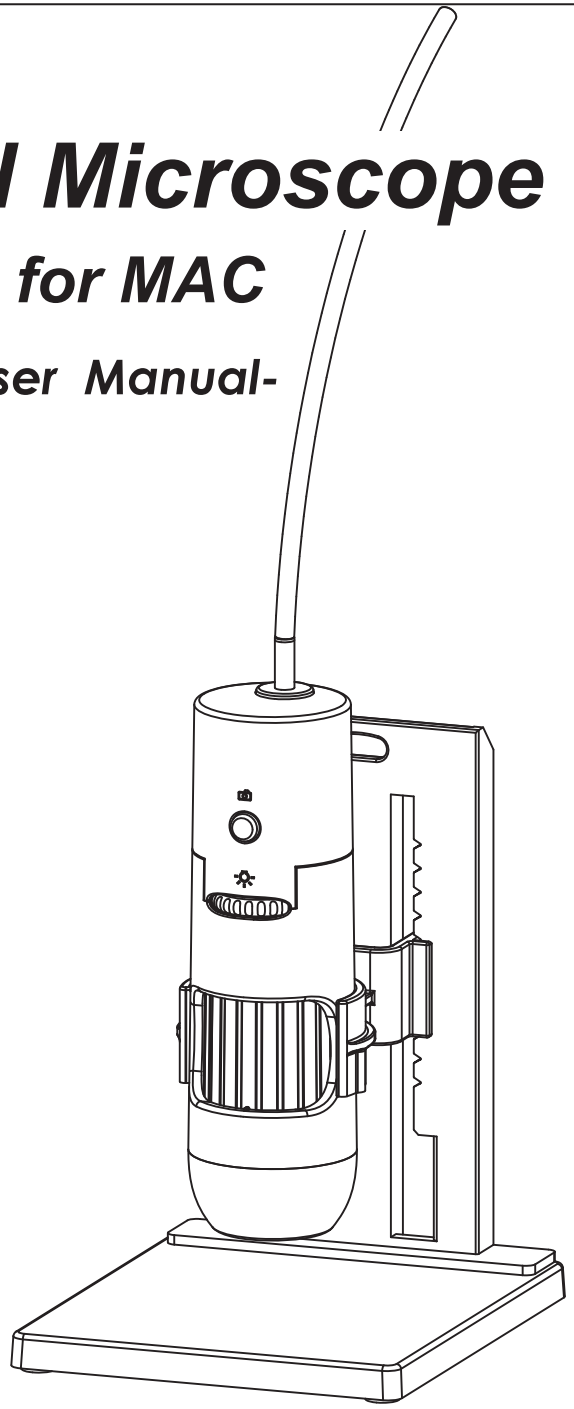
Digital Microscope

for MAC

-User Manual-



REV.B

200X Digital Microscope/500X Digital Microscope

Features

The 200X digital microscope provides a 10~200X adjustable magnification range, and the 500X microscope provides 500X magnification. The built-in high-performance LEDs can illuminate an object without using any auxiliary lighting. By adjusting the focus knob on the camera, the magnified image can be viewed, captured and recorded directly from the computer screen with dresolution.

Specifications

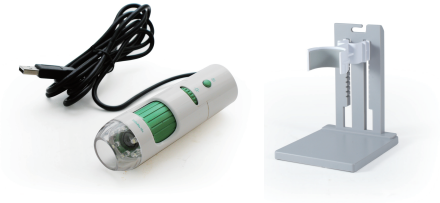
- Image Sensor： 1/4” Color CMOS image sensor
- Effective Pixels： 1.3M:1280 (H) x 1024 (V) pixels
  5M: 2592 (H) x 1944 (V) pixels (for Hardware Snapshot Max.)
- Signal Output： Serial data for USB standard compliant 2.0
- Gain Control： Auto Gain Control (AGC)
- White Balance： Automatic
- Snap Shot Mode： Hardware/Software controllable
- Power Source： 5VDC through USB port
- Power Consumption： 1.3M:180mA 5M:260mA
- O/S： Mac OS 10.6 or above
- Magnification： 200X digital microscope：10X~200X range
  500X digital microscope：500X
- CE, FCC and RoHS Compliant

