1080P HDMI Digital Microscope

User's
Manual
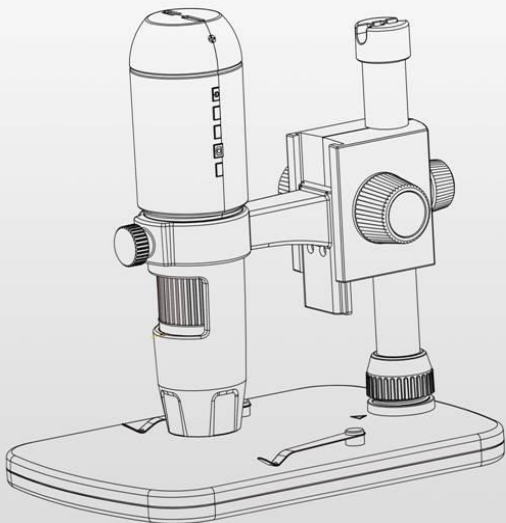
Table of Contents

<u>Welcome</u>
Thank you for your choice of our product - it is a high-tech while easy to use HDMI Digital Microscope. With this unit you will see a unique and "bigger" world via external monitors with HDMI input.
It's easy to zoom in on stamps, coins, paper currency, plants, insects, skin, fabrics, rocks and minerals, and so much more.

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

1. Precaution

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

- 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℃-50℃.
- 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.

2. Preparation

■ Standard accessories

Microscope
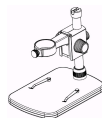
Stand
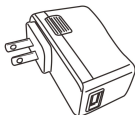
AC adaptor

USB cable
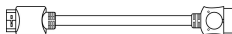
HDMI Cable
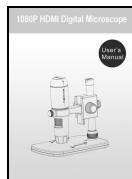
Manual

Calibration Ruler
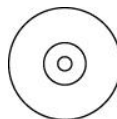
PC Software CD

■ Parts Names & Functions
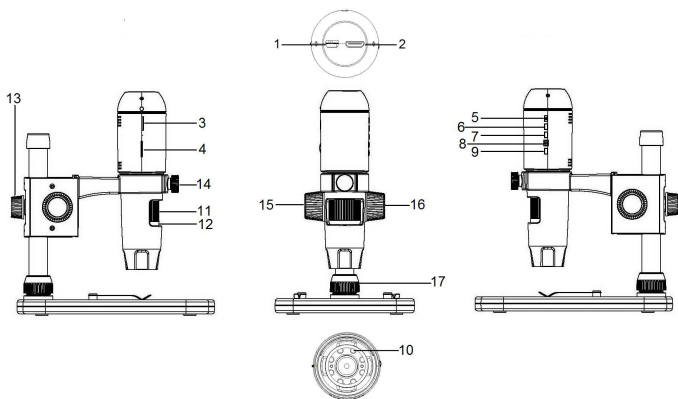
Part	Meaning	Part	Meaning
1	DC-in & USB port	10	LED
2	HDMI port	11	Focus wheel
3	Micro-SD slot	12	Magnification ruler
4	LED Dimmer	13	Screw
5	Power on/off	14	Screw
6	Mode (Playback/Photo)	15	Screw
7	Menu	16	Screw
8	Capture/OK	17	Screw
9	Down		

■ System Requirements
1. Monitor
  * Any monitor with HDMI input
2. PC
  * Windows XP / WIN7 /8 /10, Mac 10.7 and above
  * P4 1.8 or above
  * RAM: 512M
  * Video Memory: 64M
  * USB port: 2.0
  * CD-ROM Drive

■ Technical Specifications

Image sensor	3 Mega Pixels (true resolution)
Magnification	10X~230X
Live video to monitor	1920x1080
Still capture resolution	14M, 8M, 5M, 3M, 2M, WVGA (On HDMI Monitor only)
Video capture resolution	1280x720 (720P), 640x480 (VGA) / on PC
Focus Range	Manual focus from 0mm to 35mm
Video format	AVI /30 fps
Photo format	JPEG
Light source	8 LED (adjustable by control wheel)
Power source	5V DC
PC interface	USB2.0
PC Software	PortableCaptureHD (with measurement)
PC Software Language	English, Deutsch, Spanish, Russian, Italian, French, Portuguese, Dutch, Polish, Japanese, Korean
PC OS Supported	Windows XP/Vista/Win7/ 8 / 10; Mac 10.7 and above
Size	Microscope: 154mm (L) x 42mm (Diameter)
	Professional Stand: 170mm(L) x120mm(W)x12mm (H)

■ How to Use the Microscope

1. Connect to TV/Monitor with HDMI input

1) Connect the microscope with TV/monitor with HDMI input by the HDMI cable. Turn on the power of your TV/monitor and select the setting to HDMI.

