

# Spectrum Technology, Inc.

**GD Itronix,  
Model: GD6000 PC w/GOBI2,  
FCC ID: KBCIX-GOBI2,  
Model: IX-GOBI2**

Report No. SPTE0110

Report Prepared By



[www.nwemc.com](http://www.nwemc.com)  
1-888-EMI-CERT

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**EMC Test Report**

## Certificate of Test

Last Date of Test: July 30, 2009

Spectrum Technology, Inc.

Model: GD Itronix, Model: GD6000 PC w/GOBI2,

FCC ID: KBCIX-GOBI2, Model: IX-GOBI2

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Out of Band Emissions	FCC 24E:2009	ANSI/TIA/EIA-603-C-2004	Pass
Out of Band Emissions	FCC 22H:2009	ANSI/TIA/EIA-603-C-2004	Pass
Equivalent Isotropic Radiated Power	FCC 24E:2009	ANSI/TIA/EIA-603-C-2004	Pass
Equivalent Radiated Power	FCC 22H:2009	ANSI/TIA/EIA-603-C-2004	Pass

### 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 (Site filing #2834D-2).

Approved By:



Don Facteau, IS Manager



NVLAP Lab Code: 200630-0

*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		

**Barometric Pressure**

The recorded barometric pressure has been normalized to sea level.

**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 2004/108/EC, and ANSI C63.4. 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-Gen, Issue 2 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. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2*)



**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.



**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 (US0017). 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



**KCC:** Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157*)



## SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>



# Northwest EMC Locations



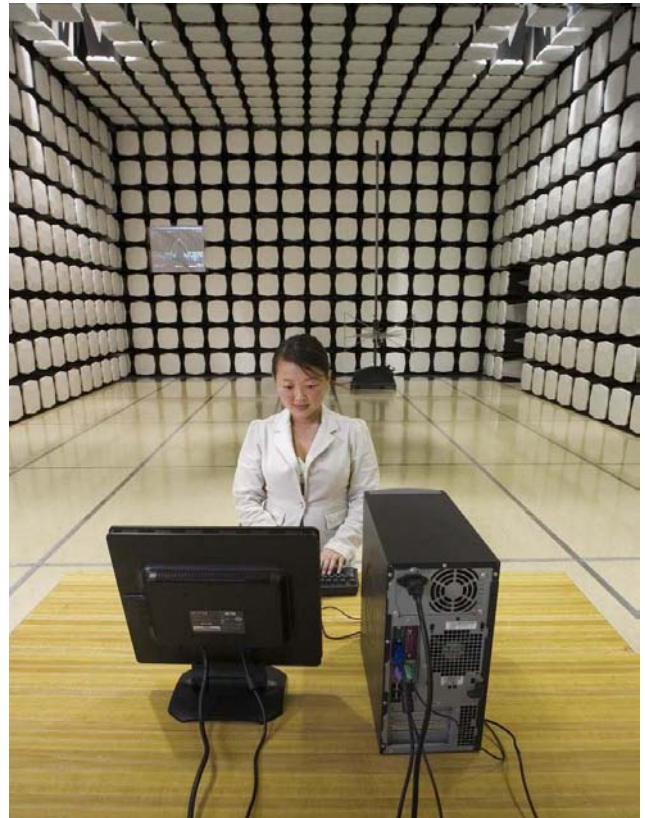
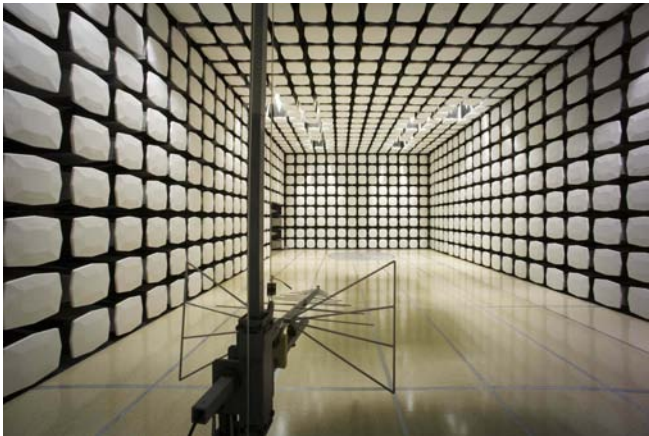
Oregon  
Labs EV01-EV12  
22975 NW Evergreen Pkwy  
Suite 400  
Hillsboro, OR 97124  
(503) 844-4066

California  
Labs OC01-OC13  
41 Tesla  
Irvine, CA 92618  
(949) 861-8918

Minnesota  
Labs MN01-MN08  
9349 W Broadway Ave.  
Brooklyn Park,  
MN 55445  
(763) 425-2281

Washington  
Labs SU01-SU07  
14128 339<sup>th</sup> Ave. SE  
Sultan, WA 98294  
(360) 793-8675

New York  
Labs WA01-WA04  
4939 Jordan Rd.  
Elbridge, NY 13060  
(315) 685-0796





**Party Requesting the Test**

<b>Company Name:</b>	Spectrum Technology, Inc.
<b>Address:</b>	4801 166th Place SE
<b>City, State, Zip:</b>	Bothell, WA 98012
<b>Test Requested By:</b>	Rod Munro
<b>Model:</b>	GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2
<b>First Date of Test:</b>	July 14, 2009
<b>Last Date of Test:</b>	July 30, 2009
<b>Receipt Date of Samples:</b>	July 13, 2009
<b>Equipment Design Stage:</b>	Preproduction
<b>Equipment Condition:</b>	No Damage

**Information Provided by the Party Requesting the Test****Functional Description of the EUT (Equipment Under Test):**

Ruggedized PC that can be used in either a notebook or vehicle - mount configuration.

**Testing Objective:**

These tests were selected to satisfy the EMC requirements requested by the client.

**CONFIGURATION 1 SPTE0110****Software/Firmware Running during test**

Description	Version
Windows XP	SP3

**EUT**

Description	Manufacturer	Model/Part Number	Serial Number
GOBI2000 WAN radio	Qualcomm	GOBI2000	Unknown
Notebook PC	General Dynamics Itronix, Corp.	GD6000	ZZGEG9139ZZ2900

**Peripherals in test setup boundary**

Description	Manufacturer	Model/Part Number	Serial Number
USB Keyboard	Logitech	Y-UT76	SC7250Z
USB Mouse	Dell	M-UK Del 3	HC8090COCNK
Serial Modem	Epson	C202A	010286
Microphone	Gateway	7000981	C19808008
Headset	Coby	CV-H42	None
AC Adapter	Delta Electronics	ADP-65JH DB	634W91900DR

**Cables**

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB	PA	1.8m	No	Notebook PC	USB Keyboard
USB	PA	1.9m	No	Notebook PC	USB Mouse
Serial	Yes	1.9m	No	Notebook PC	Serial Modem
Audio	PA	1.6m	No	Notebook PC	Microphone
Audio	PA	1.1m	No	Notebook PC	Headset
RJ11 Phone Cable	No	1.9m	No	Notebook PC	Unterminated
Ethernet	No	1.2m	No	Notebook PC	Unterminated
Video	Yes	1.6m	Yes	Notebook PC	Unterminated
AC Power	No	1.8m	No	AC Mains	AC Adapter
DC Power	PA	1.8m	Yes	AC Adapter	Notebook PC

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.



**CONFIGURATION 2 SPTE0110****Software/Firmware Running during test**

Description	Version
Windows XP	SP3

**EUT**

Description	Manufacturer	Model/Part Number	Serial Number
GOBI2000 WAN radio	Qualcomm	GOBI2000	Unknown
Notebook PC	General Dynamics Itronix, Corp.	GD6000	ZZGEG9139ZZ2900

**Peripherals in test setup boundary**

Description	Manufacturer	Model/Part Number	Serial Number
Serial Modem	Epson	C202A	010286
Microphone	Gateway	7000981	C19808008
Headset	Coby	CV-H42	None
AC Adapter	Delta Electronics	ADP-65JH DB	634W91900DR
Vehicle Dock	General Dynamics Itronix, Corp.	91.47M27.007G	ZZTPE7003ZN7367
External WLAN Antenna	Maxrad	Unknown	Unknown
PS2 Mouse	Gateway	7004055	HCA22709026
PS2 Keyboard	Gateway	7002557	G611663

**Cables**

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	1.8m	No	AC Mains	AC Adapter
DC Power	PA	1.8m	Yes	AC Adapter	Notebook PC
Serial	Yes	1.0m	No	Vehicle Dock	Unterminated
Ethernet	No	1.2m	No	Vehicle Dock	Unterminated
Antenna	Yes	3.0m	No	Vehicle Dock	External WLAN Antenna
Video	Yes	1.0m	Yes	Vehicle Dock	Unterminated
PS2	No	1.3m	PA	Vehicle Dock	PS2 Mouse
Audio	No	1.0m	No	Vehicle Dock	Microphone
Audio	No	1.0m	No	Vehicle Dock	Headset
USB	Yes	1.3m	No	Vehicle Dock	Unterminated
Firewire	Yes	1.3m	No	Vehicle Dock	Unterminated
PS2	Yes	1.6m	No	Vehicle Dock	PS2 Keyboard
USB	Yes	1.6m	No	Vehicle Dock	Unterminated
Serial	Yes	1.9m	No	Vehicle Dock	Serial Modem
Parallel	Yes	1.7m	No	Vehicle Dock	Unterminated

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

<b>Equipment modifications</b>					
Item	Date	Test	Modification	Note	Disposition of EUT
1	7/14/2009	Equivalent 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	7/20/2009	Equivalent 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	7/30/2009	Out of Band Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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**

Cell

**CHANNELS OF OPERATION**

Low Channel

Mid Channel

High Channel

**POWER SETTINGS INVESTIGATED**

120VAC/60Hz

**FREQUENCY RANGE INVESTIGATED**

Start Frequency	30MHz	Stop Frequency	26 GHz
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**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
EV12 Cables		Bilog Cables	EVS	6/25/2009	13
Antenna, Biconilog	EMCO	3141	AXE	1/15/2008	24
Pre-Amplifier	Miteq	AMF-3D00100800-32-13P	AVF	6/25/2009	13
Antenna, Horn	ETS	3115	AIB	8/25/2008	24
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVH	6/26/2009	13
EV11 Cables		Standard Gain Horn Cables	EVU	6/25/2009	13
Antenna, Horn	ETS	3160.07	AHZ	10/14/2008	24
Attenuator	Pasternack	PE7005-20	AUN	6/25/2009	13
Attenuator	INMET	64671 6A-10dB	AUI	6/25/2009	13
High Pass Filter	Micro-Tronics	50111	HGE	6/25/2009	13
High Pass Filter	Micro-Tronics	50108	HGF	6/25/2009	13
1-2 GHz Notch Filter	K&L Microwave	3TNF-1000/2000-N/N	HFU	7/2/2008	24
5-1 GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFT	7/2/2008	24
Universal Radio Communication Tester	Rhode & Schwarz	CMU200	BSU	NCR	0
Low Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	LFB	7/10/2009	13
Antenna, Horn	EMCO	3115	AHJ	6/29/2009	24
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Signal Generator	Hewlett-Packard	8648D	TGC	12/9/2008	13
Antenna, Dipole	ETS	3121C-DB4	ADH	3/6/2009	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). 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 placed 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.

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/24/09
Customer: Spectrum Technology, Inc.	Temperature: 24.2
Attendees: Rod Munro	Humidity: 42%
Project: None	Barometric Pres.: 1017.5
Tested by: Dan Haas	Power: 120V/60Hz
	Job Site: EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

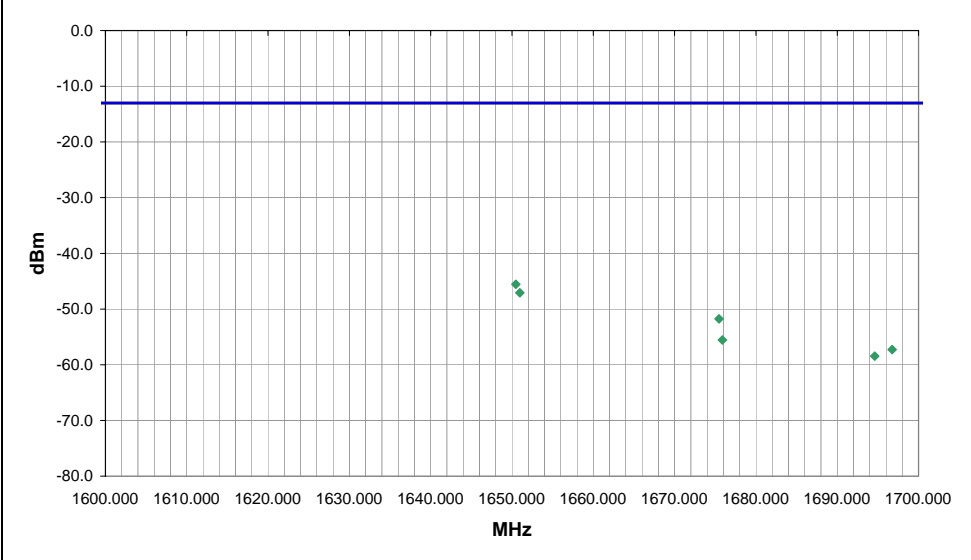
<b>TEST PARAMETERS</b>	
Antenna Height(s) (m) 1 - 4	Test Distance (m) 3

**COMMENTS**  
WCDMA Rel 99, Highest Data Rate, Standalone.

**EUT OPERATING MODES**  
Cell band

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	22	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1650.467	213.0	1.6	H-Horn	PK	2.77E-08	-45.6	-13.0	-32.6	Low channel, Laptop screen vertical.
1650.967	147.0	1.3	V-Horn	PK	1.96E-08	-47.1	-13.0	-34.1	Low channel, Laptop screen vertical.
1675.470	170.0	1.2	H-Horn	PK	6.65E-09	-51.8	-13.0	-38.8	Mid channel, Laptop screen vertical.
1675.867	349.0	1.4	V-Horn	PK	2.77E-09	-55.6	-13.0	-42.6	Mid channel, Laptop screen vertical.
1696.750	315.0	2.0	V-Horn	PK	1.88E-09	-57.3	-13.0	-44.3	High channel, Laptop screen vertical.
1694.617	159.0	1.3	H-Horn	PK	1.42E-09	-58.5	-13.0	-45.5	High channel, Laptop screen vertical.

EUT:	GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order:	SPTE0110
Serial Number:	ZZGEG9139ZZ2900	Date:	07/30/09
Customer:	Spectrum Technology, Inc.	Temperature:	24.1
Attendees:	Rod Munro	Humidity:	44%
Project:	None	Barometric Pres.:	1009
Tested by:	Ethan Schoonover	Power:	120V/60Hz
		Job Site:	EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

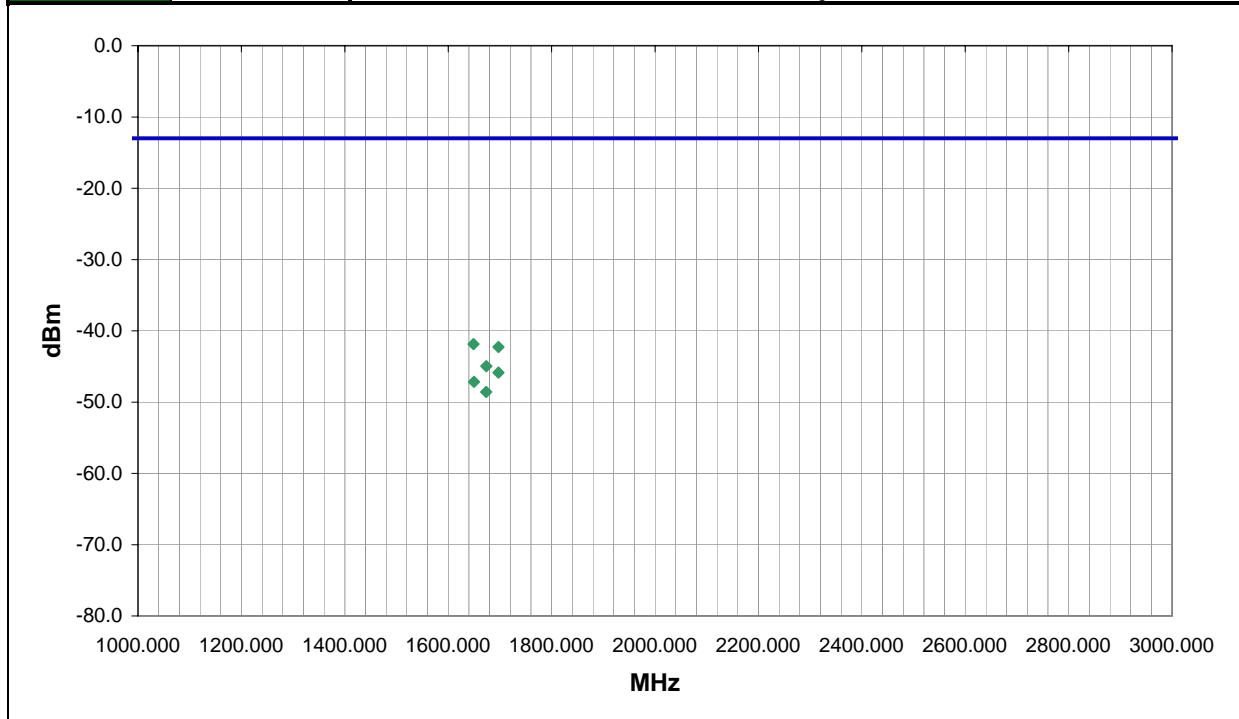
<b>TEST PARAMETERS</b>
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

**COMMENTS**  
 CDMA 1x RC3 (SO55), Highest Data Rate, Standalone

**EUT OPERATING MODES**  
 Cell band

**DEVIATIONS FROM TEST STANDARD**  
 No deviations.

Run #	33	<i>Signature</i> 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)
1648.836	157.0	1.3	H-Horn	PK	6.50E-08	-41.9	-13.0	-28.9
1697.213	354.0	1.6	V-Horn	PK	5.93E-08	-42.3	-13.0	-29.3
1673.589	140.0	1.2	H-Horn	PK	3.19E-08	-45.0	-13.0	-32.0
1697.202	198.0	1.2	H-Horn	PK	2.59E-08	-45.9	-13.0	-32.9
1649.885	277.0	1.6	V-Horn	PK	1.92E-08	-47.2	-13.0	-34.2
1673.443	352.0	1.7	V-Horn	PK	1.39E-08	-48.6	-13.0	-35.6

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/30/09
Customer: Spectrum Technology, Inc.	Temperature: 23.3
Attendees: Rod Munro	Humidity: 44%
Project: None	Barometric Pres.: 1009
Tested by: Dan Haas	Power: 120V/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	
FCC 22H:2009	Test Method ANSI/TIA/EIA-603-C-2004

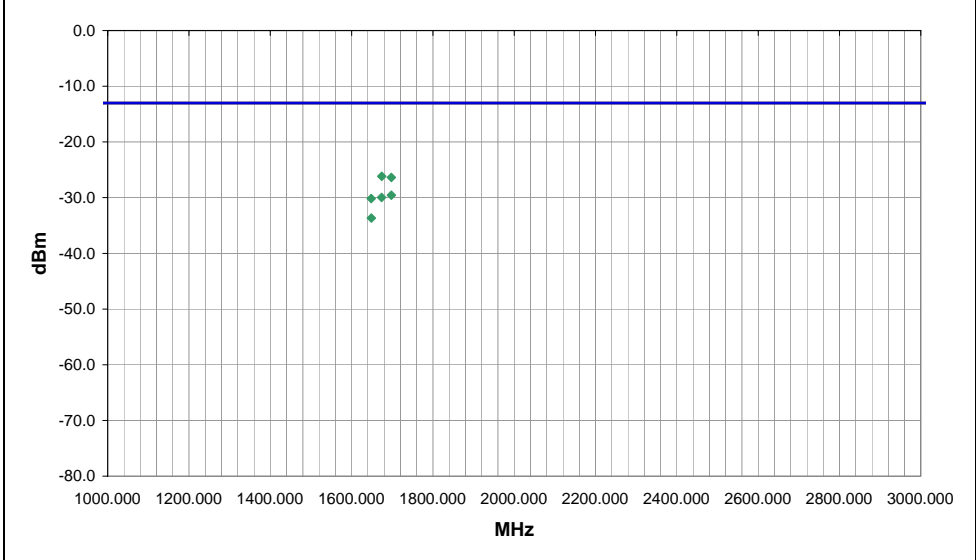
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
GPRS (GMSK), Standalone system.

