



TouchScope

Software User Manual

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I. Introduction

1.1 Overview

TouchScope is a special software of microscope system that applied to Android platform. Using this software, you can finish the image capture, dynamic image calibration and measurement.

1.2 Main Function

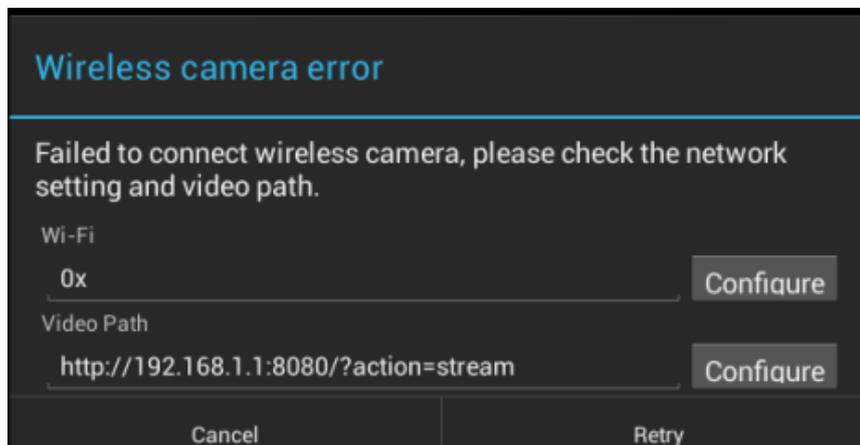
The main function of software as follows:

- 1) Real-time image preview.
- 2) Image effect adjustment.
- 3) Capture image.
- 4) View the captured images.
- 5) Real-time measurement.
- 6) Support Wi-Fi cameras.

II. Operate TouchScope

2.1 Start Application

1. Click the desktop icon  to launch TouchScope.
2. If you bought our wireless camera or microscope product, TouchScope will prompt error as below when launch TouchScope first time:

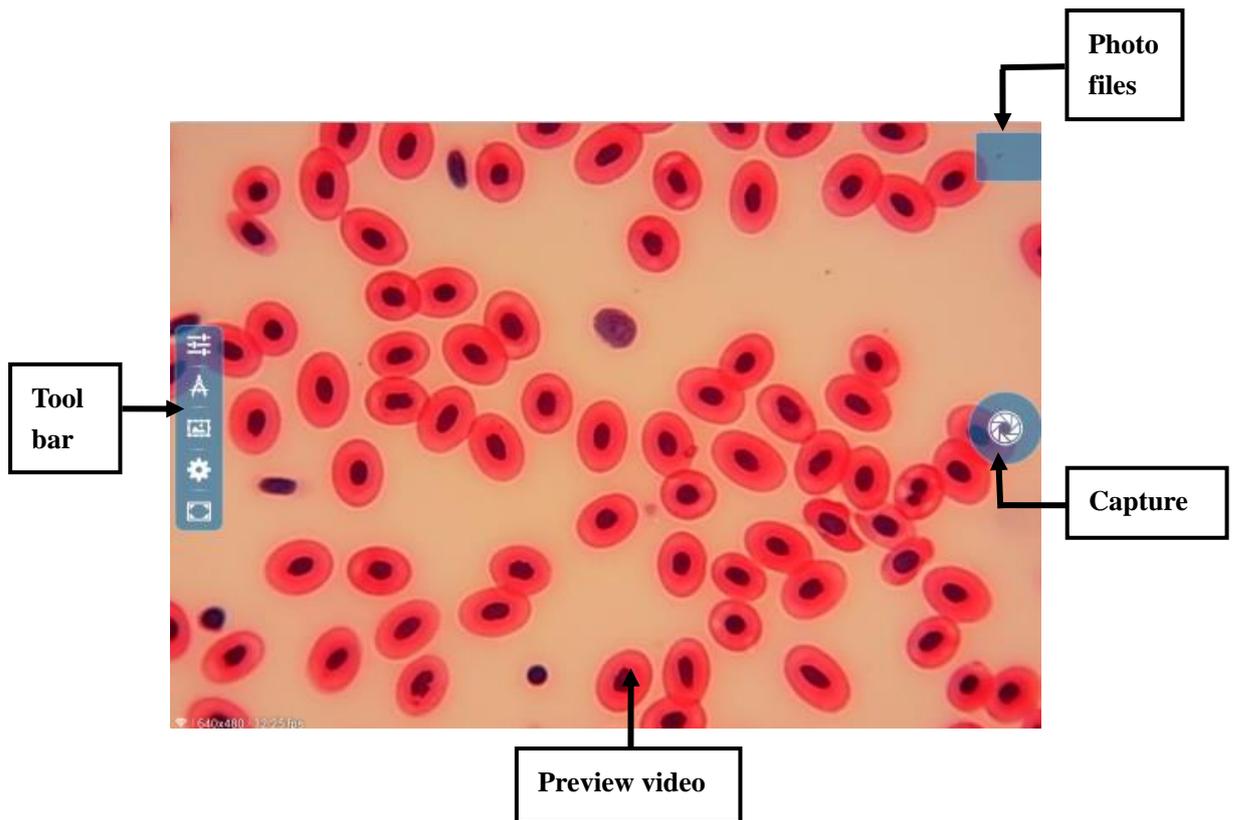


Click first configure button to set wireless network, connect to Camera's Wi-Fi access point.

Model	SSID name	Password
DN-107W/DN-10W	Netcam012	
DP6	DP6/CHD_**:**:**	12345678

Click second configure button, select wireless camera type at “setup network cameras” section.

3. the main interface of software shown as below:

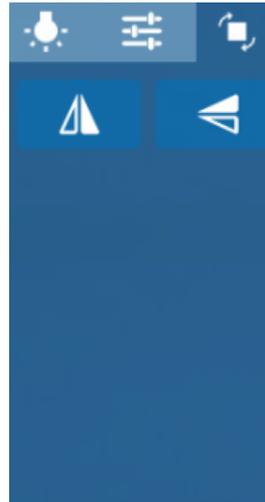


2.2 Capture

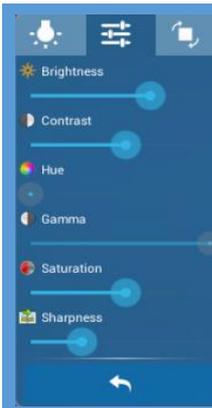
Icon	Instruction
	Click capture icon, start to capture and display image on the photo viewing thumbnails

2.3 Color Adjustment

Click button , pop-up function box:



Icon	Instruction
	<p>Click this button, software will do white balance.</p>
	<p>Color Temperature: Adjust the color temperature of camera.</p> <p>R Gain: Red gain control. Drag the bar and increase or reduce the red gain of video.</p> <p>G Gain: Green gain control. Drag the bar and increase or reduce the green gain of video.</p> <p>B Gain: Blue gain control. Drag the bar and increase or reduce the blue gain of video.</p>



Brightness: Adjust the brightness value of the video.

Contrast: Adjust the contrast value of the video.

Hue: Adjust the hue value of the video.

Gamma: Adjust the gamma value of the video.

Saturation: Adjust the saturation of the camera.

Saturation is a measurement of a color's pureness and brilliance.

Sharpness: Adjust the sharpness of the camera.

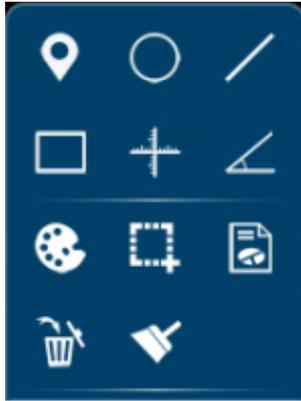


Flip: Click the button of “” and “”, Video picture flip consists of Mirror and flip

2.4 Calibration and Dynamic Measurement

TouchScope provides varieties of measurement tools and supports calibration and dynamic measurement. **Before measuring, please do calibration.**

Click , unfold a control panel of measuring tool:



Icon	Instruction
	Spot measurement
	Circle measurement
	Line measurement
	Rectangle measurement
	Cross measurement
	Angular measurement
	Tool for modifying the color and thickness of lines and tag text.
	Export graphics to image
	Export graphic data to form
	Delete the selected measurement graphic
	Delete all measurement graphics

