# *EasyCube-S User Manual*

Version 3.0


**Tüm Elektronik Mühendislik**

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EasyCube-S®  logo is registered trademark.



CAUTION

The EasyCube-S should only be serviced by qualified personnel.

Observe precautions for handling electrostatic sensitive devices when setting up or operating the EasyCube-S.

WARNING

Disconnect all power to the EasyCube-S before maintenance

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# PRODUCT DESCRIPTION

**EasyCube-S** is a **static**, **overhead** multi-dimensional measuring instrument. It is used to find the oriented minimum bounding box of a package. EasyCube-S uses the latest sensing technology to measure object dimensions in a **very precise** and **fast** way. It uses a depth sensor and an RGB camera. The depth sensor gives a depth map, and the camera gives a colored image. This data goes to a powerful single-board computer (SBC) that hosts the metrological relevant software. The software processes the data and computes object dimension measurements. The results are presented by a touch screen display and can be sent to another computer for further processing by the user. EasyCube-S overhead design makes its usage much simpler and easier. There are **no moving parts**, which allows for almost **zero maintenance** and **easy setup and use**.

EasyCube-S can measure dimensions of parcels with **any colors** and **any shapes**. It employs various triggering methods such as: **automatic parcel detection**, weight scale triggering, barcode reader triggering or manual triggering.

Each unit has an Ethernet, (WIFI optional) and a USB communications port, enabling EasyCube-S to communicate with a computer. Also to connect to a weight scale or barcode reader. Communication can be done through **TCP/IP API** or through Web access **HTTP API**.

EasyCube-S is a flexible and **economical solution**. Business usage include: Integration with warehouse management system, storage space planning, get detailed dimensions information of product, creating manifests.

EasyCube-S software can be used easily by any regular operator. No need for any special training. The software works with a touch screen display, which enables the operator to control the device easily. Measuring screen shows all the results in a clear way and also shows a live video stream of the scanning area. This makes it easy to handle the package and place it in the right way.

# Product Features

*Figure 1*

- ⇨ Latest RGB−D sensing technology. Fast and accurate.
- ⇨ Parcels with any colors.
- ⇨ Flexible and economical solution.
- ⇨ Easy to assemble & setup in 10 minutes. Work with or without a weight scale.
- ⇨ Color touchscreen display. User friendly software.
- ⇨ Various triggering methods.
- ⇨ TCP/IP communication. Web access.
- ⇨ Low maintenance.
- ⇨ Optional conveyor support for serial operations.

# Specifications

## Technical Specifications:

Power requirements: 100-240 VAC, 50-60 Hz
Object type: Cuboidal and non-cuboidal objects
Object colors: Opaque
Measure interval: 0.5 cm
Mechanical Environment Class: M1
Electromagnetic Environment Class: E1
Operating Temperature: 0°C + 35°C
Humidity: 5 to 90% non-condensing
Ambient light: from 300 lux to 2000 lux
Measurement time: Less than 200 ms

## Physical Specifications:

Length: 60 cm Width: 40 cm
Height: 165 cm
Weight: 25,7 kg
Environmental Operating temperature: 14° to 104° F (-10° to 40° C) Humidity: 5 to 95% non-condensing
Dimensioning Capacities: EasyCube-S has a pyramid-shaped scanning area, some boxes will not fit in the Scanning Area.

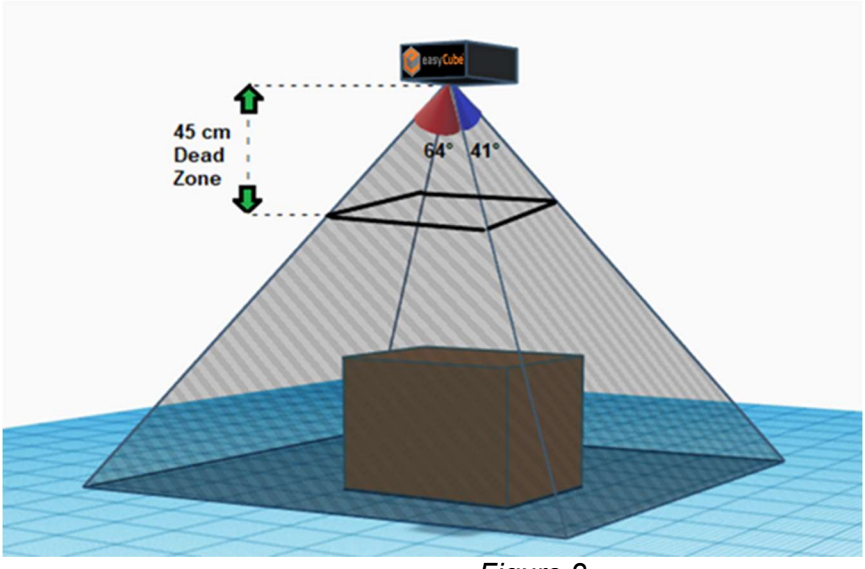


*Figure 2*

Sensing Part Height: 1.5 m

Scanning Angle: Horizontal: 65˚± 3˚ Vertical: 40˚± 3˚

Minimum Dimension L x W x H: 5cm x 5cm x 5cm

Maximum Dimension L x W x H: 85 cm x 50 cm for a 70 cm high object

135 cm x 75 cm for a 30 cm high object

Accuracy:

d = ± 0.5 cm for cuboidal objects

d = ± 1,0 cm for non−cuboidal objects

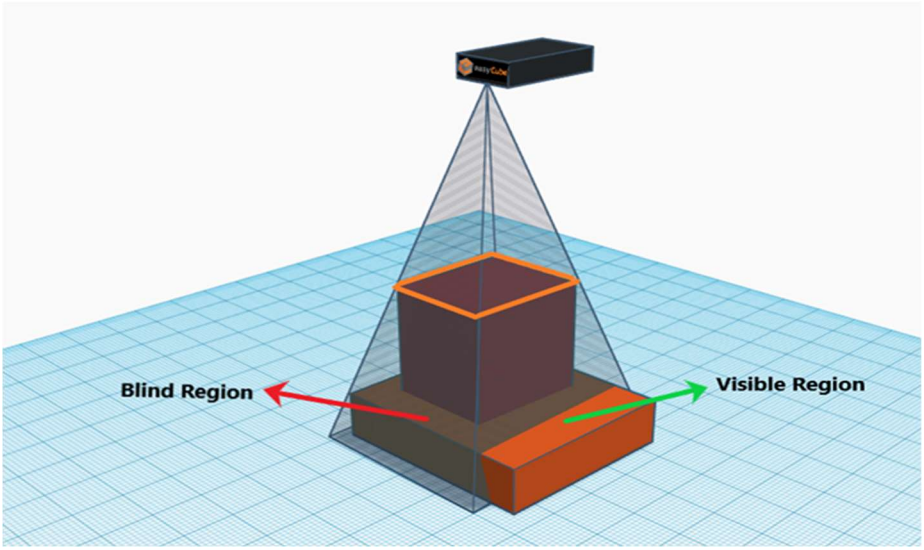


*Figure 3*

# SETUP

This chapter provides instructions for assembling and setting up the EasyCube-S. Perform the steps to set up the EasyCube-S in the following order.