**EUT OPERATING MODES**  
Cellular band

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	34	 Signature
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1674.010	220.0	1.3	H-Horn	PK	2.42E-06	-26.2	-13.0	-13.2	Mid channel, laptop screen vertical.
1697.670	222.0	1.2	H-Horn	PK	2.31E-06	-26.4	-13.0	-13.4	High channel, laptop screen vertical.
1697.565	262.0	1.2	V-Horn	PK	1.10E-06	-29.6	-13.0	-16.6	High channel, laptop screen vertical.
1673.900	144.0	1.3	V-Horn	PK	1.01E-06	-30.0	-13.0	-17.0	Mid channel, laptop screen vertical.
1648.345	221.0	1.7	H-Horn	PK	9.62E-07	-30.2	-13.0	-17.2	Low channel, laptop screen vertical.
1648.405	259.0	1.2	V-Horn	PK	4.30E-07	-33.7	-13.0	-20.7	Low channel, laptop screen vertical.

EUT:	GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order:	SPTE0110
Serial Number:	ZZGEG9139ZZ2900	Date:	07/30/09
Customer:	Spectrum Technology, Inc.	Temperature:	24.7
Attendees:	Rod Munro	Humidity:	43%
Project:	None	Barometric Pres.:	1009.7
Tested by:	Dan Haas	Power:	120V/60Hz
		Job Site:	EV12

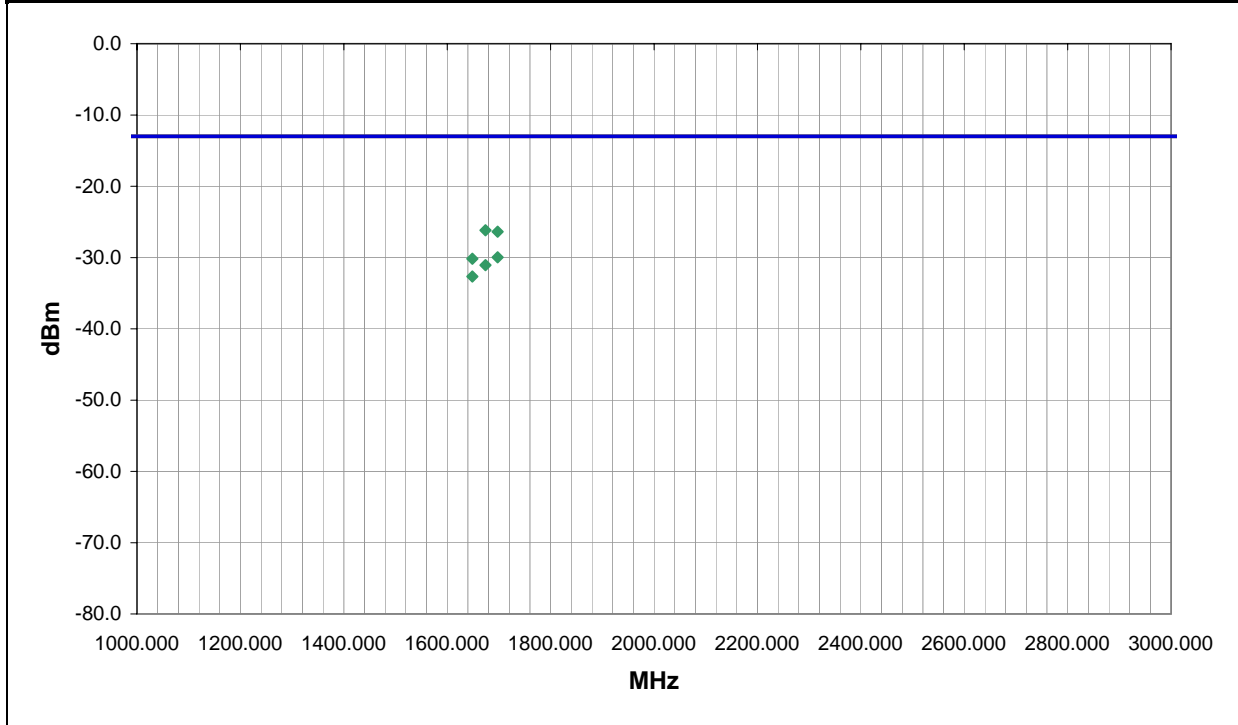
<b>TEST SPECIFICATIONS</b>	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

<b>TEST PARAMETERS</b>
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

**COMMENTS**  
EGPRS (EDGE), Standalone system.

**EUT OPERATING MODES**  
Cellular band  
**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	35	 Signature
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)
1674.105	221.0	1.3	H-Horn	PK	2.42E-06	-26.2	-13.0	-13.2
1697.495	221.0	1.2	H-Horn	PK	2.31E-06	-26.4	-13.0	-13.4
1697.395	144.0	1.7	V-Horn	PK	1.01E-06	-30.0	-13.0	-17.0
1648.490	221.0	1.7	H-Horn	PK	9.62E-07	-30.2	-13.0	-17.2
1673.965	256.0	1.5	V-Horn	PK	7.82E-07	-31.1	-13.0	-18.1
1648.540	144.0	1.3	V-Horn	PK	5.41E-07	-32.7	-13.0	-19.7







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**

Cell

**CHANNELS OF OPERATION**

Low Channel

Mid Channel

High Channel

**POWER SETTINGS INVESTIGATED**

120VAC/60Hz

**FREQUENCY RANGE INVESTIGATED**

Start Frequency	30MHz	Stop Frequency	26 GHz
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**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
EV12 Cables		Bilog Cables	EVS	6/26/2013	13
Antenna, Biconilog	EMCO	3141	AXE	1/16/2012	24
Pre-Amplifier	Miteq	AMF-3D00100800-32-13P	AVF	6/26/2013	13
Antenna, Horn	ETS	3115	AIB	8/26/2012	24
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVH	6/27/2013	13
EV11 Cables		Standard Gain Horn Cables	EVU	6/26/2013	13
Antenna, Horn	ETS	3160.07	AHZ	10/15/2012	24
Attenuator	Pasternack	PE7005-20	AUN	6/26/2013	13
Attenuator	INMET	64671 6A-10dB	AUI	6/26/2013	13
High Pass Filter	Micro-Tronics	50111	HGE	6/26/2013	13
High Pass Filter	Micro-Tronics	50108	HGF	6/26/2013	13
1-2 GHz Notch Filter	K&L Microwave	3TNF-1000/2000-N/N	HFU	7/3/2012	24
5-1 GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFT	7/3/2012	24
Universal Radio Communication Tester	Rhode & Schwarz	CMU200	BSU	NCR	0
Low Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	LFB	7/11/2013	13
Antenna, Horn	EMCO	3115	AHJ	6/30/2013	24
Power Sensor	Gigatronics	80701A	SPL	12/11/2012	13
Power Meter	Gigatronics	8651A	SPM	12/11/2012	13
Signal Generator	Hewlett-Packard	8648D	TGC	12/10/2012	13
Antenna, Dipole	ETS	3121C-DB4	ADH	3/7/2013	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). 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 placed 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.

# Out of Band Emissions

## EMC

EUT:	GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order:	SPTE0110
Serial Number:	ZZGEG9139ZZ2900	Date:	07/25/13
Customer:	Spectrum Technology, Inc.	Temperature:	24.2 °C
Attendees:	Rod Munro	Humidity:	42%
Project:	None	Barometric Pres.:	1017.5mb
Tested by:	Dan Haas	Power:	120V/60Hz
		Job Site:	EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

<b>TEST PARAMETERS</b>
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

**COMMENTS**  
CDMA 1x RC3 (SO55) Highest Data Rate vehicle mount.

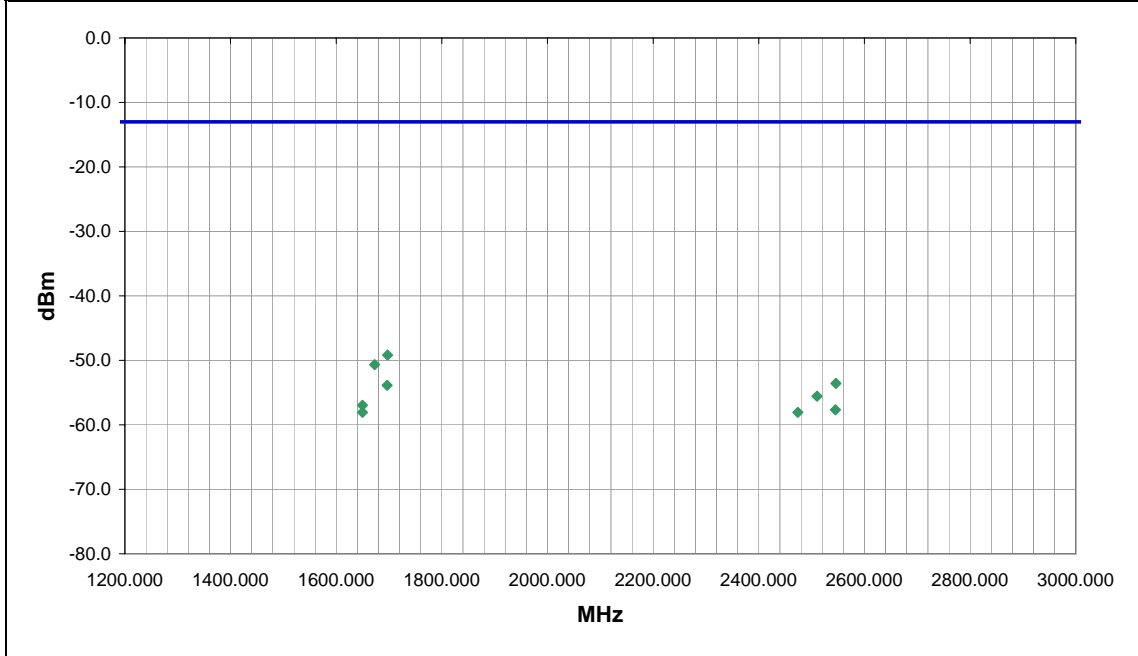
**EUT OPERATING MODES**

Cell band  
**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	19
Configuration #	2
Results	Pass

Signature 



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1697.250	110.0	1.1	V-Horn	PK	1.21E-08	-49.2	-13.0	-36.2	High channel
1672.860	96.0	1.4	V-Horn	PK	8.57E-09	-50.7	-13.0	-37.7	Mid channel
2546.048	99.0	1.1	V-Horn	PK	4.40E-09	-53.6	-13.0	-40.6	High channel
1696.317	3.0	1.1	H-Horn	PK	4.10E-09	-53.9	-13.0	-40.9	High channel
2510.345	104.0	1.1	V-Horn	PK	2.77E-09	-55.6	-13.0	-42.6	Mid channel
1649.898	244.0	1.4	V-Horn	PK	2.01E-09	-57.0	-13.0	-44.0	Low channel
2545.135	360.0	1.0	H-Horn	PK	1.71E-09	-57.7	-13.0	-44.7	High channel
2474.015	1.0	1.0	V-Horn	PK	1.56E-09	-58.1	-13.0	-45.1	Low channel
1649.813	287.0	1.7	H-Horn	PK	1.56E-09	-58.1	-13.0	-45.1	Low channel

# Out of Band Emissions

## EMC

EUT:	GD Itronix, Model: GD6000 PC w/GOB12, FCC ID: KBCIX-GOB12, Model: IX-GOB12	Work Order:	SPTE0110
Serial Number:	ZZGEG9139ZZ2900	Date:	07/25/13
Customer:	Spectrum Technology, Inc.	Temperature:	24.2 °C
Attendees:	Rod Munro	Humidity:	42%
Project:	None	Barometric Pres.:	1017.5mb
Tested by:	Dan Haas	Power:	120V/60Hz
		Job Site:	EV12

TEST SPECIFICATIONS	
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

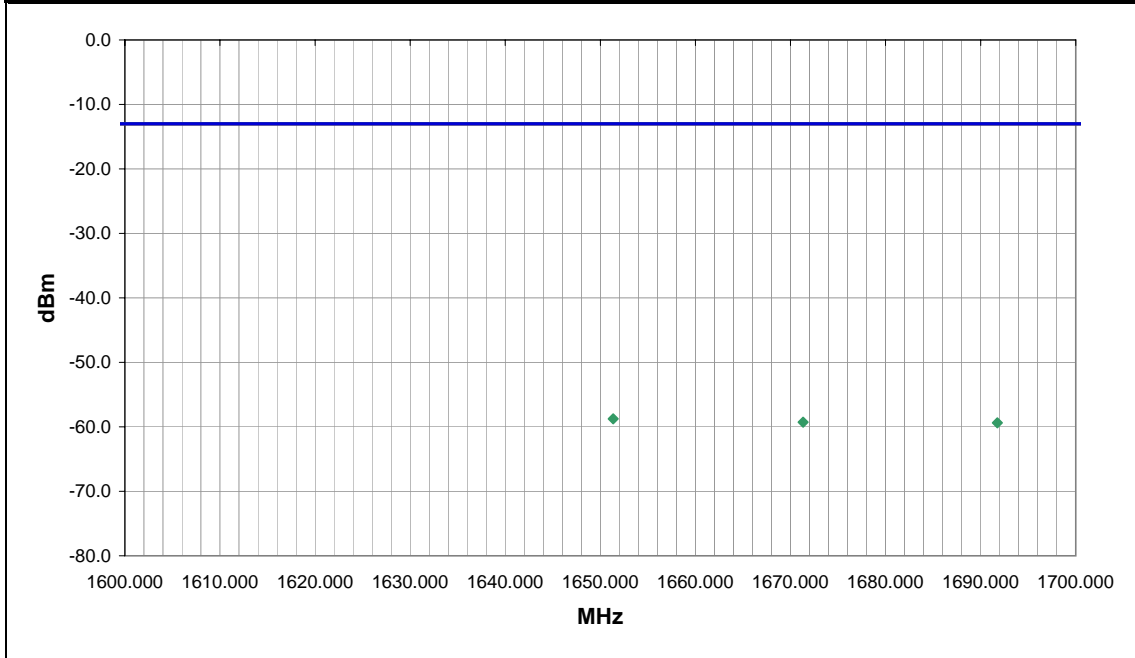
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
WCDMA Rel 99, Highest Data Rate, vehicle mount.

