



ZEBRA-TECH LTD

www.zebra-tech.co.nz

Instrumentation and equipment for
environmental monitoring and research

MEASURING BOARD **OPERATION MANUAL**

Serial number 200 and onwards

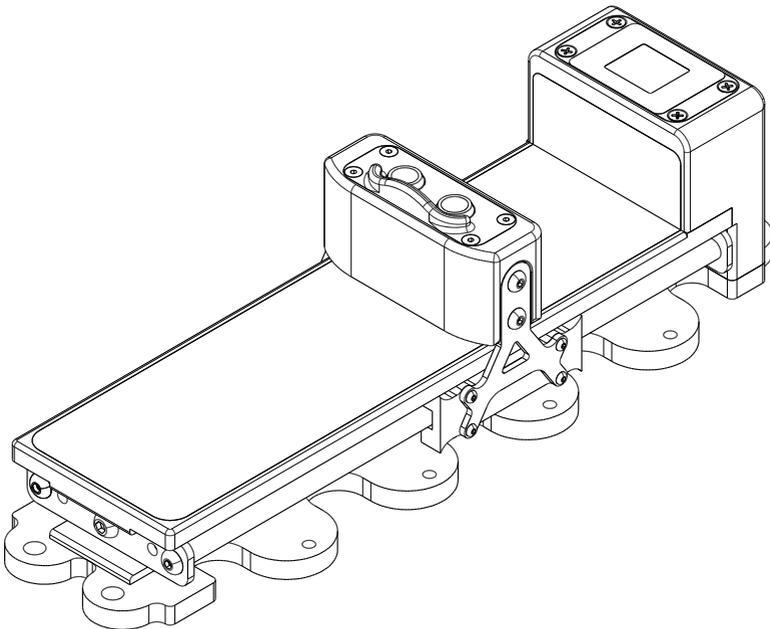


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1. INTRODUCTION

The Zebra-Tech Measuring Board is a tough portable battery powered device that is designed to take measurements of objects and organisms in harsh environments.

The measurements are logged internally and then downloaded to a mobile device using the Zebra-Tech app. The measurement can also be transmitted wirelessly to the Zebra-Tech Deck Logger for logging in real time.

The Measuring Board has been specifically designed to operate in wet and muddy conditions. It is ideal for field measurements of shellfish, fish and other organisms.

A range of user select operating modes are available which enables a variety of measurement methods. For example; logging 2 distinct species, or making length and width measurements.

2. OPERATION

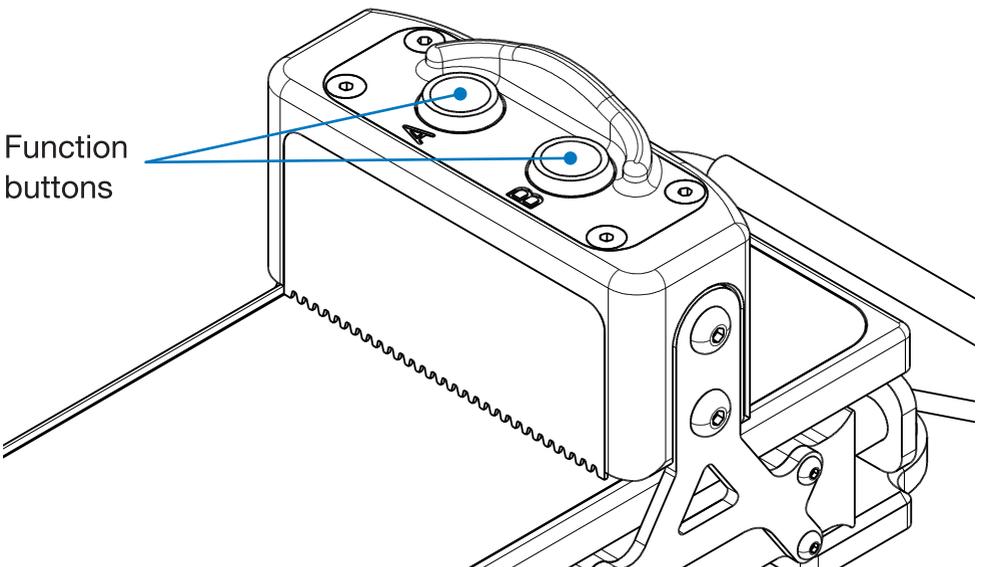
OVERVIEW

The Measuring Board is fully splash proof but it should not be completely submerged underwater.

To switch on simply slide the moving jaw. The Measuring Board will automatically shut down after 1 minute of inactivity (no jaw movement or button press).

There are two buttons which each have a different function depending on the operating mode.

