Radioframe Networks, Inc.

S-BTS GSM Base Station

April 09, 2007

Report No. RAFN0069

Report Prepared By

NORTHWEST EMC

www.nwemc.com
1-888-EMI-CERT

EMC Test Report

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Issue Date: April 09, 2007
Radioframe Networks, Inc.
Model: S-BTS GSM Base Station

Emissions				
Test Description	**Specification**	**Test Method**	**Pass**	**Fail**
Occupied Bandwidth	FCC 22H:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Occupied Bandwidth	FCC 24E:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Output Power	FCC 22H:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Output Power	FCC 24E:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Frequency Stability	FCC 22H:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Frequency Stability	FCC 24E:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Effective Isotropic Radiated Power	FCC 22H:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Effective Radiated Power	FCC 24E:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Spurious Conducted Emissions	FCC 22H:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Spurious Conducted Emissions	FCC 24E:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Out of Band Emissions	FCC 22H:2005	ANSI/TIA/EIA-603-B:2002	☒	☐
Out of Band Emissions	FCC 24E:2005	ANSI/TIA/EIA-603-B:2002	☒	☐

Modifications made to the product
See the Modifications section of this report

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
22975 NW Evergreen Parkway, Suite 400
Hillsboro, OR 97124

Phone: (503) 844-4066   Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada.

Approved By:
Don Facteau, IS Manager

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested, the specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision History

Revision Number	Description	Date	Page Number
00	None		

Accreditations and Authorizations

FCC: Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP: Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 89/336/EEC, ANSI C63.4, MIL-STD 461E, DO-160D and SAE J1113. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0

Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 212, Issue 1 (Provisional) and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements.

CAB: Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

TÜV Product Service: Included in TUV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TUV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TUV's current Listing of CARAT Laboratories, available from TUV. A certificate was issued to represent that this laboratory continues to meet TUV's CARAT Program requirements. Certificate No. USA0604C.

TÜV Rheinland: Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.

NEMKO: Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).

Australia/New Zealand: The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).

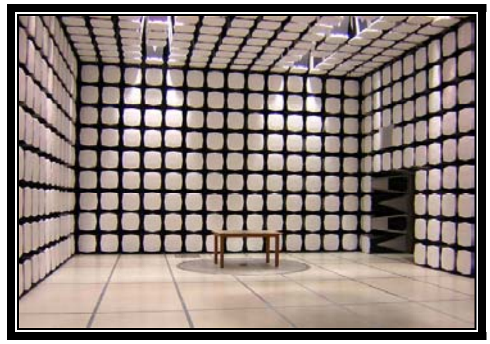
VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294).*

BSMI: Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement. License No.SL2-IN-E-1017.

GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

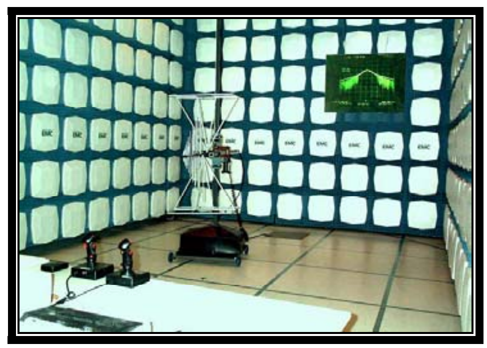
SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/scope.asp



California – Orange County Facility
Labs OC01 – OC13

41 Tesla Ave. Irvine, CA 92618
(888) 364-2378 Fax: (503) 844-3826



Oregon – Evergreen Facility
Labs EV01 – EV11

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124
(503) 844-4066 Fax: (503) 844-3826

Washington – Sultan Facility
Labs SU01 – SU07

14128 339th Ave. SE Sultan, WA 98294
(888) 364-2378

Party Requesting the Test

Company Name:	Radioframe Networks, Inc.
Address:	9461 Willows Road NE, Suite 100
City, State, Zip:	Redmond, WA 98052
Test Requested By:	Dean Busch
Model:	S-BTS GSM Base Station
First Date of Test:	March 22, 2007
Last Date of Test:	March 29, 2007
Receipt Date of Samples:	March 22, 2007
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

Picocell GSM Base Station

Testing Objective:

These tests were selected to satisfy the EMC requirements for the FCC.

CONFIGURATION 1 RAFN0069

Software/Firmware Running during test	
Description	**Version**
Operating System : VXWorks	Plat_maint_2.0.019
CE_Tools	1.0

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
EUT - Picocell GSM Base Station	Radioframe Networks, Inc.	S-BTS GSM Base Station	Engineering Unit

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
AC Power Adapter	Cincon Electronics Co., Ltd	TR30RAM120	30120-0000912

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
"ISC	Motorola	X516	None
AGW	SuperMicro	None	C51200506D00072
Remote PC	Dell	Latitude 8100	GZF3G11
USB Serial adapter	Keyspan	USA-49WLC	None
Base Chassis Unit (Contains ERTM and CRIC-X)	Radioframe Networks	101-0502-01	Orange 2
ERTM	Radioframe Networks	ASY- 0562-05	14105040069
CRIC - X	Radioframe Networks	ASY- 0950-04	041053610N6

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Leads	No	1.8m	Yes	EUT	AC Power Adapter
AC Mains	No	1.8m	No	BCU	AC Mains
AC Mains	No	1.6m	No	AGW	AC Mains
Coax	Yes	30.0m	No	Base Chassis Unit	ISC
Cat 5	No	2.0m	No	AGW	Base Chassis Unit
Cat 5	No	2.0m	No	EUT	Base Chassis Unit
Serial	Yes	2.0m	No	Base Chassis Unit	USB Serial adapter
Serial	Yes	2.0m	No	EUT	USB Serial adapter
USB	Yes	2.0m	No	Remote PC	USB Serial adapter
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 RAFN0069

Software/Firmware Running during test	
Description	**Version**
Operating System : VXWorks	Plat_maint_2.0.019
CE_Tools	1.0

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
EUT - Picocell GSM Base Station	Radioframe Networks, Inc.	S-BTS GSM Base Station	Engineering Unit

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
AC Power Adapter	Cincon Electronics Co., Ltd	TR30RAM120	30120-0000912

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
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AGW	SuperMicro	None	C51200506D00072
Remote PC	Dell	Latitude 8100	GZF3G11
USB Serial adapter	Keyspan	USA-49WLC	None
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Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Leads	No	1.8m	Yes	EUT	AC Power Adapter
AC Mains	No	1.8m	No	BCU	AC Mains
AC Mains	No	1.6m	No	AGW	AC Mains
Coax	Yes	30.0m	No	Base Chassis Unit	ISC
Cat 5	No	2.0m	No	AGW	Base Chassis Unit
Cat 5	No	2.0m	No	EUT	Base Chassis Unit
Serial	Yes	2.0m	No	Base Chassis Unit	USB Serial adapter
Serial	Yes	2.0m	No	EUT	USB Serial adapter
USB	Yes	2.0m	No	Remote PC	USB Serial adapter
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	3/22/2007	Part 22: Power Output	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	3/22/2007	Part 22: Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	3/22/2007	Part 24: Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	3/23/2007	Part 24: Power Output	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	3/26/2007	Part 22: Spurious Emissions at Antenna Terminals	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	3/26/2007	Part 24: Spurious Emissions at Antenna Terminals	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	3/27/2007	Part 22: Field Strength of Spurious Radiation	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
8	3/27/2007	Part 24: Field Strength of Spurious Radiation	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
9	3/28/2007	Part 24: Out of Band Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
10	3/28/2007	Part 22: Out of Band Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
11	3/29/2007	Part 22: Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
12	3/29/2007	Part 24: Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Transmitting, GPRS, cellular band.
Transmitting, GSM, cellular band.

MODE USED FOR FINAL DATA

Transmitting, GPRS, cellular band.
Transmitting, GSM, cellular band.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CHANNELS INVESTIGATED

Low channel, 869.2MHz
Mid channel, 881.2MHz
High channel, 893.8MHz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	10 GHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
High Pass Filter 1.2 - 18 GHz	Micro-Tronics	HPM50108	HFV	12/29/2006	13
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	12/29/2006	13
Pre-Amplifier	Miteq	AM-1616-1000	AOL	12/29/2006	13
EV01 cables g,h,j			EVB	12/29/2006	13
EV01 cables c,g, h			EVA	12/29/2006	13
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12
Antenna, Biconilog	EMCO	3141	AXE	12/28/2005	24
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The highest gain antenna to be used with the EUT was tested for final measurements. The EUT was configured for the lowest, a middle, and the highest transmit frequency in each operational band. For each configuration, the spectrum was scanned throughout the specified range. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:2003). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

For licensed transmitters, the FCC references TIA/EIA-603 as the measurement procedure standard. TIA/EIA-603 Section 2.2.12 describes a method for measuring radiated spurious emissions that utilizes an antenna substitution method:

At an approved test site, the transmitter is place on a remotely controlled turntable, and the measurement antenna is placed 3 meters from the transmitter. The turntable azimuth is varied to maximize the level of spurious emissions. The height of the measurement antenna is also varied from 1 to 4 meters. The amplitude and frequency of the highest emissions are noted. The transmitter is then replaced with a ½ wave dipole that is successively tuned to each of the highest spurious emissions for emissions below 1 GHz, and a horn antenna for emissions above 1 GHz. A signal generator is connected to the dipole (horn antenna for frequencies above 1 GHz), and its output is adjusted to match the level previously noted for each frequency. The output of the signal generator is recorded, and by factoring in the cable loss to the antenna and its gain; the power (dBm) into an ideal ½ wave dipole antenna is determined for each radiated spurious emission

For the purposes of preliminary measurements, the field strength of the spurious emissions can be measured and compared with a meter limit. The 3 meter limit was calculated to be 82.5 dBuV/m at 3 meters. The final measurements must be made utilizing the substitution method described above.

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	S-BTS GSM Base Station	Work Order:	RAFN0069
Serial Number:	Engineering Unit	Date:	03/27/07
Customer:	Radioframe Networks, Inc.	Temperature:	22°C
Attendees:	Bob Melsheimer	Humidity:	332%
Project:	None	Barometric Pres.:	30.08
Tested by:	Holly Ashkannejhad Power: 120VAC/60Hz	Job Site:	EV06

TEST SPECIFICATIONS — Test Method

FCC 22H:2005	ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

COMMENTS

Maximum Output Power. Antenna port terminated.

EUT OPERATING MODES

Transmitting, GPRS, cellular band, see comments for channel and position.

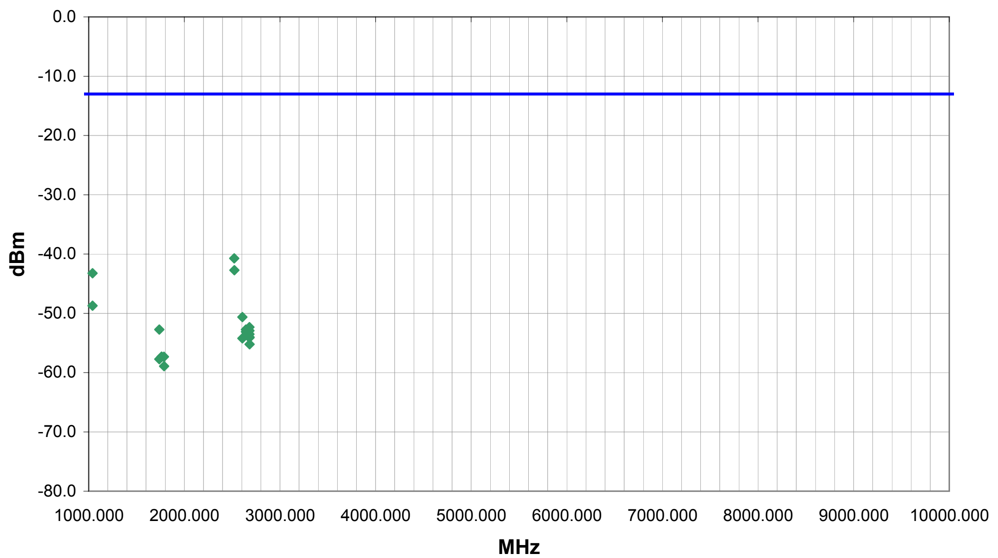
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0

Signature Holly Ashkannejhad



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
2521.850	249.0	1.0	H-Horn	PK	8.46E-08	-40.7	-13.0	-27.7	Low channel, EUT on side
2523.567	144.0	1.0	V-Horn	PK	5.33E-08	-42.7	-13.0	-29.7	Low channel, EUT on side
1040.393	220.0	1.0	H-Horn	PK	4.75E-08	-43.2	-13.0	-30.2	Low channel, EUT on side
1039.937	230.0	1.0	V-Horn	PK	1.34E-08	-48.7	-13.0	-35.7	Low channel, EUT on side
2607.490	139.0	1.3	H-Horn	PK	8.65E-09	-50.6	-13.0	-37.6	Low channel, EUT on side
2681.630	135.0	1.4	H-Horn	PK	5.85E-09	-52.3	-13.0	-39.3	High channel, EUT on side
1738.773	172.0	1.0	V-Horn	PK	5.33E-09	-52.7	-13.0	-39.7	Low channel, EUT on side
2644.063	137.0	1.0	H-Horn	PK	5.33E-09	-52.7	-13.0	-39.7	Mid channel, EUT on side
2681.190	218.0	1.0	V-Horn	PK	5.09E-09	-52.9	-13.0	-39.9	High channel, EUT on side
2643.943	193.0	1.0	V-Horn	PK	4.87E-09	-53.1	-13.0	-40.1	Mid channel, EUT on side
2681.383	347.0	1.3	H-Horn	PK	4.44E-09	-53.5	-13.0	-40.5	High channel, EUT vertical
2681.763	300.0	1.0	H-Horn	PK	3.95E-09	-54.0	-13.0	-41.0	High channel, EUT horizontal
2681.607	95.0	1.0	V-Horn	PK	3.86E-09	-54.1	-13.0	-41.1	High channel, EUT vertical
2607.957	108.0	1.0	V-Horn	PK	3.78E-09	-54.2	-13.0	-41.2	Low channel, EUT on side
2681.777	44.0	1.0	V-Horn	PK	3.00E-09	-55.2	-13.0	-42.2	High channel, EUT horizontal
1762.383	180.0	1.0	V-Horn	PK	1.85E-09	-57.3	-13.0	-44.3	Mid channel, EUT on side
1762.740	139.0	1.0	H-Horn	PK	1.85E-09	-57.3	-13.0	-44.3	Mid channel, EUT on side
1787.553	177.0	1.0	V-Horn	PK	1.85E-09	-57.3	-13.0	-44.3	High channel, EUT on side
1738.467	182.0	1.0	H-Horn	PK	1.69E-09	-57.7	-13.0	-44.7	Low channel, EUT on side
1788.517	0.0	2.3	H-Horn	PK	1.28E-09	-58.9	-13.0	-45.9	High channel, EUT on side

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	S-BTS GSM Base Station	Work Order:	RAFN0069
Serial Number:	Engineering Unit	Date:	03/28/07
Customer:	Radioframe Networks, Inc.	Temperature:	22°C
Attendees:	Bob Melsheimer	Humidity:	32%
Project:	None	Barometric Pres.:	30.08
Tested by:	Rod Peloquin Power: 120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS — Test Method

FCC 22H:2005 — ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m): 1 - 4 | Test Distance (m): 3

COMMENTS

Maximum Output Power. Antenna port terminated.

EUT OPERATING MODES

Transmitting, GSM, cellular band

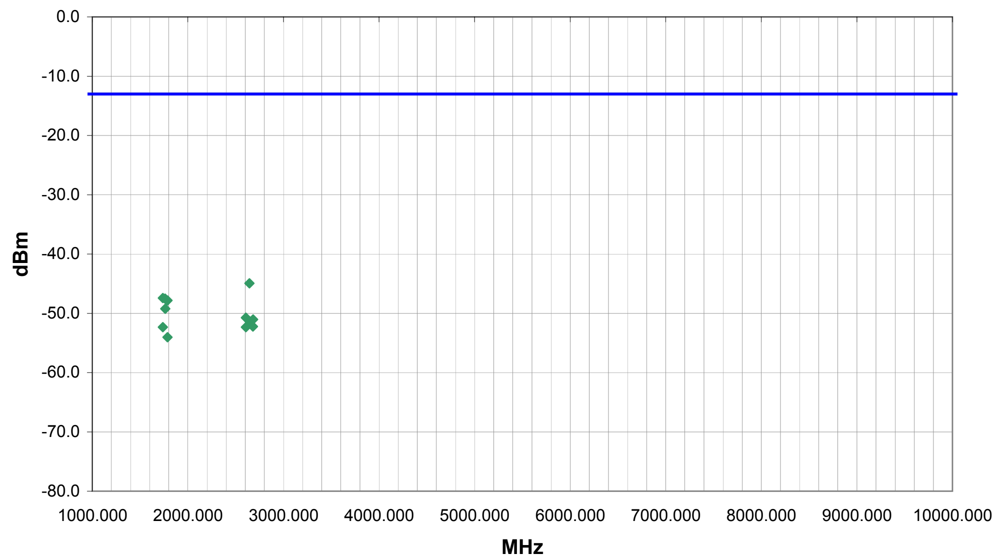
DEVIATIONS FROM TEST STANDARD

No deviations.

