

## System requirements

<b>Operating System:</b>	Windows Vista, Windows 7, 8 & 10 (32 and 64 bit compatible)
<b>Display</b> minimum: Recommended:	800 x 600 with 256 colours 1024 x 768 with high colour – 16 bit
<b>Minimum Software:</b>	Windows Installer 3.1* Microsoft .NET Framework 4* Adobe Reader (V7.0)**

\* If Microsoft .NET Framework 4 or Installer 3.1 is not detected during the installation set up process, they will be automatically installed prior to the EasySense application install. This will extend the installation time significantly.

\*\* To view and print PDF files you will need Adobe Reader installed.

## Installing the EasySense software

The 4500 EasySense Windows software is available as a download from the Data Harvest website ([www.data-harvest.co.uk](http://www.data-harvest.co.uk)). Save the compressed file to your computer, then 'unzip' it to extract all files before you run the setup.exe or msi.

**Note:** The method used to unzip a file will depend on the computers operating system and the decompression program on your computer. For example:

1. Download the EasySense software zip file; select to **Save** it to a temporary directory on your computer.



Compressed



Decompressed

2. **Right** click on the zipped folder and select **Extract All** (or Extract or Unzip). Select the extract destination as the temporary directory. When the folder has decompressed it will appear minus its 'zip'.

**USB users:** Make sure the data logger is **not** connected to the USB port prior to, or while, the EasySense software is being installed.

- Log on as ADMINISTRATOR (or with equivalent access rights) on the system.
- Close any open programs – you may need to restart your machine for configuration changes to be made.

- From the unzipped folder either double click on the Setup.exe or select the appropriate Windows installer package (.msi).

The .msi package for 32 bit systems is supplied in the **i386** directory and for 64 bit systems in the **amd64** directory.

- Follow the on-screen instructions to complete the installation of EasySense and its associated files\* onto the hard disk.
- When the installation is complete, restart your system.

\* Complete installs all, whereas a Custom install allows you to deselect the installation of logger manuals or to change their installation path.

## Starting EasySense for the first time

### Step 1: Connect an interface or data logger to the computer

- **USB connection:**

Connect the data logger to the USB port on the computer. Windows will automatically detect a new device and install the drivers.

- **Bluetooth™ connection:**

Use the instructions provided for the data logger or the Bluetooth Smart USB adaptor.

- **Serial connection:**

Connect the data logger to the serial port on the computer.



### Step 2: Start the EasySense software

E.g. Start ► Programs ► Data Harvest ► and click on EasySense Software.

### Step 3: Select the language

If a choice of language is available a Set Language window will open. To choose a different language, select from the drop-down menu and OK. The program will close. Restart to apply your choice.

### Step 4: Select a user level

A 'Select Program Level' window will automatically open, select a suitable user level.

- Level 1 is aimed at 'start' level (e.g. up to 9 years old)
- Level 2 is aimed at 'mid' level (e.g. 9 – 15 years old)

- Level 3 is aimed at 'exam' level (e.g. 15 years plus)

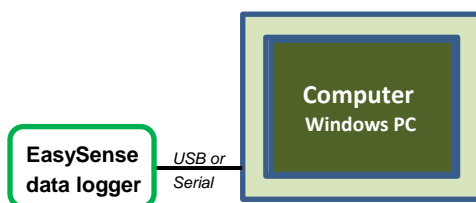
**Note:** The program level can also be altered by clicking on the Level icon and cycling through the levels (one bar for Level 1, two for Level 2 and 3 for Level 3). The selected level will be saved when the **EASYSense** program is closed.



## Step 5: Select an Interface and connection

The first time EasySense is opened a 'Select Interface' window will automatically open to allow the data logger and its connection to be selected.

- 1) If connecting direct to a Windows computer using a **USB** or **serial** lead.



