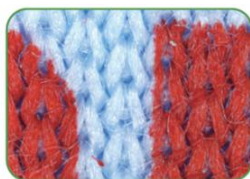


DM022B User Guide

2 Mega Pixels USB Digital Microscope with polarizer



Papter Detection



Textile Detection



Skin Detection



PCB Board Detaction

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Welcome

Thank you for purchasing the USB Digital Microscope. This digital microscope is highly useful for students, teachers, collectors, hobbyists, and testers etc to explore the microscopic world.

Please take a moment to read through this user guide. It will help you to get the best use of the smart microscope.

1.Precaution

Before using the Digital Microscope, please ensure that you read and understand the safety precautions described below. Always ensure that the Digital Microscope is operated correctly.

- Do not attempt to disassemble any part of this product.
- The Microscope is not waterproof, so keep it dry.
- Do not use it in a humid place like bathrooms. A dry environment will maintain its life to maximum.
- If the lens is dirty, please use a lens brush on soft cloth to wipe clean. Avoid touching it with your fingers. Exercise care to avoid scratching the lens.
- Sudden temperature change may fog inside the microscope like entering a warm room in the cold Winter. Put it inside a handbag or plastic bag to slow down temperature changes.
- Need to read digital microscope user guide before using and storing it.
- Use the Microscope only at -5°C to 50°C .

Notice:

The Digital Microscope have been tested for CE/FCC/RoHS certification.

2.Preparation

■ Package Contents



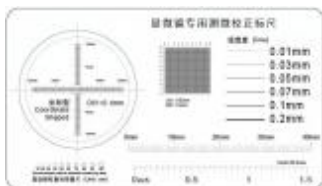
Microscope



Stand



USB cable



Calibration ruler



Quick Start Guide

■ **Parts Names & Functions**



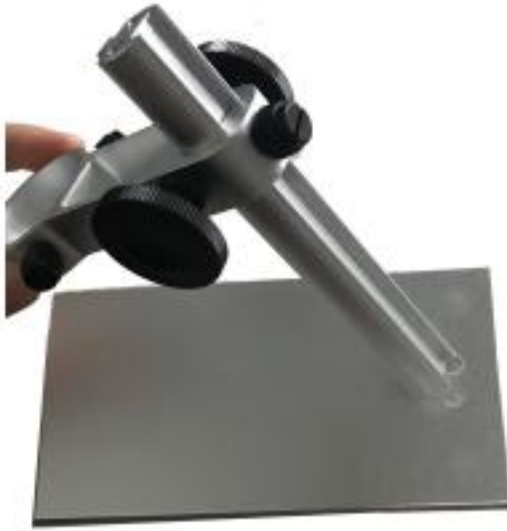
1	LED Dimmer	4	USB Output
2	Focus Wheel	5	Polarizer switch
3	8pcs SMT LED		

3.Specifications

- Image sensor : 2 Mega Pixels (**True resolution**)
- Magnification Ratio: 10x-200x (**Real magnification**)
- Photo resolution: 640*480/ 1280*720/ 1920*1080
- Video resolution: 640*480/ 1280*720/ 1920*1080
- PC interface : USB2.0
- Power source : 5V DC from USB port
- Light source : 8 LED (adjustable by control wheel)
- Object Distance: Manual focus from 0mm to 55mm
- User Guide:user guide available www.download-toproview.com
- Software: DigiCapture Pro with measurement and Four display concurrently
- Software available www.download-toproview.com
- OSD language : Chinese, English, Traditional Chinese, French, Italian, Japanese, Korean, Russian, Deutsch, Spanish, Portuguese, Dutch, Polish, Ukrainian, Lithuanian, Hungarian
- Operation system: Windows 7/8/10
 macOS 10.14 and later
 The software support plug and play
- Size: 218mm (L) x 156mm (W) x 87mm (H)
- Weight: 530g

4. Install the microscope into the stage

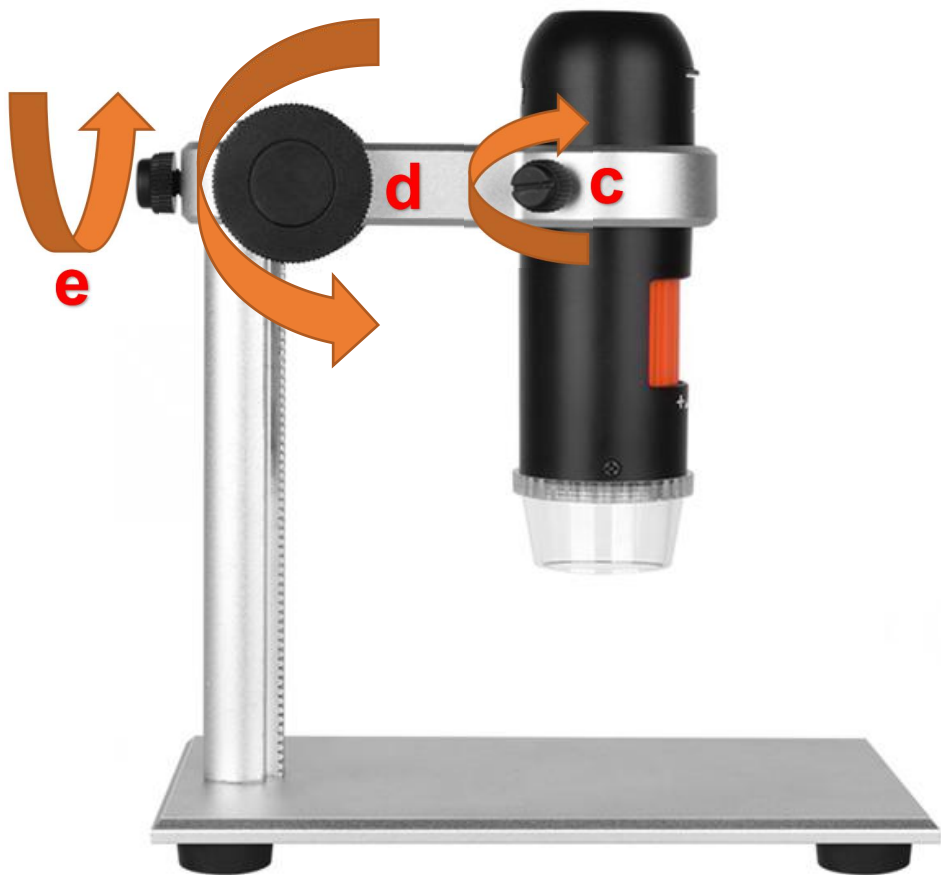
a. Install the metal pole upright into the base by the two screws (included in the package)



b. Put the microscope into the ring of the stand.



