Test Report S/N:	052604KBC-T517-E24G
Test Date(s):	July 16-19, 2004
Test Type:	FCC Parts 22 & 24 EMC Measurements

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

Test Lab

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Applicant Information

ITRONIX CORPORATION
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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 PCMCIA Modem with External Swivel Dipole Antenna, Mobile Vehicle-Mount Antenna, & Vehicle Cradle**
FCC IDENTIFIER:	**KBCIX260PLUSGC82**
Model(s):	**IX260PLUSGC82**
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. ERP/EIRP Measured:	**1.58 Watts EIRP - PCS GSM (Itronix Swivel Dipole Antenna Model: IX260PLUSGC82)**
	1.67 Watts ERP - Cellular GSM (Itronix Swivel Dipole Antenna Model: IX260PLUSGC82)
	0.311 Watts EIRP - PCS GSM (MaxRad Vehicle-Mount Antenna P/N: WMLPVDB800/1900)
	0.955 Watts ERP - Cellular GSM (MaxRad Vehicle-Mount Antenna P/N: WMLPVDB800/1900)
Max. Conducted Power Measured:	**30.13 dBm Peak (PCS GSM) / 32.27 dBm Peak (Cellular GSM)**
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:	**24.11 dBm Peak (Max. PCS GSM) / 26.25 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 Type(s) Tested:	**Itronix IX260+ External Swivel Dipole**
	MaxRad 3 dBi Gain Vehicle-Mount P/N: WMLPVDB800/1900
Power Source(s) Tested:	**11.1V Lithium-ion Battery, 6.0Ah (Model: A2121-2)**
	12V Vehicle Battery (for Vehicle Cradle)

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 IDENTIFIER	KBCIX260PLUSGC82							
Model(s)	IX260PLUSGC82							
Serial No.	ZZGEG4112ZZ9777			Production Unit				
Device Type	Rugged Laptop PC with Sony Ericsson GC82 Dual-Band GSM GPRS/EDGE PCMCIA Modem with External Swivel Dipole Antenna, Vehicle-Mount Antenna, & Vehicle Cradle							
FCC Rule Part(s)	§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(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				
Antenna Type(s) Tested	Type	Description		Max. RF Output Power (EIRP/ERP)				Length
	GSM	External Swivel Dipole		1.58	W	EIRP	PCS	4.7 “
				1.67	W	ERP	Cellular	
	GSM	3 dBi Gain Mobile Vehicle-Mount		0.311	W	EIRP	PCS	2.7 “
				0.955	W	ERP	Cellular	
Max. RF Conducted Output Power Tested	30.13 dBm		Peak	PCS GSM				
	32.27 dBm		Peak	Cellular GSM				
Modes / Data Rates Tested	PCS/Cellular GSM EDGE		2-out-of-8 Time Slots		25% Duty Cycle		61.85 kbps (max.)	
Source-Based Time-Averaged Conducted Power Tested	24.11 dBm Peak (Max. PCS GSM)			26.25 dBm Peak (Max. Cellular GSM)				
Emission Designator(s)	300KGXW							
Frequency Tolerance	0.0029 PPM (PCS GSM)			0.0055 PPM (Cellular GSM)				
Modulation Type(s)	GMSK / 8-PSK							
Power Source(s) Tested	Lithium-ion Battery		11.1V, 6.0Ah		Model: A2121-2			
	Vehicle Battery		12V		For Vehicle Cradle			

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 GC82 PCMCIA Modem 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 between the transmitter output port and the power sensor input. The Sony Ericsson GC82 test software was used to set the DUT to transmit in the GSM EDGE mode, at maximum rated power and at a worse case data rate and timeslot allocation, as defined by the manufacturer. All subsequent tests were performed using the same power measurement procedures.

