



# Mighty Scope 5M

## Instruction Manual



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## Features

The Mighty Scope digital microscope provides a adjustable magnification range. The built-in brightness adjustable LEDs provides proper illumination of the object. The magnified image can be viewed, captured and recorded directly from the computer screen with resolutions of: VGA (640x480) | XGA (1024x768) | QXGA (2048x1536) | 5M(2592x1944).

## Specifications

DIGITAL MIGHTY SCOPE 5.0M	
<b>IMAGE SENSOR</b>	1/4" Color CMOS
<b>EFFECTIVE PIXELS</b>	5.0M
<b>SIGNAL OUTPUT</b>	USB 2.0
<b>FRAMES PER SECOND:</b>	640 x 480: 30fps 1024 x 768 : 30fps 2048 x 1536: 15fps
<b>OPTICAL MAGNIFICATION</b>	Resolution: 640 x 480   Max.~95X Resolution: 1024 x 768   Max.~150X Resolution: 2048 x 1536   Max.~300X Resolution: 2592 x 1944   Max.~380X
<b>DIGITAL MAGNIFICATION</b>	Optical Magnification * max. 6X
<b>GAIN CONTROL</b>	Auto Gain Control
<b>SNAP SHOT MODE</b>	Hardware & Software controllable
<b>WHITE BALANCE</b>	Automatic
<b>POWER SOURCE</b>	5VDC through USB port
<b>O/S</b>	Windows XP SP3, Vista & 7 Mac OSX 10.6
<b>POWER CONSUMPTION</b>	260mA (AVG)
<b>LED LIGHT TYPE</b>	6 White LEDs
<b>WORKING DISTANCE</b>	At 10x, 112mm   At 20x, 42mm At 30x, 19mm   At 40x, 8.5mm

## Applications

Science Engineering  
Work Dermatology  
Detailed Repair  
Assembly  
Quality Control  
Hobbies  
Law Enforcement  
Entertainment  
& much more

## Contents

Mighty Scope (1)  
MicroViewer Software CD (1)  
User manual (1)  
Stand (1)





## PC System Requirements

- **Chip set:** Pentium 4 3.0GHz CPU or equivalent, AMD Phenom II or above, Northbridge Intel® i945GZ or above
- **RAM:** 1024MB DDR or above
- **USB:** At least one USB 2.0
- **Graphics Card:** 2D/3D with Hardware Transform and lighting, 512MB VRAM VGA system and at least 16 bit color support
- **Monitor Resolution:** 1280x1024 or above
- **O/S:** Windows XP SP3 | VISTA | Windows 7
- Direct X 9.0c or above

## PC System Requirements (Dual Scope)

- **Chip set:** Intel® Core™ 2 Duo or above / Intel G31 or above
- **Graphics Card:** NVIDIA® GeForce® 7 or above
- **RAM:** 1024 DDR2 800MHz or above
- **Storage space:** at least 30MB free space

## Mac System Requirements

- **Chip set:** Intel® Processor
- **O/S:** Mac OS X 10.6 or later

## Driver Installation

This device supports "Universal Video Class" driver, so no additional driver is required. Plug the camera in and Windows (Windows XP SP3, VISTA, and 7) will install the driver automatically.

## Getting Started

### Stand Assembly



Screw together vertical pole and base



Assemble the scope's 2-piece rack and pinion holder and tighten screw



## Software Installation (PC)

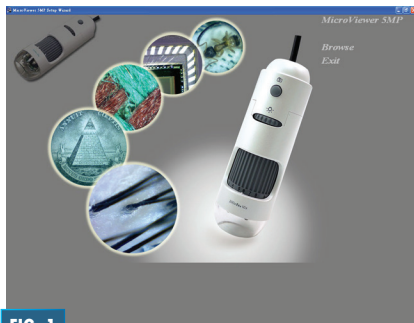
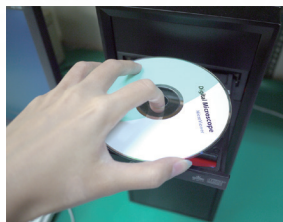
1. Insert the software installation CD into the CD-ROM drive. The installation program will appear automatically on your screen. (If the installation program doesn't appear, open the MicroViewer folder and double click AutoRun.exe)
2. Click "Install MicroViewer 5MP" button (**Fig.1**).



Connect the scope holder to the vertical post and tighten set-screw



Place the Mighty Scope in the holder and adjust to desired working distance



**FIG. 1**

**\*\*The Mighty Scope must be plugged into the computer to open and run the MicroViewer software. The MicroViewer will not run without a Mighty Scope connected.**



## Software Installation (PC) cont.

3. Install the MicroViewer 5MP program and restart the computer.

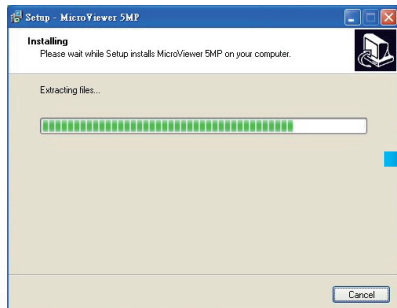
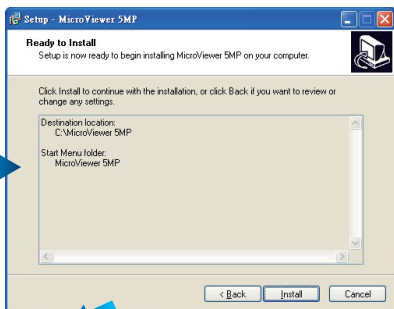
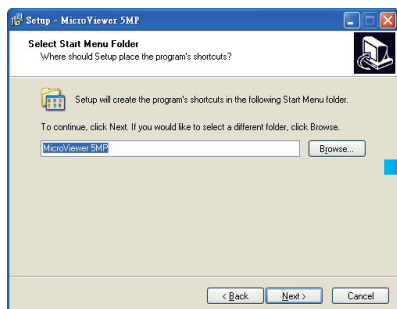
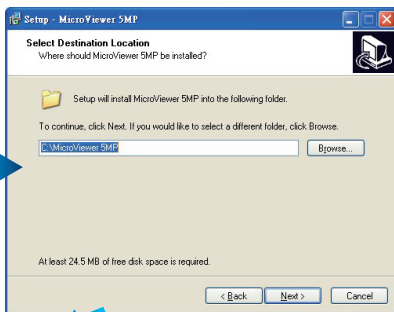
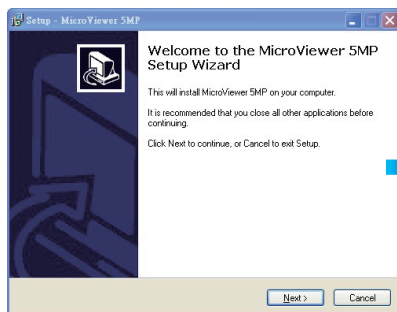




FIG. 2



FIG. 3



FIG. 4



FIG. 5



FIG. 6

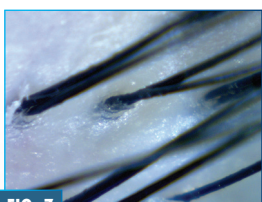


FIG. 7



FIG. 8

## Mighty Scope Controls

4. Connect the Mighty Scope to the computer (Fig. 2).
5. Double Click the [MicroViewer 5MP] software, the start-up screen will show up (Fig. 3).
6. Place the camera on or above the object to be viewed (Fig. 4).
7. Tilt the digital microscope slightly when viewing the object in order to get more depth of field to resemble a 3D image (Fig. 5).
8. The Mighty Scope can be used to get the desired magnification preferred by the user. The closer the Mighty Scope is to the object, the larger image will be and higher magnification (Fig. 6).
9. A clear focused image is obtained by adjusting the focus knob as well as changing the distance between the object and the Mighty Scope (Fig. 7).
10. 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. 8).



