

Test Report Serial No.:	022305KBC-T618-M24C Issue		
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

# EMC TEST REPORT FOR THE ITRONIX RUGGED LAPTOP PC MODEL: IX260PROA580BT WITH THE SIERRA WIRELESS AIRCARD 580 DUAL-BAND CDMA PCMCIA MODEM

TRSN 022305KBC-T618-M24C Issue 1.0

# Celltech Compliance Testing & Engineering Lab (Celltech Labs Inc.) 1955 Moss Court Kelowna, BC Canada V1Y 9L3

May 09, 2005



Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
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Lab Registration(s):	FCC #714830	IC Lab	File #3874

	DECLARATION OF COMPLIANCE							
<u>Test Lab</u>	Testing and Enginee 1955 Moss Court			nd Engineering Services			ITRONIX CORPORATION 801 South Stevens Street Spokane, WA 99204 United States	
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Fax:	250-448	-7048						
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web site:	www.cel	Itechlabs.cor	n					
aboratory Registr	aboratory Registration No.(s):			714830	IC:	IC 3874		
Rule Part(s):			Dual Ban	d CDMA	§2; §2	2H; §24E		
<u>Ruie Fur(5).</u>		IC:	Dual Band CDMA		RSS-	RSS-133 Issue 2 Revision 1, RSS-132 Issue 1 (Provisional)		
			Dual Band CDMA		- PCS Licensed Transmitter (PCB)			
Device Classification:		FCC:	Dual Band CDMA		<ul> <li>- 800 MHz Cellular Telephones Employing New Technologies</li> <li>- 2 GHz Personal Communication Services</li> </ul>			
Device Identification	Device Identification: FCC ID			KBCIX260PROA580BT IC ID: 1943A-IX260Pf				
DUT Description:								
Model:		IX260PR	DA580BT					
Device Descriptio	n:	Rugged L	aptop PC v	vith internal tra	nsmitter			
Internal Transmitt	ter:	Sierra Wir	eless AirCa	ard 580 Dual-B	and CD	MA PCMCIA Mode	em	
Tx Frequency Rar	ndo(e).	Dual Band CDMA		Cellular	824.7 - 848.31 MHz			
TX Trequency Rai	ige(3).	Duai Dan		PCS	1851.25 - 1908.75 MHz			
Max RE Output P	ower:	Dual Ban		Cellular	+23.61 dBm (Conducted)		()	
	Max. RF Output Power:			PCS	+25.07 dBm (Conducted)			
Modulation Type(	s):	Dual Ban	d CDMA	QPSK				
		90 Watt A	C Power A	dapter (Mode	I: ADP-9	90AB)		
Power Source(s):		11.1 V Lit	hium-ion B	attery, 6.0 Ah	(Model:	A2121-2)		
		12 V Vehicle Battery (for Vehicle Cradle)						

This wireless mobile 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 Parts 2, 22H, 24E, Industry Canada RSS-132 Issue 1 (Provisional), RSS 133 Issue 2 Revision 1; and ANSI TIA/EIA-603-C-2004.

I attest to the accuracy of the data. All measurements reported herein were performed by me or were 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.

This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Labs Inc. The results and statements contained in this report pertain only to the device(s) evaluated.

Russell W. Pupe

Russell Pipe Senior Compliance Technologist Celltech Labs Inc.

Duane M. Friesen EMC Manager Celltech Labs Inc.



Applicant:	Itronix Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC with Sierra Wireles	s AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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Applicant:	Itronia	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC wi	th Sierra Wireles	s AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

TEST SUMMARY								
	Reference	ed Standard: FCC CFR Titl	e 47 Part 2, 22H					
<u>Appendix</u>	Test Description	Procedure Reference	Limit Reference	Test Start Date	Test End Date	<u>Result</u>		
В	Conducted RF Output Power	ANSI/TIA/EIA-603-C, §2.1046 (a)	none	30Mar05	30Mar05	na		
С	Cellular CDMA Occupied Bandwidth and Block-Edge	§2.1049 (h), §22.917 (b)	§22.905, §22.917 (a)	30Mar05	30Mar05	Pass		
D	Cellular CDMA Spurious Emissions at Antenna Port	ANSI/TIA/EIA-603-C, §2.1051 (h)	§22.917 (a)	30Mar05	30Mar05	Pass		
E	Cellular CDMA Frequency Stability / Temperature Variation	ANSI/TIA/EIA-603-C, §2.1055 (a) (1)	§22.355	na	na	Pass*		
	Reference	ed Standard: FCC CFR Titl	e 47 Part 2, 24E					
В	Conducted RF Output Power	ANSI/TIA/EIA-603-C, §2.1046 (a)	none	30Mar05	30Mar05	na		
F	PCS CDMA Occupied Bandwidth and Block-Edge	§2.1049 (h), §24.232 (b)	§24.229, §24.232(a)	30Mar05	30Mar05	Pass		
G	PCS CDMA Spurious Emissions at Antenna Port	ANSI/TIA/EIA-603-C, §2.1051 (h)	§24.232(a)	30Mar05	30Mar05	Pass		
Н	PCS CDMA Frequency Stability / Temperature Variation	ANSI/TIA/EIA-603-C, §2.1055 (a) (1)	§24.235	na	na	Pass*		
	R	eferenced Standard: IC R	SS-132					
В	Conducted RF Output Power	ANSI/TIA/EIA-603-C, §5.1.3	SRSP-503 §5.1.3	30Mar05	30Mar05	Pass		
С	Cellular CDMA Occupied Bandwidth and Block-Edge	ANSI/TIA/EIA-603-C, §6.5	§6.5	30Mar05	30Mar05	Pass		
D	Cellular CDMA Spurious Emissions at Antenna Port	ANSI/TIA/EIA-603-C, §6.5	§6.5	30Mar05	30Mar05	Pass		
Е	Cellular CDMA Frequency Stability / Temperature Variation	ANSI/TIA/EIA-603-C, §6.3	§6.3	na	na	Pass*		
I	Receiver Spurious Emissions	ANSI/TIA/EIA-603-C, §6.6	§6.6 (b)	30Mar05	30Mar05	Pass		
	R	eferenced Standard: IC R	SS-133					
В	Conducted RF Output Power	ANSI/TIA/EIA-603-C, §6.2	§6.2	30Mar05	30Mar05	Pass		
F	PCS CDMA Occupied Bandwidth and Block-Edge	ANSI/TIA/EIA-603-C, §6.3	§6.3	30Mar05	30Mar05	Pass		
G	PCS CDMA Spurious Emissions at Antenna Port	ANSI/TIA/EIA-603-C, §6.3	§6.3	30Mar05	30Mar05	Pass		
Н	PCS CDMA Frequency Stability / Temperature Variation	ANSI/TIA/EIA-603-C, §7	§7	na	na	Pass*		
J	Receiver Spurious Emissions	ANSI/TIA/EIA-603-C, §9	§9	30Mar05	30Mar05	Pass		

\*Pass/Fail referenced to PCTEST measurement report serial no. 22/24.221125616.PNF.

Applicant:	Itroni	x Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>ITRONIX</b>	
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Lab Registration(s):	FCC #714830	IC Lab	File #3874

# **REVISION LOG**

Issue	Description	Implemented By	Implementation Date
1.0	Initial Release	Jon Hughes	09May05

# SIGNATORIES

Prepared By:	D	May 09, 2005
Name/Title	Duane M. Friesen, C.E.T. / EMC Manager	Date
Approved By:	- HE	May 09, 2005
Name/Title	Jon Hughes / General Manager	Date

Applicant:	Itroniz	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580			Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>	
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## 1.0 <u>SCOPE</u>

This report outlines the measurements made and results collected during electromagnetic emissions testing of the Sierra Wireless AirCard 580 Dual-Band CDMA PCMCIA Modem. The Dual-Band CDMA Modem has an onboard antenna and an RF output port. When utilized, the RF output port disconnects the transmitter from the onboard antenna. For the purpose of this report, only the RF output port was investigated based on the Itronix IX260+ Rugged Laptop PC does not utilize the onboard antenna, but uses an external dipole antenna on the LCD display connected to the modem RF output port via RF cable. The measurement results were applied against the applicable EMC requirements and limits outlined in the technical rules and regulations set forth in the Federal Communication Commission Code of Federal Regulations Title 47 Part 2, 22 Subpart H, and 24 Subpart E; and Industry Canada Radio Standards Specifications RSS-132 Issue 1 (Provisional) and RSS-133 Issue 2 Revision 1.

## 2.0 <u>REFERENCES</u>

#### 2.1 Normative References

ANSI/ISO 17025:1999	General Requirements for competence of testing and calibration laboratories
IEEE/ANSI C63.4:2003	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
IEEE/ANSI Std C95.1:1999	American National Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields
ANSI/TIA/EIA-603-C:2004	Land Mobile FM or PM Communication Equipment Measurement and Performance Standards
CFR Title 47 Part 2:2004	Code of Federal RegulationsTitle 47:TelecommunicationPart 2:Frequency Allocations and Radio Treaty Matters; General Rules and RegulationsPart 22:Public Mobile ServicesPart 24:Personal Communication Services
IC Spectrum Management & Telecommunications Policy	Radio Standards Specification RSS-102 Issue 1 (Provisional) - Evaluation Procedure for Mobile and Portable Radio Transmitters with respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields RSS-132 Issue 1 (Provisional) - 800 MHz Cellular Telephones Employing New Technologies RSS-133 Issue 2, Revision 1 - Personal Communication Services
PCTEST Measurement Report	Serial Number: 22/24.221125616.PNF

Applicant:	Itronix	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem					Model:	IX260PROA580BT	<b>ITRONIX</b>
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## 3.0 TERMS AND DEFINITIONS

## 4.0 FACILITIES AND ACCREDITATIONS

The facilities used in collecting the test results outlined in this report are located at 1955 Moss Court, Kelowna, British Columbia, Canada, V1Y 9L3. The radiated and conducted emissions sites conform with the requirements set forth in ANSI C63.4 and are filed and listed with the FCC under Registration Number 714830 and Industry Canada under File Number IC 3874.

