iDimension 200

Workstation

Installation Manual

RICE LAKE®
WEIGHING SYSTEMS
To be the best by every measure®

PN 167739 Rev A

Contents

1.0 Introduction 1
1.1 Safety 1
1.2 iDimension Parts Descriptions 2
1.3 Electrical Base 2
1.4 Accessories 3
2.0 Unpacking and Assembly 4
2.1 Pole Assembly 4
2.2 Base Assembly 5
2.3 Head Assembly 6
3.0 Installation 8
3.1 iDimension Setup 8
3.1.1 Define iDimension in the Network 8
3.2 QubeVu Manager 9
3.2.1 Log in to QubeVu Manager Tools 12
3.2.2 Define Network Settings 13
3.2.3 Set the Date, Time and Time Zone 15
4.0 Calibration 16
4.1 Calibrate the Cameras 16
4.1.1 Define the Scale 16
4.1.2 Calibrate the Cameras 18
4.2 Define the Zone of Interest and Other Work Areas 24
4.3 Test Changes 26
5.0 Appendix 27
5.1 Specifications 27
6.0 Administrator's Section 30
6.1 Installation 30
6.1.1 QubeVu Manager 30
6.1.2 Edit/Cancel/Save Buttons 32
6.2 Displays 32
6.2.1 Operator Display 32
6.2.2 Customer Display 33
6.2.3 Demo Display 34
6.3 Log in to QubeVu Manager Tools 35
6.3.1 Setup 35
6.3.2 Image Quality Tab 39
6.3.3 Set the Date, Time and Time Zone 42
6.3.4 User 43
6.3.5 Network Settings 44

6.4 Calibration 46
6.4.1 Measurement Settings 46
6.4.2 Calibration 50
6.4.3 Restore Configuration Button 51
6.4.4 Zone of Interest 52
6.4.5 Calibrate the Cameras 54
6.4.6 Capture Definitions 57
6.5 Firmware Upgrade 59
6.5.1 Custom Logo 61
6.5.2 Backup 62
6.5.3 Restore 62
6.6 Diagnostics 63
6.6.1 Component Test 63
6.6.2 Scale Test 64
6.6.3 Back Focal Distance Test 65
6.6.4 System Log 65
6.6.5 Debug Info 65
6.7 Inspector 66
6.8 Long Term Storage 68
6.9 Manager's Guide Appendix 69
6.10Test Pattern for Image Quality 69

1.0 Introduction

The *iDimension 200* is designed to capture dimensions, bar codes and images of items placed under the scanning head. Parcels (boxes), flats, documents and irregular shapes can be supported.

1.1 Safety

Safety Symbol Definitions:

WARNING *Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death and includes hazards that are exposed when guards are removed.*

CAUTION *Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.*

Important *Indicates information about procedures that, if not observed, could result in damage to equipment or corruption of and loss of data.*

General Safety

Do not operate or work on this equipment unless you have read and understand the instructions and warnings in this manual. Failure to follow the instructions or heed the warnings could result in injury or death. Contact Rice Lake Weighing Systems for replacement manuals. Proper care is your responsibility.

WARNING

Failure to heed may result in serious injury or death.

Electric shock hazard!

- *For pluggable equipment, the socket outlet must be installed near the equipment and must be easily accessible.*
- *Always disconnect from main power before performing any work on the device.*
- *Check the power cable for damage regularly and replace it immediately if it is damaged.*
- *On the side of the device, maintain a clearance of at least 1.5'' in order to prevent damage to the cable.*

DO NOT allow minors (children) or inexperienced persons to operate this unit.

DO NOT operate without all shields and guards in place.

DO NOT place fingers into slots or possible pinch points.

DO NOT use this product if any of the components are cracked.

DO NOT make alterations or modifications to the unit.

DO NOT remove or obscure warning labels.

Keep hands, feet and loose clothing away from moving parts.

Do not use iDimension 200 in hazardous areas!

Do not open the scanning head!

The warranty and certification is void if this stipulation is ignored.

The device may only be opened by authorized persons.

1.2 iDimension 200 Parts Descriptions

Figure 1-1. iDimension 200 Parts

1.3 Electrical Base

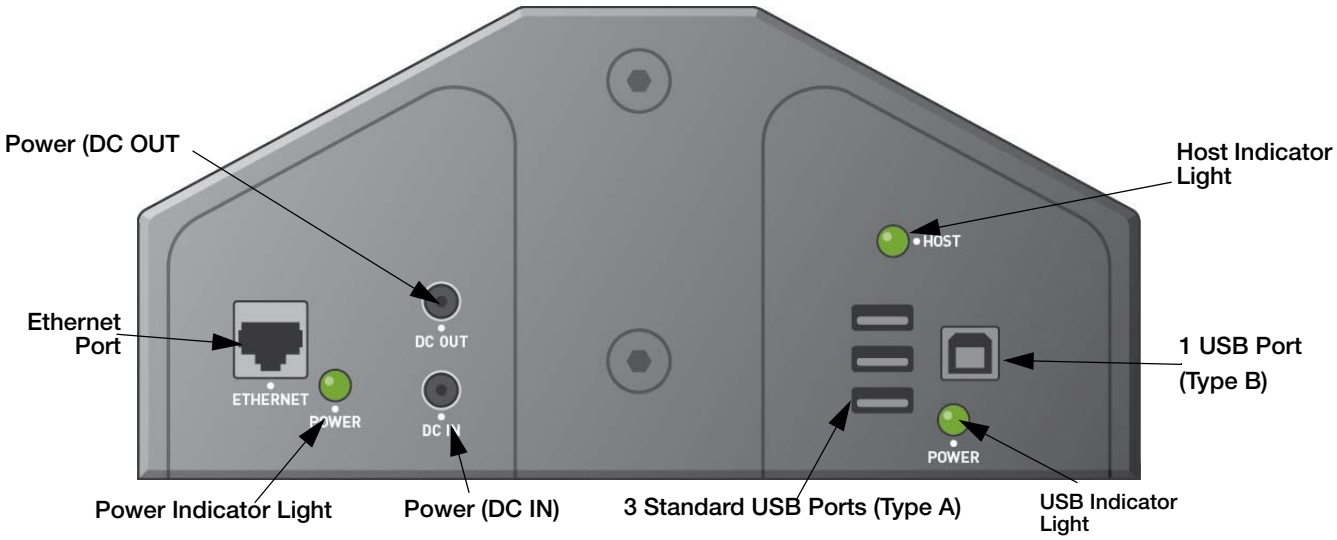


Figure 1-2. Electrical Base Parts

Note *iDimension 200 is functioning correctly when all three lights are on and green.*

1.4 Accessories

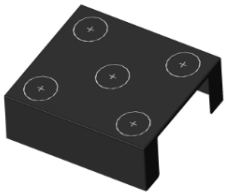
	Calibration object
	Ethernet cable
	Tools for *iDimension 200* assembly
	US-power supply and cord

Table 1-1. iDimension 200 Accessories

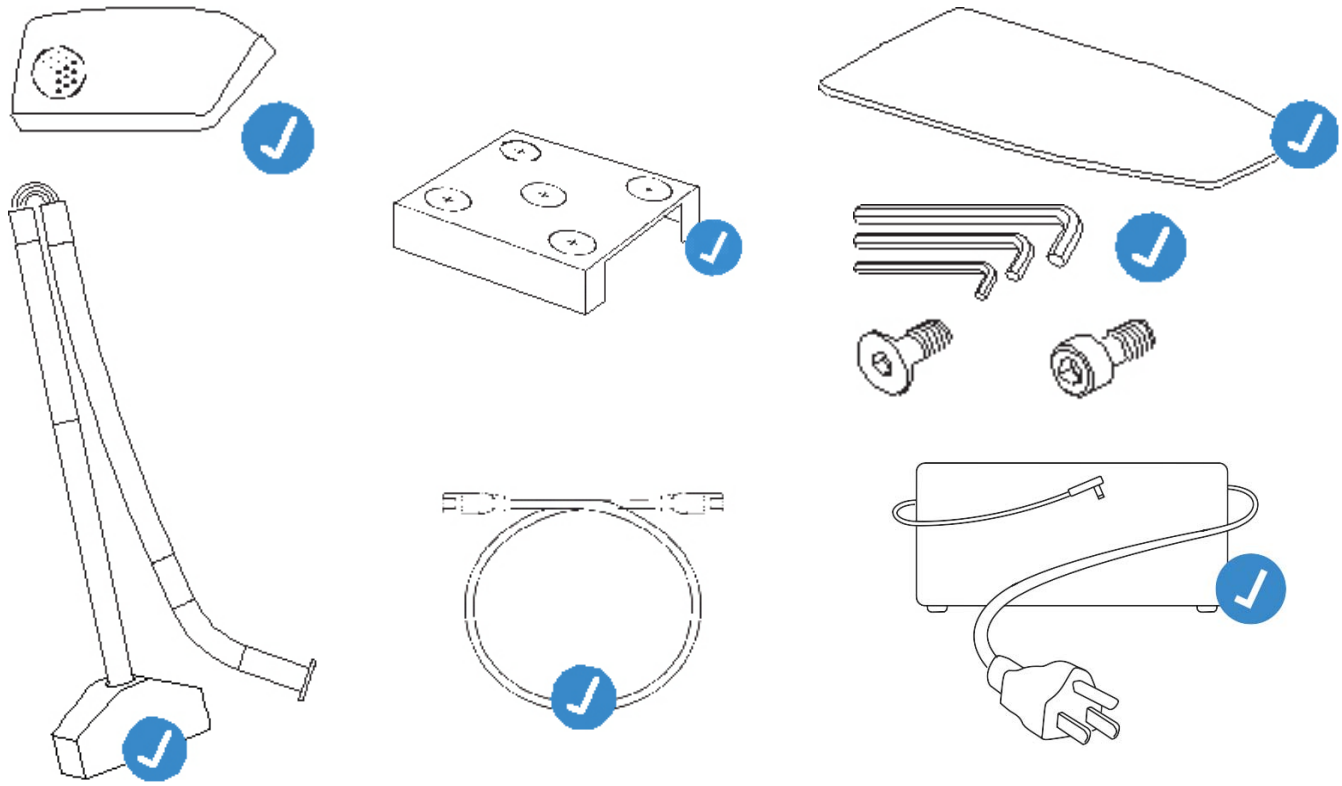
Note ***Power supply is 110 V/240 V. Depending on the country's plug requirements, a different plug may need to be supplied.***

If using a separate cable for DC OUT, these cables must be less than three meters in length.

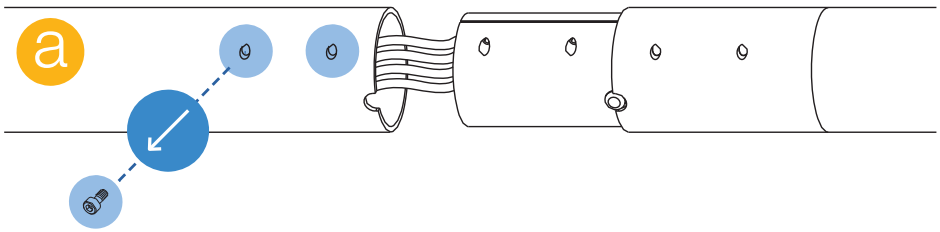
2.0 Unpacking and Assembly

Important *Retain original packaging. If the unit must be returned for modification or repair, it must be properly packed with sufficient packing materials. Damage caused by improper packaging is not covered by the warranty.*

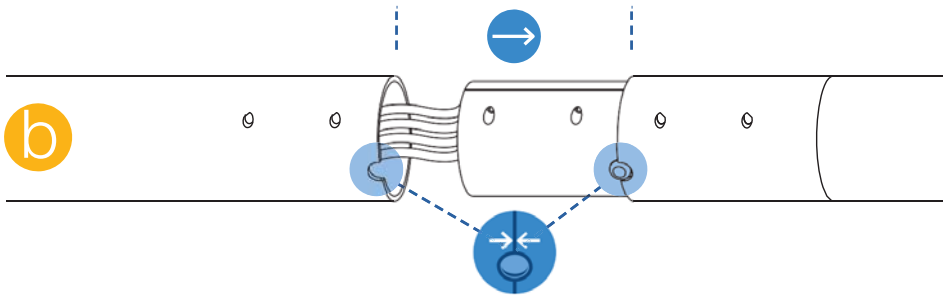
Ensure the following parts are contained in the shipping box:



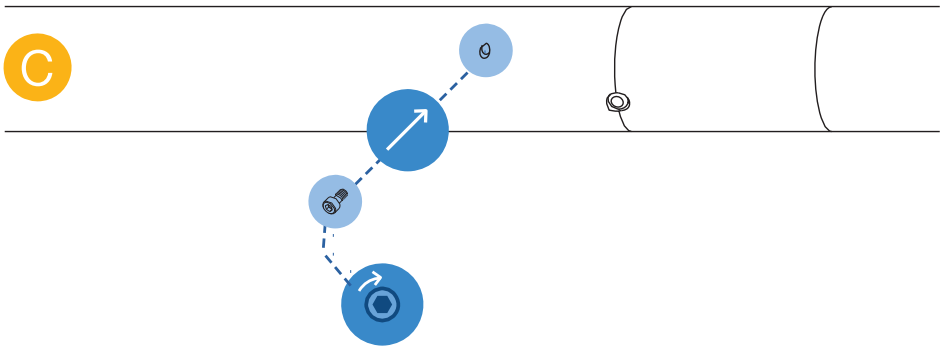
2.1 Pole Assembly



Note *Both screws in the curving top section of the pole must be removed prior to assembling the pole.*

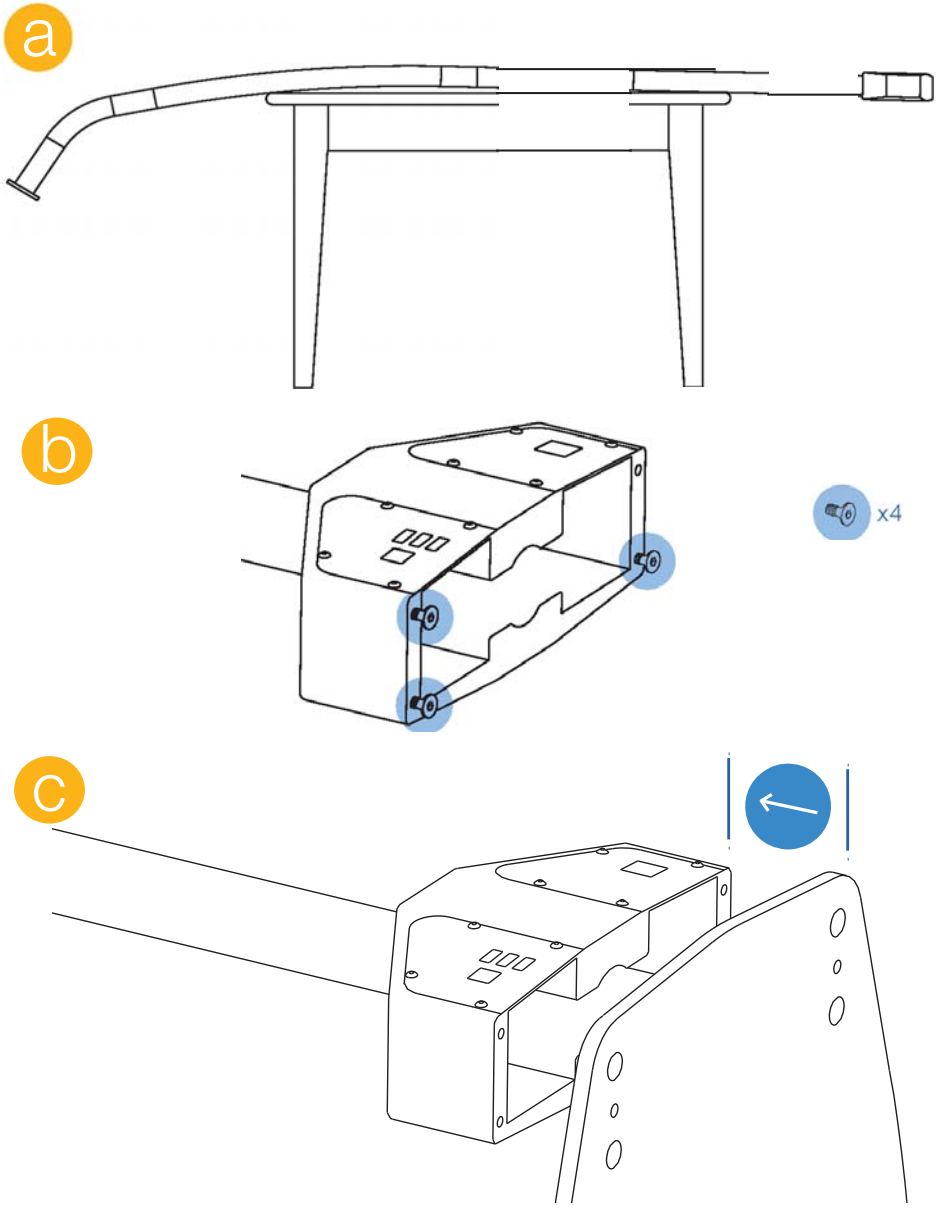


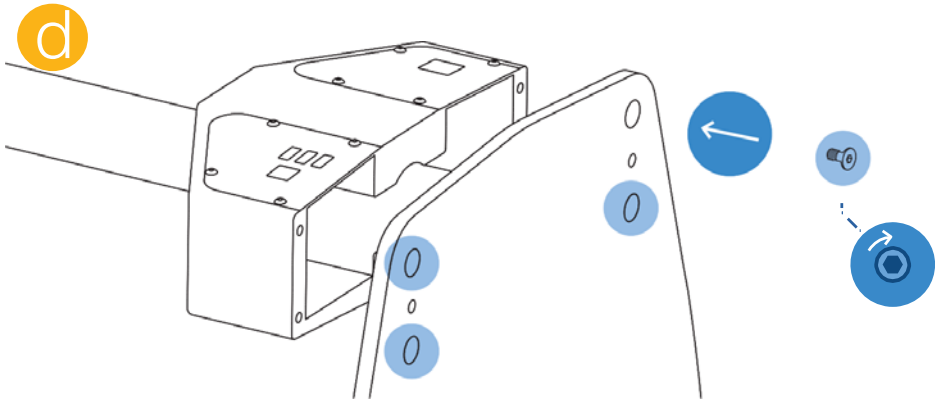
Note *The notch in the top pole section must be aligned with the matching protrusion on the bottom section.*



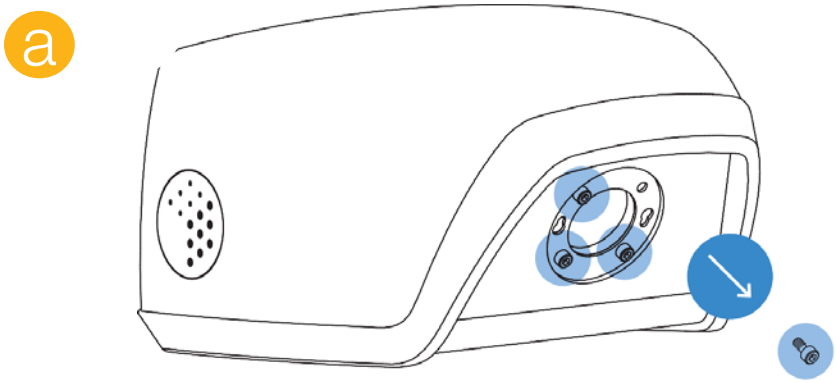
Note *Both screws in the curving top section must be securely tightened before moving or operating iDimension.*