## Unpacking

1- Carefully remove the EasyCube-S from the crate, and place the EasyCube-S on a solid, stable surface for assembly. See “Installation” on page 6.”

2- Remove the cables and accessories.

Examine the container and the EasyCube-S carefully for any damage. If, after unpacking, you discover any damage to the EasyCube-S, contact the carrier immediately.

If any of the components or accessories are missing or defective, contact EasyCube-S or your system integrator

# Assembling the EasyCube-S

The EasyCube-S is almost completely assembled when shipped. You just need to remove the shipping materials and bolt the two-piece post together.

1- Remove the EasyCube-S carefully.

2- Carefully turn the EasyCube-S upright and bolt the poles together.

3- Fasten the base part of the EasyCube-S by bolting it to the floor where you will be installing

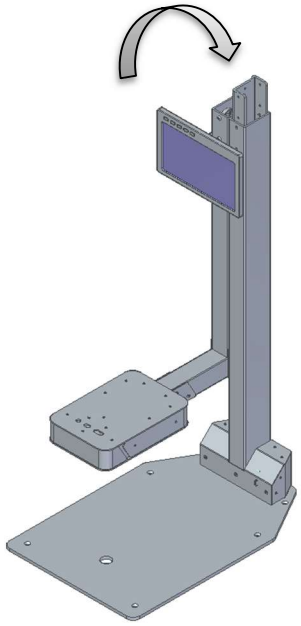

*Figure 4*

# Installation

The EasyCube-S is designed to be operated in a warehouse or office environment; however, for proper operation the following conditions should be met if possible.

- Do not subject the EasyCube-S to extremes in temperature or humidity. Locate the EasyCube-S away from open freight doors.
- Protect the EasyCube-S from static electricity, especially the display.
- The EasyCube-S is typically set on a table or similar working surface so that objects are easier to place in the measurement area. It is recommended that you bolt the EasyCube-S down, bolts are provided.
- Place the EasyCube-S on a flat, sturdy surface as free from vibration as possible. You must bolt the EasyCube-S platform in place using the bolts provided in the shipping container. Bolting the EasyCube-S in place will prevent it from falling or being knocked over and damaged.
- Orient the EasyCube-S so that the display faces the operator.
- Place the EasyCube-S away from direct sunlight or bright lights, such as halogen spotlights.

# Connecting Power

Take the following steps to connect power to the EasyCube-S.

- Locate the  power supply cable.
- Connect the power cable to a standard power outlet.
- Connect the power cable to the power connection, located at the base of the EasyCube-S post.

# Turning on/off the EasyCube-S

- Use the power button on the back on the post the for turning on EasyCube-S. Allow the EasyCube-S a few minutes to power up the first time you turn it on.
- Press the close button on the main screen to turn off the EasyCube-S

# Connecting to a computer

To connect the EasyCube-S to a computer, you can use an Ethernet cable or Wifi. Both methods are described below.

## Communication via Ethernet:

Complete the following steps to communicate with the EasyCube-S using Ethernet.

1- Plug the Ethernet cable into the Ethernet port located on the underside of the EasyCube-S back side.

2- Make sure that the cable is not in the measurement area.

3- Plug the other end of the cable into the Ethernet provider.

**Configuring Ethernet network settings**

1- Setting > Communications > Click ethernet checkbox

**Methods:**

You can use one of the two methods below

1 - DHPC

- Click Automatic IP (DHPC) and Automatic DNS checkbox(default)
- Click save button

2 - Static IP

- Remove DHCP and Automatic DNS checkbox sign
- Enter IP address with numpad
- Enter subnet mask with numpad
- Enter gateway with numpad
- Enter DNS address
- Click save button

## Communication via Wifi:

Complete the following steps to communicate with the EasyCube-S using Wifi.

**Configuring Wifi network settings**

1 - Setting > Communications > Click Wifi checkbox

2 - Click the ‘rescan’ button to refresh the ‘ Network ’ list

3 - Pick SSID from ‘Wifi Network’ list

4 - Enter password using textedit screen keyboard in ‘ Password ’ section

5 - Click save button

**Methods:**

You can use one of the two methods below

1 - DHPC

- Click DHPC and Automatic DNS checkbox(default)
- Click save button

2 - Static IP

- Remove DHCP and Automatic DNS checkbox sign
- Enter IP address with numpad
- Enter subnet mask with numpad
- Enter gateway with numpad
- Enter DNS address
- Click save button

## Communication Protocol:

1- Click TCP/IP checkbox to activate TCP/IP communication

2- Enter Communication port number with numpad

# Setup checklist

Before using the EasyCube-S for the first time, verify the following:

1- Have the EasyCube-S and the computer been placed in the proper operating environment? (page 6)

2- Has the EasyCube-S been fully assembled? (page 6)

3- Has the EasyCube-S platform been bolted in place? (page 6)

4- Has the AC power cable been connected correctly? (page 7)

5- Has the EasyCube-S been connected to the computer? (page 7)

6- Have you determined the measurement area? (page 10)

7- Have you selected your preferred measurement trigger? (page 11)

