

Digital Microscope User Manual

数码显微镜用户手册

(English)
(中文)

前 言

首先非常感谢贵司（您）购买了**USB**数码显微镜！

数码显微镜应用范围非常广泛,主要有以下方面：

1. 工业方面

- A 工业检视，例如电路板、精密机械等
- B 印刷检视，SMT焊接检查
- C 纺织检视
- D IC表面检查

2. 美容方面

- A 皮肤检视
- B 发根检视
- C 红外理疗（特定产品）

3. 生物应用

- A 微生物观察
- B 动物切片观察

4. 其它

- A 扩视器，协助视障人士阅读
- B 宝石鉴定

本数码显微镜使用简单，只需要同计算机**USB**接口连接就可以使用，

本产品还配备测量软件，可做简单的量测，非常的方便。为了更详细的介绍

本产品，敬请耐心的阅读产下面的产品介绍，使用方法，注意事项。

目 录

首页	1
前言	2
目录	3
各部位介绍	4
产品规格	4
安全警告及注意事项	5
配件说明	5
硬件需求	5
安装说明	5
驱动安装	7
测量工具安装	10
系统组件安装	13
测量软件使用说明	15
工具栏上的各图示说明	16
标定的使用方法	18
更多应用	19

部位说明规格:



规格:

传感器: 高性能感光芯片

主控芯片: 专用主控24Bit DSP

放大倍率: 100X-200X, 50X-400X, 50X-500X, 50X-600X, 800X, 1000X

拍照/录像: 内置

辅助光源: 8颗白光LED灯

静态分辨率: 标准640*480, 最大1600*1200

数码变焦: 5段式

成像距离: 手动调节10MM到远景

影像分辨率: 标准640*480, 最大1600*1200

固定底座: 万向金属底座

光盘: 内含驱动, 测量软件, 用户手册

支持系统: WIN XP/VISTA/WIN 7 32位和64位

电源: USB (5V DC)

接口支持: USB 2.0 & USB 1.1

动态帧数: 30f/s

照度范围: 0 ~ 30000LUX线控可调

硬件需求：奔腾主频700M Hz或以上；1G硬盘CD ROM光驱；64MB内存

支持语言：中文（简体）,中文（繁体）,英(其它语言需要定制)

产品颜色：磨砂黑色，其它颜色可定制

主体尺寸：112 mm (长) 33 mm (外径)

单机包装重量250克

安全警告及注意事项：

1. 勿自行拆解本产品，以避免静电击穿精密芯片。
2. 勿用酒精等有机溶剂清洁产品。
3. 勿用手指触摸镜头，以免表面造成刮痕和脏污。
4. 户外使用时应避免高温和高湿环境中，防电子器件短路。本产品不具有防水功能，请应避免淋雨和进水。
5. 本产品的使用和存储温适度范围：0° C ~ 40° C，相对湿度：45%RH ~ 85%RH
6. 若不慎使异物或水份/液体 进入数产品内部，请先拔除USB线。并送至维修中心检修，切勿自行处理。
7. 设备测量精度仅供参考，由测量误差引起的纠纷与本产品无关。

配件说明：

1. 数码显微镜主体（1台）
2. USB连接线（1.5m）
3. 万向底座（1个）
4. 光盘(驱动程序，测量软件，安装说明书)

硬件要求：

Windows 2000、XP、VISTA、WIN 7操作系统。奔腾 IV 1.5G, Celeron, AMD或以上的CPU。64MB内存。150MB以上之硬盘空间(安装驱动程序及应用软件)支持16-bit的显示卡，CD-ROM光机，USB2.0或USB1.1