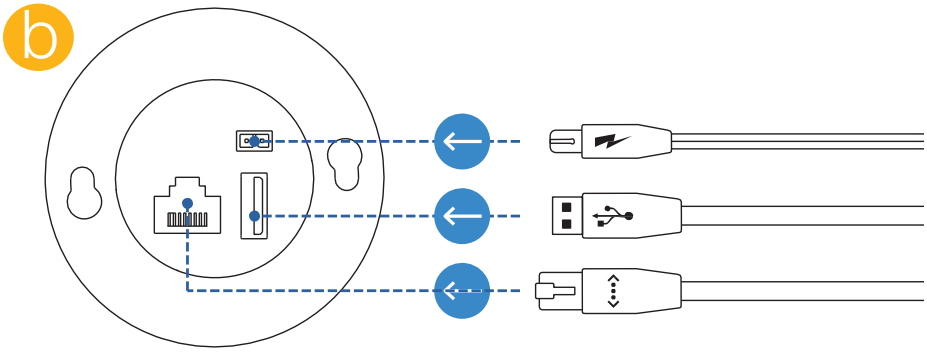
2.2 Base Assembly





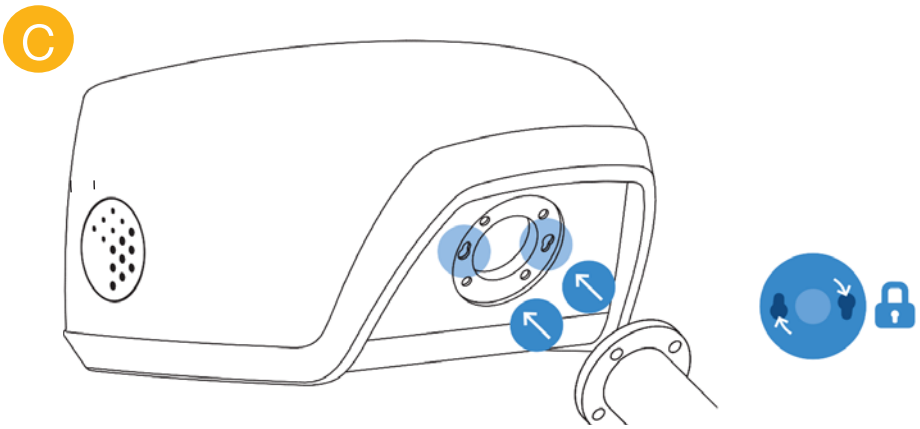
2.3 Head Assembly



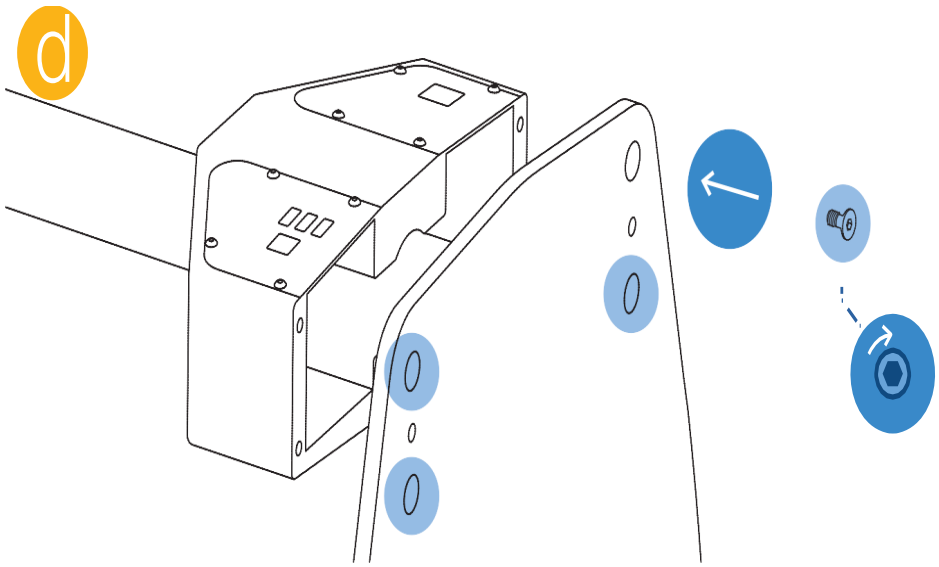


Note

All three cables must be securely inserted into the appropriate sockets.
Cables have enough slack to connect without being stretched. Avoid excessive strain.



After inserting the two studs at the top of the pole assembly into the keyhole receptors at the back of the head, rotate the head clockwise to lock it in position.



All four screws attaching the head and pole assembly must be reinstalled and securely tightened. Once the head and pole have been connected, the top section of the pole assembly must not be rotated.

To adjust the alignment of the head (if required):

1. Loosen screws attaching the head to the pole.
2. Make adjustments using the inset screws provided.
3. Re-tighten all four attachment screws.

3.0 Installation

3.1 iDimension Setup

Before beginning the setup procedure, ensure that:

- *iDimension 200* is placed in its final operating position.
- There is a computer nearby with either a wireless or Ethernet connection, running a browser that supports HTML5 (Internet Explorer® 9, Firefox® 16, Safari® 5).
- The calibration object is available.
- The checkerboard pattern included in the Appendix on page 28 has been printed.

3.1.1 Define iDimension in the Network

iDimension 200 is installed as a network device and can be configured with a static IP address or by using DHCP. Talk with the network administrator to determine the best approach for the enterprise network.

iDimension 200 was shipped with a dual IP configuration. The network interface will lease an IP address from any available DHCP server, however it also has a fixed, failsafe IP address of 169.254.1.1

If using DHCP is preferred, the network administrator can advise the IP address leased.

Configure PC Network Settings to Connect to iDimension 200

- Connect to a computer using a standard Ethernet cable.
- Configure the computer's Ethernet interface with an IP address of 169.254.1.1

Consult with the network administrator if unsure how to change the computer's IP address.

Verify Connectivity

Before you begin, verify that you can communicate with *iDimension 200 200* from a computer. Use the "ping" command to confirm connectivity (ping 169.254.1.1). If the ping command does not show it responding, this may be due to an issue with the network configuration. Make sure that wireless networking is turned off and then try the ping command again. If this attempt is unsuccessful, contact the network administrator for further assistance.

3.2 QubeVu Manager

It is not necessary to install anything on the PC being used. Simply connect *iDimension 200* to the PC or corporate network using a standard Ethernet cable. The QubeVu Manager tools will run via any compatible browser.

Note ***If using DHCP, replace 169.254.1.1 with the IP address provided by the network administrator.***

Open an Internet browser. Enter http://192.168.1.100 in the browser address area to view the QubeVu Manager home page.

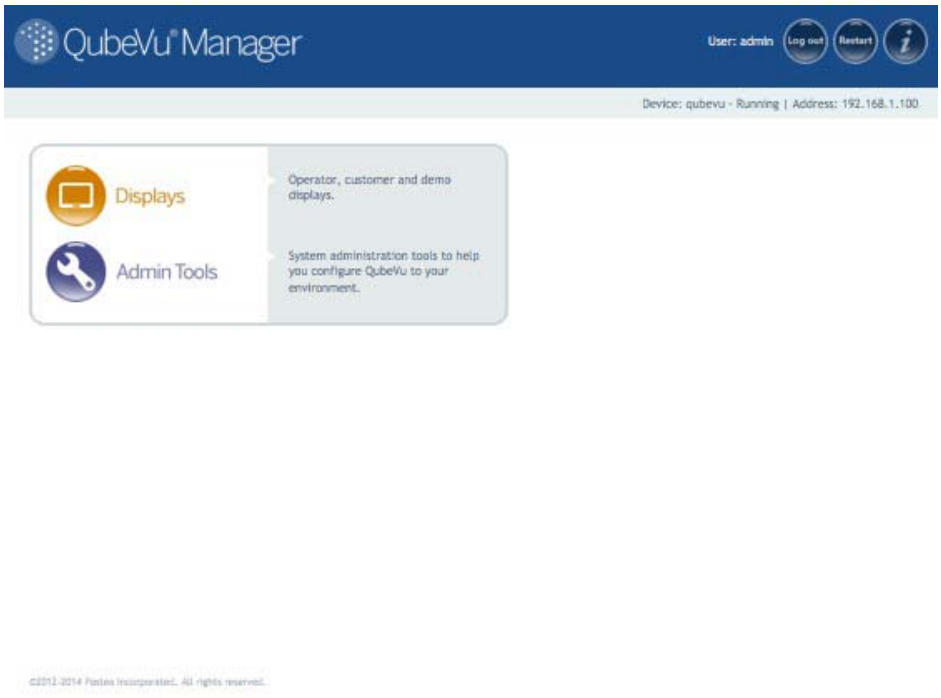


Figure 3-1. QubeVu Manager Home Page

Navigation

There is a navigation menu in the upper left section of the page. This allows users to keep track of their current location and provides links back to each preceding page.

For example, in the image below, the user is in the Calibration screen. They can select *Admin Tools* and return to the Admin Tools menu, or QubeVu Manager to return to the home page.

Figure 3-2. Navigation Menu

Status

In the upper right corner of all pages is an area that displays the status of the device that is connected.

In the example below, user “admin” is logged in. The device “localhost” is running, and its IP address is 192.168.2.241.

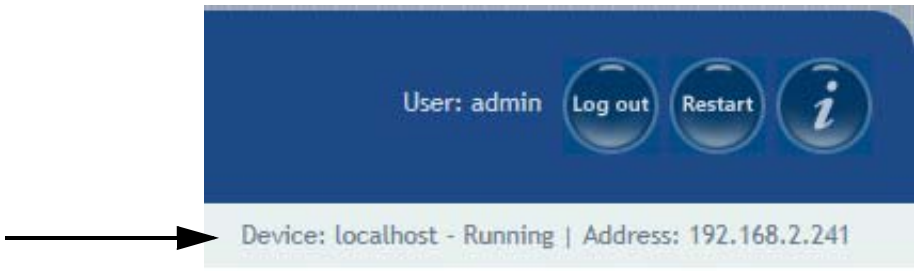


Figure 3-3. Status Display

Status Messages

Running	This device is running correctly.
Starting	*iDimension 200* is starting up. Wait for the status to change to “running” before continuing.
Restarting	*iDimension 200* is restarting. Wait for the status to change to “running” before continuing.
Configuring	*iDimension 200* is in configuration mode. If *iDimension 200* has not automatically restarted after a “save” command, the device will need to be restarted before it will be available for dimensioning and scanning.
Stopped	*iDimension 200* is not running. This status may be visible while *iDimension 200* is restarting.

Table 3-1. Status Messages

Restart/Reboot iDimension

Selecting **Restart** from any screen in the QubeVu Manager will give the user the option to either restart or reboot.

Figure 3-4. Restart/Reboot Prompt

Selecting **Restart** will restart the service that is running on the device; **Reboot** will reboot the full operating system on the device. Rebooting can take several minutes.

Information Button

The **Information Button**  on the top right of every screen shows information about the *iDimension 200* device, including the firmware version number, the firmware CRC, the serial number and the certificate number. To exit from this screen, click on the “x” in the upper right section of the information screen.

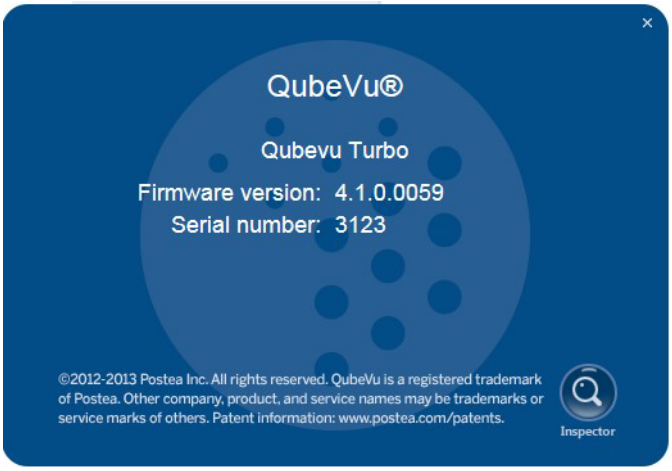


Figure 3-5. iDimension Information Screen

Inspector

The inspector button takes the user to a series of screens where the device and change information can be viewed. Changes to the following items will be logged:

- Measurement settings
- Calibration
- Firmware upgrades

See "Inspector" on page 66 for more information.

3.2.1 Log in to QubeVu Manager Tools

1. Go to the Manager home page. Select **Admin Tools** to log in.

Figure 3-6. Login

2. Select **Admin Tools**.
3. Log in with a username and password. The default username and password are listed below.
   Username: admin
   Pasword: password

Note ***The username and password can be changed.***

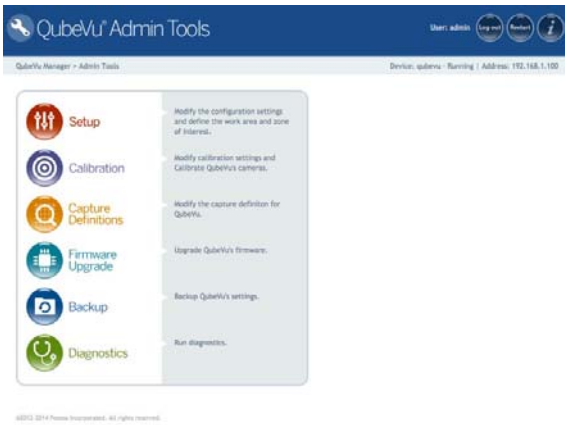


Figure 3-7. QubeVu Manager Admin Tools Menu

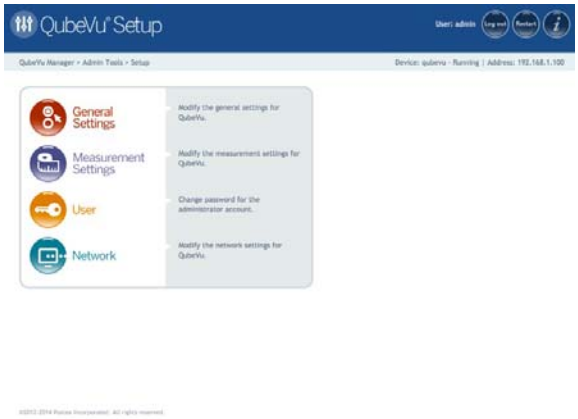


Figure 3-8. QubeVu Manager Setup Menu

3.2.2 Define Network Settings

Use the *Network* tool to define the network settings for the enterprise network.

Figure 3-9. Setup Menu

Select *Network* from the setup menu. There are two tabs:

1. Network Settings defines *iDimension 200* as a network device in the enterprise network.
2. Network Security defines the security settings for *iDimension 200* in the enterprise network.

Network Settings Tab

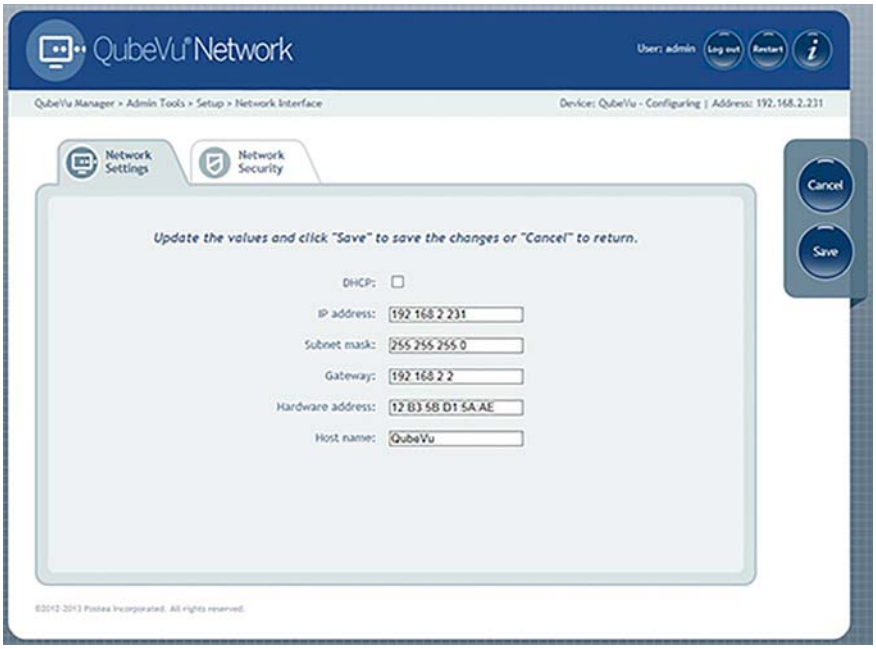


Figure 3-10. Network Settings Tab

Network	Description
DHCP	Verify with the network administrator if *iDimension 200* should be set up on the network using Dynamic Host Configuration Protocol (DHCP). If DHCP is checked, a unique hostname for this device must be defined. This name will be used to access the device from the *Manager Tools* in the future. A host name can be up to 15 characters. For example, http://<hostname>/
IP Address	If DHCP was checked, an IP address will not be entered. If DHCP was not checked, define a unique IP address for each *iDimension 200* that is installed. Consult with the network administrator if unsure how to assign a new IP address. If using fixed IP addresses, access *iDimension 200* manager by either the hostname or the IP address: http://<hostname>/ http://<ip address>/
Subnet Mask	The default subnet mask is 255.255.255.0. Consult with the network administrator for the correct setting.
Hardware Address	Each *iDimension 200* has been assigned a unique hardware address. Do not change this setting.
Hostname	The default hostname is the alphanumeric part of the device serial number. Up to 15 characters are allowed for the hostname.

Table 3-2. Network Settings

Network Security Tab

Network security settings enable more secure and encrypted communications with *iDimension 200* using the HTTPS protocol. By default, communication with *iDimension 200* is via HTTP.

When you click on the *Network Security* tab, the current settings are displayed.

Click on **Enable HTTPS** to enable HTTPS. Enter the file name of the key file, certificate file and key pass phrase. Select **Upload** to transfer the information from the local machine to *iDimension 200*.

Figure 3-11. Network Security Tab

3.2.3 Set the Date, Time and Time Zone

iDimension 200's date and time settings can be changed through the *Date/Time* tab. The date and time are used to timestamp configuration changes that affect the Legal for Trade certification.

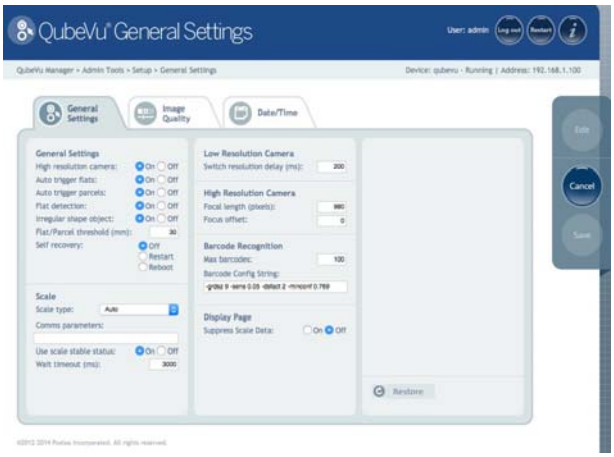


Figure 3-12. Date/Time Tab

1. Select the *Date/Time* tab from the *Setup* ⟶ *General Settings* screen. *iDimension 200*'s current date and time are displayed.

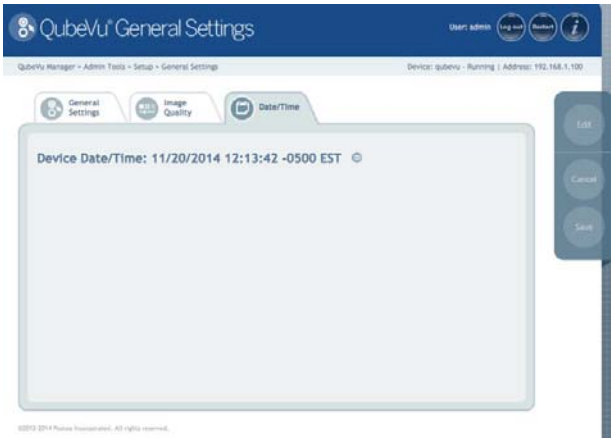


Figure 3-13. Current Date Displays

2. Click on the **Date** icon to change the date. The calendar and time settings from the local computer are displayed.
3. Click **Now** to select the current date and time.
4. Alternatively, enter the hour, minutes and seconds directly.
5. Use the *Time Zone* field to select the correct time zone.

Figure 3-14. Change the Date

6. Click **Done** to save the settings.

4.0 Calibration

4.1 Calibrate the Cameras

If using a scale, place the scale onto the base plate and put the calibration object on top of the scale. Center the scale using the base plate marks. If not using a scale, place the calibration object directly onto the base plate. Center the calibration object using the base plate marks.

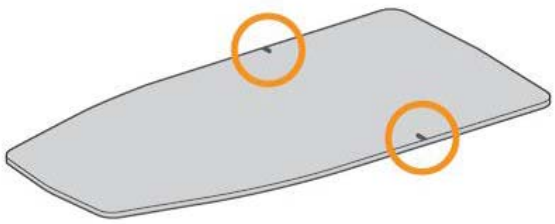


Figure 4-1. Base Plate Marks

4.1.1 Define the Scale

If not using a scale, proceed to Section 4.1.2 on page 18.

