

Test Report S/N:	102604KBC-T57	Issue 1.0		
Test Date(s):	14Oct04 - 03Nov04			
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5	
Lab Registration(s):	FCC #714830	IC La	b File #3874	

FCC PART 15C EMC TEST REPORT

FOR THE

ITRONIX RUGGED LAPTOP PC MODEL: IX260PNLA555BT

INCLUDING THE

SENAO NL-3054MP 802.11B/G 2.4 GHz DSSS WLAN MINI-PCI CARD

WITH THE

RANGESTAR INTERNAL SURFACE-MOUNT ANTENNA

CO-LOCATED WITH THE

CIRRONET BT2022 BLUETOOTH TRANSMITTER

AND THE

RANGESTAR INTERNAL SURFACE-MOUNT ANTENNA

CO-LOCATED WITH THE

SIERRA WIRELESS AIRCARD 555/550 DUAL-BAND CDMA PCMCIA MODEM

AND THE

ITRONIX EXTERNAL SWIVEL DIPOLE ANTENNA

TRSN 102604KBC-T576-E15W Issue 1.0

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

November 11, 2004



Test Report S/N:	102604KBC-T57	Issue 1.0		
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Test Type(s):	FCC §15.247 IC RSS-210 Issue 5			
Lab Registration(s):	FCC #714830	IC La	b File #3874	

DECLARATION OF COMPLIANCE						
Testin 1955 Kelow	Testing and Engineering Services 1955 Moss Court Kelowna, B.C. Canada V1Y 9L3			Applicant ITRONIX CORPORATION 801 South Stevens Street Spokane, WA 99204 United States		
Phone: 250-448-7047						
Fax: 250-448-7048						
e-mail: info@	celltechlabs.d	com				
web site: www.d	celltechlabs.c	om				
Lab Registration No.(s):	FCC:	714830		IC:	IC 3874	
Rule Part(s):	FCC:	§15.247; §2.1091; §1.1	1310	IC:	RSS-210 Issue 5	
Device Classification:	FCC:	Digital Transmission S	ystem (DTS)	IC: Low Power Licence-Exempt Device		
Device Identification:	FCC ID:	KBCIX260PNLA555BT		IC: 1943A-IX260Pb		
DUT Description:						
Model:	IX260PNI	LA555BT				
Device Description:	Rugged L	aptop PC with internal Se	ao NL-3054MP 802.11b/g DSSS WLAN Mini-PCI Card			
Co-located Transmitter(s):	Cirronet E	Cirronet BT2022 Bluetooth				
50-10cated Transmitter(5).	Sierra Wi	Sierra Wireless AirCard 555/550 Dual-Band CDMA PCMCIA Modem				
TX Frequency Range:	2412 - 24	62 MHz				
Max. RF Output Power:		atts - 17.46 dBm - Peak C atts - 20.00 dBm - Peak C				
Modulation Type(s):	DBPSK, I	DQPSK, CCK				
	WLAN: R	angeStar P/N: 100929 In	iternal Surface-	-Mount	(upper right side rear of LCD Display)	
Antenna Type(s):	Bluetooth	: RangeStar P/N: 100929	9 Internal Surfa	се-Мо	unt (upper left side rear of LCD Display)	
	CDMA: It	CDMA: Itronix IX260+ External Swivel Dipole (upper right side edge of LCD Display)				
Power Supply:	Stationar	y: 90 Watt AC Power Ada	apter / 11.1V Li	thium-i	on Battery, 6.0Ah (Model: A2121-2)	
. c s. cupp.j.	Otational	,. 55 . rate 16 1 6 10 1 7 tac	APTOL / III.IV EI	andiii i	5.1. Editory, 6.67 iii (iiiodoi. 712 12 12)	

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 §15(C), Industry Canada RSS-210 Issue 5, and ANSI TIA/EIA-603-B-2002.

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 Pipe

Senior Compliance Technologist Celltech Labs Inc.

Duane M. Friesen **EMC Manager**

Celltech Labs Inc.



Applicant:	Itronix C	orporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNL	_A555BT
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA								ITROI	NIX.
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	TEST SUMMARY								
Appendix	Test Description	Procedure Reference	Limit Reference	Test Start Date	Test End Date	Result			
	Refere	nced Standard: FCC CF	R Title 47 Part 15			-			
В	6 dB Bandwidth	FCC 97-114	§15.247(2)	na	na	Pass*			
С	Peak Conducted Power	FCC 97-114	§15.247 (b) (3)	27Oct04	27Oct04	Pass			
D	Maximum Permissible Exposure	FCC CFR 47 § 2.1091 IEEE Std C95.1-1999	§1.1310 Table 1 (b)	3Nov04	3Nov04	Pass			
Е	Radiated Spurious Emissions	FCC 97-114	§15.247(c)	25Oct04	3Nov04	Pass			
F	Restricted Band Emissions	FCC 97-114	§15.205 (a), (b) §15.209 (a)	25Oct04	3Nov04	Pass			
G	Peak Power Spectral Density	FCC 97-114	§15.247(d)	na	na	Pass*			
Н	Powerline Conducted Emissions	ANSI C63.4	§15.207	14Oct04	14Oct04	Pass			
	<u>Ref</u>	erenced Standard: IC RS	S-210 Issue 5						
В	6 dB Bandwidth	RSS-210 § 10	RSS-210 A1 §(I)(iv)	na	na	Pass*			
С	Peak Conducted Power	RSS-210 § 10	RSS-210 A1 §(I)(iv) RSS-210 §6.2.2 (o)(b)	27Oct04	27Oct04	Pass			
D	Maximum Permissible Exposure	RSS-102	RSS-210 §14 Safety Code 6 2.2.1(a) Table 5	3Nov04	3Nov04	Pass			
E	Radiated Spurious Emissions	RSS-212, ANSI C63.4	RSS-210 §6.2.2 (o)(e1)	25Oct04	3Nov04	Pass			
F	Restricted Band Emissions	RSS-212, ANSI C63.4	RSS-210 §6.3	25Oct04	3Nov04	Pass			
G	Peak Power Spectral Density	RSS-210 § 10	RSS-210 §6.2.2 (o)(b)	na	na	Pass*			
Н	Powerline Conducted Emissions	RSS-212, ANSI C63.4	RSS-210 §6.6	14Oct04	14Oct04	Pass			

^{*} Pass based on results outlined in reference module report.

REVISION LOG

Issue	Description	Implemented By	Implementation Date
1.0	Initial Release	Jon Hughes	11Nov04

SIGNATORIES

Prepared By	De	Nov. 11, 2004
Name/Title	Duane M. Friesen, C.E.T. / EMC Manager	Date
Reviewed By	Gle	Nov. 11, 2004
Name/Title	Jon Hughes / General Manager	Date

Applicant:	Itronix C	orporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA								(ITRONIX)
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Lab Registration(s):	FCC #714830	IC La	b File #3874	

1.0 SCOPE

This report outlines the measurements made and results collected during the electromagnetic emissions testing of the Itronix Corporation Rugged Laptop PC with internal Senao NL-3054MP 802.11b/g 2.4 GHz DSSS WLAN Mini-PCI Card and a Rangestar internal surface-mount antenna located in the upper right side rear of the LCD display. The DUT also incorporates an internal co-located Cirronet BT2022 Bluetooth transmitter with a Rangestar internal surface-mount antenna located in the upper left side rear of the LCD display. The DUT also incorporates an internal co-located Sierra Wireless AirCard 555/550 Dual-Band CDMA PCMCIA Modem with an external swivel dipole antenna located at the upper right side edge of the LCD display. The Senao NL-3054MP 802.11b/g WLAN and the Cirronet BT2022 Bluetooth can transmit simultaneously. Please refer to the Part 15.247 Supplementary EMC test report for co-transmit measurement data. The Senao NL-3054MP 802.11b/g WLAN and the Sierra Wireless AirCard 555/550 CDMA Modem do not transmit simultaneously. The Cirronet BT2022 Bluetooth and the Sierra Wireless AirCard 555/550 CDMA Modem were disabled during the Senao NL-3054MP 802.11b/g WLAN measurements referenced in this test report. The results were applied against the EMC requirements and limits outlined in the technical rules and regulations set forth in the Federal Communications Commission Code of Federal Regulations Title 47 Part 15 Subpart C, and Industry Canada Radio Standards Specification RSS-210 Issue 5.

2.0 REFERENCES

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

CFR Title 47 Part 2:2003 Code of Federal Regulations

Title 47: Telecommunication

Part 2: Frequency Allocations and Radio Treaty Matters;

General Rules and Regulations

CFR Title 47 Part 15:2003 Code of Federal Regulations

Title 47: Telecommunication

Part 15: Radio Frequency Devices

IC Spectrum Management &

Radio Standards Specification

Telecommunications Policy RSS-212 Issue 1 (Provisional) - Test Facilities & Test Methods for Radio Equipment

RSS-210 Issue 5 - Low Power Licence-Exempt Radiocommunication Devices:

Amendment November 30, 2002

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

ADT Corp. Test Report FCC Part 15.247 Test Report

Reference No: RF921215R02 Date: December 25, 2003



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3.0 TERMS AND DEFINITIONS

AVG Average

CFR Code of Federal Regulations

dB decibel

dBmdB referenced to 1 mWdBuVdB referenced to 1 uVDUTDevice under TestdBcdB down from carrierEBWEmission Bandwidth

EMC Electromagnetic Compatibility

FCC Federal Communication Commission

HP Hewlett Packard HPF High Pass Filter

Hpol Horizontal Polarization IC Industry Canada

kHz kilohertz

LNA Low Noise Amplifier

m meter MHz Megahertz

Mbps megabits per second not applicable

n/a not available

PK Peak

PPSD Peak Power Spectral Density

QP Quasi-peak

RBW Resolution Bandwidth R&S Rohde & Schwarz

RSS Radio Standard Specification

SA Spectrum Analyzer
VBW Video Bandwidth
Vpol Vertical Polarization

WLAN Wireless Local Area Network



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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 are listed with the FCC under Registration Number 714830 and Industry Canada under File Number IC 3874.

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 Rugged Laptop PC with Senao NL-3054MP 802.11b/g 2.4 GHz DSSS WLAN Mini-PCI Card installed in the Mini-PCI slot, and Internal Surface-Mount Antenna installed in the upper right side rear edge of the LCD display. Co-located within the Rugged Laptop PC is a Cirronet BT2022 Bluetooth transmitter incorporating an Internal Surface-Mount Antenna installed in the upper left side rear edge of the LCD display. The DUT also incorporates an internal co-located Sierra Wireless AirCard 555/550 Dual-Band PCS/Cellular CDMA PCMCIA Modem with external swivel dipole antenna located at the upper right side edge of the LCD display. Photographs of the DUT placement and construction are shown in Appendix A.

Device:	Rugged La	Rugged Laptop PC			
Model:	IX260PNL/	(260PNLA555BT			
Serial Number:	ZZGEG419	ZZGEG4196ZZ6479			
Identifier(s):	FCC ID:	FCC ID: KBCIX260PNLA555BT IC: 1943A-IX260Pb			
Power Source:	Delta Ele	Delta Electronics Model ADP-90AB Rev B 90 Watt AC-DC power supply			

Device:	2.4GHz DS	2.4GHz DSSS WLAN Mini-PCI Card (802.11b/g)				
Model:	Senao NL-	enao NL-3054MP PLUS ARIES (F) 1.00				
Serial Number:	048253621	8253621				
Rule Part(s):	FCC:	§15.247; §2.1091; §1.1310	RSS-210 Issue 5			
Classification(s):	FCC:	FCC: Digital Transmission System (DTS) IC: Low Power Licence-Exempt Transmitter				
Power Source:	Powered fr	Powered from the internal PC power supply				

Device:	Internal Surface-Mount Antenna (upper right side rear edge of LCD display)	
Model:	RangeStar P/N: 100929	
Gain:	+4.5 dBi	

Applicant:	Itronix Corpo	oration M	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT
Rugged La	ptop PC with S	h Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA				(ITRONIX)		
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5.3 Co-Located Equipment

Device:	2.4GHz FHSS Bluetooth Transmitter
Model:	Cirronet BT2022
Serial Number:	n/a
Antenna Type:	Internal Surface-Mount Antenna (upper left side rear edge of LCD display)
Model:	RangeStar P/N: 100929
Gain:	+4.5 dBi

Device:	Dual-Band PCS/Cellular CDMA PCMCIA Modem
Model:	Sierra Wireless AirCard 555/550
Serial Number:	X04060400690004
Antenna Type:	External Swivel Dipole Antenna (upper right side edge of LCD display)
Model:	Itronix IX260+
Gain:	+2.6 dBi

Device:	GPS Receiver Module and Antenna (Receive only)	
Model:	Leadtek P/N GPS9547	

5.4 Cable Descriptions

ROUTING		Length	Model	Terminations		Shield Type	Shield Termination		Suppression
From	То	m		End 1	End 2		End 1	End 2	
PC modem port	Unterminated	1.0	n/a	RJ-11	RJ-11	None	na	na	None

5.5 Support Equipment

The following equipment was used in support of the DUT.