2) Power the microscope by the supplied power adaptor. Turn on the power of the microscope by pressing the Power on/off button-5 if the device is not turned on, and then you can start the preview on the screen.

2. Capture Photo

1) Insert a Micro-SD card into the Micro SD slot-3.(Max. card size: 32GB SDHC)

2) Turn the Focus Wheel-11 to focus the image of your object to its best focus

3) Press Capture/OK button-8 and the captured photo will be Captured and saved in the Micro-SD card.

3. Playback

1) With Micro-SD card in slot.

2) Press Mode button-6 to switch to playback mode.

3) Press Down button-9 to watch the previous captured photo. Press Mode Button-6 again will return to preview

4. Mass Storage on PC

1) With Micro-SD card in slot.

2) Connect the microscope with PC by USB cable for
   downloading images from card to your computer.

## 5. Menu Introductions

5.1 Main Menu I

Press Menu button-7 to enter main menu I as follows:

Here you can select Resolution/Timer/Quality/
Sharpness/Exposure/Date Stamp by pressing the Down
button-9, then press Capture/OK button-8 to confirm your
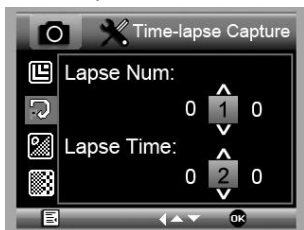selected item.

5.1.1 Set Resolution

From the main menu Ⅰ, choose Resolution and select a resolution between WVGA/2M/3M/5M/8M/14M, by pressing the Down button-9 then confirm by Capture/OK button-8.
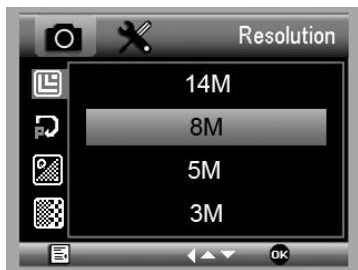
5.1.2 Time-lapse Capture

1) From the main menu Ⅰ, choose Time-lapse Capture and then enter Timer setup:

Lapse Num: input quantity of frames you want to take by Down button-9 and change the block by pressing Mode button-6. The maximum number is 999, which means 999 pictures will be automatically captured during

the Lapse Time set, after the capture function is activated later.

Lapse Time: input interval time between frame capture by Down button-9 and change the block by pressing mode button-6. The maximum number is 999, which means the time interval for each capture is 999 seconds.

The above picture setup shows 10 frames, and interval is 20seconds as an example.

2) Press Capture/OK button-8 to confirm selection and

press Manu button-7 back to preview status. Then press

Capture/OK button-8 to start auto capture. When at auto

capture status, the image quantity will be cown down on

the right up corner.

3) When all frames are captured, microscope will return to normal preview.

For Time-lapse capturing the auto power off time should be longer than the time lapse set. 30 minutes setting is recommended. Please refer to section 5.2.2

5.1.3 Quality
From the main menu Ⅰ, choose Quality and then select among Fine /Normal/Economy, by pressing the Down button-9 then confirm by Capture/OK button-8.

The three selections will result in different image
compression ratio.
5.1.4 Sharpness
     From the main menu Ⅰ, choose Sharpness and
then select among Strong/Normal/Soft, by pressing the
Down button-9 then confirm by Capture/OK button-8.

5.1.5 Exposure (Brightness)
    From the main menu Ⅰ, choose Exposure and then
select a target value, by pressing the Down button-9 then
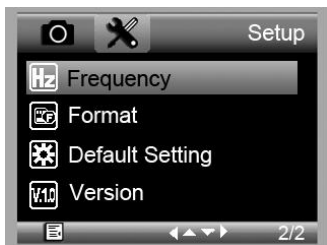confirm by Capture/OK button-8.

5.1.6 Date Stamp

From the main menu I , choose Date Stamp and then select a target option, by pressing the Down button-9 then confirm by Capture/OK button-8.

