CubiScan® 25

Operations and Technical Manual

Version 1.2

Quantronix, Inc.
Cubing and Weighing Systems

380 South 200 West
P.O. Box 929
Farmington, Utah 84025
U. S. A.
Phone +1 (801) 451-7000
Fax +1 (801) 451-0502
Website: http://www.cubiscan.com

CUBISCAN®
CUBING & WEIGHING SYSTEMS BY QUANTRONIX

CubiScan 25 Operations and Technical Manual

CubiScan® and the Quantronix logo are registered trademarks of Quantronix, Inc.

Scanning New Dimensions™, Qbit™, QbitWIN™, and The FreightWeigh System™ are trademarks of Quantronix, Inc.

Windows® is a registered trademark of Microsoft Corporation.

CubiScan® software and firmware are protected by international and domestic copyrights.

CubiScan® 150 measurement products are protected by one or more of U.S. Patents Re42,430 and D490,328 and foreign patents.

CubiScan® 110 measurement products are protected by one or more of U.S. Patent Re42,430 and foreign patents.

CubiScan® 125 measurement products are the subject of U.S. Patent 8,928,896. Another U.S. patent is pending.

CubiScan® 225 measurement products are protected by one or more U.S. patents, refer to U.S. Patent 9435637.

⚠ CAUTION	The CubiScan 25 should only be serviced by qualified personnel.
	Observe precautions for handling electrostatic sensitive devices when setting up or operating the CubiScan 25.

⚡ WARNING	Disconnect all power to the CubiScan 25 before servicing or making any connections.

c(UL)us
LISTED
E171537
ITE

CE

Limited Warranty Quantronix New Product

Statement of Warranty. Quantronix, Inc.'s, warranty obligations are limited to the terms set forth below: Quantronix (hereinafter referred to as the "Seller") warrants that its new product is in accordance with Seller's published specifications (or those agreed upon with Buyer in writing) at the time of sale or lease and that it is free from non-cosmetic defects in materials and workmanship under normal use for a period of one (1) year from the date of sale or the commencement date under a written equipment lease or rental agreement (the "Warranty Period"). If a hardware defect arises and a valid claim is received within the Warranty Period, at its option, Seller will either (i) repair the hardware defect at no charge, using new or refurbished replacement parts, or (ii) exchange the product or defective part(s) with a product or part(s) that are new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product or part, or (iii) refund the purchase price of the product after Buyer has returned the product to Seller. For purposes of this warranty agreement, "Buyer" shall mean and refer to (i) the party which originally – whether from Seller directly, or from an authorized distributor, agent or reseller who is authorized by Seller – purchases, or leases under a written equipment lease or rental agreement, the Seller's product which is the subject of this warranty, or (ii) any subsequent purchaser or transferee that acquires valid title to the equipment within the Warranty Period.

In the event of the occurrence of a claim under this warranty, the Buyer shall have thirty (30) days to notify Seller in writing of the nature and specifics of the claimed defect; provided, however, that any and all claims must be received before the expiration of the Warranty Period. Failure to notify Seller within such time period shall void this warranty. Any claim of a warrantied defect is subject to inspection and analysis by Seller, prior to and/or after Buyer ships the product to Seller, to conclusively identify or confirm the nature and cause of failure and application of this warranty. In the event that the defect or damage is excluded from warranty the Seller may at its option either (i) provide Buyer with a quote to make any such repairs or replacements which are not covered under this warranty, or (ii) give Buyer twenty (20) days to pay for return shipping and upon receipt return the product to Buyer. If Buyer fails to pay for return shipping after twenty (20) days' notice and after repairs are made or warranty coverage is determined not applicable, Seller may dispose of or scrap the product.

This is a factory warranty and any defective components, mechanical or electrical, will be repaired or replaced, at the discretion and authorization of Seller, at Seller's facilities in Utah. It shall be the Buyer's responsibility to return the faulty equipment or components to Seller at Buyer's expense as well as pay for all return shipping. All replaced or exchanged parts becomes property of Seller. Buyer shall first receive written confirmation to ship the product before sending it. Written confirmation to ship is not a guarantee that the defect or damage to the product is covered by this warranty. Seller is not obligated to pay for labor, material, or service charges involved in the removal, return, or installation of equipment or components. Seller reserves the right to incorporate improvements in material and design of its products without notice and is not obligated to incorporate the same improvements in equipment previously manufactured.

Exclusions and Limitations. This limited one (1) year warranty is applicable exclusively to original equipment products and components that were manufactured by Seller. Seller also warrants its replacement parts, subject to the terms and conditions set forth herein, for the lesser period of ninety (90) days from the date of delivery or until the expiration of the original warranty, whichever is greater. Seller does not warrant, for any purpose, any external accessories, or integrated parts, including but not limited to computers, controllers and/or barcode scanners, that are manufactured by another manufacturer and sold under a separate label, even if they are packaged or sold with Seller's product. Seller's obligation and liability under this warranty is expressly limited to repair or replacement (at its option) of the warrantied equipment or components within the Warranty Period. A purchase by Buyer of equipment that it had first leased or rented shall not start a new Warranty Period. Seller does not warrant that the operation of the product will be uninterrupted or error-free.

This warranty shall not apply to equipment or components which has/have:

1. Been the subject of an accident, or repairs or modifications attempted or made and not authorized by Seller.
2. Been used with incompatible products.
3. Been operated under abnormal conditions, excessive heat or cold, highly corrosive environments, or in an unintended manner.
4. Not been operated or maintained in accordance with Seller's instructions.
5. Been subject to misuse or abuse, negligent handling, improper installation, accident, damage by fire, flood, snow, ice, water or other liquid damage, lightning, abnormal electrical condition and/or power surge, earthquake, or other act of God or events outside of Sellers control.
6. Had serial numbers altered, defaced or removed.
7. Been operated beyond capacity.
8. Not been manufactured by Seller including parts, accessories, or components which have been integrated into, used alongside of, or in conjunction with a product manufactured by Seller.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, STATUTORY, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT ALLOWED BY LAW, SELLER SPECIFICALLY DISCLAIMS ANY AND ALL STATUTORY OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS. IF SELLER CANNOT LAWFULLY DISCLAIM STATUTORY OR IMPLIED WARRANTIES THEN TO THE EXTENT PERMITTED BY LAW, ALL SUCH WARRANTIES SHALL BE LIMITED IN DURATION TO THE DURATION OF THIS EXPRESS WARRANTY AND TO REPAIR OR REPLACEMENT SERVICE AS DETERMINED BY SELLER IN ITS SOLE DISCRETION. This statement sets forth the full extent of Seller's liability for breach of any warranty or deficiency in connection with the sale or use of the product. No employee, representative or reseller of Seller is authorized to change this warranty in any way or grant any other warranty.

EXCEPT AS PROVIDED IN THIS WARRANTY AND TO THE EXTENT PERMITTED BY LAW, SELLER IS NOT RESPONSIBLE FOR DIRECT, INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO LOSS OF USE; LOSS OF REVENUE; LOSS OF ACTUAL OR ANTICIPATED PROFITS (INCLUDING LOSS OF PROFITS ON CONTRACTS); LOSS OF THE USE OF MONEY; LOSS OF ANTICIPATED SAVINGS; LOSS OF BUSINESS; LOSS OF OPPORTUNITY; LOSS OF GOODWILL; LOSS OF REPUTATION; LOSS OF, DAMAGE TO OR CORRUPTION OF DATA; OR ANY INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE HOWSOEVER CAUSED INCLUDING THE REPLACEMENT OF EQUIPMENT AND PROPERTY, AND ANY COSTS OF RECOVERING, PROGRAMMING, OR REPRODUCING ANY PROGRAM OR DATA STORED OR USED WITH SELLER PRODUCTS. BUYER WAIVES THE RIGHT TO SEEK TOTAL COMBINED DAMAGES FROM SELLER IN EXCESS TO THAT WHICH WAS PAID TO SELLER AND SELLER SHALL BE LIMITED FROM ANY AND ALL CLAIMS RELATED TO THIS WARRANTY TO BE NO MORE THAN WHAT WAS PAID TO SELLER FOR THE NEW PRODUCT.

CONSUMER PROTECTION LAWS. FOR CONSUMERS WHO ARE COVERED BY CONSUMER PROTECTION LAWS OR REGULATIONS IN THEIR COUNTRY OF PURCHASE OR, IF DIFFERENT, THEIR COUNTRY OF RESIDENCE, THE BENEFITS CONFERRED BY THIS WARRANTY ARE IN ADDITION TO ALL RIGHTS AND REMEDIES CONVEYED BY SUCH CONSUMER PROTECTION LAWS AND REGULATIONS. Some countries, states and provinces do not allow the exclusion or limitation of incidental or consequential damages or exclusions or limitations on the duration of implied warranties or conditions, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary by country, state or province.

What's New in Version 1.2?

Updated Sections

- Updated various style choices to be consistent with the Quantronix Style Guide
- Updated terminology and images to be consistent with the latest firmware version
- Updated images and setup instructions to include the new gate stop

This document was created with the purpose of providing the most accurate and complete information. If you have comments or suggestions for improving this manual, contact Quantronix at manual@cubiscan.com.

Manual updated June 21, 2017.

Table of Contents

List of Figures

Chapter 1

Product Description

The CubiScan 25 is a small, static cubing system that uses sensing technologies to measure and weigh irregularly-shaped parts and components as well as boxed items. Small parts and non-cuboidal items are measured with great precision using infrared sensing technology. The sensing gate is moved by hand to allow the user complete control over the measuring process.

The CubiScan 25 is commonly used to improve storage-space planning, for carton size selection, repacking, check-weighing, and shipment manifesting in medical, pharmaceutical, apparel, hardware, and consumer goods distribution. It has an integrated touchscreen display and outputs to a user-supplied PC. Capacity for irregular items can be measured up to 18 x 12 x 12 inches with a resolution of 0.05 inches. The CubiScan 25 also includes an integrated, high-accuracy 15 x 0.005 lb scale.

Each unit has one active serial communication port, one Ethernet port, and one USB port. Proprietary interface software, called Qbit™, is available and allows for menu-driven operator control, data storage/transfer, and diagnostics. A mobile cart and useful accessories such as a portable power supply are available to create a completely mobile cubing, weighing, and identification workstation.

The CubiScan 25 uses powerful sensing technologies to create a flexible and economical solution for today's most demanding cubing and weighing applications.

Figure 1
CubiScan 25

Specifications

Power Requirements

100 – 240 VAC, 50 – 60 Hz

Environmental

Operating Temperature: 32° to 104° F (0° to 40° C)

Humidity: 0 to 90% non-condensing

Measuring Sensor

Infrared light beam

Weight Sensor

Four load cells

Measuring Capacities

Measurement Range

Length:	0.10 to 18.00 in (0.2 to 45.0 cm)	
Width:	0.10 to 12.00 in (0.2 to 30.0 cm)	
Height:	0.10 to 12.00 in (0.2 to 30.0 cm)	

Measurement Increment: 0.05 in (0.1 cm)

Measurement Time: < 5 seconds

Object Characteristics: Opaque

Weight Capacity: 0.005 to 15.000 lb (0.002 to 6.000 kg)

Weight Increment: 0.005 lb (0.002 kg)

Physical

Length: 32 in (81 cm)

Width: 27 in (69 cm)

Height: 23 in (58 cm)

Weight: 62 lbs (28 kg)

User Interface

Minimum PC Specifications:
Windows 10/8.1/8/7/XP/95/98/NT/2000, Pentium II processor, 20 megabytes of disk space, screen resolution setting of 800 X 600

Quantronix's QBIT™ software can be used to interface with the CubiScan 25.

Display:
Integrated TFT LCD touchscreen displays length, width, height, weight, unit of measure, 2D and height profile, and diagnostic codes.

Outputs:
Serial (1), Ethernet (1), USB (1)

Chapter 2
Setup

This chapter provides instructions for assembling and setting up the CubiScan 25. Perform the steps to set up the CubiScan 25 in the following order:

Unpacking

The CubiScan 25 is shipped in a single container with all components. The glass platform is packed in a separate cardboard box inside the crate.

Remove the Ethernet and power cables, the TRENDnet Ethernet adapter box, and the calibration cube from the foam supports and set them aside.

Remove the glass platforms from the box and place them in a safe location. The platforms are in a protected cardboard box located beneath the CubiScan 25's measuring gate.

Carefully remove the cardboard support that covers the top and sides of the CubiScan 25.

Lift the CubiScan 25 out of the shipping crate. It is best to have two people do this because the CubiScan 25 weighs 62 lbs (28 kg) and may be awkward to handle.

Do not remove the green foam shipping supports between the scale base and platform as they will help prevent damage to the load cells while you are moving and assembling the CubiScan 25.
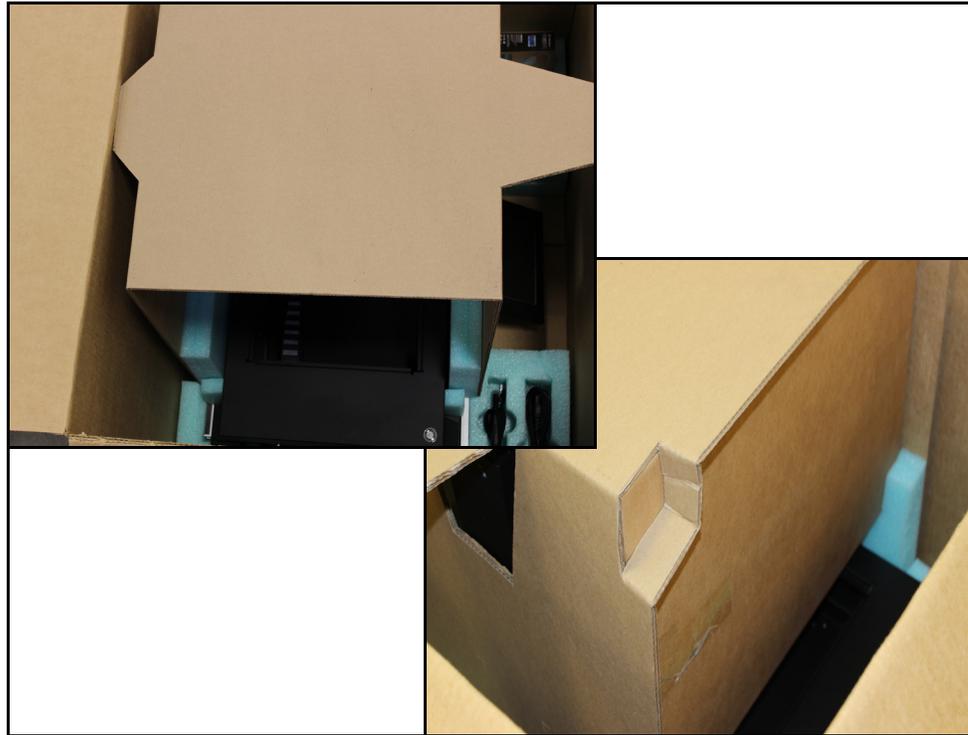
Figure 2
CubiScan 25 in Crate

Examine the container and the CubiScan 25 carefully for any damage. If, after unpacking, you discover any damage to the CubiScan 25, contact the carrier immediately. Refer to Figure 3 and the list below it to identify the components.
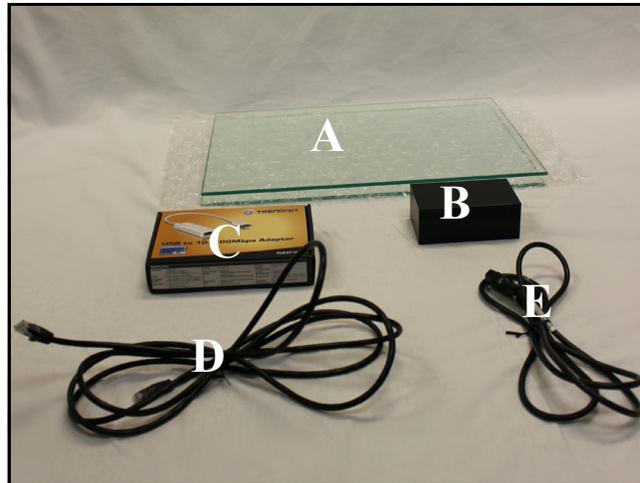
Figure 3
CubiScan 25 Components

A   Glass platforms (2)
B   Calibration cube
C   TRENDnet Ethernet adapter box (includes adapter, CD-ROM, and
     TRENDnet User's Manual)
D   Ethernet cable
E   AC power cord

If any of the components or accessories are missing or defective, contact
Quantronix or your system integrator.