RF CONDUCTED OUTPUT POWER MEASUREMENTS AT GC82 PCMCIA MODEM			
Frequency (MHz)	**Peak Power (dBm)**	**Frequency (MHz)**	**Peak Power (dBm)**
824.2	32.25	**1850.2**	29.73
836.6	32.21	**1880.0**	30.13
848.8	32.27	**1909.8**	29.84

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 Sony Ericsson GC82 test software installed in the Laptop PC was used to set the DUT to transmit in the GSM EDGE mode at maximum rated power and at a worse case data rate and timeslot allocation, as defined by the manufacturer. The DUT was placed on a turntable 3 meters from the receive antenna. For the swivel dipole evaluation, the DUT was placed in the center of the turntable, on a Styrofoam support, 1 meter above the ground plane. For the vehicle-mount antenna evaluation, the antenna was fixed on a 50 cm x 50 cm ground plane and installed on the Styrofoam support, and connected to the transmitter via a 17-foot LMR-195 cable representing a typical vehicle mount installation. The Laptop PC was installed in the cradle on the turntable below the 50 cm x 50 cm ground plane. The maximum field intensity was determined by rotating the DUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. Once the maximum emission was found, the spectrum analyzer was set to peak hold and the uncorrected emission value recorded for each of the low, mid and high channels tested. The DUT was then substituted with a horn antenna. A signal, simulating the DUT emission was generated, amplified, and fed through a directional coupler to the substitution antenna. The height and direction of the receive antenna as well as the direction of the substitution horn was adjusted for a maximum received signal. The power applied to the horn was then adjusted to give the same field strength reading as previously recorded for the DUT and the power at the forward coupler port recorded. The substitution antenna was then replaced with a calibrated power sensor, the forward coupler port power level confirmed and the power applied to the horn antenna recorded. The EIRP level was determined by correcting the applied feed point power with the addition of 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 Sony Ericsson GC82 test software installed in the Laptop PC was used to set the DUT to transmit in the GSM EDGE mode, at maximum rated power and at a worse case data rate and timeslot allocation, as defined by the manufacturer. The DUT was placed on a turntable, 3 meters from the receive antenna. For the swivel dipole testing, the DUT was placed in the center of the turntable, on a Styrofoam support, 1 meter above the ground plane. For the vehicle-mount antenna evaluation, the antenna was fixed on a 50 cm x 50 cm ground plane and installed on the Styrofoam support and connected to the transmitter via a 17-foot LMR-195 cable representing a typical vehicle mount installation. The Laptop PC was installed in the cradle on the turntable below the 50 cm x 50 cm ground plane. The maximum field intensity was determined by rotating the DUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. Once the maximum emission was found, the spectrum analyzer was set to peak hold and the uncorrected emission value recorded for each of the low, mid and high channels tested. The DUT was then substituted with a dipole antenna. A signal, simulating the DUT emission was generated, amplified, and fed through a directional coupler to the substitution antenna. The height and direction of the receive antenna as well as the direction of the substitution dipole was adjusted for a maximum received signal. The power applied to the dipole was then adjusted to give the same field strength reading as previously recorded for the DUT and the power at the forward coupler port recorded. The substitution antenna was then replaced with a calibrated power sensor, the forward coupler port power level confirmed and the power applied to the dipole antenna recorded. The ERP level was determined by correcting the applied feed point power with the addition of the dipole gain. The test data is shown on page 7.

MEASUREMENT PROCEDURES (Cont.)