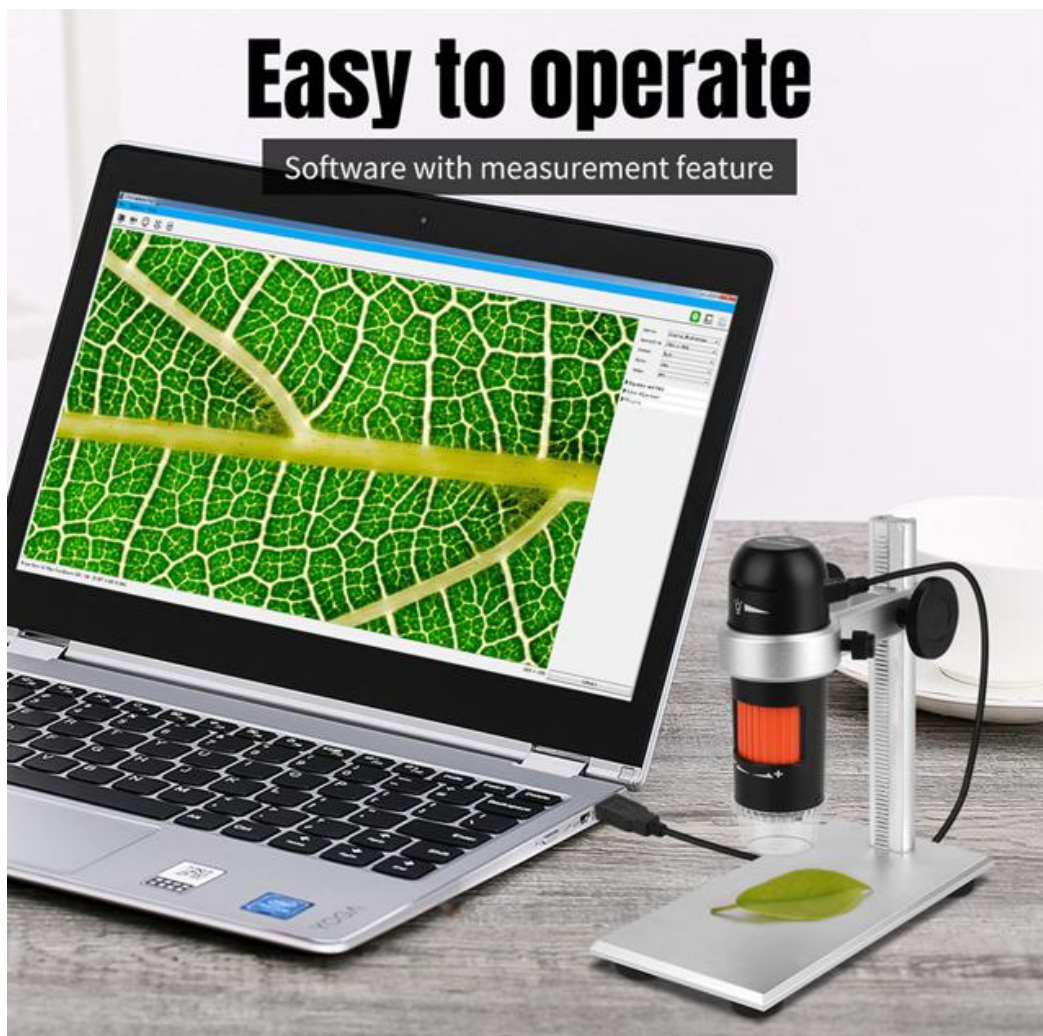
- c. Rotate the two knobs clockwise to tighten scope into the scope holder.
- d. Rotate the two knobs to Up/Down microscope focus.
- e. Rotate the knob to lock the Up/Down adjustment.



5.How to Use the Digital Microscope

■ Works on Computer by USB Connection

- a. Connect the microscope to computer by USB cable.
- b. Start DigiCapture Pro software, Please refer to **Part II** on 'DigiCapture Pro Software Introductions'



■ Adjust focus

After putting object on the observation pad and under the lens tube, you can rotate the Focus wheel to get fine focus.



Note: The closest distance of microscope and the object is 0mm, and the distance is 55mm. The magnifying time is the maximum when distance is 0mm, the magnifying time will be smaller as the distance increasing. Please adjust the appropriate height before focus adjustment.

■ LED Dimmer

You can rotate the LED Dimmer to adjust the brightness of LED lights while observe the object.



■ Polarized light adjust

This is the hot and new feature for this microscope.

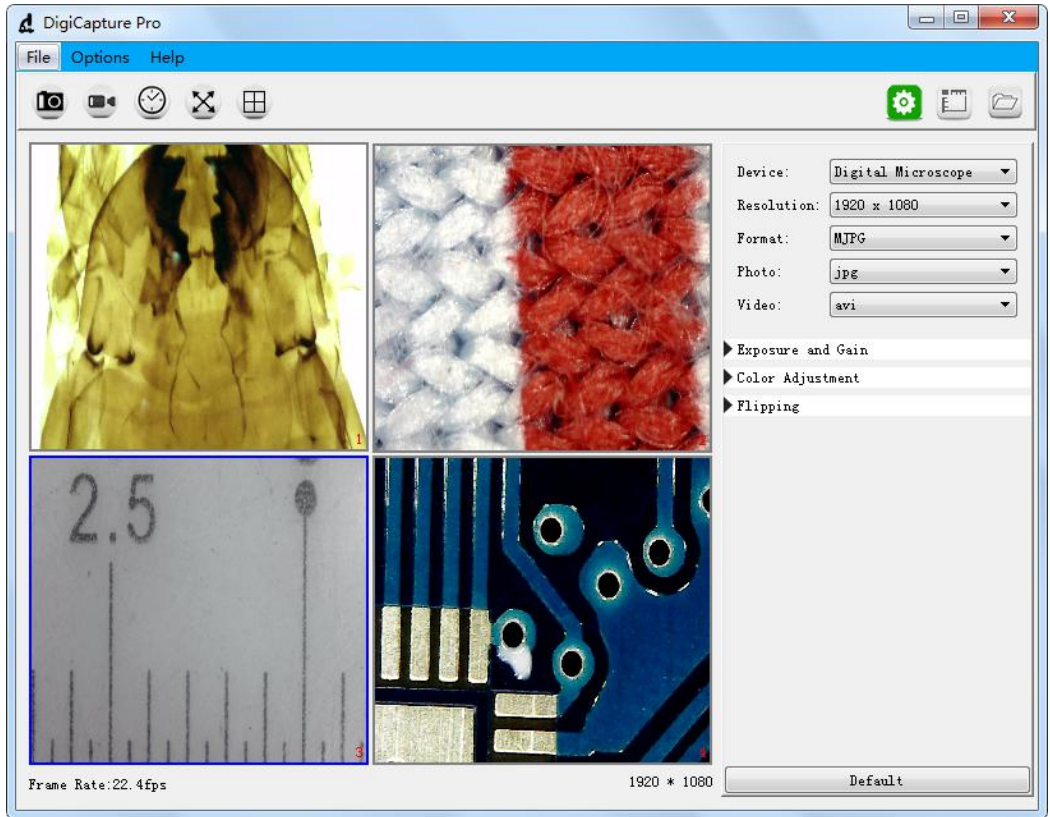
For some light reflecting object, like PCB, diamond, metal etc., you can rotate the polarizer switch while observing to reduce the light reflecting effect, and make the object more clear.

