



# Balance Sensor

## User Manual

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## Hardware Requirements

The Balance Sensor comes with all the hardware that you will need to use the product.

### In the box

- The Balance Sensor,
- A Bluetooth dongle. This is a standard Bluetooth radio that allows a PC to communicate with the Balance Sensor. Other Bluetooth dongles may be used, or the built in Bluetooth capability of some laptops.
- A USB charging cable.

### PC Requirements

Minimum (recommended in brackets)

- Windows 7 SP1 / Vista SP2 / XP SP3 (Windows 7 SP1),
- 1GHz Processor (1 GHz),
- 1 GB available system memory (1 GB),
- 16 GB hard disc space (16 GB),
- 128MB video card (256MB),
- Bluetooth capability using Microsoft Bluetooth software. A Bluetooth dongle is provided,
- USB port, required for the provided Bluetooth dongle,
- Internet connection, for initial software download only.

## Setup

### Hardware

Charge the Balance Sensor using the provided mains charger. It can take up to 6 hours to charge, a full charge will run the board for approximately 24 hours.

### Software

Download and install the Balance Sensor software from the website  
<http://www.THETAmetrix.co.uk/site/downloads/software-and-manuals>

### Setting up the Bluetooth Dongle

Windows XP Service Pack 3 and all versions of Windows Vista / 7 are Bluetooth capable.

If you already have a Bluetooth dongle installed on your computer (built-in or USB), you should be able to skip this section.

If this is the first time you have used a Bluetooth dongle with your computer, and the computer has no built-in Bluetooth dongle, we recommend that the standard Bluetooth dongle, shipped with the Balance Sensor, is used. Plug the Bluetooth dongle into a USB port and after a few minutes, a notification should appear in the bottom right of your screen, indicating that the Bluetooth dongle is installed and working.

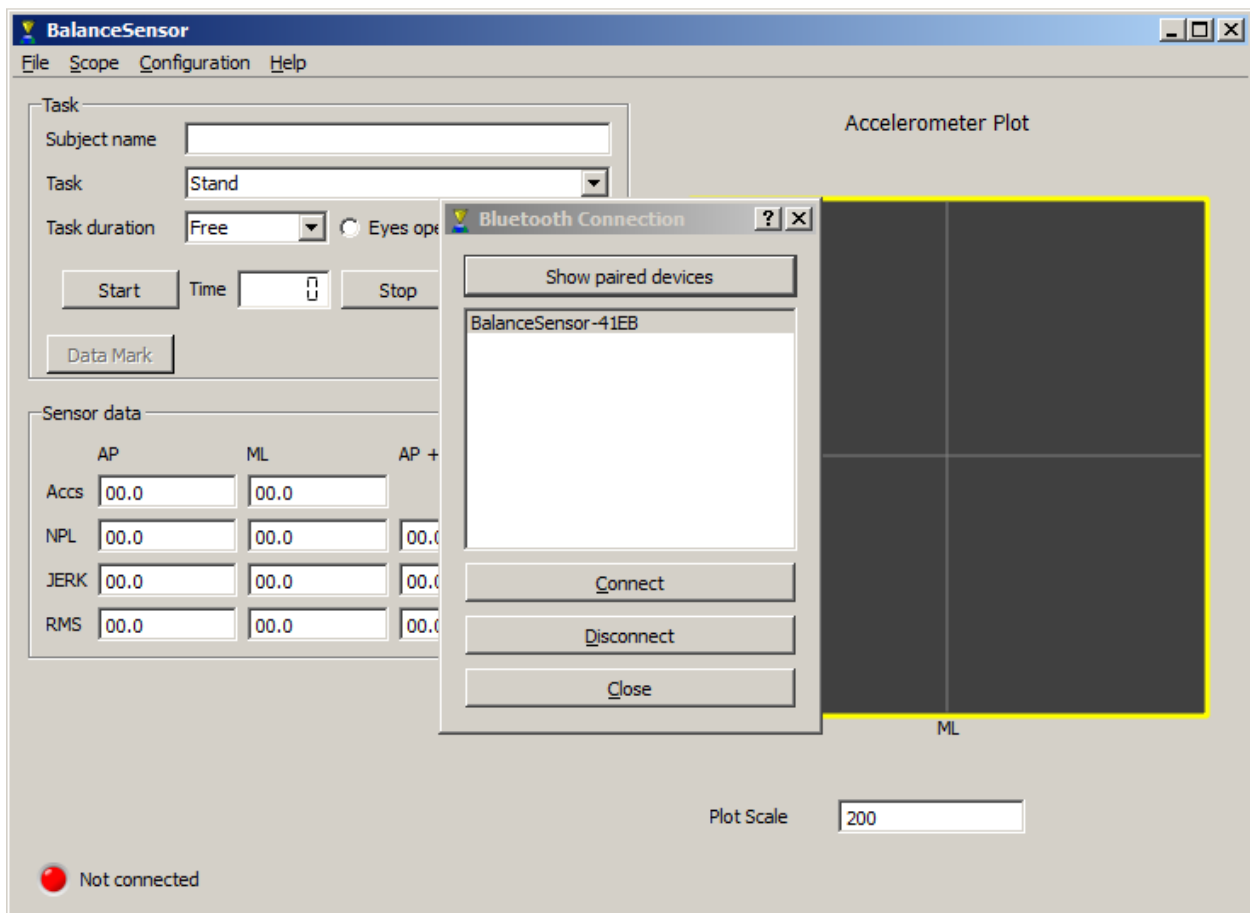
In case of problems, it may be necessary to consult Microsoft support.