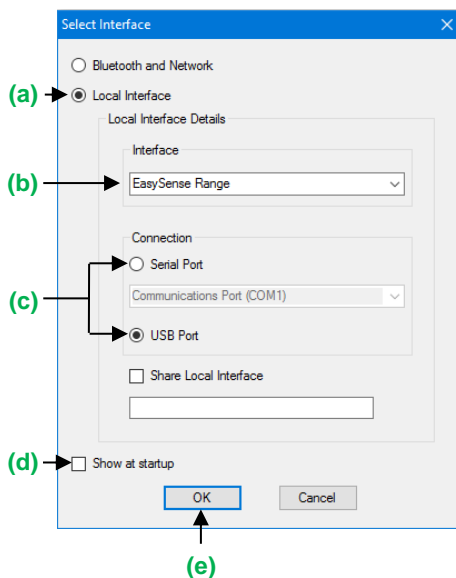
### (a) Local Interface

#### (b) Interface:

- **EasySense Range** for an EasySense data logger or interface.
- **Example Data** for stored example data to show how sensor readings are displayed. If this option is selected you will not be able to collect data from logger.

#### (c) Select either Serial or USB port as the connection.

- If you are connecting via a **USB** lead, select **USB Port**.
- If you are using a **serial** lead, select **Serial Port** and then the



number of the communication port used from the serial port drop-down list e.g. Communications Port (COM1).

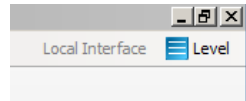
- If you are using a **USB/serial adapter**, select **Serial Port** and then the adapter from the serial port drop-down list e.g. AMC232USBDH USB Serial Port (COM4).

(d) If these settings will stay the same leave the 'Show at startup' box unticked.

**Note:** If the box is ticked (enabled) the 'Select Interface' window will automatically open when you next start **EASYSSENSE**, so you can check the selected method of connection is correct

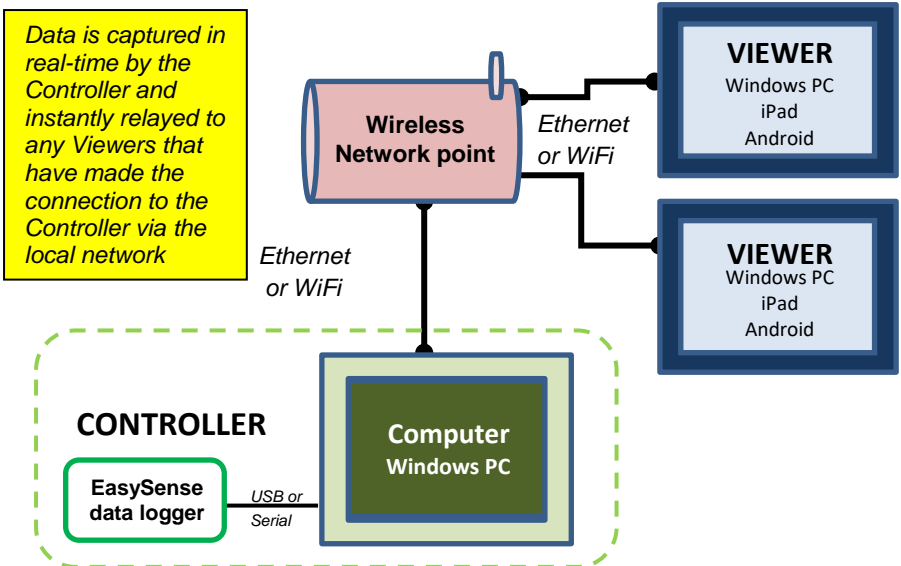
(e) Click on OK. The program will save the selection.

The text top right of the EasySense window will indicate that a Local Interface connection has been established.



**Note:** To change this selection at any time, CANCEL any 'failure to connect' errors, select **Interface** from the **File** menu and alter the selection.