The polarizer switch can be adjust from left to right for 90-degree, when you rotate it from left to right, the reflecting light effect for the object will be increasingly smaller.



Part II DigiCapture Pro Software Introductions

Software name: DigiCapture Pro



1. Install the Software on PC (Win7/Win8/Win10)

After download the software, double click it to install DigiCapture Pro in your computer.


Note:

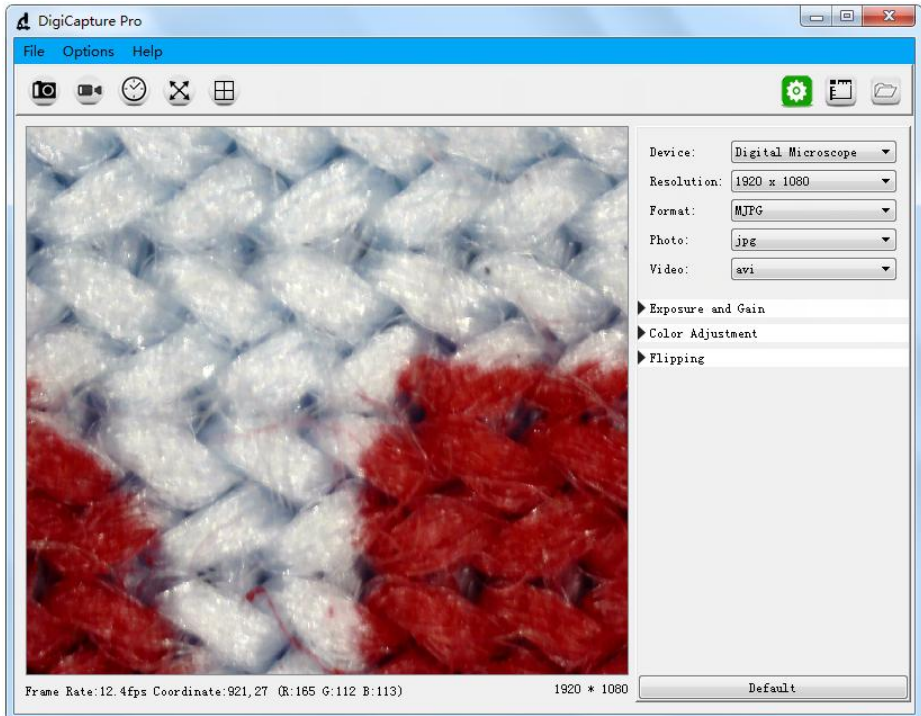
Please download the software from www.download-topreview.com or QR code as below:



2. Run Digital Microscope

Connect your Digital Microscope to your PC USB port, and double click

DigiCapture Pro icon  to run the software and you will see the following screen shown up.

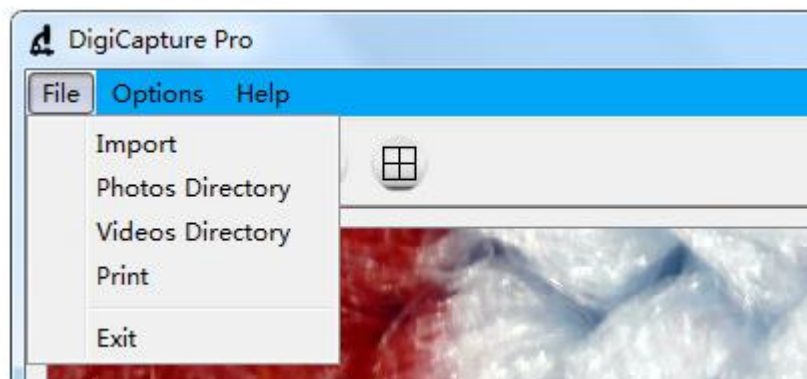


Note: When the Digital Microscope is disconnected from your PC USB port, the following message will shown up.

No device
detectde, Please
connect your
microscope to
your PC USB port
directly!

3. Main Menu

3.1: File



Import: Import photos or videos

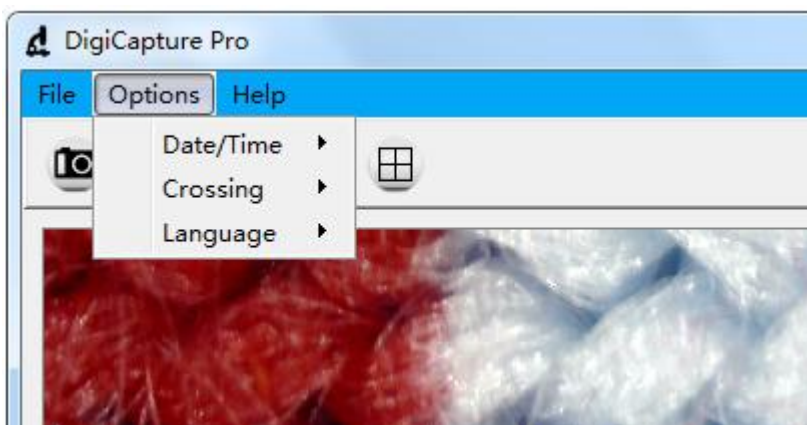
Photos Directory: set the store directory for the photo you taken