5.2 Main Menu Ⅱ

Press Menu button-7 to enter main menu I, and then

press it once more to enter Main Menu Ⅱ as follows:

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Here you can setup Date/Time, Auto Power Off, Language, TV mode, Frequency, Format, Default Setting, and Version.

5.2.1 Date/time

From the main menu Ⅱ, choose Date/Time to setup date and time.

1) Setup date and time by Down button-9 and changing set block by Capture/OK button-8
2) Setup date mode among YY/MM/DD, DD/MM/YY, and MM/DD/YY by Down button-9
3) Press Manu button-7 to return to preview mode.

5.2.2 Auto Power Off

From the main menu Ⅱ, choose Auto Power Off and then select among the following a target time by Down button-9 then press Capture/OK button-8, for the microscope to off the power automatically at the set time, when it is not in use for a period of time.

5.2.3 Language

From the main menu Ⅱ, choose Language and then select a target language by Down button-9 then confirmed by Capture/OK button-8.
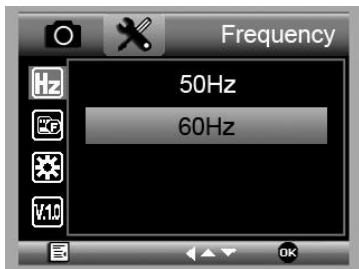
5.2.4 TV Mode

From the main menu II, choose TV Mode and then select, between NTSC and PAL, the correct mode compatible with your TV, by Down button-9 then confirmed by Capture/OK button-8.


5.2.5 Frequency

From the main menu II, choose Frequency between 50Hz and 60Hz. by Down button-9 then confirmed by Capture/OK button-8.

5.2.6 Format micro SD card

From the main menu Ⅱ, choose Format SD to format the MicroSD card inserted. **All the files in the card will be deleted after card formatting**
Normally card formatting is not necessary, unless your card is not able to store the captured image.
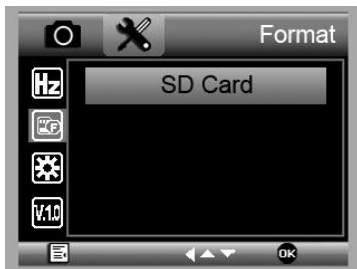
5.2.7 Default Setting

From the main menu Ⅱ, Default Setting to reset the system back to original factory preset.

5.2.8. Version

From the main menu Ⅱ, choose Version to view the current machine version.

5. Preview on PC

1) Only works with supported software installed,
Please see:

PC Software Introduction on page 12 and onward.

2) Remove Micro-SD card from the slot.

3) Connect the microscope with PC by USB cable.

■ How to Use the Stand
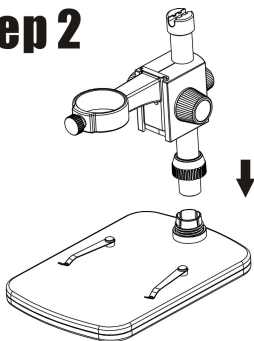
1. Install the Microscope to the Stand

1) Take the microscope out from gift box gently; put the

carriage stage on a flat surface.

2) Follow the below steps:
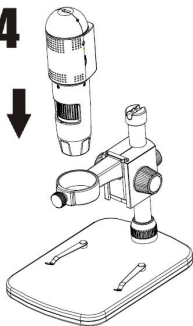
Step 1
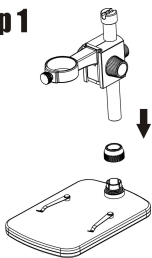
Put the metal pole through Screw 17!

Step 2

Put the metal pole into the female part of the stage!
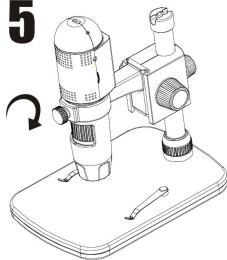
Step 3

Rotate Screw 17 to fix the pole on the stage!
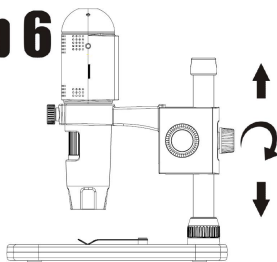
Step 4