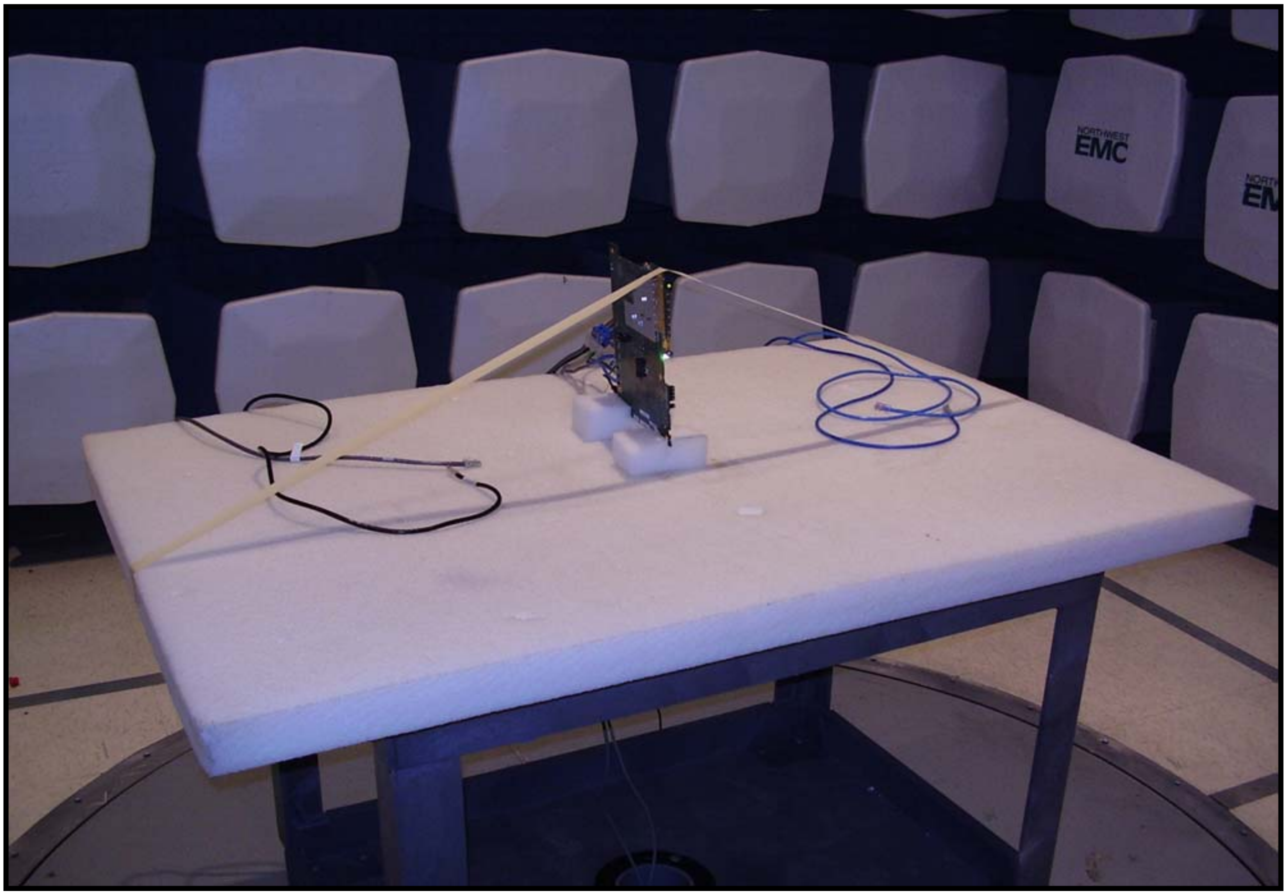
Run #	14
Configuration #	2
Results	Pass

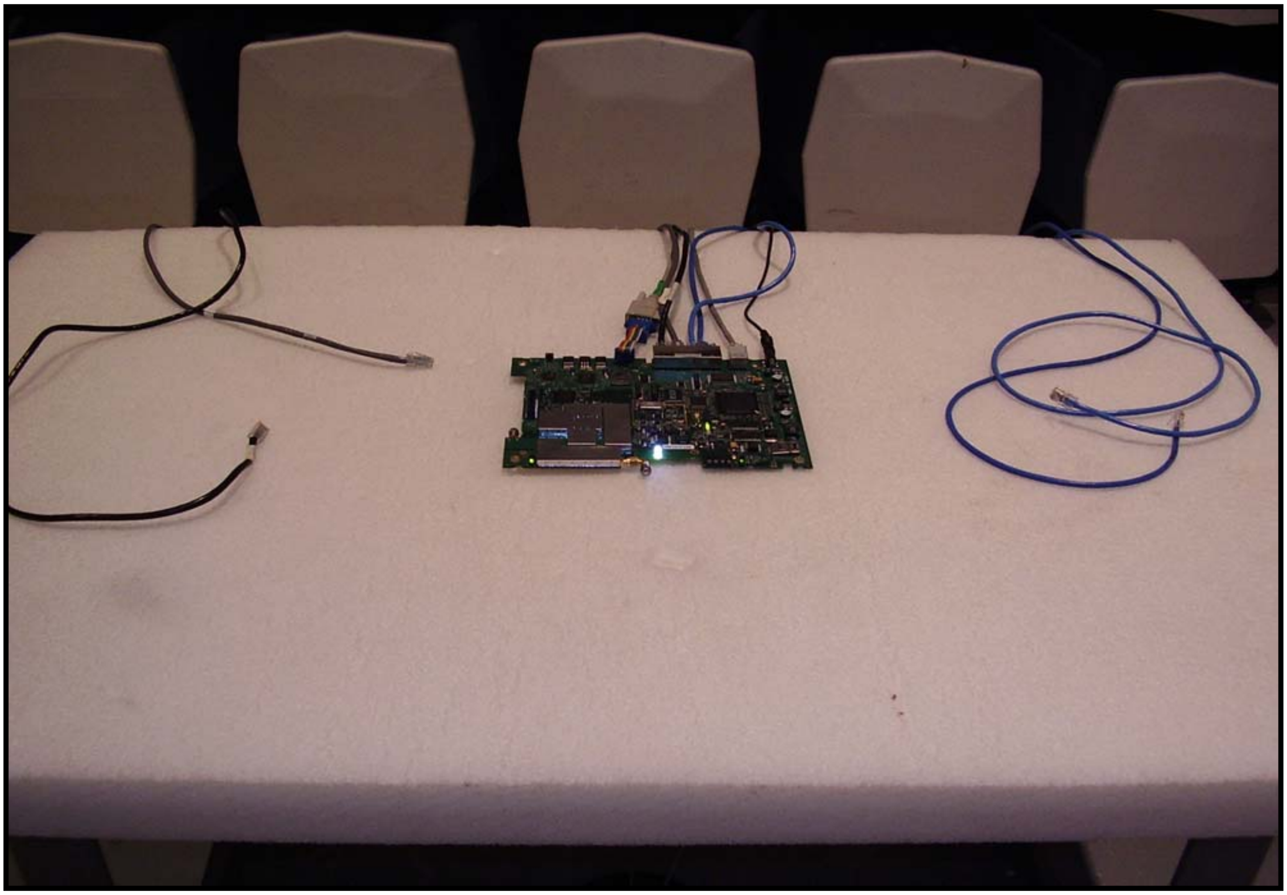
NVLAP Lab Code 200630-0

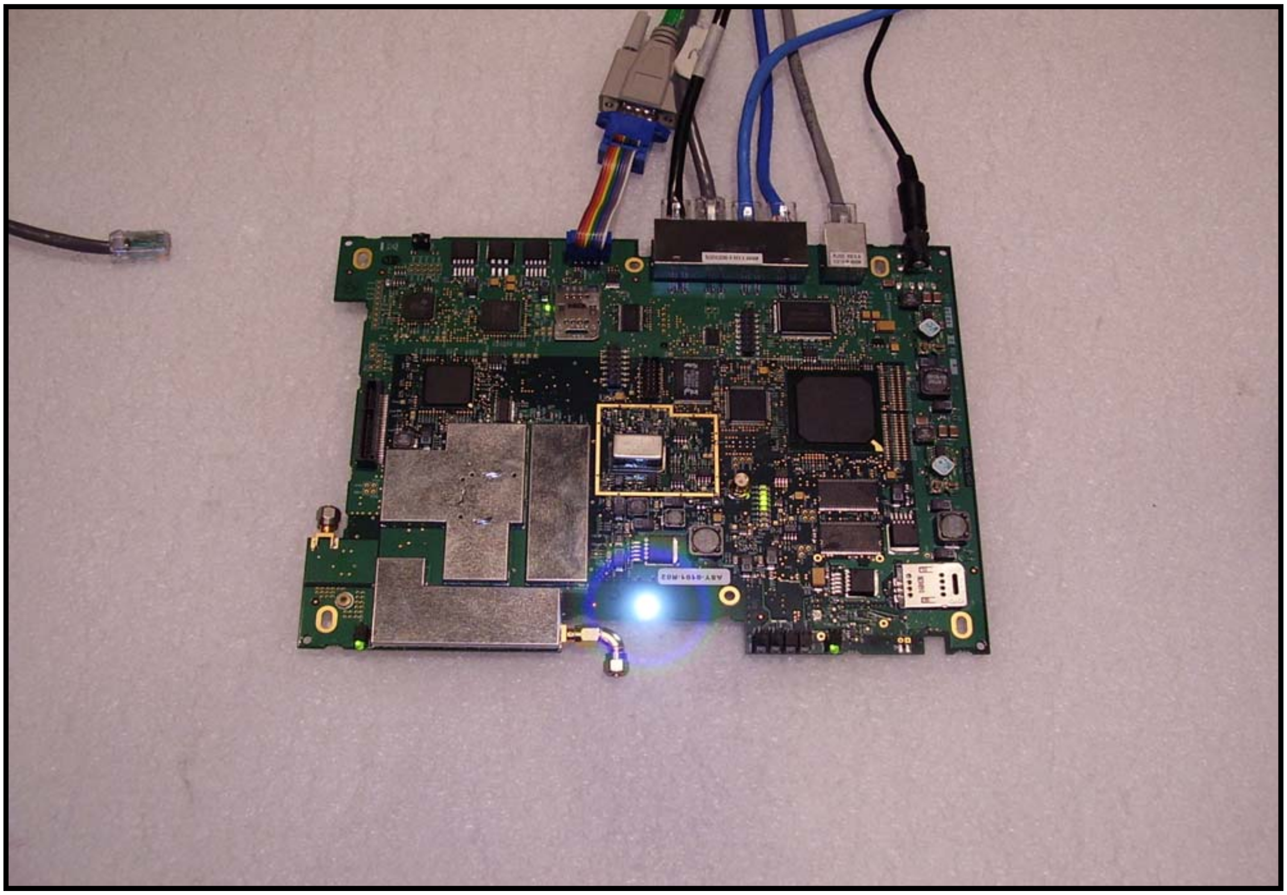
Signature

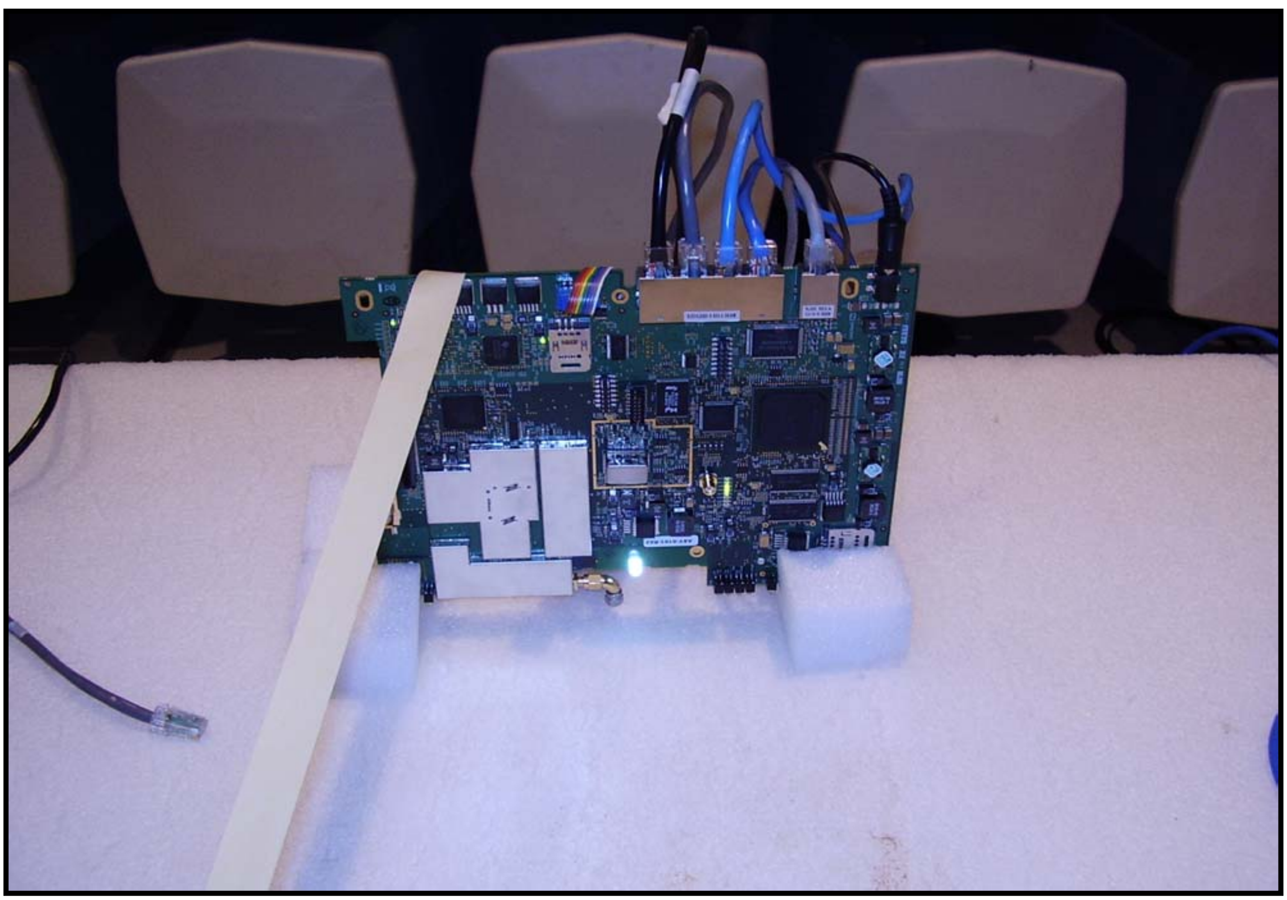


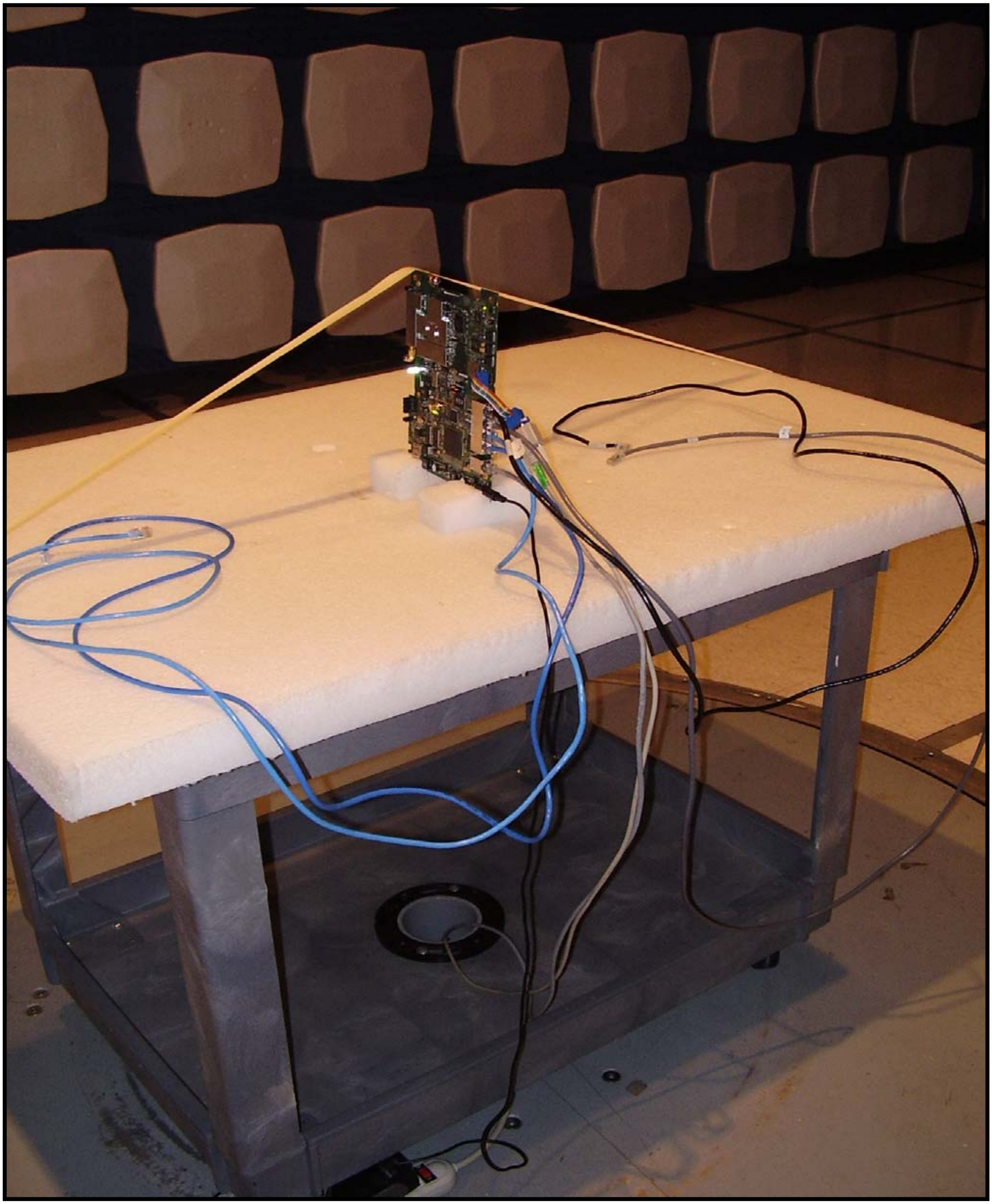
Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
2643.668			76.0	1.2			H-Horn	PK	3.21E-08	-44.9	-13.0	-31.9	Mid channel, EUT on side
1738.320			67.0	1.4			H-Horn	PK	1.81E-08	-47.4	-13.0	-34.4	Low channel, EUT on side
1762.547			73.0	1.4			H-Horn	PK	1.77E-08	-47.5	-13.0	-34.5	Mid channel, EUT on side
1787.488			74.0	1.0			H-Horn	PK	1.65E-08	-47.8	-13.0	-34.8	High channel, EUT on side
1762.653			40.0	1.3			V-Horn	PK	1.19E-08	-49.2	-13.0	-36.2	Mid channel, EUT on side
2607.688			83.0	1.2			H-Horn	PK	8.46E-09	-50.7	-13.0	-37.7	Low channel, EUT on side
2681.672			118.0	1.4			H-Horn	PK	7.89E-09	-51.0	-13.0	-38.0	High channel, EUT on side
2643.573			63.0	1.1			V-Horn	PK	7.36E-09	-51.3	-13.0	-38.3	Mid channel, EUT on side
2681.340			48.0	1.0			V-Horn	PK	5.99E-09	-52.2	-13.0	-39.2	High channel, EUT on side
1738.620			100.0	1.0			V-Horn	PK	5.85E-09	-52.3	-13.0	-39.3	Low channel, EUT on side
2607.632			108.0	1.4			V-Horn	PK	5.85E-09	-52.3	-13.0	-39.3	Low channel, EUT on side
1787.553			42.0	1.2			V-Horn	PK	3.95E-09	-54.0	-13.0	-41.0	High channel, EUT on side

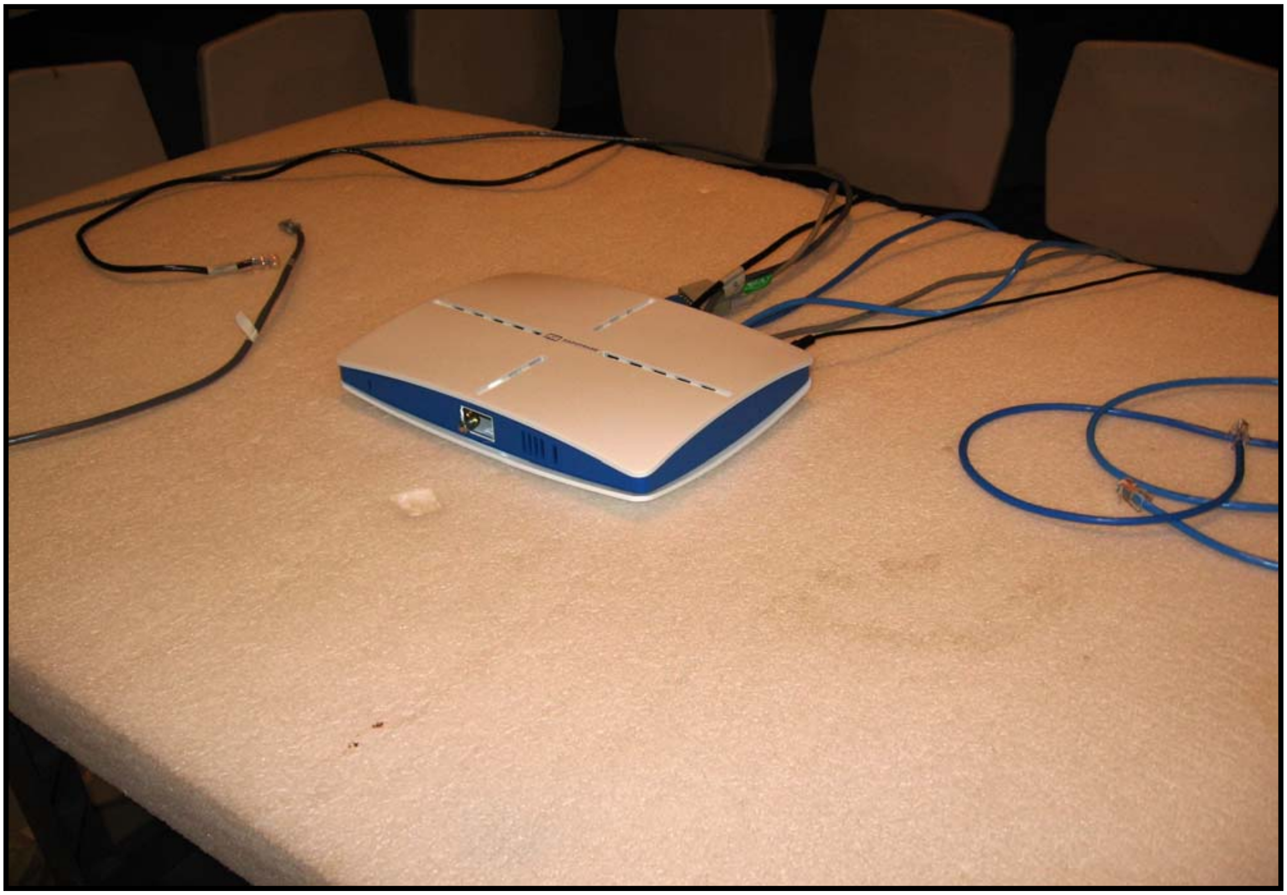

NORTHWEST
EMC

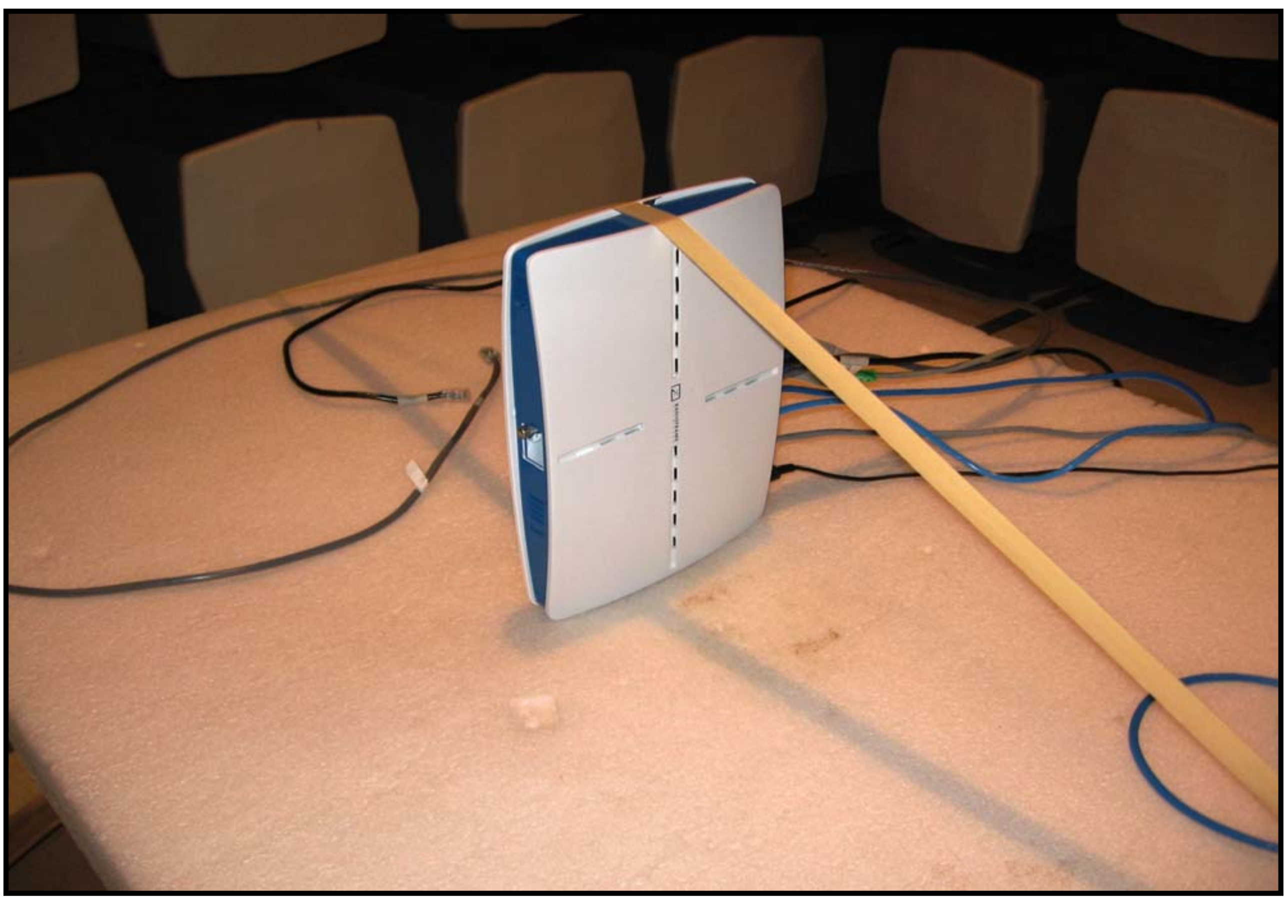




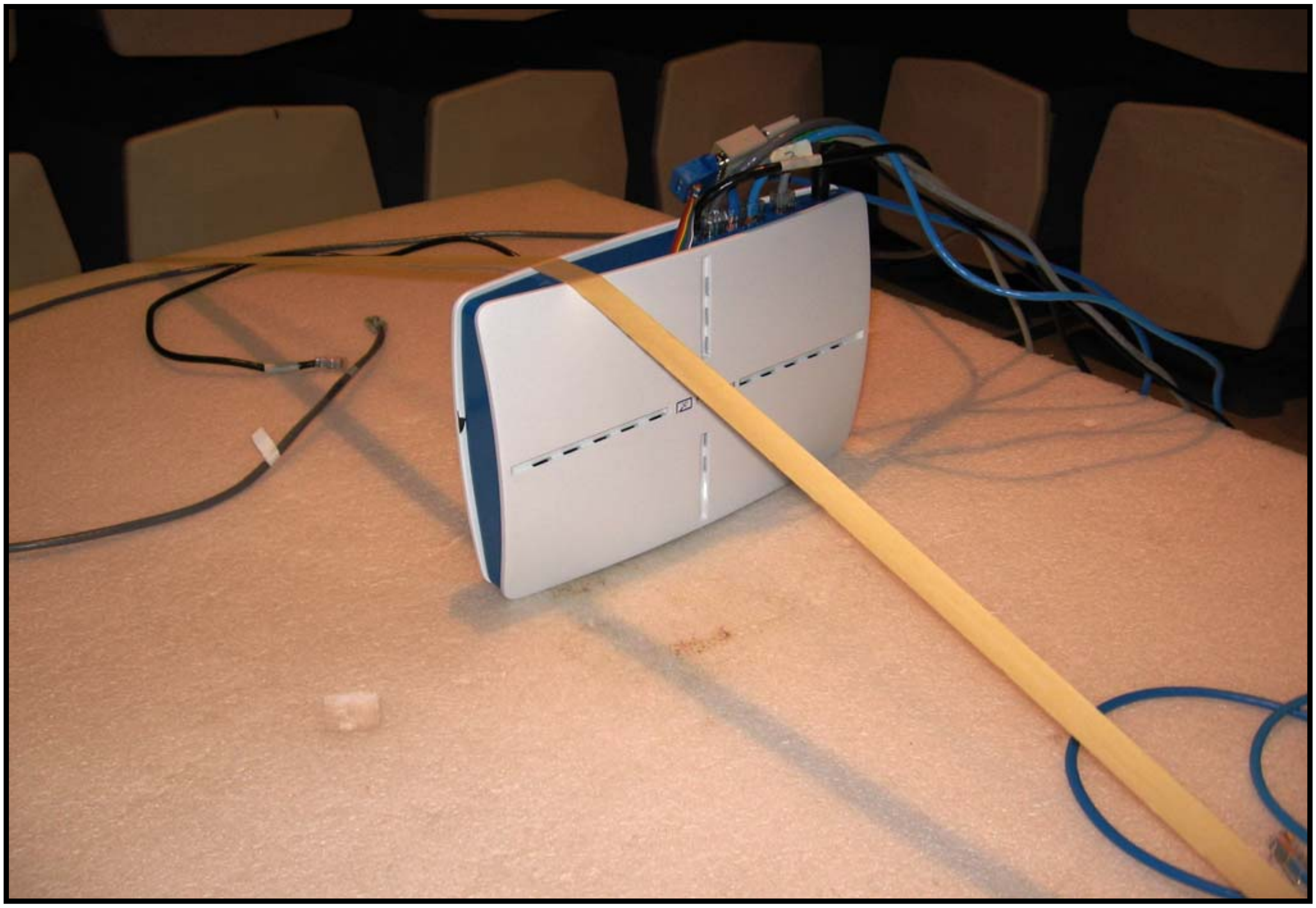








Out of Band Emissions



Out of Band Emissions

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION
Transmitting, GSM, PCS band, low channel
Transmitting, GSM, PCS band, mid channel
Transmitting, GSM, PCS band, high channel
Transmitting, GPRS, PCS band, high channel
Transmitting, GPRS, PCS band, mid channel
Transmitting, GPRS, PCS band, low channel

MODE USED FOR FINAL DATA
Transmitting, GSM, PCS band, low channel
Transmitting, GSM, PCS band, mid channel
Transmitting, GSM, PCS band, high channel
Transmitting, GPRS, PCS band, high channel
Transmitting, GPRS, PCS band, mid channel
Transmitting, GPRS, PCS band, low channel

POWER SETTINGS INVESTIGATED
120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	30 MHz	Stop Frequency	10 GHz

CLOCKS AND OSCILLATORS
None Provided

SAMPLE CALCULATIONS
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13
Antenna, Biconilog	EMCO	3141	AXE	12/28/2005	24
Pre-Amplifier	Miteq	AM-1616-1000	AOL	12/29/2006	13
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	12/29/2006	13
Antenna, Horn	EMCO	3160-08	AHK	NCR	0
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	5/12/2006	13
Antenna, Horn	EMCO	3160-09	AHG	NCR	0
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	3/23/2006	13
High Pass Filter	Micro-Tronics	HPM50111	HFO	12/29/2006	13
EV01 cables g,h,j			EVB	12/29/2006	13
EV01 cables c,g, h			EVA	12/29/2006	13
EV01 Cable D			EVD	3/30/2006	13
EV01 cables g,h,l			EVF	4/17/2006	13

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The highest gain antenna to be used with the EUT was tested for final measurements. The EUT was configured for the lowest, a middle, and the highest transmit frequency in each operational band. For each configuration, the spectrum was scanned throughout the specified range. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:2003). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

For licensed transmitters, the FCC references TIA/EIA-603 as the measurement procedure standard. TIA/EIA-603 Section 2.2.12 describes a method for measuring radiated spurious emissions that utilizes an antenna substitution method:

At an approved test site, the transmitter is place on a remotely controlled turntable, and the measurement antenna is placed 3 meters from the transmitter. The turntable azimuth is varied to maximize the level of spurious emissions. The height of the measurement antenna is also varied from 1 to 4 meters. The amplitude and frequency of the highest emissions are noted. The transmitter is then replaced with a ½ wave dipole that is successively tuned to each of the highest spurious emissions for emissions below 1 GHz, and a horn antenna for emissions above 1 GHz. A signal generator is connected to the dipole (horn antenna for frequencies above 1 GHz), and its output is adjusted to match the level previously noted for each frequency. The output of the signal generator is recorded, and by factoring in the cable loss to the antenna and its gain; the power (dBm) into an ideal ½ wave dipole antenna is determined for each radiated spurious emission.

For the purposes of preliminary measurements, the field strength of the spurious emissions can be measured and compared with a 3 meter limit. The 3 meter limit was calculated to be 82.5 dBuV/m at 3 meters. The final measurements must be made utilizing the substitution method described above.

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	**S-BTS GSM Base Station**	**Work Order:**	**RAFN0069**
Serial Number:	**Engineering Unit**	**Date:**	**03/27/07**
Customer:	**Radioframe Networks, Inc.**	**Temperature:**	**22°C**
Attendees:	**Bob Melsheimer**	**Humidity:**	**32%**
Project:	**None**	**Barometric Pres.:**	**30.08**
Tested by:	**Holly Ashkannejhad** **Power:** **120VAC/60Hz**	**Job Site:**	**EV01**

TEST SPECIFICATIONS	Test Method
FCC 24E:2005	ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	**Test Distance (m)**	3

COMMENTS

Maximum Output Power. Antenna port terminated.

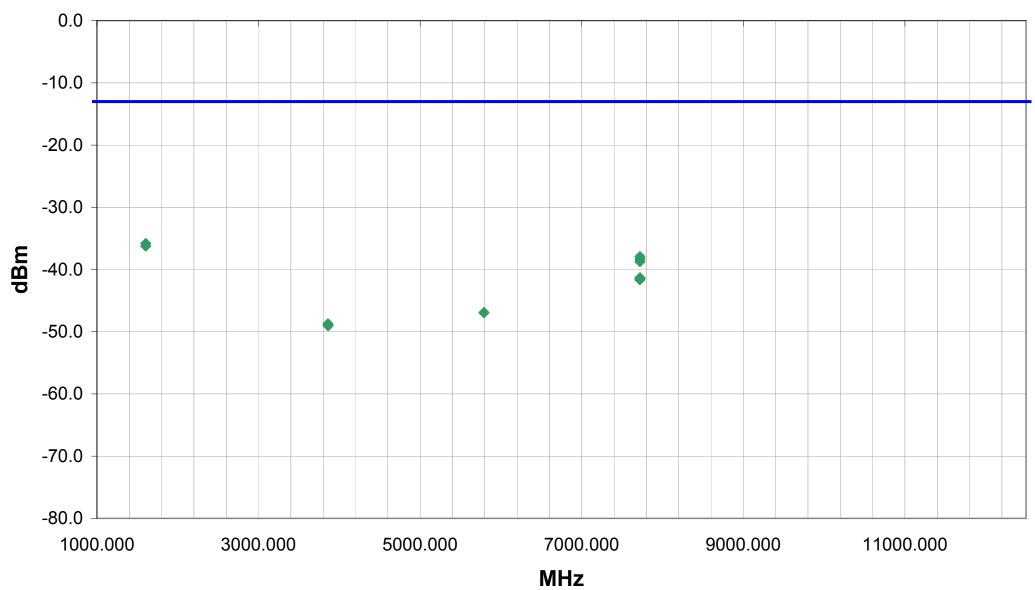
EUT OPERATING MODES

Transmitting, GPRS, PCS band, low channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	**4**	
Configuration #	**2**	
Results	**Pass**	NVLAP Lab Code 200630-0 *Signature* Holly Ashkannejhad



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1603.936	309.0	1.0	H-Horn	PK	2.61E-07	-35.8	-13.0	-22.8	EUT on side
1604.176	284.0	1.1	V-Horn	PK	2.38E-07	-36.2	-13.0	-23.2	EUT horizontal
7721.024	10.0	1.4	V-Horn	PK	1.61E-07	-37.9	-13.0	-24.9	EUT horizontal
7720.789	105.0	1.2	H-Horn	PK	1.47E-07	-38.3	-13.0	-25.3	EUT on side
7720.989	9.0	1.4	V-Horn	PK	1.34E-07	-38.7	-13.0	-25.7	EUT vertical
7721.174	118.0	1.2	H-Horn	PK	7.36E-08	-41.3	-13.0	-28.3	EUT vertical
7720.949	204.0	1.4	V-Horn	PK	7.03E-08	-41.5	-13.0	-28.5	EUT on side
7719.564	326.0	1.2	H-Horn	PK	6.87E-08	-41.6	-13.0	-28.6	EUT horizontal
5790.440	189.0	1.0	H-Horn	PK	2.03E-08	-46.9	-13.0	-33.9	EUT on side
5790.670	274.0	1.1	V-Horn	PK	2.03E-08	-46.9	-13.0	-33.9	EUT horizontal
3859.850	223.0	1.1	V-Horn	PK	1.34E-08	-48.7	-13.0	-35.7	EUT horizontal
3860.950	45.0	3.3	H-Horn	PK	1.25E-08	-49.0	-13.0	-36.0	EUT on side

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	S-BTS GSM Base Station	Work Order:	RAFN0069
Serial Number:	Engineering Unit	Date:	03/27/07
Customer:	Radioframe Networks, Inc.	Temperature:	22°C
Attendees:	Bob Melsheimer	Humidity:	32%
Project:	None	Barometric Pres.:	30.08
Tested by:	Holly Ashkannejhad Power: 120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS — Test Method

FCC 24E:2005 — ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m): 1 - 4 — Test Distance (m): 3

COMMENTS

Maximum Output Power. Antenna port terminated.

EUT OPERATING MODES

Transmitting, GPRS, PCS band, mid channel

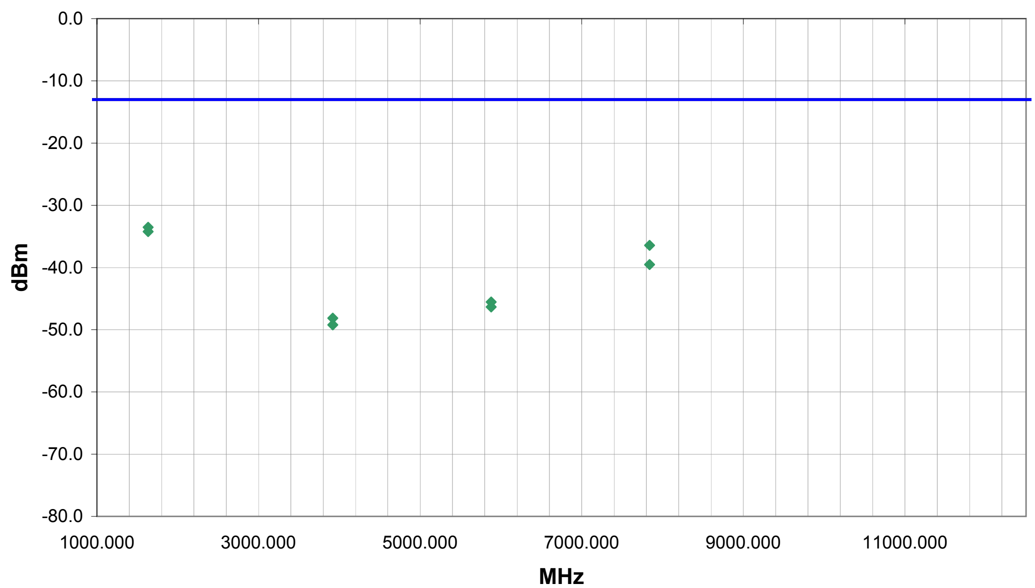
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	5
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0

Signature Holly Ashkannejhad



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1633.239			110.0	1.0			H-Horn	PK	4.44E-07	-33.5	-13.0	-20.5	EUT on side
1633.874			28.0	1.0			V-Horn	PK	3.78E-07	-34.2	-13.0	-21.2	EUT horizontal
7840.050			242.0	1.0			H-Horn	PK	2.28E-07	-36.4	-13.0	-23.4	EUT on side
7840.115			172.0	1.6			V-Horn	PK	1.11E-07	-39.5	-13.0	-26.5	EUT horizontal
5879.720			27.0	1.0			V-Horn	PK	2.80E-08	-45.5	-13.0	-32.5	EUT horizontal
5879.835			96.0	1.0			H-Horn	PK	2.33E-08	-46.3	-13.0	-33.3	EUT on side
3919.740			282.0	1.0			V-Horn	PK	1.54E-08	-48.1	-13.0	-35.1	EUT horizontal
3919.840			168.0	1.5			H-Horn	PK	1.19E-08	-49.2	-13.0	-36.2	EUT on side

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	S-BTS GSM Base Station	Work Order:	RAFN0069
Serial Number:	Engineering Unit	Date:	03/28/07
Customer:	Radioframe Networks, Inc.	Temperature:	22°C
Attendees:	Bob Melsheimer	Humidity:	31%
Project:	None	Barometric Pres.:	30.08
Tested by:	Rod Peloquin, Power: 120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS | Test Method

FCC 24E:2005 | ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m): 1 - 4 | Test Distance (m): 3

COMMENTS

Maximum Output Power. Antenna port terminated.

EUT OPERATING MODES

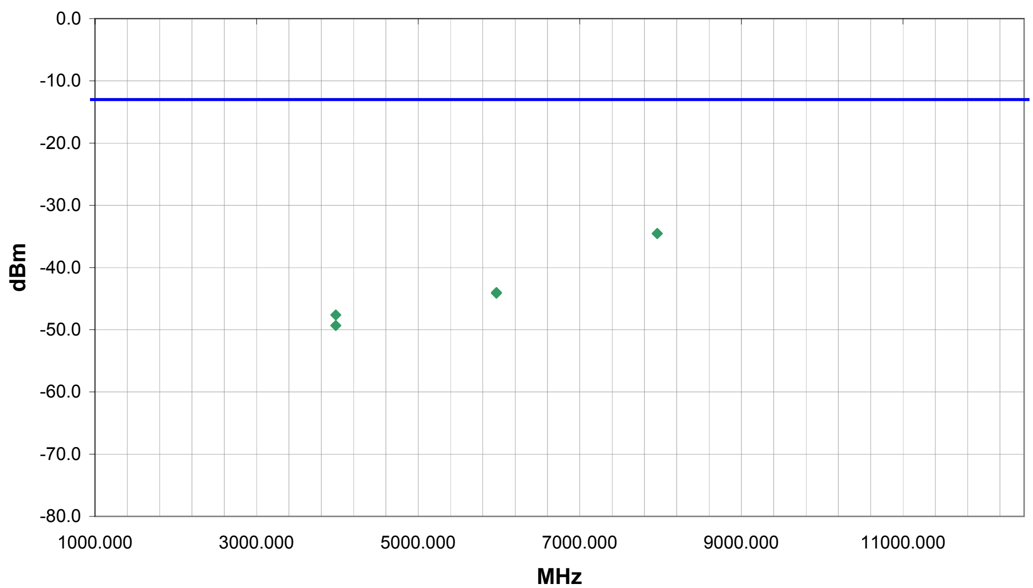
Transmitting, GPRS, PCS band, high channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	6
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0 — *Signature*



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
7959.043			300.0	1.3			H-Horn	PK	3.52E-07	-34.5	-13.0	-21.5	EUT on side
7959.147			54.0	1.2			V-Horn	PK	3.52E-07	-34.5	-13.0	-21.5	EUT horizontal
5969.320			26.0	1.4			V-Horn	PK	3.95E-08	-44.0	-13.0	-31.0	EUT horizontal
5969.302			154.0	1.1			H-Horn	PK	3.86E-08	-44.1	-13.0	-31.1	EUT on side
3979.613			55.0	1.3			H-Horn	PK	1.73E-08	-47.6	-13.0	-34.6	EUT on side
3979.830			42.0	1.4			V-Horn	PK	1.17E-08	-49.3	-13.0	-36.3	EUT horizontal

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	**S-BTS GSM Base Station**	**Work Order:**	**RAFN0069**
Serial Number:	**Engineering Unit**	**Date:**	**03/28/07**
Customer:	**Radioframe Networks, Inc.**	**Temperature:**	**22°C**
Attendees:	**Bob Melsheimer**	**Humidity:**	**31%**
Project:	**None**	**Barometric Pres.:**	**30.08**
Tested by:	**Rod Peloquin** **Power:** **120VAC/60Hz**	**Job Site:**	**EV01**

TEST SPECIFICATIONS	Test Method
FCC 24E:2005	ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	**Test Distance (m)**	3

COMMENTS

Maximum Output Power. Antenna port terminated.