## Pairing the Balance Sensor

- As with all Bluetooth devices, the Balance Sensor must be **'paired'** before use.
- Make sure that the Balance Sensor is switched on before initiating pairing.
- Access Control Panel, and select **'Bluetooth Devices'**, or right-click on the Bluetooth icon in the System Tray.
- Select **'Add'**, and follow the instructions to **'Add the Bluetooth Device'**.
- The Balance Sensor will show as a device called **'BalanceSensor-xxxx'** where xxxx is the last 4 characters from the Bluetooth MAC code for the device.
- The pairing code, (sometimes called a PIN or passcode) is **'1234'**. With Windows XP, you are offered a choice in pairing modes. Select the option to **'Use the passkey found in the documentation'**.
- Once the Balance Sensor is paired and shows up in the Control Panel Bluetooth Devices section, it is ready for use.

## Balance Sensor Software

Once launched the main screen will be seen, along with the Bluetooth connection dialog:



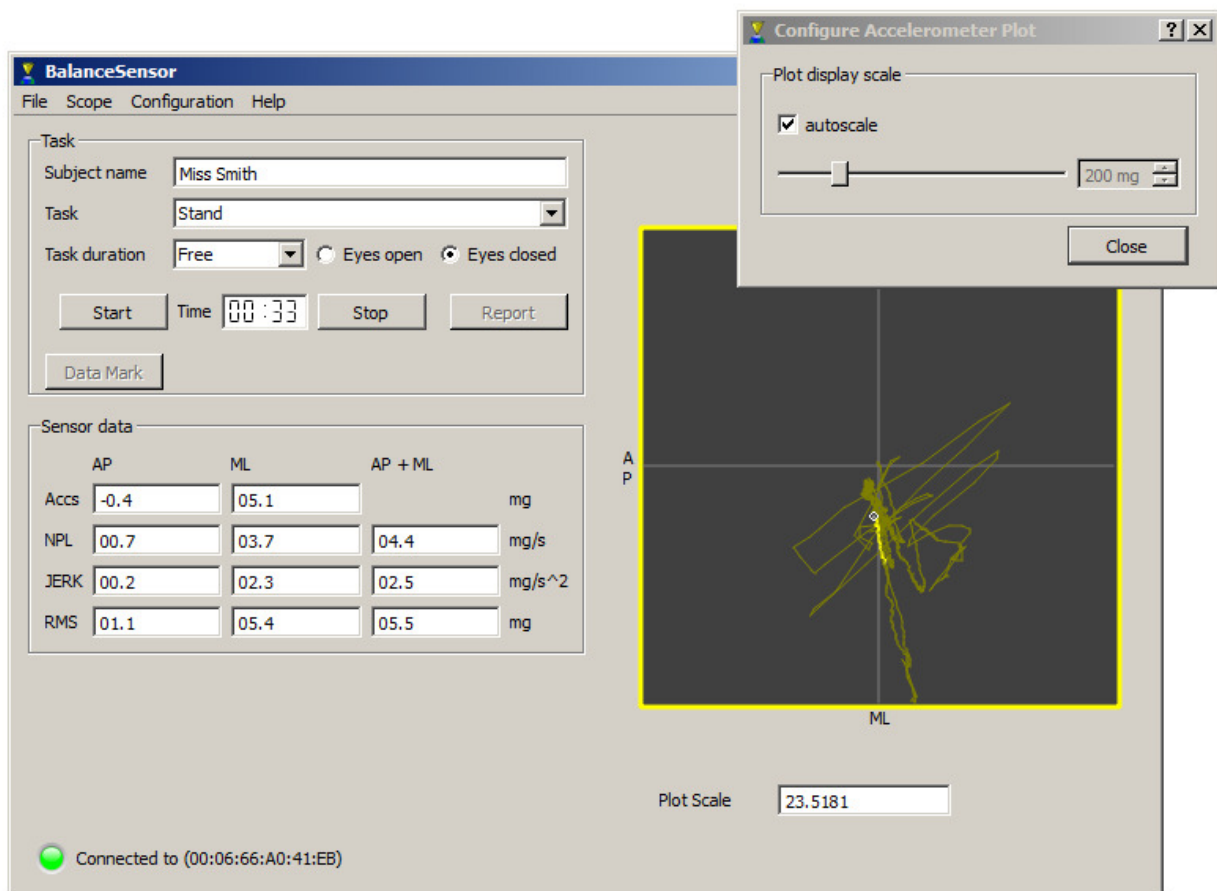
Check that the Balance Sensor is switched on.

