Spectrum Technology

Sierra Wireless MC5725 WAN Radio in the IX270

May 21, 2007

Report No. SPTE0053.2

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: May 21, 2007
Spectrum Technology
Model: Sierra Wireless MC5725 WAN Radio in the IX270

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		

Accreditations and Authorizations

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

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

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

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

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

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

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

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

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

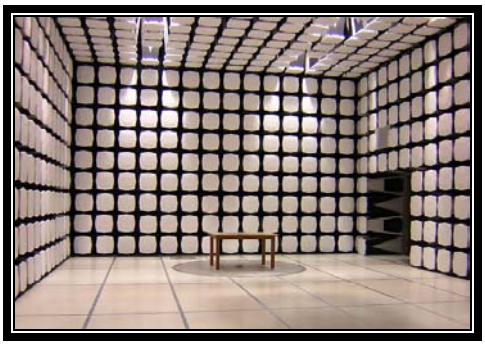
VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943,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

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

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

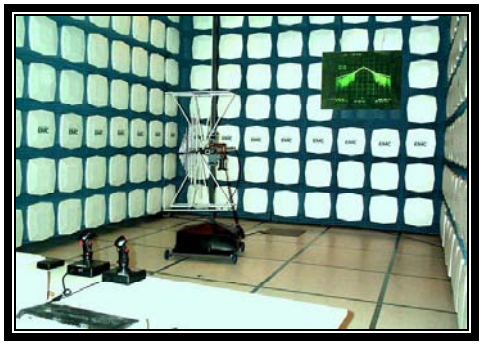
SCOPE

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



California – Orange County Facility
Labs OC01 – OC13

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



Oregon – Evergreen Facility
Labs EV01 – EV11

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

Washington – Sultan Facility
Labs SU01 – SU07

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

Party Requesting the Test

Company Name:	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 in the IX270
First Date of Test:	April 13, 2007
Last Date of Test:	April 20, 2007
Receipt Date of Samples:	April 13, 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 in the IX270 computer

Testing Objective:

Demonstrate compliance of the Sierra Wireless MC5725 WAN radio when it is installed in the IX270 computer. The MC5725 has an internal antenna and alternate vehicle mount external magnetic mount style antenna. Only radiated spurious emissions and radiated output power will be measured. The antenna port conducted data for the radio is found under the filing for FCC ID: N7N-MC5725.

CONFIGURATION 1 SPTE0053

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
WAN Network Card	Sierra Wireless, Inc.	MC5725	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Notebook PC	Itronix, Corp.	IX270	ZZGEG7036ZZ1057
AC Adapter	Delta Electronics	ADP-0=90SB BB	VCW0617007714
USB Card Reader	ImageMate	SDDR-91	015336
USB Mouse	Logitech	M-BE58	LZE02357693
802.11(a)/(b)/(g) radio	Intel Corporation	2915ABG (FCC ID:KBCIX270-WL3945)	Unknown
Bluetooth Module	Broadcomm	BT2022 (FCC ID: KBCIX270-BT2022)	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
Video	Yes	1.0m	No	Notebook PC	Unterminated
Phone	No	1.3m	No	Notebook PC	Unterminated
USB	Yes	1.2m	No	Notebook PC	Game controller
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 2 SPTE0053

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
WAN Network Card	Sierra Wireless, Inc.	MC5725	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Notebook PC	Itronix, Corp.	IX270	ZZGEG7036ZZ1057
USB Card Reader	ImageMate	SDDR-91	015336
USB Mouse	Logitech	M-BE58	LZE02357693
802.11(a)/(b)/(g) radio	Intel Corporation	2915ABG	Unknown
Bluetooth Module	Broadcomm	BT2022	Unknown
Game Controller	Microsoft	X04-63237	6323700623744
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
Vehicle Dock	Itronix, Corp.	IX270 VEH DCK RF	ZZCWA7017AE0042
DC Power Supply	Astron	VS-35M	Unknown

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
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	DC Power Supply
Serial	Yes	1.3m	No	Vehicle Dock	Unterminated
Video	Yes	1.0m	Yes	Vehicle Dock	Unterminated
USB	Yes	1.4m	No	Vehicle Dock	USB Mouse
Audio	No	1.0m	No	Vehicle Dock	Headset
Ethernet	No	1.0m	No	Vehicle Dock	Headset
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	4/13/2007	Effective 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.
2	4/16/2007	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.
3	4/20/2007	Effective 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.
4	4/20/2007	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.

OPERATING BANDS
North American PCS
US Cellular

MODES OF OPERATION INVESTIGATED
CDMA 1xEV-DO Rev A (IS-856-A)
CDMA 1xEV-Do Rev 0 (IS-856)
CDMA 1xRTT (IS-2000)

MODE OF OPERATION USED FOR FINAL TEST
CDMA 1xEV-DO Rev A (IS-856-A) - worst case per Sierra Wireless test report

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

POWER CONTROL SETTINGS
All bits up

DATA RATES INVESTIGATED
Maximum

CONFIGURATIONS INVESTIGATED
Notebook configuration, internal antenna
Optional vehicle mount configuration, external antenna

POWER SETTINGS INVESTIGATED
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
PCS BAND			
Start Frequency	30MHz	Stop Frequency	26 GHz
CELLULAR BAND			
Start Frequency	30MHz	Stop Frequency	10 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Low Pass Filter 0-1000 MHz	Micro-Tronics	LPM50004	LFD	12/29/2006	13
Low Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	LFB	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
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	3/23/2006	13
Antenna, Horn	EMCO	3160-09	AHG	NCR	0
EV01 Cable D			EVD	3/30/2006	13
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	5/12/2006	13
EV01 cables g,h,I			EVF	4/17/2006	13
Antenna, Horn	EMCO	3160-08	AHK	NCR	0
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	12/29/2006	13
Pre-Amplifier	Miteq	AM-1616-1000	AOL	12/29/2006	13
Antenna, Biconilog	EMCO	3141	AXE	12/28/2005	24
EV01 cables c,g, h			EVA	12/29/2006	13
Antenna, Dipole (part of ADA)	ETS	3121C-DB4	ADAA	12/28/2006	24
Antenna, Dipole (ADAA included)	Roberts	Roberts	ADA	12/28/2006	24
EV01 cables g,h,j			EVB	12/29/2006	13
Antenna, Horn	EMCO	3115	AHJ	5/20/2005	24
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12
Signal Generator	Hewlett-Packard	8648D	TGC	12/7/2006	13
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
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

TEST DESCRIPTION

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

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

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/16/07
Customer:	Spectrum Technology	Temperature:	23
Attendees:	None	Humidity:	31%
Project:	None	Barometric Pres.:	29.97
Tested by:	David Divergigelis	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 standalone

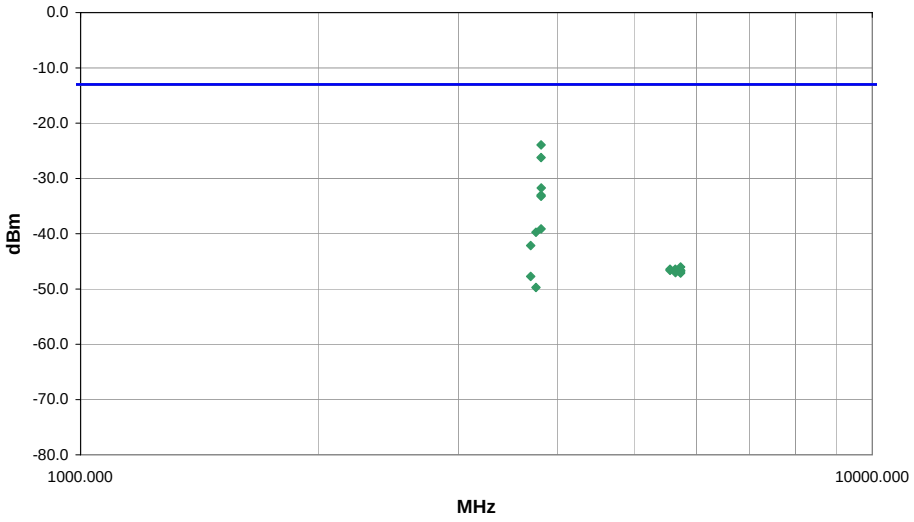
EUT OPERATING MODES

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

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	8		
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
3816.568			207.0	1.0			H-Horn	PK	4.05E-06	-23.9	-13.0	-10.9	High channel, notebook on side
3816.997			205.0	1.0			H-Horn	PK	2.38E-06	-26.2	-13.0	-13.2	High channel, notebook screen horizontal
3817.338			157.0	1.0			V-Horn	PK	6.72E-07	-31.7	-13.0	-18.7	High channel, notebook screen horizontal
3816.980			74.0	1.0			H-Horn	PK	4.98E-07	-33.0	-13.0	-20.0	High channel, notebook typical position
3816.963			211.0	1.3			V-Horn	PK	4.75E-07	-33.2	-13.0	-20.2	High channel, notebook typical position
3816.663			218.0	1.7			V-Horn	PK	1.22E-07	-39.1	-13.0	-26.1	High channel, notebook on side
3759.525			204.0	1.0			H-Horn	PK	1.06E-07	-39.7	-13.0	-26.7	Mid channel, notebook on side
3702.953			298.0	1.0			H-Horn	PK	6.13E-08	-42.1	-13.0	-29.1	Low channel, notebook on side
5725.225			118.0	2.4			H-Horn	PK	2.50E-08	-46.0	-13.0	-33.0	High channel, notebook typical position
5553.337			88.0	1.0			V-Horn	PK	2.28E-08	-46.4	-13.0	-33.4	Low channel, notebook on side
5639.583			173.0	2.7			V-Horn	PK	2.28E-08	-46.4	-13.0	-33.4	Mid channel, notebook on side
5554.008			310.0	1.0			H-Horn	PK	2.17E-08	-46.6	-13.0	-33.6	Low channel, notebook on side
5725.240			36.0	1.0			H-Horn	PK	2.17E-08	-46.6	-13.0	-33.6	High channel, notebook screen horizontal
5725.217			0.0	1.0			V-Horn	PK	2.12E-08	-46.7	-13.0	-33.7	High channel, notebook on side
5724.735			126.0	3.2			V-Horn	PK	2.03E-08	-46.9	-13.0	-33.9	High channel, notebook screen horizontal
5725.052			159.0	1.0			V-Horn	PK	2.03E-08	-46.9	-13.0	-33.9	High channel, notebook typical position
5640.500			218.0	1.0			H-Horn	PK	1.98E-08	-47.0	-13.0	-34.0	Mid channel, notebook on side
5725.138			302.0	2.4			H-Horn	PK	1.94E-08	-47.1	-13.0	-34.1	High channel, notebook on side
3702.592			194.0	1.6			V-Horn	PK	1.69E-08	-47.7	-13.0	-34.7	Low channel, notebook on side
3759.615			200.0	1.8			V-Horn	PK	1.06E-08	-49.7	-13.0	-36.7	Mid channel, notebook on side

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/17/07
Customer:	Spectrum Technology	Temperature:	21
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	30.11
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 standalone. All bits up, max data rate

