AmbioMote24
Development kit
Quick Start Guide

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1 UNPACK THE DEVELOPMENT KIT

Unpack the development kit in a static-free environment.
The kit has the following preconfigured components:

1. AmbioMote24-A + Analog temperature sensor (SKU: SENS-00001)
2. AmbioMote24-B + USB interface board (SKU: USB-00001)
3. AmbioMote24-B + 3D acceleration sensor (SKU: SENS-00003)
4. AmbioMote24-A + Ambient light sensor (SKU: SENS-00002)
5. Mini USB cable
6. Configuration, visualization and data logging software
   (free download at www.ambiosystems.com, SKU: SWU-00001)
7. Quick start guide (free download at www.ambiosystems.com, AN-07-0003-1.0)
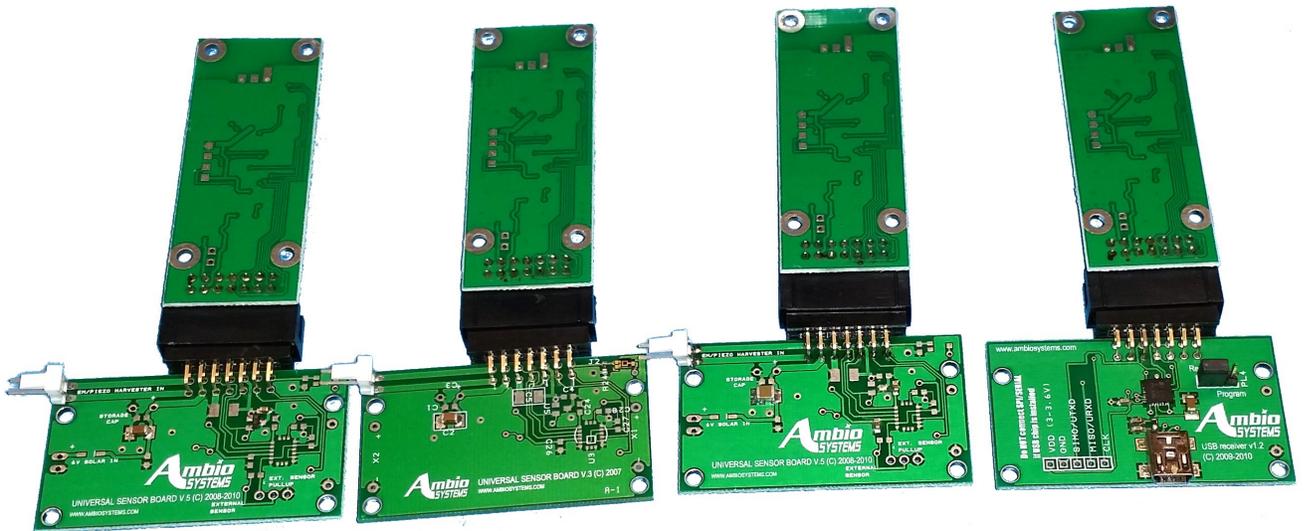
Kit contents

2 DOWNLOAD AND INSTALL SOFTWARE UTILITIES

The latest version of software utilities for configuration and data logging are available at AmbioSystem's Web site. We recommend always using the latest version available on the Web.

- Navigate to: Home -> Software and firmware -> Configuration Utility for AmbioMote24 or search for SWU-00001
- Go through the registration process, download and unpack the distribution package **Utilities.zip** using Windows.
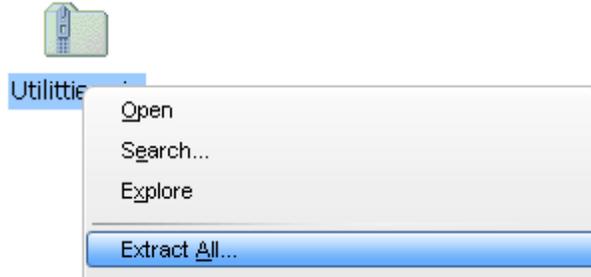
Open **Drivers** subdirectory and locate USB driver.