Select the Balance Sensor– if you have more than one Balance Sensor, you can identify the Balance Sensor using the mac address which appears in the list and is printed on a label on the bottom of the Balance Sensor. Press **'Connect'** to connect to the board. If the Balance Sensor is not switched on, it will fail to connect and a warning dialog will appear.

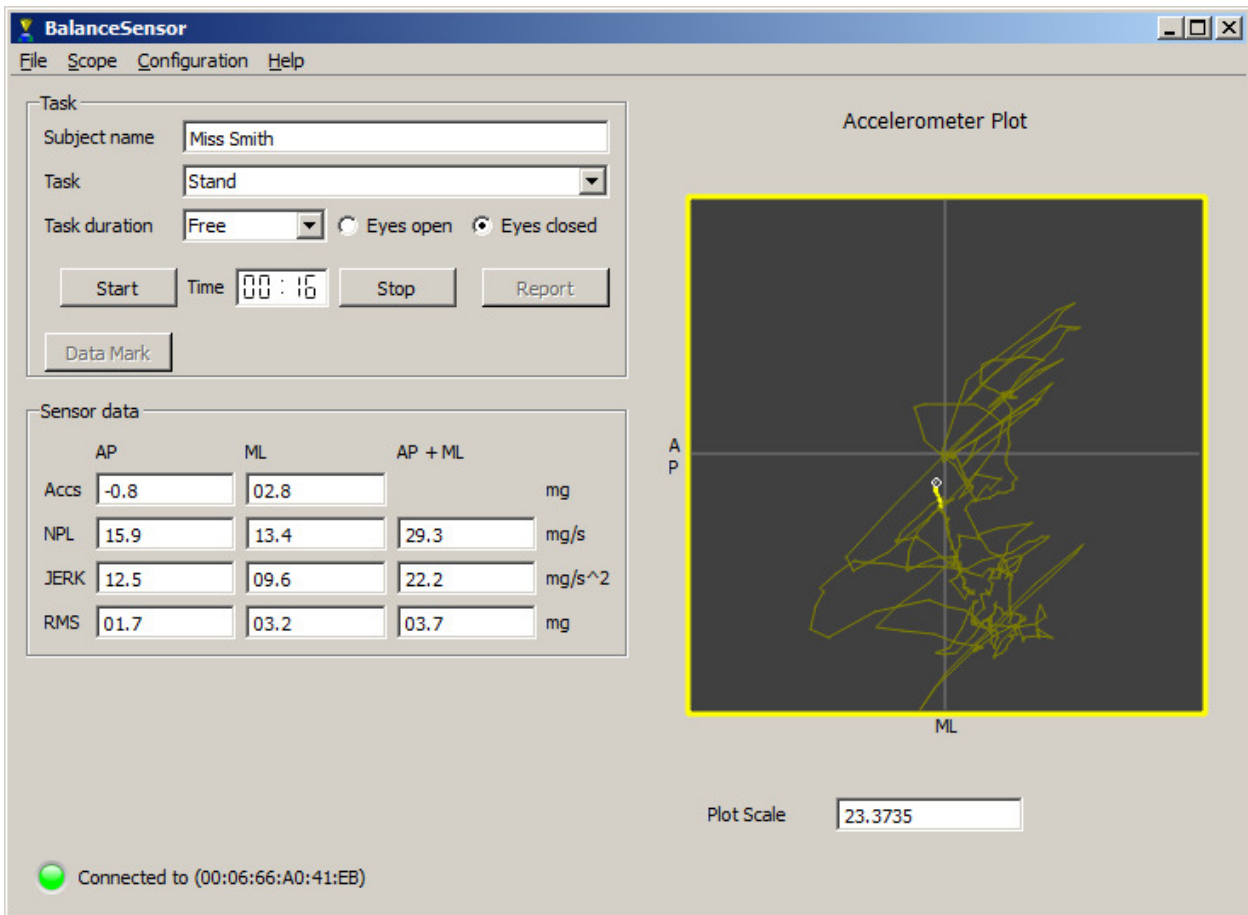
After a brief pause the dialog should disappear and the board and software are now ready to use. The status indicator (at the bottom of the screen) will show that the software is talking to the Balance Sensor.