1. Select **Setup** from the *Admin Tools* menu.

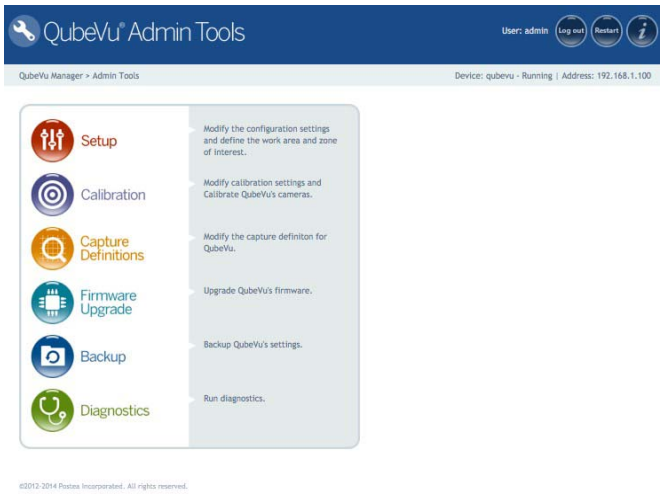


Figure 4-2. iDimension 200 Admin Tools Menu

2. Review the descriptions for scale type and scale comm parameters below.
3. Change the field values to match the scale.
4. Click **Save** when done. *iDimension 200* will automatically restart to apply the changes.

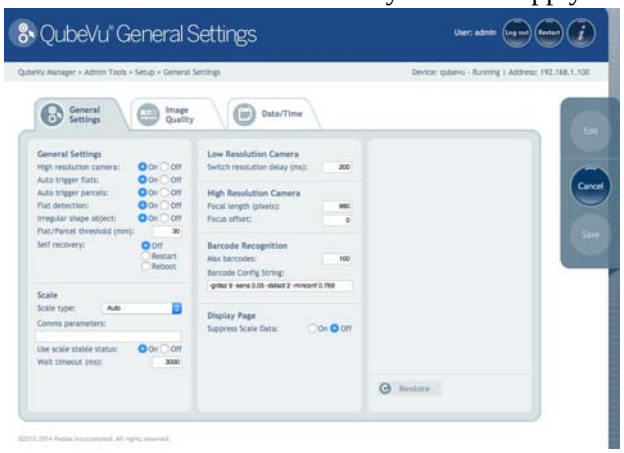


Figure 4-3. Scale Type and Scale Comm Parameters

Scale Type

Scale type is selectable from a drop-down list. If the scale is not listed below, contact Rice Lake Weighing Systems for assistance.

Scale Type	Description
Auto	*iDimension 200* will attempt to identify the scale and, if identified, will use that scale.
None	There is no scale attached to the *iDimension 200*.
External	There is no scale attached to *iDimension 200* and the application must trigger *iDimension 200* from either a bar code scan or by using the ScaleService API to notify *iDimension 200* of a change in weight.
USBHID	A scale which uses the USBHID protocol is connected to *iDimension 200*.
Mettler Toledo®	A scale which uses the Mettler Toledo standard protocol is connected to the *iDimension 200*.
MTSICS	A scale which uses the MTSICS (Mettler Toledo Standard Interface Command Set) protocol is connected to *iDimension 200*.
NCI	A scale which uses the Weigh Tronix/NCI protocol is connected to *iDimension 200*.
Pennsylvania® 7300	The Pennsylvania 7300 scale is connected to *iDimension 200*.

Table 4-1. Scale Types

Scale Communication Parameters

Any required parameters needed to control communication with the scale can be entered into this field.

For serial scale connections (namely Mettler Toledo, MTSICS, NCI and Pennsylvania 7300) other than the default values (which can be left empty), the following format is expected:

<BAUD RATE>,<PARITY>,<BITS>,<STOPBITS>

Eg. 9600,N,8,1

Parameters	Values
Baud Rate	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600 and 115200
Parity	N,O,E
Bits	5,6,7,8,9
Stopbits	1,1.4,2

Table 4-2. Valid Values for Scale Communication Parameters

For USBHID, other than the supported scales listed, the scale communication parameters should contain the vendor and product ID in the following format:

<VENDOR ID>,<PRODUCT ID>

Eg: 0x0EB8,0XF000

4.1.2 Calibrate the Cameras

1. Select **Calibration** from the *Admin Tools* menu.

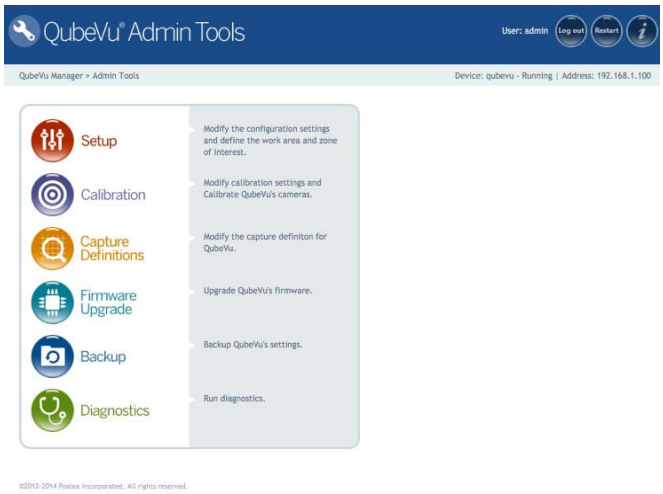


Figure 4-4. iDimension Admin Tools Menu

2. Select **Camera Calibration** from the *Calibration Menu*.

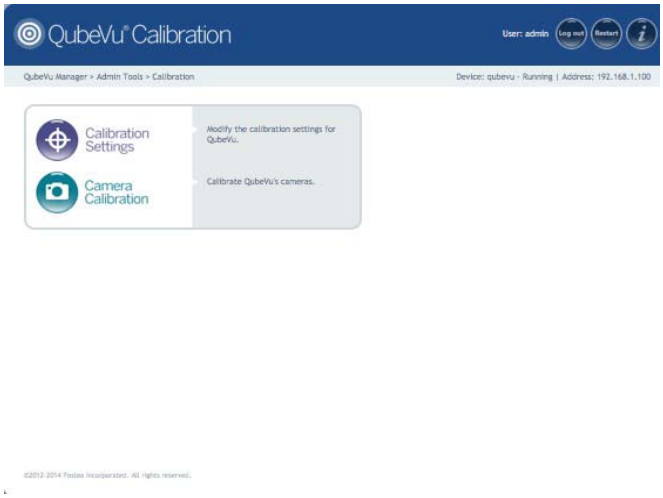


Figure 4-5. Camera Calibration

3. If *iDimension 200* is not already set to *Configuring* select **Edit** to start the calibration process.

Figure 4-6. Select Edit to Start the Calibration Process

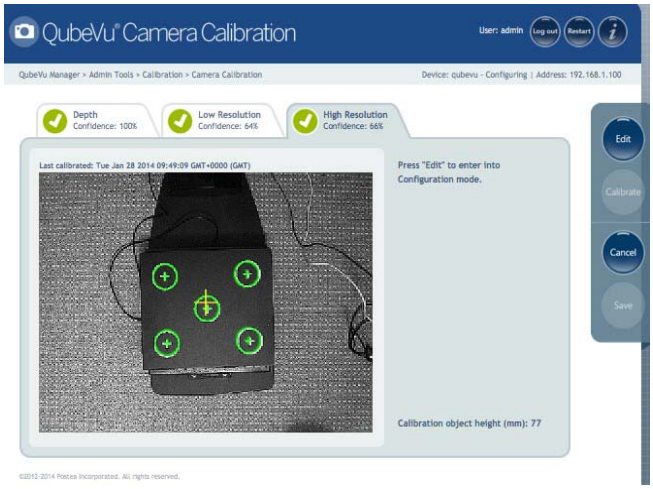


Figure 4-7. Start the Calibration Process

4. Select the *High Resolution* tab.
5. Ensure that the yellow diagonal lines intersect as near as possible to the center of the calibration object. If the lines are not intersecting at the center, move the calibration object until the center mark intersects with the yellow diagonal lines. If the marks cannot be centered, try to adjust the physical positions of the head by adjusting the top section of the head and/or adjusting the screws on the rear of the head.

Figure 4-8. Center the Yellow Diagonal Lines on the Calibration Object

6. Hold down the left mouse button and drag the mouse to draw a rectangle around the calibration object.
7. Select the *Depth Confidence* tab.
8. Hold down the left mouse button and drag the mouse to draw a rectangle around the calibration object.

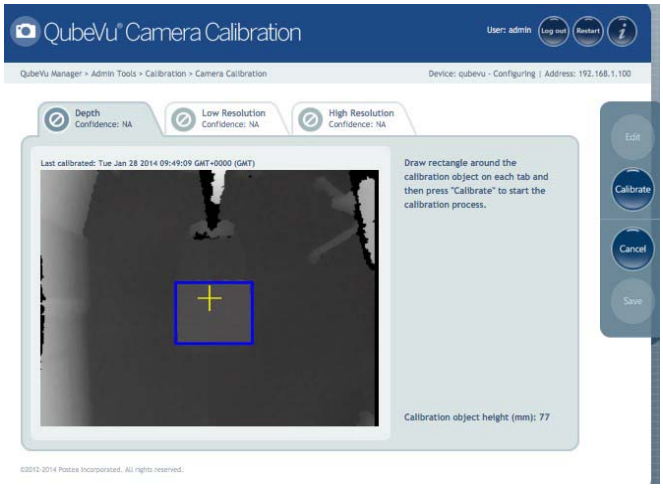


Figure 4-9. Draw a Rectangle around the Calibration Object

9. Select the *Low Resolution* tab.

10. Hold down the left mouse button and drag the mouse to draw a rectangle around the calibration object.

Figure 4-10. Draw a Rectangle around the Calibration Object

11. Press **Calibrate**.

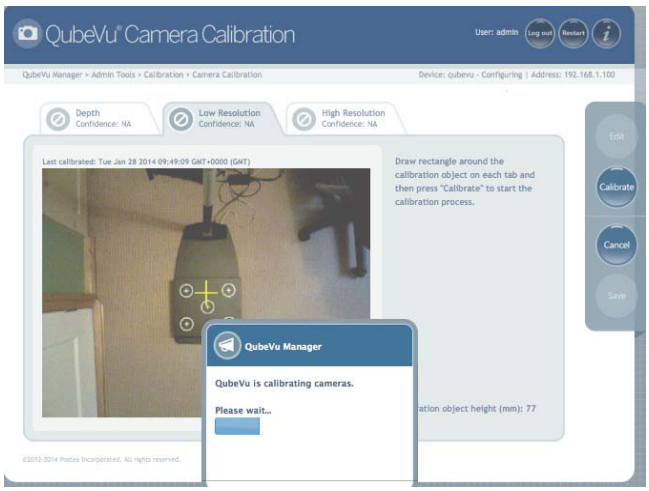


Figure 4-11. iDimension 200 Camera Calibration

12. All three tabs must show the green check mark for the calibration to be successful. Review each tab to ensure that the calibration object was successfully captured and no other object has mistakenly been placed in the view of the cameras.

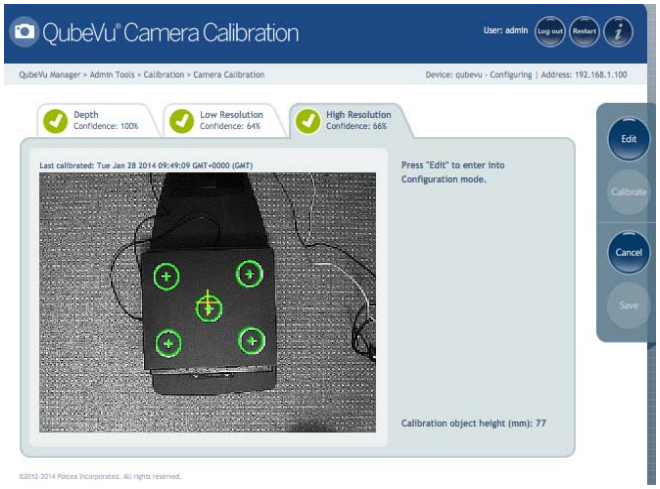


Figure 4-12. Calibration Successful

Calibration not Successful

The calibration was not successful if any of the tabs show the orange warning sign. Try re-drawing the rectangle on the *Depth*, *Low Resolution* and *High Resolution* tabs. Calibrate again until all three tabs have the green check mark symbol.

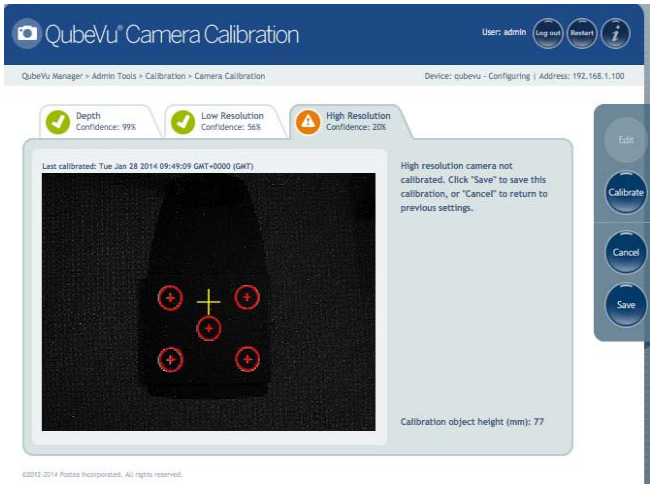


Figure 4-13. Unsuccessful Calibration

If the calibration is still unsuccessful, check the camera exposure settings and adjust the exposure to optimize the quality of the images. Use "Best Exposure Setting" procedure to let the system automatically determine the best exposure settings for the environment.

1. Print the checkerboard pattern included in the Appendix on page 28.
2. Place the printed checkerboard pattern on the base (or scale).
3. Center the paper under the scanning head using the scale marks on the base as a guide.
4. Select **Setup** from the *Tools* menu.

Figure 4-14. iDimension Tools Menu

5. Select the *Image Quality* tab.

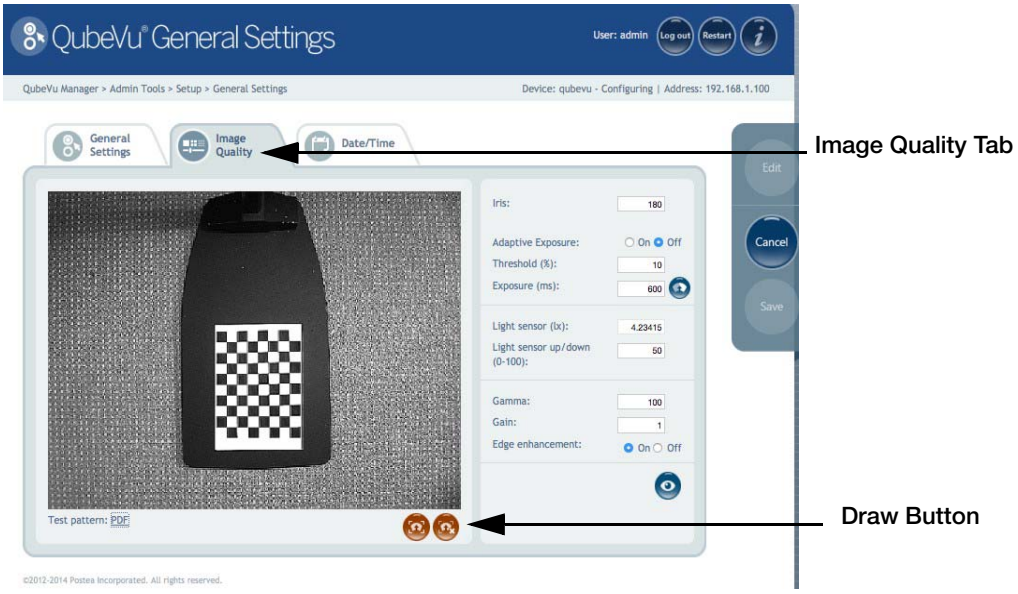


Figure 4-15. QubeVu Image Quality Tab

6. If the status is not "configuring," select **Edit** to change into configuration mode.
7. Click on the **Draw** button.
8. Using the mouse, hold down the left mouse button and drag to draw a rectangle around the squares.
9. Be sure to draw evenly around the squares, ensuring the same number of white and black squares are selected.
10. Click on the **Best Settings** button. *iDimension 200* will find the best exposure setting for the environment. The exposure setting value will update and the results of the change will be apparent on the image.

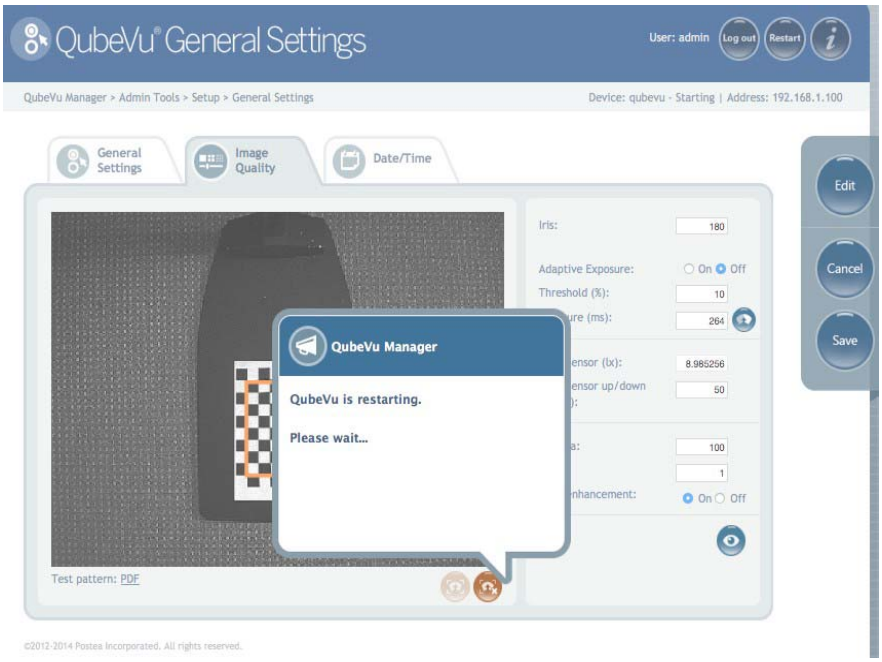


Figure 4-16. Best Settings

11. If satisfied with the results, select **Save** to apply the new settings.
12. Confirm the changes by clicking **OK**. This process may take a few minutes. After applying the setting, *iDimension 200* will automatically be restarted to complete the process.

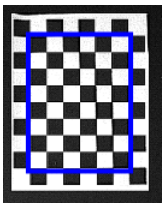
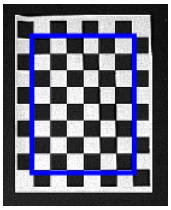
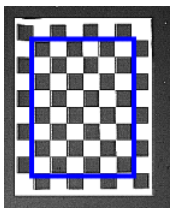
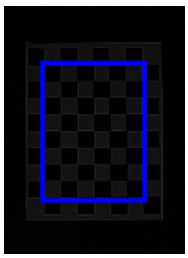
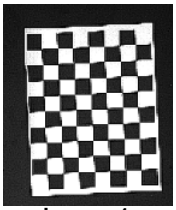
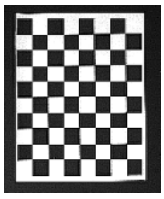
Troubleshooting Image Quality	
	Exposure setting using default value of 140.
	Image exposure set using “best setting” function.
	This image is over-exposed.
	This image is under-exposed.
 Image 1  Image 2	The squares are slightly distorted in Image 1, as the paper was at a slight angle. Once the paper is straightened, the squares should look even as in Image 2.