EUT OPERATING MODES

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

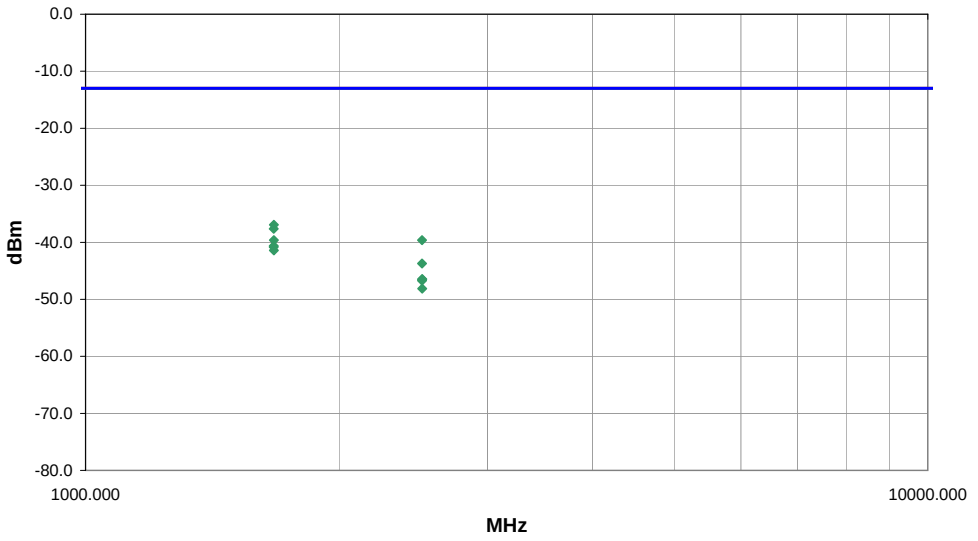
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	9
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
1673.210			262.0	1.2			V-Horn	PK	2.03E-07	-36.9	-13.0	-23.9	Notebook in typical orientation
1672.690			227.0	1.2			V-Horn	PK	1.73E-07	-37.6	-13.0	-24.6	Notebook on side
1673.083			342.0	1.7			H-Horn	PK	1.09E-07	-39.6	-13.0	-26.6	Notebook screen horizontal
2509.517			182.0	1.1			H-Horn	PK	1.09E-07	-39.6	-13.0	-26.6	Notebook in typical orientation
1672.893			108.0	1.3			H-Horn	PK	8.65E-08	-40.6	-13.0	-27.6	Notebook on side
1672.750			144.0	1.1			V-Horn	PK	8.26E-08	-40.8	-13.0	-27.8	Notebook screen horizontal
1673.110			198.0	1.3			H-Horn	PK	7.20E-08	-41.4	-13.0	-28.4	Notebook in typical orientation
2509.160			176.0	1.1			H-Horn	PK	4.24E-08	-43.7	-13.0	-30.7	Notebook on side
2509.750			33.0	1.2			V-Horn	PK	2.28E-08	-46.4	-13.0	-33.4	Notebook on side
2509.777			308.0	1.2			V-Horn	PK	2.22E-08	-46.5	-13.0	-33.5	Notebook in typical orientation
2508.893			327.0	1.2			H-Horn	PK	2.12E-08	-46.7	-13.0	-33.7	Notebook screen horizontal
2509.983			199.0	1.2			V-Horn	PK	1.54E-08	-48.1	-13.0	-35.1	Notebook screen horizontal

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/17/07
Customer:	Spectrum Technology	Temperature:	21
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	30.11
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 standalone. All bits up, max data rate

EUT OPERATING MODES

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

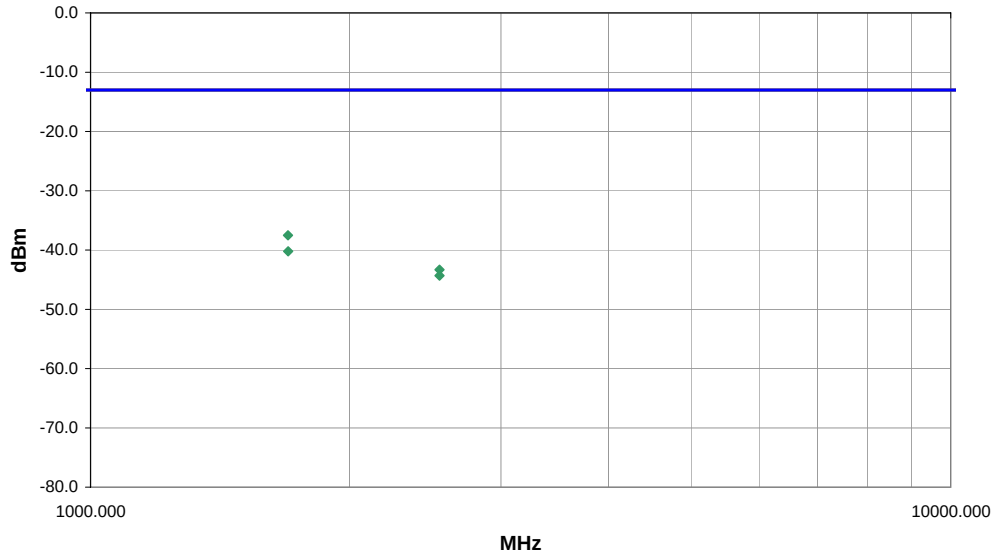
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	10
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
1696.660			289.0	1.2			V-Horn	PK	1.77E-07	-37.5	-13.0	-24.5	Notebook typical
1696.940			338.0	1.3			H-Horn	PK	9.49E-08	-40.2	-13.0	-27.2	Notebook screen horizontal
2544.580			214.0	1.1			H-Horn	PK	4.65E-08	-43.3	-13.0	-30.3	Notebook typical
2545.527			311.0	1.2			V-Horn	PK	3.69E-08	-44.3	-13.0	-31.3	Notebook typical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270			Work Order:	SPTE0053
Serial Number:	None			Date:	04/17/07
Customer:	Spectrum Technology			Temperature:	21
Attendees:	None			Humidity:	33%
Project:	None			Barometric Pres.:	30.11
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 standalone. All bits up, max data rate

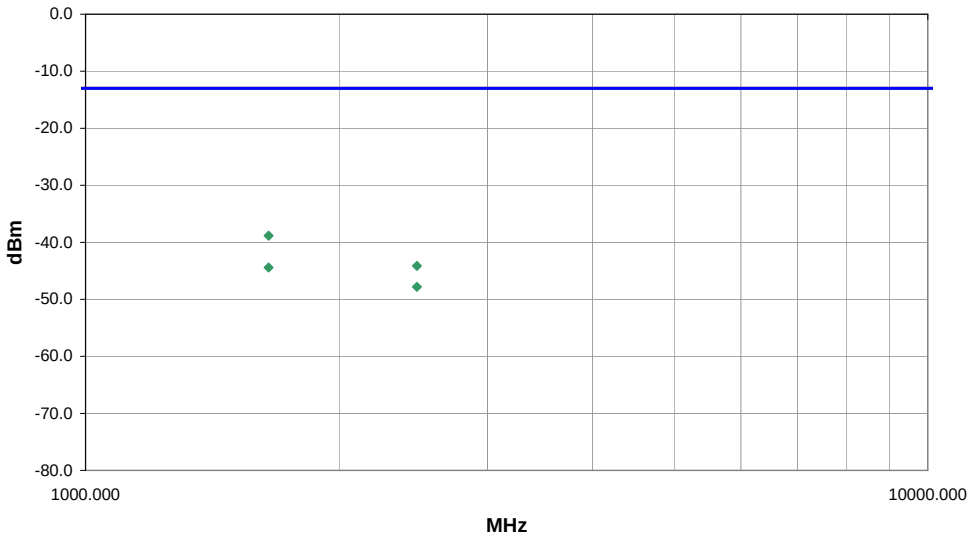
EUT OPERATING MODES

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

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	11		
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
1649.463			16.0	1.2			V-Horn	PK	1.31E-07	-38.8	-13.0	-25.8	Notebook in typical orientation
2473.967			357.0	1.5			V-Horn	PK	3.86E-08	-44.1	-13.0	-31.1	Notebook in typical orientation
1649.523			312.0	1.3			H-Horn	PK	3.61E-08	-44.4	-13.0	-31.4	Notebook screen horizontal
2473.820			228.0	1.2			H-Horn	PK	1.65E-08	-47.8	-13.0	-34.8	Notebook in typical orientation

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/23/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	None	Humidity:	31%
Project:	None	Barometric Pres.:	29.95
Tested by:	David Divergigelis	Power: 13.8VDC	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)	0

COMMENTS

Notebook in optional vehicle mount with external antenna

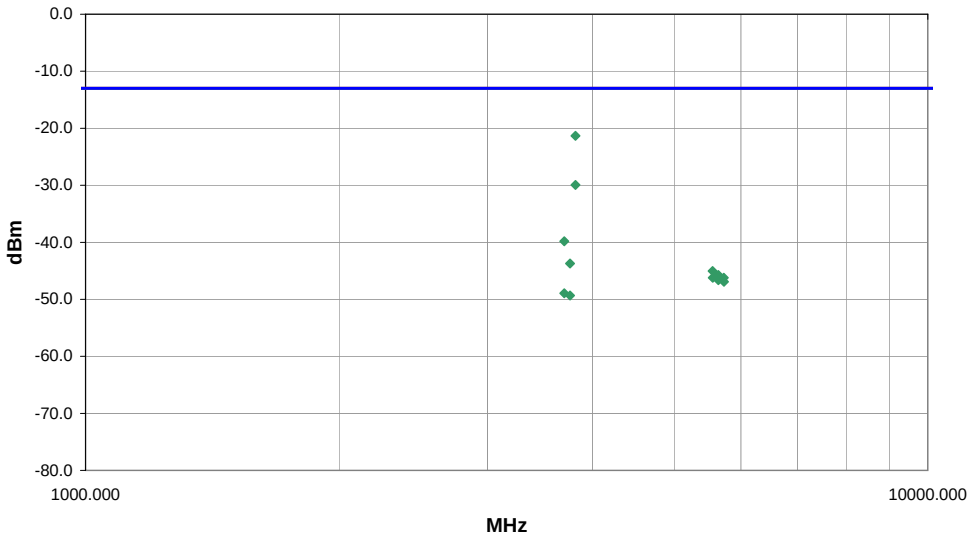
EUT OPERATING MODES

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

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	25		
Configuration #	2		
Results	Pass	NVLAP Lab Code 200630-0	*Signature*



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
3817.127			300.0	1.0			H-Horn	PK	7.36E-06	-21.3	-13.0	-8.3	High channel, antenna on side
3817.088			204.0	1.0			V-Horn	PK	1.02E-06	-29.9	-13.0	-16.9	High channel, antenna vertical
3702.190			202.0	1.0			H-Horn	PK	1.04E-07	-39.8	-13.0	-26.8	Low channel, antenna on side
3759.772			324.0	1.0			H-Horn	PK	4.24E-08	-43.7	-13.0	-30.7	Mid channel, antenna on side
5553.427			302.0	1.0			H-Horn	PK	3.14E-08	-45.0	-13.0	-32.0	Low channel, antenna on side
5640.423			4.0	2.1			V-Horn	PK	2.67E-08	-45.7	-13.0	-32.7	Mid channel, antenna vertical
5554.052			216.0	3.1			V-Horn	PK	2.38E-08	-46.2	-13.0	-33.2	Low channel, antenna vertical
5725.878			28.0	1.8			H-Horn	PK	2.38E-08	-46.2	-13.0	-33.2	High channel, antenna on side
5640.062			355.0	1.0			H-Horn	PK	2.17E-08	-46.6	-13.0	-33.6	Mid channel, antenna on side
5726.508			349.0	3.1			V-Horn	PK	2.03E-08	-46.9	-13.0	-33.9	High channel, antenna vertical
3702.132			29.0	1.0			V-Horn	PK	1.28E-08	-48.9	-13.0	-35.9	Low channel, antenna vertical
3760.057			264.0	1.0			V-Horn	PK	1.17E-08	-49.3	-13.0	-36.3	Mid channel, antenna vertical

NORTHWEST EMC

Out of Band Emissions

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/23/07
Customer:	Spectrum Technology	Temperature:	22
Attendees:	None	Humidity:	31%
Project:	None	Barometric Pres.:	29.95
Tested by:	David Divergigelis	Power: 13.8VDC	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)	0

COMMENTS

Notebook in optional vehicle mount with external antenna

EUT OPERATING MODES

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

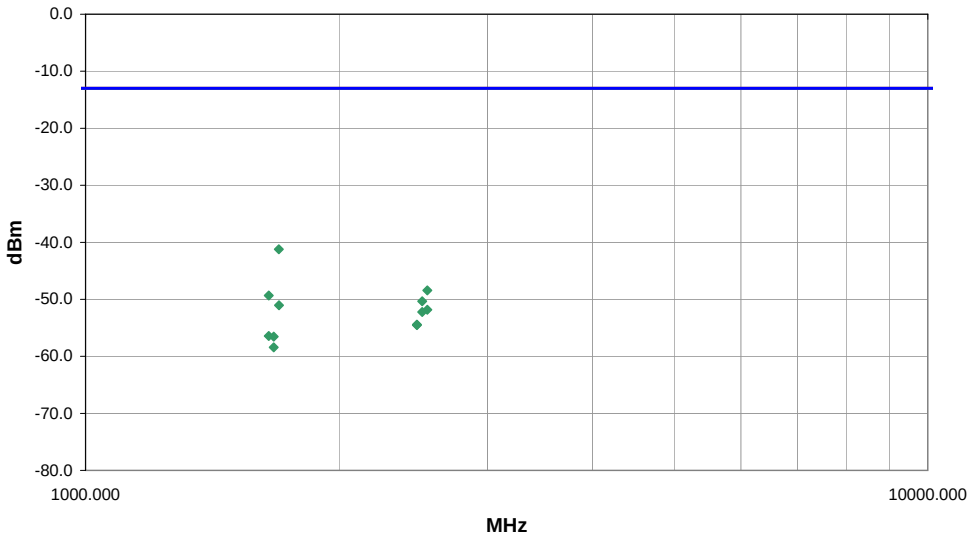
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	26
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0