## Using the Balance Sensor

<b>Subject name</b>	This edit box allows for entering the subject's name.
<b>Task dropdown</b>	Currently the only task is 'Stand'.
<b>Task Duration</b>	This can be selected from 15 seconds, 30 seconds, 1 minute, or set to "free" which is of unlimited time.
<b>Eyes open / eyes closed</b>	Select whether the task is to be done blind or not.
<b>Start button</b>	This button starts the task timing and start gathering data from the Balance Sensor.
<b>Stop button</b>	In Free Timing mode, this will stop the task in progress. Once a task has been stopped – either when the task duration was reached or when the stop button was pressed – the performance report is generated and can be viewed using the report button.
<b>Time</b>	This display shows the elapsed time of the running test. The time will stop at the selected task duration (unless the duration is set to "free"). No data will be collected from the Balance Sensor once the time has stopped.
<b>Report button</b>	Once a test is completed or stopped the Report button will be enabled and will show a report of the test results



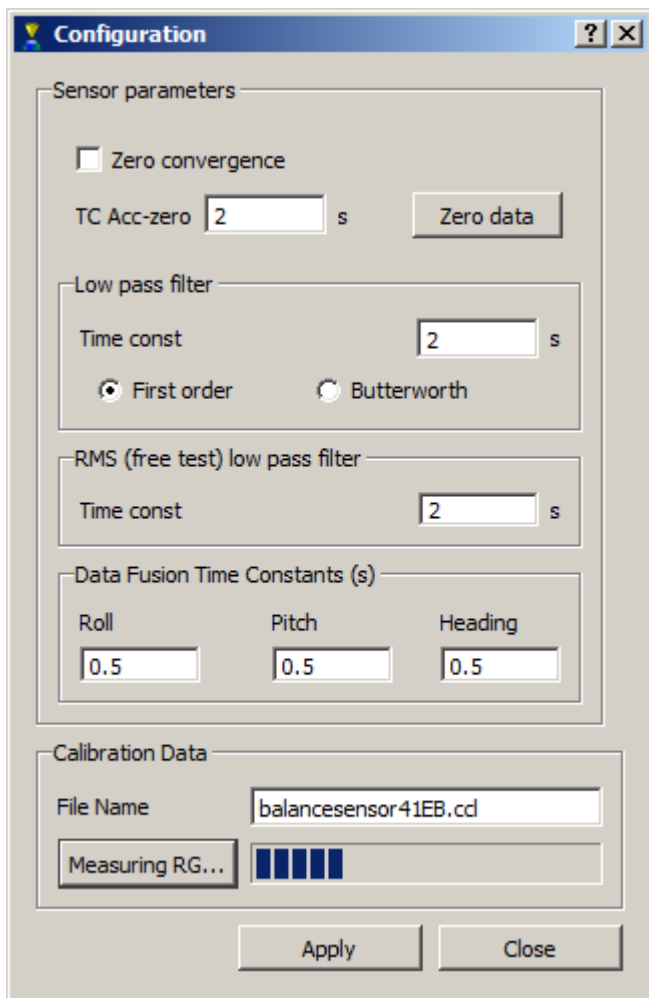
To change the scaling on the Accelerometer on the right-hand side of the dialog, right-click on the plot and either check 'autoscale' or use the slider to zoom in or out.



The right side of the display shows the current accelerometer data, as well as a trace of the data from last few seconds (the older data fades away).