	SUPPORT EQUIPMENT LIST						
MANUFACTURER	MODEL	DESCRIPTION					
D-Link	DE-809TC/	Ethernet hub					
YNG YUH	YP-040	Hub power supply					
MLi	699	Speakers					
Polk Audio	n/a	Speaker-microphone					
DeLorme	Tripmate	GPS Receiver					
Intel	CS-430	Camera					
Logitech	M-S34	Mouse					

Applicant:	Itronix C	orporation Model: IX260PNLA555BT IC ID: 1943A-IX260Pb		FCC ID:	KBCIX260	OPNLA555BT			
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA								<pre></pre>	RONIX.
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5.6 Clock Frequencies

5.6.1 <u>DUT Clock Frequencies</u>

Device:	Rugged Laptop PC
Clocks:	1.6 GHz processor
Device:	2.4GHz DSSS WLAN Mini-PCI Card
Clocks:	n/a
Device:	Internal Surface-Mount Antenna (WLAN)
Clocks:	None

5.6.2 Co-Located Clock Frequencies

Device:	Peripherals
Clocks:	n/a

5.7 Mode(s) of Operation Tested

Customer supplied software was used to place the WLAN card in the appropriate mode, channel, and power level for the specific measurement.

TX Frequency Range:	2412 - 2462 MHz Ch. 1 (2412 MHz), Ch. 6 (2437 MHz) & Ch. 11 (2462 MHz) measured unless otherwise noted					
Software Power Gain Settings:	802.11b set to 0,1 for Channel 1; 0,5 for Channel 6; 0,7 for Channel 11 802.11g set to 0,8 for Channel 1; 0,10 for Channel 6; 0,12 for Channel 11 (x,y) setting $x = rfgain_l$ $y = PN9$ gain y					
RF Peak Conducted Output Power Tested:	802.11b 2412 MHz(1 Mbps) = 16.99 dBm 802.11b 2437 MHz(1 Mbps) = 17.46 dBm 802.11b 2462 MHz(1 Mbps) = 17.35 dBm 802.11g 2412 MHz(6 Mbps) = 20.00 dBm 802.11g 2437 MHz(6 Mbps) = 19.52 dBm 802.11g 2462 MHz(6 Mbps) = 19.49 dBm					
Modes / Data Rates	802.11b (1, 5.5, 11 Mbps checked in prescan) (1 Mbps determined to be worse case and used unless otherwise noted)					
Tested*:	802.11g (6, 36, 54 Mbps checked in prescan) (6 Mbps determined to be worse case and used unless otherwise noted)					
Modulation Type(s):	OFDM with BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK, CCK					
Battery Type(s):	11.1V Lithium-ion, 6.0Ah (Model: A2121-2)					

^{*} Turbo mode available at module level but not enabled when installed in DUT



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5.7.1 DUT Exercising Software Description

The DUT was configured and exercised using customer supplied test software that allowed an operator to set the parameters of the WLAN operation. The settings used are described in each appendix. Unless otherwise noted the power gain settings were set as described in section 5.6 with the worse case data rate as described in the same section.

5.8 Configuration Description

The DUT was configured, as described by the client as being representative of what would be delivered to a final customer. This configuration included the WLAN and internal antenna as described in section 5.2 installed in a typical manner. More specific details may be included in each appendix.

5.8.1 Configuration Justification

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

Prescan measurements were made with the WLAN in each of the two available modes (b & g), lowest and highest bit rates and each of the lowest, highest and mid-band frequencies. From this preliminary data, it was determined that Mode b Rate 1 Mbps resulted in the highest spurious emissions. When a measurement of Mode g was required, its data rate was set for a worse case setting of 6 Mbps. Unless otherwise specified in the applicable appendices, these settings were used for the measurements described in this report.

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 less than or equal to the specified limits as defined. The pass/fail statements made in this report only apply to the unit tested.



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APPENDICES



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Appendix A - DUT Photographs

Photograph A-1 - Front of Open IX260+ Laptop PC

Photograph A-2 - Back of Open IX260+ Laptop PC





Photograph A-3 - Left Side of Open IX260+ Laptop PC







Applicant:	Itronix Corpo	ration N	/lodel:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260P	NLA555BT
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA								@ITR	ONIX.
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Appendix B - 6 dB Bandwidth Measurement

B.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §15.247 (2)
Procedure Reference	FCC 97-114

B.2. LIMITS

B.2.1. FCC CFR 47

FCC CFR 47 (2) System §15.247 and 5725-

(2) Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz

B.3. TEST PROCEDURE

The test method used is outlined in the ADT Corp reference test report no. RF921215R02, section 4.3

B.4. TEST RESULTS

The results used to show compliance to the applicable parts are outlined in the ADT Corp. reference test report no. RF921215R02, section 4.3.

As shown in section 4.3.7, the following are the outlined results for Mode b:

Channel	Channel Frequency	6 dB Bandwidth	Minimum Limit	Pass/Fail
	(MHz)	(MHz)	(MHz)	
1	2412	11.48	0.5	PASS
6	2437	11.48	0.5	PASS
11	2462	11.08	0.5	PASS

As shown in section 4.3.7, the following are the outlined results for Mode g:

Channel	Channel Frequency	6 dB Bandwidth	Minimum Limit	Pass/Fail
	(MHz)	(MHz)	(MHz)	
1	2412	16.52	0.5	PASS
6	2437	16.56	0.5	PASS
11	2462	16.40	0.5	PASS

B.5. PASS/FAIL

In reference to the results outlined in B.4 and stated in the ADT Corp reference report, the DUT passes the requirements as stated in the reference standards as follows:

FCC 15.247 (2): The 6 dB bandwidth as measured meets the minimum 500 kHz bandwidth requirement.

Applicant:	Itronix Corporation	Model:	Model: IX260PNLA555BT IC ID: 1943A-IX260Pb FCC ID:		FCC ID:	KBCIX260PNLA555BT	
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA							
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Appendix C - Peak Conducted Power Measurement

C.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §15.247(b) (3)
Procedure Reference	FCC 97-114

C.2. LIMITS

C.2.1. FCC CFR

§15.247(b): The maximum peak output power of the intentional radiator shall not exceed the following: §15.247(b) (3) For system using digital modulation in the 902 – 928 MHz, 2400 – 2483.5 MHz, and 5725 – 5850 MHz bands: 1 Watt.

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	29Dec03	29Dec04			
00075	Alpha Wire-J	9223	2ft. RG223/U RF Cable	08Jul04*	24Jun05			
00076	Pasternack	PE7014-30	30dB 2 Watt Attenuator	08Jul04*	24Jun05			

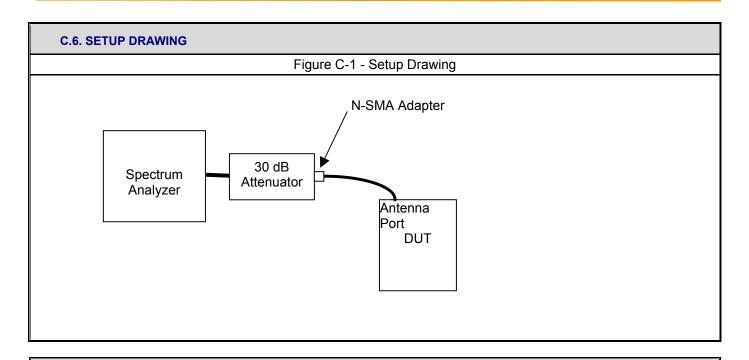
^{*}Cable and attenuator verified with power meter prior to use

C.5. MEASUREMENT	C.5. MEASUREMENT EQUIPMENT SETUP						
Measurement Equipment Connections	The equipment was connected as shown in the setup drawing in C.6.						
Measurement Equipment Settings	To evaluate the maximum peak power, the 26 dB bandwidth needs to be determined. This is performed with the spectrum analyzer using the following setting: RBW – 300 kHz VBW – 1MHz Span – 50 MHz Detector – Peak Average – Power Trace Average – 100 Once the 26 dB bandwidth is determined, the channel power is measured within the band with the following spectrum analyzer settings: RBW – 1 MHz VBW – 3 MHz Detector – Peak Average – Power Integrate BW – equal to specific -26 dB EBW						

Applicant:	Itronix Co	orporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260	PNLA555BT
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA									
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Test Report S/N:	102604KBC-T57	Issue 1.0		
Test Date(s):	14Oct04 - 03Nov04			
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5	
Lab Registration(s):	FCC #714830	IC La	b File #3874	



C.7. DUT OPERATING DESCRIPTION

The worst-case data rate was determined from prescan investigations. Measurements were made at three channels throughout the band, Low Channel (2412 MHz), Mid Channel (2437 MHz), High Channel (2462 MHz) and for both Modes b and g.

C.8. TEST RESULTS										
		802.11b				802.11g				
Channel	Frequency	Peak Conducte		Limit	-26 dB EBW	Peak Conducted Power		Limit	-26 dB EBW	
	MHz	dBm	Watts	Watts	MHz	dBm	Watts	Watts	MHz	
Low	2412	16.99	0.050	1	19.2	20.00	0.100	1	29.59	
Mid	2437	17.46	0.056	1	19.2	19.52	0.090	1	29.70	
High	2462	17.35	0.054	1	19.2	19.49	0.089	1	30.56	

Applicant:	Itronix Corporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT	
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA							@IT	RONIX
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Test Report S/N:	102604KBC-T57	Issue 1.0		
Test Date(s):	14Oct04 - 03Nov04			
Test Type(s):	FCC §15.247 IC RSS-210 Issue 5			
Lab Registration(s):	FCC #714830	IC La	b File #3874	

C.9. PASS/FAIL

In reference to the results outlined in C.8 the DUT passes the requirements as stated in the reference standards as follows: FCC 15.247 (b) (3): The peak power did not exceed 1 Watt.

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.

Russell Pipe

Senior Compliance Technologist

Celltech Labs Inc.

3Nov04

Date



Test Report S/N:	102604KBC-T576-E15W		Issue 1.0	
Test Date(s):	14Oct04 - 03Nov04			
Test Type(s):	FCC §15.247 IC RSS-210 Issue 5			
Lab Registration(s):	FCC #714830	IC La	b File #3874	

Appendix D - Maximum Permissible Exposure Calculation

D.1. REFERENCES	
Normative Reference Standard	FCC CFR 47§1.1310 IEEE Std C95.1-1999
Procedure Reference	FCC CFR 47§2.1091

D.2. LIMITS	
FCC CFR 47§1.1310 Table 1(b)	1.0 mW/cm ²

D.3. ENVIRONMENTAL CONDITIONS		
Temperature	na	
Humidity	na	
Barometric Pressure	na	

D.4. EQUIPMENT LIST						
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE	
na						

D.5. MEASUREMENT EQUIPMENT SETUP				
MEASUREMENT EQUIPMENT CONNECTIONS	The results described herein were determined by the following calculation, so no measurement equipment was used.			
MEASUREMENT EQUIPMENT SETTINGS	na			

D.6. SETUP PHOTOS	
na	

D.7. SETU	IP DRAWINGS
na	

D.8. DUT OPERATING DESCRIPTION	
na	

Applicant:	Itronix Corporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT	
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA						RONIX		
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Test Report S/N:	102604KBC-T57	Issue 1.0		
Test Date(s):	14Oct04 - 03Nov04			
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5	
Lab Registration(s):	FCC #714830	IC La	b File #3874	

D.9. TEST RESULTS

Calculation:

RangeStar Internal Antenna (802.11b mode):

Tx Frequency: 2437 (MHz)
RF Output Power at Antenna Input Terminal: 17.46 (dBm)
Antenna gain: 4.50 (dBi)

S= 1.00 (mW/cm^2) P= 55.7186 (mW) G= 2.82 (numeric)

R = 3.54 (cm)

S at 20cm: 0.031207528 (mW/cm^2)

RangeStar Internal Antenna (802.11g mode):

Tx Frequency: 2412 (MHz)
RF Output Power at Antenna Input Terminal: 20.00 (dBm)
Antenna gain: 4.50 (dBi)

S= 1.00 (mW/cm^2) P= 100.0000 (mW) G= 2.82 (numeric)

R = 4.74 (cm)

S at 20cm: 0.0560092 (mW/cm^2)

Formulae:

S = PG where: S = Power Density Limit

P = Power Applied to the Antenna

Results:

Mode	Power Density Limit	RF Conducted Output Power	Antenna Gain	MPE Distance	Power Density at 20 cm	
	mW/cm ²	dBm	dBi	cm	mW/cm ²	
802.11b	1.0	17.46	4.5	3.54	0.031	
802.11g	1.0	20.00	4.5	4.74	0.056	

Applicant:	Itronix Corporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT	
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA								
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Test Report S/N:	102604KBC-T57	Issue 1.0		
Test Date(s):	14Oct04 - 03Nov04			
Test Type(s):	FCC §15.247 IC RSS-210 Issue 5			
Lab Registration(s):	FCC #714830	IC La	b File #3874	

D.10. PASS/FAIL

In reference to the results outlined in D.9 the DUT passes the requirements as stated in the reference standards as follows:

1) The DUT must comply with the minimum spacing requirement of 20 cm to ensure an exposure of not more than 1 mW/cm².