Applicant:	Itroni	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580BT						<b>ITRONIX</b>	
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# 5.0 GENERAL INFORMATION

## **5.1 Applicant Information**

Company Name:	Itronix Corporation
Address:	801 South Stevens Street
	Spokane, WA 99204
	United States

## 5.2 DUT Description

The DUT consisted of the Sierra Wireless AirCard 580 Dual-Band CDMA PCMCIA Modem installed in the Itronix IX260+ Rugged Laptop PC. The Laptop PC supplied the modem with power and control signals. Photographs of the DUT placement and construction are shown in Appendix A.

Device:	Dual-Ban	Dual-Band PCS/Cellular CDMA PCMCIA Modem		
Model:	Sierra Wir	Sierra Wireless AirCard 580		
Serial Number:	60209FB	60209FB5		
Rule Part(s):	FCC:	§1.1310 Table 1(b); §2.1091; §22.913; §22.917; §24.232(b); §24.238		
	IC:	RSS-132 Issue 1 (Provisional); RSS-133 Issue 2		
	FCC:	PCS Licensed Transmitter (PCB)		
Classification(s):	IC:	800 MHz Cellular Telephones employing New Technologies (RSS-132)		
	10.	2 GHz Personal Communication Services (RSS-133)		
Power Source:	Powered from the internal PC power bus			

Device:	IX260+ R	IX260+ Rugged Laptop PC				
Model:	IX260PR0	X260PROA580BT				
Serial Number(s):	ZZGEG41	ZZGEG4196ZZ6480				
Identifier(s):	FCC ID:	FCC ID: KBCIX260PROA580BT IC ID: 1943A-IX260Pf				
Power Source:	Delta Elec	Delta Electronics Model ADP-90AB Rev B 90 Watt AC-DC power supply				

## 5.3 Cable Descriptions

ROU	TING	Length	Model	Termin	ations	Shield Type	Shield Ter	rmination	Suppression
From	То	m		End 1	End 2		End 1	End 2	
na									

Applicant:	Itroniz	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC wi	th Sierra Wireless	s AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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## 5.4 Support Equipment

## The following equipment was used in support of the DUT.

Co-located Support Equipment List				
Manufacturer Model		Description		
na				

## **5.5 Clock Frequencies**

## 5.5.1 DUT Clock Frequencies

Device:	Dual-Band PCS/Cellular CDMA PCMCIA Modem
Clocks:	n/a

## 5.5.2 Co-Located Clock Frequencies

Device:	Rugged Laptop PC
Clocks:	1.6 GHz processor

## 5.6 Mode(s) of Operation Tested

#### 5.6.1 Dual-Band CDMA Modem

Customer supplied software was used to set the CDMA Modem to the appropriate channel and power level for the specific measurement. Measurements were made with the CDMA modem set to each of low, mid, and high channel in each band, or on a mid channel, as applicable for the rule part being evaluated. The following settings where used for each channel.

## 5.6.1.1 Cellular CDMA

TX Frequency Range:	824.7 - 848.31 MHz Ch. 1013 (824.700 MHz) (low), Ch. 384 (836.52 MHz) (mid)& Ch. 777 (848.310 MHz) (high) measured unless otherwise noted
Software Power Gain Settings:	Set by manufacturer software or CDMA test set communications for "all ups"
Modulation Type(s):	QPSK

#### 5.6.1.2 PCS CDMA

TX Frequency Range:	1851.25 - 1908.75 MHz Ch. 25 (1851.25 MHz) (low), Ch 600 (1880 MHz) (mid) & Ch. 1175 (1908.75 MHz) (high) measured unless otherwise noted
Software Power Gain Settings:	Set by manufacturer software or CDMA test set communications for "all ups"
Modulation Type(s):	QPSK

Applicant:	Itronix Corporation	x Corporation FCC ID: KBCIX260PROA580BT IC ID: 1943A-IX260Pf		1943A-IX260Pf		
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## 5.6.2 DUT Exercising Software Description

The DUT was configured and exercised during conducted testing using customer supplied Directed Test Version 2.8 test software, that allowed an operator to place the Dual-Band CDMA modem in an "all ups" mode. The modem manufacturer described this mode as one in which the modem transmitted at its maximum power level.

## **5.7 Configuration Description**

The DUT was configured, as described by the client as being representative of what would be delivered to a final customer. More specific details may be included in each appendix.

## 5.7.1 Configuration Justification

The DUT was tested in a configuration described by the client as being worst-case but typical of normal use.

## 6.0 PASS/FAIL CRITERIA

Unless otherwise noted in the Appendices, the pass/fail criteria is the limit set forth in the reference standards. A DUT is considered to have passed the requirements, if the data collected during the described measurement procedure is within the specified limits as defined. The pass/fail statements made in this report only apply to the unit tested.

Applicant:	Itroniz	x Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PRO			IX260PROA580BT	ITRONIX"			
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# **APPENDICES**

Applicant:	Itronix Corporation FCC ID: KBCIX260PROA580BT IC		IC ID: 1943A-IX260Pf				
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580				IX260PROA580BT	ITRONIX <sup>®</sup>		
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## Appendix A - Photographs

## A.1. DUT PHOTOGRAPHS

Photograph A.1-1 - Dual-Band CDMA PCMCIA Modem Card



Photograph A.1-2 - CDMA Modem installed in PC



Photograph A.1-3 - Sierra Wireless AirCard 580 CDMA Modem



Antenna RF Port (note: modem manufacturer's factory antenna is disabled when RF cable is connected to RF port)

Applicant:	Itronia	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
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## Appendix B - CDMA Conducted RF Output Power Measurement

B.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §2.1046
Procedure Reference	ANSI/TIA/EIA-603-B , FCC CFR 47 §2.1046 (a)

B.2. LIMITS	
	None - reference data

B.3. ENVIRONMENTAL CONDITIONS				
Temperature	25.2 +/- 2 °C			
Humidity	35 +/- 2 %			
Barometric Pressure	96.34 kPa			

B.4. EQUIPMENT LIST									
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE				
00008	Gigatronics	8652A	Power Meter	30Apr04	30Apr05				
00011	Gigatronics	80701A	Power Sensor	08Oct04	08Oct05				
00107	HP	8491C	Attenuator	n/a	n/a				

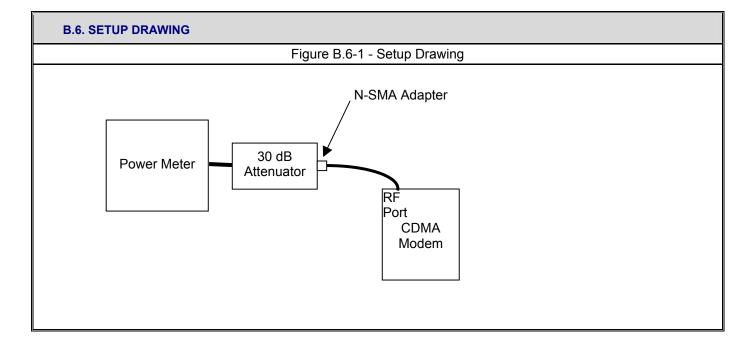
\*Cable and attenuator verified with power meter prior to use

Applicant:	Itronix Corporation		FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem			Model:	IX260PROA580BT	<b>ITRONIX</b>		
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B.5. MEASUREMENT EQUIPMENT SETUP					
Measurement Equipment Connections	The equipment was connected as shown in the setup drawing in B.6.				
Measurement Equipment Settings	Power Meter Settings: Mode - MAP Frequency compensation set for carrier frequency Offset set appropriately to compensate for any attenuator or cable losses				
Measurement Procedure	The RF conducted power levels for both PCS and cellular bands were measured at the DUT antenna connector port using a Gigatronics 8652A Universal Power Meter in mean average power mode. An offset was entered into the power meter to correct for the losses of the attenuator and cable installed between the output port and the power sensor input. The DUT test software was used to set it to transmit in the CDMA "always up" power control mode.				



Applicant:	Itronix Corporation		Itronix Corporation FCC ID: KBCIX260PROA580BT		IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem					Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C Issue 2			
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133	
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

#### **B.7. DUT OPERATING DESCRIPTION**

Power measurements were made of each channel in both the cellular and PCS bands, with the CDMA modem set appropriately as described in section 5.7.

## B.8. TEST RESULTS

Mode	Channel	Frequency	Conducted Power
Cellular CDMA	1013	824.70 MHz	+23.41 dBm
	384	836.52 MHz	+23.39 dBm
	777	848.31 MHz	+23.61 dBm
PCS CDMA	25	1851.25 MHz	+24.41 dBm
	600	1880.00 MHz	+25.07 dBm
	1175	1908.75 MHz	+24.62 dBm

#### **B.9. PASS/FAIL**

There is no modular pass/fail criterion for this measurement. Applicable limits in ERP/EIRP are in place once the modem is connected to an antenna. The application of these limits is covered in the reports issued for the specific installation.

#### B.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

W. Pupe

Russell Pipe Senior Compliance Technologist Celltech Labs Inc.

