



Quick Start Guide – Hardware



The BroadWeigh shackle can be used almost exactly as a normal shackle with a few additional considerations.

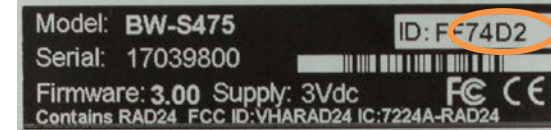
It is worth noting that the strain gauge is located within the shackle pin and therefore this is where measurement takes place. The loading in the bow is not measured directly but can be inferred.

Before rigging, check the shackles all work. Remove cover and insert batteries, observing polarity. Wake them up by switching the handheld display on- . All shackles on the same radio channel will wake and their LEDs should start to flash.

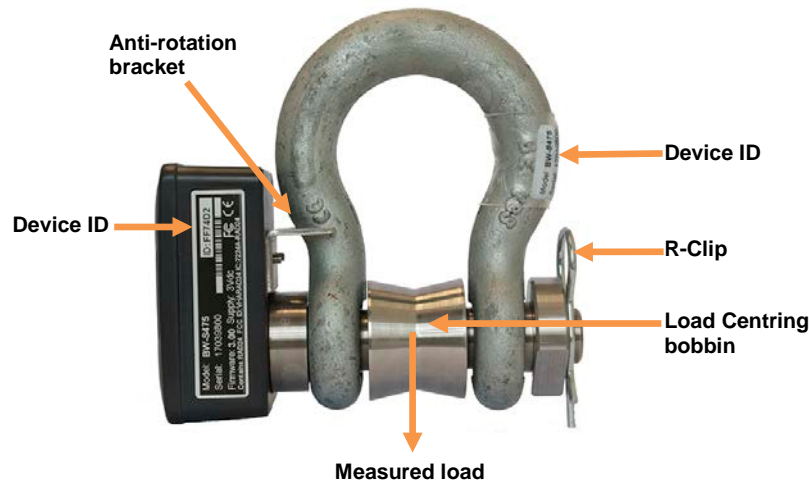
Cycle through the shackles on the display by pressing the select button-  and check that the data tag shown on the handheld matches the one on the shackle with its LED constantly on.

Alternatively, you can use the LOG100 software once the project has been configured to wake/sleep the shackles and confirm that they are transmitting as expected.

It is a good idea to note down all the shackles' data tags and IDs and where they are located within the rig plot. This is crucial for identifying which loads are being measured and where. The ID will be needed to soft pair.



Default Data Tag (Last 4 digits of device ID)



BroadWeigh Handheld Display

Sig Low

The radio signal from the BroadWeigh device is low. Signal may be intermittent when this indicator is visible until----- is displayed. Note: Even with a degraded signal the display value will always be correct.

Batt Low

The batteries in the handheld are low and need to be replaced.

Remote Error

The BroadWeigh device has reported an error.



Remote Batt Low

The batteries of the BroadWeigh device are low and need to be replaced.

Select button

Press to cycle through available BroadWeigh devices. Press and hold to see selected device **Data Tag**.

Power button

Press and hold to power on/off. The handheld regularly wakes all BroadWeigh devices on the same radio channel that are in range and are using the same group key.

For maximum accuracy and safety, it is critical to ensure the following:

- The pin and bow must be used as a pair in the orientation shown and are marked with matching IDs.
- The load centring bobbin must be used as shown.

Quick Start Guide – Hardware



Radio Channel	Data Tag/ID	Location

Radio Channel	Data Tag/ID	Location

Pre use check list

- Shackles power up
- Shackles talk to handheld or LOG100
- Data tags match as expected
- Pins and bows match
- Anti-rotation brackets are correctly positioned
- Bobbins are in place
- R-clips are in place
- Shackles' data tags and rig location are noted

To get the optimum wireless range

- Rig the BroadWeigh shackle vertically
- Aim the BroadWeigh logo towards the receiver
- Ensure a good line of sight
- Keep a reasonable distance from other objects

Quick Start Guide – LOG100



LOG100 PC logging and mapping software will be provided by your distributor. The **BroadWeigh Toolkit** is available to download from www.broadweigh.com/support. It is used for the initial setup of the hardware and to monitor wireless traffic in the area (see below).