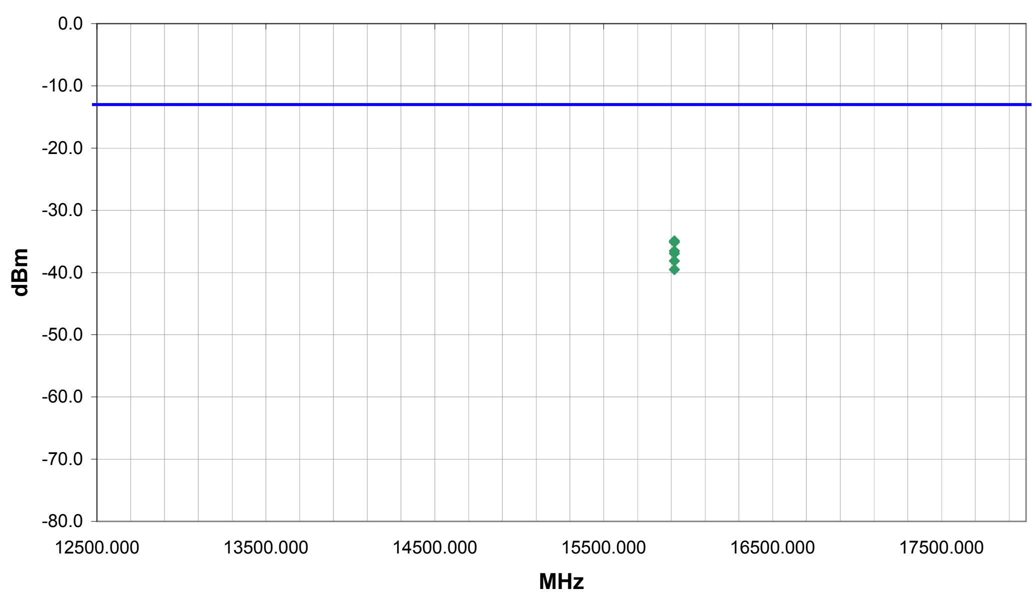
EUT OPERATING MODES

Transmitting, GPRS, PCS band, high channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	**7**	
Configuration #	**2**	
Results	**Pass**	NVLAP Lab Code 200630-0 *Signature*



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
15918.650	21.0	1.2	H-Horn	PK	3.21E-07	-34.9	-13.0	-21.9	EUT on side
15918.360	25.0	1.3	H-Horn	PK	3.07E-07	-35.1	-13.0	-22.1	EUT vertical
15918.370	90.0	1.1	V-Horn	PK	2.22E-07	-36.5	-13.0	-23.5	EUT vertical
15918.210	57.0	1.1	V-Horn	PK	2.03E-07	-36.9	-13.0	-23.9	EUT on side
15918.070	234.0	1.7	V-Horn	PK	1.54E-07	-38.1	-13.0	-25.1	EUT horizontal
15918.270	327.0	1.6	H-Horn	PK	1.11E-07	-39.5	-13.0	-26.5	EUT horizontal

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	S-BTS GSM Base Station	Work Order:	RAFN0069
Serial Number:	Engineering Unit	Date:	03/28/07
Customer:	Radioframe Networks, Inc.	Temperature:	22°C
Attendees:	Bob Melsheimer	Humidity:	31%
Project:	None	Barometric Pres.:	30.08
Tested by:	Rod Peloquin Power: 120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS — Test Method

FCC 24E:2005 — ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m): 1 - 4 — Test Distance (m): 3

COMMENTS

Maximum Output Power. Antenna port terminated.

EUT OPERATING MODES

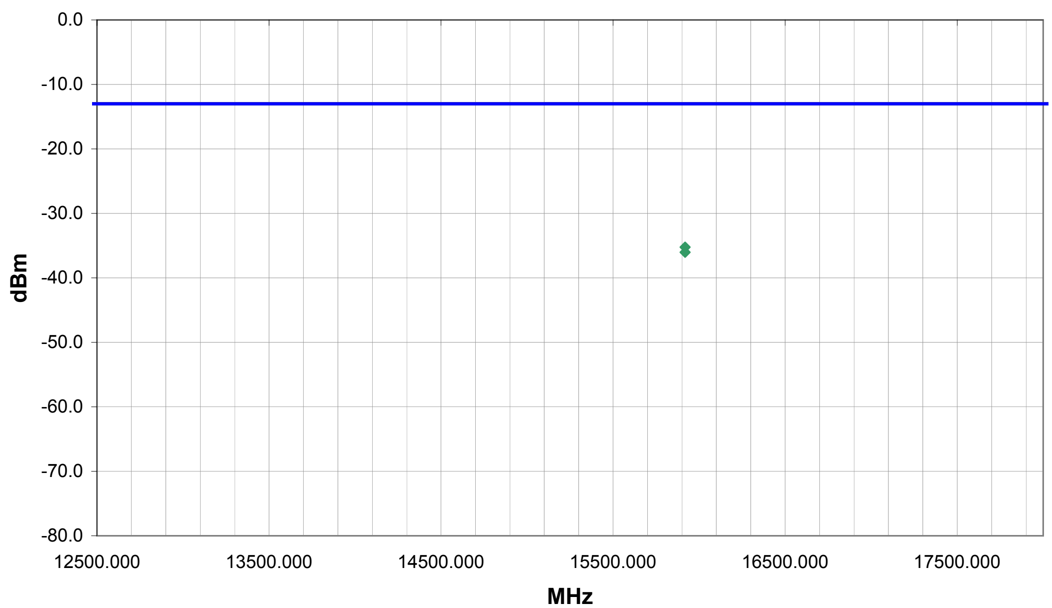
Transmitting, GSM, PCS band, high channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	8
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0 — Signature



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
15918.690			30.0	1.1			H-Horn	PK	3.00E-07	-35.2	-13.0	-22.2	EUT on side
15918.490			62.0	1.1			V-Horn	PK	2.50E-07	-36.0	-13.0	-23.0	EUT on side

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	**S-BTS GSM Base Station**	**Work Order:**	**RAFN0069**
Serial Number:	**Engineering Unit**	**Date:**	**03/28/07**
Customer:	**Radioframe Networks, Inc.**	**Temperature:**	**22°C**
Attendees:	**Bob Melsheimer**	**Humidity:**	**31%**
Project:	**None**	**Barometric Pres.:**	**30.08**
Tested by:	**Rod Peloquin** **Power:** **120VAC/60Hz**	**Job Site:**	**EV01**

TEST SPECIFICATIONS	Test Method
FCC 24E:2005	ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	**Test Distance (m)**	3

COMMENTS

Maximum Output Power. Antenna port terminated.

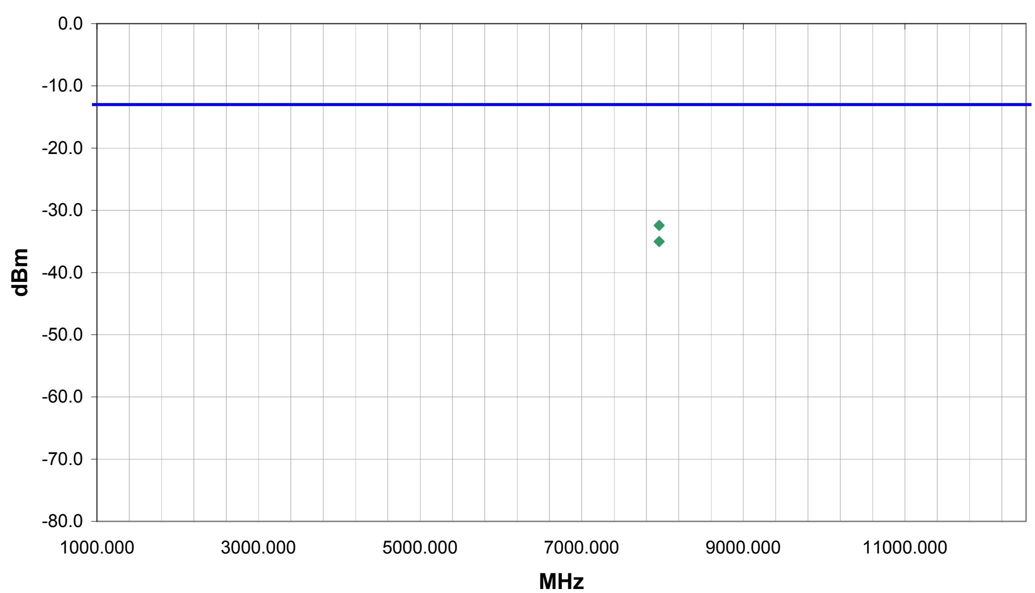
EUT OPERATING MODES

Transmitting, GSM, PCS band, high channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	**9**	
Configuration #	**2**	
Results	**Pass**	NVLAP Lab Code 200630-0 *Signature*



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
7959.220			58.0	1.1			V-Horn	PK	5.72E-07	-32.4	-13.0	-19.4	EUT horizontal
7959.252			305.0	1.3			H-Horn	PK	3.14E-07	-35.0	-13.0	-22.0	EUT on side

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	**S-BTS GSM Base Station**	**Work Order:**	**RAFN0069**
Serial Number:	**Engineering Unit**	**Date:**	**03/28/07**
Customer:	**Radioframe Networks, Inc.**	**Temperature:**	**22°C**
Attendees:	**Bob Melsheimer**	**Humidity:**	**32%**
Project:	**None**	**Barometric Pres.:**	**30.08**
Tested by:	**Rod Peloquin** **Power:** **120VAC/60Hz**	**Job Site:**	**EV01**

TEST SPECIFICATIONS | Test Method

FCC 24E:2005 | ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	**Test Distance (m)**	3

COMMENTS

Maximum Output Power. Antenna port terminated.

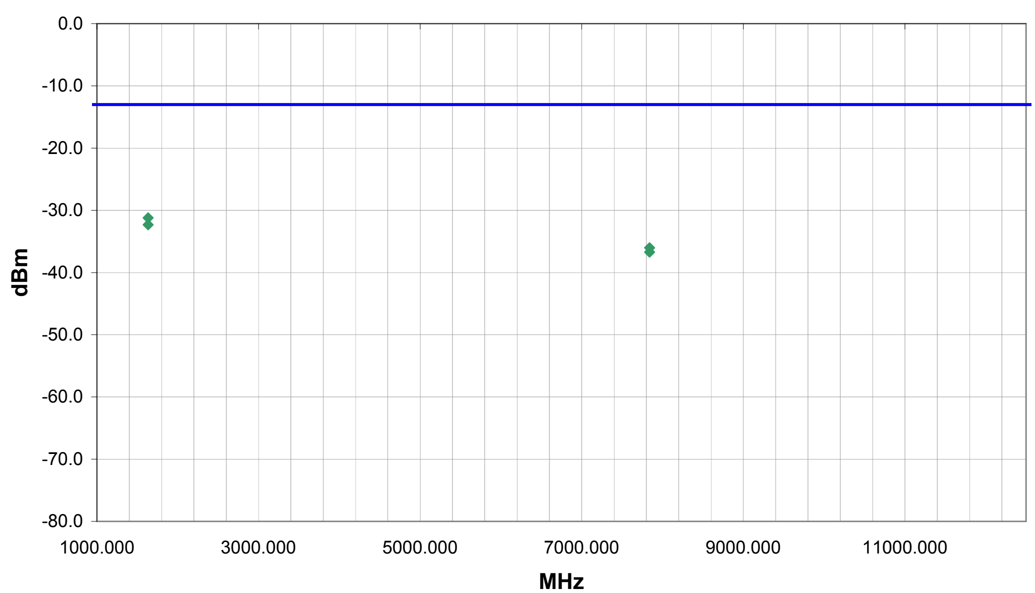
EUT OPERATING MODES

Transmitting, GSM, PCS band, mid channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	**10**	
Configuration #	**2**	
Results	**Pass**	NVLAP Lab Code 200630-0 *Signature*



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1633.721			274.0	1.1			H-Horn	PK	7.54E-07	-31.2	-13.0	-18.2	EUT on side
1634.029			321.0	1.1			V-Horn	PK	5.85E-07	-32.3	-13.0	-19.3	EUT horizontal
7840.137			127.0	1.6			V-Horn	PK	2.50E-07	-36.0	-13.0	-23.0	EUT horizontal
7839.985			133.0	1.3			H-Horn	PK	2.12E-07	-36.7	-13.0	-23.7	EUT on side

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	S-BTS GSM Base Station	Work Order:	RAFN0069
Serial Number:	Engineering Unit	Date:	03/28/07
Customer:	Radioframe Networks, Inc.	Temperature:	22°C
Attendees:	Bob Melsheimer	Humidity:	31%
Project:	None	Barometric Pres.:	30.08
Tested by:	Rod Peloquin Power: 120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2005	ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

COMMENTS

Maximum Output Power. Antenna port terminated.

EUT OPERATING MODES

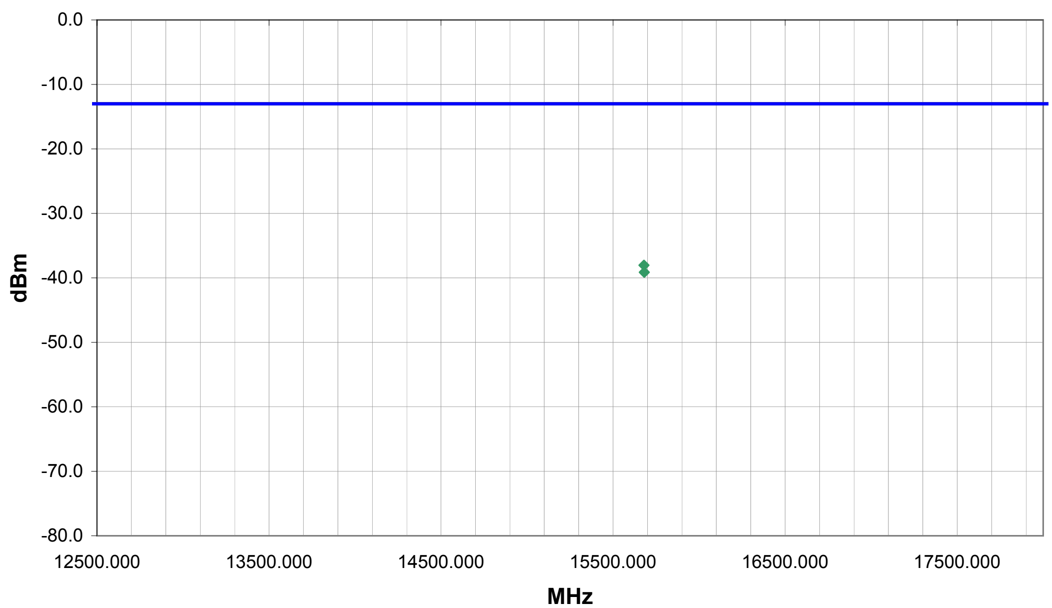
Transmitting, GSM, PCS band, mid channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	11
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0 *Signature*



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
15679.860			26.0	1.0			H-Horn	PK	1.57E-07	-38.0	-13.0	-25.0	EUT on side
15680.840			59.0	1.2			V-Horn	PK	1.22E-07	-39.1	-13.0	-26.1	EUT on side

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	S-BTS GSM Base Station			Work Order:	RAFN0069
Serial Number:	Engineering Unit			Date:	03/28/07
Customer:	Radioframe Networks, Inc.			Temperature:	22°C
Attendees:	Bob Melsheimer			Humidity:	31%
Project:	None			Barometric Pres.:	30.08
Tested by:	Rod Peloquin	Power:	120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS — Test Method

FCC 24E:2005 — ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m): 1 - 4 — Test Distance (m): 3

COMMENTS

Maximum Output Power. Antenna port terminated.

EUT OPERATING MODES

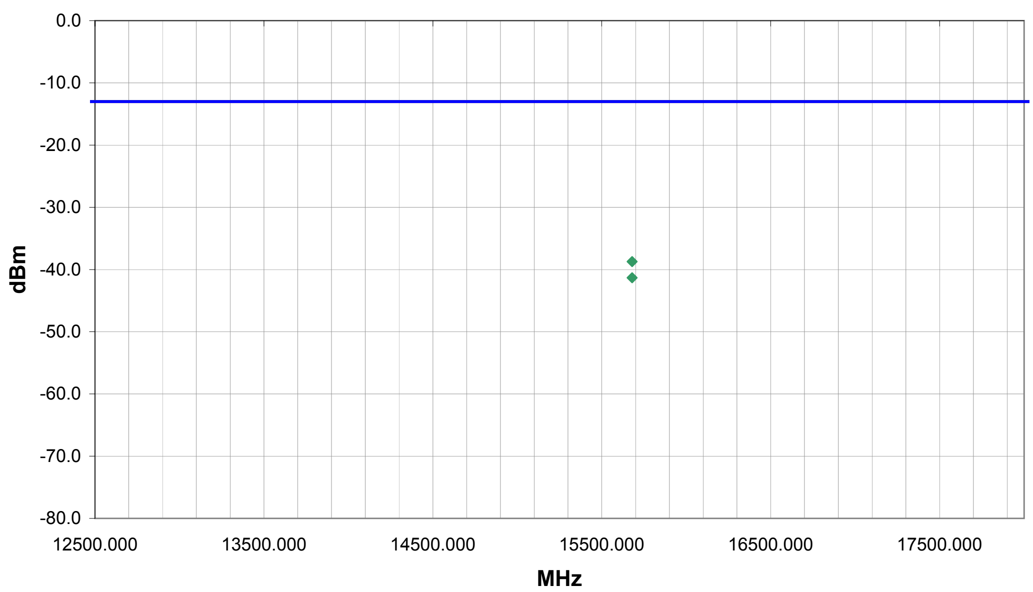
Transmitting, GPRS, PCS band, mid channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	12
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0 — *Signature*



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
15679.690			27.0	1.0			H-Horn	PK	1.34E-07	-38.7	-13.0	-25.7	EUT on side
15679.770			23.0	1.1			V-Horn	PK	7.36E-08	-41.3	-13.0	-28.3	EUT on side

NORTHWEST
EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	**S-BTS GSM Base Station**			**Work Order:**	**RAFN0069**
Serial Number:	**Engineering Unit**			**Date:**	**03/28/07**
Customer:	**Radioframe Networks, Inc.**			**Temperature:**	**22°C**
Attendees:	**Bob Melsheimer**			**Humidity:**	**32%**
Project:	**None**			**Barometric Pres.:**	**30.08**
Tested by:	**Rod Peloquin**	**Power:**	**120VAC/60Hz**	**Job Site:**	**EV01**

TEST SPECIFICATIONS — Test Method

FCC 24E:2005 — ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	**Test Distance (m)**	3

COMMENTS

Maximum Output Power. Antenna port terminated.

EUT OPERATING MODES

Transmitting, GSM, PCS band, low channel

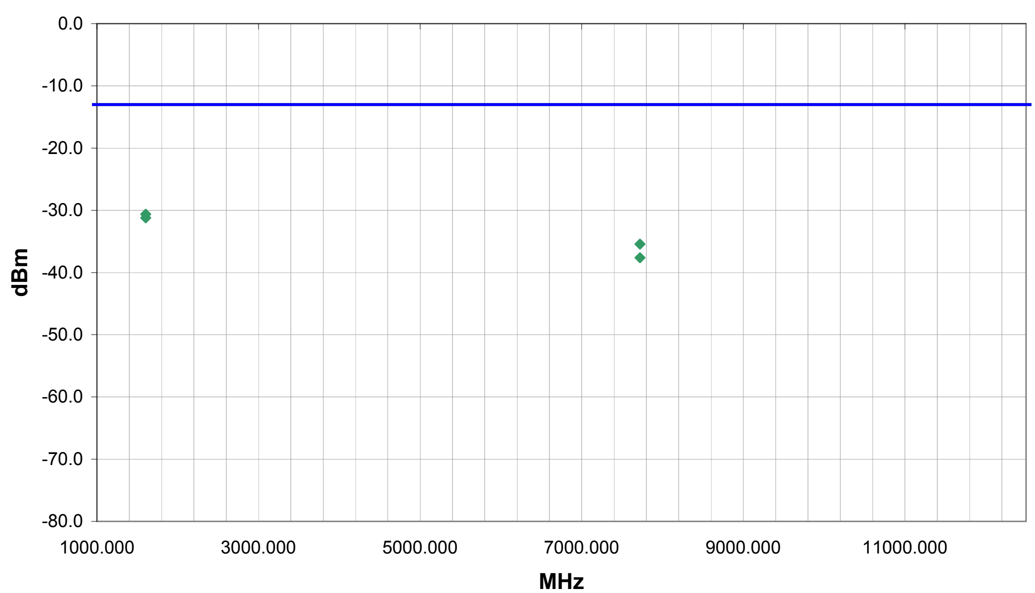
DEVIATIONS FROM TEST STANDARD

No deviations.

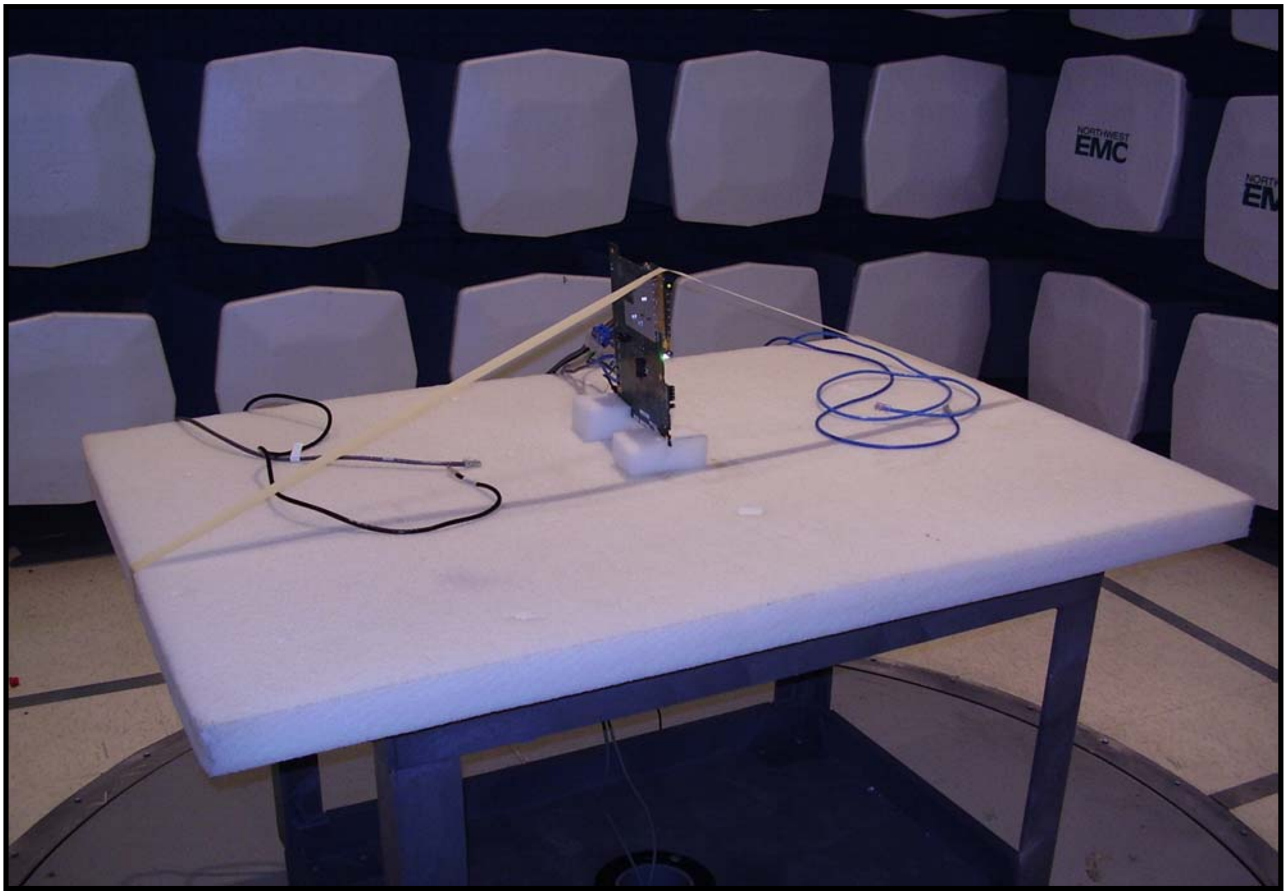
Run #	**13**
Configuration #	**2**
Results	**Pass**