Put the microscope into the ring of the stand!
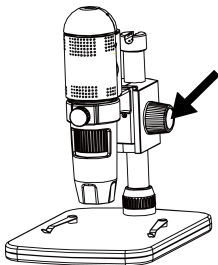
Step 5

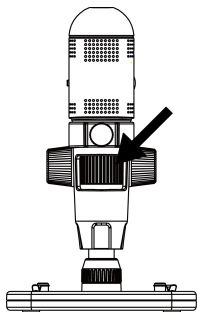**Rotate Screw 14 clockwise to fix the microscope on the ring.**

Step 6

**(1) Adjust the upper part of the stand to get a proper height.
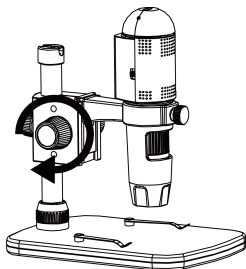(2) Rotate Screw 13 clockwise to fix the upper part.**

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2．How to get focus

Rotate Screw 16 to get a rough focus!

Rotate Wheel 11 to get a fine focus!

Rotate Screw 15 to lock or release the movement!

■ PC Software Introduction

1. Install the Software on PC (Windows)

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

1) Install PortableCaptureHD
   Click Install **PortableCaptureHD** and the installation wizard will guide you through the whole process.
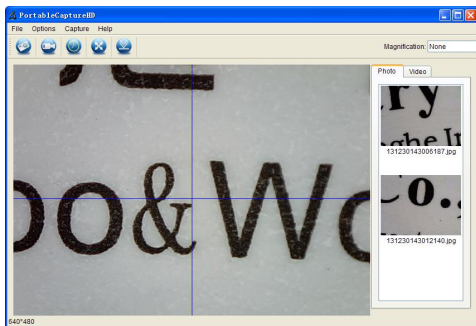
2) Full user's manual can be viewed by clicking **User's Manual**

2. Start Microscope

Connect your Microscope to your PC USB port, start the

software by clicking the ![icon] PortableCaptureHD icon generated on the

desktop after installation and you will see the following

screen pop up.

Note:

Please remember to take the micro SD card away

from the card slot before connect to the personal

computer via USB cable, so that enable you to

capture & taking the video on the PC.

If the micro SD card keep in the microscope, then when you connect to the PC it will default as mass storage for you to download your images from the card.

When the Microscope is disconnected from your PC USB port, the following message will pop up.

> No Device detected, please connect your Microscope directly to your PC USB port.
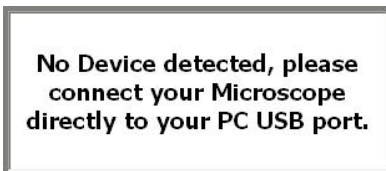
3. Software Functions
■ Capture Photo

a. Click 'Photo' shortcut icon in the main menu bar.

OR

b. Click 'Capture > Photo'.

■ **Capture Video**

a. Click 'Video' shortcut icon in the main menu bar.   OR

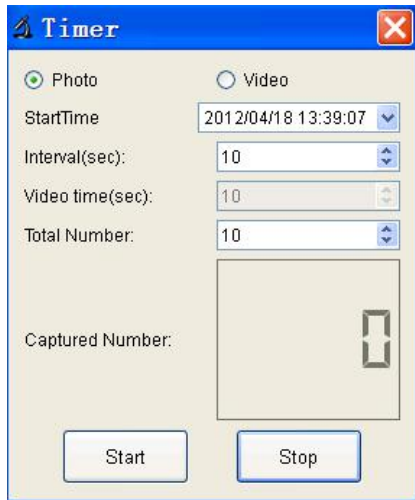b. Click 'Capture > Video'.

Click once again to stop video capturing.

■ **Timer (Photo / Video)**

Click 'Timer' shortcut icon in the main menu bar.

* Under Timer photo, you can set the start time, interval time and total picture number.

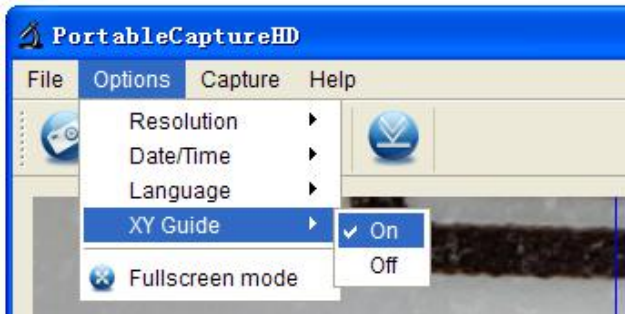* Under Timer video, you can set the start time, interval time, video time and total video number.