Table 4-3. Troubleshooting Image Quality

4.2 Define the Zone of Interest and Other Work Areas

1. Return to the *Admin Tools* menu and select **Calibration**.

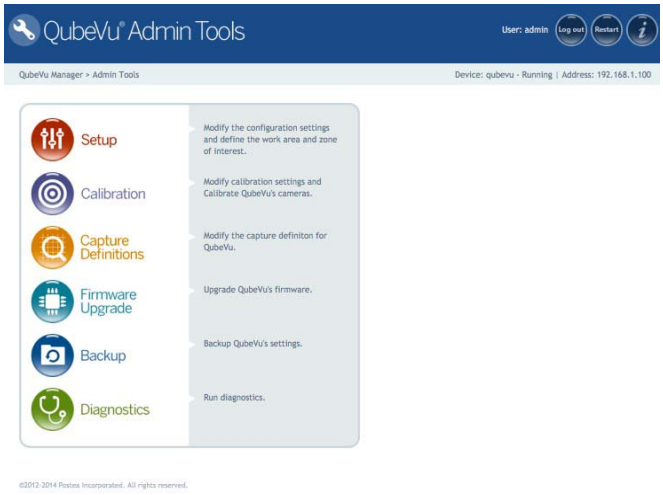


Figure 4-17. Calibration Menu

2. Select the *Calibration Settings*.

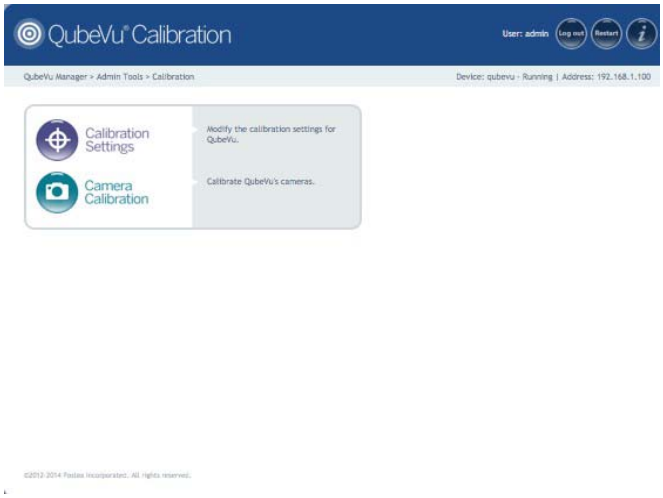


Figure 4-18. Select the Calibration Settings Tab

3. Select the *Zone of Interest* tab.
4. Press the **Edit** button to switch to configuration mode. This will take a minute while the device resets.

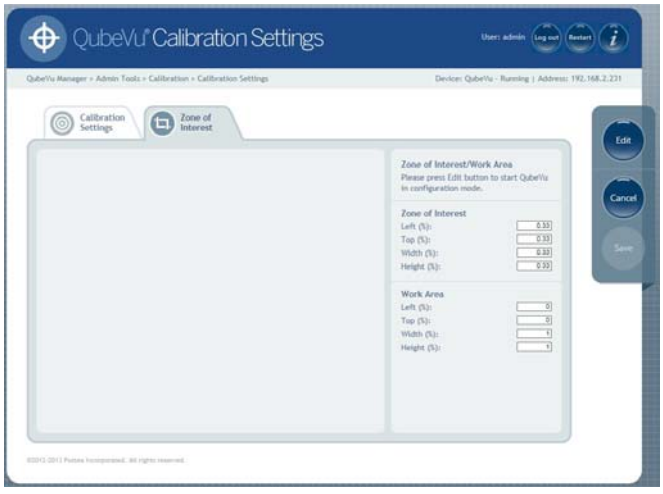


Figure 4-19. Zone of Interest Tab

Note ***The iDimension status has now changed to "configuring." When you cancel or save,*** *iDimension 200* ***will reset back to "running."***

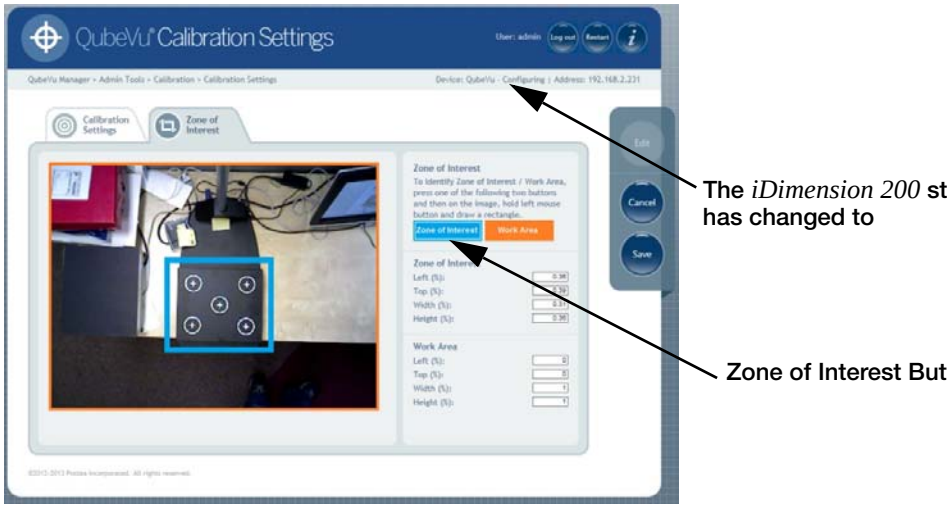


Figure 4-20. Zone of Interest

5. Click on the blue **Zone of Interest** button.
6. Hold down the left mouse button and draw a rectangle to define the Zone of Interest. The Zone of Interest represents detection area for dimensioning an item.

Figure 4-21. Work Area

7. Click on the orange **Work Area** button.
8. Hold down the left mouse button and draw a rectangle around the work area. The work area represents the area around the *iDimension 200* platform within which the *iDimension 200* device will detect the motion of placing an item for dimensioning. The work area also provides a maximum area for the detection of flats.

9. Click **Save**. *iDimension 200* will request confirmation of the save action.

Figure 4-22. Save the Changes

10. Click **OK** to save the changes or **Cancel** to abandon saving the changes.

4.3 Test Changes

Use the Demo application to test the changes.

1. Return to the QubeVu Manager main menu.
2. Select **Demo**.

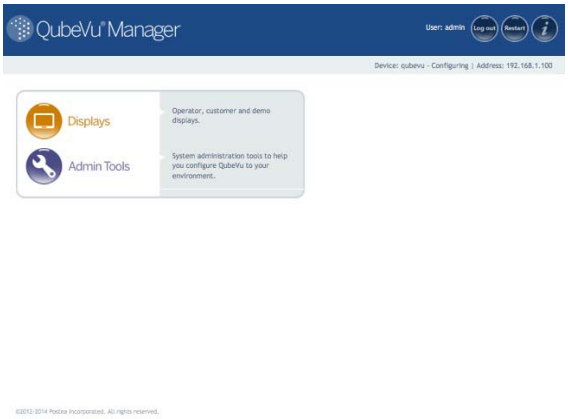


Figure 4-23. Select Demo from the QubeVu Manager Main Menu

3. Place an item on the *iDimension 200* platform or onto the scale to test that the device is operating correctly.

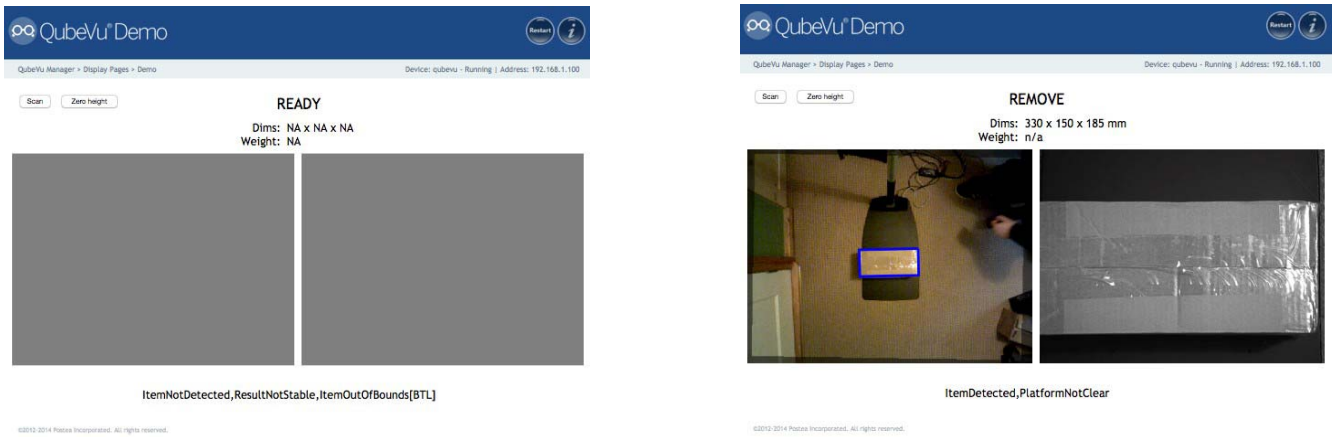


Figure 4-24. Place an Item on the iDimension 200 Platform or onto the Scale

Congratulations! *iDimension 200* is now ready to use.

5.0 Appendix

5.1 Specifications

Physical Specifications

Height (with Standard Frame)	67 – 79 inches/170 cm – 200 cm
Base Dimensions	Length: 25.5 in/65 cm Width: 14in/36 cm
Weight (without Frame)	28 lb/13 kg

Operating Conditions

Indoor operating temperature	41° - 104° F (5° - 40°C)
Humidity	Non-condensing
Mechanical environment class	M1
Electromagnetic class	E1
Power	110V - 240V

Performance Specifications

Shape	LFT: Cuboid
	Non-LFT: Cuboid, irregular shapes
Accuracy	± 0.2 in (± 5 mm)
Maximum object size (LxWxH)	47.25 in x 31.5 in x 31.5 in object
	(120 cm x 80 cm x 80 cm object)
	31.5 in x 23.6in x 27.6 in object
	(80 cm x 60 cm x 70 cm object)
Minimum object size (LxWxH)	LFT: 4.7 in x 3.4 in x 2 in
	(12 cm x 10 cm x 5 cm)
	Non-LFT: 4.7 in x 3.4 in x single sheet of paper
	(12 cm x 10 cm x single sheet of paper)
Item position	Dimensions only: Any position
	OCR required: Any position with text and bar codes facing upwards
Object colors	All opaque packaging; some variances may occur with glossy surfaces or shrink wrap
Measurement surface	Level table, scale, roller or conveyor
	Background should have contrasting color from items to be dimensioned; also avoid overly polished or glossy surfaces

Interoperability

Scales	The following are supported:
	Mettler Toledo® Standard Protocol
	METTLER TOLEDO Standard Interface Command Set (MT-SICS)
	NCI Standard Protocol
	PENNSYLVANIA SCALE COMPANY® 7300 Scale
	USB HID Protocol
	External scale support via ScaleService web service interface

Other scales and interfaces can be supported; please contact RLWS Customer Support for custom quotes.

Communications

Communications interface	HTTP/HTTPS
	Tools are provided for setup, calibration and service.

Connectivity	3 USB A 1 USB B (unused) 1 – 10/100/1000BASE-T Ethernet

Technical Specifications

System requirements	Client computer with Ethernet connection.
	Customer applications can be integrated with <Prodfont>iDimension 200 using a web service interface.
	Configuration tool requires a JavaScript-enabled browser.
Bar codes	EAN 13, UPC-A and 2/5 digit extensions
	Code 128 and UCC/EAN-128 encoding
	Code 39
	Code 93
	EAN 8
	UPC–E
	UPC 2/5 digit extensions
	Interleaved 2 of 5
	Codabar
	Patch Codes
	PDF 417
	Datamatrix
	QR Code
Applications Interface	Web Services
	API documentation available

6.0 Administrator's Section

6.1 Installation

QubeVu Manager is a set of tools provided to set up and configure the *iDimension* in any environment. These tools are recommended for use by a technical systems administrator.

6.1.1 QubeVu Manager

Each unit is defined as a network device during the initial installation and setup. Contact the Administrator for details of how to connect (via a IP address or host name).

It is not necessary to install additional software on the PC being used. Simply connect the unit to the PC using the Ethernet cable provided. The QubeVu Manager tools will run via any compatible browser.

Open an Internet browser. Enter the address or host name in the address area. The following screen displays as the main menu.

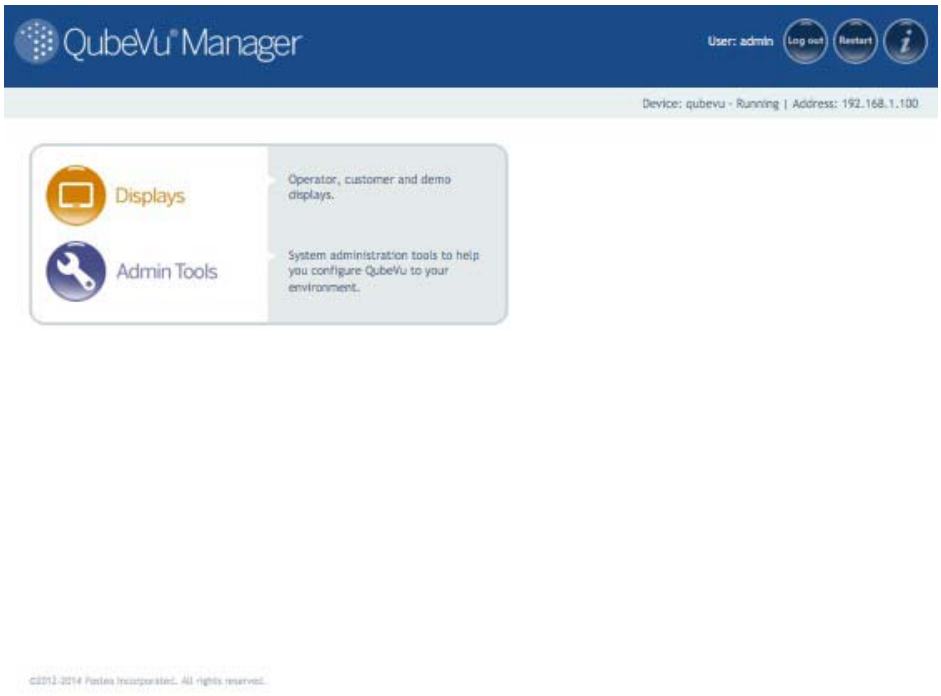


Figure 6-1. QubeVu Manager Home Page

Navigation

There is a navigation menu in the upper left section of the page. This allows users to keep track of their current location and provides links back to each preceding page.

For example, in the image below, the user is in the Calibration screeen. They can select *Admin Tools* and return to the Admin Tools menu, or QubeVu Manager to return to the home page.

Figure 6-2. Navigation Menu

Status

In the upper right corner of all pages is an area that displays the status of the device that is connected.

In the example below, user “admin” is logged in. The device “localhost” is running, and its IP address is 192.168.2.241.

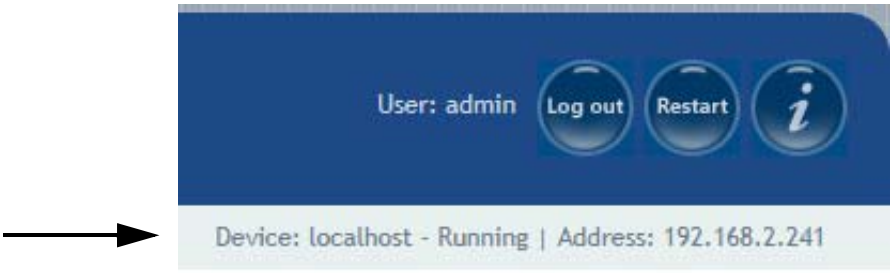


Figure 6-3. Status Display

Status Messages

Running	This device is running correctly.
Starting	*iDimension* is starting up. Wait for the status to change to “running” before continuing.
Restarting	*iDimension* is restarting. Wait for the status to change to “running” before continuing.
Configuring	*iDimension* is in configuration mode. If it has not automatically restarted after a “save” command, the device will need to be restarted before it will be available for dimensioning and scanning.
Stopped	*iDimension* is not running. This status may be visible while restarting.

Table 6-1. Status Messages

Restart/Reboot iDimension

Selecting **Restart** from any screen in the QubeVu Manager (see Figure 2-3) will give the user the option to either restart or reboot the system.

Figure 6-4. Restart/Reboot Prompt

Selecting the **Restart** button will restart the service that is running on the device; **Reboot** will reboot the full operating system on the device. Rebooting can take several minutes.

6.1.2 Edit/Cancel/Save Buttons

For a number of the tools, located on the right-hand side of the screen are the **Edit**, **Cancel** and **Save** buttons.

Edit

When available, the **Edit** button will switch *iDimension* into configuration mode (status will change to "configuring"). Configuration mode will stay on until a "save" or "reboot" action is completed. Be sure to change back to "Running" before exiting from the QubeVu Manager. While the QubeVu Manager will not save changes from page to page (for example, from the General Settings page to the Network page), it will save changes that have been made from tab to tab within a tool.

Cancel

The **Cancel** button will cancel all changes that may have been made while in the specific tool. Some tools have multiple tabs; selecting **Cancel** while viewing information on any tab will cancel edits made to all tabs.

Save

The **Save** button will save all changes that may have been made while in the specific tool. Some tools have multiple tabs; selecting **Save** while viewing information on any tab will save edits made to all tabs.

6.2 Displays

QubeVu Manager has three display screens for displaying dimensions. These displays are accessible from the QubeVu Manager home page.

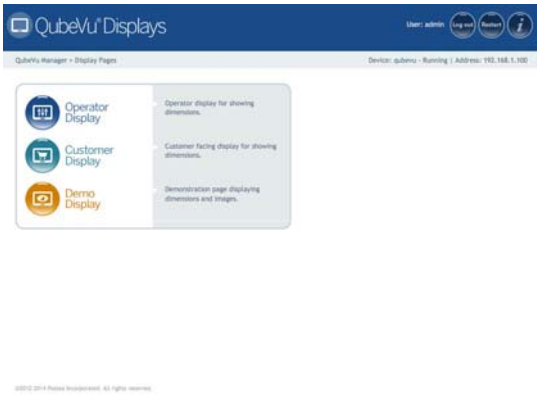


Figure 6-5. QubeVu Manager Displays

6.2.1 Operator Display

The operator display is an operator facing display intended for use in production environments. It displays the dimensions of an item, optional weight and various status indicators. The operator display also gives the operator access to system level controls. It does not display images.

Figure 6-6. Operator Display

	System Information Button
	Zero Height Button
	Reboot Button
	Out of Bounds Indicator - Indicates if the item has been placed within the viewable area.
	Regular Shape Indicator - Indicates if the item was treated as a regular shape.
	Irregular Shape Indicator - Indicates if the item was treated as an irregular shape.

Table 1: Operator Display Buttons and Indicators

6.2.2 Customer Display

The Customer Display is a customer facing display intended for use in production environments. It displays the dimensions of an item, optional weight and various status indicators. The difference between the Customer Display and the Operator Display is that the Customer Display does not give the customer access to system level controls. The Customer Display does not display images.

Figure 6-7. Customer Display

	Out of Bounds Indicator - Indicates if the item has been placed within the viewable area.
	Regular Shape Indicator - Indicates if the item was treated as a regular shape.
	Irregular Shape Indicator - Indicates if the item was treated as an irregular shape.

Table 2: Customer Display Indicators

6.2.3 Demo Display

The Demo Display is intended for use in demonstrations of the units features. It is also a useful tool for testing the effects of configuration changes. It displays the dimensions of an item, optional weight, various status indicators and images.

6.3 Log in to QubeVu Manager Tools

1. Go to the QubeVu Manager home page.
2. Select **Tools** to log in.
3. Select **Admin Tools**.
4. The Administrator defined a username and password during the initial setup process. Log in with the username and password to access the QubeVu Manager Admin Tools.

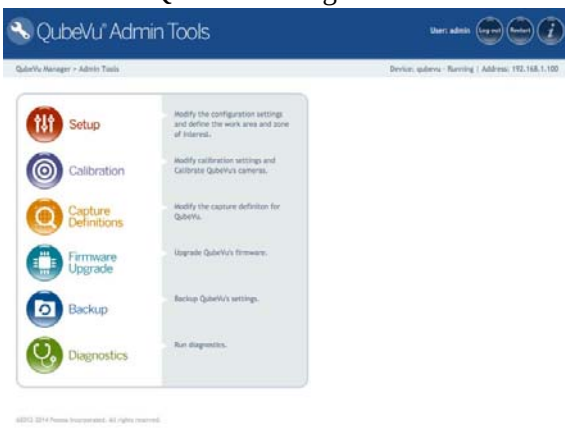


Figure 6-8. iDimension Manager Admin Tools Menu

6.3.1 Setup

There are four parameters involved with the setup of the system.