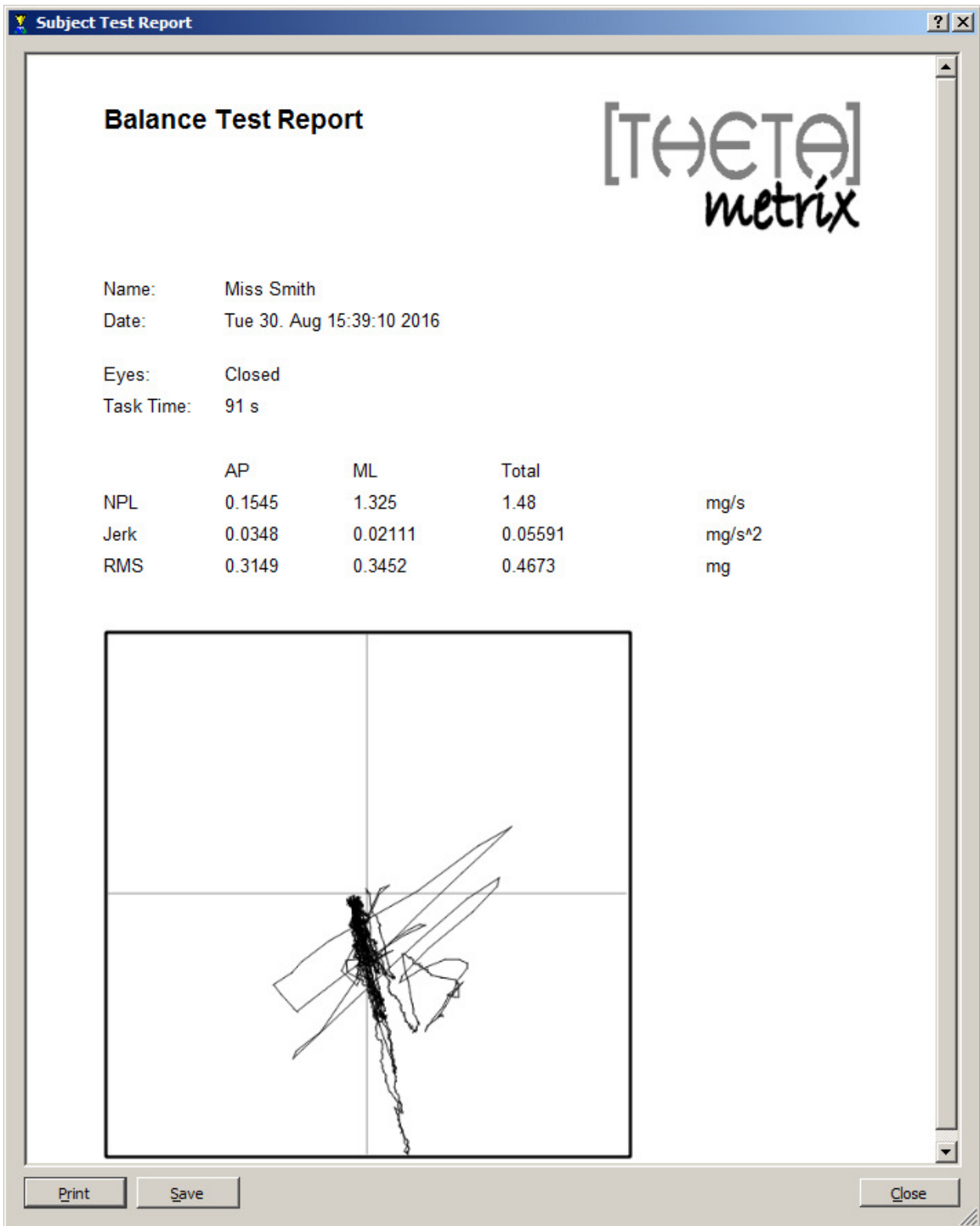
## Configuration

The filter time constants can be altered in the Configuration Panel. In addition, the offsets for the rate gyro sensors can be measured and applied. The rate gyros are very sensitive to changes in temperature. To obtain best performance from the Balance Sensor we recommend that the offsets are measured regularly. To do this, place the Balance Sensor on a non-moving surface and click on 'RG init'. The bar displays the progress of the calibration process.



## Subject Test Report

Once a test is completed the Report button becomes enabled. Clicking on this generates the report of the test:



<b>Print button</b>	Sends the report to a printer using the standard Windows print dialog
<b>Save button</b>	Saves the report in a user-named PDF file. This allows the clinician to compare and monitor a subject's performance over repeated tests during treatment.