DECLARATION OF COMPLIANCE
FCC PART 24(E) & 22(H) EMC MEASUREMENTS

Test Lab

CELLTECH LABS INC.
Testing and Engineering Services
1955 Moss Court
Kelowna, B.C.
Canada V1Y 9L3
Tel.: 250-448-7047
Fax: 250-448-7046
e-mail: info@celltechlabs.com
web site: www.celltechlabs.com

Applicant Information

ITRONIX CORPORATION
801 South Stevens Street
Spokane, WA 99210

FCC Rule Part(s):	**FCC 47 CFR §24(E), §22(H), §2**
IC Rule Part(s):	**RSS-133 Issue 2, RSS-132 Issue 1 (Provisional)**
Test Procedure(s):	**FCC 47 CFR §24(E), §22(H), §2**
	IC RSS-133 Issue 2, IC RSS-132 Issue 1 (Provisional)
	ANSI TIA/EIA-603-A-2001
FCC Device Classification:	**PCS Licensed Transmitter (PCB)**
IC Device Classification:	**2 GHz Personal Communication Services (RSS-133)**
	800 MHz Cellular Telephones Employing New Technologies (RSS-132)
Device Type:	**Rugged Laptop PC with Sony Ericsson GC82 Dual-Band GSM GPRS/EDGE Radio Modem (co-located with Cisco MPI-350 Mini-PCI 2.4GHz DSSS WLAN Card & Internal Antenna) with External Swivel Dipole Antenna, Vehicle-Mount Antenna, & Vehicle Cradle**
FCC ID:	**KBCIX260MPIGC82**
Model(s):	**IX260**
Tx Frequency Range(s):	**1850.2 - 1909.8 MHz (PCS GSM)**
	824.2 - 848.8 MHz (Cellular GSM)
Rx Frequency Range(s):	**1930.2 - 1990.8 MHz (PCS GSM)**
	869.2 - 894.8 MHz (Cellular GSM)
Max. RF Output Power Measured:	**1.65 Watts EIRP - PCS GSM (Itronix Swivel Dipole Antenna Model: IX260)**
	1.96 Watts ERP - Cellular GSM (Itronix Swivel Dipole Antenna Model: IX260)
	0.337 Watts EIRP - PCS GSM (MaxRad Vehicle-Mount Antenna P/N: WMLPVDB800/1900)
	0.762 Watts ERP - Cellular GSM (MaxRad Vehicle-Mount Antenna P/N: WMLPVDB800/1900)
Max. Conducted Power Measured:	**30.06 dBm Peak (PCS GSM) / 32.37 dBm Peak (Cellular GSM) / 21.2 dBm Peak (WLAN)**
Mode(s) / Time Slot(s) Tested:	**GSM EDGE / 2-out-of-8 Time Slots (EDGE Max. Data Rate: 61.85 kbps per time slot)**
Source-Based Time-Av. Duty Cycle:	**25 %**
Source-Based Time-Av. Cond. Pwr:	**24.04 dBm Peak (Max. PCS GSM) / 26.35 dBm Peak (Max. Cellular GSM)**
Modulation Type(s):	**GMSK / 8-PSK**
Emission Designator(s):	**300KGXW**
Frequency Tolerance(s):	**0.0029 PPM (PCS GSM) / 0.0055 PPM (Cellular GSM)**
Antenna Types Tested:	**Itronix IX260 External Swivel Dipole (Dual-Band GSM)**
	Rangestar P/N: 100929 802.11b Dual Internal Surface-Mount (WLAN)
	MaxRad 3 dBi Gain Vehicle-Mount P/N: WMLPVDB800/1900 (Dual-Band GSM)
Power Source(s) Tested:	**11.1V Lithium-ion Battery, 6.0Ah (Model: A2121-2)**
	12V Vehicle Battery (Vehicle-Mount Antenna)

This device has demonstrated compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in FCC 47 CFR §24(E), §22(H), §2; Industry Canada RSS-133 Issue 2, RSS-132 Issue 1 (Provisional); and ANSI TIA/EIA-603-A-2001.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Russell Pipe
Senior Compliance Technologist
Celltech Labs Inc.

TABLE OF CONTENTS

FCC PART 24(E) & 22(H) EMC MEASUREMENT REPORT

1.1 SCOPE

Measurement and determination of electromagnetic emissions (EME) from radio frequency devices for compliance with the technical rules and regulations of the Federal Communications Commission and Industry Canada.