6.1 FIELD STRENGTH OF SPURIOUS RADIATION - §24.238; 22.917

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 Sony Ericsson GC82 test software installed in the Laptop PC was used to set the DUT to transmit in the GSM EDGE mode, at maximum rated power and at a worse case data rate and timeslot allocation, as defined by the manufacturer. For the swivel dipole testing, the DUT was placed in the center of the turntable, on a Styrofoam support, 1 meter above the ground plane. For the vehicle-mount antenna evaluation, the antenna was fixed on a 50 cm x 50 cm ground plane and installed on the Styrofoam support and connected to the transmitter via a 17-foot LMR-195 cable representing a typical vehicle mount installation. The Laptop PC was installed in the cradle on the turntable below the 50 cm x 50 cm ground plane. A frequency band from just above the highest transmitted frequency to just above the 10th harmonic of the highest transmitted frequency was divided into smaller bands corresponding to measurement equipment setups and capabilities. The measurement equipment including carrier blocking filters, was optimized for maximum sensitivity for each band while ensuring no saturation occurred in any gain stages that may be present. It was also necessary to measure the bands above 10 GHz at a distance of 1 meter versus the 3-meter measurement distance used for the lower bands. The applicable bands were chosen from: 800 MHz to 1 GHz, 1 GHz to 5 GHz, 5 GHz to 10 GHz, 10 GHz to 18 GHz and 18 GHz to 20 GHz. The maximum field intensity in each of these bands were determined by rotating the DUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters while maintaining the spectrum analyzer trace in max hold. The stored trace was then evaluated to determine any significant emissions that should be evaluated by substitution. The frequency and uncorrected field strength level for each significant emission was recorded. To describe the noise floor, the maximum level associated with a number of frequencies within the band were also recorded. The DUT was then substituted with a transmit antenna. A signal simulating the DUT emission was generated for each of the signals recorded; it was amplified and fed through a directional coupler to the substitution antenna. The height and direction of the receive antenna as well as the direction of the substitution horn was adjusted for a maximum received signal. The power applied to the transmit antenna was then adjusted to give the same field strength reading as previously recorded for the DUT and the power at the forward coupler port recorded. The substitution antenna was then replaced with a calibrated power sensor, the forward coupler port power level confirmed and the power applied to the horn antenna recorded. The radiated power level was determined by correcting the applied feed point power with the addition of the antenna gain. The test data is shown on page 8-13.