Videos Directory: set the directory to store video taken

Print: Print current image

Exit: Exit the software

3.2: Options

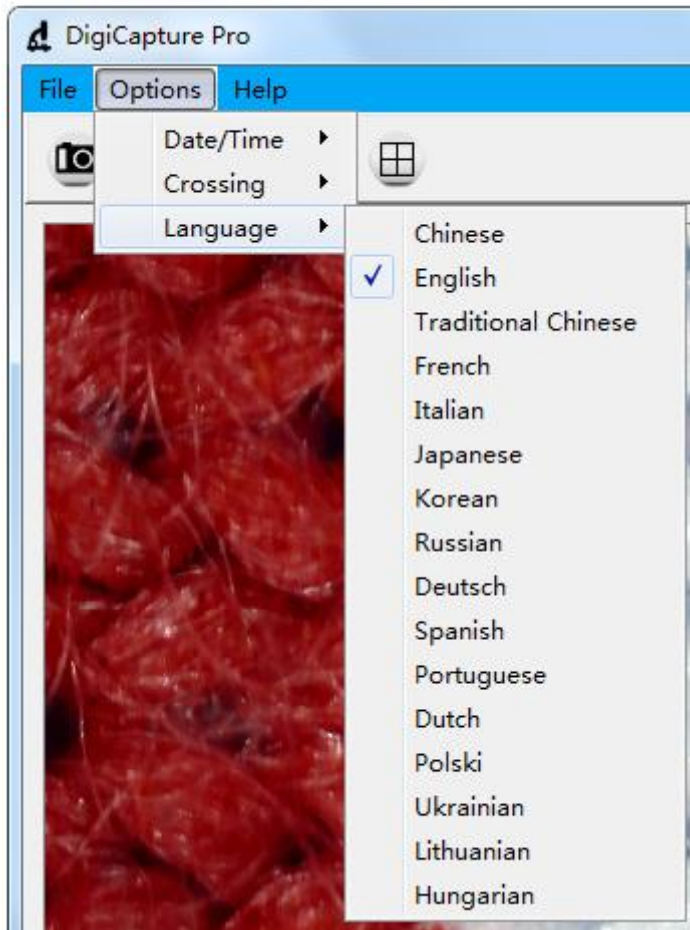


Date/Time: set the display system date/time on preview window

Crossing: display cross on preview window

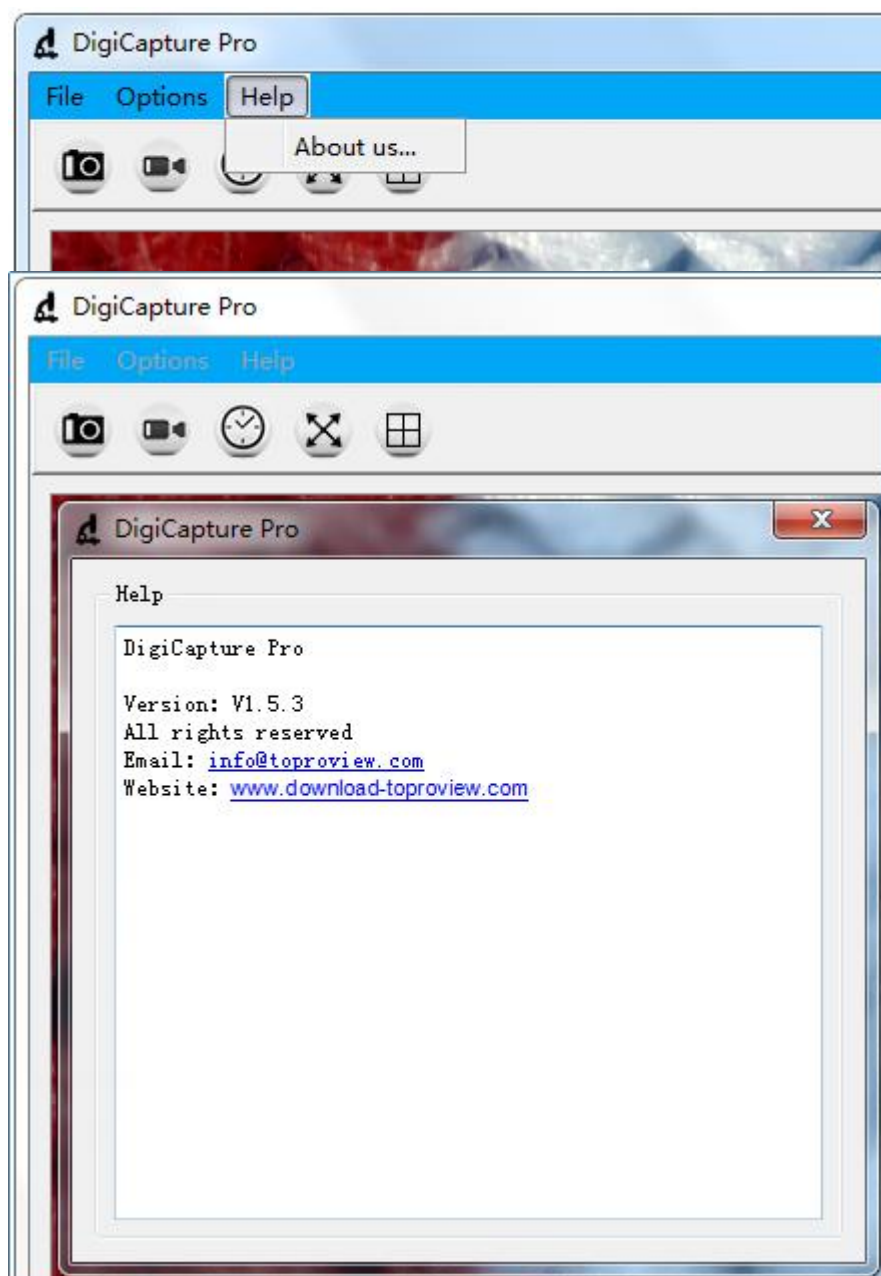
Language: choose different OSD language

3.3: Language



a. There are 16 languages built in the software.

3.4: Help



a. Please contact us through the information in this page if there is any necessary.

4. Software Functions

4.1: Capture Photo

Click 'Photo' shortcut icon



in the main menu bar.

4.2: Capture Video

Click 'Video' shortcut icon



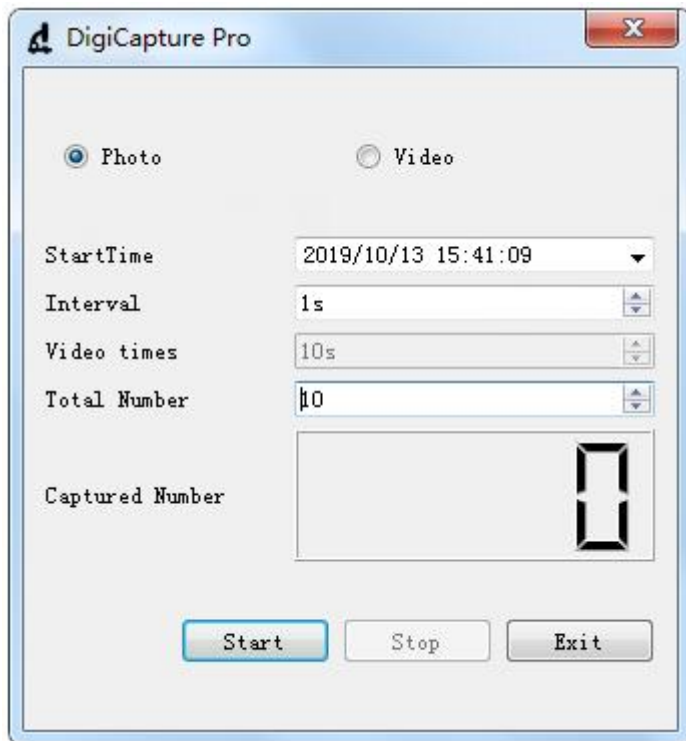
in the main menu bar.

4.3: Timer (Photo / Video)

Click 'Timer' shortcut icon



in the main menu bar.

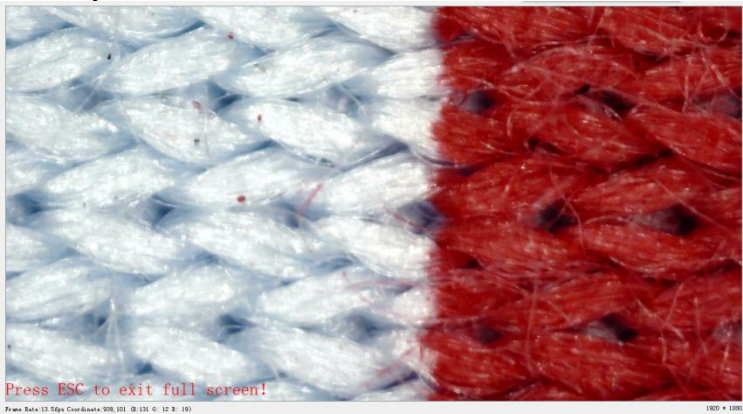


- Under Timer photo, you can set the start time, interval time and total number of picture.
- Under Timer video, you can set the start time, interval time, video times and total number of video.
- After setting, you can choose "Start", "Stop" or "Exit" to the next process.