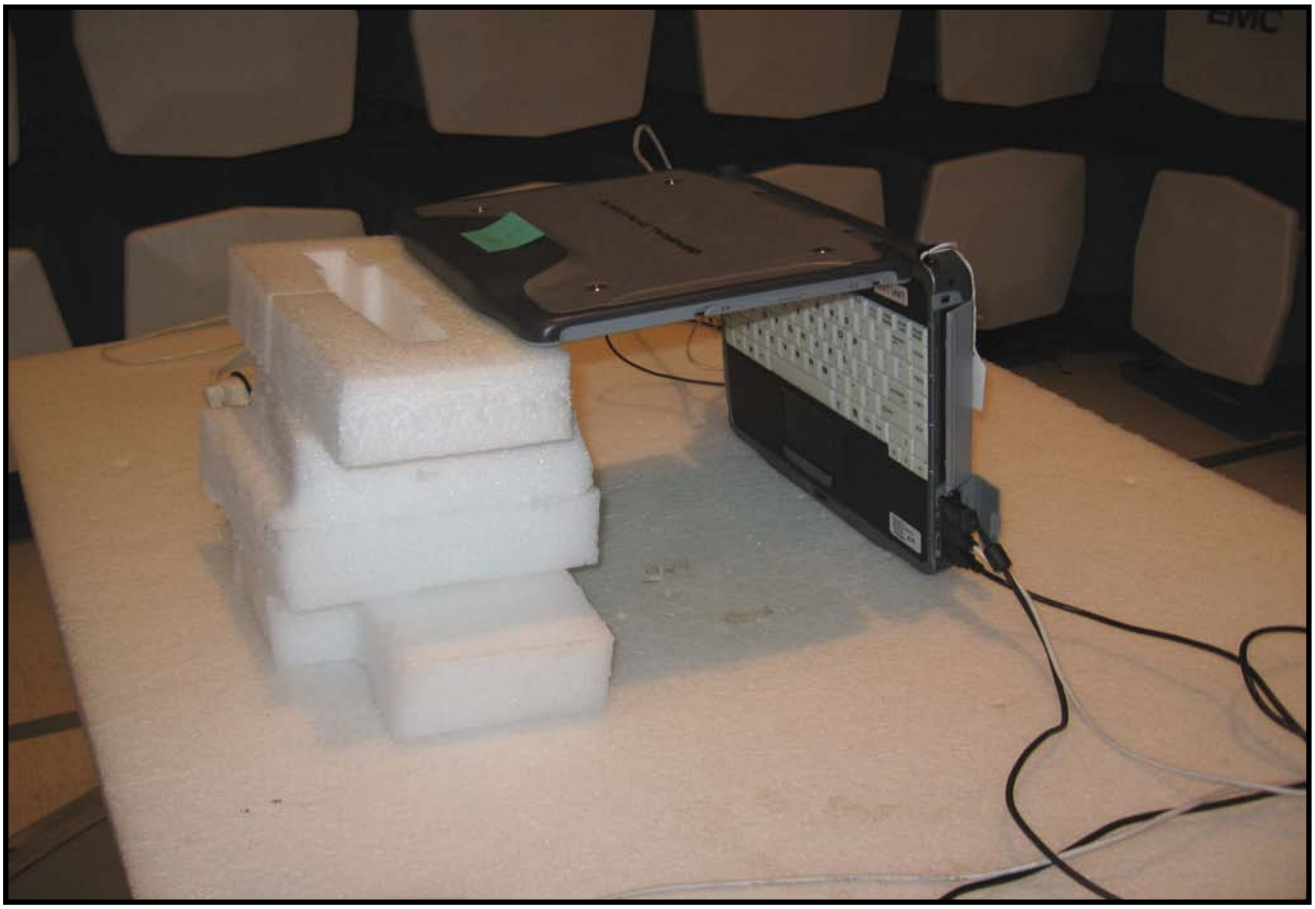
Signature

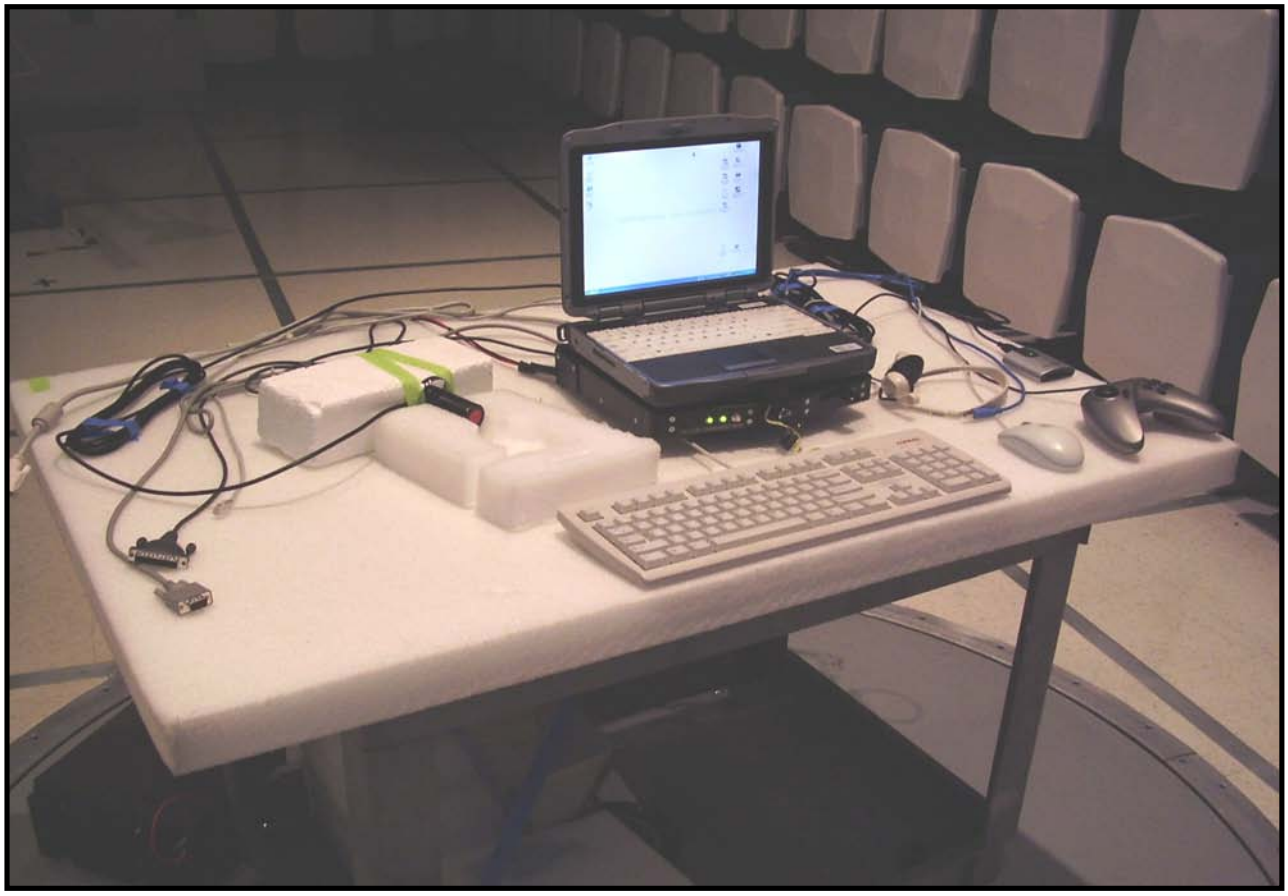


Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1696.203			355.0	1.4			V-Horn	PK	7.54E-08	-41.2	-13.0	-28.2	High channel, antenna vertical
2545.213			360.0	1.0			V-Horn	PK	1.44E-08	-48.4	-13.0	-35.4	High channel, antenna vertical
1649.868			-1.0	1.5			V-Horn	PK	1.17E-08	-49.3	-13.0	-36.3	Low channel, antenna vertical
2509.927			8.0	1.0			V-Horn	PK	9.27E-09	-50.3	-13.0	-37.3	Mid channel, antenna vertical
1696.602			-1.0	1.7			H-Horn	PK	7.89E-09	-51.0	-13.0	-38.0	High channel, antenna on side
2545.167			207.0	1.0			H-Horn	PK	6.56E-09	-51.8	-13.0	-38.8	High channel, antenna on side
2509.897			225.0	1.0			H-Horn	PK	5.99E-09	-52.2	-13.0	-39.2	Mid channel, antenna on side
2474.378			7.0	1.0			H-Horn	PK	3.61E-09	-54.4	-13.0	-41.4	Low channel, antenna on side
2474.507			10.0	1.0			V-Horn	PK	3.52E-09	-54.5	-13.0	-41.5	Low channel, antenna vertical
1649.820			209.0	1.0			H-Horn	PK	2.28E-09	-56.4	-13.0	-43.4	Low channel, antenna on side
1672.587			226.0	1.0			V-Horn	PK	2.22E-09	-56.5	-13.0	-43.5	Mid channel, antenna vertical
1672.807			60.0	1.0			H-Horn	PK	1.44E-09	-58.4	-13.0	-45.4	Mid channel, antenna on side

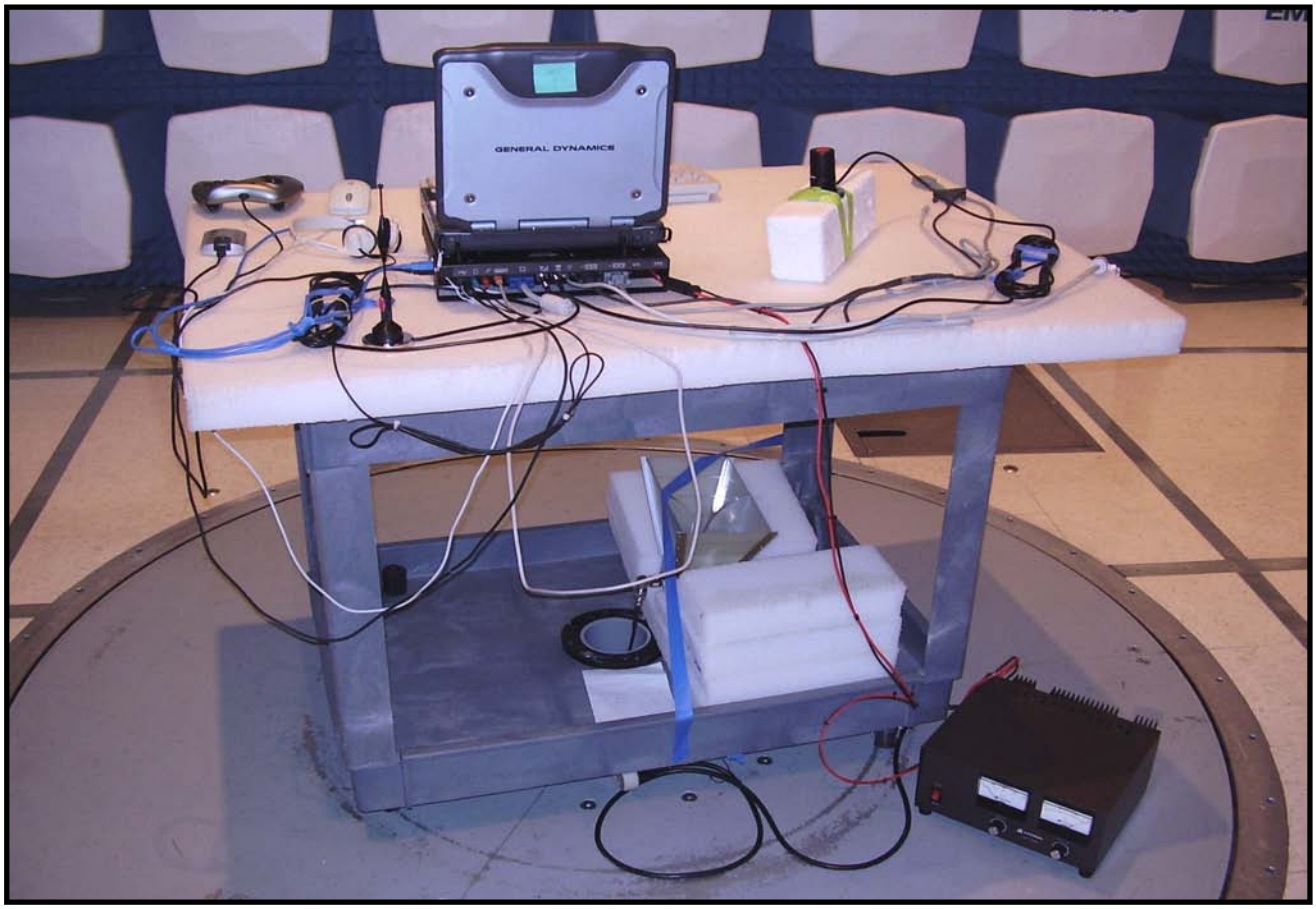

EMC
GENERAL DYNAMICS

Out of Band Emissions





Out of Band Emissions



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.