> <u>30Mar05</u> Date

Applicant:	t: Itronix Corporation		nt: Itronix Corporation FCC ID: KBCIX260PROA580BT IC ID:		IC ID:	1943A-IX260Pf		
Rugged Lapt	Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem			Model:	IX260PROA580BT	<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T618-M24C Issue 1			
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

## Appendix C - Cellular CDMA Occupied Bandwidth and Block-Edge Measurement

C.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §22.917 (a)
Procedure Reference	FCC CFR 47 §2.1049 (h), §22.917 (b)

C.2. LIMITS	
FCC CFR 47 §22.917	(a) Out of Band Emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB
Block A 824.	CC CFR 47 §22.905 Channel Assignment for: 040 MHz to 834.990 MHz 510 MHz to 848.970 MHz

C.3. ENVIRONMENTAL CONDITIONS				
Temperature	25.2 +/- 2 °C			
Humidity	35 +/- 2 %			
Barometric Pressure	96.34 kPa			

C.4. EQUIPMENT LIST									
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE				
00015	Agilent	E4408B	Spectrum Analyzer	24Jan05	24Jan06				
00008	Gigatronics	8652A	Power Meter	30Apr04	30Apr05				
00011	Gigatronics	80701A	Power Sensor	08Oct04	08Oct05				
00107	HP	8491C	Attenuator	n/a	n/a				

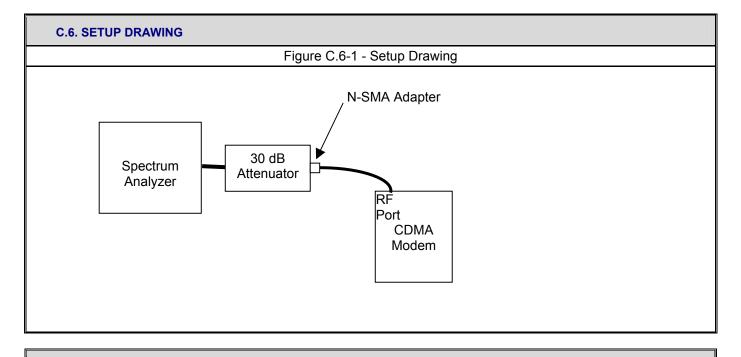
\*Cable and attenuator verified with power meter prior to use

Applicant:	Itroniz	x Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX2				IX260PROA580BT	<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T618-M24C Issu		
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RSS-132/133	
Lab Registration(s):	FCC #714830	IC Lab	File #3874

C.5. MEASUREMENT	
Measurement Equipment Connections	The equipment was connected as shown in the setup drawing in C.6.
Measurement Equipment Settings	Spectrum Analyzer Settings: Detector: Peak Resolution Bandwidth: 30 kHz or 10 kHz* Video Bandwidth: 30 kHz Offset: Set to compensate for losses in through the 30 dB attenuator and attachment RF cable. * Pursuant to §22.917 (b), the RBW used may be less than 1% of the EBW and the resulting emission level corrected with a factor equal to 10 * log (1%EBW/RBW)
Measurement Procedure	The conducted RF emission level was measured using a spectrum analyzer connected to the RF output port through a 30 dB attenuator and RF cable. A power meter was used to determine the loss through the cable and attenuator prior to their use with the spectrum analyzer. This loss was offset with factors applied internally in the analyzer. The DUT test software was used to set the modem to transmit in the CDMA "always up" power control mode, on the channels closest to the edge of the licensed band.



## C.7. DUT OPERATING DESCRIPTION

Occupied Bandwidth and Block-Edge measurements were made of the upper and lower channels within the cellular band, with the CDMA modem set appropriately as described in section 5.7.

Applicant:	Itronix	c Corporation	FCC ID:	KBCIX260PROA580BT	580BT IC ID: 1943A-IX260Pf		
Rugged Lapt	Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem         Model:         IX260PROA580BT					<b>ITRONIX</b>	
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Test Report Serial No.:	022305KBC-T67	Issue 1		
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133	
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

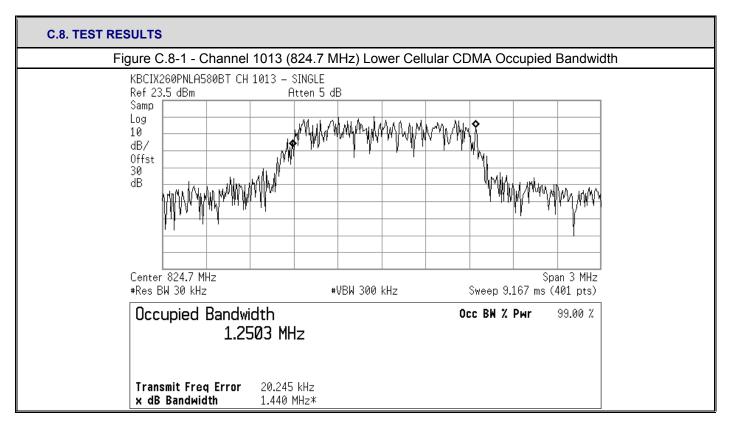
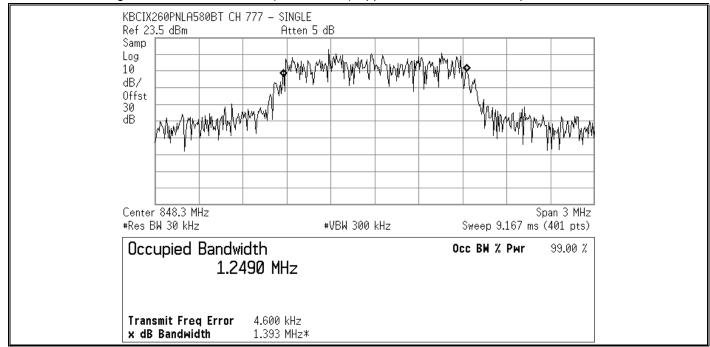


Figure C.8-2 - Channel 777 (848.31 MHz) Upper Cellular CDMA Occupied Bandwidth



Applicant:	Itroniz	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem					Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C Iss			
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

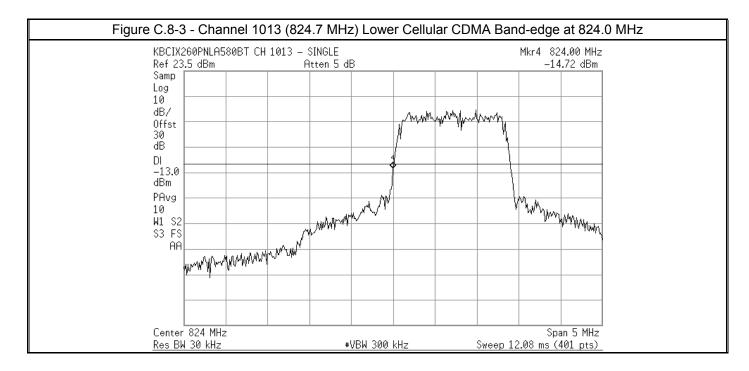
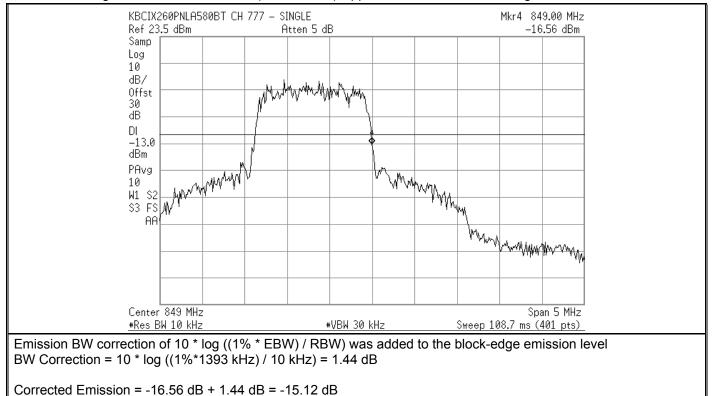


Figure C.8-4 - Channel 777 (848.31 MHz) Upper Cellular CDMA Band-edge at 849.0 MHz



Applicant:	Itronix	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>ITRONIX</b>	
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Test Report Serial No.:	022305KBC-T618-M24C Iss			
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133	
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

C.8.1. Result Summary								
Channel	Center Frequency	Center Frequency Emission Bandwidth		Band-edge Level	Band-edge Limit	Pass/Fail		
	(MHz)	(MHz)	(MHz)	(dBm)	(dBm)			
1013	824.700	1.440	1.2503	-14.72	-13	Pass		
777	848.310	1.393	1.2490	-15.12 (corrected)	-13	Pass		

#### C.9. PASS/FAIL

In reference to the results outlined in C.8, the DUT passes the requirements as stated in the reference standards.

FCC CFR 4 §22.917(a) Out of Band Emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB.

The results set forth in this section meet the requirement with a maximum out-of-band emission, within 1 MHz of the edge, with a level of -14.72 dB at the lower block-edge and -15.12 dB at the upper block-edge.

#### C.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

W. Pupe

Russell Pipe Senior Compliance Technologist Celltech Labs Inc.

30Mar05

Date

Applicant:	Itronix	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem         Model:         IX260PROA580BT						<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T61	Issue 1		
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

## Appendix D - Cellular Spurious Emissions at the Antenna Port Measurement

D.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §22.917 (a)
Procedure Reference	FCC CFR 47 §22.917 (b)

D.2. LIMITS	
FCC CFR 47 §2.917	(a) Out of Band Emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB

D.3. ENVIRONMENTAL CONDITIONS				
Temperature25.2 +/- 2 °C				
Humidity	35 +/- 2 %			
Barometric Pressure	96.34 kPa			

D.4. EQUIPMENT LIST								
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE			
00015	Agilent	E4408B	Spectrum Analyzer	24Jan05	24Jan06			
00008	Gigatronics	8652A	Power Meter	30Apr04	30Apr05			
00011	Gigatronics	80701A	Power Sensor	08Oct04	08Oct05			
00107	HP	8491C	Attenuator	n/a	n/a			

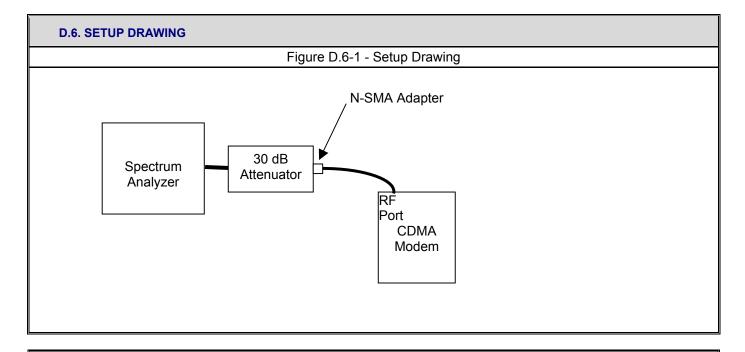
\*Cable and attenuator verified with power meter prior to use

Applicant:	Itronix	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC wi	th Sierra Wireless	s AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C Issue		
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874

D.5. MEASUREMENT	EQUIPMENT SETUP
Measurement Equipment Connections	The equipment was connected as shown in the setup drawing in D.6.
Measurement Equipment Settings	Spectrum Analyzer Settings: Detector: Peak Resolution Bandwidth: 1 MHz* Video Bandwidth: 1 MHz Offset: Set to compensate for losses in through the 30 dB attenuator and attachment RF cable. * Pursuant to §22.917 (b), a RBW of 100 kHz or greater is to be employed.
Measurement Procedure	The conducted RF spurious emission level was measured using a spectrum analyzer connected to the RF output port through a 30 dB attenuator and RF cable. A power meter was used to determine the loss through the cable and attenuator prior to their use with the spectrum analyzer. This loss was offset with factors applied internally in the analyzer. To improve accuracy of measurement over the frequency range of 10 MHz to 10 GHz (10 <sup>th</sup> harmonic of the carrier), sub-sub ranges were measured and the resulting spectrum analyzer displays recorded. The DUT test software was used to set the modem to transmit in the CDMA "always up" power control mode on each of the low, mid and high channels.