## Mighty Scope Controls

11. When magnifying an object, adjust the focus knob slightly to the left or right, depending on the working distance, until image is clear (**Fig. 9**).
12. If the object has too much relief or if a higher magnification is unnecessary, lift the Mighty Scope a little bit and adjust the focus knob slightly to the right or left until the image is clear (**Fig. 10**).
13. LEDs can be adjusted by the light wheel. Turn the knob to the right to get a brighter light and to the left to get a dimmer light (**Fig. 11**).
14. 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. 12**).
15. Use snapshot button to capture an image (**Fig. 13**).



FIG. 9



FIG. 10

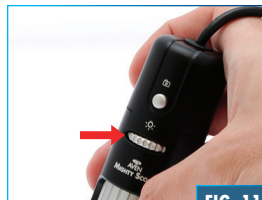


FIG. 11



FIG. 12



FIG. 13

# MicroViewer Software

1. Double click the [MicroViewer 5MP] icon on your desktop (Fig. 14).

- Make sure the Mighty Scope is plugged into the USB port.
- Key in the Serial Number (which can be found on the outside of the CD envelope) or just press the "Evaluate" button for a 30 day free trial (Fig. 15).
- "TV Card Configuration" window will show up the first time, click the "OK" button and double click the MicroViewer 5MP again (Fig. 16).

2. The MicroViewer 5MP window will show up and you should see the live image from the Microscope (Fig. 17).

*\*The MicroViewer 5MP will choose the appropriate video format automatically by detecting the resolution of the monitor. If the resolution is 1280x1024 (or above), the default video format is 1024x768. If the resolution is 1024x768 (or below), the default video format is 640x480.*

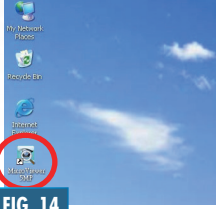


FIG. 14

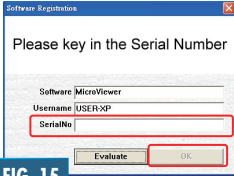


FIG. 15

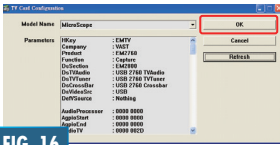


FIG. 16

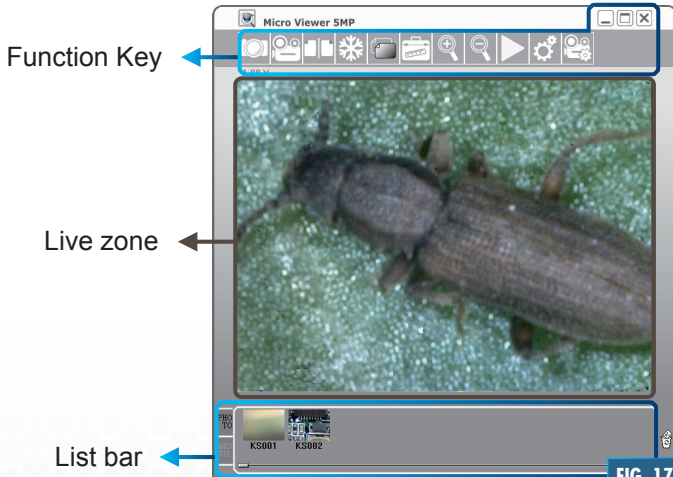


FIG. 17



## MicroViewer Menu



### Snapshot

Take a picture.  
(Saved as a BMP file)

#### Shortcut key: F3

*\*The max resolution for software snapshot is 2048x1536.*



### Record

Capture a movie.  
(Saved as an AVI video file)

#### Shortcut key: F4



### Compare

Compare a live image with a picture or video, compare two pictures or compare two live image from two microscopes  
(Please see the Compare Section for more detail)

#### Shortcut key: C



### Freeze

Freeze the live image on the screen.

#### Shortcut key: F



### Save clipboard

Copy the live image to the clipboard.



### Measurement

Measure lines, circles, angles, rectangles, triangles or radii.  
(Please see the Measurement Section for more detail)

#### Shortcut key: M



### Zoom in/out

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.

#### Shortcut key: +/-



### Play

Playback the last recorded video.



### Video Setup

The setup window.  
(Please see the Video Setup Section for more detail)

#### Shortcut key: V



### Video Quality

Change the video value for brightness, contrast and saturation.



### Crosshair

Click to display cross hair overlay on a live image.



### Manual

Click to open the user Manual  
*Must have Adobe Acrobat Reader installed*



### Zoom screen

Click "Zoom screen icon" or double click the live image, it will switch to full screen mode.



### Power off


Close MicroViewer 5MP.  
**Shortcut key: X**






FIG. 17


## Micro Viewer Comparison Mode

1. Plug two microscope USB cables into the PC USB ports (Fig. 17).
2. Click the Compare button,  and the compare window will appear on the screen. The live image shows in the left zone (Fig. 18).

**\*For the best results screen resolution requirement should be at least 1440x900 pixel**

3. Click the 2<sup>nd</sup> Camera button  to show the live image of the second Mighty Scope.

**\*The second Mighty Scope only supports Snapshot, Recording, Preview Image, and Freeze functions.**

4. The compare window also supports dragging any pictures to the left and right sides to compare two existing pictures.
5. Click (Go Back button)  or (Compare button) to return to normal mode.

1. If you close MicroViewer 5MP on compare mode, it will automatically enter compare mode next time.

2. The resolution of the 2<sup>nd</sup> microscope will change automatically when you change the resolution of the first microscope.

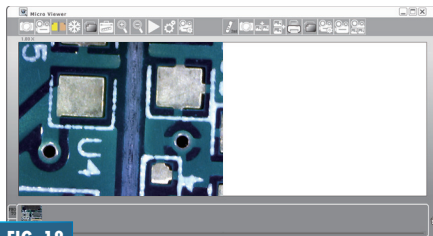


FIG. 18

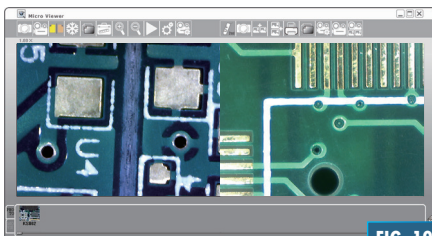


FIG. 19



## MicroViewer – Compare Menu



### Camera 2

Enable/Disable the image of the second microscope.



### Snapshot

Take a picture.



### Save BMP HR

Combine the two live images horizontally and take a picture.

*\*It doesn't support combining live image with an existing image.*



### Save BMP VT

Combine the two live images vertically and take a picture.

*\*It doesn't support combining live image with an existing image.*



### Print Dual Camera

Print live images from two Microscopes.



### Save clipboard

Copy the live image to clipboard.



### Video Setup

Change the video value for brightness, contrast and saturation.



### Save AVI 2

Capture AVI video files from the 2nd microscope .



### Save AVI HR

Combine the two movies horizontally and save a movie.

*\* It only supports 640\*480 resolution.*



### Cross hair

Click to display cross hair overlay on a live image.