7.1 RADIATED MEASUREMENT TEST SETUP

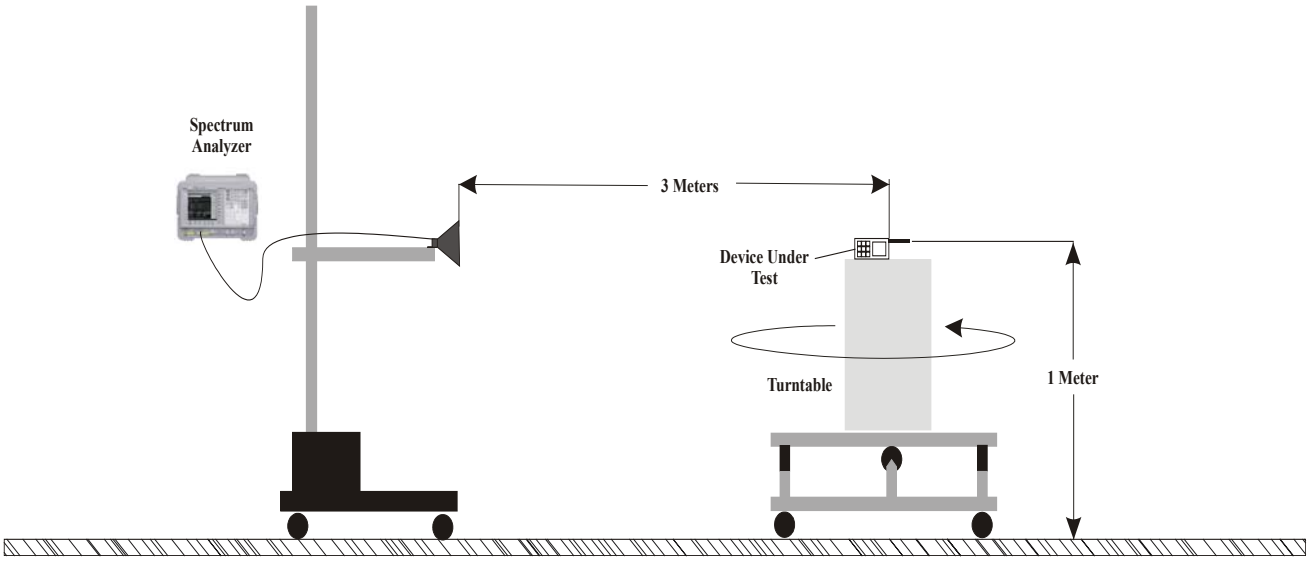

Figure 1. Radiated Measurement Test Setup Diagram
(3 Meters for Frequencies < 10 GHz - 1 Meter for Frequencies ≥ 10 GHz)

MEASUREMENT DATA

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

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+
Standard: FCC24.232(b)
Test Start Date: 16Jul04
Test End Date: 19Jul04

Swivel Dipole Antenna Carrier Power Levels

Polarity	Distance	Tx Antenna	Channel	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP Carrier Level	
	m			MHz	dBuV/m	dBuV	dBm	dBi	dBm	Watts
H	3	Horn SN6267	512	1850.2	130.399	100.700	25.270	6.550	31.820	1.52
H	3	Horn SN6267	661	1880.0	129.914	100.100	25.400	6.580	31.980	1.58
H	3	Horn SN6267	810	1909.8	124.448	94.510	23.000	6.610	29.610	0.914
V	3	Horn SN6267	512	1850.2	126.569	96.870	21.520	6.550	28.070	0.641
V	3	Horn SN6267	661	1880.0	126.664	96.850	21.290	6.580	27.870	0.612
V	3	Horn SN6267	810	1909.8	126.198	96.260	21.010	6.610	27.620	0.578

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+
Standard: FCC24.232(b)
Test Start Date: 16Jul04
Test End Date: 19Jul04

Mobile Antenna Carrier Power Levels

Polarity	Distance	Tx Antenna	Channel	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP Carrier Level	
	m			MHz	dBuV/m	dBuV	dBm	dBi	dBm	Watts
H	3	Horn SN6267	512	1850.2	109.97	80.27	11.13	6.55	17.68	0.059
H	3	Horn SN6267	661	1880.0	108.35	78.54	7.35	6.58	13.93	0.025
H	3	Horn SN6267	810	1909.8	103.37	73.43	0.59	6.61	7.20	0.005
V	3	Horn SN6267	512	1850.2	123.54	93.84	18.38	6.55	24.93	0.311
V	3	Horn SN6267	661	1880.0	122.28	92.47	17.25	6.58	23.83	0.242
V	3	Horn SN6267	810	1909.8	122.81	92.87	17.57	6.61	24.18	0.262

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain

MEASUREMENT DATA (Cont.)

9.1 EFFECTIVE RADIATED POWER OUTPUT - §22.913

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+
Standard: FCC22.913
Test Start Date: 16Jul04
Test End Date: 19Jul04

Swivel Dipole Antenna Carrier Power Levels

Polarity	Distance	Tx Antenna	Channel	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	ERP Carrier Level	
	m			MHz	dBuV/m	dBuV	dBm	dBd	dBm	Watts
H	3	B_3121C	128	824.2	125.75	100.60	30.00	1.29	31.29	1.34
H	3	B_3121C	190	836.6	126.88	101.40	30.03	1.44	31.47	1.40
H	3	B_3121C	251	848.8	127.49	101.90	30.65	1.59	32.24	1.67
V	3	B_3121C	128	824.2	123.06	97.91	29.99	1.29	31.28	1.34
V	3	B_3121C	190	836.6	124.64	99.16	30.41	1.44	31.85	1.53
V	3	B_3121C	251	848.8	124.96	99.37	30.49	1.59	32.07	1.61

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

Dipole Antenna used for substitution
Antenna factors are stated in dBd
ERP = Power applied to Antenna + Antenna Gain