If the wireless link with the Zebra-Tech Deck Logger is to be used, the Deck Logger needs to be configured so that it will pair with your unique Measuring Board. Please refer to your "Deck Logger Custom Application Manual" for details on how to do this.



MODE OPTIONS

The Digital Measuring Board has several mode options which can be accessed and set through the menu (Refer to section 3. Menu later in this manual).

- Mode 1

This is for logging the measurement made by each single A or B button press. The button ID associated with the measurement is recorded in the data file.

Example: Two species of shellfish could be measured with a button assigned to each species.

- Mode 2

This requires 2 button presses to occur in a fixed sequence – A followed by B. The data is not logged or transmitted until both measurements have been made.

Example: The length and width of a shellfish could be measured with length assigned to button A and width assigned to button B.

- Mode 3

This requires 3 button presses to occur in an A,B,B sequence. The data is not logged or transmitted until all 3 measurements have been made.

Example: The length,width and height of a shellfish could be measured with length assigned to button A , width assigned to button B first press and height assigned to button B second press.

- Mode 4

This mode enables button presses to be used to increment a secondary manual measurement following the jaw measurement. It can be used in 2 ways;

1) If no additional secondary measurement is required, simply press button A.

2) If a secondary measurement is required, button B is pressed (jaw measurement is logged) and then subsequent button B presses increment the secondary measurement. Pressing A then logs both measurements.

Example: The length of mussels are being measured by pressing button B, which saves the measurement. The visual quality of the mussels are being rated on a scale of 1 to 3. Pressing button B again will increment the value required. Pressing button A will then log the initial length measurement and the number chosen to represent visual quality. Note that the manually chosen value is arbitrary. It could represent a measurement such as an estimation of Abalone hump size or a general value such as in the above example.

Fishtail Attachment

The Fishtail attachment is an optional extra. It is intended to allow measurements to be taken from the "V" of the caudal fin "fishtail" rather than from the very end of the tail.

The attachment simply slides overtop of the button slide. To use it, tare the instrument as usual with the Fishtail attachment fitted.



3. MENU

MENU SYSTEM

To enter the menu system both buttons must be pressed simultaneously while the Measuring Board is turned on.

The menu is navigated by pressing the A button if the current menu option is required, or the B button to advance onto the next menu option.

DELETE LAST ENTRY

Selecting this causes the last logged measurement to be deleted from the on-board data storage.



Note that the measurement is not deleted if it has already been transmitted to a nearby Zebra-Tech Deck Logger.

TARE

This zero's the sliding jaw measurement. Before selecting Tare, ensure that the jaws are pushed together.

ENABLE BLUETOOTH

Data stored on the Measuring Board can be offloaded to an Android or IOS device using the Zebra-Tech app. Please refer to the Mobile application section for details. Select "Enable Bluetooth" whenever data is to be offloaded using the app.

CLEAR STORAGE



This deletes all the data in the on-board storage.

STATUS

- SN: The Measuring Board's individual serial number which will match the serial number etched on the bed.
- Store: Amount of available data storage.
- Ver: Current firmware version number.
- Batt: Internal battery voltage.

CONFIG

Selecting this enables the configuration setup menu to be accessed.

- Measuring mode

Mode 1 to 4 can be selected – refer to description above.

- Set time

When selected, the internal clock time and date can be set. This is done by pressing button A to select the field to adjust, then sliding the movable jaw until the correct value is displayed, then setting by pressing button A. Fields can be skipped by pressing button B.

- Units

The units displayed can be set to mm, inch or raw. Note that regardless of the selected units, the logged data is always mm.

- Exit

Return to normal operation.

4. DATA RECORDING

The Measuring Board logs all measurements in its internal non-volatile data storage. This data is retained even if the battery goes flat. There is sufficient capacity to store 10,000 single measurements or 5,000 double measurements.

Each measurement is logged with the time and date and also the button number that was pressed to trigger the measurement. The user is alerted if the data memory becomes full. No further measurements are possible until the data is deleted.

Data can be offloaded using the Zebra-Tech mobile application – available for Android and IOS. See Mobile application section.

Measurement data is also wirelessly transmitted every time a measurement is made. If a Zebra-Tech Deck Logger is nearby it will display and log the Measuring Board data if it has been configured to pair with the Measuring Board.

The internal real time clock are automatically set everytime a mobile device is connected to the Measuring Board using the zebra-Tech app.

