

# **USB Digital Microscope (20x-200x)**



**User instructions**

## ● Introduction

Thank you for your choice of our product - it is a high-tech while easy to use Digital Microscope. With this unit you will see a unique and “bigger” world.

It’s easy to zoom in on stamps, coins, paper currency, plants, insects, rocks and minerals, and so much more.

We recommend reading this manual first to get the best out of this unit.

## Computer System Requirements:

- Windows 2000/XP/VISTA/WIN7&Mac
- P4 1.8 or above
- RAM: 256M
- Video Memory: 32M
- USB port: 2.0
- CD-ROM Drive

## ● Technical Specifications

Image sensor	2 Mega Pixels (interpolated to 5M)
Still capture resolution	2560x2048 (5M), 2000x1600, 1600x1280 (2M), 1280x1024, 1024x960, 1024x768, 800x600, 640x480, 352x288, 320x240, 160x120
Video capture resolution	2560x2048 (5M), 2000x1600, 1600x1280 (2M), 1280x1024, 1024x960, 1024x768, 800x600, 640x480, 352x288, 320x240, 160x120
Focus Range	Manual focus from 10mm to 500mm
Frame Rate	Max 30f/s under 600 Lus Brightness
Magnification Ratio	20x to 200x
Video format	AVI
Photo format	JPEG or BMP
Light source	8 LED (adjustable by control wheel)
PC interface	USB2.0
Power source	5V DC from USB port
Operation system	Windows2000/XP/Vista/Win7/ Mac
OSD language	English, German, Spanish, Korean, French, Russian

Bundle software	MicroCapture with measurement & calibration function
Size	110mm (L) x 33mm (R)

- **Install the software**

**Connecting the Microscope to Computer!!** It is must to connect the Microscope to Computer before software installation.

Insert the driver CD into CD-ROM Drive and this will automatically display the following interface:



1. Install the driver by clicking **install *Microscope Driver***

The Install Shield Wizard will walk you through the whole process. Click on the “*Next*” button to continue.

2. Install the MicroCapture software

Click ***MicroCapture software*** and then reboot the system when asked.

3. You can also browse the User’s manual in PDF format and the CD contents by choosing the corresponding menus.


## A Quick Look at the Digital Microscope

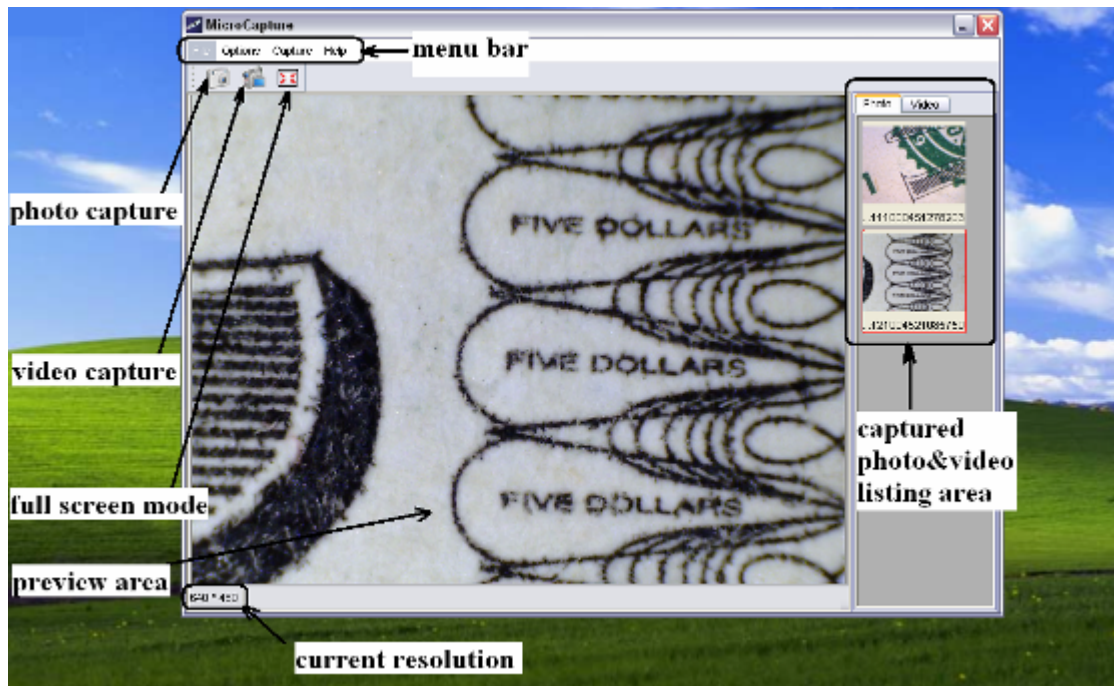


- 1/ Remove protective lens cap from microscope before use.
- 2/ Use the FOCUS WHEEL to adjust focus on the subject.
- 3/ The SNAPSHOT BUTTON enables user to capture snapshots by hardware; photo capture by software is discussed later on in this manual.
- 4/ Light control wheel enables you to adjust the LED light brightness

- **Start Microscope**

Connect your Microscope to your PC USB port, start the software by

clicking the  icon generated on the desktop after installation and you will see the following screen pop up.