## FAQ

**1.** Why does the combined picture become distorted when I preview the image?

**A:** It will distort the image because of the ratio on the screen. Please go to the saved picture location and check the picture to see if it distorted.

**2.** Can I print the combined image full page?

**A:** Yes, go into the printer dialog box and set it to landscape orientation.

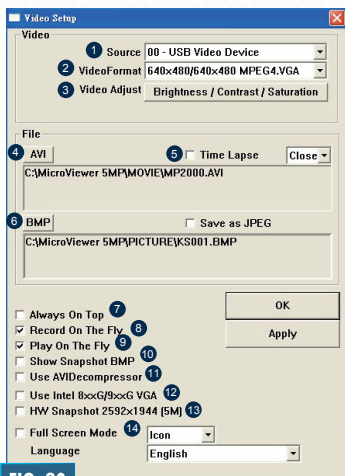
**3.** Does the 2<sup>nd</sup> microscope support full-screen function?

**A:** No, only the 1<sup>st</sup> microscope supports full-screen function.

**4.** Can I switch the 1<sup>st</sup> microscope and 2<sup>nd</sup> microscope?

**A:** Yes. Disable the 2<sup>nd</sup> microscope, and choose the source in the video setup window.





**FIG. 20**

## Video Setup - Overview

Click the Setup button  for the video dialogue box (Fig. 20).

- 1. Source:** User can to choose the image source if there is multiple microscopes connected to the PC.
- 2. Video Format:** Supports three resolution options: 640x480 | 1024x768 | 2048x1536.  
*\*Both the Snapshot and Record format will be changed*
- 3. Video Adjust:** Manually change values for brightness, contrast, and saturation.
- 4. AVI:** Set up the path to save videos.
- 5. Time Lapse:** Check the box and select the time-lapse rate. (i.e. If you choose "60:1" only one second of every 60 seconds will be recorded.)  
*\*If you choose the time-lapse function, please make sure the recording time is longer than the ratio time. i.e.: Choose "60:1", the real recording time must be longer than 60 seconds.*

**6. BMP:** Set up the path to save pictures.

*\*If you want to save JPEG files, please check the "Save as JPEG" box.*

**7. Always On Top:** Check this box so the MicroViewer 5MP window is always on the top.

**8. Record On The Fly:** Record the video immediately when button is pressed.

*\*If the box isn't marked, you have to set up the file name and saving location before recording.*

**9. Play On The Fly:** Play the latest video immediately.

*\*If the box isn't marked, you have to choose a video file to play.*

**10. Show Snapshot BMP:** After snapshot, the preview window will appear.

**11. Use AVI Decompressor:** Corrects possible image distortion in Window XP SP2 or Older.

*\*DO NOT mark this box if it is Windows XP SP3 or above*

**12. Use Intel 8xxG/9xxG VGA:** Corrects possible image distortion with Intel chip sets.

*\*The resolution will be limited to 1024x768.*

**13. HW Snapshot 2592x1944:** To save images with maximum resolution of 2592x1944[5MP]when you click the hardware snapshot button.

*\*It can take 5~6 seconds to save a picture, please not to move the microscope.*

**14. Full Screen Mode:** To Start MicroViewer 5MP in full-screen mode automatically.

- 4:3:** Live video zone will remain in a 4:3 aspect ratio. 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 may appear distorted.
- ICON:** The Screen will be filled with the MicroViewer 5MP window, so all function buttons will be visible. In this mode, the video image will be expanded and it is not correct for the measurement function.



## Preview – Picture Mode

Drag the picture from the list bar to the live zone or just double click the picture in the list bar. The Image will show in the live zone for editing. (Fig. 21).



### Drawing mode

The Drawing mode button opens Microsoft Paint to draw on the picture. After editing, close Microsoft Paint, and the image will update automatically.



### Save file

Click this button to save as a new file. New file name will be renamed by date and time.

**Shortcut key: S**



### Compare

Compare a live image with a picture or video, compare two pictures or compare two live image from two microscopes  
*(Please see the Compare Section for more detail)*

**Shortcut key: C**



### Delete

Click the Delete button to delete an image or video. If you want to recover this file, just click Save file button. To delete files, you can also left click the picture in the list bar and drag to the Delete icon.

**Shortcut key: D**



### Print File

Print this picture. Opens printer dialogue box.



### Measurement

Measure lines, circles, angles, rectangles, triangles or radii.  
*(Please see the Measurement Section for more detail)*

**Shortcut key: M**

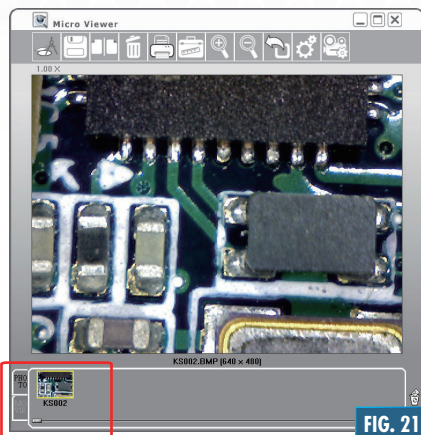


FIG. 21



### Zoom in/out

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.

**Shortcut key: +/-**



### Go Back

Go back to live mode.



### Video Setup

Opens the video setup window.  
*(Please see the Video Setup Section for more detail)*


**Shortcut key: V**



### Video Quality

Change the video value for brightness, contrast and saturation.

## Measuring -Overview

Click the Measurement button  to open the measurement window. The image will be frozen. You can calibrate or measure the frozen image (**Fig. 22**).

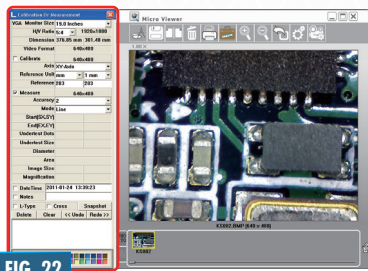




FIG. 22

Calibration Or Measurement	
1	VGA Monitor Size 19.0 Inches
2	H/V Ratio 4:3 1280x1024 Dimension 386.08 mm 289.56 mm Video Format 640x480
3	Calibrate 640x480 Axis XY-Axis Reference Unit mm 1 mm Reference 100 100
4	Measure 640x480 Accuracy 2 Mode Line Start(SX,SY) Angle Circle End(EX,EY) Ellipse Undertest Dots Line Undertest Size Rect Diameter Triangle 3DotsRadius Area Image Size Magnification
5	DateTime 2010-10-19 15:40:02
6	Notes
7	L-Type <input type="checkbox"/> Cross <input type="checkbox"/> Snapshot <input type="checkbox"/>
	Delete Clear << Undo Redo >>
8	
9	

- VGA monitor size:** Select the monitor size.
- H/V ratio:** Select the monitor's correct aspect ratio to insure correct measurements
- Calibrate:** Adjust the calibration.
  - Calibrate axis:** X axis /Y axis /X-Y axis.
  - Reference Unit:** Please select a unit of measurement for calibration. There are three units: mm/inch/mil
- Measure:** Choose the measurement type.
  - Accuracy:** The number is accurate up to nine decimal points.
  - Mode:** Select a measurement mode from the following options: Angle | Circle | Ellipse | Line | Rectangle | Triangle | 3DotsRadius.
- Data of the measurement.**
- Remarks:** The mode supports Date, Time and Notes for a measured image.
- Ruler guides:** Check the L-type or Cross if you want this function.
- Record history:** Record the measurement actions. It allows the user to delete a record or clear all history records.
- Choose the color of the line and words.**

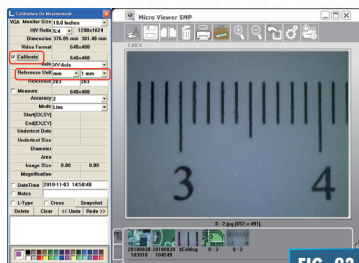
\*After finishing the measurement, click the Snapshot button  or save button  to save the measured picture.



