Spectrum Technology

Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.

April 20, 2007

Report No. SPTE0049

Report Prepared By

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 20, 2007

Spectrum Technology

Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.

Emissions				
Test Description	**Specification**	**Test Method**	**Pass**	**Fail**
Effective Isotropic Radiated Power	FCC 24E:2006	ANSI/TIA/EIA-603-B:2002	☒	☐
Effective Radiated Power	FCC 22H:2006	ANSI/TIA/EIA-603-B:2002	☒	☐
Out of Band Emissions	FCC 24E:2006	ANSI/TIA/EIA-603-B:2002	☒	☐
Out of Band Emissions	FCC 22H:2006	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 Number	Description	Date	Page Number
00	None		

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).

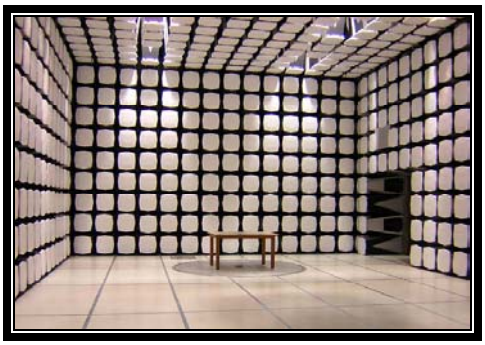
VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943,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

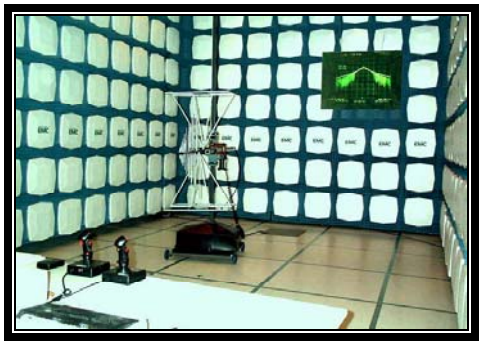
SCOPE

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:	Spectrum Technology
Address:	209 Dayton Street Suite #205
City, State, Zip:	Edmonds, WA 98020
Test Requested By:	Rod Munro
Model:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.
First Date of Test:	March 26, 2007
Last Date of Test:	April 2, 2007
Receipt Date of Samples:	March 26, 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):

Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.

Testing Objective:

TCB and IC original certification of the Sierra Wireless MC5725 WAN radio in the IX605 (FCC ID: KBCIX-MC5725). Also, limited modular approvals of the Intel 4965AGN 802.11(a)/(b)/(g)/(n) radio (FCC ID: KBCIX-4965AGN) and the Broadcom USB Bluetooth Module BCM92035NMD (FCC ID: KBCIXBR-52) in the IX605. The IX605 is a new laptop pc that will require digital emissions. The MC5725 has an internal antenna and an alternate vehicle mount external magnetic mount style antenna. The radio already has RF antenna direct connect data under the FCC ID: N7N-MC5725. Direct connect data for the BT and WLAN radio is available under FCC ID: KBCIX600-BT and PD94965AGN . The BT radio has a single antenna. The 802.11n radio has two antennas (in n mode it can transmit through both simultaneously).

CONFIGURATION 1 SPTE0049

Software/Firmware Running during test	
Description	**Version**
ProcommPlus Terminal	4.8 Build 71

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
WAN Network Card	Sierra Wireless, Inc.	MC5725	Unknown

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Notebook PC	Itronix, Corp.	IX605	814T101002G70400806M000
AC Adapter	Delta Electronics	SADP-65KB D	92W0546007993
USB Card Reader	ImageMate	SDDR-91	015336
USB Mouse	Logitech	M-BE58	LZE02357693
802.11(a)/(b)/(g)/(n)	Intel Corporation	4965AGN	Unknown
USB Bluetooth Module	Broadcomm	BCM92035NMD	Unknown
Headset	Unknown	Unknown	Unknown

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB	Yes	1.0m	No	Card Reader	Notebook PC
USB	Yes	1.2m	No	USB mouse	Notebook PC
Audio	No	1.0m	No	Headset	Notebook PC
Serial	Yes	1.0m	No	Notebook PC	Unterminated
Video	Yes	1.0m	No	Notebook PC	Unterminated
Phone	No	1.3m	No	Notebook PC	Unterminated
Ethernet	No	1.0m	No	Notebook PC	Unterminated
DC	No	1.2m	Yes	Notebook PC	AC Adapter
AC	No	1.6m	No	AC Adapter	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 4 SPTE0049

Software/Firmware Running during test	
Description	**Version**
ProcommPlus Terminal	4.8 Build 71

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
WAN Network Card	Sierra Wireless, Inc.	MC5725	Unknown

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Notebook PC	Itronix, Corp.	IX605	814T101002G70400806M000
USB Card Reader	ImageMate	SDDR-91	015336
USB Mouse	Logitech	M-BE58	LZE02357693
802.11(a)/(b)/(g)/(n)	Intel Corporation	4965AGN	Unknown
USB Bluetooth Module	Broadcomm	BCM92035NMD	Unknown
Vehicle Dock	Itronix, Corp.	IX600 Vehicle Dock, RF	ZZTPE7003ZN7393
Game Controller	Microsoft	X04-63237	6323700623744
PS2 Mouse	Microsoft	X04-72174	5041022-6
12V Car Battery	N/A	N/A	N/A
External WAN Antenna	Maxrad	Unknown	Unknown
External WLAN Antenna (to populate port only)	Maxrad	Unknown	Unknown
Keyboard	Compaq	166516-006	B13990E39G7250
Headset	Unknown	Unknown	Unknown

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB	Yes	1.0m	No	Card Reader	Notebook PC
USB	Yes	1.2m	No	USB mouse	Notebook PC
Audio	No	1.0m	No	Headset	Notebook PC
Serial	Yes	1.0m	No	Notebook PC	Unterminated
Video	Yes	1.0m	No	Notebook PC	Unterminated
Ethernet	No	1.0m	No	Notebook PC	Unterminated
USB	Yes	1.3m	No	Vehicle Dock	Unterminated
USB	Yes	1.3m	No	Vehicle Dock	Game Controller
Serial	Yes	1.0m	No	Vehicle Dock	Untermianted
Mouse	No	1.3m	No	PS2 Mouse	Vehicle Dock
Keyboard	No	1.6m	No	Keyboard	Vehicle Dock
Antenna	Yes	2m	No	External WAN Antenna	Vehicle Dock
Antenna	Yes	2m	No	External WLAN Antenna	Vehicle Dock
DC	No	1.6m	No	Vehicle Dock	12V Battery
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	3/26/2007	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.
2	3/26/2007	Effective Isotropic Radiated Power	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	4/2/2007	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.
4	4/2/2007	Effective Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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
CDMA 1xRTT (IS-2000)
CDMA 1xEV-DO Rev 0 (IS-856)
CDMA 1xEV-DO Rev A (IS-856-A)

BANDS INVESTIGATED
Cellular
PCS

CHANNELS INVESTIGATED
Cellular, Low channel, Ch. 1013, 824.7MHz
Cellular, Mid channel, Ch. 384, 836.52MHz
Cellular, High channel, Ch. 777, 848.31MHz
PCS, Low channel, Ch. 25, 1851.25MHz
PCS, Mid channel, Ch. 600, 1880MHz
PCS, High channel, Ch. 1175, 1908.75MHz

CONFIGURATIONS INVESTIGATED
Notebook configuration
Notebook in optional vehicular dock configuration

POWER SETTINGS INVESTIGATED
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	30 MHz	Stop Frequency	26 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
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13
EV01 cables g,h,j			EVB	12/29/2006	13
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12
Antenna, Horn	EMCO	3115	AHJ	5/20/2005	24
Signal Generator	Agilent	E8257D	TGX	1/25/2007	13
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Low Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	LFB	12/29/2006	13
Low Pass Filter 0-1000 MHz	Micro-Tronics	LPM50004	LFD	12/29/2006	13
High Pass Filter 1.2 - 18 GHz	Micro-Tronics	HPM50108	HFV	12/29/2006	13
High Pass Filter	Micro-Tronics	HPM50111	HFO	12/29/2006	13
EV01 cables c,g, h			EVA	12/29/2006	13
EV01 cables g,h,j			EVB	12/29/2006	13
EV01 cables g,h,I			EVF	4/17/2006	13
EV01 Cable D			EVD	3/30/2006	13
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	3/23/2006	13
Antenna, Horn	EMCO	3160-09	AHG	NCR	0
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	5/12/2006	13
Antenna, Horn	EMCO	3160-08	AHK	NCR	0
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	12/29/2006	13
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12
Pre-Amplifier	Miteq	AM-1616-1000	AOL	12/29/2006	13
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 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:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/26/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.17
			Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), PCS, low channel

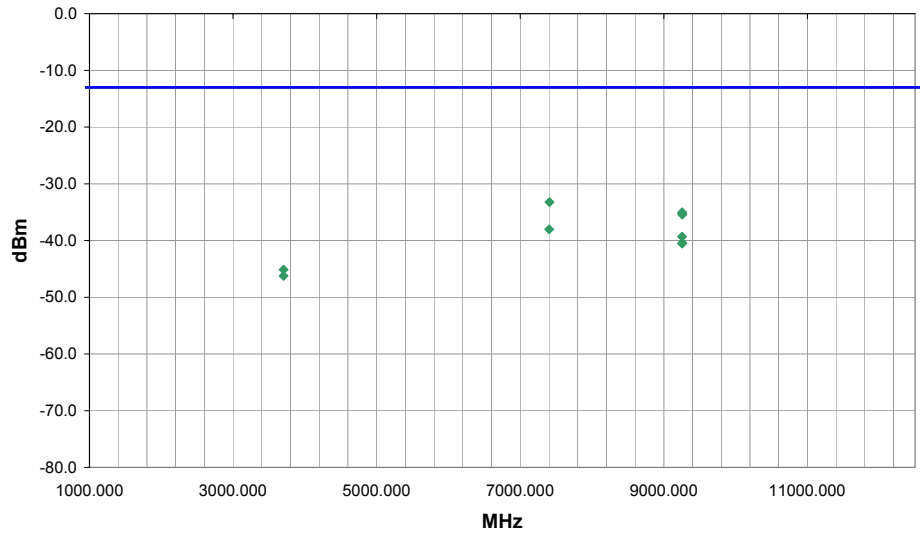
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	23
Configuration #	1
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
7406.660			355.0	1.0			H-Horn	PK	4.75E-07	-33.2	-13.0	-20.2	Notebook screen horizontal
9256.150			129.0	1.0			H-Horn	PK	3.14E-07	-35.0	-13.0	-22.0	Notebook screen horizontal
9256.600			34.0	1.4			V-Horn	PK	3.00E-07	-35.2	-13.0	-22.2	Notebook on side
9258.200			275.0	1.4			V-Horn	PK	2.86E-07	-35.4	-13.0	-22.4	Notebook typical operating position
7404.080			79.0	1.0			V-Horn	PK	1.57E-07	-38.0	-13.0	-25.0	Notebook on side.
9256.070			30.0	1.0			H-Horn	PK	1.17E-07	-39.3	-13.0	-26.3	Notebook typical operating position
9257.590			155.0	1.0			V-Horn	PK	9.06E-08	-40.4	-13.0	-27.4	Notebook screen horizontal
9254.750			112.0	1.0			H-Horn	PK	8.85E-08	-40.5	-13.0	-27.5	Notebook on side
3703.030			133.0	1.0			V-Horn	PK	3.07E-08	-45.1	-13.0	-32.1	Notebook on side
3702.480			95.0	1.0			H-Horn	PK	2.38E-08	-46.2	-13.0	-33.2	Notebook screen horizontal

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/26/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

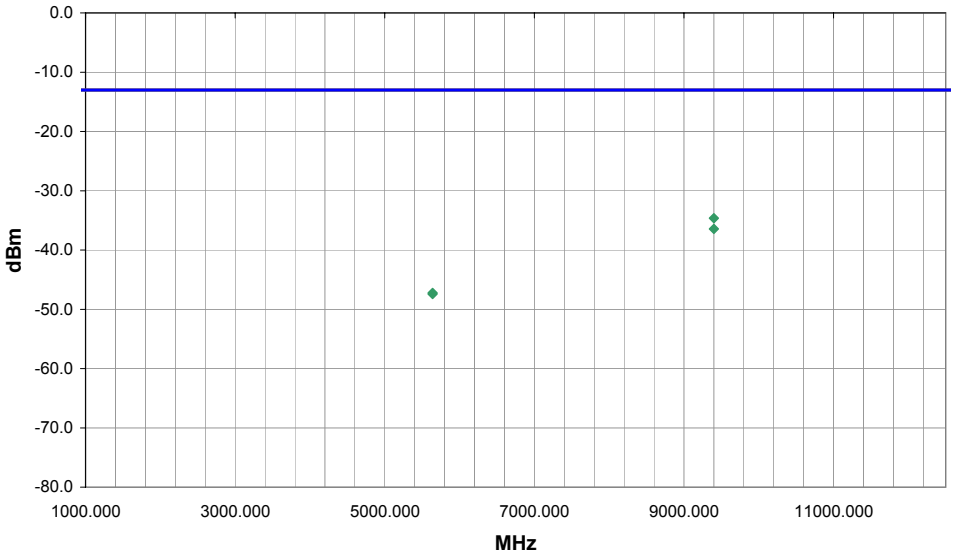
EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), PCS, mid channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	24		
Configuration #	1		
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
9400.000			86.0	1.2			H-Horn	PK	3.44E-07	-34.6	-13.0	-21.6	Notebook screen horizontal
9401.430			5.0	1.0			V-Horn	PK	2.28E-07	-36.4	-13.0	-23.4	Notebook on side
5639.550			50.0	1.3			H-Horn	PK	1.89E-08	-47.2	-13.0	-34.2	Notebook screen horizontal
5639.270			281.0	1.0			V-Horn	PK	1.81E-08	-47.4	-13.0	-34.4	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/28/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	39%
Project:	None	Barometric Pres.:	30.2
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), PCS, high channel

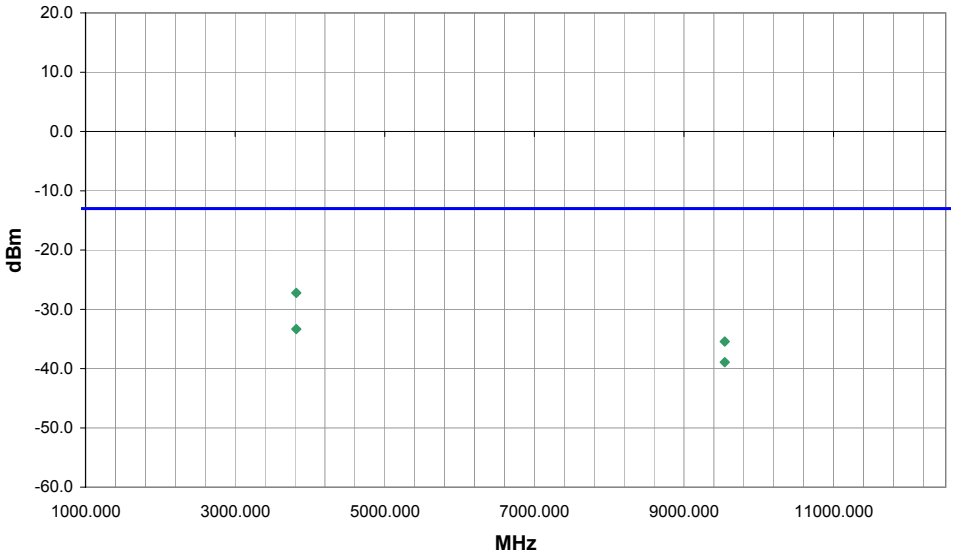
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	25
Configuration #	1
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
3817.025			60.0	1.0			H-Horn	PK	1.89E-06	-27.2	-13.0	-14.2	Notebook screen horizontal
3817.100			223.0	1.0			V-Horn	PK	4.65E-07	-33.3	-13.0	-20.3	Notebook on side
9545.505			332.0	1.5			H-Horn	PK	2.86E-07	-35.4	-13.0	-22.4	Notebook screen horizontal
9545.688			-1.0	1.5			V-Horn	PK	1.28E-07	-38.9	-13.0	-25.9	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/28/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, low channel

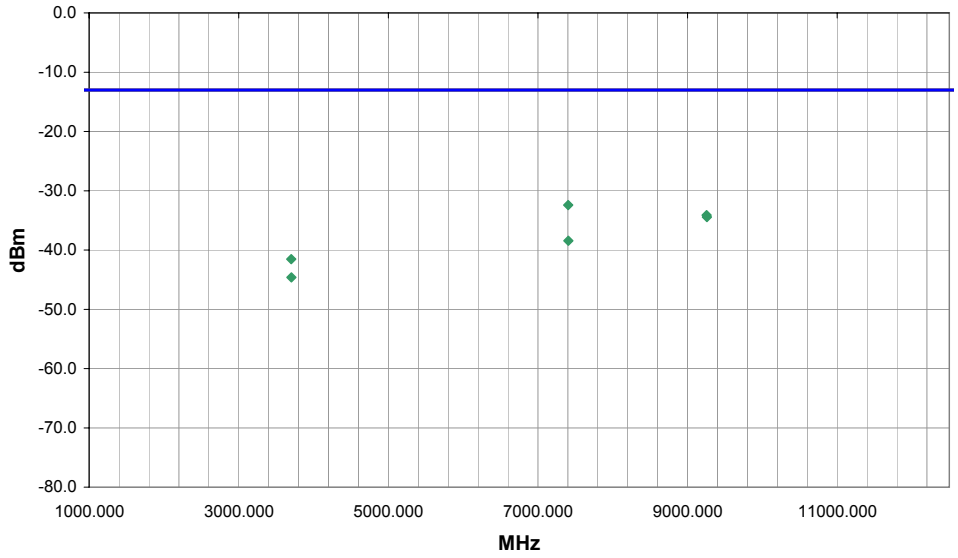
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	33
Configuration #	1
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
7403.510			11.0	1.0			V-Horn	PK	5.72E-07	-32.4	-13.0	-19.4	Notebook on side
9254.753			324.0	1.0			H-Horn	PK	3.86E-07	-34.1	-13.0	-21.1	Notebook screen horizontal
9258.140			11.0	1.0			V-Horn	PK	3.61E-07	-34.4	-13.0	-21.4	Notebook on side
7405.777			8.0	1.0			H-Horn	PK	1.44E-07	-38.4	-13.0	-25.4	Notebook screen horizontal
3702.192			20.0	1.0			H-Horn	PK	7.03E-08	-41.5	-13.0	-28.5	Notebook screen horizontal
3702.920			8.0	1.0			V-Horn	PK	3.44E-08	-44.6	-13.0	-31.6	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/28/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

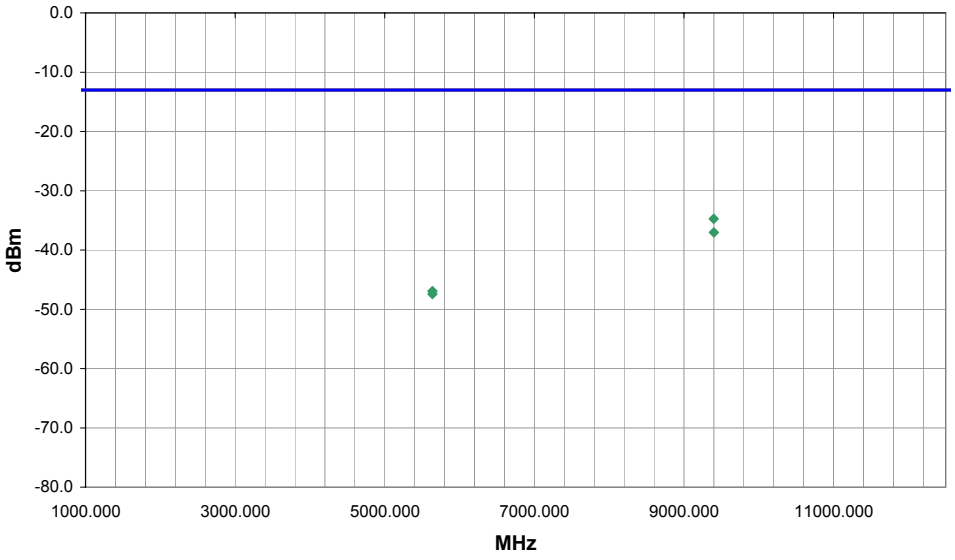
EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, mid channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	34		
Configuration #	1		
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
9398.750			92.0	1.3			H-Horn	PK	3.37E-07	-34.7	-13.0	-21.7	Notebook screen horizontal
9401.433			3.0	1.0			V-Horn	PK	1.98E-07	-37.0	-13.0	-24.0	Notebook on side
5637.983			53.0	1.3			H-Horn	PK	2.03E-08	-46.9	-13.0	-33.9	Notebook screen horizontal
5638.242			45.0	1.0			V-Horn	PK	1.81E-08	-47.4	-13.0	-34.4	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/29/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	39%
Project:	None	Barometric Pres.:	30.2
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, high channel

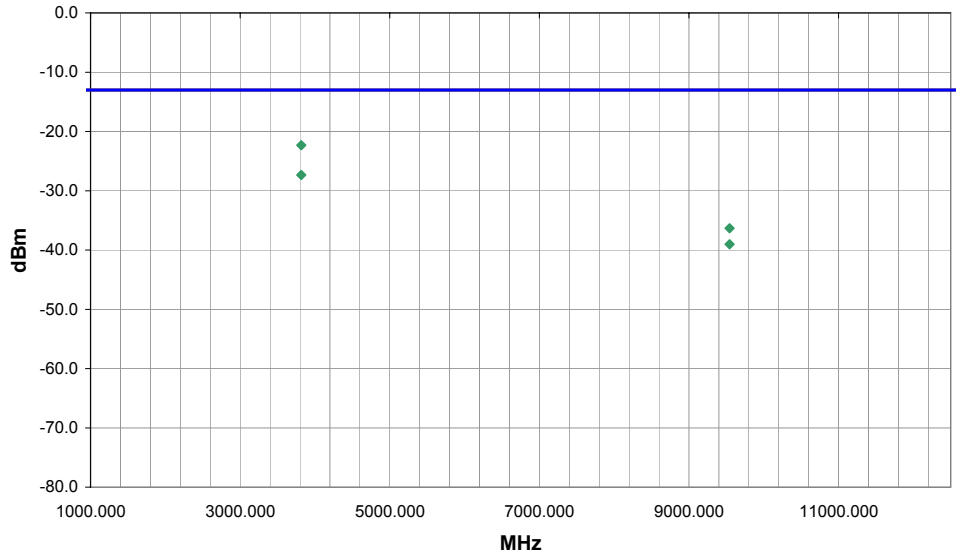
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	35
Configuration #	1
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
3817.975			145.0	1.0			H-Horn	PK	5.85E-06	-22.3	-13.0	-9.3	Notebook screen horizontal
3817.583			228.0	1.0			V-Horn	PK	1.85E-06	-27.3	-13.0	-14.3	Notebook on side
9543.947			20.0	1.0			H-Horn	PK	2.33E-07	-36.3	-13.0	-23.3	Notebook screen horizontal
9543.213			103.0	1.5			V-Horn	PK	1.25E-07	-39.0	-13.0	-26.0	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/29/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000) PCS Band, low channel

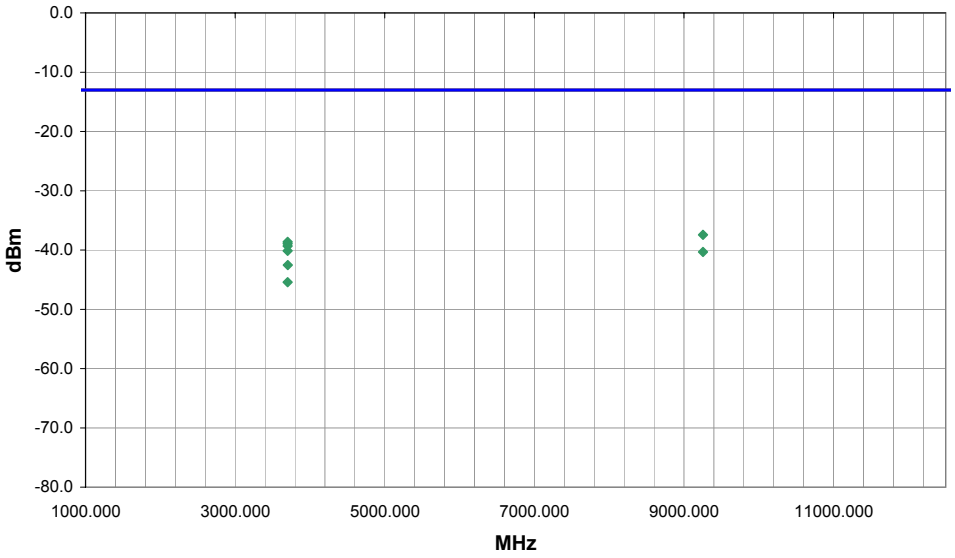
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	37
Configuration #	1
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
9255.058			-1.0	1.2			H-Horn	PK	1.81E-07	-37.4	-13.0	-24.4	Notebook screen horizontal
3701.800			186.0	1.0			V-Horn	PK	1.37E-07	-38.6	-13.0	-25.6	Notebook typical position
3702.458			31.0	1.0			H-Horn	PK	1.28E-07	-38.9	-13.0	-25.9	Notebook screen horizontal
3702.492			35.0	1.0			H-Horn	PK	1.17E-07	-39.3	-13.0	-26.3	Notebook on side
3702.667			231.0	1.0			H-Horn	PK	9.71E-08	-40.1	-13.0	-27.1	Notebook typical position
9255.325			346.0	1.4			V-Horn	PK	9.27E-08	-40.3	-13.0	-27.3	Notebook on side
3702.892			23.0	1.0			V-Horn	PK	5.59E-08	-42.5	-13.0	-29.5	Notebook screen horizontal
3702.217			267.0	1.0			V-Horn	PK	2.86E-08	-45.4	-13.0	-32.4	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/29/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	30%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000) PCS Band, mid channel