# Choose Language

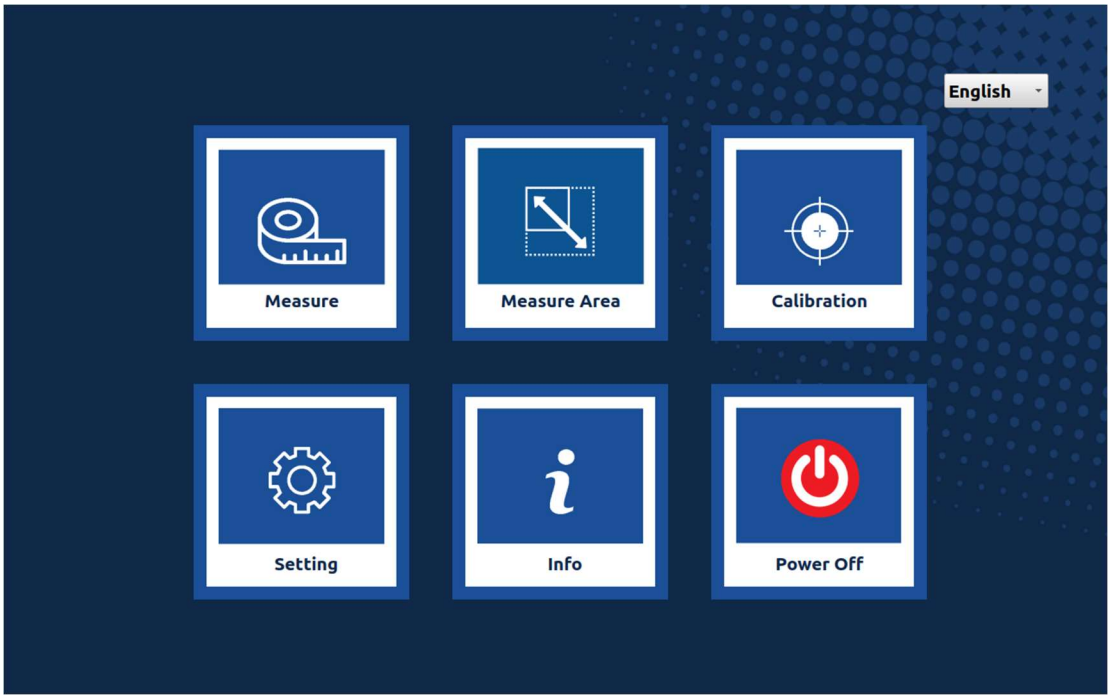


*Figure 5*

Use the language option button at the top right of the home screen.

## Measuring Area Screen

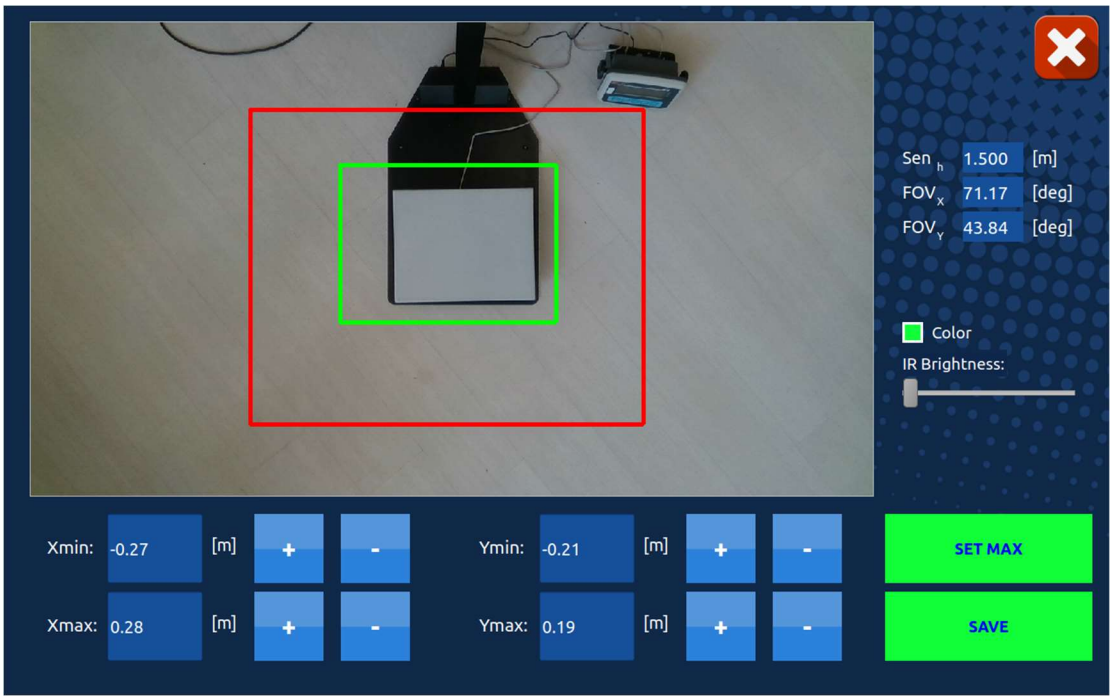


*Figure 6*

You can size the green area to be scanned with your finger and by changing the values below or tap “set max” button to be maximum scanned area.