Carefully remove the CubiScan 25 and its components from the crate, and
place the CubiScan 25 on a solid, stable surface for assembly. See
"Assembling the CubiScan 25" on page 7.

Placement

The CubiScan 25 is designed to be operated in a warehouse environment;
however, for proper operation the following conditions should be met if
possible.

- Do not subject the CubiScan 25 to extremes in temperature or humidity.
  Locate the CubiScan 25 as far from open freight doors as possible.
  Heaters or air conditioners should not blow directly on the CubiScan 25.

- Avoid placing the CubiScan 25 in direct sunlight, as it may affect
  measurement readings.

- Protect the CubiScan 25 from static electricity, especially the
  touchscreen.

- Place the CubiScan 25 on a flat, sturdy surface as free from vibration as possible. Excess vibration can reduce the accuracy of the CubiScan 25 scale.

- The CubiScan 25's platform is free-floating—it is resting on four springs (load cells). Maintain a minimum of one-inch clearance at the back and sides of the CubiScan 25. Do not rest objects against or set objects on the CubiScan 25 when not in use.

- If a computer is used, place it as close to the CubiScan 25 as possible. The operator needs to use the keyboard or mouse on the computer while cubing and weighing packages using the CubiScan 25.

- Orient the CubiScan 25 so the touchscreen faces the operator.

Assembling the CubiScan 25

The CubiScan 25 is almost completely assembled when shipped. You only need to remove the shipping materials, place the glass platform, and loosen the scale thumb screws.

- Place the base assembly of the CubiScan 25 on a stable surface. Make sure that the CubiScan 25 is level. Adjust the leveling feet located in each corner if necessary. (An optional cart, custom-designed for the CubiScan 25, is available from Quantronix.)

Removing the Shipping Material

1. Carefully remove the four green foam shipping supports from the CubiScan 25 base.
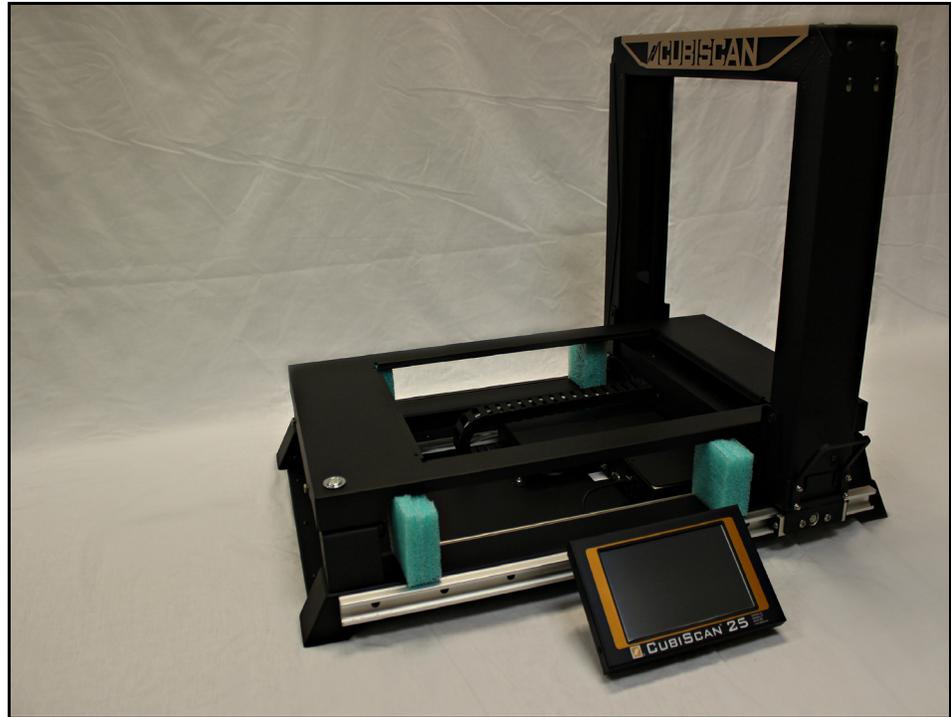
Figure 4
Foam Shipping Supports

Placing the Glass Platform

1. Remove the glass cubing and weighing platform from the cardboard box that was in the shipping crate, and carefully place it on the platform frame, as shown below.

Figure 5
Glass Cubing and Weighing Platform

2. Store the extra glass platform in a safe location.

Loosening the Scale Thumb Screws

There are four thumb screws that must be loosened before the CubiScan 25 can properly cube and weigh objects. These screws are located on each end of the CubiScan 25.

To loosen the screws, complete the following steps.

1. Locate the scale thumb screws. Refer to Figure 6 below.

2. Loosen each screw by turning the screw to the left several times until the weighing platform is able to move freely.

3. Do not remove the screws from the CubiScan 25.

Figure 6
Scale Thumb Screws

Loosening the Gate Stop

1. Loosen the gate stop by turning it counter-clockwise. If you ever want to lock the gate in place, simply turn the gate stop clockwise until the gate no longer moves.

Figure 7
Gate Stop

Connecting Power

1. Locate the AC power cord (supplied), and connect it to the power connection on the right side of the controller box, as shown below.

Figure 8
Connecting Power

2. Route the AC power cord so it cannot be crushed, bent, or pulled loose.

3. Connect the other end of the AC power cord to a standard power outlet.

4. Use the power switch on the right side of the controller box (shown above) to turn the CubiScan 25 on and off.

NOTE ☞ *The CubiScan 25 should be powered on before running the Qbit program to cube and weigh packages.*

Turning On the CubiScan 25

Specific procedures must be followed each time you turn on the CubiScan 25, as follows:

1. Make sure there are no packages or other objects on the CubiScan 25 platform.

2. Make sure the gate is in the home position (right-hand side).

3. Turn on the CubiScan 25 with the power switch located on the right side of the controller box.

4. Zero the CubiScan 25. For instructions, See "Zeroing the CubiScan 25" on page 27.

The CubiScan 25 performs self-calibration and diagnostic procedures that take about 5 seconds. Do not touch the CubiScan 25 platform during these 5 seconds.

Connecting to a Computer or Network (Optional)

To connect the CubiScan 25 to a computer, do the following.

1. Place the computer close to the CubiScan 25. (Refer to "Placement" on page 6 for information.)

2. Remove the center cover by removing the two thumb screws located on the right-hand side of the cover. Slide the cover off to the left so that you can access the ports on the left side of the controller.

3. Locate the controller box. The controller box can be found beneath the measuring gate's home position (the right-hand side).

4. Choose from one of the following operating methods.

-   Connect the CubiScan 25 to a host system via a standard 10/100Base-T Ethernet TCP/IP port. This is the recommended method and all parts needed to connect the CubiScan 25 to a computer via an Ethernet connection have been supplied by Quantronix. You may need to load the driver. To load the driver onto the computer follow the instructions on page 14. You can use Qbit software or the touchscreen options to configure the CubiScan 25 for TCP/IP communication. Contact Quantronix for information on available software. Or, refer to the Communications Protocol.

-   Connect the CubiScan 25 to a PC using a USB cable (not provided) through the USB port on the controller box. You will need to load the USB driver to use this port. Follow the instructions on page 18 to load the driver.

-   Connect the CubiScan 25 to a PC through the RS-232-C serial port on the controller box. Use the Qbit software on the computer to run the CubiScan 25.

- Operate the CubiScan 25 without a computer using the touchscreen. Refer to "Measuring/ Weighing Items" on page 25 for information.
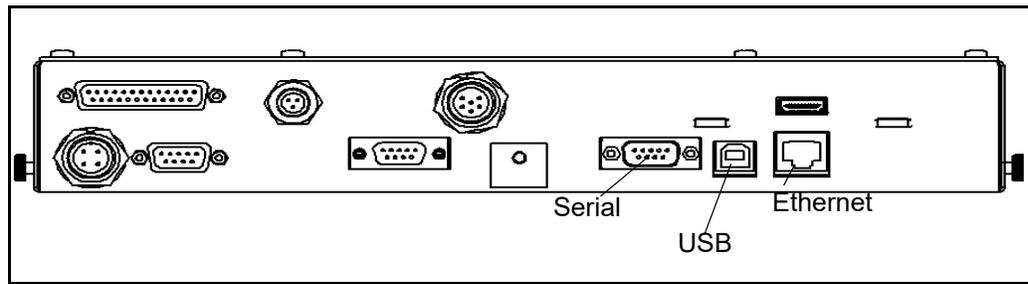

Figure 9
Ethernet, Serial, and USB Connectors

Connecting to a Computer via Ethernet

This section describes how to use Ethernet to connect a computer to the CubiScan 25 (recommended method).

Use Quantronix's Qbit software (refer to the *Qbit User Guide*) or the touchscreen options (see Chapter 4 "Configuration") to configure the CubiScan 25 for TCP/IP communication. Contact Quantronix if you need additional assistance.

If you are using the Ethernet connection option:

1. Install the driver that is needed, for further information on installing the driver, see below.

2. Connect the Ethernet cable (supplied) to the CubiScan 25's Ethernet port, as shown in Figure 9.

3. Attach the Ethernet cable to the TRENDnet USB to Ethernet cable adapter (supplied).

4. Connect the TRENDnet cable adapter to the PC.

NOTE ☞   *The following screen images were taken from a Windows 7 operating system. Your screen images may appear different if you are using a different operating system.*

Installing and Configuring the Ethernet Driver

To install the Ethernet driver there are two options.

1. You can install the driver using the TRENDnet CD-ROM and User's Guide.

Or you can complete the following steps:

1. Plug the white TRENDnet USB to Ethernet adapter into the computer. The following bubble will appear in the bottom right corner of the screen.

Figure 10
Installation Bubble

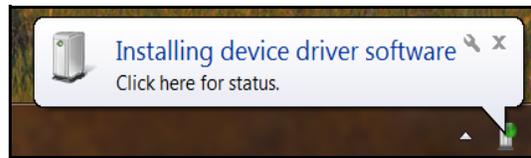- Wait a few moments for the installation process to finish and the following bubble will pop up.
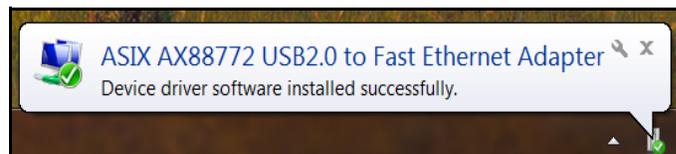
Figure 11
Device Installed Bubble

- If you clicked on the installation bubble, the following window will open.
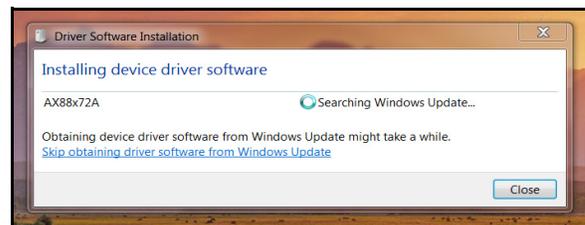
Figure 12
Installation Process Bubble

- Once the driver has finished the installation process it will report that the adapter is ready to use.
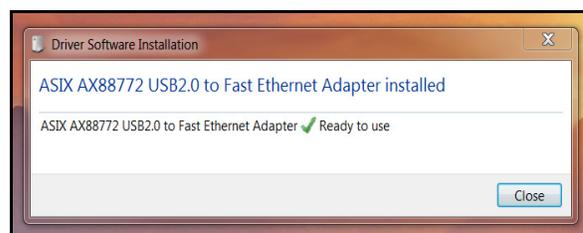
Figure 13
Adapter is Ready to Use

Access Ethernet Network Settings
Once the driver is installed you need to set the static IP address and the Subnet mask of the adapter. You can access these network settings by completing the following steps:

1. Under Control Panel > Network and Internet > Network and Sharing Center locate and click on the correct connection to bring up the status window.
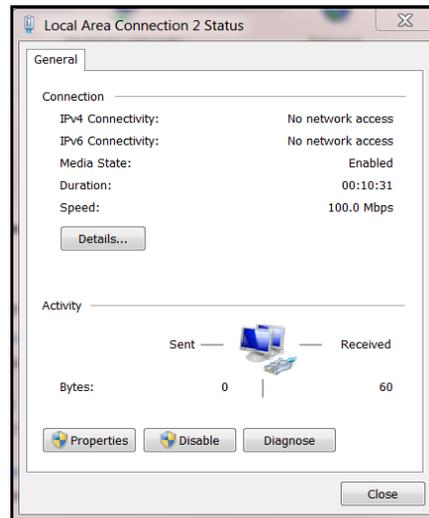
Figure 14
Status Window

2. Select **[Properties]**. Double-click **Internet Protocol Version 4** to bring up the general properties window.
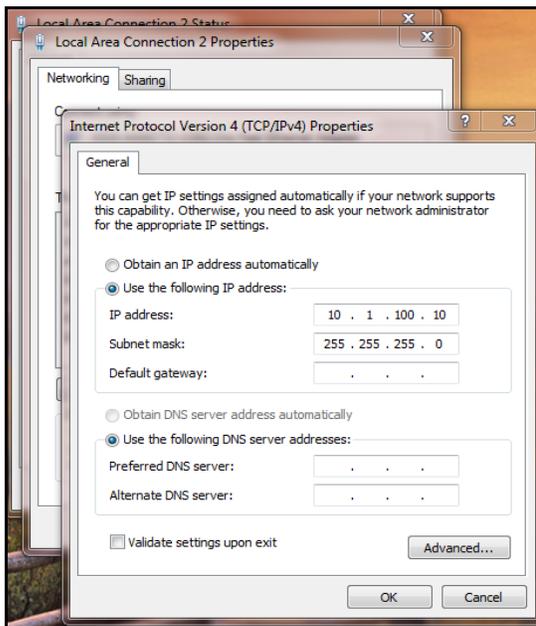
Figure 15
General Properties Window

From this screen you can set the IP address and Subnet mask. The recommended IP address setting is 10.1.100.10. The recommended Subnet mask setting is 255.255.255.0.

3. Click **[OK]** to exit when you are finished. Close any other remaining windows.

Once you have completed this setup process, the computer should communicate with the CubiScan 25.

Connecting to a Computer via USB

This section describes how to use a USB connection to connect a computer to the CubiScan 25.

If you are using the USB cable (not supplied) connection:

1. Connect the USB cable to the CubiScan 25's USB port located on the controller box, as shown in Figure 9.

2. Make sure that the proper driver has been installed on the PC (see below).

3. Connect the USB cable to the PC.

Installing and Configuring the USB Driver

You must install a driver on your computer before it can recognize and communicate with the CubiScan 25 via the USB port. Complete the following steps to install the driver.

1. With the CubiScan 25 turned on, connect the USB cable to your computer's USB port and to the USB port on the CubiScan 25.

    In the bottom right corner of the monitor, a bubble appears indicating that new hardware has been found.

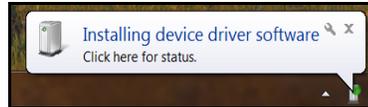   The driver will be automatically installed. A notification bubble will pop up in the bottom right corner of the screen when the installation process is finished.

    If you are using Windows XP, the driver will need to be loaded manually.

2. To determine which COM port the computer has assigned to the USB port, go to Control Panel > Hardware and Sound.

3. Click on **Device Manager** to display the Device Manager window.
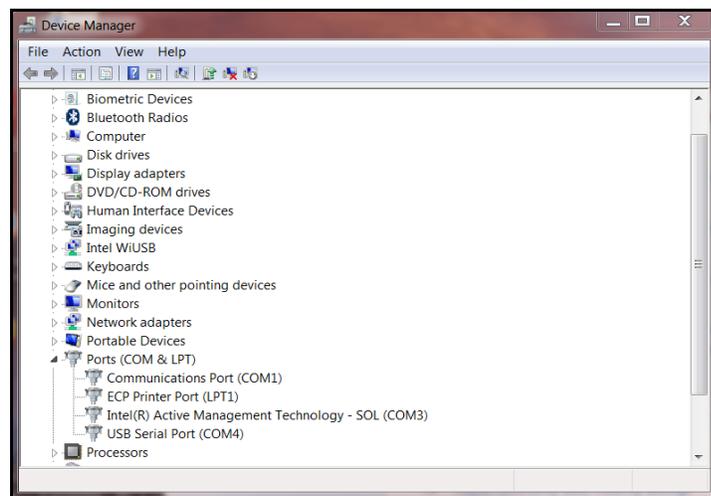
4. Click the arrow next to **Ports** to display the available ports. Locate the COM port assigned to the CubiScan 25. It will read **USB Serial Port**. This is the COM port you will use when setting up Qbit applications to communicate with the CubiScan 25. In this example, the CubiScan 25 was assigned to COM4.