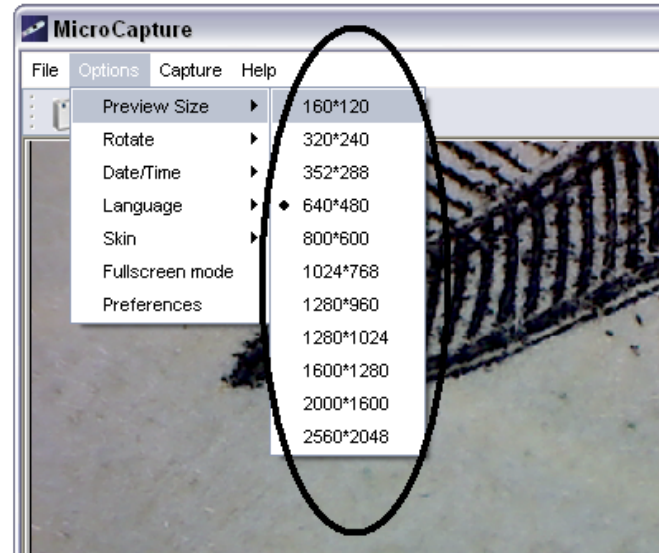


1. When the Microscope is disconnected from your PC USB port, the screen will display ***“No Device detected, please connect your Microscope directly to your PC USB port.”***

**No Device detected, please connect your Microscope directly to your PC USB port.**

- **Change preview size**

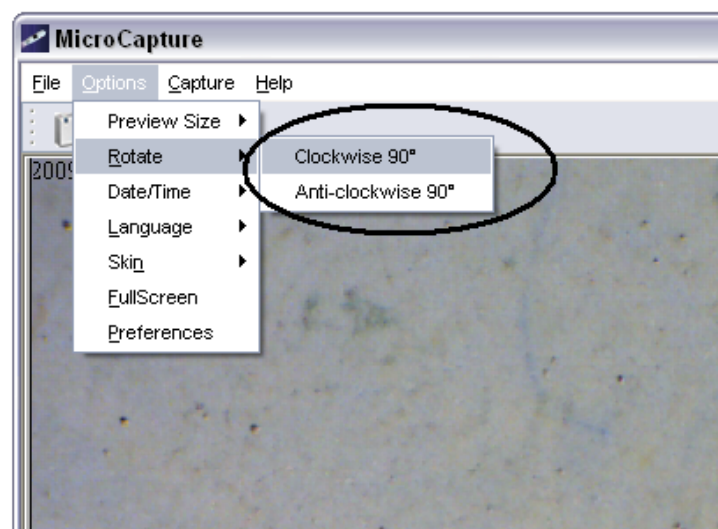
You can change the preview size by the following operation:



**Note: The size of the photo taken is equivalent to the preview size selected in the Options menu/Preview Size.**

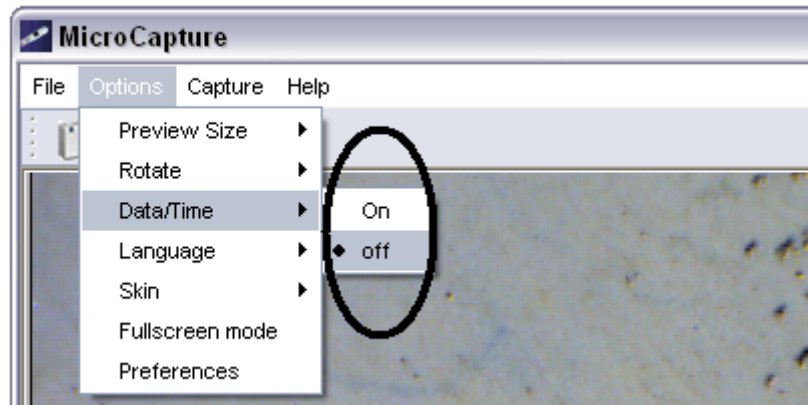
- **Rotate the output image angle**

You can rotate the output image clockwise and counter-clockwise.



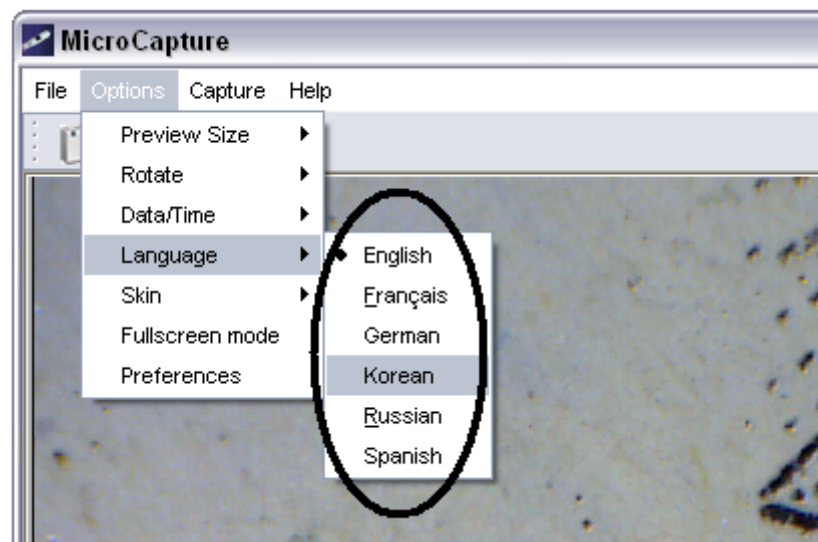
- **Date/Time**

You can display or turn off Date/Time by the following operation:



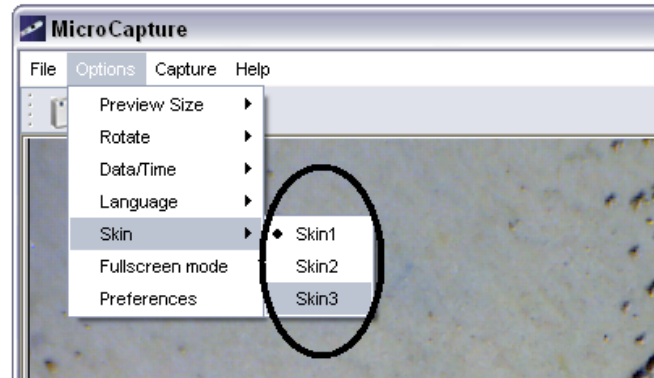
- **Language**

You can choose On Screen Display language by the following operation:



- **Skin**

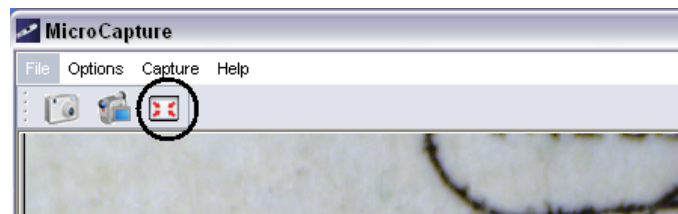
You can choose to change the appearance of your MicroCapture screen by the following operation:



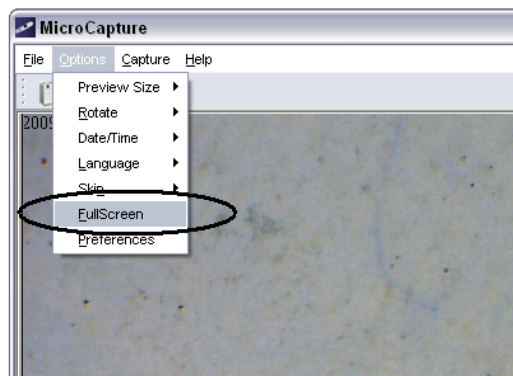
- **Full screen**

1. You can enter & quit full screen mode by:

- 1) Double-clicking the preview area.
- 2) Clicking the full screen icon:



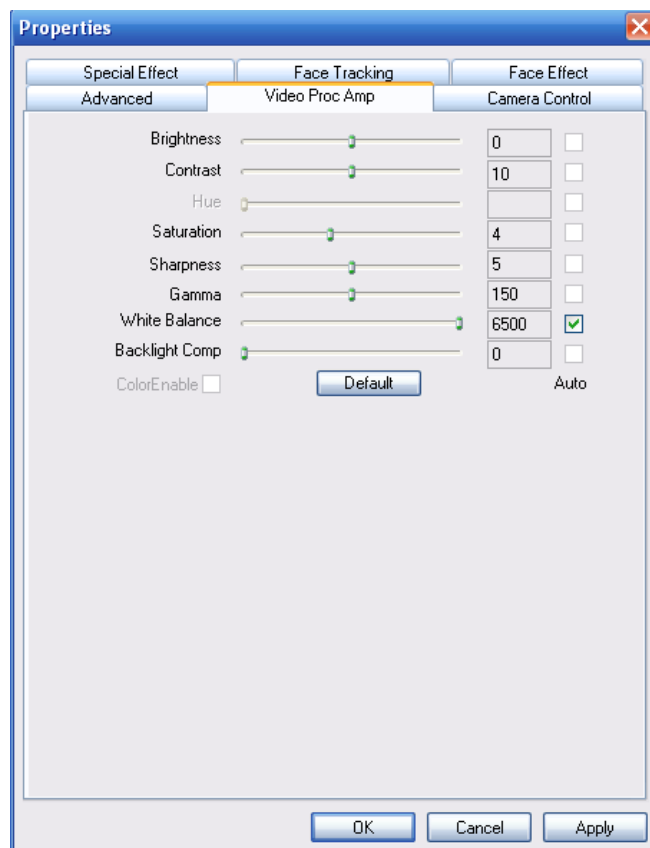
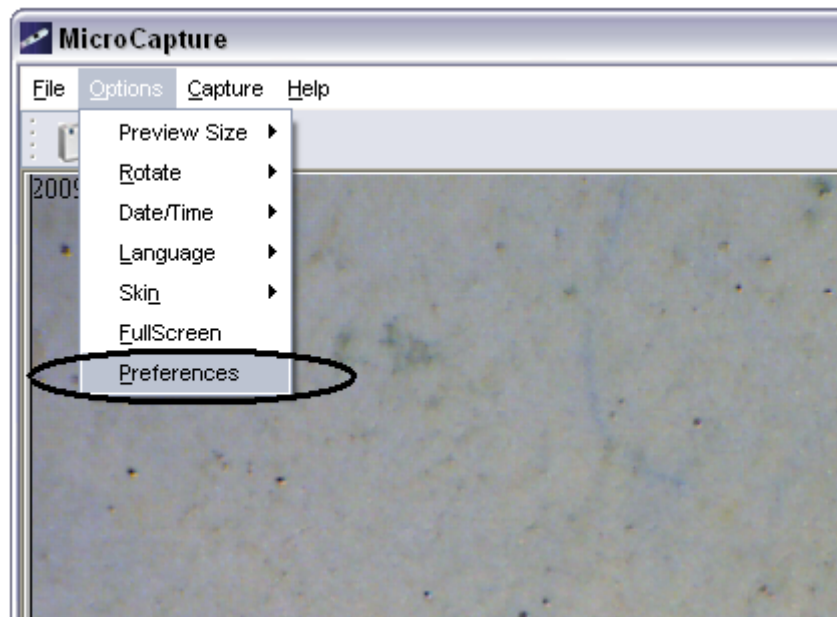
3) Choose **Full screen mode** from menu.



When in full screen mode, click on the Full screen icon to turn off and restore toolbars and menus.



- Preferences




Major operations under preferences include Brightness, Contrast, Saturation, white balance etc.

- **Capture**

- 1. Photo capture**


You can take photos by either of the following ways:

- 1) Click the camera button 
- 2) Choose **Capture** and then click **Photo**
- 3) By pressing F11

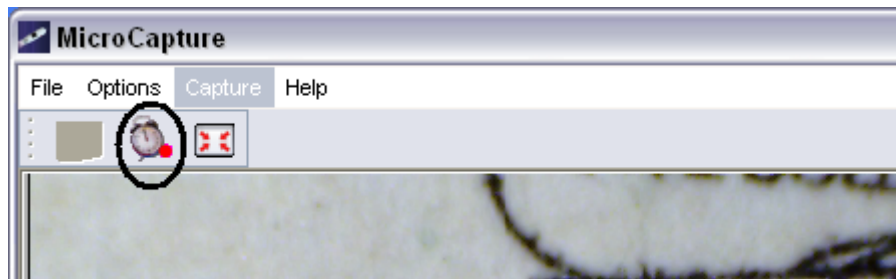
Captured photos are saved automatically and image thumbnails will be available on the right side of the MicroCapture screen for further editing. For editing photo, please refer to later operations.

- 2. Video capture**

You can record video by either of the following two ways:

- 1) Click the video camera button 
- 2) Choose from the menu bar **Capture** and then click **Video**

When recording, there is a red dot flashing on the video camera button.



Video is saved in AVI format.