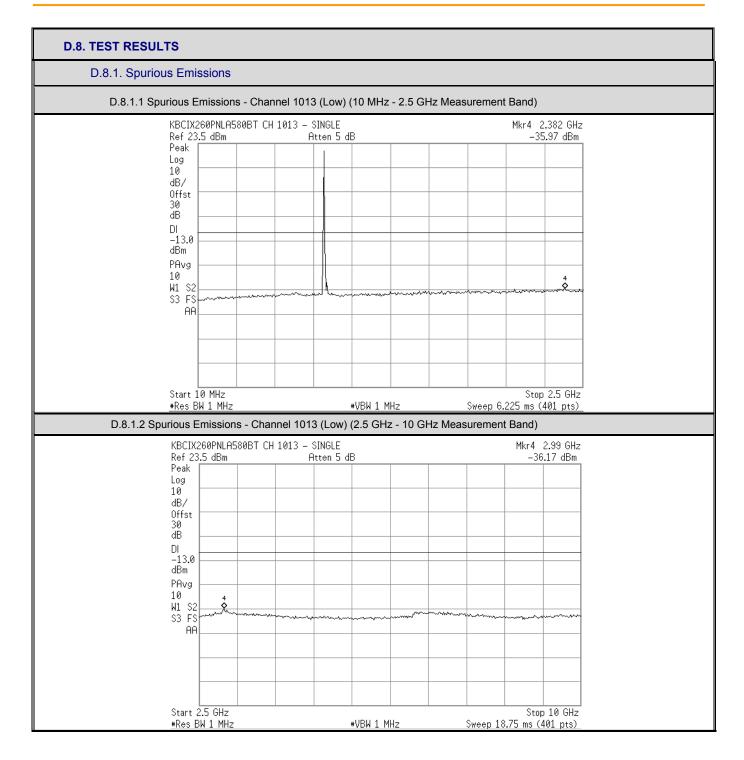
## **D.7. DUT OPERATING DESCRIPTION**

Spurious emission measurements were made of the low, mid and high channels within the cellular band, with the CDMA modem set appropriately as described in section 5.7.

Applicant:	Itronix Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>ITRONIX</b>
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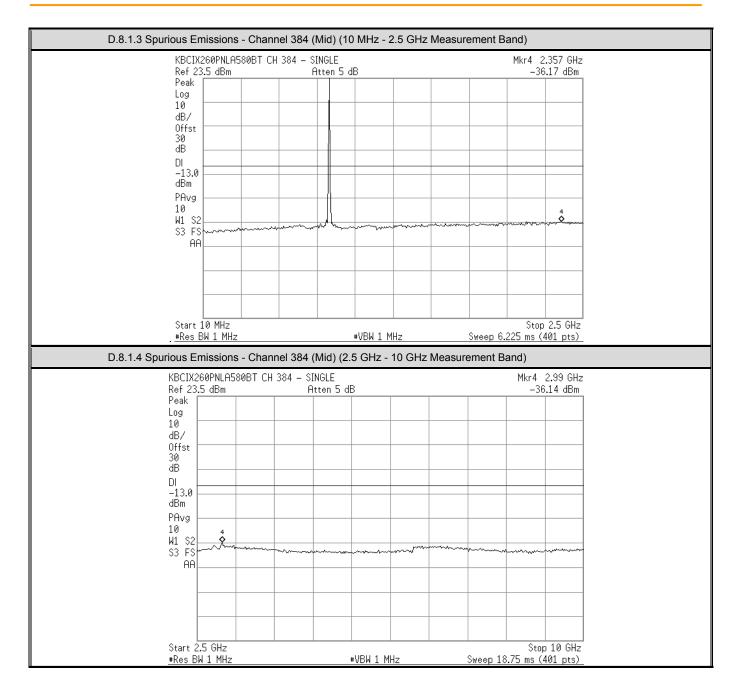
Test Report Serial No.:	022305KBC-T618-M24C Issue		
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874



Applicant:	Itronix	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC wi	th Sierra Wireless	s AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	ITRONIX"
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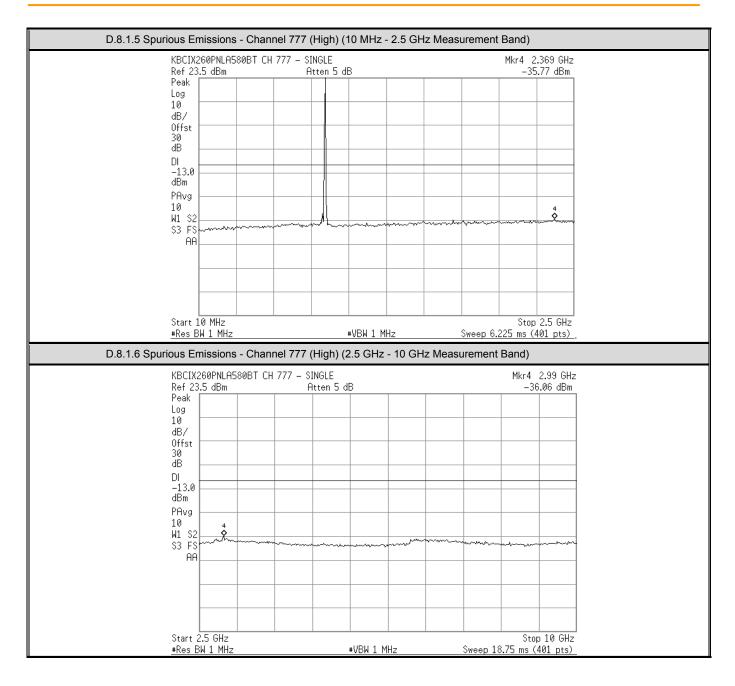
Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874



Applicant:	Itronia	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC wi	th Sierra Wireles	s AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1	
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	E IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874	



	Applicant:	Itroniz	k Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf		
	Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580B1					IX260PROA580BT	<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

D.	D.8.2. Result Summary										
Channel	Center Frequency	Maximum betw 10 MHz an		between		between		Limit	Pass/Fail		
	(MHz)	Frequency	Level	Frequency	ency Level (dBr	(dBm)					
		(MHz)	(dBm)	(MHz)	(dBm)	(dBiii)					
1013	824.70	2382	-35.97	2990	-36.17	-13	Pass				
384	836.52	2357	-36.17	2990	-36.14	-13	Pass				
777	848.31	2369	-35.77	2990	-36.06	-13	Pass				

#### D.9. PASS/FAIL

In reference to the results outlined in D.8, the DUT passes the requirements as stated in the reference standards.

FCC CFR 4 §22.917(a) Out of Band Emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB.

The results set forth in this section meet the requirement for out-of-band emission, greater than 1 MHz from the edge of the licensed band, with a maximum level of -35.77 dB measured at 2.382 GHz with the modem transmitting on Channel 777.

#### D.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

M. W. Pupe

Russell Pipe Senior Compliance Technologist Celltech Labs Inc.

30Mar05

Date

Applicant:	Itronix	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260						IX260PROA580BT	ITRONIX"
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Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E IC RSS-132/13		
Lab Registration(s):	FCC #714830	IC Lab	File #3874

## Appendix E - Cellular Frequency Stability / Temperature Variation Measurement

E.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §22.355
Procedure Reference	ANSI/TIA/EIA-603-C, FCC CFR 47 §2.1055 (a) (1)

## E.2. LIMITS

FCC CFR 47	Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Service must be maintained within the tolerances given on Table C-1 of this section.
§22.355	Table C-1 – Frequency Tolerance for Transmitters in the Public Mobile Services:821 MHz to 896 MHz Mobile $\leq$ 3 watts2.5 ppm

\* Data presented in this section are referenced to the PCTEST measurement report serial no. 22/24.221125616.PNF section 8.1

E.3. ENVIRONMENTAL CONDITIONS				
Temperature	n/a			
Humidity	n/a			
Barometric Pressure	n/a			

# E.4. EQUIPMENT LIST

* DATA	* DATA PRESENTED IN THIS SECTION ARE REFERENCED TO THE PCTEST MEASUREMENT REPORT S/N 22/24.221125616.PNF SECTION 8.1									
ID	ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE				
* PCT	* PCTEST measurement report serial no. 22/24.221125616.PNF section 10.1									

E.5. MEASUREME	E.5. MEASUREMENT EQUIPMENT SETUP					
MEASUREMENT EQUIPMENT CONNECTIONS	* PCTEST measurement report serial no. 22/24.221125616.PNF section 10.1					
MEASUREMENT EQUIPMENT SETTINGS	* PCTEST measurement report serial no. 22/24.221125616.PNF section 10.1					

## E.6. SETUP DRAWING

n/a

#### **E.7. SETUP PHOTOGRAPHS**

n/a

Applicant:	Itroniz	k Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580B					IX260PROA580BT	<b>ITRONIX</b>	
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Test Report Serial No.:	022305KBC-T618-M24C Issu		
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

#### **E.8. DUT OPERATING DESCRIPTION**

na

#### E.9. TEST RESULTS

E.9.1. Frequency St	ability Data - Channel	384 (mid)
---------------------	------------------------	-----------

OPERATING FREQUENCY: 836,520,003 Hz

CHANNEL: 384

REFERENCE VOLTAGE: 3.7 VDC

DEVIATION LIMIT: \_ ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP FREQ. (°C) (Hz)		Deviation (%)
100 %	3.70	+ 20 (Ref)	836,520,003	0.000000
100 %		- 30	836,519,903	0.000012
100 %		- 20	836,519,911	0.000011
100 %		- 10	836,519,919	0.000010
100 %		0	836,519,944	0.000007
100 %		+ 10	836,519,953	0.000006
100 %		+ 20	836,520,003	0.000000
100 %		+ 25	836,519,970	0.000004
100 %		+ 30	836,519,936	0.00008
100 %		+ 40	836,520,078	-0.000009
100 %		+ 50	836,520,087	-0.000010
100 %		+ 60	836,520,095	-0.000011
85 %	3.17	+ 20	836,520,003	0.000000
115 %	4.26	+ 20	836,520,003	0.000000
BATT. ENDPOINT	2.97	+ 20	836,520,003	0.000000

\* Original data in PCTEST measurement report serial no. 22/24.221125616.PNF section 8.1

Maximum deviations are +0.000012% & -0.000011% or +0.12 ppm & -0.11 ppm

Applicant:	Itronia	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC wi	h Sierra Wireless AirCard 580 Dual-Band CDMA Modem				IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874

#### E.10. PASS/FAIL

In reference to the results outlined in E.9, the PCTEST measurement report states that the DUT passes the requirements as stated in the reference standards.