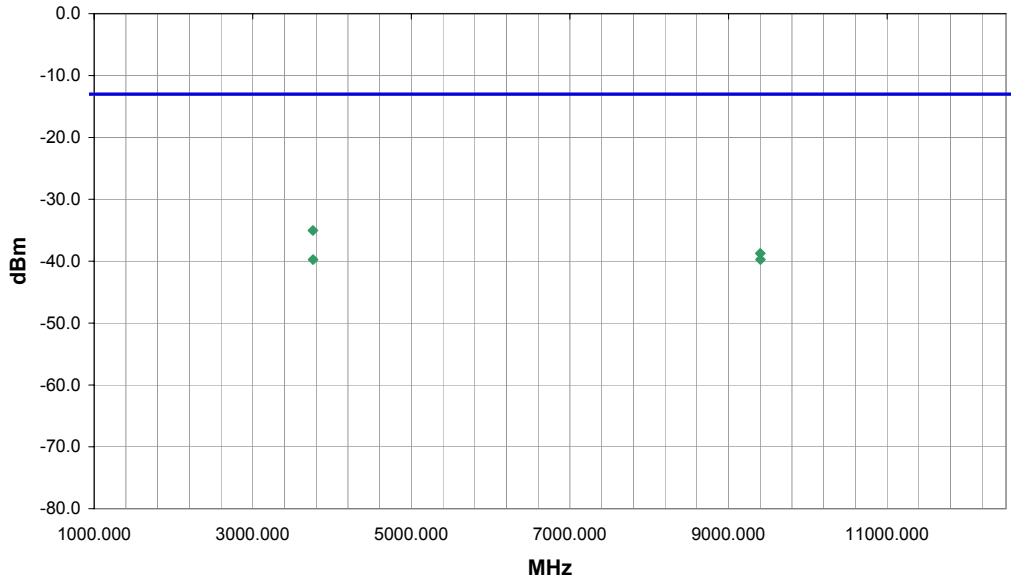
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	38
Configuration #	1
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
3759.425			178.0	1.0			V-Horn	PK	3.14E-07	-35.0	-13.0	-22.0	Notebook on side
9400.067			42.0	1.0			H-Horn	PK	1.34E-07	-38.7	-13.0	-25.7	Notebook horizontal
3759.775			322.0	1.0			H-Horn	PK	1.06E-07	-39.7	-13.0	-26.7	Notebook horizontal
9402.392			179.0	1.7			V-Horn	PK	1.06E-07	-39.7	-13.0	-26.7	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/29/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000) PCS Band, high channel

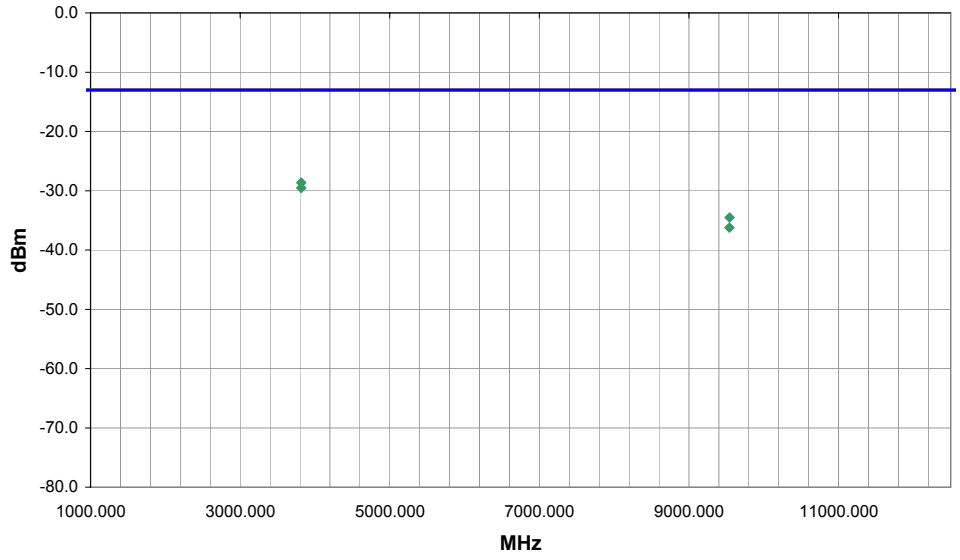
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	39
Configuration #	1
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
3817.792			60.0	1.3			H-Horn	PK	1.37E-06	-28.6	-13.0	-15.6	Notebook screen horizontal
3817.800			355.0	1.0			V-Horn	PK	1.11E-06	-29.5	-13.0	-16.5	Notebook typical position
9543.058			116.0	1.8			H-Horn	PK	3.52E-07	-34.5	-13.0	-21.5	Notebook screen horizontal
9542.558			104.0	1.0			V-Horn	PK	2.38E-07	-36.2	-13.0	-23.2	Notebook typical position

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/28/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.17
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), cellular, low channel

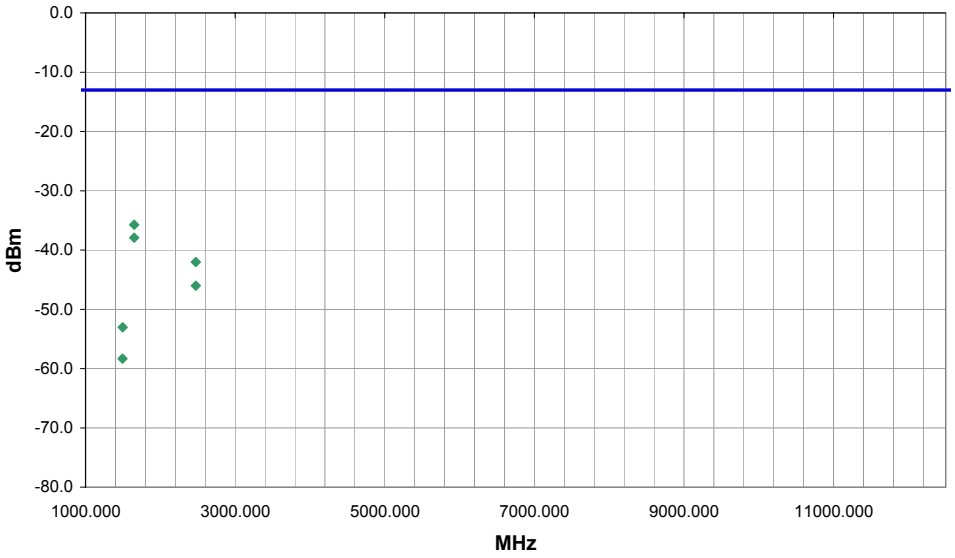
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	26
Configuration #	1
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
1649.269			82.0	1.4			V-Horn	PK	2.67E-07	-35.7	-13.0	-22.7	Notebook on side
1649.502			303.0	1.0			H-Horn	PK	1.61E-07	-37.9	-13.0	-24.9	Notebook screen horizontal
2473.419			37.0	1.0			V-Horn	PK	6.27E-08	-42.0	-13.0	-29.0	Notebook on side
2473.735			122.0	1.0			H-Horn	PK	2.50E-08	-46.0	-13.0	-33.0	Notebook screen horizontal
1495.910			360.0	1.4			H-Horn	PK	4.98E-09	-53.0	-13.0	-40.0	Notebook screen horizontal
1494.365			104.0	1.3			V-Horn	PK	1.47E-09	-58.3	-13.0	-45.3	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/28/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

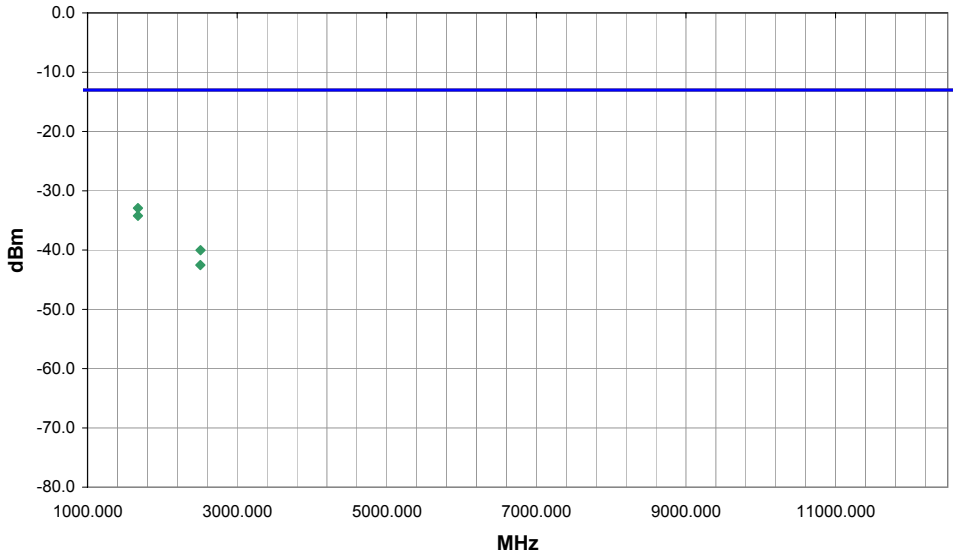
EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), cellular, mid channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	27		
Configuration #	1		
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
1672.932			302.0	1.1			V-Horn	PK	5.09E-07	-32.9	-13.0	-19.9	Notebook on side
1673.077			9.0	1.2			H-Horn	PK	3.78E-07	-34.2	-13.0	-21.2	Notebook screen horizontal
2509.390			136.0	1.1			V-Horn	PK	9.93E-08	-40.0	-13.0	-27.0	Notebook on side
2509.119			47.0	1.0			H-Horn	PK	5.59E-08	-42.5	-13.0	-29.5	Notebook screen horizontal

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/28/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), cellular, high channel

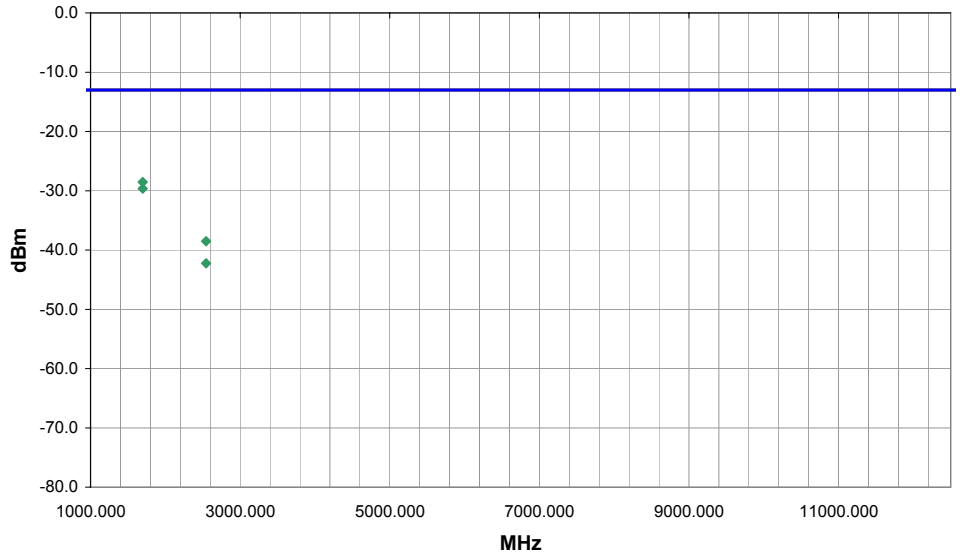
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	28
Configuration #	1
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
1696.857			304.0	1.3			H-Horn	PK	1.40E-06	-28.5	-13.0	-15.5	Notebook screen horizontal
1696.623			105.0	1.0			V-Horn	PK	1.09E-06	-29.6	-13.0	-16.6	Notebook on side
2545.328			293.0	1.6			H-Horn	PK	1.40E-07	-38.5	-13.0	-25.5	Notebook screen horizontal
2544.387			123.0	1.0			V-Horn	PK	5.99E-08	-42.2	-13.0	-29.2	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/28/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

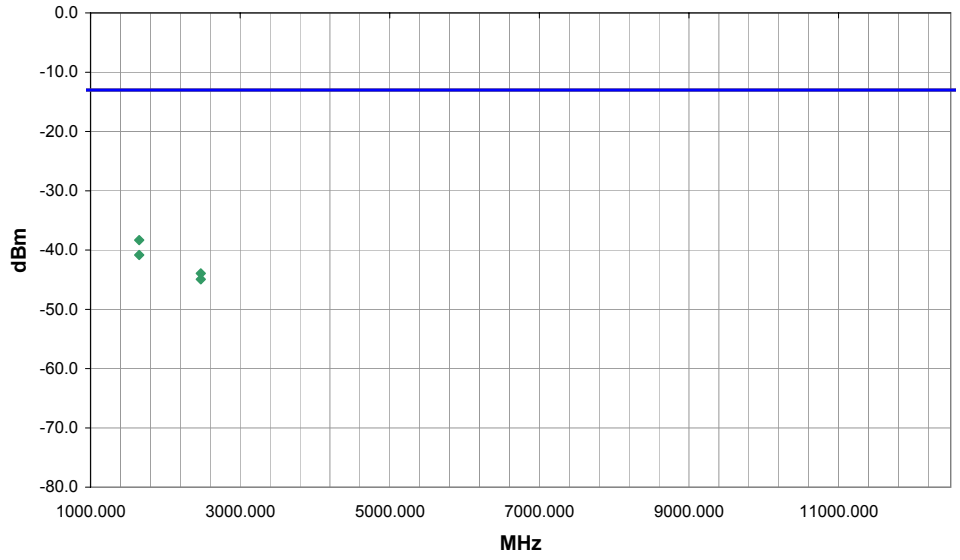
EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), cellular, low channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	29		
Configuration #	1		
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
1649.452			334.0	1.0			H-Horn	PK	1.47E-07	-38.3	-13.0	-25.3	Notebook screen horizontal
1649.852			345.0	1.0			V-Horn	PK	8.26E-08	-40.8	-13.0	-27.8	Notebook on side
2474.086			292.0	2.0			H-Horn	PK	4.05E-08	-43.9	-13.0	-30.9	Notebook screen horizontal
2474.802			127.0	1.1			V-Horn	PK	3.21E-08	-44.9	-13.0	-31.9	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/28/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

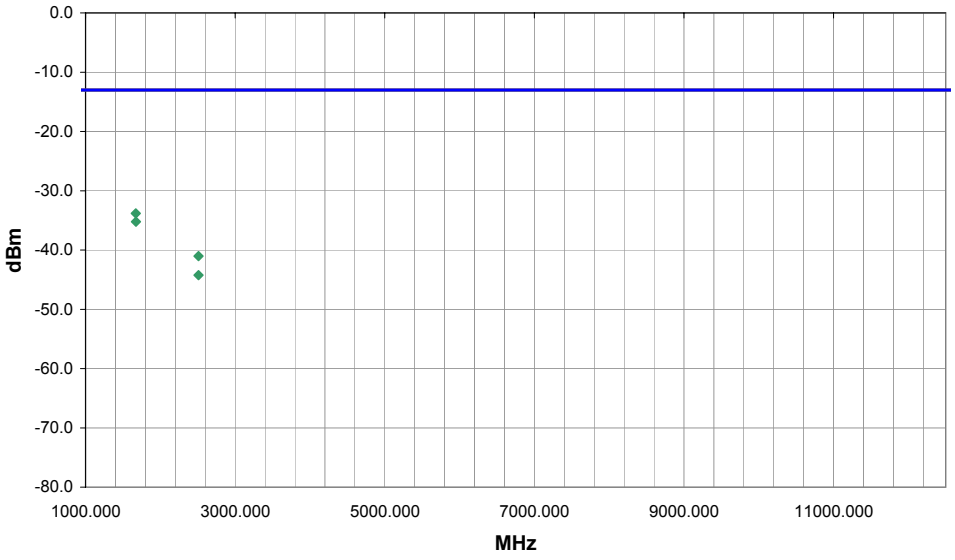
EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), cellular, mid channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	30		
Configuration #	1		
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
1672.410			311.0	1.0			H-Horn	PK	4.14E-07	-33.8	-13.0	-20.8	Notebook screen horizontal
1673.374			134.0	1.1			V-Horn	PK	3.00E-07	-35.2	-13.0	-22.2	Notebook on side
2509.315			130.0	1.1			V-Horn	PK	7.89E-08	-41.0	-13.0	-28.0	Notebook on side
2510.453			50.0	1.3			H-Horn	PK	3.78E-08	-44.2	-13.0	-31.2	Notebook screen horizontal

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/28/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), cellular, high channel

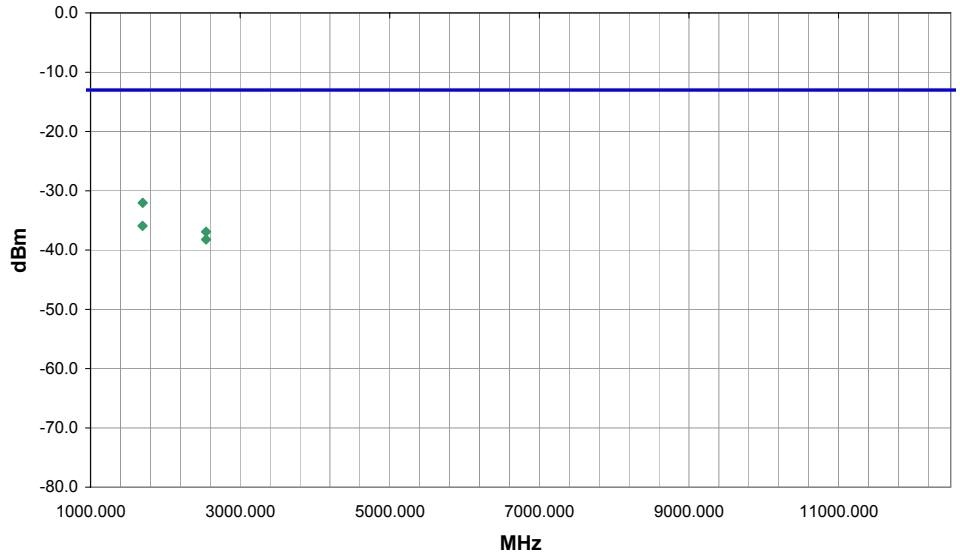
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	32
Configuration #	1
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
1696.632			91.0	1.0			V-Horn	PK	6.27E-07	-32.0	-13.0	-19.0	Notebook on side
1696.065			256.0	1.4			H-Horn	PK	2.55E-07	-35.9	-13.0	-22.9	Notebook screen horizontal
2545.028			130.0	1.0			H-Horn	PK	2.03E-07	-36.9	-13.0	-23.9	Notebook screen horizontal
2544.353			132.0	1.1			V-Horn	PK	1.50E-07	-38.2	-13.0	-25.2	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	28%
Project:	None	Barometric Pres.:	30.42
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

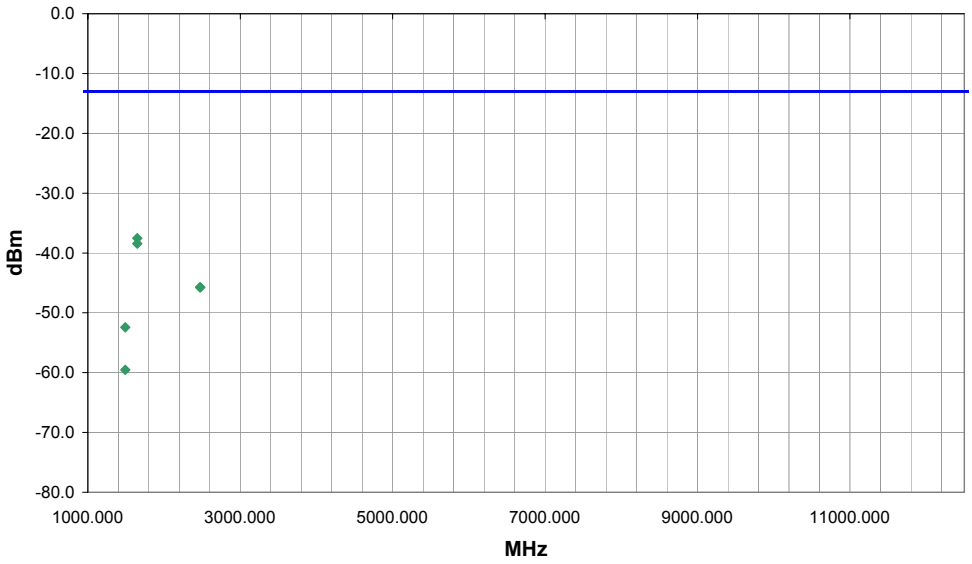
EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular band, low channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	65		
Configuration #	1		
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
1649.689			356.0	1.0			V-Horn	PK	1.77E-07	-37.5	-13.0	-24.5	Notebook on side
1648.980			162.0	1.0			H-Horn	PK	1.44E-07	-38.4	-13.0	-25.4	Notebook typical position
2474.264			125.0	1.2			H-Horn	PK	2.67E-08	-45.7	-13.0	-32.7	Notebook typical position
2474.380			98.0	1.0			V-Horn	PK	2.67E-08	-45.7	-13.0	-32.7	Notebook on side
1491.640			56.0	1.0			V-Horn	PK	5.72E-09	-52.4	-13.0	-39.4	Notebook on side
1491.410			89.0	1.0			H-Horn	PK	1.11E-09	-59.5	-13.0	-46.5	Notebook typical position

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	28%
Project:	None	Barometric Pres.:	30.42
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

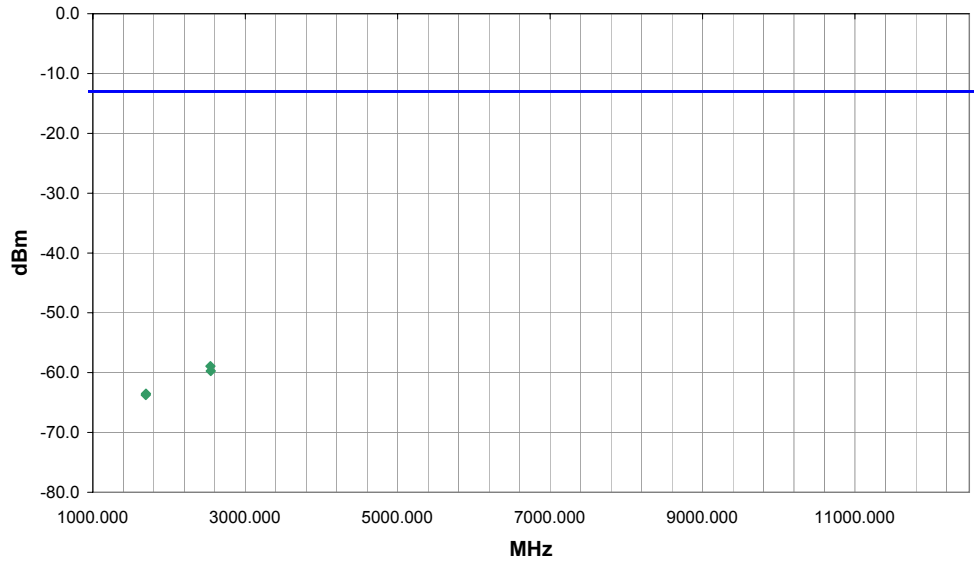
EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular band, high channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	66		
Configuration #	1		
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
2543.597			21.0	1.0			V-Horn	PK	1.28E-09	-58.9	-13.0	-45.9	Notebook on side
2546.938			294.0	1.0			H-Horn	PK	1.06E-09	-59.7	-13.0	-46.7	Notebook typical position
1697.795			273.0	1.0			H-Horn	PK	4.44E-10	-63.5	-13.0	-50.5	Notebook typical position
1694.520			227.0	1.0			V-Horn	PK	4.24E-10	-63.7	-13.0	-50.7	Notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	28%
Project:	None	Barometric Pres.:	30.42
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