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+
Standard: FCC22.913
Test Start Date: 16Jul04
Test End Date: 19Jul04

Mobile Antenna Carrier Power Levels

Polarity	Distance	Tx Antenna	Channel	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	ERP Carrier Level	
	m			MHz	dBuV/m	dBuV	dBm	dBd	dBm	Watts
H	3	B_3121C	128	824.2	116.35	91.20	20.50	1.29	21.79	0.151
H	3	B_3121C	190	836.6	117.73	92.25	21.03	1.44	22.47	0.177
H	3	B_3121C	251	848.8	116.66	91.07	20.18	1.59	21.77	0.150
V	3	B_3121C	128	824.2	120.76	95.61	27.65	1.29	28.94	0.783
V	3	B_3121C	190	836.6	122.55	97.07	28.36	1.44	29.80	0.955
V	3	B_3121C	251	848.8	122.62	97.03	28.11	1.59	29.70	0.932

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

Dipole Antenna used for substitution
Antenna factors are stated in dBd
ERP = Power applied to Antenna + Antenna Gain

MEASUREMENT DATA (Cont.)

10.1 FIELD STRENGTH OF SPURIOUS RADIATION - §24.238

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC24.238
Test Start Date 16Jul04
Test End Date: 19Jul04

Swivel Dipole Antenna Channel 512 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	EIRP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
H	3	Horn SN6267	3700.4	67.06	66.79	-45.61	8.06	-37.55	-39.69	-13.00	24.55	PASS
H	3	Horn SN6267	5550.6	70.81	66.81	-27.45	8.66	-18.79	-20.93	-13.00	5.79	PASS
H	3	Horn SN6267	9251.0	77.74	68.72	-39.17	9.05	-30.12	-32.26	-13.00	17.12	PASS
H	1	Horn SN6267	16651.8	57.98	44.70	-58.17	12.61	-45.56	-47.70	-13.00	32.56	PASS
H	1	3160-09	18502.0	60.55	45.70	-56.86	15.30	-41.56	-43.70	-13.00	28.56	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC24.238
Test Start Date 16Jul04
Test End Date: 19Jul04

Mobile Antenna Channel 512 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	EIRP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
V	3	Horn SN6267	3700.4	68.52	68.25	-36.41	8.06	-28.35	-30.49	-13.00	15.35	PASS
V	3	Horn SN6267	5550.6	73.60	69.60	-27.75	8.66	-19.09	-21.23	-13.00	6.09	PASS
V	1	Horn SN6267	14801.6	58.21	44.80	-48.02	11.06	-36.95	-39.09	-13.00	23.95	PASS
V	1	Horn SN6267	16651.8	57.75	44.47	-58.75	12.61	-46.14	-48.28	-13.00	33.14	PASS
V	1	3160-09	18502.0	60.22	45.37	-56.64	15.30	-41.34	-43.48	-13.00	28.34	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

MEASUREMENT DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §24.238 (Cont.)

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC24.238
Test Start Date 16Jul04
Test End Date: 19Jul04

Swivel Dipole Antenna Channel 661 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	EIRP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
H	3	Horn SN6267	3760.0	67.08	66.67	-43.65	8.05	-35.60	-37.74	-13.00	22.60	PASS
H	3	Horn SN6267	5640.0	70.80	66.76	-26.83	8.77	-18.06	-20.20	-13.00	5.06	PASS
H	3	Horn SN6267	9400.0	78.03	68.96	-37.69	9.20	-28.49	-30.63	-13.00	15.49	PASS
H	1	Horn SN6267	16920.0	60.93	46.38	-53.45	11.91	-41.54	-43.68	-13.00	28.54	PASS
H	1	3160-09	18800.0	59.81	44.24	-58.15	15.42	-42.73	-44.87	-13.00	29.73	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC24.238
Test Start Date 16Jul04
Test End Date: 19Jul04