4.4: Fullscreen Mode



Click 'Fullscreen Mode' shortcut icon in the main menu bar to see the observation object in full screen.



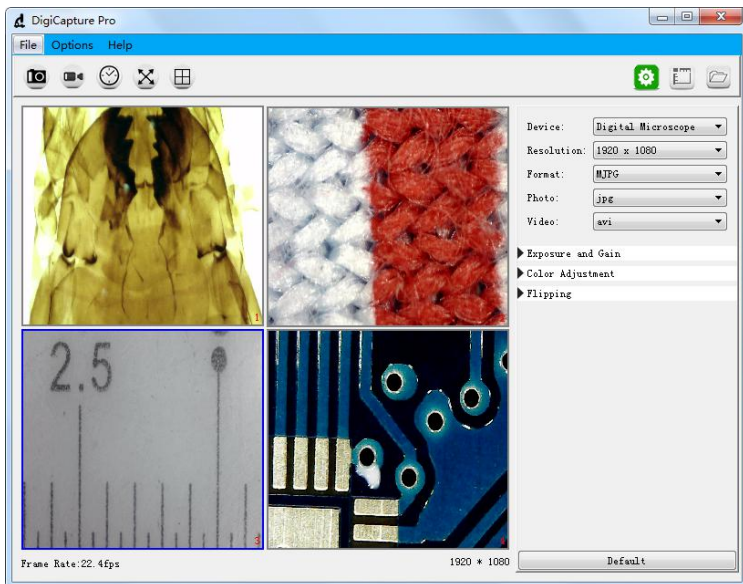
Note: press 'ESC' key or Double click the right mouse button to exit full screen mode.

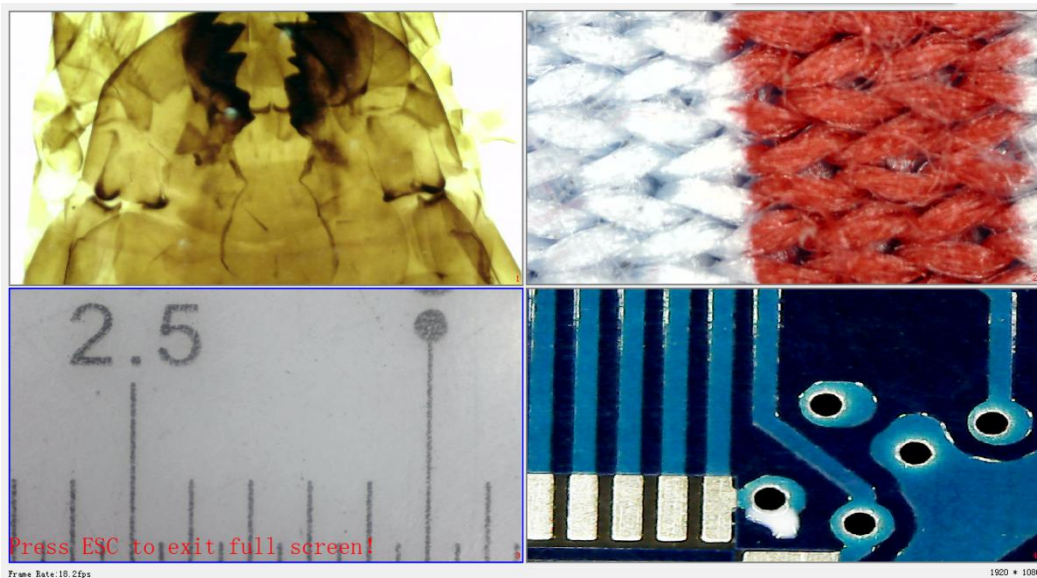
4.5: Screen Switch

The software support one display or four display concurrently. Click 'Screen Switch' shortcut icon



shortcut icon in the main menu bar to switch it from one display into four display.





- a. Click the left mouse button to select window 1, window 2, window 3 or window 4, When selected, the window border will turn into blue.
- b. Select different devices in different Windows through the 'Device' option on the right.
- c. The software can work with up to four devices simultaneously to display images.
- d. You can click 'Screen Switch' shortcut icon again to exit four image display.

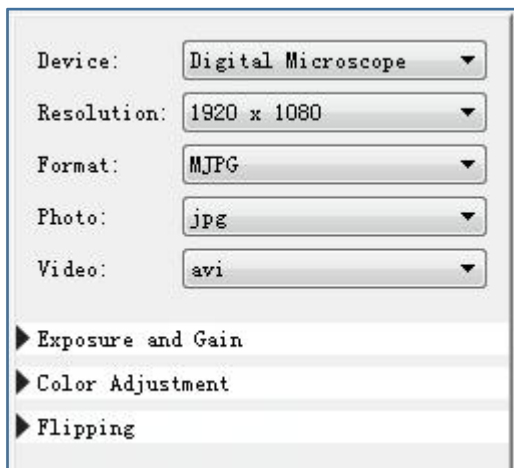
Note1: Check if the 4USB port in your PC could support the enough power dissipation for the microscope, if the USB port power dissipation is not strong enough, then the 4 preview windows can not work at the same time.

Note2: One USB 2.0 port could offer 500MA output current normally, and the power dissipation for one microscope is less than 500MA normally, but it depends on the actual situation, different microscope should be with different power dissipation.

4.6: Setup



Click 'Setup' shortcut icon in the main menu bar and you will see the following screen shown up.



The screenshot shows a 'Setup' dialog box with the following settings:

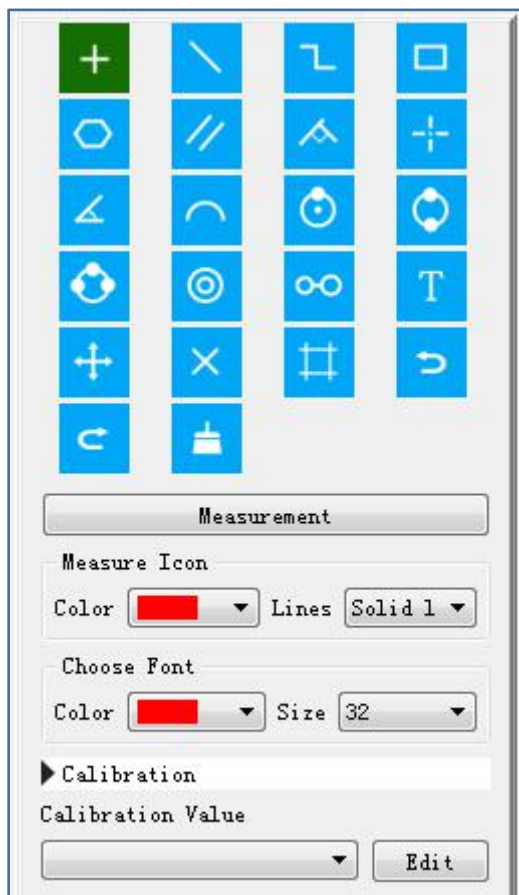
- Device: Digital Microscope
- Resolution: 1920 x 1080
- Format: MJPG
- Photo: jpg
- Video: avi

Below these settings are three expandable sections, each indicated by a right-pointing triangle icon:

- Exposure and Gain
- Color Adjustment
- Flipping

- Support different devices working by clicking the drop-down menu 'Device'.
- Choose different resolution working by clicking the drop-down menu 'Resolution'.
- Select different image parameter through 'Format', 'Photo format', 'Video format', 'Exposure and Gain', 'Color Adjustment', and 'Flipping'.