安装说明：

本数码显微镜为无驱动产品，如果不需要一些特殊操作的话，在windows2000以上版本可直接运行。

直接将本产品同过USB线连接到计算机上，打开我的电脑



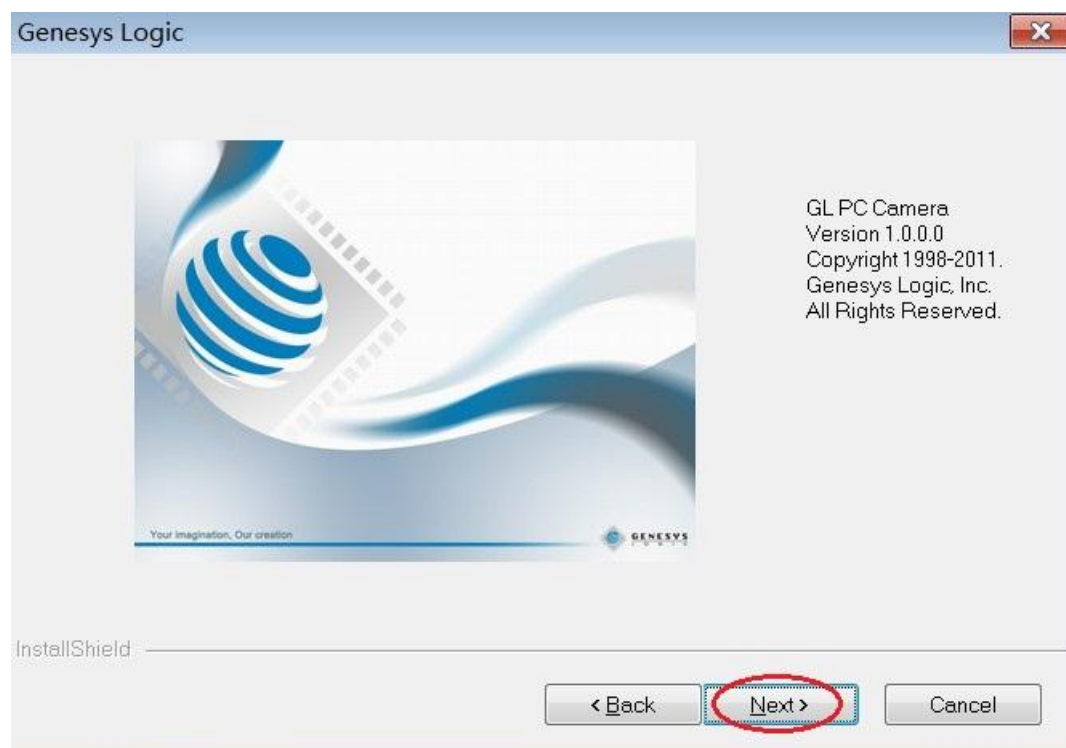
双击红色标示内的设备图标就可以正常使用。