2.1 GENERAL INFORMATION - §2.1033(a)

APPLICANT

ITRONIX CORPORATION
801 South Stevens Street
Spokane, WA 99210

FCC ID	KBCIX260MPIGC82			
Model(s)	IX260			
Serial No.	ZZGEG4062ZZ5168 (Production Unit)			
Device Type	Rugged Laptop PC with Sony Ericsson GC82 Dual-Band GSM GPRS/EDGE Modem (co-located with Cisco MPI-350 Mini-PCI 2.4GHz DSSS WLAN Card & Internal Antenna) with External Swivel Dipole Antenna, Vehicle-Mount Antenna, & Vehicle Cradle			
FCC Rule Part(s)	47 CFR §24(E), §22(H), §2			
IC Rule Part(s)	RSS-133 Issue 2, RSS-132 Issue 1 (Provisional)			
FCC Classification	PCS Licensed Transmitter (PCB)			
IC Classification	2 GHz Personal Communication Services (RSS-133)			
	800 MHz Cellular Telephones Employing New Technologies (RSS-132)			
Tx Frequency Range	1850.2 - 1909.8 MHz (PCS GSM)	824.2 - 848.8 MHz (Cellular GSM)		
Rx Frequency Range	1930.2 - 1990.8 MHz (PCS GSM)	869.2 - 894.8 MHz (Cellular GSM)		
Antenna Type(s) Tested	Type / Description	Max. RF Output Power	Length	
	External Swivel Dipole (GSM)	1.65 Watts EIRP (PCS) 1.96 Watts ERP (Cellular)	4.7 inches	
	802.11b Dual Surface-Mount (WLAN)	0.372 Watts EIRP	1.1 inches	
	3 dBi Gain Mobile Vehicle-Mount (GSM)	0.337 Watts EIRP (PCS) 0.762 Watts ERP (Cellular)	2.7 inches	
Max. RF Conducted Output Power Tested	30.06 dBm Peak	PCS GSM	21.2 dBm Peak	DSSS WLAN
	32.37 dBm Peak	Cellular GSM		
Modes / Data Rates Tested	PCS/ Cellular GSM EDGE	2-out-of-8 Time Slots	25% Duty Cycle	61.85 kbps
Source-Based Time-Averaged Cond. Pwr.	24.04 dBm Peak (Max. PCS GSM)	26.35 dBm Peak (Max. Cellular GSM)		
Emission Designator	300KGXW			
Frequency Tolerance	0.0029 PPM (PCS GSM)	0.0055 PPM (Cellular GSM)		
Modulation Type(s)	GMSK / 8-PSK			
Power Source(s) Tested	11.1V Lithium-ion Battery, 6.0Ah (Model: A2121-2)			
	12V Vehicle Battery (Vehicle-Mount Antenna)			

MEASUREMENT PROCEDURES

3.1 RF OUTPUT POWER MEASUREMENT - §2.1046

The peak conducted power levels for both PCS and cellular bands were measured at the RF port of the DUT using a Gigatronics 8652A Universal Power Meter in burst average power mode. An offset was entered into the power meter to correct for the losses of the attenuator and cable installed before the sensor input. The transmitter terminal was coupled to the power meter and the DUT was placed in GSM EDGE mode at the maximum data rate and full rated power using the Sony Ericsson GC82 test software installed in the Laptop PC. All subsequent tests were performed using the same power measurement procedures. The measurement data is shown on page 6.

4.1 EFFECTIVE ISOTROPIC RADIATED POWER OUTPUT - §24.232(b)

EIRP measurements were performed on a 3-meter open area test site using the Signal Substitution Method in accordance with ANSI TIA/EIA-603-A-2001. The DUT was tested in PCS GSM EDGE mode at the maximum data rate and full rated power using the Sony Ericsson GC82 GSM test software installed in the Laptop PC. The DUT was placed on a turntable 3-meters from the receive antenna. The vehicle-mount antenna evaluation was performed with the DUT installed in the cradle and the antenna fixed on a 50 cm x 50 cm ground plane. The field of maximum intensity was found by rotating the DUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. Once a peak was found the spectrum analyzer was set to peak hold and the value of the emission was extracted. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. A standard gain horn antenna was substituted in place of the DUT. A modulated signal with the same bandwidth as the DUT was generated, amplified, and fed through a directional coupler. The height and direction of the horn was adjusted in order to give the field of maximum intensity. The power to the horn was adjusted to give the same field strength reading as previously recorded for the DUT. The power at the coupler port was recorded at this point. The feed point for the antenna was then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded, this is to account for any mismatch in impedance, which may occur at the horn antenna. The conducted power at the antenna feed point was recorded. The EIRP level was determined by adding the horn forward conducted power and the horn gain. The test data is shown on page 6.

5.1 EFFECTIVE RADIATED POWER OUTPUT - §22.913

ERP measurements were performed on a 3-meter open area test site using the Signal Substitution Method in accordance with ANSI TIA/EIA-603-A-2001. The DUT was tested in cellular GSM EDGE mode at the maximum data rate and full rated power using the Sony Ericsson GC82 GSM test software installed in the Laptop PC. The DUT was placed on a turntable 3-meters from the receive antenna. The vehicle-mount antenna evaluation was performed with the DUT installed in the cradle and the antenna fixed on a 50 cm x 50 cm ground plane. The field of maximum intensity was found by rotating the DUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. Once a peak was found the spectrum analyzer was set to peak hold and the value of the emission was extracted. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. A half-wave dipole was substituted in place of the DUT. A modulated signal with the same bandwidth as the DUT was generated, amplified, and fed through a directional coupler. The height and direction of the dipole was adjusted in order to give the field of maximum intensity. The power to the dipole was adjusted to give the same field strength reading as previously recorded for the DUT. The power at the coupler port was recorded at this point. The feed point for the dipole was then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded, this is to account for any mismatch in impedance, which may occur at the dipole antenna. The conducted power at the antenna feed point was recorded. The ERP level was determined by adding the dipole forward conducted power and the dipole gain. The test data is shown on page 6.

MEASUREMENT PROCEDURES (Cont.)