OPERATING BANDS
North American PCS

MODES OF OPERATION
CDMA 1xEV-DO Rev A (IS-856-A)
CDMA 1xEV-Do Rev 0 (IS-856)
CDMA 1xRTT (IS-2000)

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

POWER CONTROL SETTINGS
All bits up

DATA RATES INVESTIGATED
Maximum

CONFIGURATIONS INVESTIGATED
Notebook configuration, internal antenna
Optional vehicle mount configuration, external antenna

POWER SETTINGS INVESTIGATED
120VAC/60Hz
13.8 VDC

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
EV01 cables g,h,j			EVB	12/29/2006	13
Antenna, Horn	EMCO	3115	AHJ	5/20/2005	24
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12
Signal Generator	Hewlett-Packard	8648D	TGC	12/7/2006	13
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
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 antennas to be used with the EUT were tested. The EUT was transmitting and/or receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003).

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

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/16/07
Customer:	Spectrum Technology	Temperature:	23
Attendees:	None	Humidity:	31%
Project:	None	Barometric Pres.:	29.97
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 standalone

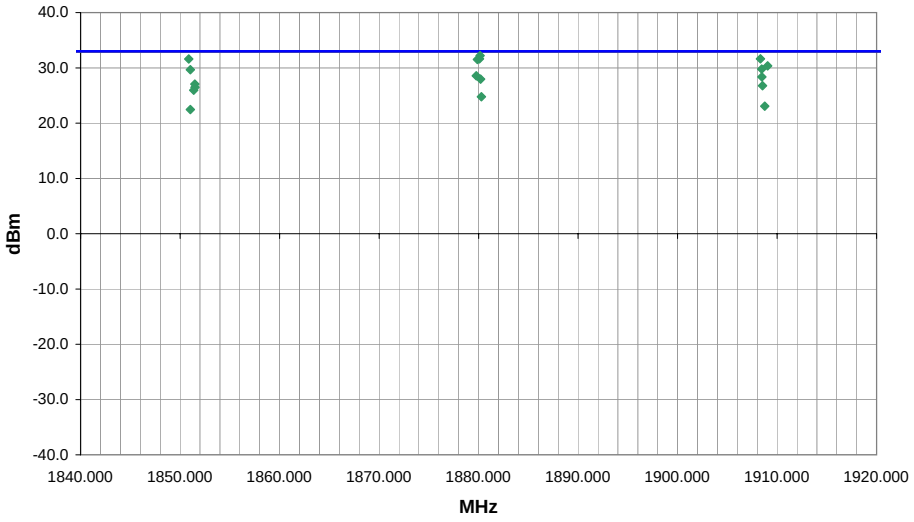
EUT OPERATING MODES

CDMA 1xRTT (IS-2000), PCS band

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	4		
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
1880.150			5.0	1.1			V-Horn	PK	1.67E+00	32.2	33.0	-0.8	Mid channel, notebook typical position
1880.092			135.0	1.5			H-Horn	PK	1.45E+00	31.6	33.0	-1.4	Mid channel, notebook on side
1908.325			135.0	1.5			H-Horn	PK	1.45E+00	31.6	33.0	-1.4	High channel, notebook on side
1850.875			144.0	1.3			H-Horn	PK	1.45E+00	31.6	33.0	-1.4	Low channel, notebook on side
1879.883			353.0	1.2			V-Horn	PK	1.42E+00	31.5	33.0	-1.5	Mid channel, notebook screen horizontal
1909.042			12.0	1.1			V-Horn	PK	1.09E+00	30.4	33.0	-2.6	High channel, notebook typical position
1908.458			356.0	1.1			V-Horn	PK	9.49E-01	29.8	33.0	-3.2	High channel, notebook screen horizontal
1851.025			1.0	1.4			V-Horn	PK	9.27E-01	29.7	33.0	-3.3	Low channel, notebook typical position
1879.767			223.0	1.2			H-Horn	PK	7.20E-01	28.6	33.0	-4.4	Mid channel, notebook typical position
1908.475			137.0	1.2			H-Horn	PK	6.87E-01	28.4	33.0	-4.6	High channel, notebook typical position
1880.200			297.0	1.2			H-Horn	PK	6.27E-01	28.0	33.0	-5.0	Mid channel, notebook screen horizontal
1851.483			275.0	1.9			H-Horn	PK	5.09E-01	27.1	33.0	-5.9	Low channel, notebook screen horizontal
1908.533			75.0	1.6			H-Horn	PK	4.75E-01	26.8	33.0	-6.2	High channel, notebook screen horizontal
1851.500			-1.0	1.2			V-Horn	PK	4.44E-01	26.5	33.0	-6.5	Low channel, notebook screen horizontal
1851.367			136.0	1.3			H-Horn	PK	3.95E-01	26.0	33.0	-7.0	Low channel, notebook typical position
1880.283			49.0	1.7			V-Horn	PK	3.00E-01	24.8	33.0	-8.2	Mid channel, notebook on side
1908.767			64.0	1.0			V-Horn	PK	2.03E-01	23.1	33.0	-9.9	High channel, notebook on side
1851.025			349.0	1.1			V-Horn	PK	1.77E-01	22.5	33.0	-10.5	Low channel, notebook on side

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270			Work Order:	SPTE0053
Serial Number:	None			Date:	04/16/07
Customer:	Spectrum Technology			Temperature:	23
Attendees:	None			Humidity:	31%
Project:	None			Barometric Pres.:	29.97
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 standalone

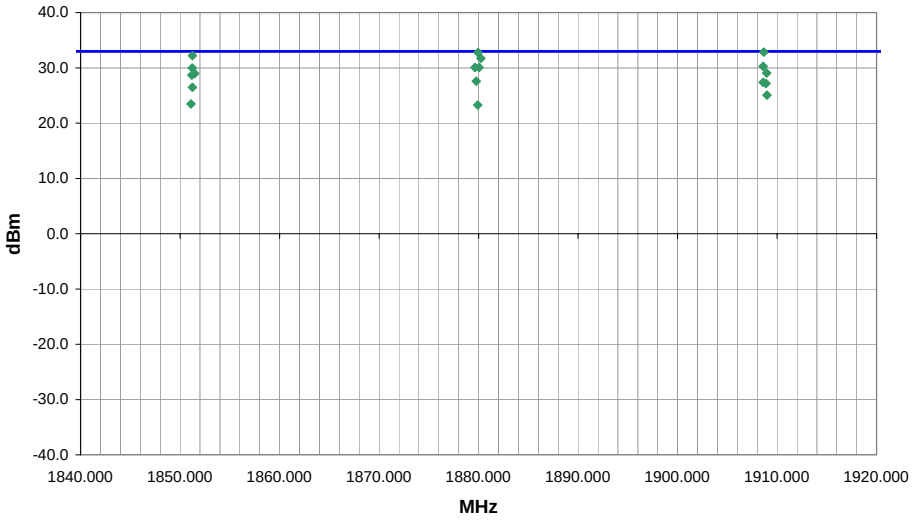
EUT OPERATING MODES

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

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	5		
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
1908.667			64.0	1.3			H-Horn	PK	1.93E+00	32.8	33.0	-0.2	High channel, notebook on side
1879.942			32.0	1.3			H-Horn	PK	1.90E+00	32.8	33.0	-0.2	Mid channel, notebook on side
1851.233			35.0	1.3			H-Horn	PK	1.66E+00	32.2	33.0	-0.8	Low channel, notebook on side
1880.233			-1.0	1.2			V-Horn	PK	1.49E+00	31.7	33.0	-1.3	Mid channel, notebook screen horizontal
1908.592			361.0	1.2			V-Horn	PK	1.06E+00	30.3	33.0	-2.7	High channel, notebook screen horizontal
1879.642			-1.0	1.1			V-Horn	PK	1.02E+00	30.1	33.0	-2.9	Mid channel, notebook typical position
1880.058			107.0	1.3			H-Horn	PK	1.02E+00	30.1	33.0	-2.9	Mid channel, notebook typical position
1851.217			352.0	1.5			V-Horn	PK	9.93E-01	30.0	33.0	-3.0	Low channel, notebook typical position
1908.958			-1.0	1.1			V-Horn	PK	8.07E-01	29.1	33.0	-3.9	High channel, notebook typical position
1851.458			297.0	1.2			H-Horn	PK	7.89E-01	29.0	33.0	-4.0	Low channel, notebook screen horizontal
1851.175			360.0	1.2			V-Horn	PK	7.36E-01	28.7	33.0	-4.3	Low channel, notebook screen horizontal
1879.767			24.0	1.2			H-Horn	PK	5.72E-01	27.6	33.0	-5.4	Mid channel, notebook screen horizontal
1908.592			299.0	1.2			H-Horn	PK	5.46E-01	27.4	33.0	-5.6	High channel, notebook screen horizontal
1908.892			107.0	1.2			H-Horn	PK	5.21E-01	27.2	33.0	-5.8	High channel, notebook typical position
1851.242			110.0	1.3			H-Horn	PK	4.44E-01	26.5	33.0	-6.5	Low channel, notebook typical position
1908.983			164.0	1.1			V-Horn	PK	3.21E-01	25.1	33.0	-7.9	High channel, notebook on side
1851.100			197.0	1.2			V-Horn	PK	2.22E-01	23.5	33.0	-9.5	Low channel, notebook on side
1879.917			70.0	1.1			V-Horn	PK	2.12E-01	23.3	33.0	-9.7	Mid channel, notebook on side

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/16/07
Customer:	Spectrum Technology	Temperature:	23
Attendees:	None	Humidity:	31%
Project:	None	Barometric Pres.:	29.97
Tested by:	Rod Peloquin and 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 standalone