5. Close the Device Manager and the System Properties window.

When it is turned on, the CubiScan 25 will recognize the cable connection and, if configured correctly, will respond to a connection request from the host.

Connecting to a Computer via Serial (RS-232-C)

If you are using the RS-232 serial communications cable (not supplied) connection, complete the following steps:

1. Route the RS-232 serial communications cable so it cannot be crushed, bent, or pulled loose. Make sure that the cable does not interfere with the scale.

2. Connect the serial cable to the CubiScan 25's serial port, as shown in Figure 9.

3. Locate a free RS-232-C serial port on your computer. Refer to your computer's documentation, if necessary, to identify the ports. If the serial port is 9-pin, connect the serial cable directly to the serial port. If it is 25-pin, use a 25-pin to 9-pin adapter (not supplied).

4. To secure the RS-232 serial cable, tighten both screws at each end of the cable. It is important that the cable be secure.

Installing Qbit (Optional)

A flash drive is available containing the Qbit software program, which can be used to operate the CubiScan 25.

The *Qbit User Guide*, located on the drive, provides instructions for installing and using Qbit. You can also download the user guide from the Quantronix website at www.cubiscan.com.

Setup Checklist

Before using the CubiScan 25 for the first time, verify the following:

1. Have the CubiScan 25 and the computer (if applicable) been placed in the proper operating environment? (page 6)

2. Has the CubiScan 25 been fully assembled? (page 7)

3. Has all shipping material been removed? (page 8)

4. Is the CubiScan 25's scale platform free moving? The CubiScan 25 should not be pushed up against a wall and no object, cable, etc., should be resting on it or against it.

5. Has the Ethernet, RS-232, or USB cable been attached to the CubiScan 25 and the computer (if applicable)?

6. Has the AC power cord been connected correctly?

7. If you are using Qbit to operate the CubiScan 25, has the software been copied onto your computer's hard-disk drive? (Refer to the *Qbit User Guide* for information.)

8. Does the CubiScan 25 require recalibration? The CubiScan 25 was calibrated at the factory, but *may* require recalibration due to handling during shipping. Refer to for information on calibrating the CubiScan 25. If you are using Qbit software, check the status of the CubiScan 25 before operating it. Refer to the *Qbit User Guide* for information on checking the CubiScan 25's status.

Chapter 3
Operation

This chapter provides instructions for operating the CubiScan 25.

NOTE ☞   *The CubiScan 25's glass platform should be kept clean and free of objects that are not being measured.*

Before You Begin

Follow the procedures below to turn on the CubiScan 25. The CubiScan 25 should be turned on before you start Qbit (if applicable).

1. Make sure there are no objects on the CubiScan 25's platform.

2. Make sure that the gate has enough room to move freely.

3. Turn on the CubiScan 25. The CubiScan 25 performs self-diagnostic procedures that take about 5 seconds. **Do not touch the CubiScan 25 platform during these 5 seconds**.

4. The CubiScan 25 must be zeroed each time it is turned on. For instructions on zeroing the CubiScan 25 see "Zeroing the CubiScan 25" on .

NOTE ☞   *Do not lean on or touch the CubiScan 25 glass platform or the object while the object is being measured and weighed. Any kind of contact with the platform during the measurement process can alter the weight or sensor reading.*

| ⚠ CAUTION | While the CubiScan 25 has overload protection, objects heavier than 15 pounds (6 kg) should not be placed on the platform. Overloading the scale or shock loading (dropping a heavy object on the scale) can cause permanent zero shift, making the scale inoperable. |

CubiScan 25 Touchscreen

You can use the CubiScan 25 touchscreen (below) to configure and control the CubiScan 25 as well as display measurement results.
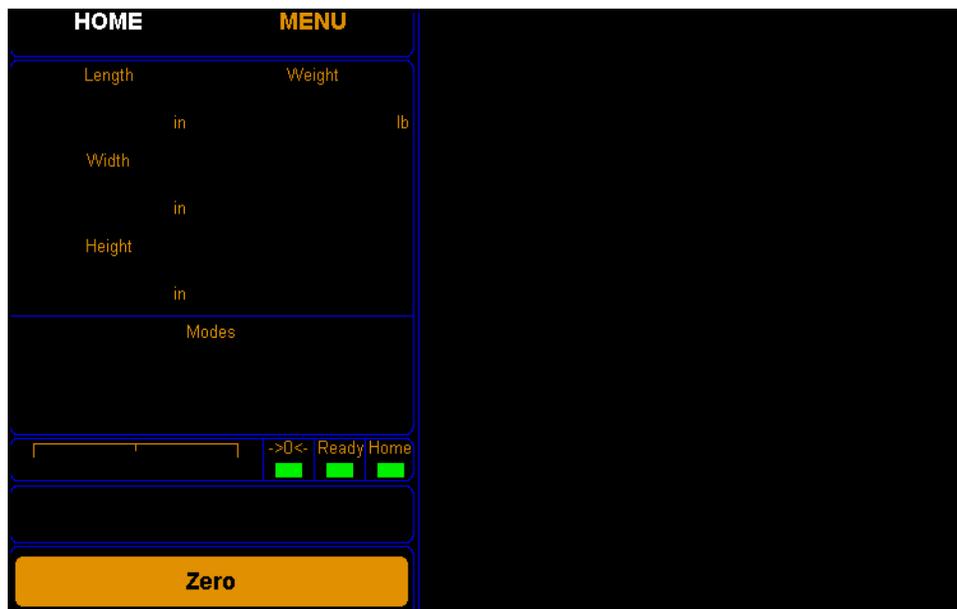

Figure 16
CubiScan 25 Touchscreen

All measurement, setup, and diagnostic information is shown on the touchscreen. You tap touch keys on the display to change the configuration and perform diagnostics.

- Tap a key to select a function.

- Tap **[Zero]** to "zero" the CubiScan 25 (see "Zeroing the CubiScan 25 on page 27).

- Tap **[Menu]** to select configuration or calibration functions.

Other touch keys may be used for specific functions and are described in the instructions for that function. Refer to Chapter 4 "Configuration" on page 28 for information on configuration and to "Diagnostics" on page 60 for information on diagnostics.

Touchscreen Care

Never use a sharp or hard-tipped object to tap on the touchscreen. It is glass and can scratch or break. You can tap lightly on the screen with your fingertip, or you can use the eraser end of a pencil or a stylus with a soft point. Use a light touch, just hard enough for the screen to respond.

To clean the touchscreen, moisten a soft cloth with water, then gently wipe the screen clean with the cloth. Do not spray liquid directly on the touchscreen.

Cubing and Weighing

The CubiScan 25 can be used to measure irregularly-shaped, opaque objects as small as 0.1 inch (refer to "Specifications" on page 2 for specifications and size limitations).

Objects are measured by the infrared light beams on the CubiScan 25's gate by moving the gate over the object on the platform.

Refer to the appropriate following section for instructions.

Cubing and Weighing Using Qbit

Refer to the *Qbit User Guide* for instructions on measuring, weighing, and other functions in Qbit. The *Qbit User Guide* is provided on the flash drive or you can download it from the Quantronix website at www.cubiscan.com.

Cubing and Weighing Using the Touchscreen

All controls and displays for the CubiScan 25 are shown on the touchscreen at the front of the base. If a computer is not connected, you can use the touchscreen to measure and weigh objects.

Measurement and weight results will only display when the CubiScan 25 touchscreen is displaying the home screen.

Figure 17
Measurement Display

Length Width Height	These display the measured dimensions in inches (in), centimeters (cm), or millimeters (mm) as selected.
Weight	This displays the measured weight in pounds (lb) or kilograms (kg) as selected.
->0<- (indicator)	This indicates that the scale is zeroed and ready to receive an object. This indicator must be lit before you can place an object on the platform. When you place an object on the platform, the indicator goes off.
Ready (indicator)	This indicates that the CubiScan 25 is ready for cubing and weighing.
Home (indicator)	This indicates that the measuring gate is positioned in the "home" position (on the right-hand side).
Zero (button)	Tap this key to reset the scale to "zero" (make sure the platform is empty). Refer to "Zeroing the CubiScan 25" on page 27.
Menu	Tap this key to go to the configuration menu to set up or calibrate the CubiScan 25.
Home	Tap this key to return to the home screen.

Measuring/   Take the following steps to measure and weigh an item using the
Weighing Items touchscreen. The measuring gate can measure opaque objects as small as .1
inch (2 mm). An image of the object is displayed on the touchscreen as it is
measured.When you begin measuring with the measuring gate, you must
start with the gate on the right side of the CubiScan 25, or home position
(indicated by the **home** indicator on the touchscreen).

You can then use either of the following two methods to measure an object.

- Place the item anywhere on the glass platform. Starting with the
  measuring gate on the right side, or home position, move the gate over
  the object, and then move it back to the home position to complete the
  measurement.

- Place the item anywhere on the glass platform. Move the gate past the
  item that you are measuring to complete the measurement. You can
  then remove the item, place another item on the platform, and measure
  the new item by moving the gate over it.

1. Verify that the CubiScan 25 scale is at zero. The **zero** indicator should be
   lit.

2. Place the object on the glass platform. The **zero** indicator light will go
   out.

NOTE ☞   *Do not lean on or touch the CubiScan 25 platform or the object while an object is
being measured. Any kind of contact with the platform during the measurement
process can alter the weight or sensor reading.*

3. Using one of the gate movement methods described above, move the
   measurement gate slowly using the handle. If the measurement was
   successful the length, width, height, and weight of the object are
   displayed.

4. Remove the object from the platform. Wait for the **zero** indicator to
   light before placing the next object on the platform.

5. If the **zero** indicator does not light, it means that the CubiScan 25 needs
    to be zeroed. To zero the scale, make sure that the platform is free of all
    objects, then tap **[Zero]**.

Figure 18
Measuring Gate

NOTE ☞   *Do not move the gate too quickly across the platform. A gate speed error is
              displayed on the touchscreen if you move it too quickly.*

A two-dimensional image of the object shows the top-down view of the
object. An image of the side view of the object appears below the image
of the top-down view. The length, width, height, and weight are
displayed on the touchscreen.

Figure 19
Measuring Gate Display

Zeroing the CubiScan 25

Tap the **[Zero]** button on the touchscreen to "zero" the CubiScan 25 (set all empty measurements and weight to zero). The weight when the platform is empty must be set to zero for the CubiScan 25 to operate properly. The CubiScan 25 tries to zero itself automatically. However, you may need to use this option in the following circumstances.

• If, during a long measuring session, environmental conditions (temperature and humidity) have changed noticeably.

• If you suspect that the last zeroing was in error (something was on the platform).

NOTE ☞   *Make certain that the platform is free of all objects before using Zero. If not, the zero reading will not be accurate.*

Chapter 4

Configuration

This chapter provides instructions for using the CubiScan 25 touchscreen to set up the length, width, and height measurements, as well as special features that the CubiScan 25 offers. This chapter also provides instructions for configuring the units, dimensional weight factor, com port, and other settings. For information on calibrating the CubiScan 25 gate, touchscreen, or scale, refer to Chapter 5 "Calibration".

If you have a computer connected to the CubiScan 25 with Qbit installed, you can use Qbit to set up the measurement and dimensional weight units, select the CubiScan 25 communications port, perform calibration, and other functions. Refer to the *Qbit User Guide* for instructions on measuring and other functions in Qbit. The *Qbit User Guide* is provided on the flash drive with the Qbit application, or you can download it from the Quantronix website at www.cubiscan.com.

System Configuration

The following options can be used to configure your CubiScan 25. The options available on the configure menu are Operation, Units, Ethernet, and Other.

Operation

This section discusses the options available on the Operation menu. Complete the following steps to access the Operation menu.

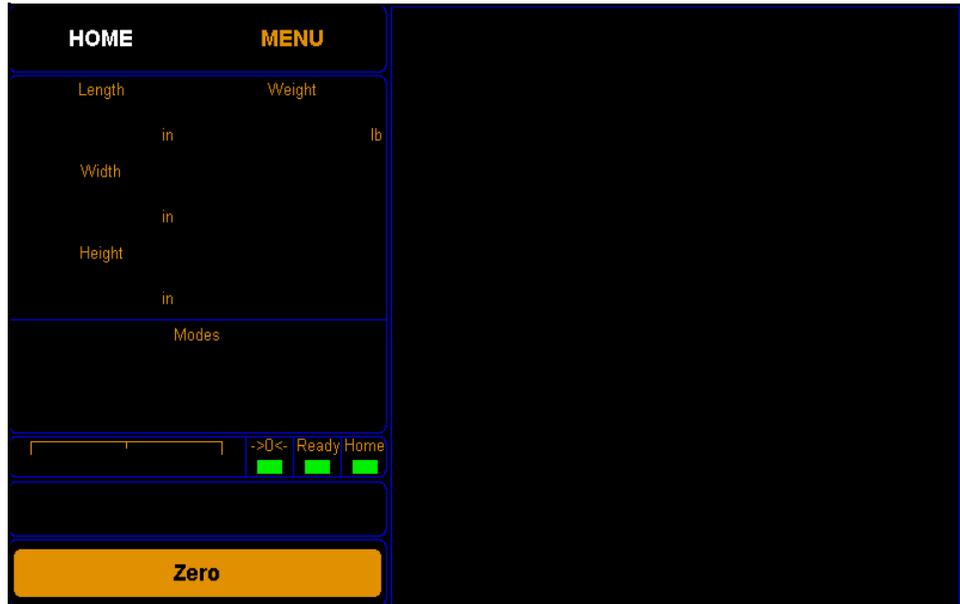1. From the home screen, tap **MENU**.

Figure 20
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

2. Tap **CONFIGURE**. Select the Operation option if it is not already selected.

Figure 21
Configure Operation

Display Dim Weight   Check this box if you want the dim weight and factor to be displayed on the home screen.

Enable Scale   Check this box if you want to enable the CubiScan 25's scale. If this box is not checked, weight will not be reported on the home screen or sent in the data packet.

Enable Ethernet   Check this box if you want to enable Ethernet communication.

Enable Smallest Box   Check this box if you want to enable the smallest box mode. This mode boxes items into the smallest box possible, the placement of the item on the platform makes no difference. Turning off the smallest box mode measures items depending on their placement on the platform.

The images below illustrate the difference between having the smallest box mode on or off.

Figure 22
Smallest Box Mode On

Figure 23
Smallest Box Mode Off

Enable Swap Longest	Check this box if you want to enable the Swap Longest feature. This feature will automatically report the longest dimension as the length.
Enable Filter	Check this box if you want the filter mode option available on the home screen. You can then enable or disable the filter mode from the home screen. In this mode the CubiScan 25 measures only the largest item that is on the platform (the item that takes up the most pixels). Height is not taken into account. As shown below, the largest item's measurements are displayed even though it is not the tallest item. Items that were excluded

from the measurement process are shown in red while the item that was measured is shown in yellow.
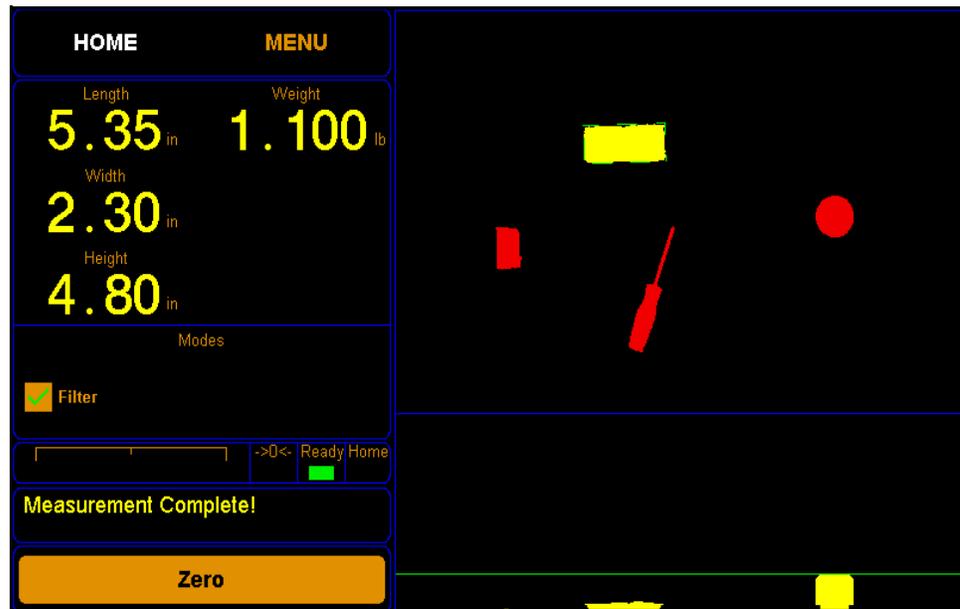

Figure 24
Filter Mode On

Password: In this field you can enter a four-digit password. If you set up a password, it must be entered each time you try to access any of the menu screens (except for the About menu).