Applications

- Skin Exam
- Scalp Exam
- Industrial Inspection e.g. Printing Circuit Board(PCB)inspection
- Electronics Device inspection
- Visual Assistance
- Printing Inspection
- Textile Inspection
- Paper Money Inspection
- Jewelry Inspection
- Science Education

Contents

- Digital Microscope Device x 1
- Software CD x 1
- User Quickly Guide x 1
  Stand x 1

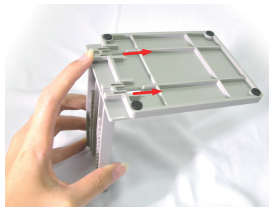


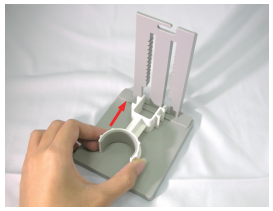
Mac System Requirement

- Mac OS X 10.6 or later
- Intel® Processor

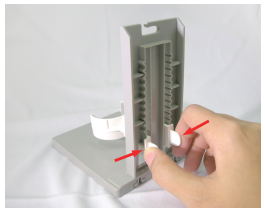
Getting Started

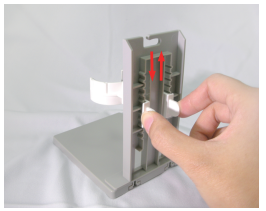
1. Stand assembly:

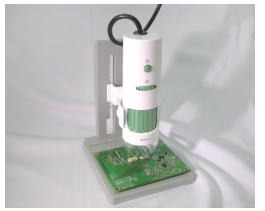




a.) Push and Lock the stand.





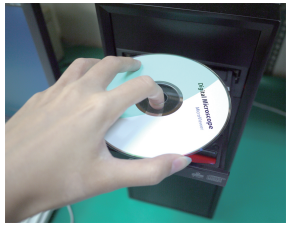


b.) Press the holder, pull up and down to adjust the distance between the microscope and the object.

c.) Place the microscope on the stand holder.

2. Insert the software installation CD into the CD-ROM drive. The software will install automatically.(fig.1)

3. Plug the USB cable into the PC USB port.(fig.2)



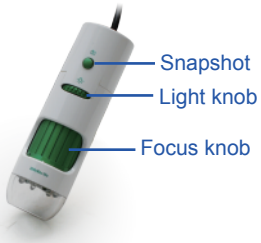
(fig.1)

(fig.2)

Install Software (MAC)

1.Drag the MicroViewer to the Applications folder.

4. Double Click the【MicroViewer】icon on the desktop, and the image will show up.
5. Place the camera on or above the object to be viewed.

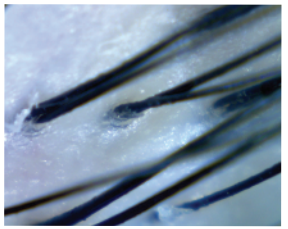


6. Tilt the digital microscope slightly when viewing the object in order to get 3D image.(fig.3)
7. The digital microscope can be used to get the desired image size preferred by the user's. The closer you put the digital microscope to the object, the bigger image will be.(fig.4)

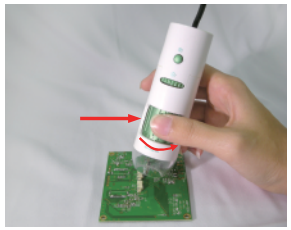
(fig.3)

(fig.4)

8. A clear focused image can be obtained by adjusting the focus knob as well as changing the distance between the object and the digital microscope.(fig.5)
9. If the image is blurred, adjust the focus knob to the right end and view the image of the object in lower magnification first.(fig.6)



(fig.5)