D.11. 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.

Duane M. Friesen, C.E.T.

EMC Manager Celltech Labs Inc.

03Nov04

Date



Test Report S/N:	102604KBC-T57	Issue 1.0		
Test Date(s):	14Oct04 - 03Nov04			
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5	
Lab Registration(s):	FCC #714830	IC La	b File #3874	

Appendix E - Radiated Spurious Emissions Measurement

E.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §15.247(c)
Procedure Reference	ANSI C63.4; FCC 97-114

E.2. LIMITS

E.2.1. FCC CFR 47

§15.247 (c): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in 15.209 (a) is not required.

Note: Spurious emissions within the restricted bands are reported in Appendix F.

E.3. ENVIRONMENTAL CONDITIONS			
Temperature	27.4 +/- 2 °C		
Humidity	33 +/- 2 %		
Barometric Pressure	96.24 +/- 0.2 kPa		

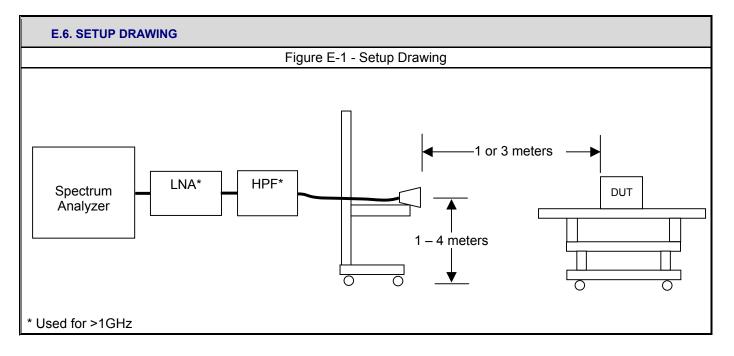
E.4. EQUIPME	E.4. EQUIPMENT LIST								
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE				
00072	EMCO	2075	Mini-mast	n/a	n/a				
00073	EMCO	2080	Turn Table	n/a	n/a				
00071	EMCO	2090	Multi-Device Controller	n/a	n/a				
00050	Chase	CBL-6111A	Bilog Antenna	30Apr04	30Apr05				
00035	ETS	3115	Double Ridged Guide Horn	24Mar04	24Mar05				
00202	ETS	3160-09	Small Horn Antenna	27May04	27Jun05				
00015	Agilent	E4408B	Spectrum Analyzer	29Dec03	29Dec04				
00049	HP	8566B	Spectrum Analyzer RF Section	18May04	18May05				
00049	HP	85650A	Quasi-peak Adapter	18May04	18May05				
00047	HP	85685A	RF Preselector	18May04	18May05				
00048	Gore	65474	Microwave Cable	20May04	20May05				
00030	HP	83017A	LNA	20May04	20May05				

Applicant:	Itronix Co	orporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX26	0PNLA555BT
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA							RONIX.		
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Test Date(s):	14Oct04 - 03Nov04			
Test Type(s):	FCC §15.247 IC RSS-210 Issue 5			
Lab Registration(s):	FCC #714830	IC La	b File #3874	

		The measurement equipment was connected as shown in the E.6. A number of antennas were used to cover the applicable frequency range test. The ranges in which each antenna was used are as follows:					
MEASUREMENT	Frequency F	Range	An	tenna			
EQUIPMENT CONNECTIONS	30 MHz – 1	GHz	CBL-61	I11A Bilog			
COMMEDITORIO	1 GHz – 18	GHz	ETS 3115 Horn				
	18 GHz – 26	GHz	ETS 3160-09 Horn				
	The spectrum analyzer was set to the following settings:						
	Frequency Range	RBW	VBW	Detector			
MEASUREMENT	MHz	kHz	kHz	Beteetei			
EQUIPMENT SETTINGS	30 – 1000	100	300	Peak*			
SETTINGS	> 1000	1000*	1000	Peak*			



Applicant:	Itronix Corporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT	
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA								
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Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0				
Test Date(s):		14Oct0	4 - 03Nov04				
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5				
Lab Registration(s):	FCC #714830 IC Lab File #387						

E.7. SETUP PHOTOGRAPHS

Photograph E-1 - Vertical Polarization (1-18 GHz)

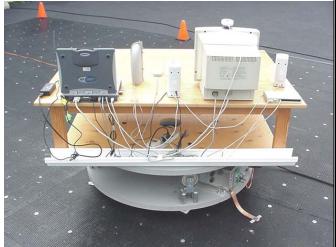


Photograph E-3 - Front of Radiated Emission Configuration



Photograph E-4 - Back of Radiated Emission Configuration





E.8. DUT OPERATING DESCRIPTION

The worst-case data rate was determined from prescan investigations. Measurements were made at three channels throughout the band, Low Channel (2412 MHz), Mid Channel (2437 MHz), High Channel (2462 MHz) and for both Modes b and g for the band-edge measurements and for Mode b for the remaining measurements. The configuration used for all other measurements was Mode b, 1 mbps with a gain setting of 0,1.

Applicant:	Itronix Corporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT
Rugged La	ptop PC with Senao NL	-3054MP 802	(ITRONIX)				
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Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0
Test Date(s):		14Oct0	4 - 03Nov04
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5
Lab Registration(s):	FCC #714830	b File #3874	

E.9. TEST RESULTS

E.9.1. Mode b - Fundamental Field Strengths @ Specified Distance

Project Number: 100504KBC-T562-E15W

Standard: FCC15.247a Test Start Date: Company: Itronix 25Oct04 Celltech IX260+ with Senao NL-3054MP Plus Aries2 WLAN Test End Date: 03Nov04

	Mode b Carrier Field Strengths																
Channel	Polarity	Measurement Distance	Antenna	Frequency	SA Level	Noise Floor	AF	CL	Other	Total CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m		m	dB	dBuV/m	dB	
1	Н	3	Horn SN6276	2412.00	74.44		30.26	3.49	0.00	33.75	108.19	PK	3	0.00	116.20	8.01	PASS
6	Н	3	Horn SN6276	2437.00	74.58		30.30	3.51	0.00	33.81	108.39	PK	3	0.00	116.20	7.81	PASS
11	Н	3	Horn SN6276	2462.00	73.48		30.34	3.52	0.00	33.86	107.34	PK	3	0.00	116.20	8.86	PASS
1	٧	3	Horn SN6276	2412.00	67.66		30.26	3.49	0.00	33.75	101.41	PK	3	0.00	116.20	14.79	PASS
6	٧	3	Horn SN6276	2437.00	68.53		30.30	3.51	0.00	33.81	102.34	PK	3	0.00	116.20	13.86	PASS
11	٧	3	Horn SN6276	2462.00	67.05		30.34	3.52	0.00	33.86	100.91	PK	3	0.00	116.20	15.29	PASS

E.9.2. Mode g - Fundamental Field Strengths @ Specified Distance

100504KBC-T562-E15W FCC15.247a Test Start Date: Company: 25Oct04 Celltech Product: IX260+ with Senao NL-3054MP Plus Aries2 WLAN Test End Date: 03Nov04

	Mode g Carrier Field Strengths																
Channel	Polarity	Measurement Distance	Antenna	Frequency	SA Level	Noise Floor	AF	CL	Other	Total CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m		m	dB	dBuV/m	dB	
1	Н	3	Horn SN6276	2412.00	73.32		30.26	3.49	0.00	33.75	107.07	PK	3	0.00	116.20	9.13	PASS
6	Н	3	Horn SN6276	2437.00	71.68		30.30	3.51	0.00	33.81	105.49	PK	3	0.00	116.20	10.71	PASS
11	Н	3	Horn SN6276	2462.00	70.70		30.34	3.52	0.00	33.86	104.56	PK	3	0.00	116.20	11.64	PASS
1	٧	3	Horn SN6276	2412.00	66.81		30.26	3.49	0.00	33.75	100.56	PK	3	0.00	116.20	15.64	PASS
6	٧	3	Horn SN6276	2437.00	66.31		30.30	3.51	0.00	33.81	100.12	PK	3	0.00	116.20	16.08	PASS
11	٧	3	Horn SN6276	2462.00	64.89		30.34	3.52	0.00	33.86	98.75	PK	3	0.00	116.20	17.45	PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = 40*log(d1/d2) for F<30 MHz, 20*log(d1/d2) for F> 30 MHz :

where d1 is the measurement distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

Calculated Limit (-20 dBc) = Field Strength -20

*Calculated Limit used for spurious emission evaluation, levels measured with 100 kHz RBW

Itronix Corporation Model: IX260PNLA555BT IC ID: 1943A-IX260Pb FCC ID: KBCIX260PNLA555BT Applicant: Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA **ITRONIX** 23 of 48

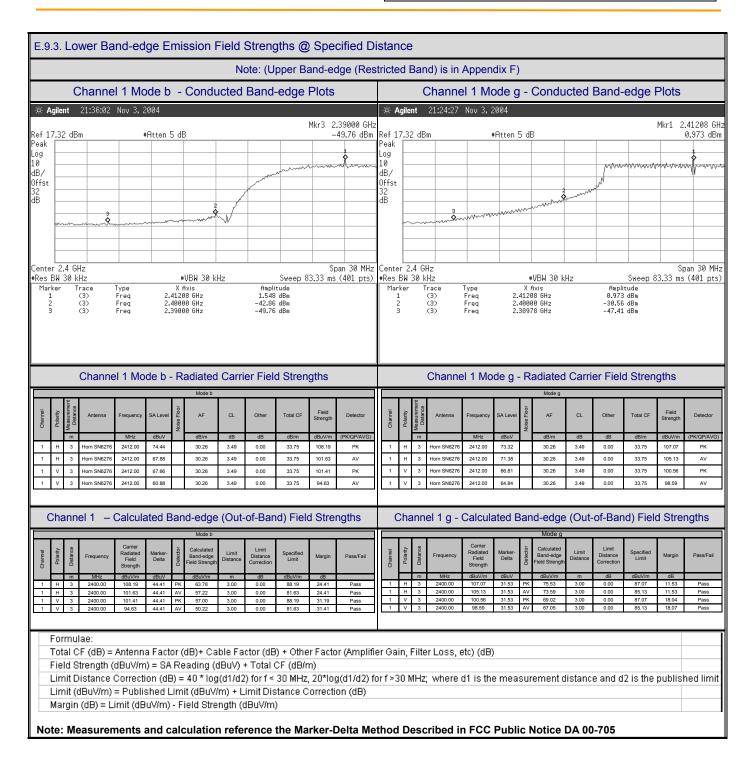


 Test Report S/N:
 102604KBC-T576-E15W
 Issue 1.0

 Test Date(s):
 14Oct04 - 03Nov04

 Test Type(s):
 FCC §15.247
 IC RSS-210 Issue 5

 Lab Registration(s):
 FCC #714830
 IC Lab File #3874



Applicant:	Itronix Co	orporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260I	PNLA555BT
Rugged La	ptop PC wit	th Senao NL-	3054MP 802	.11b/g WLAN, Cirron	et BT202	2 Bluetooth, & AC5	55 CDMA	@ITF	SONIX.
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Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0
Test Date(s):		14Oct0	4 - 03Nov04
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5
Lab Registration(s):	FCC #714830	b File #3874	