Language: From this drop-down box you can select which language is used. The options are: English, French, and Spanish.

Protocol: From this drop-down box you can select which protocol is used. The options are: Standard, Expanded, CS 100-L, and Custom.

The Standard option is the default and works the best with Qbit software.

The Expanded option includes more information in the data packet, such as the packet number and date and time.

The CS 100-L option makes the data packet backwards compatible with the CubiScan 100-L.

The Custom option allows the use of a custom communication protocol file that has been saved on the SD card.

Image: From this drop-down box you can select your image transfer type. The options are: Full and Compact.

Bmp File: From this drop-down box you can select your Bmp file type. This controls the XY and Z image options that may be downloaded. The CubiScan 25 measures more quickly with this option disabled. The options are: Disabled, XY, and XY & Z.

Compression: From this drop-down box you can select your preferred compression mode option. This mode weighs down items such as apparel or books in order to get a more accurate measurement of the height. The options are: Disabled, Enabled, and Auto-Off.

When you select the Disabled option, the compression feature is disabled.

When you select the Enabled option, a Compression checkbox appears on the home screen. Compression mode can then be enabled or disabled from the home screen.

When you select the Auto-Off option, a Compression checkbox appears on the home screen. With this option selected, you can measure an object in compression mode once, then compression mode is automatically turned off. Compression mode can easily be turned on again with the compression checkbox on the home screen, though it will automatically turn off after each use.

Complete the following steps to measure an object in compression mode.

Figure 25
Compression Mode

1.   After you have enabled the Compression check box, place the item on the glass platform with the compression plate on top.

2. Move the gate slowly across the object. You will then be prompted to remove the compression plate and set it aside.

3. Complete the measurement by moving the gate back across the item. The end result shows the actual weight of the item that was measured. The red line shows the compressed height of the item and the green line shows the actual height. The height figure that is reported is the compressed value.

Comp. Hgt (mm):   This field displays the height of the compression plate in millimeters. The default setting for this field is 085, the height of the compression plate that Quantronix can provide. This value should not be changed unless you are using a different compression weight. To change the tare value simply tap on the number and enter the new value.

Units

This section discusses the options available on the Units menu. Complete the following steps to access the Units menu.

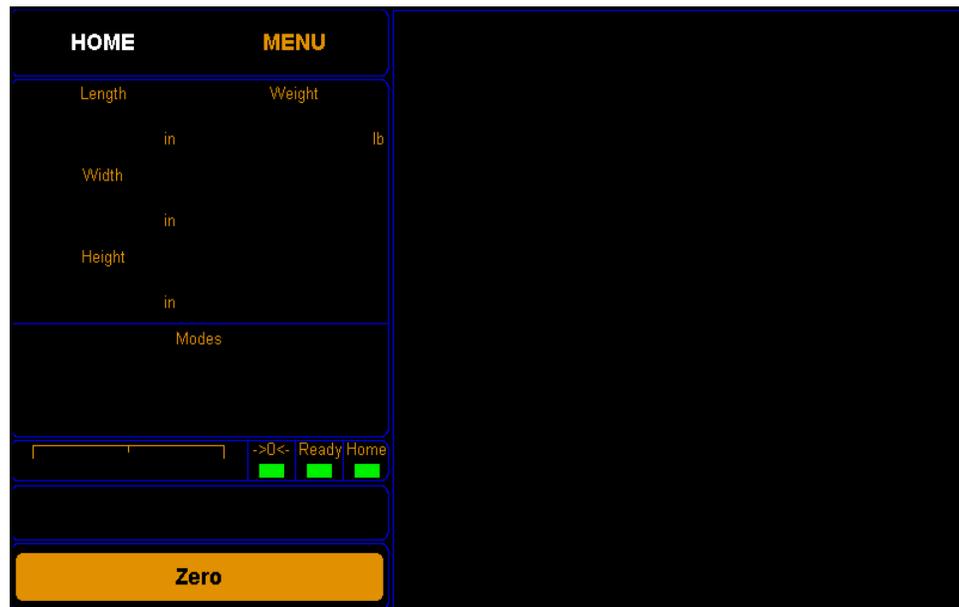1. From the home screen, tap **MENU**.

Figure 26
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

2. Tap **CONFIGURE**. Select the Units option if it is not already selected.

Figure 27
Configure Operation

Units   In this field you can select the units that will be used. The options are
inches (in), centimeters (cm), millimeters (mm), pounds (lb), or kilograms
(kg).

Scale Increment   In this drop-down box you can select the accuracy of the scale in pounds or
kilograms. The options for pounds are 0.005, 0.01, or 0.02. The options for
kilograms are 0.002, 0.005, or 0.01.

Dim-Factor   In this field you can select the dim factor that will be used. The options are
domestic and international.

Factors   In these fields you can view or change the current dim factor values.

The following table displays the default dimensional weight factors used by
the CubiScan.

139	International:	inches, pounds (in lb)
166	Domestic:	inches, pounds (in lb)
306	International:	inches, kilograms (in kg)
366	Domestic:	inches, kilograms (in kg)
2278	International:	centimeters, pounds (cm lb)
2720	Domestic:	centimeters, pounds (cm lb)
5000	International:	centimeters, kilograms (cm kg)
6000	Domestic:	centimeters, kilograms (cm kg)

Ethernet

This section discusses the options available on the Ethernet menu. Complete the following steps to access the Ethernet menu.
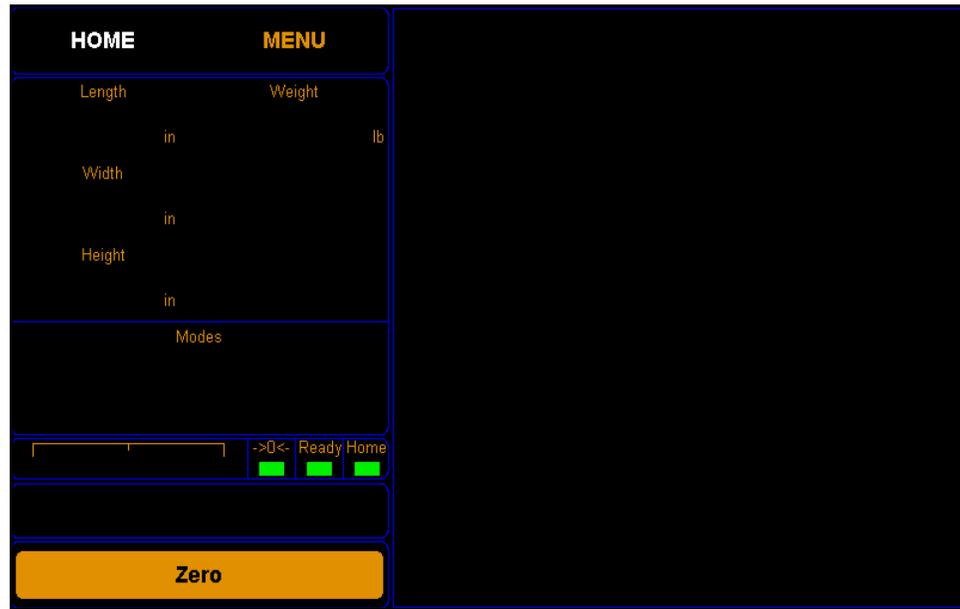
1. From the home screen, tap **MENU**.

Figure 28
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

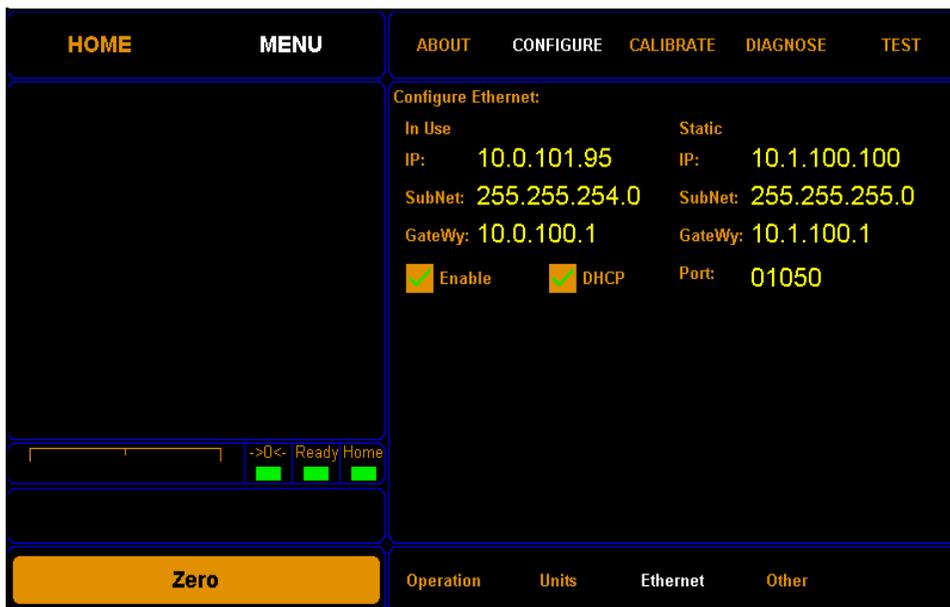2. Tap **CONFIGURE**. Select the Ethernet option if it is not already selected.

Figure 29
Configure Operation

In Use

This section describes the various settings and options of the Ethernet in use.

IP   This is the static IP address.

SubNet This is the subnet mask.

GateWy This is the gateway setting.

Enable Check this box to enable the in use Ethernet.

DHCP   Check this box to enable the DHCP.

Static

This section describes the various settings and options of the static Ethernet.

IP   This is the current IP address.

SubNet This is the current subnet mask.

GateWy This is the current gateway setting.

Port   This is the current port setting.

Other

This section discusses the options available on the Other menu. Complete the following steps to access the Other menu.
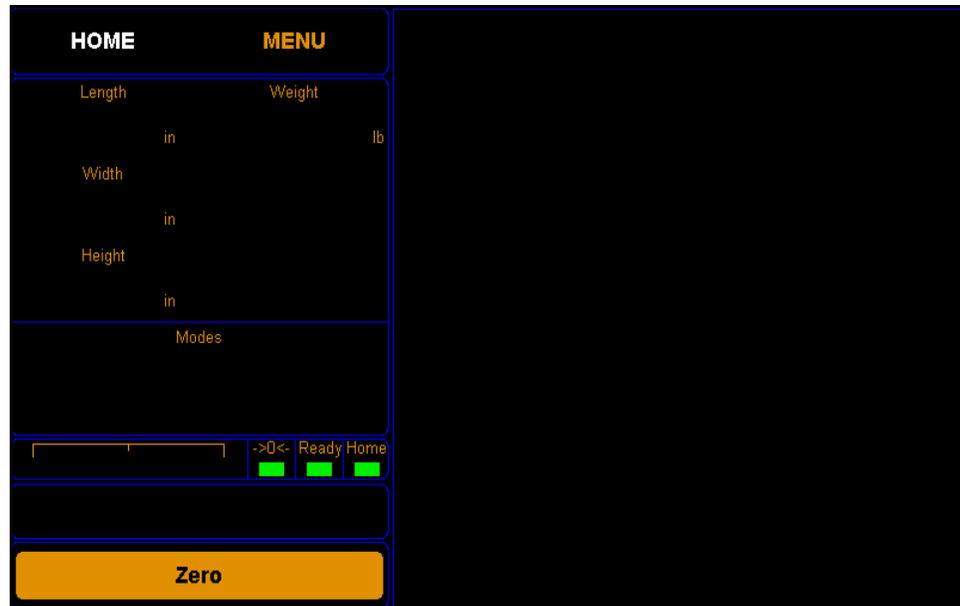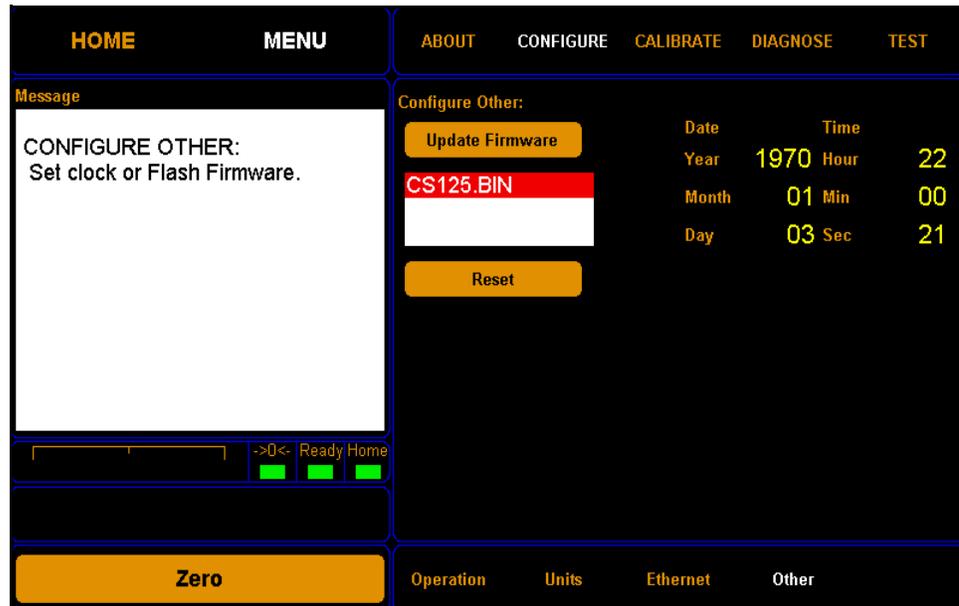
1.   From the home screen, tap **MENU**.

Figure 30
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

2. Tap **CONFIGURE**. Select the Other option if it is not already selected.

Figure 31
Configure Other

Update Firmware	Tap this button to update the firmware. The field below the button displays all firmware files that are saved on the SD card. If you would like to update the CubiScan 25 to a certain firmware file, select it in the list displayed and tap **[Update Firmware]**.
Reset	Tap this button to reboot the system after updating the firmware. The system must be rebooted each time the firmware is updated.
Date/Time	This displays the current date and time.

Chapter 5
Calibration

This chapter provides instructions for calibrating the CubiScan 25 touchscreen, measurement gate, and scale (load cells). The CubiScan 25 is calibrated at the factory; however, some circumstances in which recalibration may be required include the following:

- Calibrate the touchscreen if you have trouble making selections on the screen.
- Calibrate the CubiScan 25 if you have problems cubing and weighing after assembly and setup.
- Calibrate the CubiScan 25 if it is subjected to any type of mechanical shock or collision with a heavy object.
- Calibrate the CubiScan 25 as part of a regular maintenance schedule. Calibration of the scale is recommended at least annually. If the CubiScan 25 is used heavily, scale calibration should be performed monthly.
- Perform quality checks as needed, depending on how critical the accuracy of the data is to you. Recalibrate if you are outside the tolerance of +/- 0.05 inches (+/- 0.1 cm) for the gate or +/- 0.010 pounds (+/- 0.005 kg) for the scale.

During quality checks or when calibrating, make sure that the CubiScan 25 is not affected by external forces that may affect readings, such as sunlight or fans.

Before You Begin

Before calibrating the CubiScan 25, remove all items or other material from the platform and blow any dust off the measurement sensors. Refer to for information on cleaning the sensors.

NOTE ☞   *The following sections provide instructions for calibration using the CubiScan 25's touchscreen. For instructions on calibrating the CubiScan 25 using Qbit, refer to the Qbit User Guide.*

Calibrating the Scale

To perform the calibration, you will need the following:

- Official test weight up to 15 pounds (6 kg) (it is recommended that you calibrate with the maximum weight)

IMPORTANT: Do not begin scale calibration until you have the test weight. Calibrating without an accurate known weight (within .01 of a lb/kg) can make all future weight readings inaccurate.

Take the following steps to calibrate the CubiScan 25 scale.