(Click the button again and hide measuring tools)

When measuring, it is recommended to use the mouse to stretch and drag the lines. Please do the specific setting as follow:

Click , enter the setting interface of software:



As shown in the red box, check the mode of using mouse, which is

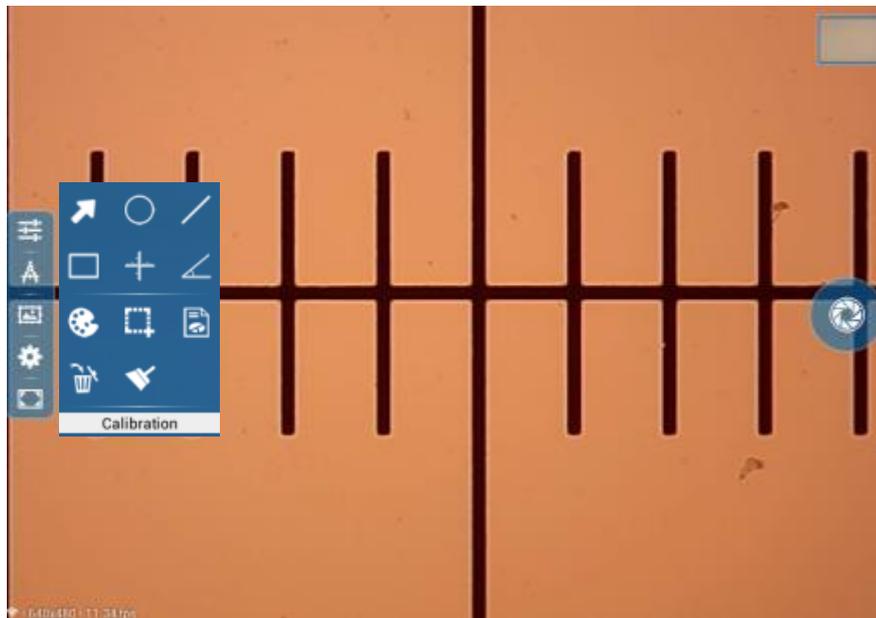
a convenient way to measure. The measurement data will be more accurate.

A. Calibration

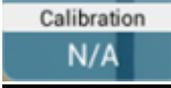
Before measuring, please do calibration.

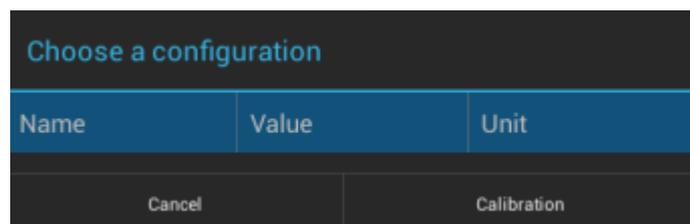
Here the objective is 10X and the unit of micro ruler is 0.1mm.

1. Put a micro ruler on the stage of microscope. Select the objective (here is 10X), focus the microscope, and make the micro ruler display clearly on the screen.

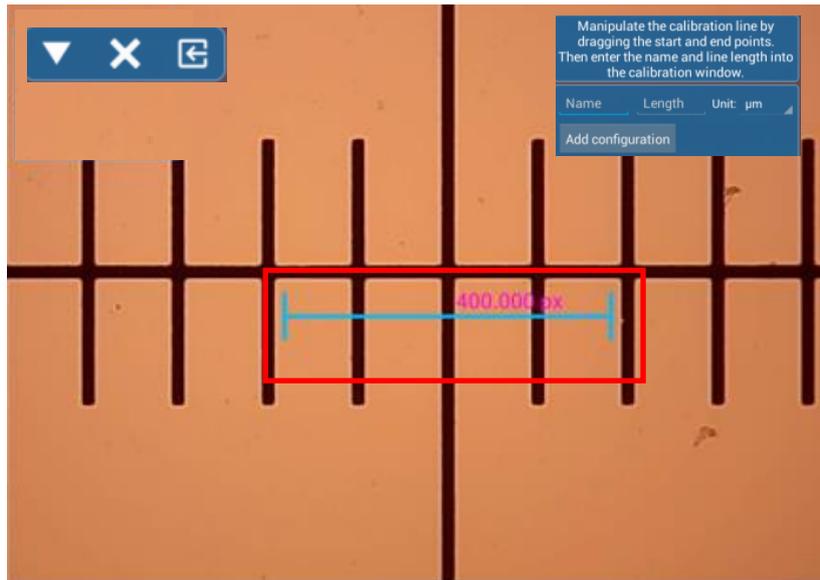


2. Set calibration value

Click button  , pop up a box:

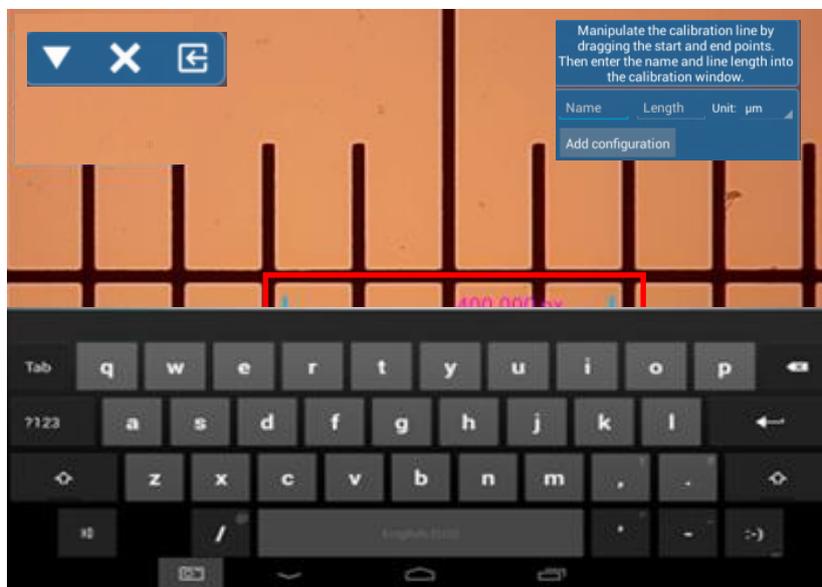


Click “”:

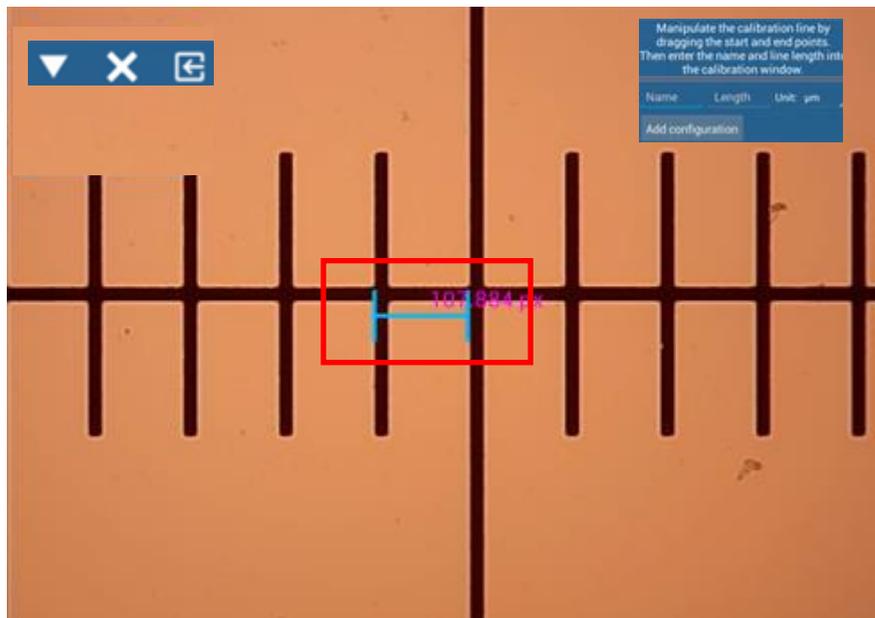


Icon	Function
  	<p> : Click this icon, it will unfold the list of calibration.</p> <p> : Click this icon, it will delete the selected calibration.</p> <p> : Click this icon, it will back to home page.</p>
<p>Manipulate the calibration line by dragging the start and end points. Then enter the name and line length into the calibration window.</p> <p>Name <input type="text"/> Length <input type="text"/> Unit: μm </p> <p>Add configuration</p>	<p>By dragging two endpoints of calibration scale to limit scale length, and then fill in the actual line length, the name of the unit, then click “add configuration” button. As shown in the figure below.</p>