Mobile Antenna Channel 661 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	EIRP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
V	3	Horn SN6267	3760.0	54.57	54.16	-52.25	8.05	-44.20	-46.34	-13.00	31.20	PASS
V	3	Horn SN6267	5640.0	55.44	51.40	-47.65	8.77	-38.88	-41.02	-13.00	25.88	PASS
V	1	Horn SN6267	15040.0	64.83	52.40	-53.75	11.29	-42.46	-44.60	-13.00	29.46	PASS
V	1	Horn SN6267	16920.0	66.71	52.16	-42.30	11.91	-30.39	-32.53	-13.00	17.39	PASS
V	1	3160-09	18800.0	66.27	50.70	-53.65	15.42	-38.23	-40.37	-13.00	25.23	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

MEASUREMENT DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §24.238 (Cont.)

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC24.238
Test Start Date 16Jul04
Test End Date: 19Jul04

Swivel Dipole Antenna Channel 810 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	EIRP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
H	3	Horn SN6267	3819.6	66.89	66.30	-44.66	8.04	-36.62	-38.76	-13.00	23.62	PASS
H	3	Horn SN6267	5729.4	70.90	66.76	-28.13	8.88	-19.25	-21.39	-13.00	6.25	PASS
H	3	Horn SN6267	9549.0	78.84	69.68	-29.47	9.36	-20.11	-22.25	-13.00	7.11	PASS
H	1	Horn SN6267	17188.2	61.76	45.51	-49.30	11.10	-38.20	-40.34	-13.00	25.20	PASS
H	1	3160-09	19098.0	60.28	44.97	-55.09	15.56	-39.53	-41.67	-13.00	26.53	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC24.238
Test Start Date 16Jul04
Test End Date: 19Jul04

Mobile Antenna Channel 810 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	EIRP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
V	3	Horn SN6267	3819.6	62.94	62.35	-44.24	8.04	-36.20	-38.34	-13.00	23.20	PASS
V	3	Horn SN6267	5729.4	56.57	52.43	-48.04	8.88	-39.16	-41.30	-13.00	26.16	PASS
V	1	Horn SN6267	13368.6	66.36	52.96	-55.76	10.82	-44.94	-47.08	-13.00	31.94	PASS
V	1	Horn SN6267	15278.4	62.85	51.20	-60.68	12.44	-48.24	-50.38	-13.00	35.24	PASS
V	1	Horn SN6267	17188.2	68.76	52.51	-47.12	11.10	-36.02	-38.16	-13.00	23.02	PASS
V	1	3160-09	19098.0	64.72	49.41	-48.38	15.56	-32.82	-34.96	-13.00	19.82	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

MEASUREMENT DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §22.917

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC22.917
Test Start Date 16Jul04
Test End Date: 19Jul04

Swivel Dipole Antenna Channel 128 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	ERP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
H	3	Horn SN6267	1648.4	27.09	37.79	-40.34	6.35	-33.99	-36.13	-13.00	23.13	PASS
H	3	Horn SN6267	2472.6	28.30	33.00	-45.56	7.74	-37.82	-39.96	-13.00	26.96	PASS
H	3	Horn SN6267	3296.8	29.82	30.89	-47.59	7.98	-39.61	-41.75	-13.00	28.75	PASS
H	1	Horn SN6267	5769.4	35.53	31.25	-43.31	8.92	-34.39	-36.53	-13.00	23.53	PASS
H	1	Horn SN6267	8242.0	42.44	34.37	-38.56	9.30	-29.26	-31.40	-13.00	18.40	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC22.917
Test Start Date: 16Jul04
Test End Date: 19Jul04

Mobile Antenna Channel 128 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	ERP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
V	3	Horn SN6267	1648.4	65.62	76.32	-41.12	6.35	-34.77	-36.91	-13.00	23.91	PASS
V	3	Horn SN6267	2472.6	66.09	70.79	-43.00	7.74	-35.26	-37.40	-13.00	24.40	PASS
V	3	Horn SN6267	4945.2	70.64	67.72	-40.82	8.61	-32.21	-34.35	-13.00	21.35	PASS
V	1	Horn SN6267	8242.0	79.89	71.82	-32.68	9.30	-23.38	-25.52	-13.00	12.52	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

MEASUREMENT DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §22.917 (Cont.)