FCC CFR 4 §22.355 Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Service must be maintained within the tolerances given on Table C-1 of this section.

<u>Table C-1 - Frequency Tolerance for Transmitters in the Public Mobile Services: .....821 MHz to 896 MHz ... Mobile < 3 watts</u> ....2.5 ppm

The results set forth in the PCTEST measurement report indicate the DUT meets the requirement with maximum frequency deviations of +.0.12 ppm and –0.11 ppm.

#### E.11. SIGN-OFF

\* Data presented in this section is referenced to the PCTEST measurement report serial no. 22/24.221125616.PNF section 8.1

Applicant:	Itronix	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>TRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

## Appendix F - PCS Occupied Bandwidth and Block-Edge Measurement

F.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §24.229, §24.232(a)
Procedure Reference	FCC CFR 47 §2.1049 (h), §24.232 (b)

F.2. LIMITS						
FCC CFR 47 §24.232	(a) Out of Band Emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB					
	*Referenced to FCC CFR 47 §2.905 Channel Assignment for:					
Block A … 1850 MHz to 1865 MHz Block B … 1870 MHz to 1885 MHz						
Block C 189	5 MHz to 1910 MHz					

F.3. ENVIRONMENTAL CONDITIONS			
Temperature	25.2 +/- 2 °C		
Humidity	35 +/- 2 %		
Barometric Pressure	96.34 kPa		

F.4. EQUIPMENT LIST							
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE		
00015	Agilent	E4408B	Spectrum Analyzer	24Jan05	24Jan06		
00008	Gigatronics	8652A	Power Meter	30Apr04	30Apr05		
00011	Gigatronics	80701A	Power Sensor	08Oct04	08Oct05		
00107	HP	8491C	Attenuator	n/a	n/a		

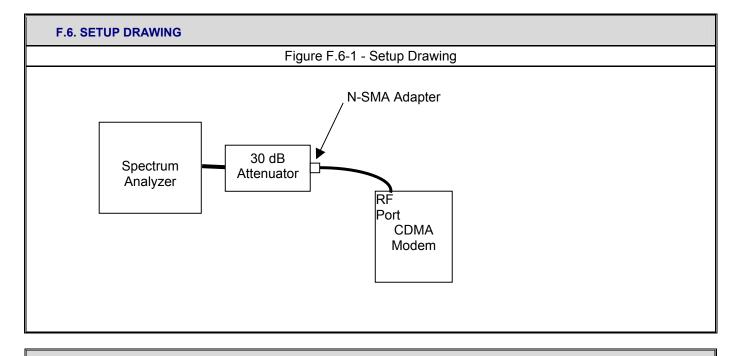
\*Cable and attenuator verified with power meter prior to use

Applicant:	Itronia	c Corporation	Corporation FCC ID: KBCIX260PROA580BT IC ID: 1943A-IX260Pf				
Rugged Lapt	op PC wi	PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	2, §22H, §24E IC RSS-132/133	
Lab Registration(s):	FCC #714830	IC Lab	File #3874

F.5. MEASUREMENT	EQUIPMENT SETUP
Measurement Equipment Connections	The equipment was connected as shown in the setup drawing in F.6.
Measurement Equipment Settings	Spectrum Analyzer Settings: Detector: Peak Resolution Bandwidth: 30 kHz or 10 kHz* Video Bandwidth: 30 kHz Offset: Set to compensate for losses in through the 30 dB attenuator and attachment RF cable. * Pursuant to §22.917 (b), the RBW used may be less than 1% of the EBW and the resulting emission level corrected with a factor equal to 10 * log (1%EBW/RBW)
Measurement Procedure	The conducted RF emission level was measured using a spectrum analyzer connected to the RF output port through a 30 dB attenuator and RF cable. A power meter was used to determine the loss through the cable and attenuator prior to their use with the spectrum analyzer. This loss was offset with factors applied internally in the analyzer. The DUT test software was used to set the modem to transmit in the CDMA "always up" power control mode, on the channels closest to the edge of the licensed band.



## F.7. DUT OPERATING DESCRIPTION

Occupied Bandwidth and Block-Edge measurements were made of the upper and lower channels within the PCS band, with the CDMA modem set appropriately as described in section 5.7.

Applicant:	Itronix Corporation		cant: Itronix Corporation FCC ID: KBCIX260PROA580BT IC		IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC wi	th Sierra Wireless	s AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

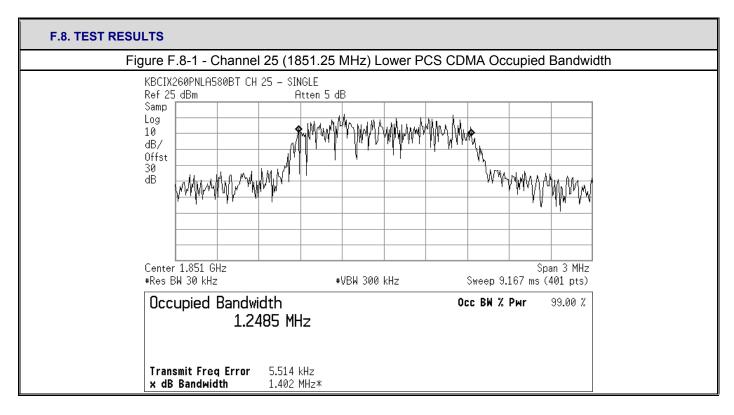
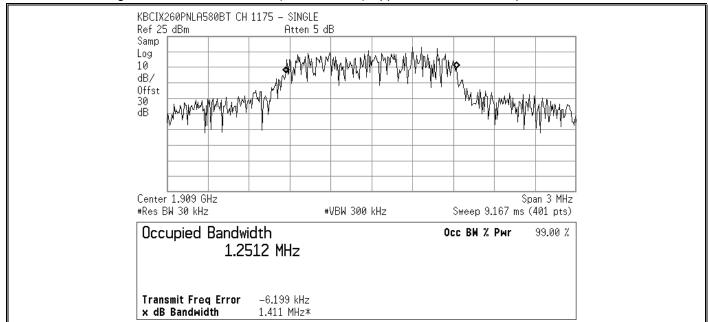


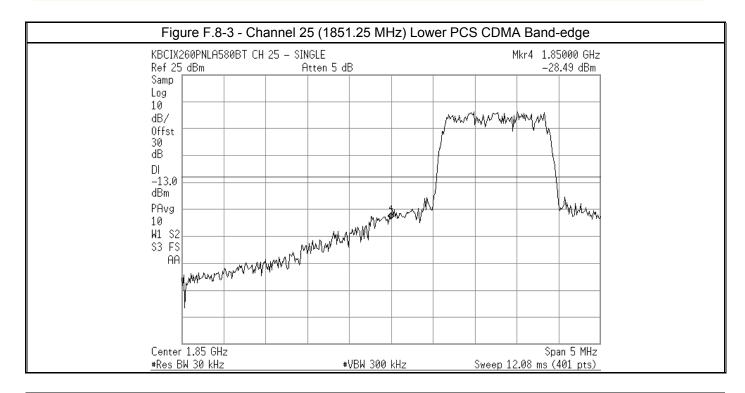
Figure F.8-2 - Channel 1175 (1908.75 MHz) Upper PCS CDMA Occupied Bandwidth



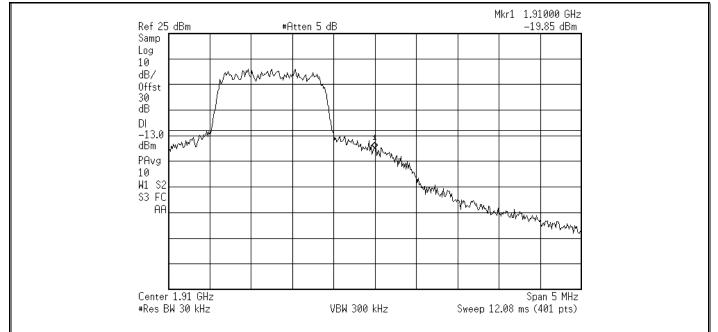
Applicant:	cant: Itronix Corporation FCC ID: KBCIX260PROA580BT IC ID:		IC ID:	1943A-IX260Pf		
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>TRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874



## Figure F.8-4 - Channel 1175 (1908.75 MHz) Upper PCS CDMA Band-edge



Applicant:	Itronix Corporation FCC ID: KBCIX260PROA580BT		IC ID:	1943A-IX260Pf		
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

F.8.1. Result Summary						
Channel	Center Frequency	Emission Bandwidth	Occupied Bandwidth	Band-edge Level	Band-edge Limit	Pass/Fail
	(MHz)	(MHz)	(MHz)	(dBm)	(dBm)	
25	1851.25	1.402	1.2485	-28.49	-13	Pass
1175	1908.75	1.411	1.2512	-19.85	-13	Pass

#### F.9. PASS/FAIL

In reference to the results outlined in F.8, the DUT passes the requirements as stated in the reference standards.