# SETTING

## General

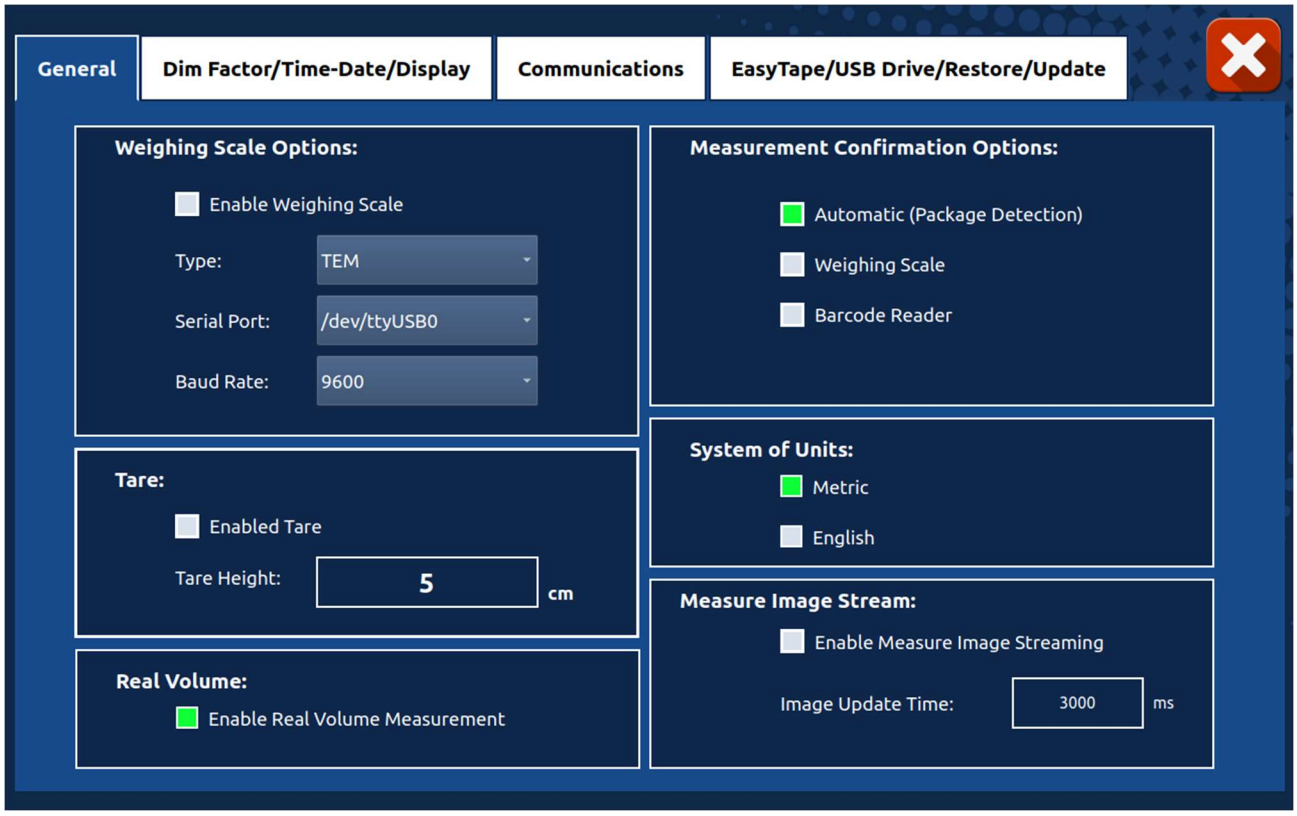


*Figure 7*

## Weighing Scale Options:

To set up the scale connection setting:

1- Connect the weighing scale to EasyCube-S through the USB port.
2- Turn EasyCube-S on if you have not already.
3- Press setting button on the display.
4- Go to General tab -> Weighing scale options.
5- Check “Weighing scale enable” to enable the connection.
6- In the “Serial port” option choose the Serial/USB port name.
7- In the “Baud Rate” option choose the communication speed

Note: If you are not going to use scales in your operations, do not activate it.

## Measurement Confirmation Options:

Complete the following steps to selecting measurement trigger:

1- Turn EasyCube-S on if you have not already.
2- Press setting button on the display.
3- Go to General tab -> measurement confirmation options.
4- You can choose between options below:

a. **Automatic (package detection)**: Enable this option to turn on automatic measuring. When the object detection trigger is on, the EasyCube-S will try to measure as soon as any object is in the measurement area. When this option is disabled, a measure event must be triggered.

b. **Weighing scale**: The dimension measurement is triggered as soon as the weight data is calculated by placing the object on the scale.

c. **Barcode reader**: With this option, you can perform the triggering process using your barcode reader.

## Tare Setting:

Use the tare feature if you ever need to automatically subtract a set value from the height, for example if you use tare blocks to measure objects that may have been too short to measure for the EasyCube-S to measure.
Complete the following steps to set a tare value.

1- Enable the Height to tare button.

2- Enter the height that you would like tared off the height.

3- Select your unit of inches or centimeters.

If you ever stop using tare blocks with the EasyCube-S, remember to disable the tare button.

The home screen Tare indicator also shows whether the tare is being used.

Enabling the tare feature disables the zero and height calibration functions.

## System of Units:

You can choose metric or imperial units of measure.

## Real Volume (Optional)
## Measure Image Stream (Optional)
## Dim Factor/Time-Date/Display Setting

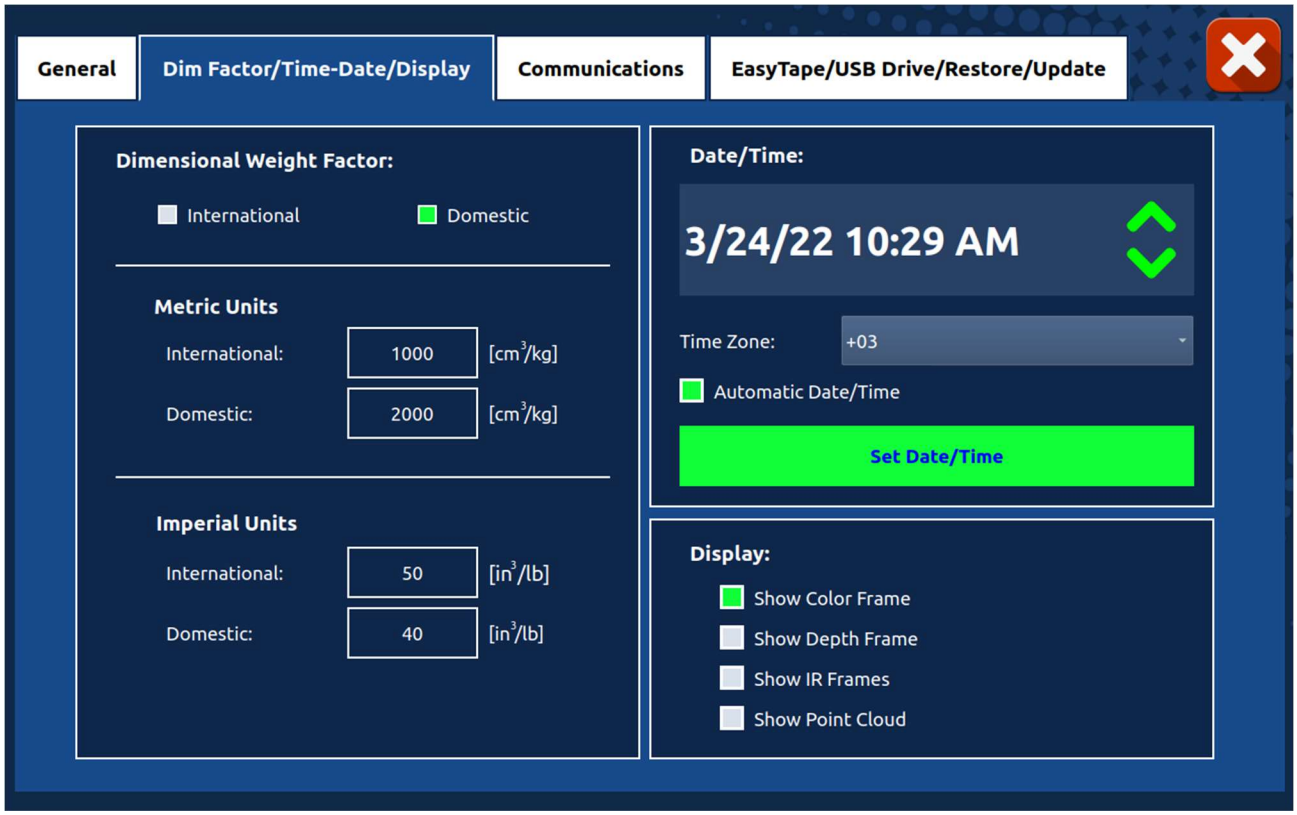


*Figure 8*

## Dimensional Weight Factor:

You can manually change your national or international measurement calculation values in this area.