Stop capture:

- 1) Click the flashing video camera button
- 2) Choose **Capture** and then click **Stop capturing**

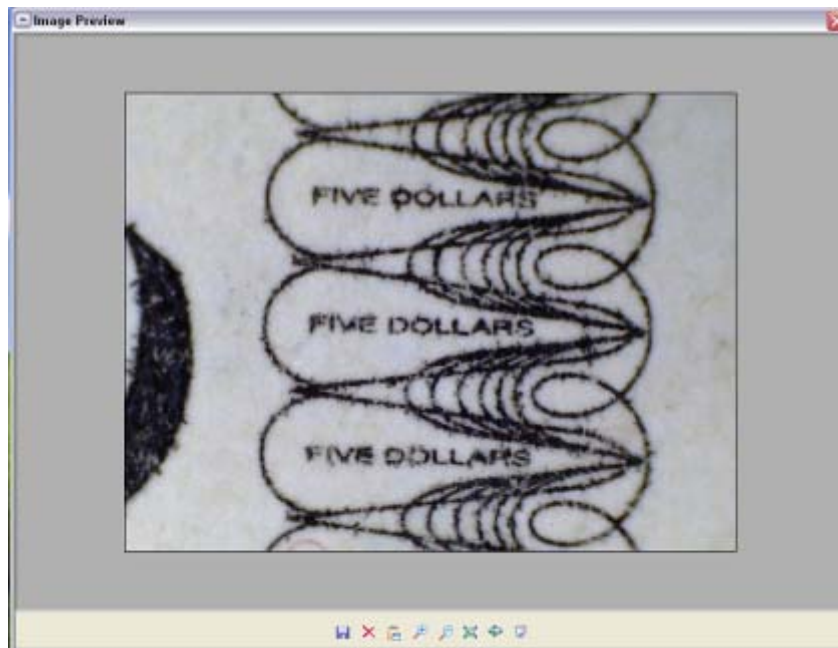
**Note: Please note the best pixels for video capturing is 640x480.**

- **Edit photos**

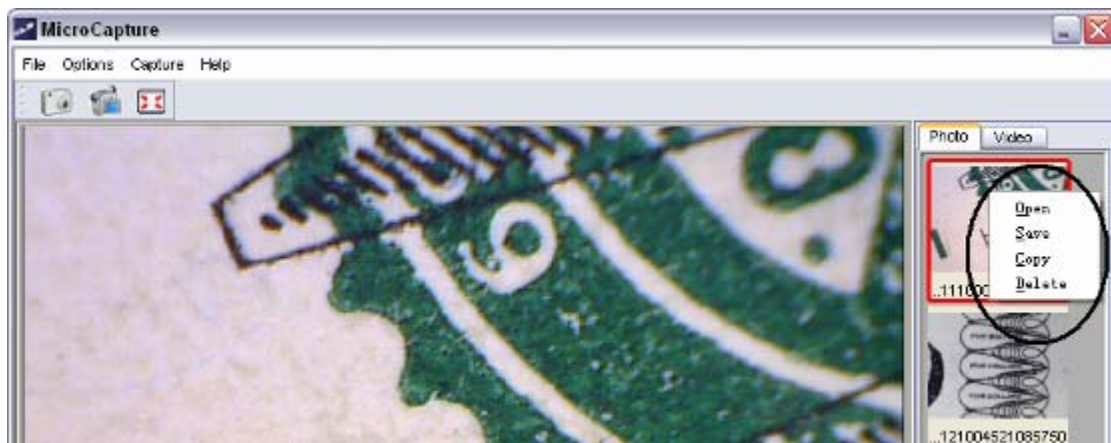
- 1. Preview photos**

- 1) Clicking on an image thumbnail will display the image selected on the preview area, with its size displayed on the left-bottom corner.

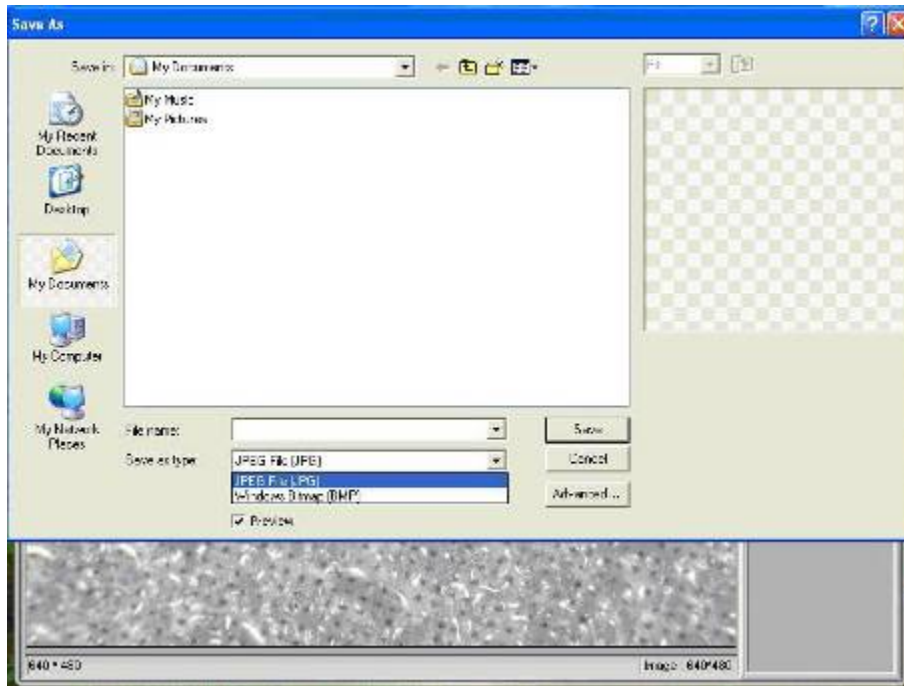
- 2) You can double click the image thumbnail and an independent preview box will pop up as shown below:



## 2. Save photos



You can save photo by right clicking on the thumbnail and then choose *Save*.



The file can be saved in either jpeg or bmp. The jpeg size in which the photo is saved is the maximum allowed for jpeg. You can choose to decrease the size by adjusting quality. Click the Advanced button to view and select jpeg save options.