## Measuring - Calibration

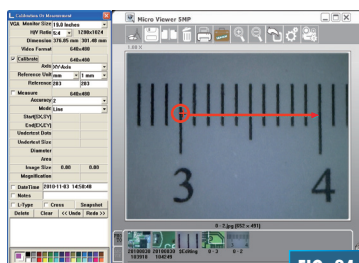
1. Place a scale under the camera and adjust the focus knob until the image is sharp (**Fig. 23**).
2. Click the "Snapshot" button to capture the picture, double click this picture in the list bar.
3. Click the "Measurement" button to open the Measurement Window.

*\*You must calibrate again if you change the distance, magnification, or resolution.*



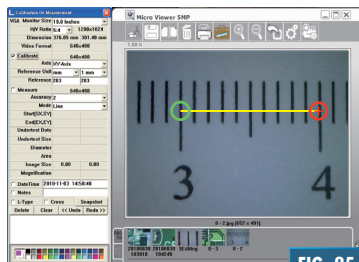
**FIG. 23**

4. Check "Calibrate" box, and choose the "Reference Unit" that matches your scale and is the largest dimension visible on your snapshot. (i.e. The largest dimension available between 3 centimeter and 4 centimeter is 10 millimeter. Therefore, we choose the 10 mm as the "Reference Unit")



**FIG. 24**

5. Click and hold the right button of the mouse at the 3 centimeter line and drag the cursor to the 4 centimeter line (**Fig. 24**).
6. Release the right button of the mouse, and the calibration is done. (**Fig. 25**).
7. Now you can begin measuring. Double click the picture in the list bar or just place the microscope on the object and click the "Measurement" button.



**FIG. 25**

## Measuring - Angles

1. Click the "Measurement" button to open the Measurement Window.
2. Click the check box next to "Measure." (Fig. 26)
3. Select the mode "Angle" from the drop down.
4. Set the "Accuracy" to the number of decimal points displayed in the measurement.
5. Click and hold the right button of the mouse at the first point. (Fig. 27)
6. Drag to the left side and release the right button of the mouse. (Fig. 28)
7. Hold the right button of the mouse and drag to the other side counterclockwise. (Fig. 29)
8. Release the right button of the mouse, and the angle measurement will appear. (Fig. 30)

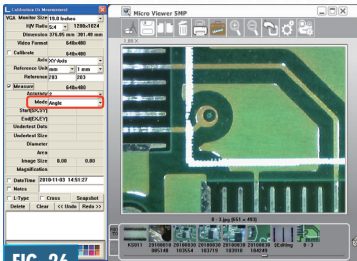


FIG. 26

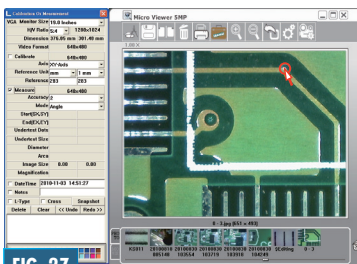


FIG. 27

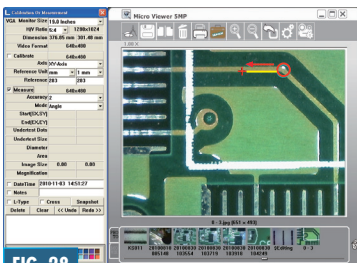


FIG. 28

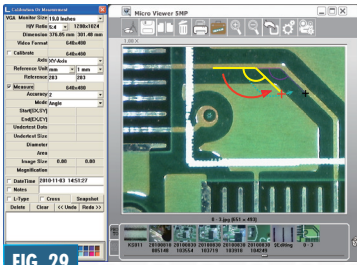


FIG. 29

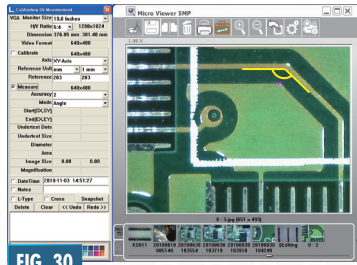


FIG. 30



## Measuring - Circle/Ellipse

1. Click the "Measurement" button to open the Measurement Window.
2. Check the "Measure" box (Fig. 31).
3. Select the "Circle" Mode for circle or "Ellipse" mode for ellipse.
4. Check the "Cross" function to display crosshairs.
5. Hold the right button of the mouse at the upper left of the object (Fig. 32).

*\*You can aim easily by aligning the X axis cross line with the top of the object and aligning the Y axis cross line with the left of the object.*

6. Drag to the lower right of the object (Fig. 33).

*\*You can aim easily by aligning the X axis cross line with the bottom of the object and aligning the Y axis cross line with the right of the object.*

7. Release the right button of the mouse (Fig. 34).
  - The Circle measurement will display 2 measurements. The "D" means diameter and the "A" means area.
  - The Ellipse measurement will display 3 measurements. The "D1" means X axis diameter, "D2" means Y axis diameter, and "A" means area.

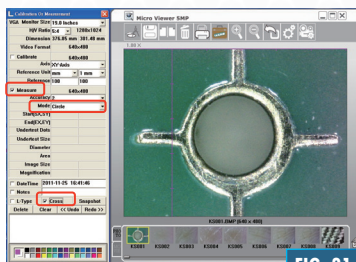


FIG. 31

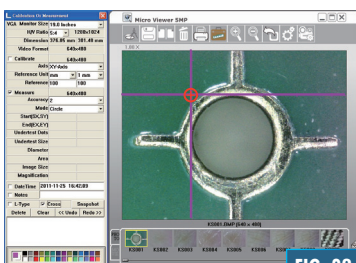


FIG. 32

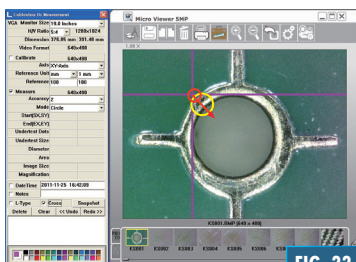


FIG. 33

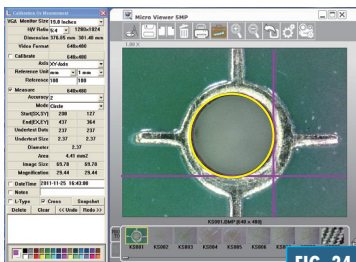
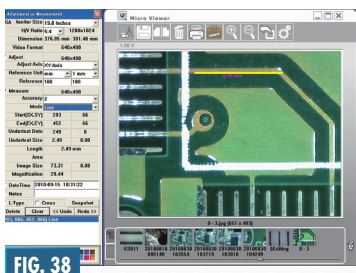
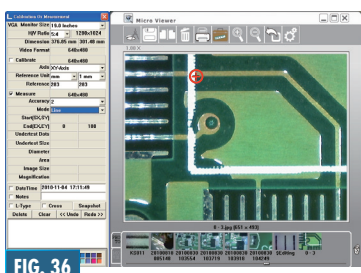
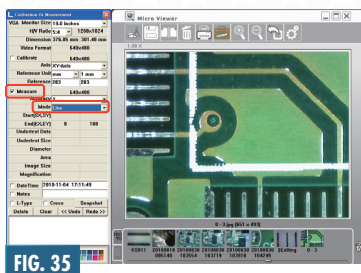


FIG. 34

## Measuring - Line

1. Click the "Measurement" button to open the Measurement Window.
2. Check the "Measure" box. **(Fig. 35)**.
3. Select the "Line" Mode.
4. Hold the right button of the mouse at the first measurement point. **(Fig. 36)**.
5. Drag the mouse to the sending point of the measurement **(Fig. 37)**.
6. Release the right button of the mouse, and the line will appear. The number is the length in the calibrated units of measure **(Fig. 38)**.