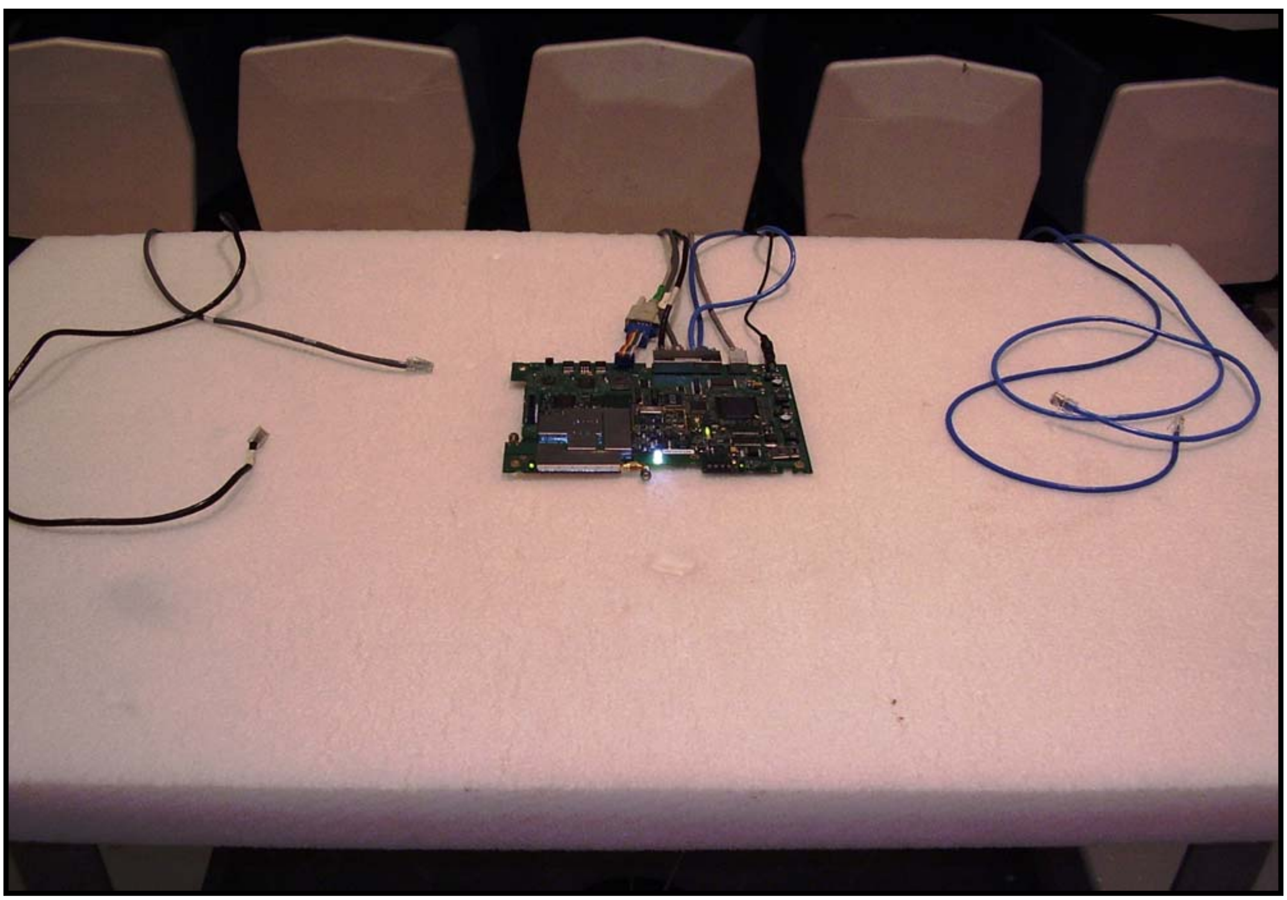
NVLAP Lab Code 200630-0

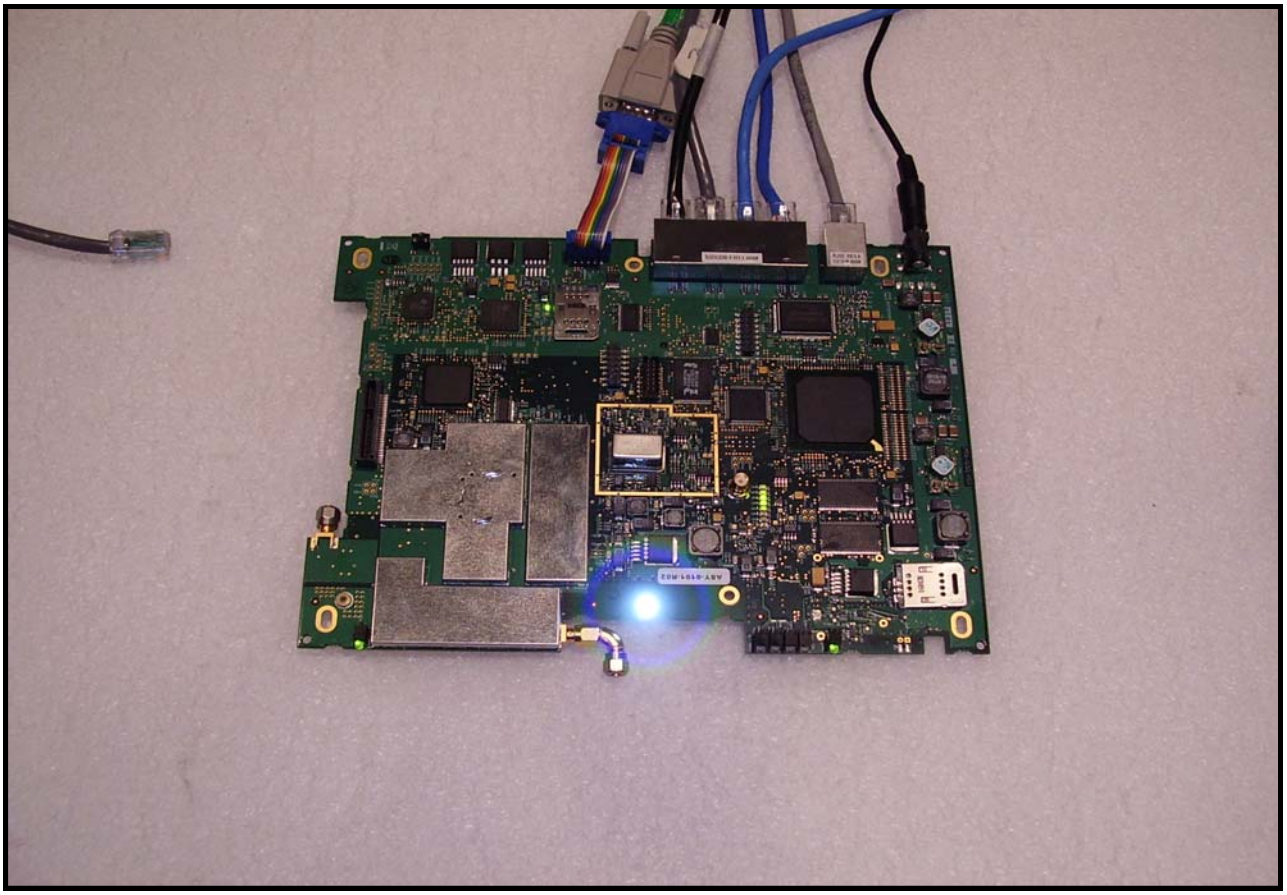
Signature

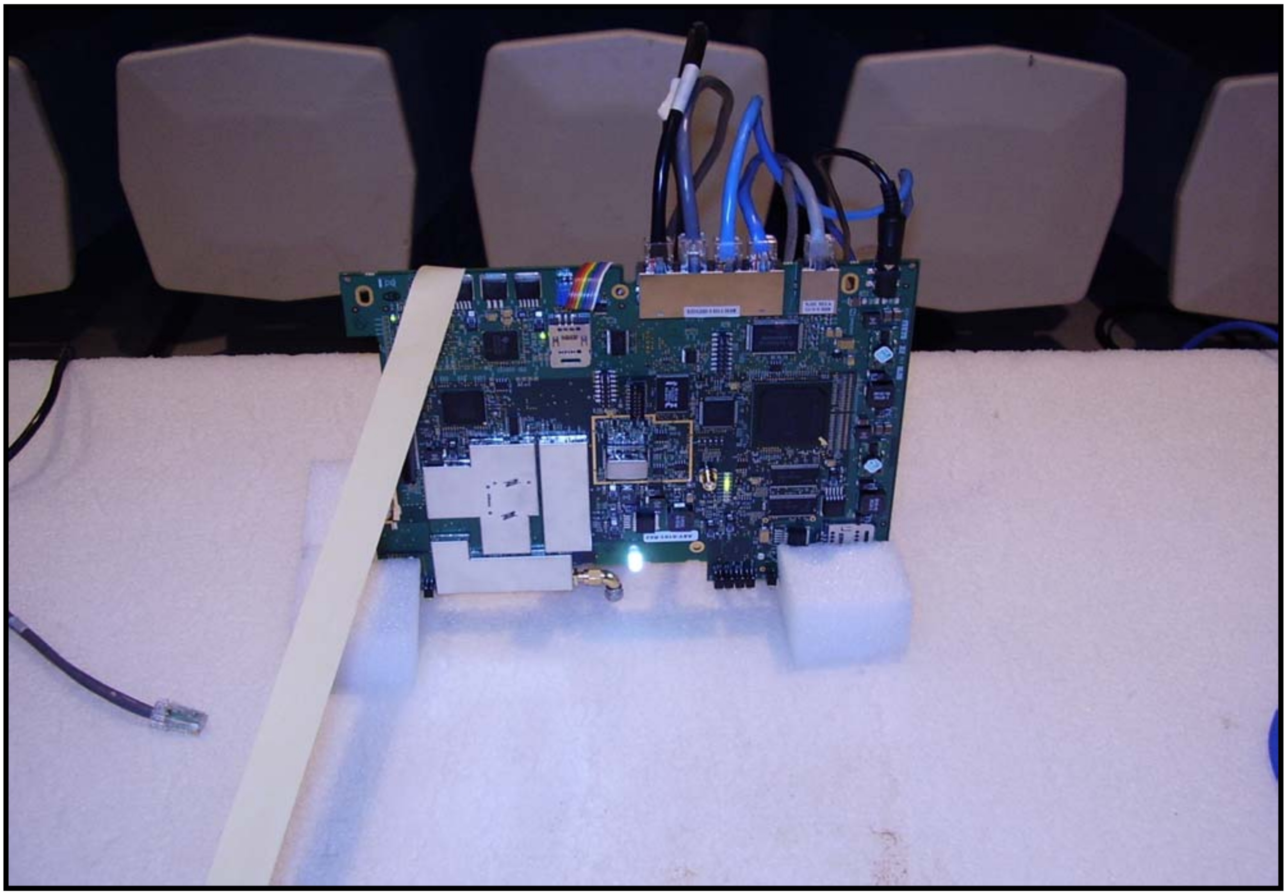


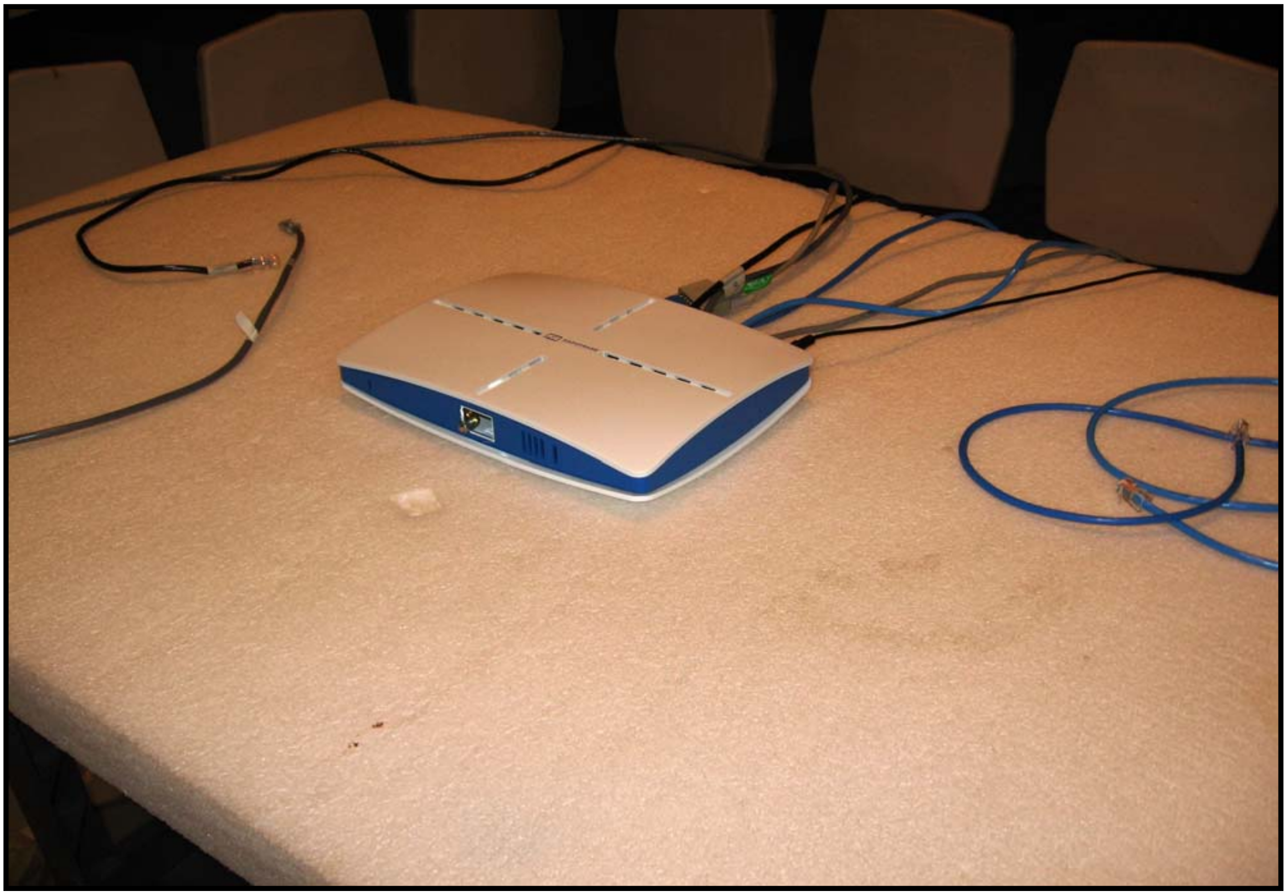
Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1604.071			214.0	1.1			H-Horn	PK	8.65E-07	-30.6	-13.0	-17.6	EUT on side
1604.161			340.0	1.1			V-Horn	PK	7.54E-07	-31.2	-13.0	-18.2	EUT horizontal
7720.847			272.0	1.7			V-Horn	PK	2.86E-07	-35.4	-13.0	-22.4	EUT horizontal
7720.996			77.0	1.2			H-Horn	PK	1.73E-07	-37.6	-13.0	-24.6	EUT on side

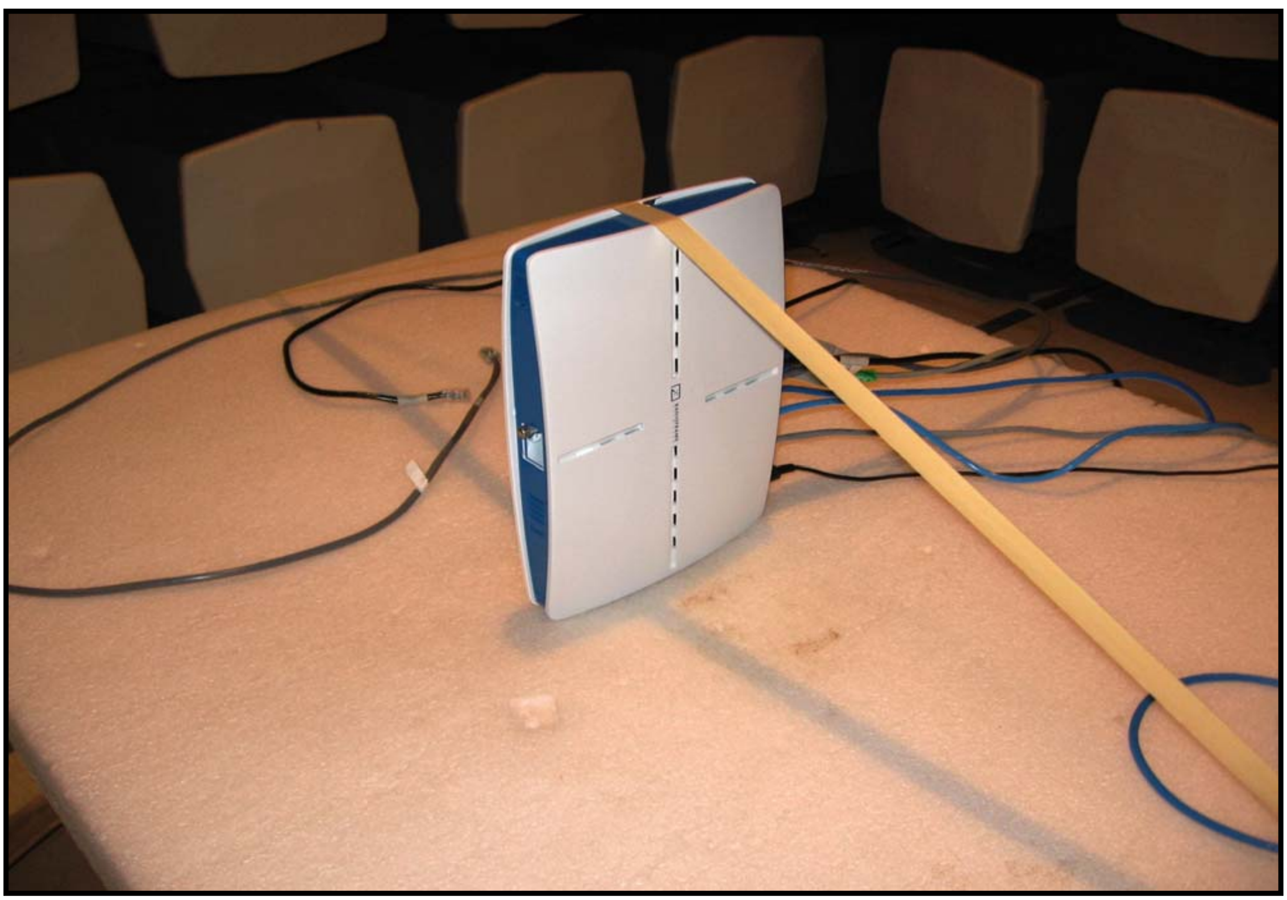

NORTHWEST
EMC

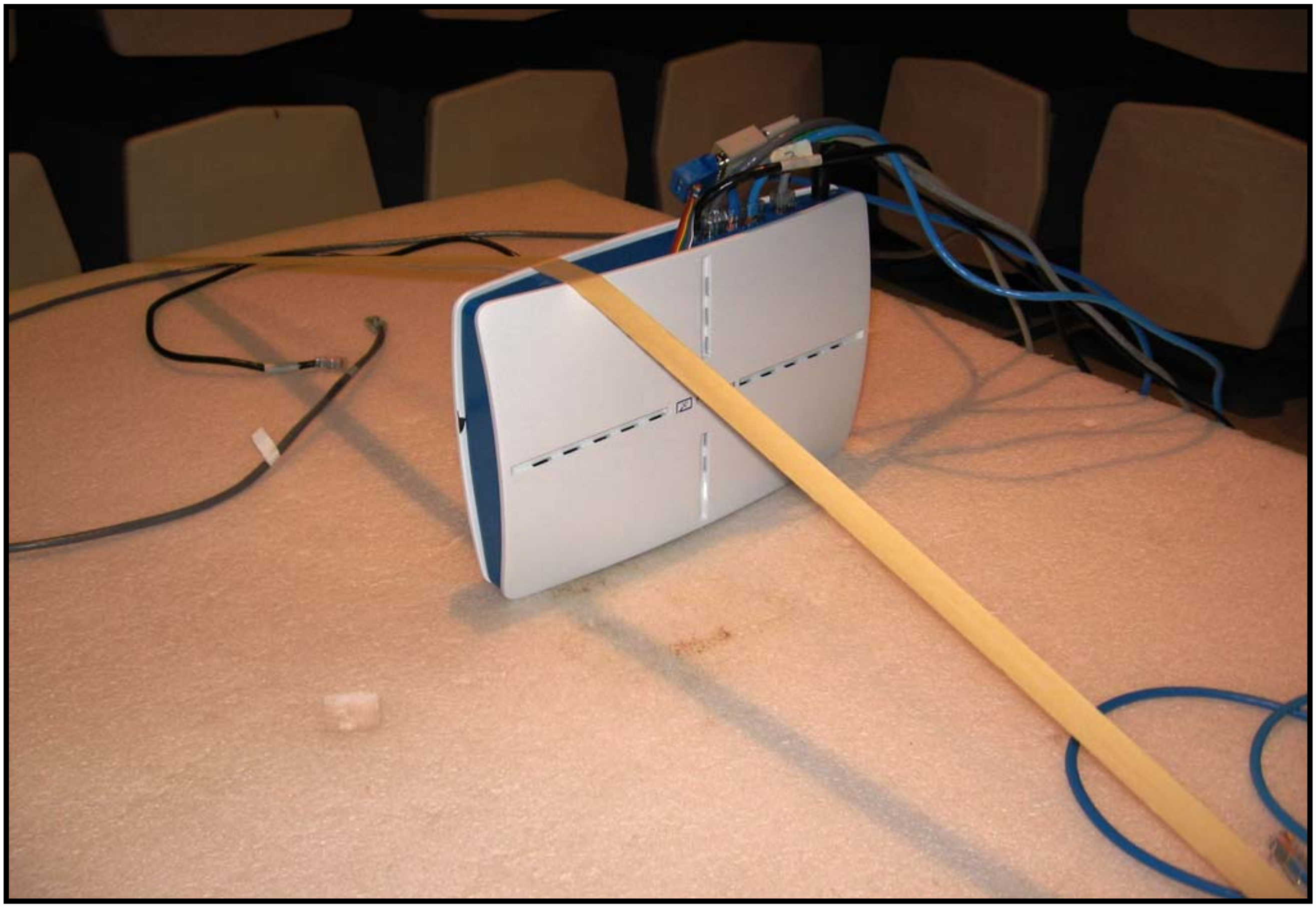


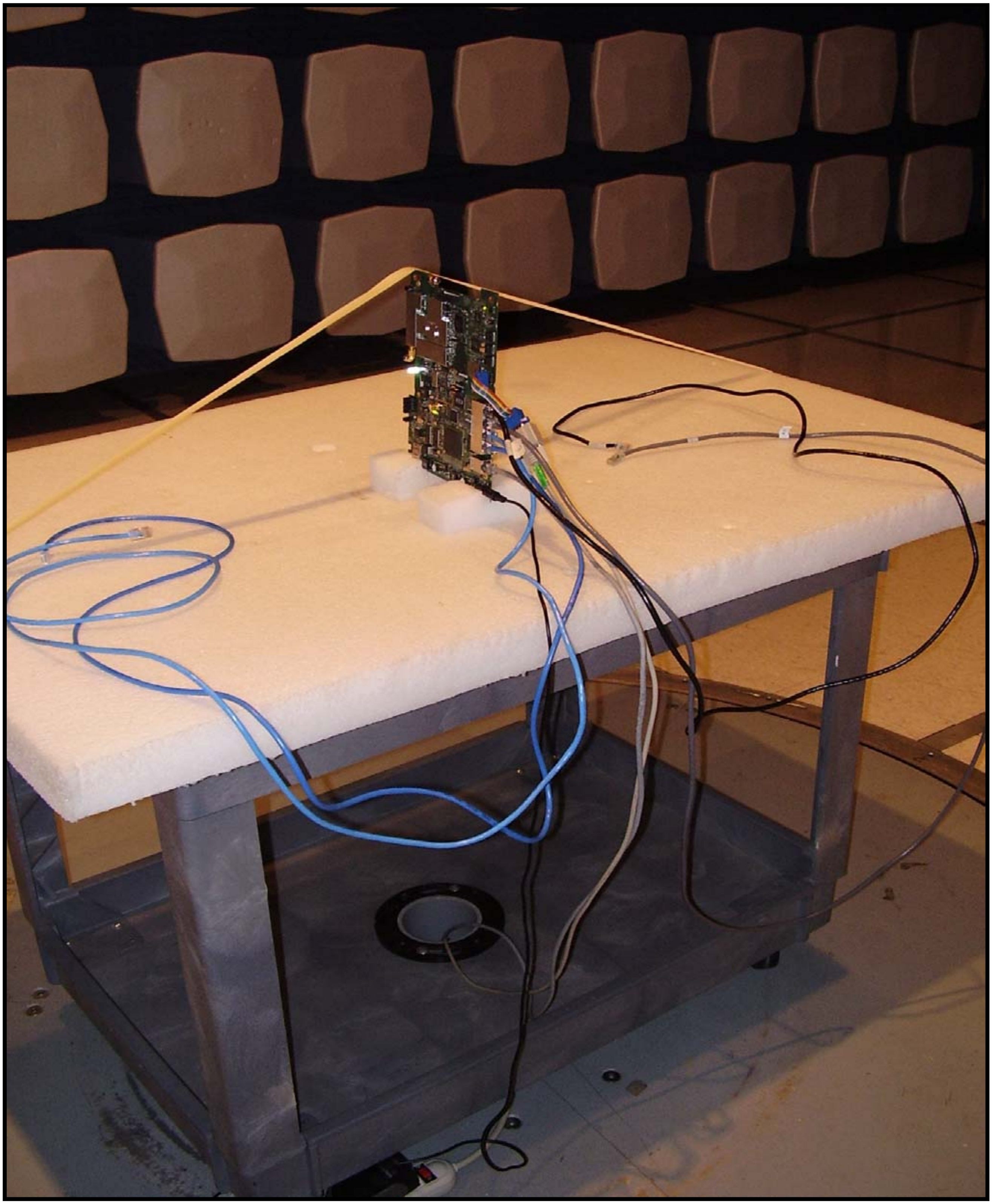












Effective Radiated Power

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION
GPRS
GSM

WORST CASE MODE OF OPERATION
GPRS

POWER SETTINGS INVESTIGATED
120VAC/60Hz

CHANNELS INVESTIGATED
Low channel, 869.2MHz
Mid channel, 881.2MHz
High channel, 893.8MHz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	800MHz	Stop Frequency	900MHz

SAMPLE CALCULATIONS
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
EV01 cables g,h,j			EVB	12/29/2006	13
EV01 cables c,g, h			EVA	12/29/2006	13
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13
Antenna, Biconilog	EMCO	3141	AXE	12/28/2005	24
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003).

The amplitude and frequency of the highest emissions were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the cable loss to the dipole antenna and its gain (dBi); the effective radiated power for each radiated spurious emission was determined.

NORTHWEST
EMC

Effective Radiated Power

PSA 2007.01.31
EMI 2006.12.20

EUT:	S-BTS GSM Base Station	Work Order:	RAFN0069
Serial Number:	Engineering Unit	Date:	03/27/07
Customer:	Radioframe Networks, Inc.	Temperature:	22°C
Attendees:	Bob Melsheimer	Humidity:	332%
Project:	None	Barometric Pres.:	30.08
Tested by:	Holly Ashkannejhad, Greg Kiemel Power: 120VAC/60Hz	Job Site:	EV06

TEST SPECIFICATIONS | Test Method

FCC 22H:2005 | ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	0

COMMENTS

Maximum Output Power

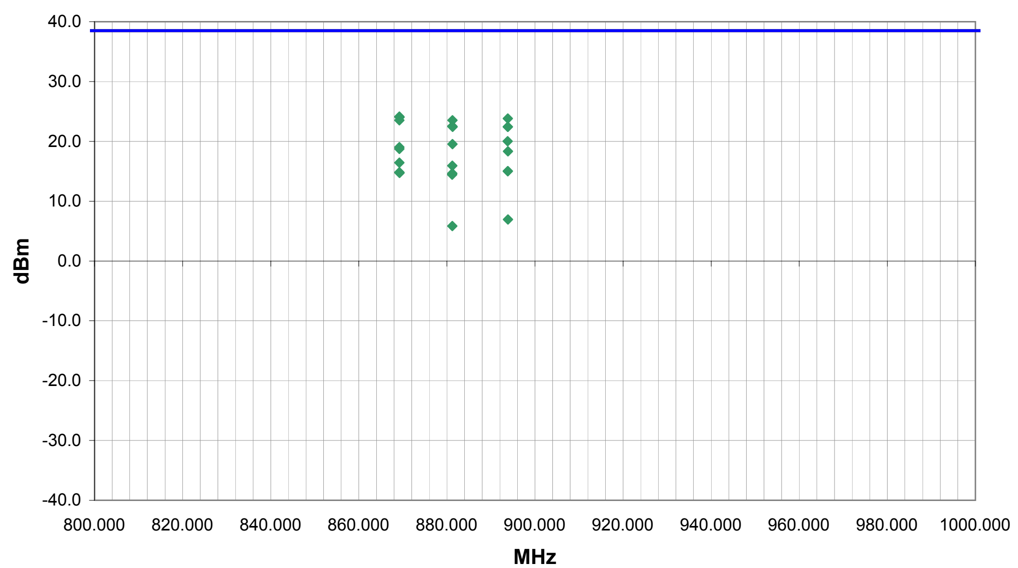
EUT OPERATING MODES

DEVIATIONS FROM TEST STANDARD

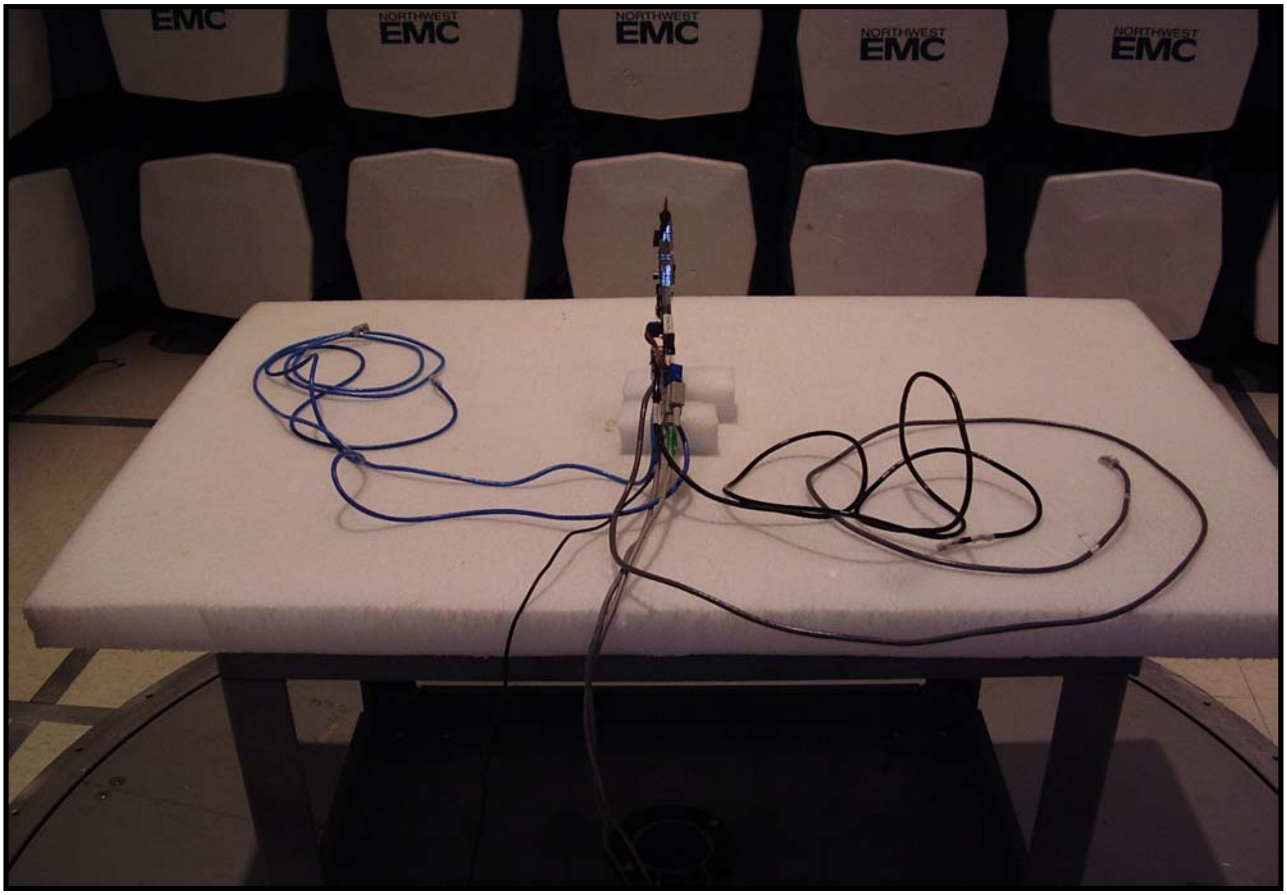
No deviations.

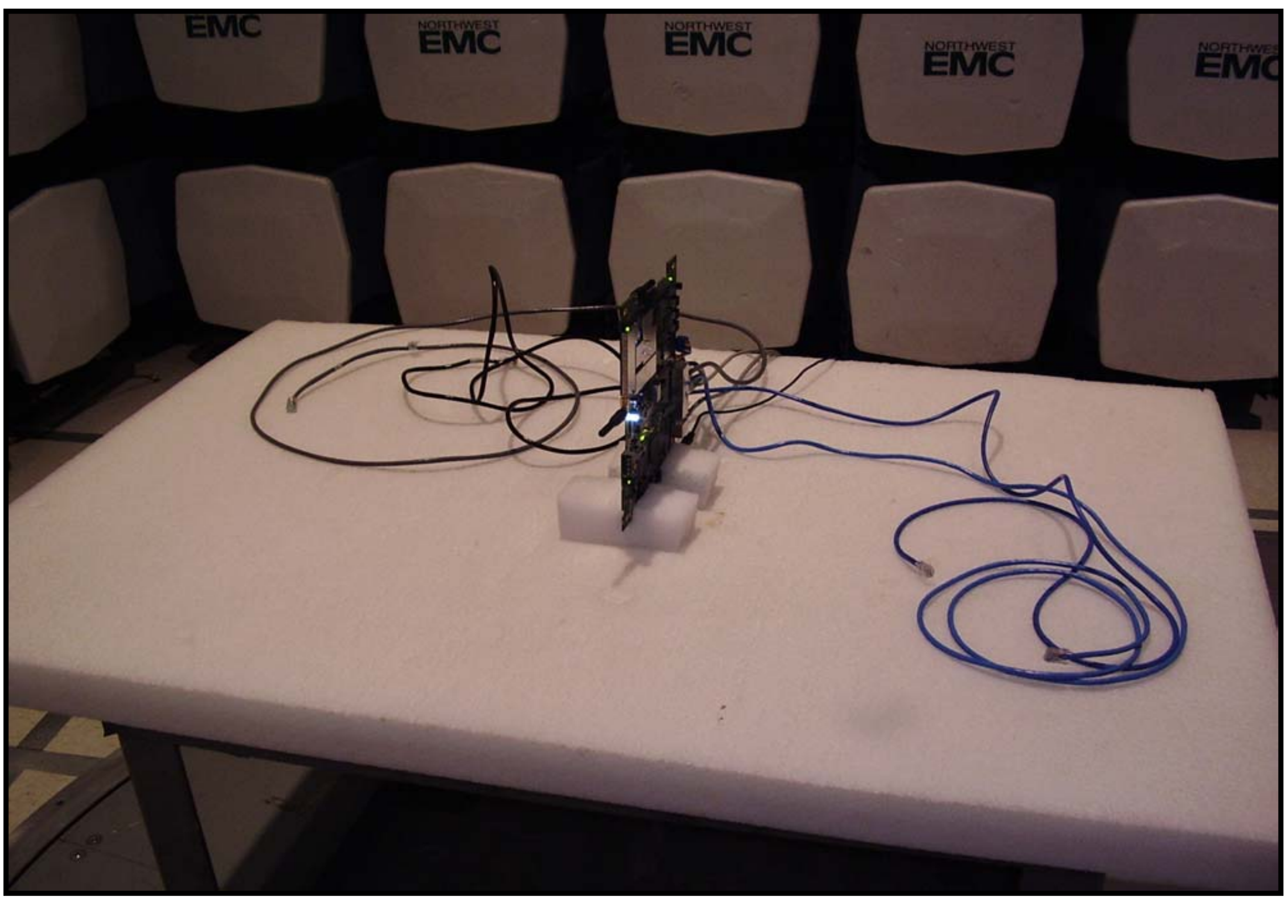
Run #	2	
Configuration #	2	
Results	Pass	NVLAP Lab Code 200630-0

Signature Holly Ashkannejhad



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
869.222			279.0	1.0			H-Bilog	PK	2.59E-01	24.1	38.5	-14.4	GPRS - EUT horizontal
869.240			279.0	1.0			H-Bilog	PK	2.53E-01	24.0	38.5	-14.5	GSM - EUT horizontal
893.839			227.0	1.0			V-Bilog	PK	2.42E-01	23.8	38.5	-14.7	GPRS - EUT vertical
869.208			227.0	1.0			V-Bilog	PK	2.25E-01	23.5	38.5	-15.0	GPRS - EUT vertical
881.257			235.0	1.0			V-Bilog	PK	2.25E-01	23.5	38.5	-15.0	GPRS - EUT vertical
881.229			277.0	1.0			H-Bilog	PK	1.79E-01	22.5	38.5	-16.0	GSM - EUT horizontal
881.289			283.0	1.0			H-Bilog	PK	1.75E-01	22.4	38.5	-16.1	GPRS - EUT horizontal
893.812			351.0	1.0			H-Bilog	PK	1.75E-01	22.4	38.5	-16.1	GSM - EUT horizontal
893.842			349.0	1.0			H-Bilog	PK	1.75E-01	22.4	38.5	-16.1	GPRS - EUT horizontal
893.807			252.0	1.0			V-Bilog	PK	1.01E-01	20.0	38.5	-18.5	GPRS - EUT on its side
881.266			210.0	1.0			V-Bilog	PK	8.98E-02	19.5	38.5	-19.0	GPRS - EUT on its side
869.207			161.0	1.6			H-Bilog	PK	8.00E-02	19.0	38.5	-19.5	GPRS - EUT on its side
869.202			53.0	1.0			V-Bilog	PK	7.47E-02	18.7	38.5	-19.8	GPRS - EUT on its side
893.852			238.0	2.9			V-Bilog	PK	6.81E-02	18.3	38.5	-20.2	GSM - EUT horizontal
869.202			239.0	3.0			V-Bilog	PK	4.40E-02	16.4	38.5	-22.1	GSM - EUT horizontal
881.234			192.0	1.0			H-Bilog	PK	3.92E-02	15.9	38.5	-22.6	GPRS - EUT vertical
893.820			247.0	1.0			V-Bilog	PK	3.19E-02	15.0	38.5	-23.5	GPRS - EUT horizontal
893.829			292.0	1.0			H-Bilog	PK	3.19E-02	15.0	38.5	-23.5	GPRS - EUT vertical
869.208			238.0	1.0			V-Bilog	PK	3.04E-02	14.8	38.5	-23.7	GPRS - EUT horizontal
869.232			239.0	1.4			H-Bilog	PK	2.97E-02	14.7	38.5	-23.8	GPRS - EUT vertical
881.210			237.0	1.0			V-Bilog	PK	2.90E-02	14.6	38.5	-23.9	GPRS - EUT horizontal
881.207			236.0	1.0			V-Bilog	PK	2.77E-02	14.4	38.5	-24.1	GSM - EUT horizontal
893.854			234.0	1.4			H-Bilog	PK	4.93E-03	6.9	38.5	-31.6	GPRS - EUT on its side
881.235			112.0	1.7			H-Bilog	PK	3.83E-03	5.8	38.5	-32.7	GPRS - EUT on its side