Double click on the driver file to start installation and wait for installation to complete
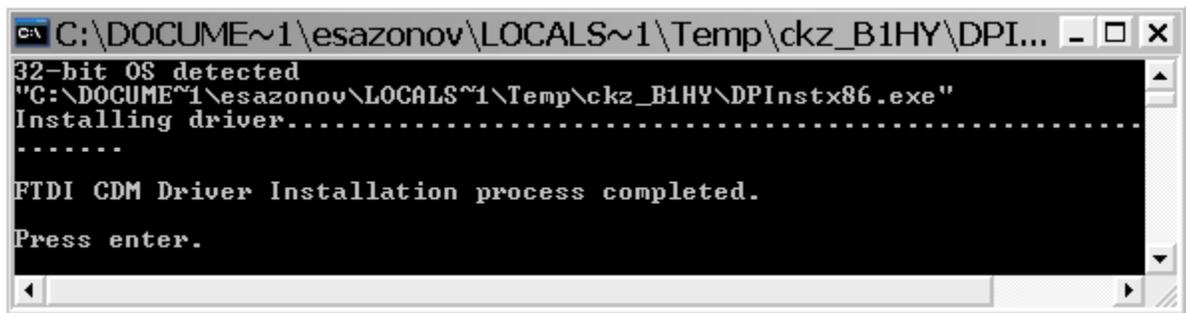
3   START THE DATALOGGING SOFTWARE

One of the AmbioMotes shipped with the development kit is programmed as a receiver. You can recognize it by the labeling on the antistatic bag in which it was shipped. The receiver firmware can communicate with any software that can read data out of a serial port. We provide a data logging utility that can convert, display and store data coming from the sensors into a file.

The following steps will start receiver operation:

- Connect USB adapter board to the AmbioMote24 .
  Make sure that the function selection jumper is in *Receive* position.
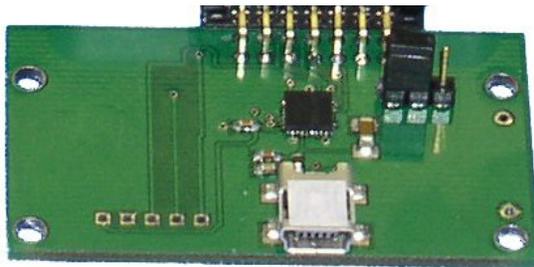
All changes in the position of the selection jumper should be made either with disconnected USB cable or disconnected AmbioMote24.

- Connect the miniUSB cable to the USB adapter board and to a USB port on a computer. Windows will identify new hardware and install drivers.

- After receiving a prompt that serial port driver installation is complete, right click on *My Computer* and select *Properties*.
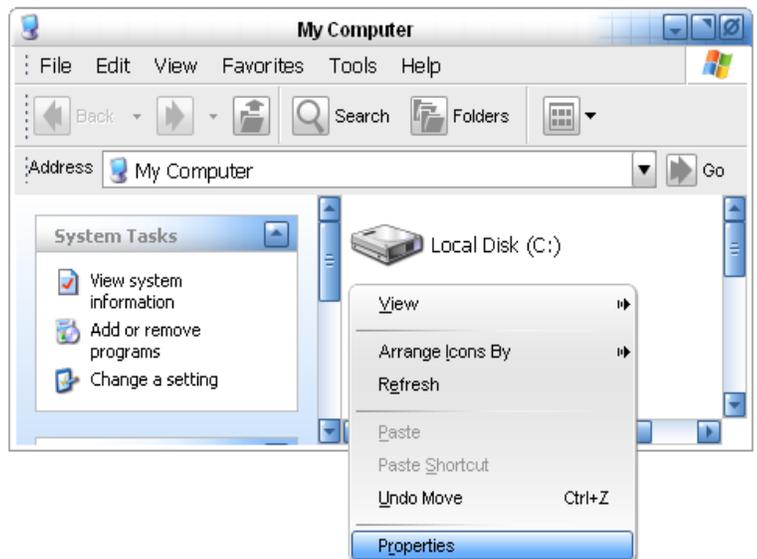
- In the *System Properties* window, select *Hardware* tab and click on *Device Manager*