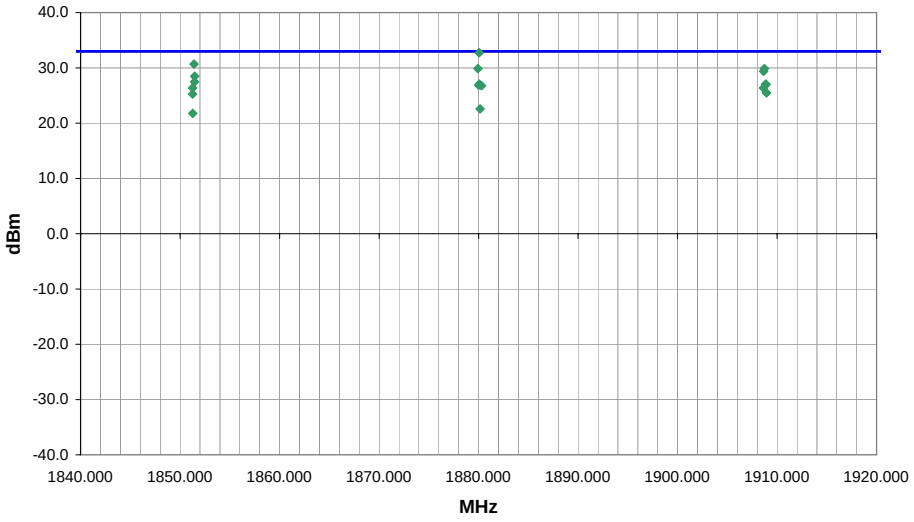
EUT OPERATING MODES

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

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	6		
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
1880.050			12.0	1.3			H-Horn	PK	1.87E+00	32.7	33.0	-0.3	Mid channel, notebook on side
1851.408			51.0	1.4			H-Horn	PK	1.17E+00	30.7	33.0	-2.3	Low channel, notebook on side
1879.933			363.0	1.2			V-Horn	PK	9.71E-01	29.9	33.0	-3.1	Mid channel, notebook screen horizontal
1908.733			43.0	1.0			H-Horn	PK	9.71E-01	29.9	33.0	-3.1	High channel, notebook on side
1908.650			2.0	1.2			V-Horn	PK	8.65E-01	29.4	33.0	-3.6	High channel, notebook screen horizontal
1851.458			304.0	1.2			H-Horn	PK	7.03E-01	28.5	33.0	-4.5	Low channel, notebook screen horizontal
1851.450			5.0	1.2			V-Horn	PK	5.59E-01	27.5	33.0	-5.5	Low channel, notebook screen horizontal
1880.067			34.0	1.3			H-Horn	PK	5.09E-01	27.1	33.0	-5.9	Mid channel, notebook screen horizontal
1908.858			310.0	1.2			H-Horn	PK	5.09E-01	27.1	33.0	-5.9	High channel, notebook screen horizontal
1908.883			-2.0	1.1			V-Horn	PK	4.98E-01	27.0	33.0	-6.0	High channel, notebook typical position
1880.000			0.0	2.2			V-Horn	PK	4.87E-01	26.9	33.0	-6.1	Mid channel, notebook typical position
1880.292			97.0	1.2			H-Horn	PK	4.75E-01	26.8	33.0	-6.2	Mid channel, notebook typical position
1851.250			156.0	1.0			H-Horn	PK	4.34E-01	26.4	33.0	-6.6	Low channel, notebook typical position
1908.625			104.0	1.2			H-Horn	PK	4.34E-01	26.4	33.0	-6.6	High channel, notebook typical position
1908.933			360.0	1.4			H-Horn	PK	3.52E-01	25.5	33.0	-7.5	High channel, notebook on side
1851.250			68.0	1.0			V-Horn	PK	3.37E-01	25.3	33.0	-7.7	Low channel, notebook typical position
1880.150			144.0	1.2			V-Horn	PK	1.81E-01	22.6	33.0	-10.4	Mid channel, notebook on side
1851.275			147.0	1.2			V-Horn	PK	1.50E-01	21.8	33.0	-11.2	Low channel, notebook on side

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270			**Work Order:**	SPTE0053
Serial Number:	None			**Date:**	04/20/07
Customer:	Spectrum Technology			**Temperature:**	22
Attendees:	None			**Humidity:**	31%
Project:	None			**Barometric Pres.:**	29.957
Tested by:	Greg Kiemel	**Power:**	13.8 VDC	**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

Optional vehicular configuration with external antenna.

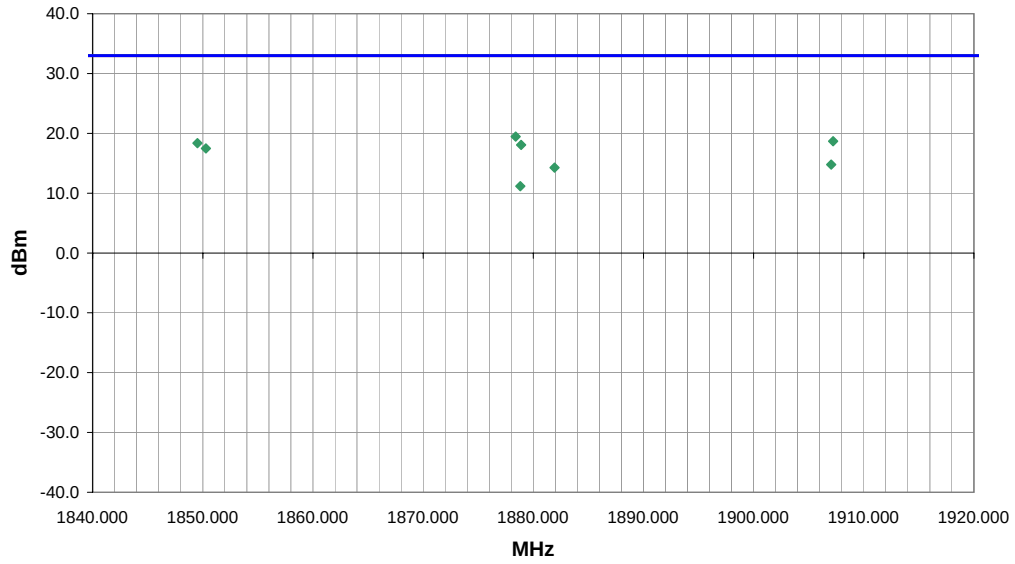
EUT OPERATING MODES

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

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	17		
Configuration #	2		
Results	Pass	NVLAP Lab Code 200630-0	*Signature*



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1878.400			51.0	2.9			H-Horn	PK	8.85E-02	19.5	33.0	-13.5	EUT Antenna Horizontal
1907.220			53.0	2.0			H-Horn	PK	7.36E-02	18.7	33.0	-14.3	EUT Antenna Horizontal
1849.520			96.0	1.2			H-Horn	PK	6.87E-02	18.4	33.0	-14.6	EUT Antenna Horizontal
1878.900			149.0	1.2			V-Horn	PK	6.41E-02	18.1	33.0	-14.9	EUT Antenna Horizontal
1850.280			151.0	1.2			V-Horn	PK	5.59E-02	17.5	33.0	-15.5	EUT Antenna Horizontal
1907.050			141.0	1.2			V-Horn	PK	3.00E-02	14.8	33.0	-18.2	EUT Antenna Horizontal
1881.930			218.0	1.0			V-Horn	PK	2.67E-02	14.3	33.0	-18.7	EUT Antenna Vertical
1878.830			260.0	1.2			H-Horn	PK	1.31E-02	11.2	33.0	-21.8	EUT Antenna Vertical

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270			**Work Order:**	SPTE0053
Serial Number:	None			**Date:**	04/20/07
Customer:	Spectrum Technology			**Temperature:**	22
Attendees:	None			**Humidity:**	31%
Project:	None			**Barometric Pres.:**	29.95
Tested by:	Greg Kiemel	**Power:**	13.8 VDC	**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

Optional vehicular configuration with external antenna.

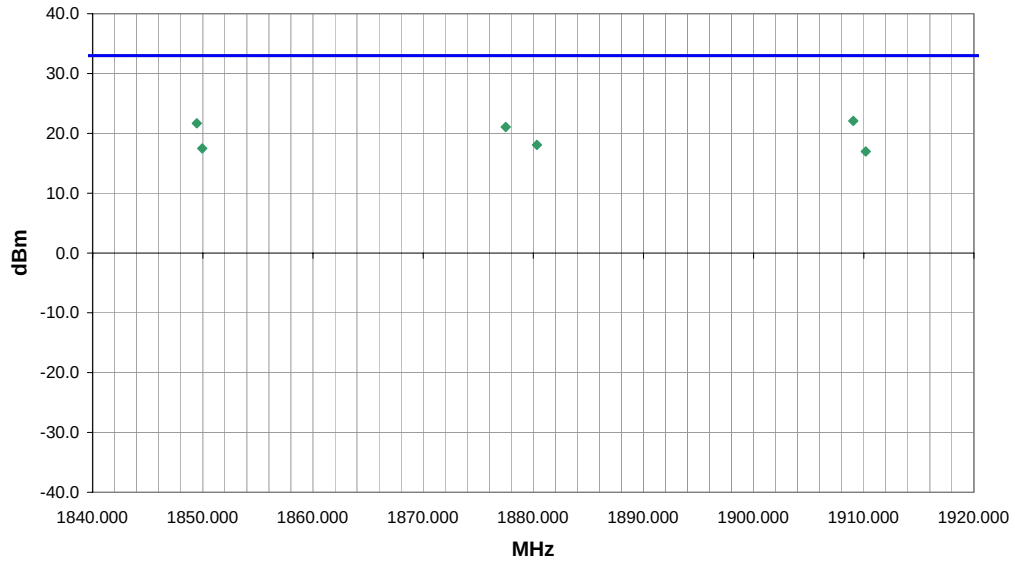
EUT OPERATING MODES

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

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	18		
Configuration #	2		
Results	Pass	NVLAP Lab Code 200630-0	*Signature*



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1909.050			218.0	1.4			H-Horn	PK	1.61E-01	22.1	33.0	-10.9	EUT Antenna Horizontal
1849.450			272.0	1.0			H-Horn	PK	1.47E-01	21.7	33.0	-11.3	EUT Antenna Horizontal
1877.500			277.0	1.0			H-Horn	PK	1.28E-01	21.1	33.0	-11.9	EUT Antenna Horizontal
1880.330			148.0	1.2			V-Horn	PK	6.41E-02	18.1	33.0	-14.9	EUT Antenna Horizontal
1849.950			152.0	1.2			V-Horn	PK	5.59E-02	17.5	33.0	-15.5	EUT Antenna Horizontal
1910.180			202.0	1.0			V-Horn	PK	4.98E-02	17.0	33.0	-16.0	EUT Antenna Horizontal

NORTHWEST EMC

Effective Radiated Power (EIRP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270			Work Order:	SPTE0053
Serial Number:	None			Date:	04/20/07
Customer:	Spectrum Technology			Temperature:	23
Attendees:	None			Humidity:	31%
Project:	None			Barometric Pres.:	29.97
Tested by:	Holly Ashkannejhad	Power:	13.8 VDC	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

Optional vehicular configuration with external antenna.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000), PCS band, see comments for channel

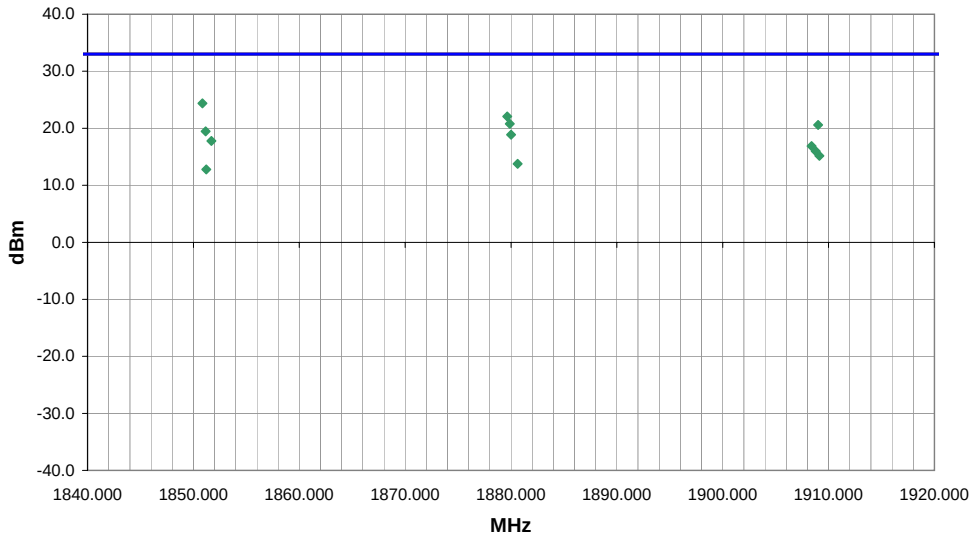
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	24
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0