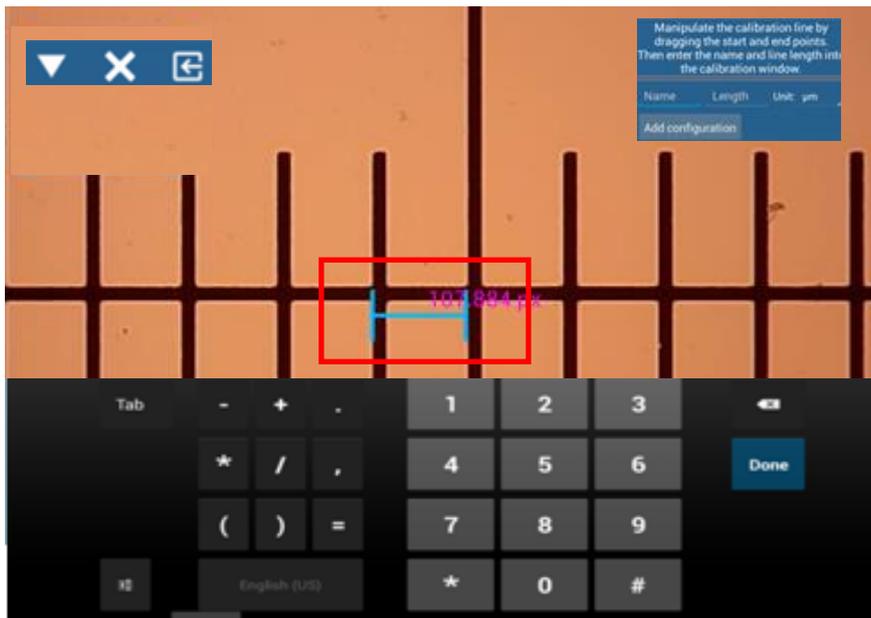
Enter the name of the calibration item, pop up a box:



After input the name, hide keyboard. Move the line by mouse and set the starting point.



Enter the physical length of this line.



Click **Add configuration**, save the result of calibration.

Then click return key, back to the video.

B. Line measurement

Click the icon  on the control panel.

Select the line on the video, move line, click one side of line and adjust the start point and end point of line. Then click **Calibration**  , loading the calibration,

Choose a configuration		
Name	Value	Unit
dr	2.5E-4	mm/Pixel
Cancel		Calibration

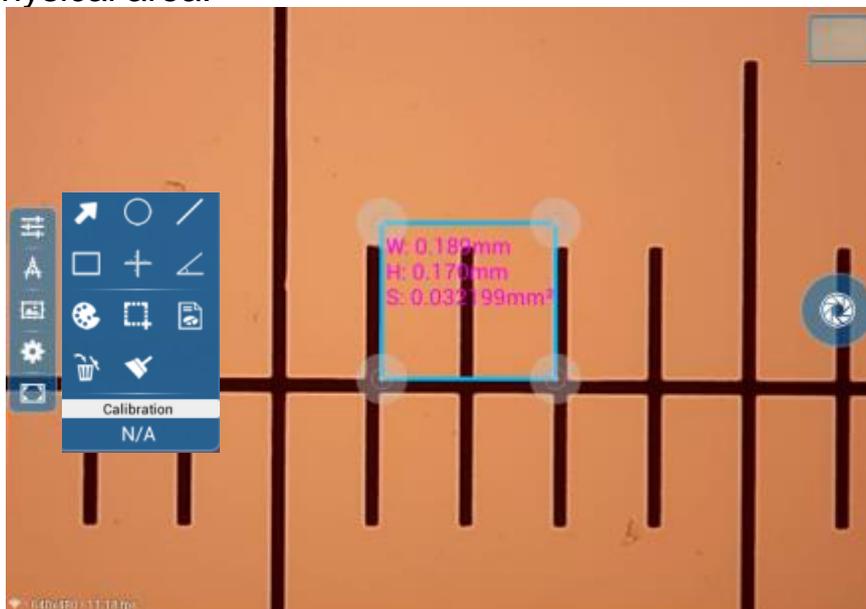
Now the measurement value will display on the screen.