FCC CFR 4 §24.232(a) Out of Band Emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB.

The results set forth in this section meet the requirement with a maximum out-of-band emission, within 1 MHz of the edge, with a level of -28.49 dB at the lower block-edge and -19.85 dB at the upper block-edge.

#### F.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

W. Pupe

Russell Pipe Senior Compliance Technologist Celltech Labs Inc.

30Mar05

Date

Applicant:	Itronix Co	orporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC with S	ierra Wireles	AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	CC §2, §22H, §24E IC RSS-132/13	
Lab Registration(s):	FCC #714830	IC Lab	File #3874

## Appendix G - PCS Spurious Emissions at the Antenna Port Measurement

G.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §24.232 (a)
Procedure Reference	ANSI/TIA/EIA-603-C, §2.1051 (h)

G.2. LIMITS	
FCC CFR 47 §24.232	(a) Out of Band Emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB

G.3. ENVIRONMENTAL CONDITIONS				
Temperature	25.2 +/- 2 °C			
Humidity	35 +/- 2 %			
Barometric Pressure	96.34 kPa			

G.4. EQUIPMENT LIST										
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE					
00015	Agilent	E4408B	Spectrum Analyzer	24Jan05	24Jan06					
00008	Gigatronics	8652A	Power Meter	30Apr04	30Apr05					
00011	Gigatronics	80701A	Power Sensor	08Oct04	08Oct05					
00107	HP	8491C	Attenuator	n/a	n/a					

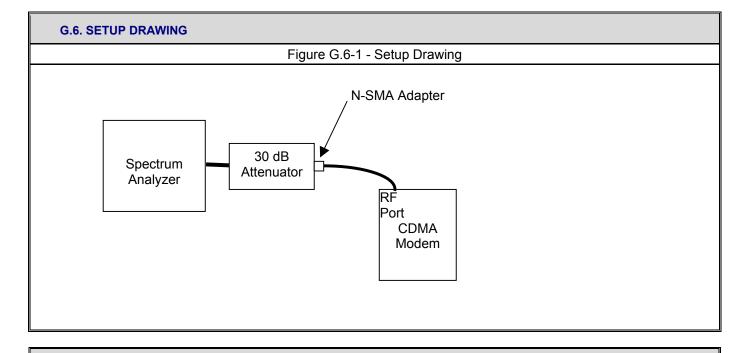
\*Cable and attenuator verified with power meter prior to use

Applicant:	Itronia	Itronix Corporation		Corporation FCC ID: KBCIX260PROA580		KBCIX260PROA580BT	IC ID:	1943A-IX260Pf		
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem					Model:	IX260PROA580BT	<b>ITRONIX</b>			
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Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

G.5. MEASUREMENT EQUIPMENT SETUP						
Measurement Equipment Connections	The equipment was connected as shown in the setup drawing in G.6.					
Measurement Equipment Settings	Spectrum Analyzer Settings: Detector: Peak Resolution Bandwidth: 1 MHz Video Bandwidth: 1 MHz Offset: Set to compensate for losses in through the 30 dB attenuator and attachment RF cable.					
Measurement Procedure	The conducted RF spurious emission level was measured using a spectrum analyzer connected to the RF output port through a 30 dB attenuator and RF cable. A power meter was used to determine the loss through the cable and attenuator prior to their use with the spectrum analyzer. This loss was offset with factors applied internally in the analyzer. To improve accuracy of measurement over the frequency range of 10 MHz to 20 GHz (10 <sup>th</sup> harmonic of the carrier), subsub ranges were measured and the resulting spectrum analyzer displays recorded. The DUT test software was used to set the modem to transmit in the CDMA "always up" power control mode on each of the low, mid and high channels.					



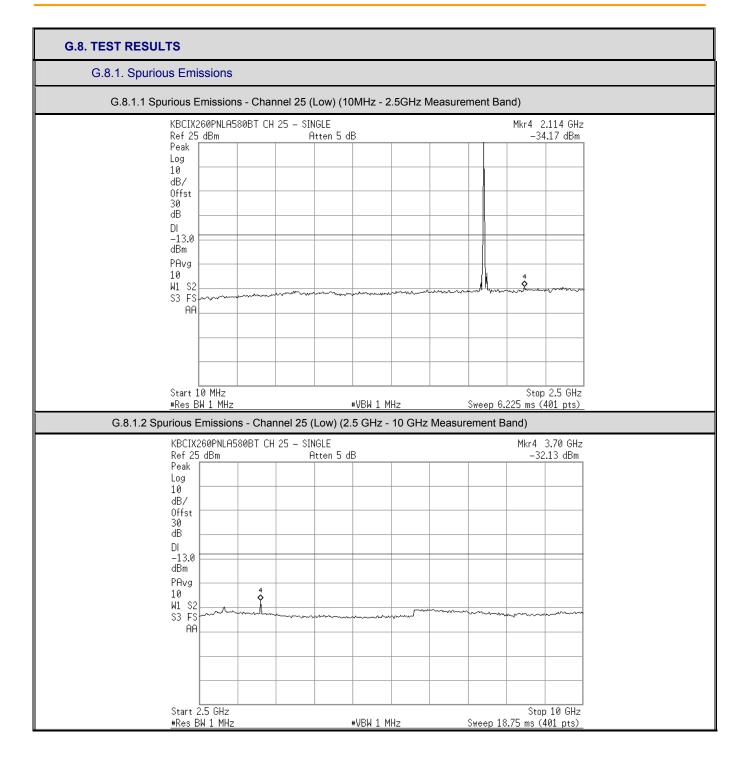
# G.7. DUT OPERATING DESCRIPTION

Spurious emission measurements were made of the low, mid and high channels within the PCS band, with the CDMA modem set appropriately as described in section 5.7.

Applicant:	Itronia	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf		
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T618-M24C Issue		
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874



Applicant:	Itroniz	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>ITRONIX</b>	
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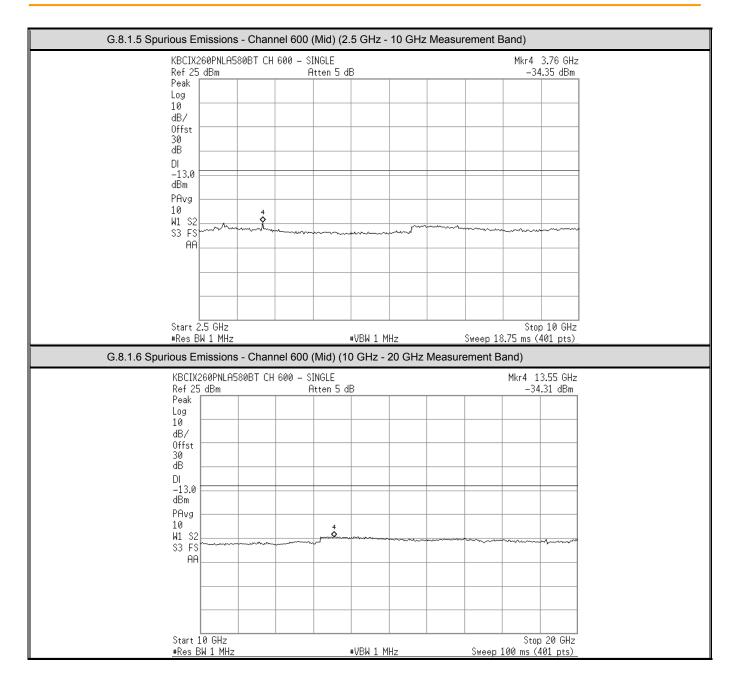
Test Report Serial No.:	022305KBC-T618-M24C Iss			
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	E IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

G.8.1.3 S	purious Emissions - Ch	annel 25 (Low) (10 GHz - 20 GHz Me	asurement Band)	
	KBCIX260PNLA580BT C Ref 25 dBm		Mkr4 13.95 GHz -34.24 dBm	
	Peak Log			
	10 dB/			
	Offst 30 dB			
	dB DI			
	-13.0 dBm			
	PAvg 10			
	W1 S2 S3 FS		www.www.www.www.www.	
	AA			
	Start 10 GHz #Res BW 1 MHz	∗VBW 1 MHz	Stop 20 GHz Sweep 100 ms (401 pts)	
G.8.1.4 S	purious Emissions - Ch	annel 600 (Mid) (10 MHz - 2.5 GHz N	leasurement Band)	
	KBCIX260PNLA580BT( Ref 25 dBm	CH 600 - SINGLE Atten 5 dB	Mkr4 2.145 GHz -31.84 dBm	
	Peak Log			
	10 dB/			
	Offst 30			
	dB DI			
	-13.0 dBm			
	PAvg		 Nµ ♀	
	10 W1 S2	www.when.when.when.when.when.when.when.w	warman Manager and a second	
	S3 FS AA			
	Start 10 MHz		Stop 2.5 GHz	

Applicant:	Itroniz	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapt	op PC wi	th Sierra Wireless	AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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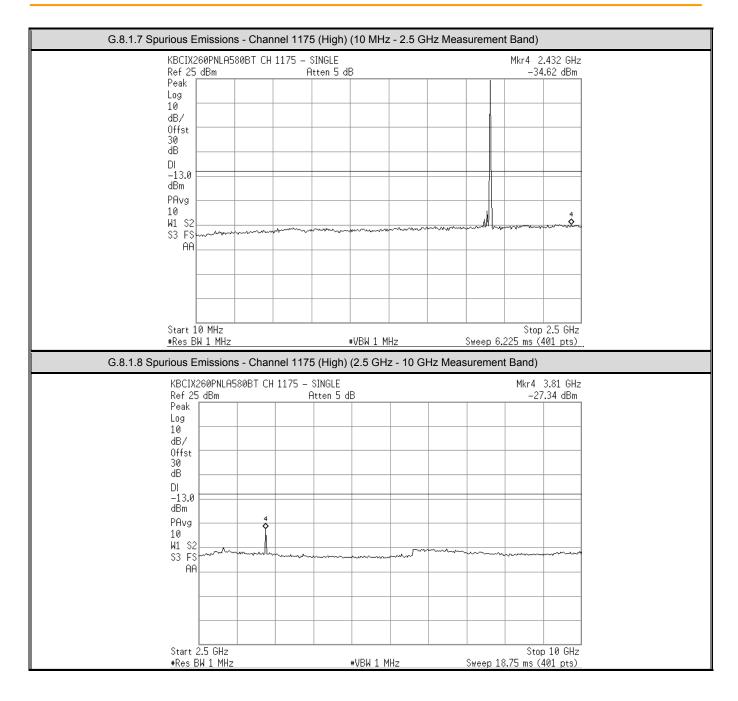
Test Report Serial No.:	022305KBC-T618-M24C Iss			
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	E IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874	