## Measuring - Rectangle

1. Click the "Measurement" button to open the Measurement Window.
2. Check the "Measure" box,
3. Select the "Rectangle" Mode (**Fig. 39**).
4. Click and hold the right button of the mouse at corner of the object (**Fig. 40**).
5. Drag to the lower right of the object (**Fig. 41**).
6. Release the right button of the mouse and the rectangle will appear. The number is the area of the triangle (length x width = area) (**Fig. 42**).

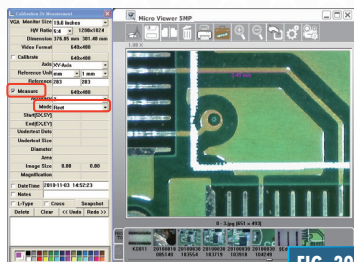


FIG. 39

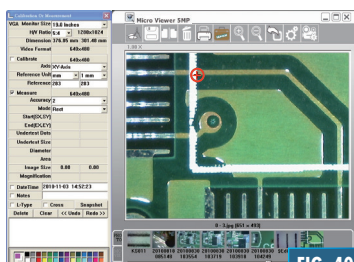


FIG. 40

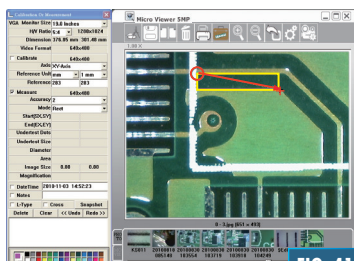


FIG. 41

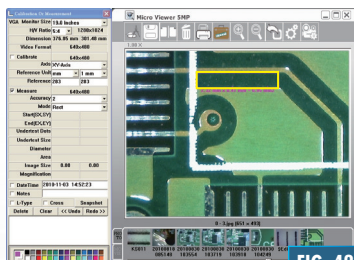
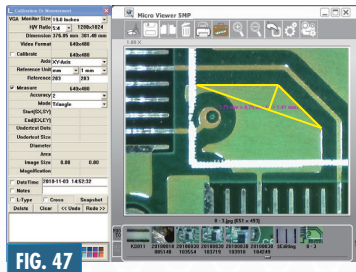
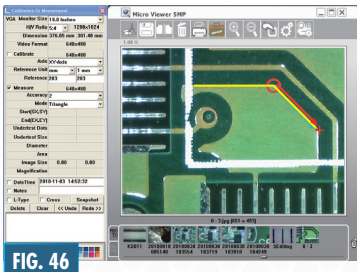
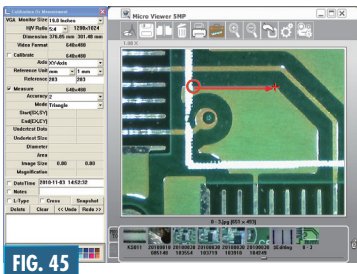
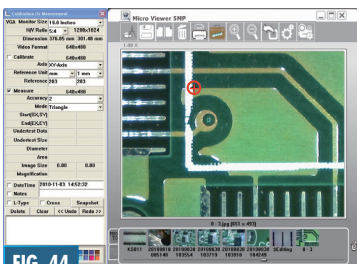
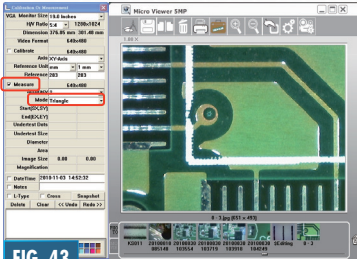


FIG. 42



## Measuring - Triangle

1. Click the "Measurement" button to open the Measurement Window.
2. Check the "Measure" box.
3. Select the "Triangle" Mode. (Fig. 43).
4. Click and hold the right button of the mouse at the first point of the object. (Fig. 44).
5. Drag to the second point and release. (Fig. 45).
6. Click and hold the right button of the mouse again at the second point of the object (Fig. 46).
7. Release the right button of the mouse, and the Triangle measurement will appear. The number displayed is the area of the triangle (width x length / 2 = area). (Fig. 47).





## Measuring - Radius/Arc

1. Click the "Measurement" button to open the Measurement Window.
2. Check the "Measure" box.
3. Select the "3DotRadius" Mode (Fig. 48).
4. Click and hold the right button of the mouse at the first point of the arc (Fig. 49).
5. Drag to the second point of the arc and release (Fig. 50).
6. Click and hold the right button of the mouse again at the second point of the arc, then drag to the third point of the arc (Fig. 51).
7. Release the right button of the mouse, and the arc measurement will appear. The "R" means radius, "A" means angle, and the "L" means arc (Fig. 52).

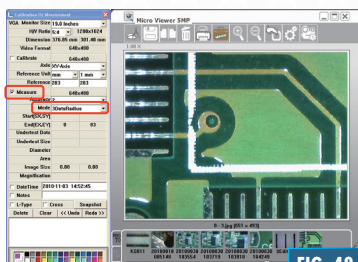


FIG. 48

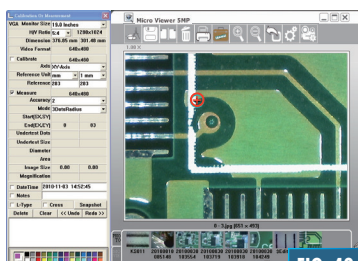


FIG. 49

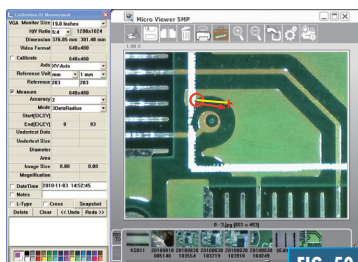


FIG. 50

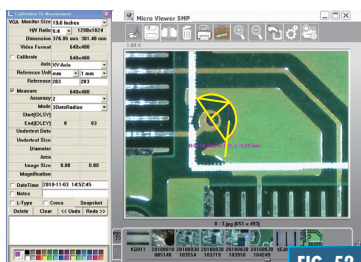


FIG. 52

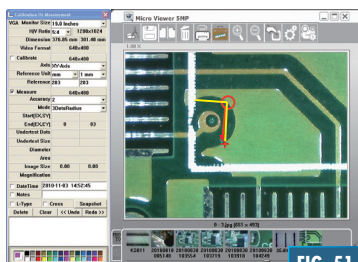
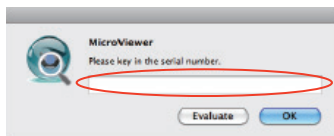