5. MAINTENANCE

- After use, the Measuring Board should be thoroughly washed with clean fresh water. A low pressure hose or tap may be used.
- Ensure the rails are clean and free of debris
- Clean around the buttons to ensure their smooth operation
- After washing and drying, lubricate the rails with the supplied Measuring Board oil. Apply a few drops to the two stainless rails and then slide the jaw back and forth several times to evenly distribute the oil

6. BATTERY

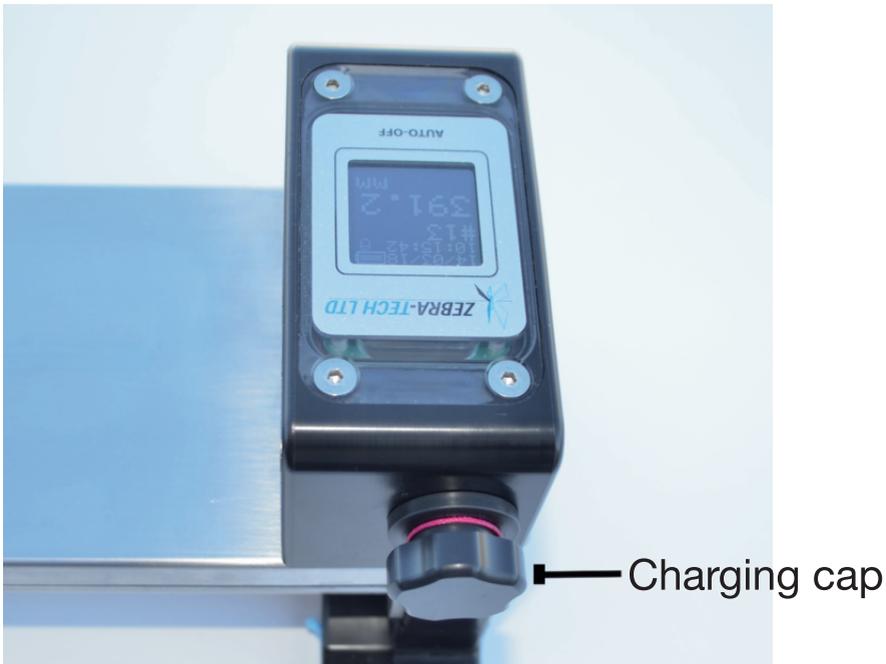
The Measuring Board has 2 separate sets of batteries as described below:

CHARGING THE LOGGER BATTERY

The Measuring Board has an internal rechargeable battery. The battery status can be determined from the battery icon, shown on the display. If the icon is flashing, the battery should be recharged.

To recharge the internal battery, unscrew the charging cap from the side of the fixed jaw. The USB Micro B to USB A male cable provided with the Measuring Board can then be connected, and plugged into a USB power supply for overnight charging. The battery icon on the display will indicate charging.

Once fully charged, the Measuring board should operate for at least 100 hours.



BUTTON BATTERY

This is located in the moving jaw. Under normal operation this battery should last many years (millions of measurements).

In the event that the Measuring Board turns on normally by moving the jaw but does not respond to button presses then it is likely that the button battery needs to be replaced. In this case the battery is not user replaceable so the Measuring Board will need to be sent to Zebra-Tech for battery replacement.

7. SPECIFICATIONS

Sheet1

| Standard bed | |
|---|---|
| MEASUREMENT RANGE | 0-230mm |
| ACCURACY | +/- 1mm |
| RESOLUTION | 0.1mm |
| LOGGER BATTERY LIFE | Dependant on use – approximately 1 year. User replaceable |
| BUTTON BATTERY LIFE | In excess of 5 years. Not user replaceable |
| DATA STORAGE CAPACITY | 10,000 single measurements |
| WIRELESS DATA RANGE TO ZEBRA-TECH DECK LOGGER | 20m line of sight |
| WIRELESS DATA OFFLOAD | Bluetooth v2.0 Android and IOS App, using Zebra-Tech app |
| WEIGHT | 2.9kg |

Sheet1

| Long bed | |
|---|--|
| MEASUREMENT RANGE | 0-720mm |
| ACCURACY | +/- 2mm |
| RESOLUTION | 0.2mm |
| LOGGER BATTERY LIFE | Rechargeable |
| BUTTON BATTERY LIFE | In excess of 5 years. Not user replaceable |
| DATA STORAGE CAPACITY | 10,000 single measurements |
| WIRELESS DATA RANGE TO ZEBRA-TECH DECK LOGGER | 20m line of sight |
| WIRELESS DATA OFFLOAD | Bluetooth v2.0 Android and IOS App, using Zebra-Tech app |
| WEIGHT | 4.5kg |

8. MOBILE APPLICATION

OVERVIEW

Data can be offloaded from the Measuring Board to a smartphone or tablet, using the Zebra-Tech app.

The mobile device must be Bluetooth 2.0 (BLE) capable. Please check your device's specifications to confirm compatibility.