Touch the section where the value you will change, then enter the new values from the panel that opens.

## Setup the Date and Time:

You can change your date settings.

## Display:

You can change measurement screen image

# Communication Setting

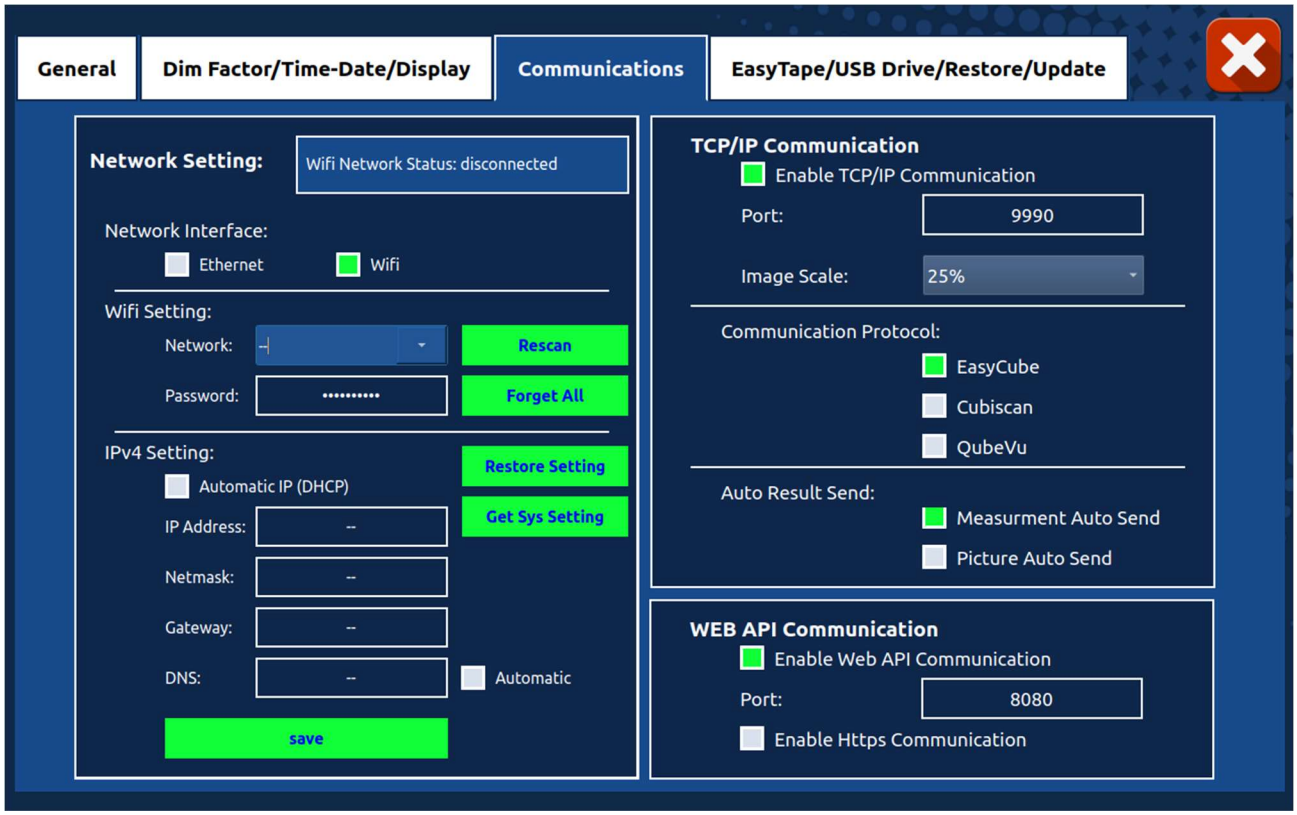


*Figure 9*

## Network Settings:

You can find information about this section in the Connecting to a Computer section. (page 7)

## TCP/IP Communication:

You can activate TCP/IP protocol or change port number in this section.

You can change image scale. Communication may slow down when image gets larger

## TCP/IP Auto Result Send:

You can choose the measurement data you want to transfer from this section.

## WEB API Communication:

You can activate Web API communication or change port number in this section.

You can activate Https communication.