NOTE ☞   *When calibrating the scale, the CubiScan 25 must be stable with no movement of the platform such as that caused by vibration or air movement.*

1. At the home screen, tap **MENU**.
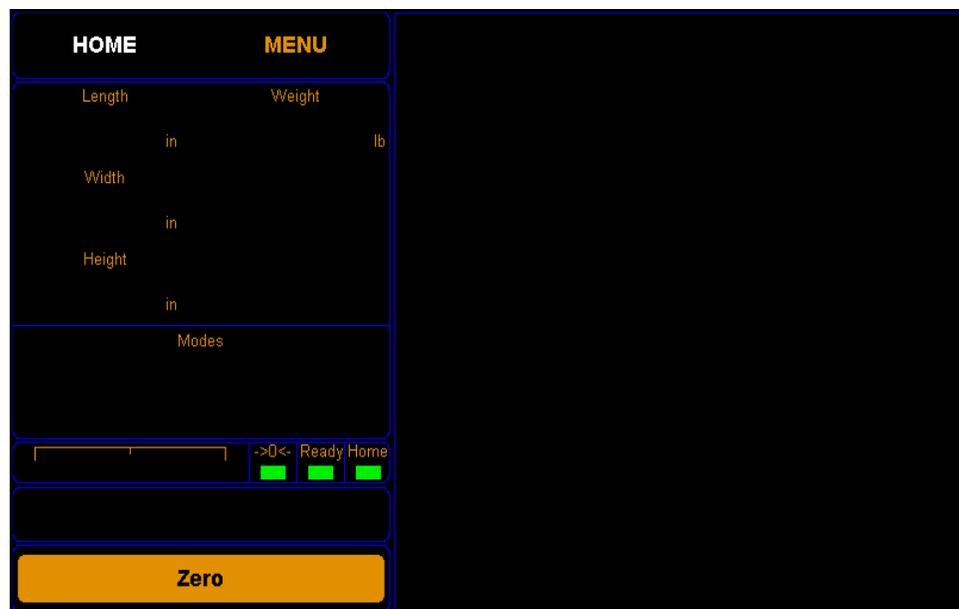
Figure 32
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

2. Tap **CALIBRATE**. Select the Scale option if it is not already selected. Make sure the weight units displayed are correct for the test weight you are using. Tap **[Next]** to begin the scale calibration.
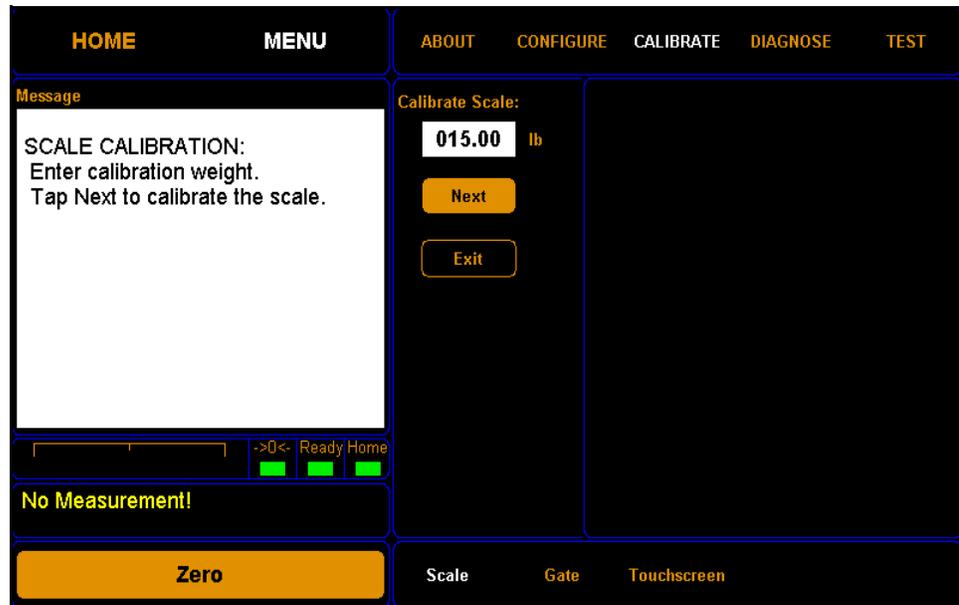

Figure 33
First Scale Calibration Screen

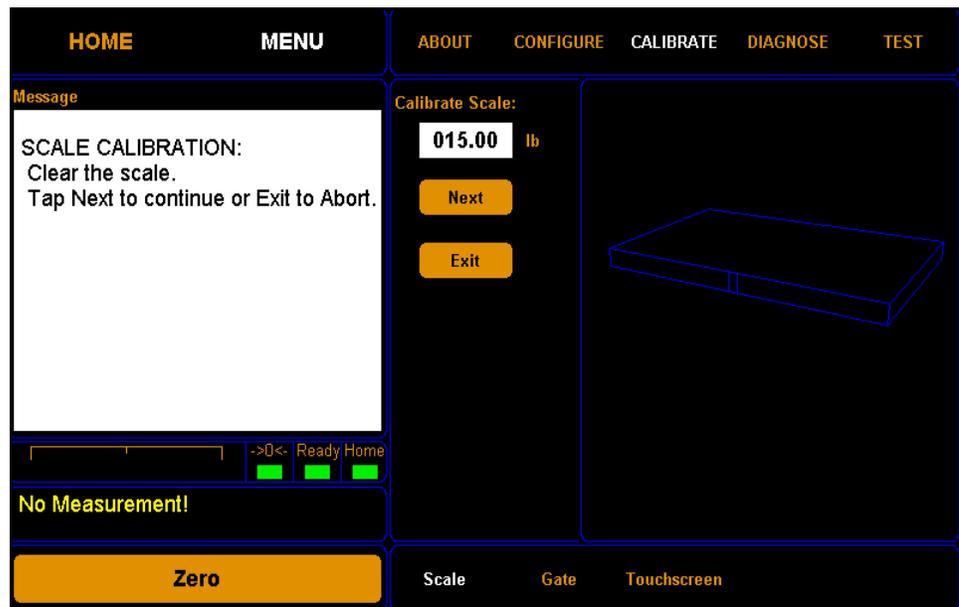3. The following screen is displayed. Clear the scale of all objects, and tap **[Next]** to continue.

Figure 34
Second Scale Calibration Screen

4. Place the calibration weights on the CubiScan 25 platform. Tap **[Next]** to continue.

Figure 35
Second Scale Calibration Screen

5. You have now finished calibrating the scale. Tap **HOME** to return to the home screen or if you would like to try calibrating the scale again, tap **[Next]**.
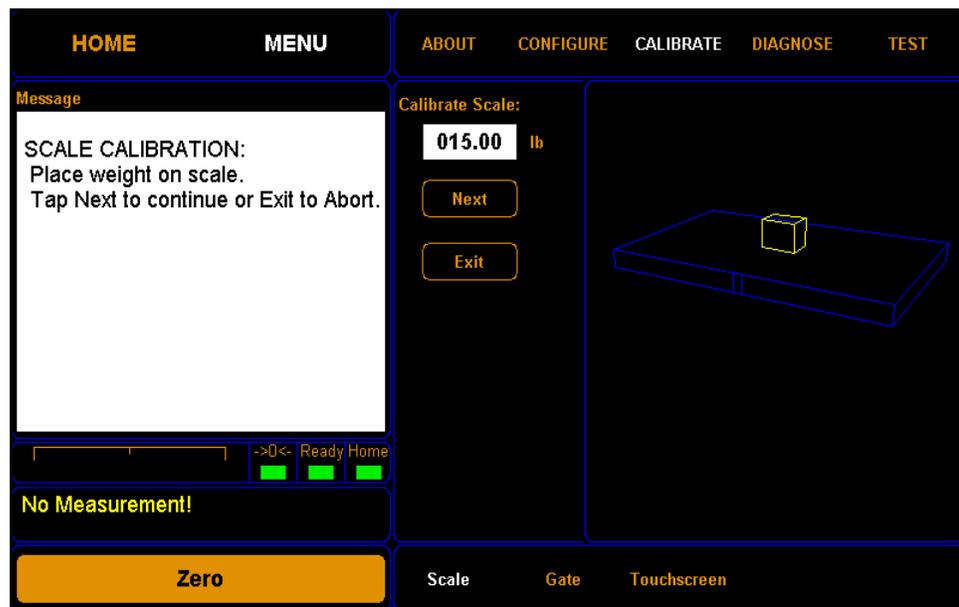

Figure 36
Scale Calibration Complete

Calibrating the Gate

To calibrate the gate using the touchscreen, proceed as follows.

1. Tap **MENU** at the home screen.

Figure 37
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

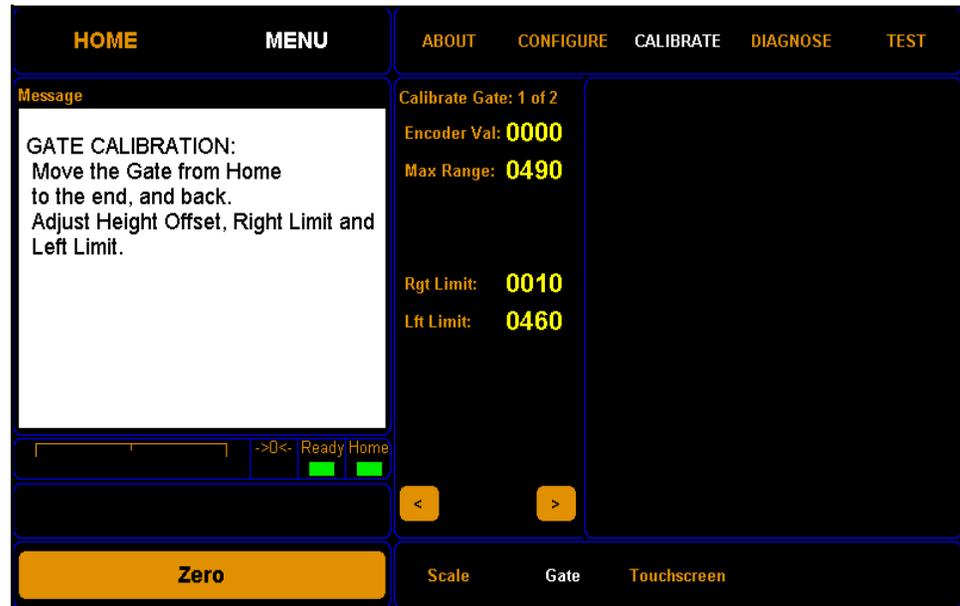2. Tap **CALIBRATE**. Select the Gate option if it is not already selected.

Figure 38
First Gate Calibration Screen

The encoder val field shows the movement of the gate and should read between 0490 and 0500 when the gate is the furthest from the home position. The max range value should be set a little lower than the highest encoder val.

From this screen you can set the measurement window for the CubiScan 25 using the left and right limit fields.

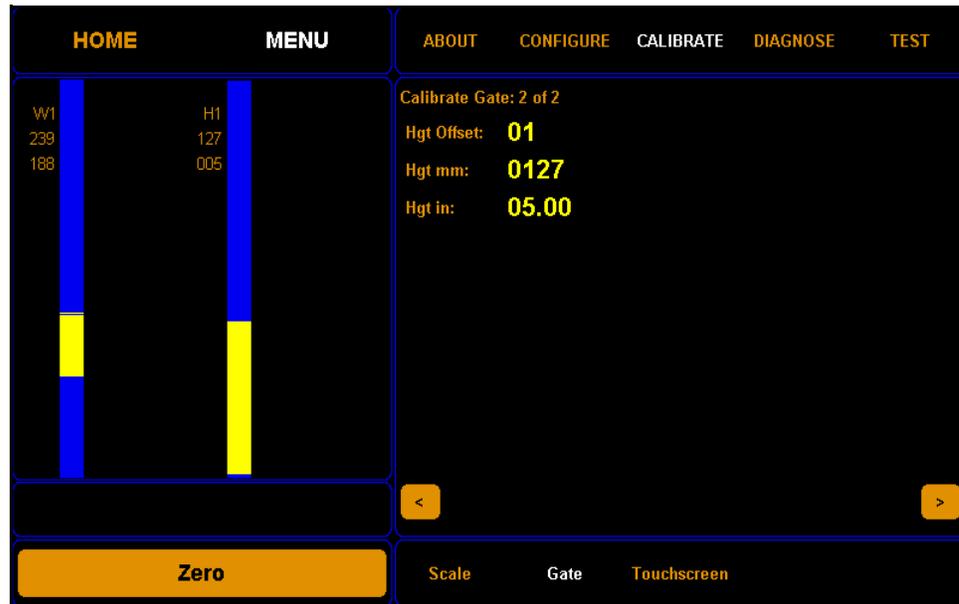3. Tap the **[>]** button to go to the next screen.

Figure 39
Second Gate Calibration Screen

From this screen you can adjust the height offset field. Adjust the height offset only if your height measurements are inaccurate.

To adjust the height offset, complete the following steps.

Step 1.0   Place the calibration cube in the gate measurement field with the long side (the five inch side) upwards. The **Hgt in** field will display the current height in inches.

Step 1.1   Click on the **Hgt Offset** field to adjust the height offset. Adjust this field until the **Hgt in** field reads as close to 5.00 inches as possible. The height offset value may be slightly different for each CubiScan.

Calibrating the Touchscreen

If you are having problems selecting functions on the touchscreen, you may need to recalibrate it. You should recalibrate any time it becomes difficult to select options on the screen.

Take the following steps to calibrate the touchscreen.

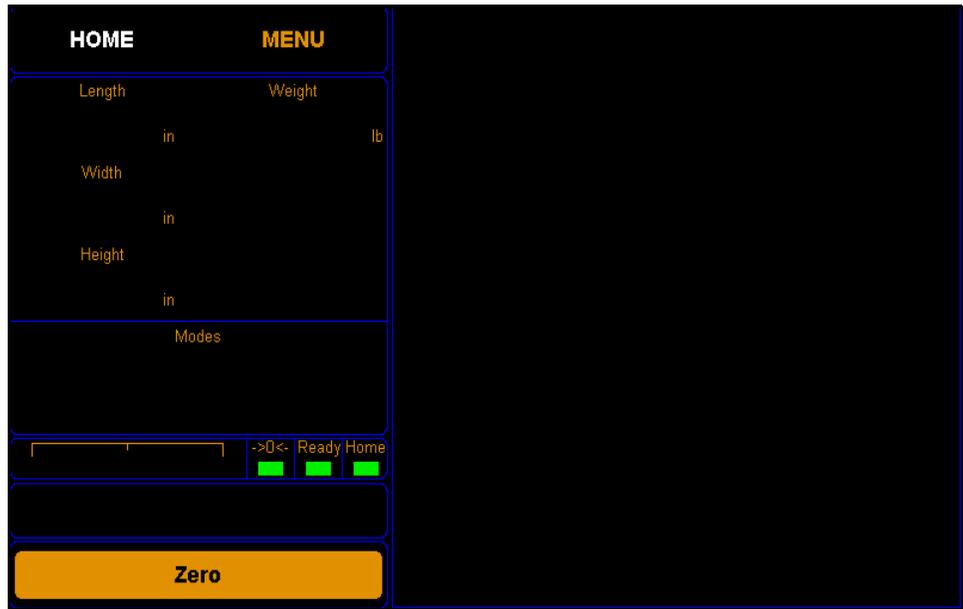1. Tap **MENU** at the home screen.

Figure 40
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

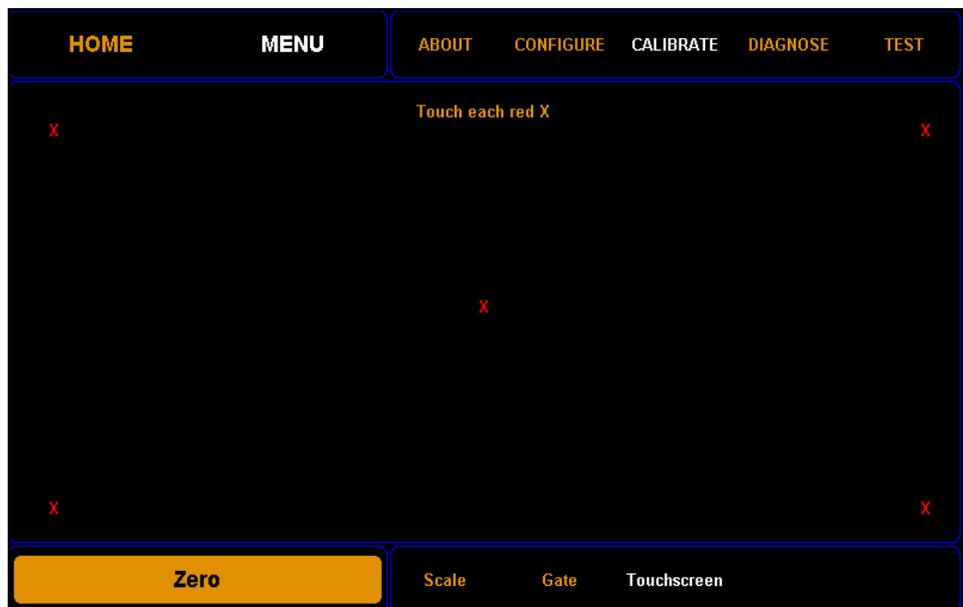2. Tap **CALIBRATE**. Select the Touchscreen option if it is not already selected.