E.9.4. Channel 1 Out-of-Band Spurious Emission Field Strengths @ Specified Distance (not within restricted bands)

Celltech

Product:

Company: 100504KBC-T562-E15W

Itronix
IX260+ with Senao NL-3054MP Plus Aries2 WLAN

Standard:

ECC15 247c

 Test Start Date:
 25Oct04

 Test End Date:
 03Nov04

	Mode b																	
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	dBuV/m		dB	
CH1	Н	3	Horn SN6276	4441.56	49.57		34.70	4.78	-34.04	5.43	55.00	PK	3.00	0.00	88.39	*	33.38	PASS
CH1	Н	1	Horn SN6276	13155.80	46.30		41.72	9.46	-34.15	17.03	63.33	PK	3.00	9.54	97.93	*	34.60	PASS
CH1	٧	3	Horn SN6276	1889.00	24.70		29.07	3.07	0.00	32.14	56.84	PK	3.00	0.00	82.34	*	25.50	PASS
CH1	٧	3	Horn SN6276	2565.00	47.50		30.61	3.58	-20.13	14.06	61.56	PK	3.00	0.00	82.34	*	20.78	PASS
CH1	٧	3	Horn SN6276	5272.81	53.55		36.14	5.24	-34.38	7.00	60.55	PK	3.00	0.00	82.34	*	21.79	PASS
CH1	٧	3	Horn SN6276	8803.44	46.61		39.89	6.88	-34.28	12.49	59.10	PK	3.00	0.00	82.34	*	23.24	PASS
CH1	V	3	Horn SN6276	9531.88	45.80		40.30	7.28	-34.26	13.32	59.12	PK	3.00	0.00	82.34	*	23.22	PASS
CH1	V	1	Horn SN6276	16428.50	44.30		41.71	10.15	-33.10	18.77	63.07	PK	3.00	9.54	91.88	*	28.81	PASS

E.9.5. Channel 1 Harmonic Emission Field Strengths @ Specified Distance (not within restricted bands)

Celltech

Company: 100504KBC-T562-E15W
Product: Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

 Standard:
 FCC15.247c

 Test Start Date:
 25Oct04

 Test End Date:
 03Nov04

	Mode b																	
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	dBuV/m		dB	
CH1	Н	3	Horn SN6276	7236.00	44.50		38.22	6.28	-34.32	10.19	54.69	PK	3.00	0.00	88.39	*	33.70	PASS
CH1	Н	3	Horn SN6276	9648.00	50.06		40.30	7.37	-34.25	13.41	63.47	PK	3.00	0.00	88.39	*	24.91	PASS
CH1	Н	1	Horn SN6276	16884.00	36.50	х	42.74	10.36	-36.68	16.42	52.92	PK	3.00	9.54	97.93	*	45.01	PASS
CH1	V	3	Horn SN6276	7236.00	45.72		38.22	6.28	-34.32	10.19	55.91	PK	3.00	0.00	82.34	*	26.43	PASS
CH1	V	3	Horn SN6276	9648.00	49.38		40.30	7.37	-34.25	13.41	62.79	PK	3.00	0.00	82.34	*	19.54	PASS
CH1	V	1	Horn SN6276	16884.00	36.90	х	42.74	10.36	-36.68	16.42	53.32	PK	3.00	9.54	91.88	*	38.56	PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = 40*log(d1/d2) for F<30 MHz, 20*log(d1/d2) for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

*Where applicable the QP or Average Limits where applied to the peak emission

No emissions levels were measured above those reported



Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0				
Test Date(s):		14Oct0	4 - 03Nov04				
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5				
Lab Registration(s):	FCC #714830 IC Lab File #387						

E.9.6. Channel 6 Out-of-Band Spurious Emission Field Strengths @ Specified Distance (not within restricted bands)

Celltech

mpany: 100504KBC-T562-E15W

Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

Standard:

FCC15.247c

Test Start Date: 25Oct04
Test End Date: 03Nov04

										Mode b								
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	#REF!		dB	
CH6	Н	3	Horn SN6276	1892.00	22.10		29.08	3.07	0.00	32.15	54.25	PK	3.00	0.00	88.39	*	34.13	PASS
CH6	V	3	Horn SN6276	1887.00	31.10		29.06	3.07	0.00	32.13	63.23	PK	3.00	0.00	82.34	*	19.11	PASS
CH6	V	1	Horn SN6276	17641.50	39.90		44.82	10.48	-36.59	18.72	58.62	PK	3.00	9.54	91.88	*	33.26	PASS

E.9.7. Channel 6 Harmonic Emission Field Strengths @ Specified Distance (not within restricted bands)



Company: Product:

Product:

100504KBC-T562-E15W

Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

Standard: Test Start Date: Test End Date: FCC15.247c 25Oct04 03Nov04

Mode b Limit Field Calculated Channel Rx CL Pass/Fai Rx Antenna Frequency SA Leve Rx AF Other Rx Total Rx CF Detecto Distance Margin Dista Distance Correction #REF! dBuV dB/m dB/m K/QP/A dBuV/m CH6 Horn SN6276 9748.00 47.32 40.30 7.39 -34.25 13.44 60.76 PΚ 3.00 0.00 88.39 27.63 PASS PASS CH6 Н 1 Horn SN6276 17059.00 38.50 х 43.17 10.40 -36.66 16.91 55.41 PK 3.00 9.54 97.93 42.52 CH6 21933.00 47.81 40.30 11.99 14.33 62.14 PK 3.00 9.54 97.93 35.79 PASS 3160-09 -37.96 CH6 3 Horn SN6276 9748.00 49.37 40.30 7.39 -34.25 13.44 62.81 PK 3.00 0.00 82.34 19.53 PASS CH6 V 1 Horn SN6276 17059.00 36.70 43.17 10.40 -36.66 16.91 53.61 PK 3.00 9.54 91.88 38.27 PASS ٧ 3160-09 21933.00 40.30 11.99 63.00 91.88 PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = $40*\log(d1/d2)$ for F<30 MHz, $20*\log(d1/d2)$ for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

*Where applicable the QP or Average Limits where applied to the peak emission

No emissions levels were measured above those reported



Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0				
Test Date(s):		14Oct0	4 - 03Nov04				
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5				
Lab Registration(s):	FCC #714830 IC Lab File #						

E.9.8. Channel 11 Out-of-Band Spurious Emission Field Strengths @ Specified Distance (not within restricted bands)

Celltech

Product:

Company: 100504KBC-T562-E15W

Itronix
IX260+ with Senao NL-3054MP Plus Aries2 WLAN

Standard: Test Start Date: FCC15.247c

 Test Start Date:
 25Oct04

 Test End Date:
 03Nov04

	Mode b																	
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	#REF!		dB	
CH11	Н	3	Horn SN6276	4441.56	49.57		34.70	4.78	-34.04	5.43	55.00	PK	3.00	0.00	88.39	*	33.38	PASS
CH11	Н	3	Horn SN6276	9647.81	50.06		40.30	7.37	-34.25	13.41	63.47	PK	3.00	0.00	88.39	*	24.91	PASS
CH11	Н	1	Horn SN6276	16498.40	44.50		41.90	10.28	-33.05	19.12	63.62	PK	3.00	9.54	97.93	*	34.31	PASS
CH11	V	3	Horn SN6276	9647.81	49.38		40.30	7.37	-34.25	13.41	62.79	PK	3.00	0.00	82.34	*	19.54	PASS
CH11	V	1	Horn SN6276	16422.00	45.30		41.70	10.14	-33.10	18.73	64.03	PK	3.00	9.54	91.88	*	27.85	PASS

E.9.9. Channel 11 Harmonic Emission Field Strengths @ Specified Distance (not within restricted bands)

Celltech

Company:

Product:

100504KBC-T562-E15W

Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

Standard: Test Start Date: FCC15.247c

 Test Start Date:
 25Oct04

 Test End Date:
 03Nov04

	Mode b																	
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	dBuV/m		dB	
CH11	Н	3	Horn SN6276	9848.00	44.51	х	40.30	7.41	-34.25	13.46	57.97	PK	3.00	0.00	88.39	*	30.41	PASS
CH11	V	3	Horn SN6276	9848.00	44.43	х	40.30	7.41	-34.25	13.46	57.89	PK	3.00	0.00	82.34	*	24.44	PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = 40*log(d1/d2) for F<30 MHz, 20*log(d1/d2) for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

*Where applicable the QP or Average Limits where applied to the peak emission

No emissions levels were measured above those reported



Test Report S/N:	102604KBC-T57	Issue 1.0				
Test Date(s):	14Oct04 - 03Nov04					
Test Type(s):	FCC §15.247	CC §15.247 IC RSS-210 Issue				
Lab Registration(s):	n(s): FCC #714830 IC Lab File:					

E.10. PASS/FAIL

In reference to the results outlined in E.9, the DUT passes the requirements as stated in the reference standards as follows: FCC 15.247 (c): All emissions within any 100 kHz bandwidth outside the operating frequency band are greater than 20 dB below the maximum 100 kHz bandwidth signal within the operating band.

E.11. 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.

Russell Pipe

Senior Compliance Technologist

M W. Pype

Celltech Labs Inc.

04Nov04

Date



Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0			
Test Date(s):	14Oct04 - 03Nov0					
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5			
Lab Registration(s):	FCC #714830	IC La	b File #3874			

Appendix F - Restricted Band Emissions Measurement

F.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §15.205 (a) (b), FCC CFR 47 §15.209 (a)
Procedure Reference	FCC 97-114

F.2. LIMITS					
FCC CFR 47 §15.205	(a) Except as shown in paragraph (c frequency bands listed below:	d) of this section, o	nly spurious emiss	sions are permit	ted in any of the
	MHz	MHz	N	ИНz	GHz
	0.090–0.110 10.495–0.505 2.1735–2.1905 4.125–4.128 4.17725–4.17775 4.20725–4.20775 6.215–6.218 6.26775–6.26825 6.31175–6.31225 8.291–8.294 8.362–8.366 8.37625–8.38675 8.41425–8.41475 12.29–12.293 12.51975–12.52025 12.57675–12.57725 13.36–13.41. 1 Until February 1, 1999, this restricted b 2 Above 38.6 (b) Except as provided in paragraphs bands shall not exceed the limits showith the limits in Section 15.209 shall quasi-peak detector. Above 1000 demonstrated based on the average measurements.	16.69475— 16.80425— 21. 37. 10. 149. 156.52475—1. 156.52475—1. 162.012 167. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.	16.80475 5.5–25.67 7.5–38.25 73–74.6 11 74.8–75.2 8–121.94 123–138 9–150.05 56.52525 57.7–156.9 5–167.17 72–173.2 240–285 22–335.4 10 MHz. d strength of emission frequencies equal to using measuremen with the emission	o or less than 1 It instrumentation In limits in Sec	000 MHz, compliance n employing a CISPR tion 15.209 shall be
FCC CFR 47 §15.209	(a) Except as provided elsewhere in the field strength levels specified in the field specified specified in the field specified in the field specified specified in the field specified specified specified specifie			intentional radio	ator shall not exceed
	Frequency	Field S	trength	Measure	ement Distance
	MHz	uV/m	dBuv/m		Meters
	.009 – 0.490	2400/F(kHz)	48.52 – 13.80		300
	0.490 – 1.705	24000/F(kHz)	33.80 – 22.97		30
	1.705 – 30.0 30 29.54				
	30 – 88	100	40.00	3	
	88 – 216	150	43.52		3
	216 - 960	200	46.02		3
	Above 960	500	53.98		3
	(b) In the emission table above, the	tighter limit applies	s at the band edges	S.	