Here the length is 0.295mm. It is matched with the physical length.

C. Rectangle measurement

Click the icon  and display the Rectangle tool on the screen. Click the center of Rectangle can move Rectangle. Click four corners of rectangle can adjust the size of rectangle. Then the length, width and area of rectangle will display on the screen.

As shown in the below, area is 0.032199mm^2 , which is matched with physical area.



D. Reticle ruler

Click the reticle button. There will be a reticle tool on the image, click the center of the reticle with the mouse, there will be a little white cursor in the center of the reticle, drag the cursor, the reticle will move.



E. Angle measurement

Click the button  can finish the angle measurement. Choose an end of one line of angle, then drag and change the shape of angle. Choose the whole point of graphic can move it.

F. Property of ruler

Click the button , there are many tools to modify the color, line width and text size of ruler. As shown in the below:



Click the color selection bar, pop up a box:



Click and choose one color you wanted on the annulus. Then click inner circle and you can get the chose color successfully.

Click the button  , add the width of line.

Click the button  , minus the width of line.

The way to change the color and size of text is the same as the way to change line.

G.  Export the graphic to image

Click the button  can export the graphic to image, then Save as

JPEG format.

H.  Export the graphic data to form

Click button  can export the graphic data to form. As shown in follows:

Measurement results								
Unit:px 								
No.	Center	Diameter	Area	Length	Width	Height	Angle	Distance
0	(50.0,50.0)		10,000.00		100.00	100.00		
1	(637.0,493.9)	160.00	20,106.19					
2	(50.0,50.0)			141.42				

Click the button  can save the form to storage. Then Save as .xls format.

I.  Delete the selected graphic

Click button  can delete the selected graphic.

J.  Delete the all graphics

Click button  can delete all graphics.

2.5 Display / Hide Photo Files

Click button  can display or hide the photo files on the upper right of video.

2.6 Software Setting

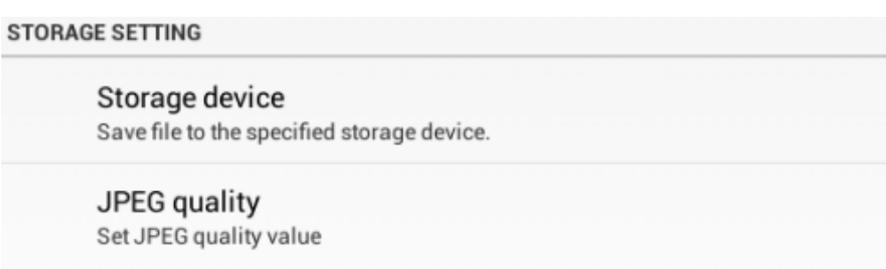
Click button , pop up a box to set software.

1. The IP address of wireless camera

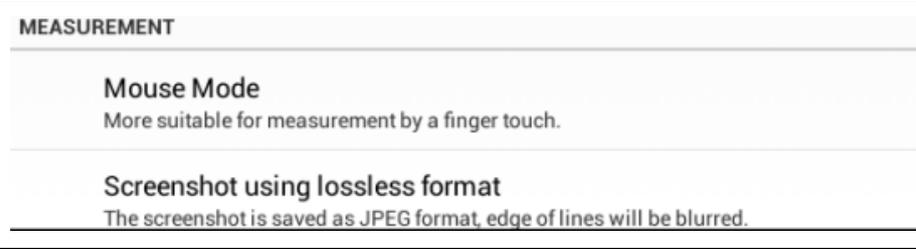
<p>Control panel</p>	<p>NETWORK CAMERA</p> <hr/> <p>Enable Enable network camera.</p> <hr/> <p>Setup network cameras Select the network camera type, and set the corresponding parameters.</p>
<p>Function</p>	<p>◆Enable network camera : connect the wireless network of network camera, check enable network</p>