4.7: Measurement



- Choose different measurement functions through the menu. Different measurement function can be operated in the preview window or the store photos.
- Click the 'Edit' button to set Calibration.

Noted: Remember to follow this step, or the measurement will be inaccurate. **(More on that later).**

4.8: Measurement Interface Instructions

	Coordinate	Lines	
	Continuous Line	Rectangle	
	Polygon	Parallel Lines	
	Vertical Line	Grid Line	
	Angle	Arc	
	Circle	Two Points Circle	
	Three Points Circle	Concentric Circles	
	Double Circle	Text	
	Move	Delete	
	Crossing	Undo	
	Redo	Delete	

4.9: Browse file



Click 'Browse file' shortcut icon in the main menu bar and you will see the following screen shown up.



- a .You can replay photo or video, and double click photo to measure.
- b. Photo taken by the software will be saved at: **D:\DigiCapture Pro\save\image\Photo1 or \Photo2,\Photo3,\Photo4**
- c. Video taken by the software will be saved at:**D:\DigiCapture Pro\save\movie\Movie1 or \Movie2,\Movie3,\Movie4**

Noted: Please note that do not install this software on the disk c of your computer, or may cause some computer permission issue.

If you have to install it on disk c, please change the save path for capture and video as below(due to Windows permission, can't take capture and video if the default location is disk c): File---Photos Directory---Add an new foler in disk C with whatever name---Choose this new folder as your capture save path; Same way for video recording.

5: Calibration

Please make calibration before measurement.

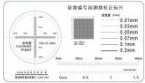
Calibration

Start Crossing from 'Options>Crossing>On'.

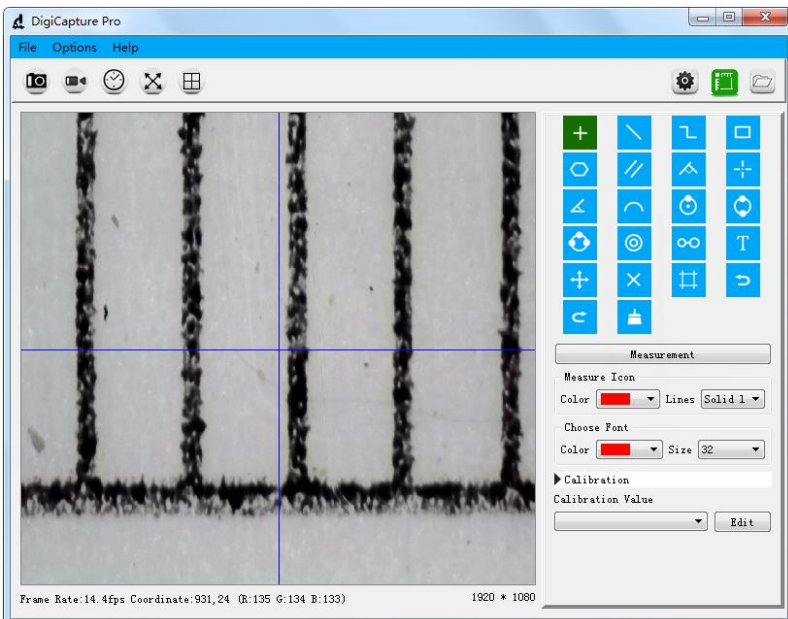


Noted: the usage of this crossing is checking the dial on the calibration ruler.

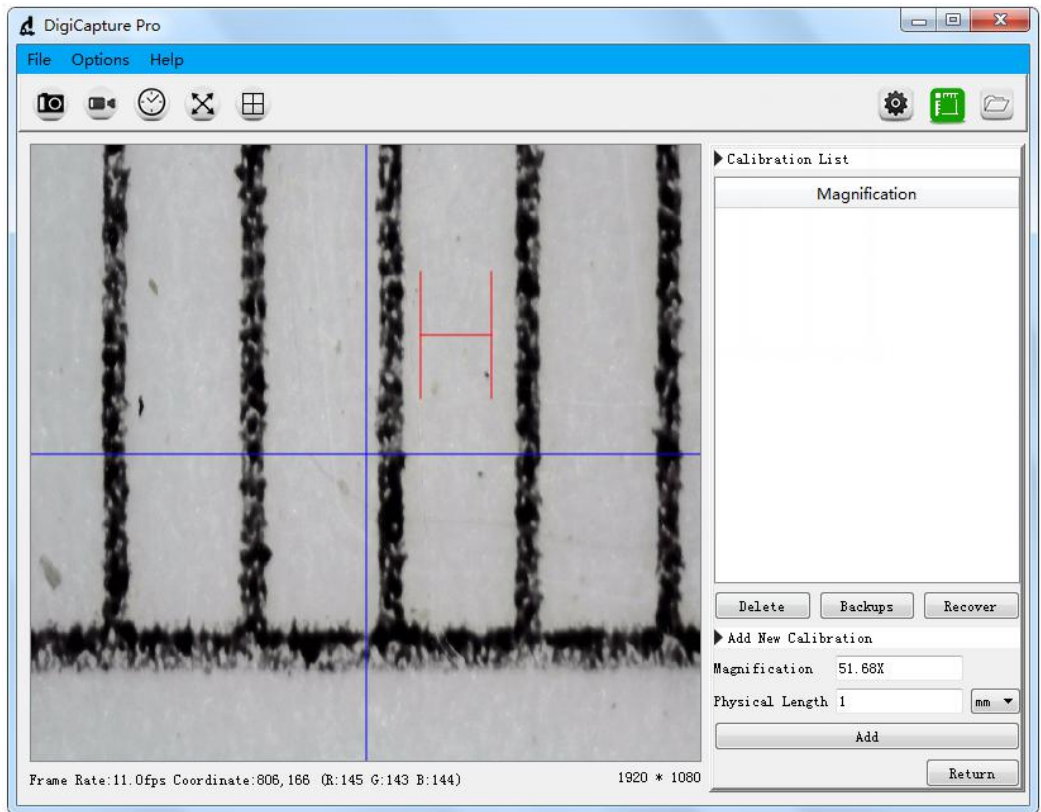
5.1: Focusing microscope by using the attached calibration ruler



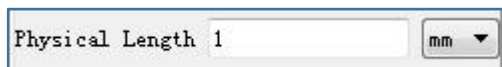
until the picture is clear. Make the dial parallel to the crossing as below.