button.
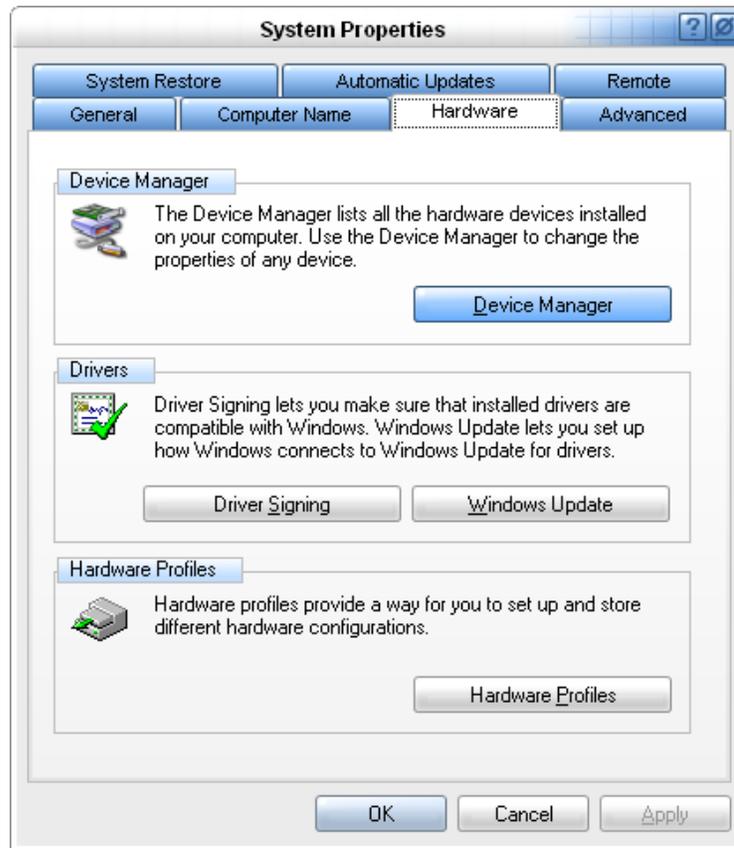
- In the ***Device Manager*** window, scroll down and unroll ***Ports (COM & LPT)***

- Take a note of the COM port number for ***USB Serial Port***. This is the port that will be used by the logging utility.

- Start the data logging utility located in Utilities directory

AmbioLogger.exe
AmbioMote Datalogging and Visuali...
AmbioSystems LLC
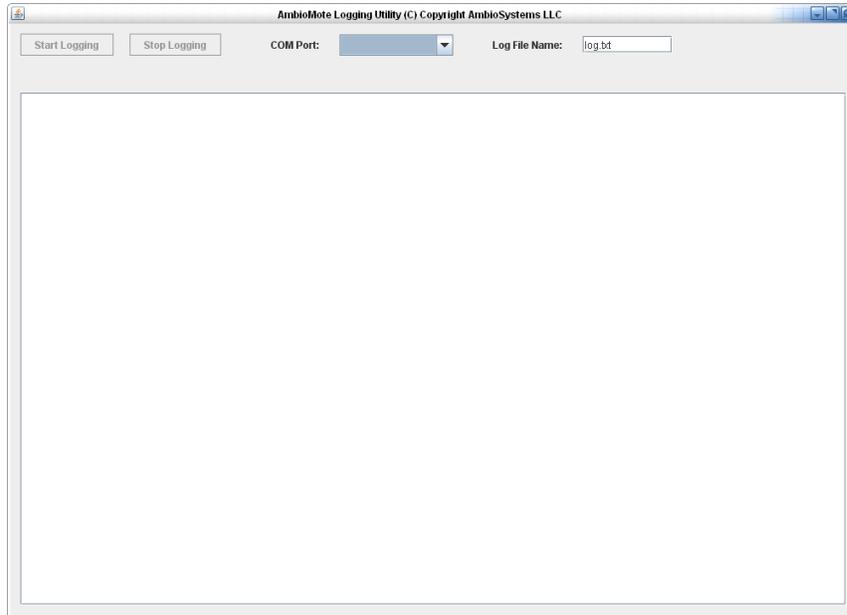
- Set the COM port
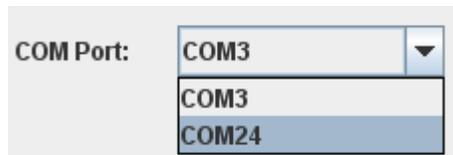
- Click Start Logging. You should see periodic (every 30 seconds) pings from the receiver.