**EUT OPERATING MODES**  
Cell band

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	21	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1651.362	94.0	1.0	V-Horn	PK	1.33E-09	-58.8	-13.0	-45.8	Low channel
1671.335	103.0	1.5	V-Horn	PK	1.18E-09	-59.3	-13.0	-46.3	Mid channel
1691.753	244.0	3.0	V-Horn	PK	1.16E-09	-59.4	-13.0	-46.4	High channel





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**

PCS

**CHANNELS OF OPERATION**

Low Channel  
Mid Channel  
High Channel

**POWER SETTINGS INVESTIGATED**

120VAC/60Hz

**FREQUENCY RANGE INVESTIGATED**

Start Frequency	30MHz	Stop Frequency	26 GHz
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**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
EV12 Cables		Bilog Cables	EVS	6/25/2009	13
Antenna, Biconilog	EMCO	3141	AXE	1/15/2008	24
Pre-Amplifier	Miteq	AMF-3D00100800-32-13P	AVF	6/25/2009	13
Antenna, Horn	ETS	3115	AIB	8/25/2008	24
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVH	6/26/2009	13
EV11 Cables		Standard Gain Horn Cables	EVU	6/25/2009	13
Antenna, Horn	ETS	3160.07	AHZ	10/14/2008	24
Attenuator	Pasternack	PE7005-20	AUN	6/25/2009	13
Attenuator	INMET	64671 6A-10dB	AUI	6/25/2009	13
High Pass Filter	Micro-Tronics	50111	HGE	6/25/2009	13
High Pass Filter	Micro-Tronics	50108	HGF	6/25/2009	13
1-2 GHz Notch Filter	K&L Microwave	3TNF-1000/2000-N/N	HFU	7/2/2008	24
.5-1 GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFT	7/2/2008	24
Universal Radio Communication Test	Rhode & Schwarz	CMU200	BSU	NCR	0
Low Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	LFB	7/10/2009	13
Antenna, Horn	EMCO	3115	AHJ	6/29/2009	24
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Signal Generator	Hewlett-Packard	8648D	TGC	12/9/2008	13
Antenna, Dipole	ETS	3121C-DB4	ADH	3/6/2009	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). 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 placed 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 2008.07.21  
EMI 2008.1.9

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/29/09
Customer: Spectrum Technology, Inc.	Temperature: 24.6
Attendees: Rod Munro	Humidity: 41%
Project: None	Barometric Pres.: 1004.9
Tested by: Dan Haas	Power: 120V/60Hz
	Job Site: EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

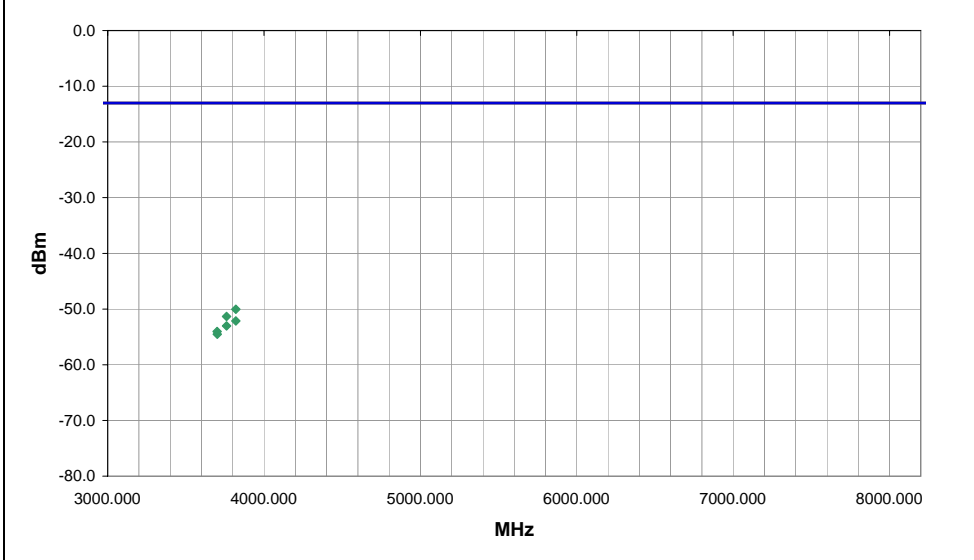
<b>TEST PARAMETERS</b>
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

**COMMENTS**  
GPRS (GMSK). Standalone system. New GPS module installed in original PC.

**EUT OPERATING MODES**  
PCS band

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	28	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
3819.640	103.0	1.5	H-Horn	PK	9.93E-09	-50.0	-13.0	-37.0	Laptop screen vertical, High channel
3759.910	166.0	1.1	V-Horn	PK	7.36E-09	-51.3	-13.0	-38.3	Laptop screen vertical, Mid channel
3819.743	4.0	1.7	V-Horn	PK	6.13E-09	-52.1	-13.0	-39.1	Laptop screen vertical, High channel
3760.053	99.0	1.6	H-Horn	PK	4.98E-09	-53.0	-13.0	-40.0	Laptop screen vertical, Mid channel
3700.033	173.0	1.3	V-Horn	PK	3.95E-09	-54.0	-13.0	-41.0	Laptop screen vertical, Low channel
3700.607	172.0	1.3	H-Horn	PK	3.52E-09	-54.5	-13.0	-41.5	Laptop screen vertical, Low channel

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/29/09
Customer: Spectrum Technology, Inc.	Temperature: 24.6
Attendees: Rod Munro	Humidity: 41%
Project: None	Barometric Pres.: 1004.9
Tested by: Dan Haas	Power: 120V/60Hz
	Job Site: EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

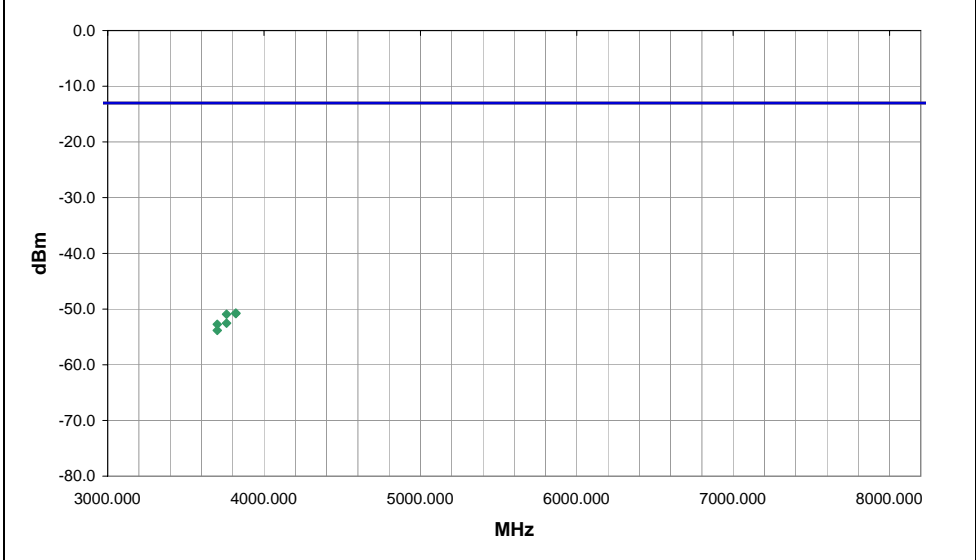
<b>TEST PARAMETERS</b>
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

**COMMENTS**  
EGPRS (EDGE), Standalone system. New GPS module installed in original PC.

**EUT OPERATING MODES**  
PCS band

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	29	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
3819.883	180.0	1.1	H-Horn	PK	8.46E-09	-50.7	-13.0	-37.7	High channel, laptop screen vertical.
3819.617	175.0	1.1	V-Horn	PK	8.26E-09	-50.8	-13.0	-37.8	High channel, laptop screen vertical.
3760.060	166.0	1.1	V-Horn	PK	8.07E-09	-50.9	-13.0	-37.9	Mid channel, laptop screen vertical.
3760.313	98.0	1.6	H-Horn	PK	5.59E-09	-52.5	-13.0	-39.5	Mid channel, laptop screen vertical.
3700.403	171.0	1.0	V-Horn	PK	5.33E-09	-52.7	-13.0	-39.7	Low channel, laptop screen vertical.
3700.437	176.0	1.0	H-Horn	PK	4.14E-09	-53.8	-13.0	-40.8	Low channel, laptop screen vertical.

EUT:	GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order:	SPTE0110
Serial Number:	ZZGEG9139ZZ2900	Date:	07/29/09
Customer:	Spectrum Technology, Inc.	Temperature:	24.2
Attendees:	Rod Munro	Humidity:	42%
Project:	None	Barometric Pres.:	1017.5
Tested by:	Dan Haas	Power:	120V/60Hz
		Job Site:	EV12

**TEST SPECIFICATIONS**

FCC 24E:2009	ANSI/TIA/EIA-603-C-2004
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**TEST PARAMETERS**

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

CDMA 1x RC3 (SO55), Standalone system. New GPS module installed in original PC.

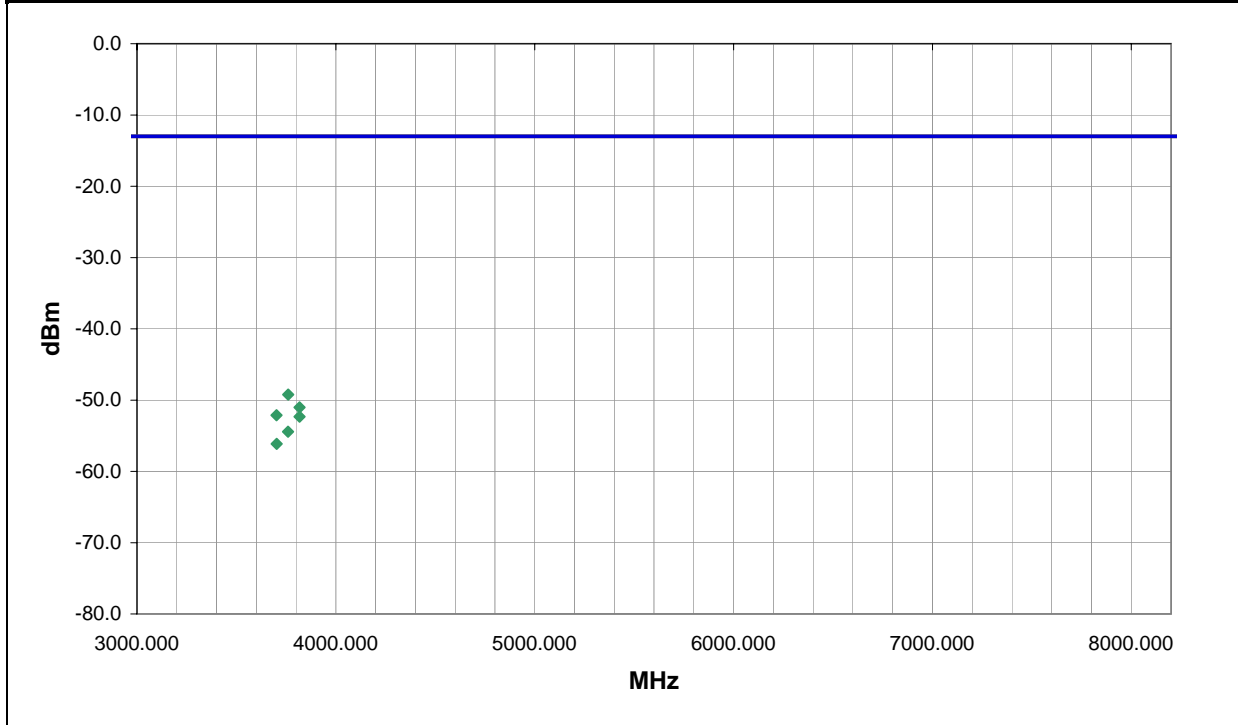
**EUT OPERATING MODES**

PCS band

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	30	 Signature
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)
3760.683	164.0	1.1	V-Horn	PK	1.19E-08	-49.2	-13.0	-36.2
3817.550	144.0	1.4	V-Horn	PK	7.89E-09	-51.0	-13.0	-38.0
3701.570	157.0	1.1	V-Horn	PK	6.13E-09	-52.1	-13.0	-39.1
3817.292	95.0	1.4	H-Horn	PK	5.85E-09	-52.3	-13.0	-39.3
3759.458	89.0	1.4	H-Horn	PK	3.61E-09	-54.4	-13.0	-41.4
3702.003	257.0	1.4	H-Horn	PK	2.44E-09	-56.1	-13.0	-43.1

EUT:	GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order:	SPTE0110
Serial Number:	ZZGEG9139ZZ2900	Date:	07/30/09
Customer:	Spectrum Technology, Inc.	Temperature:	23.1
Attendees:	Rod Munro	Humidity:	45%
Project:	None	Barometric Pres.:	1008
Tested by:	Ethan Schoonover	Power:	120V/60Hz
		Job Site:	EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

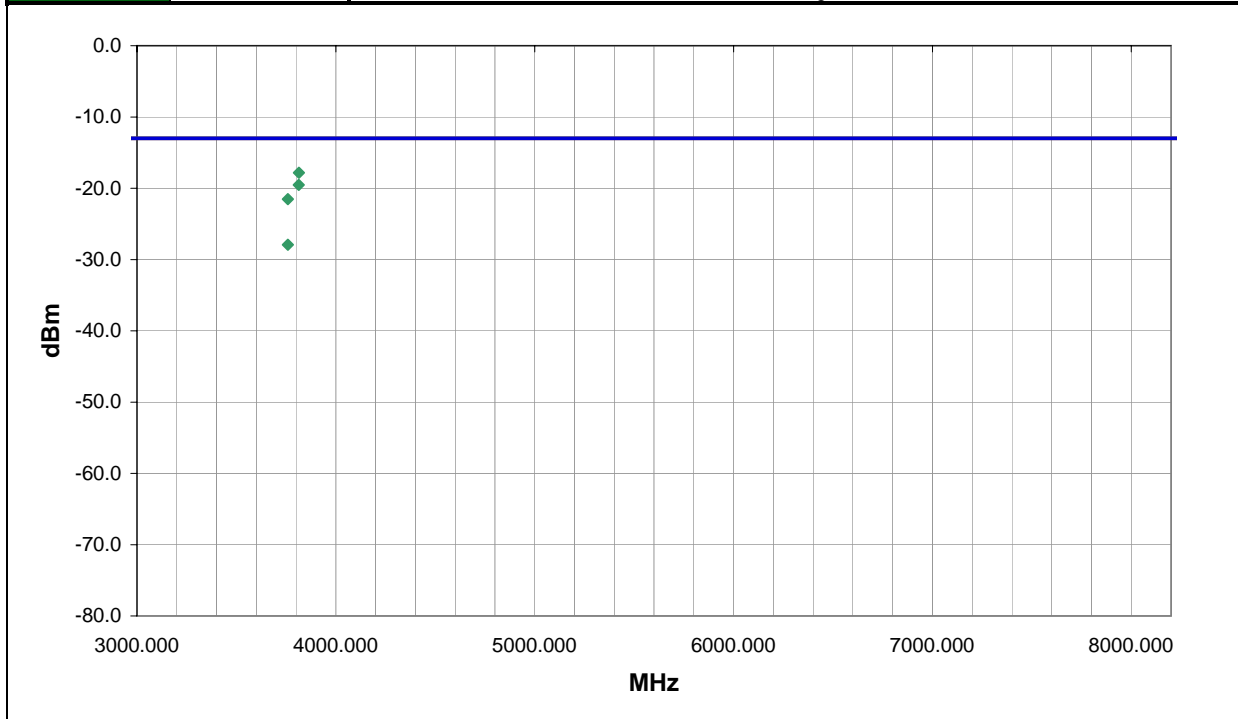
<b>TEST PARAMETERS</b>			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
WCDMA Rel 99, Highest Data Rate, Standalone.

**EUT OPERATING MODES**  
PCS mode.

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	31	<i>Signature</i> 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)
3813.883	173.0	1.1	V-Horn	PK	1.65E-05	-17.8	-13.0	-4.8
3813.800	93.0	1.5	H-Horn	PK	1.11E-05	-19.5	-13.0	-6.5
3758.575	164.0	1.1	V-Horn	PK	7.03E-06	-21.5	-13.0	-8.5
3758.808	75.0	1.5	H-Horn	PK	1.61E-06	-27.9	-13.0	-14.9





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**

PCS

**CHANNELS OF OPERATION**

Low Channel

Mid Channel

High Channel

**POWER SETTINGS INVESTIGATED**

120VAC/60Hz

**FREQUENCY RANGE INVESTIGATED**

Start Frequency	30MHz	Stop Frequency	26 GHz
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**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
EV12 Cables		Bilog Cables	EVS	6/25/2009	13
Antenna, Biconilog	EMCO	3141	AXE	1/15/2008	24
Pre-Amplifier	Miteq	AMF-3D00100800-32-13P	AVF	6/25/2009	13
Antenna, Horn	ETS	3115	AIB	8/25/2008	24
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVH	6/26/2009	13
EV11 Cables		Standard Gain Horn Cables	EVU	6/25/2009	13
Antenna, Horn	ETS	3160.07	AHZ	10/14/2008	24
Attenuator	Pasternack	PE7005-20	AUN	6/25/2009	13
Attenuator	INMET	64671 6A-10dB	AUI	6/25/2009	13
High Pass Filter	Micro-Tronics	50111	HGE	6/25/2009	13
High Pass Filter	Micro-Tronics	50108	HGF	6/25/2009	13
1-2 GHz Notch Filter	K&L Microwave	3TNF-1000/2000-N/N	HFU	7/2/2008	24
5-1 GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFT	7/2/2008	24
Universal Radio Communication Tester	Rhode & Schwarz	CMU200	BSU	NCR	0
Low Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	LFB	7/10/2009	13
Antenna, Horn	EMCO	3115	AHJ	6/29/2009	24
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Signal Generator	Hewlett-Packard	8648D	TGC	12/9/2008	13
Antenna, Dipole	ETS	3121C-DB4	ADH	3/6/2009	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). 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 placed 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.