6.1 FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053

Radiated spurious emissions were measured on a 3-meter open area test site using the Signal Substitution Method in accordance with ANSI TIA/EIA-603-A-2001. The DUT was tested in PCS and cellular GSM EDGE modes at the maximum data rate and full rated power using the Sony Ericsson GC82 GSM test software installed in the Laptop PC. The DUT was placed on a turntable 3-meters from the receive antenna. For the external dipole antenna single transmit evaluation, the DUT was placed on the turntable with the transmitter transmitting into a non-radiating load connected at the antenna feed point. For the simultaneous transmit tests with external dipole antenna and co-located WLAN antenna, the WLAN was set to the maximum peak conducted power level (21.2 dBm) at the low channel (2412 MHz), with a modulated DSSS signal and the right side internal antenna transmitting (the WLAN EIRP results reported the low channel as the maximum EIRP - please refer to the EIRP data in the Part 15.247 test report for the Cisco MPI-350 Mini-PCI DSSS WLAN Card submitted simultaneously with this application). The vehicle-mount antenna evaluation was performed with the DUT installed in the cradle placed on the turntable and the antenna fixed on a 50 cm x 50 cm ground plane with the transmitter transmitting into a non-radiating load via substitute LMR-195 cable (15 feet) connected to the cradle. The LMR-195 cable length (15 feet) was equal to the vehicle-mount antenna LMR-195 cable length. A receiving antenna located 3 meters from the turntable received any signal radiated from the transmitter and its operating accessories. The receiving antenna was varied in height from 1 to 4 meters and the polarization was varied (horizontal and vertical) to determine the worst-case emission level. A standard gain horn antenna was substituted in place of the DUT. A modulated signal was fed through a directional coupler to the antenna and the power at the coupler port was monitored. A signal generator and power amplifier controlled the antenna, and the input level of the antenna was adjusted to the same field strength level as the DUT. The antenna feed point was then connected to a calibrated power meter and the power was adjusted to read the same power at the coupler port previously recorded, to account for any mismatch in impedance that may occur at the horn antenna. The conducted power at the antenna feed point was then recorded. The forward conducted power for the horn antenna was determined by measuring the power at the horn antenna feed point and reproducing the coupler power previously measured. The EIRP level was determined by adding the horn forward conducted power and the horn gain. All spurious emissions from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier were investigated. The test data is shown on pages 7-16.

7.1 RADIATED MEASUREMENT TEST SETUP

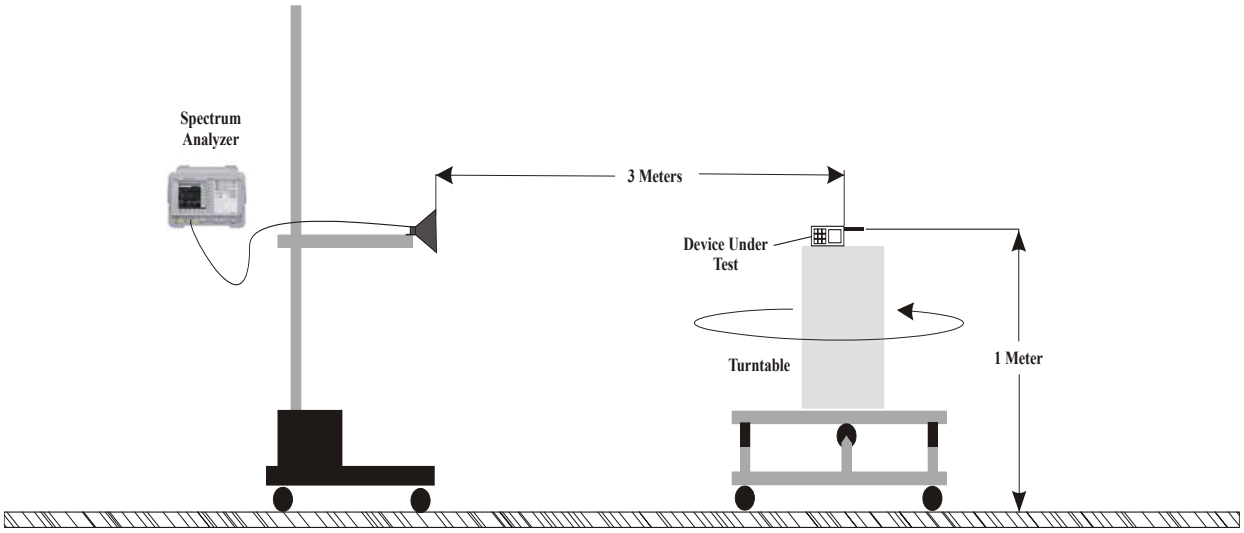

Figure 1. Radiated Measurement Test Setup Diagram

TEST DATA

8.1 RF OUTPUT POWER MEASUREMENT - §2.1046

RF CONDUCTED OUTPUT POWER MEASUREMENTS			
Frequency (MHz)	Peak Power (dBm)	Frequency (MHz)	Peak Power (dBm)
824.2	32.25	**1850.2**	29.67
836.6	32.21	**1880.0**	30.06
848.8	32.37	**1909.8**	30.01