Note:

The file size of the video is quite large, your have to consider the memory space of your computer if a long video recording time is needed.

■ Calibration and Measurement

Please make calibration before measurement

Calibration

Display Crossing from 'Options>Crossing''.
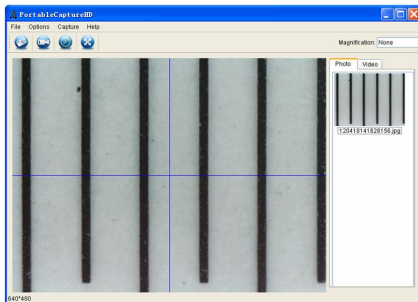

Microscope default at crossing "on"

It's used to check the dial on the calibration ruler.
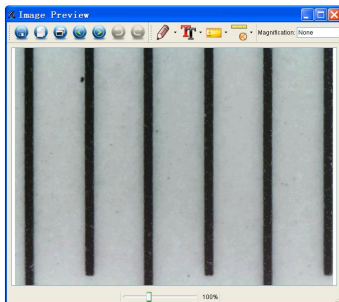
1. Focus microscope on the attached calibration ruler

 at the same height(place) of your object to be
captured from the lens, and then adjust the Focus

Wheel-11 till the picture is clear. Take a picture for the selected area when the dial is parallel to the crossing as below.

2. Double-click on the picture to enter into measurement interface as below.

3. Click Calibration icon ![icon], and then move mouse to the picture.   Click on the beginning and ending points across a known value. Now a dialog will popup as below and you need to enter the exact value of the measurement sample into 'Actual dimension'.

Then the software will automatically calibrate the magnification rate. Click 'OK' and the adjusted magnification rate will show in the upper right corner.
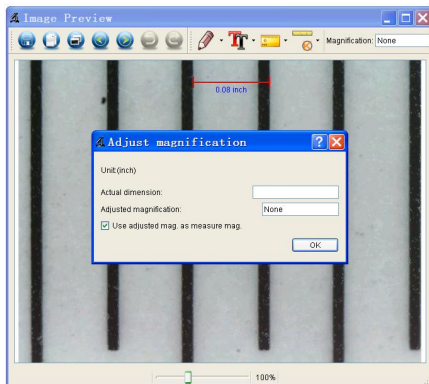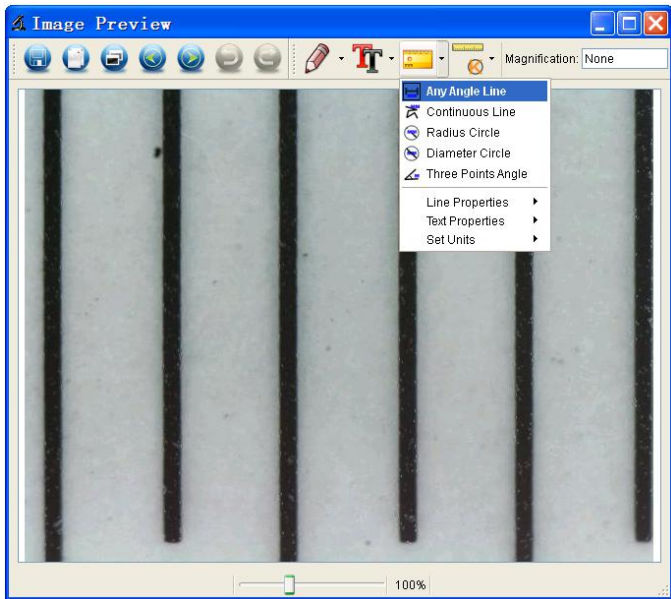

* Remark: The measured line should be paralleled.

4. Now you can use 'Any angle Line' under Measurement

icon to measure the value again. If the value

you measure by software is nearly the same as the exact

value of the dial means the calibration finish.

Measurement

Double-click on the picture to enter into measurement

interface. Under the 'Measurement' icon , you can

choose any desired options to measure.

