



Innovative **Technology** for a **Connected** World

### **OVERVIEW**

This document is designed as a quick start guide for the Laird Technologies OEM ZB2430 family System Developer Kit (SDK). This guide will take you through the basics of reading the radio's configuration and performing a data throughput test between the Coordinator and a Router. For more detailed information on these steps refer to the SDK User Manual or the radio User Manual.

#### **INSTALL SOFTWARE**

Insert the Laird Technologies CD which came with the SDK into a Windows XP PC.

Install the OEM Configuration Utility under Design Kits and Software and follow the on-screen instructions.

### **CONNECT THE RADIOS TO THE PC**

Connect the Coordinator to the PC with the provided USB cable. Make sure the power switch on the SDK board is on and allow Windows to automatically install the appropriate drivers. If using a module with a U.FL connector, connect the antenna.

Connect the AC power adapter to the Router eval board and power on the board with the power switch. Place the J9 Jumper to Loopback Mode. If using a module with a U.FL connector, connect the antenna. Place the Router board at least 5 feet from the Coordinator board.

At this point, the application should be installed on the associated PCs, the SDK board(s) should be properly connected to the PC(s), and the jumpers and power switch should be properly positioned.

### global solutions: local support...

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# QUICK START GUIDE

### **RADIO CONFIGURATION**

- 1. Launch the Laird OEM software application by navigating to and selecting the product as follows: Start>All Programs>Laird Tech Wireless>Laird OEM.exe.
- 2. Click on the PC Settings tab at the top of the application window.
- 3. Locate the Product drop-down menu and select the ZB2430.
- 4. Locate and click on the Find Ports button.
- 5. A dialog box will appear with notification of the number of ports found. Click the OK button.
- 6. Locate the Port field and select the AeroComm Wireless USB port.
- 7. Change the Baud Rate to 38400.

### **PC SETTINGS TAB**

| 🗷 ZB2430 Configuration/Test Utility |                              |  |   |                              |                       |              |                 |                     |  |
|-------------------------------------|------------------------------|--|---|------------------------------|-----------------------|--------------|-----------------|---------------------|--|
| 6                                   | Configu                      |  | Banna Tart                                  |                              | Country of Market     |              | Commond         |                     |  |
| ┝                                   | Contigu                      | re                                     | Range Test                                  |                              | erminal/Chat          |              | Command         | PC Settings         |  |
|                                     | Port1 Settings               |  |   | Options                      |                       |              |                 |                     |  |
|                                     | USB / COM<br>C TCD / ID Deer | Port /                                 | Add Find Open Port                          | Save Save                    | Settings on Exit      | nda          |                 |                     |  |
|                                     | Port Status:                 | Open                                   | ons rons close port                         | Use A                        | uto Baud/Port         | ius          |                 |                     |  |
|                                     | Port:                        | Port: COM7: AeroComm Wireless USB (C 💌 |   | Auto Archive EEPROM Settings |                       |              |                 |                     |  |
|                                     | Baud Rate:                   | 38400                                  | -   |                              | or UDP for new device | 15           |                 |                     |  |
|                                     | Parity:                      | None (recor                            | nmended) 💌                                  | Product                      |                       |              |                 |                     |  |
|                                     | Handshaking:                 | Hardware (                             | recommended)                                | Product:                     | ZB2430                | •            |                 |                     |  |
|                                     | Data Bits:                   | 8 💌                                    | Stop Bits: 1                                |                              |                       |              |                 |                     |  |
|                                     | Port2 Settings               |  |   |                              |                       |              |                 |                     |  |
|                                     | Enabled:                     |  |   |                              |                       |              |                 |                     |  |
|                                     | C USB / COM                  | l Port<br>t F                          | Add Find Open Port<br>orts Ports Close Port |                              |                       |              |                 |                     |  |
|                                     | Port                         |  | <b>T</b>                                    | Radio Upda                   | ite                   | race ell     |                 |                     |  |
|                                     | Baud Rate:                   | 57600                                  | <b>T</b>                                    | Load                         | Read Flash            | pages        |                 |                     |  |
|                                     | Parity:                      | None (recor                            | nmended)                                    | <u>F</u> ilename:            |                       |              |                 |                     |  |
|                                     | Handshaking:                 | Hardware (                             | recommended)                                |                              |                       |              |                 |                     |  |
|                                     | <u>D</u> ata Bits:           | 8 💌                                    | Stop Bits: 1                                |                              |                       |              |                 |                     |  |
|                                     |                              |  |   |                              |                       | About        |                 |                     |  |
|                                     |                              |  |   |                              |                       |              |                 |                     |  |
|                                     |                              |  |   |                              |                       |              |                 |                     |  |
|                                     |                              |  |   |                              |                       |              |                 |                     |  |
| P                                   | ort1: Open [COM7             | 1 [38,400] [8-                         | N-1] RTS Port1: High                        | CTS                          | Port1: Low Port2      | 2: Unavailab | le RTS Port2: H | iqh CTS Port2: High |  |
| Communications idle                 |                              |  |   |                              |                       |              |                 |                     |  |

