

This README is geared for the users of a CRICKET-KIT only. Crossbow's CRICKET-KITs come pre-installed with firmware for Cricket Motes. One unit is configured as a *Listener* and the other seven units are configured as *Beacons*. If you did not purchase a complete Kit but instead purchased individual boards, please refer to the Cricket manual to compile and install the firmware and to configure boards as beacons, as appropriate.

In addition to the hardware contained in this kit, you will find a CD-ROM that includes the following:

- TinyOS Installer and Updates
- Cricket Software
- Cricket Manual
- TinyOS Getting Started Guide
- Cricket Mote Schematic

The Cricket Manual refers to TinyOS RPM release 1.1.6 to be used for the Cricket firmware. You should ignore this and use the TinyOS RPM 1.1.10 as mentioned in the Getting Started Guide.

#### 1: Install TinyOS 1.1.0 and Updates

- ❑ If you have not yet installed TinyOS 1.1.0, please refer to the Chapter 2 of the Getting Started Guide for instructions on how to install TinyOS.
- ❑ Also, please follow the directions to update to TinyOS RPM release 1.1.7 and install the Crossbow contribution – `xbow.tgz`

#### 2: Install the Cricket Software

- ❑ Copy the `Cricket.tgz` file from the TinyOS Updates folder on the CDROM to `/opt/` directory of your Cygwin installation and extract it using the following command:  

```
tar xvfz Cricket.tgz
```

#### 3: Run Java GUI to Test Distance Measurements

- ❑ Connect and turn on the Listener Cricket to the serial port of the host PC.
- ❑ Turn on the Crickets configured as beacons and spread them evenly with Ultrasonic sensors facing at you.
- ❑ Launch the Cricket Daemon by typing the following command in cygwin from `/opt/Cricket2.0/bin` folder  

```
./cricketd
```
- ❑ Run the Beacon Config demo by typing the following command in cygwin from `/opt/Cricket2.0/demo` folder  

```
./launchall.sh
```

#### 4: Configuring the Beacon Coordinate System

- ❑ Lay out 3 or more beacons on a flat surface (ceiling or floor, etc.). If 4 beacons are being used, make sure they don't form a square or rectangle.
- ❑ Select 3 beacons as references.
- ❑ Steadily hold the listener directly above (below) a reference beacon for a few seconds until all the error bars in the Beacon Finder window falls under the indicated threshold. When a new dot appears in the Beacon Configuration window, move to next step.
- ❑ Repeat step 4.3 two more times to configure the other two reference beacons. The order in which you calibrate the reference beacons defines the directions of the coordinate system axes.
- ❑ Once all the references have been calibrated, the Beacon Configuration program enters tracking mode, which shows the listener's position with respect to the beacons.
- ❑ Locate and place the beacons on the display appropriately and watch the relative position of the listener change as you move the Listener.

5: Cricket Document Errata

- ❑ In the Cricket Version 2 manual, section 1.2 Quick Start mentions that you should use TinyOS 1.1.6. This CD contains release 1.1.7, which can be safely used with the Cricket Software.
- ❑ In section 2.2.1 there is a reference to the Cygwin version 1.5.10 to be used for running the “cricketd” utility, you can safely use the Cygwin version installed by TinyOS (1.3.22) to run the cricketd utility provided in the Cricket2.0/bin/ directory, which has been tested on Windows 2000 and Windows XP.

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Crossbow Technology, Inc.  
4145 N. First Street  
San Jose, CA 95134  
Tel: 408-965-3300  
Fax: 408-324-4840  
email: [info@xbow.com](mailto:info@xbow.com),  
website: [www.xbow.com](http://www.xbow.com)