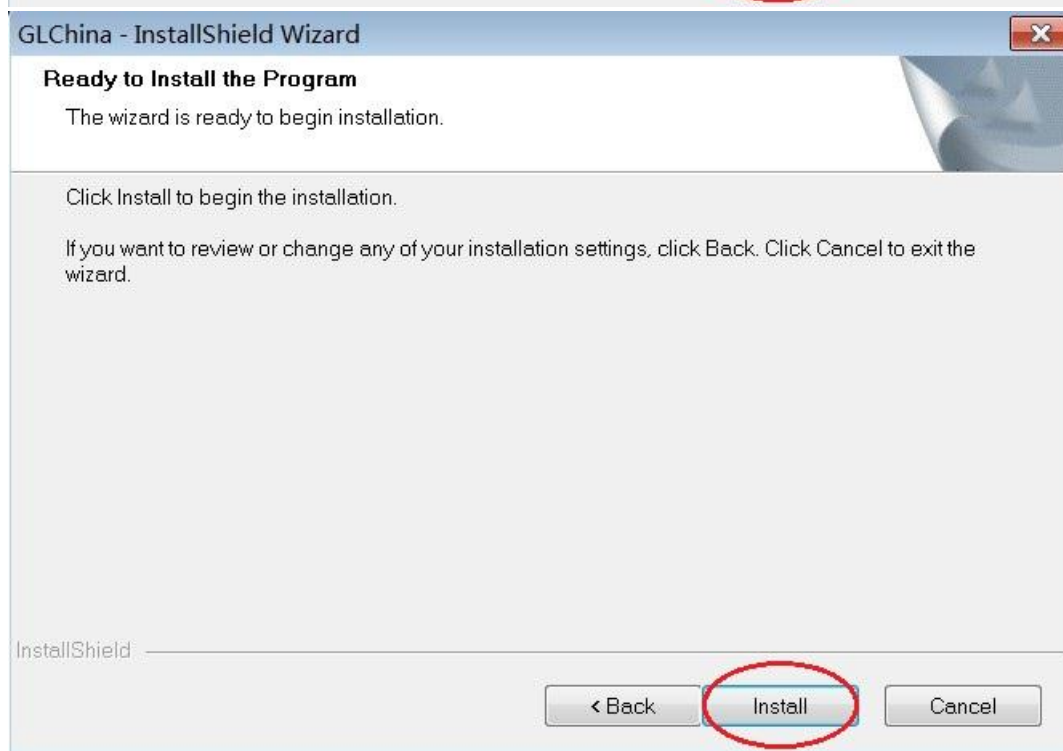
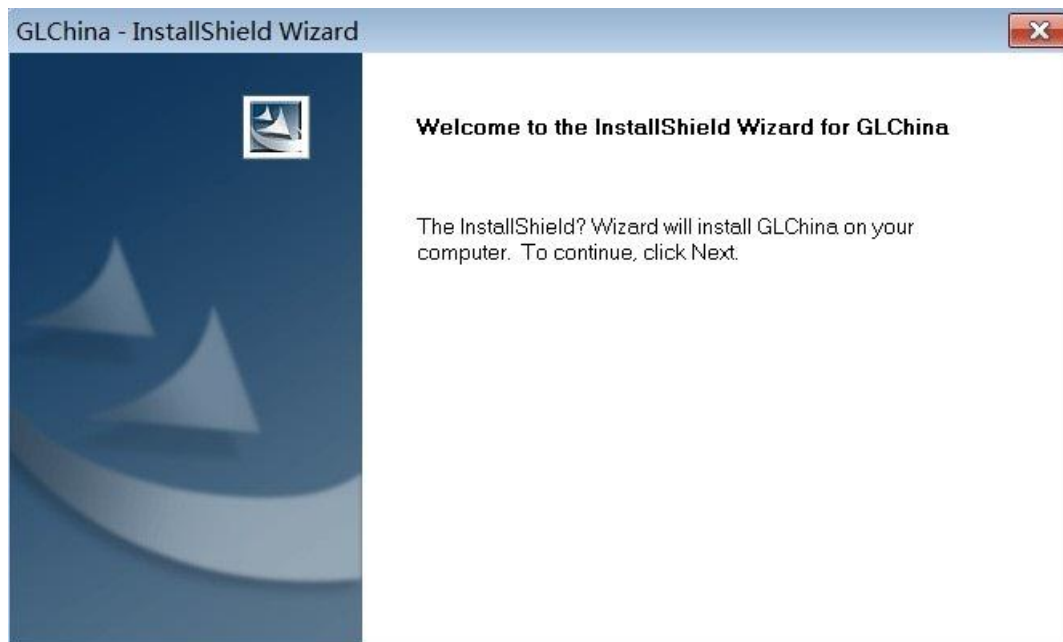
如需要特殊的操作，请参考本产品附送光盘，安装步骤（以Win XP为例），将安装光盘放入光驱后，打开我的电脑，双击光盘驱动器。