Applicant:	nt: Itronix Corporation Model: IX260PNLA555BT IC ID: 1943A-IX260Pb FCC ID:					FCC ID:	KBCIX260PNLA555BT			
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA										
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Test Report S/N:	102604KBC-T57	Issue 1.0			
Test Date(s):	14Oct04 - 03Nov0				
Test Type(s):	FCC §15.247	FCC §15.247 IC RSS-210 Issue			
Lab Registration(s):	on(s): FCC #714830 IC Lab File #				

F.3. ENVIRONMENTAL COND	ITIONS
Temperature	27.4 +/- 2 °C
Humidity	33 +/- 2 %
Barometric Pressure	96.24 +/- 0.2 kPa

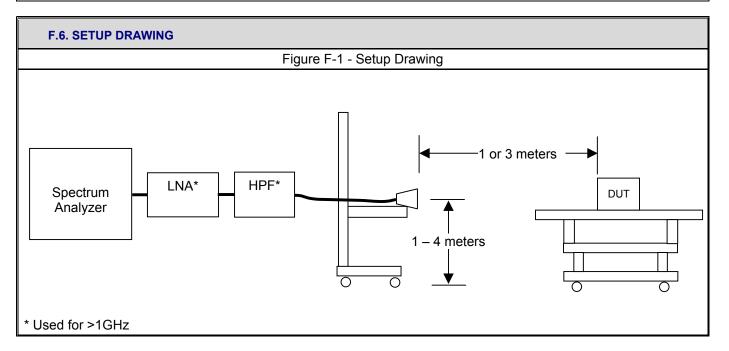
ASSET NUMBER	MANUFACTURER	MODEL DESCRIPTION		LAST CAL	CAL DUE
00072	EMCO	2075	Mini-mast	n/a	n/a
00073	EMCO	2080	Turn Table	n/a	n/a
00071	EMCO	2090	Multi-Device Controller	n/a	n/a
00200	Empire	LG-105	Large Loop Antenna	30Apr04	30Apr05
00201	Empire	LC-105	Small Loop Antenna	30Apr04	30Apr05
00050	Chase	CBL-6111A	Bilog Antenna	30Apr04	30Apr05
00035	ETS	3115	Double Ridged Guide Horn	24Mar04	24Mar05
00202	ETS	3160-09	Small Horn Antenna	27May04	27Jun05
00015	Agilent	E4408B	Spectrum Analyzer	29Dec03	29Dec04
00049	HP	8566B	Spectrum Analyzer RF Section	18May04	18May05
00049	HP	85650A	Quasi-peak Adapter	18May04	18May05
00047	HP	85685A	RF Preselector	18May04	18May05
00048	Gore	65474	Microwave Cable	20May04	20May05
00030	HP	83017A	LNA	20May04	20May05

Applicant:	Itronix Corporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT				
Rugged La	Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA										
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Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0			
Test Date(s):	14Oct04 - 03Nov04					
Test Type(s):	FCC §15.247 IC RSS-210 Issue					
Lab Registration(s):	(s): FCC #714830 IC Lab File					

	The measurement equipment cover the applicable frequency										
	Frequency F	Range	An	tenna							
MEASUREMENT	9 kHz – 150) kHz	LP-1	05 Loop							
EQUIPMENT CONNECTIONS	150 kHz – 30	0 MHz	LG-1	05 Loop							
CONNECTIONS	30 MHz – 1	GHz	CBL-61	111A Bilog							
	1 GHz – 18	GHz	ETS 3115 Horn								
	18 GHz– 26	6GHz	ETS 310	60-09 Horn							
	The spectrum analyzer was set to the following settings:										
	Frequency Range	RBW	VBW	Detector							
	MHz	kHz	kHz	Detector							
MEASUREMENT	0.009 - 0.150	0.200	10	Peak*							
EQUIPMENT	0.150 - 30	9	30	Peak*							
SETTINGS	30 – 1000	100	300	Peak*							
	> 1000	1000*	1000	Peak*							



Applicant:	Itronix C	Corporation Mode		rporation Model: IX260PNLA555BT IC ID: 1943A-IX260Pk		1943A-IX260Pb	FCC ID:	KBCIX260PN	LA555BT	
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA										
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Test Report S/N:	102604KBC-T57	Issue 1.0							
Test Date(s):	14Oct04 - 03Nov04								
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5						
Lab Registration(s):	FCC #714830	b File #3874							

F.7. SETUP PHOTOGRAPHS

Photograph F-1 - Horizontal Polarization (30MHz - 1 GHz)





Photograph F-3 - Front of Radiated Emission Configuration

Photograph F-4 - Back of Radiated Emission Configuration





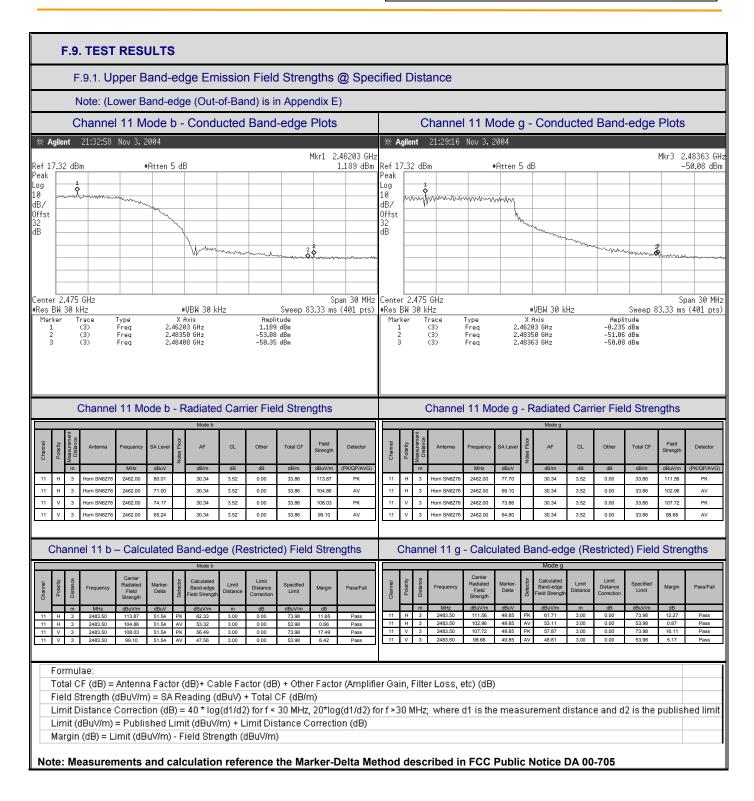
F.8. DUT OPERATING DESCRIPTION

The worst-case data rate was determined from prescan investigations. Measurements were made at three channels throughout the band, Low Channel (2412 MHz), Mid Channel (2437 MHz), High Channel (2462 MHz) and for both Modes b and g for the band-edge measurements and for Mode b for the remaining measurements.

Applicant:	Itronix Corporation	nix Corporation Model: IX260PNLA555BT IC ID: 1943A-IX260Pb F		FCC ID:	KBCIX260PNLA555BT						
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA											
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Test Report S/N:	102604KBC-T57	Issue 1.0							
Test Date(s):	14Oct04 - 03Nov04								
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5						
Lab Registration(s):	FCC #714830	b File #3874							



Applicant:	Itronix C	ronix Corporation N		IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260	PNLA555BT	
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA										
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Test Report S/N:	102604KBC-T57	Issue 1.0							
Test Date(s):	14Oct04 - 03Nov04								
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5						
Lab Registration(s):	FCC #714830	b File #3874							

F.9.2. Channel 1 Out-of-Band Spurious Emission Field Strengths @ Specified Distance (within restricted bands)

Celltech

Product:

100504KBC-T562-E15W

Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

Test Start Date:

25Oct04 Test End Date: 03Nov04

										Mode b								
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	dBuV/m		dB	
CH1	Н	3	Horn SN6276	2688.00	51.40		31.00	3.65	-19.98	14.67	66.07	PK	3.00	0.00	73.98		7.91	PASS
CH1	Н	3	Horn SN6276	2688.00	28.80		31.00	3.65	-19.98	14.67	43.47	AV	3.00	0.00	53.98		10.51	PASS
CH1	Н	3	Horn SN6276	2768.00	51.40		31.26	3.71	-19.94	15.03	66.43	PK	3.00	0.00	73.98		7.55	PASS
CH1	Н	3	Horn SN6276	2768.00	27.40		31.26	3.71	-19.94	15.03	42.43	AV	3.00	0.00	53.98		11.55	PASS
CH1	Н	3	Horn SN6276	7541.25	56.96		38.73	6.43	-34.31	10.85	67.81	PK	3.00	0.00	73.98		6.17	PASS
CH1	Н	3	Horn SN6276	7541.25	38.80		38.73	6.43	-34.31	10.85	49.65	AV	3.00	0.00	53.98		4.33	PASS
CH1	Н	3	Horn SN6276	9035.31	38.70		40.21	7.02	-34.27	12.96	51.66	PK	3.00	0.00	73.98		22.32	PASS
CH1	Н	3	Horn SN6276	9035.00	34.10		40.21	7.02	-34.27	12.96	47.06	AV	3.00	0.00	53.98		6.92	PASS
CH1	Н	1	Horn SN6276	13159.79	50.30		41.73	9.45	-34.15	17.03	67.33	PK	3.00	9.54	83.52		16.19	PASS
CH1	Н	1	Horn SN6276	13155.80	37.80		41.72	9.46	-34.15	17.03	54.83	AV	3.00	9.54	63.52		8.69	PASS
CH1	Н	1	Horn SN6276	16138.89	52.90		40.96	10.01	-33.30	17.67	70.57	PK	3.00	9.54	83.52		12.96	PASS
CH1	Н	1	Horn SN6276	16138.89	39.70		40.96	10.01	-33.30	17.67	57.37	AV	3.00	9.54	63.52		6.16	PASS
CH1	Н	1	Horn SN6276	17991.00	52.50		45.87	10.45	-36.54	19.78	72.28	PK	3.00	9.54	83.52		11.25	PASS
CH1	Н	1	Horn SN6276	17991.00	39.90		45.87	10.45	-36.54	19.78	59.68	AV	3.00	9.54	63.52		3.85	PASS
CH1	V	3	Horn SN6276	1089.00	39.30		26.62	2.31	0.00	28.93	68.23	PK	3.00	0.00	73.98		5.74	PASS
CH1	V	3	Horn SN6276	1089.00	24.20		26.62	2.31	0.00	28.93	53.13	AV	3.00	0.00	53.98		0.84	PASS
CH1	V	3	Horn SN6276	2486.00	51.60		30.38	3.51	-20.25	13.64	65.24	PK	3.00	0.00	73.98		8.74	PASS
CH1	V	3	Horn SN6276	2486.00	37.30		30.38	3.51	-20.25	13.64	50.94	AV	3.00	0.00	53.98		3.04	PASS
CH1	V	3	Horn SN6276	2734.00	51.10		31.15	3.68	-19.96	14.87	65.97	PK	3.00	0.00	73.98		8.01	PASS
CH1	V	3	Horn SN6276	2734.00	27.20		31.15	3.68	-19.96	14.87	42.07	AV	3.00	0.00	53.98		11.91	PASS
CH1	V	3	Horn SN6276	2844.00	50.40		31.50	3.77	-19.90	15.37	65.77	PK	3.00	0.00	73.98		8.21	PASS
CH1	٧	3	Horn SN6276	2844.00	27.40		31.50	3.77	-19.90	15.37	42.77	AV	3.00	0.00	53.98		11.21	PASS
CH1	V	3	Horn SN6276	7541.25	48.00		38.73	6.43	-34.31	10.85	58.85	PK	3.00	0.00	73.98		15.13	PASS
CH1	٧	3	Horn SN6276	7541.25	37.30		38.73	6.43	-34.31	10.85	48.15	AV	3.00	0.00	53.98		5.83	PASS
CH1	V	3	Horn SN6276	9363.44	46.20		40.27	7.23	-34.26	13.24	59.44	PK	3.00	0.00	73.98		14.54	PASS
CH1	V	3	Horn SN6276	9363.44	33.30		40.27	7.23	-34.26	13.24	46.54	AV	3.00	0.00	53.98		7.44	PASS
CH1	V	1	Horn SN6276	16428.00	53.20		41.71	10.15	-33.10	18.76	71.96	PK	3.00	9.54	83.52		11.56	PASS
CH1	V	1	Horn SN6276	16429.93	39.40		41.72	10.16	-33.10	18.78	58.18	AV	3.00	9.54	63.52		5.35	PASS
CH1	V	1	Horn SN6276	17974.50	53.60		45.82	10.38	-36.55	19.66	73.26	PK	3.00	9.54	83.52		10.26	PASS
CH1	V	1	Horn SN6276	17974.50	39.90		45.82	10.38	-36.55	19.66	59.56	AV	3.00	9.54	63.52		3.96	PASS
CH1	V	1	3160-09	19770.00	55.00	х	40.30	11.39	-36.32	15.36	70.36	PK	3.00	9.54	83.52		13.16	PASS
CH1	V	1	3160-09	19770.00	42.40	х	40.30	11.39	-36.32	15.36	57.76	AV	3.00	9.54	63.52		5.76	PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = 40*log(d1/d2) for F<30 MHz, 20*log(d1/d2) for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

The frequency points reported describe the highest emission measured in each of the ranges tested and are used to describe the measured spectrum as a whole. It is shown that the highest emissions measured within the spectrum pass the appropriate restricted limits; therefore all emissions within the restricted bands would also meet the requirements. No out-of-band emissions were measured above the levels noted.