(fig.6)

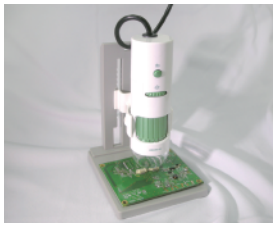
10. When magnifingan object, adjust the focus knob slightly to the left and move the digital microscope up and down until a clear image is obtained.(fig.7)
11. If the object is has too much relief or if a higher magnification (bigger image) is unnecessary, lift the digital microscope a little bit and adjust the focus knob slightly to the right until a clear image is obtained.(fig.8)

(fig.7)

(fig.8)

12. If the object is too dark or bright, adjust the light knob until you get the preferred brightness. Turn the knlb to the right to get a brighter light and to the left to get a dimmer light.(fig.9)
13. When using high magnification to observe a specific area of the object, placing the digital microscope on the stand holder is recommended to obtain a clearly focused image.(fig.10)
14. Use snapshot button to capture an image.

(fig.9)



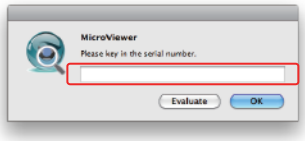
(fig.10)

Software application (Mac)

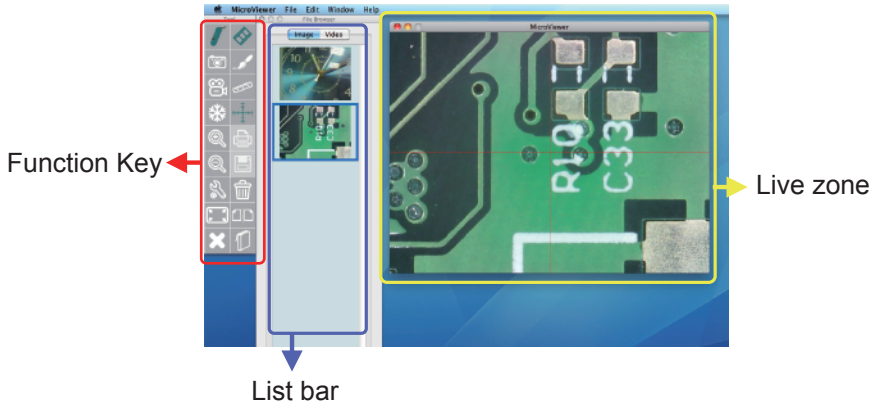
1. Double click the MicroViewer icon on your “Applications” folder.

** Make sure the microscope is plugged into the USB port.

** Key in the Mac OS version Serial Number which can be found on the paper CD envelope or just press the Evaluate button for a 30 day free trial.



2. The MicroViewer window will show up and you will see the live image from the Microscope.



Function Key Lists:

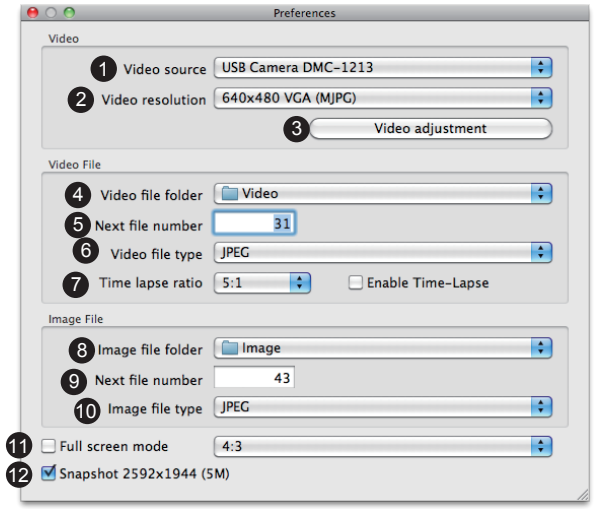
ICON	*Function*	*Function Instruction*
	Preview	Enable the live image of the microscope.
	Snapshot	Take a picture. (saved as a Jpg file) Images would be saved in the picture saving location.
	Record	Capture a movie.(saved as an AVI video file) Videos would be saved in the video saving location.