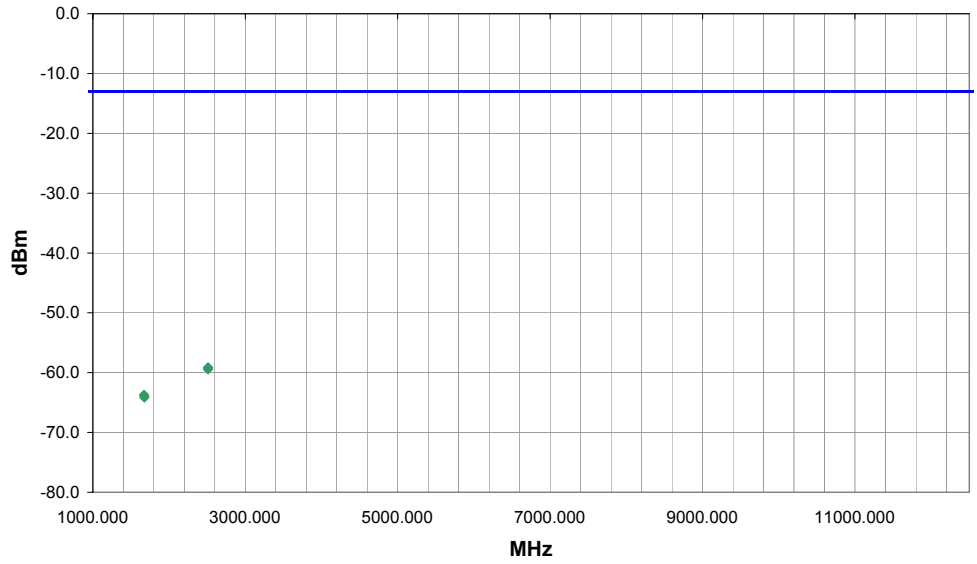
EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular band, mid channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	67		
Configuration #	1		
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
2512.060			317.0	1.0			V-Horn	PK	1.22E-09	-59.1	-13.0	-46.1	Notebook on side
2510.835			19.0	1.0			H-Horn	PK	1.14E-09	-59.4	-13.0	-46.4	Notebook typical position
1671.043			248.0	1.0			V-Horn	PK	4.24E-10	-63.7	-13.0	-50.7	Notebook on side
1675.326			329.0	1.0			H-Horn	PK	3.86E-10	-64.1	-13.0	-51.1	Notebook typical position

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	39%
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Barometric Pres.: 30.2
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), PCS, high channel

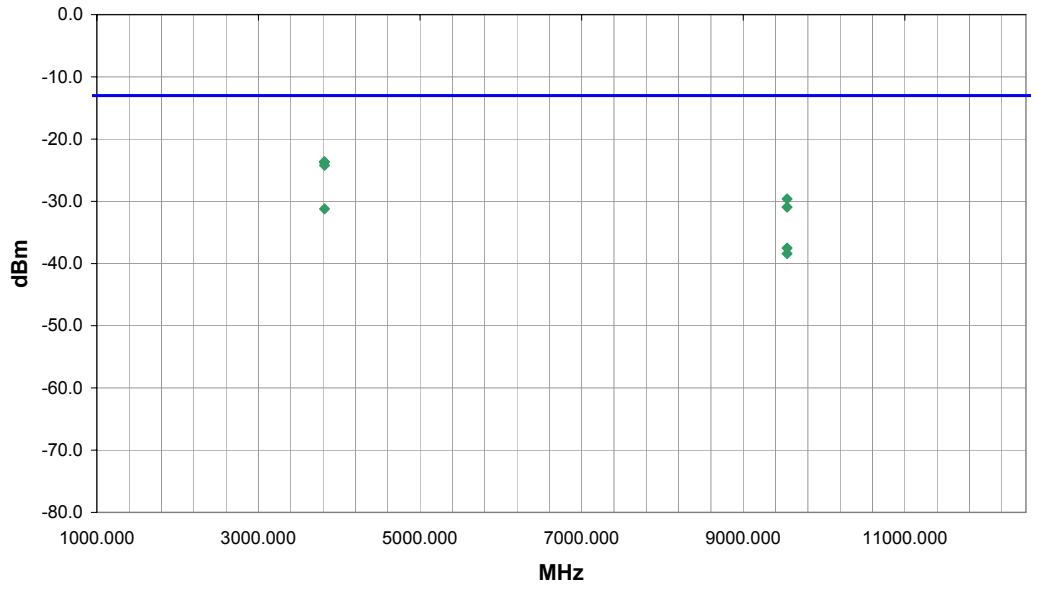
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	46
Configuration #	4
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
3816.710			97.0	2.1			H-Horn	PK	4.34E-06	-23.6	-13.0	-10.6	Antenna on side
3816.840			187.0	1.3			V-Horn	PK	4.24E-06	-23.7	-13.0	-10.7	Antenna on side
3818.195			180.0	1.3			V-Horn	PK	3.78E-06	-24.2	-13.0	-11.2	Antenna vertical
9543.495			108.0	1.0			V-Horn	PK	1.09E-06	-29.6	-13.0	-16.6	Antenna vertical
9542.395			108.0	1.0			V-Horn	PK	8.07E-07	-30.9	-13.0	-17.9	Antenna on side
3818.255			57.0	2.2			H-Horn	PK	7.54E-07	-31.2	-13.0	-18.2	Antenna vertical
9544.025			25.0	1.0			H-Horn	PK	1.77E-07	-37.5	-13.0	-24.5	Antenna vertical
9543.460			97.0	1.0			H-Horn	PK	1.44E-07	-38.4	-13.0	-25.4	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/30/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), PCS, mid channel

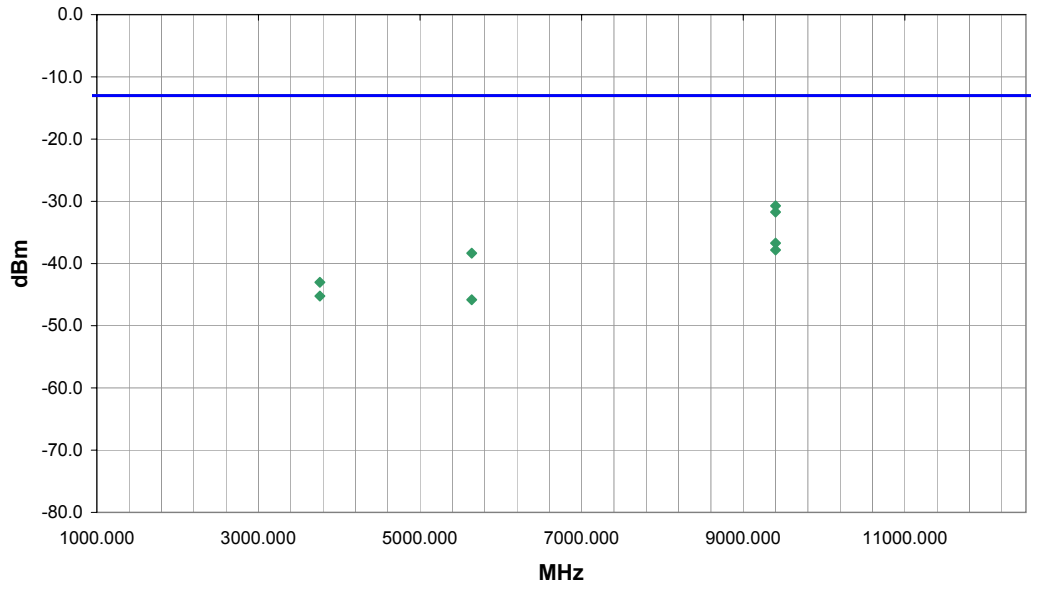
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	47
Configuration #	4
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
9399.820			96.0	1.4			V-Horn	PK	8.46E-07	-30.7	-13.0	-17.7	Antenna vertical
9400.473			91.0	1.2			V-Horn	PK	6.72E-07	-31.7	-13.0	-18.7	Antenna on side
9399.997			105.0	1.2			H-Horn	PK	2.12E-07	-36.7	-13.0	-23.7	Antenna on side
9400.517			133.0	0.6			H-Horn	PK	1.65E-07	-37.8	-13.0	-24.8	Antenna vertical
5639.393			125.0	1.8			H-Horn	PK	1.47E-07	-38.3	-13.0	-25.3	Antenna on side
3760.077			229.0	1.2			H-Horn	PK	4.98E-08	-43.0	-13.0	-30.0	Antenna on side
3760.293			150.0	1.2			V-Horn	PK	3.00E-08	-45.2	-13.0	-32.2	Antenna on side
5639.180			121.0	1.2			V-Horn	PK	2.61E-08	-45.8	-13.0	-32.8	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Barometric Pres.: 30.17
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), PCS, low channel

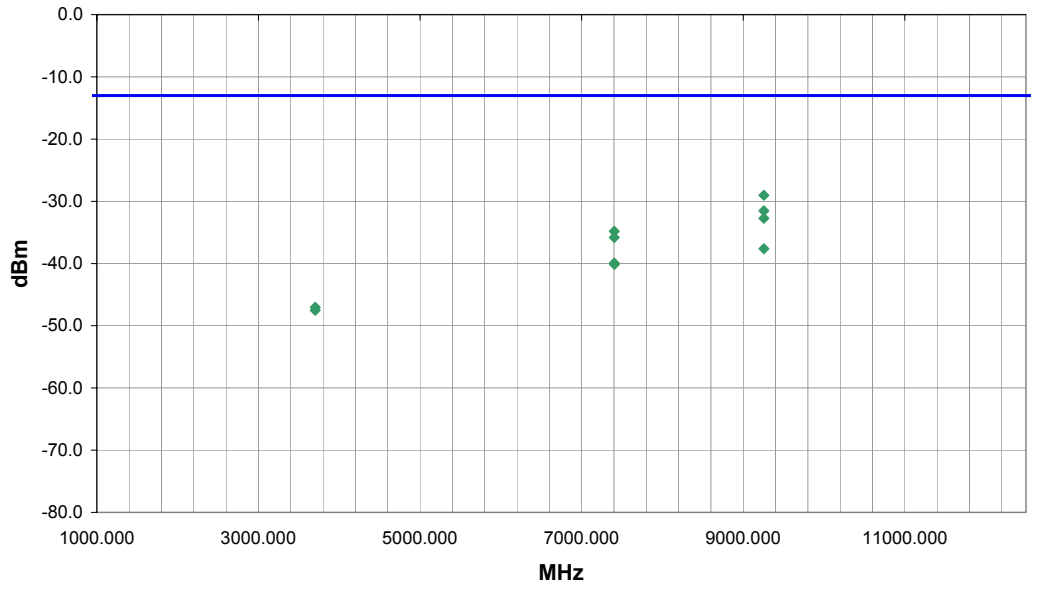
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	48
Configuration #	4
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
9256.477			281.0	1.6			V-Horn	PK	1.25E-06	-29.0	-13.0	-16.0	Antenna on side
9255.487			106.0	1.3			H-Horn	PK	7.03E-07	-31.5	-13.0	-18.5	Antenna vertical
9256.267			117.0	1.6			V-Horn	PK	5.33E-07	-32.7	-13.0	-19.7	Antenna vertical
7404.017			286.0	1.8			V-Horn	PK	3.29E-07	-34.8	-13.0	-21.8	Antenna vertical
7405.067			289.0	1.3			V-Horn	PK	2.61E-07	-35.8	-13.0	-22.8	Antenna on side
9256.177			94.0	1.3			H-Horn	PK	1.73E-07	-37.6	-13.0	-24.6	Antenna on side
7405.080			112.0	1.2			H-Horn	PK	1.02E-07	-39.9	-13.0	-26.9	Antenna vertical
7405.617			141.0	1.2			H-Horn	PK	9.71E-08	-40.1	-13.0	-27.1	Antenna on side
3703.130			215.0	1.2			H-Horn	PK	1.98E-08	-47.0	-13.0	-34.0	Antenna on side
3703.390			224.0	1.2			V-Horn	PK	1.77E-08	-47.5	-13.0	-34.5	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/29/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.17
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, low channel

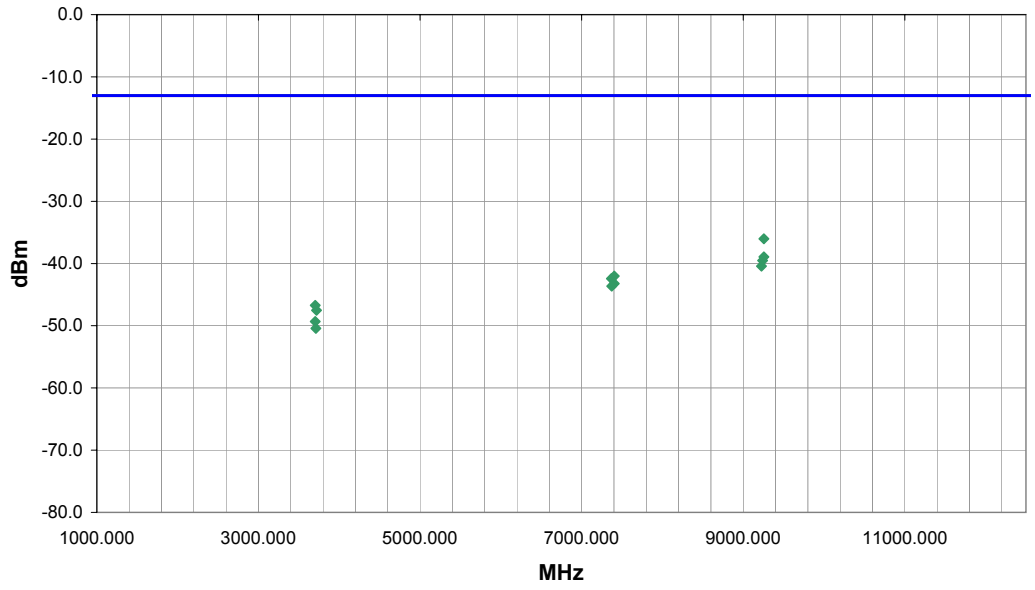
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	43
Configuration #	4
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
9255.978			298.0	1.6			V-Horn	PK	2.50E-07	-36.0	-13.0	-23.0	Antenna on side
9256.070			71.0	1.0			V-Horn	PK	1.28E-07	-38.9	-13.0	-25.9	Antenna vertical
9239.660			217.0	1.0			H-Horn	PK	1.11E-07	-39.5	-13.0	-26.5	Antenna vertical
9225.930			12.0	1.2			H-Horn	PK	9.06E-08	-40.4	-13.0	-27.4	Antenna on side
7404.968			103.0	1.4			V-Horn	PK	6.27E-08	-42.0	-13.0	-29.0	Antenna on side
7369.000			240.0	1.0			H-Horn	PK	5.72E-08	-42.4	-13.0	-29.4	Antenna on side
7404.735			2.0	1.7			V-Horn	PK	4.75E-08	-43.2	-13.0	-30.2	Antenna vertical
7372.950			193.0	1.0			H-Horn	PK	4.34E-08	-43.6	-13.0	-30.6	Antenna vertical
3703.058			183.0	1.0			V-Horn	PK	2.12E-08	-46.7	-13.0	-33.7	Antenna vertical
3719.900			224.0	1.3			H-Horn	PK	1.77E-08	-47.5	-13.0	-34.5	Antenna on side
3703.067			236.0	1.6			V-Horn	PK	1.17E-08	-49.3	-13.0	-36.3	Antenna on side
3710.580			73.0	1.2			H-Horn	PK	9.06E-09	-50.4	-13.0	-37.4	Antenna vertical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/29/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.17
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, mid channel

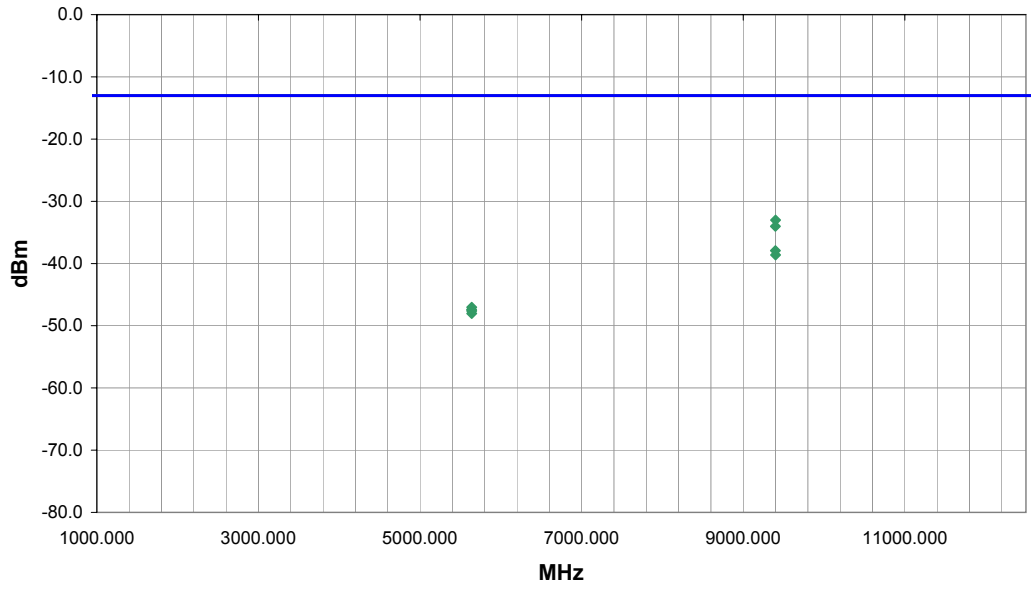
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	44
Configuration #	4
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
9401.567			104.0	1.0			V-Horn	PK	4.98E-07	-33.0	-13.0	-20.0	Antenna on side
9398.167			104.0	1.0			V-Horn	PK	3.95E-07	-34.0	-13.0	-21.0	Antenna vertical
9398.908			109.0	1.2			H-Horn	PK	1.61E-07	-37.9	-13.0	-24.9	Antenna on side
9400.517			359.0	2.1			H-Horn	PK	1.37E-07	-38.6	-13.0	-25.6	Antenna vertical
5640.567			94.0	1.0			V-Horn	PK	1.98E-08	-47.0	-13.0	-34.0	Antenna on side
5638.267			69.0	1.0			V-Horn	PK	1.81E-08	-47.4	-13.0	-34.4	Antenna vertical
5639.042			112.0	1.2			H-Horn	PK	1.73E-08	-47.6	-13.0	-34.6	Antenna on side
5640.525			178.0	1.0			H-Horn	PK	1.57E-08	-48.0	-13.0	-35.0	Antenna vertical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/30/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	39%
Project:	None	Barometric Pres.:	30.2
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, high channel

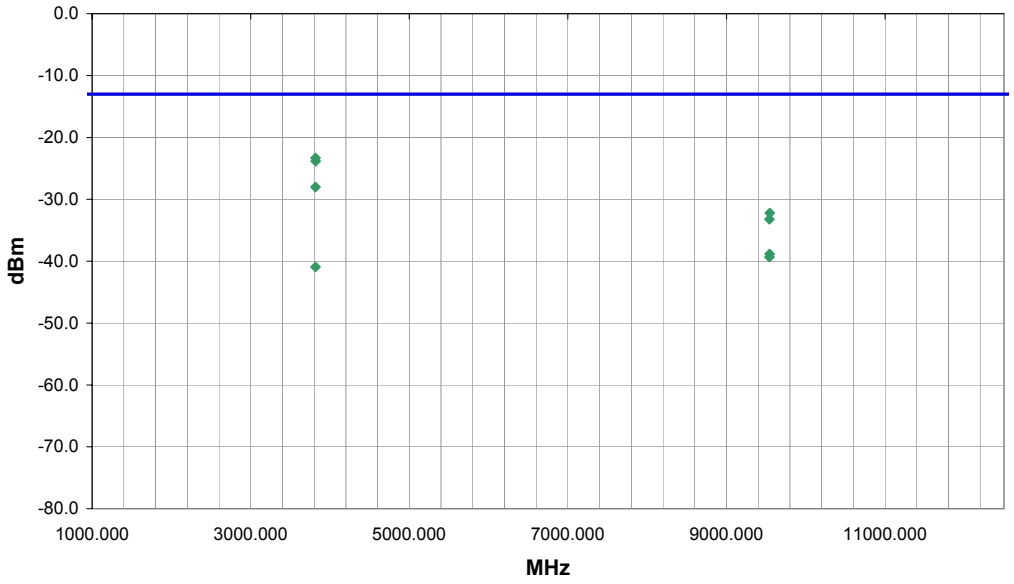
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	45
Configuration #	4
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
3817.408			236.0	1.0			H-Horn	PK	4.65E-06	-23.3	-13.0	-10.3	Antenna on side
3818.267			239.0	1.0			H-Horn	PK	4.14E-06	-23.8	-13.0	-10.8	Antenna horizontal
3817.825			183.0	1.6			V-Horn	PK	1.57E-06	-28.0	-13.0	-15.0	Antenna on side
9546.122			129.0	1.0			V-Horn	PK	5.99E-07	-32.2	-13.0	-19.2	Antenna on side
9541.713			128.0	1.0			V-Horn	PK	4.75E-07	-33.2	-13.0	-20.2	Antenna horizontal
9544.488			108.0	1.0			H-Horn	PK	1.31E-07	-38.8	-13.0	-25.8	Antenna horizontal
9541.388			235.0	1.0			H-Horn	PK	1.17E-07	-39.3	-13.0	-26.3	Antenna on side
3817.783			98.0	1.6			V-Horn	PK	8.07E-08	-40.9	-13.0	-27.9	Antenna horizontal

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/29/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

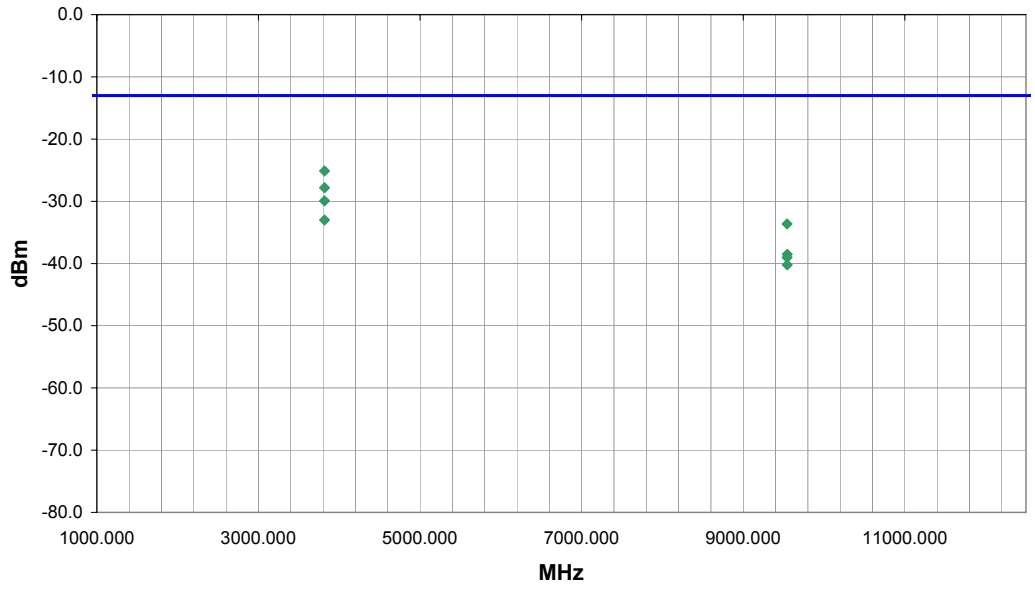
EUT OPERATING MODES

CDMA 1xRTT (IS-2000) PCS Band, high channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	40		
Configuration #	4		
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
3817.233			237.0	1.0			H-Horn	PK	3.07E-06	-25.1	-13.0	-12.1	Antenna on side
3818.100			221.0	1.0			V-Horn	PK	1.65E-06	-27.8	-13.0	-14.8	Antenna vertical
3817.525			194.0	1.0			V-Horn	PK	1.02E-06	-29.9	-13.0	-16.9	Antenna on side
3817.800			17.0	1.0			H-Horn	PK	4.98E-07	-33.0	-13.0	-20.0	Antenna vertical
9543.850			128.0	1.0			V-Horn	PK	4.34E-07	-33.6	-13.0	-20.6	Antenna on side
9545.975			61.0	1.5			H-Horn	PK	1.40E-07	-38.5	-13.0	-25.5	Antenna on side
9544.067			306.0	1.0			H-Horn	PK	1.25E-07	-39.0	-13.0	-26.0	Antenna vertical
9544.900			178.0	1.4			V-Horn	PK	9.49E-08	-40.2	-13.0	-27.2	Antenna vertical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/29/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	30%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.42
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000) PCS Band, mid channel