9.1 EFFECTIVE ISOTROPIC RADIATED POWER OUTPUT - §24.232(b)

EFFECTIVE ISOTROPIC RADIATED POWER OUTPUT MEASUREMENTS									
Transmit Mode(s)	Antenna Type(s)	Freq. Tuned	DUT Conducted Power	Maximum Field Strength of DUT	Antenna Polariz.	Horn Gain	Horn Forward Conducted Power	EIRP of DUT Horn Gain + Horn Forward Conducted Power	
		MHz	dBm	dBm	H/V	dBi	dBm	dBm	Watts
PCS GSM	IX260 External Dipole	1880.0	30.06	-10.50	V	6.58	21.03	27.61	0.577
		1880.0	30.06	-6.579	H	6.58	24.74	31.32	1.36
		1850.2	29.67	-5.762	H	6.55	25.62	32.17	1.65
		1909.8	30.01	-8.725	H	6.61	23.36	29.97	0.993
PCS GSM	MaxRad Vehicle-Mount	1850.2	29.67	-13.64	V	6.55	18.32	24.87	0.307
		1880.0	30.06	-15.93	V	6.58	17.86	24.44	0.278
		1909.8	30.01	-14.08	V	6.61	18.67	25.28	0.337

10.1 EFFECTIVE RADIATED POWER OUTPUT - §22.913

EFFECTIVE RADIATED POWER OUTPUT MEASUREMENTS									
Transmit Mode(s)	Antenna Type(s)	Freq. Tuned	DUT Conducted Power	Maximum Field Strength of DUT	Antenna Polariz.	Dipole Gain	Dipole Forward Conducted Power	ERP of DUT Dipole Gain + Dipole Forward Conducted Power	
		MHz	dBm	dBm	H/V	dBd	dBm	dBm	Watts
Cellular GSM	IX260 External Dipole	836.6	32.21	-11.64	V	-0.70	24.91	24.21	0.264
		836.6	32.21	-4.831	H	-0.70	31.90	31.20	1.32
		824.2	32.25	-5.805	H	-0.85	30.99	30.14	1.03
		848.8	32.37	-3.198	H	-0.55	33.48	32.93	1.96
Cellular GSM	MaxRad Vehicle-Mount	824.2	32.25	-9.502	V	-0.85	29.67	28.82	0.762
		836.6	32.21	-9.757	V	-0.70	26.96	26.26	0.423
		848.8	32.37	-10.42	V	-0.55	27.23	26.68	0.466

TEST DATA (Cont.)

11.1 FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053

Mode: PCS GSM
Operating Frequency (MHz): 1850.2
Channel: 512 (Low)
Peak Conducted Pwr. (dBm): 29.67
Measured EIRP (dBm): 32.17
Distance: 3 Meters
Limit: 43 + 10 log (W) = 45.17 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: Itronix IX260 External Swivel Dipole

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3700.40	-76.54	-43.65	6.6	H	-37.05	-39.19	71.36
5550.60	-76.83	-39.03	7.8	H	-31.23	-33.37	65.54
7400.80	-73.71	-37.13	7.8	H	-29.33	-31.47	63.64
9251.00	-74.59	-36.57	7.6	H	-28.97	-31.11	63.28
11101.20	-73.99	-37.63	8.5	H	-29.13	-31.27	63.44
12951.40	-74.52	-36.64	8.8	H	-27.84	-29.98	62.15
14801.60	-71.22	-33.34	9.6	H	-23.74	-25.88	58.05
16651.80	-71.05	-33.22	9.0	H	-24.22	-26.36	58.53
18502.00	-72.45	-36.24	9.3	H	-26.94	-29.08	61.25

Mode: PCS GSM
Operating Frequency (MHz): 1850.2
Channel: 512 (Low)
Peak Conducted Pwr. (dBm): 29.67
Measured EIRP (dBm): 32.17
Distance: 3 Meters
Limit: 43 + 10 log (W) = 45.17 dBc
Transmitter: Sony Ericsson GC82 GSM Modem & Cisco MPI-350 WLAN (Simultaneous Transmit)
Antenna: Itronix IX260 External Swivel Dipole & Rangestar 100929 Internal WLAN Antenna

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3700.40	-75.50	-42.61	6.6	H	-36.01	-38.15	70.32
5550.60	-76.01	-38.21	7.8	H	-30.41	-32.55	64.72
7400.80	-74.58	-38.00	7.8	H	-30.20	-32.34	64.51
9251.00	-74.93	-36.91	7.6	H	-29.31	-31.45	63.62
11101.20	-75.49	-39.13	8.5	H	-30.63	-32.77	64.94
12951.40	-74.09	-36.21	8.8	H	-27.41	-29.55	61.72
14801.60	-71.82	-33.94	9.6	H	-24.34	-26.48	58.65
16651.80	-72.08	-34.25	9.0	H	-25.25	-27.39	59.56
18502.00	-72.54	-36.33	9.3	H	-27.03	-29.17	61.34

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: PCS GSM
Operating Frequency (MHz): 1880.0
Channel: 661 (Mid)
Peak Conducted Pwr. (dBm): 30.06
Measured EIRP (dBm): 31.32
Distance: 3 Meters
Limit: 43 + 10 log (W) = 44.34 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: Itronix IX260 External Swivel Dipole