^{*}Where applicable the QP or Average Limits where applied to the peak emission



Test Report S/N:	102604KBC-T57	Issue 1.0							
Test Date(s):	14Oct04 - 03Nov04								
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5						
Lab Registration(s):	FCC #714830	b File #3874							

F.9.3. Channel 1 Harmonic Emission Field Strengths @ Specified Distance (within restricted bands)

Celltech

Company: Product: 100504KBC-T562-E15W

Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

Standard:

FCC15.209

 Test Start Date:
 25Oct04

 Test End Date:
 03Nov04

										Mode b								
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	LowerLimit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	dBuV/m		dB	
CH1	Н	3	Horn SN6276	4824.00	42.40		35.35	4.98	-34.08	6.24	48.64	PK	3.00	0.00	73.98		25.34	PASS
CH1	Н	3	Horn SN6276	4824.00	28.90		35.35	4.98	-34.08	6.24	35.14	AV	3.00	0.00	53.98		18.84	PASS
CH1	Н	1	Horn SN6276	12060.00	36.10	Х	40.58	8.54	-34.18	14.94	51.04	PK	3.00	9.54	63.52	*	12.49	PASS
CH1	Н	1	Horn SN6276	14472.00	42.50	х	42.57	9.28	-34.12	17.74	60.24	PK	3.00	9.54	63.52	*	3.28	PASS
CH1	Н	1	3160-09	19926.00	55.80	х	40.30	11.75	-36.30	15.75	71.55	PK	3.00	9.54	83.52		11.97	PASS
CH1	Н	1	3160-09	19926.00	42.50	Х	40.30	11.75	-36.30	15.75	58.25	AV	3.00	9.54	63.52		5.27	PASS
CH1	Н	1	3160-09	21708.00	48.56	х	40.30	11.91	-38.05	14.15	62.71	PK	3.00	9.54	83.52		20.81	PASS
CH1	Н	1	3160-09	21708.00	35.21	х	40.30	11.91	-38.05	14.15	49.36	AV	3.00	9.54	63.52		14.16	PASS
CH1	٧	3	Horn SN6276	4824.00	44.40		35.35	4.98	-34.08	6.24	50.64	PK	3.00	0.00	73.98		23.34	PASS
CH1	٧	3	Horn SN6276	4824.00	31.90		35.35	4.98	-34.08	6.24	38.14	AV	3.00	0.00	53.98		15.84	PASS
CH1	V	1	Horn SN6276	12060.00	36.10	Х	40.58	8.54	-34.18	14.94	51.04	PK	3.00	9.54	63.52	*	12.49	PASS
CH1	٧	1	Horn SN6276	14472.00	42.30	х	42.57	9.28	-34.12	17.74	60.04	PK	3.00	9.54	63.52	*	3.48	PASS
CH1	٧	1	3160-09	19926.00	42.90	х	40.30	11.75	-36.30	15.75	58.65	PK	3.00	9.54	63.52	*	4.87	PASS
CH1	٧	1	3160-09	21708.00	48.67	х	40.30	11.91	-38.05	14.15	62.82	PK	3.00	9.54	83.52		20.70	PASS
CH1	٧	1	3160-09	21708.00	34.47	х	40.30	11.91	-38.05	14.15	48.62	AV	3.00	9.54	63.52		14.90	PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = 40*log(d1/d2) for F<30 MHz, 20*log(d1/d2) for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

*Where applicable the QP or Average Limits where applied to the peak emission

The frequency points reported describe the highest emission measured in each of the ranges tested and are used to describe the measured spectrum as a whole. It is shown that the highest emissions measured within the spectrum pass the appropriate restricted limits; therefore all emissions within the restricted bands would also meet the requirements. No out-of-band emissions were measured above the levels noted.



Test Report S/N:	102604KBC-T57	Issue 1.0							
Test Date(s):	14Oct04 - 03Nov04								
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5						
Lab Registration(s):	FCC #714830	b File #3874							

F.9.4. Channel 6 Out-of-Band Spurious Emission Field Strengths @ Specified Distance (within restricted bands)

Celltech

Company:

100504KBC-T562-E15W

Standa

FCC15.209

Product:

Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

Test Start Date: 25Oct04
Test End Date: 03Nov04

										Mode b								
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	#REF!		dB	
CH6	Н	3	Horn SN6276	4284.06	42.40		34.70	4.68	-34.03	5.36	47.76	PK	3.00	0.00	73.98		26.22	PASS
CH6	Н	3	Horn SN6276	4284.06	29.60		34.70	4.68	-34.03	5.36	34.96	AV	3.00	0.00	53.98		19.02	PASS
CH6	Н	3	Horn SN6276	4319.06	43.50		34.70	4.70	-34.03	5.37	48.87	PK	3.00	0.00	73.98		25.11	PASS
CH6	Н	3	Horn SN6276	4319.06	30.40		34.70	4.70	-34.03	5.37	35.77	AV	3.00	0.00	53.98		18.21	PASS
CH6	Н	1	Horn SN6276	16430.10	52.10		41.72	10.16	-33.10	18.78	70.88	PK	3.00	9.54	83.52		12.64	PASS
CH6	Н	1	Horn SN6276	16430.10	39.40		41.72	10.16	-33.10	18.78	58.18	AV	3.00	9.54	63.52		5.34	PASS
CH6	Н	1	Horn SN6276	17925.00	52.60		45.68	10.28	-36.55	19.40	72.00	PK	3.00	9.54	83.52	T	11.52	PASS
CH6	Н	1	Horn SN6276	17925.00	39.90		45.68	10.28	-36.55	19.40	59.30	AV	3.00	9.54	63.52	T	4.22	PASS
CH6	Н	1	3160-09	19920.00	55.40		40.30	11.74	-36.30	15.74	71.14	PK	3.00	9.54	83.52	T	12.38	PASS
CH6	Н	1	3160-09	19920.00	42.50		40.30	11.74	-36.30	15.74	58.24	AV	3.00	9.54	63.52	T	5.28	PASS
CH6	V	3	Horn SN6276	1081.00	36.40		26.61	2.30	0.00	28.91	65.31	PK	3.00	0.00	73.98	7	8.67	PASS
CH6	V	3	Horn SN6276	1081.00	24.20		26.61	2.30	0.00	28.91	53.11	AV	3.00	0.00	53.98	T	0.87	PASS
CH6	V	3	Horn SN6276	1109.00	34.50		26.65	2.33	0.00	28.98	63.48	PK	3.00	0.00	73.98		10.50	PASS
CH6	V	3	Horn SN6276	1109.00	23.10		26.65	2.33	0.00	28.98	52.08	AV	3.00	0.00	53.98	T	1.90	PASS
CH6	٧	3	Horn SN6276	1887.00	35.30		29.06	3.07	0.00	32.13	67.43	PK	3.00	0.00	73.98	T	6.55	PASS
CH6	V	3	Horn SN6276	1887.00	25.20		29.06	3.07	0.00	32.13	57.33	AV	3.00	0.00	73.98	*	16.65	PASS
CH6	V	3	Horn SN6276	4316.88	44.40		34.70	4.70	-34.03	5.37	49.77	PK	3.00	0.00	73.98		24.21	PASS
CH6	V	3	Horn SN6276	4316.88	31.10		34.70	4.70	-34.03	5.37	36.47	AV	3.00	0.00	53.98		17.51	PASS
CH6	V	1	Horn SN6276	14777.50	51.80		42.54	9.29	-34.11	17.73	69.53	PK	3.00	9.54	83.52		13.99	PASS
CH6	V	1	Horn SN6276	14777.50	39.00		42.54	9.29	-34.11	17.73	56.73	AV	3.00	9.54	63.52	T	6.79	PASS
CH6	٧	1	Horn SN6276	16462.60	52.50		41.80	10.23	-33.08	18.96	71.46	PK	3.00	9.54	83.52		12.07	PASS
CH6	V	1	Horn SN6276	16462.60	39.10		41.80	10.23	-33.08	18.96	58.06	AV	3.00	9.54	63.52	┪	5.47	PASS
CH6	V	1	Horn SN6276	17641.50	39.90		44.82	10.48	-36.59	18.72	58.62	PK	3.00	9.54	63.52	*	4.91	PASS
CH6	V	1	3160-09	19986.00	55.20		40.30	11.77	-36.30	15.77	70.97	PK	3.00	9.54	83.52	T	12.55	PASS
CH6	V	1	3160-09	19986.00	42.40		40.30	11.77	-36.30	15.77	58.17	AV	3.00	9.54	63.52	寸	5.35	PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = 40*log(d1/d2) for F<30 MHz, 20*log(d1/d2) for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

*Where applicable the QP or Average Limits where applied to the peak emission

The frequency points reported describe the highest emission measured in each of the ranges tested and are used to describe the measured spectrum as a whole. It is shown that the highest emissions measured within the spectrum pass the appropriate restricted limits; therefore all emissions within the restricted bands would also meet the requirements. No out-of-band emissions were measured above the levels noted.



Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0
Test Date(s):		14Oct0	4 - 03Nov04
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5
Lab Registration(s):	FCC #714830	IC La	b File #3874

F.9.5. Channel 6 Harmonic Emission Field Strengths @ Specified Distance (within restricted bands)

Celltech

Product:

Company: 100504KBC-T562-E15W

Itronix IX260+ with Senao NL-3054MP Plus Aries2 WLAN

 Standard:
 FCC15.209

 Test Start Date:
 25Oct04

 Test End Date:
 03Nov04

						_				Mode b								
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	#REF!		dB	
CH6	Н	3	Horn SN6276	4874.00	43.40		35.45	5.03	-34.09	6.39	49.79	PK	3.00	0.00	73.98		24.19	PASS
CH6	Н	3	Horn SN6276	4874.00	30.20		35.45	5.03	-34.09	6.39	36.59	AV	3.00	0.00	53.98		17.39	PASS
CH6	Н	3	Horn SN6276	7311.00	47.32	х	38.36	6.31	-34.32	10.35	57.67	PK	3.00	0.00	73.98		16.31	PASS
CH6	Н	3	Horn SN6276	7311.00	32.20	х	38.36	6.31	-34.32	10.35	42.55	AV	3.00	0.00	53.98		11.43	PASS
CH6	Н	1	Horn SN6276	14622.00	51.90	х	42.58	9.35	-34.11	17.82	69.72	PK	3.00	9.54	83.52		13.80	PASS
CH6	Н	1	Horn SN6276	14622.00	38.90	х	42.58	9.35	-34.11	17.82	56.72	AV	3.00	9.54	63.52		6.80	PASS
CH6	Н	1	3160-09	19496.00	54.90	х	40.30	11.28	-36.36	15.22	70.12	PK	3.00	9.54	83.52		13.40	PASS
CH6	Н	1	3160-09	19496.00	42.20	х	40.30	11.28	-36.36	15.22	57.42	AV	3.00	9.54	63.52		6.10	PASS
CH6	Н	1	3160-09	24370.00	51.62	х	40.40	12.90	-36.92	16.38	68.00	PK	3.00	9.54	83.52		15.52	PASS
CH6	Н	1	3160-09	24370.00	41.40	х	40.40	12.90	-36.92	16.38	57.78	AV	3.00	9.54	63.52		5.74	PASS
CH6	V	3	Horn SN6276	4874.69	43.20		35.45	5.03	-34.09	6.39	49.59	PK	3.00	0.00	73.98		24.39	PASS
CH6	V	3	Horn SN6276	4874.69	30.40	L'	35.45	5.03	-34.09	6.39	36.79	AV	3.00	0.00	53.98		17.19	PASS
CH6	V	3	Horn SN6276	7311.00	44.09	х	38.36	6.31	-34.32	10.35	54.44	PK	3.00	0.00	73.98		19.54	PASS
CH6	V	3	Horn SN6276	7311.00	32.20	х	38.36	6.31	-34.32	10.35	42.55	AV	3.00	0.00	53.98		11.43	PASS
CH6	V	1	Horn SN6276	14622.00	51.70	х	42.58	9.35	-34.11	17.82	69.52	PK	3.00	9.54	83.52		14.00	PASS
CH6	V	1	Horn SN6276	14622.00	38.80	х	42.58	9.35	-34.11	17.82	56.62	AV	3.00	9.54	63.52		6.90	PASS
CH6	V	1	3160-09	19496.00	54.80	х	40.30	11.28	-36.36	15.22	70.02	PK	3.00	9.54	83.52		13.50	PASS
CH6	V	1	3160-09	19496.00	42.20	х	40.30	11.28	-36.36	15.22	57.42	AV	3.00	9.54	63.52		6.10	PASS
CH6	V	1	3160-09	24370.00	51.54	х	40.40	12.90	-36.92	16.38	67.92	PK	3.00	9.54	83.52		15.60	PASS
CH6	V	1	3160-09	24370.00	37.09	х	40.40	12.90	-36.92	16.38	53.47	AV	3.00	9.54	63.52		10.05	PASS

Formulae

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = 40*log(d1/d2) for F<30 MHz, 20*log(d1/d2) for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

The frequency points reported describe the highest emission measured in each of the ranges tested and are used to describe the measured spectrum as a whole. It is shown that the highest emissions measured within the spectrum pass the appropriate restricted limits; therefore all emissions within the restricted bands would also meet the requirements. No out-of-band emissions were measured above the levels noted.