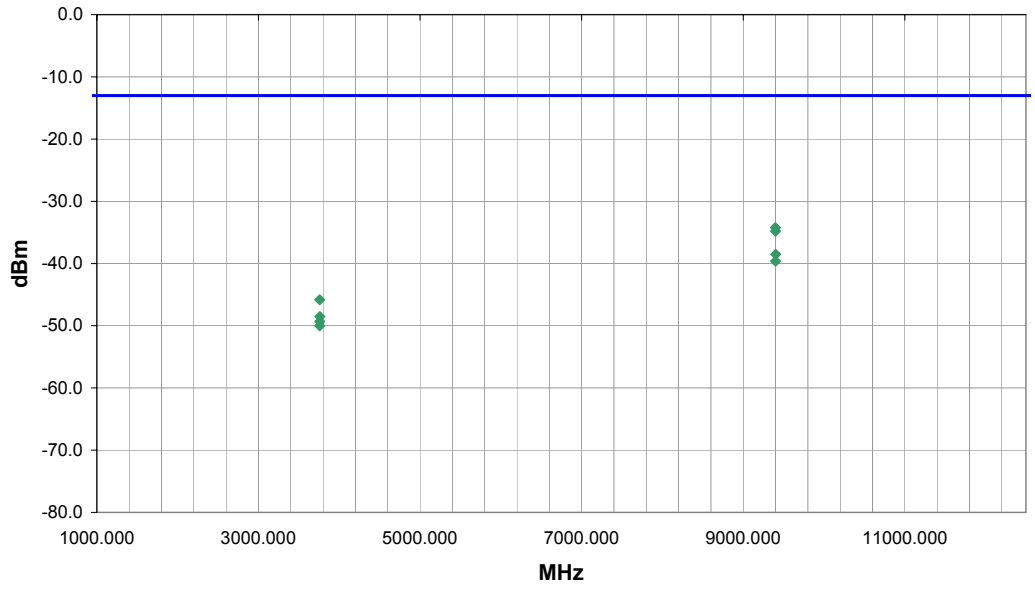
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	41
Configuration #	4
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
9399.525			107.0	1.0			V-Horn	PK	3.78E-07	-34.2	-13.0	-21.2	Antenna vertical
9401.300			105.0	1.0			V-Horn	PK	3.29E-07	-34.8	-13.0	-21.8	Antenna on side
9401.975			-1.0	1.8			H-Horn	PK	1.40E-07	-38.5	-13.0	-25.5	Antenna on side
9400.358			293.0	1.8			H-Horn	PK	1.09E-07	-39.6	-13.0	-26.6	Antenna vertical
3759.058			221.0	1.0			H-Horn	PK	2.61E-08	-45.8	-13.0	-32.8	Antenna vertical
3759.950			144.0	1.6			V-Horn	PK	1.40E-08	-48.5	-13.0	-35.5	Antenna on side
3759.333			207.0	1.0			V-Horn	PK	1.17E-08	-49.3	-13.0	-36.3	Antenna vertical
3759.100			271.0	1.2			H-Horn	PK	9.93E-09	-50.0	-13.0	-37.0	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/29/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

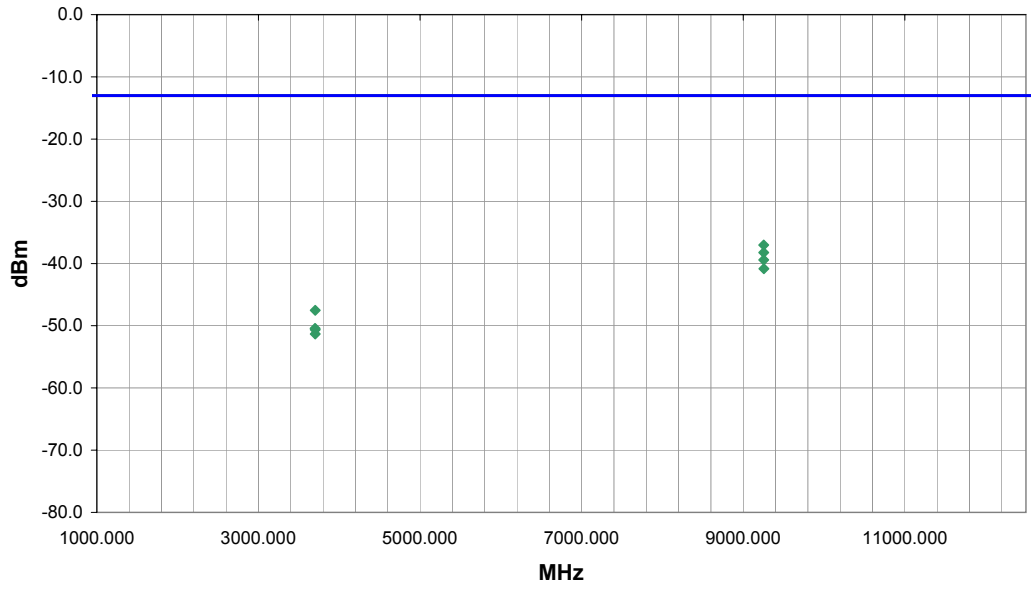
EUT OPERATING MODES

CDMA 1xRTT (IS-2000) PCS Band, low channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	42		
Configuration #	4		
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
9254.767			91.0	1.0			V-Horn	PK	1.98E-07	-37.0	-13.0	-24.0	Antenna on side
9254.492			287.0	1.0			V-Horn	PK	1.50E-07	-38.2	-13.0	-25.2	Antenna vertical
9254.675			31.0	1.2			H-Horn	PK	1.14E-07	-39.4	-13.0	-26.4	Antenna on side
9256.108			25.0	1.0			H-Horn	PK	8.26E-08	-40.8	-13.0	-27.8	Antenna vertical
3702.550			145.0	1.0			H-Horn	PK	1.77E-08	-47.5	-13.0	-34.5	Antenna vertical
3700.950			359.0	2.4			V-Horn	PK	9.06E-09	-50.4	-13.0	-37.4	Antenna on side
3702.392			315.0	2.4			V-Horn	PK	8.65E-09	-50.6	-13.0	-37.6	Antenna vertical
3703.467			304.0	2.4			H-Horn	PK	7.36E-09	-51.3	-13.0	-38.3	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/30/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), cellular, high channel

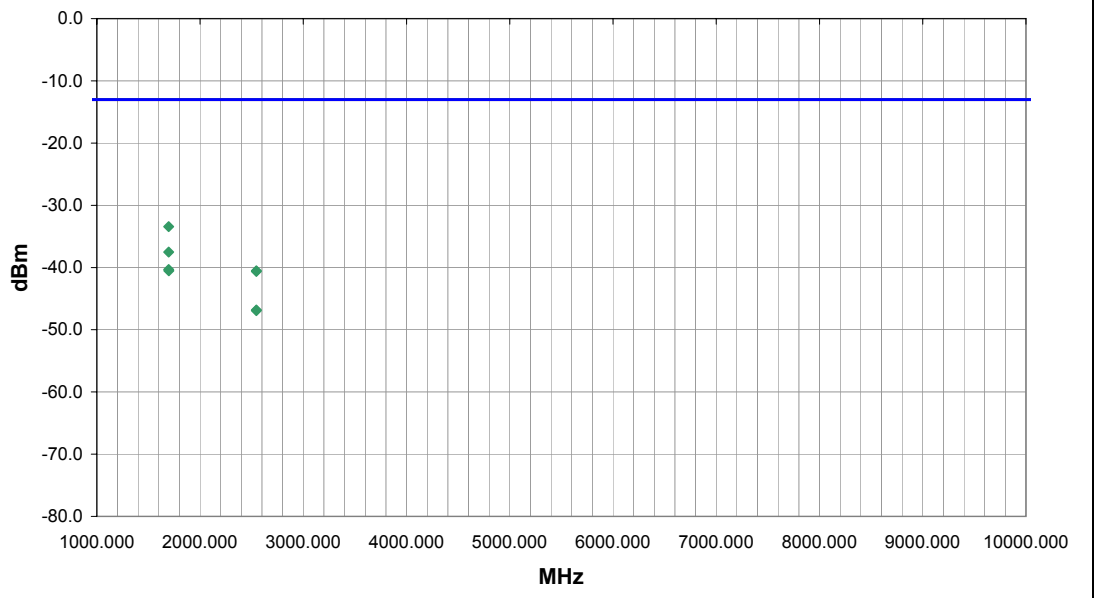
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	49
Configuration #	4
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
1696.398			143.0	1.1			H-Horn	PK	4.54E-07	-33.4	-13.0	-20.4	Antenna on side
1696.392			309.0	1.4			V-Horn	PK	1.77E-07	-37.5	-13.0	-24.5	Antenna on side
1695.814			320.0	1.5			V-Horn	PK	9.27E-08	-40.3	-13.0	-27.3	Antenna vertical
1697.144			143.0	1.2			H-Horn	PK	8.85E-08	-40.5	-13.0	-27.5	Antenna vertical
2545.260			318.0	2.0			V-Horn	PK	8.85E-08	-40.5	-13.0	-27.5	Antenna on side
2545.184			342.0	1.2			V-Horn	PK	8.65E-08	-40.6	-13.0	-27.6	Antenna vertical
2545.085			28.0	1.4			H-Horn	PK	2.08E-08	-46.8	-13.0	-33.8	Antenna vertical
2545.913			317.0	1.4			H-Horn	PK	2.03E-08	-46.9	-13.0	-33.9	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.17
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), cellular, mid channel

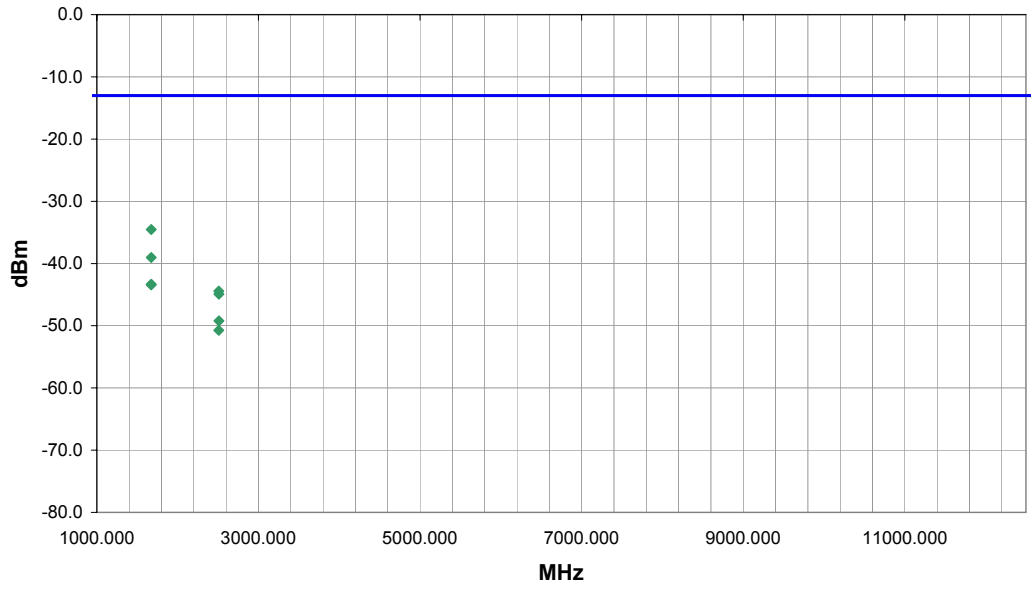
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	50
Configuration #	4
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
1673.268			344.0	1.3			H-Horn	PK	3.52E-07	-34.5	-13.0	-21.5	Antenna on side
1673.507			91.0	1.1			V-Horn	PK	1.25E-07	-39.0	-13.0	-26.0	Antenna on side
1673.218			332.0	1.3			H-Horn	PK	4.65E-08	-43.3	-13.0	-30.3	Antenna vertical
1673.415			46.0	1.0			V-Horn	PK	4.54E-08	-43.4	-13.0	-30.4	Antenna vertical
2508.273			316.0	1.0			V-Horn	PK	3.61E-08	-44.4	-13.0	-31.4	Antenna vertical
2510.582			309.0	1.2			V-Horn	PK	3.21E-08	-44.9	-13.0	-31.9	Antenna on side
2510.519			170.0	1.0			H-Horn	PK	1.19E-08	-49.2	-13.0	-36.2	Antenna on side
2509.811			91.0	1.0			H-Horn	PK	8.46E-09	-50.7	-13.0	-37.7	Antenna vertical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.17
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), cellular, low channel

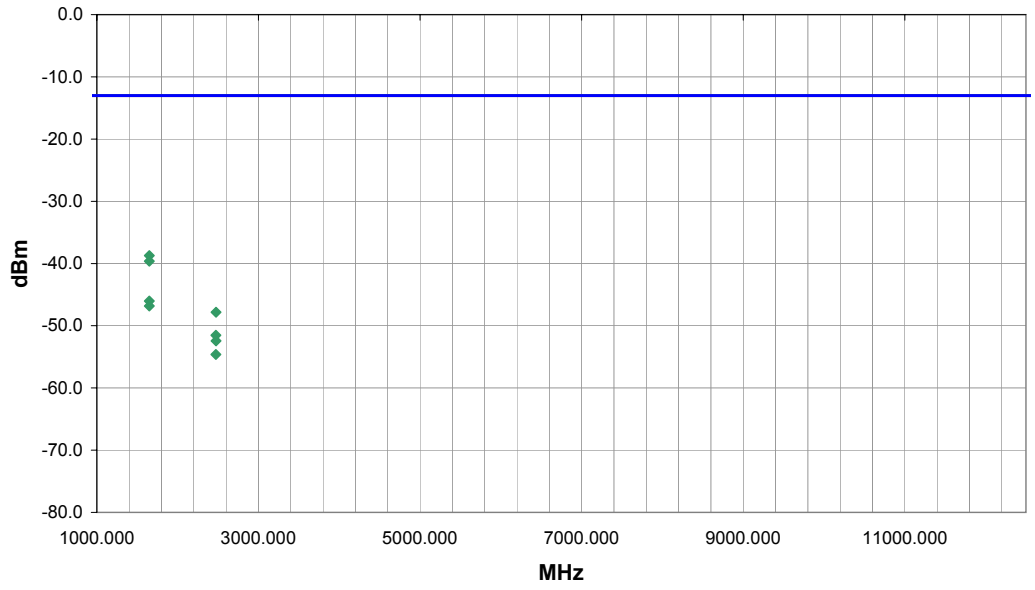
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	51
Configuration #	4
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
1649.877			296.0	1.0			V-Horn	PK	1.34E-07	-38.7	-13.0	-25.7	Antenna vertical
1650.077			293.0	1.0			V-Horn	PK	1.09E-07	-39.6	-13.0	-26.6	Antenna on side
1648.652			114.0	1.0			H-Horn	PK	2.50E-08	-46.0	-13.0	-33.0	Antenna on side
1650.219			112.0	1.0			H-Horn	PK	2.08E-08	-46.8	-13.0	-33.8	Antenna vertical
2474.818			286.0	1.0			V-Horn	PK	1.65E-08	-47.8	-13.0	-34.8	Antenna on side
2474.102			321.0	1.0			V-Horn	PK	7.03E-09	-51.5	-13.0	-38.5	Antenna vertical
2475.011			83.0	2.7			H-Horn	PK	5.72E-09	-52.4	-13.0	-39.4	Antenna vertical
2473.011			139.0	1.0			H-Horn	PK	3.44E-09	-54.6	-13.0	-41.6	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.17
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, low channel

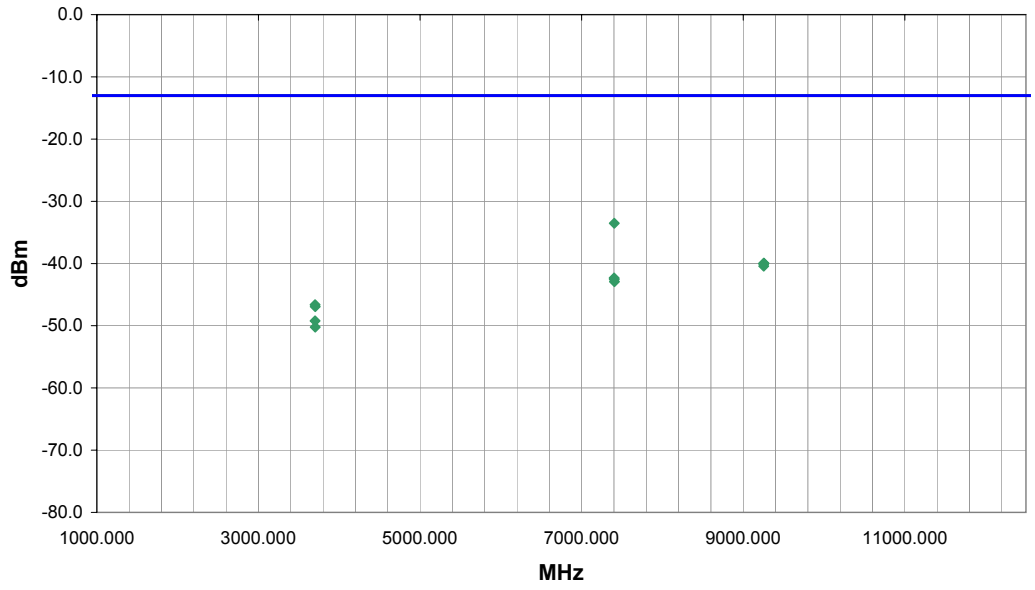
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	52
Configuration #	4
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
7403.768			48.0	1.8			V-Horn	PK	4.44E-07	-33.5	-13.0	-20.5	Antenna vertical
9256.278			20.0	1.0			H-Horn	PK	1.02E-07	-39.9	-13.0	-26.9	Antenna on side
9254.445			325.0	1.0			H-Horn	PK	9.93E-08	-40.0	-13.0	-27.0	Antenna vertical
9254.837			97.0	1.0			V-Horn	PK	9.93E-08	-40.0	-13.0	-27.0	Antenna on side
9254.620			234.0	1.7			V-Horn	PK	9.06E-08	-40.4	-13.0	-27.4	Antenna vertical
7403.393			130.0	1.0			H-Horn	PK	5.85E-08	-42.3	-13.0	-29.3	Antenna on side
7405.443			32.0	1.0			H-Horn	PK	5.59E-08	-42.5	-13.0	-29.5	Antenna vertical
7406.652			-1.0	1.8			V-Horn	PK	5.09E-08	-42.9	-13.0	-29.9	Antenna on side
3701.500			63.0	1.0			V-Horn	PK	2.17E-08	-46.6	-13.0	-33.6	Antenna vertical
3702.458			226.0	3.0			H-Horn	PK	2.03E-08	-46.9	-13.0	-33.9	Antenna on side
3702.042			163.0	1.0			V-Horn	PK	1.19E-08	-49.2	-13.0	-36.2	Antenna on side
3703.867			196.0	1.0			H-Horn	PK	9.49E-09	-50.2	-13.0	-37.2	Antenna vertical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.17
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, mid channel

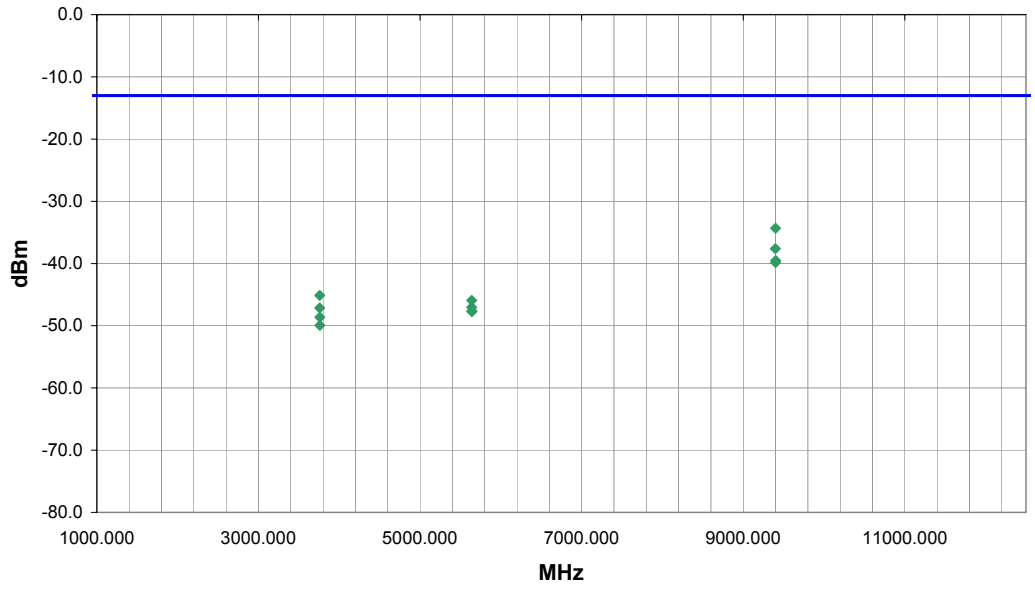
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	53
Configuration #	4
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
9400.275			97.0	1.2			V-Horn	PK	3.69E-07	-34.3	-13.0	-21.3	Antenna vertical
9399.025			96.0	1.2			V-Horn	PK	1.73E-07	-37.6	-13.0	-24.6	Antenna on side
9401.983			104.0	1.0			H-Horn	PK	1.11E-07	-39.5	-13.0	-26.5	Antenna on side
9400.467			102.0	1.0			H-Horn	PK	1.04E-07	-39.8	-13.0	-26.8	Antenna vertical
3759.483			205.0	1.0			H-Horn	PK	3.07E-08	-45.1	-13.0	-32.1	Antenna on side
5639.925			35.0	1.0			V-Horn	PK	2.55E-08	-45.9	-13.0	-32.9	Antenna vertical
5639.142			169.0	1.2			H-Horn	PK	1.98E-08	-47.0	-13.0	-34.0	Antenna vertical
3759.633			188.0	1.0			V-Horn	PK	1.94E-08	-47.1	-13.0	-34.1	Antenna vertical
5642.350			228.0	1.0			V-Horn	PK	1.73E-08	-47.6	-13.0	-34.6	Antenna on side
5642.450			67.0	1.0			H-Horn	PK	1.69E-08	-47.7	-13.0	-34.7	Antenna on side
3761.483			72.0	1.0			V-Horn	PK	1.37E-08	-48.6	-13.0	-35.6	Antenna on side
3760.808			234.0	1.0			H-Horn	PK	1.02E-08	-49.9	-13.0	-36.9	Antenna vertical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/30/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	39%
Project:	None	Barometric Pres.:	30.2
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS, high channel

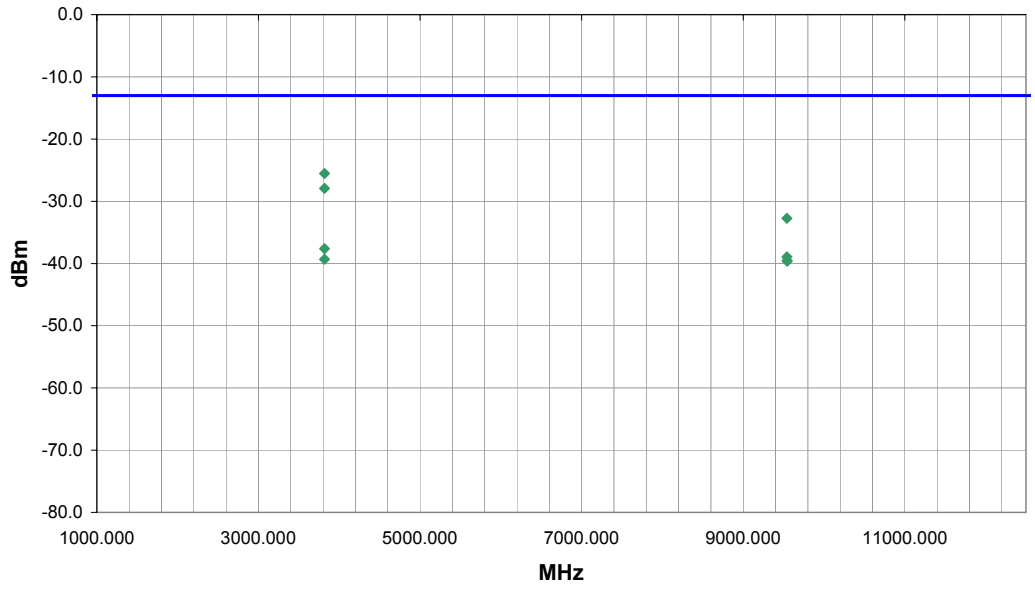
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	54
Configuration #	4
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
3817.867			193.0	1.0			V-Horn	PK	2.80E-06	-25.5	-13.0	-12.5	Antenna vertical
3817.942			226.0	1.0			V-Horn	PK	1.61E-06	-27.9	-13.0	-14.9	Antenna on side
9542.247			120.0	1.4			V-Horn	PK	5.33E-07	-32.7	-13.0	-19.7	Antenna vertical
3818.300			224.0	1.0			H-Horn	PK	1.73E-07	-37.6	-13.0	-24.6	Antenna vertical
9542.288			172.0	1.4			V-Horn	PK	1.28E-07	-38.9	-13.0	-25.9	Antenna on side
3818.000			275.0	1.6			H-Horn	PK	1.17E-07	-39.3	-13.0	-26.3	Antenna on side
9542.363			23.0	1.0			H-Horn	PK	1.11E-07	-39.5	-13.0	-26.5	Antenna vertical
9544.547			138.0	1.0			H-Horn	PK	1.09E-07	-39.6	-13.0	-26.6	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	39%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.2
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular, high channel