Function Key Lists:

ICON	*Function*	*Function Instruction*
	Freeze	Freeze the live image on the screen. Click Freeze icon again to back the live image.
	Zoom in	Select the zoom-in and zoom-out function on a live image or on captured pictures. The maximum magnification is 6x. The arrow keys on the keyboard will move the image.
	Zoom out	
	Preference	The setup window. Click the icon, the Video Setup window will show up.(See the Video Setup Chapter for more detail).
	Full Screen	Click "Full screen icon" or double click the live image, it will switch to full screen mode.
	Exit	Close MicroViewer.
	File Browser	Open / Close the file browser.
	Draw	You can input words, draw lines, draw circles, draw freehands.
	Measure	Measure lines, circles, angles, rectangles, triangles or radii. It’s necessary to calibrate before making a measurement.
	Crosshair	Click "Crosshair icon” to add a crosshair to the live video. You can position the crosshair by clicking the button.
	Print	Print the saved picture.
	Save	Click this button to save as a new file.
	Delete	Double click a file in the list bar, and click this button to delete it.
	Compare	Compare a live image with a picture or video, compare two pictures or compare two live image from two microscopes.
	Manual	Click the button to read the user’s manual of MicroViewer.

Preference:

Click the Prefernce button and the following window will appear:



1 Video Source	Allows a user to choose or switch the image source if there is more than one microscope connected to the PC.
2 Video resolution	Supports different resolutions: 1.3M Microscope:640x480 / 1280x1024 5M:640x480 / 1024x768 / 2048x1536 Note: The Snapshot and Record format will be changed at the same time.
3 Video adustment	Changes the Video values for Exposure time / Brightness / Contrast / Saturation / Sharpness.
4 Video file folder	Set up the video saving location.
5 Next file number	Set up the file name of the next video.
6 Video file type	Set up the compression type of video.
7 Time lapse	If you need time-lapse function, check the “Enable Time Lapse “box and select the time-lapse ratio. For example, if you choose"60:1" only one second of every 60 seconds will be recorded. Warning: If you choose the time-lapse function, please make sure the recording time is longer than the ratio time. EX: Choose “60:1”, the real recording time must be longer than 60 seconds.
8 Image file folder	Set up the picture saving location.
9 Next file number	Set up the file name of the next picture.

10 Image file type	Set up the compression type of video.
11 Full Screen mode	If the full screen mode box is marked, MicroViewer will start on full-screen mode automatically. 4:3：Live video zone will remain in a 4:3 aspect ration. This mode is necessary for the measurement function. FULL：The entire screen will display live video. The aspect ratio may not be correct, so live images my appear distorted. ICON：The Screen will be filled with the MicroViewer window, so all function buttons will be visible. In this mode,the video image will be expanded and it is not correct for the measrurement function.
12 Snapshot 2592x1944(5M)	**(FOR Digital Microscope 5MP)** Mark the box and you can save the picture with maximum resolution of 2592x1944(5-Mega) when you click the hardware snapshot button. Warning: It will take 5~6 seconds to save a picture, not move the microscope.

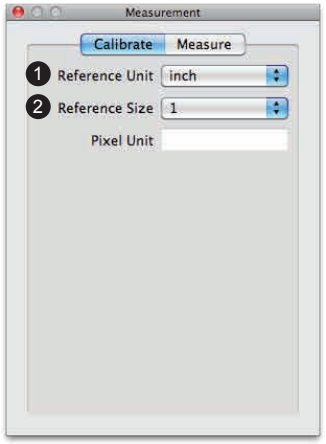
Draw:

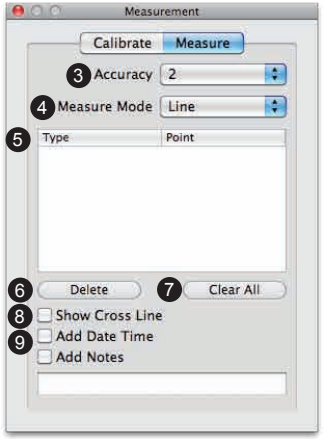
Click the Draw button and the following window will appear:

ICON	*Function Instruction*
	Cursor for move the window.
	Draw lines. You can set up the line width and color.
	Draw circles. You can set up the line width and color.
	Delete the last drawing.
	Input the text. You can set up the line width and color.
	Free hand drawing. You can set up the line width and color.
	Draw rectangles. You can set up the line width and color.
	Delete all drawing.

Measurement:

Click the Measurement button, and the measurement window will appear. You can calibrate or measure the image.





Instructions for Measurement window

Calibrate	
❶ Reference Unit	Select a unit for calibration and measurement. There are three units: mm/inch/mil
❷ Reference Size	Select the reference size for calibration.
Measure	
❸ Accuracy	The number is accurate up to nine decimal points.
❹ Measure Mode	Select a measurement mode from the following options: Angle / Circle / Ellipse / Line / Rectangle / Triangle / 3DotsRadius.
❺ Data of the measurement.	
❻ Delete	Click the measurement data and click the delete button to delete the data.
❼ Clear all	Delete all measurement data.
❽ Show Cross line	Check the Cross Line if you want this function for accurate measurement.
❾ Add Date Time/Notes	Add notes and data times in the image.

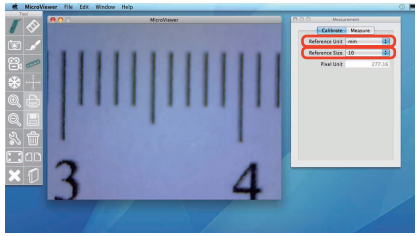
PS. After finish the measurement, click the Snapshot button to save the measured picture.

Measurement-Calibrate

1. Place the camera on a ruler and adjust the focus knob untill the image is sharp.(fig.1)
2. Click the “Measurement” button, and the Measurement window will appear.

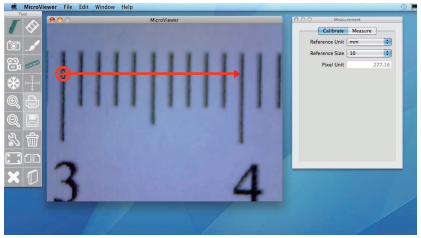
Note: You must calibrate again if you change the distance between the object and microscope, magnification or resolution.

3. Check “Calibrate”, and choose the “Reference Unit” and “Reference Size”, which is the largest dimension visible on your snapshot. EX: The largest dimension available between 3 centimeter and 4 centimeter is 10 millimeter. Therefore, we choose the “mm” as the “Reference Unit” and choose “10” as the “Reference size”.(fig.1)

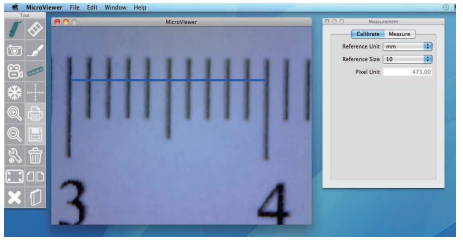


(fig.1)

4. Hold the button of the mouse at the 3 centimeter line and drag to the 4 centimeter line.(fig.2)
5. Release the button of the mouse, and the calibration is done.(fig.3)



(fig.2)

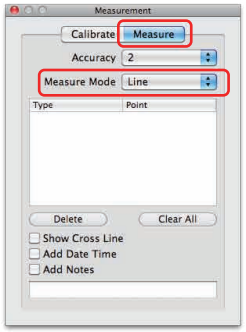


(fig.3)

PS.This measurement function doesn’t support files in 5MP.