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC22.917
Test Start Date 16Jul04
Test End Date: 19Jul04

Swivel Dipole Antenna Channel 190 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	ERP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
H	3	Horn SN6267	1673.2	27.47	37.89	-40.09	6.37	-33.72	-35.86	-13.00	22.86	PASS
H	3	Horn SN6267	2509.8	29.02	33.57	-45.90	7.80	-38.10	-40.24	-13.00	27.24	PASS
H	3	Horn SN6267	3346.4	30.57	31.43	-44.89	8.01	-36.88	-39.02	-13.00	26.02	PASS
H	3	Horn SN6267	4183.0	32.13	30.61	-44.55	8.26	-36.29	-38.43	-13.00	25.43	PASS
H	1	Horn SN6267	6692.8	37.09	31.91	-38.25	9.48	-28.77	-30.91	-13.00	17.91	PASS
H	1	Horn SN6267	8366.0	42.38	34.12	-34.59	9.30	-25.29	-27.43	-13.00	14.43	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC22.917
Test Start Date 16Jul04
Test End Date: 19Jul04

Mobile Antenna Channel 190 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	ERP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
V	3	Horn SN6267	1673.2	67.92	78.34	-38.68	6.37	-32.31	-34.45	-13.00	21.45	PASS
V	3	Horn SN6267	2509.8	66.45	71.00	-42.95	7.80	-35.15	-37.29	-13.00	24.29	PASS
V	1	Horn SN6267	5019.6	71.81	68.70	-39.23	8.60	-30.63	-32.77	-13.00	19.77	PASS
V	1	Horn SN6267	8366.0	80.93	72.67	-30.85	9.30	-21.55	-23.69	-13.00	10.69	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

MEASUREMENT DATA (Cont.)

FIELD STRENGTH OF SPURIOUS RADIATION - §22.917 (Cont.)

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC22.917
Test Start Date 16Jul04
Test End Date: 19Jul04

Swivel Dipole Antenna Channel 251 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	ERP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
H	3	Horn SN6267	1697.6	27.62	37.77	-39.79	6.40	-33.39	-35.53	-13.00	22.53	PASS
H	3	Horn SN6267	2546.4	28.83	33.15	-45.44	7.80	-37.64	-39.78	-13.00	26.78	PASS
H	3	Horn SN6267	3395.2	30.06	30.70	-45.90	8.04	-37.86	-40.00	-13.00	27.00	PASS
H	1	Horn SN6267	5941.6	34.48	30.05	-43.16	9.13	-34.03	-36.17	-13.00	23.17	PASS
H	1	Horn SN6267	8488.0	42.12	33.73	-35.78	9.30	-26.48	-28.62	-13.00	15.62	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

Project Number: 052604-512KBC
Company: Itronix
Product: IX260+

Standard: FCC22.917
Test Start Date 16Jul04
Test End Date: 19Jul04

Mobile Antenna Channel 251 Spurious Emission Power Levels

Polarity	Distance	Tx Antenna	Frequency	Corrected Field Strength	Substituted SA Signal Level	Power Applied to Antenna	Antenna Gain	EIRP	ERP	ERP Limit	Margin	Pass/Fail
	m		MHz	dBuV/m	dBuV	dBm	dBi	dBm	dBm	dBm*	dB	
V	3	Horn SN6267	1697.6	59.16	69.31	-45.04	6.40	-38.64	-40.78	-13.00	27.78	PASS
V	3	Horn SN6267	2546.4	66.80	71.12	-39.08	7.80	-31.28	-33.42	-13.00	20.42	PASS
V	3	Horn SN6267	3395.2	68.20	68.84	-37.62	8.04	-29.58	-31.72	-13.00	18.72	PASS
V	1	Horn SN6267	7639.2	76.05	68.67	-31.05	9.01	-22.04	-24.18	-13.00	11.18	PASS

Note:
Limit = 43 + 10*log(Fundemental Power Level, in watts) below the Fundemental peak power => -13 dBm
All bands were investigated and the significant emissions or noise floor reported.