FIG. 51



## Software Installation (Mac)

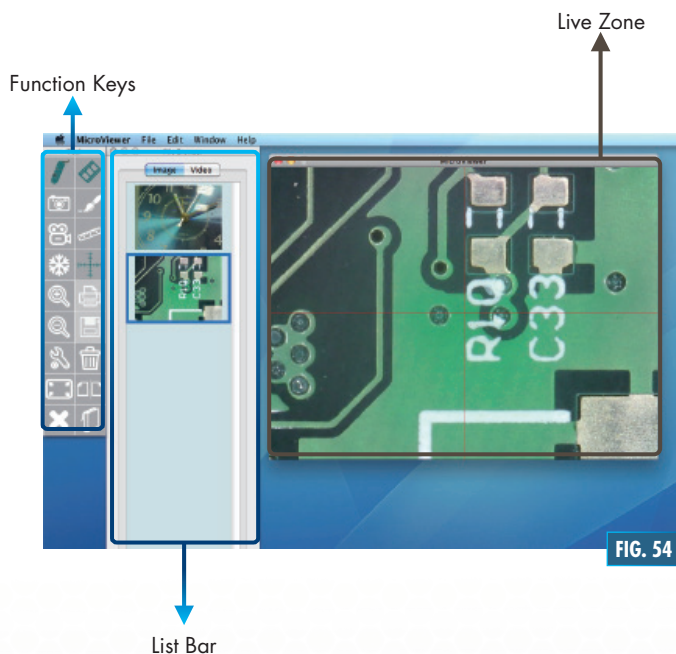
1. Insert the software installation CD into the CD-ROM drive. The installation program will appear automatically on your screen.
2. Drag the "MicroViewer" icon to the Applications folder.
3. Open your application folder and double-click to open the MicroViewer software.
4. Key in the Mac OS version serial number which can be found on the paper CD envelope or just press the Evaluate button for a 30 day free trial.

**\*\*The Mighty Scope must be plugged into the computer to open and run the MicroViewer software. The MicroViewer will not run without a Mighty Scope connected.**



## MicroViewer Software (Mac)

1. Double click the [MicroViewer] icon on your desktop or in your Applications folder (**Fig. 53**).
  - Make sure the Mighty Scope is plugged into the USB port.
2. The MicroViewer window will show up and you should see the live image from the Microscope (**Fig. 54**).



## MicroViewer Menu (Mac)



### Preview

Enable the live image of the microscope. *(Saved as a JPG file)*



### Snapshot

Take a picture.  
*(Saved as a JPG file)*



### Record

Capture a movie.  
*(Saved as an AVI video file)*



### Freeze

Freeze the live image on the screen.  
Click again to return to the live image.



### Zoom in/out

Select the zoom-in and zoom-out function on live and captured pictures. The arrow keys on the keyboard will move the image.  
*The maximum magnification is 6x.*



### Preferences

The preference window.  
*(Please see the Video Setup Section 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

Input words, draw lines, circles and freehand.



### Measurement

Measure lines, circles, angles, rectangles or triangles  
*(Please see the Measurement Section for more detail)*



### Cross hair

Add a cross hair to the live image.  
Position the cross hair by clicking on the image.



### Print

Print a saved picture.



### Save

Save image as a new file.



### Delete

Double-Click the file in the list bar, and click the "Delete icon." The file will be erased.



### Compare

Compare a live image with a picture or video, compare two pictures or compare two live image from two microscopes  
*(Please see the Compare Section for more detail)*



### Manual

Access the User's Manual for MicroViewer.



## Micro Viewer Comparison Mode (Mac)

1. Click the Compare button  and the compare window will appear on the screen. The live image shows on the left side (**Fig. 55**).
2. The live image shows in the left side. Click on the right image and double click a picture or a video in the list bar. The file will show up on the right view.
3. The left side also supports freeze function to compare two images
4. The compare window also supports comparing two existing pictures.
5. Plug two microscope USB cables into the USB ports. to compare two live images off of each microscope.
6. Click the Compare button  to return to live mode when viewing saved images.

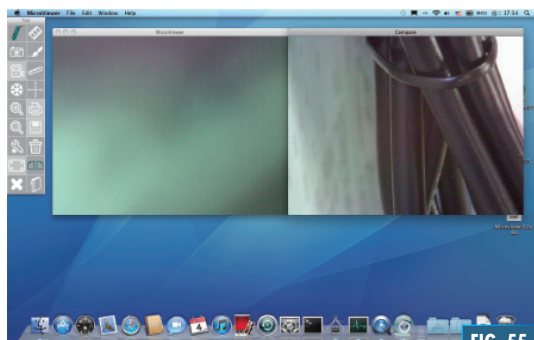



FIG. 55



## Media Setup - Overview (Mac)

Click the Preference  button for the media dialogue box (Fig. 57).

- 1. Video source:** Allows the user to choose or switch the image source if there is more than one microscope connected to the PC.
- 2. Video resolution:** Supports three resolutions: 640x480, 1024x768, 2048x1536  
*\*Both the Snapshot and Record format will be changed*
- 3. Video adjustment:** 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. (i.e. If you choose "60:1" only one second of every 60 seconds will be recorded. *\*If you choose the time-lapse function, please make sure the recording time is longer than the ratio time. (i.e. "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 open in full-screen mode.
- 12. Aspect Ratio:** Choose between 3

options for full-screen mode.

**4:3:** This mode is necessary for the measurement function.

**FULL:** The image will fill the screen. The aspect ratio may not be correct, so live images may appear distorted.

**ICON:** The Screen will be filled with the MicroViewer window, so all function buttons will be visible. In this mode, the aspect ratio may not be correct, so live images may appear distorted and not correct for the measuring.

**13. Snapshot:** Check the box and to save pictures with maximum resolution of 2592x1944(5MP).

*\*It could take between 5-6 sec. to save an image in this format.*

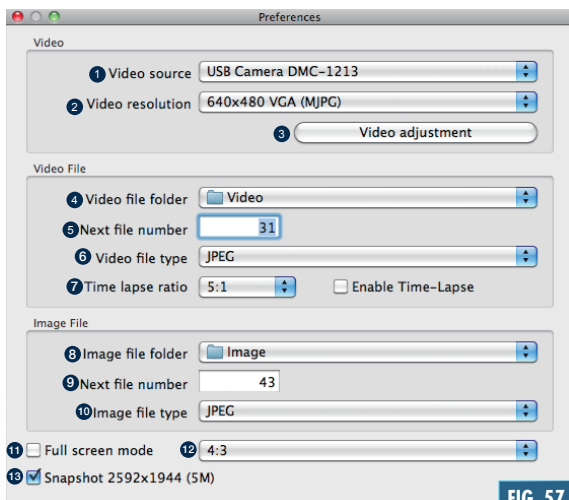



FIG. 57



## Measuring -Overview (Mac)

Click the Measurement button  to open the measurement dialogue window (Fig. 58a | Fig. 58b).

**Calibrate:** Click "Calibrate" button at the top of the dialogue box to enter calibration mode.

- 1. Reference Unit:** Select the measurement unit for calibration. There are three different units: mm/inch/mil
- 2. Reference Size:** Select the unit of measurement or calibration.

*\*Using a scale at the chosen magnification allows for the most accurate measuring.*

**Measure:** Click "Measure" button at the top of the dialogue box to enter measurement mode.

- 3. Accuracy:** The number of decimal points the measurement is accurate to. Supports up to nine decimal points.
- 4. Measure Mode:** Choose the type: Angle | Circle | Ellipse | Line  
Rectangle | Triangle | 3-Dot-Radius
- 5. Measurement Data:** Shows the latest measurement data.
- 6. Delete:** Click the measurement data to delete and click the delete button.
- 7. Add Notes:** Add notes to the saved image.
- 8. Show Cross line:** Check the Cross Line if you want this function for accurate measurement.
- 9. Add Date Time/Notes:** Add date/time and notes to the image.