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3760.00	-76.41	-43.52	6.6	H	-36.92	-39.06	70.38
5640.00	-76.90	-39.10	7.8	H	-31.30	-33.44	64.76
7520.00	-73.95	-37.37	7.8	H	-29.57	-31.71	63.03
9400.00	-75.05	-37.03	7.6	H	-29.43	-31.57	62.89
11280.00	-73.79	-37.43	8.5	H	-28.93	-31.07	62.39
13160.00	-73.70	-35.82	8.8	H	-27.02	-29.16	60.48
15040.00	-71.38	-33.50	9.6	H	-23.90	-26.04	57.36
16920.00	-71.01	-33.18	9.0	H	-24.18	-26.32	57.64
18800.00	-72.67	-36.46	9.3	H	-27.16	-29.30	60.62

Mode: PCS GSM
Operating Frequency (MHz): 1880.0
Channel: 661 (Mid)
Peak Conducted Pwr. (dBm): 30.06
Measured EIRP (dBm): 31.32
Distance: 3 Meters
Limit: 43 + 10 log (W) = 44.34 dBc
Transmitter: Sony Ericsson GC82 GSM Modem & Cisco MPI-350 WLAN (Simultaneous Transmit)
Antenna: Itronix IX260 External Swivel Dipole & Rangestar 100929 Internal WLAN Antenna

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3760.00	-76.25	-43.36	6.6	H	-36.76	-38.90	70.22
5640.00	-76.49	-38.69	7.8	H	-30.89	-33.03	64.35
7520.00	-73.93	-37.35	7.8	H	-29.55	-31.69	63.01
9400.00	-75.66	-37.64	7.6	H	-30.04	-32.18	63.50
11280.00	-73.38	-37.02	8.5	H	-28.52	-30.66	61.98
13160.00	-74.90	-37.02	8.8	H	-28.22	-30.36	61.68
15040.00	-71.66	-33.78	9.6	H	-24.18	-26.32	57.64
16920.00	-71.58	-33.75	9.0	H	-24.75	-26.89	58.21
18800.00	-72.46	-36.25	9.3	H	-26.95	-29.09	60.41

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: PCS GSM
Operating Frequency (MHz): 1909.8
Channel: 810 (High)
Peak Conducted Pwr. (dBm): 30.01
Measured EIRP (dBm): 29.97
Distance: 3 Meters
Limit: 43 + 10 log (W) = 42.97 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: Itronix IX260 External Swivel Dipole

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3819.60	-77.86	-44.97	6.6	H	-38.37	-40.51	70.48
5729.40	-76.84	-39.04	7.8	H	-31.24	-33.38	63.35
7639.20	-75.35	-38.77	7.8	H	-30.97	-33.11	63.08
9549.00	-76.11	-38.09	7.6	H	-30.49	-32.63	62.60
11458.80	-74.75	-38.39	8.5	H	-29.89	-32.03	62.00
13368.60	-70.08	-32.20	8.8	H	-23.40	-25.54	55.51
15278.40	-70.77	-32.89	9.6	H	-23.29	-25.43	55.40
17188.20	-72.28	-34.45	9.0	H	-25.45	-27.59	57.56
19098.00	-72.58	-36.37	9.3	H	-27.07	-29.21	59.18

Mode: PCS GSM
Operating Frequency (MHz): 1909.8
Channel: 810 (High)
Peak Conducted Pwr. (dBm): 30.01
Measured EIRP (dBm): 29.97
Distance: 3 Meters
Limit: 43 + 10 log (W) = 42.97 dBc
Transmitter: Sony Ericsson GC82 GSM Modem & Cisco MPI-35O WLAN (Simultaneous Transmit)
Antenna: Itronix IX260 External Swivel Dipole & Rangestar 100929 Internal WLAN Antenna

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3819.60	-77.13	-44.24	6.6	H	-37.64	-39.78	69.75
5729.40	-76.71	-38.91	7.8	H	-31.11	-33.25	63.22
7639.20	-74.68	-38.10	7.8	H	-30.30	-32.44	62.41
9549.00	-75.08	-37.06	7.6	H	-29.46	-31.60	61.57
11458.80	-74.64	-38.28	8.5	H	-29.78	-31.92	61.89
13368.60	-70.59	-32.71	8.8	H	-23.91	-26.05	56.02
15278.40	-71.79	-33.91	9.6	H	-24.31	-26.45	56.42
17188.20	-72.58	-34.75	9.0	H	-25.75	-27.89	57.86
19098.00	-71.96	-35.75	9.3	H	-26.45	-28.59	58.56

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: PCS GSM
Operating Frequency (MHz): 1850.2
Channel: 512 (Low)
Peak Conducted Pwr. (dBm): 29.67
Measured EIRP (dBm): 24.87
Distance: 3 Meters
Limit: 43 + 10 log (W) = 37.87 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: MaxRad External Vehicle-Mount (P/N: WMLPVDB800/1900)

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3700.40	-75.92	-43.03	6.6	V	-36.43	-38.57	63.44
5550.60	-76.72	-38.92	7.8	V	-31.12	-33.26	58.13
7400.80	-72.93	-36.35	7.8	V	-28.55	-30.69	55.56
9251.00	-74.95	-36.93	7.6	V	-29.33	-31.47	56.34
11101.20	-75.31	-38.95	8.5	V	-30.45	-32.59	57.46
12951.40	-74.12	-36.24	8.8	V	-27.44	-29.58	54.45
14801.60	-69.90	-32.02	9.6	V	-22.42	-24.56	49.43
16651.80	-71.93	-34.10	9.0	V	-25.10	-27.24	52.11
18502.00	-71.15	-34.94	9.3	V	-25.64	-27.78	52.65