NORTHWEST
EMC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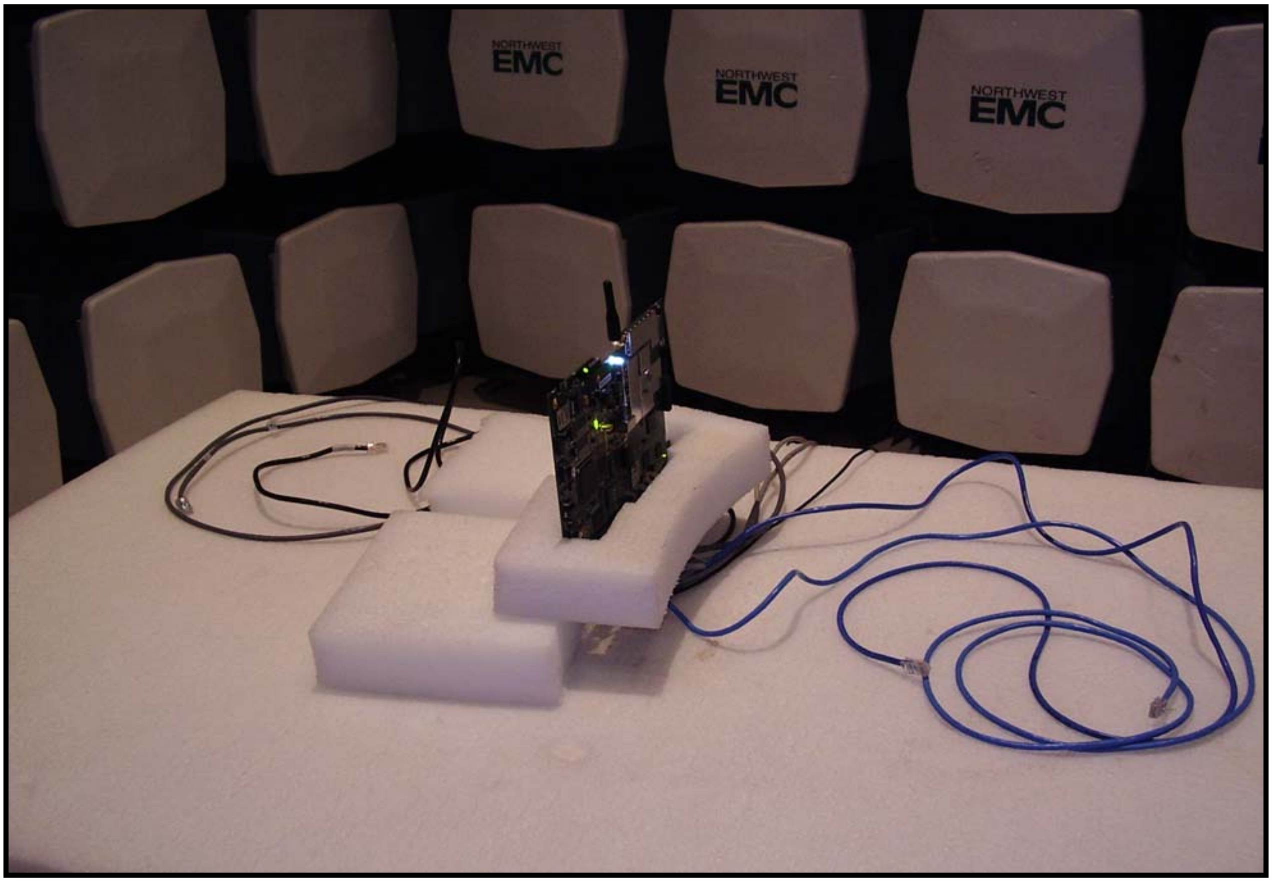
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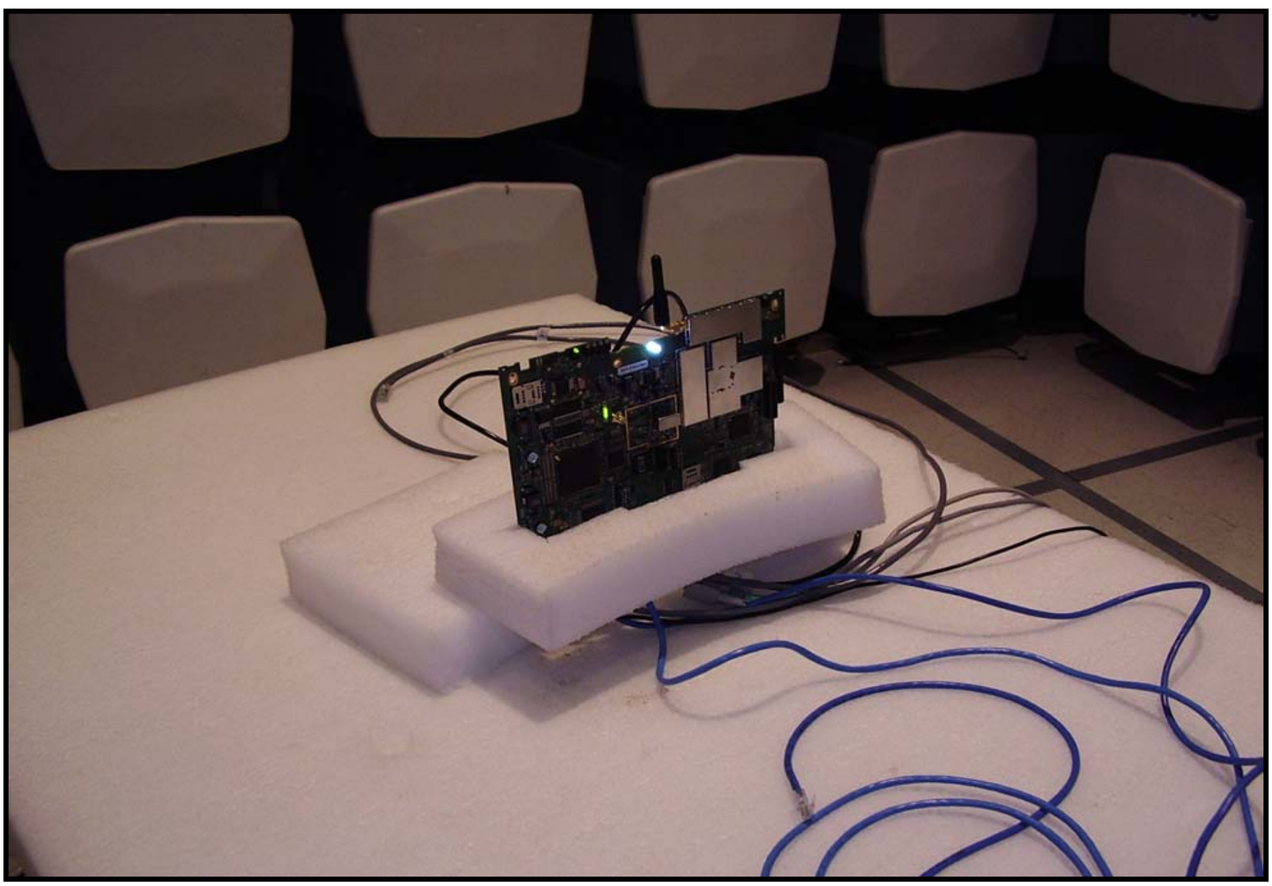
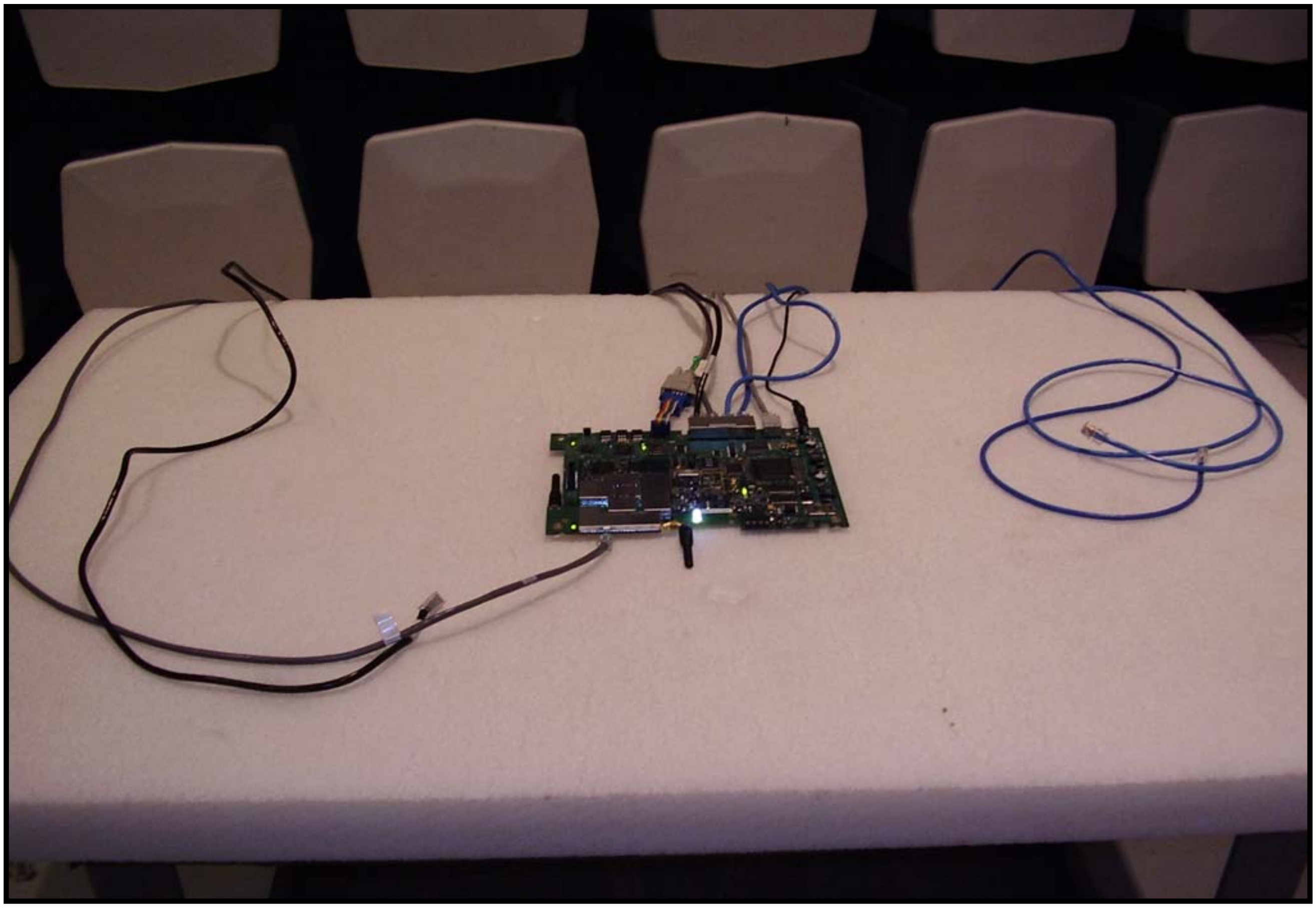
NORTHWEST
EMC





NORTHWEST
EMC

Effective Isotropic Radiated Power

PSA 2007.01.31

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION
GPRS
GSM

WORST CASE MODE OF OPERATION
GPRS

POWER SETTINGS INVESTIGATED
120VAC/60Hz

CHANNELS INVESTIGATED
Low channel, 1930.2MHz
Mid channel, 1960MHz
High channel, 1990MHz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	1900MHz	Stop Frequency	2000MHz

SAMPLE CALCULATIONS
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
EV01 cables g,h,j			EVB	12/29/2006	13
EV01 cables c,g, h			EVA	12/29/2006	13
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13
Antenna, Biconilog	EMCO	3141	AXE	12/28/2005	24
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003).

The amplitude and frequency of the highest emissions were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the cable loss to the dipole antenna and its gain (dBi); the effective radiated power for each radiated spurious emission was determined.

NORTHWEST
EMC

Effective Isotropic Radiated Power

PSA 2007.01.31
EMI 2006.12.20

EUT:	**S-BTS GSM Base Station**	**Work Order:**	**RAFN0069**
Serial Number:	**Engineering Unit**	**Date:**	**03/27/07**
Customer:	**Radioframe Networks, Inc.**	**Temperature:**	**22°C**
Attendees:	**Bob Melsheimer**	**Humidity:**	**332%**
Project:	**None**	**Barometric Pres.:**	**30.08**
Tested by:	**Holly Ashkannejhad, Greg Kiemel** — **Power:** **120VAC/60Hz**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	Test Method
FCC 24E:2005	ANSI/TIA/EIA-603-B:2002

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	**Test Distance (m)**	0

COMMENTS

Maximum Output Power

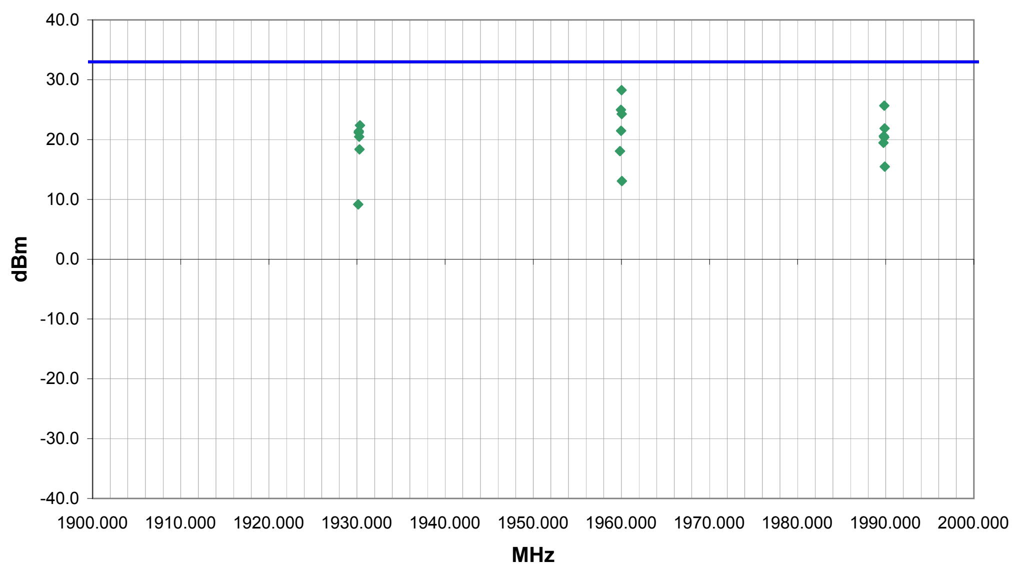
EUT OPERATING MODES

Transmit, see comments below

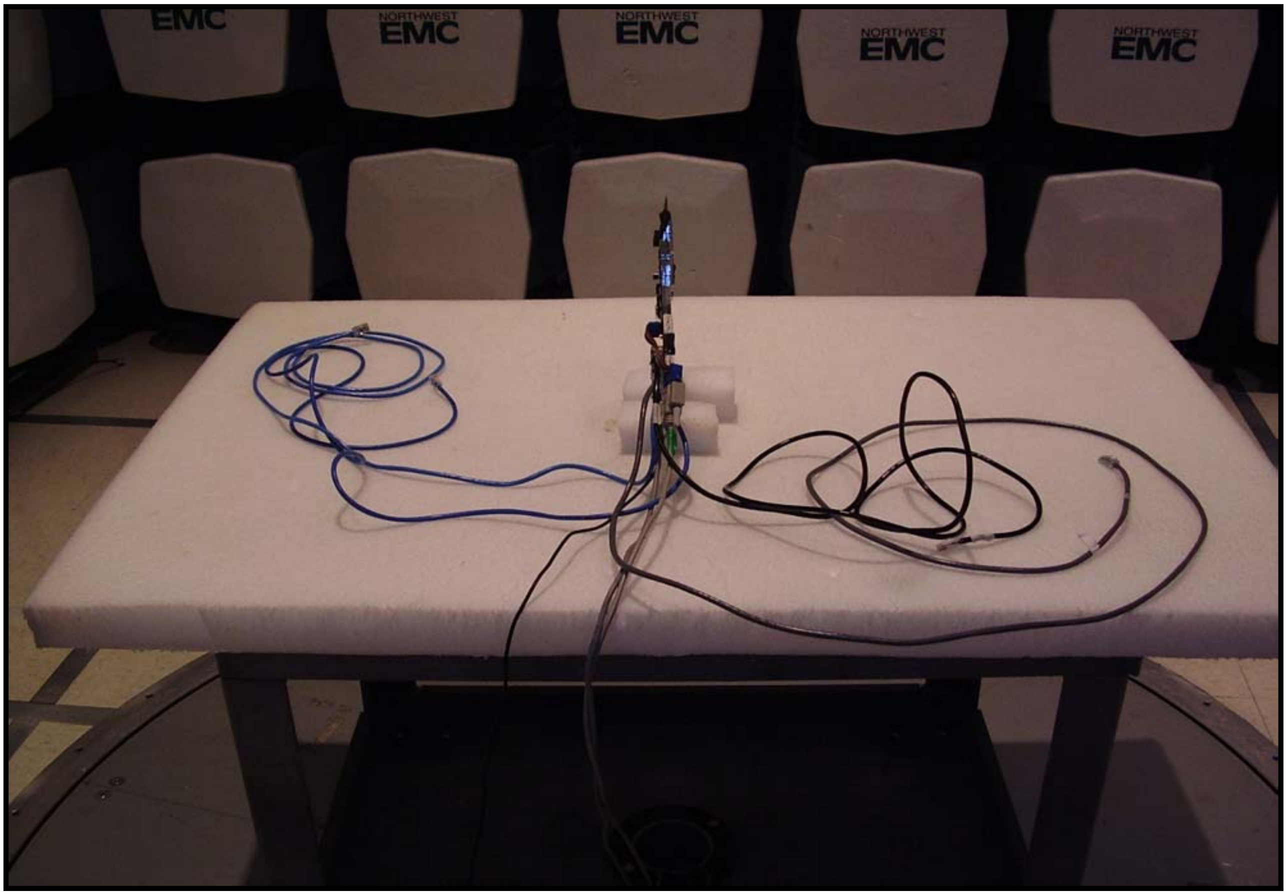
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	**2**	
Configuration #	**2**	
Results	**Pass**	NVLAP Lab Code 200630-0 — *Signature*



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1930.140	239.0	1.4	H-Horn	PK	9.2	33.0	-23.8	GPRS - EUT vertical
1930.187	360.0	1.0	H-Horn	PK	21.2	33.0	-11.8	GPRS - EUT horizontal
1930.213	73.0	1.0	V-Horn	PK	21.4	33.0	-11.6	GPRS - EUT on its side
1930.240	257.0	1.2	H-Horn	PK	20.5	33.0	-12.5	GPRS - EUT on its side
1930.280	304.0	1.0	V-Horn	PK	18.4	33.0	-14.6	GPRS - EUT horizontal
1930.333	230.0	1.2	V-Horn	PK	22.4	33.0	-10.6	GPRS - EUT vertical
1959.833	285.0	1.4	V-Horn	PK	18.1	33.0	-14.9	GPRS - EUT on its side
1959.947	104.0	1.0	H-Horn	PK	25.0	33.0	-8.0	GPRS - EUT on its side
1959.973	55.0	1.0	V-Horn	PK	21.5	33.0	-11.5	GPRS - EUT vertical
1960.020	46.0	1.0	H-Horn	PK	28.3	33.0	-4.7	GPRS - EUT horizontal
1960.040	182.0	1.0	H-Horn	PK	24.3	33.0	-8.7	GPRS - EUT vertical
1960.067	335.0	1.1	V-Horn	PK	13.1	33.0	-19.9	GPRS - EUT horizontal
1989.740	302.0	1.0	V-Horn	PK	19.5	33.0	-13.5	GPRS - EUT horizontal
1989.787	235.0	1.0	V-Horn	PK	20.6	33.0	-12.4	GPRS - EUT on its side
1989.827	41.0	1.0	H-Horn	PK	25.7	33.0	-7.3	GPRS - EUT horizontal
1989.833	36.0	1.0	V-Horn	PK	20.4	33.0	-12.6	GPRS - EUT vertical
1989.873	293.0	1.0	H-Horn	PK	21.9	33.0	-11.1	GPRS - EUT vertical
1989.887	261.0	1.5	H-Horn	PK	15.5	33.0	-17.5	GPRS - EUT on its side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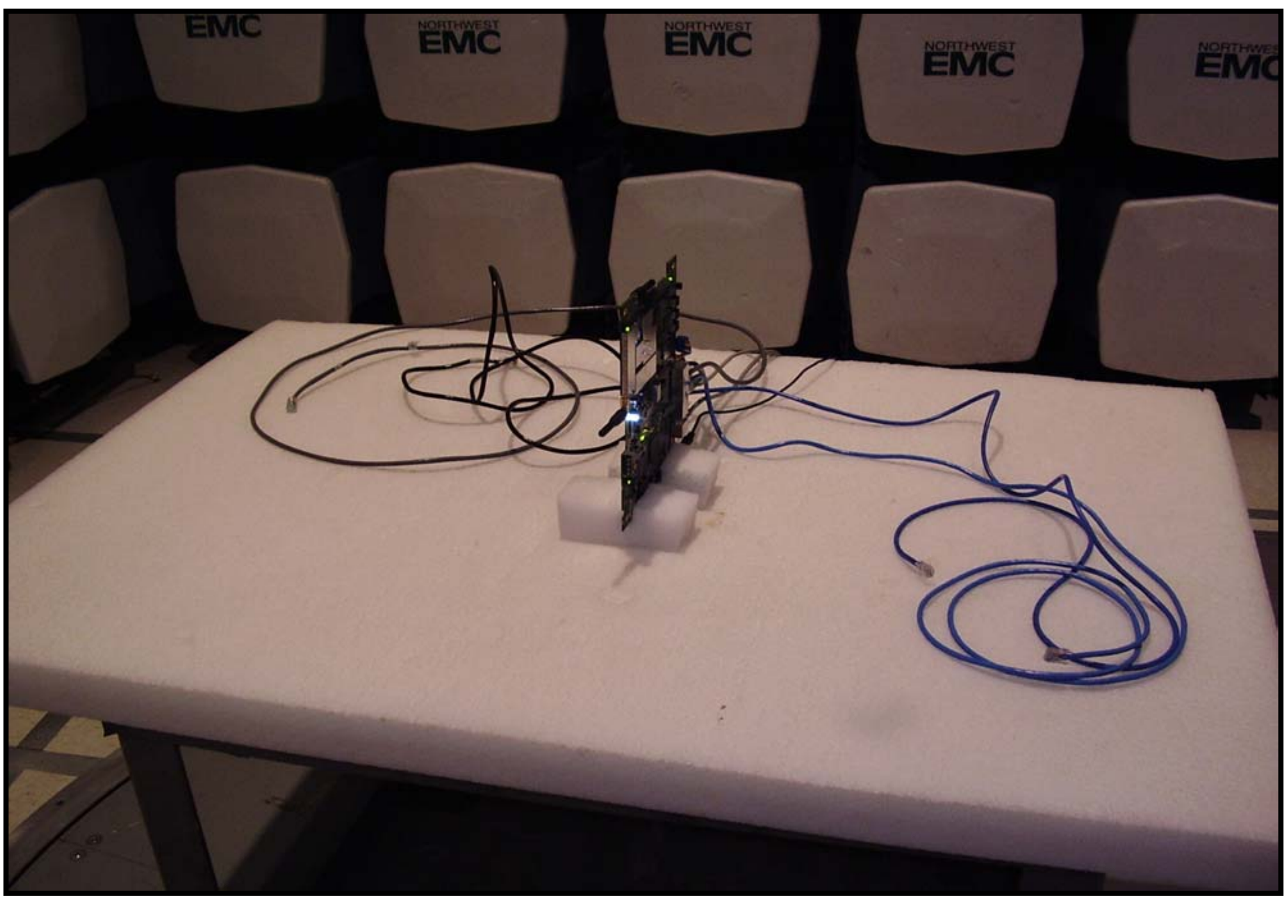
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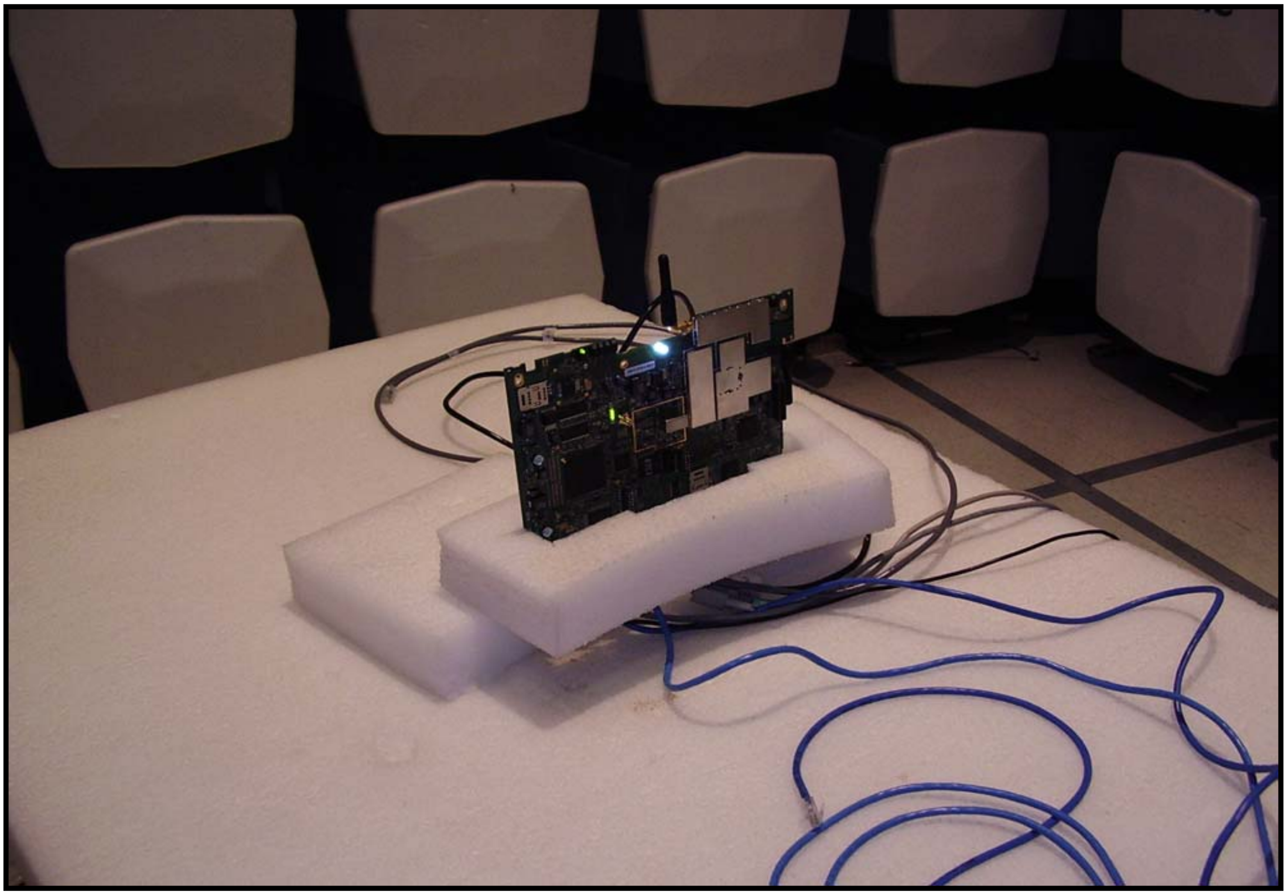
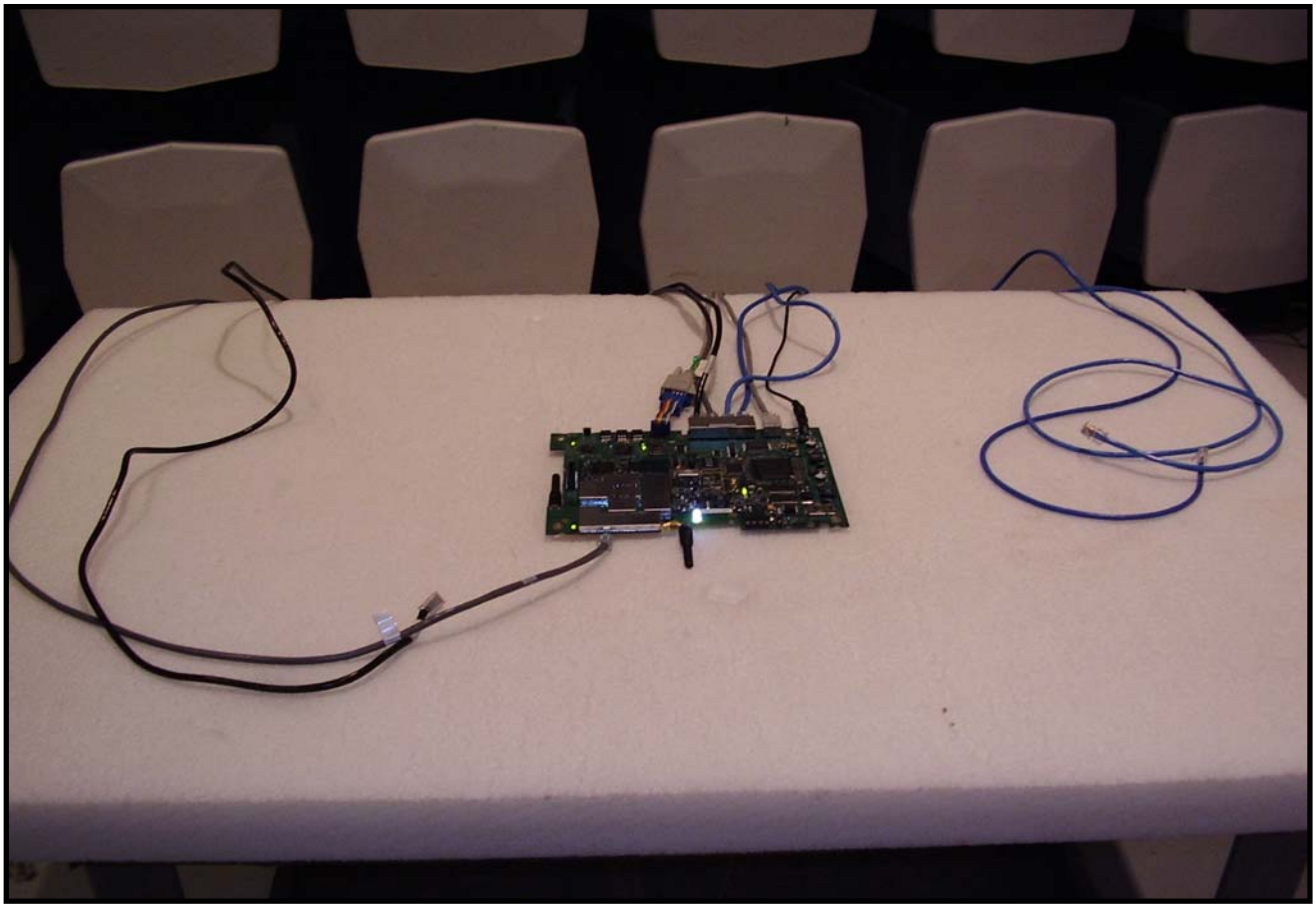
EMC





OUTPUT POWER

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4407B	AAU	12/8/2006	13
Attenuator	Pasternack	PE7005-20	AUN	2/6/2007	13
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Signal Generator	Hewlett-Packard	8648D	TGC	12/7/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The peak output power was measured with the EUT set to the parameters called out in the data sheets. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Prior to making the measurements the setup and attenuator was calibrated using a signal generator and power meter.