**\*\*Click the Snapshot button  to save the measured picture.**

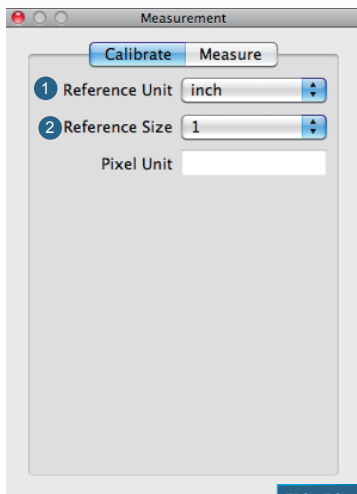


FIG. 58a

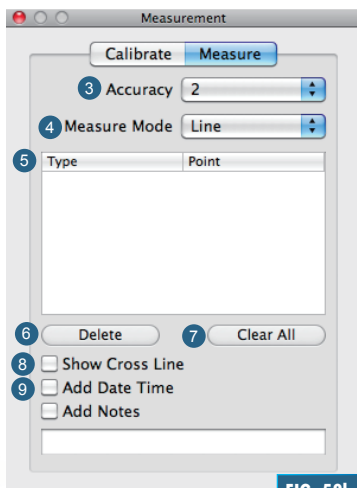


FIG. 58b



## Measuring - Calibration (Mac)

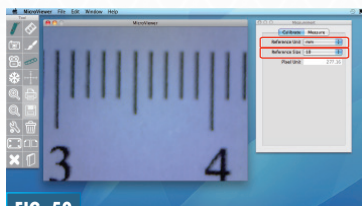


FIG. 59

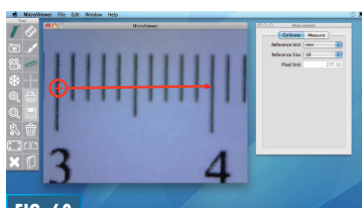


FIG. 60

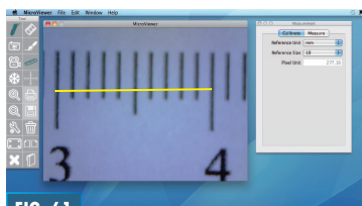


FIG. 61

1. Place a scale under the camera and adjust the focus knob until the image is sharp (**Fig. 59**).
2. Click the "Measurement" button to open the Measurement Window.  
*\*You must calibrate again if you change the distance, magnification, or resolution.*
3. Click "Calibrate," and choose the "Reference Unit" that matches your scale and is the largest dimension visible on your snapshot. (i.e. *The largest dimension available between 3 centimeter and 4 centimeter is 10 millimeter. Therefore, we choose the 10mm as the "Reference Unit"*)
4. Click and hold the mouse button at the 3 centimeter line and drag the cursor to the 3.5 centimeter line (**Fig. 60**).
5. Release the mouse button, and the calibration is complete. (**Fig. 61**).
6. Now you can begin measuring. Double click the picture in the list bar or just place the microscope on the object and click the "Measurement" button.



## Measuring - Angles (Mac)

1. Click the "Measurement" button to open the Measurement window.
2. Click the "Measure" button. Change the measure mode to "Angle." (Fig. 62)
3. Click and hold the mouse button at the first point of the angle. (Fig. 63)
4. Drag to the second point or corner of the angle and release the button of the mouse. (Fig. 64)
5. Click the mouse button at the third point. (Fig. 65)
6. The measurement of the angle will appear on the image as well as in the "Measurement Dialogue Box."

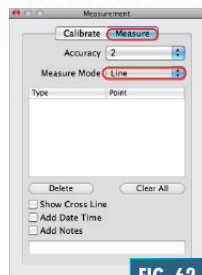


FIG. 62

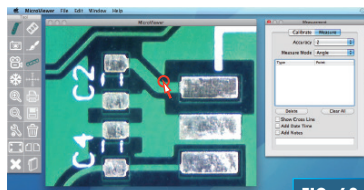


FIG. 63

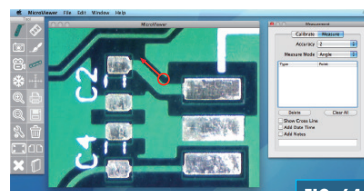


FIG. 64



FIG. 65

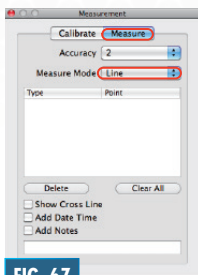


FIG. 67

## Measuring - Circle/Ellipse (Mac)

1. Click the "Measurement" button to open the Measurement window.
2. Click the "Measure" button. Change the measure mode to "Circle or Ellipse." (Fig. 67).
3. Click and hold the button of the mouse at the edge of the object (Fig. 68).
4. Drag to the opposite edge of the object (Fig. 69).
5. Release the mouse button (Fig. 70).
  - The Circle measurement will display 2 measurements. The "D" means diameter and the "A" means area.
  - The Ellipse measurement will display 2 measurements. The "D" means diameter and the "A" means area.

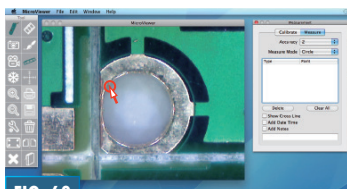


FIG. 68

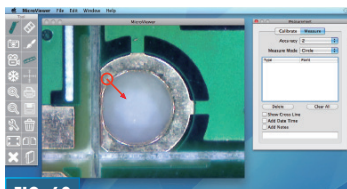


FIG. 69

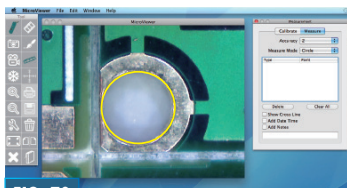


FIG. 70



## Measuring - Line (Mac)

1. Click the "Measurement" button to open the Measurement window.
2. Click the "Measure" button. Change the measure mode to "Line." (Fig. 71)
3. Click and hold the mouse button at the first measurement point. (Fig. 72).
4. Drag the mouse to the sending point of the measurement (Fig. 73).
5. Release the mouse button, and the line will appear. The number is the length in the calibrated units of measure (Fig. 74).

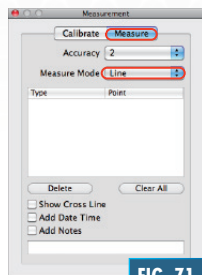


FIG. 71

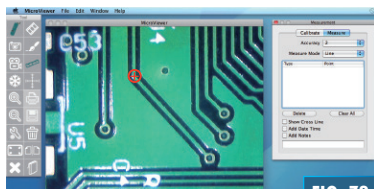


FIG. 72

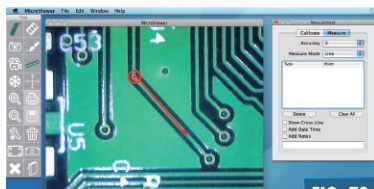


FIG. 73

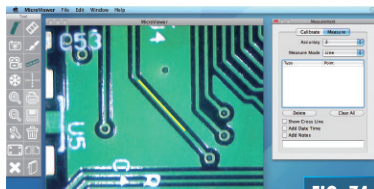


FIG. 74

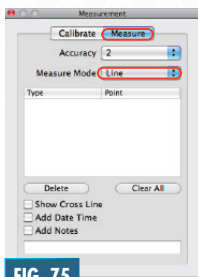


FIG. 75

## Measuring - Rectangle (Mac)

1. Click the "Measurement" button to open the Measurement window.
2. Click the "Measure" button. Change the measure mode to "Rectangle." (Fig. 75)
3. Click and hold the mouse button at corner of the object (Fig. 76).
4. Drag to the opposite corner (diagonally) of the object (Fig. 77).
5. Release the mouse button and the rectangle will appear. The number is the area of the triangle (length x width = area) (Fig. 78).