Mode: PCS GSM
Operating Frequency (MHz): 1880.0
Channel: 661 (Mid)
Peak Conducted Pwr. (dBm): 30.06
Measured EIRP (dBm): 24.44
Distance: 3 Meters
Limit: 43 + 10 log (W) = 37.44 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: MaxRad External Vehicle-Mount (P/N: WMLPVDB800/1900)

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3760.00	-76.43	-43.54	6.6	V	-36.94	-39.08	63.52
5640.00	-75.36	-37.56	7.8	V	-29.76	-31.90	56.34
7520.00	-73.64	-37.06	7.8	V	-29.26	-31.40	55.84
9400.00	-73.83	-35.81	7.6	V	-28.21	-30.35	54.79
11280.00	-74.65	-38.29	8.5	V	-29.79	-31.93	56.37
13160.00	-73.10	-35.22	8.8	V	-26.42	-28.56	53.00
15040.00	-71.40	-33.52	9.6	V	-23.92	-26.06	50.50
16920.00	-71.88	-34.05	9.0	V	-25.05	-27.19	51.63
18800.00	-72.52	-36.31	9.3	V	-27.01	-29.15	53.59

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: PCS GSM
Operating Frequency (MHz): 1909.8
Channel: 810 (High)
Peak Conducted Pwr. (dBm): 30.01
Measured EIRP (dBm): 25.28
Distance: 3 Meters
Limit: 43 + 10 log (W) = 38.28 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: MaxRad External Vehicle-Mount (P/N: WMLPVDB800/1900)

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard-Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3819.60	-77.25	-44.36	6.6	V	-37.76	-39.90	65.18
5729.40	-76.76	-38.96	7.8	V	-31.16	-33.30	58.58
7639.20	-74.30	-37.72	7.8	V	-29.92	-32.06	57.34
9549.00	-74.61	-36.59	7.6	V	-28.99	-31.13	56.41
11458.80	-73.02	-36.66	8.5	V	-28.16	-30.30	55.58
13368.60	-68.66	-30.78	8.8	V	-21.98	-24.12	49.40
15278.40	-71.94	-34.06	9.6	V	-24.46	-26.60	51.88
17188.20	-72.00	-34.17	9.0	V	-25.17	-27.31	52.59
19098.00	-71.92	-35.71	9.3	V	-26.41	-28.55	53.83

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: Cellular GSM
Operating Frequency (MHz): 824.2
Channel: 128 (Low)
Peak Conducted Pwr. (dBm): 32.25
Measured ERP (dBm): 30.14
Distance: 3 Meters
Limit: 43 + 10 log (W) = 43.13 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: Itronix IX260 External Swivel Dipole

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1648.40	-61.39	-28.50	6.6	H	-21.90	-24.04	54.18
2472.60	-68.19	-30.39	7.8	H	-22.59	-24.73	54.87
3296.80	-75.76	-39.18	7.8	H	-31.38	-33.52	63.66
4121.00	-76.73	-38.71	7.6	H	-31.11	-33.25	63.39
4945.20	-76.01	-39.65	8.5	H	-31.15	-33.29	63.43
5769.40	-75.79	-37.91	8.8	H	-29.11	-31.25	61.39
6593.60	-76.07	-38.19	9.6	H	-28.59	-30.73	60.87
7417.80	-73.68	-35.85	9.0	H	-26.85	-28.99	59.13
8242.00	-74.04	-37.83	9.3	H	-28.53	-30.67	60.81

Mode: Cellular GSM
Operating Frequency (MHz): 824.2
Channel: 128 (Low)
Peak Conducted Pwr. (dBm): 32.25
Measured ERP (dBm): 30.14
Distance: 3 Meters
Limit: 43 + 10 log (W) = 43.13 dBc
Transmitter: Sony Ericsson GC82 GSM Modem & Cisco MPI-350 WLAN (Simultaneous Transmit)
Antenna: Itronix IX260 External Swivel Dipole & Rangestar 100929 Internal WLAN Antenna

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1648.40	-61.63	-28.74	6.6	H	-22.14	-24.28	54.42
2472.60	-69.05	-31.25	7.8	H	-23.45	-25.59	55.73
3296.80	-76.63	-40.05	7.8	H	-32.25	-34.39	64.53
4121.00	-76.06	-38.04	7.6	H	-30.44	-32.58	62.72
4945.20	-77.21	-40.85	8.5	H	-32.35	-34.49	64.63
5769.40	-75.07	-37.19	8.8	H	-28.39	-30.53	60.67
6593.60	-76.04	-38.16	9.6	H	-28.56	-30.70	60.84
7417.80	-73.98	-36.15	9.0	H	-27.15	-29.29	59.43
8242.00	-73.93	-37.72	9.3	H	-28.42	-30.56	60.70

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: Cellular GSM
Operating Frequency (MHz): 836.6
Channel: 190 (Mid)
Peak Conducted Pwr. (dBm): 32.21
Measured ERP (dBm): 31.20
Distance: 3 Meters
Limit: 43 + 10 log (W) = 44.21 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: Itronix IX260 External Swivel Dipole