Figure 41
Touchscreen Calibration

3. Using a stylus or your finger, touch the center of each **x** on the screen
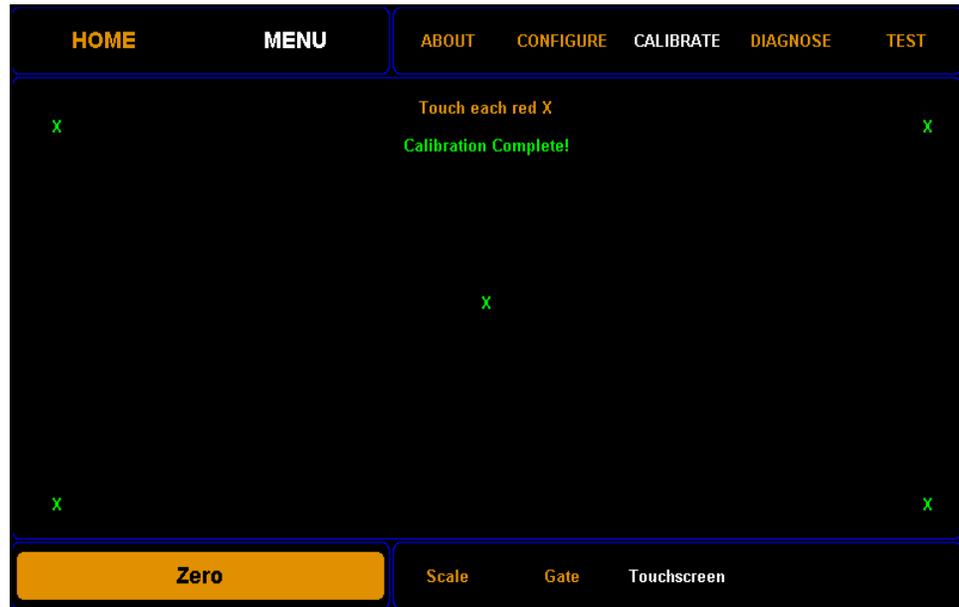   until the "x" turns green. There are five calibration points on the screen.

Figure 42
Touchscreen Calibration

4. When all the **x**'s are green, the calibration is complete.

Chapter 6
Maintenance

This chapter provides information on the care and maintenance of the CubiScan 25. Routine maintenance and careful handling will help keep the CubiScan 25 in good operating condition and prevent service calls or repairs.

Precautions

The CubiScan 25 should not be subjected to extremes in temperature or humidity, nor should it be subjected to excessive vibration. For environmental recommendations, see "Placement" on page 6.

Do not put packages on the platform that are known to be over 15 pounds (6 kg). All objects, especially heavy ones, should be placed on the platform gently. Shock loading will occur if an object is dropped or thrown onto the platform. This puts unnecessary and potentially damaging pressure on the load cell.

The CubiScan 25 has been designed to accept overload without damage. However, rough handling and abuse, over time, can cause the load cell to lose much of its spring action. In addition, severe shock loading can cause permanent zero shift, making the scale inoperable.

Cleaning the Gate Filters

This section describes how to clean the gate filters. The gate filters 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 gate filters, use a clean, damp (if needed) microfiber cloth. Use water to dampen the cloth; **do not clean the gate filters with a solvent as this could cause damage**.

Removing the Controller

If you suspect that there is a problem with the CubiScan 25 controller, first review the Troubleshooting chapter and take any recommended action. If the problem persists, contact Quantronix Technical Assistance at +1 (801) 451-7000 for assistance.

If Quantronix recommends removing the controller and returning it for service, proceed as follows.

1. Turn off the power switch, and disconnect the power cord from the controller.

2. Remove the glass platform from the CubiScan 25 base. It can simply be lifted out.

3. Place the platform in a safe location where it will not get stepped on or broken.

4. Move the gate to the far left position.

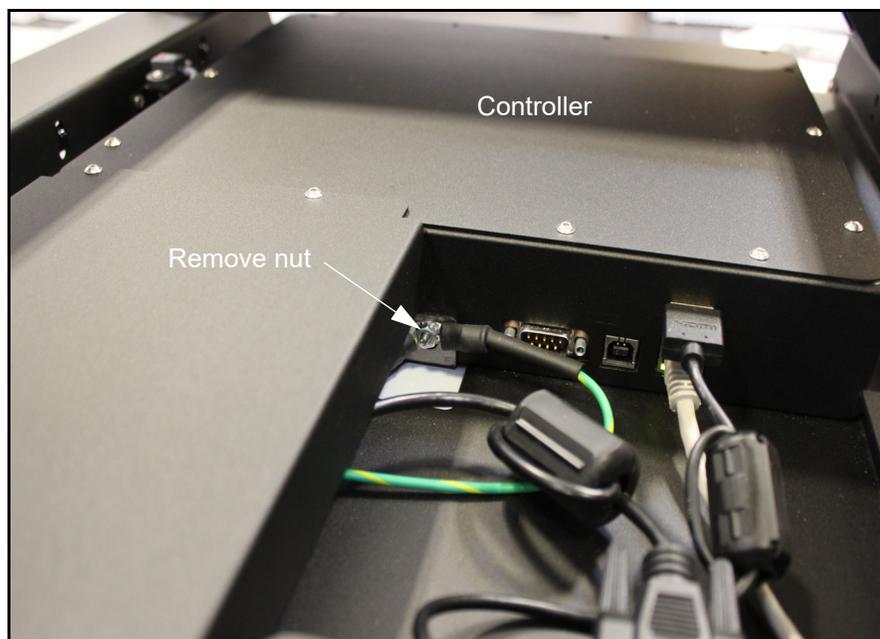5. Locate the controller (the black box located below the gate's home position).

Figure 43
Controller Box

6. Remove the nut using a 3/8" nut driver (see Figure 43 above).

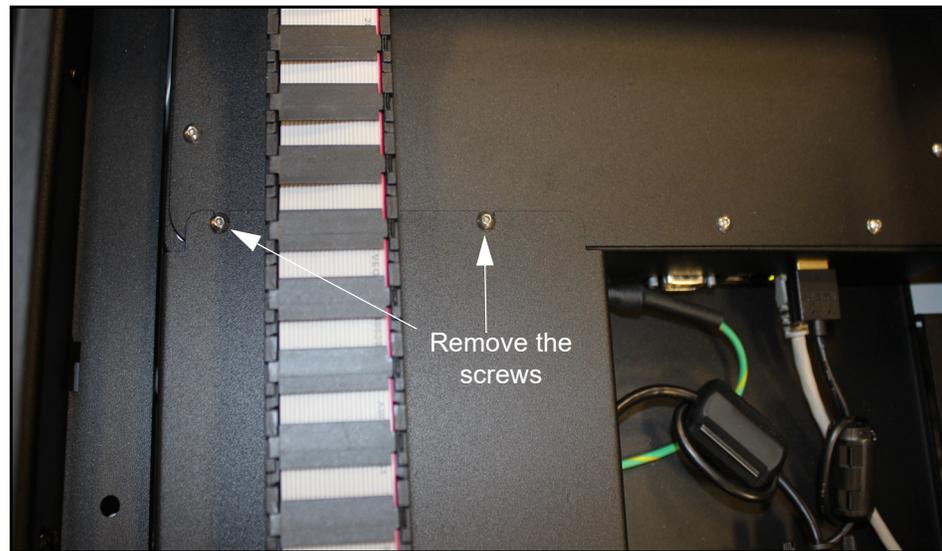7. Remove the two screws using a 5/64" Allen wrench (see Figure 44).

Figure 44
Screw Removal

8. Move the gate back into the home position.

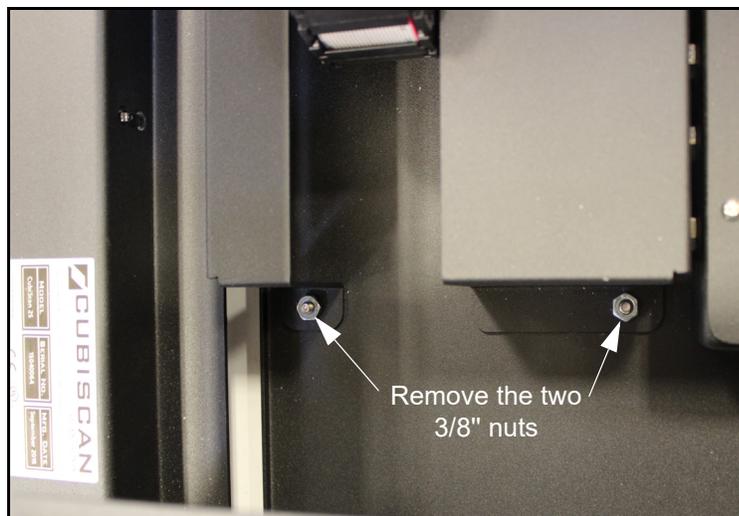9. Remove the two nuts using a 3/8" nut driver (see Figure 45).

Figure 45
Cover Box Nut Removal

10. Move the gate to the far left position.

11. Gently remove the cover that was held in place by the two 3/8" nuts by carefully lifting it up and towards the controller.
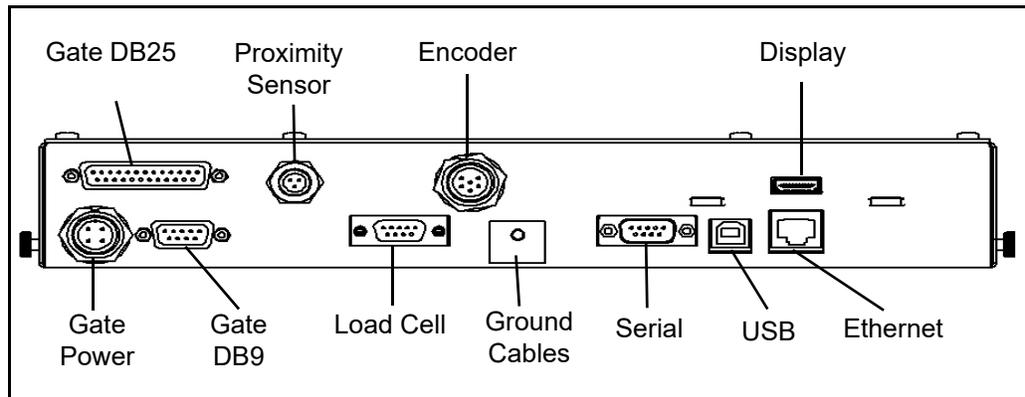

Figure 46
Drawing of Controller

12. Disconnect all connectors that are attached to the controller box (refer to Figure 46 as needed), as follows:

   • To remove the Ethernet cable connector, press the tab on the connector to release it, and pull it straight out.

   • To remove the USB and display cable, simply pull it straight out using even pressure.

   • To remove the serial and load cell cables, loosen the screws and pull the cable connectors out using even pressure.

   • To remove the gate DB9 connector and the gate DB25 connector, use a Phillips head screwdriver to loosen the screws, and pull the cables straight out.

   • To remove the gate power, proximity sensor, and encoder cables; unscrew the cables and pull them straight out.

   • Remove the nut holding the ground cables in place and detach the ground cables from the controller.

13. Verify that all cables have been removed from the controller, then lift the box up and pull it out sideways (to the right) until it is clear of the metal frame of the CubiScan 25.

Chapter 7

Troubleshooting

This chapter provides assistance in identifying and solving common problems with the CubiScan 25. If you encounter problems not covered in this chapter, or if a defect is suspected, contact your system integrator or call Quantronix Technical Assistance at +1 (801) 451-7000 for assistance.

After installation, some problems are caused either by incorrect cabling or because the system setup is not correct. If you are having problems with the CubiScan 25, first verify that all cables attached to the controller box (serial communications cables, sensor cables, power cord, Ethernet cable, load cell cable) are fully seated and secure (locking rings, clips, or screws). Then, verify that the setup is correct. For information on the setup, refer to Chapter 2 "Setup" or to the *Qbit User Guide*.

Problems with your computer may affect operation of the CubiScan 25 system. If you have trouble starting Qbit or if you encounter problems with your computer (including computer-related error messages), refer to your computer manual or contact your computer representative or dealer for assistance.

Frequent computer errors may be caused by dust or static electricity. It is important that your computer be kept as clean and static free as possible. Consult your computer manual for information.

If problems continue, review the following sections for more information.

No Response When You Turn Power On

If there is no response when you power on the CubiScan 25, do the following:

1. Verify that the AC power cord is pressed firmly into the power socket.

2. Check the fuse in the fuse drawer next to the power switch.

3. Verify that the AC power source is working properly.

Contact Quantronix if you require additional help.

Scale Readings Are Not Accurate

If you suspect that the CubiScan 25 scale readings are inaccurate, do the following:

1. Zero the CubiScan 25 by making sure the platform is free of all objects and then selecting **Zero** from the toolbar or Tools menu in Qbit. (If a computer is not connected, tap the **[Zero]** button on the touchscreen.)

2. Make sure that the CubiScan 25 is on a level surface.

3. Move the CubiScan 25 if it is located close to open freight doors or where air is blowing on it. Extreme air flow can affect the accuracy of the CubiScan 25. Refer to "Placement" on page 6 for information.

4. Recalibrate the CubiScan 25. Refer to page 40 for instructions.

Dimension Readings Are Not Accurate

If you suspect that the CubiScan 25 dimension readings are inaccurate, do the following:

1. Check the glass platform and gate filters for dirt or debris. Clean the glass platform with a clean, damp cloth.

2. Verify that the image is representative of the measured item. If not, check gate diagnostics of the CubiScan 25. Refer to "Gate Diagnostics" on page 61 for further information.

Computer Error Messages

The following error messages generated by Qbit indicate a communications problem between the CubiScan 25 and the computer.

No Communications with CubiScan 25   This message indicates that no communication is taking place between the computer and the CubiScan 25.

Transmission Error   This message indicates that erroneous or garbled data is being sent from the CubiScan 25.

If you receive one of these messages, verify the following.

1. Is the CubiScan 25 turned on and securely connected to power?

2. Is the serial cable or Ethernet cable connected to both the CubiScan 25 and the computer or network, and are both connections secure?

3. (Computer connection) Is the serial cable connected to the computer at either the COM1 or COM2 port?

4. (Computer connection) Is the Com Port in the Options dialog box (Tools menu) configured for the correct port?

5. (Network connection) Is the CubiScan 25 properly configured for TCP/IP communication? (Qbit software is used to configure the CubiScan 25.)

6. Is there a problem with the CubiScan 25? Perform the Status function in Qbit to check the status of the CubiScan 25.

7. Is there a problem with the computer or network? Refer to your computer manual for information on troubleshooting the computer, or contact your network administrator.

About

This section describes the About menu of the CubiScan 25. The About menu contains useful information and records of the CubiScan 25.

Version

This section discusses the options available on the Version menu. Complete the following steps to access the Version menu.
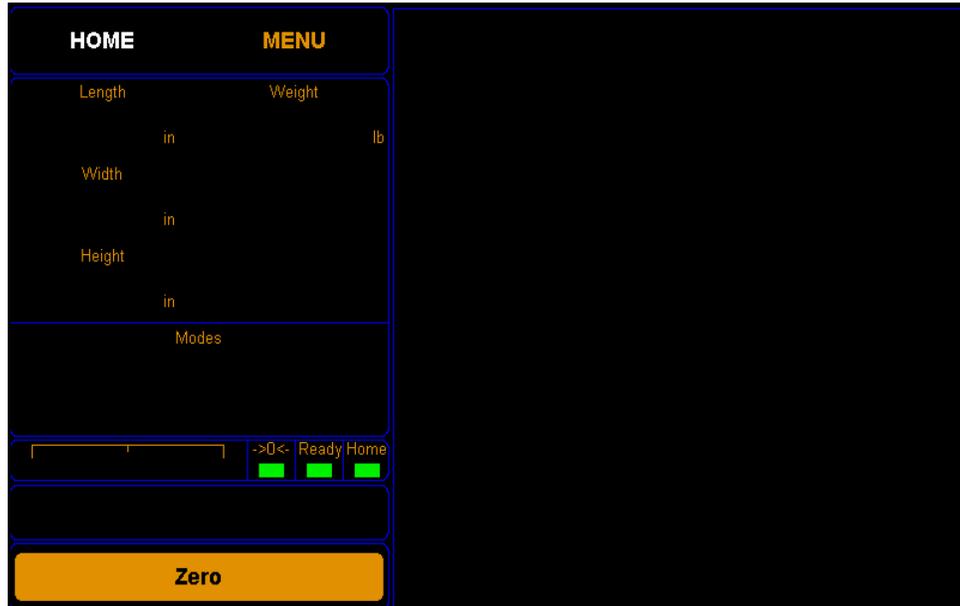
1. Tap **MENU** at the home screen.