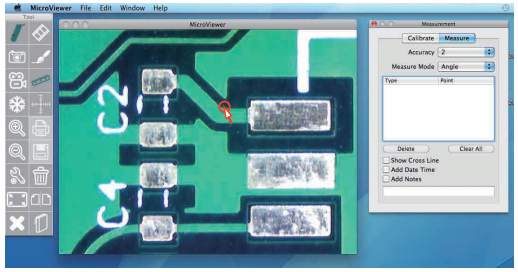
Measurement-Angle

1. After calibating you can begin measuring. Click the “measure” button. Select the “Angle” of the Measure Mode(fig.4)



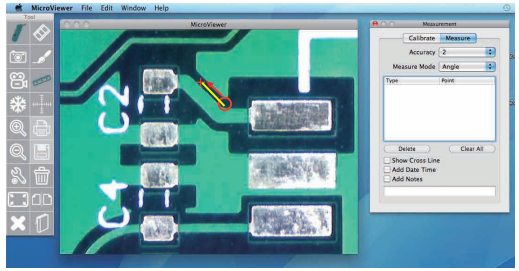
(fig.4)

2. Hold the button of the mouse at the point of angle.(fig.5)



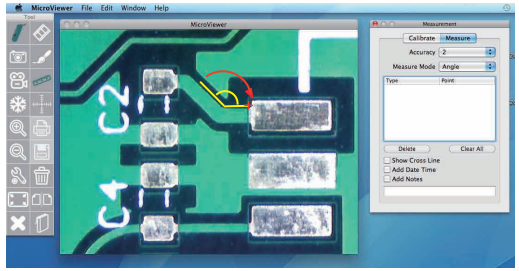
(fig.5)

3. Drag to one side and release the button of the mouse.(fig.6)



(fig.6)

4. Click the button at the another side and the angle measurement will appear. (fig.7)

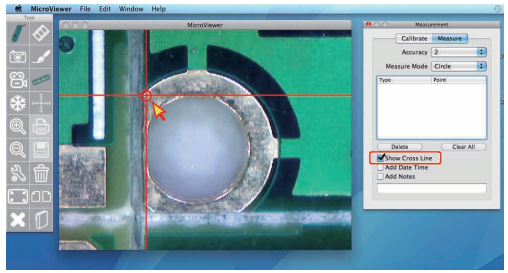


(fig.7)

Measurement-Circle

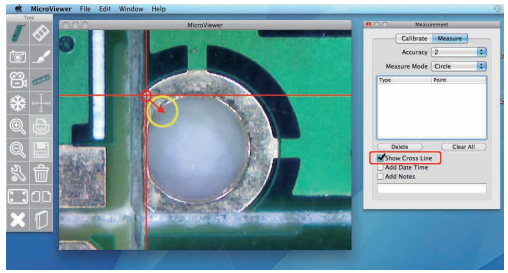
1. After calibating you can begin measuring. Click the “measure” button. Select the “Circle” of the Measure Mode then click “show Cross Line” function.

2. Hold the button of the mouse at the upper left of the object. (fig.8)



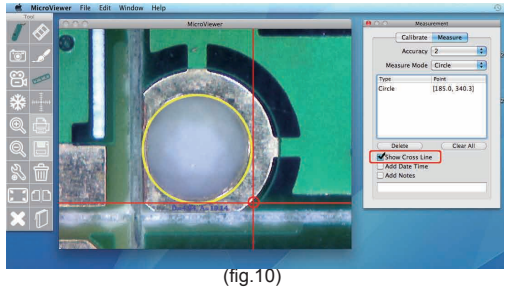
(fig.8)

3. Drag to the lower right of the object.(fig.9)



(fig.9)

4. Release the button of the mouse, and the circle measurement will appear.
The “D” means diameter and the “A” means area.(fig.10)