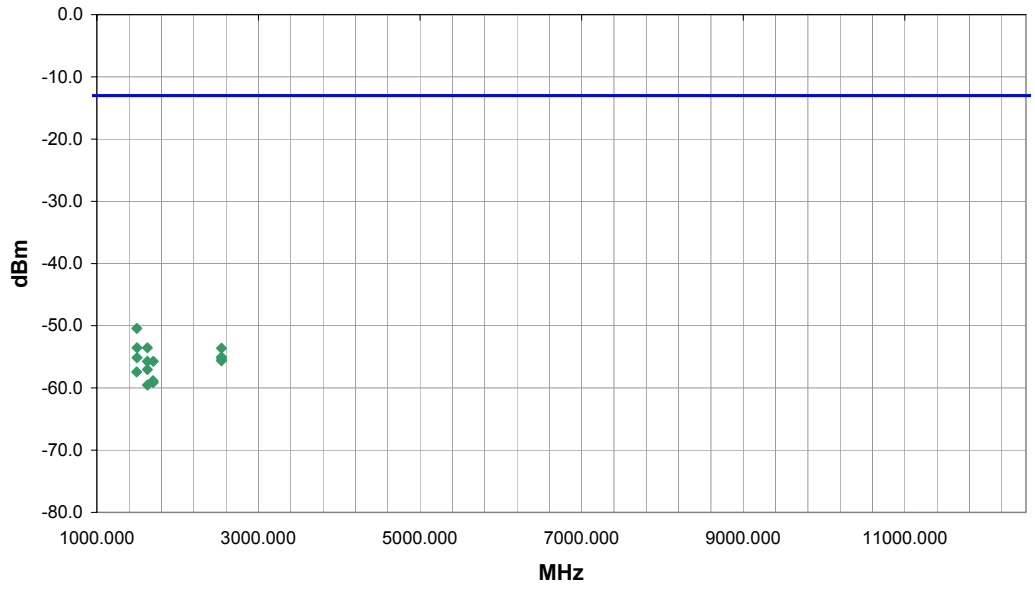
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	55
Configuration #	4
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
1494.440			52.0	1.3			V-Horn	PK	9.06E-09	-50.4	-13.0	-37.4	Antenna on side
1497.920			217.0	1.4			H-Horn	PK	4.44E-09	-53.5	-13.0	-40.5	Antenna on side
1624.999			109.0	2.2			V-Horn	PK	4.44E-09	-53.5	-13.0	-40.5	Antenna vertical
2542.730			6.0	1.5			H-Horn	PK	4.34E-09	-53.6	-13.0	-40.6	Antenna on side
2542.555			273.0	1.0			H-Horn	PK	3.14E-09	-55.0	-13.0	-42.0	Antenna vertical
1496.450			176.0	1.0			H-Horn	PK	3.07E-09	-55.1	-13.0	-42.1	Antenna vertical
2543.938			182.0	1.0			V-Horn	PK	2.93E-09	-55.3	-13.0	-42.3	Antenna on side
2542.672			181.0	1.0			V-Horn	PK	2.74E-09	-55.6	-13.0	-42.6	Antenna vertical
1626.008			113.0	1.0			V-Horn	PK	2.67E-09	-55.7	-13.0	-42.7	Antenna on side
1698.228			114.0	1.4			V-Horn	PK	2.67E-09	-55.7	-13.0	-42.7	Antenna on side
1625.849			196.0	1.4			H-Horn	PK	1.98E-09	-57.0	-13.0	-44.0	Antenna on side
1493.940			218.0	1.3			V-Horn	PK	1.81E-09	-57.4	-13.0	-44.4	Antenna vertical
1694.628			223.0	1.0			H-Horn	PK	1.31E-09	-58.8	-13.0	-45.8	Antenna vertical
1696.070			51.0	1.0			H-Horn	PK	1.25E-09	-59.0	-13.0	-46.0	Antenna on side
1698.012			60.0	1.5			V-Horn	PK	1.22E-09	-59.1	-13.0	-46.1	Antenna vertical
1625.166			14.0	1.4			H-Horn	PK	1.11E-09	-59.5	-13.0	-46.5	Antenna vertical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	39%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.2
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular, mid channel

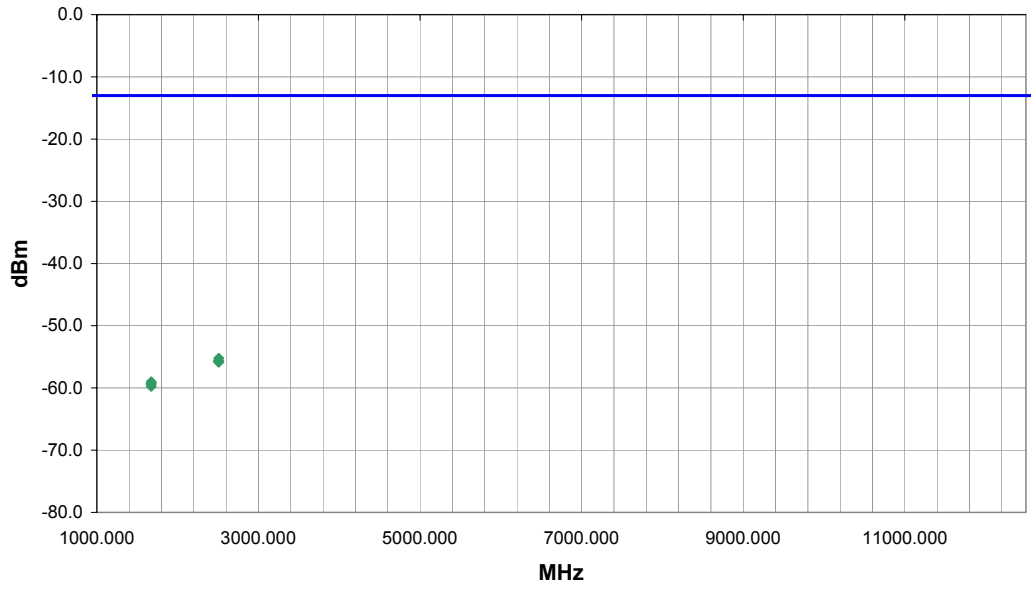
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	57
Configuration #	4
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
2508.835			242.0	1.0			H-Horn	PK	3.00E-09	-55.2	-13.0	-42.2	Antenna on side
2505.725			230.0	3.0			V-Horn	PK	2.74E-09	-55.6	-13.0	-42.6	Antenna on side
2507.068			209.0	1.4			H-Horn	PK	2.61E-09	-55.8	-13.0	-42.8	Antenna vertical
2511.710			132.0	3.0			V-Horn	PK	2.61E-09	-55.8	-13.0	-42.8	Antenna vertical
1674.307			133.0	1.5			V-Horn	PK	1.25E-09	-59.0	-13.0	-46.0	Antenna on side
1671.832			8.0	1.0			H-Horn	PK	1.17E-09	-59.3	-13.0	-46.3	Antenna vertical
1674.248			215.0	1.5			V-Horn	PK	1.17E-09	-59.3	-13.0	-46.3	Antenna vertical
1672.573			108.0	1.0			H-Horn	PK	1.06E-09	-59.7	-13.0	-46.7	Antenna on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/30/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	39%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.2
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular, low channel

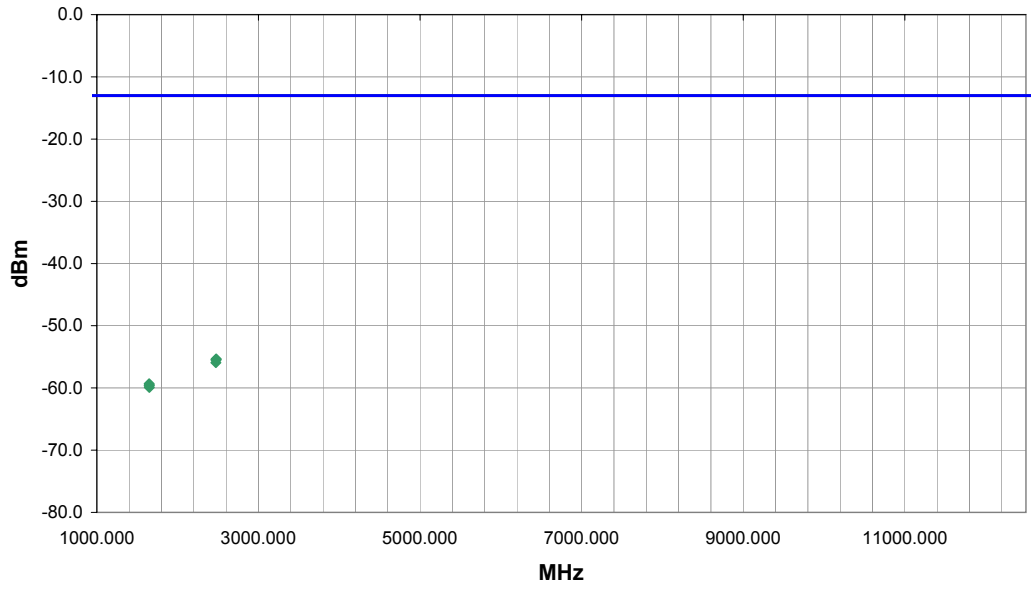
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	58
Configuration #	4
Results	Pass

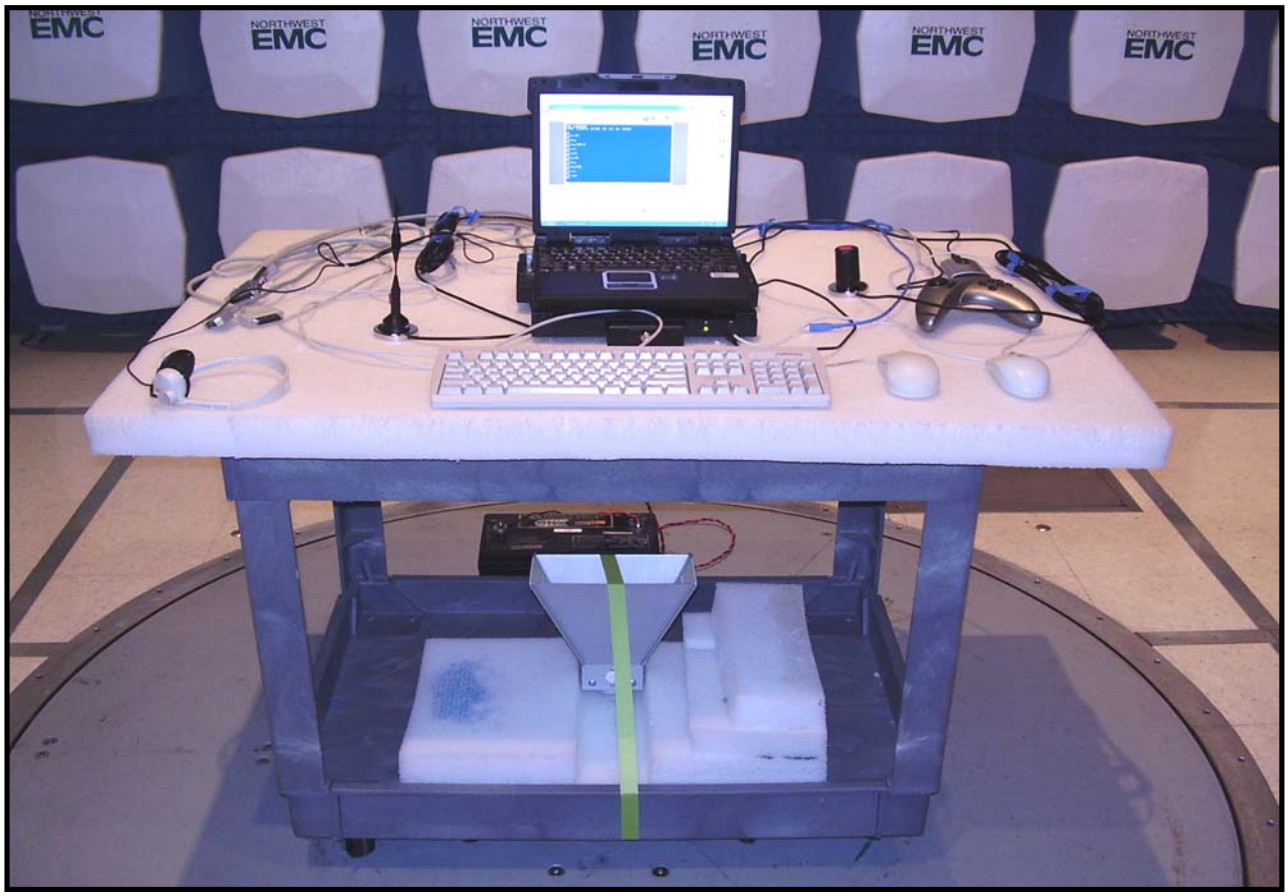
NVLAP Lab Code 200630-0

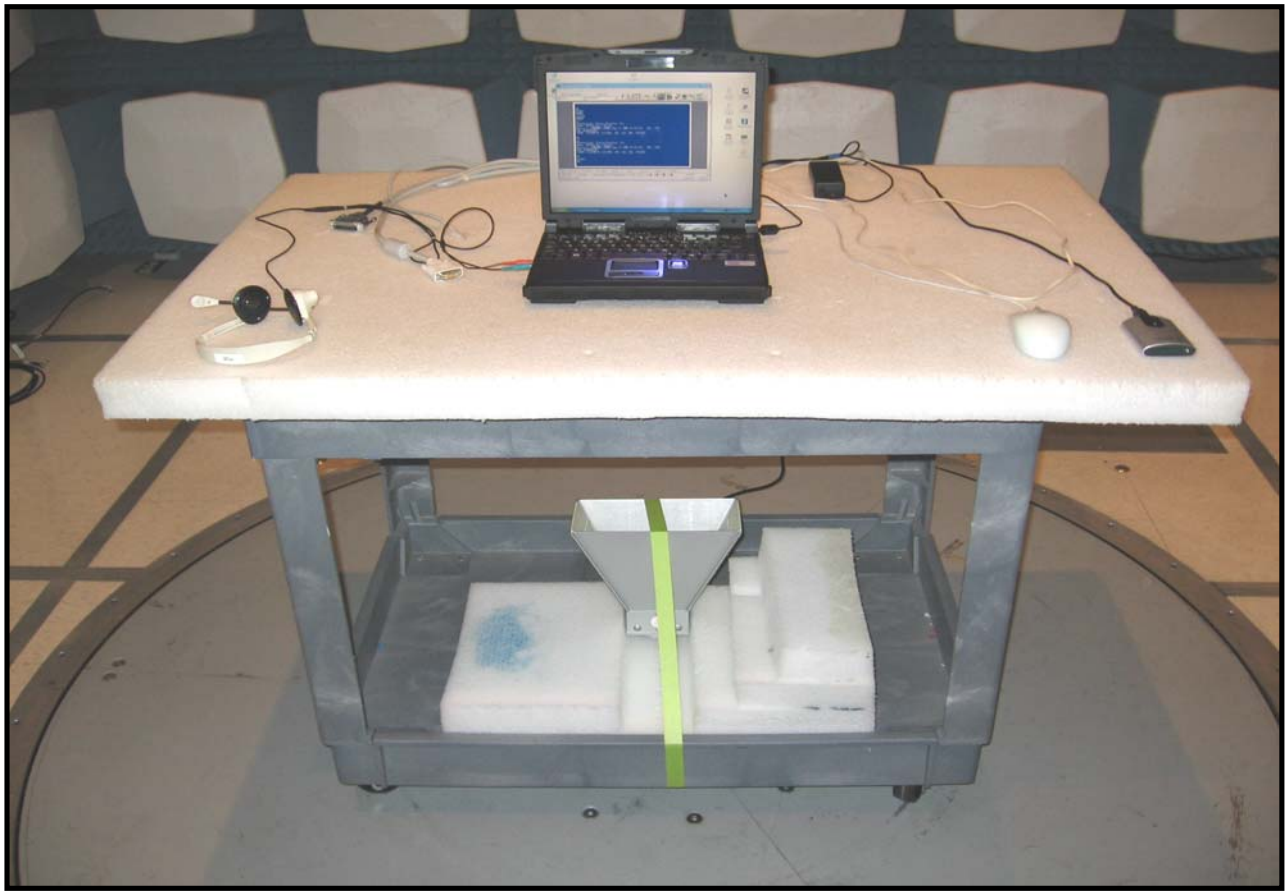
Signature Holly Ashkannejhad

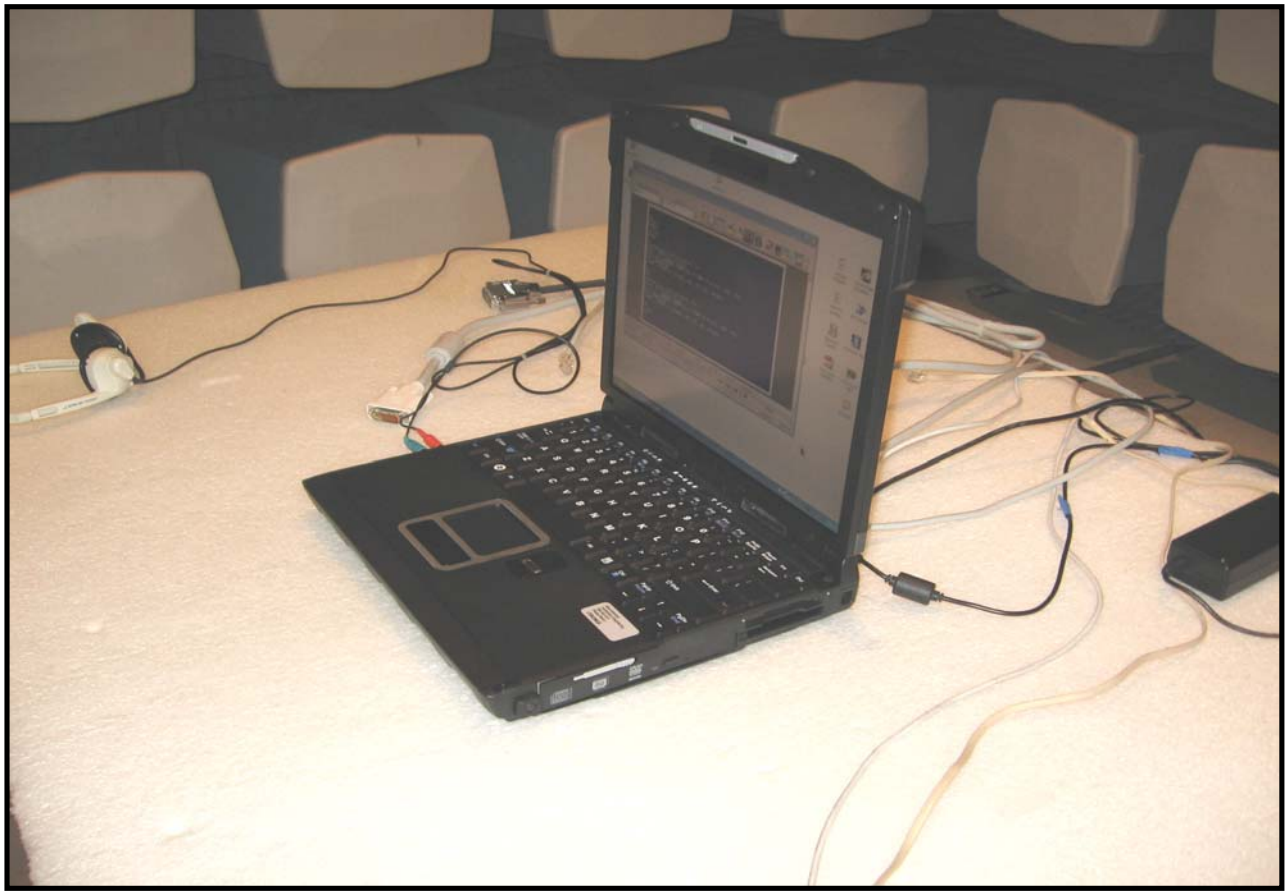


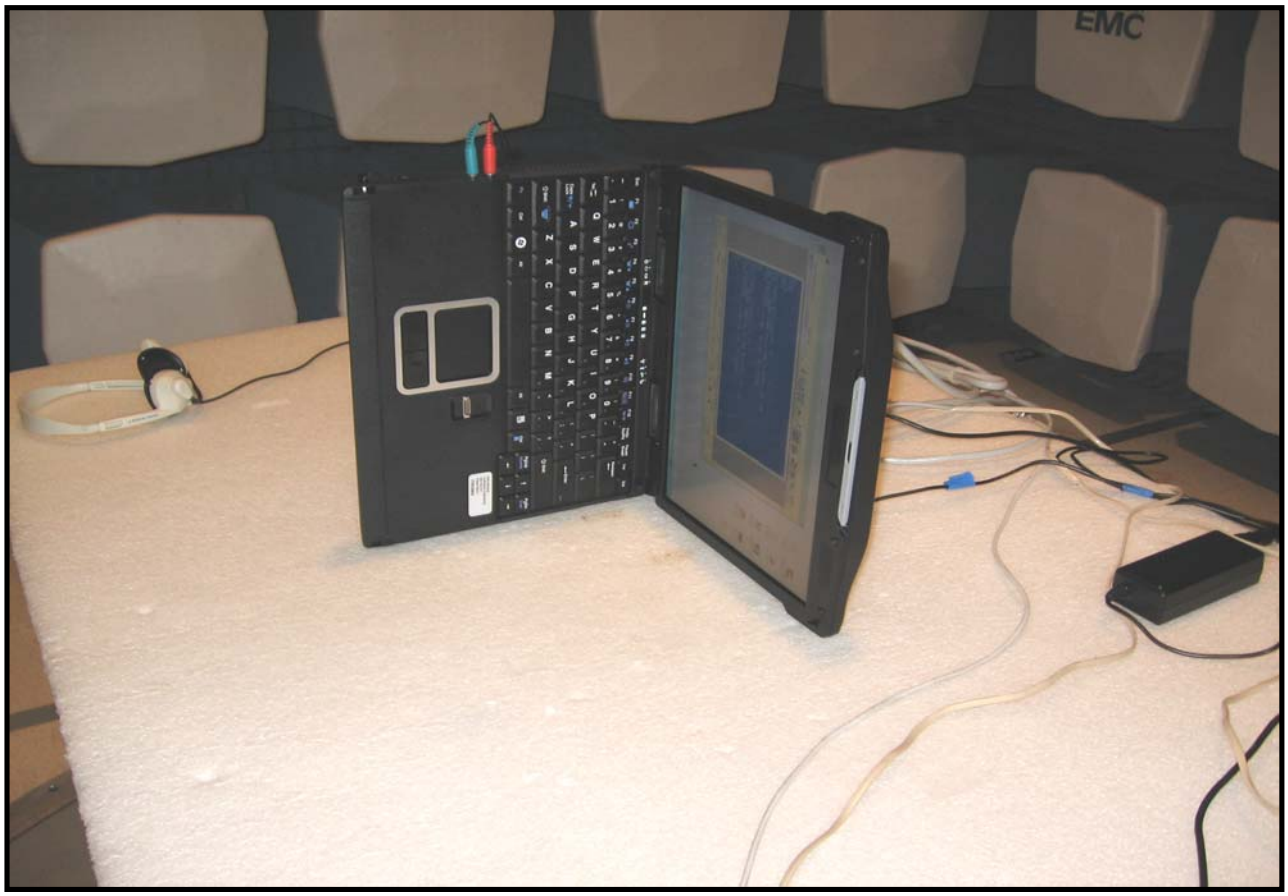
Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
2476.483			84.0	1.0			V-Horn	PK	2.93E-09	-55.3	-13.0	-42.3	Antenna on side
2474.475			305.0	1.0			H-Horn	PK	2.86E-09	-55.4	-13.0	-42.4	Antenna vertical
2475.558			210.0	2.8			V-Horn	PK	2.80E-09	-55.5	-13.0	-42.5	Antenna vertical
2473.717			182.0	1.0			H-Horn	PK	2.55E-09	-55.9	-13.0	-42.9	Antenna on side
1647.500			360.0	1.4			H-Horn	PK	1.17E-09	-59.3	-13.0	-46.3	Antenna on side
1648.817			228.0	2.7			V-Horn	PK	1.11E-09	-59.5	-13.0	-46.5	Antenna vertical
1648.333			160.0	3.1			V-Horn	PK	1.09E-09	-59.6	-13.0	-46.6	Antenna on side
1650.242			94.0	2.4			H-Horn	PK	1.02E-09	-59.9	-13.0	-46.9	Antenna vertical