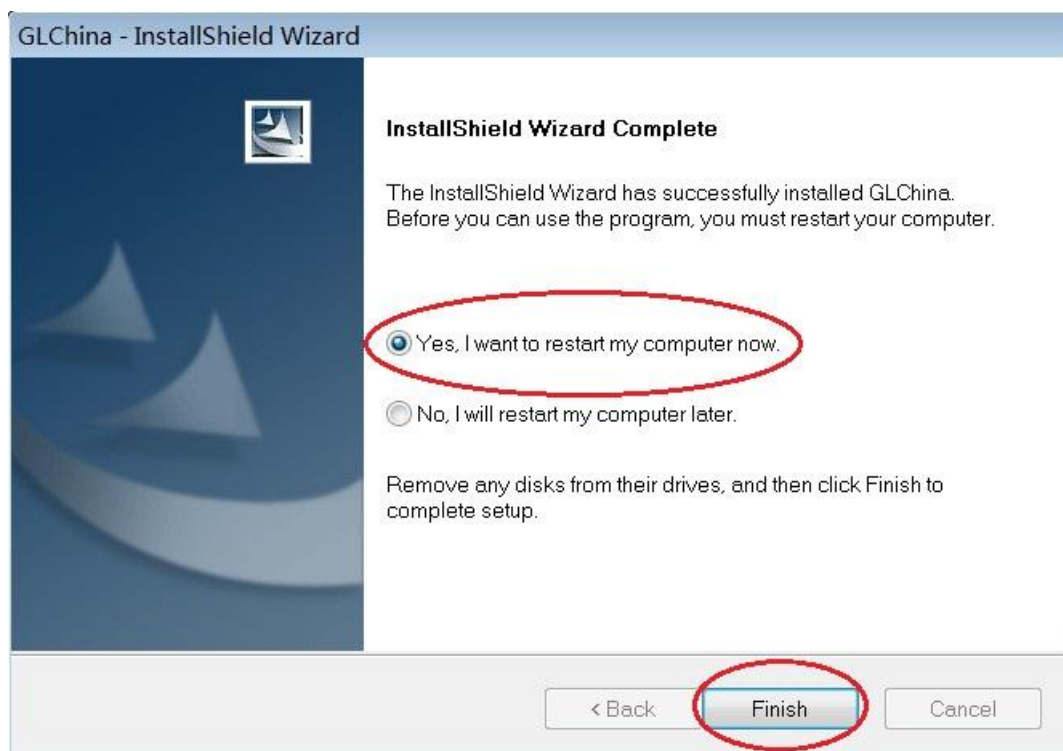
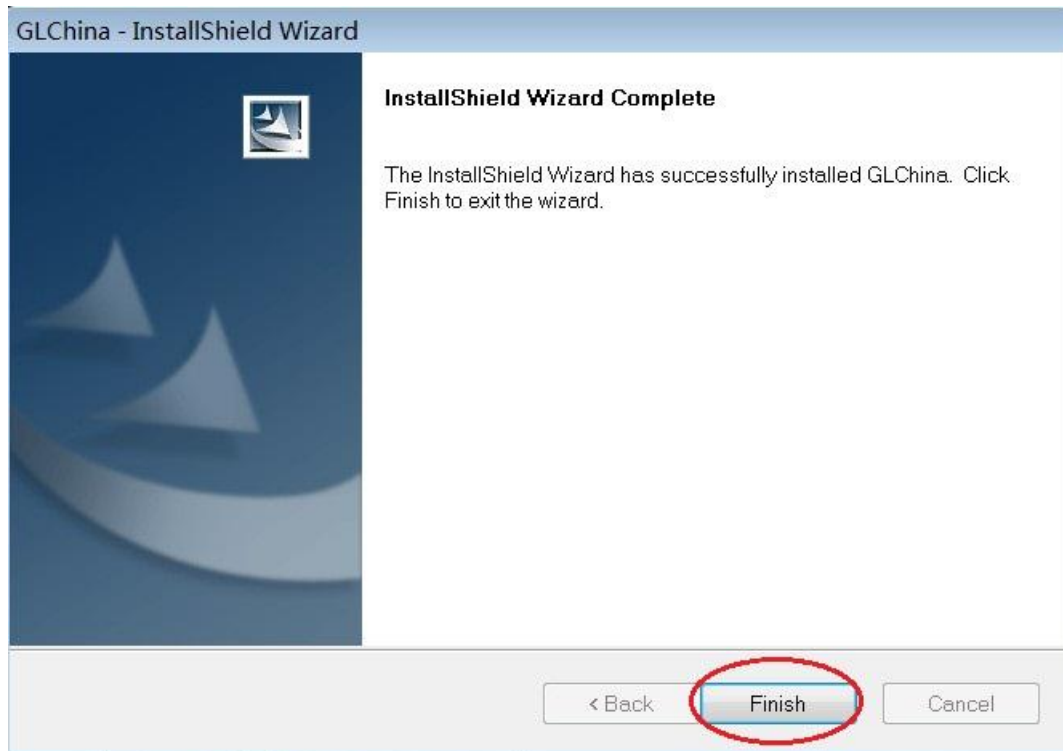