- General Settings (see “General Settings” on page 36).
- User (see “User” on page 43).
- Network (see “Network Settings” on page 44).
- Measurement Settings (see “Measurement Settings” on page 15).

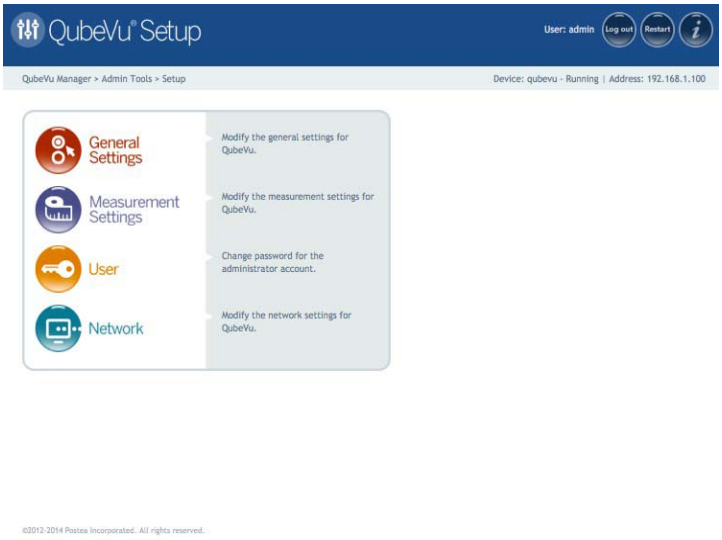


Figure 6-9. iDimension Setup Main Menu

General Settings

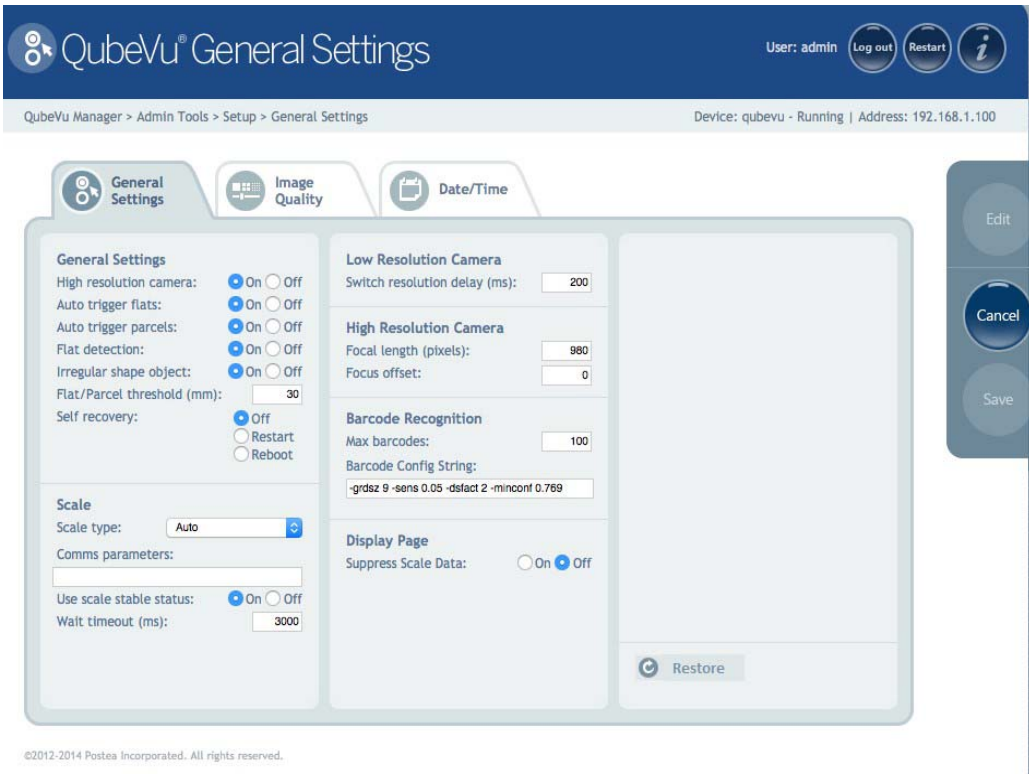


Figure 6-10. iDimension General Settings Main Menu

General Settings Tab

Parameter	Definition	Values
High Resolution Camera	Determines whether or not a high resolution image of the object should be captured when it is dimensioned. High Resolution Image Capture is controlled by the Capture Definitions (see “Capture Definitions” on page 26). This switch can be used to turn off the high resolution camera, completely overriding any capture definitions. This may provide some performance improvements for customers that do not need images from the high resolution camera.	Default Value: On Valid Values: On/Off
Auto Trigger Flats	Determines whether the capture of dimensions, weight and image is automatically triggered for items classified as “Flats.” Flats are represented by items with a height up to the value specified by the Flat/Parcel Threshold. When switched on, the capture process will be initiated as soon as a flat item is placed on the Work Area (see “Zone of Interest” on page 21) and the item is stable (a stable weight has been received from a connected scale).	Default Value: On Valid Values: On/Off
Auto Trigger Parcels	Determines whether the capture of dimensions, weight and image is automatically triggered for items classified as ‘Parcels.’ Parcels are items with a height greater than the value specified by the “Flat/Parcel Threshold.” When switched on, the capture process will be initiated as soon as a Flat item is placed on the work area (see “Zone of Interest” on page 21), the item is stable (a stable weight has been received from a connected scale) and if scale is present, the scale weight has been settled.	Default Value: On Valid Values: On/Off
Flat Detection	Determines whether the system will process or ignore items classified as flats. If it is set to ‘Off,’ it will override ‘Auto Trigger Flats’ and any capture definitions.	Default Value: Off Valid Values: On/Off
Irregular Shape Object	Determines whether the system will process or ignore items classified as *Irregular Shapes*. If set to *Off*, irregular shaped objects will be ignored (nothing will be returned).	Default Value: Off Valid Values: On/Off
Flat/Parcel Threshold	The maximum height (in millimeters) of what should be considered a flat object.	Default Value: 30 mm Valid Values: 30 mm-50 mm
Self Recovery	The desired behavior in the event of a critical error. Restarting will restart the service that is running on the device. Reboot will reboot the full operating system on the device.	Default Value: Off Valid Values: Restart/Reboot

Table 6-2. General Settings Tab

Scale Type

Scale type is selectable from a drop-down list. If a preferred scale is not listed below, contact Rice Lake Weighing Systems Customer Support for assistance.

Scale Type	Description
Auto	Will attempt to identify the scale and, if identified, will use that scale. Auto is the default value.
None	There is no scale attached. Flats are not supported in this model.
External	There is no scale attached and the application must trigger from either a bar code scan or by using the ScaleService API to notify *iDimension* of a change in weight.
USBHID	A scale which uses the USBHID protocol is connected.
Mettler Toledo	A scale which uses the Mettler Toledo standard protocol is connected.
MTSICS	A scale which uses the MTSICS (Mettler Toledo Standard Interface Command Set) protocol is connected.
NCI	A scale which uses the Weigh Tronix/NCI protocol is connected.
Penssylvania7300	The Pennsylvania 7300 scale is connected.

Table 6-3. Scale Type

Communication Parameters

Any required parameters needed to control communication with the scale can be entered into this field.

For serial scale connections (namely Mettler Toledo, MTSICS, NCI and Pennsylvania 7300), other than the default values (which can be left empty), the following format is expected:

<BAUD RATE>,<PARITY>,<BITS>,<STOPBITS>

Eg. 9600,N,8,1

Parameters	Values
Baud Rate	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600 and 115200
Parity	N,O,E
Bits	5,6,7,8,9
Stopbits	1,1.5,2

Table 6-4. Valid Values for Scale Communication Parameters

For USBHID, other than the supported scales listed, the scale communication parameters should contain the vendor and product ID in the following format:

<VENDOR ID>,<PRODUCT ID>

Eg: 0x0EB8,0XF000

Scale Stable Status

Determines whether *iDimension* will wait for the scale to stabilize before accepting a weight or status.

Default Value: On

Valid Values: On/Off

Wait Timeout (ms)

The period of time (in milliseconds) that the system will wait for a response from the scale.

Default Value: 3000

Valid Values: Scale Dependent

Low Resolution Camera

The Switch Resolution Delay (ms) is a minimum period of time (in milliseconds) that the system should pause after switching the resolution of the camera. Do not change this setting unless instructed to by Rice Lake Weighing Systems.

Default Value: 200

Valid Values: 100ms-500ms

High Resolution Camera

Setting	Description
Focal Length (Pixels)	Focal length (in pixels) of the high resolution camera when the lens is fully zoomed out and the camera is set to 640 x 480 pixels. Do not change this setting unless instructed to by Rice Lake Weighing Systems. Default Value: 980
Focus Offset	An offset that will be applied to each value in the focus table. The use of this parameter is reserved.

Table 6-5. High Resolution Camera Settings

Bar Code Recognition

Set the maximum number of bar codes the system should consider when processing a single capture.

Default Value: 100

Valid Values: 1-999

Bar Code Configuration String

The bar code configuration string conveys parameters for the bar code reading engine. Default value: -grdsz 9 -dsfact 2 -psdn 64 -sens 0.05 -srnbs 512 -srnbp 21 -srpsp 1 -srshrp 0.5 -minconf 0.769 -minredund 5.0 -shiftrange 1.

Valid Value	Description
-grdsz	Bar code map grid size (integer in pixels).
-dsfact	Bar code map downsampling factor (integer >=1).
-psdn	Psd score FFT size (integer power of 2).
-sens	Contrast sensitivity (in [0.0, 1.0])
-srnbs	Size of super resolution bar code signal (integer nb of samples).
-srnbp	Number of parallel paths used for super resolution stage (integer).
-srpsp	Spacing between parallel paths (integer number of pixels).
-srshrp	Sharpening factor to be applied to super resolution signal (>=0.0f)
-minconf	Minimum confidence value that may be considered a successful read (in [0.0, 1.0])
-minredund	Minimum redundancy among parallel paths (in [0.0, <srnbp - 1>]).
-shiftrange	Range of a sliding offset during symbol matching.

Table 6-6. Bar Code Configuration String

Display Page

Turn Suppress Scale Data on to suppress the display of the scale data (weight) on the Customer and Operator Displays.

Default Value: Off

Valid Values: On/Off

Disk Finder

Enable Disk Finder, a feature that provides flat detection without the use of a scale.

Default value: Off

Valid Values: On/Off

6.3.2 Image Quality Tab

Since lighting conditions vary from location to location, it is recommended to check the camera exposure settings and adjust the exposure to optimize the quality of the images that *iDimension* returns.

1. Print the checkerboard pattern included in the appendix.
2. Place the single sheet of paper on the base (or scale) and center it under the scanning head.
3. Use the scale marks on the base as a guide to center.
4. If not already set to **Configuring**, press the **Edit** button to switch to the *Configuring* mode.

Button	Description
	Use the **Draw** button to draw a rectangle on the checkerboard, or to delete the current rectangle and start over. Hold down the left mouse button and drag to draw a rectangle.
	Use the **Delete** button to delete the current rectangle and start over.
	Use the **Best Exposure Setting** button to automatically find the best exposure value based on current lighting conditions.
	Use the **Preview** button to apply the current settings and see the results of any changes.

Table 6-7. Button Descriptions

It is recommended to allow the system to automatically determine the best exposure settings for the environment using the **Best Exposure Setting** button.

1. Click on the **Draw** button.
2. Hold down the left mouse button and drag the mouse to draw a rectangle around the squares. Draw evenly around the squares; be sure to select the same number of white and black squares.

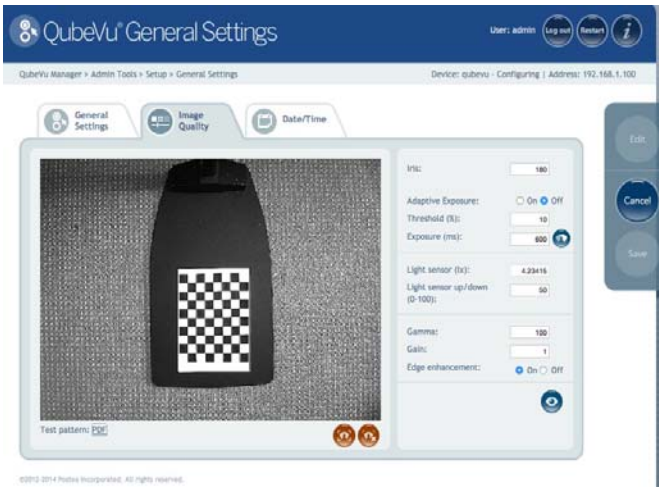


Figure 6-11. Best Exposure Settings

3. Click on the **Best Settings** button. Wait for QubeVu Manager to find the best exposure setting for the current environment. The Exposure Setting value will be updated, and the results of the change will display.

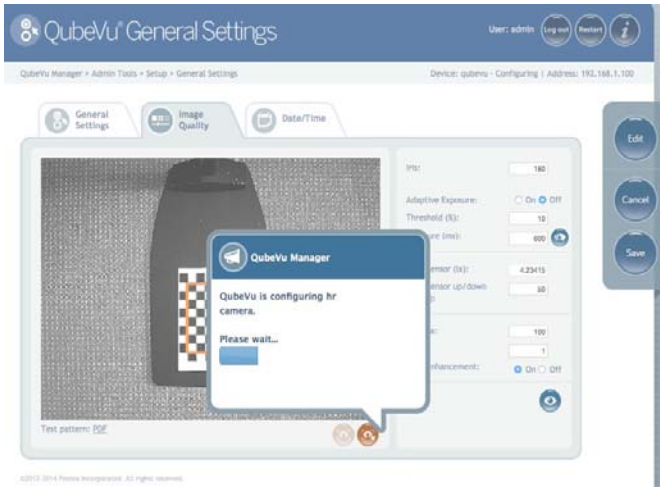


Figure 6-12. QubeVu Manager Finds the Best Exposure Setting

4. If satisfied with the results, select **Save** to apply the new settings.
5. Confirm the changes by clicking **OK**.
6. This process may take a few minutes. After applying the setting, the system will automatically be restarted to complete the process.

Image Quality Screen — Field Values

Field Value	Description	Values
Iris	This controls the aperture of the high resolution camera's lens. The larger the value, the larger the aperture, the brighter the image. However, a larger aperture also produces a shallower depth of field. A setting of 136 provides best image quality.	Default Value: 136 Valid Values: 0-255
Adaptive Exposure	Allows the system to auto-sense the lighting conditions and adjust the exposure accordingly. Intended for use in environments subject to gradual changes in light conditions.	Default Value: Off Valid Values: On/Off
Threshold	A threshold value, expressed as a percentage of change in lighting conditions, above which the system will re-assess and adjust the exposure.	Default Value: 10 Valid Values: 0-100
Exposure	Exposure time, in milliseconds, for the high resolution camera. The longer the exposure time, the brighter the image. The value for exposure can be changed manually. Use the **Preview** button to review results.	Default Value: 100 Valid Values: 1ms-255 ms
Light Sensor (lx)	Environmental illumination as detected by the system's light sensor.	Default Value: 0 Valid Values: N/A
Light Sensor Up/Down	Low pass filter controlling how fast/slow the light sensor value will respond with regards to instantaneous reading.	Default Value: 50 Valid Values: 0-100
Gamma	The gamma function brightens dark areas of an image, which corresponds more to the perception of the human eye. In light areas of an image, the differences in brightness are condensed for this.	Default Value: 100 Valid Values: 1-1000
Gain	High resolution camera gain setting.	Default Value: 100 Valid Values: Camera Dependent
Edge Enhancement	Determines whether or not a sharpness filter should be applied to all high resolution images. This setting should normally remain at the default setting of *On*, which provides the best results for bar code and OCR definition.	Default Value: On Valid Values: On/Off

Table 6-8. Image Quality Field Values

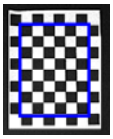
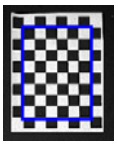
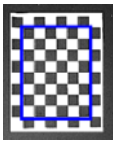
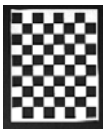
	Exposure setting using default value of 136.
	Image exposure set using “best setting” function. In this case, the default value was sufficient.
	This image is over-exposed.
	This image is under-exposed.
 Image 1  Image 2	The squares are slightly distorted in Image 1, as the paper was at a slight angle. Once the paper is straightened, the squares should look even as in Image 2.

Table 6-9. Troubleshooting Image Quality

6.3.3 Set the Date, Time and Time Zone

The Date/Time tab allows the date and time setting to be changed. The date and time are used to time stamp configuration changes that affect the Legal for Trade certification.

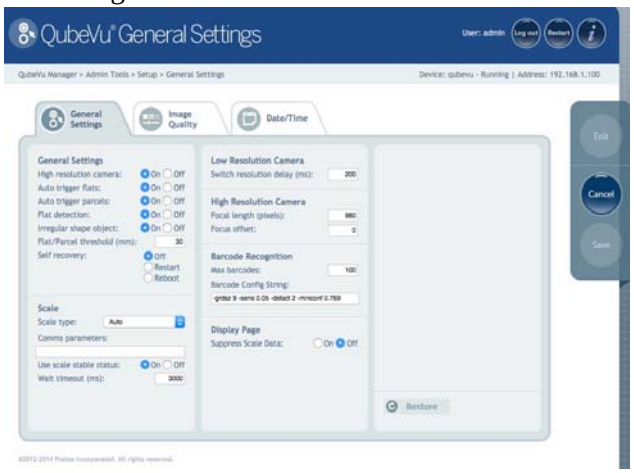


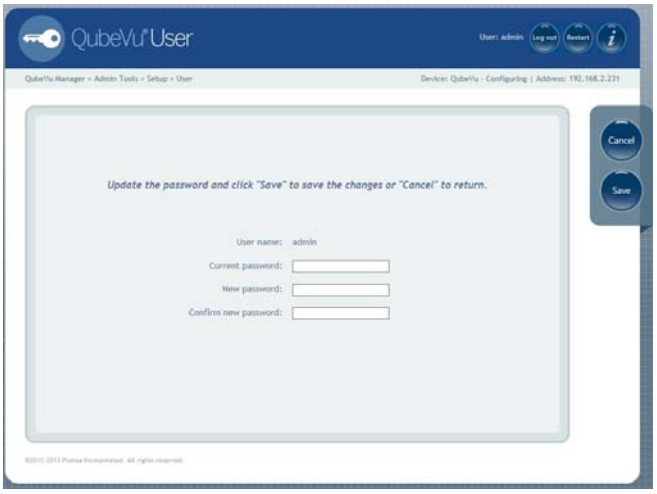
Figure 6-13. Date/Time Tab

1. Select the *Date/Time* tab from the *Setup* ⟶ *General Settings* screen. The current date and time are displayed.
2. Click on the **Date** icon to change the date. The calendar and time settings from the local computer are displayed.
3. Click **Now** to select the current date and time.
4. Alternatively, enter the hour, minutes and seconds directly.
5. Use the *Time Zone* field to select the correct time zone.

Figure 6-14. Change the Date

6. Click **Done** to save the settings.

6.3.4 User



Use the User screen to modify the password. When selecting a new password, keep these rules in mind:

- Minimum length: Six characters
- Maximum length: 511 characters
- All printable characters are allowed except Unicode characters.
- Be sure to change more than case, eg. “oldpassword” to “OLDPASSWORD” is not acceptable.
- Select a new password that is not too much like the old password, eg. “oldpassword1” would not be considered a valid change from “oldpassword”.
- The new password cannot simply rotate the old password’s characters, eg. “oldpassword” and “ldpasswordo”.

6.3.5 Network Settings

Use the Network tool to define the network settings for the enterprise network.

Select *Network* from the setup menu. There are two tabs:

- Network Settings defines *iDimension* as a network device in the enterprise network.
- Network Security defines the security settings for *iDimension* in the enterprise network.