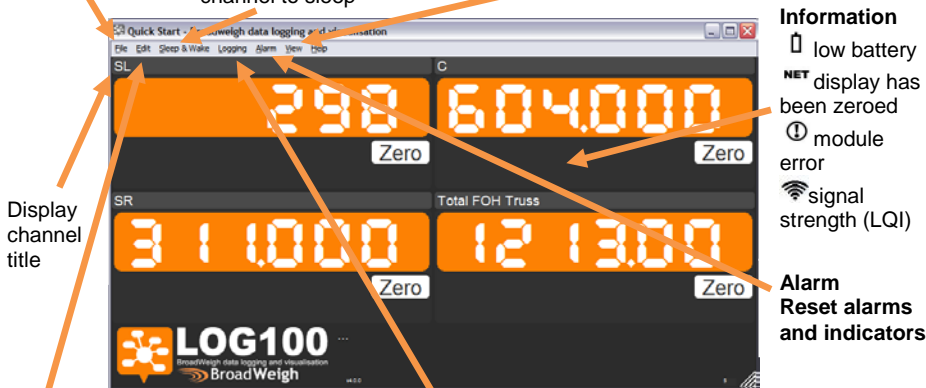
With LOG100, up to 100 channels of data can be viewed real time or logged via CSV to an application such as Microsoft Excel. Mapping, report generation and webservice are also available.

Install the LOG100 software and follow the instructions. The software is also available via our website. Once the software is installed connect the **USB base station** and launch the software.

File
New project
Open project
Save as Project

Sleep and Wake
Wake
 Wakes all BroadWeigh devices on the same radio channel
Sleep
 Sends all modules on the same radio channel to sleep

View
All channels
 Shows this view
Visualisation
 Shows visualisation view.



Display channel title

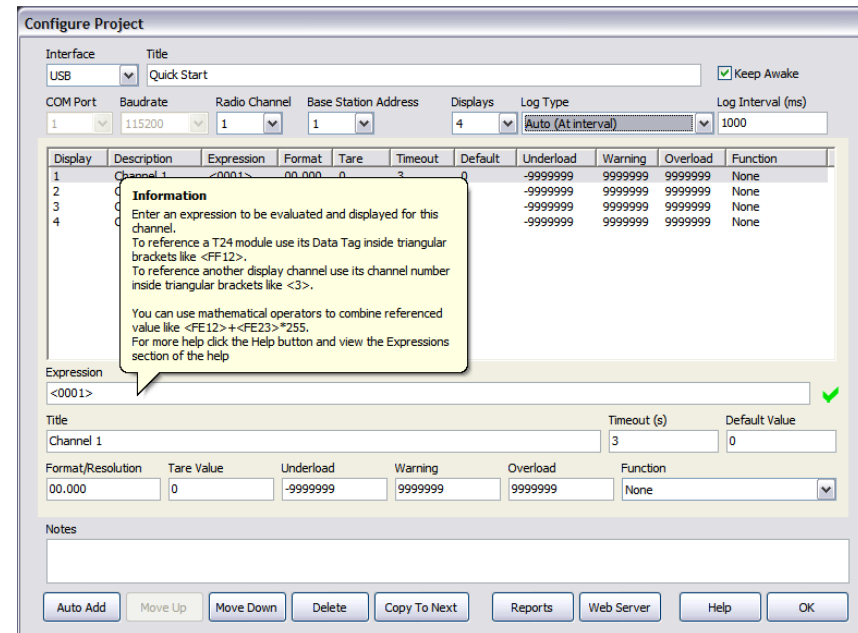
Edit
Configure project
 Set up the data display screen is organised.
Edit visualisation
 Configure the visual representation of the individual setup.
Preferences

Logging
Start logging
 Opens a file save dialog window to allow the user to select the name and destination of the log file.
Stop logging
 Stops a previously started log.
View last log
 Opens the last logged file with the default CSV application.

Information
 low battery
 NET display has been zeroed
 module error
 signal strength (LQI)
Alarm
 Reset alarms and indicators

A window similar to the one opposite will appear (four display channels are shown). This is the **all channels** display window. Each display channel does not necessarily need to display data from a single BroadWeigh shackle; they can be set up to show mathematical calculations involving as many shackles as required. In the case opposite, display channel 4 is showing the sum of display channels 1, 2, and 3.