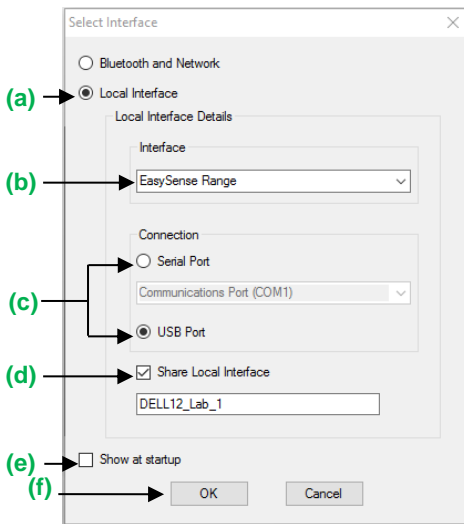
2) If connecting via a **USB or serial lead** and simultaneously **sharing data with other network users**.



On the computer that is acting as the **Controller** (interface connected to the computer) select

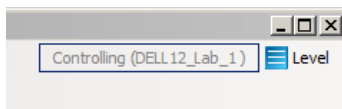
- (a) Local Interface.
- (b) EasySense Range.
- (c) The appropriate connection i.e. either Serial or USB Port.
- (d) To allow others network user's to connect as Viewers select **Share Local Interface**

**Note:** Type in a more appropriate name for the controller computer if preferred.



- (e) If ticked the 'Select Interface' window will automatically open when you next start EasySense.
- (f) Click on OK. The program will save the selection.

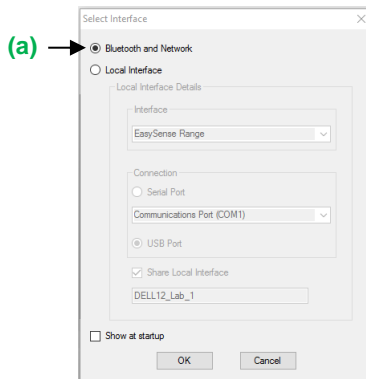
The text top right of the EasySense window will indicate that connection as the Controller has been established.



On the computer that will be acting as a **Viewer** select:

- (a) **Bluetooth and Network**

Click on OK. The program will save the selection.

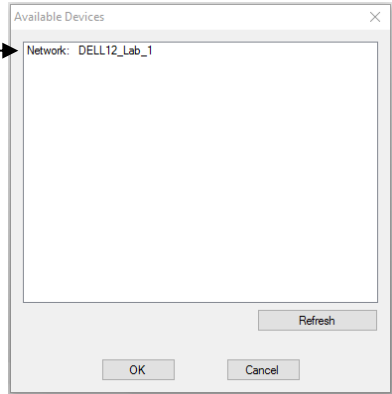
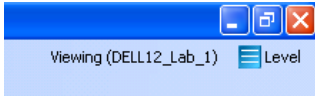


Click on the **Not connected** text top right of the EasySense window.

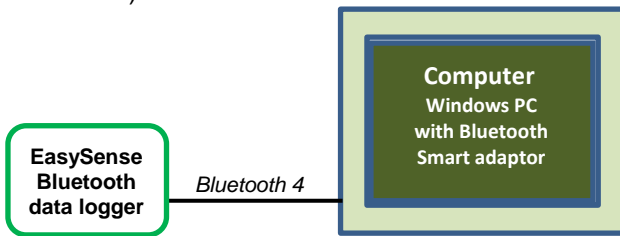


Select the computer acting as the Controller from the list of available devices, OK.

The text top right of the EasySense window will indicate that connection as a Viewer has been established.



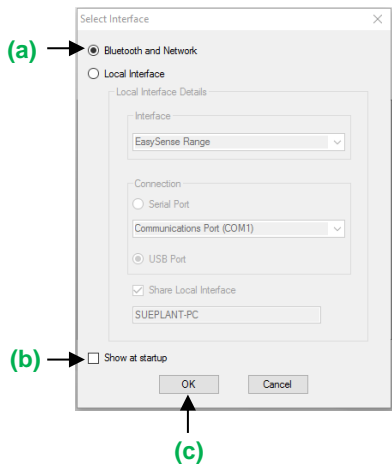
3) If connecting direct to a Windows computer using **Bluetooth 4.0** (aka Smart or BLE).