### 3. Delete photos

By right clicking and then choosing *Delete*, you can delete the selected photo

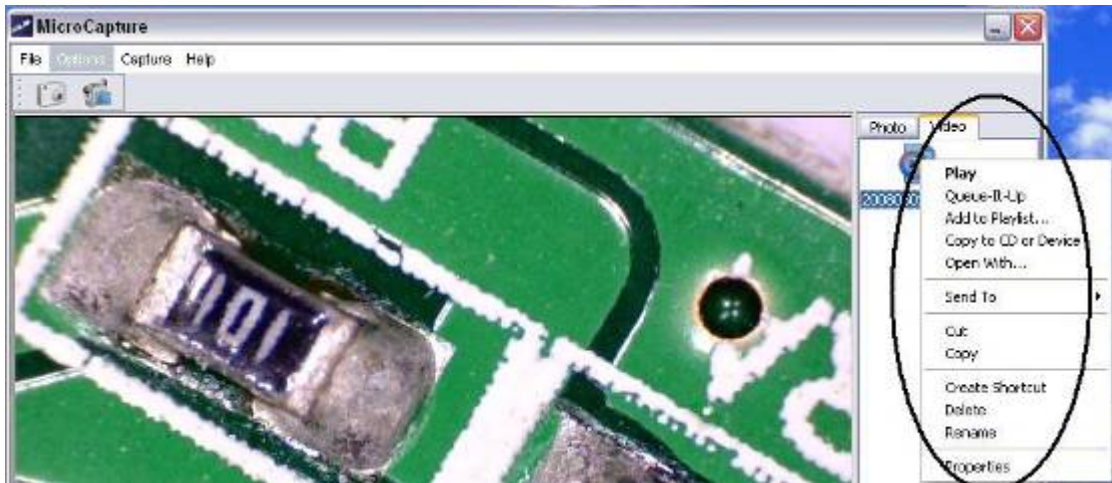
Or, at the independent preview box you can choose delete icon to delete the previewed photo.

### 4. Copy photos

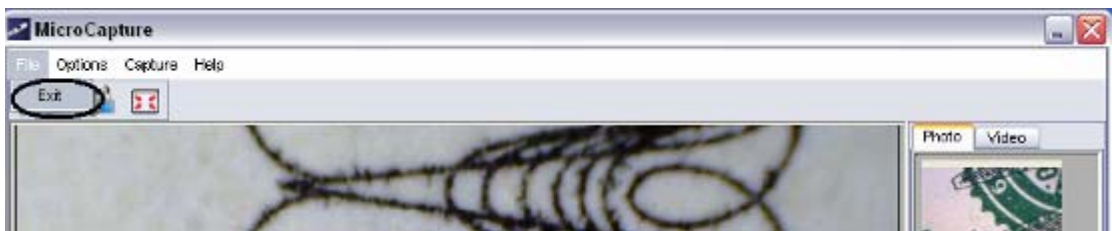
Right click on the thumbnail and then choose *Copy*.

### ● Edit videos

You can right click the video small icon listed on the right column and then choose *Play*, *Copy*, and *Delete* etc.

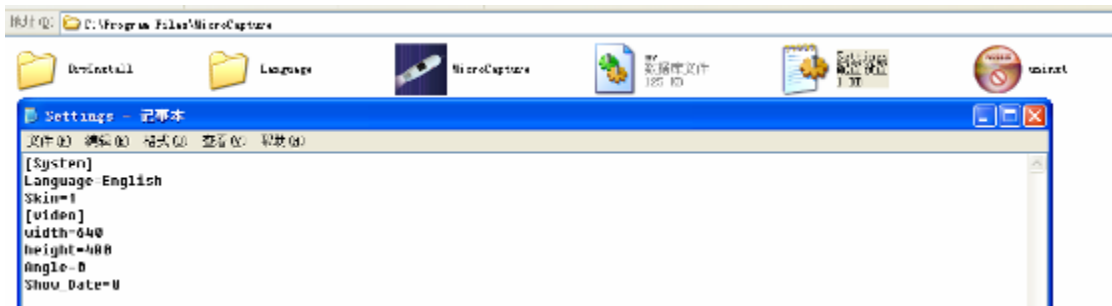


- **Quit MicroCapture**



- **Tips:**

You can preset the preview window size, output image angle, language etc by editing an .ini file named settings at *C:\Programs\MicroCapture*.

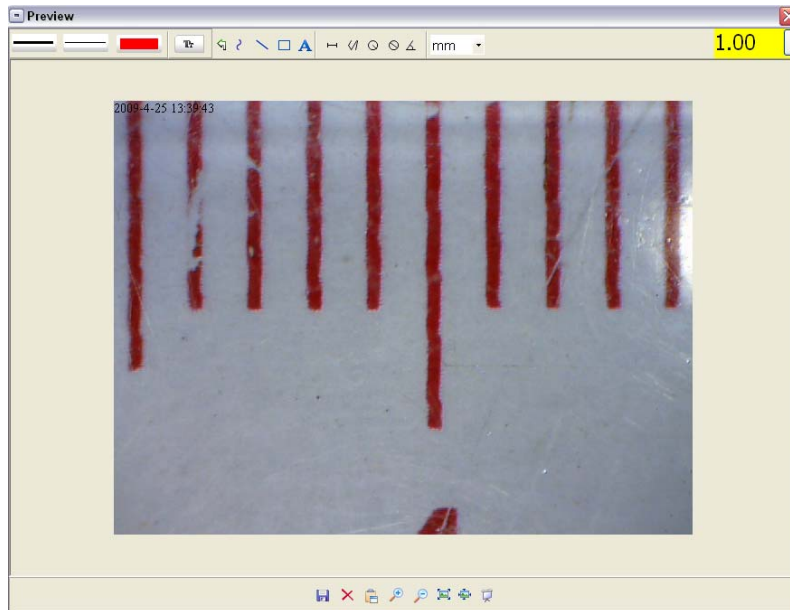



## How to use measurement & calibration function

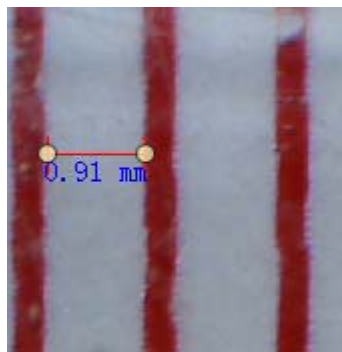
- 1 Point the microscope onto a target object e.g. a ruler; rotate the focus wheel to get a clear focus.
- 2 When the focus at the clearest point, take a snapshot
- 3 Watch the calibration at the lower-end of the focus wheel; note down the magnification value that corresponds to the indicator marker on the microscope body as shown below. That value is the magnification at which the focus was set and the image taken. (This is very important, since only with the magnification ratio noted down can the object size be worked out at later steps!!)