The **configure project** window below is where the display channels are set up.



As shown, hovering over an area within the window gives tool-tip help which, with the online help should provide enough information to aid setup. To summarise, select the number of display channels required, assign Data Tags to the expression section (**ensuring that they are enclosed in triangular brackets, <FF69>**) and change any other parameters as necessary. The triangular brackets allow the expression field to identify the Data Tag for what it is.

Quick Start Guide – BroadWeigh Toolkit



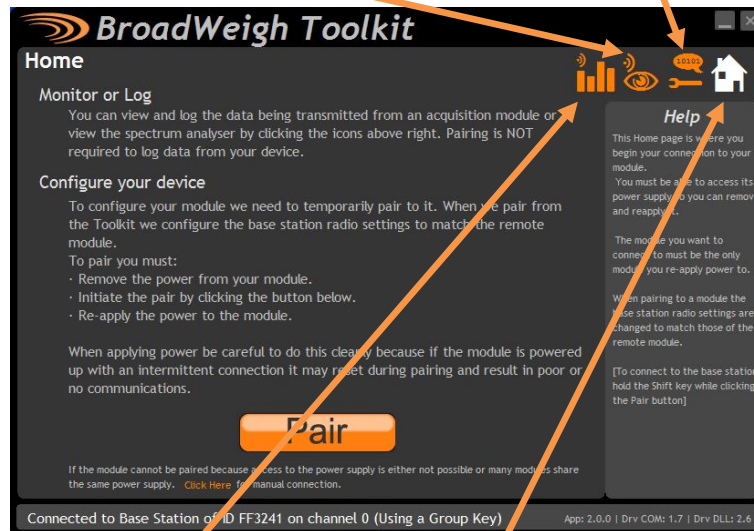
The **BroadWeigh Toolkit** allows detailed interrogation and setup of the BroadWeigh devices and base station. This is achieved via various dialog windows and editable boxes (coloured orange).

It is essential to setup and test all components of a system before planned use. This should mean that all the software is pre-loaded, data tags and radio channels are set and components are labelled making on-site use as smooth as possible. More detailed information on the BroadWeigh Toolkit is available at, <http://www.broadweigh.com/support.html>

Install the BroadWeigh Toolkit by inserting the **CD** or **USB stick** and following the instructions. Then connect the **USB base station** and launch the software.

Channel monitor
View and log data provided by devices.
Monitor sleeping devices.
Move group channel.

Settings
Configure base station connection



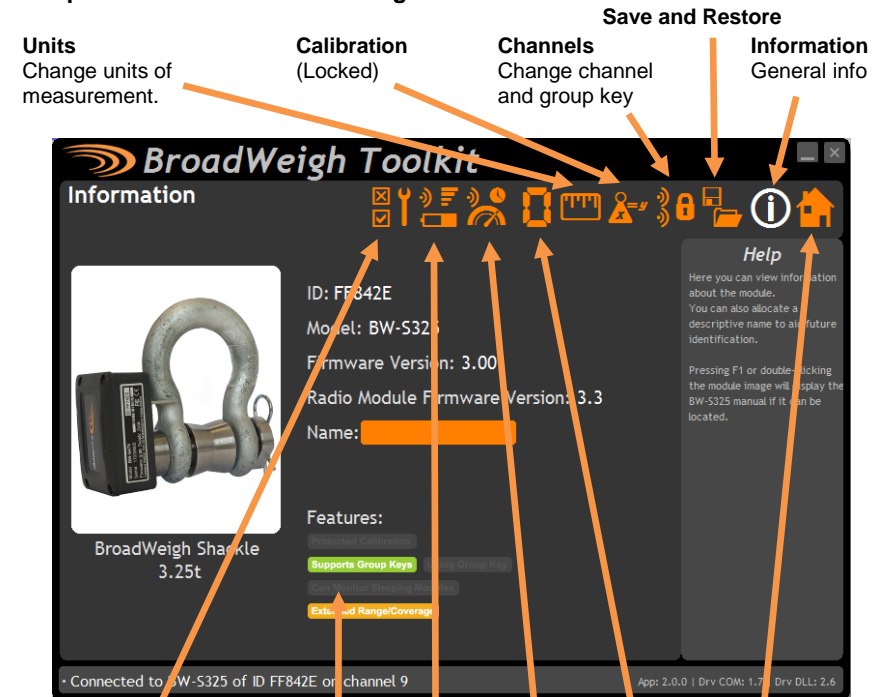
Spectrum analyser
Planar and spectral views of local radio traffic to check for possible congestion.