## QUICK START GUIDE

### **RADIO CONFIGURATION**

- 8. Click on the Configure tab.
- 9. Click on the Read Radio button; this will display the modules internal configuration.
- You can use this screen to make changes and write those changes to the module.
- 10. A dialog box will appear and will display one of two messages:
  - a. If "Read Successful" is displayed, click on OK and continue to step 12.
  - b. If "Unable to enter command mode. Would you like to try using Auto Baud?" is displayed, follow these steps: 1) Move the J9 jumper to the Force 9600 Baud position.
    - 2) Reset the radio module with the Reset button on the SDK
    - 3) In the OEM software go to the PC Settings Tab and change the baud rate to 9600
    - 4) Change back to the Configure Tab
    - 5) Click on the Read Radio button again.
    - 6) The Interface Baud field will now display the Baud setting of the module.
    - 7) Move the J9 jumper back to the Normal Operation position.
    - 8) Click on the PC Settings tab.
    - 9) Locate the Baud Rate field and set it to match the Baud setting of the module.
    - 10) Click on the Configure tab.
    - 11) Go back to step 10.

#### **CONFIGURE TAB**

| 🖳 ZB2430 Configuration/Test Utility   |                                      |                         |                 |                     |  |  |  |  |  |
|---|--------------------------------------|-------------------------|-----------------|---------------------|--|--|--|--|--|
| Configure   | Range Test                           | Terminal/Chat           | Command         | PC Settings         |  |  |  |  |  |
| Radio Interface   | Radio Interface                      |                         | •               | Radio Features      |  |  |  |  |  |
| Interface Timeout:  | 9 Hex                                | RF Channel Number:      | B Hex           | - 🔽 Auto Channel    |  |  |  |  |  |
| RF Packet Size:   | 00 54 Hex                            | RF Channel Mask:        | 07 FF F8 00 Hex | Full Duplex         |  |  |  |  |  |
| CTS On  | 01 90 Hex                            | PAN ID                  | 00 01 Hex       | Transmit API        |  |  |  |  |  |
| CTS Off   | 01 80 Hex                            | Trapsmit Power:         | Full Power 🔹    | Send Data Complete  |  |  |  |  |  |
| MAC Retries:  | 3 Hex                                | RSSI Threshold          | E0 Hex          | RTS Enable          |  |  |  |  |  |
| MAK Retries:  | 2 Hex                                | End Device Poll Rate:   | 03 E8 Hex       | Modern Mode         |  |  |  |  |  |
| ADS Retries:  | 3 Hex                                | End Device Make Time    | 00 64 Hex       | Modify Wake Upon RX |  |  |  |  |  |
| Broodcost Itterrete:  | 4 Hex                                | Lind Device Wake Time.  | 00 32 Hex       | Reload Sleep        |  |  |  |  |  |
| Stop Bit Delev:   | 0 Hex                                | Beret Hold Message:     | 42 Hex          | End-to-End Ack      |  |  |  |  |  |
| Stop bit belay.   | ]                                    | Parent Hold Wessage.    |                 |                     |  |  |  |  |  |
| Info Center   | Info Center  Copyright [28]:         |                         | Radio Other     |                     |  |  |  |  |  |
| Copyright [28]:<br>Address: 0x00  |                                      |                         | Calc Baud       |                     |  |  |  |  |  |
| Version: All  | Version: All                         |                         | Hex             |                     |  |  |  |  |  |