Online 30 seconds - Ambiomote
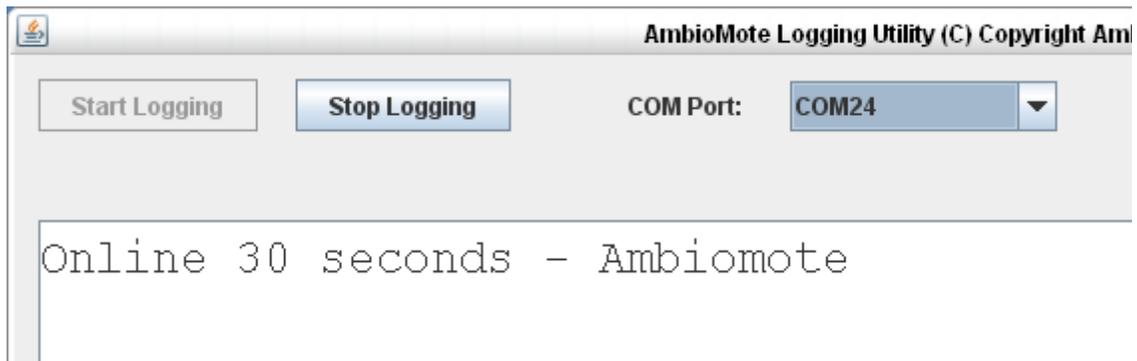
4 CONNECT THE ENERGY HARVESTER TO A SENSOR