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1673.20	-61.16	-28.27	6.6	H	-21.67	-23.81	55.01
2509.80	-67.47	-29.67	7.8	H	-21.87	-24.01	55.21
3346.40	-76.10	-39.52	7.8	H	-31.72	-33.86	65.06
4183.00	-77.62	-39.60	7.6	H	-32.00	-34.14	65.34
5019.60	-76.95	-40.59	8.5	H	-32.09	-34.23	65.43
5856.20	-76.08	-38.20	8.8	H	-29.40	-31.54	62.74
6692.80	-75.79	-37.91	9.6	H	-28.31	-30.45	61.65
7529.40	-74.09	-36.26	9.0	H	-27.26	-29.40	60.60
8366.00	-75.14	-38.93	9.3	H	-29.63	-31.77	62.97

Mode: Cellular GSM
Operating Frequency (MHz): 836.6
Channel: 190 (Mid)
Peak Conducted Pwr. (dBm): 32.21
Measured ERP (dBm): 31.20
Distance: 3 Meters
Limit: 43 + 10 log (W) = 44.21 dBc
Transmitter: Sony Ericsson GC82 GSM Modem & Cisco MPI-350 WLAN (Simultaneous Transmit)
Antenna: Itronix IX260 External Swivel Dipole & Rangestar 100929 Internal WLAN Antenna

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1673.20	-60.84	-27.95	6.6	H	-21.35	-23.49	54.69
2509.80	-67.61	-29.81	7.8	H	-22.01	-24.15	55.35
3346.40	-76.98	-40.40	7.8	H	-32.60	-34.74	65.94
4183.00	-78.22	-40.20	7.6	H	-32.60	-34.74	65.94
5019.60	-76.22	-39.86	8.5	H	-31.36	-33.50	64.70
5856.20	-76.06	-38.18	8.8	H	-29.38	-31.52	62.72
6692.80	-76.71	-38.83	9.6	H	-29.23	-31.37	62.57
7529.40	-73.21	-35.38	9.0	H	-26.38	-28.52	59.72
8366.00	-75.06	-38.85	9.3	H	-29.55	-31.69	62.89

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: Cellular GSM
Operating Frequency (MHz): 848.8
Channel: 251 (High)
Peak Conducted Pwr. (dBm): 32.37
Measured ERP (dBm): 26.68
Distance: 3 Meters
Limit: 43 + 10 log (W) = 39.68 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: Itronix IX260 External Swivel Dipole

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1697.60	-61.16	-28.27	6.6	H	-21.67	-23.81	50.49
2546.40	-67.47	-29.67	7.8	H	-21.87	-24.01	50.69
3395.20	-76.10	-39.52	7.8	H	-31.72	-33.86	60.54
4244.00	-77.62	-39.60	7.6	H	-32.00	-34.14	60.82
5092.80	-76.95	-40.59	8.5	H	-32.09	-34.23	60.91
5941.60	-76.08	-38.20	8.8	H	-29.40	-31.54	58.22
6790.40	-75.79	-37.91	9.6	H	-28.31	-30.45	57.13
7639.20	-74.09	-36.26	9.0	H	-27.26	-29.40	56.08
8488.00	-75.14	-38.93	9.3	H	-29.63	-31.77	58.45

Mode: Cellular GSM
Operating Frequency (MHz): 848.8
Channel: 251 (High)
Peak Conducted Pwr. (dBm): 32.37
Measured ERP (dBm): 32.93
Distance: 3 Meters
Limit: 43 + 10 log (W) = 45.92 dBc
Transmitter: Sony Ericsson GC82 GSM Modem & Cisco MPI-350 WLAN (Simultaneous Transmit)
Antenna: Itronix IX260 External Swivel Dipole & Rangestar 100929 Internal WLAN Antenna

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1697.60	-59.03	-26.14	6.6	H	-19.54	-21.68	54.61
2546.40	-65.89	-28.09	7.8	H	-20.29	-22.43	55.36
3395.20	-76.28	-39.70	7.8	H	-31.90	-34.04	66.97
4244.00	-77.93	-39.91	7.6	H	-32.31	-34.45	67.38
5092.80	-77.91	-41.55	8.5	H	-33.05	-35.19	68.12
5941.60	-77.89	-40.01	8.8	H	-31.21	-33.35	66.28
6790.40	-73.00	-35.12	9.6	H	-25.52	-27.66	60.59
7639.20	-74.75	-36.92	9.0	H	-27.92	-30.06	62.99
8488.00	-74.22	-38.01	9.3	H	-28.71	-30.85	63.78

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: Cellular GSM
Operating Frequency (MHz): 824.2
Channel: 128 (Low)
Peak Conducted Pwr. (dBm): 32.25
Measured ERP (dBm): 28.82
Distance: 3 Meters
Limit: 43 + 10 log (W) = 41.82 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: MaxRad External Vehicle-Mount (P/N: WMLPVDB800/1900)