1. Any Angle Line Measurement
Simply click from one point and drag to the next point, and
then release the click.

2. Continuous Line Measurement
The Continuous Line measurement allows you to
measure any continuous desired length.
Simply click and drag from one point to other desired
points, and then release the click.

3. Radius Circle Measurement
Simply click and extend out to the desired radius, the
radius, circumference and area of the circle will show up
accordingly.

4. Diameter Circle Measurement
Simply click and extend out to the desired diameter, the
diameter, circumference and area of the circle will show
up accordingly.

5. Three Points Angle Measurement
Simply define any three points angle and click, the angle
value will then display.

Change Calibration

If you need to change the magnification rate and adjust focus to capture picture, please calibrate the magnification rate again.

1. Double click to open the picture, Click ' >
Reset magnification > Reset picture magnification' as below. And then start calibration again (Calibration details please refer to page28).
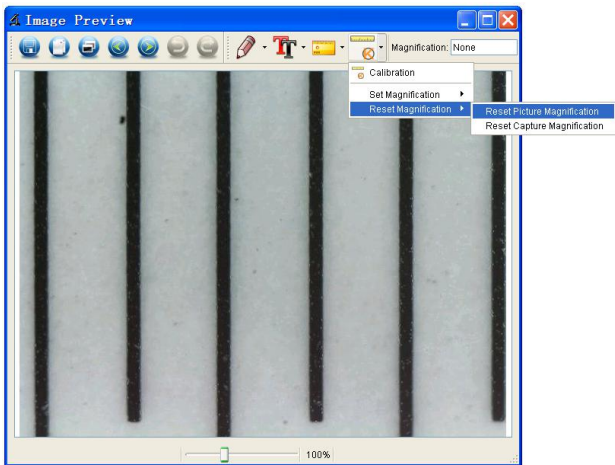
2. Change the magnification rate and capture several pictures, click on the picture to enter into measurement interface. And click ' > Set magnification > Set picture magnification', now a dialog will show up as below; enter the magnification rate into the dialog and click 'OK'.
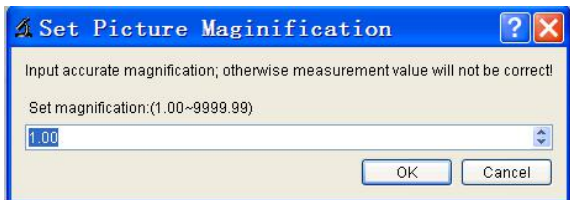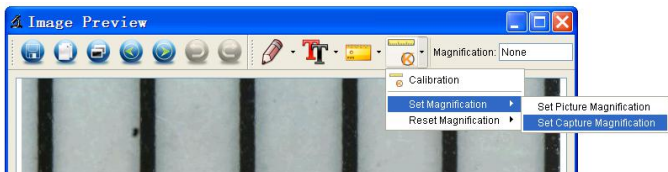

3. If you want to use the same magnification rate to capture pictures, just click ' > Set
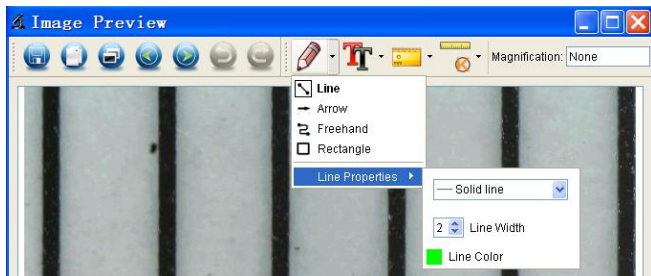
magnification >Set capture magnification'. Now all pictures will use the same magnification rate and you can start measurement directly.
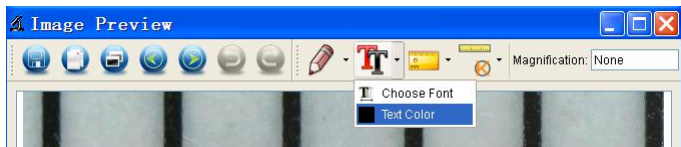

Draw and Text

You can draw or add a text on the picture and save for later analysis.

1. Click icon to choose any kinds of drawing under the pull-down manual as below.

2. Click icon ![TT icon] and set the font for the text in the

popup dialogue as below.