	<p>camera.</p> <p>◆ Setup network cameras: Click this list, enter the interface of network name and choose the name of camera.</p>
Initial Set	<p>◆ before using wireless device, please choose to connect the corresponding wireless network.</p>

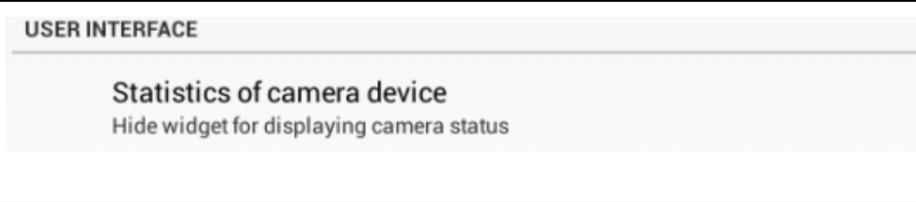
2. Storage

Control panel	 <p>The screenshot shows a 'STORAGE SETTING' menu with two main options: 'Storage device' (Save file to the specified storage device.) and 'JPEG quality' (Set JPEG quality value).</p>
Function	<p>◆ Storage device: Choose the storage path of image and video. This is a dynamic storage. When insert USB storage or SD card, which names can be shown in the storage path option..</p> <p>◆ JPEG quality: Inferior quality (50%), medium quality (70%), high quality (80%), ultra quality (90%)</p>
Initial set	<p>◆ Choose different storage path to save files.</p> <p>◆ The compression quality of software is medium quality (70%)</p>

3. Measurement

Control panel	
Function	<ul style="list-style-type: none"> ◆ Mouse mode: check the mouse mode, which is convenient to measure. The measurement value will be more accurate. ◆ Screenshot using lossless format: the screenshot is saved as JPEG format, edge of lines will be blurred
Initial set	<p>When measuring, it is more advantageous to improve the accuracy of measurement after choosing the mouse mode.</p>

4. User interface

Control panel	
Function	<ul style="list-style-type: none"> ◆ Statistics of camera device: Check this state can show the state of network, preview resolution and video frame rate on the video .
Initial set	<ul style="list-style-type: none"> ◆ the default of state is on.

5. About

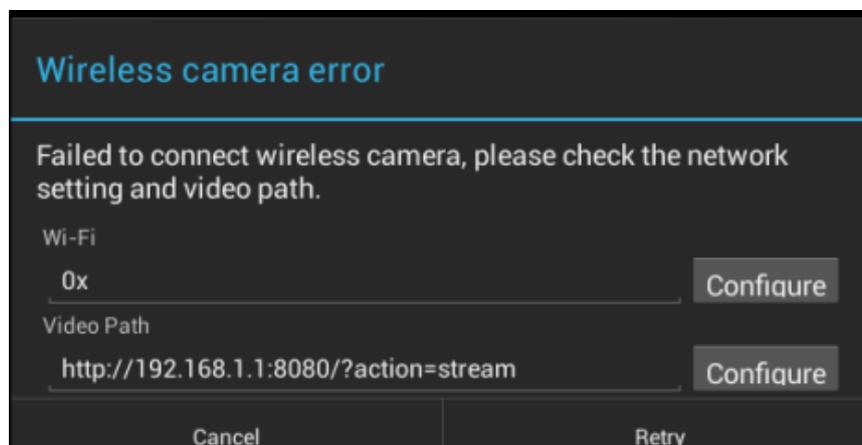
Control panel	<p>OTHER</p> <hr/> <p>Help Open user manual.</p> <hr/> <p>About About this Application.</p>
Function	<ul style="list-style-type: none"> ◆ Help: click this and open user manual. ◆ About: software version
Initial set	<ul style="list-style-type: none"> ◆ The update vision of software will be pushed for users.

III. Common Failure and Solution

3.1. Can't connect wireless camera

Phenomenon:

When opening the software, popping up a box “Wireless camera error”. As shown in follows:



Causes:

There is not a valid network can be used.

Solutions:

- 1) Check that if there is a power supported for the head of microscope. You can use a power adapter our company supplied connects the socket at the head of microscope with a power supply board.
- 2) Opening the network of android system, then connect Wi-Fi, which name is Netcam012 or DP6.