# EasyTape / USB Drive / Restore / Update

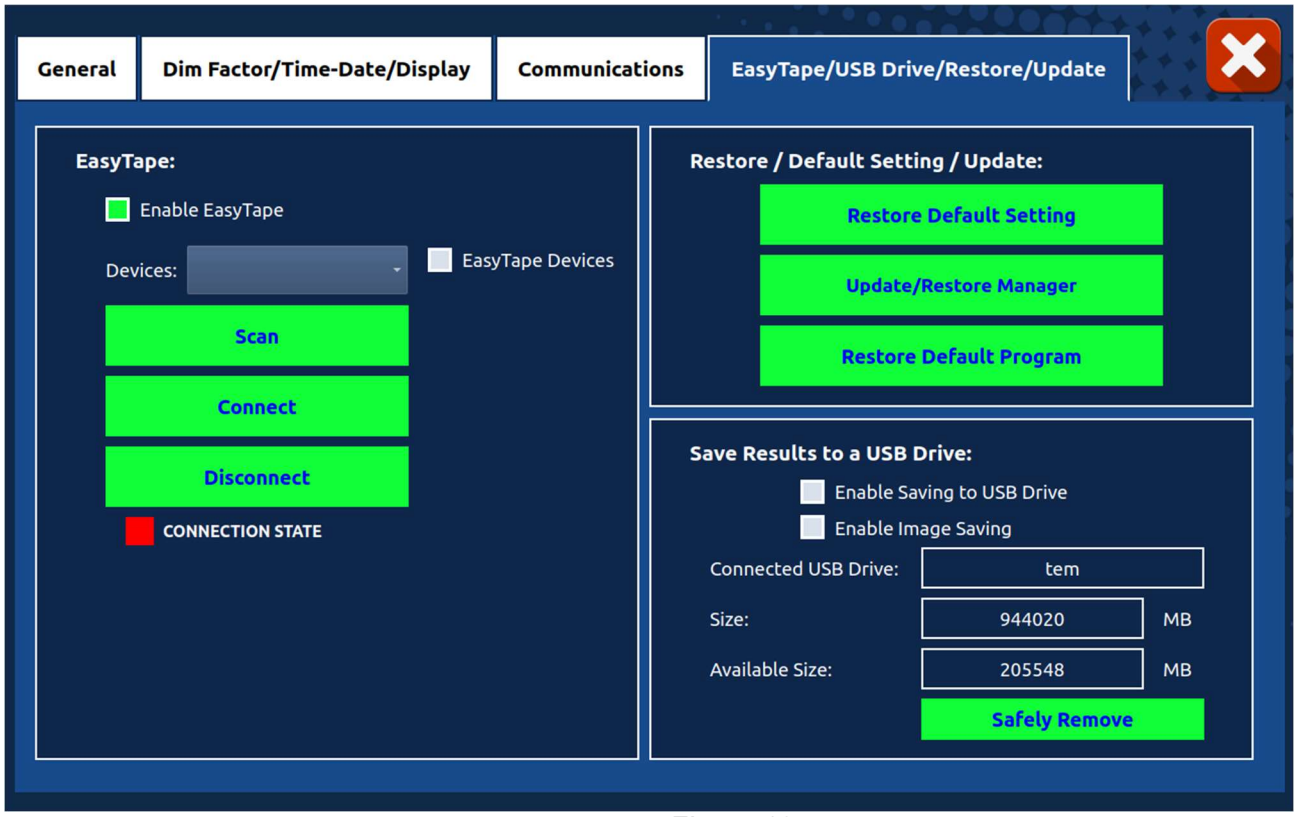


*Figure 10*

## EasyTape:

Complete the following steps to connect the EasyTape with Bluetooth

1- Turn the EasyTape on
2- Check “Enable EasyTape” on the EasyCube Screen
3- Check “EasyTape Devices” for only EasyTape devices scanning
4- Tap the “Scan” button
5- In the “Devices” option choose the EasyTape
6- Tap the “Connect” button
7- Wait for the connection state to turn green
8- Return to the Measure window and check that the EasyTape status is green

## Restore/Default Setting/Update:

By pressing these buttons, all setting parameters will be turned to default values.

## Save Result to a USB Drive:

Plug in the USB drive into the USB port on the back of easycube
Check “Enable Saving to USB Drive” to save the measurement results to a a USB Drive
Check “Enable Image Saving” to save results with images

When you want to unplug the USB drive, you should tap to “safely remove” button then you should unplug the USB drive.

# OPERATION

This chapter provides instructions for operating the EasyCube-S.


*Figure 11*

## Measuring Screen:

**Length:** This field displays the length of the measurement in inches (in) or centimeters (cm) as selected. To configure the units, see “Units” on page 11.

**Width:** This field displays the width of the measurement in inches (in) or centimeters (cm) as selected. To configure the units, see “Units” on page 11.

**Height:** This field displays the height of the measurement in inches (in) or centimeters (cm) as selected. To configure the units, see “Units” on page 11.

**Dw**: This field displays the dim weight result of the measurement in pounds (lb) or kilograms (kg) as selected. To configure the units, see “Units” on

page 13.
The dim weight depends on your selected dim weight factor

**Measure Status:** This field displays the current status of the EasyCube-S.

**Connection Status**: This field displays the current connection status of the EasyCube-S.

**Dimensional Weight Factor**: This field displays the currently selected dim weight factor. To configure the factor, see “Units” on page 13.

**EasyTape:** This button is used to measure with EasyTape. If the button is activated, its color turns red and you can measure with EasyTape.

**Weighing Only:** This button only provides weight data for small cargo bags that size information is not required. If this feature is activated, length, height and width measurements will stop automatically.

**Weighing Scale Zero:** This button is used to reset the weighing scale zero. If the weighing scale is not zero, you can tap this button.

**Measure Button**: You can remeasure without removing the object by tapping the measure button

**EasyTape Status:** This indicates that the EasyTape connection state. If the indicator to light, the connection is established.

**Tare:** This indicates whether or not the system is taring height off automatically. In most cases, you would only want to use the tare function while using a tare blocks. For more information on taring, see “TARE” on page 12.

**Ready:** This indicates that the system is ready to take a measurement. For the indicator to light, the sensor must be working properly and the measurement area must be clear.

# Dimensioning Objects

The EasyCube-S can be used to measure opaque objects as small as 2 x 2 x 2 in (5x 5 x 5 cm) (refer to “Specifications” on page 4 for specifications and size limitations). Below is a explanation of the shapes the EasyCube-S can measure.

**Cuboida**l: Cuboidal objects are any shape that closely resembles a cube. The most commonly measured cuboidal objects are boxes.

**Known shapes:** Known shapes are generally geometric shapes. Triangles, rectangles, and spheres are examples of “known” geometric shapes that are easy for a EasyCube-S to identify and measure. Packages that closely resemble geometric shapes can be measured by the EasyCube-S, for example, packages, tubes, and boxes.

You can select from multiple options to trigger a measurement. The options available are:
Auto Package Detection Trigger
Weighing Scale Trigger
Barcode Trigger
Manually measure by tapping the [Measure] button on the touchscreen

For more information on selecting your measuring trigger, see “Select Measurement Triggers” on page 12.
To dimension objects using the EasyCube-S, complete the following steps.

1- Make sure the measurement area is free of all objects.

2- Turn the EasyCube-S on. The power button is located on the back post under. If this is the first time you are turning the system on, allow it a few minutes to boot up.

3- Place the object you will measure in the measurement area. For the small objects use blue square that is the center of the measurement area

4- Depending on the measurement trigger you selected, the EasyCube-S will measure the object.