# Out of Band Emissions

## EMC

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/24/09
Customer: Spectrum Technology, Inc.	Temperature: 23.3
Attendees: Rod Munro	Humidity: 43%
Project: None	Barometric Pres.: 1018.5
Tested by: Dan Haas	Power: 120V/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	
FCC 24E:2009	Test Method ANSI/TIA/EIA-603-C-2004

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

**COMMENTS**  
CDMA 1x RC3 (SO55) Highest Data Rate vehicle mount.

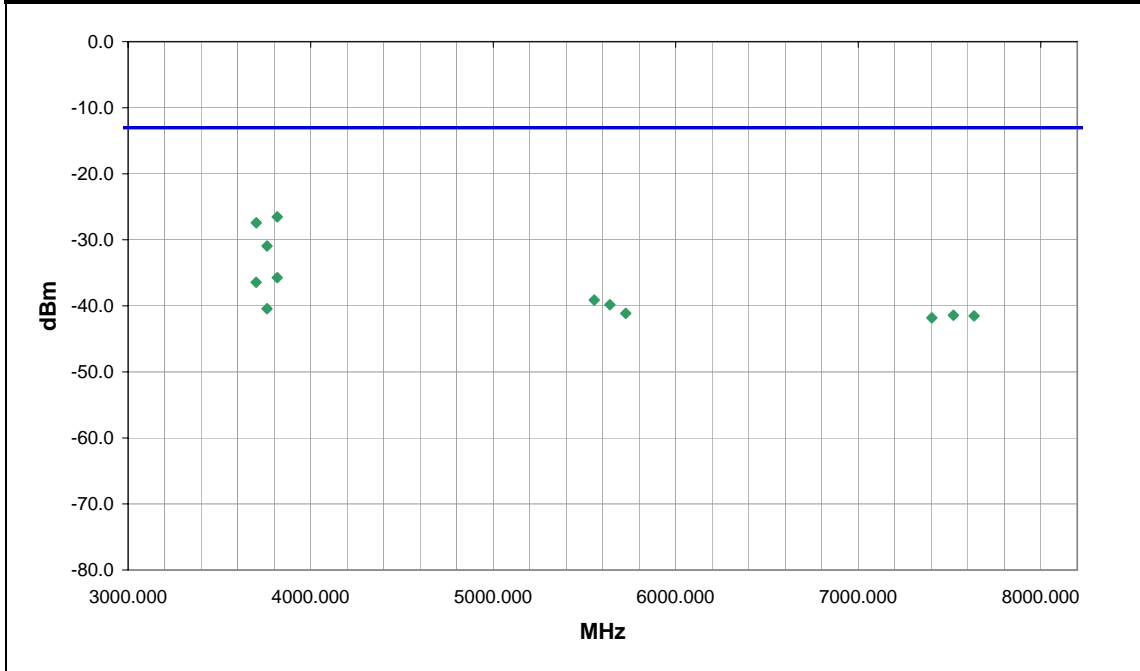
**EUT OPERATING MODES**

PCS band

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	17	 Signature
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
3817.075	202.0	1.1	V-Horn	PK	2.22E-06	-26.5	-13.0	-13.5	High channel
3701.733	160.0	1.5	V-Horn	PK	1.81E-06	-27.4	-13.0	-14.4	Low channel
3760.483	200.0	1.5	V-Horn	PK	8.07E-07	-30.9	-13.0	-17.9	Mid channel
3817.142	229.0	1.2	H-Horn	PK	2.67E-07	-35.7	-13.0	-22.7	High channel
3701.663	231.0	1.2	H-Horn	PK	2.28E-07	-36.4	-13.0	-23.4	Low channel
5553.875	230.0	1.3	V-Horn	PK	1.22E-07	-39.1	-13.0	-26.1	Low channel
5639.792	99.0	2.0	V-Horn	PK	1.04E-07	-39.8	-13.0	-26.8	Mid channel
3760.567	213.0	2.4	H-Horn	PK	9.06E-08	-40.4	-13.0	-27.4	Mid channel
5726.083	94.0	2.0	V-Horn	PK	7.71E-08	-41.1	-13.0	-28.1	High channel
7521.158	109.0	1.0	V-Horn	PK	7.20E-08	-41.4	-13.0	-28.4	Mid channel
7634.975	70.0	1.3	V-Horn	PK	7.03E-08	-41.5	-13.0	-28.5	High channel
7402.758	1.0	1.0	V-Horn	PK	6.56E-08	-41.8	-13.0	-28.8	Low channel

**Out of Band Emissions**

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/24/09
Customer: Spectrum Technology, Inc.	Temperature: 24.2
Attendees: Rod Munro	Humidity: 42%
Project: None	Barometric Pres.: 1017.5
Tested by: Dan Haas	Power: 120V/60Hz
	Job Site: EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

<b>TEST PARAMETERS</b>			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
CDMA 1x RC3 (SO55) Highest Data Rate vehicle mount.

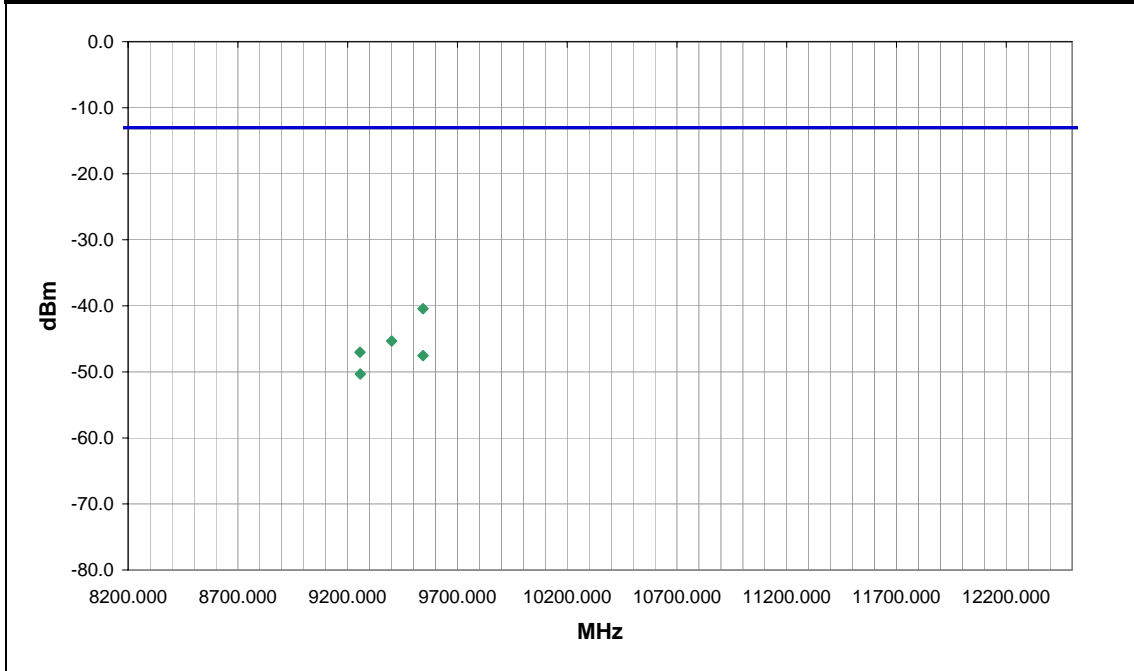
**EUT OPERATING MODES**

PCS band

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	18	 Signature
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
9543.567	114.0	1.3	V-Horn	PK	9.06E-08	-40.4	-13.0	-27.4	High channel
9400.292	113.0	1.4	V-Horn	PK	2.93E-08	-45.3	-13.0	-32.3	Mid channel
9256.142	48.0	1.1	V-Horn	PK	1.98E-08	-47.0	-13.0	-34.0	Low channel
9543.325	5.0	1.0	H-Horn	PK	1.77E-08	-47.5	-13.0	-34.5	High channel
9257.775	169.0	1.5	H-Horn	PK	9.27E-09	-50.3	-13.0	-37.3	Low channel

**Out of Band Emissions**

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/24/09
Customer: Spectrum Technology, Inc.	Temperature: 24.2
Attendees: Rod Munro	Humidity: 42%
Project: None	Barometric Pres.: 1017.5
Tested by: Dan Haas	Power: 120V/60Hz
	Job Site: EV12

<b>TEST SPECIFICATIONS</b>	<b>Test Method</b>
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

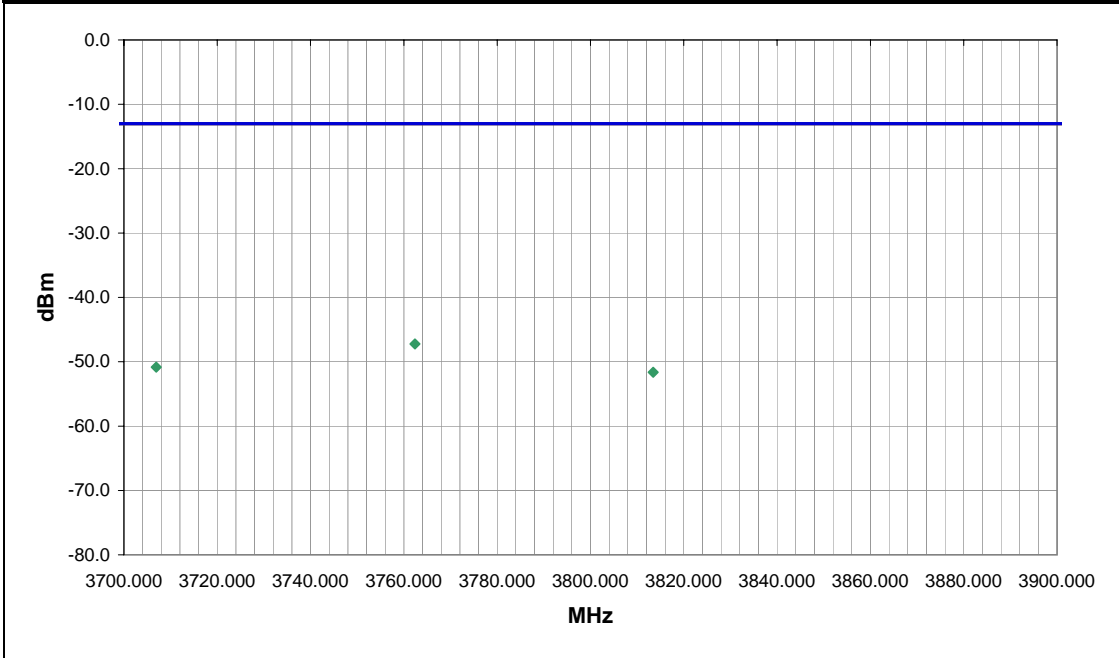
<b>TEST PARAMETERS</b>
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

**COMMENTS**  
WCDMA Rel 99, Highest Data Rate, vehicle mount.

**EUT OPERATING MODES**  
PCS band

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	20	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
3762.367	293.0	1.1	V-Horn	PK	1.89E-08	-47.2	-13.0	-34.2	Mid Channel
3706.933	1.0	1.0	V-Horn	PK	8.26E-09	-50.8	-13.0	-37.8	Low Channel
3813.433	1.0	1.0	V-Horn	PK	6.87E-09	-51.6	-13.0	-38.6	High channel.



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

PCS Band

#### POWER SETTINGS INVESTIGATED

120VAC/60Hz

#### FREQUENCY RANGE INVESTIGATED

Start Frequency	1800MHz	Stop Frequency	2000MHz
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#### 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	E44440A	AFA	11/14/2008	12
EV12 Cables		Bilog Cables	EVS	6/25/2009	13
Antenna, Horn	ETS	3115	AIB	8/25/2008	24
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	13
Antenna, Horn	EMCO	3115	AHJ	6/29/2009	24

#### MEASUREMENT BANDWIDTHS

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(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


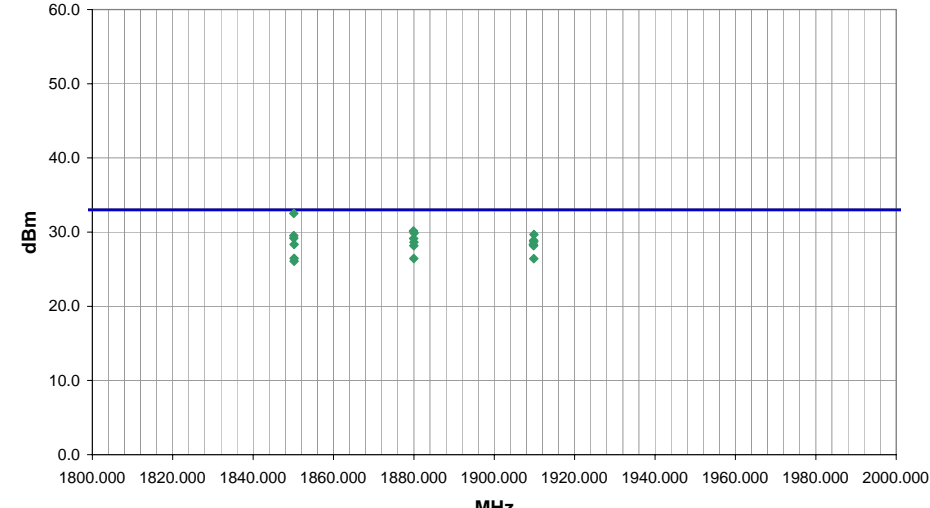
Measurements were made using the bandwidths and detectors specified. No video filter was used.

#### 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 fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization. The amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined.

EMC		Equivalent Isotropic Radiated Power (EIRP)		PSA 2008.07.21 EMI 2008.1.9					
EUT:	GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order:	SPT0110						
Serial Number:	ZZGEG9139ZZ2900	Date:	07/16/09						
Customer:	Spectrum Technology, Inc.	Temperature:	24.5						
Attendees:	Rod Munro	Humidity:	46%						
Project:	None	Barometric Pres.:	1017.5						
Tested by:	Ethan Schoonover	Power:	120VAC/60Hz	Job Site:	EV12				
TEST SPECIFICATIONS		Test Method							
FCC 24E:2009		ANSI/TIA/EIA-603-C-2004							
TEST PARAMETERS									
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3						
COMMENTS									
GPRS (GMSK). Standalone PC.									
EUT OPERATING MODES									
PCS band									
DEVIATIONS FROM TEST STANDARD									
No deviations.									
Run #	4	Signature 							
Configuration #	1								
Results	Pass								
									
Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1850.135	346.0	1.3	H-Horn	PK	1.79E+00	32.5	33.0	-0.5	Low channel, Laptop screen horizontal.
1879.905	343.0	1.2	H-Horn	PK	1.04E+00	30.2	33.0	-2.8	Mid channel, Laptop screen horizontal.
1880.065	351.0	1.4	H-Horn	PK	9.68E-01	29.9	33.0	-3.1	Mid channel, Laptop on its side.
1909.855	345.0	1.2	H-Horn	PK	9.27E-01	29.7	33.0	-3.3	High channel, Laptop screen horizontal.
1850.125	352.0	1.3	H-Horn	PK	8.97E-01	29.5	33.0	-3.5	Low channel, Laptop on its side.
1850.125	27.0	2.1	V-Horn	PK	8.26E-01	29.2	33.0	-3.8	Low channel, Laptop on its side.
1879.945	59.0	1.7	V-Horn	PK	8.20E-01	29.1	33.0	-3.9	Mid channel, Laptop on its side.
1909.795	183.0	1.3	H-Horn	PK	7.71E-01	28.9	33.0	-4.1	High channel, Laptop screen vertical.
1909.820	7.0	2.0	V-Horn	PK	7.46E-01	28.7	33.0	-4.3	High channel, Laptop screen vertical.
1880.010	11.0	1.0	V-Horn	PK	7.31E-01	28.6	33.0	-4.4	Mid channel, Laptop screen vertical.
1909.710	107.0	1.3	V-Horn	PK	6.81E-01	28.3	33.0	-4.7	High channel, Laptop on its side.
1850.200	110.0	1.6	H-Horn	PK	6.81E-01	28.3	33.0	-4.7	Low channel, Laptop screen vertical.
1909.785	64.0	1.1	H-Horn	PK	6.56E-01	28.2	33.0	-4.8	High channel, Laptop on its side.
1879.970	202.0	1.3	H-Horn	PK	6.55E-01	28.2	33.0	-4.8	Mid channel, Laptop screen vertical.
1850.183	88.0	1.3	V-Horn	PK	4.44E-01	26.5	33.0	-6.5	Low channel, Laptop screen vertical.
1879.975	116.0	1.8	V-Horn	PK	4.41E-01	26.4	33.0	-6.6	Mid channel, Laptop screen horizontal.
1909.820	237.0	1.4	V-Horn	PK	4.40E-01	26.4	33.0	-6.6	High channel, Laptop screen horizontal.
1850.205	108.0	1.5	V-Horn	PK	4.05E-01	26.1	33.0	-6.9	Low channel, Laptop screen horizontal.

# Equivalent Isotropic Radiated Power (EIRP)

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/17/09
Customer: Spectrum Technology, Inc.	Temperature: 23.8
Attendees: Rod Munro	Humidity: 44%
Project: None	Barometric Pres.: 1020
Tested by: Ethan Schoonover	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

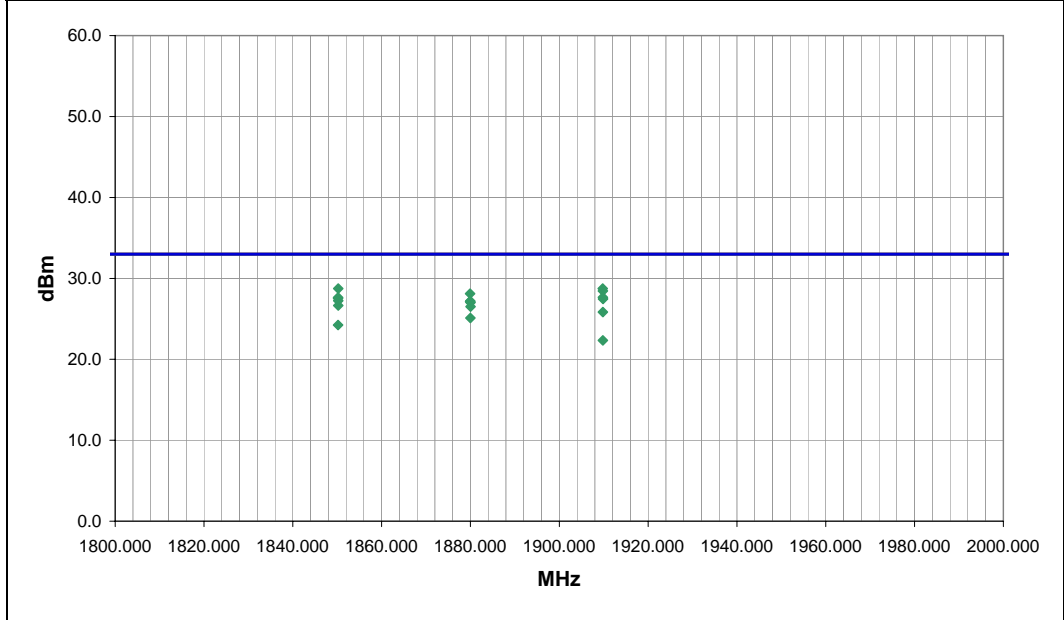
TEST PARAMETERS
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

COMMENTS  
EGPRS (EDGE). Standalone PC.

EUT OPERATING MODES  
PCS band

DEVIATIONS FROM TEST STANDARD  
No deviations.