^{*}Where applicable the QP or Average Limits where applied to the peak emission



Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0				
Test Date(s):	14Oct04 - 03Nov04						
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5				
Lab Registration(s):	FCC #714830	IC La	b File #3874				

F.9.6. Channel 11 Out-of-Band Spurious Emission Field Strengths @ Specified Distance (within restricted bands)

Celltech

Company: 100504KBC-T562-I

Product:

Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

 Standard:
 FCC15.209

 Test Start Date:
 25Oct04

 Test End Date:
 03Nov04

										Mode b								
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	dBuV/m		dB	
CH11	Н	3	Horn SN6276	4826.53	40.50		35.35	4.98	-34.08	6.25	46.75	PK	3.00	0.00	73.98		27.23	PASS
CH11	Н	3	Horn SN6276	4826.53	27.80		35.35	4.98	-34.08	6.25	34.05	AV	3.00	0.00	53.98		19.93	PASS
CH11	Н	3	Horn SN6276	9350.13	41.50		40.27	7.23	-34.26	13.24	54.74	PK	3.00	0.00	73.98		19.24	PASS
CH11	Н	3	Horn SN6276	9350.13	28.50		40.27	7.23	-34.26	13.24	41.74	AV	3.00	0.00	53.98		12.24	PASS
CH11	Н	1	3160-09	19907.86	55.20	Х	40.30	11.73	-36.31	15.72	70.92	PK	3.00	9.54	83.52		12.60	PASS
CH11	Н	1	3160-09	19907.86	42.40	х	40.30	11.73	-36.31	15.72	58.12	AV	3.00	9.54	63.52		5.40	PASS
CH11	Н	1	3160-09	24616.31	50.61	Х	40.40	13.00	-36.82	16.58	67.19	PK	3.00	9.54	83.52		16.33	PASS
CH11	Н	1	3160-09	24616.31	36.75	Х	40.40	13.00	-36.82	16.58	53.33	AV	3.00	9.54	63.52		10.19	PASS
CH11	V	3	Horn SN6276	4826.81	42.50		35.35	4.98	-34.08	6.25	48.75	PK	3.00	0.00	73.98		25.23	PASS
CH11	V	3	Horn SN6276	4826.81	29.80		35.35	4.98	-34.08	6.25	36.05	AV	3.00	0.00	53.98		17.93	PASS
CH11	V	3	Horn SN6276	7540.54	47.80		38.73	6.43	-34.31	10.85	58.65	PK	3.00	0.00	73.98		15.33	PASS
CH11	V	3	Horn SN6276	7540.54	41.20		38.73	6.43	-34.31	10.85	52.05	AV	3.00	0.00	53.98		1.93	PASS
CH11	٧	3	Horn SN6276	9365.09	40.50		40.27	7.23	-34.26	13.24	53.74	PK	3.00	0.00	73.98		20.24	PASS
CH11	V	3	Horn SN6276	9365.09	27.50		40.27	7.23	-34.26	13.24	40.74	AV	3.00	0.00	53.98		13.24	PASS
CH11	V	1	3160-09	19920.45	55.20	х	40.30	11.75	-36.30	15.74	70.94	PK	3.00	9.54	83.52		12.58	PASS
CH11	V	1	3160-09	19920.00	42.40	Х	40.30	11.74	-36.30	15.74	58.14	AV	3.00	9.54	63.52		5.38	PASS
CH11	V	1	3160-09	24621.69	50.88	х	40.40	13.00	-36.82	16.58	67.46	PK	3.00	9.54	83.52		16.06	PASS
CH11	V	1	3160-09	24621.69	36.73	х	40.40	13.00	-36.82	16.58	53.31	AV	3.00	9.54	63.52		10.21	PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = 40*log(d1/d2) for F<30 MHz, 20*log(d1/d2) for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

The frequency points reported describe the highest emission measured in each of the ranges tested and are used to describe the measured spectrum as a whole. It is shown that the highest emissions measured within the spectrum pass the appropriate restricted limits; therefore all emissions within the restricted bands would also meet the requirements. No out-of-band emissions were measured above the levels noted.

^{*}Where applicable the QP or Average Limits where applied to the peak emission



Test Report S/N:	102604KBC-T57	'6-E15W	Issue 1.0				
Test Date(s):	14Oct04 - 03Nov04						
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5				
Lab Registration(s):	FCC #714830	IC La	b File #3874				

F.9.7. Channel 11 Harmonic Emission Field Strengths @ Specified Distance (within restricted bands)

Celltech

ompany: 100504KBC-T562-E15W

Product:

Itronix

IX260+ with Senao NL-3054MP Plus Aries2 WLAN

 Standard:
 FCC15.209

 Test Start Date:
 25Oct04

 Test End Date:
 03Nov04

										Mode b								
Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Noise Floor	Rx AF	Rx CL	Other Rx	Total Rx CF	Field Strength	Detector	Limit Distance	Limit Distance Correction	Calculated Limit	Lower Limit	Margin	Pass/Fail
		m		MHz	dBuV		dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	m	dB	dBuV/m		dB	
CH11	Н	3	Horn SN6276	4924.00	41.20		35.55	5.05	-34.09	6.51	47.71	PK	3.00	0.00	73.98		26.27	PASS
CH11	Н	3	Horn SN6276	4924.00	28.80		35.55	5.05	-34.09	6.51	35.31	AV	3.00	0.00	53.98		18.67	PASS
CH11	Н	3	Horn SN6276	7386.00	44.50		38.49	6.34	-34.32	10.51	55.01	PK	3.00	0.00	73.98		18.97	PASS
CH11	Η	3	Horn SN6276	7386.00	31.70		38.49	6.34	-34.32	10.51	42.21	AV	3.00	0.00	53.98		11.77	PASS
CH11	Ι	1	Horn SN6276	12310.00	36.30	х	40.93	8.69	-34.18	15.45	51.75	PK	3.00	9.54	63.52	*	11.78	PASS
CH11	Н	1	Horn SN6276	14772.00	51.90	х	42.55	9.29	-34.11	17.73	69.63	PK	3.00	9.54	83.52		13.89	PASS
CH11	Н	1	Horn SN6276	14772.00	39.00	х	42.55	9.29	-34.11	17.73	56.73	AV	3.00	9.54	63.52		6.79	PASS
CH11	Η	1	3160-09	19696.00	54.90	х	40.30	11.42	-36.33	15.39	70.29	PK	3.00	9.54	83.52		13.24	PASS
CH11	Н	1	3160-09	19696.00	42.30	х	40.30	11.42	-36.33	15.39	57.69	AV	3.00	9.54	63.52		5.84	PASS
CH11	Ι	1	3160-09	22158.00	49.49	Х	40.33	12.08	-37.86	14.54	64.03	PK	3.00	9.54	83.52		19.49	PASS
CH11	Η	1	3160-09	22158.00	35.19	х	40.33	12.08	-37.86	14.54	49.73	AV	3.00	9.54	63.52		13.79	PASS
CH11	٧	3	Horn SN6276	4924.00	46.60		35.55	5.05	-34.09	6.51	53.11	PK	3.00	0.00	73.98		20.87	PASS
CH11	٧	3	Horn SN6276	4924.00	40.10		35.55	5.05	-34.09	6.51	46.61	AV	3.00	0.00	53.98		7.37	PASS
CH11	>	3	Horn SN6276	7386.00	43.60		38.49	6.34	-34.32	10.51	54.11	PK	3.00	0.00	73.98		19.87	PASS
CH11	٧	3	Horn SN6276	7386.00	31.10		38.49	6.34	-34.32	10.51	41.61	AV	3.00	0.00	53.98		12.37	PASS
CH11	٧	1	Horn SN6276	12310.00	36.90		40.93	8.69	-34.18	15.45	52.35	PK	3.00	9.54	63.52	*	11.18	PASS
CH11	٧	1	Horn SN6276	14772.00	51.30	Х	42.55	9.29	-34.11	17.73	69.03	PK	3.00	9.54	83.52		14.49	PASS
CH11	٧	1	Horn SN6276	14772.00	39.06	х	42.55	9.29	-34.11	17.73	56.79	AV	3.00	9.54	63.52		6.73	PASS
CH11	٧	1	3160-09	19696.00	55.50	х	40.30	11.42	-36.33	15.39	70.89	PK	3.00	9.54	83.52		12.64	PASS
CH11	٧	1	3160-09	19696.00	42.30	х	40.30	11.42	-36.33	15.39	57.69	AV	3.00	9.54	63.52		5.84	PASS
CH11	٧	1	3160-09	22158.00	49.48	х	40.33	12.08	-37.86	14.54	64.02	PK	3.00	9.54	83.52		19.50	PASS
CH11	٧	1	3160-09	22158.00	35.46	х	40.33	12.08	-37.86	14.54	50.00	AV	3.00	9.54	63.52		13.52	PASS

Formulae:

Total CF = Antenna Factor + Cable Factor + Other Factor (Amplifier Gain, filter loss, etc)

Field Strength = SA Reading + Total CF

Limit Distance Correction = $40*\log(d1/d2)$ for F<30 MHz, $20*\log(d1/d2)$ for F> 30 MHz:

where d1 is the measurement distance, d2 is the published limit distance

Limit = Specified Limit + Limit Distance Correction

Margin = Limit - Field Strength

*Where applicable the QP or Average Limits where applied to the peak emission

The frequency points reported describe the highest emission measured in each of the ranges tested and are used to describe the measured spectrum as a whole. It is shown that the highest emissions measured within the spectrum pass the appropriate restricted limits; therefore all emissions within the restricted bands would also meet the requirements. No out-of-band emissions were measured above the levels noted.



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Test Date(s):	14Oct04 - 03Nov04						
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5				
Lab Registration(s):	FCC #714830	IC La	b File #3874				

F.10. PASS/FAIL

In reference to the results outlined in F.9, the DUT passes the requirements as stated in the reference standards as follows: FCC 15.205 (a) (b) and 15.209 (a): No emissions were measured within the restricted bands as outlined in 15.205 that exceeded the limits stated in 15.209.

F.11. 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.

Russell Pipe

Senior Compliance Technologist

Kussell W. Rype

Celltech Labs Inc.

04Nov04

Date



Test Report S/N:	102604KBC-T57	Issue 1.0	
Test Date(s):		14Oct0	4 - 03Nov04
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5
Lab Registration(s):	FCC #714830	IC La	b File #3874

Appendix G - Peak Power Spectral Density Measurement

G.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §15.247(d)
Procedure Reference	FCC 97-114

G.2. LIMITS

G.2.1. FCC CFR

§15.247(d): For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission.

G.3. TEST PROCEDURE

The test method used is outlined in the ADT Corp reference test report no. RF921215R02, section 4.5

G.4. TEST RESULTS

The results used to show compliance to the applicable parts are outlined in the ADT Corp reference test report no. RF921215R02, section 4.5.

