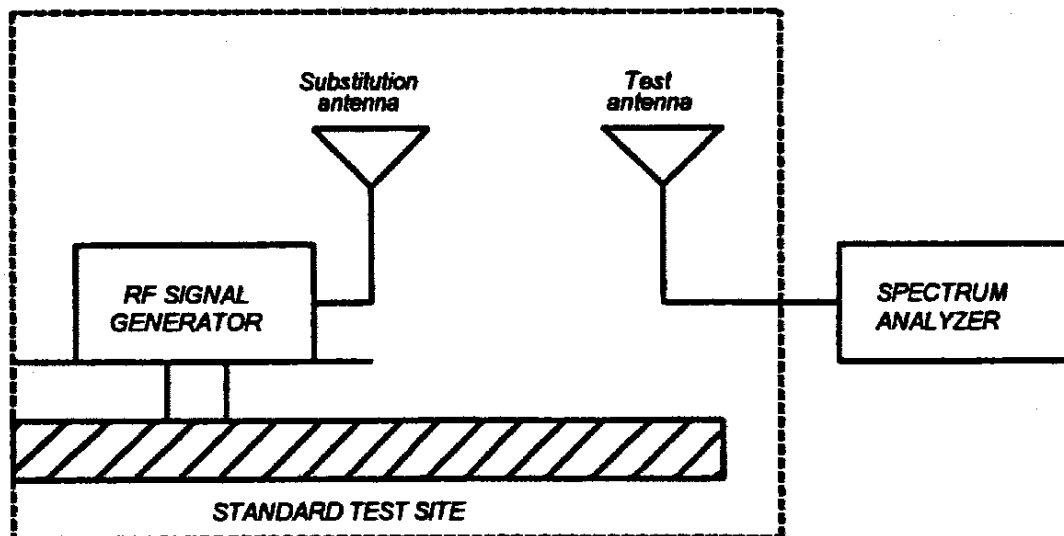
Method of Measurement:

- 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.



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 \pm the test bandwidth (see section 1.3.4.4).
- E) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.
- F) Repeat step E) for each spurious frequency with the test antenna polarized vertically.



- G) Reconnect the equipment as illustrated.
- H) Keep the spectrum analyzer adjusted as in step B).
- I) Remove the transmitter and replace it with a substitution antenna (the 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 =

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

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	Apriel 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				
	i00067	HP 8920A Communication TS	3345U01242	12 mo. May-04
	i00207	HP 8753D Network Analyzer	3410A08514	12 mo. Jun-04
X	Rental	HP E4438C	MY42082921	24 mo. Feb-04
Microphone, Antenna Port, and Cabling				
Microphone	<u>N</u>	Cable Length	<u> </u> Meters	
Antenna Port Terminated	<u>Y</u>	Load	<u>Y</u>	Antenna Gain <u>N/A</u>
All Ports Terminated by Load	<u>Y</u>	Peripheral	<u>N</u>	

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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
1975.000000	1738.000000	-26.8		-13.8
1975.000000	2607.000000	-30.5		-17.5
1975.000000	3476.000000	-29.2		-16.2
1975.000000	4345.000000	-38.6		-25.6
1975.000000	5214.000000	-44.2	-13dBm	-31.2
1975.000000	6083.000000	-37.4		-24.5
1975.000000	6952.000000	-46.5		-33.6
1975.000000	7821.000000	-44.4		-31.5
1975.000000	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
1895.000000	1648.080000	-60.8		-47.8
1895.000000	2472.120000	-58.3		-45.4
1895.000000	3296.160000	-55.4		-42.5
1895.000000	4120.200000	-51.2		-38.3
1895.000000	4944.240000	-50.6	-13dBm	-37.6
1895.000000	5768.280000	-56.2		-43.2
1895.000000	6592.320000	-50.3		-37.3
1895.000000	7416.360000	-48.6		-35.7
1895.000000	8240.400000	-47.1		-34.1



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Name of Test: A/C Powerline Conducted Emissions

Specification: FCC: 47 CFR 15.107

Guide: IEEE Standard 213

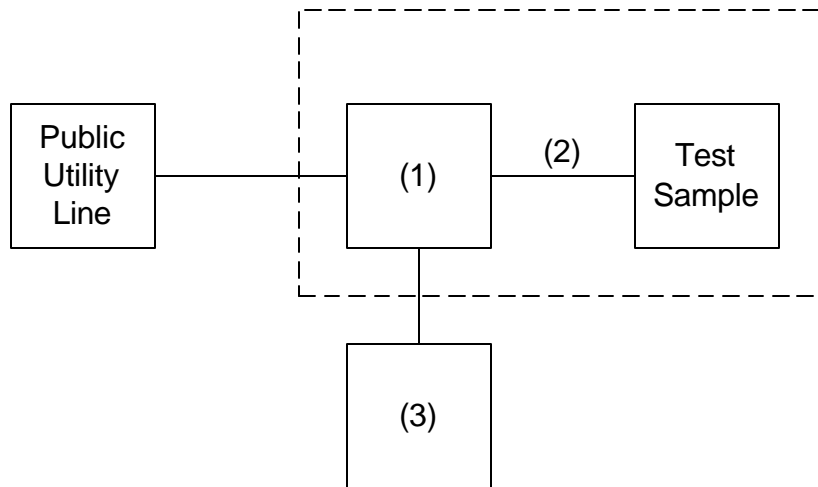
Test Conditions: S. T. & H.

Test Equipment: As per attached page

Measurement Procedure

1. A test sample was connected to the Public Utility lines through a LISN (50 μ H).
2. A reference level of 250 μ V 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.
☒ The test sample does not use a charger.

AC Powerline Conducted Measurements



Asset	Description	s/n	Cycle	Last Cal
(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	12 mo.	Jul-04

Per ANSI C63.4-1992/2000 Draft, 10.1.4

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Name of Test: A/C Powerline Conducted Emissions



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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	μ V/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	μ V/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 ManagerEND 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