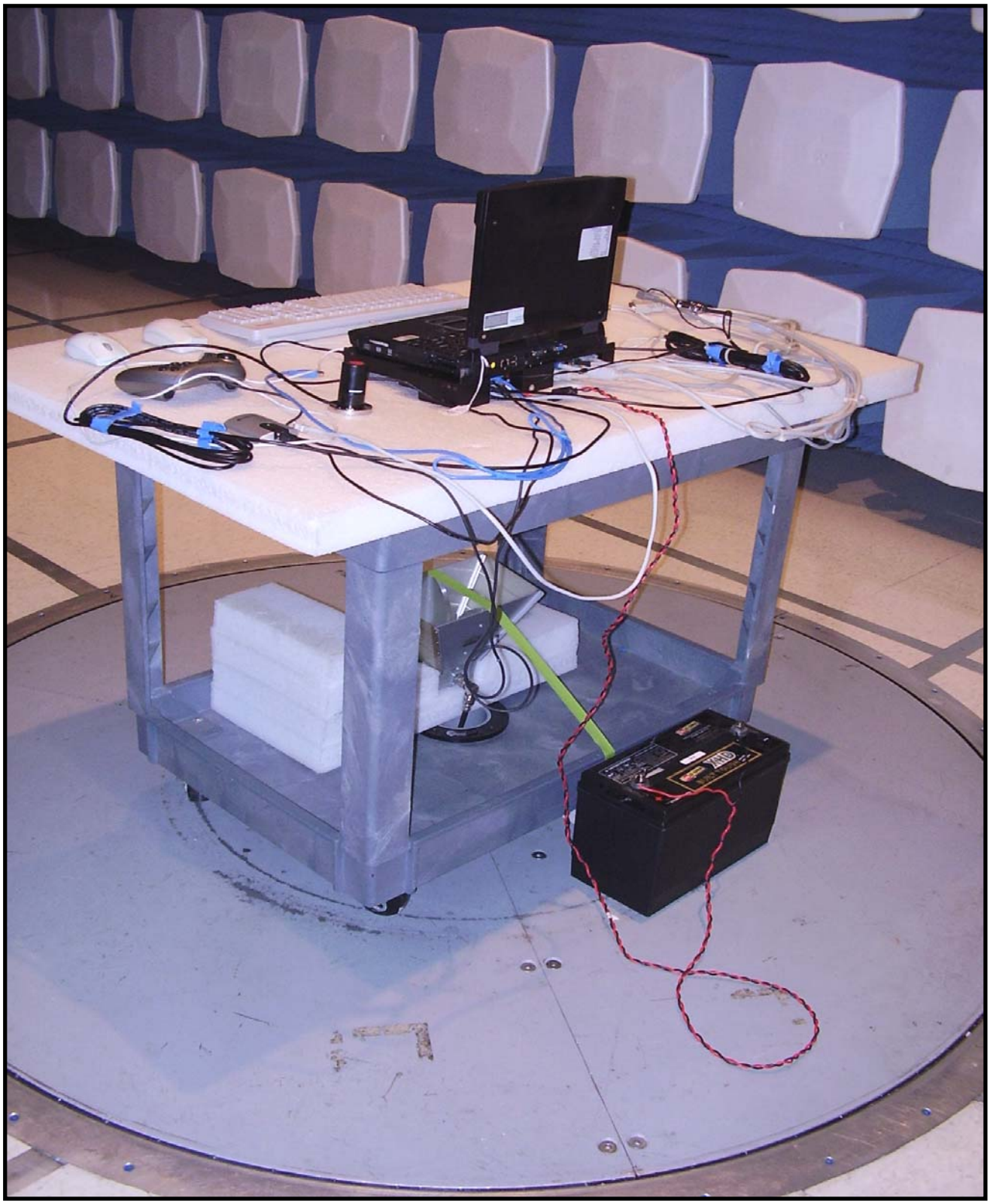
Out of Band Emissions








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
CDMA 1xRTT (IS-2000)
CDMA 1xEV-DO Rev 0 (IS-856)
CDMA 1xEV-DO Rev A (IS-856-A)

CHANNELS INVESTIGATED
Cellular, Low channel, Ch. 1013, 824.7MHz
Cellular, Mid channel, Ch. 384, 836.52MHz
Cellular, High channel, Ch. 777, 848.31MHz

CONFIGURATIONS INVESTIGATED
Notebook configuration
Notebook in optional vehicular dock configuration

POWER SETTINGS INVESTIGATED
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	824.7MHz	Stop Frequency	848.31MHz

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
Signal Generator	Agilent	E8257D	TGX	1/25/2007	13
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
EV01 cables c,g, h			EVA	12/29/2006	13
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).

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.

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	03/26/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	33%
Tested by:	Holly Ashkannejhad	Barometric Pres.:	30.17
Power:	120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), Cellular, Low channel

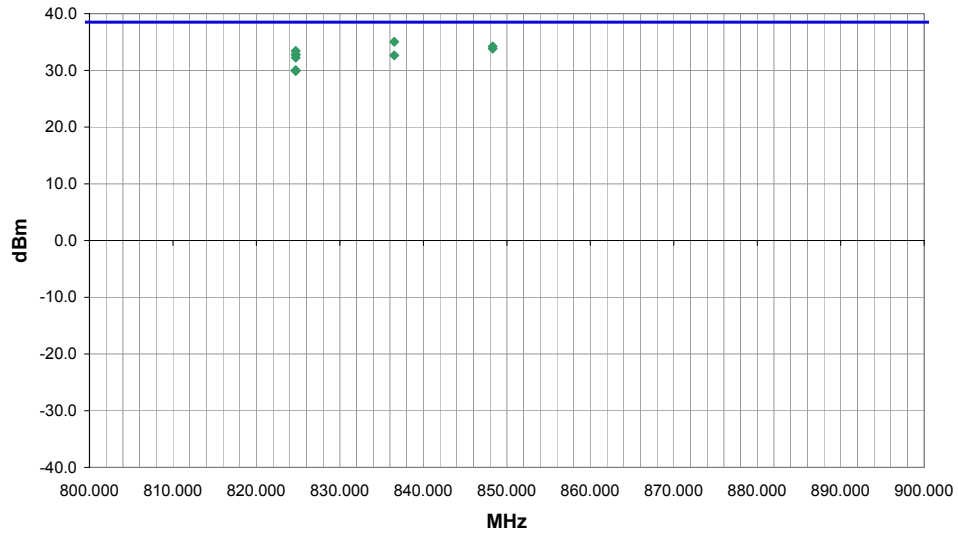
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	21
Configuration #	1
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
836.520			277.0	1.8			V-Bilog	PK	3.19E+00	35.0	38.5	-3.5	Notebook on side
848.310			276.0	1.8			V-Bilog	PK	2.65E+00	34.2	38.5	-4.3	Notebook on side
848.310			221.0	1.4			H-Bilog	PK	2.42E+00	33.8	38.5	-4.7	Notebook typical operating position
824.700			275.0	1.7			V-Bilog	PK	2.20E+00	33.4	38.5	-5.1	Notebook on side
824.700			227.0	1.5			H-Bilog	PK	1.92E+00	32.8	38.5	-5.7	Notebook typical operating position
824.700			77.0	1.0			V-Bilog	PK	1.88E+00	32.7	38.5	-5.8	Notebook typical operating position
836.520			231.0	1.6			H-Bilog	PK	1.83E+00	32.6	38.5	-5.9	Notebook typical operating position
824.700			141.0	1.0			H-Bilog	PK	1.67E+00	32.2	38.5	-6.3	Notebook screen horizontal
824.700			116.0	1.0			V-Bilog	PK	1.01E+00	30.0	38.5	-8.5	Notebook screen horizontal
824.700			328.0	1.0			H-Bilog	PK	9.69E-01	29.9	38.5	-8.6	Notebook on side

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	04/02/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	30%
Tested by:	Holly Ashkannejhad	Barometric Pres.:	30.42
Power:	120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular band

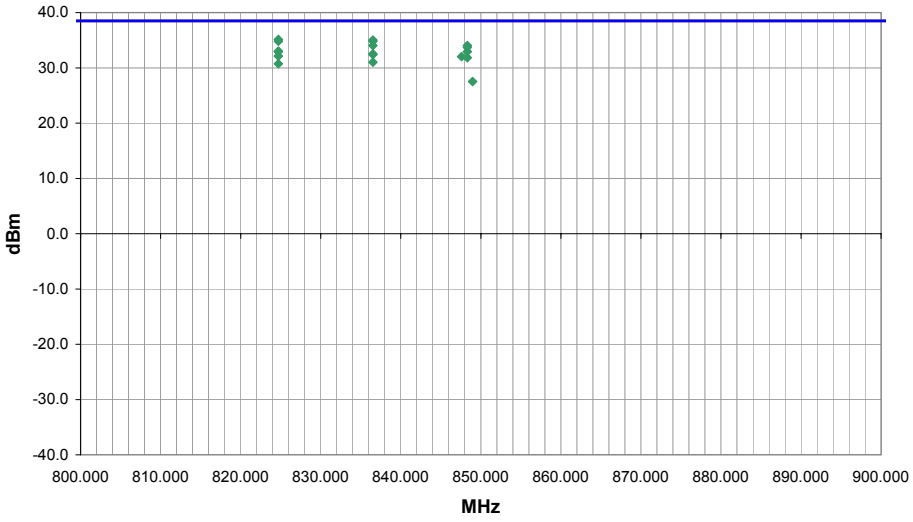
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	68
Configuration #	1
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
824.700			286.0	1.2			V-Bilog	PK	3.26E+00	35.1	38.5	-3.4	Notebook on side, low channel
836.520			266.0	1.2			H-Bilog	PK	3.19E+00	35.0	38.5	-3.5	Notebook typical position, mid channel
824.700			310.0	1.2			V-Bilog	PK	3.04E+00	34.8	38.5	-3.7	Notebook screen horizontal, low channel
836.520			135.0	1.0			V-Bilog	PK	3.04E+00	34.8	38.5	-3.7	Notebook on side, mid channel
836.520			275.0	1.2			H-Bilog	PK	2.53E+00	34.0	38.5	-4.5	Notebook screen horizontal, mid channel
848.310			330.0	1.0			H-Bilog	PK	2.53E+00	34.0	38.5	-4.5	Notebook typical position, high channel
848.310			295.0	1.1			H-Bilog	PK	2.36E+00	33.7	38.5	-4.8	Notebook screen horizontal, high channel
824.700			194.0	1.2			H-Bilog	PK	2.01E+00	33.0	38.5	-5.5	Notebook on side, low channel
824.700			94.0	1.2			H-Bilog	PK	1.96E+00	32.9	38.5	-5.6	Notebook typical position, low channel
848.310			241.0	1.2			V-Bilog	PK	1.96E+00	32.9	38.5	-5.6	Notebook typical position, high channel
836.520			127.0	1.2			V-Bilog	PK	1.79E+00	32.5	38.5	-6.0	Notebook typical position, mid channel
836.520			341.0	1.2			H-Bilog	PK	1.75E+00	32.4	38.5	-6.1	Notebook on side, mid channel
824.700			152.0	1.2			V-Bilog	PK	1.63E+00	32.1	38.5	-6.4	Notebook typical position, low channel
847.590			262.0	1.0			V-Bilog	PK	1.60E+00	32.0	38.5	-6.5	Notebook on side, high channel
848.310			295.0	1.1			V-Bilog	PK	1.52E+00	31.8	38.5	-6.7	Notebook screen horizontal, high channel
836.520			341.0	1.0			V-Bilog	PK	1.27E+00	31.0	38.5	-7.5	Notebook screen horizontal, mid channel
824.700			265.0	1.2			V-Bilog	PK	1.18E+00	30.7	38.5	-7.8	Notebook screen horizontal, low channel
848.980			342.0	1.0			H-Bilog	PK	5.66E-01	27.5	38.5	-11.0	Notebook on side, high channel

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	04/02/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	30%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.42
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), cellular band

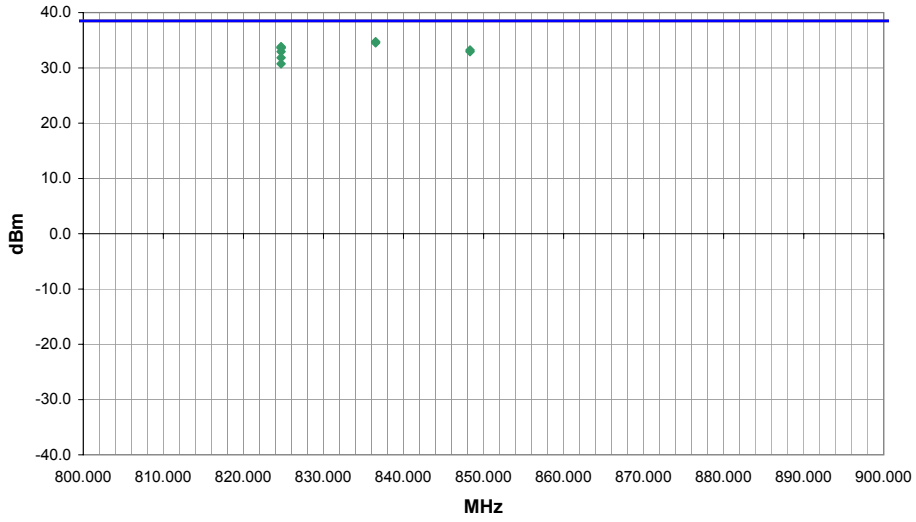
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	69
Configuration #	1
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
836.520			183.0	1.1			V-Bilog	PK	2.97E+00	34.7	38.5	-3.8	Notebook on side, mid channel
836.520			277.0	1.0			H-Bilog	PK	2.84E+00	34.5	38.5	-4.0	Notebook typical position, mid channel
824.700			278.0	1.0			H-Bilog	PK	2.42E+00	33.8	38.5	-4.7	Notebook typical position, low channel
824.700			175.0	1.2			V-Bilog	PK	2.31E+00	33.6	38.5	-4.9	Notebook on side, low channel
824.700			268.0	1.2			H-Bilog	PK	2.31E+00	33.6	38.5	-4.9	Notebook screen horizontal, low channel
848.310			148.0	1.2			V-Bilog	PK	2.10E+00	33.2	38.5	-5.3	Notebook on side, high channel
824.700			146.0	1.2			V-Bilog	PK	1.96E+00	32.9	38.5	-5.6	Notebook screen horizontal, low channel
848.310			305.0	1.0			H-Bilog	PK	1.96E+00	32.9	38.5	-5.6	Notebook typical position, mid channel
824.700			319.0	1.2			H-Bilog	PK	1.52E+00	31.8	38.5	-6.7	Notebook on side, low channel
824.700			225.0	1.2			V-Bilog	PK	1.18E+00	30.7	38.5	-7.8	Notebook typical position, low channel

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000)

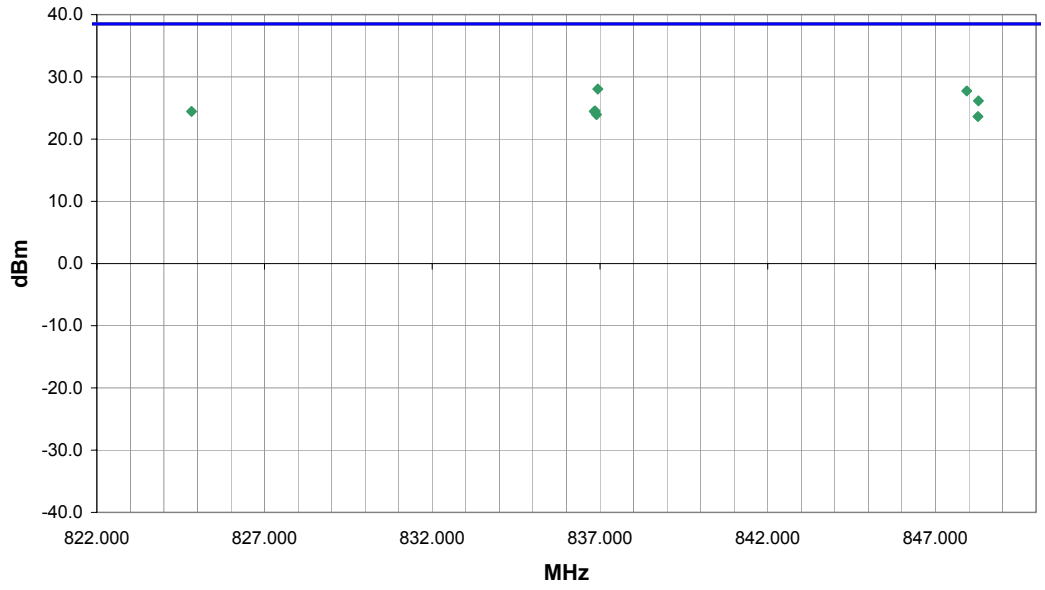
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	59
Configuration #	4
Results	Pass

NVLAP Lab Code 200630-0

Signature



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
836.937			131.0	1.3			V-Bilog	PK	6.36E-01	28.0	38.5	-10.5	Antenna vertical
847.935			133.0	1.3			V-Bilog	PK	5.93E-01	27.7	38.5	-10.8	Antenna vertical
848.285			349.0	1.1			H-Bilog	PK	4.10E-01	26.1	38.5	-12.4	Antenna on side
836.853			14.0	1.2			H-Bilog	PK	2.84E-01	24.5	38.5	-14.0	Antenna on side
824.825			345.0	1.1			H-Bilog	PK	2.77E-01	24.4	38.5	-14.1	Antenna on side
836.828			12.0	1.1			H-Bilog	PK	2.77E-01	24.4	38.5	-14.1	Antenna vertical
836.895			284.0	1.4			V-Bilog	PK	2.47E-01	23.9	38.5	-14.6	Antenna on side
848.268			12.0	1.0			H-Bilog	PK	2.31E-01	23.6	38.5	-14.9	Antenna vertical

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856)

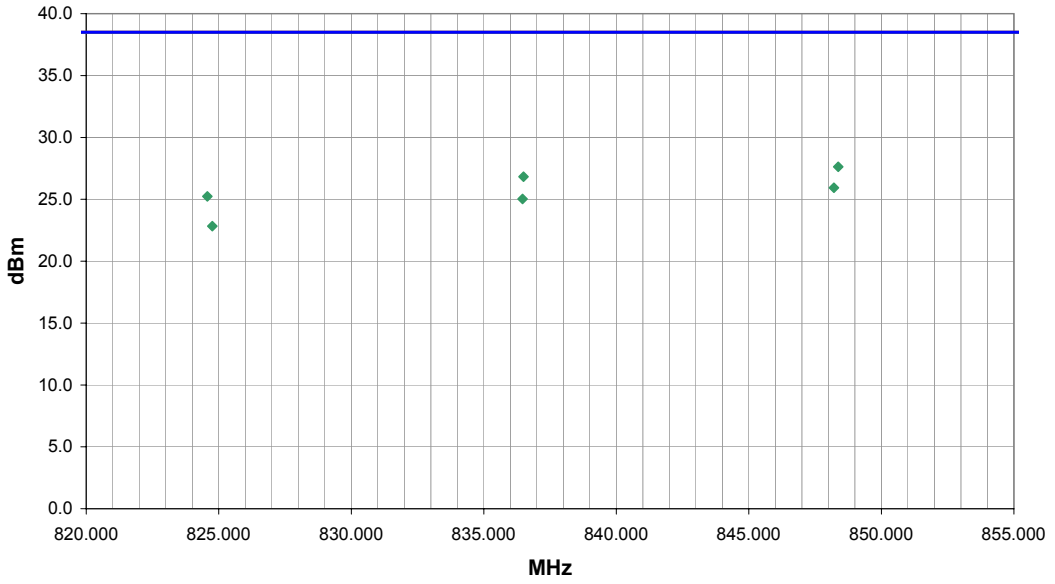
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	63
Configuration #	4
Results	Pass

NVLAP Lab Code 200630-0

Signature



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
848.374			185.0	1.4			V-Bilog	PK	5.80E-01	27.6	38.5	-10.9	Antenna vertical
836.497			309.0	1.4			V-Bilog	PK	4.82E-01	26.8	38.5	-11.7	Antenna vertical
848.211			174.0	1.0			H-Bilog	PK	3.92E-01	25.9	38.5	-12.6	Antenna on side
824.572			178.0	1.0			H-Bilog	PK	3.34E-01	25.2	38.5	-13.3	Antenna on side
836.462			329.0	1.1			H-Bilog	PK	3.19E-01	25.0	38.5	-13.5	Antenna on side
824.758			168.0	1.2			V-Bilog	PK	1.92E-01	22.8	38.5	-15.7	Antenna vertical

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 22H:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A)

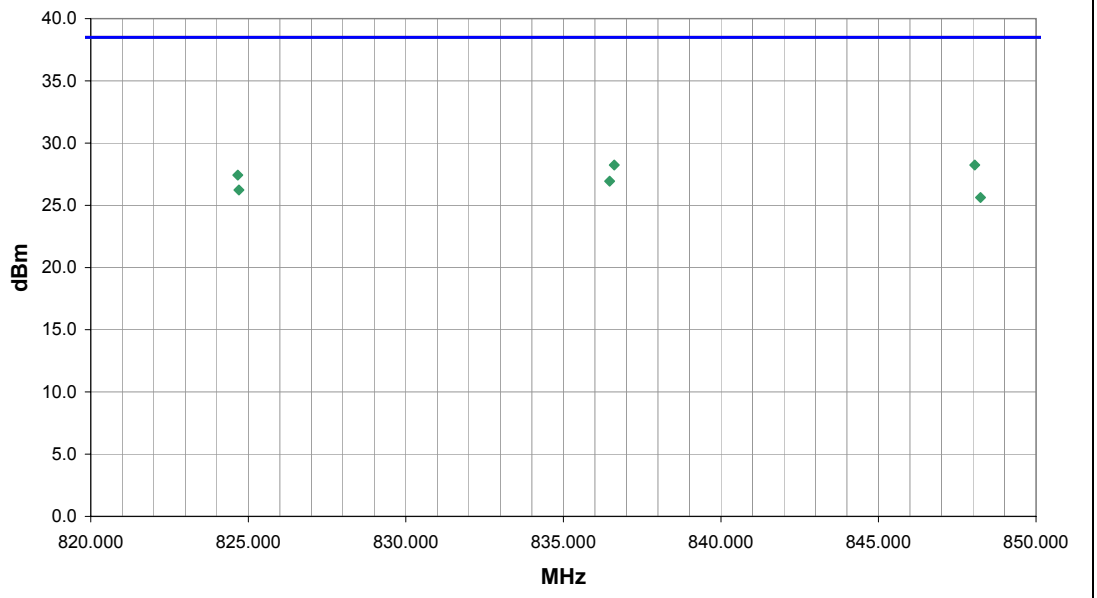
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	64
Configuration #	4
Results	Pass