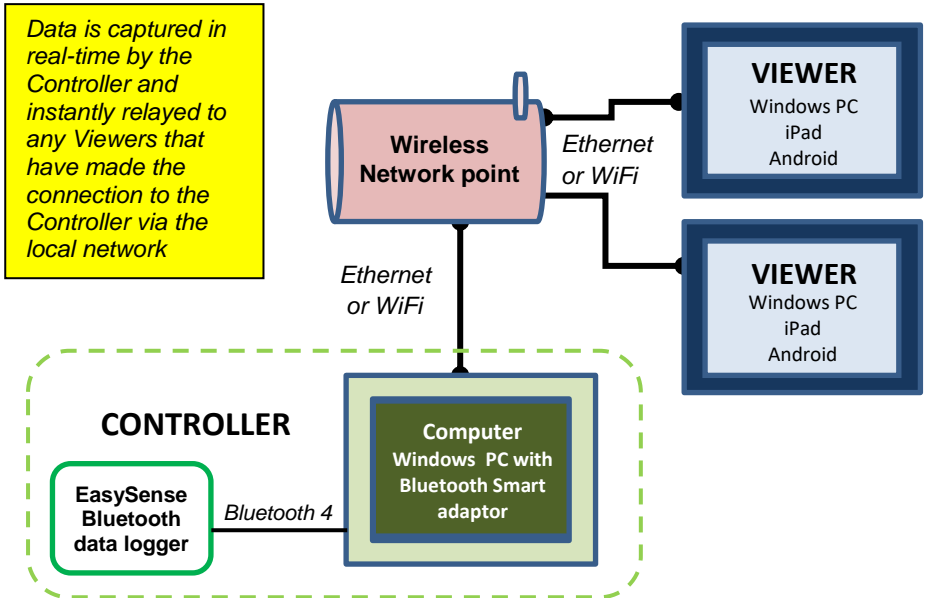
Select:

- (a) **Bluetooth and Network**
- (b) If these settings will stay the same leave the 'Show at startup' box unticked.
- (c) Click on OK. The program will save the selection.

The text, top right of the EasySense window will indicate a Local Interface connection has been established.



4) If connecting using **Bluetooth BLE** and simultaneously **sharing data with other network users**.

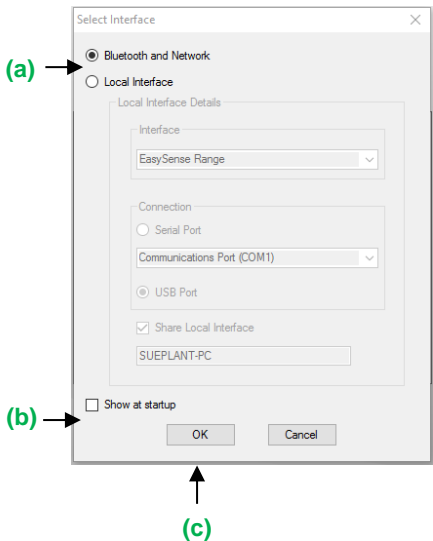
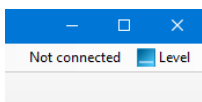


Data is captured in real-time by the Controller and instantly relayed to any Viewers that have made the connection to the Controller via the local network

On the computer that is acting as the **Controller** (logger connected to the computer) select:

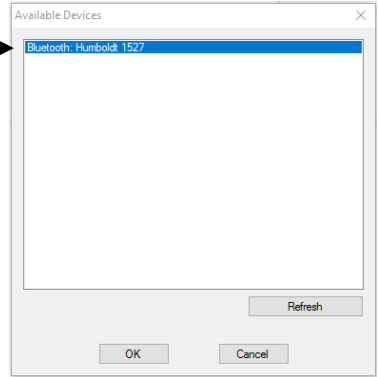
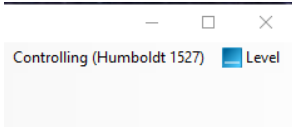
- (a) **Bluetooth and Network**
- (b) If these settings will stay the same leave the 'Show at startup' box unticked.
- (c) Click on OK. The program will save the selection.