Run #	5	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1909.775	100.0	1.3	H-Horn	PK	7.48E-01	28.7	33.0	-4.3	Laptop screen vertical
1850.208	81.0	1.3	H-Horn	PK	7.48E-01	28.7	33.0	-4.3	Laptop screen horizontal
1909.808	0.0	1.6	V-Horn	PK	7.00E-01	28.5	33.0	-4.6	Laptop screen vertical
1879.917	44.0	1.7	V-Horn	PK	6.47E-01	28.1	33.0	-4.9	Laptop on side.
1909.833	16.0	1.2	V-Horn	PK	5.82E-01	27.7	33.0	-5.4	Laptop on side.
1850.200	52.0	1.5	H-Horn	PK	5.81E-01	27.6	33.0	-5.4	Laptop on side.
1850.200	125.0	1.3	V-Horn	PK	5.68E-01	27.5	33.0	-5.5	Laptop on side.
1909.858	16.0	1.1	V-Horn	PK	5.56E-01	27.5	33.0	-5.6	Laptop screen horizontal
1850.217	64.0	1.3	V-Horn	PK	5.30E-01	27.2	33.0	-5.8	Laptop screen vertical
1879.950	0.0	1.0	V-Horn	PK	5.26E-01	27.2	33.0	-5.8	Laptop screen vertical
1879.908	26.0	1.4	H-Horn	PK	5.15E-01	27.1	33.0	-5.9	Laptop on side.
1880.033	267.0	1.1	H-Horn	PK	5.04E-01	27.0	33.0	-6.0	Laptop screen horizontal
1850.233	333.0	1.4	H-Horn	PK	4.61E-01	26.6	33.0	-6.4	Laptop screen vertical
1880.008	103.0	1.2	H-Horn	PK	4.49E-01	26.5	33.0	-6.5	Laptop screen vertical
1909.825	79.0	1.6	H-Horn	PK	3.84E-01	25.8	33.0	-7.2	Laptop screen horizontal
1880.000	116.0	1.9	V-Horn	PK	3.24E-01	25.1	33.0	-7.9	Laptop screen horizontal
1850.175	247.0	1.3	V-Horn	PK	2.65E-01	24.2	33.0	-8.8	Laptop screen horizontal
1909.833	27.0	1.3	H-Horn	PK	1.71E-01	22.3	33.0	-10.7	Laptop on side.



# Equivalent Isotropic Radiated Power (EIRP)

## EMC

EUT: GD Itronix, Model: GD6000 PC w/GOB12, FCC ID: KBCIX-GOB12, Model: IX-GOB12	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/17/09
Customer: Spectrum Technology, Inc.	Temperature: 24.3
Attendees: Rod Munro	Humidity: 45%
Project: None	Barometric Pres.: 1020
Tested by: Ethan Schoonover	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

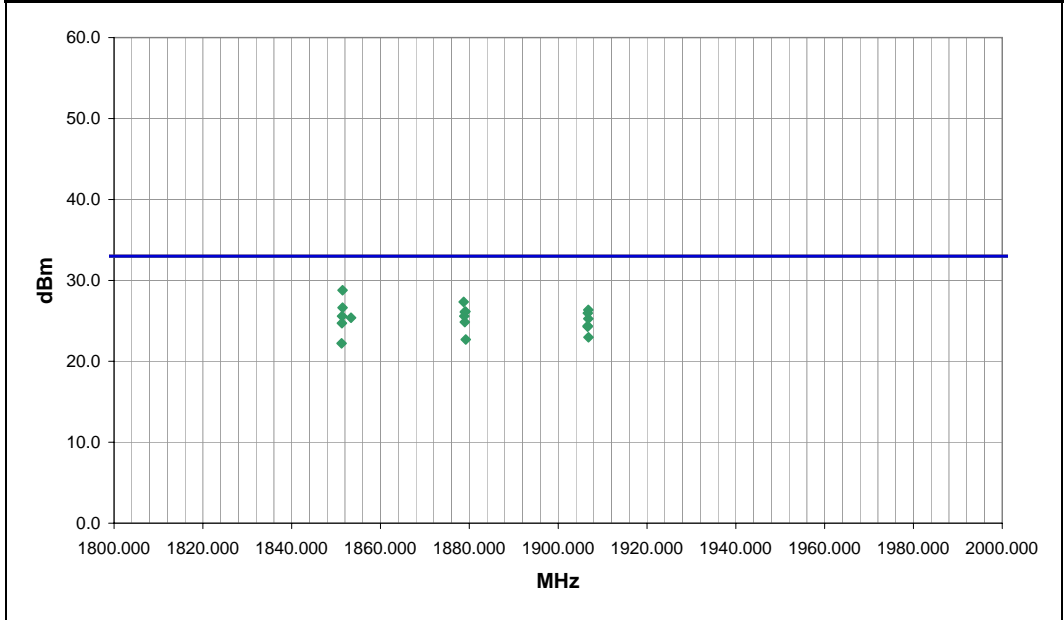
TEST PARAMETERS
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

COMMENTS  
WCDMA Rel 99. Standalone PC.

EUT OPERATING MODES  
PCS band

DEVIATIONS FROM TEST STANDARD  
No deviations.

Run #	6	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1851.467	351.0	1.3	H-Horn	PK	7.57E-01	28.8	33.0	-4.2	Laptop Screen horizontal
1878.717	349.0	1.2	H-Horn	PK	5.43E-01	27.4	33.0	-5.7	Laptop Screen horizontal
1851.433	54.0	1.2	V-Horn	PK	4.59E-01	26.6	33.0	-6.4	Laptop on its side
1906.783	25.0	1.3	H-Horn	PK	4.33E-01	26.4	33.0	-6.6	Laptop on its side
1879.117	29.0	1.3	H-Horn	PK	4.12E-01	26.2	33.0	-6.9	Laptop on its side
1878.983	5.0	1.6	V-Horn	PK	4.06E-01	26.1	33.0	-6.9	Laptop Screen Vertical
1906.700	308.0	1.2	H-Horn	PK	3.94E-01	26.0	33.0	-7.0	Laptop Screen horizontal
1878.867	344.0	1.2	V-Horn	PK	3.62E-01	25.6	33.0	-7.4	Laptop on its side
1851.350	204.0	1.3	H-Horn	PK	3.62E-01	25.6	33.0	-7.4	Laptop Screen Vertical
1853.350	32.0	1.0	H-Horn	PK	3.46E-01	25.4	33.0	-7.6	Laptop on its side
1906.800	115.0	1.2	H-Horn	PK	3.36E-01	25.3	33.0	-7.7	Laptop Screen Vertical
1878.975	339.0	1.0	H-Horn	PK	3.05E-01	24.9	33.0	-8.2	Laptop Screen Vertical
1851.317	0.0	2.0	V-Horn	PK	2.96E-01	24.7	33.0	-8.3	Laptop Screen Vertical
1906.633	52.0	1.2	V-Horn	PK	2.74E-01	24.4	33.0	-8.6	Laptop on its side
1906.650	360.0	1.2	V-Horn	PK	2.68E-01	24.3	33.0	-8.7	Laptop Screen Vertical
1906.833	14.0	2.0	V-Horn	PK	1.99E-01	23.0	33.0	-10.0	Laptop Screen horizontal
1879.200	13.0	1.2	V-Horn	PK	1.86E-01	22.7	33.0	-10.3	Laptop Screen horizontal
1851.250	10.0	1.3	V-Horn	PK	1.67E-01	22.2	33.0	-10.8	Laptop Screen horizontal

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/17/09
Customer: Spectrum Technology, Inc.	Temperature: 24.6
Attendees: Rod Munro	Humidity: 45%
Project: None	Barometric Pres.: 1017
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

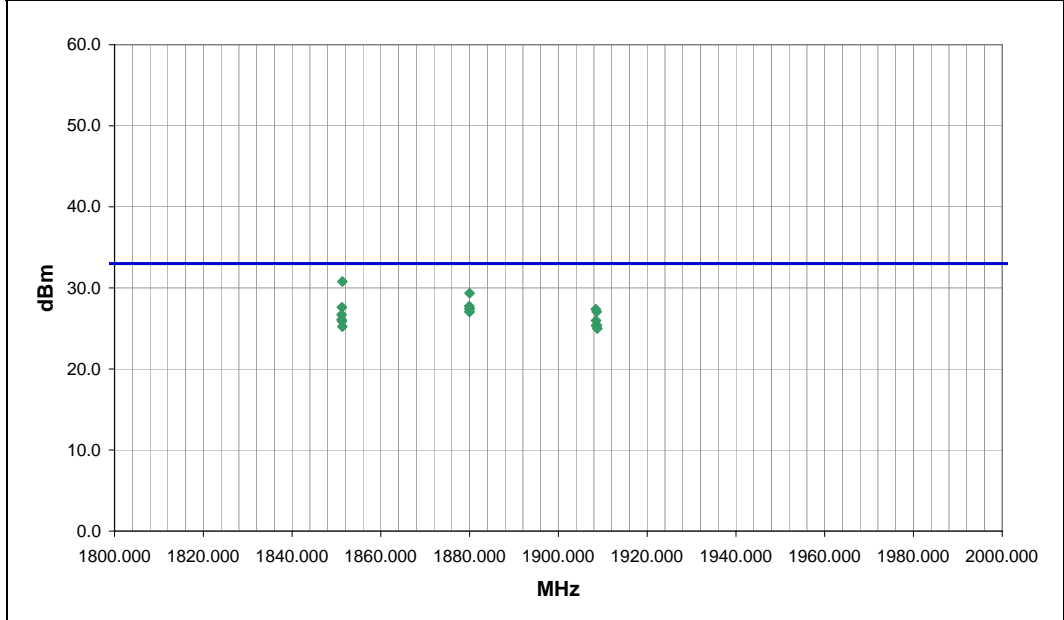
TEST PARAMETERS
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

**COMMENTS**  
CDMA 1x RC3 (SO55). Standalone PC

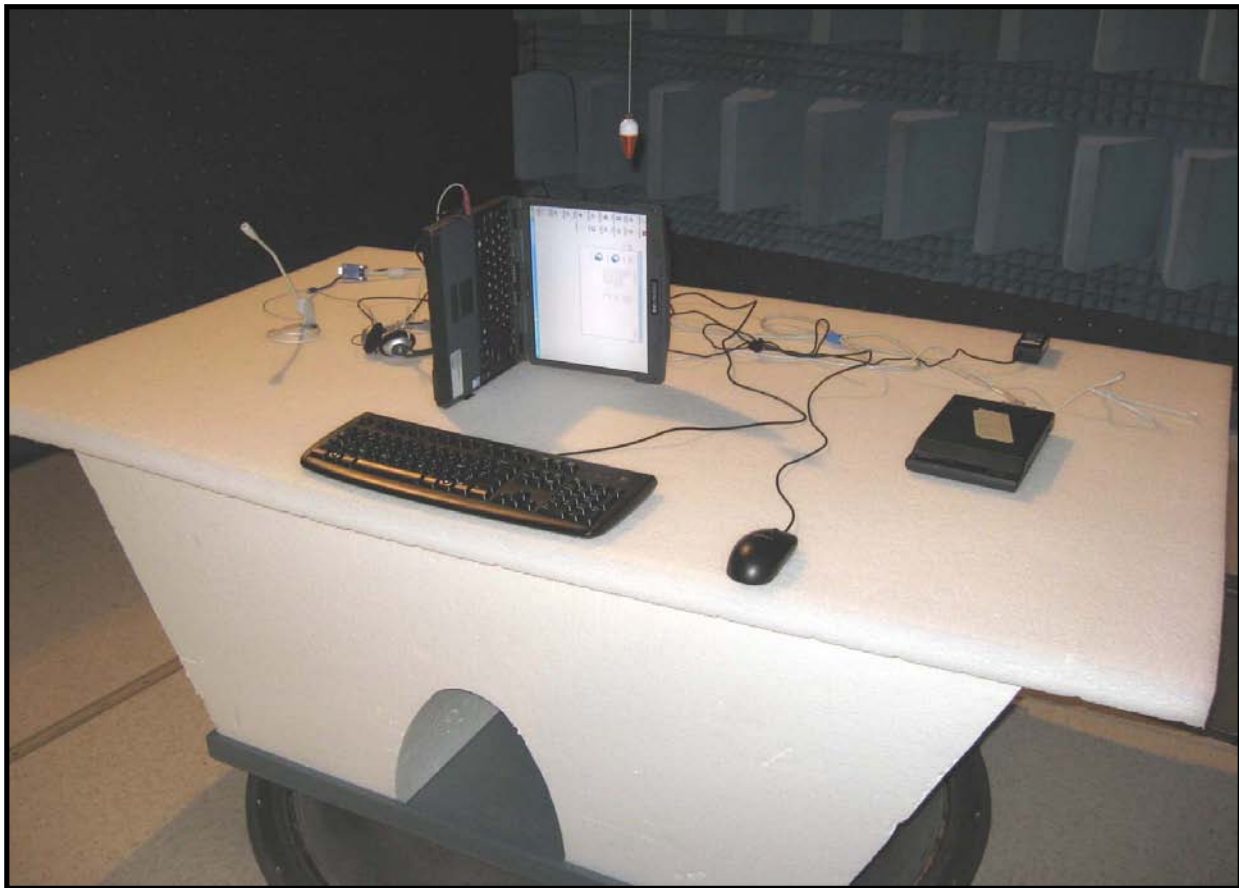
**EUT OPERATING MODES**  
PCS mode.

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	7	 Signature
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1851.320	348.0	1.2	H-Horn	PK	1.20E+00	30.8	33.0	-2.2	Laptop screen horizontal
1879.980	349.0	1.2	H-Horn	PK	8.61E-01	29.4	33.0	-3.7	Laptop screen horizontal
1879.935	351.0	1.4	H-Horn	PK	5.96E-01	27.8	33.0	-5.3	Laptop on its side
1851.235	51.0	1.3	V-Horn	PK	5.78E-01	27.6	33.0	-5.4	Laptop on its side
1880.040	10.0	1.2	V-Horn	PK	5.61E-01	27.5	33.0	-5.5	Laptop screen vertical
1879.950	51.0	1.7	V-Horn	PK	5.48E-01	27.4	33.0	-5.6	Laptop on its side
1908.445	12.0	1.2	V-Horn	PK	5.47E-01	27.4	33.0	-5.6	Laptop screen vertical
1908.625	353.0	1.2	H-Horn	PK	5.08E-01	27.1	33.0	-5.9	Laptop screen horizontal
1880.005	204.0	1.2	H-Horn	PK	5.07E-01	27.1	33.0	-6.0	Laptop screen vertical
1879.970	110.0	1.8	V-Horn	PK	5.07E-01	27.1	33.0	-6.0	Laptop screen horizontal
1851.150	33.0	1.0	H-Horn	PK	4.67E-01	26.7	33.0	-6.3	Laptop on its side
1851.165	353.0	1.2	H-Horn	PK	4.06E-01	26.1	33.0	-6.9	Laptop screen vertical
1908.480	99.0	1.3	V-Horn	PK	3.96E-01	26.0	33.0	-7.0	Laptop on its side
1851.215	360.0	1.6	V-Horn	PK	3.91E-01	25.9	33.0	-7.1	Laptop screen vertical
1908.485	120.0	1.2	H-Horn	PK	3.44E-01	25.4	33.0	-7.6	Laptop screen vertical
1908.715	30.0	1.0	H-Horn	PK	3.44E-01	25.4	33.0	-7.6	Laptop on its side
1851.350	110.0	2.2	V-Horn	PK	3.33E-01	25.2	33.0	-7.8	Laptop screen horizontal
1908.750	115.0	1.7	V-Horn	PK	3.15E-01	25.0	33.0	-8.0	Laptop screen horizontal





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

PCS Band

#### POWER SETTINGS INVESTIGATED

120VAC/60Hz

#### FREQUENCY RANGE INVESTIGATED

Start Frequency	1800MHz	Stop Frequency	2000MHz
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#### 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	E44440A	AFA	11/14/2008	12
EV12 Cables		Bilog Cables	EVS	6/25/2009	13
Antenna, Horn	ETS	3115	AIB	8/25/2008	24
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	13
Antenna, Horn	EMCO	3115	AHJ	6/29/2009	24

#### MEASUREMENT BANDWIDTHS

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(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 fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization. The amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined.

# Equivalent Isotropic Radiated Power (EIRP)

## EMC

EUT:	GD Itronix, Model: GD6000 PC w/GOB12, FCC ID: KBCIX-GOB12, Model: IX-GOB12	Work Order:	SPT0110
Serial Number:	ZZGEG9139ZZ2900	Date:	07/20/09
Customer:	Spectrum Technology, Inc.	Temperature:	24.1
Attendees:	Rod Munro	Humidity:	42%
Project:	None	Barometric Pres.:	1017
Tested by:	Ethan Schoonover	Power:	120VAC/60Hz
		Job Site:	EV12

<b>TEST SPECIFICATIONS</b>		Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004	

<b>TEST PARAMETERS</b>			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
CDMA 1x RC3 (SO55). Vehicle mount.