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1648.40	-68.57	-35.68	6.6	V	-29.08	-31.22	60.04
2472.60	-73.88	-36.08	7.8	V	-28.28	-30.42	59.24
3296.80	-76.43	-39.85	7.8	V	-32.05	-34.19	63.01
4121.00	-77.13	-39.11	7.6	V	-31.51	-33.65	62.47
4945.20	-76.59	-40.23	8.5	V	-31.73	-33.87	62.69
5769.40	-74.74	-36.86	8.8	V	-28.06	-30.20	59.02
6593.60	-75.58	-37.70	9.6	V	-28.10	-30.24	59.06
7417.80	-73.74	-35.91	9.0	V	-26.91	-29.05	57.87
8242.00	-73.19	-36.98	9.3	V	-27.68	-29.82	58.64

Mode: Cellular GSM
Operating Frequency (MHz): 836.6
Channel: 190 (Mid)
Peak Conducted Pwr. (dBm): 32.21
Measured ERP (dBm): 26.26
Distance: 3 Meters
Limit: 43 + 10 log (W) = 39.26 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: MaxRad External Vehicle-Mount (P/N: WMLPVDB800/1900)

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1673.20	-67.57	-34.68	6.6	V	-28.08	-30.22	56.48
2509.80	-73.15	-35.35	7.8	V	-27.55	-29.69	55.95
3346.40	-75.60	-39.02	7.8	V	-31.22	-33.36	59.62
4183.00	-77.53	-39.51	7.6	V	-31.91	-34.05	60.31
5019.60	-75.97	-39.61	8.5	V	-31.11	-33.25	59.51
5856.20	-76.21	-38.33	8.8	V	-29.53	-31.67	57.93
6692.80	-75.10	-37.22	9.6	V	-27.62	-29.76	56.02
7529.40	-73.28	-35.45	9.0	V	-26.45	-28.59	54.85
8366.00	-74.27	-38.06	9.3	V	-28.76	-30.90	57.16

TEST DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Mode: Cellular GSM
Operating Frequency (MHz): 848.8
Channel: 251 (High)
Peak Conducted Pwr. (dBm): 32.37
Measured ERP (dBm): 26.68
Distance: 3 Meters
Limit: 43 + 10 log (W) = 39.68 dBc
Transmitter: Sony Ericsson GC82 GSM Modem (Single Transmit)
Antenna: MaxRad External Vehicle-Mount (P/N: WMLPVDB800/1900)

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1697.60	-67.52	-34.63	6.6	V	-28.03	-30.17	56.85
2546.40	-72.40	-34.60	7.8	V	-26.80	-28.94	55.62
3395.20	-75.04	-38.46	7.8	V	-30.66	-32.80	59.48
4244.00	-76.60	-38.58	7.6	V	-30.98	-33.12	59.80
5092.80	-76.80	-40.44	8.5	V	-31.94	-34.08	60.76
5941.60	-76.68	-38.80	8.8	V	-30.00	-32.14	58.82
6790.40	-72.48	-34.60	9.6	V	-25.00	-27.14	53.82
7639.20	-73.93	-36.10	9.0	V	-27.10	-29.24	55.92
8488.00	-74.92	-38.71	9.3	V	-29.41	-31.55	58.23

12.1 TEST EQUIPMENT

TEST EQUIPMENT LIST			
Equipment Type	**Model**	**Serial No.**	**Calibration Due Date**
HP Signal Generator	8648D (9kHz-4.0GHz)	3847A00611	April 2004
Rohde & Schwarz Signal Generator	SMR40 (10MHz-40GHz)	835537/022	Nov 2004
Gigatronics Power Meter	8652A	1835272	April 2004
Gigatronics Power Sensor	80701A (0.05-18GHz)	1833535	April 2004
Gigatronics Power Sensor	80701A (0.05-18GHz)	1833542	April 2004
Amplifier Research Power Amp.	5S1G4 (5W, 800MHz-4.2GHz)	26235	N/A
Microwave System Amplifier	HP 83017A (0.5-26.5GHz)	3123A00587	N/A
Network Analyzer	HP 8753E (30kHz-3GHz)	US38433013	April 2004
Frequency Counter	HP 53181A (3GHz)	3736A05175	May 2004
DC Power Supply	HP E3611A	KR83015294	N/A
Multi-Device Controller	EMCO 2090	9912-1484	N/A
Mini Mast	EMCO 2075	0001-2277	N/A
Turntable	EMCO 2080-1.2/1.5	0002-1002	N/A
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	6267	Oct 2004
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	6276	Oct 2004
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	9120A-239	Sept 2004
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	9120A-240	Sept 2004
Roberts Dipoles	Compliance Design (2 sets) 3121C		June 2004
Spectrum Analyzer	HP 8594E	3543A02721	April 2004
Spectrum Analyzer	HP E4408B	US39240170	Nov 2004
Shielded Screen Room	Lindgren R.F. 18W-2/2-0	16297	N/A
Environmental Chamber	ESPEC ECT-2 (Temperature/Humidity)	0510154-B	Feb 2005

13.1 SUMMARY

The data in this measurement report demonstrates that the ITRONIX CORPORATION Model: IX260 Rugged Laptop PC FCC ID: KBCIX260MPIGC82 with Sony Ericsson GC82 Dual-Band GSM GPRS/EDGE Radio Modem, external dipole antenna and vehicle-mount antenna, with co-located Cisco MPI-350 Mini-PCI DSSS WLAN Card and internal 802.11b surface-mount dual antenna, complies with the requirements of FCC Rule Parts §24(E), §22(H), and §2.