Click on the **Not connected** text top right of the EASYSense window.



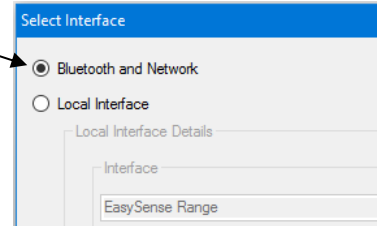
Select the Bluetooth logger from the list of available devices, OK.

The text top right of the EasySense window will indicate connection as the Controller has been established.



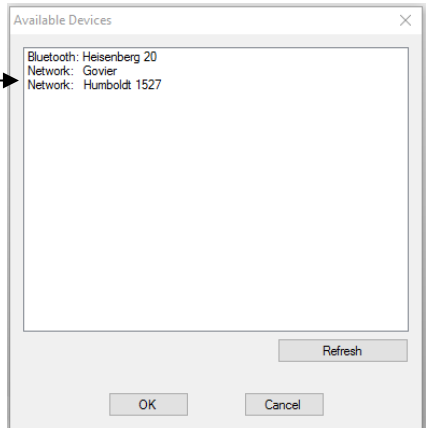
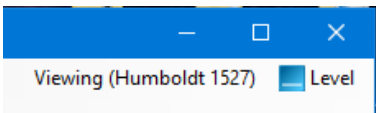
On a Windows computer that will be acting as a **Viewer**.

Select **Bluetooth and Network** and click on OK.



Click on the **Not connected** text top right of the EasySense window.

Select the computer / logger acting as the Controller (network) from the list of available devices, OK.



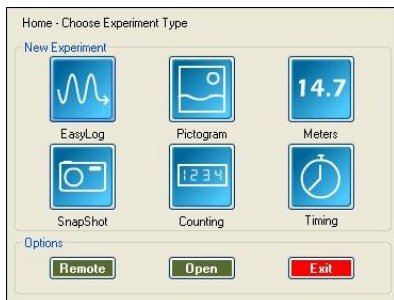
The text top right of the EasySense window will indicate that connection as a Viewer has been established.



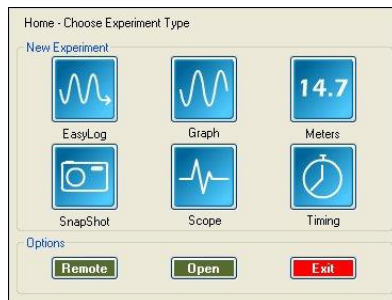
## The Home screen



Home is the main navigation screen, which contains the icons for all available options. The appearance of the Home screen and the complexity of the toolbars and functions are altered by the user level selected.



The Home page at Level 1





The Home page at Level 3

**Note:** If the interface/data logger detected cannot use an option it will appear greyed out e.g. the Setup and Retrieve Remote options will only be available for data loggers which support remote data collection.



### EasyLog

The Graph window will open pre-set to record sensor values **continuously** as a line graph until stopped.

Click on the **Start** icon  to begin logging. Recording will start with a time span of 30 seconds and when it has elapsed the time span will double automatically. This will continue until the recording is stopped by clicking on the **Stop** icon .



### Meters

The Meters window gives an introduction to sensors and how they respond to change. Up to four section displays can be open at any one time and they can be any combination of sensors and displays.