- 4 Open the captured photo double clicking on the thumbnail. A preview window will open

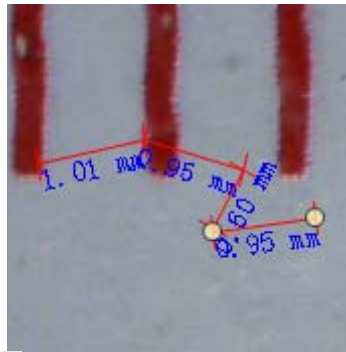



- 5 Input the magnification ratio noted down into the box indicated at the top right corner of the preview window. (Please note it is necessary to input the magnification ratio noted down on step3; otherwise the measurement is meaningless.)
- 6 Now you can measure the size of the whole or part of the object you have taken using the available options. Click on the icons on top of the window. Following are the options:
  - 1) Direct line: click  , left-click mouse to choose a start point and drag mouse to an end point, Notice that the measurement is displayed. Release the mouse when done.

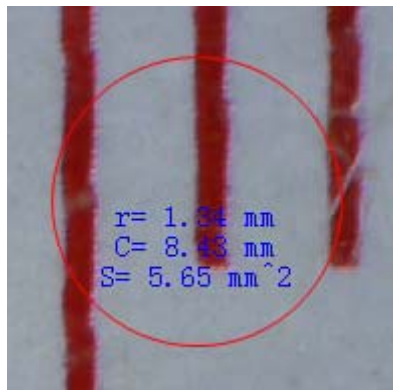



- 2) Multi-line: click  , left-click mouse to choose a start point and drag to an end point. Notice that the measurements are displayed as you go along. Release mouse when done. You can continue measuring from

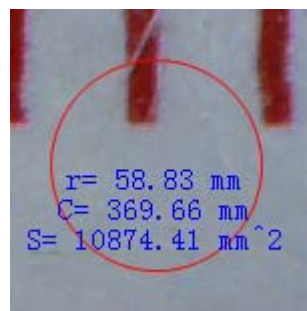
the previous end point to a next point and so on.




- 3) Circle-radius: click , left-click to choose a start point for a circle; draw the circle to an end point, release the mouse, and the radius of the circle will be displayed.

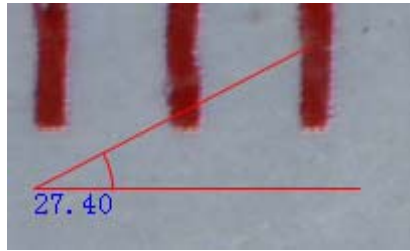


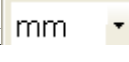







- 4) Circle-diameter: click , left-clicking to choose a start point for a circle; draw the circle to an end point, release the mouse, and the radius of the circle will be displayed.



- 5) Angle: click , left-click to choose a start point for an angle, draw the line to another point and then release the mouse to create one line for an angle. Move your mouse to bring out another line of the angle, left-click when the angle is ok. The angle value will then display.





- 6) Unit: click , you can choose the unit at which the measured values display. Units available include: pixels / inches / km / mt / mm / cm / micro
- 7 Other operations you can carry out on the photo taken include:
- 1) : make notes on the photo taken
  - 2) : select font, font style, font size etc
  - 3) : draw line, box etc on the photo
  - 4) : line color
  - 5) : line thickness
  - 6) : line type
  - 7) : undo operation

Note:

1. The magnification ratio you are allowed to input is from 20 to 200. Do not input any value beyond that.
2. The measurement value worked out by the software is only for reference; it may not be 100% correct.
3. The measurement function is only available on Windows Operating System.

## Instructions for Mac software



### Part I How to Install the Software

Open *mac* folder from the disc and copy *MicroCapture* onto your desktop for daily use.



### Part II How to use MicroCapture

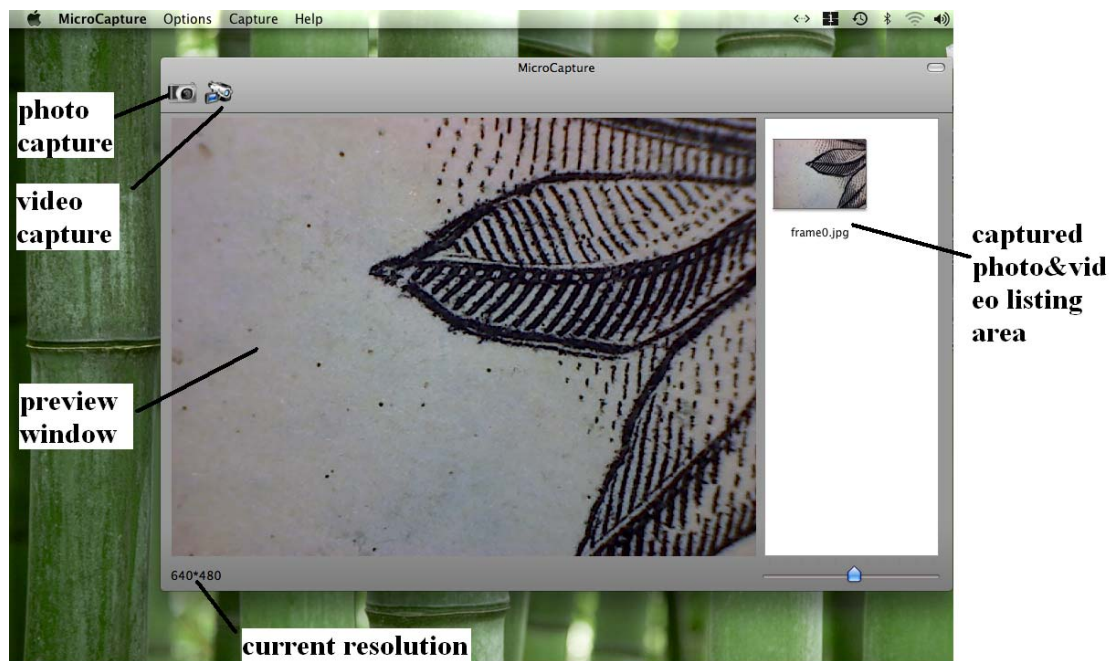
1. Plug your Microscope into PC USB port.
2. Double click MicroCapture icon to open the MicroCapture window.