The application is freely available from Google Play App store and the Apple App store. Search for "Zebra-Tech BLE", and install the app.

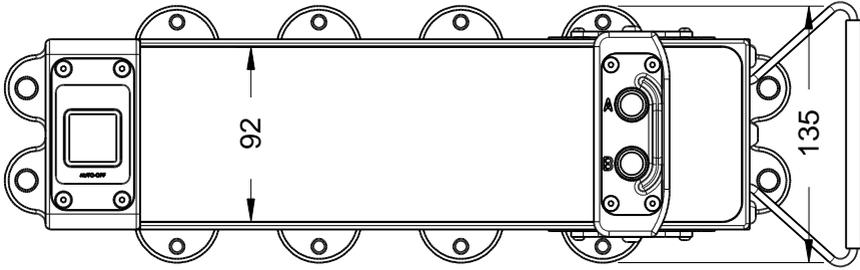


There is an app called Zebra-Tech on Google Play. This app will only communicate with Measuring Boards with serial numbers 1 to 199. It will not work with Measuring Boards serial number 200 onwards.

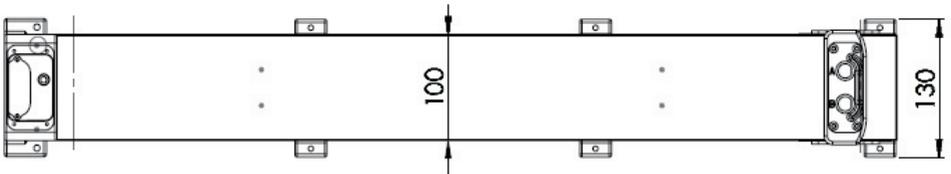
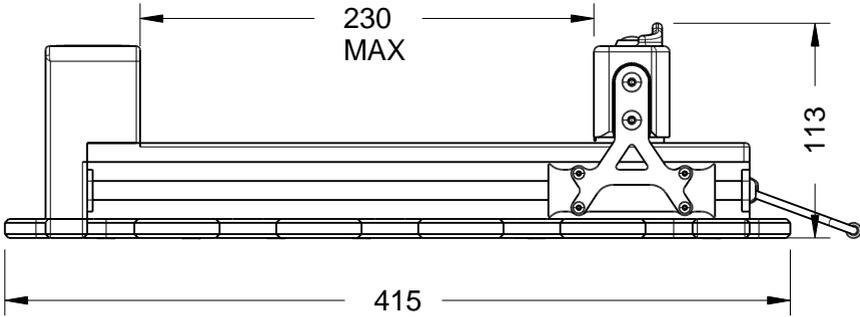
MOBILE CONFIGURATION

- Ensure that Blue Tooth option is switched on in the mobile device.
- Turn on the Measuring Board by sliding the jaw and then press both buttons to enter the menu.
- Select "Enable Bluetooth". The Bluetooth icon should then be visible on the screen.
- Open the Zebra-Tech app and press the "Refresh devices" button. From the list of devices, select the applicable Measuring Board. The app should connect and then data can be offloaded.
- Offloaded data can be opened for viewing, emailed, or uploaded to Dropbox or Google Drive depending on your mobile device capabilities and requirements.
- The Measuring Board automatically exits Bluetooth mode once the Bluetooth connection is terminated.

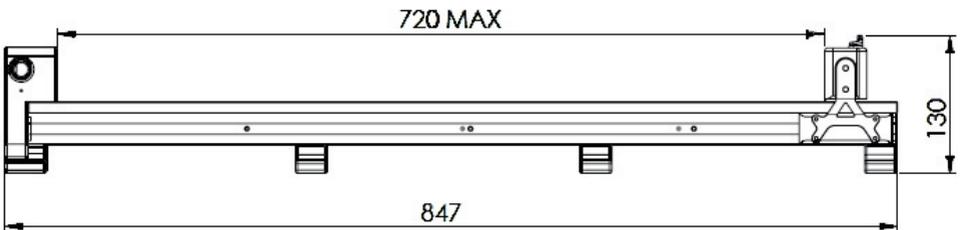
9. OVERALL DIMENSIONS



Standard Digital Measuring Board



Extended Digital Measuring Board



10. FURTHER ASSISTANCE

For further assistance with this or any other Zebra-Tech product, please contact:

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PO Box 1668
Nelson 7040
New Zealand

Tel: International [0064 3 548 0468](tel:006435480468)

Fax: International [0064 3 548 0466](tel:006435480466)

Email: enquiry@zebra-tech.co.nz

For up to date information about the Measuring Board and other products available, please visit the Zebra-Tech Ltd website at:

www.zebra-tech.co.nz

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