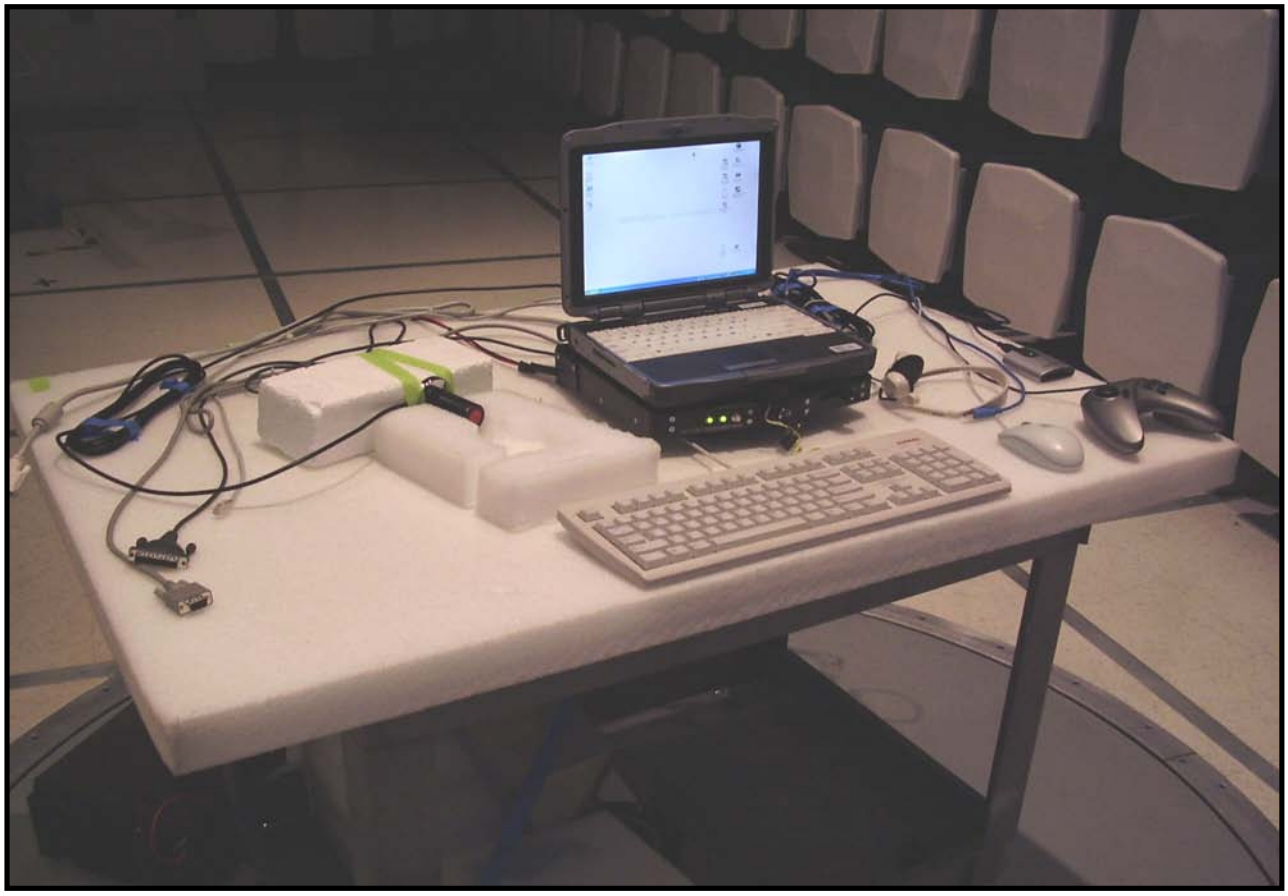
Signature Holly Ashkannejhad



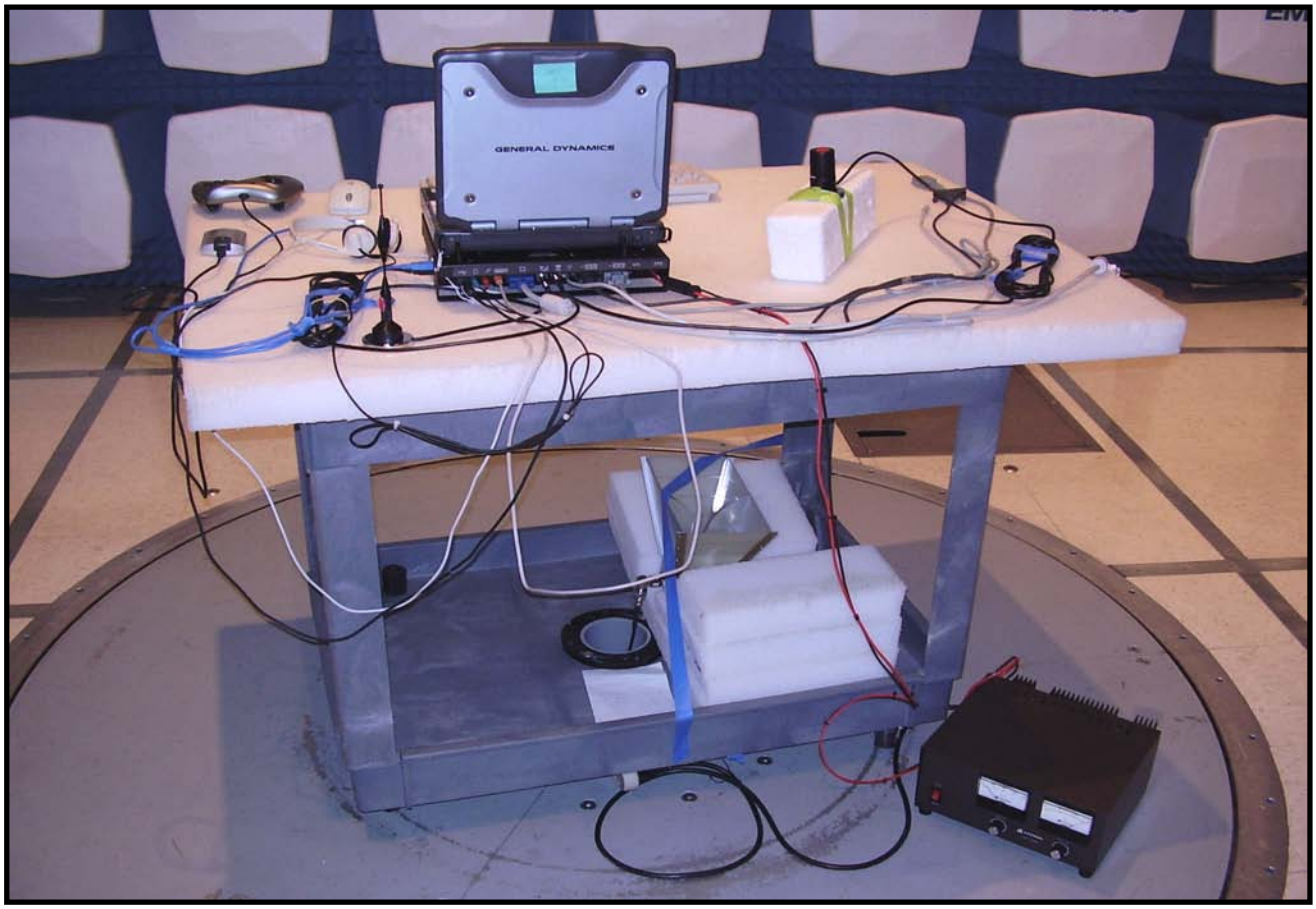
Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1850.850			253.0	1.2			V-Horn	PK	2.74E-01	24.4	33.0	-8.6	Low channel, antenna vertical
1879.650			308.0	1.2			H-Horn	PK	1.61E-01	22.1	33.0	-10.9	Mid channel, antenna horizontal
1879.890			259.0	1.0			V-Horn	PK	1.19E-01	20.8	33.0	-12.2	Mid channel, antenna vertical
1909.010			255.0	1.0			H-Horn	PK	1.14E-01	20.6	33.0	-12.4	High channel, antenna horizontal
1851.150			142.0	1.2			H-Horn	PK	8.85E-02	19.5	33.0	-13.5	Low channel, antenna horizontal
1880.000			173.0	1.2			V-Horn	PK	7.71E-02	18.9	33.0	-14.1	Mid channel, antenna horizontal
1851.700			169.0	1.2			V-Horn	PK	5.99E-02	17.8	33.0	-15.2	Low channel, antenna horizontal
1908.390			172.0	1.2			V-Horn	PK	4.87E-02	16.9	33.0	-16.1	High channel, antenna horizontal
1908.790			4.0	1.0			V-Horn	PK	3.95E-02	16.0	33.0	-17.0	High channel, antenna vertical
1909.140			265.0	1.0			H-Horn	PK	3.29E-02	15.2	33.0	-17.8	High channel, antenna vertical
1880.620			284.0	1.0			H-Horn	PK	2.38E-02	13.8	33.0	-19.2	Mid channel, antenna vertical
1851.220			37.0	1.2			H-Horn	PK	1.89E-02	12.8	33.0	-20.2	Low channel, antenna vertical


EMC
GENERAL DYNAMICS

Effective Isotropic Radiated Power



Effective Isotropic Radiated Power



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.

OPERATING BANDS
US Cellular

MODES OF OPERATION
CDMA 1xEV-DO Rev A (IS-856-A)
CDMA 1xEV-Do Rev 0 (IS-856)
CDMA 1xRTT (IS-2000)

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

POWER CONTROL SETTINGS
All bits up

DATA RATES INVESTIGATED
Maximum

CONFIGURATIONS INVESTIGATED
Notebook configuration, internal antenna
Optional vehicle mount configuration, external antenna

POWER SETTINGS INVESTIGATED
120VAC/60Hz
13.8 VDC

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
Antenna, Dipole (part of ADA)	ETS	3121C-DB4	ADAA	12/28/2006	24
Antenna, Dipole (ADAA included)	Roberts	Roberts	ADA	12/28/2006	24
Signal Generator	Hewlett-Packard	8648D	TGC	12/7/2006	13
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13
EV01 cables c,g, h			EVA	12/29/2006	13
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 antennas to be used with the EUT were tested. The EUT was transmitting and/or receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003).

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

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/13/07
Customer:	Spectrum Technology	Temperature:	23
Attendees:	Rod Munro	Humidity:	31%
Project:	None	Barometric Pres.:	29.97
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 standalone

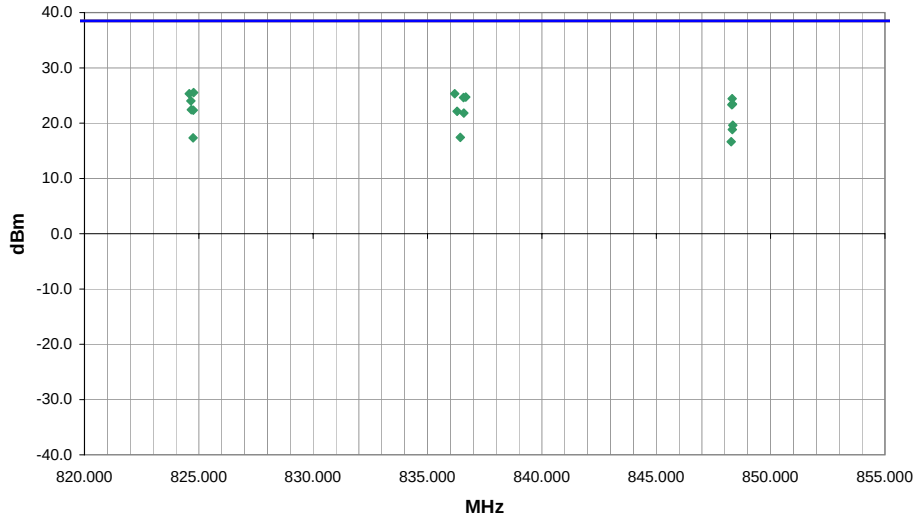
EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), cellular band, see comments for channel