|   |                                      |                         |                 |                     |  |  |  |  |  |
|   |                                      |                         |                 |                     |  |  |  |  |  |
|   |                                      | Type: Coordinator       |                 |                     |  |  |  |  |  |
|   |                                      | MAC Address: 00 00 00 : | 0 67 48 93 41   |                     |  |  |  |  |  |
|   |                                      | D.O.B.: 2/25/2008       | .0              |                     |  |  |  |  |  |
|   | Full Part Number: ZB2430-003A-TTL-01 |                         |                 |                     |  |  |  |  |  |
| GUI View EEPROM   | CILI View EEPROM Archive Window      |                         |                 |                     |  |  |  |  |  |
| Editor Viev   | Editor View                          |                         |                 |                     |  |  |  |  |  |
| Port 1         Port 2         Show Default         Compare EE         Load File         Save to File         Print         Write Radio         Read Radio |                                      |                         |                 |                     |  |  |  |  |  |
| Port1: Unavailable RTS Port1: High CTS Port1: High Port2: Unavailable RTS Port2: High CTS Port2: High   |                                      |                         |                 |                     |  |  |  |  |  |
| Communications idle   |                                      |                         |                 |                     |  |  |  |  |  |

## QUICK START GUIDE

### **RANGE TEST**

- 11. Click on the Range Test tab.
- 12. Select the desired Port 1 Loopback in the Test Selection field.
- 13. Click on the Create Data button in the Transmit Packet Selection field. Enter the desired data.
- 14. Make sure that Continuous is selected in the Test Type field.
- 15. Set the TX Delay to 1000 and the RX Timeout to 2000 in the Timing field.
- 16. Click on the Run button or press F10 on the keyboard.
- 17. Range test, and radio setup is now complete.

### **RANGE TEST TAB**

| ZB2430 Configuration/Test Utility  |  |                      |                        |  |  |  |  |  |
|--|--|----------------------|------------------------|--|--|--|--|--|
| Configure Range Test   | Terminal/Chat  | Command              | PC Settings            |  |  |  |  |  |
| Test Selection         Port 1 -> Port 2       Port 1 Receive Only         Port 1 -> Port 1       Port 1 Receive Only         Port 1 -> Port 2       Port 1 Loopback         Transmit Packet Selection <ul> <li>Create Data</li> <li>Elename:</li> </ul> Test Type:       Receive Packet Display:         © Continuous <ul> <li>Timed</li> <li>Only Display Errors</li> <li>Packet Time Stamp</li> </ul> Number of Runs       Timing:         00       Timing:         © Single Step       Tot Delay         Test Results       Eurors: 0         Percentage Good: 100%       Approx. 0 bps         Time Remaining: 0 | Port 1: View D123456789ABCDEFGHJJKLMNO Port 2: D123456789ABCDEFGHJJKLMNO S | v TX Packets         | rets<br>ppgrstuvwxyz01 |  |  |  |  |  |
| Port1: Unavailable RTS Port1: High C   | TS Port1: High Port2: Unavaila   | ible RTS Port2: High | CTS Port2: High        |  |  |  |  |  |
| Communications idle  |  |                      |                        |  |  |  |  |  |

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