Network Settings Tab

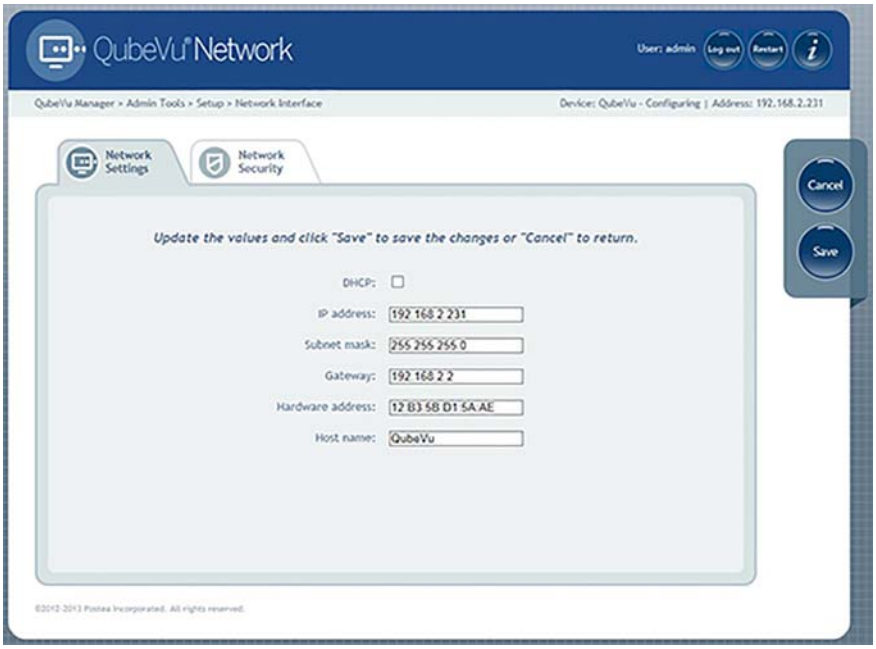


Figure 6-15. Network Settings Tab

Network	Description
DHCP	Verify with the network administrator if *iDimension* should be set up on the network using Dynamic Host Configuration Protocol (DHCP). If DHCP is checked, a unique host name for this device must be defined. This name will be used to access the device from the *Manager Tools* in the future. A hostname can be up to 15 characters. For example, http://<hostname>/
IP Address	If DHCP was checked, an IP address will not be entered. If DHCP was not checked, define a unique IP address for each *iDimension* that is installed. Consult with the network administrator if unsure how to assign a new IP address. If using fixed IP addresses, access QubeVu Manager by either the host name or the IP address: http://<hostname>/ http://<ip address>/
Subnet Mask	The default subnet mask is 255.255.255.0. Consult with the network administrator for the correct setting.
Gateway	The default gateway is 0.0.0.0. Consult with your network administrator for the correct setting.
Hardware Address	Each *iDimension* has been assigned a unique hardware address. Do not change this setting.
Hostname	The default host name is the alphaneumeric part of the device serial number. Up to 15 characters are allowed for the host name.

Table 6-10. Network Settings

Network Security Tab

Network security settings allow enhanced security by encrypting communications with *iDimension* using the HTTPS protocol. By default, communication with the system is via HTTP.

When you click on the *Network Security* tab, the current settings are displayed.

Click on **Enable HTTPS** to enable HTTPS. Enter the file name of the key file, certificate file and key pass phrase. Select **Upload** to transfer the information from the local machine to the device.

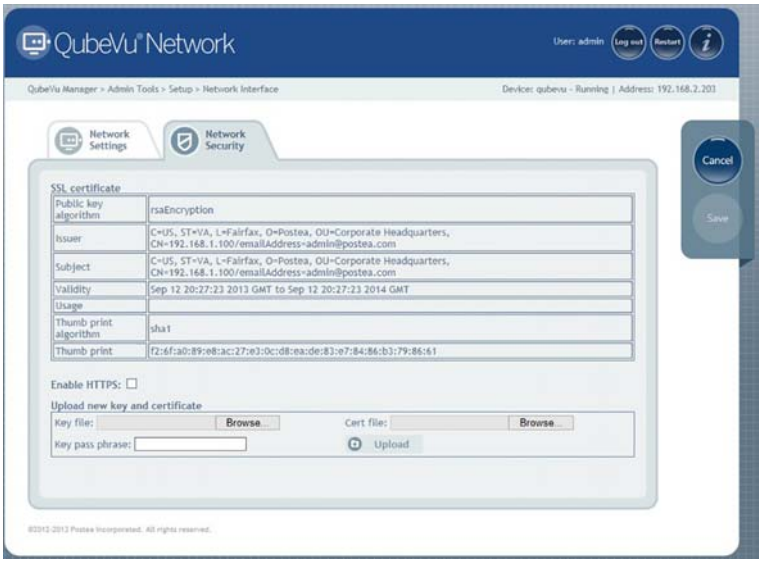


Figure 6-16. Network Security Tab

6.4 Calibration

The following describes calibration information for *iDimension*.

6.4.1 Measurement Settings

Important ***Changes to the measurement settings will invalidate the Legal for Trade certification. Only change these settings if Legal for Trade certification is not important to the enterprise.***

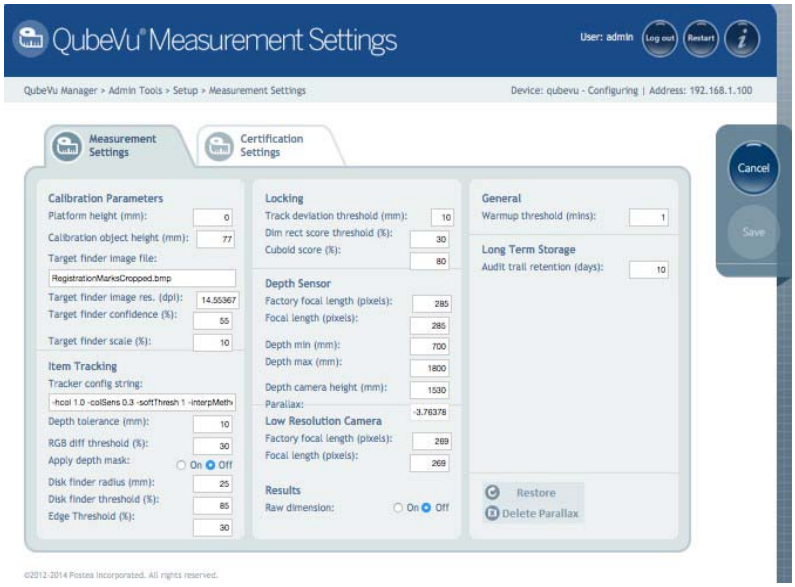


Figure 6-17. Measurement Settings Main Menu

Calibration Parameters

Parameters	Description	Values
Platform Height (mm)	This setting is primarily required when carrying out a factory calibration of the cameras. The value specifies the height of any platform placed on top of the base plate that is intended to be permanently located there (ie. a weigh scale). For a factory calibration, this value must be set to '0.'	Default Value: 0 mm Valid Values: <height of platform>
Calibration Object Height (mm)	The height of the object used to calibrate the device. If using the calibration object supplied with the device, this setting will be either 76 or 77 mm depending on the version of the calibration object supplied.	Default Value: 77 mm Valid Values: 76-77 mm
Target Finder Image File	Name of a bitmap file that describes the calibration pattern.	Default value: RegistrationMark-sCropped.bmp Valid Values: Use default file. Alternative files may be supplied in the future.
Target Finder Image Res (dpi)	Effective printed size of the calibration pattern on the calibration object. This size is provided in terms of a resolution (in dots per inch) relative to the bitmap file that was provided above.	
Target Finder Confidence (%)	As it searches for the calibration pattern, the system derives a confidence value alongside its result. This parameter is the minimum confidence value required for a calibration process to be deemed successful.	Default Value: 55% Valid Values: 0-100%
Calibration Target Finder Scale (%)	This value describes a tolerance for the expected size of the calibration pattern.	Default Value: 10% Valid Values: 0-100%

Table 6-11. Calibration Parameters

Item Tracking

Tracking Configuration String

A string conveying configuration parameters for the internal calibration target finder module.

Default Values: -hcol 1.0 -colsens 0.3 -softThresh 1 -interpMethod 1 -blobSeg0 -fftSizes 512

Valid Values	Description
-hcol	Heavy color [0,1] used to threshold scene image
-colSens	Color sensitivity [0,1] used to threshold scene image
-softThresh	0: hard threshold; 1: soft threshold
-interpMethod	0: nearest neighbor; 1: bilinear; 2:quadratic
-blobSeg	1: use blob segmentation; 0: don't use blob segmentation
-fftSizes	Size for all internal images and FFTs

Table 6-12. Tracking Configuration String

Parameters	Description	Values
Depth Tolerance (mm)	A tolerance value (in millimeters) used during the segmentation process of the depth data provided by the sensor. Adjacent depth values that are within this tolerance will be deemed to belong to the same object.	Default Value: 10 mm Valid Values: 5 mm-15 mm
RGB Diff Threshold (%)	A pixel intensity threshold relative to the full image dynamic used during the segmentation process of the RGB data provided by the sensor.	Default Value: 30% Valid Values: 0-100%
Apply Depth Mask	Determines whether or not the system should account for vertical protrusions on the platform. These are very rare cases when the platform may have a backstop or a lip.	Default Value: Off Valid Values: On/Off
Disk Finder Radius (mm)	The radius (in millimeters) of the Disk Finder disk.	Default Value: 25
Disk Finder Threshold	Score threshold value above which the disk finder will consider a match to be successful.	Default Value: 85 Valid Values: 0-100
Edge Threshold (%)	Gradient threshold value used during scene edge detection. The local image gradient must be above that value in order for the local feature to be considered as an edge.	Default Value: 30 Valid Values: 0-100

Table 6-13. Item Tracking

Locking

Parameters	Description	Values
Track Deviation Threshold (mm)	A threshold value (in millimeters) below which the deviation of the object's three dimensions should remain in order for the system to settle and lock onto the object.	Default Value: 10 mm Valid Values: 5 - 30 mm
Dim Rect Score Threshold (%)	The rectangle score of an object measures how rectangular its outline appears to be. This parameter is a rectangle score threshold value below which any returned dimension will be ignored.	Default Value: 30% Valid Values: 0-100%
Cuboid Score (%)	The cuboid score of an object measures how box-like it appears to be. This parameter is a cuboid score threshold value below which the object will be deemed irregular.	Default Value: 80% Valid Values: 0-100%

Table 6-14. Locking

Depth Sensor

Parameters	Description	Values
Factory Focal Length (pixels)	Focal length of the depth sensor for the purpose of factory calibration, provided in pixels relative to its resolution.	Default Value: 285 Valid Values: N/A Use Default
Focal Length (pixels)	Focal length of the depth sensor, provided in pixels relative to its resolution.	Default Value: 285
Depth Min (mm)	Threshold Depth Value - the minimum distance allowed (in millimeters) between the device head and the object it is measuring. Any depth measure returned by the sensor that is below this value will be ignored.	Default Value: 700 Valid Values: 600-1800 (or “Depth max” value)
Depth Max (mm)	Threshold depth value (in millimeters) above which any depth measure returned by the sensor will be ignored.	Default Value: 1800 Valid Values: 600 (or “Depth min value”) to 1800
Depth Camera Height (mm)	Distance (in millimeters) between the depth sensor and the base of the device.	Default Value: 1530 Valid Values: 600-1800
Parallax	This is a read-only field. Correction factor compensating for slight parallax imperfections.	

Table 6-15. Depth Sensor

Low Resolution Cameras

Parameters	Description	Values
Factory Focal Length (pixels)	Initial focal length of the low-resolution camera for the purpose of factory calibration (in pixels) relative to its resolution.	Default Value: 269 Valid Values: N/A Use Default.
Focal Length (pixels)	Focal length of the low resolution camera, provided (in pixels) relative to its resolution.	Default Value: 269 Valid Values: *Use default value unless directed to change by Rice Lake Customer Support*

Table 6-16. Low Resolution Cameras

Results

Parameters	Description	Values
Raw Dimension	Instructs the system to return raw results that have not been rounded to the nearest division.	Default Value: Off Valid Values: On/Off

Table 6-17. Results

General

Parameters	Description	Values
Warmup Threshold (mins)	Specifies the number of minutes after a cold start that the system will wait before entering a READY state or before calibration is allowed.	Default Value: 180 Valid Values: 0 or higher (max int)

Long Term Storage

Audit Trail Retention specifies the number of days captured data will be retained in Long Term Storage.

Default Value: 0.

Restore Buttons

Use Restore to restore the settings on this page to their default values or to restore from a previously saved backup file.

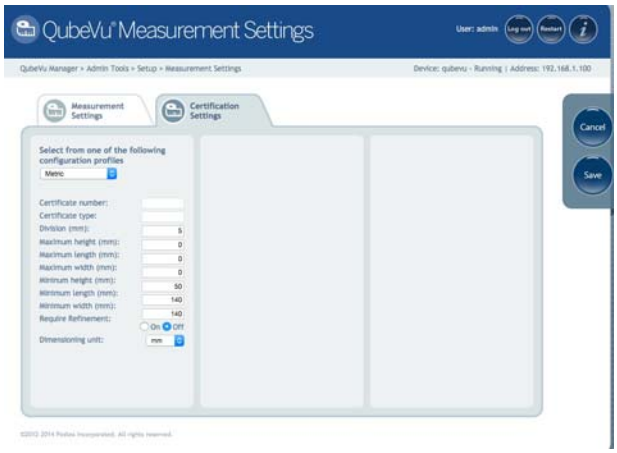
Figure 6-18. Factory Reset

Select **OK** to restore factory default settings or browse to select a backup file to restore form. *iDimension* will be restarted after the restore. Use the restore action from the *Backup Menu* to completely restore all settings.

Important ***To clear the parallax or to complete a factory calibration contact Rice Lake Customer Support.***

Certification Settings

Certification settings allow the selection of pre-defined configuration profiles for Legal for Trade applications. The certificate profile selection is dependent on the jurisdiction. Contact Rice Lake Customer Support for further information.



6.4.2 Calibration

Figure 6-19. Calibration Tool Main Menu

Use the calibration tool to set the camera settings and to calibrate the depth, low resolution and high resolution cameras. This is typically done at setup; however, if the unit is moved to a new location or the type of scale has changed, the calibration settings should be checked to ensure correct calibration.

Calibration Settings

Figure 6-20. Calibration Settings Menu

Parameters	Description	Values
Dimension Up (%)	A low-pass filter is applied to the three dimensions of the object from every single frame that is captured. This is intended to overcome noise and further improve accuracy. These two parameters (up and down) control the speed of this low-pass filter as a percentage. The closer to 100%, the faster the filter's response; the closer to 0%, the slower the filter's response.	Default Value: 70% Valid Values: 0-100%
Dimension Down (%)		

Table 6-18. Dimensioning

Parameters	Description	Values
Lock Motion (%)	The motion threshold value below which the system must settle in order to lock onto an object.	Default Value: 1% Valid Values: 0-100%

Table 6-19. Locking

Parameters	Description	Values
Motion Up (%)	A low-pass filter is applied to the motion detected from every single frame that is captured. These two parameters (up and down) control the speed of this low-pass filter as a percentage. The closer to 100%, the faster the filter's response; the closer to 0%, the slower the filter's response.	Default Value: 90% Valid Values: 0-100%
Motion Down (%)		Default Value: 50% Valid Values: 0-100%
Lock Rect Score (%)	Specifies a minimum tracking confidence value that needs to be reached in order to trigger the capture of the object's dimensions.	Default Value: 0% Valid Values: 0-100%
Weight Diff Ready (%)	When an object is removed from the scale, the reported weight will obviously drop. This parameter determines the percentage of weight drop necessary to reset the system to a ready state. This percentage is relative to the weight of the object that was last dimensioned.	Default Value: 50% Valid Values: 0-100%
Min Weight Ready (%)	The weight threshold value (in grams) below which the system will determine that there is not an object on the scale and will switch to a ready state.	Default Value: 100 g Valid Values: 0-200 g

Table 6-19. Locking

Relocking refers to the ability to dimension a new object even in cases when no ready state was detected due to particularly fast operations.

Parameters	Description	Values
Diff Center Enabled	Determines whether or not the system should relock based on the detection of a shift in the object's center.	Default Value: Off Valid Values: On/Off
Diff Center (mm)	Specifies the amount of variation in the location of the object placed on the platform which will trigger the capture of new dimensions.	Default Values: 100 mm Valid Values: 20 - 300 mm
Diff Theta Enabled	Determines whether or not the system should relock based on the detection of a shift in the object's orientation.	Default Value: 0.262 Valid Values: 0.1-0.4
Diff Theta (rad)	Specifies the amount of variation in the orientation of the object placed on the platform which will trigger the capture of new dimensions.	Default Value: 0.262 Valid Values: 0.1- 0.4
Diff Dim Enabled	Determines whether or not the system should relock based on inconsistencies in the reported dimensions for the object.	Default Value: Off Valid Values: On/Off
Diff Dim (mm)	Specifies the amount of variation in the dimensions of consecutive objects placed on the platform which will trigger the capture of new dimensions.	Default Value: 50 mm Valid Values: 20 - 100 mm
Diff Weight Enabled	Determines whether or not the system should relock based on inconsistencies in the reported weight for the object.	Default Value: Off Valid Values: On/Off
Diff Weight (%)	Specifies the amount of variation in the weight received from the scale which will trigger the capture of new dimensions. The threshold weight value (weight percentage) determines which inconsistencies should be detected in order to trigger a relock.	Default Value: 10% Valid Values: 0-100%

Table 6-20. Relocking

6.4.3 Restore Configuration Button

Use 

to restore the settings on this page to their default values or to restore from a previously saved backup file.

Figure 6-21. Factory Reset

Select **OK** to restore factory default settings or browse to select a backup file to restore from. *iDimension* will be restarted after the restore. If you have deleted the parallax settings, you must re-calibrate the cameras before it will be ready for use. Use the restore action from the *Backup Menu* to completely restore all settings.

6.4.4 Zone of Interest

In general, the Zone of Interest should not need to be re-defined after it has been calibrated during the initial setup.

Re-defining the Zone of Interest is required only if:

- The height of the scanning head has changed
- The height of the weigh scale has changed
- A scale has been added or removed from operation

Follow the steps below to review the current camera calibration settings.

1. Return to the Admin Tools menu and select **Calibration**.

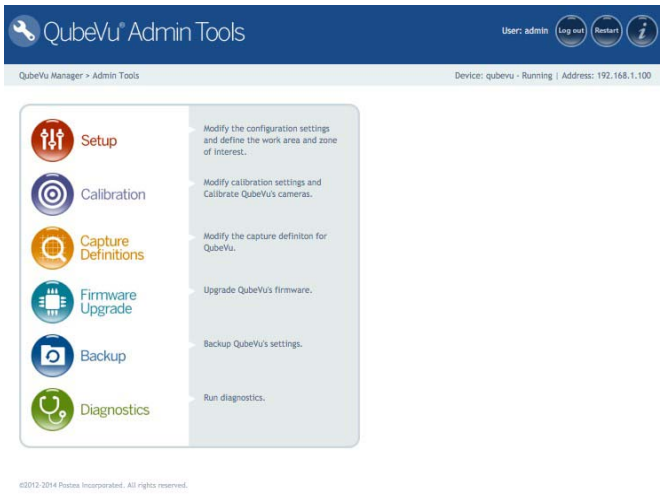


Figure 6-22. Calibration Menu

2. Select the *Calibration Settings* tab.

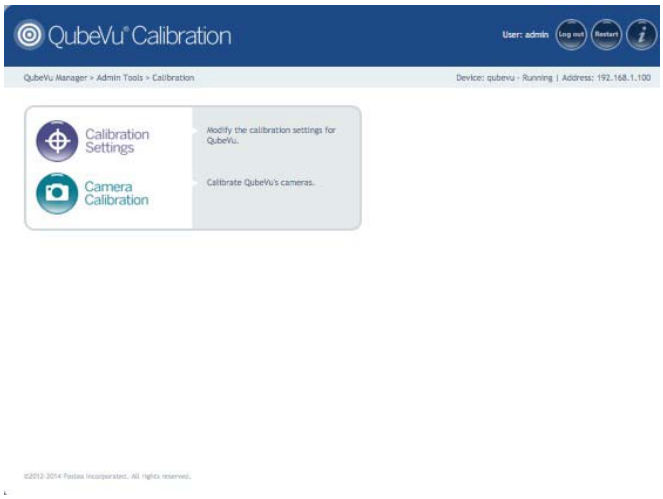
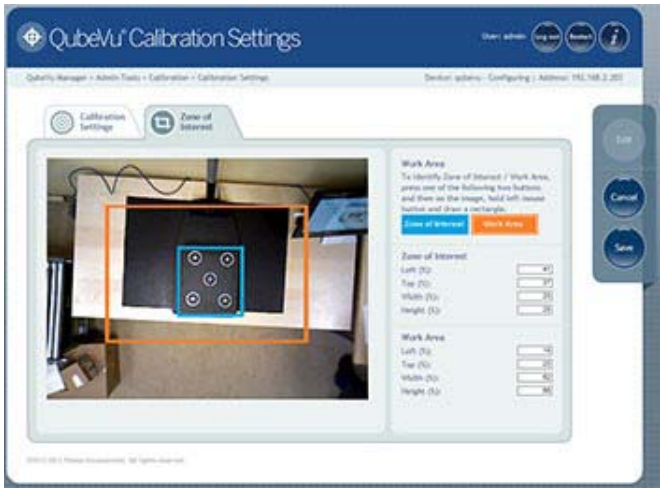


Figure 6-23. Select the Calibration Settings Tab

3. Select the *Zone of Interest* tab.
4. Press the **Edit** button to switch to configuration mode. This will take a minute while the device resets.