The energy harvester is connected to the two-pin connector on the sensor board.
(Note: the harvesting element is not supplied with the development kit. Compatible harvesters are available from AmbioSystems).
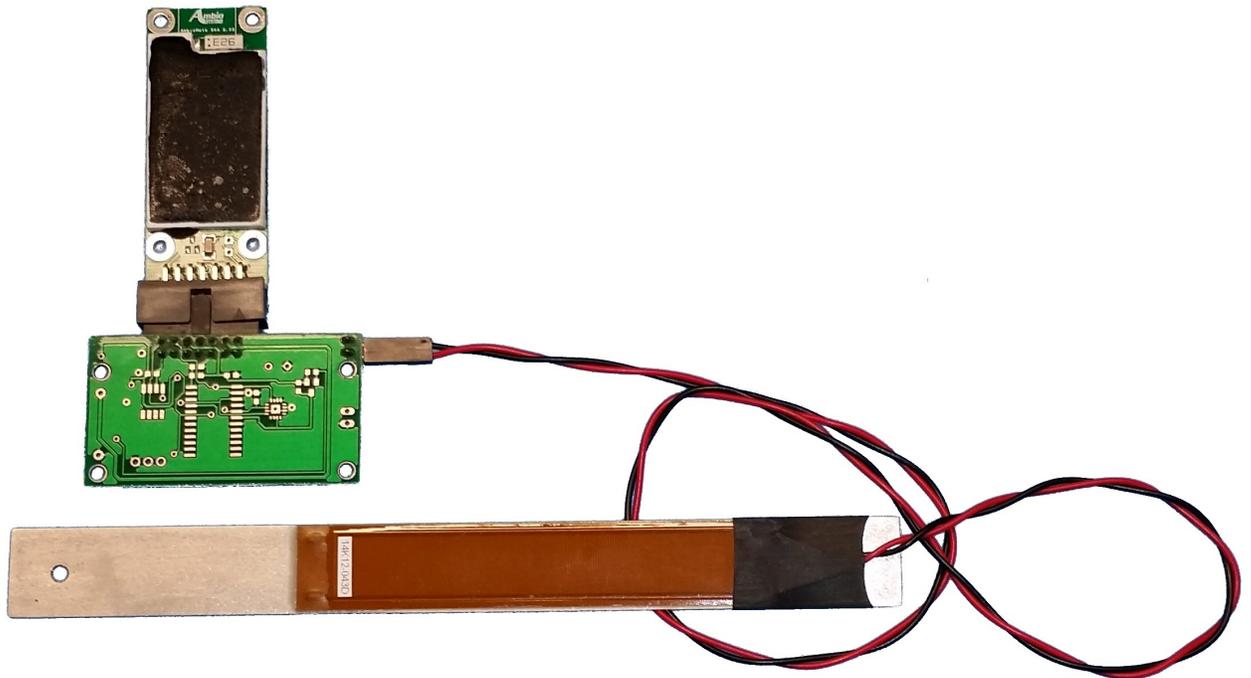
5 TEST THE SENSOR

Provide excitation to the energy harvester. The data logging utility will display the readings. The figure below displays output generated by one strong pulse of vibration of the energy harvester on a light sensor and low-level pulse on a temperature sensor.

```
AmbioMote Logging Utility (C) Copyright AmbioSystems LLC

 Start Logging     Stop Logging      COM Port:   COM24  ▼      Log File Name:   log.txt

Online 30 seconds - Ambiomote
Time: 31 Sensor ID: 36 Light: 179 lx
Time: 31 Sensor ID: 36 Light: 182 lx
Time: 31 Sensor ID: 36 Light: 181 lx
Time: 31 Sensor ID: 36 Light: 184 lx
Time: 31 Sensor ID: 36 Light: 181 lx
Time: 31 Sensor ID: 36 Light: 183 lx
Time: 32 Sensor ID: 36 Light: 186 lx
Time: 32 Sensor ID: 36 Light: 184 lx
Time: 32 Sensor ID: 36 Light: 187 lx
Time: 37 Sensor ID: 13 Temperature: 20.31 C
Time: 37 Sensor ID: 13 Temperature: 21.04 C
Time: 37 Sensor ID: 13 Temperature: 20.80 C
```

6 TROUBLESHOOTING

6.1 Operations using the serial port are slow.

Scanning the ports, reading and writing the config may be slow on some computers with a Bluetooth adapter. Some software stacks create an excessive number of Bluetooth serial ports that may interfere with RXTX protocol. Temporarily disabling the Bluetooth adapter should solve the problem.

6.2 The energy source is providing enough power, but I get sensor readings every 1-2 seconds

AmbioMote configuration specifies the sampling frequency at which data will be acquired. If the configuration specifies 1Hz sampling rate, the AmbioMote will not acquire more data even if additional energy is available. Change the configuration as described in AN-07-0001-1.0.

6.3 The logging utility displays numeric data

You use an outdated version of sensor firmware. Download the latest utilities package (SWU-00001) from AmbioSystems Web site and use configuration utility to update sensor firmware to the latest version.

7 Revision history

07-12-24

– original document

08-08-24

– reflect changes in firmware that eliminate need for sensors.txt

IMPORTANT NOTICE