![Image Preview dialog showing toolbar with options: Choose Font, Text Color, and Magnification: None]

Software Interface Instructions

Main Interface Icons

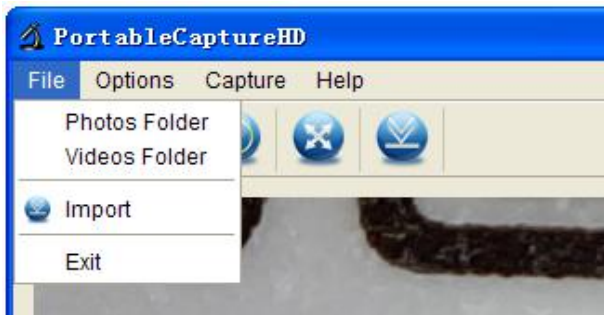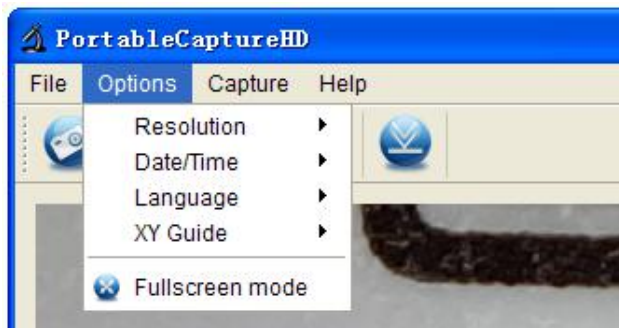|	
📷	Capture photo – It's used to capture photo one by one.
🎥	Start / Stop record video.
🕐	Timer for photo / video – Set the start time, interval time and total photo/video number.
✖	Full screen mode, Press ESC or double-click to exit.

Main Menu

File

Photos Directory: set the directory to store photos taken;

Videos Directory: set the directory to store video taken;

Options

Resolution: change preview size

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

Language: choose different OSD language

Crossing: display cross on preview window

Full-screen mode: enter into full screen. Click ESC or double click to exit

Capture

Photo: take a photo

Video: record a video clip

Measurement Interface Instructions

	Save as		Redo
	Copy to clipboard		Draw
	Copy file		Text note
	Previous		Measurement
	Next		Calibration
	Undo		

Instructions for Mac software

Part I How to Install the Software

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

Part II   How to use PortableCaptureHD

1. Plug Microscope into PC USB port.
2. Double click **PortableCaptureHD** icon to open the
   PortableCaptureHD window. The microscope is
   now ready to use.

Note:

Please remember to take the micro SD card away from the card slot before connect to the personal computer via USB cable, so that enable you to capture & taking the video on the PC.

If the micro SD card keep in the microscope, then when you connect to the PC it will default as mass storage for you to download your images from the card.
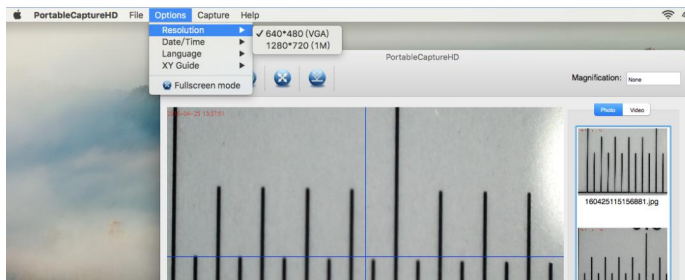
3. **Preview**

At the central window, you can preview the magnified subject.
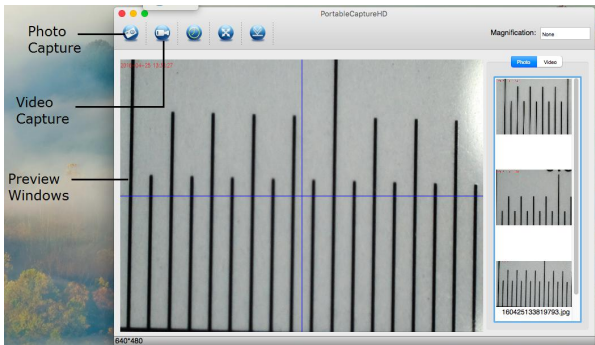
4. Change preview resolution

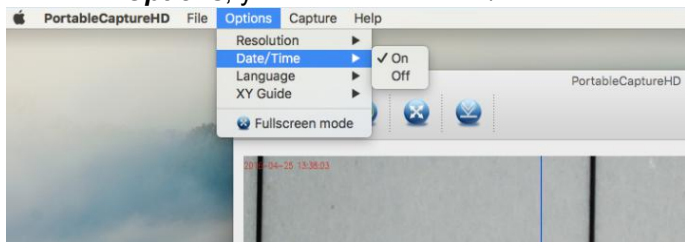From *Options*, you can choose the preview resolution. The current resolution will be displayed at the left bottom corner of the preview window.