Home
Pair and configure your device. Follow the onscreen instructions. If power cycling is not available it is possible to pair using the device's ID and data tag but you need to be on the correct radio channel.

Pairing

This is the system used for configuring the BroadWeigh devices. First, remove one of the batteries. Then, click the 'Pair' button (on the home screen) and firmly re-connect the power to the device. This makes a solid link without needing to know the device's Data Tag or radio channel.

Sample Paired Device- BroadWeigh Shackle



Advanced Settings
Allows changing of the device data tag.
Very noisy RF environment mode.

LQI and Battery
Monitors signal quality and battery condition.

Zero
Set zero to hide small values.

Features
Shows the new features that the device supports.

Data Rate
Adjust accuracy and compare to theoretical battery life.

Home
'Un-pair' current device and return to home screen.

No data displayed in LOG100 display window

Are the shackles awake?

Use the wake function within LOG100. Either 'Ctrl+W' or 'Sleep and wake>Wake' in the drop down menus. It may then be necessary to check the 'Keep awake' box in the **configure project** window.

Is the expression correctly entered?

Make sure that the device data tags are entered within triangular brackets in the

form **<FF69>**. Remember that the data tag is (by default) the last 4 characters of the device ID.

Are the base station, shackles and LOG100 workspace all on the same radio channel?

- (i) The easiest method to check is to go through and methodically try different channels in the LOG100 configure project window. (Return to display window to manually wake each channel).
- (ii) You can also use the BroadWeigh Toolkit to monitor activity on various channels via the **Channel Monitor** page. Change the channel and then manually wake all data providers on that channel (it will take around 10 seconds to update). This will then show all available data providers on the channel and may highlight errors in Data Tag entry. Base stations purchased after June 2015 can also monitor sleeping modules.

Be aware that the base station can only be set to one radio channel. Therefore you cannot log data and pair devices at the same time. It is good practice to configure the hardware via the BroadWeigh Toolkit before using the LOG100 software as it is possible for the two programs to give conflicting instructions.

Do all relevant transmitters and receivers have the same group key set?

Group keys were enabled from June 2015. For communication to happen between devices they must be on the same radio channel with the same group key set. It is still possible to use 'old' with 'new' devices but the group keys must all be left blank.

Is there heavy radio traffic in the area?

It is possible that 'wake' signals from the base station could not be getting through to the shackles and that they are going to sleep as they think they don't need to be used.

One possible solution is to click on the very noisy RF environment mode on the **Advanced** page of the Toolkit. Be careful as battery life will be reduced. Also ensure that 'Keep awake' is ticked in Log100 'Configure Project'.

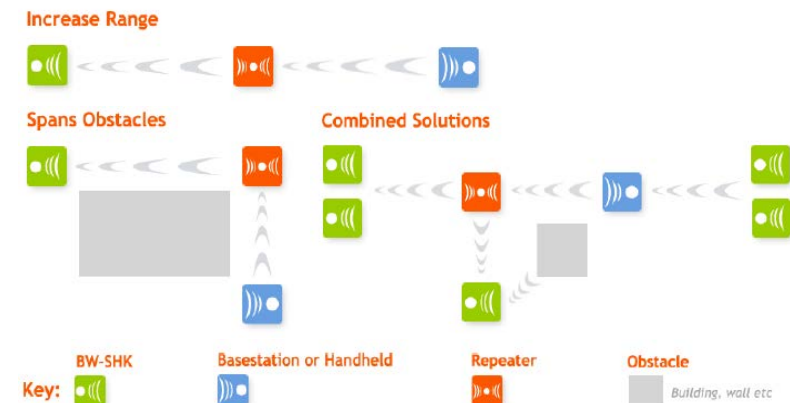
Unexpected values displayed

- (i) Check to see if the display channel has been zeroed ('NET' shown below channel display). To clear a zero either go to **configure project** or click the gross button in the display window.
- (ii) Check to see if an unnecessary or incorrect function has been used.