# INFORMATION

## Device Info

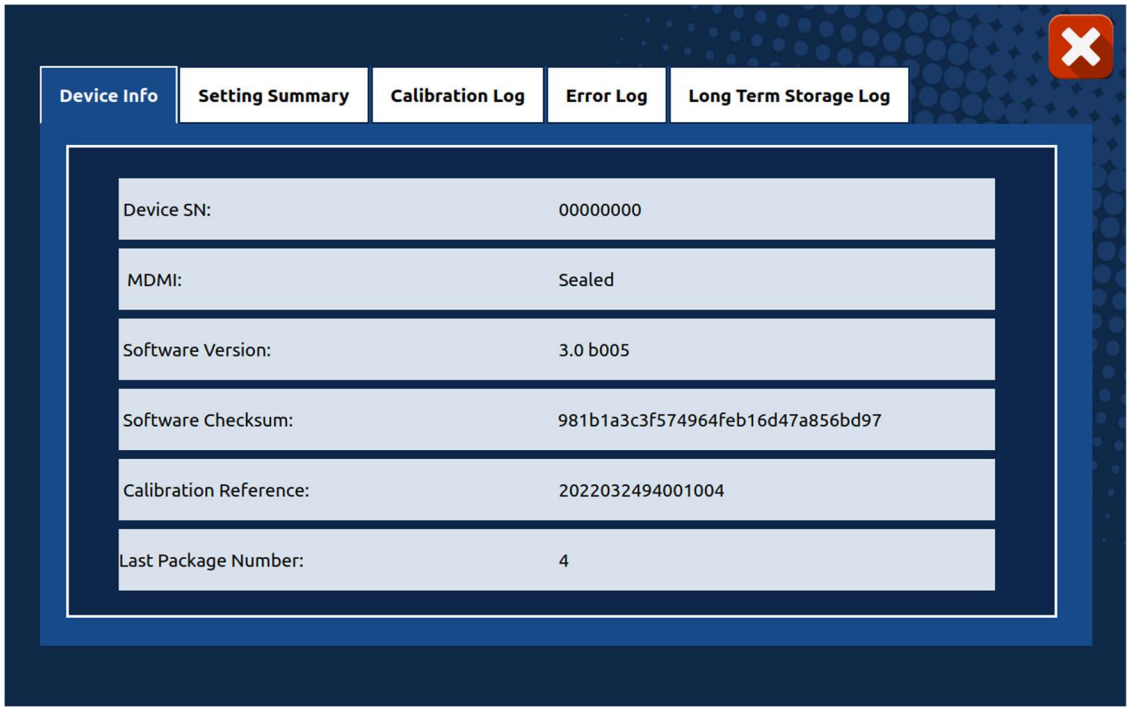


*Figure 12*

You can view device information on this page.

# Setting Summary

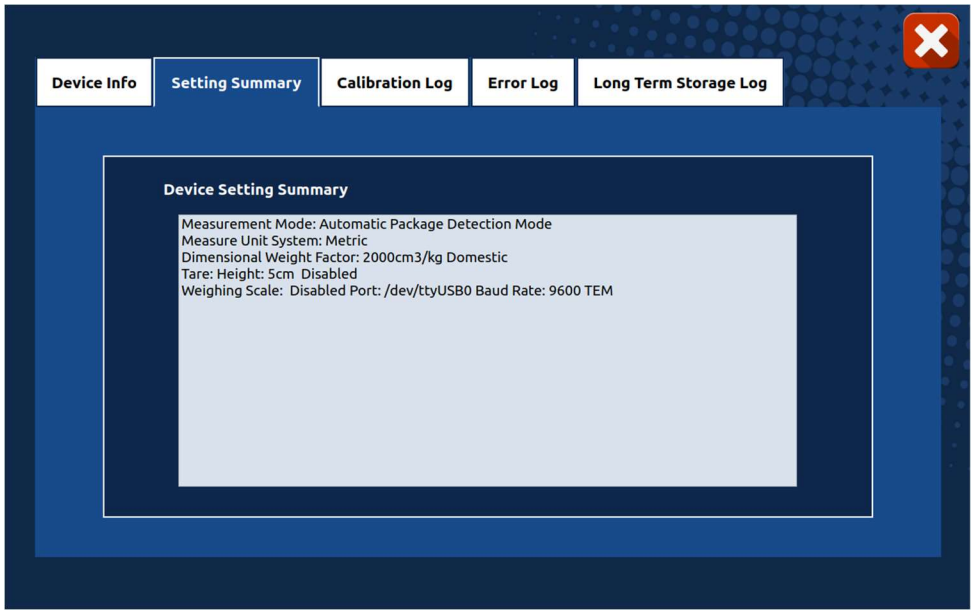


*Figure 13*

View summary information of device setting.

# Calibration Log

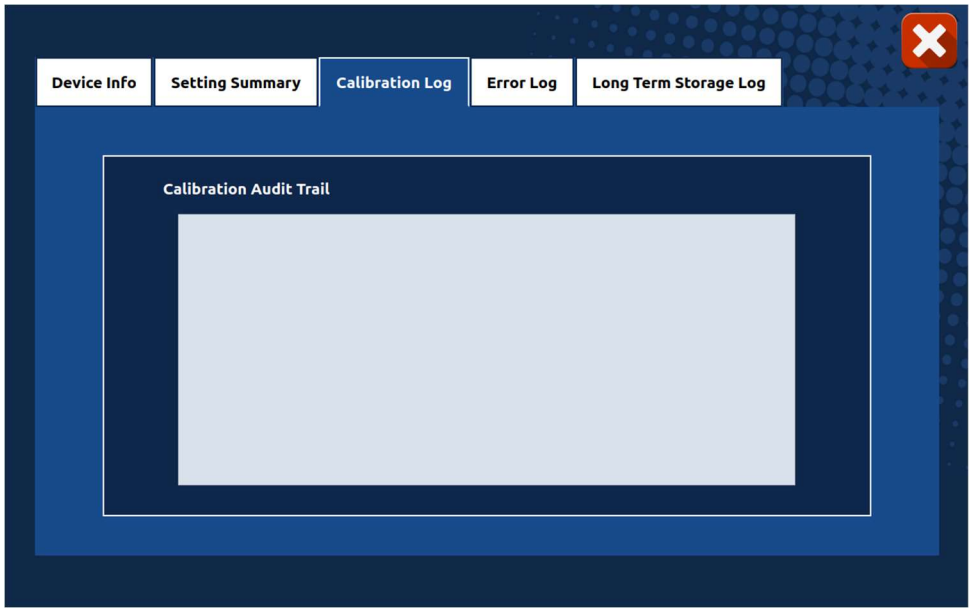


*Figure 14*

You can see calibration change dates and information on this page.