Figure 47
Home Screen

2. Tap **About**. Select the **Version** option if it is not already selected.

Figure 48
About Version

MAC   This field displays the Media Access Control (MAC) address.

SN   This field displays the product number that is unique to each CubiScan 25.

Main   This field displays the firmware version used for the main controller.

FPGA   This field displays the firmware version used for the FPGA.

Kernel   This field displays the firmware version used for the kernel.

Scale   This field displays the firmware version used for the scale.

W1,   These fields display the firmware used for the width 1 board, as well as the
H1   height 1 board.

Config-Audit

This section discusses the Config-Audit menu. Complete the following steps
to access the Config-Audit menu.

1.   Tap **MENU** at the home screen.
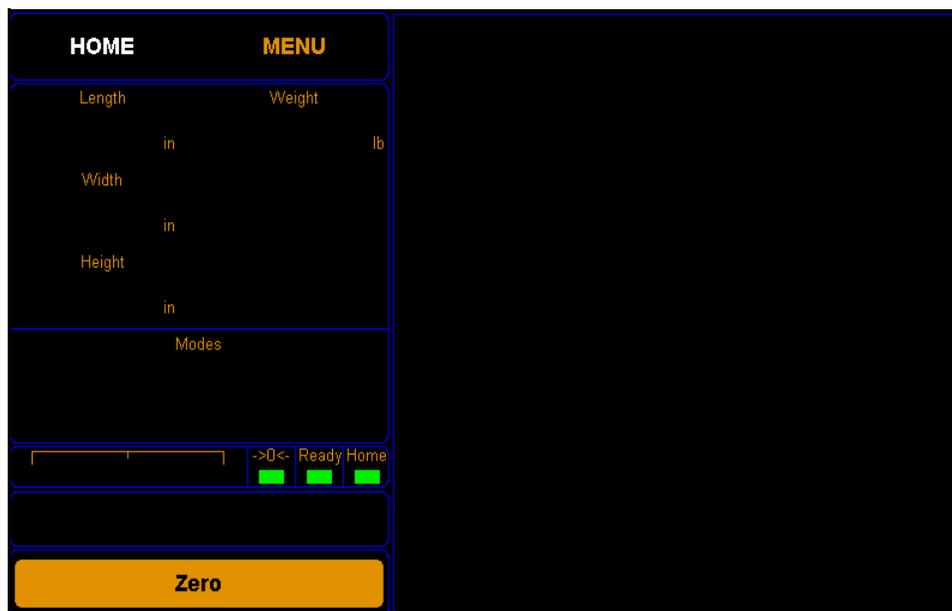
Figure 49
Home Screen

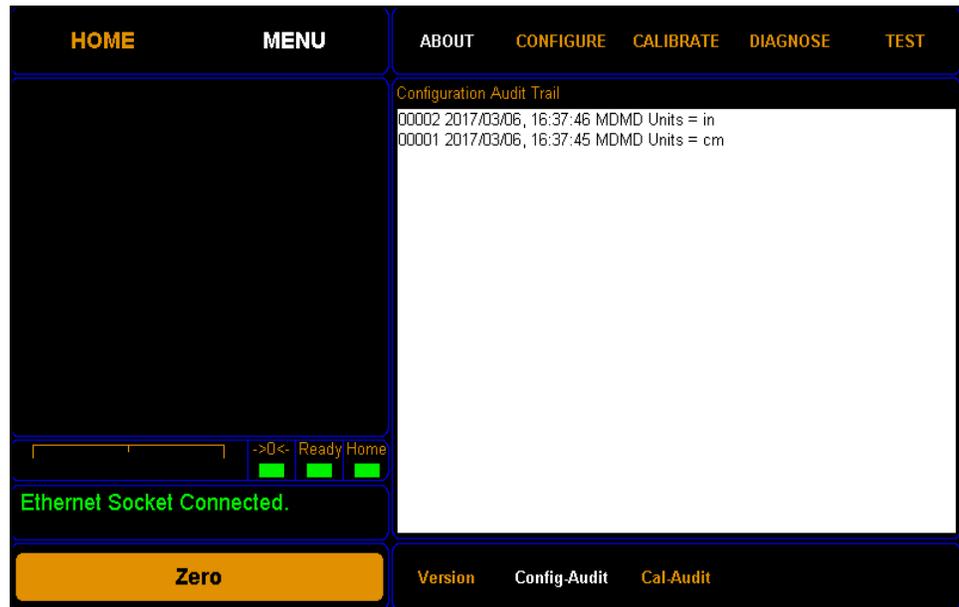2. Tap **About**. Select the **Config-Audit** option if it is not already selected.

Figure 50
About Config-Audit

Configuration Audit Trail   This field displays the configuration audit history.

Cal-Audit

This section discusses the Cal-Audit menu. Complete the following steps to access the Cal-Audit menu.
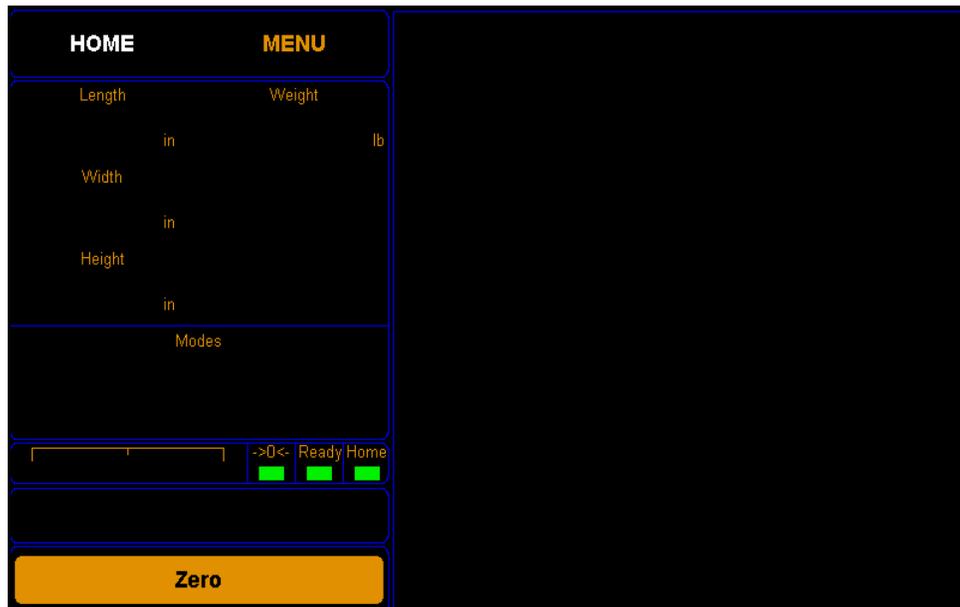
1. Tap **MENU** at the home screen.

Figure 51
Home Screen

2. Tap **About**. Select the **Cal-Audit** option if it is not already selected.
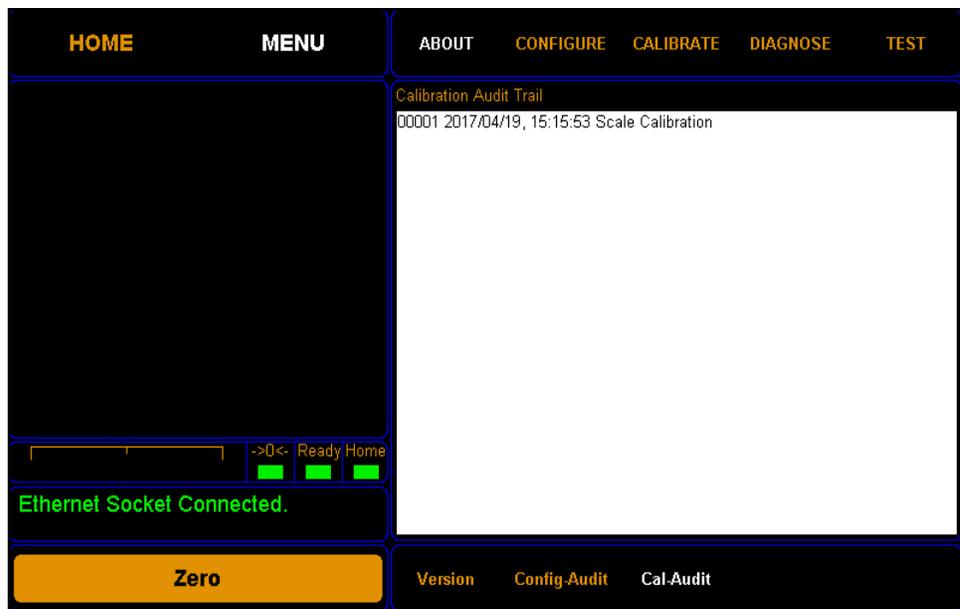

Figure 52
About Cal-Audit

Calibration Audit Trail   This field displays the scale calibration history.

Diagnostics

This section describes the diagnostic capabilities of the CubiScan 25.

Scale Diagnostics

Complete the following steps to view the Scale Diagnostics.
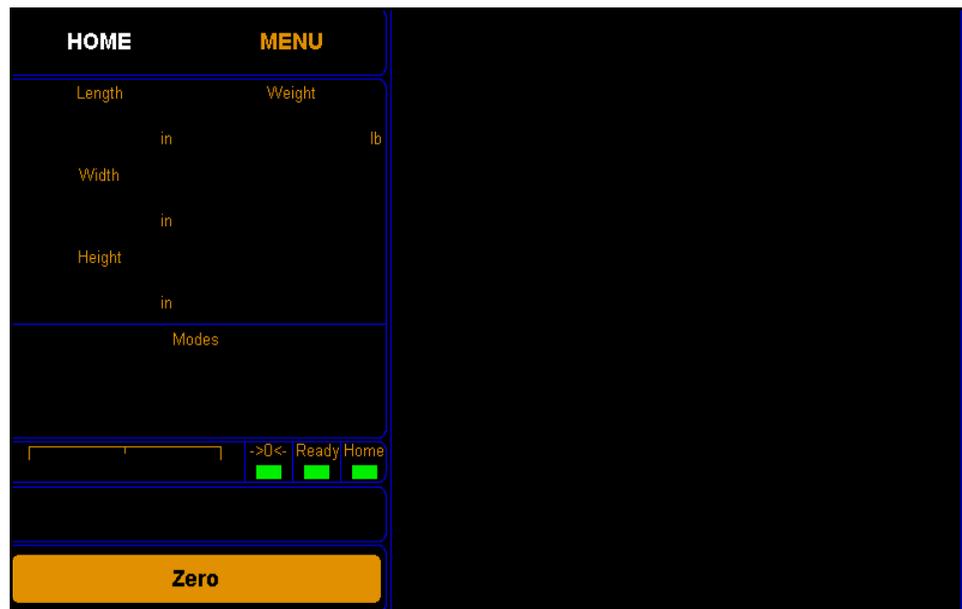
1.   From the home screen, tap **MENU**.

Figure 53
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

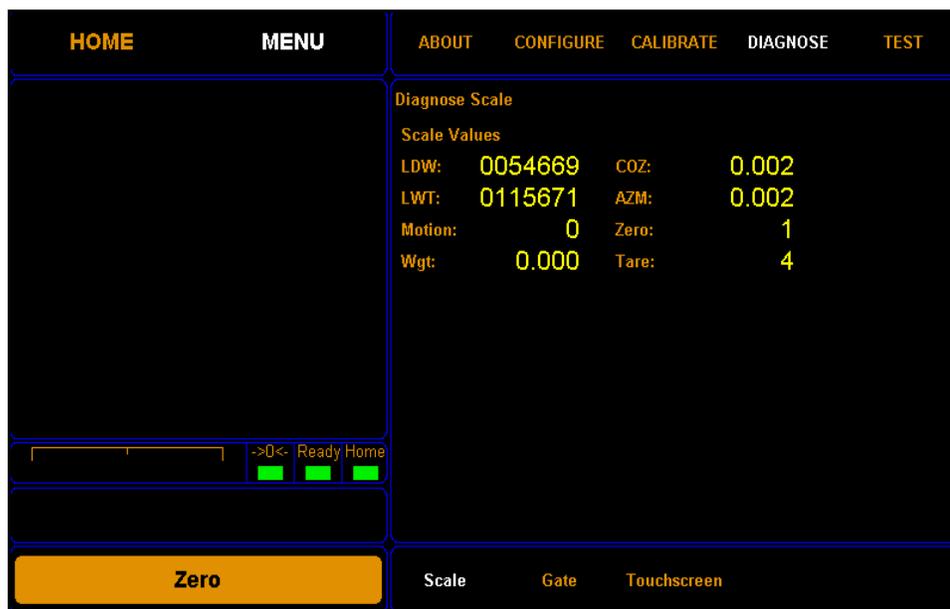2. Tap **DIAGNOSE**. Select the Scale option if it is not already selected.

Figure 54
Scale Diagnostics

From this screen you can view the diagnostic scale values.

LDW   This field displays the dead weight count.

LWT   This field displays the full weight count.

Motion   This field displays the motion status of the scale.
0=No motion
1=Motion

Wgt   This field displays the current weight.

COZ   This field displays the center of zero.

AM   This field displays the auto zero tracker.

Zero   This field displays whether there is weight on the scale or not.
0=Weight on scale
1=No weight on scale

Tare   This field displays the zero adjustment count.

Gate Diagnostics

Complete the following steps to view the gate diagnostics.
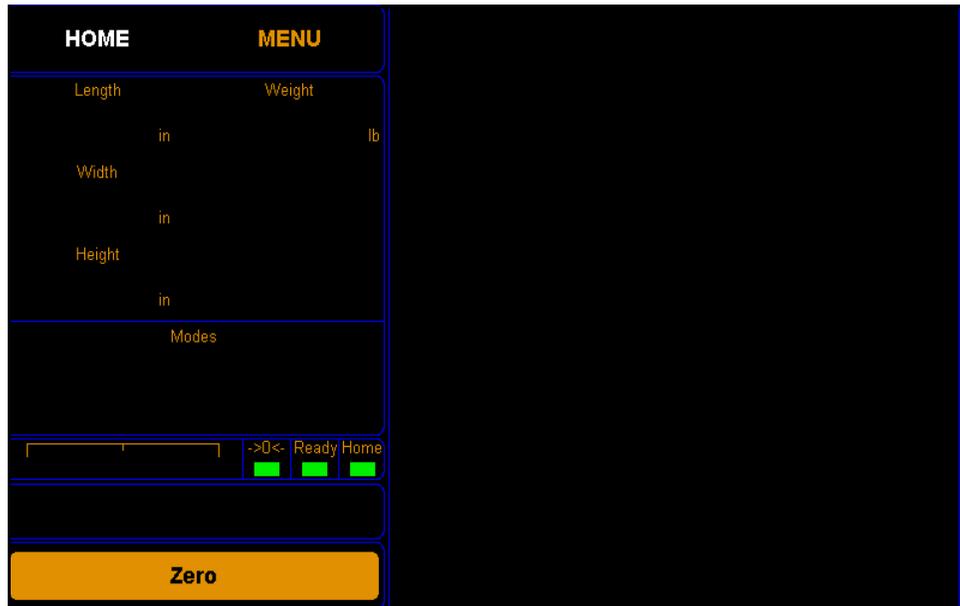
1.   From the home screen, tap **MENU**.

Figure 55
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

2. Tap **DIAGNOSE**. Select the Gate option if it is not already selected.

Figure 56
First Gate Diagnostic Screen

From this screen you can view the sensitivity threshold board settings.

The two LED beam bars now shown on the display represent the LED beams that the CubiScan 25 uses to measure objects. This is a useful screen for determining the functionality of the LED beams.

The width and height bars correspond to the width and height boards in the measurement gate.

These LED beams bars are blue when no light beams are being broken (as seen above), which typically means that there is no object in the measurement field.

The emitter checkbox should always be checked when you are measuring objects. When this box is unchecked, the gate is not emitting light and cannot measure objects.