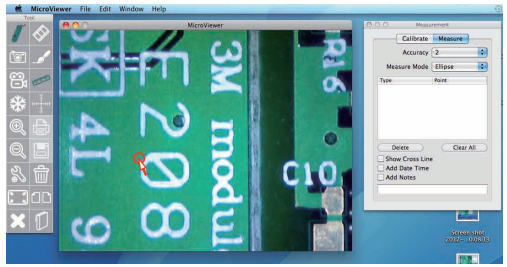


(fig.10)

Measurement-Ellipse

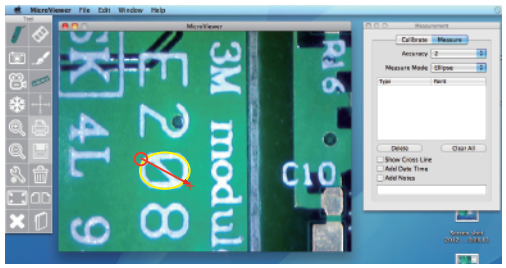
1. After calibating you can begin measuring. Click the “measure” button. Select the “Ellipse” of the Measure Mode.

2. Hold the button of the mouse at the upper left of the object. (fig.11)



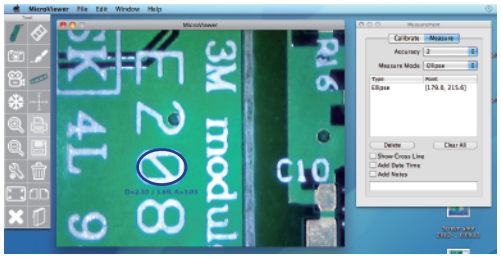
(fig.11)

3. Drag to the lower right of the object.(fig.9)



(fig.12)

4. Release the button of the mouse, and the ellipse measurement will appear.
The “D” means diameter and the “A” means area.(fig.13)

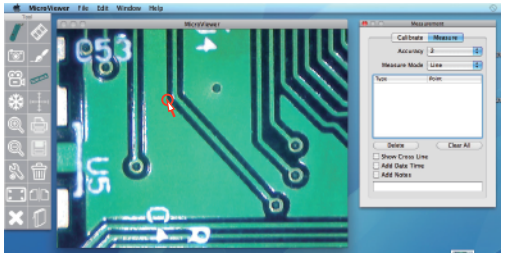


(fig.13)

Measurement-Line

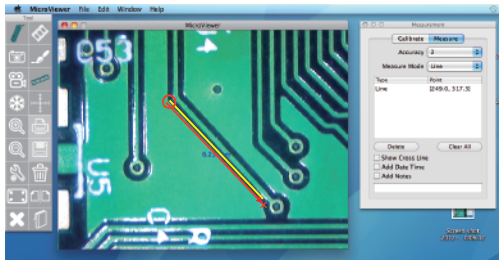
1. After calibating you can begin measuring. Click the “measure” button. Select the “Line” of the Measure Mode.

2. Hold the button of the mouse at the starting of the line. (fig.14)



(fig.14)

3. Drag to the finishing point of the line.(fig.15)
4. Release the right button of the mouse,and the line measurement will appear. The number means the length.



(fig.15)

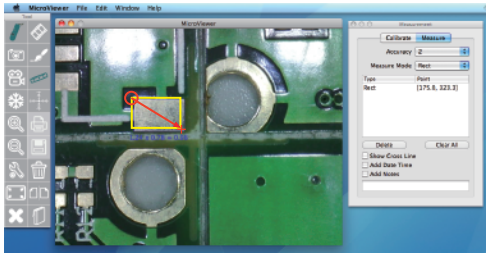
Measurement-Rectangle

1. After calibating you can begin measuring. Click the “measure” button. Select the “Rectangle” of the Measure Mode.
2. Hold the button of the mouse at the upper left of the object.

(fig.16)

3.Drag to the lower right of the object.

4.Release the button of the mouse and the rectangle will show up.
The number means the length x width = area.