For frequencies ≤ 1000 MHz:
Dipole Antenna used for substitution
Antenna factors are stated in dBd
EIRP = Power applied to Antenna + Antenna Gain+2.14
ERP = Power applied to Antenna + Antenna Gain

For frequencies > 1000 MHz:
Horn Antenna used for substitution
Antenna factors are stated in dBi
EIRP = Power applied to Antenna + Antenna Gain
ERP = Power applied to Antenna + Antenna Gain-2.14

11.1 TEST EQUIPMENT

TEST EQUIPMENT LIST

Equipment Type	Model	Serial No.	Calibration Due Date
HP Signal Generator	8648D (9kHz-4.0GHz)	3847A00611	April 2005
Rohde & Schwarz Signal Generator	SMR 20 (10MHz-40GHz)	100104	April 2005
Gigatronics Power Meter	8651A	8650137	April 2005
Gigatronics Power Meter	8652A	1835267	April 2005
Gigatronics Power Sensor	80701A (0.05-18GHz)	1833535	April 2005
Gigatronics Power Sensor	80701A (0.05-18GHz)	1833542	April 2005
Gigatronics Power Sensor	80701A (0.05-18GHz)	1834350	April 2005
Amplifier Research Power Amp.	5S1G4 (5W, 800MHz-4.2GHz)	26235	N/A
Amplifier Research Power Amp.	10W1000C (0.5 – 1 GHz)	27887	N/A
Microwave System Amplifier	HP 83017A (0.5-26.5GHz)	3123A00587	N/A
Network Analyzer	HP 8753E (30kHz-3GHz)	US38433013	April 2005
Frequency Counter	HP 53181A (3GHz)	3736A05175	April 2005
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) TX Substitution Antenna (Horn SN6267)	6267	Oct 2004
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	6276	Oct 2004
Standard Gain Horn Antenna	ETS 3160-09 TX Substitution Antenna (3160-09)	9810-1123	N/A
Standard Gain Horn Antenna	ETS 3160-09	1263	N/A
Bilog Antenna	Schaffner CBL6111A	1607	Jan 2005
Roberts Dipole Antenna	3121C-DB4 TX Substitution Antenna (B_3121C)	0003-1494	Dec 2004
Roberts Dipole Antenna	3121C-DB4	0003-1498	Dec 2004
Spectrum Analyzer	HP 8594E	3543A02721	April 2005
Spectrum Analyzer	HP E4408B	US39240170	Dec 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
Directional Coupler	Amplifier Research DC7154 (0.8-4.2 GHz)	26197	N/A
Directional Coupler	Pasternack PE2214-20	00078	N/A
High Pass Filter	Microwave Circuits HIG318G1	0001DC0020	N/A
High Pass Filter	Microwave Circuits H02G18G1	0001DC0020	N/A
30 dB Attenuator	Pasternack PE7019-30	00065	N/A

12.1 SUMMARY

The data in this measurement report demonstrates that the ITRONIX CORPORATION Model: IX260PLUSGC82 Rugged Laptop PC FCC ID: KBCIX260PLUSGC82 with Sony Ericsson GC82 Dual-Band PCS/Cellular GSM GPRS/EDGE PCMCIA Radio Modem with external swivel dipole antenna and mobile vehicle-mount antenna complies with the requirements of FCC §24(E), §22(H), and §2.