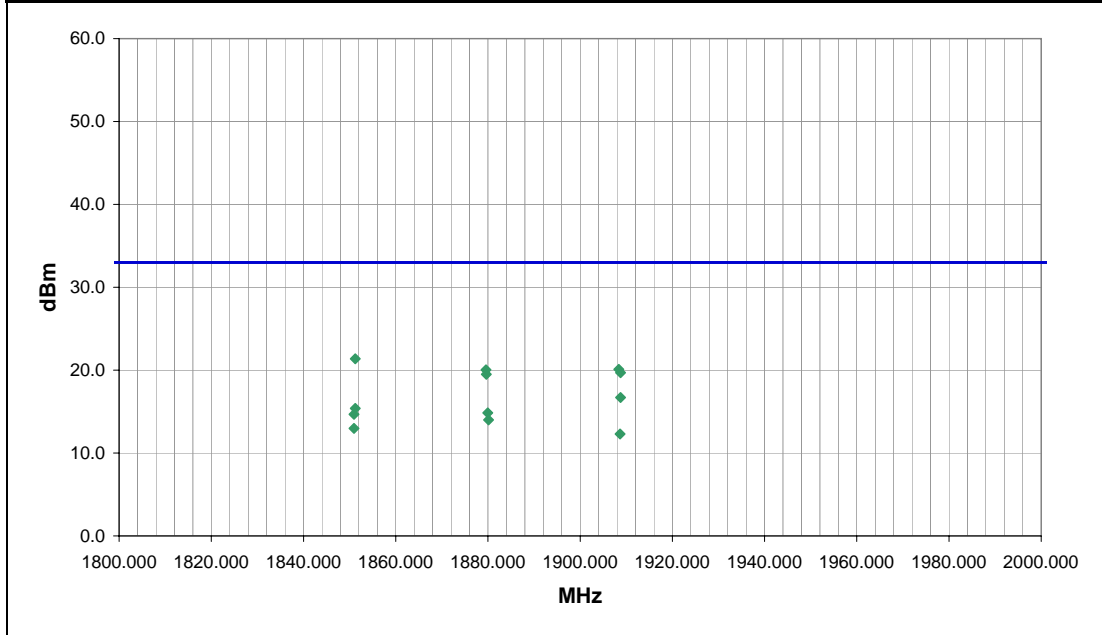
**EUT OPERATING MODES**

PCS band

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	8	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1851.225	162.0	1.3	V-Horn	PK	1.37E-01	21.4	33.0	-11.6	Antenna Vertical
1908.375	204.0	1.2	H-Horn	PK	1.02E-01	20.1	33.0	-12.9	Antenna Horizontal
1879.583	242.0	1.0	V-Horn	PK	1.01E-01	20.0	33.0	-13.0	Antenna Vertical
1908.750	157.0	1.3	V-Horn	PK	9.31E-02	19.7	33.0	-13.3	Antenna Vertical
1879.658	188.0	1.2	H-Horn	PK	8.89E-02	19.5	33.0	-13.5	Antenna Horizontal
1908.750	250.0	1.5	V-Horn	PK	4.67E-02	16.7	33.0	-16.3	Antenna Horizontal
1851.208	44.0	1.5	H-Horn	PK	3.45E-02	15.4	33.0	-17.6	Antenna Horizontal
1879.942	314.0	1.9	V-Horn	PK	3.05E-02	14.8	33.0	-18.2	Antenna Horizontal
1850.933	249.0	1.6	V-Horn	PK	2.94E-02	14.7	33.0	-18.3	Antenna Horizontal
1880.117	133.0	1.6	H-Horn	PK	2.51E-02	14.0	33.0	-19.0	Antenna Vertical
1850.933	130.0	1.2	H-Horn	PK	1.99E-02	13.0	33.0	-20.0	Antenna Vertical
1908.675	300.0	1.4	H-Horn	PK	1.70E-02	12.3	33.0	-20.7	Antenna Vertical

# Equivalent Isotropic Radiated Power (EIRP)

## EMC

EUT: GD Itronix, Model: GD6000 PC w/GOB2, FCC ID: KBCIX-GOB2, Model: IX-GOB2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/20/09
Customer: Spectrum Technology, Inc.	Temperature: 24.1
Attendees: Rod Munro	Humidity: 42%
Project: None	Barometric Pres.: 1017
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004
Test Method	

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

**COMMENTS**  
GPRS (GMSK). Vehicle mount.

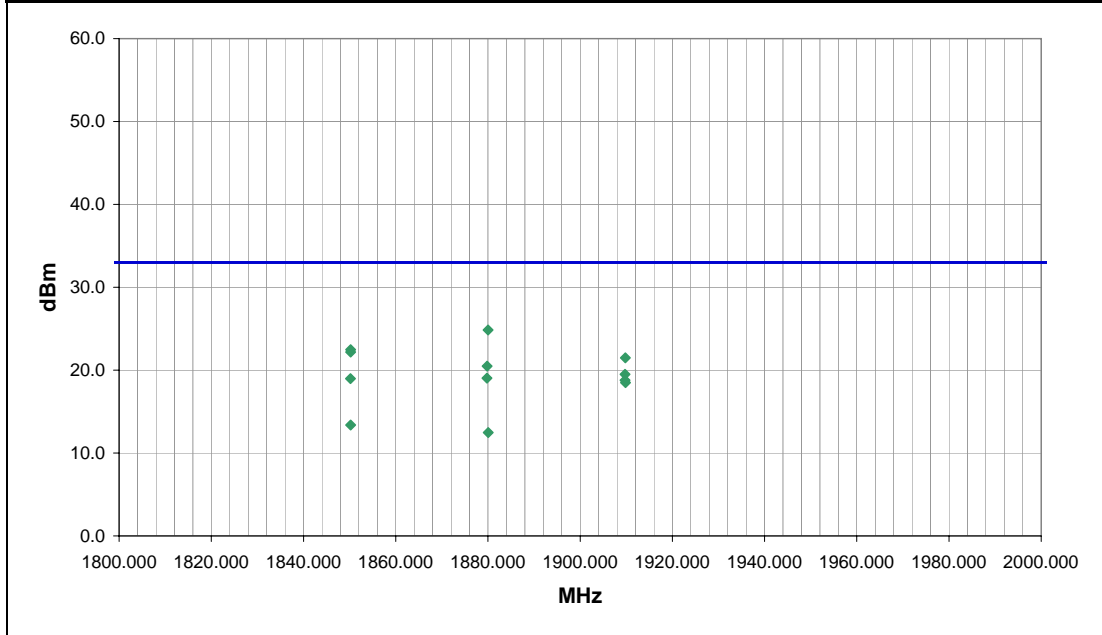
**EUT OPERATING MODES**

PCS band

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	9	 Signature
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1880.017	228.0	1.3	V-Horn	PK	3.05E-01	24.8	33.0	-8.2	Antenna Vertical
1850.200	18.0	1.3	V-Horn	PK	1.77E-01	22.5	33.0	-10.5	Antenna Vertical
1850.200	187.0	1.2	H-Horn	PK	1.65E-01	22.2	33.0	-10.8	Antenna Horizontal
1909.817	126.0	1.6	V-Horn	PK	1.41E-01	21.5	33.0	-11.5	Antenna Vertical
1879.825	319.0	1.5	H-Horn	PK	1.12E-01	20.5	33.0	-12.5	Antenna Horizontal
1909.750	43.0	1.5	H-Horn	PK	8.91E-02	19.5	33.0	-13.5	Antenna Horizontal
1879.783	318.0	1.2	V-Horn	PK	8.02E-02	19.0	33.0	-14.0	Antenna Horizontal
1850.192	248.0	1.7	V-Horn	PK	7.89E-02	19.0	33.0	-14.0	Antenna Horizontal
1909.725	258.0	1.5	V-Horn	PK	7.57E-02	18.8	33.0	-14.2	Antenna Horizontal
1909.850	90.0	1.2	H-Horn	PK	7.08E-02	18.5	33.0	-14.5	Antenna Vertical
1850.208	214.0	1.2	H-Horn	PK	2.18E-02	13.4	33.0	-19.6	Antenna Vertical
1880.075	25.0	1.5	H-Horn	PK	1.77E-02	12.5	33.0	-20.5	Antenna Vertical

EUT: GD Itronix, Model: GD6000 PC w/GOBi2, FCC ID: KBCIX-GOBi2, Model: IX-GOBi2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/20/09
Customer: Spectrum Technology, Inc.	Temperature: 24.5
Attendees: Rod Munro	Humidity: 40%
Project: None	Barometric Pres.: 1014.1
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV12


TEST SPECIFICATIONS		Test Method	
FCC 24E:2009		ANSI/TIA/EIA-603-C-2004	

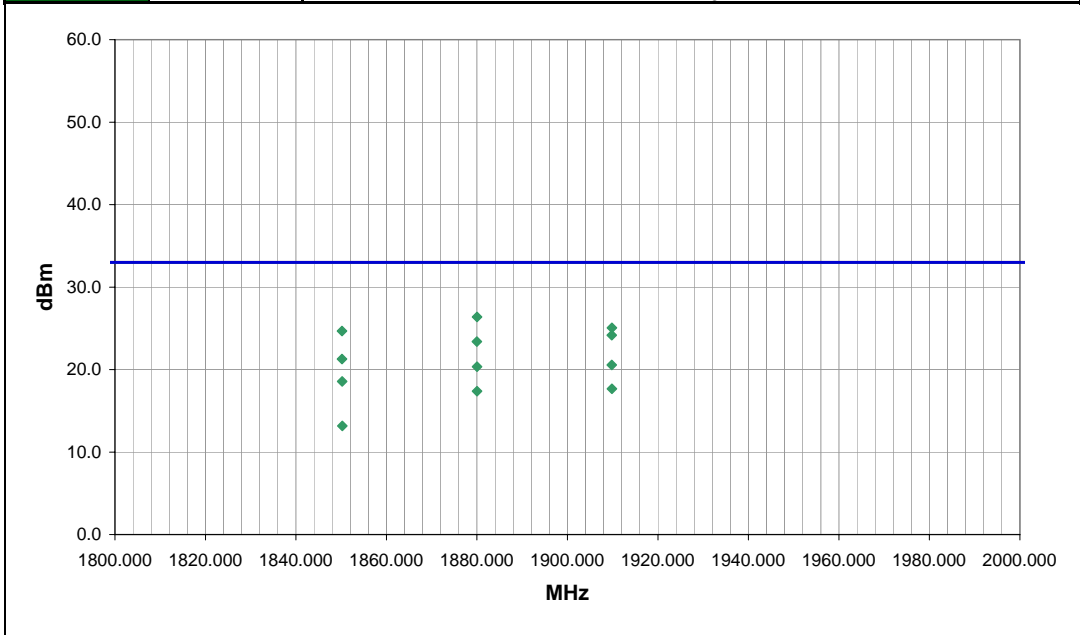
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
EGPRS (EDGE). Vehicle mount.

**EUT OPERATING MODES**  
PCS mode.

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	10	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1880.005	289.0	1.2	V-Horn	PK	4.36E-01	26.4	33.0	-6.6	Antenna vertical.
1909.840	253.0	1.2	V-Horn	PK	3.21E-01	25.1	33.0	-7.9	Antenna vertical.
1850.180	169.0	1.3	V-Horn	PK	2.93E-01	24.7	33.0	-8.3	Antenna vertical.
1909.805	360.0	1.6	H-Horn	PK	2.61E-01	24.2	33.0	-8.8	Antenna horizontal.
1879.985	1.0	2.1	H-Horn	PK	2.18E-01	23.4	33.0	-9.6	Antenna horizontal.
1850.180	3.0	1.6	H-Horn	PK	1.34E-01	21.3	33.0	-11.7	Antenna horizontal.
1909.790	288.0	1.9	V-Horn	PK	1.14E-01	20.6	33.0	-12.4	Antenna horizontal.
1880.010	139.0	1.3	V-Horn	PK	1.08E-01	20.3	33.0	-12.7	Antenna horizontal.
1850.195	143.0	1.3	V-Horn	PK	7.19E-02	18.6	33.0	-14.4	Antenna horizontal.
1909.830	288.0	1.2	H-Horn	PK	5.85E-02	17.7	33.0	-15.3	Antenna vertical.
1880.020	292.0	1.3	H-Horn	PK	5.48E-02	17.4	33.0	-15.6	Antenna vertical.
1850.255	16.0	1.3	H-Horn	PK	2.08E-02	13.2	33.0	-19.8	Antenna vertical.



**Equivalent Isotropic Radiated Power (EIRP)**

EUT: GD Itronix, Model: GD6000 PC w/GOBi2, FCC ID: KBCIX-GOBi2, Model: IX-GOBi2	Work Order: SPT0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/20/09
Customer: Spectrum Technology, Inc.	Temperature: 24.5
Attendees: Rod Munro	Humidity: 40%
Project: None	Barometric Pres.: 1014.1
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 24E:2009	ANSI/TIA/EIA-603-C-2004

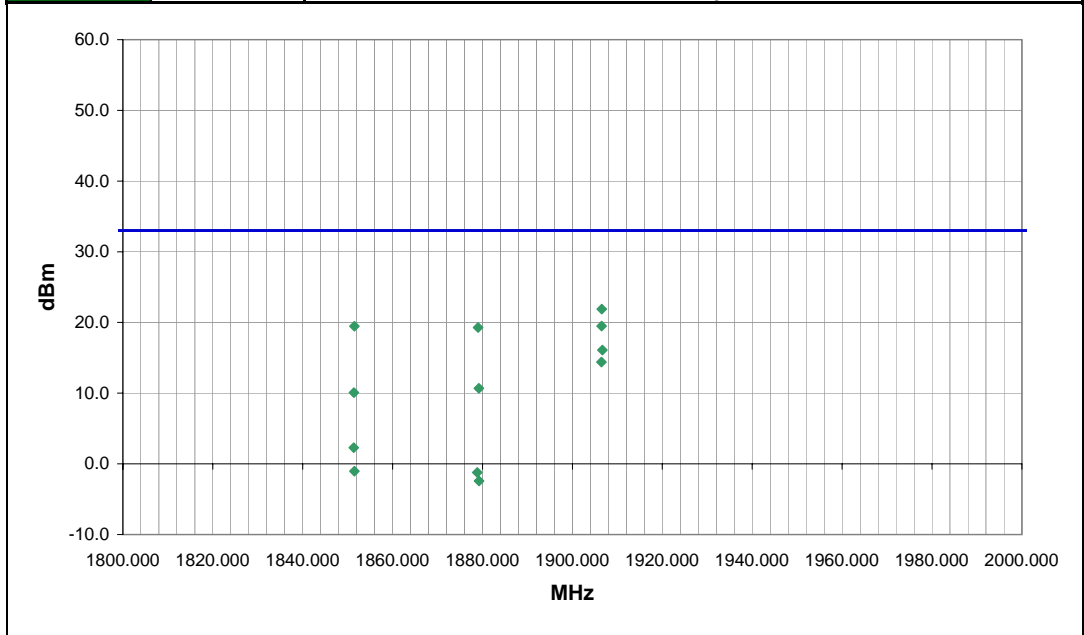
<b>TEST PARAMETERS</b>
Antenna Height(s) (m)   1 - 4   Test Distance (m)   3

**COMMENTS**  
WCDMA Rel 99, Vehicle mount.

**EUT OPERATING MODES**  
PCS mode.

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	11	 Signature
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
1906.527	198.0	1.2	V-Horn	PK	1.55E-01	21.9	33.0	-11.1	Antenna vertical.
1906.492	360.0	1.2	H-Horn	PK	8.91E-02	19.5	33.0	-13.5	Antenna horizontal.
1851.502	288.0	1.3	V-Horn	PK	8.85E-02	19.5	33.0	-13.5	Antenna vertical.
1879.020	335.0	1.3	V-Horn	PK	8.49E-02	19.3	33.0	-13.7	Antenna vertical.
1906.678	263.0	1.2	H-Horn	PK	4.07E-02	16.1	33.0	-16.9	Antenna vertical.
1906.468	144.0	1.3	V-Horn	PK	2.75E-02	14.4	33.0	-18.6	Antenna horizontal.
1879.195	252.0	1.7	H-Horn	PK	1.17E-02	10.7	33.0	-22.3	Antenna vertical.
1851.397	227.0	1.8	H-Horn	PK	1.02E-02	10.1	33.0	-22.9	Antenna vertical.
1851.373	360.0	1.2	H-Horn	PK	1.69E-03	2.3	33.0	-30.7	Antenna horizontal.
1851.513	140.0	1.3	V-Horn	PK	7.89E-04	-1.0	33.0	-34.0	Antenna horizontal.
1878.833	340.0	1.2	H-Horn	PK	7.57E-04	-1.2	33.0	-34.2	Antenna horizontal.
1879.218	64.0	2.2	V-Horn	PK	5.74E-04	-2.4	33.0	-35.4	Antenna horizontal.



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

Cellular Band

#### POWER SETTINGS INVESTIGATED

120VAC/60Hz

#### FREQUENCY RANGE INVESTIGATED

Start Frequency	824MHz	Stop Frequency	849MHz
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#### 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	E44440A	AFA	11/14/2008	12
EV12 Cables		Bilog Cables	EVS	6/25/2009	13
Antenna, Biconilog	EMCO	3141	AXG	11/4/2008	13
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	13
Antenna, Dipole	ETS	3121C-DB4	ADH	3/6/2009	24

#### MEASUREMENT BANDWIDTHS

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(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 fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization. The amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined.