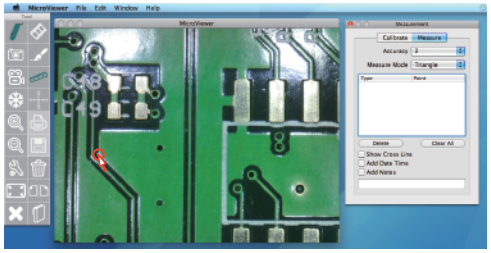


(fig.17)

Measurement-Triangle

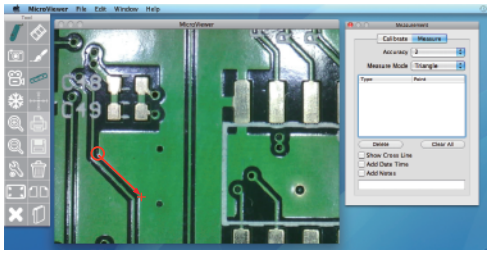
1. After calibating you can begin measuring. Click the “measure” button. Select the “Triangle” of the Measure Mode.

2. Hold the button of the mouse at the first point of the object.(fig.18)



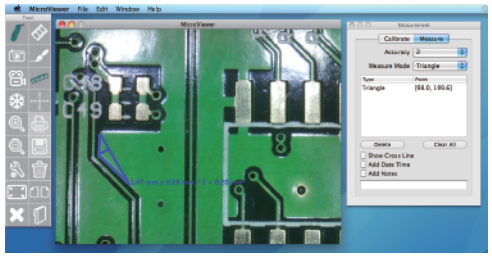
(fig.18)

3. Drag to the second point and release.(fig.19)



(fig.19)

4. Click the button of mouse at the third point of the object, and the triangle measurement will appear. The number means the base x length / 2 = area.

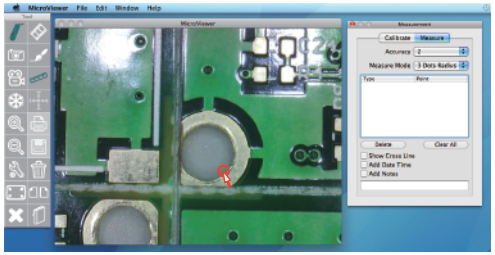


(fig.20)

Measurement-Radius/Arc

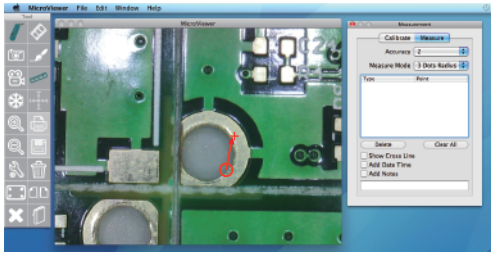
1. After calibating you can begin measuring. Click the “measure” button. Select the “3DotRadius” of the Measure Mode.

2. Hold the button of the mouse at the first point of the arc. (fig.21)



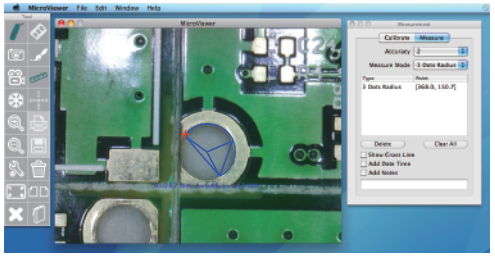
(fig.21)

3. Drag to the second point and release.(fig.22)



(fig.21)

4. Click the button of mouse at the third point of the arc, and the arc measurement will appear.
The “R” means radius, “A” means area, and the “L” means arc.(fig.23)



(fig.21)

Compare:

1.Click the Compare button and the second window will appear on the screen:

2.The live image shows in the left window. You can click the right side window and double click a picture in the list bar. The image will show in the right side. Or you can compare two pictures. Just click the left side window and double click the picture in the list bar.Then duplicate the action on the right side.

3. You can plug two digital microscope USB cables into the USB ports to compare images from two microscopes.

4. Click Compare button to return the normal mode.