NORTHWEST **EMC**

XMit 2006.11.13

OUTPUT POWER

EUT:	**S-BTS GSM Base Station**			**Work Order:**	**RAFN0069**
Serial Number:	**Engineering Unit**			**Date:**	**03/22/07**
Customer:	**Radioframe Networks, Inc.**			**Temperature:**	**21°C**
Attendees:	**Bob Melsheimer**			**Humidity:**	**32%**
Project:	**None**			**Barometric Pres.:**	**30.18**
Tested by:	**Rod Peloquin**	**Power:**	**120VAC/60Hz**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	Test Method
FCC 22H:2005	ANSI/TIA/EIA-603-B-2002

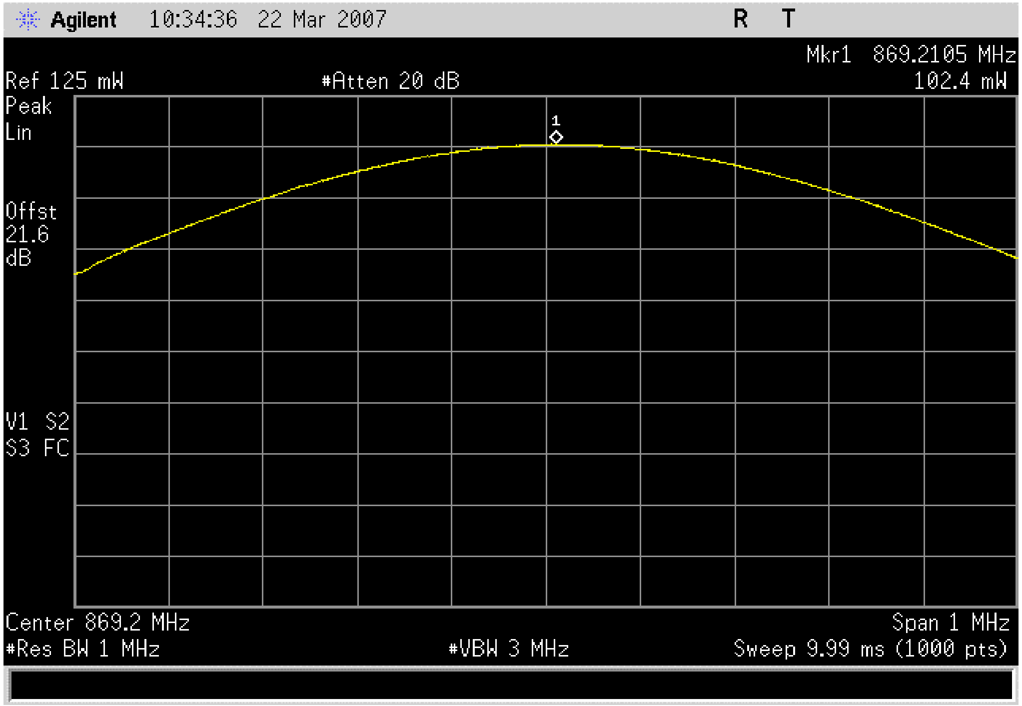
COMMENTS

DEVIATIONS FROM TEST STANDARD

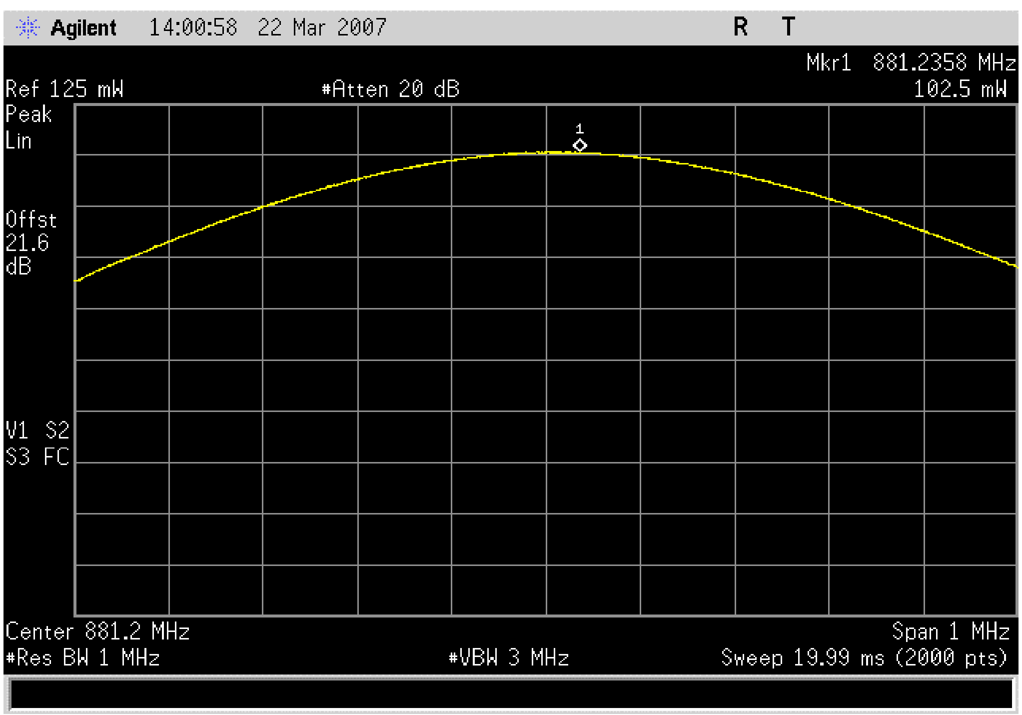
Configuration #	**1**	*Signature*

			Value	Limit	Results
GSM Modulation					
	High Power				
		Low Channel	102.4 mW	7 W	Pass
		Mid Channel	102.5 mW	7 W	Pass
		High Channel	99.88 mW	7 W	Pass
	Mid Power				
		Low Channel	25.5 mW	7 W	Pass
		Mid Channel	24.3 mW	7 W	Pass
		High Channel	26.48 mW	7 W	Pass
	Low Power				
		Low Channel	6.84 mW	7 W	Pass
		Mid Channel	6.47 mW	7 W	Pass
		High Channel	7.36 mW	7 W	Pass
GPRS Modulation					
	High Power				
		Low Channel	101.2 mW	7 W	Pass
		Mid Channel	100.4 mW	7 W	Pass
		High Channel	96.56 mW	7 W	Pass
	Mid Power				
		Low Channel	26.31 mW	7 W	Pass
		Mid Channel	25.03 mW	7 W	Pass
		High Channel	26.87 mW	7 W	Pass
	Low Power				
		Low Channel	6.90 mW	7 W	Pass
		Mid Channel	6.56 mW	7 W	Pass
		High Channel	7.46 mW	7 W	Pass

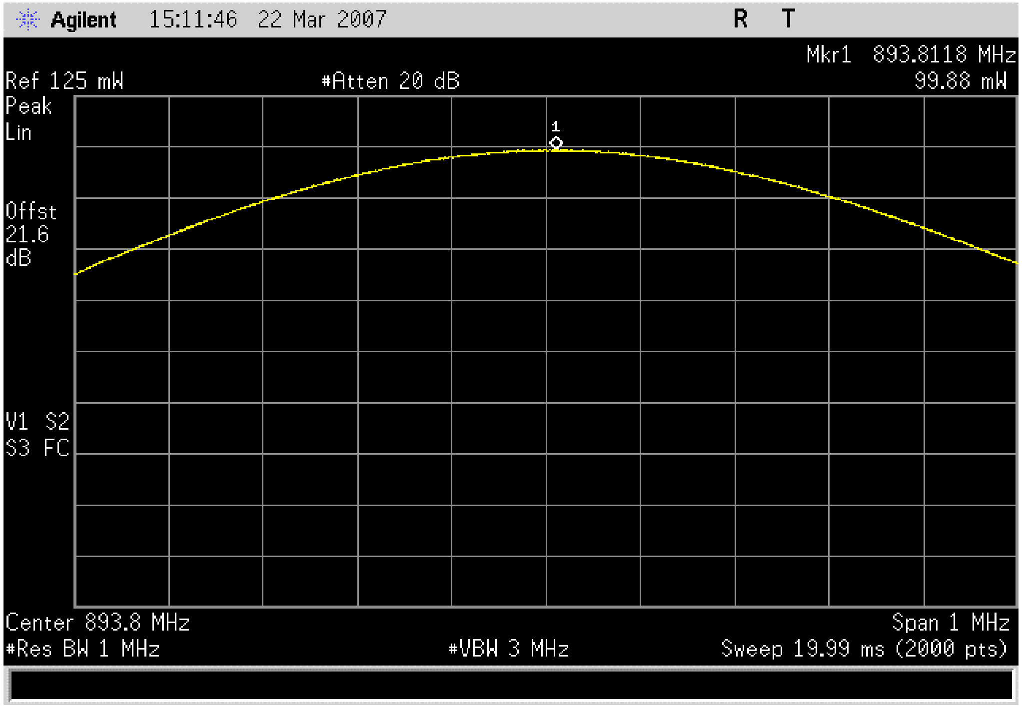
GSM Modulation, High Power, Low Channel					
Result:	Pass	**Value:**	102.4 mW	**Limit:**	7 W



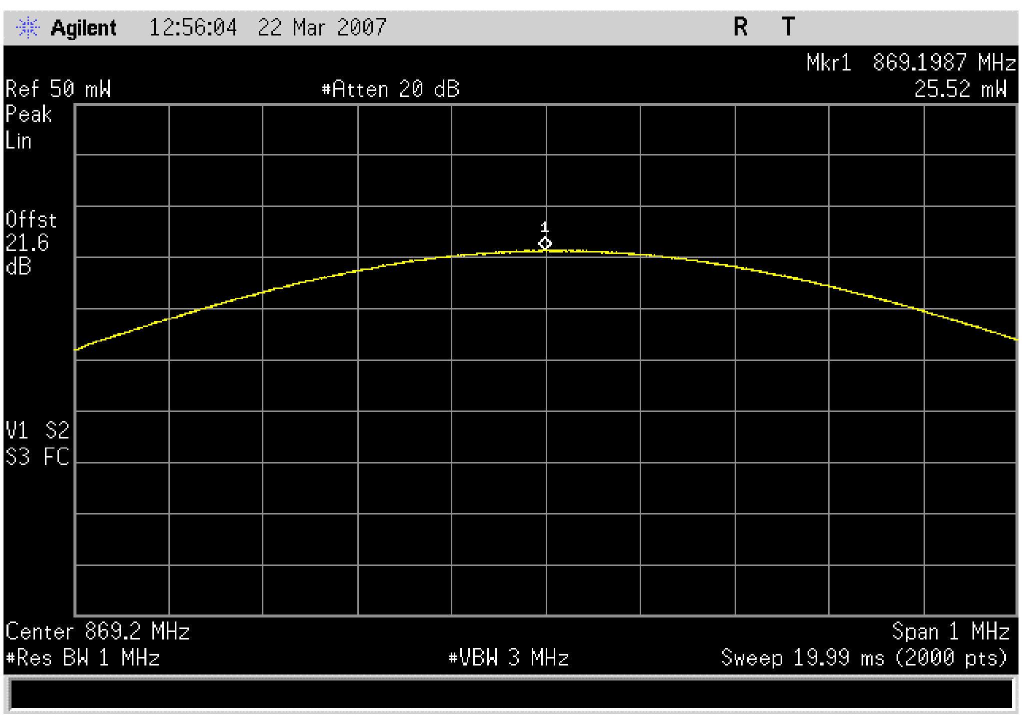
GSM Modulation, High Power, Mid Channel					
Result:	Pass	**Value:**	102.5 mW	**Limit:**	7 W



GSM Modulation, High Power, High Channel		
Result: Pass	**Value:** 99.88 mW	**Limit:** 7 W

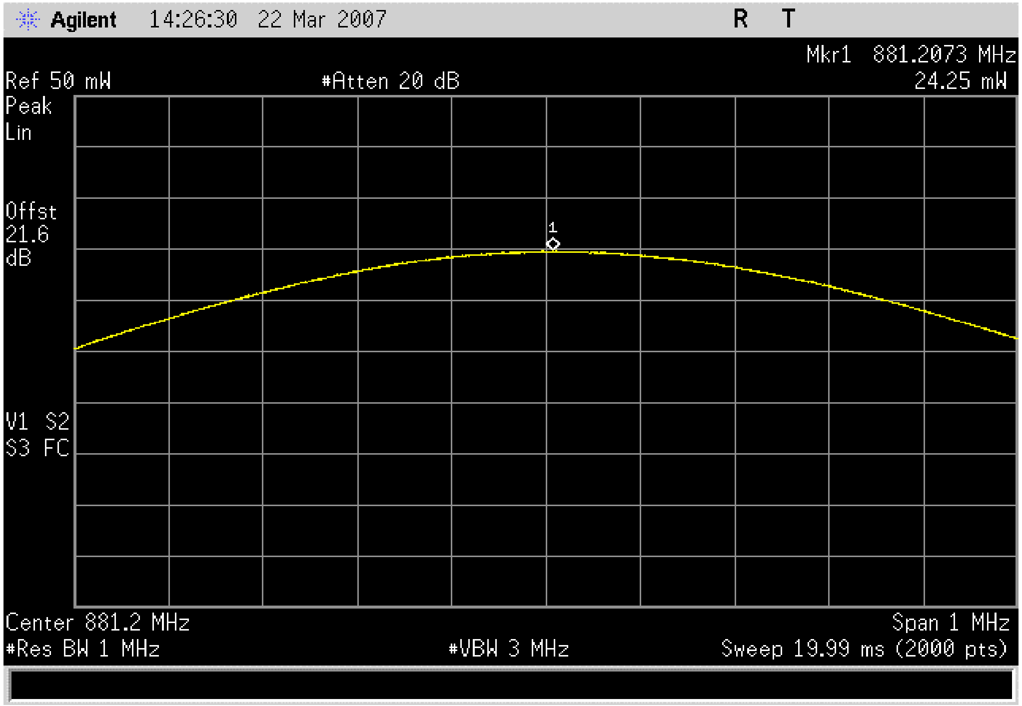


GSM Modulation, Mid Power, Low Channel		
Result: Pass	**Value:** 25.5 mW	**Limit:** 7 W

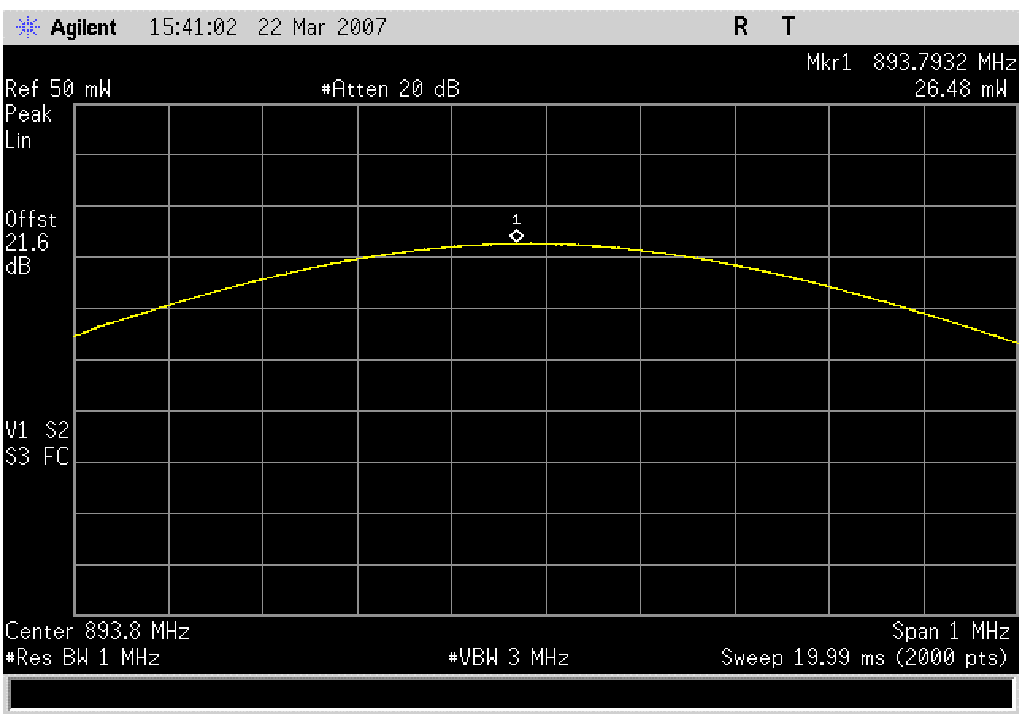


OUTPUT POWER

GSM Modulation, Mid Power, Mid Channel					
Result:	Pass	**Value:**	24.3 mW	**Limit:**	7 W

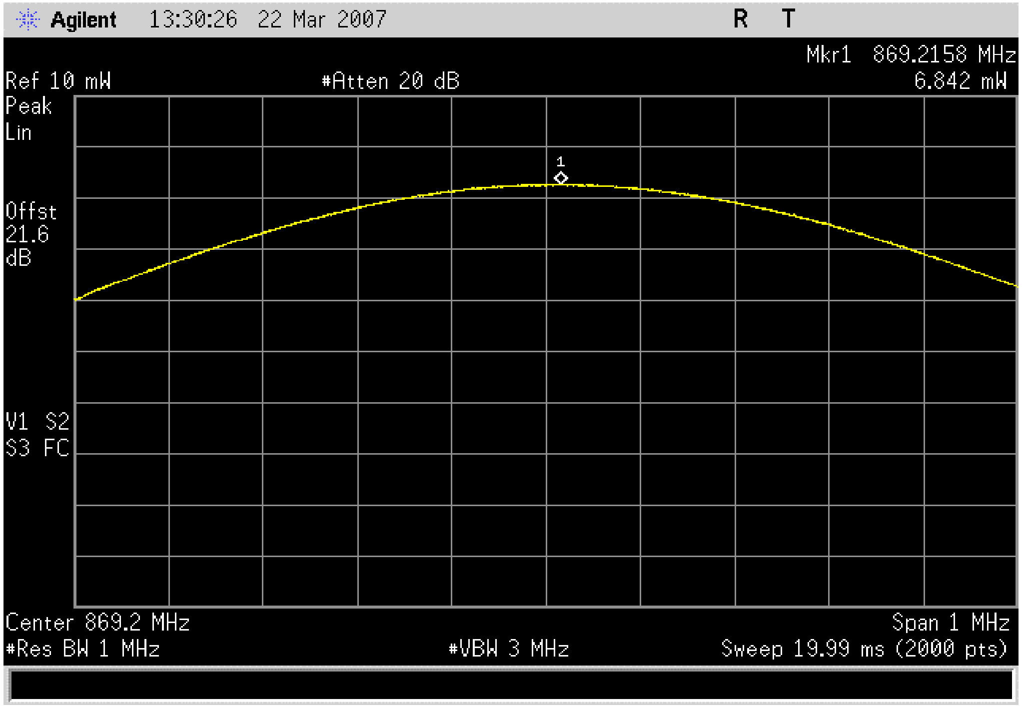


GSM Modulation, Mid Power, High Channel					
Result:	Pass	**Value:**	26.48 mW	**Limit:**	7 W

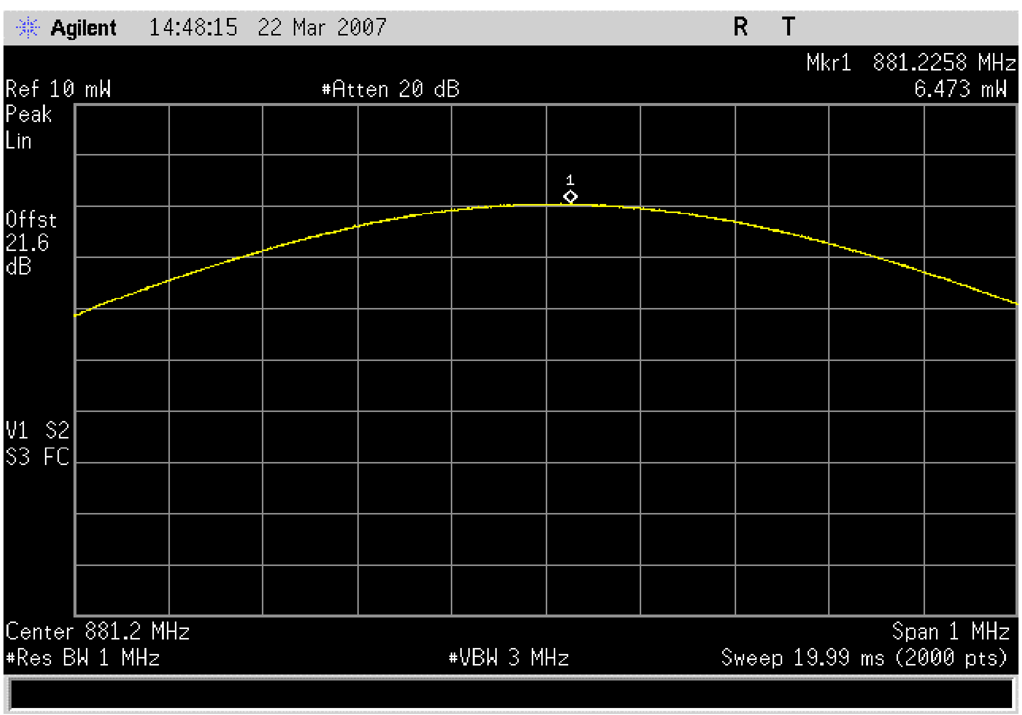


OUTPUT POWER

GSM Modulation, Low Power, Low Channel					
Result:	Pass	**Value:**	6.84 mW	**Limit:**	7 W

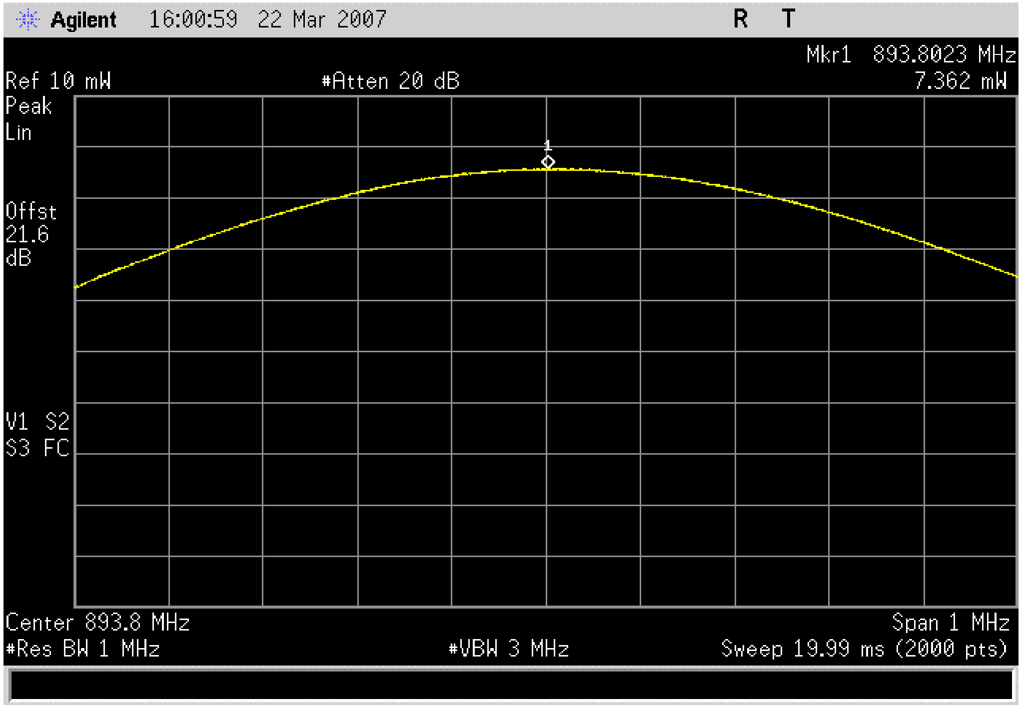


GSM Modulation, Low Power, Mid Channel					
Result:	Pass	**Value:**	6.47 mW	**Limit:**	7 W

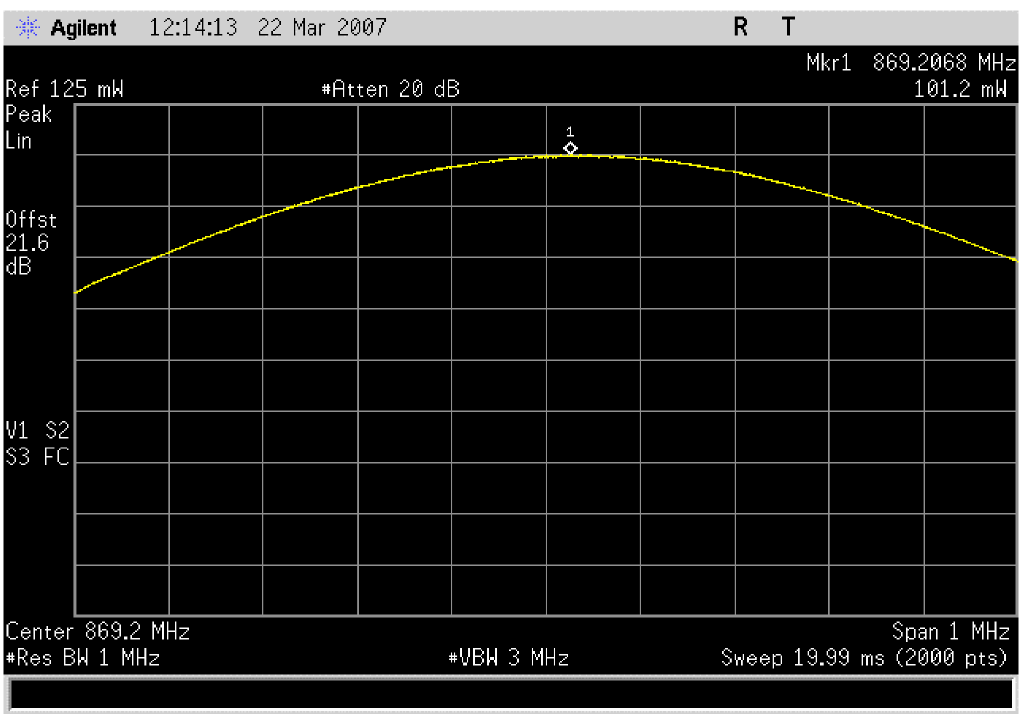


OUTPUT POWER

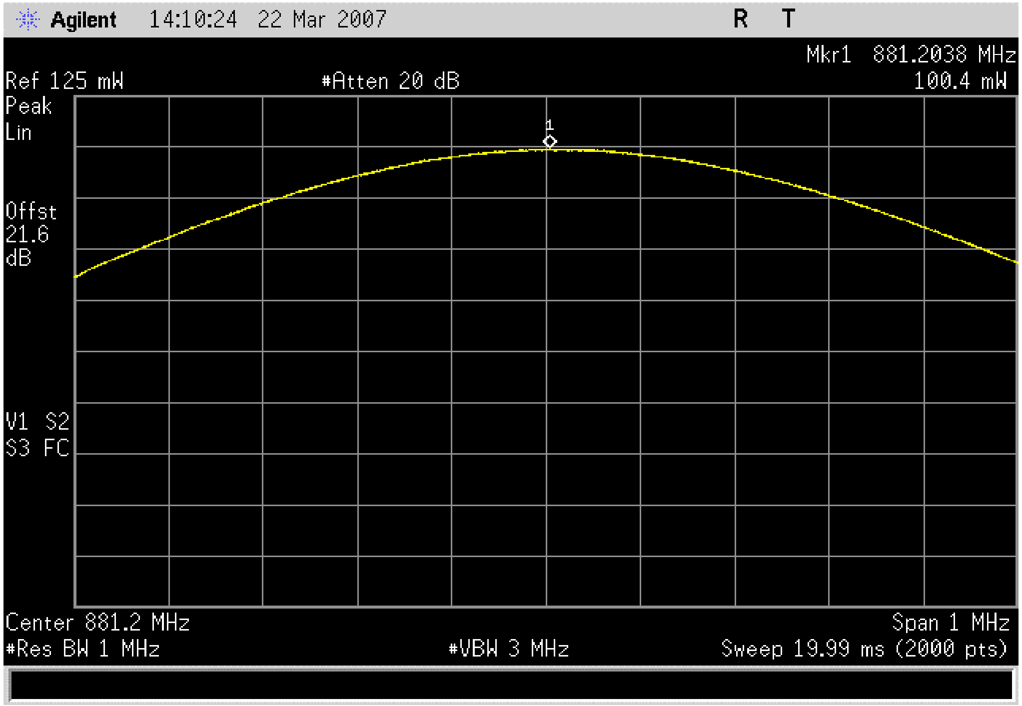
GSM Modulation, Low Power, High Channel					
Result:	Pass	**Value:**	7.36 mW	**Limit:**	7 W



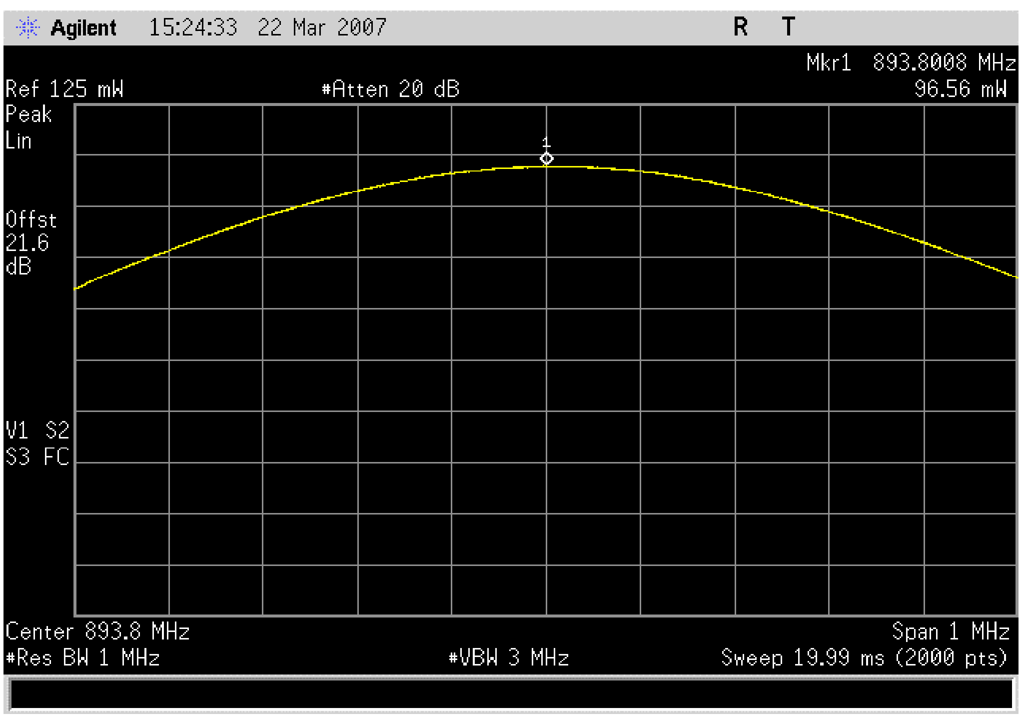
GPRS Modulation, High Power, Low Channel					
Result:	Pass	**Value:**	101.2 mW	**Limit:**	7 W



GPRS Modulation, High Power, Mid Channel					
Result:	Pass	**Value:**	100.4 mW	**Limit:**	7 W

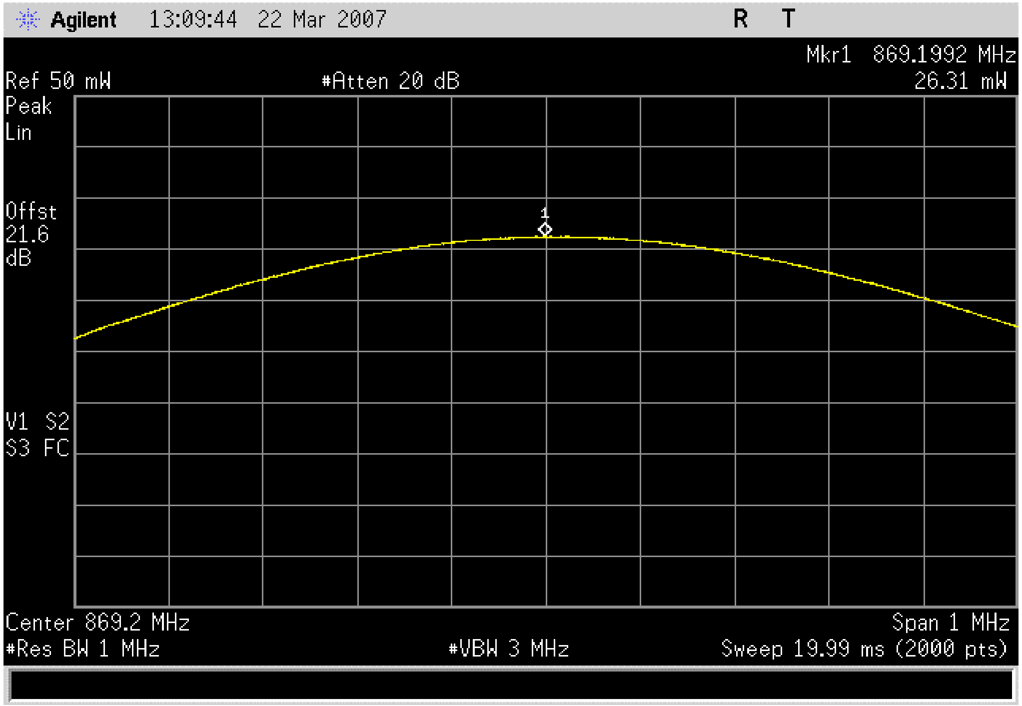


GPRS Modulation, High Power, High Channel					
Result:	Pass	**Value:**	96.56 mW	**Limit:**	7 W