Applicant:	Itronia	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem					Model:	IX260PROA580BT	<b>ITRONIX</b>
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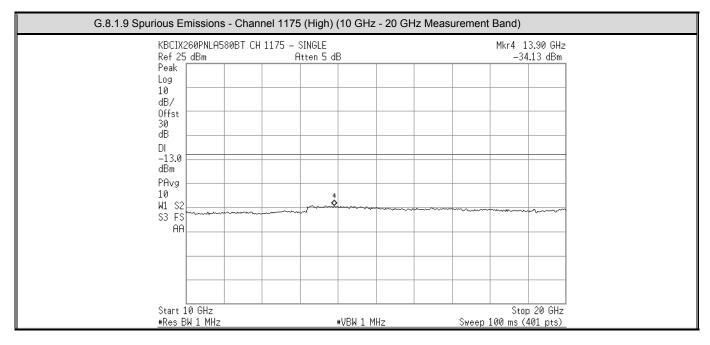
Test Report Serial No.:	022305KBC-T618-M24C Iss			
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	E IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874	



Applicant:	Itronix	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf		
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874



G.8.2. Result Summary											
Channel	Center Frequency	Maximum E betwo 10 MHz and	een	Maximum Emission between 2.5 GHz and 10 GHz		Maximum Emission between 10 GHz and 20 GHz		n between		Limit	Pass/Fail
	(MHz)	Frequency	Level	Frequency	Level	Frequency	Level	-			
		(MHz)	(dBm)	(MHz)	(dBm)	(MHz)	(dBm)				
25	1851.25	2114	-34.17	3700	-32.13	13950	-34.24	-13	Pass		
600	1880.00	2145	-31.84	3760	-34.35	13550	-34.31	-13	Pass		
1175	1908.75	2432	-34.62	3810	-27.34	13900	-34.13	-13	Pass		

Applicant:	Itroniz	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem					Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

#### G.9. PASS/FAIL

In reference to the results outlined in G.8, the DUT passes the requirements as stated in the reference standards.

FCC CFR 4 §24.232(a) Out of Band Emissions. The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: at least 43 + 10 log P dB.

The results set forth in this section meet the requirement for out-of-band emission, greater than 1 MHz from the edge of the licensed band, with a maximum level of -31.84 dB measured at 2.145 GHz with the modem transmitting on Channel 600.

#### G.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

D. Pupe

Russell Pipe Senior Compliance Technologist Celltech Labs Inc.

> <u>30Mar05</u> Date

Applicant:	Itronix	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem						IX260PROA580BT	ITRONIX"
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Test Report Serial No.:	022305KBC-T61	Issue 1		
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133	
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

# Appendix H - PCS Frequency Stability / Temperature Variation Measurement

H.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §24.2355
Procedure Reference	ANSI/TIA/EIA-603-B, FCC CFR 47 §2.1055

# H.2. LIMITS FCC CFR 47 §24.355 The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. \*the fundamental frequency of the channel closest to a block edge is separated from the edge by 1.25 MHz.

\* Data presented in this section are referenced to the PCTEST measurement report serial no. 22/24.221125616.PNF section 8.1

H.3. ENVIRONMENTAL CONDITIONS				
Temperature	n/a			
Humidity	n/a			
Barometric Pressure	n/a			

F	H.4. EQUIPMENT LIST								
* DATA	* DATA PRESENTED IN THIS SECTION ARE REFERENCED TO THE PCTEST MEASUREMENT REPORT S/N 22/24.221125616.PNF SECTION 8.1								
ID	ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE			
* PCTI	* PCTEST measurement report serial no. 22/24.221125616.PNF section 10.1								

H.5. MEASUREME	H.5. MEASUREMENT EQUIPMENT SETUP						
MEASUREMENT EQUIPMENT CONNECTIONS	* PCTEST measurement report s/n 22/24.221125616.PNF section 10.1						
MEASUREMENT EQUIPMENT SETTINGS	* PCTEST measurement report s/n 22/24.221125616.PNF section 10.1						

#### H.6. SETUP DRAWING

n/a

#### **H.7. SETUP PHOTOGRAPHS**

n/a

Applicant:	Itronia	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580BT						<b>ITRONIX</b>	
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Test Report Serial No.:	022305KBC-T618-M24C Issue		
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

#### H.8. DUT OPERATING DESCRIPTION

na

#### H.9. TEST RESULTS

H.9.1. Frequency Sta	pility Data - Channel 600 (mid)
----------------------	---------------------------------

OPERATING FREQUENCY: 1,880,000,002 Hz

CHANNEL: 600

REFERENCE VOLTAGE: 3.7 VAC

DEVIATION LIMIT: <u>± 0.00025</u>% or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	1,880,000,002	0.000000
100 %		- 30	1,879,999,814	0.000010
100 %		- 20	1,879,999,795	0.000011
100 %		- 10	1,879,999,852	0.000008
100 %		0	1,879,999,870	0.000007
100 %		+ 10	1,879,999,946	0.000003
100 %		+ 20	1,880,000,002	0.000000
100 %		+ 25	1,879,999,927	0.000004
100 %		+ 30	1,879,999,852	0.000008
100 %		+ 40	1,880,000,171	-0.000009
100 %		+ 50	1,880,000,190	-0.000010
100 %		+ 60	1,880,000,190	-0.000010
85 %	3.17	+ 20	1,880,000,002	0.000000
115 %	4.26	+ 20	1,880,000,002	0.000000
BATT. ENDPOINT	2.97	+ 20	1,880,000,002	0.000000

\* Original data in PCTEST measurement report serial no. 22/24.221125616.PNF section 8.1

Maximum deviations are +0.000011% & -0.000010% or +205 Hz & -190 Hz

Applicant:	Itronia	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapto	op PC wit	th Sierra Wireless	AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

#### H.10. PASS/FAIL

In reference to the results outlined in H.9, the PCTEST measurement report states that the DUT passes the requirements as stated in the reference standards.

FCC CFR 4 §24.235 The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

\*Based on the frequency separation between a block edge and the closest channel fundamental frequency, the limit would be 1.25 MHz.

The results set forth in the PCTEST measurement report indicate the DUT meets the requirement with maximum frequency deviations of +250 Hz and -190 Hz.

#### H.11. SIGN-OFF

\* Data presented in this section is referenced to the PCTEST measurement report serial no. 22/24.221125616.PNF section 8.1

Applicant:	Itronix Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapto	op PC with Sierra Wirele	ss AirCard 580	Dual-Band CDMA Modem	Model:	IX260PROA580BT	<b>ITRONIX</b>
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Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

# Appendix I - Cellular Receiver Spurious Emissions Measurement

I.1. REFERENCES	
Normative Reference Standard	RSS-132 §6.6
Procedure Reference	ANSI/TIA/EIA-603-C, RSS-132 §6.6

I.2. LIMITS	
RSS-132 §6.6	(b) no spurious output signals appearing at the antenna terminals shall exceed 2 nanowatts per 4 kHz spurious frequency in the band 30-1000 MHz or 5 nanowatts above 1 GHz.

I.3. ENVIRONMENTAL CONDITIONS			
Temperature	25.2 +/- 2 °C		
Humidity	35 +/- 2 %		
Barometric Pressure	96.34 kPa		

I.4. EQUIPMENT LIST									
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE				
00015	Agilent	E4408B	Spectrum Analyzer	24Jan05	24Jan06				
00008	Gigatronics	8652A	Power Meter	30Apr04	30Apr05				
00011	Gigatronics	80701A	Power Sensor	08Oct04	08Oct05				
00107	HP	8491C	Attenuator	n/a	n/a				

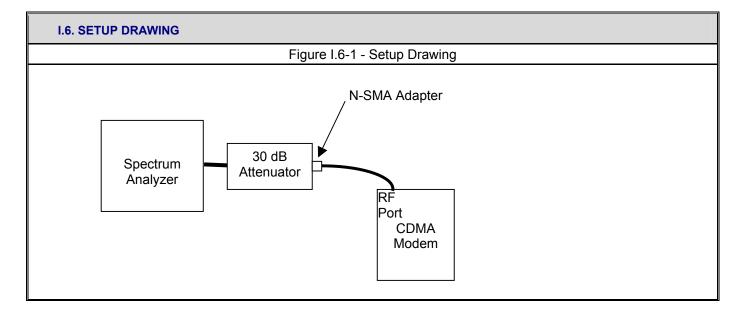
\*Cable and attenuator verified with power meter prior to use

Applicant:	Itronix	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Lapte	op PC wit	h Sierra Wireless AirCard 580 Dual-Band CDMA Modem		Model:	IX260PROA580BT	<b>ITRONIX</b>	
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Test Report Serial No.:	022305KBC-T67	Issue 1	
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

I.5. MEASUREMENT	EQUIPMENT SETUP
Measurement Equipment Connections	The equipment was connected as shown in the setup drawing in I.6.
Measurement Equipment Settings	Spectrum Analyzer Settings: Detector: Peak Resolution Bandwidth: 10 kHz* Video Bandwidth: 10 kHz Offset: Set to compensate for losses in through the 30 dB attenuator and attachment RF cable. *4 kHz RBW was not available on the instrumentation used, so 10 kHz RBW was used as a worst- case setting.
Measurement Procedure	The conducted RF receiver spurious emission level was measured using a spectrum analyzer connected to the RF output port through a 30 dB attenuator and RF cable. A power meter was used to determine the loss through the cable and attenuator prior to their use with the spectrum analyzer. This loss was offset with factors applied internally in the analyzer. To improve accuracy of measurement over the frequency range of 30 MHz to 3 GHz (3 <sup>th</sup> harmonic of the carrier), sub-sub ranges were measured and the resulting spectrum analyzer displays recorded.