		902 11h		902 444				
Channel	Frequency (GHz)	PPSD (dBm)	Data Rate Mb/s	Frequency (GHz)	PPSD (dBm)	Data Rate Mb/s		
Low	2.412	-1.13	11	2.412	-10.79	6		
Mid	2.437	5.44	11	2.437	-7.58	6		
High	2.462	4.44	11	2.462	-11.99	6		

G.5. PASS/FAIL

In reference to the results outlined in G.4 and stated in the ADT Corp reference report, the DUT passes the requirements as stated in the reference standards as follows:

FCC 15.247 (d): The peak power spectral density did not exceed +8 dBm in any 3 kHz band.



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Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5				
Lab Registration(s):	FCC #714830	IC La	b File #3874				

Appendix H - Conducted Powerline Emissions Measurement

H.1. REFERENCES	
Normative Reference Standard	CFR 47 FCC Part 15 §15.207
Procedure Reference	ANSI C63.4

H.2. LIMITS

§15.207: Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each powerline and ground at the power terminal.

,							
Frequency of Emission (MHz)	Conducted	Conducted Limit (dBuV)					
	Quasi-Peak	Average					
0.15 – 0.5	66 to 56*	56 to 46*					
0.50 - 5.0	56	46					
5.0 – 30.0	60	50					

^{*}Decreases logarithmically with frequency.

H.3. ENVIRONMENTAL CONDITIONS						
Temperature	+26 <u>+</u> 5 °C					
Humidity	31 % <u>+</u> 10% RH					
Barometric Pressure	101.4 kpa					

H.4. EQUIPME	H.4. EQUIPMENT LIST									
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE					
00063	HP	85662A	Spectrum Analyzer Display	na	na					
00051	HP	8566B	Spectrum Analyzer RF Section	18May04	18May05					
00049	HP	85650A	Quasi-Peak Adapter	18May04	18May05					
00047	HP	85685A	Preselector	18May04	18May05					
00083	EMCO	3825/2	Line Impedance Stabilization Network	29Apr04	29Apr05					
00084	EMCO	3825/2	Line Impedance Stabilization Network	29Apr04	29Apr05					

H.5. MEASUREMENT EQUIPMENT SETUP							
MEASUREMENT EQUIPMENT CONNECTIONS	The conducted emissions were measured on each of the two AC powerline leads connected to the DUT's power supply brick. A two line LISN was used to make this measurement. A drawing of the equipment setup is shown in H.7						
MEASUREMENT EQUIPMENT SETTINGS	Each of the monitor ports from the 2-line LISN was connected in turn to the spectrum analyzer. The port not connected to the analyzer was terminated in a 50-ohm load. A prescan of the peak emission levels was made of the 150 kHz – 30 MHz range split into 4 equal frequency bands. The following were the spectrum analyzer settings: Start Frequency and Stop Frequency set by software for each of the four bands RBW: 100 kHz VBW: 300 kHz Sweep: 500 mS The resulting data from each band was corrected and collected by software and presented in the graphical representations shown in H.9 for the two leads. The frequency points with the highest 10 levels on each lead were used by software to optimize a set of 20 readings for each type of detector (peak, quasi-peak and average). This data was corrected by the software is presented in the tables shown in section H.9.						

Applicant:	Itronix Corporation	on Model: IX260PNLA555BT IC ID: 1943A-IX260Pb FCC ID: KE		KBCIX2	260PNLA555BT			
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA								
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Test Date(s):	14Oct04 - 03Nov04					
Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5			
Lab Registration(s):	FCC #714830	IC La	b File #3874			

H.6. SETUP PHOTOS

Photograph H-1 - AC Powerline Conducted Emission Configuration





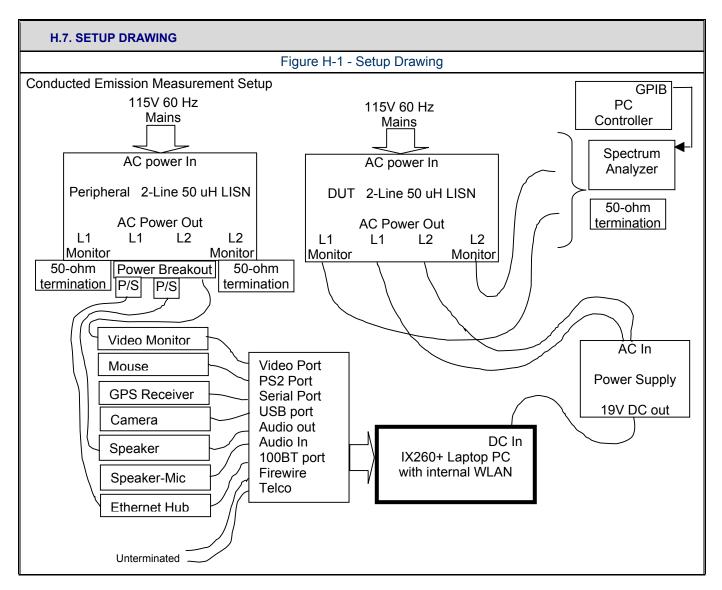
Photograph H-2 - AC Powerline Conducted Emission Cable Placement



Applicant:	Itronix Corporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX260PNLA555BT		
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Lab Registration(s):	FCC #714830	IC La	b File #3874			



H.8. DUT OPER	H.8. DUT OPERATING DESCRIPTION									
WLAN:	The WLAN was set to transmit at full power on Channel 1, Mode b 1 Mb/s									
PC:	Other than operating the WLAN software and running MS windows, no PC exercising was performed.									
Peripherals:	All peripherals were active, but no specific traffic was initiated.									

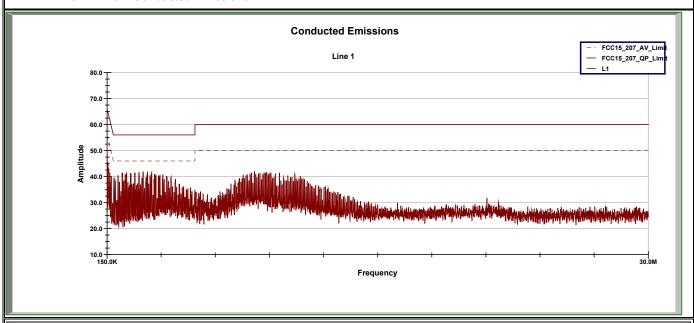
Applicant:	Itronix Corp	poration	Model:	I: IX260PNLA555BT IC ID: 1943A-IX260Pb		FCC ID:	KBCIX260PN	ILA555BT	
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA									
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Test Report S/N:	102604KBC-T57	Issue 1.0				
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Test Type(s):	FCC §15.247	IC RSS	-210 Issue 5			
Lab Registration(s):	FCC #714830	IC La	b File #3874			

H.9. TEST RESULTS

H.9.1. Line 1 Conducted Emissions





Project Number: Company:

Product:

072804KBC-T543-E15B

Itronix IX260+ with Cirronet BT2022 Bluetooth

Standard: FCC 15.207 Test Start Date: 14-Oct-04

Test End Date: 14-Oct-04

	Line 1 Conducted Emissions											
Un		Uncorrected Reading		Correction Factor			Quasi-Peak Limit	Quasi-Peak Margin		Average Margin	Pass/Fail	
	Peak	Quasi-Peak	Average	1 45(5)	Peak	Quasi-Peak	Average	2	a.g	2	Widigiti	F 455/F4II
MHz	dBuV	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dBuV	dB	
0.186	46.50	42.69	25.92	1.57	48.07	44.26	27.49	64.23	19.97	54.23	26.74	Pass
0.992	39.70	38.89	38.44	0.32	40.03	39.22	38.77	56.00	16.79	46.00	7.24	Pass
1.895	43.00	31.49	29.85	0.29	43.29	31.78	30.13	56.00	24.22	46.00	15.87	Pass
2.126	43.10	41.67	41.32	0.29	43.39	41.96	41.61	56.00	14.04	46.00	4.39	Pass
8.290	42.80	41.50	38.55	0.32	43.12	41.82	38.87	60.00	18.18	50.00	11.13	Pass
8.975	42.40	40.92	36.32	0.33	42.73	41.25	36.65	60.00	18.75	50.00	13.35	Pass
9.654	41.40	39.08	33.94	0.33	41.73	39.41	34.27	60.00	20.59	50.00	15.73	Pass
16 301	30.00	23 10	15.72	0.37	30.37	23.47	16.09	60.00	36.53	50.00	33.91	Pass

Calculations

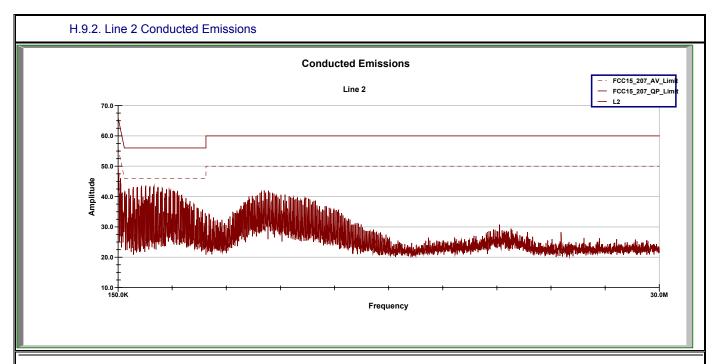
CF = Correction Factor

Emission Level = Measured Level + correction factor

Margin = Limit – Emission Level



Test Report S/N:	102604KBC-T57	Issue 1.0	
Test Date(s):	14Oct04 - 03Nov04		
Test Type(s):	FCC §15.247	IC RSS-210 Issue :	
Lab Registration(s):	FCC #714830	IC La	b File #3874





Project Number: Company:

Product:

072804KBC-T543-E15B

Itronix IX260+ with Cirronet BT2022 Bluetooth

Standard: Test Start Date: Test End Date: FCC 15.207 14-Oct-04 14-Oct-04

Line 2 Conducted Emissions Uncorrected Reading Corrected Emission Level Correction Quasi-Peak Quasi-Peal Average Average Margin Factor Limit Margin Pass/Fail Quasi-Peak Peak Average Peak Quasi-Peak Average MHz dBuV dBuV dB dBuV dBuV dBuV dB dBuV dB 0.193 48.10 44.67 28.79 1.51 49.61 46.18 30.30 63.91 17.72 53.91 23.61 Pass 0.284 42.00 38.75 19.10 0.89 42.89 39.64 20.00 60.71 21.06 50.71 30.71 Pass 42.67 42.97 46.00 1.670 43.20 42.72 0.30 43.50 43.02 56.00 13.03 2.98 Pass 1.900 43.40 42.75 42.79 0.29 43.69 43.04 43.09 56.00 12.96 46.00 2.91 Pass 8 209 41 90 40.79 37.84 42.23 41.12 38.17 60.00 18.88 50.00 11.83 0.33 Pass 8.437 41.90 40.93 38.24 0.33 42.23 41.26 38.57 60.00 18.74 50.00 11.43 Pass 10.488 39.90 38.66 35.90 0.33 40.23 38.99 36.24 60.00 21.01 50.00 13.77 Pass 21.024 31.50 27.26 22.42 23.41 60.00 31.75 50.00 Pass 0.99 32.49 28.25 26.59

Calculations

CF = Correction Factor Emission Level = Measured Level + correction factor Margin = Limit – Emission Level

Applicant:	Itronix Corporation	Model:	IX260PNLA555BT	IC ID:	1943A-IX260Pb	FCC ID:	KBCIX26	OPNLA555BT
Rugged Laptop PC with Senao NL-3054MP 802.11b/g WLAN, Cirronet BT2022 Bluetooth, & AC555 CDMA						RONIX.		
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Test Report S/N:	102604KBC-T576-E15W		Issue 1.0
Test Date(s):	14Oct04 - 03Nov04		
Test Type(s):	FCC §15.247	IC RSS-210 Issue 5	
Lab Registration(s):	FCC #714830	IC Lab File #3874	

H.10. PASS/FAIL

In reference to the results outlined in H.9 the DUT passes the requirements as stated in the reference standards as follows: The RF voltage measured in reference to ground on each of the power line conductors does not exceed the limits as outline in FCC 15.207.

H.11. 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.

Russell Pipe

Senior Compliance Technologist

Kussell W. Pupe

Celltech Labs Inc.

05Nov04

Date



Test Report S/N:	102604KBC-T576-E15W		Issue 1.0
Test Date(s):	14Oct04 - 03Nov04		
Test Type(s):	FCC §15.247	IC RSS-210 Issue 5	
Lab Registration(s):	FCC #714830	IC Lab File #3874	

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