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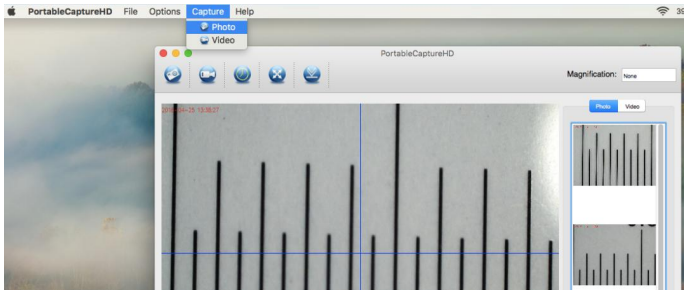
5. Date/Time

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

6. Photo capture

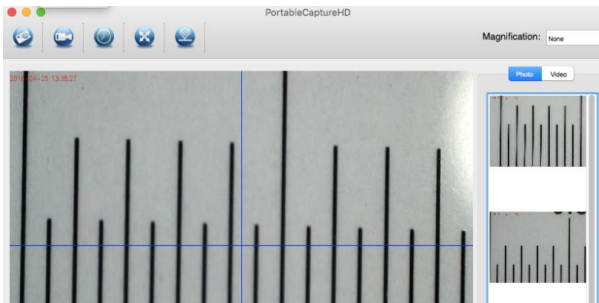You can capture photo by:
- Choosing *Capture/Photo*

- 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 appearing as thumbnails on the right side of the preview window under Video tab.
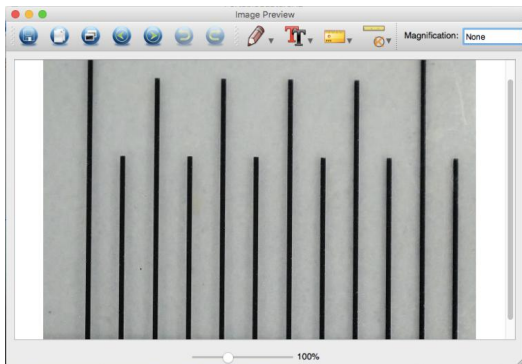
8. Photo & Video editing

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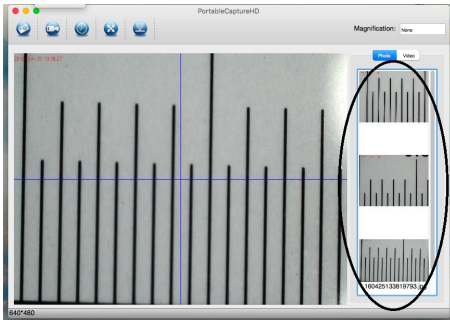
1) Photo

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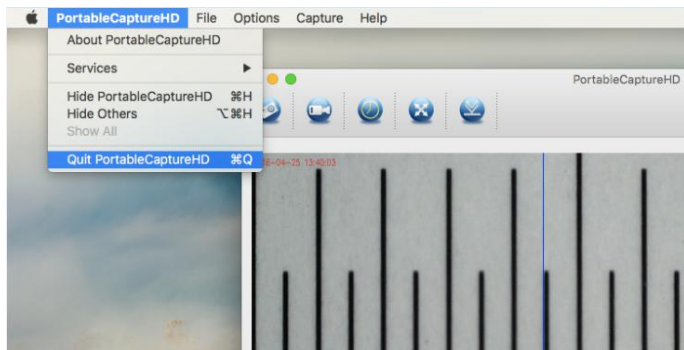

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You can then carry out operations as you normally do on Mac system.

2) Video

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

9. Quit MicroCapture

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

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This symbol on the product or in the instructions means that your electrical and electronic equipment should be disposed at the end of its life separately from your household waste. There are separate collection systems for recycling in the EU. For more information, please contact the local authority or your retailer where you purchased the product.