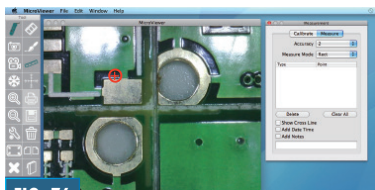


FIG. 76

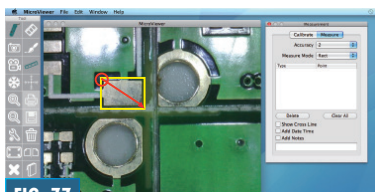


FIG. 77

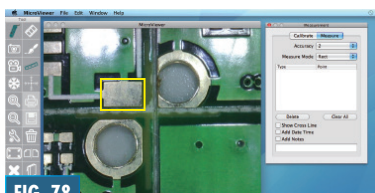


FIG. 78



## Measuring - Triangle (Mac)

1. Click the "Measurement" button to open the Measurement window.
2. Click the "Measure" button. Change the measure mode to "Triangle." (Fig. 79)
3. Click and hold the mouse button at the first point of the object. (Fig. 80).
4. Drag to the second point and release. (Fig. 81).
5. Click and hold the mouse button again at the second point of the object (Fig. 82).
6. Release the mouse button, and the Triangle measurement will appear. The number displayed is the area of the triangle ( $\text{width} \times \text{length} / 2 = \text{area}$ ). (Fig. 83).

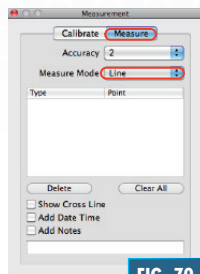


FIG. 79

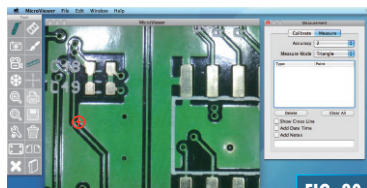


FIG. 80

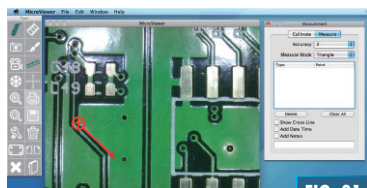


FIG. 81

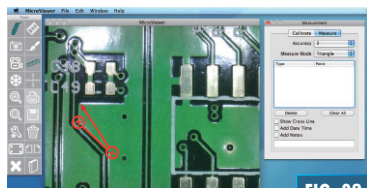


FIG. 82



FIG. 83



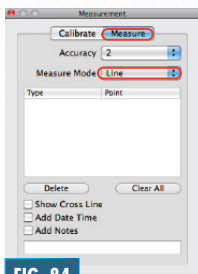


FIG. 84

## Measuring - 3-Dot-Radius (Mac)

1. Click the "Measurement" button to open the Measurement window.
2. Click the "Measure" button. Change the measure mode to "3DotRadius." (Fig. 84)
3. Click and hold the mouse button at corner of the object (Fig. 85).
4. Drag to the second point of the object and release the mouse (Fig. 86).
5. Click the mouse on the third point of the radius or arc and the measurement will appear. The "R" means radius, "A" means area, and the "L" means arc. (Fig. 87).

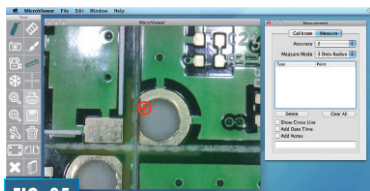


FIG. 85

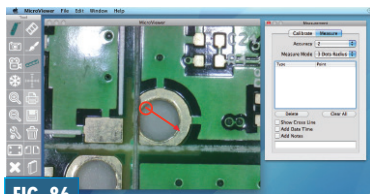


FIG. 86

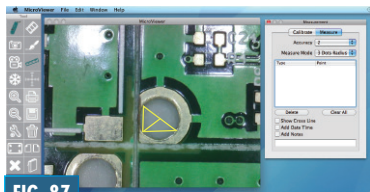



FIG. 87



## Draw (Mac)

Click the Draw button  to access the drawing menu and functions (Fig. 88).

## Draw Menu (Mac)



### Cursor

Move the window



### Line Tool

Draw lines with custom line weights and color



### Circle Tool

Draw circles with custom line weights and color



### Delete Tool

Delete the last drawing



### Text Tool

Place text over the image with custom line weights and color



### Freehand Tool

Draw custom shapes or words with custom line weights and color



### Rectangle Tool

Draw rectangles with custom line weights and color



### Clear Canvas Tool

Clear all text and drawings on the canvas





## FAQ

- Q.** After inserting the software installation CD into the CD-ROM drive, why doesn't the install start automatically?
- A:** Due to the computer's system security, many system's software disables the CD-R/USB Auto run function. Please double click the CD-ROM drive on your computer, and click the AUTORUN.EXE file.
- Q.** Why does the image lag after I check the Use AVI Decompressor box on the Video Setup window?
- A:** The Use AVI Decompressor function doesn't support Windows XP SP3 or above.
- Q.** Why is the measurement number incorrect?
- A:** You need to use the Calibrate function on the measurement window before making a measurement. Also if you change the focal distance or height of the object you will need to use the Calibrate function again.
- Q.** Why does the monitor "twinkle" under the measurement mode?
- A:** Set up the system using the following steps: Start>Control Panel>Home>System Advanced>Performance>Setting. Deselect the "Show shadows under windows" and "Show window contents while dragging."
- Q.** Why does the recording file show an error message when I open the time-lapse function?
- A:** If you open the time-lapse function, please make sure the recording time is longer than the ratio time. i.e. Choose 60s:1s, the real recording time must be longer than 60 seconds.
- Q.** Why do the LED lights will go out automatically while recording?
- A:** Under Windows 7, the "power saving" function will turn off the LED lights automatically, please set the system by the following steps: Start>Control Panel>System and Security>Power Options>Select a power plan. Click the "Show additional Plans" arrow, and choose the "High performance."
- Q.** After installing the MicroViewer 5.0MP, why doesn't the MicroViewer 1.3M program work?
- A:** The version you are running might be out of date. Please install the upgrade version of MicroViewer 1.3MP by the following steps:
- Insert the MicroViewer 5MP CD into the CD-ROM drive.
  - Click the "Install MicroViewer 1.3MP" button on the installation program and the latest MicroViewer 1.3MP will install automatically.
- Q.** I can't install the MicroViewer because of the antivirus software protection. How do you solve this problem?
- A:** Your antivirus software may quarantine the MicroViewer because the software thought it was a virus. Try adding MicroViewer to your antivirus white list or try uninstalling the antivirus software, install the MicroViewer, and install your antivirus software again.



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4595 Platt Rd  
Ann Arbor, MI 48108

Tel: **734-973-0099**

Fax: **734-973-0097**

E-mail: **[sales@aveninc.com](mailto:sales@aveninc.com)**

Web: **[aveninc.com](http://aveninc.com)**

**[aveninc.com](http://aveninc.com)**