Poor Signal Quality (LQI)

Check location of BroadWeigh shackles and USB base station.

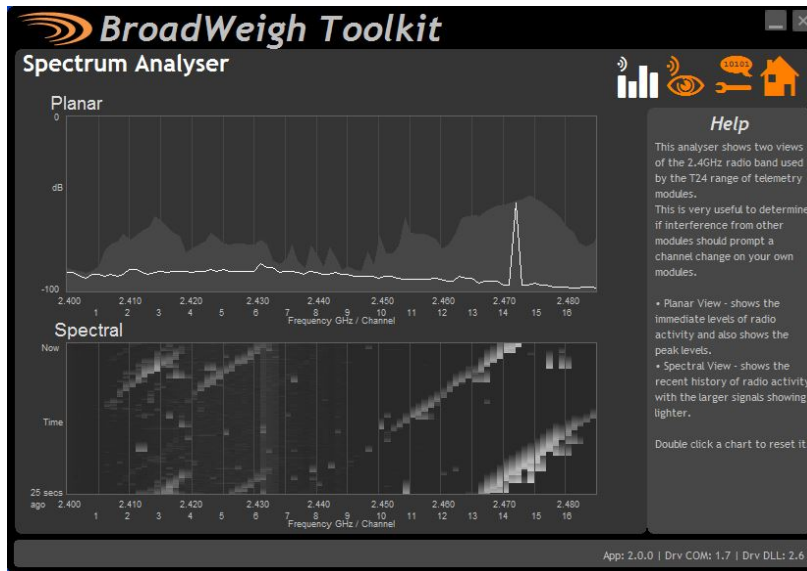
A poor line of sight between the shackle and base station or objects in close proximity will affect the range. Try re-siting the base station. It may be worth considering a wireless repeater if the problem persists.



Quick Start Guide – Troubleshooting

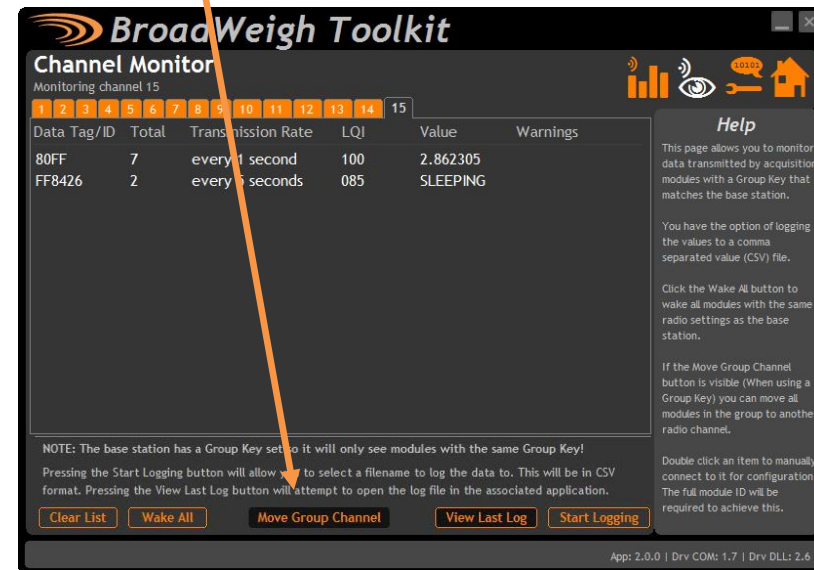


Check local traffic on the 2.4GHz radio band.
Using the BroadWeigh Toolkit, go to the **Spectrum Analyser** page. This will show local traffic on the 2.4GHz radio band and highlight any potential congestion. You can then change the radio channels for all devices via pairing.



The above charts show the traffic from a Wi-Fi network and it can be seen to be operating over channels 12 to 16. It would be best (though not essential) to avoid using these channels.

One of the useful features of Group Keys is that an entire group can move radio channel all at the same time. To do this, go to the **Channel Monitor** page of the Toolkit and follow the instructions.



Make sure that all the devices required are visible and make sure that any receivers to be moved are powered up. (They won't be visible on this page to check).

Please see our website or scan QR code for quick start videos, the manual and associated software:

www.broadweigh.com/support.html