Note ***It is not recommended to modify the values of Zone of Interest and Work Area directly from this screen. Instead, use the drawing tools to draw the X/Y/Z coordinates for both areas.***



5. Review the Zone of Interest Area (blue rectangle) and the Work Area (orange rectangle) that was previously set up.

6.4.5 Calibrate the Cameras

In general, the cameras should not require re-calibration after the initial setup.

Re-calibration may be required if:

- The height of the scanning head has changed
- The height of the scale has changed
- A scale has been added or removed from operation

To review the current camera calibration settings, follow the steps below.

1. Select **Calibration** from the *Admin Tools* menu.
2. Select **Camera Calibration** from the *Calibration* menu.

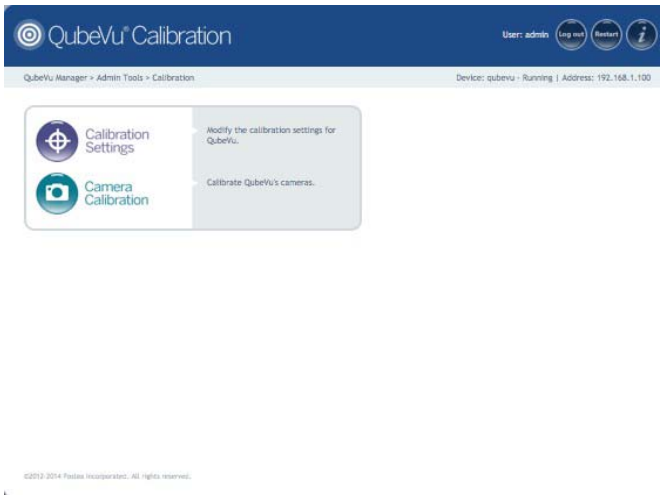


Figure 6-24. Camera Calibration

3. The Confidence levels on each tab indicate the system's confidence in finding the calibration box. The image in each tab should be reviewed to confirm that the system correctly identified the calibration box. To re-calibrate the cameras, select **Edit** to switch into *Configuration* mode.

Figure 6-25. Select Edit to Start the Calibration Process

4. Select the *High Resolution* tab.
5. Ensure that the yellow diagonal lines intersect as near as possible to the center of the calibration object. If the lines are not intersecting at the center, move the calibration object until the center mark intersects with the yellow diagonal lines. If the marks cannot be centered, try to adjust the physical position of the head by adjusting the top section of the head and/or adjusting the screws on the rear of the head.

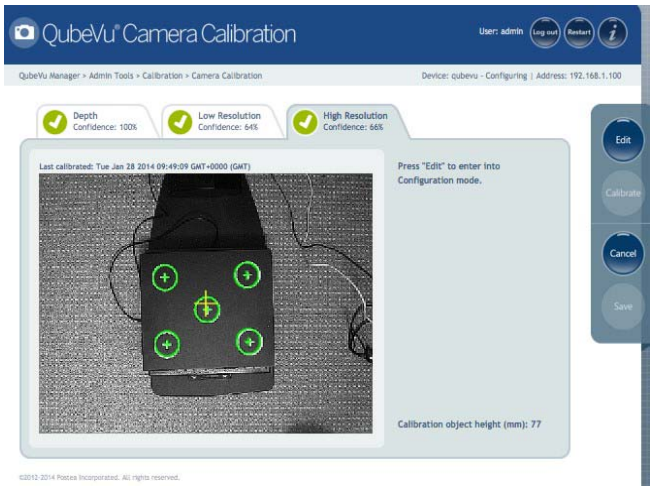


Figure 6-26. Center the Yellow Diagonal Lines on the Calibration Object

6. Hold down the left mouse button and drag the mouse to draw a rectangle around the calibration object.
7. Select the *Depth Confidence* tab.

8. Hold down the left mouse button and drag the mouse to draw a rectangle around the calibration object.

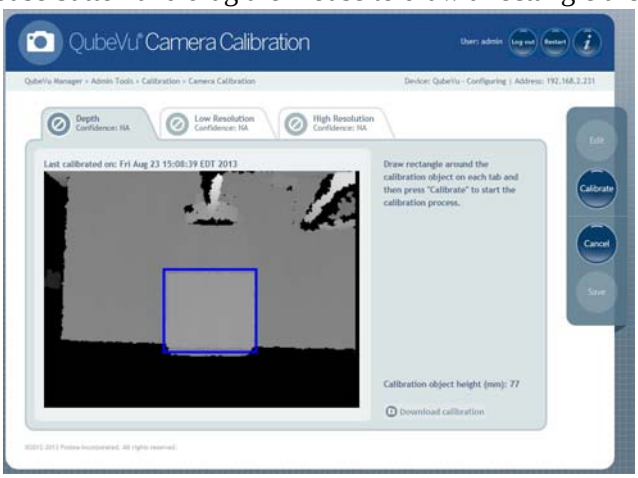


Figure 6-27. Draw a Rectangle Around the Calibration Object

9. Select the *Low Resolution* tab.
10. Hold down the left mouse button and drag the mouse to draw a rectangle around the calibration object.

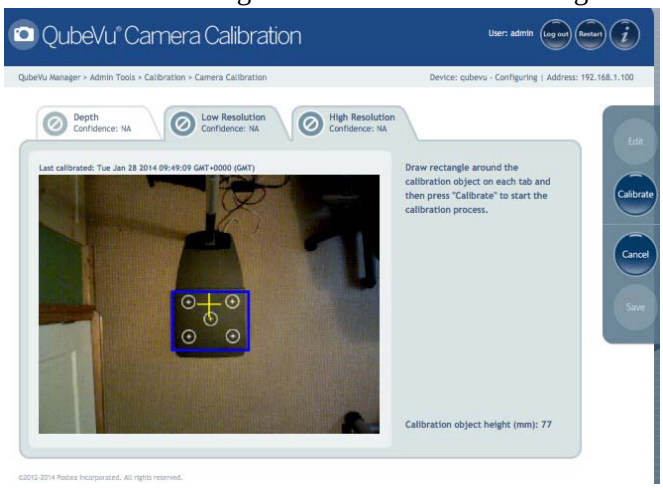


Figure 6-28. Draw a Rectangle Around the Calibration Object

11. Press **Calibrate**.

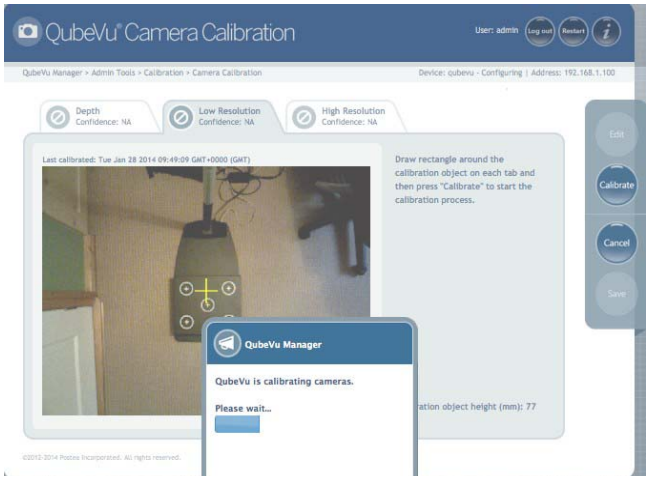


Figure 6-29. iDimension Camera Calibration

12. All three tabs must show the green check mark for the calibration to be successful. Review each tab to ensure that the calibration object was successfully captured and no other object has mistakenly been placed in the view of the cameras. Press **Save** to save these settings. The unit will automatically restart to apply the camera calibrations.

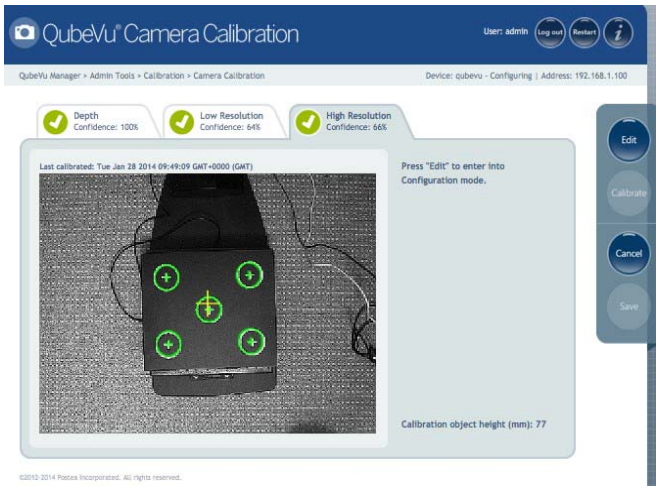


Figure 6-30. Calibration Successful

Calibration not Successful

The calibration was not successful if any of the tabs show the orange warning sign. Try re-drawing the rectangle on the *Depth*, *Low Resolution* and *High Resolution* tabs. Calibrate again until all three tabs have the green check mark symbol.

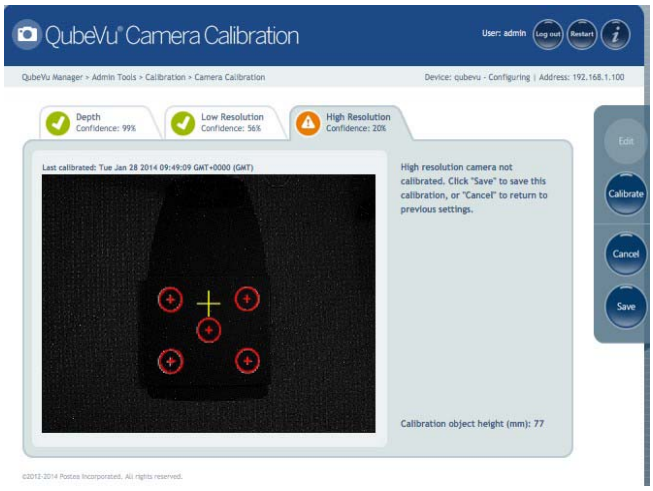


Figure 6-31. Unsuccessful Calibration

If the calibration is still unsuccessful, check the camera exposure settings and adjust the exposure to optimize the quality of the images. Use the “Best Exposure Setting” procedure to let the system automatically determine the best exposure settings for the environment. See the Setup Guide for instructions on how to adjust the exposure.

6.4.6 Capture Definitions

Users may create capture definitions with external triggering or modify the autotrigger capture definitions for automatic triggering as required. Changing the capture definition, or defining a new capture definition, is done by programmers when integrating with a client application.

Automatic Triggering

iDimension will dimension and capture the image(s) when it detects that an item has been placed under the scan head and there are no impeding conditions such as movement or unstable scale readings. The capture definitions that control what gets captured are autotriggerflat and autotriggerparcel depending on the height of the item. Autotriggerflat is used for items with a height less than the flat/parcel threshold, while autotriggerparcel is used for items with a height greater than the flat/parcel threshold.

Manual or External Triggering

iDimension will dimension and capture image(s) when the capture method is implemented, it detects that an item has been placed under the scan head and there are no impeding conditions such as movement or unstable scale readings.

This is similar to automatic triggering with the addition of requiring the capture method to be called by the client application.

The capture definition that controls what gets captured is specified as a parameter to the capture call in a client application.

A capture definition is used to describe the process that will apply to an item after it has been detected.

The following processing options can be applied:

- Dimensioning
- Low resolution image
- High resolution image
- Bar code recognition

There are four predefined profiles, but it is possible to create new ones depending on the application processing requirements.

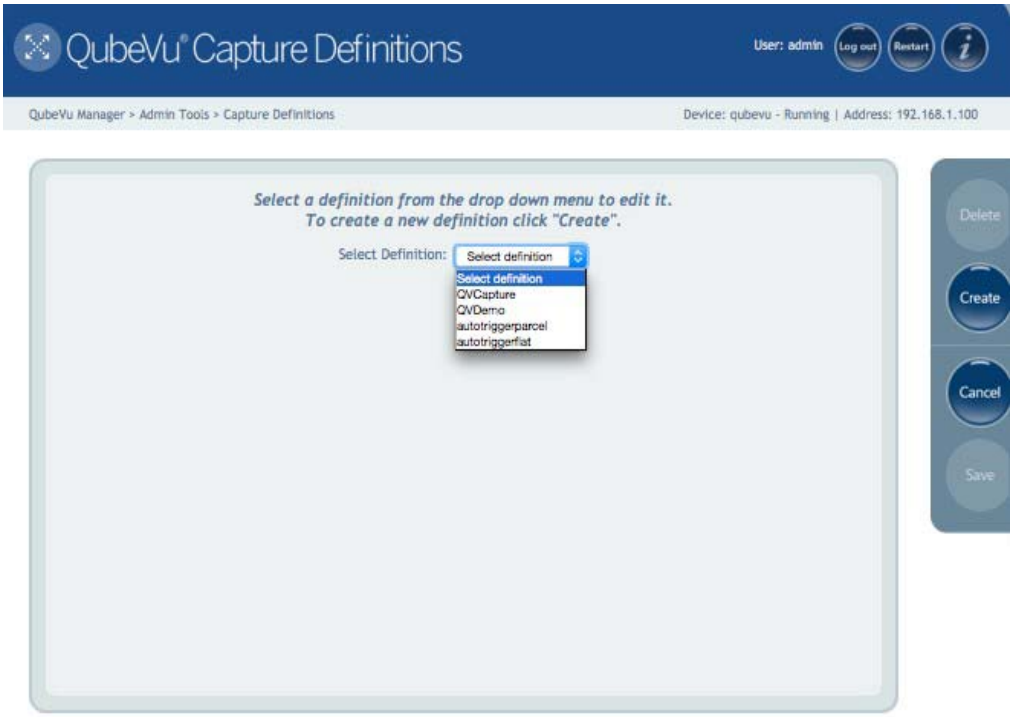


Figure 6-32. Capture Definitions Menu

Capture Definition	Use
autotriggerflat	Used for items with a height less than the flat/parcel threshold when automatic triggering is enabled.
autotriggerparcel	Used for items with a height larger than the flat/parcel threshold when automatic triggering is enabled.
QVDemo	Used when **Capture** button is pressed in QubeVu Manager Demo.
QVCapture	Used when Scan button is pressed in capture application.

Table 6-21. Pre-Defined Capture Definitions

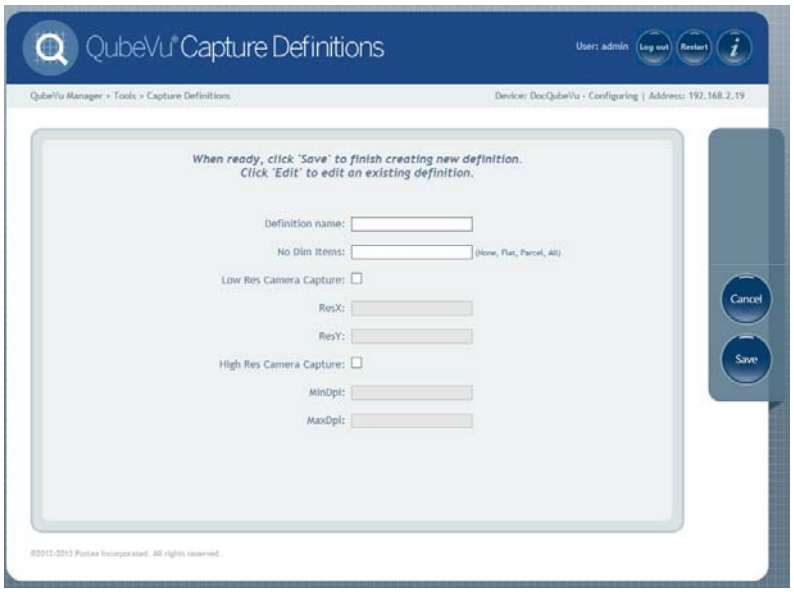


Figure 6-33. Capture Definitions Menu

Definition Name	Enter the name you would like to assign to this definition.
No Dim Items	This field defines the items that will NOT be dimensioned. Valid Values: None - All items are dimensioned Flat - Do not dimension flats Parcel - Do not dimension parcels All - Neither flats nor parcels are dimensioned
Low Res Camera Capture	If checked, it will create a low resolution camera image. ResX and ResY are, respectively, the desired width and height of such image (in pixels). For example, 640 x 480.
High Res Camera Capture	If checked, it will create a high resolution camera image. These images will be such that they scan the top surface of the object with a resolution that is comprised between MinDPI and MaxDPI (dots per inches). MinDPI - The high resolution image captured will be at least MinDPI in resolution. MaxDPI - The resolution of the high resolution image captured will be capped at MaxDPI. In some cases, the actual resolution may be somewhat higher than MaxDPI due to the coarse resolution of the zoom.

Table 6-22. Capture Definitions

6.5 Firmware Upgrade

Rice Lake Weighing Systems will notify customers of any firmware upgrades. Releases will be available for download. The firmware release must be downloaded to one of the following three media types before it can be uploaded to *QubeVu Manager*:

- USB Drive
- Network Share
- Local File

Upgrade Firmware

1. Log on to QubeVu Manager *Tools.*
2. Select the Firmware Upgrade tool.

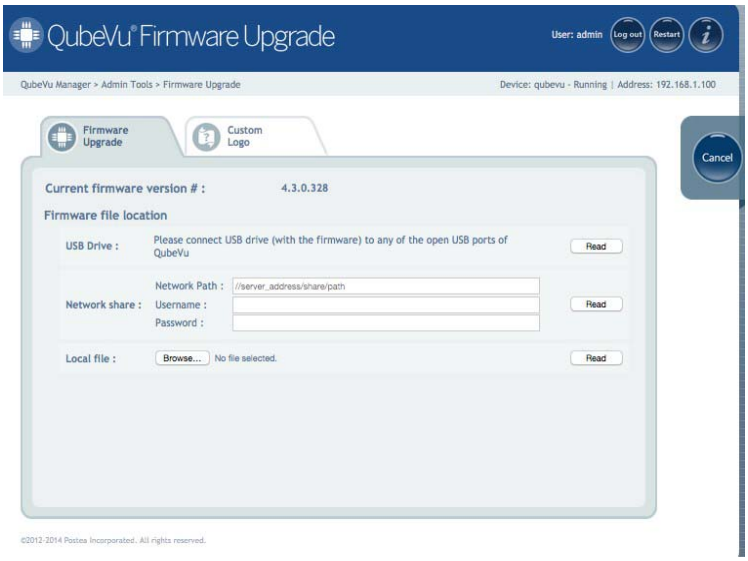


Figure 6-34. Firmware Upgrade Tool

3. Select **Read** to read the USB drive.

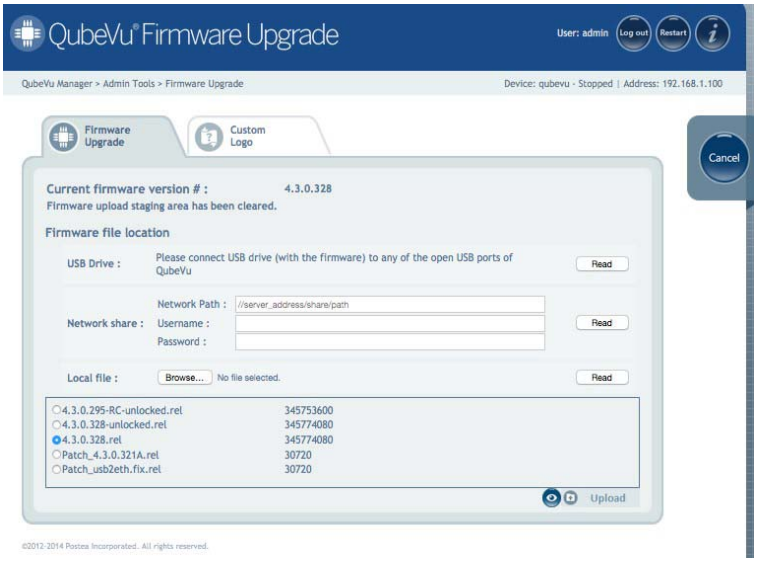


Figure 6-35. Select Firmware Version

4. Click **Upload**. The firmware upgrade process will first copy the update file to the embedded processor. It is recommended not to interrupt the upload process. There will be one more opportunity to stop the firmware upgrade process if desired.