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPT0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/14/09
Customer: Spectrum Technology, Inc.	Temperature: 24.5 °C
Attendees: Rod Munro	Humidity: 46%
Project: None	Barometric Pres.: 1017.5mb
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV12

<b>TEST SPECIFICATIONS</b>	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

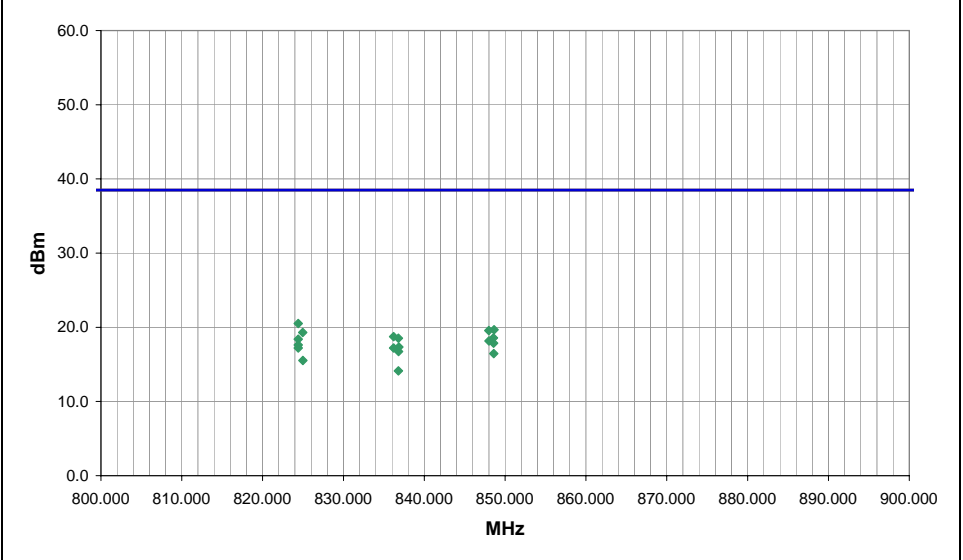
<b>TEST PARAMETERS</b>	
Antenna Height(s) (m) 1 - 4	Test Distance (m) 3

**COMMENTS**  
CDMA 1x RC3 (SO55). Standalone PC

**EUT OPERATING MODES**  
Cellular band

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	1	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
824.410	316.0	1.0	V-Bilog	PK	1.13E-01	20.5	38.5	-18.0	Low channel, laptop screen vertical.
848.637	141.0	1.4	H-Bilog	PK	9.25E-02	19.7	38.5	-18.8	High channel, laptop screen vertical.
847.990	139.0	1.5	H-Bilog	PK	9.04E-02	19.6	38.5	-18.9	High channel, laptop screen horizontal.
824.970	211.0	1.5	H-Bilog	PK	8.51E-02	19.3	38.5	-19.2	Low channel, laptop screen vertical.
836.210	140.0	1.5	H-Bilog	PK	7.48E-02	18.7	38.5	-19.8	Mid channel, laptop screen vertical.
848.563	65.0	1.0	V-Bilog	PK	7.18E-02	18.6	38.5	-19.9	High channel, laptop screen vertical.
836.790	88.0	1.5	V-Bilog	PK	7.11E-02	18.5	38.5	-20.0	Mid channel, laptop screen vertical.
824.397	134.0	1.4	H-Bilog	PK	6.92E-02	18.4	38.5	-20.1	Low channel, laptop screen horizontal.
847.997	20.0	2.3	H-Bilog	PK	6.55E-02	18.2	38.5	-20.3	High channel, laptop on its side.
848.577	213.0	2.5	V-Bilog	PK	6.11E-02	17.9	38.5	-20.6	High channel, laptop on its side.
824.397	218.0	2.4	V-Bilog	PK	5.78E-02	17.6	38.5	-20.9	Low channel, laptop on its side.
836.863	261.0	1.4	H-Bilog	PK	5.42E-02	17.3	38.5	-21.2	Mid channel, laptop screen horizontal.
836.213	211.0	2.4	V-Bilog	PK	5.27E-02	17.2	38.5	-21.3	Mid channel, laptop on its side.
824.407	18.0	2.4	H-Bilog	PK	5.25E-02	17.2	38.5	-21.3	Low channel, laptop on its side.
836.820	22.0	2.3	H-Bilog	PK	4.72E-02	16.7	38.5	-21.8	Mid channel, laptop on its side.
848.597	131.0	2.1	V-Bilog	PK	4.43E-02	16.5	38.5	-22.0	High channel, laptop screen horizontal.
824.990	82.0	2.3	V-Bilog	PK	3.56E-02	15.5	38.5	-23.0	Low channel, laptop screen horizontal.
836.793	60.0	1.4	V-Bilog	PK	2.58E-02	14.1	38.5	-24.4	Mid channel, laptop screen horizontal.

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/15/09
Customer: Spectrum Technology, Inc.	Temperature: 24.5 °C
Attendees: Rod Munro	Humidity: 45%
Project: None	Barometric Pres.: 1017
Tested by: Ethan Schoonover	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS		Test Method
FCC 22H:2009		ANSI/TIA/EIA-603-C-2004

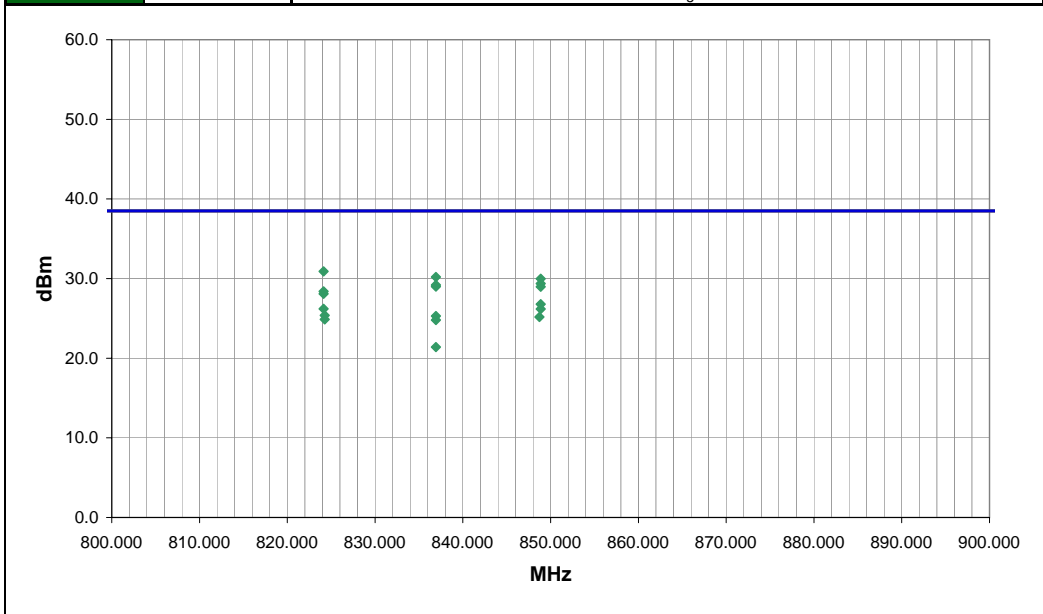
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

**COMMENTS**  
GPRS (GMSK). Standalone PC.

**EUT OPERATING MODES**  
Cellular band

**DEVIATIONS FROM TEST STANDARD**  
No deviations.

Run #	2	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
824.132	197.0	1.4	H-Bilog	PK	1.23E+00	30.9	38.5	-7.6	Laptop screen vertical.
836.930	199.0	1.4	H-Bilog	PK	1.05E+00	30.2	38.5	-8.3	Laptop screen vertical.
848.863	171.0	2.5	V-Bilog	PK	9.93E-01	30.0	38.5	-8.5	Laptop on its side.
848.864	66.0	1.0	V-Bilog	PK	8.65E-01	29.4	38.5	-9.1	Laptop screen vertical.
836.927	47.0	1.4	H-Bilog	PK	8.31E-01	29.2	38.5	-9.3	Laptop screen horizontal.
836.930	81.0	1.0	V-Bilog	PK	7.93E-01	29.0	38.5	-9.5	Laptop screen vertical.
848.863	191.0	1.4	H-Bilog	PK	7.91E-01	29.0	38.5	-9.5	Laptop screen vertical.
824.133	32.0	1.3	H-Bilog	PK	6.91E-01	28.4	38.5	-10.1	Laptop screen horizontal.
824.132	88.0	1.5	V-Bilog	PK	6.43E-01	28.1	38.5	-10.4	Laptop screen vertical.
848.866	307.0	1.9	H-Bilog	PK	4.77E-01	26.8	38.5	-11.7	Laptop screen horizontal.
824.140	14.0	2.2	H-Bilog	PK	4.16E-01	26.2	38.5	-12.3	Laptop on its side.
848.864	7.0	2.2	H-Bilog	PK	4.15E-01	26.2	38.5	-12.3	Laptop on its side.
824.268	79.0	1.2	V-Bilog	PK	3.45E-01	25.4	38.5	-13.1	Laptop on its side.
836.932	82.0	1.2	V-Bilog	PK	3.38E-01	25.3	38.5	-13.2	Laptop on its side.
848.732	232.0	2.3	V-Bilog	PK	3.29E-01	25.2	38.5	-13.3	Laptop screen horizontal.
824.264	284.0	1.5	V-Bilog	PK	3.08E-01	24.9	38.5	-13.6	Laptop screen horizontal.
836.932	300.0	1.5	H-Bilog	PK	3.02E-01	24.8	38.5	-13.7	Laptop on its side.
836.929	248.0	1.0	V-Bilog	PK	1.38E-01	21.4	38.5	-17.1	Laptop screen horizontal.

# Effective Radiated Power (ERP)

## EMC

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/15/09
Customer: Spectrum Technology, Inc.	Temperature: 24.5 °C
Attendees: Rod Munro	Humidity: 45%
Project: None	Barometric Pres.: 1017
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	
FCC 22H:2009	Test Method: ANSI/TIA/EIA-603-C-2004

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

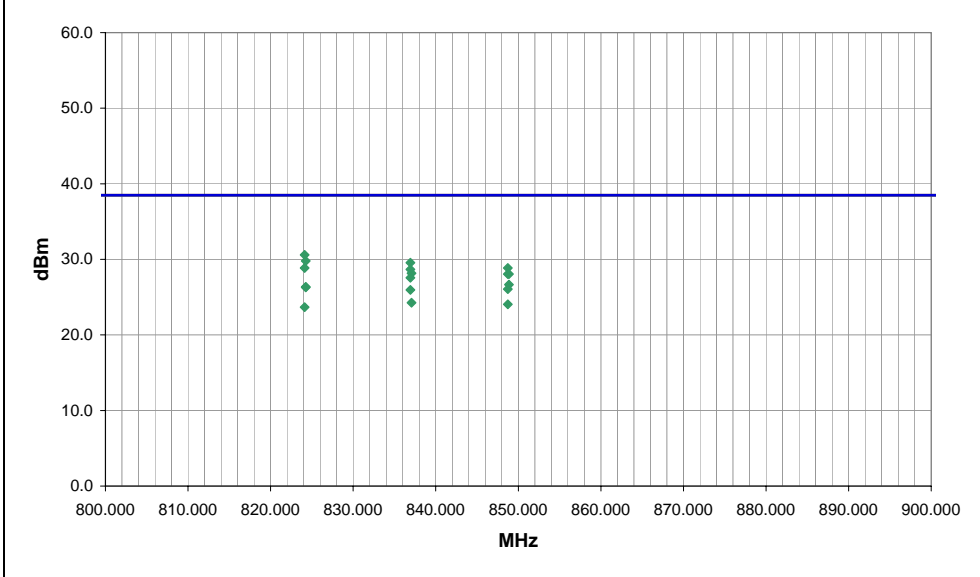
**COMMENTS**  
EGPRS (EDGE). Standalone PC

**EUT OPERATING MODES**

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	3	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
824.131	200.0	1.4	H-Bilog	PK	1.15E+00	30.6	38.5	-7.9	Low channel, Laptop screen vertical.
824.265	301.0	1.3	H-Bilog	PK	9.53E-01	29.8	38.5	-8.7	Laptop screen horizontal.
836.931	279.0	1.3	H-Bilog	PK	9.04E-01	29.6	38.5	-8.9	Laptop screen horizontal.
824.130	305.0	1.0	V-Bilog	PK	7.69E-01	28.9	38.5	-9.6	Low channel, Laptop screen vertical.
848.729	200.0	1.4	H-Bilog	PK	7.69E-01	28.9	38.5	-9.6	High channel, Laptop screen vertical.
836.930	203.0	1.4	H-Bilog	PK	7.35E-01	28.7	38.5	-9.8	Mid channel, Laptop screen vertical.
837.064	64.0	1.0	V-Bilog	PK	6.55E-01	28.2	38.5	-10.3	Mid channel, Laptop screen vertical.
848.729	271.0	1.3	H-Bilog	PK	6.40E-01	28.1	38.5	-10.4	Laptop screen horizontal.
848.867	234.0	1.5	V-Bilog	PK	6.38E-01	28.1	38.5	-10.5	High channel, Laptop on its side.
836.930	53.0	2.4	V-Bilog	PK	5.70E-01	27.6	38.5	-10.9	Laptop on its side.
848.864	304.0	1.6	V-Bilog	PK	4.62E-01	26.7	38.5	-11.9	High channel, Laptop screen vertical.
824.265	54.0	2.4	V-Bilog	PK	4.33E-01	26.4	38.5	-12.1	Laptop on its side.
824.267	36.0	1.5	H-Bilog	PK	4.26E-01	26.3	38.5	-12.2	Laptop on its side.
848.730	22.0	2.3	H-Bilog	PK	4.04E-01	26.1	38.5	-12.4	High channel, Laptop on its side.
836.932	250.0	2.2	V-Bilog	PK	3.94E-01	26.0	38.5	-12.5	Laptop screen horizontal.
837.064	34.0	2.3	H-Bilog	PK	2.67E-01	24.3	38.5	-14.2	Laptop on its side.
848.728	256.0	2.1	V-Bilog	PK	2.54E-01	24.1	38.5	-14.5	Laptop screen horizontal.
824.131	258.0	3.4	V-Bilog	PK	2.32E-01	23.7	38.5	-14.8	Laptop screen horizontal.

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/21/09
Customer: Spectrum Technology, Inc.	Temperature: 25.3 °C
Attendees: Rod Munro	Humidity: 45%
Project: None	Barometric Pres.: 1013.6mb
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS		Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004	

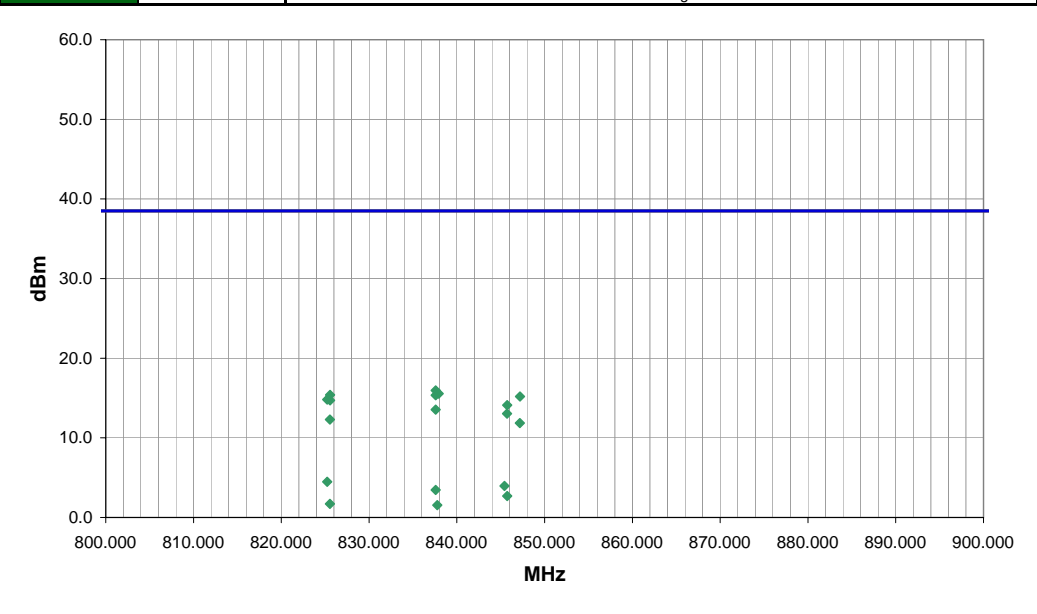
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

COMMENTS  
WCDMA Standalone PC

EUT OPERATING MODES  
Cellular band

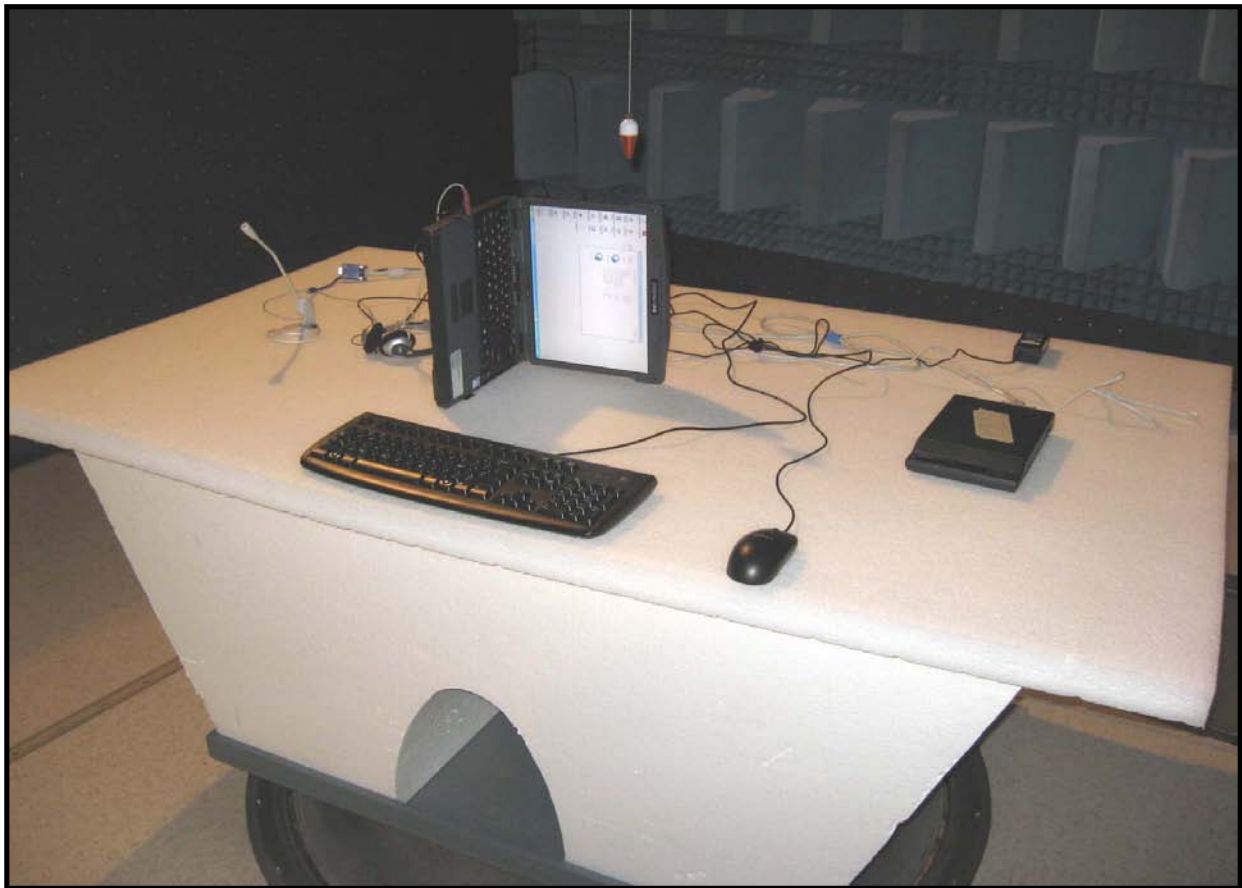
DEVIATIONS FROM TEST STANDARD  
No deviations.