The microscope is now ready to use.



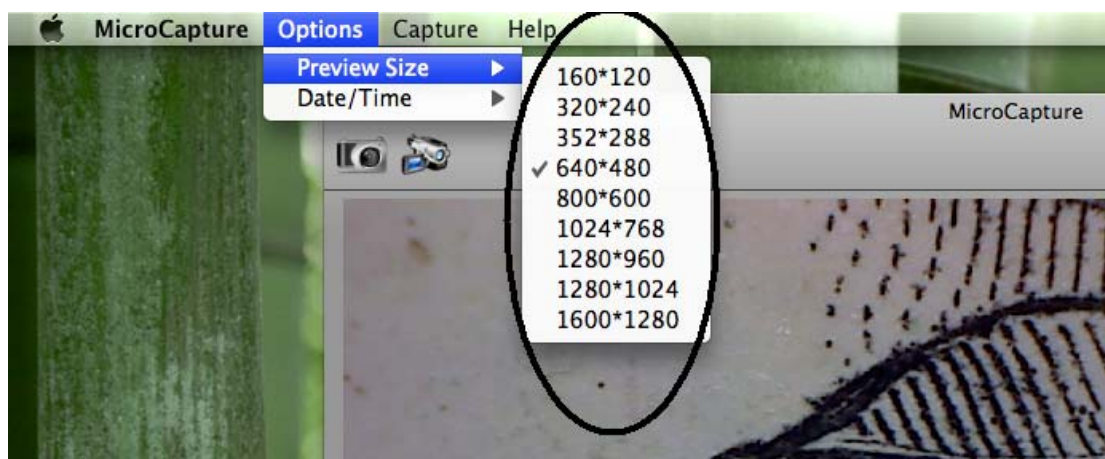
### 3. Preview

At the central window, you can preview the magnified subject.



### 4. Change preview resolution

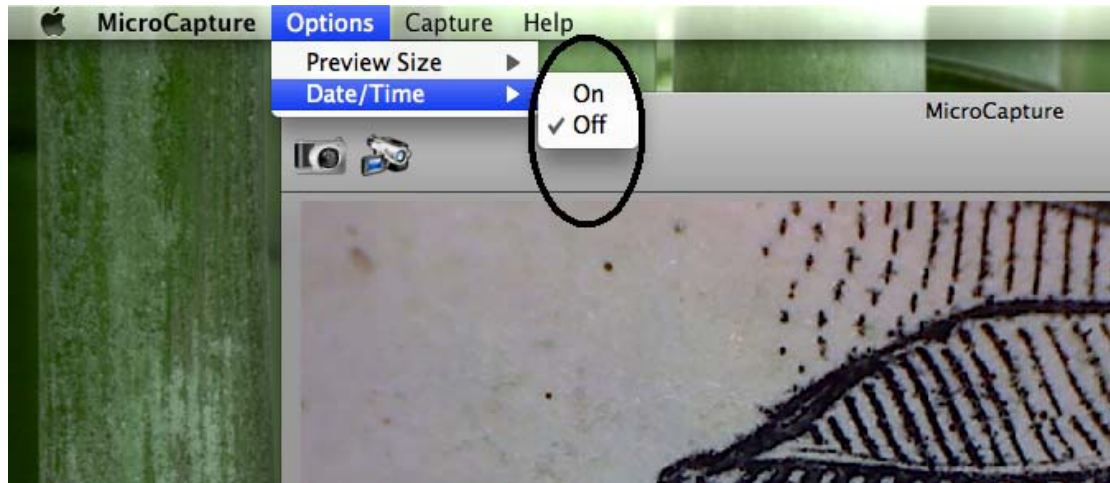
From *Options*, you can choose the preview resolution. The current resolution will be displayed at the left bottom corner of the preview window.



Please note that the preview window size always remains at 640x480 but the current resolution will show at the left bottom corner.

## 5. Date/Time

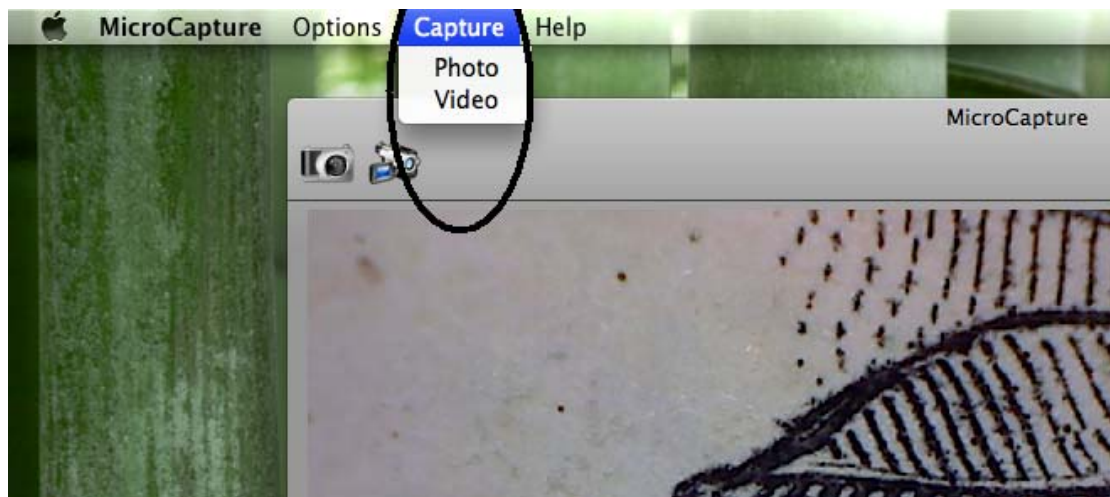
From *Options*, you can turn the date/time on or off.