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	1		
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
824.770			306.0	1.0			H-Bilog	PK	3.57E-01	25.5	38.5	-13.0	Low channel, Notebook screen horizontal
824.585			132.0	1.0			H-Bilog	PK	3.41E-01	25.3	38.5	-13.2	Low channel, Notebook typical position
836.185			138.0	1.0			H-Bilog	PK	3.41E-01	25.3	38.5	-13.2	Mid channel, Notebook typical position
836.670			59.0	1.0			H-Bilog	PK	2.97E-01	24.7	38.5	-13.8	Mid channel, Notebook screen horizontal
836.575			324.0	1.0			H-Bilog	PK	2.90E-01	24.6	38.5	-13.9	Mid channel, Notebook on side
848.320			312.0	1.0			H-Bilog	PK	2.77E-01	24.4	38.5	-14.1	High channel, Notebook typical position
824.655			181.0	1.7			V-Bilog	PK	2.53E-01	24.0	38.5	-14.5	Low channel, Notebook on side
848.330			249.0	1.0			V-Bilog	PK	2.20E-01	23.4	38.5	-15.1	High channel, Notebook on side
848.305			112.0	1.0			V-Bilog	PK	2.15E-01	23.3	38.5	-15.2	High channel, Notebook typical position
824.670			319.0	1.0			H-Bilog	PK	1.75E-01	22.4	38.5	-16.1	Low channel, Notebook on side
824.755			103.0	1.0			V-Bilog	PK	1.71E-01	22.3	38.5	-16.2	Low channel, Notebook typical position
836.290			56.0	1.2			V-Bilog	PK	1.63E-01	22.1	38.5	-16.4	Mid channel, Notebook typical position
836.590			18.0	1.2			V-Bilog	PK	1.52E-01	21.8	38.5	-16.7	Mid channel, Notebook on side
848.350			113.0	1.6			H-Bilog	PK	9.19E-02	19.6	38.5	-18.9	High channel, Notebook screen horizontal
848.325			62.0	1.0			V-Bilog	PK	7.64E-02	18.8	38.5	-19.7	High channel, Notebook screen horizontal
836.430			208.0	1.2			V-Bilog	PK	5.54E-02	17.4	38.5	-21.1	Mid channel, Notebook screen horizontal
824.750			62.0	1.8			V-Bilog	PK	5.41E-02	17.3	38.5	-21.2	Low channel, Notebook screen horizontal
848.280			0.0	2.7			H-Bilog	PK	4.60E-02	16.6	38.5	-21.9	High channel, Notebook on side

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/13/07
Customer:	Spectrum Technology	Temperature:	23
Attendees:	Rod Munro	Humidity:	31%
Project:	None	Barometric Pres.:	29.97
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 standalone

EUT OPERATING MODES

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

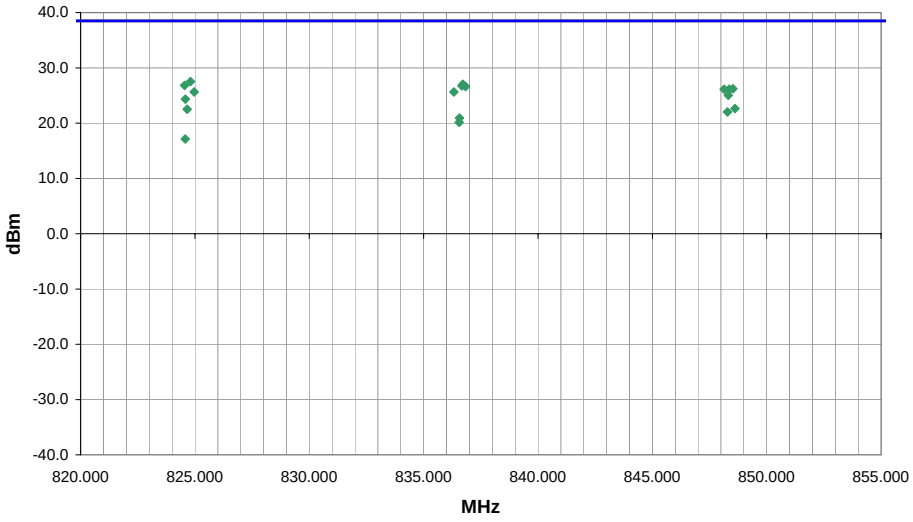
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	2
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
824.805			148.0	1.0			H-Bilog	PK	5.66E-01	27.5	38.5	-11.0	Low channel, notebook screen horizontal
836.715			150.0	1.0			H-Bilog	PK	5.05E-01	27.0	38.5	-11.5	Mid channel, notebook screen horizontal
824.545			228.0	1.0			H-Bilog	PK	4.82E-01	26.8	38.5	-11.7	Low channel, notebook typical position
836.670			325.0	1.0			H-Bilog	PK	4.71E-01	26.7	38.5	-11.8	Mid channel, notebook on side
836.830			215.0	1.0			H-Bilog	PK	4.60E-01	26.6	38.5	-11.9	Mid channel, notebook typical position
848.525			50.0	1.0			H-Bilog	PK	4.20E-01	26.2	38.5	-12.3	High channel, notebook screen horizontal
848.135			324.0	1.0			H-Bilog	PK	4.10E-01	26.1	38.5	-12.4	High channel, notebook on side
848.360			233.0	1.0			H-Bilog	PK	4.10E-01	26.1	38.5	-12.4	High channel, notebook typical position
824.970			182.0	1.9			V-Bilog	PK	3.66E-01	25.6	38.5	-12.9	Low channel, notebook on side
836.320			160.0	1.9			V-Bilog	PK	3.66E-01	25.6	38.5	-12.9	Mid channel, notebook on side
848.320			259.0	1.0			V-Bilog	PK	3.19E-01	25.0	38.5	-13.5	High channel, notebook on side
824.580			320.0	1.0			H-Bilog	PK	2.71E-01	24.3	38.5	-14.2	Low channel, notebook on side
848.615			108.0	1.0			V-Bilog	PK	1.83E-01	22.6	38.5	-15.9	High channel, notebook typical position
824.660			296.0	1.0			V-Bilog	PK	1.79E-01	22.5	38.5	-16.0	Low channel, notebook typical position
848.285			196.0	1.0			V-Bilog	PK	1.60E-01	22.0	38.5	-16.5	High channel, notebook screen horizontal
836.565			63.0	1.7			V-Bilog	PK	1.24E-01	20.9	38.5	-17.6	Mid channel, notebook screen horizontal
836.550			72.0	1.0			V-Bilog	PK	1.03E-01	20.1	38.5	-18.4	Mid channel, notebook typical position
824.575			277.0	1.0			V-Bilog	PK	5.17E-02	17.1	38.5	-21.4	Low channel, notebook screen horizontal

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/13/07
Customer:	Spectrum Technology	Temperature:	23
Attendees:	Rod Munro	Humidity:	31%
Project:	None	Barometric Pres.:	29.97
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 standalone

EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular band, see comments for channel

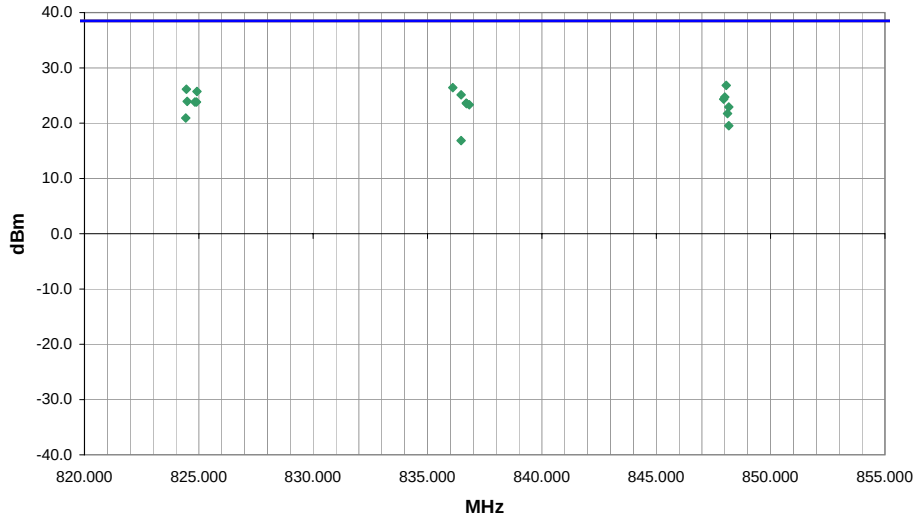
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3
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
848.060			64.0	1.7			H-Bilog	PK	4.82E-01	26.8	38.5	-11.7	High channel, Notebook screen horizontal
836.105			55.0	1.0			H-Bilog	PK	4.40E-01	26.4	38.5	-12.1	Mid channel, Notebook screen horizontal
824.455			298.0	1.0			H-Bilog	PK	4.10E-01	26.1	38.5	-12.4	Low channel, Notebook screen horizontal
824.920			126.0	1.0			H-Bilog	PK	3.74E-01	25.7	38.5	-12.8	Low channel, Notebook typical position
836.465			120.0	1.0			H-Bilog	PK	3.26E-01	25.1	38.5	-13.4	Mid channel, Notebook typical position
847.995			359.0	1.8			V-Bilog	PK	2.97E-01	24.7	38.5	-13.8	High channel, Notebook on side
847.950			108.0	1.0			V-Bilog	PK	2.71E-01	24.3	38.5	-14.2	High channel, Notebook typical position
824.490			188.0	1.0			H-Bilog	PK	2.47E-01	23.9	38.5	-14.6	Low channel, Notebook on side
824.830			360.0	1.8			V-Bilog	PK	2.42E-01	23.8	38.5	-14.7	Low channel, Notebook on side
824.900			77.0	2.0			V-Bilog	PK	2.42E-01	23.8	38.5	-14.7	Low channel, Notebook typical position
836.690			359.0	1.7			V-Bilog	PK	2.31E-01	23.6	38.5	-14.9	Mid channel, Notebook on side
836.715			109.0	1.0			V-Bilog	PK	2.25E-01	23.5	38.5	-15.0	Mid channel, Notebook typical position
836.825			193.0	1.0			H-Bilog	PK	2.15E-01	23.3	38.5	-15.2	Mid channel, Notebook on side
848.170			270.0	1.7			H-Bilog	PK	1.96E-01	22.9	38.5	-15.6	High channel, Notebook typical position
848.115			194.0	1.0			H-Bilog	PK	1.49E-01	21.7	38.5	-16.8	High channel, Notebook on side
824.430			121.0	1.0			V-Bilog	PK	1.24E-01	20.9	38.5	-17.6	Low channel, Notebook screen horizontal
848.175			288.0	1.0			V-Bilog	PK	8.98E-02	19.5	38.5	-19.0	High channel, Notebook screen horizontal
836.470			173.0	1.8			V-Bilog	PK	4.82E-02	16.8	38.5	-21.7	Mid channel, Notebook screen horizontal

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270			**Work Order:**	SPTE0053
Serial Number:	None			**Date:**	04/20/07
Customer:	Spectrum Technology			**Temperature:**	21
Attendees:	None			**Humidity:**	33%
Project:	None			**Barometric Pres.:**	30.11
Tested by:	Greg Kiemel	**Power:**	13.8 VDC	**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

Optional vehicular configuration with external antenna.

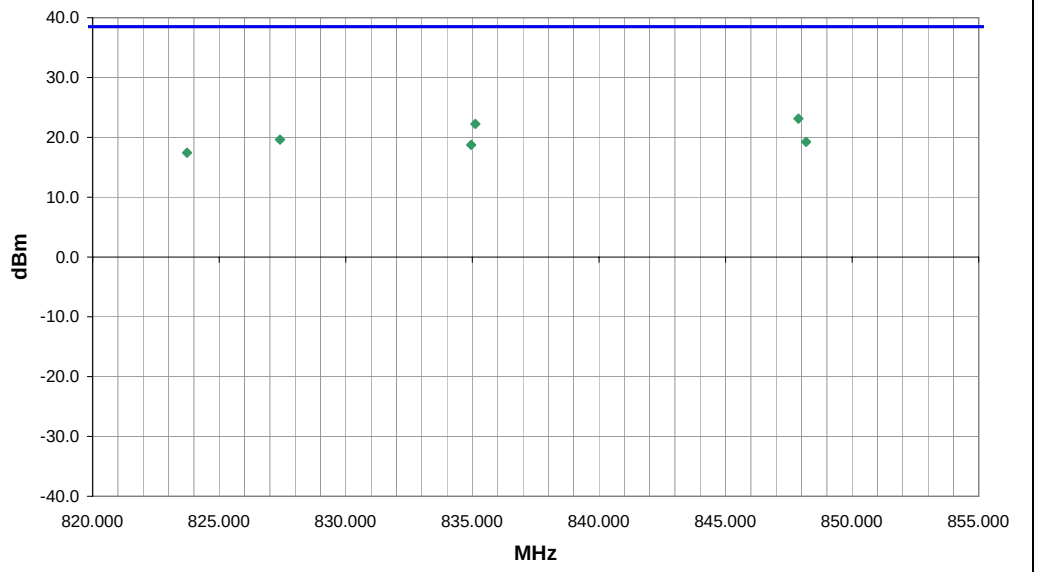
EUT OPERATING MODES

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

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	19		
Configuration #	2		
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
847.880			289.0	1.9			H-Bilog	PK	2.06E-01	23.1	38.5	-15.4	EUT Antenna Horizontal
835.120			293.0	1.9			H-Bilog	PK	1.67E-01	22.2	38.5	-16.3	EUT Antenna Horizontal
827.400			295.0	1.1			H-Bilog	PK	9.19E-02	19.6	38.5	-18.9	EUT Antenna Horizontal
848.180			295.0	1.8			V-Bilog	PK	8.38E-02	19.2	38.5	-19.3	EUT Antenna Horizontal
834.950			295.0	1.8			V-Bilog	PK	7.47E-02	18.7	38.5	-19.8	EUT Antenna Horizontal
823.730			282.0	1.9			V-Bilog	PK	5.54E-02	17.4	38.5	-21.1	EUT Antenna Horizontal

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/20/07
Customer:	Spectrum Technology	Temperature:	23
Attendees:	Rod Munro	Humidity:	31%
Project:	None	Barometric Pres.:	29.97
Tested by:	Holly Ashkannejhad	Power: 13.8 VDC	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

Optional vehicular configuration with external antenna.