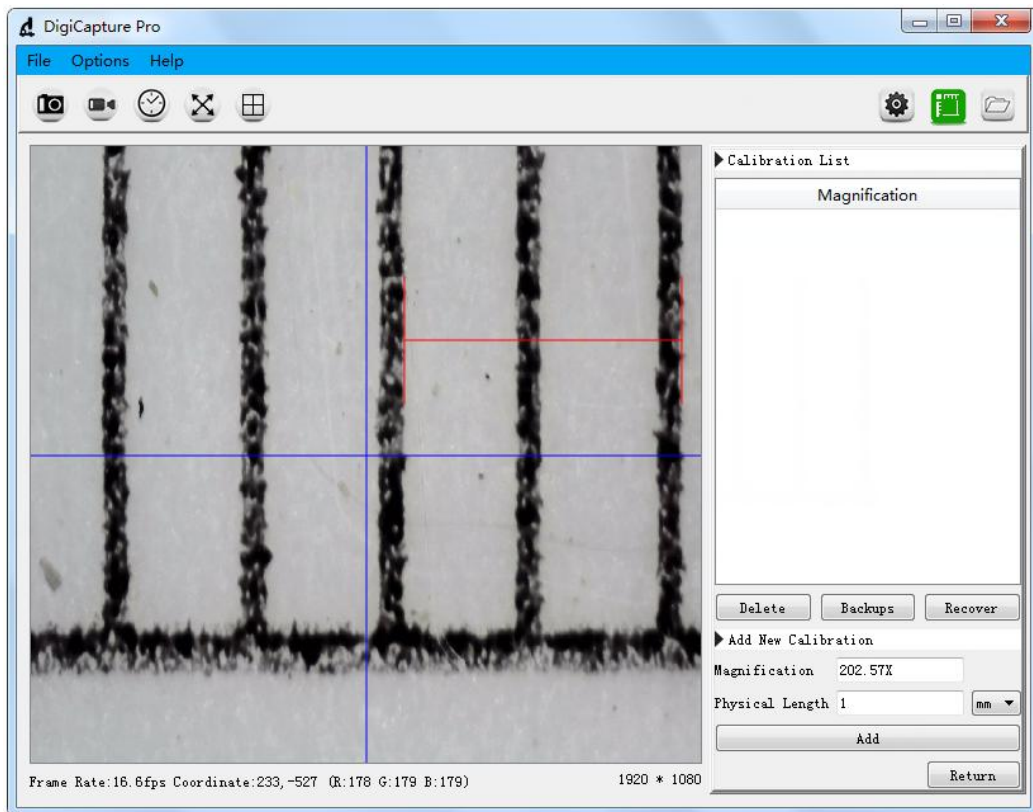
5.2: Click the 'Edit' button in the lower right and you will see the following screen shown up.



5.3: Select physical length unit same as the calibration ruler.
E.g., If the calibration unit is mm, then select mm in the drop down menu.



5.4: Move the H-shaped ruler in the preview window to a reasonable position

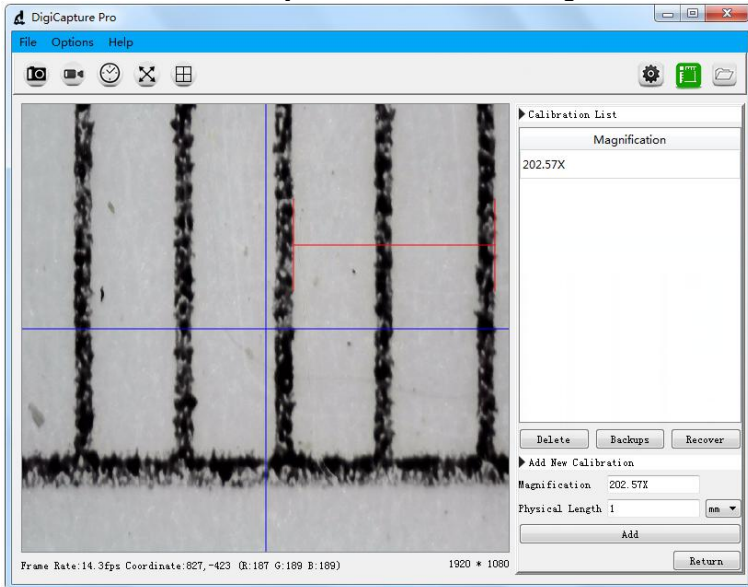


* **Remark:** The measured line should be parallel.

5.5: Select the length of H-shape, the length number of H-shape is same as the corresponding calibration ruler dial, then fill the length number as following figure, such as '1'.

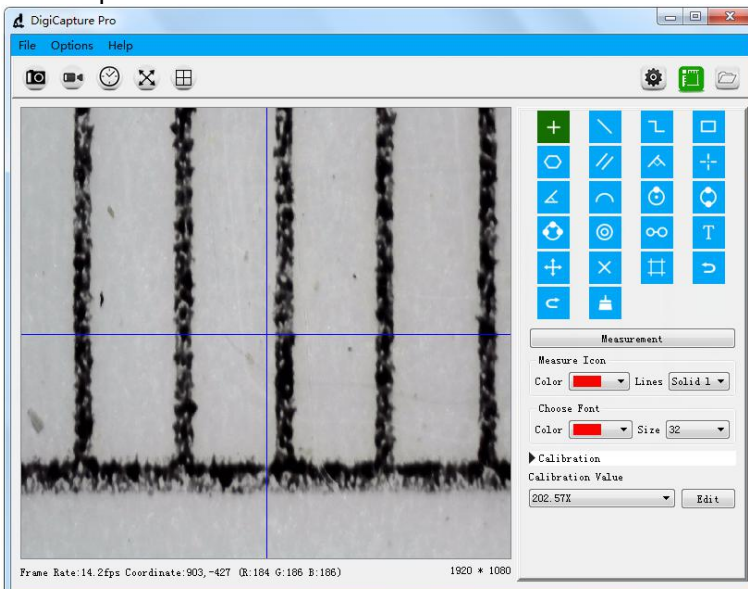


5.6: Click the 'Add' button and you will see the following screen shown up.



a. You can see actual magnification under the 'Magnification' menu on the left of the window.e.g. '202.57X', means the image is magnified 202.57 times.

5.7: Click the 'Return' button in the lower right and you will see the following screen shown up.