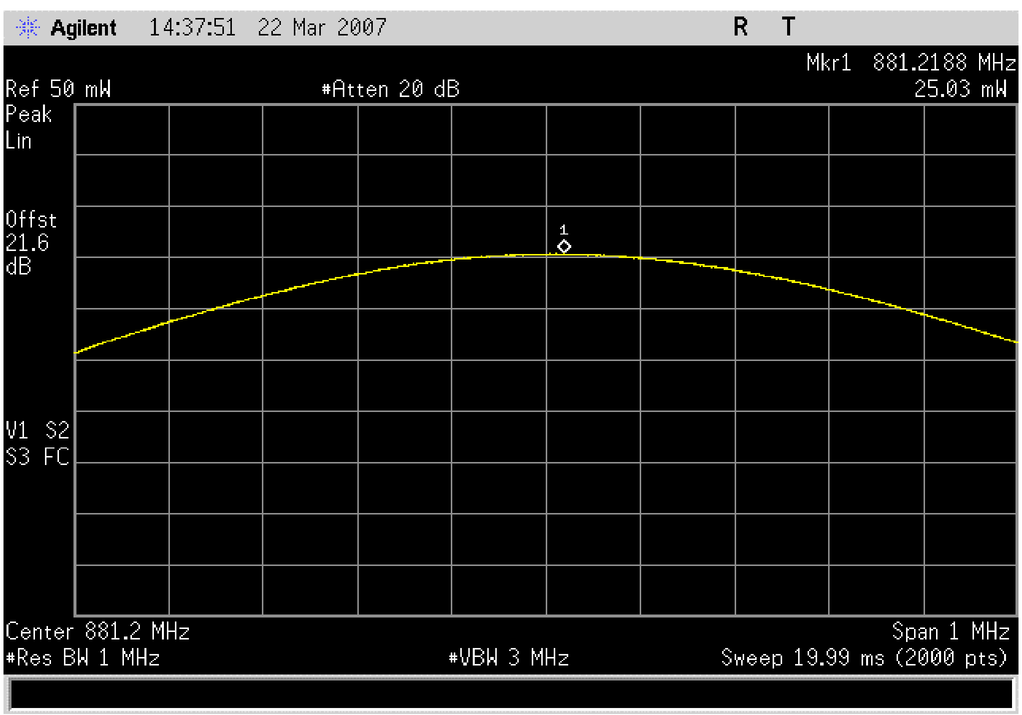


OUTPUT POWER

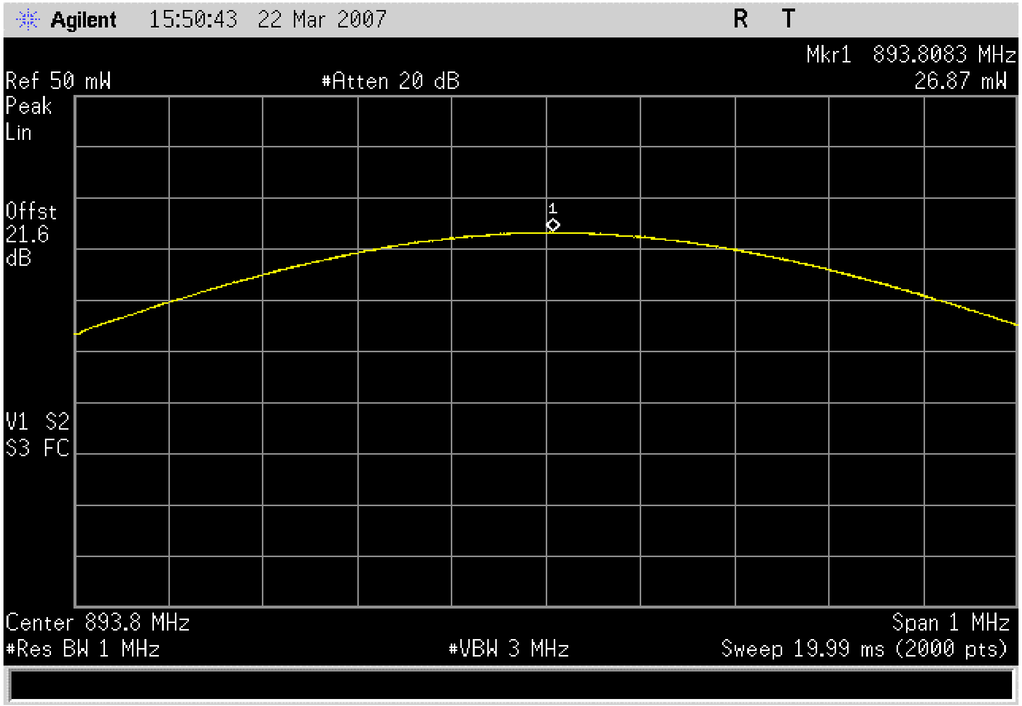
GPRS Modulation, Mid Power, Low Channel					
Result:	Pass	**Value:**	26.31 mW	**Limit:**	7 W



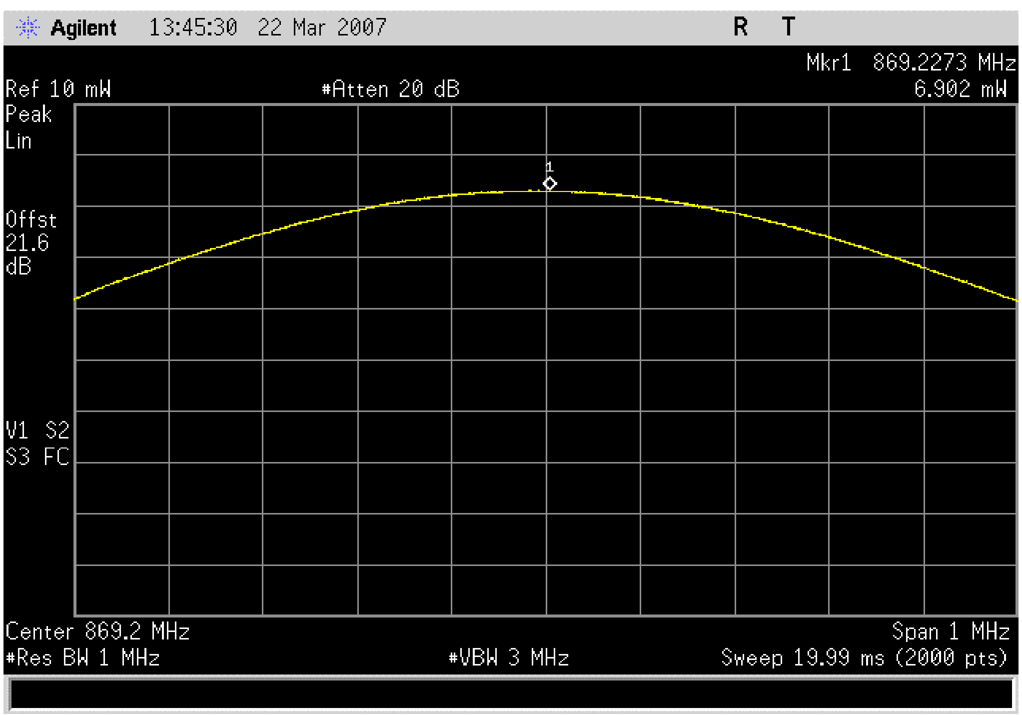
GPRS Modulation, Mid Power, Mid Channel					
Result:	Pass	**Value:**	25.03 mW	**Limit:**	7 W



GPRS Modulation, Mid Power, High Channel					
Result:	Pass	**Value:**	26.87 mW	**Limit:**	7 W

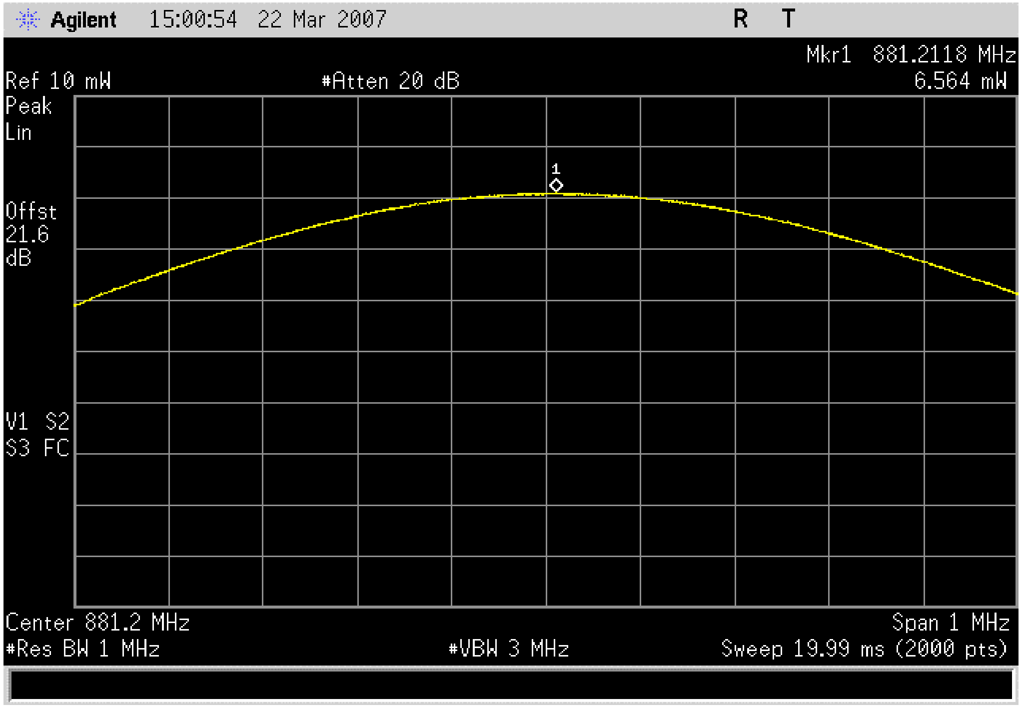


GPRS Modulation, Low Power, Low Channel					
Result:	Pass	**Value:**	6.90 mW	**Limit:**	7 W

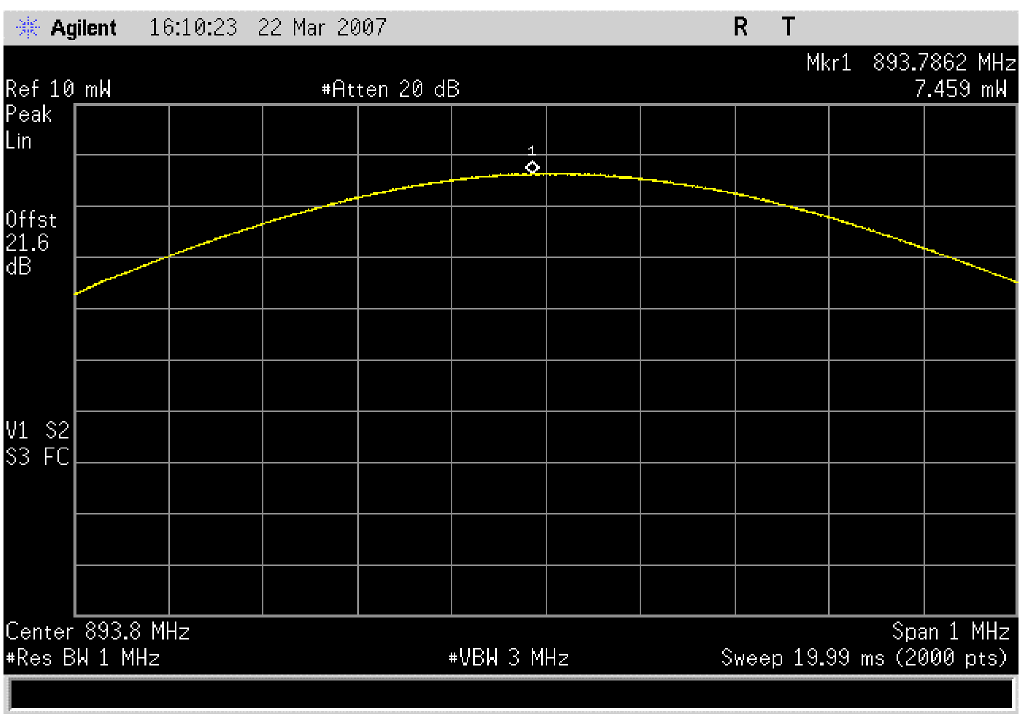


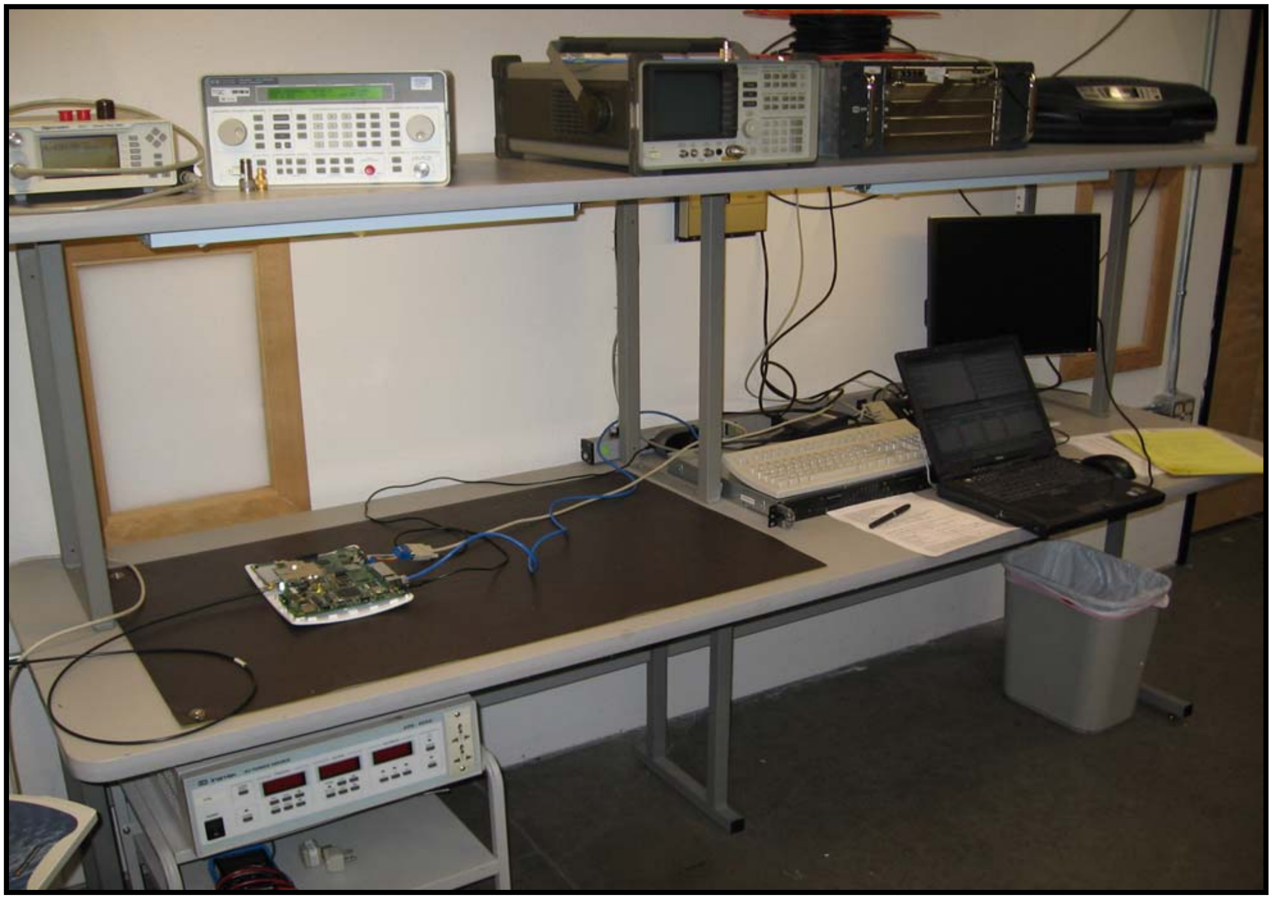
OUTPUT POWER

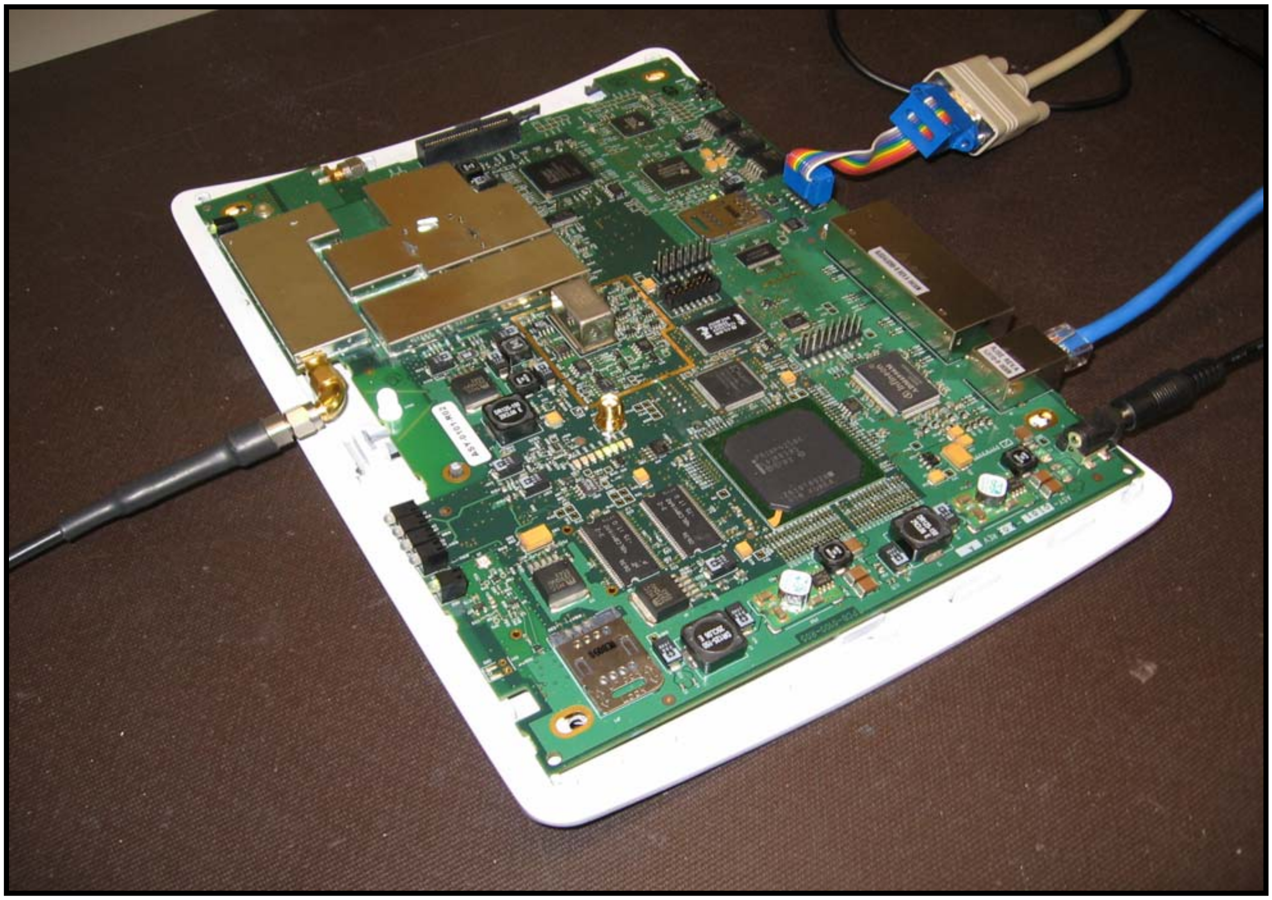
GPRS Modulation, Low Power, Mid Channel		
Result: Pass	**Value:** 6.56 mW	**Limit:** 7 W



GPRS Modulation, Low Power, High Channel		
Result: Pass	**Value:** 7.46 mW	**Limit:** 7 W







OUTPUT POWER

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4407B	AAU	12/8/2006	13
Attenuator	Pasternack	PE7005-20	AUN	2/6/2007	13
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Signal Generator	Hewlett-Packard	8648D	TGC	12/7/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The peak output power was measured with the EUT set to the parameters called out in the data sheets. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Prior to making the measurements the setup including cables and attenuator was calibrated with a signal generator and a power meter.

NORTHWEST
EMC

OUTPUT POWER

XMit 2006.11.13

EUT:	**S-BTS GSM Base Station**			**Work Order:**	**RAFN0069**
Serial Number:	**Engineering Unit**			**Date:**	**03/23/07**
Customer:	**Radioframe Networks, Inc.**			**Temperature:**	**21°C**
Attendees:	**Bob Melsheimer**			**Humidity:**	**32%**
Project:	**None**			**Barometric Pres.:**	**30.18**
Tested by:	**Rod Peloquin**	**Power:**	**120VAC/60Hz**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	Test Method
FCC 24E:2005	ANSI/TIA/EIA-603-B-2002

COMMENTS

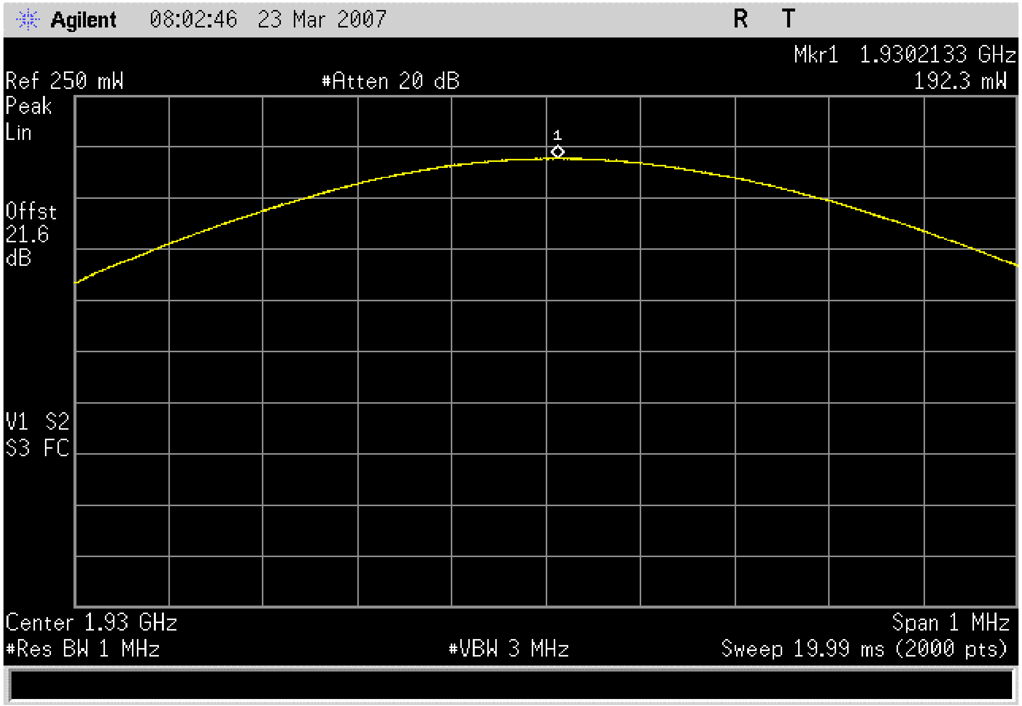
DEVIATIONS FROM TEST STANDARD

Configuration #	**1**	*Signature*

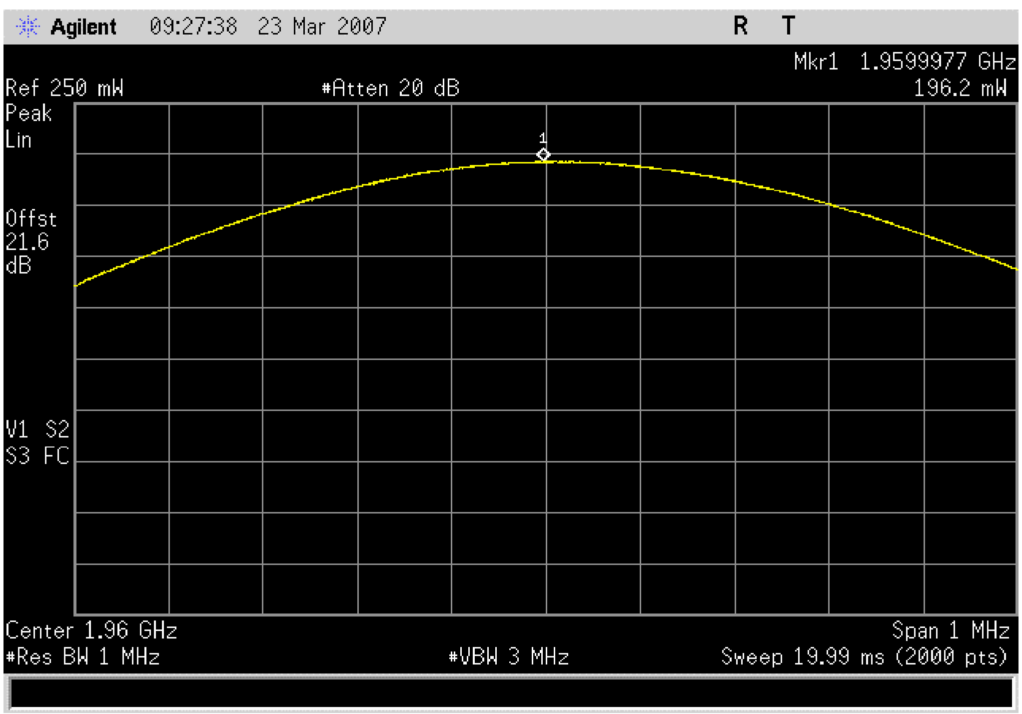
			Value	Limit	Results
GSM Modulation					
	High Power				
		Low Channel	192.3 mW	7 W	Pass
		Mid Channel	196.2 mW	7 W	Pass
		High Channel	142.5 mW	7 W	Pass
	Mid Power				
		Low Channel	47.8 mW	7 W	Pass
		Mid Channel	55.8 mW	7 W	Pass
		High Channel	59.8 mW	7 W	Pass
	Low Power				
		Low Channel	12.3 mW	7 W	Pass
		Mid Channel	15.7 mW	7 W	Pass
		High Channel	18.9 mW	7 W	Pass
GPRS Modulation					
	High Power				
		Low Channel	191.0 mW	7 W	Pass
		Mid Channel	196.6 mW	7 W	Pass
		High Channel	142.3 mW	7 W	Pass
	Mid Power				
		Low Channel	47.8 mW	7 W	Pass
		Mid Channel	56.5 mW	7 W	Pass
		High Channel	59.8 mW	7 W	Pass
	Low Power				
		Low Channel	12.3 mW	7 W	Pass
		Mid Channel	15.6 mW	7 W	Pass
		High Channel	18.9 mW	7 W	Pass

OUTPUT POWER

GSM Modulation, High Power, Low Channel					
Result:	Pass	**Value:**	192.3 mW	**Limit:**	7 W

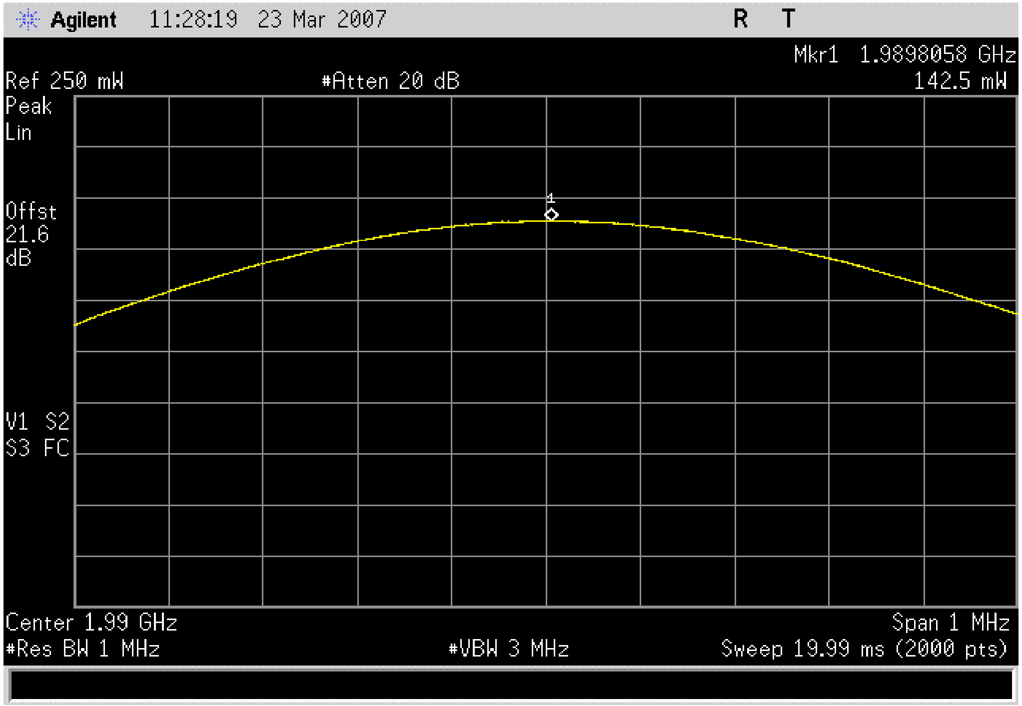


GSM Modulation, High Power, Mid Channel					
Result:	Pass	**Value:**	196.2 mW	**Limit:**	7 W

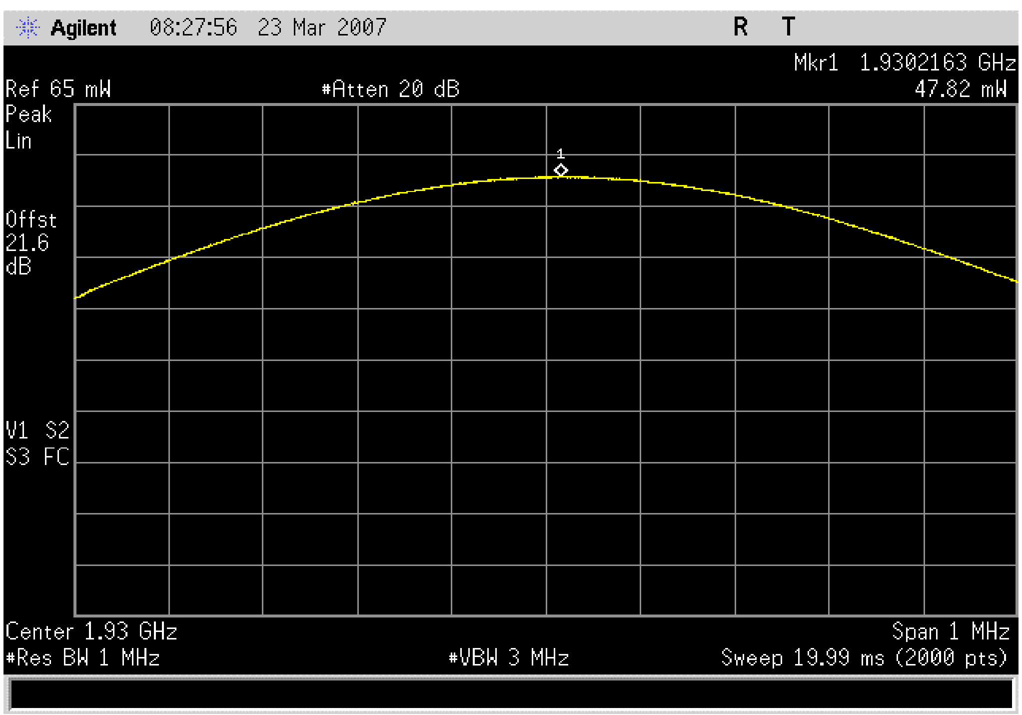


OUTPUT POWER

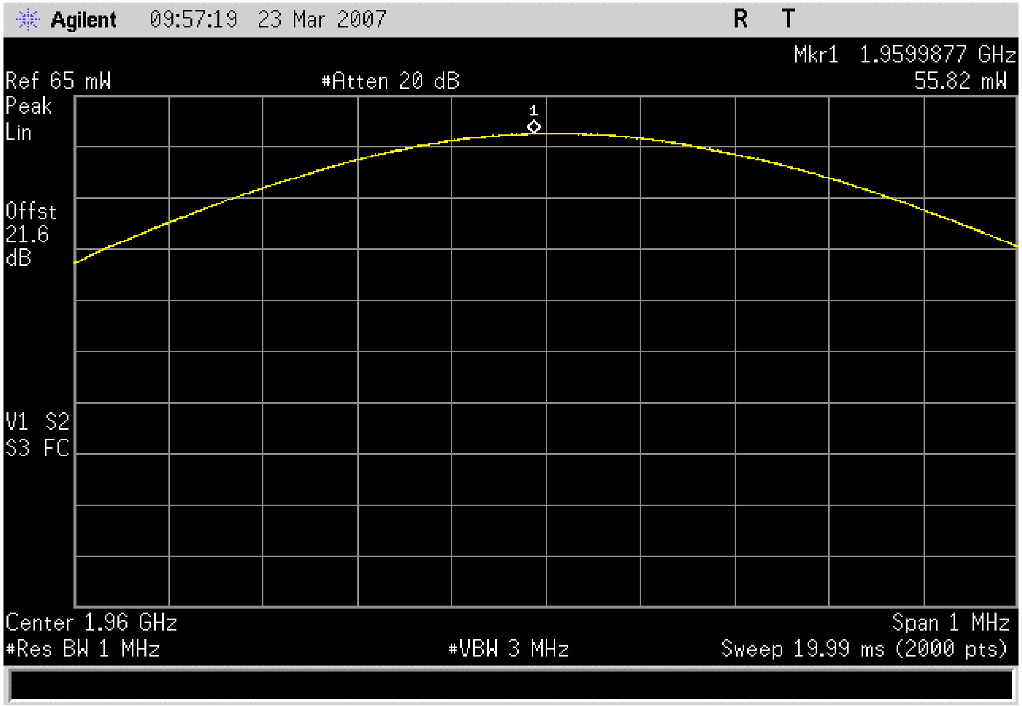
GSM Modulation, High Power, High Channel					
Result:	Pass	**Value:**	142.5 mW	**Limit:**	7 W