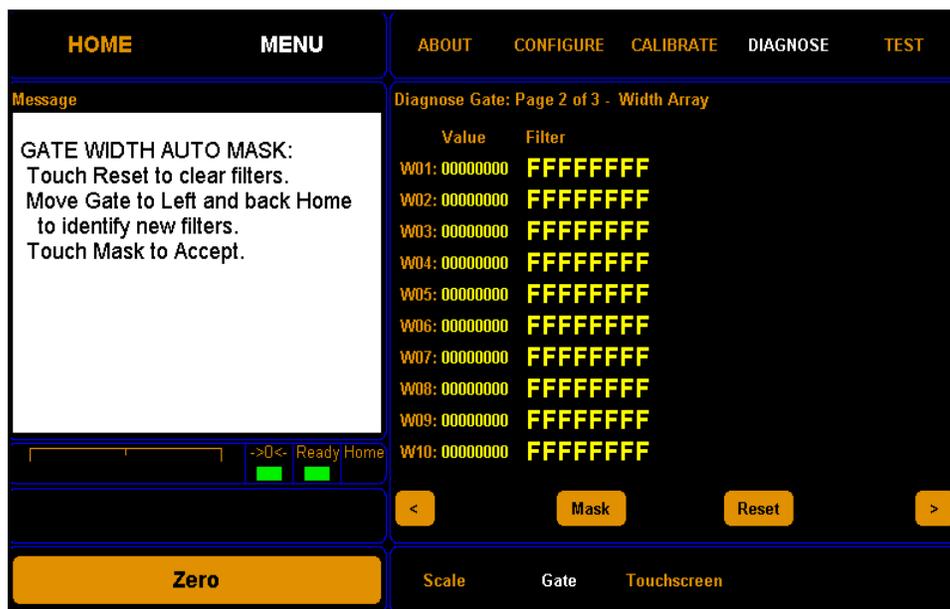3. Tap the **[>]** button to go to the next screen.

Figure 57
Second Gate Diagnostic Screen

From this screen you can view the gate width array settings and automatically mask width LEDs that are malfunctioning. No more than three LEDs should be masked at one time, or measurements may be affected.

To mask malfunctioning LEDs, complete the following steps.

Step 1.0   Clear the glass platform of all objects.

Step 1.1   Tap **Reset** to clear any masks that may have been previously set.

Step 1.2   Move the gate slowly from the home position (right-hand side) all the way to the left side and back to the home position. Malfunctioning LEDs appear as yellow tick marks

on the blue LED beam bars. The image below shows five malfunctioning LEDs that could be masked.
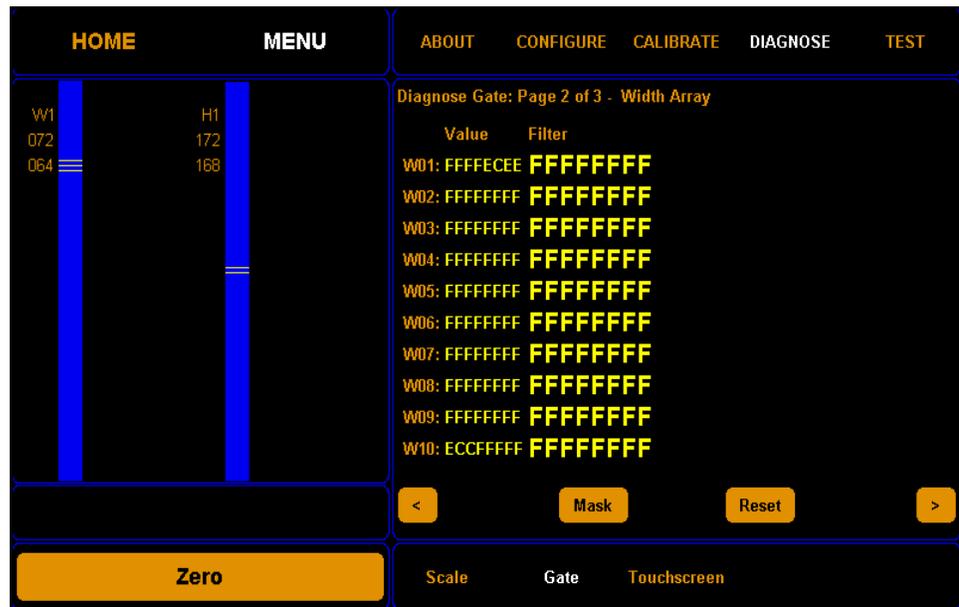

Figure 58
Gate Mask Tick Marks

Step 1.3 Tap **Mask** to mask the LEDs shown on the blue beam bars. When the LEDs are masked, they will no longer be used to take measurements. If you want to clear all masks, tap **Reset**.

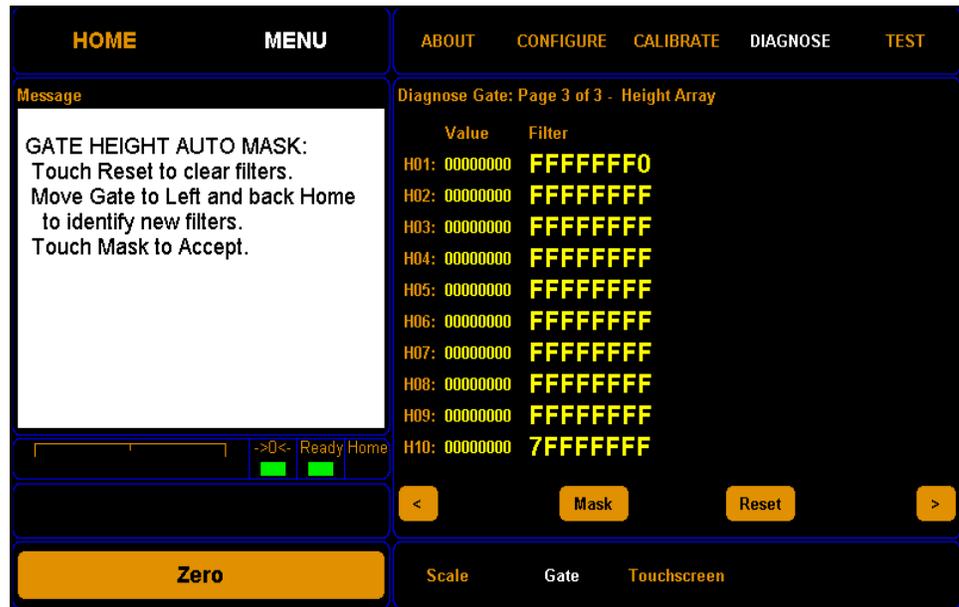2.   Tap the **[>]** button to go to the next screen.

Figure 59
Third Gate Diagnostic Screen

Touchscreen Diagnostics

Complete the following steps to view the touchscreen diagnostics.
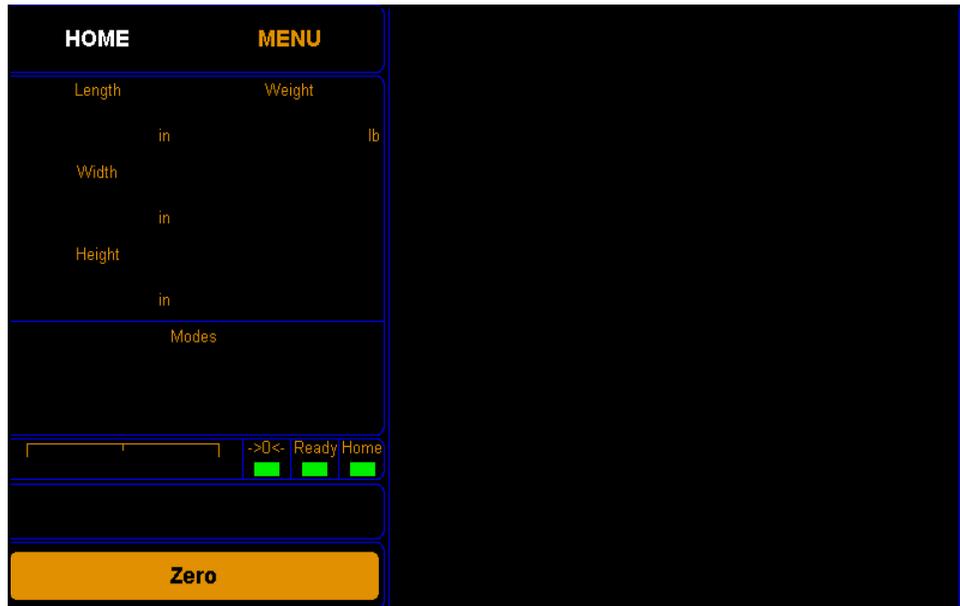
1. From the home screen, tap **MENU**.

Figure 60
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

2. Tap **DIAGNOSE**. Select the Touchscreen option if it is not already
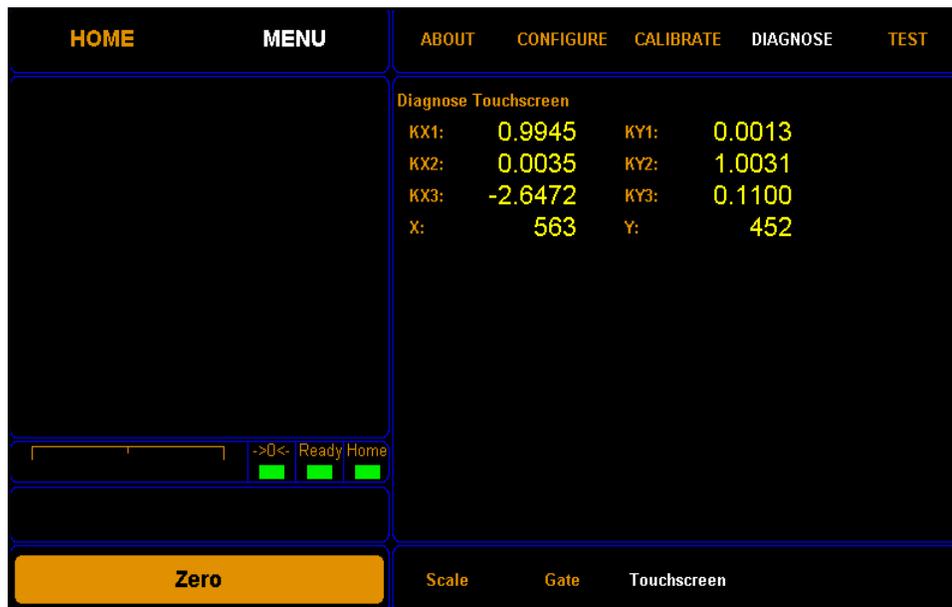   selected.

Figure 61
Diagnostic Touchscreen

From this screen you can view the linearization parameters of the
touchscreen.

To test the calibration of the touchscreen you can touch the screen and a **x**
should appear.

Testing

This section describes the factory testing capabilities of the CubiScan 25.
Data in this section should not be altered unless you are instructed to do so
by a Quantronix employee.

Scale

Complete the following steps to view the Scale Testing.

1.   From the home screen, tap **MENU**.

Figure 62
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

2. Tap **TEST**. Select the Scale option if it is not already selected.

Figure 63
Test Scale

From this screen you can test for scale repeatability. Only run this test if instructed to by a Quantronix employee.

Gate

Complete the following steps to view the Gate Testing.

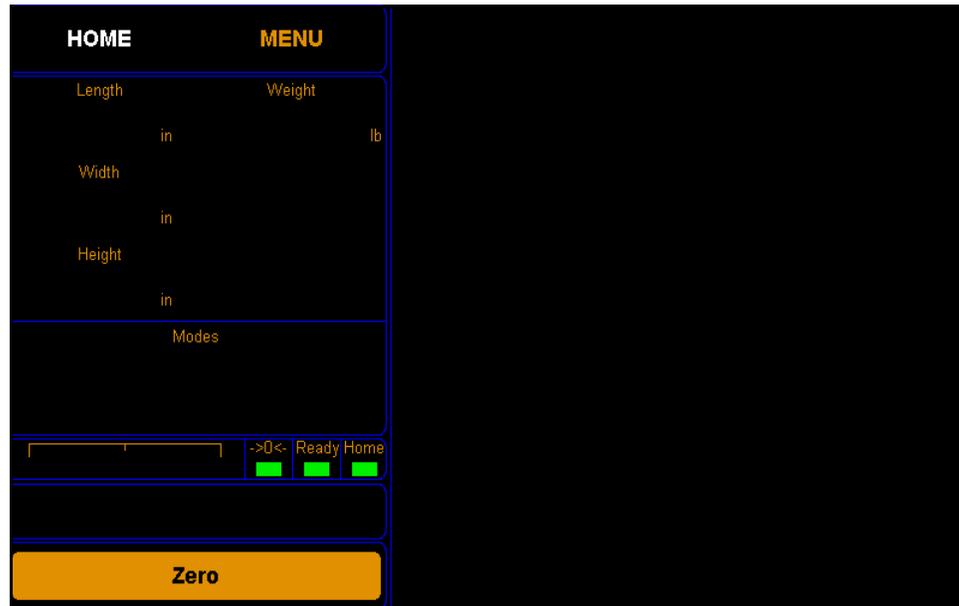1. From the home screen, tap **MENU**.

Figure 64
Home Screen

NOTE ☞   *If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 32.*

2. Tap **TEST**. Select the Gate option if it is not already selected.

Figure 65
First Gate Test Screen

From gate diagnostic screens one through two, you can run and view the results of the cube test. Only run this test if instructed to by a Quantronix employee.

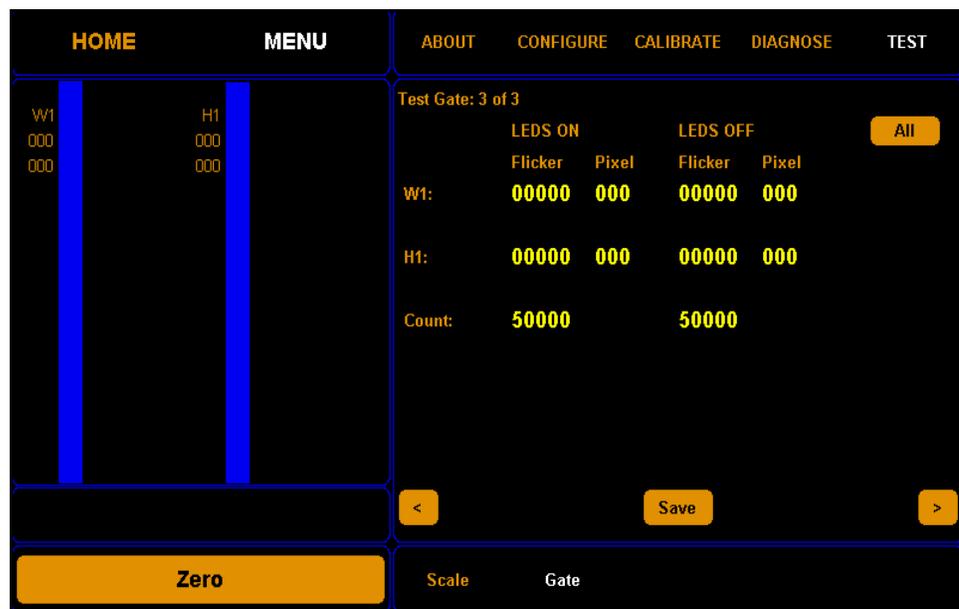3. Tap **[>]** twice to reach the third gate diagnostic screen.

Figure 66
Third Gate Diagnostic Screen

From this screen you can run a flicker test for internal gate testing purposes.

You should only run this test if you are instructed to by a Quantronix employee.

Appendix A
Parts List

Following is a list of parts that can be purchased for the CubiScan 25 as spare parts or if replacement is necessary.

Part No.	Description	Quantity/Unit
10083	AC Power Cord	1
10558	Scale Card PCB	1
12344	1/2" Diameter Ball	4
12841	Infrared Receive PCB	2
12844	Infrared Transmit PCB	2
12956	Infrared Filter, 14"	2
13340	Proximity Sensor	1
13351	1 Amp Fuse	2
13372	Load Cell Summing PCB	1
13411	USB to Ethernet Adapter	1
13620	Infrared Filter, 12.8"	2
13624	Calibration Cube, 5" x 3" x 2"	1
14066	Leveling Foot	4
14090	Touchscreen Assembly	1
14100	Main Controller Assembly	1
14119	Glass Plate	2
14124	Scale Plate	1
14159	Motion Encoder with Connector	1
14161	Encoder Magnet	
14165	User Manual (PDF)	1
14309	10 kg Load Cell	4

Appendix B
Firmware Log

Following is the firmware log that records updates and changes to the CubiScan 25 firmware.

Firmware	Build	Date	By	Description
3.00	B01	2017/3/28	RLK	Initial Build