# I.7. DUT OPERATING DESCRIPTION

Spurious emission measurements were made of the mid channel within the cellular band, with the CDMA modem set in its receive only mode for the appropriate band.

Applicant:	Itronia	k Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem				Model:	IX260PROA580BT	<b>ITRONIX</b>	
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Test Report Serial No.:	022305KBC-T618-M24C Issue		Issue 1
Test Date(s):		30Mar05	- 30Mar05
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

I.8.1. Spurious	Emissions					
I.8.1.1 Spuri	ous Emissions - C	hannel 384 (Mid) (30	MHz - 1 GHz Me	asurement Band	()	
Ref	6.324 nW	CELLULAR RECEIVER < Atten 5 dE			Mkr4 690 MHz 1.356 nW	
Pea Log 10 dB/ Offs 30 dB DI	, maharana	n Man market and a second s	ngana ang ang ang ang ang ang ang ang an	4 Martin Januar	Mandal Markadown Andrew Andr	
2 nW						
W1 \$3						
	rt 30 MHz s BW 10 kHz		/BW 10 kHz	Sweep	Stop 1 GHz 24.25 s (401 pts)	
		Channel 384 (Mid) (1				
	6.324 nW	CELLULAR RECEIVER S Atten 5 dE	3		Mkr4 2.990 GHz 1.179 nW	
10 dB, 0ff 30 dB	/ monthermon	www.wh.www.w	and the month that he	and the second		
DI 5 nW						
W1 \$3	\$2 FS AA					
	rt 1 GHz				Stop 3 GHz	

Applicant:	Itronia	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem			Model:	IX260PROA580BT	<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):		30Mar05	- 30Mar05
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

I.8.2. Result Summary						
Channel	384	Maximum	Emission	Limit		
Center Frequency	836.6 MHz	Frequency	Level	Linit	Pass/Fail	
Center Frequency	000.0 1112	(MHz)	(nW/10kHz*)	(nW/4kHz)		
Measurement Band	30 MHz and 1 GHz	690	1.356	2	Pass	
measurement band	1 GHz and 3 GHz	2990	1.179	5	Pass	

## \* 10 kHz RBW used as worst-case setting

#### I.9. PASS/FAIL

In reference to the results outlined in I.8, the DUT passes the requirements as stated in the reference standards.

<u>RSS-132 §6.6</u> (*b*) ... no spurious output signals appearing at the antenna terminals shall exceed 2 nanowatts per 4 kHz spurious frequency in the band 30-1000 MHz or 5 nanowatts above 1 GHz.<u>.</u>

The results set forth in this section meet the requirement for conducted receiver spurious emission with a maximum level of 1.356 nW / 10 kHz band in the 30 - 1000 MHz frequency band and 1.179 nW / 10 kHz band above 1 GHz.

### I.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

D. Pupe

Russell Pipe Senior Compliance Technologist Celltech Labs Inc.

> 30Mar05 Date

Applicant:	Itronio	Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Mode				Model:	IX260PROA580BT	<b>ITRONIX</b>	
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Test Report Serial No.:	022305KBC-T618-M24C Issu		Issue 1
Test Date(s):		30Mar05	- 30Mar05
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

# Appendix J - PCS Receiver Spurious Emissions

J.1. REFERENCES	
Normative Reference Standard	RSS-133 §9
Procedure Reference	ANSI/TIA/EIA-603-C, RSS-132 §9

J.2. LIMITS	
RSS-132 §9	(i) emission power in any 4 kHz shall not exceed 2 nanowatts in the band 30-1000 MHz or 5 nanowatts above 1 GHz.

J.3. ENVIRONMENTAL CONDITIONS		
Temperature25.2 +/- 2 °C		
Humidity	35 +/- 2 %	
Barometric Pressure	96.34 kPa	

J.4. EQUIPMENT LIST							
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE		
00015	Agilent	E4408B	Spectrum Analyzer	24Jan05	24Jan06		
00008	Gigatronics	8652A	Power Meter	30Apr04	30Apr05		
00011	Gigatronics	80701A	Power Sensor	08Oct04	08Oct05		
00107	HP	8491C	Attenuator	n/a	n/a		

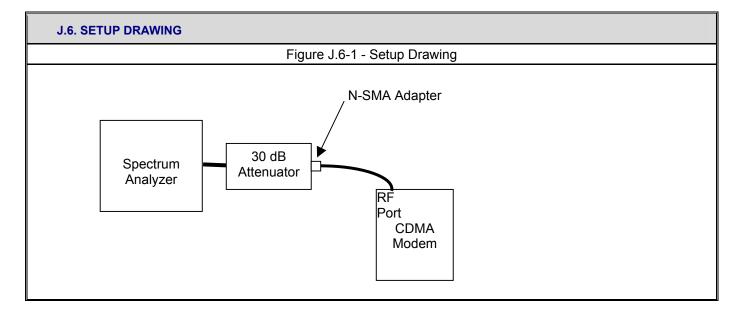
\*Cable and attenuator verified with power meter prior to use

Applicant:	Itronia	k Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580BT					<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	C §2, §22H, §24E IC RSS-132/13	
Lab Registration(s):	FCC #714830	IC Lab	File #3874

J.5. MEASUREMENT	J.5. MEASUREMENT EQUIPMENT SETUP					
Measurement Equipment Connections	The equipment was connected as shown in the setup drawing in J.6.					
Measurement Equipment Settings	Spectrum Analyzer Settings: Detector: Peak Resolution Bandwidth: 10 kHz* Video Bandwidth: 10 kHz Offset: Set to compensate for losses in through the 30 dB attenuator and attachment RF cable. *4 kHz RBW was not available on the instrumentation used; so 10 kHz RBW was used as a worst- case setting.					
Measurement Procedure	The conducted RF receiver spurious emission level was measured using a spectrum analyzer connected to the RF output port through a 30 dB attenuator and RF cable. A power meter was used to determine the loss through the cable and attenuator prior to their use with the spectrum analyzer. This loss was offset with factors applied internally in the analyzer. To improve accuracy of measurement over the frequency range of 30 MHz to 6 GHz (3 <sup>th</sup> harmonic of the carrier), subsub ranges were measured and the resulting spectrum analyzer displays recorded.					



# J.7. DUT OPERATING DESCRIPTION

Spurious emission measurements were made of the mid channel within the PCS band, with the CDMA modem set in its receive only mode for the appropriate band.

Applicant:	Itroniz	c Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580BT					<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T618-M24C Is		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	§24E IC RSS-132/133	
Lab Registration(s):	FCC #714830	IC Lab	File #3874

J.8. TEST RESULTS				
J.8.1. Spurious E				
J.8.1.1 Spuriou	s Emissions - Channel 600	(Mid) (30 MHz - 1 GHz Measureme	nt Band)	
KBCIX2 Ref 4.7 Peak	260PNLA580BT PCS RECEIVE 797 pW At	ten 5 dB	Mkr4 374 MHz 944.3 fW	
Log	mun man	4 miles and the second	we want the second second	
DI 2 nW				
W1 S2 S3 FS AA				
Start 3	20 MU-		Stop 1 GHz	
<u>#Res B</u>	W 10 kHz	VBW 10 kHz	Sweep 24.25 s (401 pts)	
		(Mid) (1 GHz - 6 GHz Measuremen		
Ref 76 Peak Log	160PNLA580BT PCS RECEIVE 0.3 pW At	ten 5 dB	Mkr4 4.29 GHz 356.5 pW	
10 dB/				
DI 2 nW	man marked and and and and and and and and and an	man hannand han	wardshire w	
W1 S2 S3 FS AA				
Start 1 #Res B	GHz W 10 kHz	VBW 10 kHz	Stop 6 GHz Sweep 125 s (401 pts)	

Applicant:	Itroniz	k Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580BT					<b>ITRONIX</b>		
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Test Report Serial No.:	022305KBC-T618-M24C		Issue 1
Test Date(s):	30Mar05 - 30Mar05		
Test Type(s):	FCC §2, §22H, §24E	IC RS	SS-132/133
Lab Registration(s):	FCC #714830	IC Lab	File #3874

J.8.2. Result Summary							
Channel	600	Maximum	Emission	Limit			
Center Frequency	1880 MHz	Frequency	Level	Linit	Pass/Fail		
Center Frequency		(MHz)	(nW/10kHz*)	(nW/4kHz)			
Measurement Band	30 MHz and 1 GHz	374	.009443	2	Pass		
Measurement Danu	1 GHz and 6 GHz	4.29	.003565	5	Pass		

\* 10 kHz RBW used as worst-case setting

#### J.9. PASS/FAIL

In reference to the results outlined in I.8, the DUT passes the requirements as stated in the reference standards.

<u>RSS-132 §6.6 (b)</u> ... no spurious output signals appearing at the antenna terminals shall exceed 2 nanowatts per 4 kHz spurious frequency in the band 30-1000 MHz or 5 nanowatts above 1 GHz.

The results set forth in this section meet the requirement for conducted receiver spurious emission with a maximum level of 0.009 nW / 10 kHz band in the 30 - 1000 MHz frequency band and 0.003 nW / 10 kHz band above 1 GHz.

#### J.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

D. Pupe

Russell Pipe Senior Compliance Technologist Celltech Labs Inc.

> 30Mar05 Date

Applicant:	Itronix Corporation	FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem Model: IX260PROA580BT					<b>ITRONIX</b>	
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Test Report Serial No.:	022305KBC-T618-M24C Issue		Issue 1	
Test Date(s):	30Mar05 - 30Mar05			
Test Type(s):	FCC §2, §22H, §24E	IC RSS-132/133		
Lab Registration(s):	FCC #714830	IC Lab	File #3874	

END OF DOCUMENT

Applicant:	Itronix Corporation		FCC ID:	KBCIX260PROA580BT	IC ID:	1943A-IX260Pf	
Rugged Laptop PC with Sierra Wireless AirCard 580 Dual-Band CDMA Modem					Model:	IX260PROA580BT	<b>ITRONIX</b>
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