## 6. Photo capture

You can capture photo by:

- 1) Choosing *Capture/Photo*



- 2) clicking photo capture icon



The captured photos will appear as thumbnails on the right side of the preview window.

## 7. Video capture

You can capture video by:

- 1) choosing *Capture/Video*



- 2) clicking video capture icon



**Note: After clicking on the icon, the video capture icon will turn red to indicate video clip recording. Click the red icon again, to stop recording!!**

The captured videos will be appear as thumbnails on the right side of the preview window under Video tab.

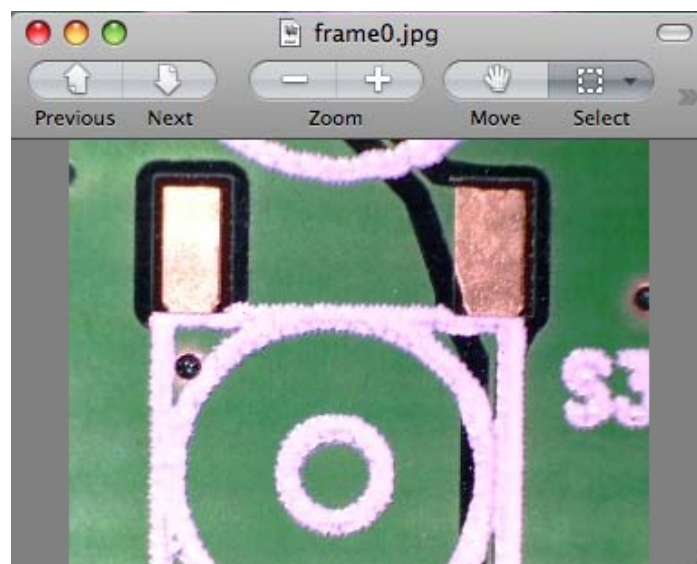
## 8. Photo & Video editing

Captured photo & video appear as thumbnails on the right side of the preview window.



### 1) photo

Double click a photo thumbnail to open in the main preview window



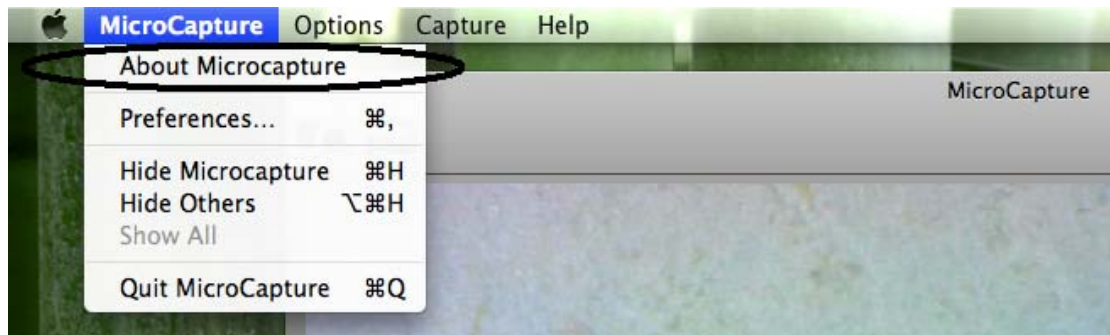
You can then carry out operations as you normally do on Mac system.

## 2) Video

Click a video clip thumbnail, the video will play automatically.

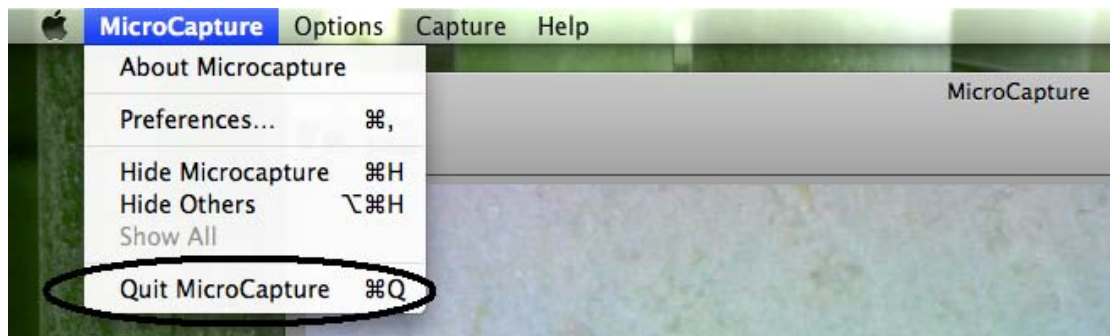
## 9. Help info

By choosing *About MicroCapture*, you can get help info from your local agent.



## 10. Quit MicroCapture

Choose *Quit MicroCapture* as follows, you can quit the software.



## Safety:

- 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.
- Use the Microscope only at  $-5^{\circ}\text{C}$ - $50^{\circ}\text{C}$ .
- Sudden temperature change may form dew inside the Microscope like entering a warm room in cold winter. Put it inside a handbag or plastic bag to slow down temperature changes.
- Do not point Microscope lens to the sun or strong light for a long time. Powerful light may hurt the light-sensitive electronics.
- Avoid touching the lens.
- The white LEDs which illuminate the Microscope target field are very bright. Do not stare directly into these LEDs as it may damage your eyes.
- The clear plastic distance shell sometimes picks up dirt or toxic material from a microscopically observed surface. Be careful that this doesn't get in contact with the human skin. Always wash carefully or disinfect as needed.
- Do not unplug the Microscope from USB port when LEDs are on. This may cause information loss or circuit damage. Please always close MicroCapture and then unplug the Microscope.