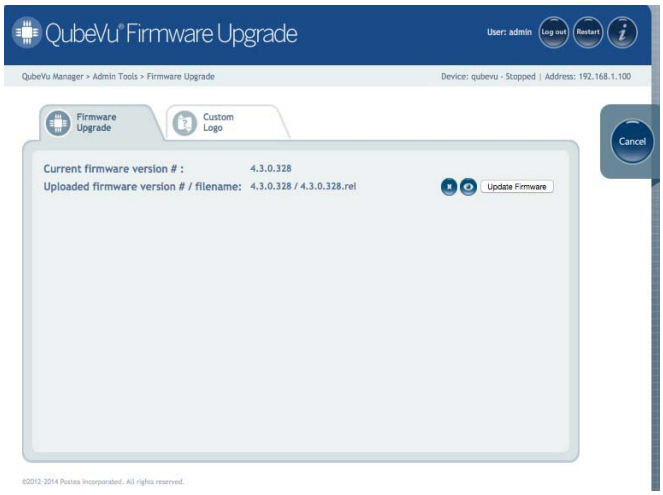


Figure 6-36. Review the Firmware Version Number

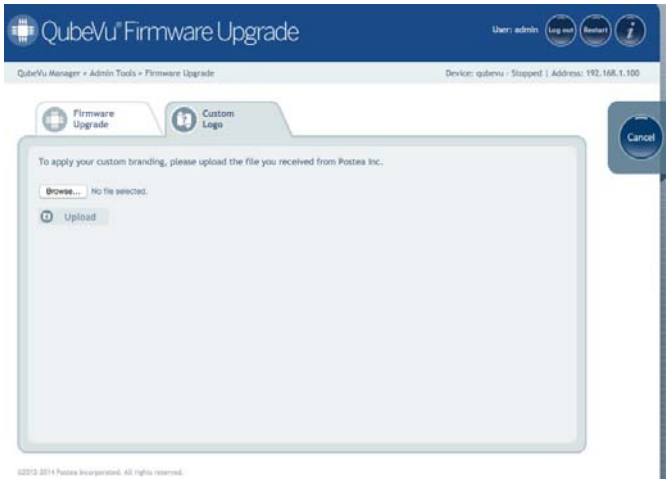
5. Select **Update** to complete the upgrade process, or **Cancel** to cancel the upgrade process.
6. Confirm the update. After selecting **OK**, wait until the firmware upgrade has been completed.

Important ***Stopping the process at any time is not recommended and may cause problems with the device.***

7. *iDimension* will automatically restart to complete the upgrade. While restarting, the QubeVu Manager user interface cannot be displayed; an error may display in the browser.
8. Close the browser window.
9. Restart the browser window and enter the IP address or host name in the address bar.
10. Wait for the unit to show *Running* before running QubeVu Manager or any client application.

6.5.1 Custom Logo

The QubeVu Manager interface can be customized with a company logo. To prevent inappropriate use, the logo file must be pre-approved. Please contact Rice Lake Customer Support to use this feature.



6.5.2 Backup

Use the backup function to create a saved backup file of all settings. While there will always be a factory calibration file, it is recommended that a full backup is done after the initial setup of the system.

The backup file is saved to the computer as an XML file.

Figure 6-37. QubeVu Backup/Restore Screen

1. Select **Backup** from the *Admin Tools* main menu.
2. Press Back up to begin the backup process.
3. Look to the bottom of the window for the file-save dialog box. To proceed with the backup, select **Save As** to customize the file name and save location.

4. When the backup is complete, confirmation will display.

6.5.3 Restore

Use the restore function to restore the factory calibration file or to restore from a saved backup file.

Figure 6-38. iDimension Backup/Restore Screen

1. Select Restore all to begin the restore process.

2. Select **OK** to restore all settings from factory calibration, or select **Browse** to restore all settings from a previously saved backup file.

6.6 Diagnostics

QubeVu Manager provides a complete set of diagnostic tools. These tools can be used to test hardware components and gather diagnostic information.

6.6.1 Component Test

1. Click on **Test All** to test all hardware components. Hardware components can be tested individually by clicking on the **test** button beside each component.

Figure 6-39. Component Test

2. The status of each individual component is returned as either passed or failed. Further test results can be viewed by clicking **View Details**. Component failures should be reported to Rice Lake Customer Support.

Figure 6-40. Test Results

6.6.2 Scale Test

The Scale Test Tool is used to help determine the communication settings of a serial scale attached to the system.

1. Select the Serial Port and Scale Type from the drop down lists.
2. Click the play icon to start the test.

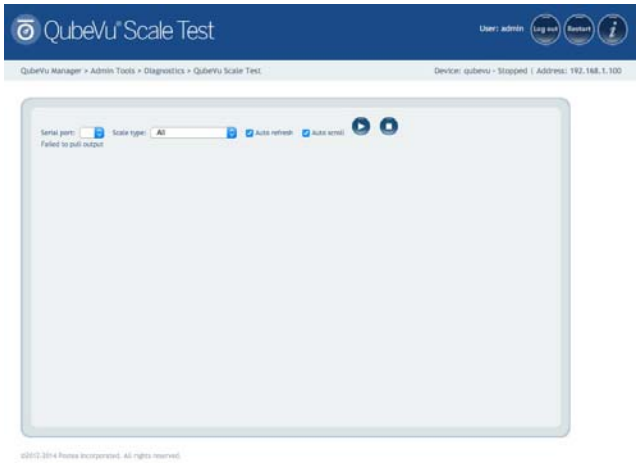


Figure 6-41. Scale Test

3. If a valid scale is detected the output will display the scales communication parameters.

Figure 6-42. Scale Communication Parameters

6.6.3 Back Focal Distance Test

The Back Focal Distance test is executed during unit production.

6.6.4 System Log

The System Log displays system information, debug and error messages.

The log view can be customized by:

- Type: all, info, debug or error
- Order: Latest first or earliest first

The log can be manually refreshed by clicking **Refresh** or automatically refreshed by ticking the **Auto Refresh** box. To download the log to a CSV file, click **Download**.

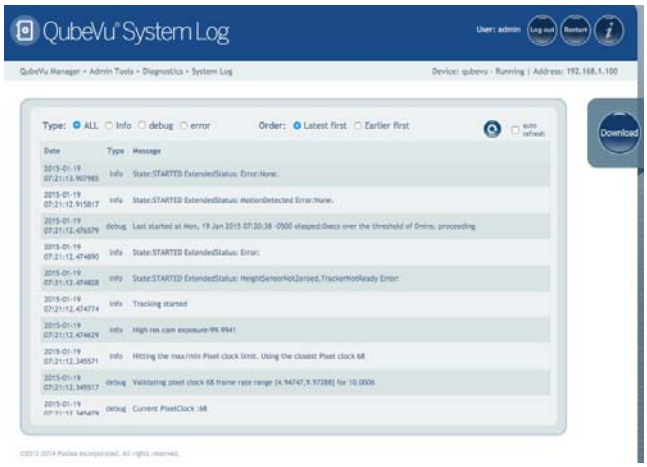


Figure 6-43. System Log

6.6.5 Debug Info

The Debug Info tool allows for the capture and download of a complete set of diagnostic data.

6.7 Inspector

Access the Inspector by selecting the **Information** button on any page of QubeVu Manager. A login is not required to view this information.

Figure 6-44. Information Panel

1. Click on the **Information** button.
2. From the Information panel, click on the **Inspector** button.

Device Information

Figure 6-45. Device Information Tab

The *Device Information* tab displays:

- Model
- Serial number of this device
- Certification number (the EC type-examination certificate number)
- Firmware version that is currently installed
- Firmware CRC number (the CRC checksum of the legally relevant part of the firmware) – this must match what is on the actual EC type-examination certificate.

Change Log

The *Change Log* will display changes to settings. Select a date range or view all changes that have occurred since *iDimension* was installed.

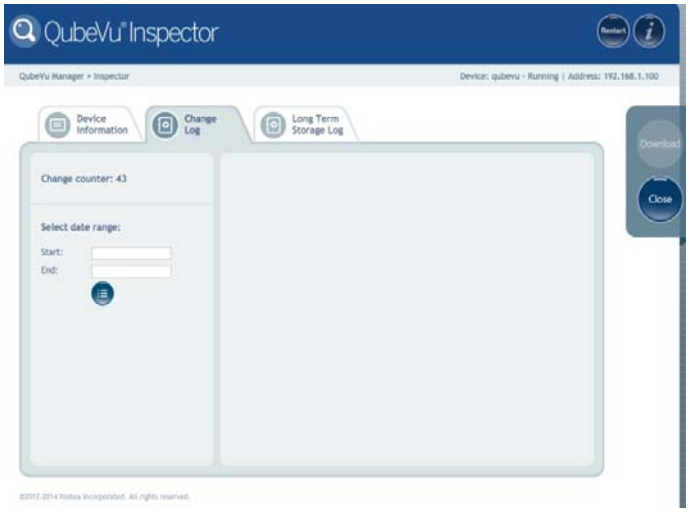


Figure 6-46. Change Counter

The Change Counter displays the number of changes that have been done within the selected date range.

1. To display all changes, press the **Search** button without entering a date range. To display changes within a date range, select a start and end date and press **Search**.
2. Use the scrolling buttons to scroll through the results.

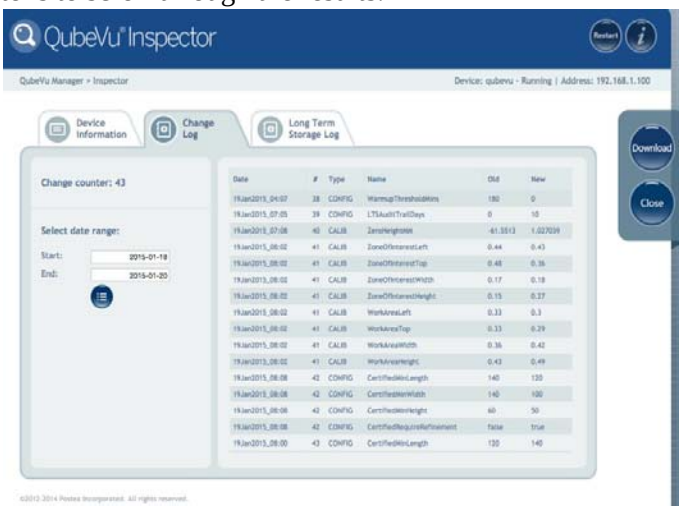


Figure 6-47. Scroll Through the Results

6.8 Long Term Storage

The Long Term Storage (LTS) feature is necessary to satisfy particular Legal For Trade requirements in certain jurisdictions. The measurement data stored in LTS contains all relevant information necessary to reconstruct an earlier measurement. The stored data is protected against accidental, unintentional and intentional changes, and can be authentically traced back to the measurement that generated them.

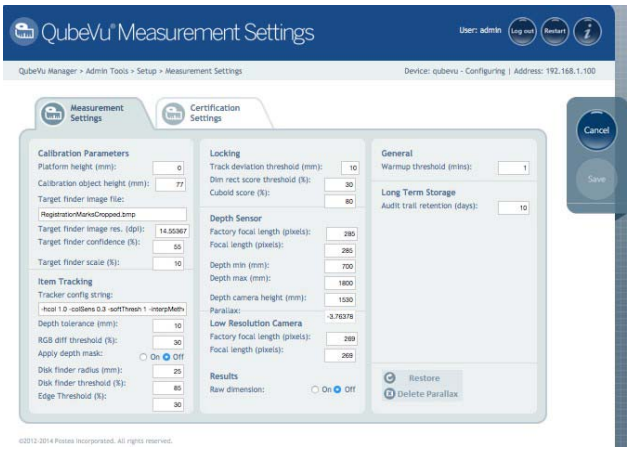


Figure 6-48. Long Term Storage

LTS is enabled from the *Measurement Settings Screen*. It is disabled by default with a zero value. To enable, enter the appropriate number of days and click **Save**.

Viewing Long Term Storage Data

LTS is viewed from the *Long Term Storage Log* in the Inspector.

The log is queried by specifying a start and end scan ID. To assist with this selection, the total number of entries is displayed, along with the first and last scan IDs. Enter the scan ID range and click **Search**.

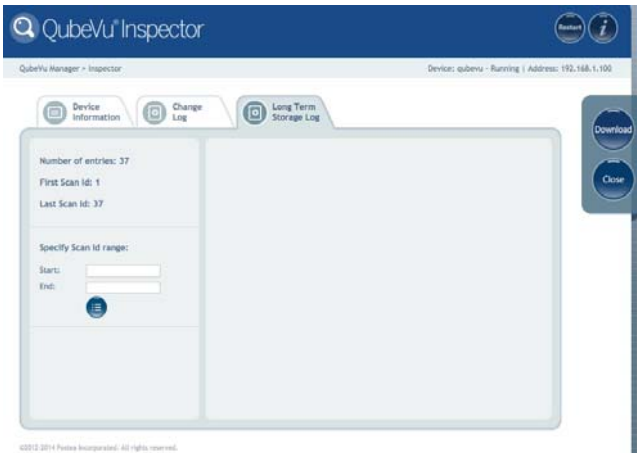


Figure 6-49. View Long Term Storage Data

Use the scrolling buttons to scroll through the results. The log can be exported to a CSV file using the **Download** button.

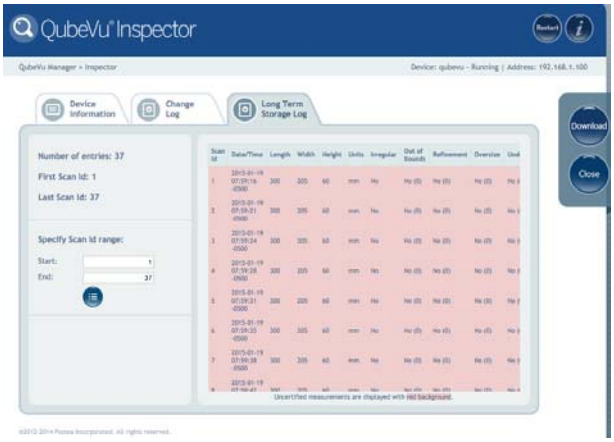


Figure 6-50. Scroll Through the Results

6.9 Manager's Guide Appendix

Performing a Factory Calibration

1. If using a scale, remove the scale from the base plate.
2. Place the calibration object directly onto the base plate.
3. Delete the current calibration file.

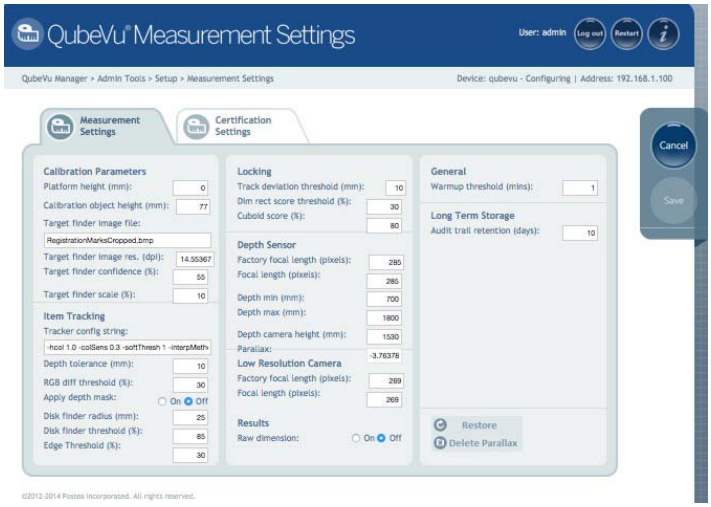
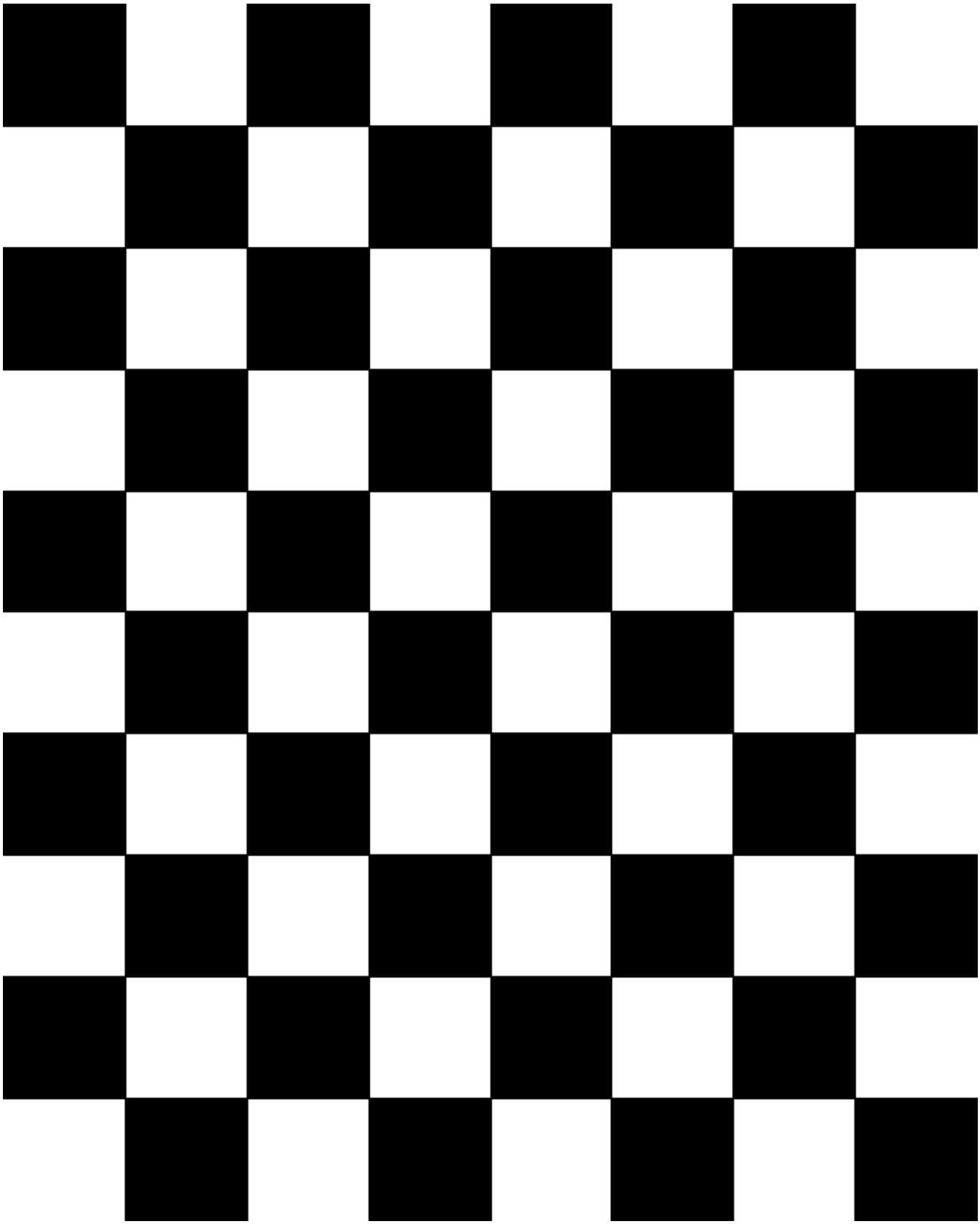


Figure 6-51. Measurement Settings

4. Click on the **Delete Parallax** button.
5. Use the **Restore** function to restore from the factory settings.
6. Re-calibrate the cameras (without the scale in place) and define the Work Area and Zone of Interest.
7. If working with a scale, put the scale back in place. Re-calibrate a second time to complete the factory calibration process.

6.10 Test Pattern for Image Quality

Print the next page for testing image quality.



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