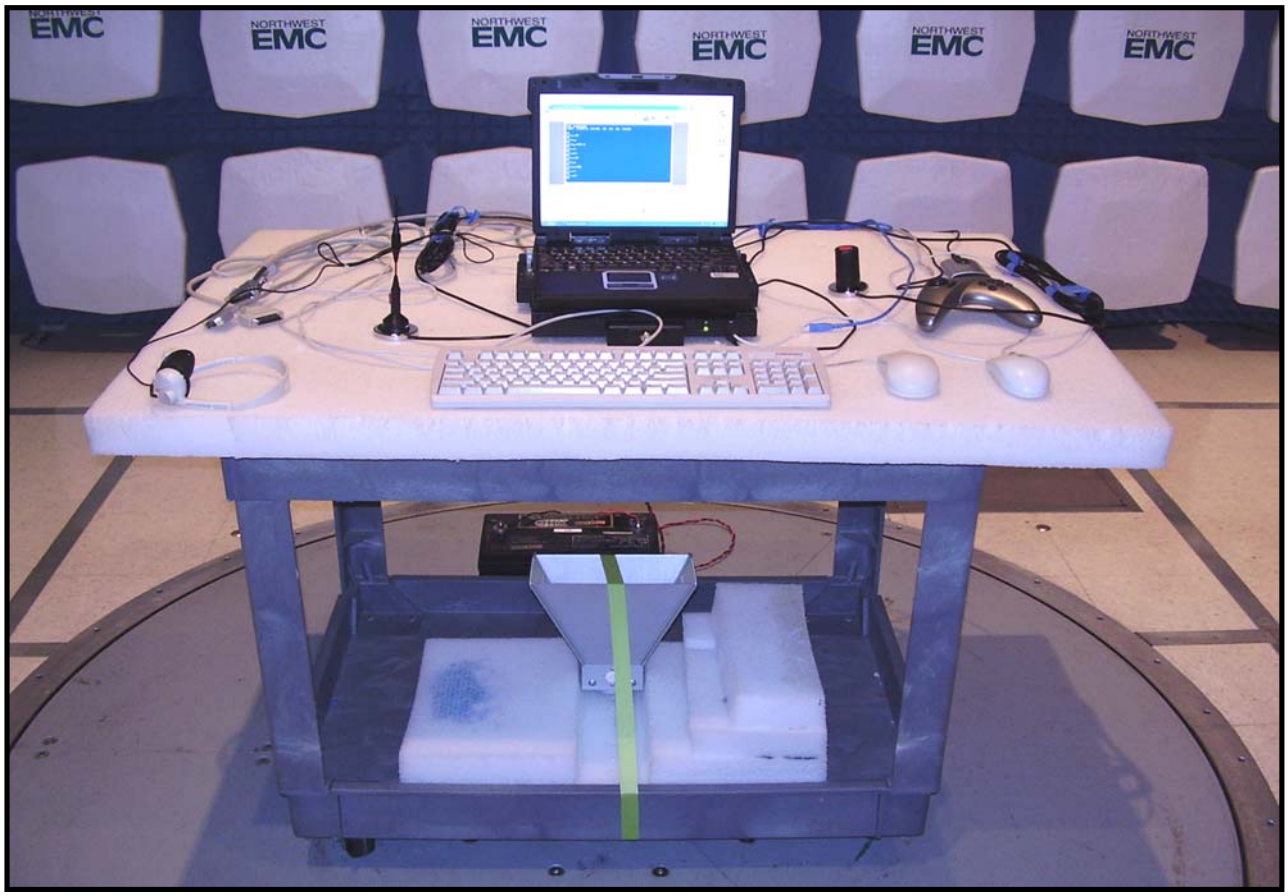
NVLAP Lab Code 200630-0

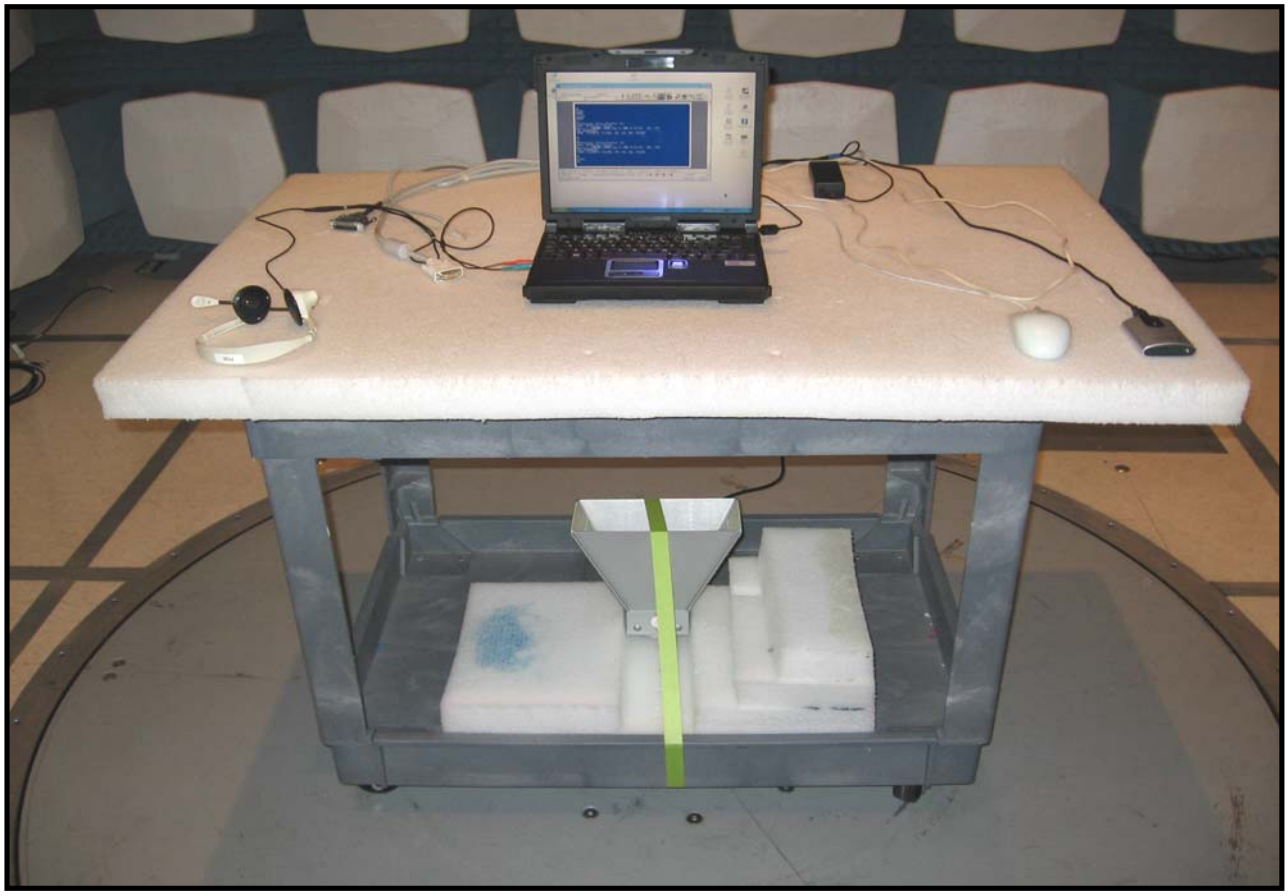
Signature

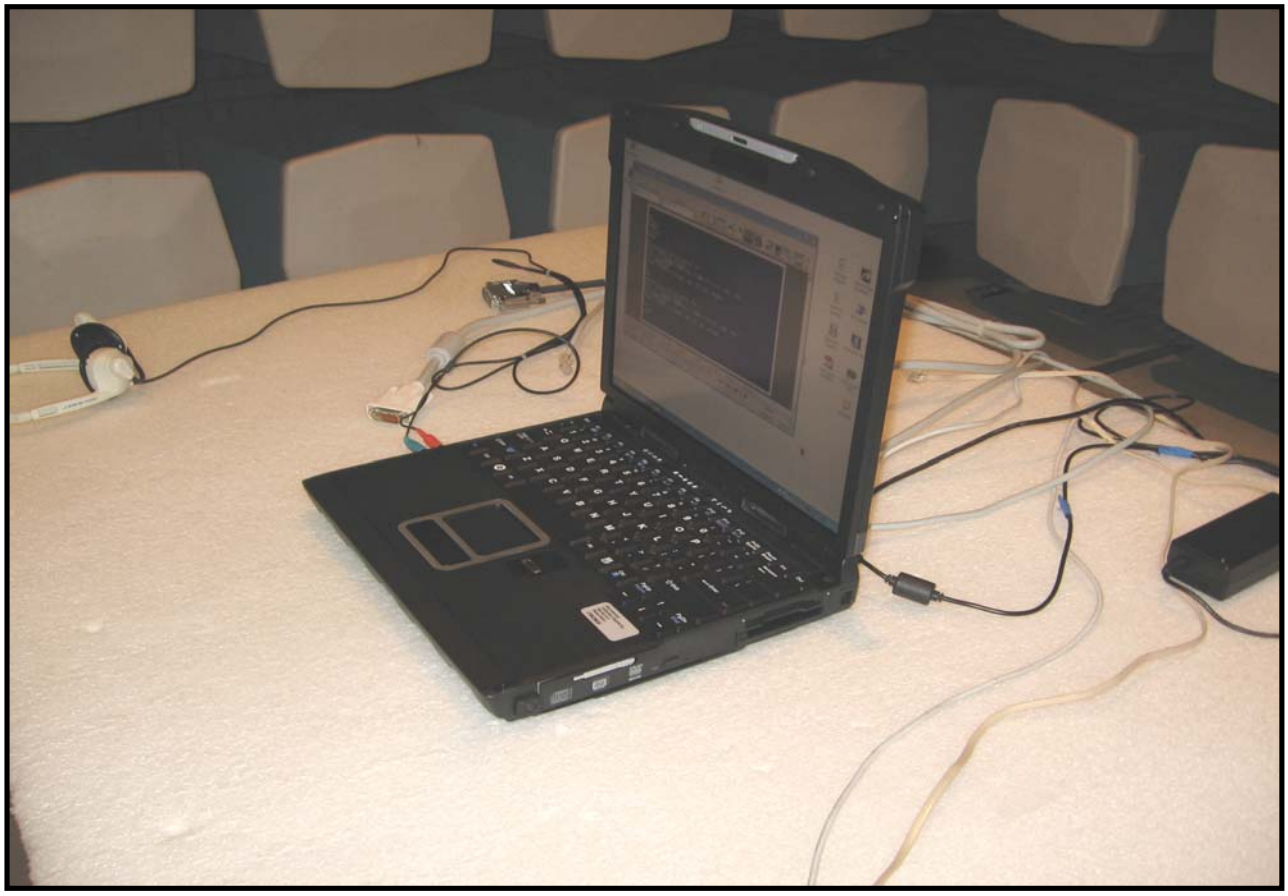


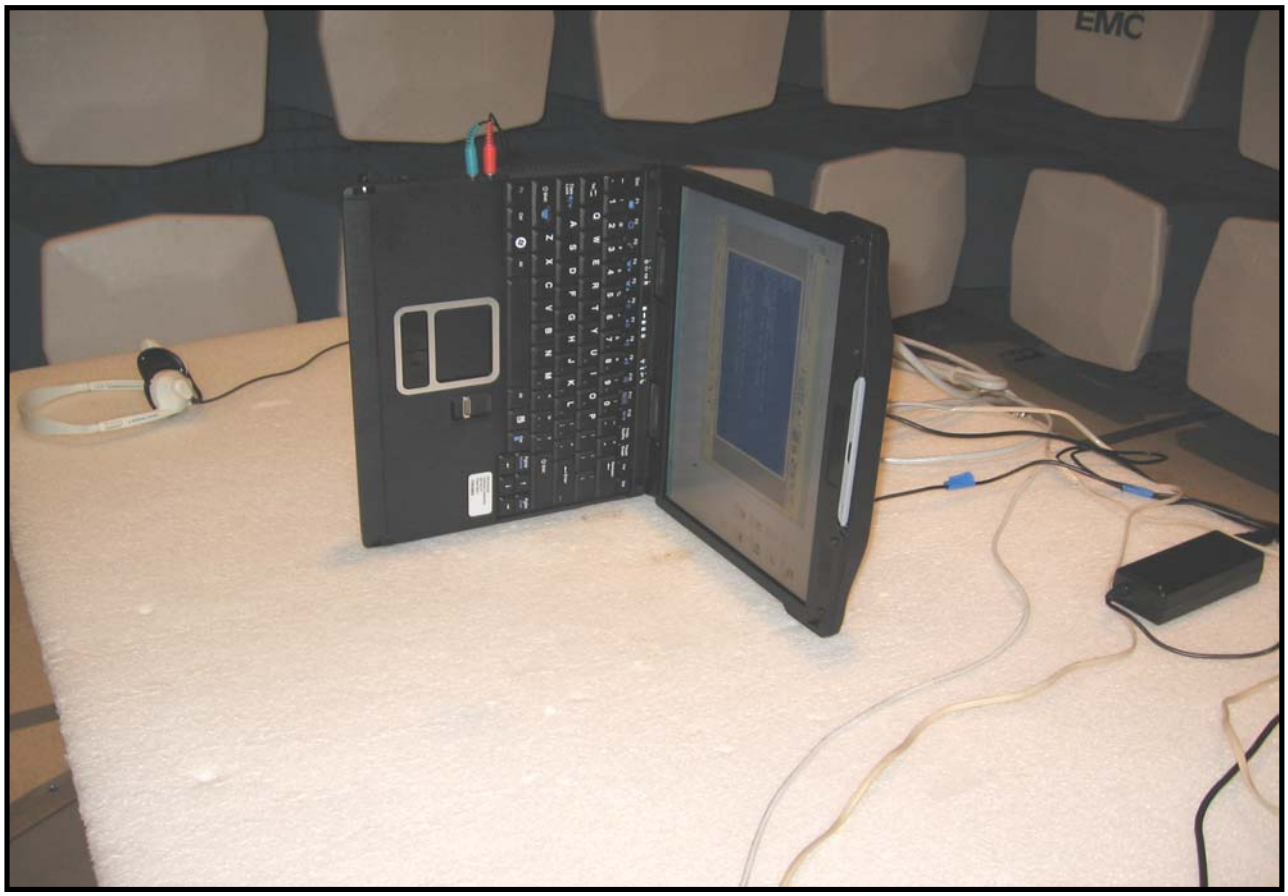
Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
836.613			189.0	1.3			V-Bilog	PK	6.65E-01	28.2	38.5	-10.3	Antenna vertical
848.053			192.0	1.4			V-Bilog	PK	6.65E-01	28.2	38.5	-10.3	Antenna vertical
824.665			171.0	1.1			H-Bilog	PK	5.54E-01	27.4	38.5	-11.1	Antenna on side
836.468			172.0	1.0			H-Bilog	PK	4.93E-01	26.9	38.5	-11.6	Antenna on side
824.700			177.0	1.4			V-Bilog	PK	4.20E-01	26.2	38.5	-12.3	Antenna vertical
848.240			170.0	1.0			H-Bilog	PK	3.66E-01	25.6	38.5	-12.9	Antenna on side

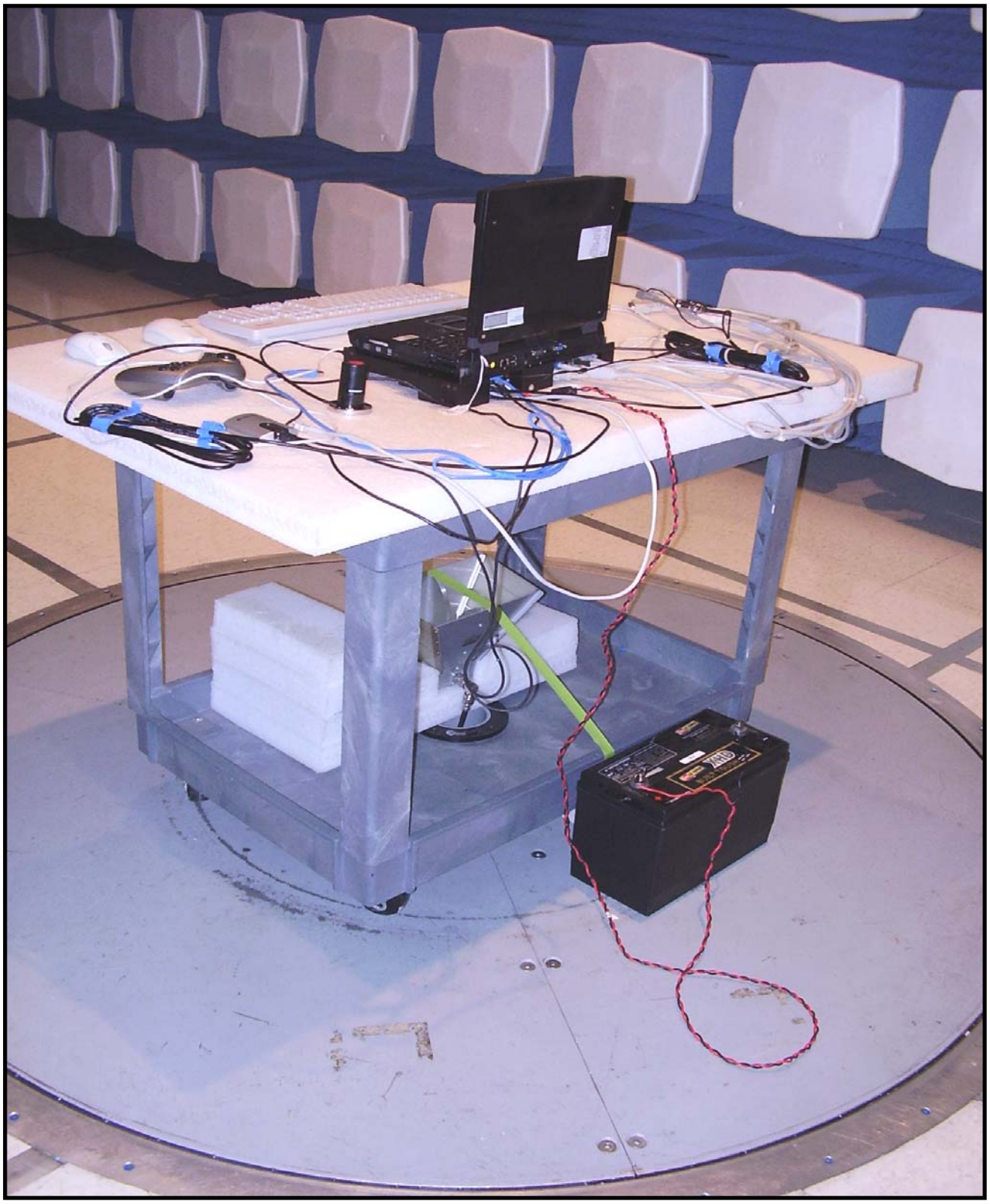
Effective Radiated Power








EMC



Effective Isotropic 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
CDMA 1xRTT (IS-2000)
CDMA 1xEV-DO Rev 0 (IS-856)
CDMA 1xEV-DO Rev A (IS-856-A)

BANDS INVESTIGATED
PCS

CHANNELS INVESTIGATED
PCS, Low channel, Ch. 25, 1851.25MHz
PCS, Mid channel, Ch. 600, 1880MHz
PCS, High channel, Ch. 1175, 1908.75MHz

CONFIGURATIONS INVESTIGATED
Notebook configuration
Notebook in optional vehicular dock configuration

POWER SETTINGS INVESTIGATED
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	1851.25MHz	Stop Frequency	1908.75MHz

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
EV01 cables g,h,j			EVB	12/29/2006	13
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12
Antenna, Horn	EMCO	3115	AHJ	5/20/2005	24
Signal Generator	Agilent	E8257D	TGX	1/25/2007	13
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Antenna, Biconilog	EMCO	3141	AXE	12/28/2005	24

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).

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.

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/26/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	33%
Project:	None	Barometric Pres.:	30.17
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A), PCS, see comments for channel.

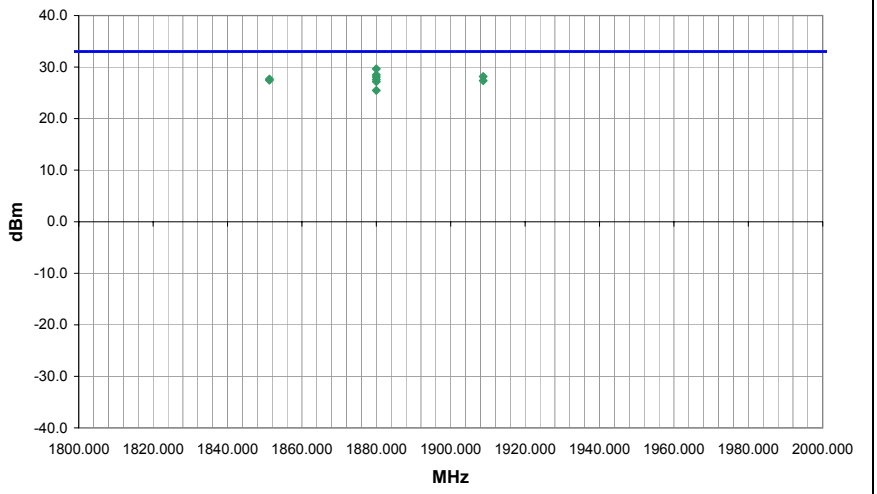
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	22
Configuration #	1
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
1880.000			306.0	1.4			H-Horn	PK	9.27E-01	29.7	33.0	-3.3	Mid channel. Notebook screen horizontal.
1880.000			36.0	1.0			H-Horn	PK	7.03E-01	28.5	33.0	-4.5	Mid channel. Notebook on side.
1908.750			332.0	1.1			H-Horn	PK	6.56E-01	28.2	33.0	-4.8	High channel. Notebook screen horizontal.
1880.000			7.0	1.0			V-Horn	PK	6.41E-01	28.1	33.0	-4.9	Mid channel. Notebook screen horizontal.
1851.250			54.0	1.4			H-Horn	PK	5.85E-01	27.7	33.0	-5.3	Low channel. Notebook screen horizontal.
1880.000			26.0	1.5			H-Horn	PK	5.72E-01	27.6	33.0	-5.4	Mid channel. Notebook typical operating position.
1851.250			8.0	1.0			V-Horn	PK	5.59E-01	27.5	33.0	-5.5	Low channel. Notebook screen horizontal.
1908.750			17.0	1.0			V-Horn	PK	5.46E-01	27.4	33.0	-5.6	High channel. Notebook screen horizontal.
1880.000			-1.0	1.0			V-Horn	PK	5.21E-01	27.2	33.0	-5.8	Mid channel. Notebook on side.
1880.000			288.0	1.6			V-Horn	PK	3.52E-01	25.5	33.0	-7.5	Mid channel. Notebook typical operating position.

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
Customer:	Spectrum Technology	Date:	04/02/07
Attendees:	Rod Munro	Temperature:	22
Project:	None	Humidity:	30%
Tested by:	Holly Ashkannejhad	Power: 120VAC/60Hz	Barometric Pres.: 30.42
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), PCS band

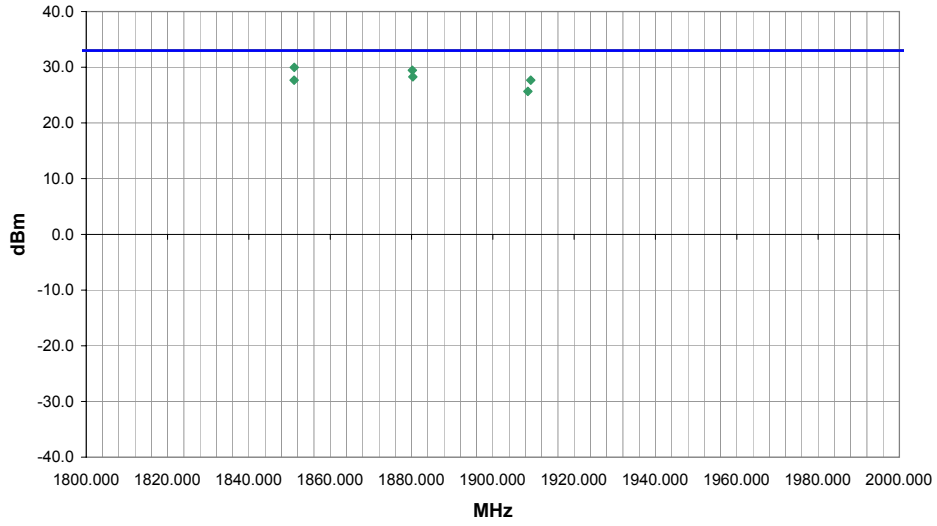
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	70
Configuration #	1
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
1851.175			12.0	1.2			H-Horn	PK	9.93E-01	30.0	33.0	-3.0	Notebook typical position, low channel
1880.208			315.0	1.2			H-Horn	PK	8.85E-01	29.5	33.0	-3.5	Notebook typical position, low channel
1880.342			292.0	1.2			V-Horn	PK	6.72E-01	28.3	33.0	-4.7	Notebook on side, mid channel
1851.133			19.0	1.0			V-Horn	PK	5.85E-01	27.7	33.0	-5.3	Notebook on side, low channel
1909.325			50.0	1.0			H-Horn	PK	5.85E-01	27.7	33.0	-5.3	Notebook typical position, high channel
1908.617			11.0	1.9			V-Horn	PK	3.69E-01	25.7	33.0	-7.3	Notebook on side, high channel

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	03/29/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook configuration.