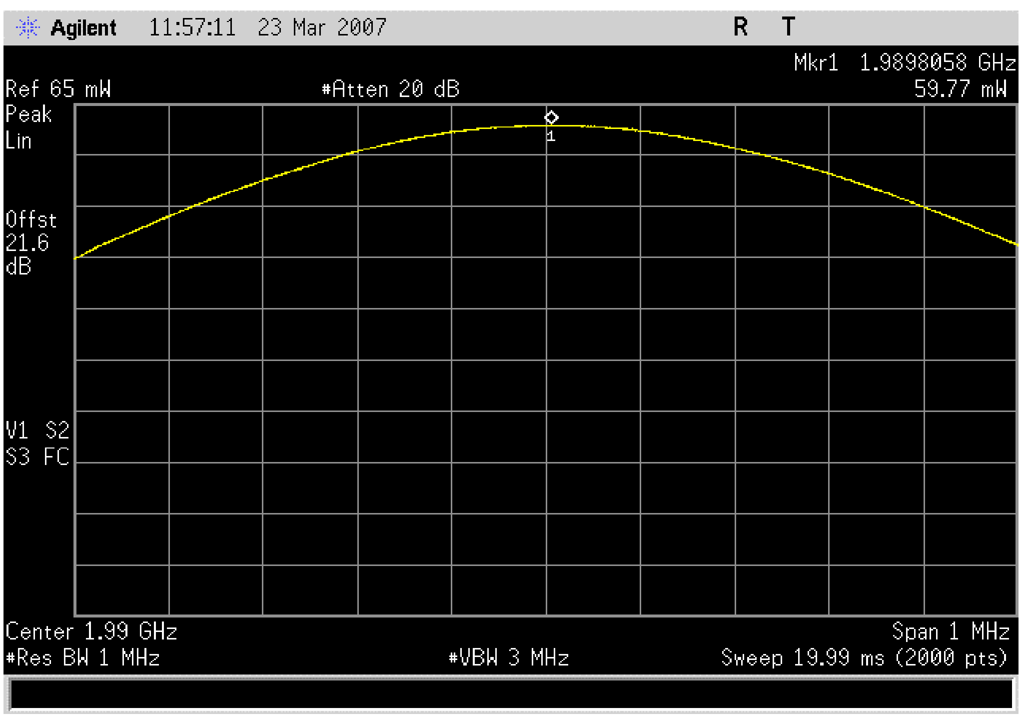
GSM Modulation, Mid Power, Low Channel					
Result:	Pass	**Value:**	47.8 mW	**Limit:**	7 W



GSM Modulation, Mid Power, Mid Channel					
Result:	Pass	**Value:**	55.8 mW	**Limit:**	7 W

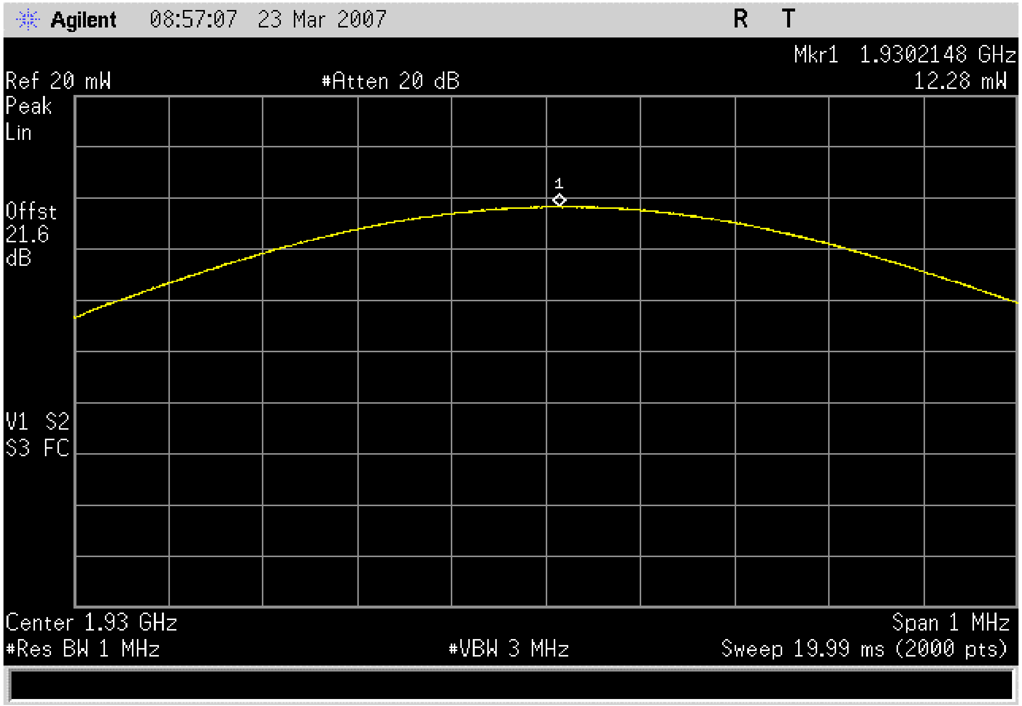


GSM Modulation, Mid Power, High Channel					
Result:	Pass	**Value:**	59.8 mW	**Limit:**	7 W

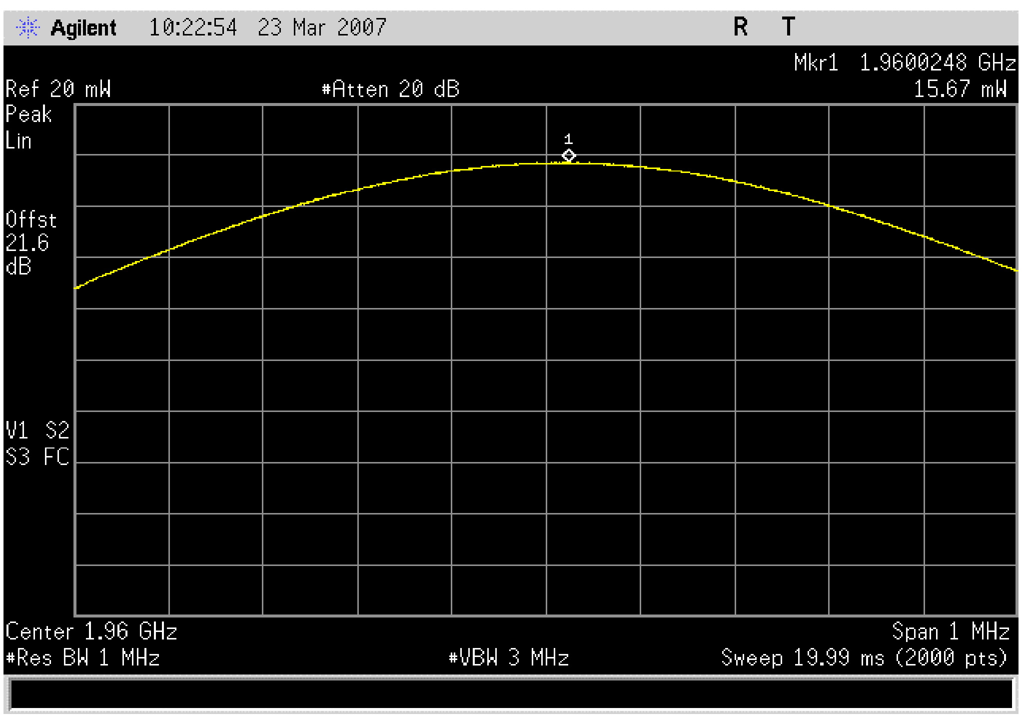


OUTPUT POWER

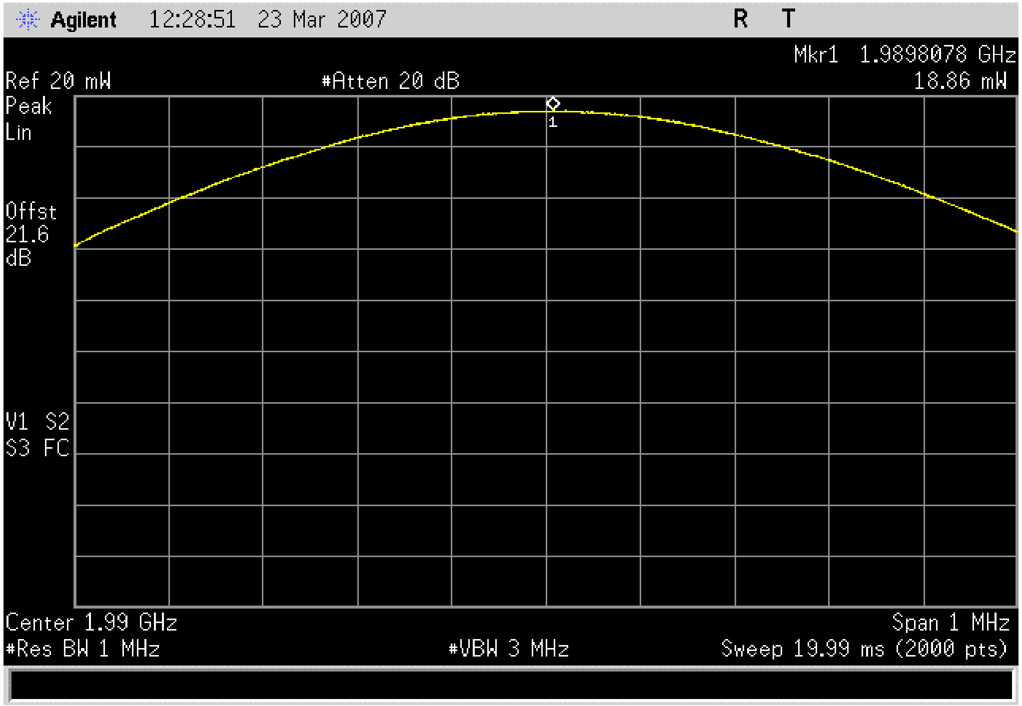
GSM Modulation, Low Power, Low Channel					
Result:	Pass	**Value:**	12.3 mW	**Limit:**	7 W



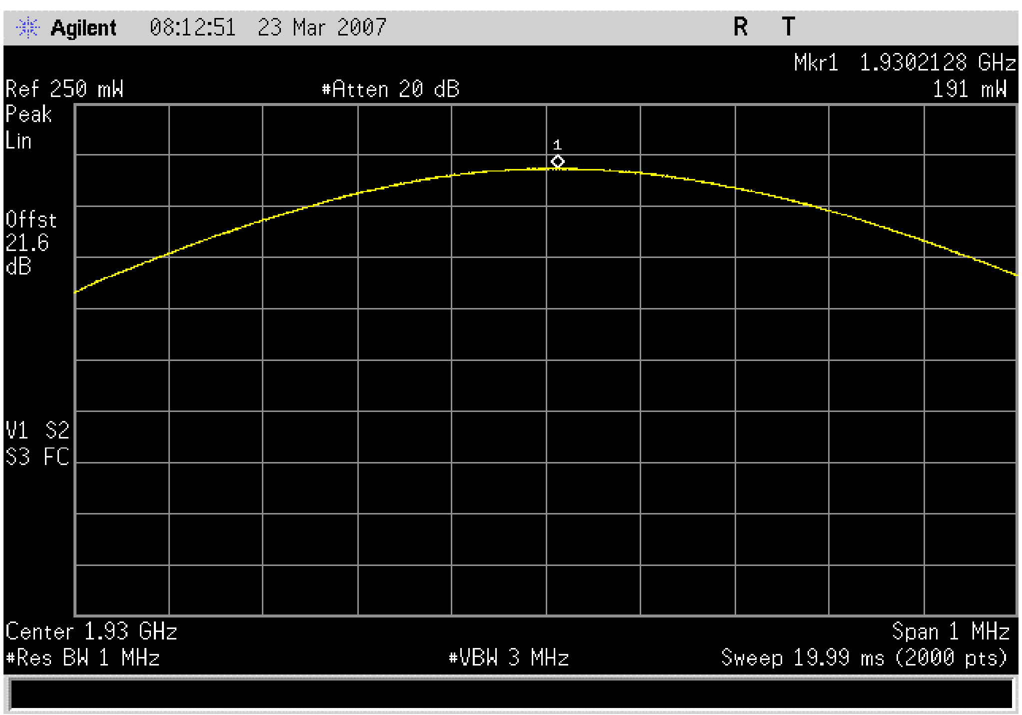
GSM Modulation, Low Power, Mid Channel					
Result:	Pass	**Value:**	15.7 mW	**Limit:**	7 W



GSM Modulation, Low Power, High Channel					
Result:	Pass	**Value:**	18.9 mW	**Limit:**	7 W



GPRS Modulation, High Power, Low Channel					
Result:	Pass	**Value:**	191.0 mW	**Limit:**	7 W



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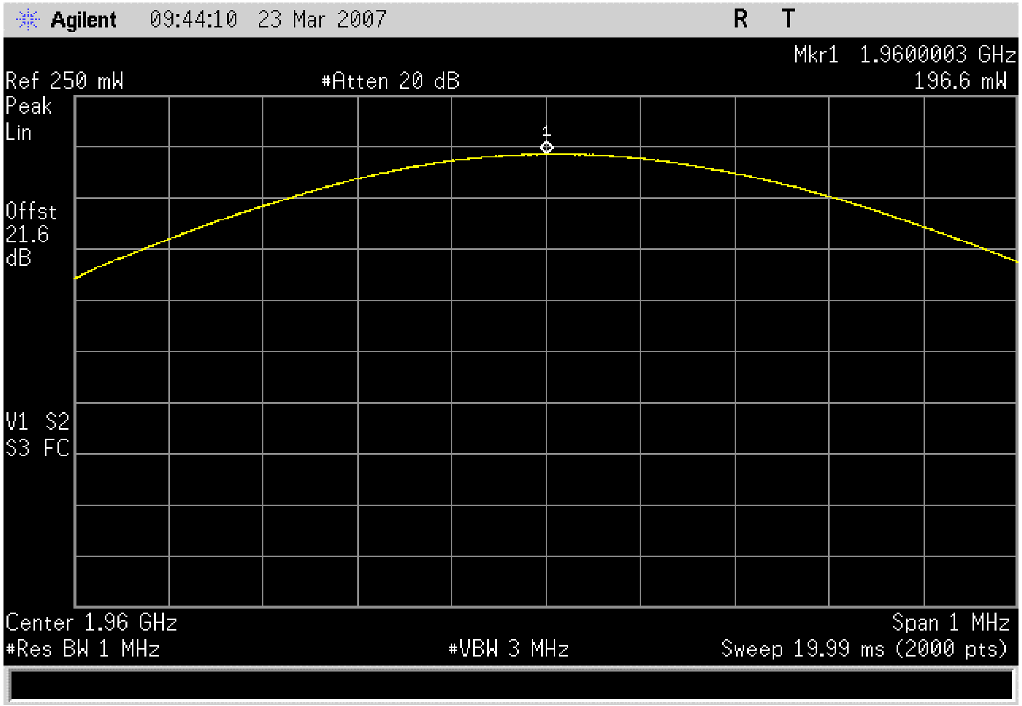
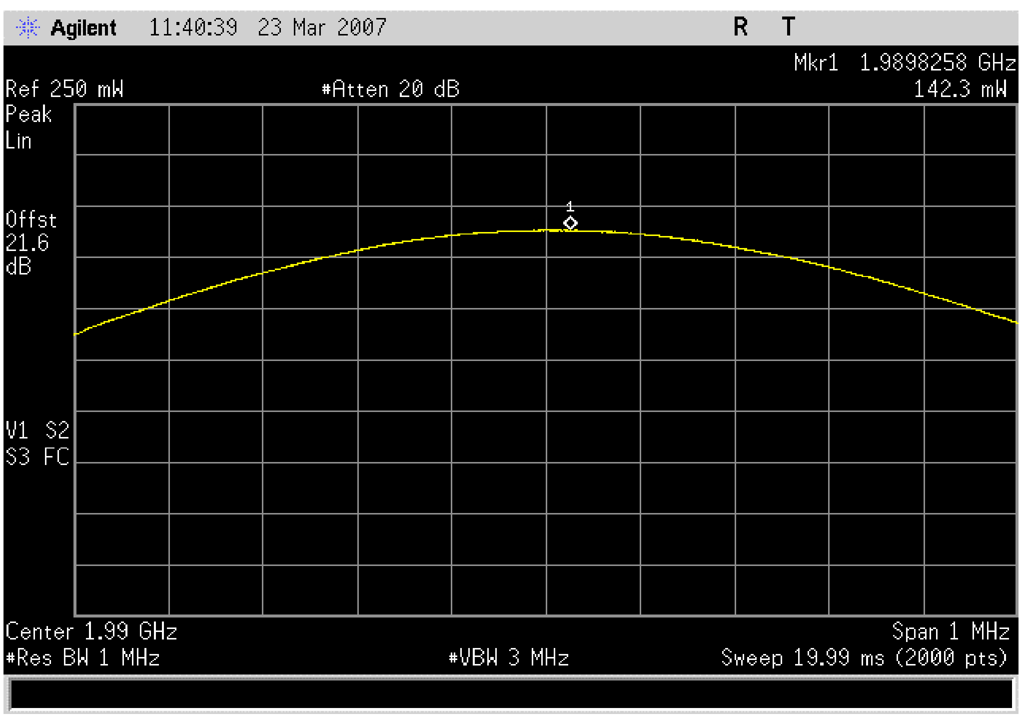
OUTPUT POWER

GPRS Modulation, High Power, Mid Channel					
Result:	Pass	**Value:**	196.6 mW	**Limit:**	7 W

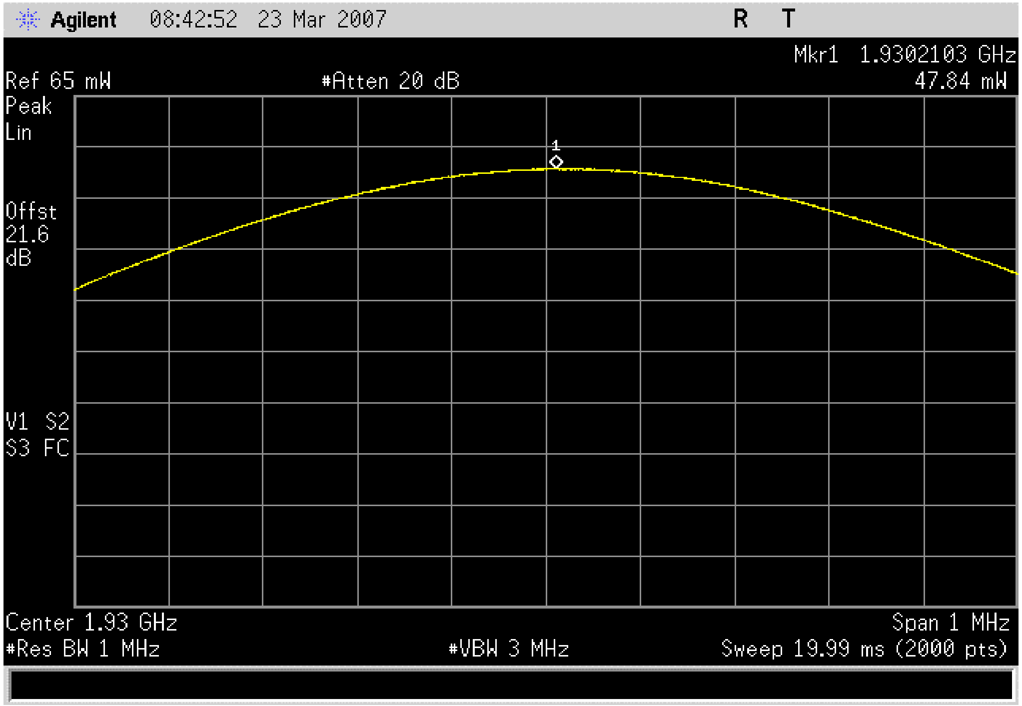


GPRS Modulation, High Power, High Channel					
Result:	Pass	**Value:**	142.3 mW	**Limit:**	7 W

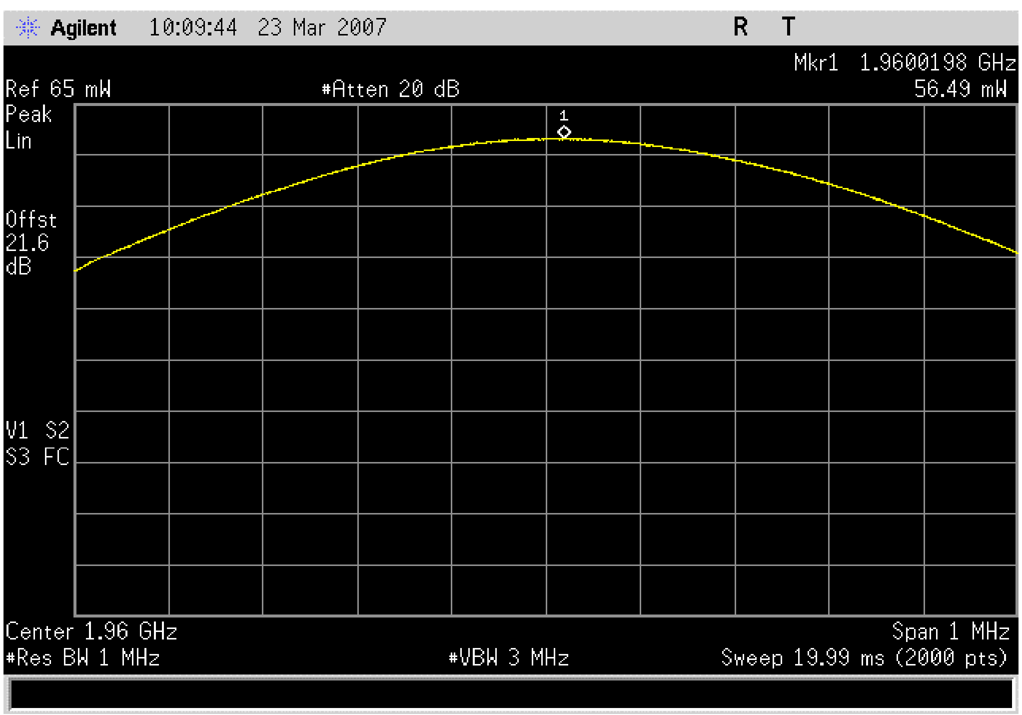


OUTPUT POWER

GPRS Modulation, Mid Power, Low Channel					
Result:	Pass	**Value:**	47.8 mW	**Limit:**	7 W

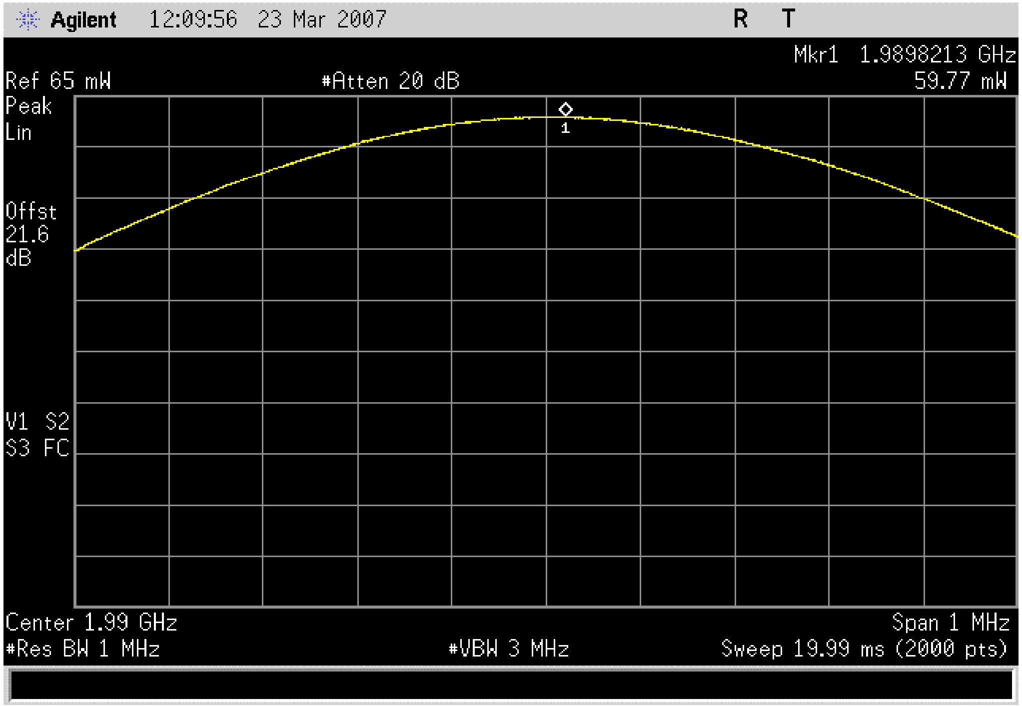


GPRS Modulation, Mid Power, Mid Channel					
Result:	Pass	**Value:**	56.5 mW	**Limit:**	7 W

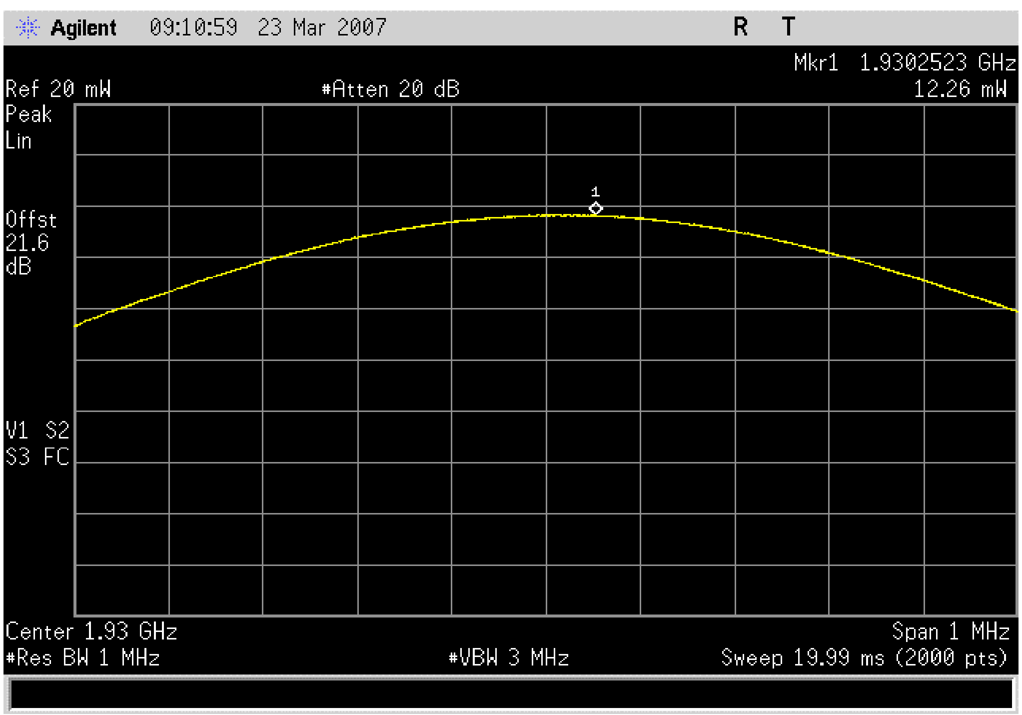


OUTPUT POWER

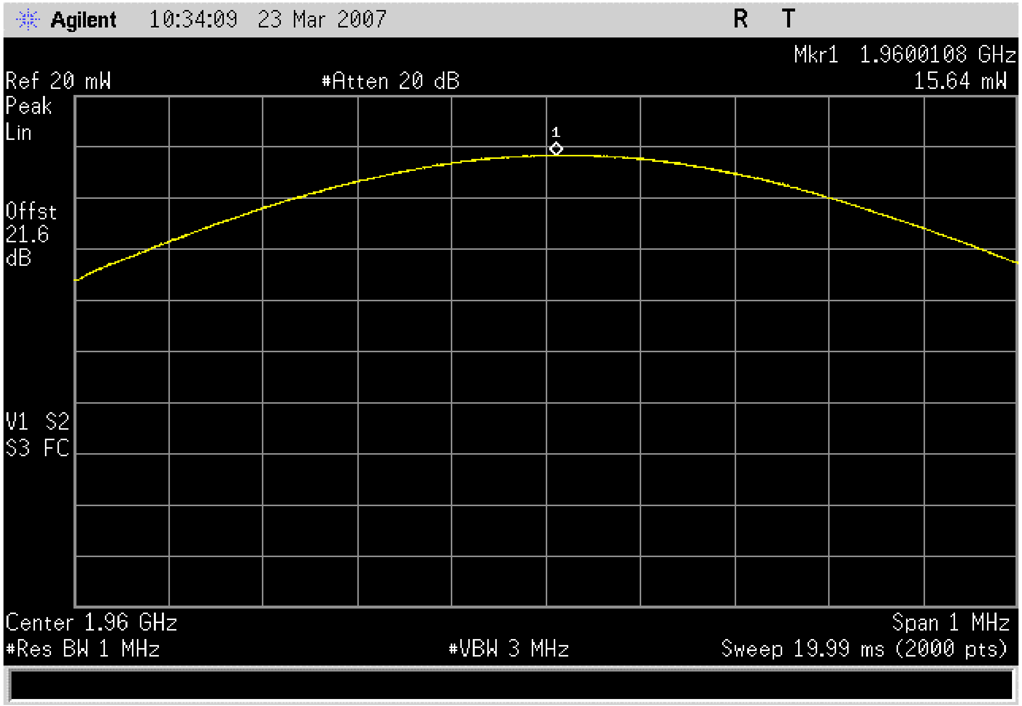
GPRS Modulation, Mid Power, High Channel					
Result:	Pass	**Value:**	59.8 mW	**Limit:**	7 W



GPRS Modulation, Low Power, Low Channel					
Result:	Pass	**Value:**	12.3 mW	**Limit:**	7 W



GPRS Modulation, Low Power, Mid Channel					
Result:	Pass	**Value:**	15.6 mW	**Limit:**	7 W



GPRS Modulation, Low Power, High Channel					
Result:	Pass	**Value:**	18.9 mW	**Limit:**	7 W