EUT OPERATING MODES

CDMA 1xEV-DO Rev 0 (IS-856), cellular band, see comments for channels

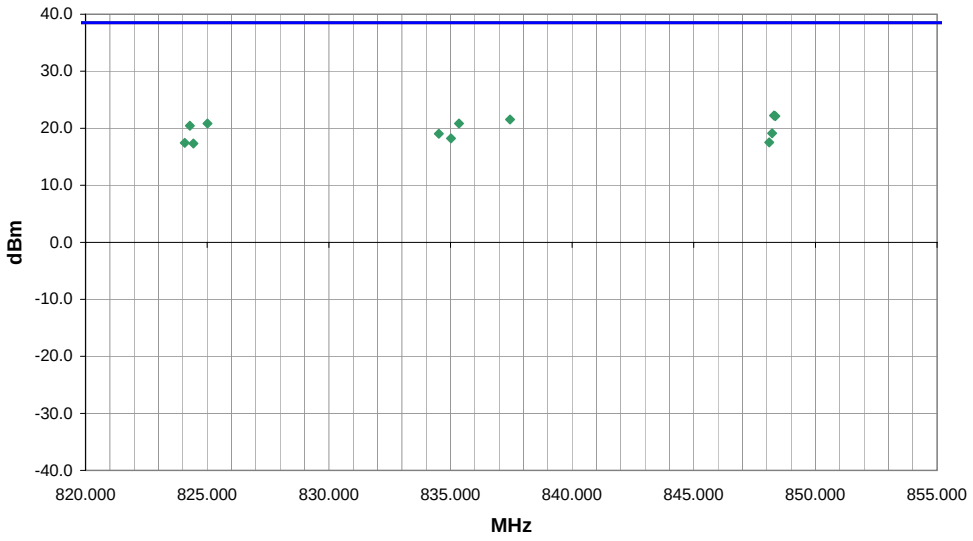
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	22
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0

Signature Holly Ashkannejhad



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
848.300			230.0	1.1			V-Bilog	PK	1.67E-01	22.2	38.5	-16.3	High channel, antenna vertical
848.350			299.0	1.0			H-Bilog	PK	1.63E-01	22.1	38.5	-16.4	High channel, antenna on side
837.450			291.0	2.0			H-Bilog	PK	1.42E-01	21.5	38.5	-17.0	Mid channel, antenna on side
825.010			322.0	1.0			H-Bilog	PK	1.21E-01	20.8	38.5	-17.7	Low channel, antenna on side
835.350			26.0	1.4			V-Bilog	PK	1.21E-01	20.8	38.5	-17.7	Mid channel, antenna vertical
824.290			177.0	1.2			V-Bilog	PK	1.10E-01	20.4	38.5	-18.1	Low channel, antenna vertical
848.220			323.0	1.1			V-Bilog	PK	8.19E-02	19.1	38.5	-19.4	High channel, antenna on side
834.520			246.0	1.8			H-Bilog	PK	8.00E-02	19.0	38.5	-19.5	Mid channel, antenna vertical
835.020			285.0	1.9			V-Bilog	PK	6.65E-02	18.2	38.5	-20.3	Mid channel, antenna on side
848.100			253.0	1.7			H-Bilog	PK	5.66E-02	17.5	38.5	-21.0	High channel, antenna vertical
824.080			248.0	1.0			H-Bilog	PK	5.54E-02	17.4	38.5	-21.1	Low channel, antenna vertical
824.430			340.0	1.0			V-Bilog	PK	5.41E-02	17.3	38.5	-21.2	Low channel, antenna on side

NORTHWEST EMC

Effective Radiated Power (ERP)

PSA 2007.01.31
EMI 2006.12.20

EUT:	Sierra Wireless MC5725 WAN Radio in the IX270	Work Order:	SPTE0053
Serial Number:	None	Date:	04/20/07
Customer:	Spectrum Technology	Temperature:	23
Attendees:	Rod Munro	Humidity:	31%
Project:	None	Barometric Pres.:	29.97
Tested by:	Holly Ashkannejhad	Power: 13.8 VDC	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

Optional vehicular configuration with external antenna.

EUT OPERATING MODES

CDMA 1xRTT (IS-2000), cellular band, see comments for channel

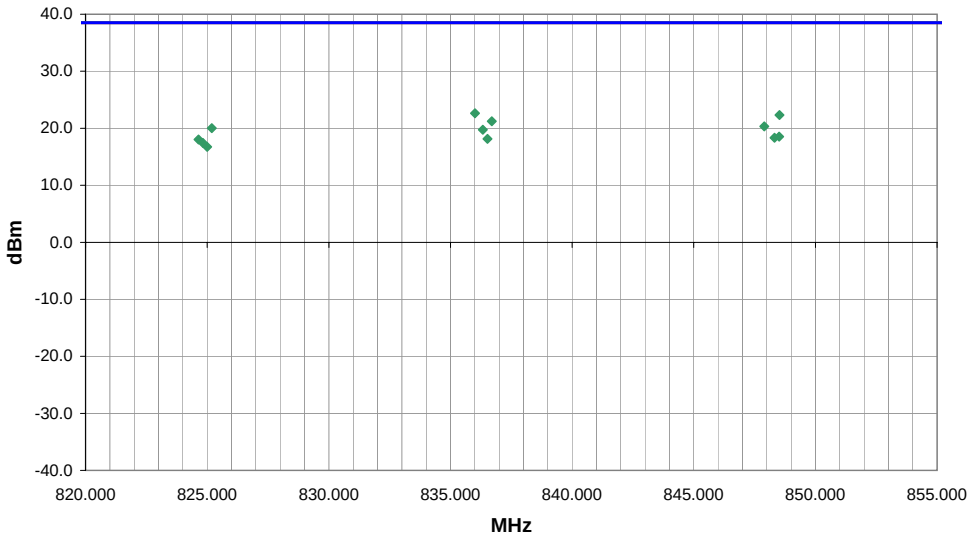
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	23
Configuration #	2
Results	Pass

NVLAP Lab Code 200630-0

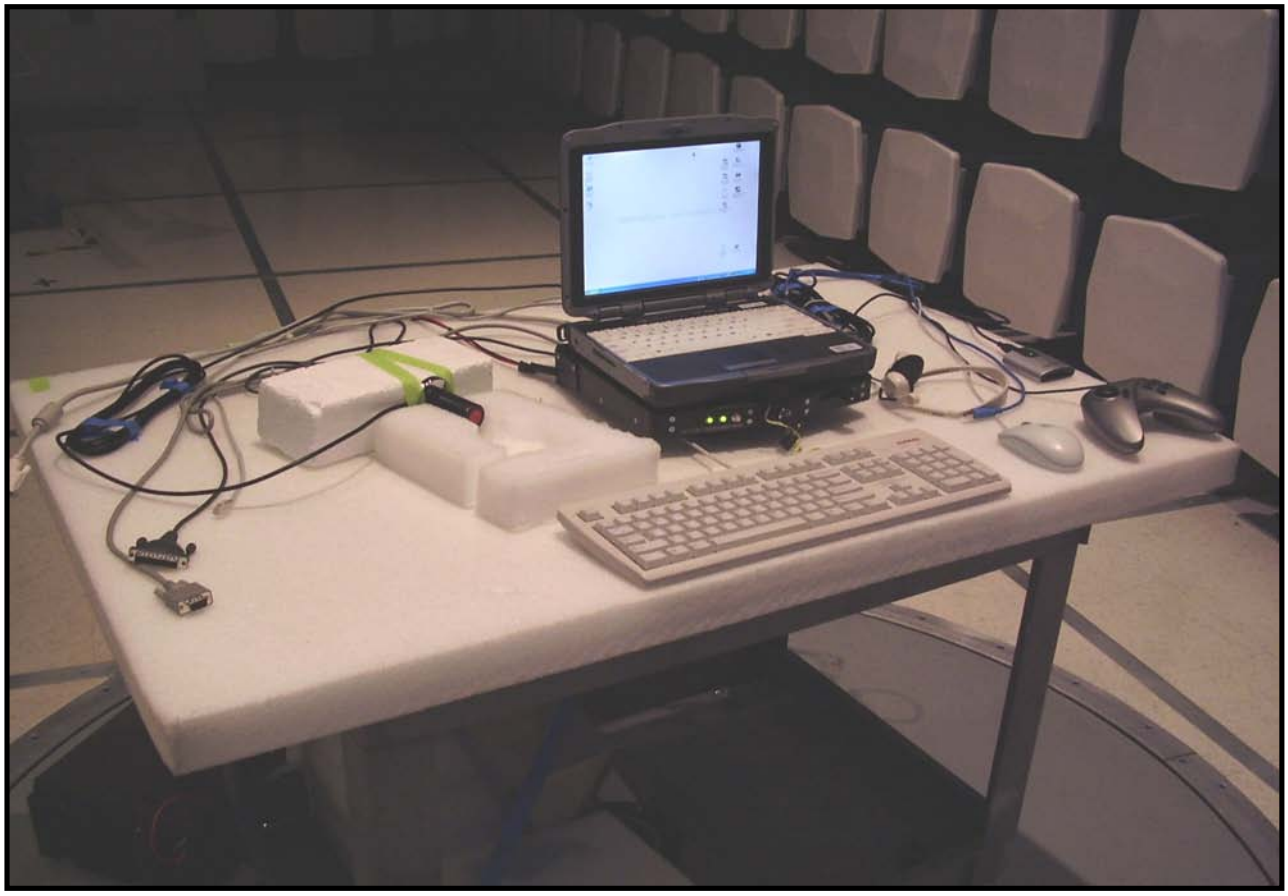
Signature Holly Ashkannejhad



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
836.010			231.0	1.2			V-Bilog	PK	1.83E-01	22.6	38.5	-15.9	Mid channel, antenna vertical
848.520			308.0	1.0			H-Bilog	PK	1.71E-01	22.3	38.5	-16.2	High channel, antenna on side
836.700			308.0	1.0			H-Bilog	PK	1.33E-01	21.2	38.5	-17.3	Mid channel, antenna on side
847.900			177.0	1.2			V-Bilog	PK	1.08E-01	20.3	38.5	-18.2	High channel, antenna vertical
825.190			326.0	1.0			H-Bilog	PK	1.01E-01	20.0	38.5	-18.5	Low channel, antenna on side
836.330			246.0	1.0			H-Bilog	PK	9.40E-02	19.7	38.5	-18.8	Mid channel, antenna vertical
848.510			331.0	1.2			V-Bilog	PK	7.13E-02	18.5	38.5	-20.0	High channel, antenna on side
848.320			245.0	1.0			H-Bilog	PK	6.81E-02	18.3	38.5	-20.2	High channel, antenna vertical
836.520			329.0	1.0			V-Bilog	PK	6.50E-02	18.1	38.5	-20.4	Mid channel, antenna on side
824.640			247.0	1.0			H-Bilog	PK	6.36E-02	18.0	38.5	-20.5	Low channel, antenna vertical
824.820			230.0	1.0			V-Bilog	PK	5.54E-02	17.4	38.5	-21.1	Low channel, antenna vertical
825.000			329.0	1.0			V-Bilog	PK	4.71E-02	16.7	38.5	-21.8	Low channel, antenna on side


EMC
GENERAL DYNAMICS

Effective Radiated Power



Effective Radiated Power