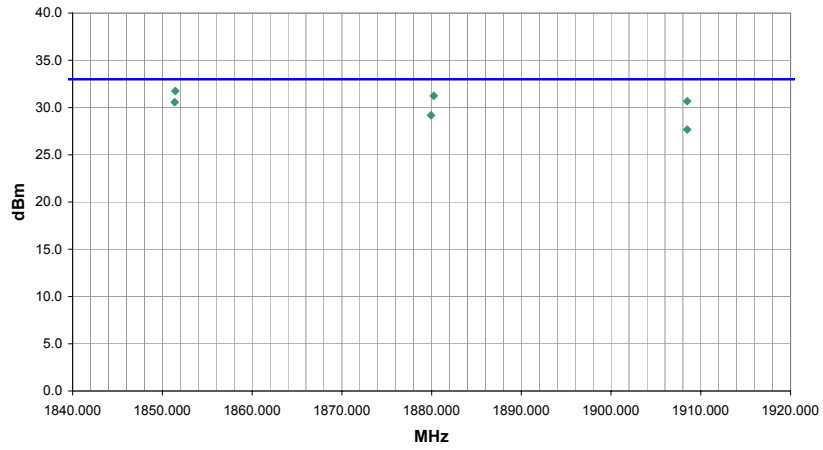
EUT OPERATING MODES

CDMA2000

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	36		
Configuration #	1		
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
1851.442			210.0	1.2			H-Horn	PK	1.50E+00	31.8	33.0	-1.2	Low channel, Notebook in typical orientation: 58 out, 40 in ALL UP
1880.242			208.0	1.5			H-Horn	PK	1.33E+00	31.2	33.0	-1.8	Mid channel, Notebook in typical orientation: 58 out, 40 in ALL UP
1908.475			206.0	1.1			H-Horn	PK	1.17E+00	30.7	33.0	-2.3	High channel, Notebook in typical orientation: 58 out, 40 in ALL UP
1851.383			361.0	1.1			V-Horn	PK	1.14E+00	30.6	33.0	-2.4	Low channel, Notebook in typical orientation: 58 out, 40 in ALL UP
1879.942			-2.0	1.1			V-Horn	PK	8.26E-01	29.2	33.0	-3.8	Mid channel, Notebook in typical orientation: 58 out, 40 in ALL UP
1908.475			6.0	1.4			V-Horn	PK	5.85E-01	27.7	33.0	-5.3	High channel, Notebook in typical orientation: 58 out, 40 in ALL UP

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev A (IS-856-A)

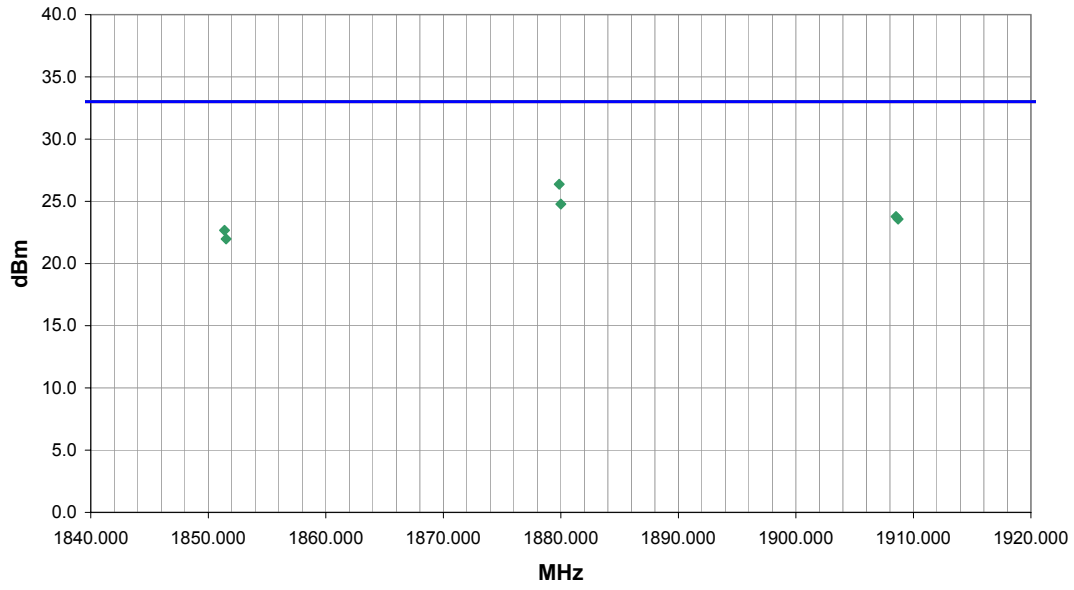
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	61
Configuration #	4
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
1879.860			12.0	1.1			V-Horn	PK	4.34E-01	26.4	33.0	-6.6	Antenna vertical
1880.006			137.0	1.2			H-Horn	PK	3.00E-01	24.8	33.0	-8.2	Antenna on side
1908.528			207.0	1.3			V-Horn	PK	2.38E-01	23.8	33.0	-9.2	Antenna vertical
1908.698			173.0	1.5			H-Horn	PK	2.28E-01	23.6	33.0	-9.4	Antenna on side
1851.378			143.0	1.2			H-Horn	PK	1.85E-01	22.7	33.0	-10.3	Antenna on side
1851.512			274.0	1.3			V-Horn	PK	1.57E-01	22.0	33.0	-11.0	Antenna vertical

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856)

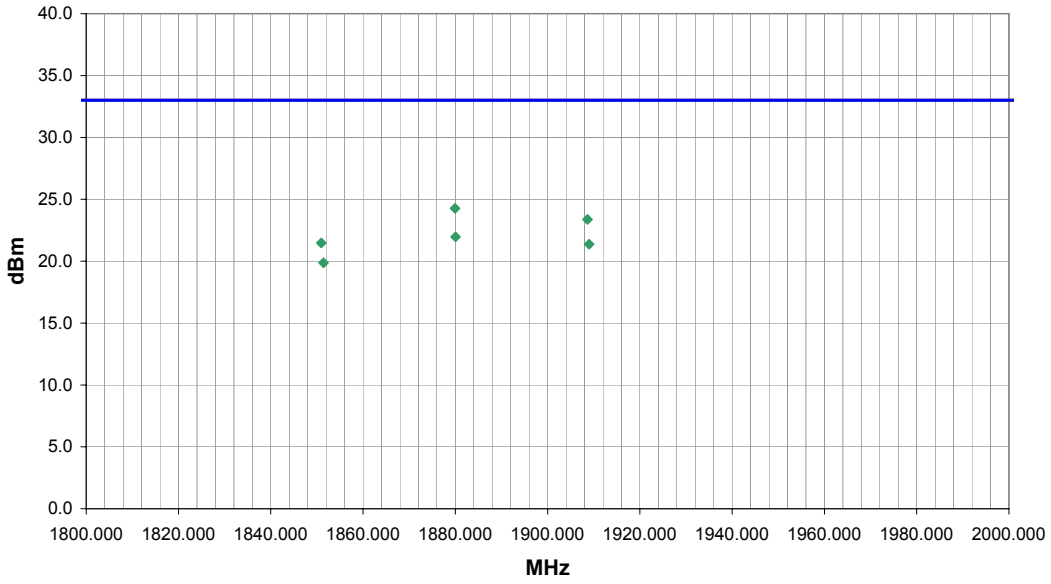
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	62
Configuration #	4
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
1879.924			43.0	1.1			V-Horn	PK	2.67E-01	24.3	33.0	-8.7	Antenna vertical
1908.651			210.0	1.3			V-Horn	PK	2.17E-01	23.4	33.0	-9.6	Antenna vertical
1880.052			343.0	1.1			H-Horn	PK	1.57E-01	22.0	33.0	-11.0	Antenna horizontal
1850.952			12.0	1.1			V-Horn	PK	1.40E-01	21.5	33.0	-11.5	Antenna vertical
1908.983			208.0	1.1			H-Horn	PK	1.37E-01	21.4	33.0	-11.6	Antenna horizontal
1851.442			265.0	1.2			H-Horn	PK	9.71E-02	19.9	33.0	-13.1	Antenna horizontal

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN radio, Intel 4965AGN 802.11(b)/(g)/(a)/(n) radio, and Broadcom USB Bluetooth module BCM92035NMD in the IX605 notebook.	Work Order:	SPTE0049
		Date:	04/02/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	Rod Munro	Humidity:	30%
Project:	None	Barometric Pres.:	30.42
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 24E:2006	ANSI/TIA/EIA-603-B:2002

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

COMMENTS

Notebook in optional vehicle dock with external WAN antenna. All bits up. Max data rate.

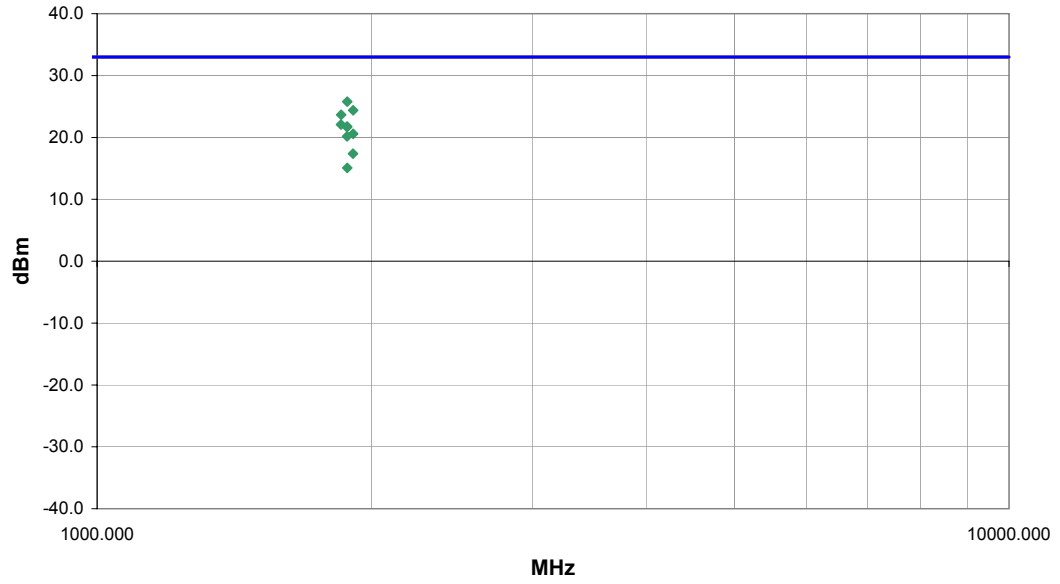
EUT OPERATING MODES

CDMA 1xRTT (IS-2000)

DEVIATIONS FROM TEST STANDARD

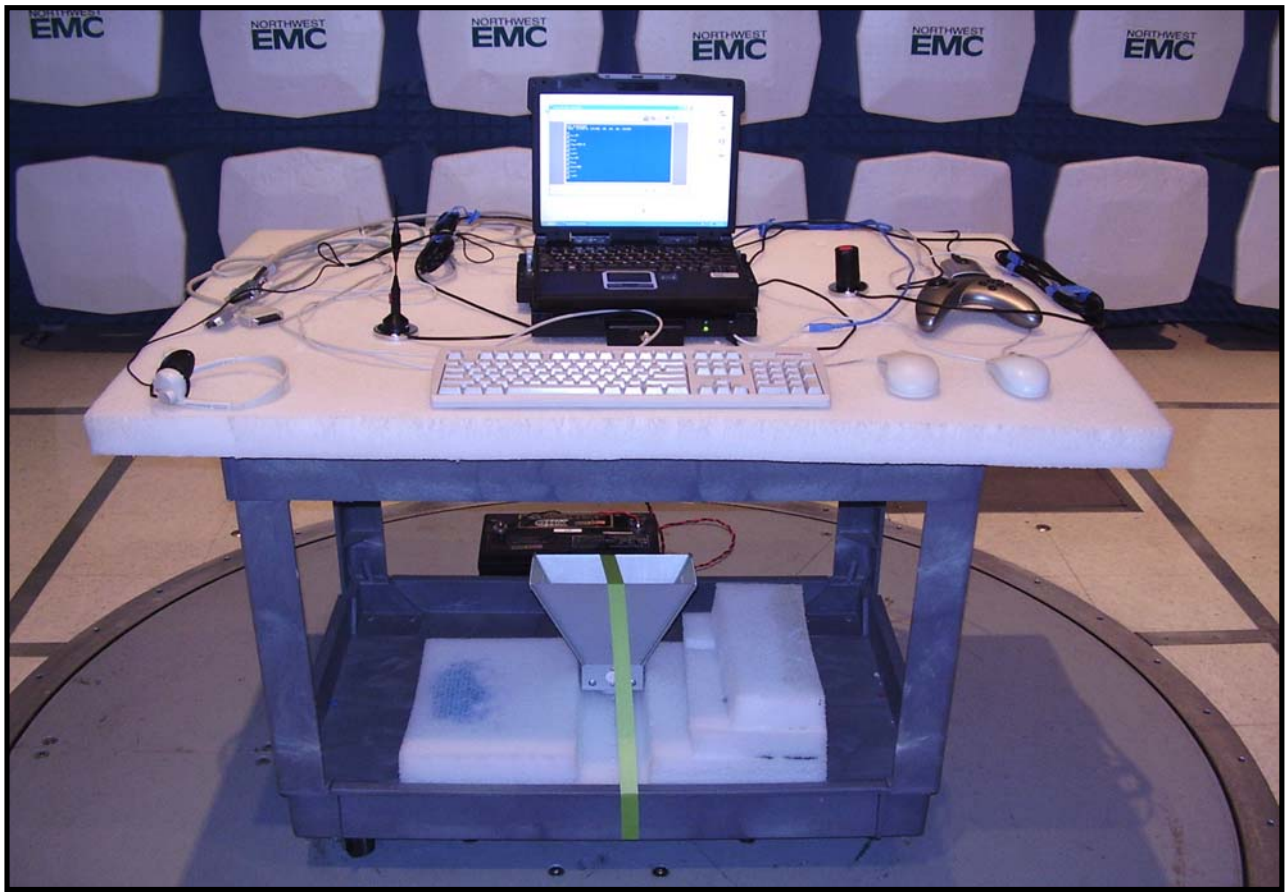
No deviations.

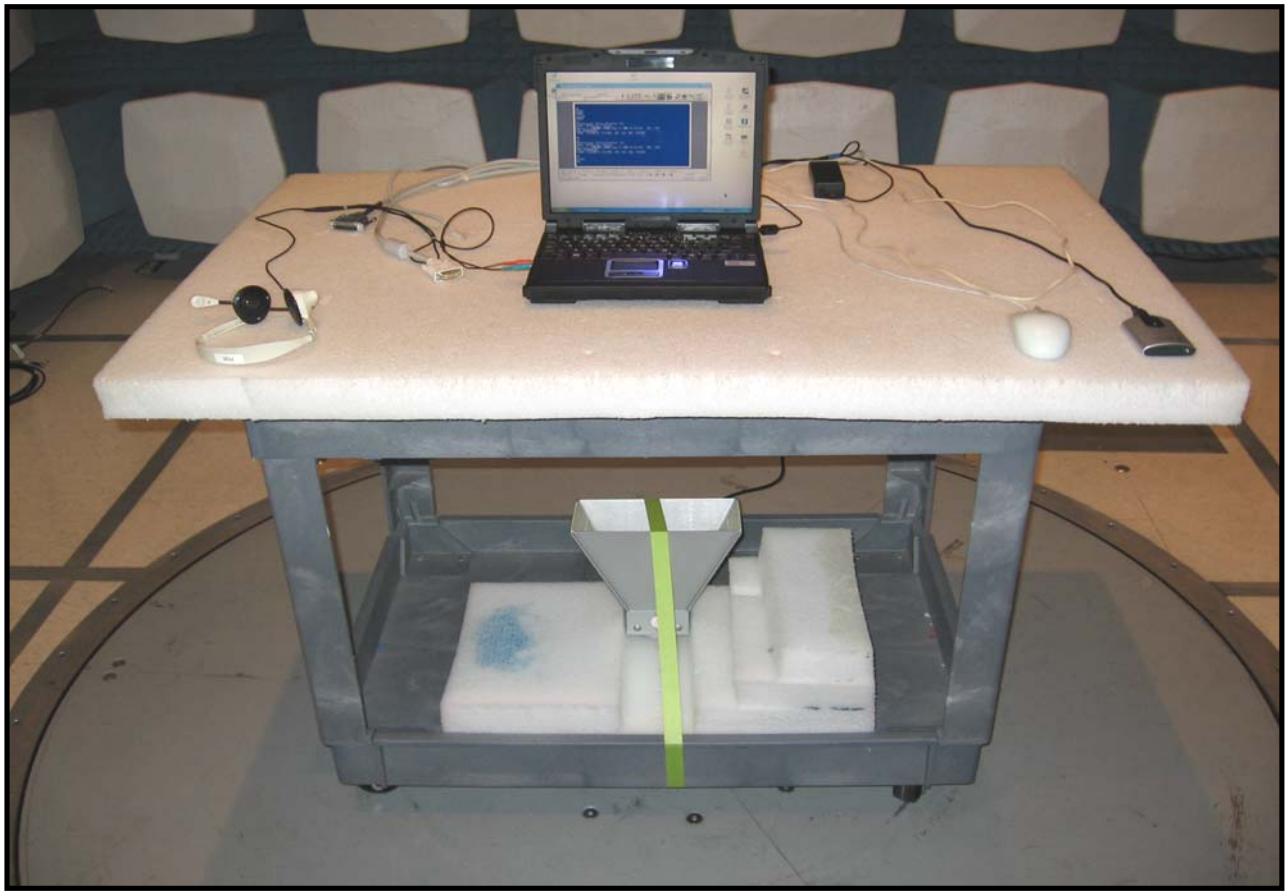
Run #	60		
Configuration #	4		
Results	Pass	NVLAP Lab Code 200630-0	*Signature*

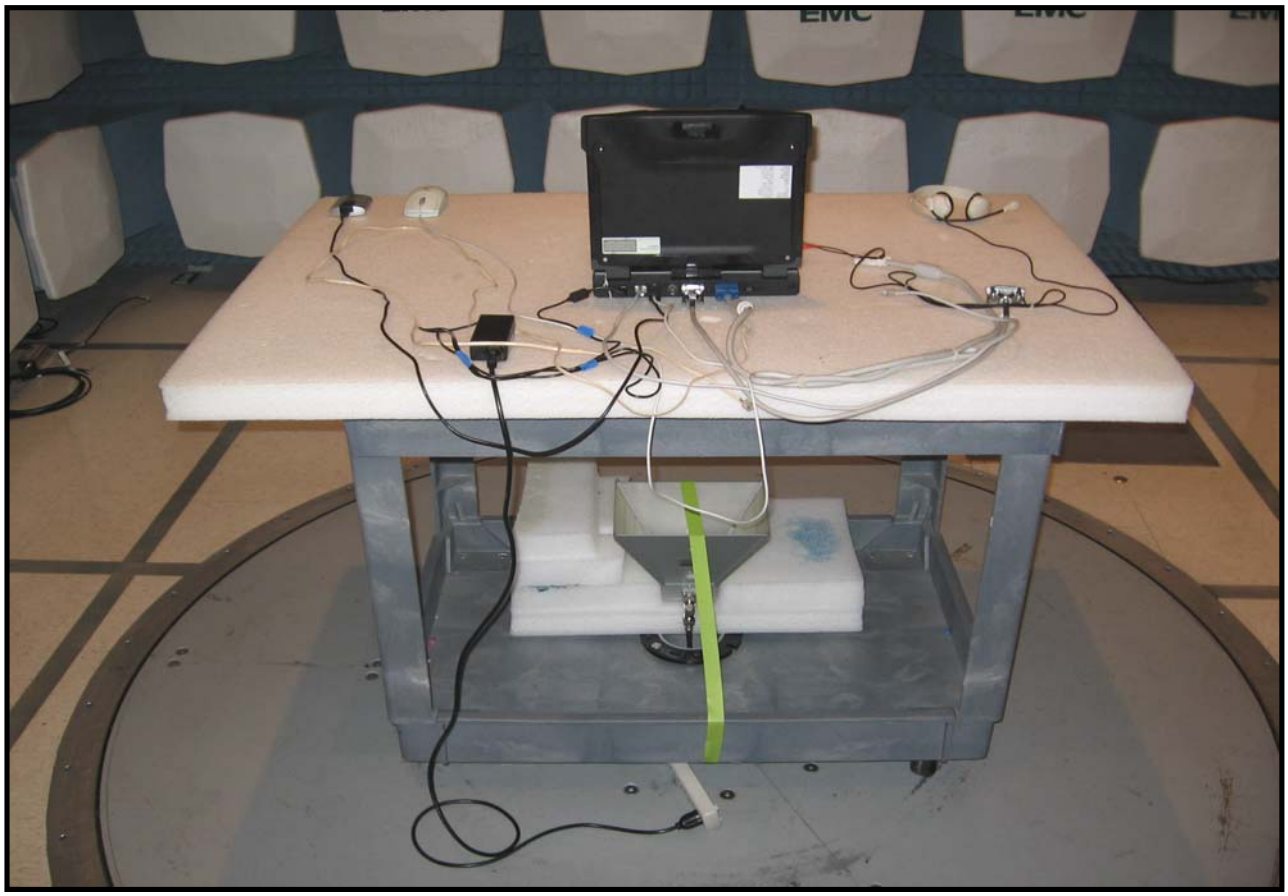


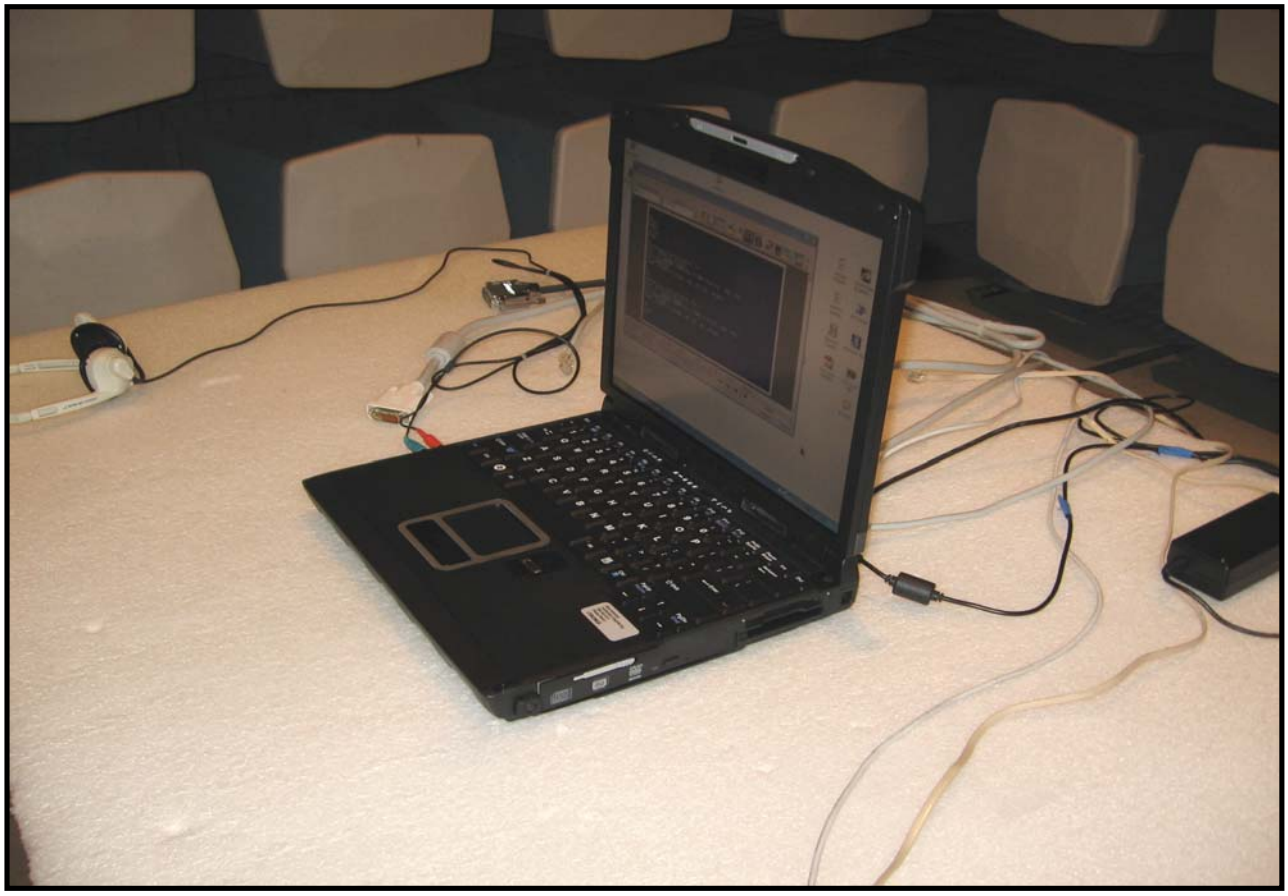
Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1880.064			222.0	1.2			V-Horn	PK	3.78E-01	25.8	33.0	-7.2	Antenna vertical
1908.744			264.0	1.0			V-Horn	PK	2.74E-01	24.4	33.0	-8.6	Antenna vertical
1851.618			1.0	1.0			V-Horn	PK	2.33E-01	23.7	33.0	-9.3	Antenna vertical
1851.372			154.0	1.6			H-Horn	PK	1.61E-01	22.1	33.0	-10.9	Antenna horizontal
1879.720			352.0	1.2			V-Horn	PK	1.50E-01	21.8	33.0	-11.2	Antenna horizontal
1879.982			360.0	2.0			H-Horn	PK	1.47E-01	21.7	33.0	-11.3	Antenna horizontal
1908.604			352.0	1.2			H-Horn	PK	1.14E-01	20.6	33.0	-12.4	Antenna horizontal
1880.030			228.0	1.2			H-Horn	PK	1.04E-01	20.2	33.0	-12.8	Antenna horizontal
1908.318			10.0	1.2			V-Horn	PK	5.46E-02	17.4	33.0	-15.6	Antenna horizontal
1880.187			223.0	1.2			H-Horn	PK	3.21E-02	15.1	33.0	-17.9	Antenna vertical

Effective Isotropic Radiated Power









Effective Isotropic Radiated Power