# Error Log

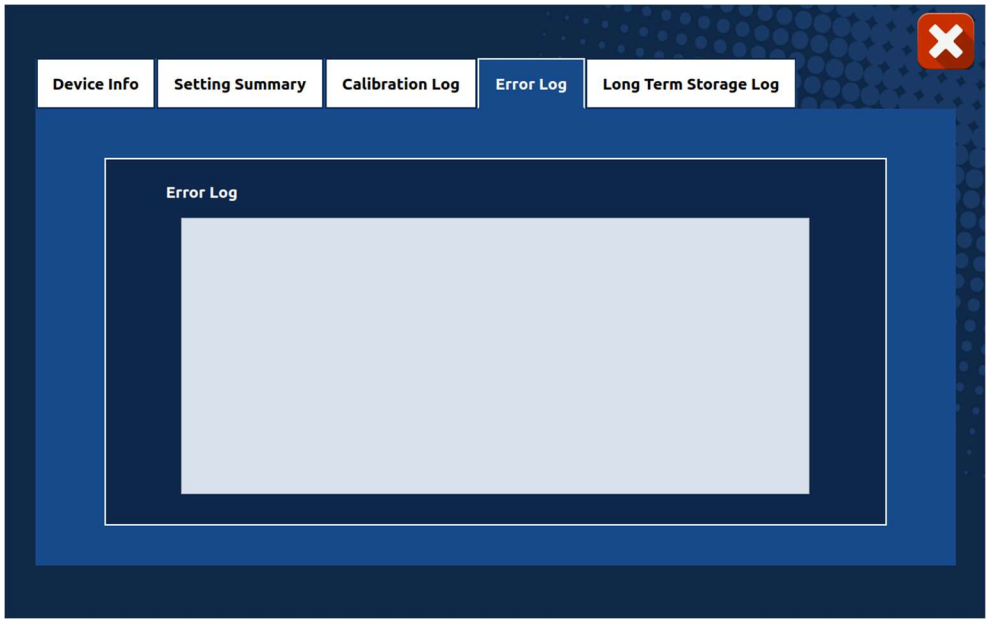


*Figure 15*

You can view the last error codes by date.

# Long Term Storage Log

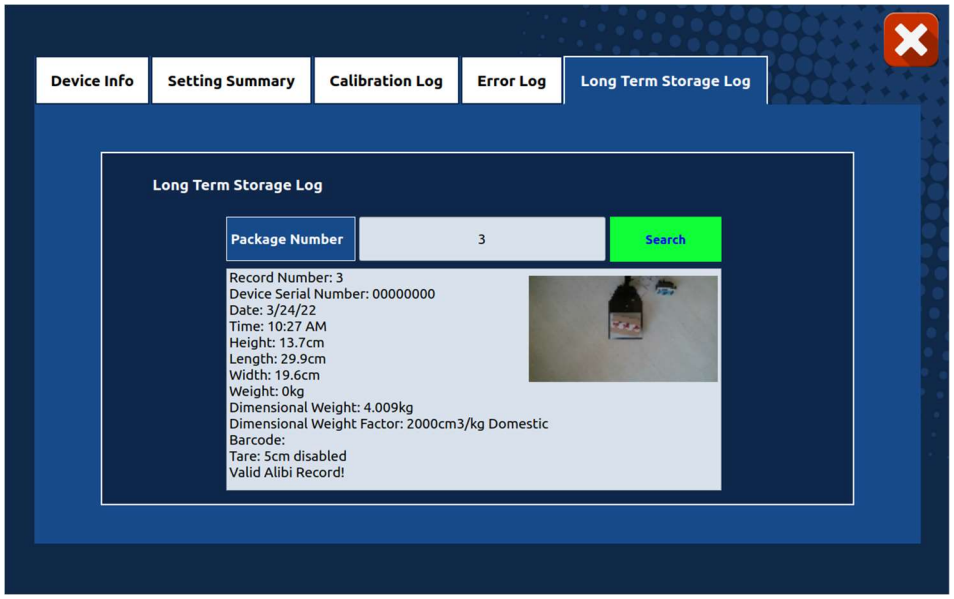


*Figure 16*

You can view the information about the package like device number, package number, date, height, width, length or image by entering the package number.

# MAINTENANCE

This chapter provides information on the care and maintenance of the EasyCube-S. Routine maintenance and careful handling will help keep the EasyCube-S in good operating condition and prevent service calls or repairs.

## Precautions for Right Working

The EasyCube-S should not be subjected to extremes in temperature or humidity, nor should it be subjected to excessive vibration. For environmental recommendations, see “Specifications” on page 3.

## Cleaning the sensors Head

The sensor covers should be kept clean. While dust normally won’t interfere with sensor operation, they should be cleaned routinely to prevent the possibility of interference.

To clean the sensor covers, use a clean microfiber cloth and gently wipe the covers located on the underside of the EasyCube-S head. Do not get the covers wet. Do not use solvents or compressed air to clean the covers.

# TROUBLESHOOTING

This chapter provides assistance in identifying and solving common problems with the EasyCube-S. If you encounter problems not covered in this chapter, or if a defect is suspected, contact your system integrator or call EasyCube-S Technical Assistance at 0216 394 25 25 for assistance.

## No response when you turn power on

If there is no response when you power on the EasyCube-S, do the following:

1- Wait at least 30 seconds after powering on for signs that the system is booting up. The system may take a few minutes to boot, especially if this is the first time that it is being turned on.

2- The power cable consists of two cables that plug into each other, make sure these cables are undamaged and securely plugged into each other.

3- Make sure that both ends of the power cable are securely plugged in. Make sure the power cable is plugged into an active outlet or alternative power source.

4- Contact EasyCube-S Service and Support at 0216 394 25 25 if you require additional help.

## Dimension readings are not accurate

If you suspect that the EasyCube-S dimension readings are inaccurate (varying by more than ± 0.2"), do the following:

1- Make sure that no other objects are interfering with measurements. The measurement area should be clear of all objects that are not being measured.

2- Make sure that the tare function is disabled, unless you are using tare blocks.

3- Sometimes black, shiny surfaces are difficult for the EasyCube-S to dimension. Try measuring an object with a different surface to see if the surface is causing a problem.

4- Check the color-depth image to see what is being measured. Make sure that hands, arms, or other items are not included in measurements.

5- Direct sunlight can interfere with EasyCube-S measurements. Move the EasyCube-S if direct sunlight is in the measurement area.

6- Cycle the power.

7- Try restore the EasyCube-S manually, see “Default Settings” on page 16.

8- Contact EasyCube-S at 0216 394 25 25 if you require additional help.

# Sensor error

If the EasyCube-S reports a sensor error, complete the following steps.

1- Cycle the power.

2- If you are still receiving a sensor error, contact EasyCube-S at 0216 394 25 25.