The program will open with live data being displayed from a sensor in a Numeric window. Click on the appropriate picture icon on the Menu bar to open other section displays i.e. Numeric, Gauge, Colour Change or Bar. To alter the sensor displayed in a section, **right** click in the individual section window and select the sensor from the list.

Click on the **Stop** icon  to stop logging.



### Pictogram

The value from the sensors is displayed as images, abstract colour blocks or a bar chart. Each represents a 10<sup>th</sup> of the range (or span) of the sensor and is also displayed as a number from zero to ten.

The program will open with live data being displayed as images. Click on the **Store** icon to capture a live reading from the sensors.


Click on the **Stop** icon  to stop logging.

**Note:** Pictogram is only available if the User level is set to Level 1.



### Snapshot

The graph window will open pre-set to record sensor values on demand (**manual sampling**) with a bar graph display.

Click on the **Start** icon  to begin logging. Click in the graph area to record the current value for each active sensor.



Click on the **Stop** icon  to stop data being recorded.



### Graph

Graph is used to record sensor values against a **chosen time span** as a line graph display.

A real time logging wizard will open from which the time span, interval between samples, start condition and triggers for the recording can be chosen. (The options available will depend on the logger and user level). When your selection has been made, click on Finish.


Click on the **Start** icon . Recording will start when the start condition you have selected is met e.g. if None is the selected trigger then the recording will start as soon as the **Start** icon is clicked. The recording will stop when the selected time span has passed. (If you want to stop a recording before it has run the full term, click on the **Stop** icon .

**Note:** Graph is only available if the User level is set to 2 or 3.



### Scope

Scope is a simple oscilloscope type display. A scope trace is redrawn continuously on the screen. It is ideal for demonstrating fast events where there are rapid changes such as ECG traces, sound waveform, etc.

Make your selection from the right-hand control panel and click on the **Start** icon  to begin logging.

**Note:** Scope is only available if the User level is set to Level 3.




### Timing

Timing is used to allow students to study Time, Velocity, Acceleration, Momentum and Kinetic Energy relationships using switch-type (digital) sensors such as Light gates.

Sensors must be connected to the inputs labeled A or A & B.

A recording wizard will open with options to select before recording data. (The availability of options will depend on the user level you have selected to work at). When the selection has been made, click on Finish.

Click on the **Start**  icon and a reading will be displayed when a change in signal is detected from the digital sensors.



### Counting

Use to count events by using switch-type (digital) sensors. The chart type can be displayed as images or a colour block or bar chart oriented either horizontally or vertically.

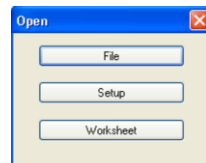
The program will open with logging started. The count will increase by one each time a change in signal is detected from the digital sensors and be displayed as a bar chart.

Click on the **Stop** icon  to stop logging.

**Note:** Counting is only available if the User level is set to Level 1 or 2.

### Open File

Used to load a previously saved .SSL or .sid file. Locate the correct file and click on open.



### Open Worksheet

To select and open a worksheet and its accompanying experimental set up file.

### Open Setup

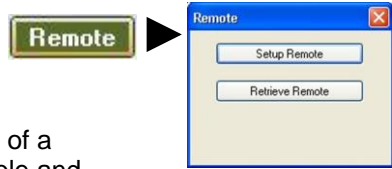
To select and open an experimental set up file. This will pre-set the

software for a specific operation.

### Set up Remote

Used to set up the options for capturing data while disconnected from the computer (remote).

These options can include the duration of a recording, the time between each sample and triggers.



### Retrieve Remote

Use this option to retrieve a data set stored in your data logger's memory.

## EasySense software Multi-user Site Licence

### Definitions

The following expressions have the meanings given here:

- 'DHG' means **Data Harvest Group Limited**, being owner of all intellectual property rights in the Software
- '**Documentation**' means both printed and electronic user documentation.
- '**Software**' means the program supplied.

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