Run #	13	 Signature
Configuration #	1	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
837.585	210.0	1.4	H-Bilog	PK	3.94E-02	16.0	38.5	-22.6	Laptop screen vertical.
837.933	72.0	1.0	V-Bilog	PK	3.59E-02	15.6	38.5	-23.0	Laptop screen vertical.
825.565	60.0	1.0	V-Bilog	PK	3.46E-02	15.4	38.5	-23.1	Laptop screen vertical.
837.583	54.0	1.3	H-Bilog	PK	3.43E-02	15.4	38.5	-23.2	Laptop screen horizontal.
847.195	306.0	1.9	H-Bilog	PK	3.31E-02	15.2	38.5	-23.3	Laptop screen horizontal.
825.231	207.0	1.4	H-Bilog	PK	3.02E-02	14.8	38.5	-23.7	Laptop screen vertical.
825.565	314.0	1.2	H-Bilog	PK	2.95E-02	14.7	38.5	-23.8	Laptop screen horizontal.
845.737	208.0	1.3	H-Bilog	PK	2.57E-02	14.1	38.5	-24.4	Laptop screen vertical.
837.583	241.0	2.0	V-Bilog	PK	2.26E-02	13.6	38.5	-25.0	Laptop screen horizontal.
845.713	73.0	1.5	V-Bilog	PK	2.02E-02	13.1	38.5	-25.5	Laptop screen vertical.
825.542	247.0	2.2	V-Bilog	PK	1.69E-02	12.3	38.5	-26.2	Laptop screen horizontal.
847.172	58.0	1.4	V-Bilog	PK	1.53E-02	11.9	38.5	-26.7	Laptop screen horizontal.
825.227	291.0	1.5	V-Bilog	PK	2.81E-03	4.5	38.5	-34.0	Laptop on its side.
845.422	291.0	1.5	V-Bilog	PK	2.48E-03	4.0	38.5	-34.6	Laptop on its side.
837.583	211.0	2.4	V-Bilog	PK	2.21E-03	3.5	38.5	-35.1	Laptop on its side.
845.737	19.0	2.3	H-Bilog	PK	1.86E-03	2.7	38.5	-35.8	Laptop on its side.
825.530	27.0	1.4	H-Bilog	PK	1.48E-03	1.7	38.5	-36.8	Laptop on its side.
837.770	33.0	1.4	H-Bilog	PK	1.43E-03	1.6	38.5	-37.0	Laptop on its side.









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

Cellular Band

#### POWER SETTINGS INVESTIGATED

120VAC/60Hz

#### FREQUENCY RANGE INVESTIGATED

Start Frequency	824MHz	Stop Frequency	849MHz
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#### 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	E44440A	AFA	11/14/2008	12
EV12 Cables		Bilog Cables	EVS	6/25/2009	13
Antenna, Biconilog	EMCO	3141	AXG	11/4/2008	13
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	13
Antenna, Dipole	ETS	3121C-DB4	ADH	3/6/2009	24

#### MEASUREMENT BANDWIDTHS

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(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 fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization. The amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined.

# Effective Radiated Power (ERP)

## EMC

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/21/09
Customer: Spectrum Technology, Inc.	Temperature: 24.2
Attendees: Rod Munro	Humidity: 49%
Project: None	Barometric Pres.: 1018
Tested by: Ethan Schoonover	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

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

**COMMENTS**  
WCDMA Vehicle Mount

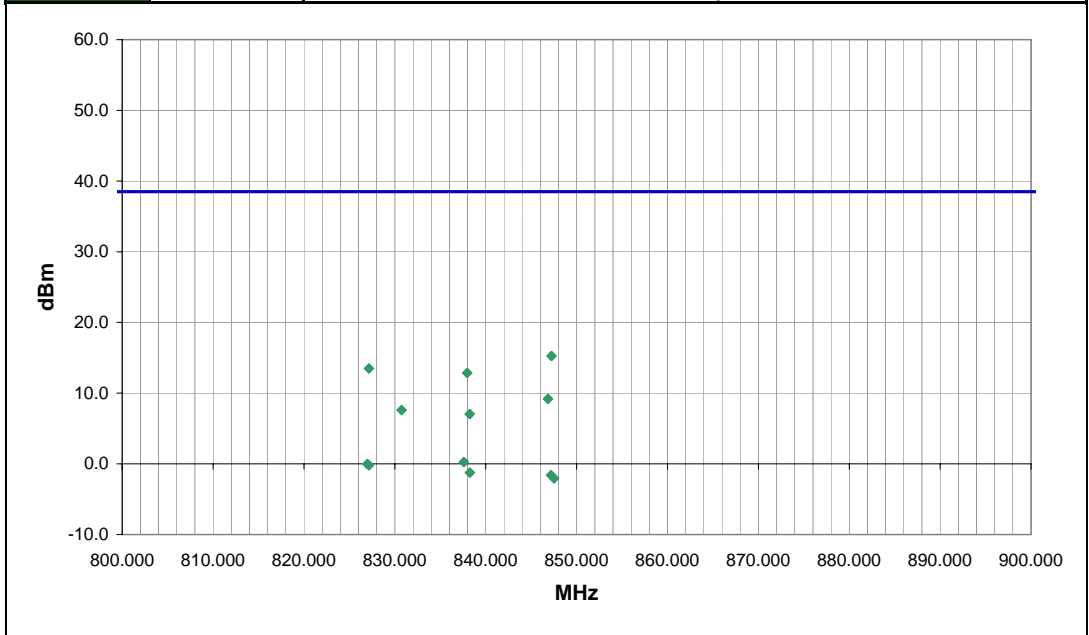
**EUT OPERATING MODES**

Cellular band  
**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	12
Configuration #	2
Results	Pass

Signature 



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
847.233	72.0	1.2	V-Bilog	PK	3.35E-02	15.3	38.5	-23.3	Antenna Vertical
827.150	238.0	1.5	V-Bilog	PK	2.23E-02	13.5	38.5	-25.0	Antenna Vertical
837.950	72.0	1.2	V-Bilog	PK	1.93E-02	12.9	38.5	-25.7	Antenna Vertical
846.850	271.0	2.0	H-Bilog	PK	8.32E-03	9.2	38.5	-29.3	Antenna Vertical
830.733	267.0	1.8	H-Bilog	PK	5.75E-03	7.6	38.5	-30.9	Antenna Vertical
838.233	268.0	1.7	H-Bilog	PK	5.07E-03	7.1	38.5	-31.5	Antenna Vertical
837.583	111.0	1.6	V-Bilog	PK	1.06E-03	0.3	38.5	-38.3	Antenna Horizontal
826.977	257.0	1.8	V-Bilog	PK	9.98E-04	0.0	38.5	-38.5	Antenna Horizontal
827.153	67.0	1.9	H-Bilog	PK	9.55E-04	-0.2	38.5	-38.7	Antenna Horizontal
838.250	265.0	1.7	H-Bilog	PK	7.50E-04	-1.3	38.5	-39.8	Antenna Horizontal
847.183	64.0	1.0	H-Bilog	PK	6.92E-04	-1.6	38.5	-40.1	Antenna Horizontal
847.517	139.0	3.3	V-Bilog	PK	6.24E-04	-2.1	38.5	-40.6	Antenna Horizontal

# Effective Radiated Power (ERP)

## EMC

EUT: GD Itronix, Model: GD6000 PC w/GOBI2, FCC ID: KBCIX-GOBI2, Model: IX-GOBI2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/21/09
Customer: Spectrum Technology, Inc.	Temperature: 25.3 °C
Attendees: Rod Munro	Humidity: 45%
Project: None	Barometric Pres.: 1013.6
Tested by: Ethan Schoonover	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

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

**COMMENTS**  
GPRS (GMSK). Vehicle mount.

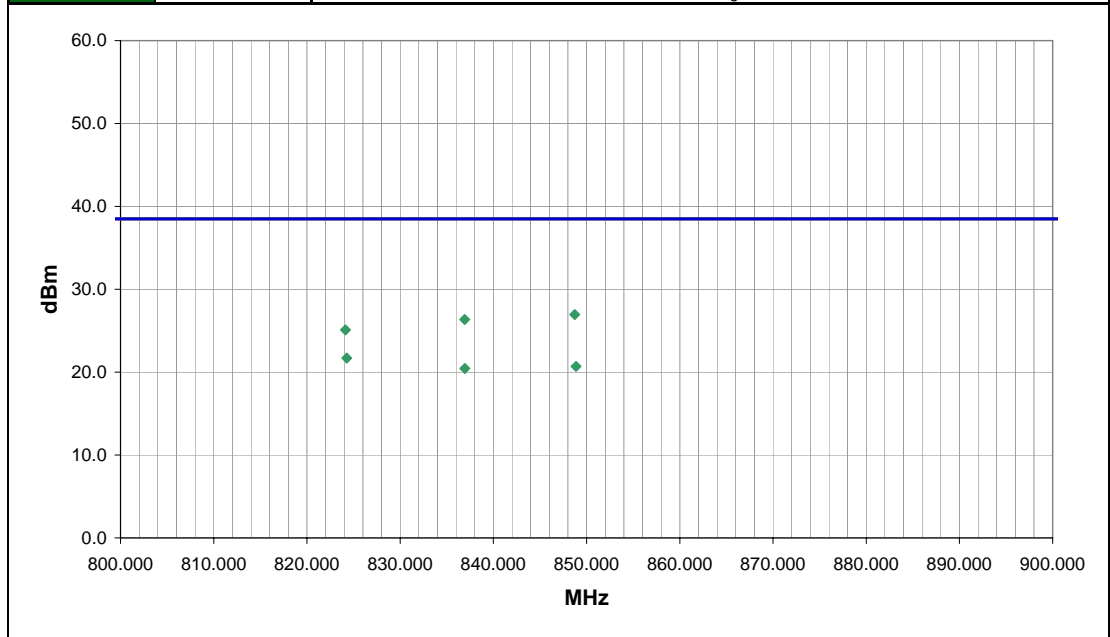
**EUT OPERATING MODES**

Cellular band

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	14	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
848.729	324.0	1.2	V-Bilog	PK	4.95E-01	27.0	38.5	-11.6	Antenna Vertical
836.929	49.0	1.3	V-Bilog	PK	4.32E-01	26.4	38.5	-12.2	Antenna Vertical
824.129	339.0	1.3	V-Bilog	PK	3.23E-01	25.1	38.5	-13.4	Antenna Vertical
824.266	319.0	1.0	H-Bilog	PK	1.48E-01	21.7	38.5	-16.8	Antenna Vertical
848.864	335.0	1.0	H-Bilog	PK	1.17E-01	20.7	38.5	-17.8	Antenna Vertical
836.931	347.0	1.1	H-Bilog	PK	1.11E-01	20.5	38.5	-18.1	Antenna Vertical

# Effective Radiated Power (ERP)

## EMC

EUT: GD Itronix, Model: GD6000 PC w/GOBi2, FCC ID: KBCIX-GOBi2, Model: IX-GOBi2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/22/09
Customer: Spectrum Technology, Inc.	Temperature: 24.5 °C
Attendees: Rod Munro	Humidity: 45%
Project: None	Barometric Pres.: 1017
Tested by: Ethan Schoonover	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

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

**COMMENTS**  
EGPRS (EDGE). Vehicle Mount

**EUT OPERATING MODES**

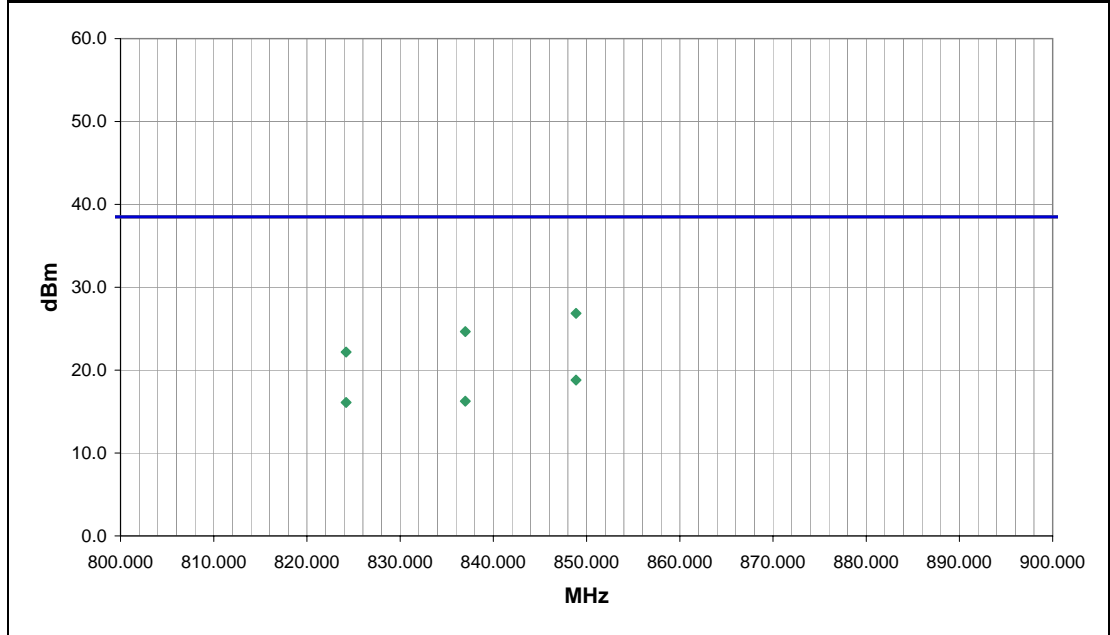
Cellular band

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	15
Configuration #	2
Results	Pass

Signature 



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
848.865	48.0	1.3	V-Bilog	PK	4.84E-01	26.9	38.5	-11.7	Antenna Vertical
836.992	50.0	1.3	V-Bilog	PK	2.92E-01	24.7	38.5	-13.9	Antenna Vertical
824.200	252.0	1.3	V-Bilog	PK	1.66E-01	22.2	38.5	-16.3	Antenna Vertical
848.866	217.0	1.3	H-Bilog	PK	7.59E-02	18.8	38.5	-19.7	Antenna Vertical
836.992	164.0	1.2	H-Bilog	PK	4.22E-02	16.3	38.5	-22.3	Antenna Vertical
824.200	161.0	1.2	H-Bilog	PK	4.07E-02	16.1	38.5	-22.4	Antenna Vertical

# Effective Radiated Power (ERP)

## EMC

EUT: GD Itronix, Model: GD6000 PC w/GOBi2, FCC ID: KBCIX-GOBi2, Model: IX-GOBi2	Work Order: SPTE0110
Serial Number: ZZGEG9139ZZ2900	Date: 07/22/09
Customer: Spectrum Technology, Inc.	Temperature: 24.5 °C
Attendees: Rod Munro	Humidity: 46%
Project: None	Barometric Pres.: 1017.5
Tested by: Dan Haas	Power: 120VAC/60Hz
	Job Site: EV12

TEST SPECIFICATIONS	Test Method
FCC 22H:2009	ANSI/TIA/EIA-603-C-2004

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

**COMMENTS**  
CDMA 1x RC3 (SO55) Vehicle mount.

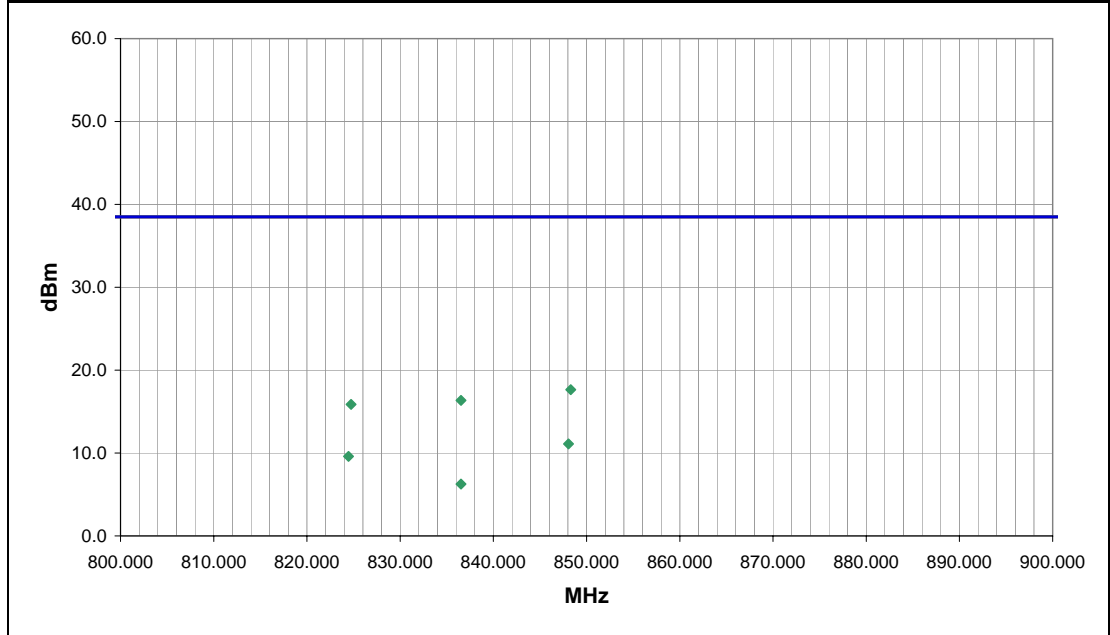
**EUT OPERATING MODES**

Cellular band

**DEVIATIONS FROM TEST STANDARD**

No deviations.

Run #	16	 Signature
Configuration #	2	
Results	Pass	



Freq (MHz)	Azimuth (degrees)	Height (meters)	Polarity	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
848.297	246.0	1.2	V-Bilog	PK	5.82E-02	17.7	38.5	-20.9	Antenna Vertical
836.520	360.0	1.3	V-Bilog	PK	4.32E-02	16.4	38.5	-22.2	Antenna Vertical
824.727	352.0	1.3	V-Bilog	PK	3.85E-02	15.9	38.5	-22.6	Antenna Vertical
848.053	222.0	1.3	H-Bilog	PK	1.29E-02	11.1	38.5	-27.4	Antenna Vertical
824.453	142.0	1.3	H-Bilog	PK	9.12E-03	9.6	38.5	-28.9	Antenna Vertical
836.520	160.0	1.3	H-Bilog	PK	4.22E-03	6.3	38.5	-32.3	Antenna Vertical