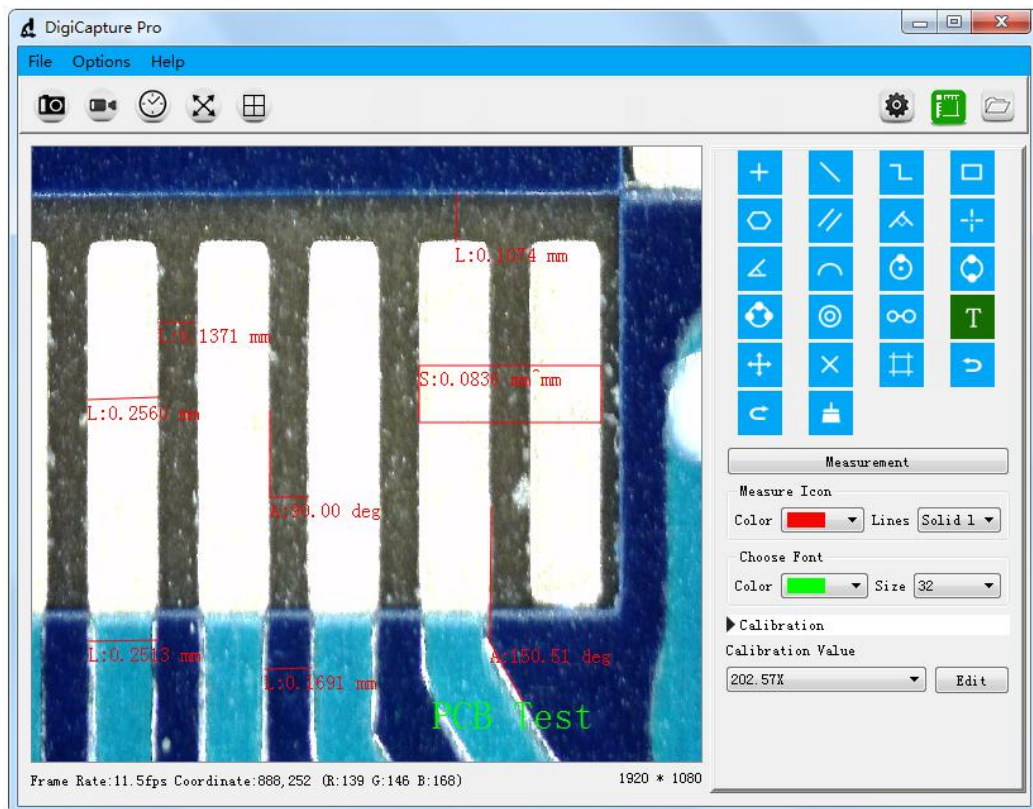


a. If the above 7 points(5.1~5.7) are completed in sequence, the correction is completed.

6. Measurement

Please make calibration before measurement.

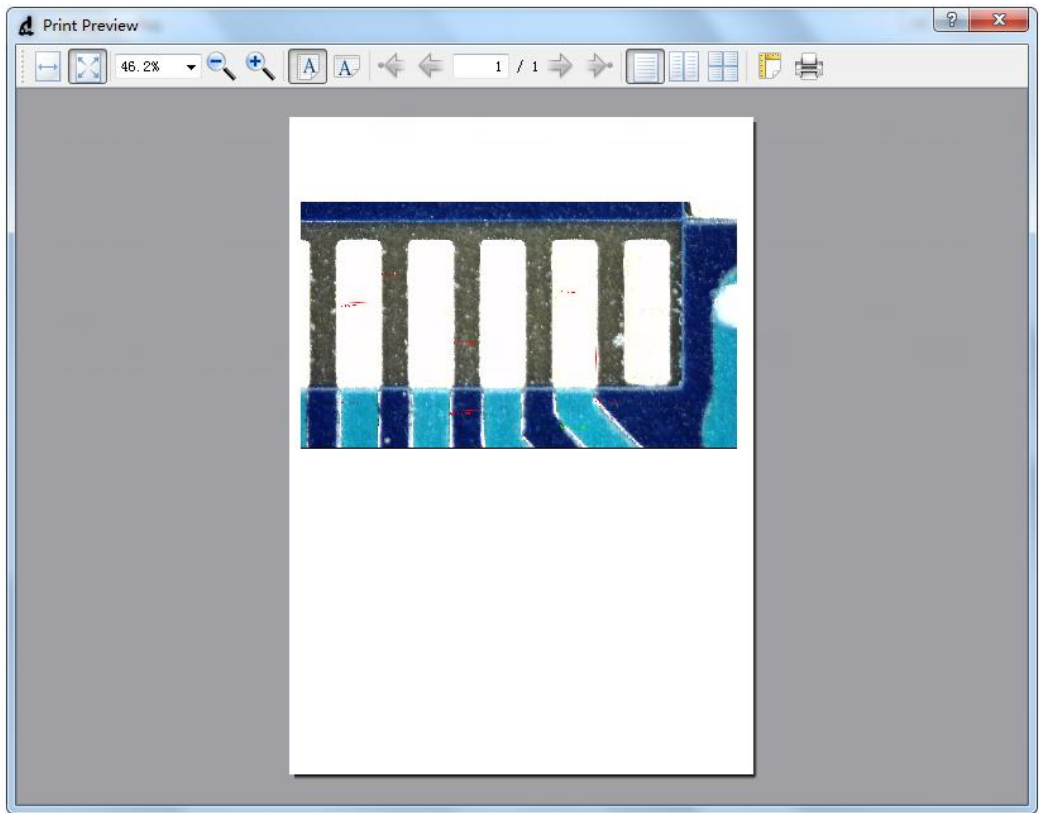
6.1: Use the corrected magnification to test the target object, as shown below:



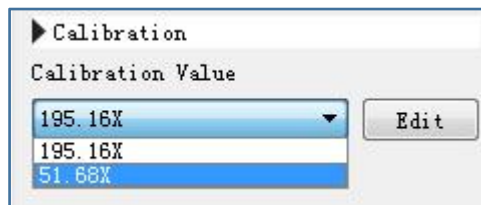
In order to ensure the accuracy of the measurement, please make sure the focal length and resolution are the same as the correction value. Otherwise, the measured results will not be accurate.

Picture shown above is the result for the target object "PCB": PCB line width is 0.2513mm and distance of two PCB line is 0.1691mm.

6.2: Print images from 'File>Print', as shown below:



6.3: Choose other magnification to measure target object by clicking the drop-down menu 'Calibration Value'. Different magnification will lead to different measurement results.



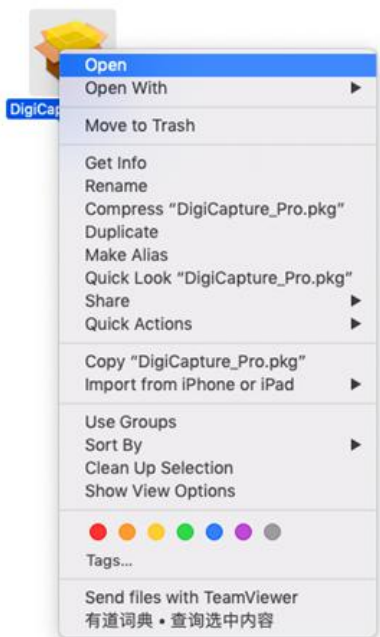
6.4: If you change the resolution or the focal length, please revise the calibration again and use the corrected magnification to go ahead the target object measurement, or the measurement result will not be accurate.

7. Install the Software on MacBook (10.14 and later)

7.1: Please download the software from www.download-topreview.com



7.2: After download, press 'control' and click the “pkg” file to install DigiCapture Pro in your MacBook



7.3: Please click 'Open' to allow the installation, as follow



7.4: Run the software as follow