驱动安装

选择驱动程序Driver进行安装，如下图：



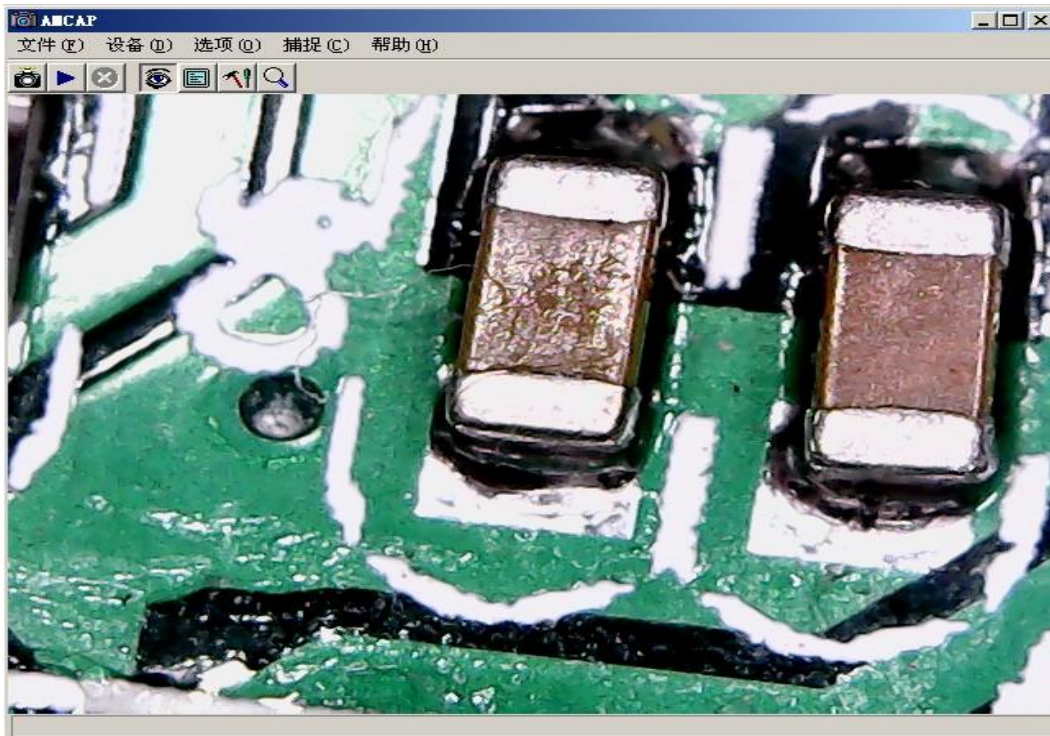




安装完毕后立刻重启电脑。

若驱动软件安装不成功，可能因为安装过程被杀毒安全软件阻止，建议在安装过程让杀毒安全软件允许本程序所有操作，或者先关闭杀毒安全软件再进行安装。

若驱动安装成功，可在工具栏看到  小图标，桌面上也有驱动软件图标，点击运行，如下图：



到此可根据需要对显微镜进行相关操作。长按显微镜上SNAP按钮进行拍照，ZOOM按钮可进行数码变焦调节。

测量工具安装

选择测量工具进行安装，如下图：







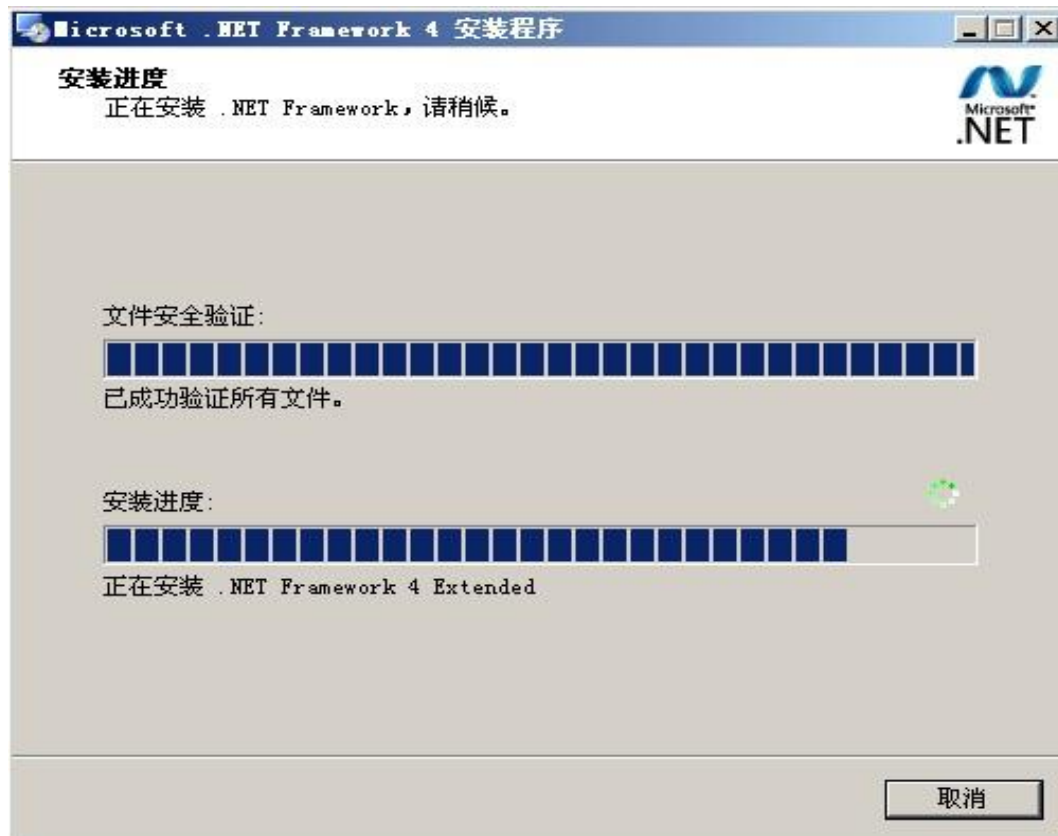


点击完成，程序就可以使用了

安装系统组件

如果电脑操作系统是Windows XP或者更老的版本，则需要系统组件Net. Framework 4.0 的支持，否则测量工具可能工作不正常。如未安装请选择该程序进行安装，如下图：



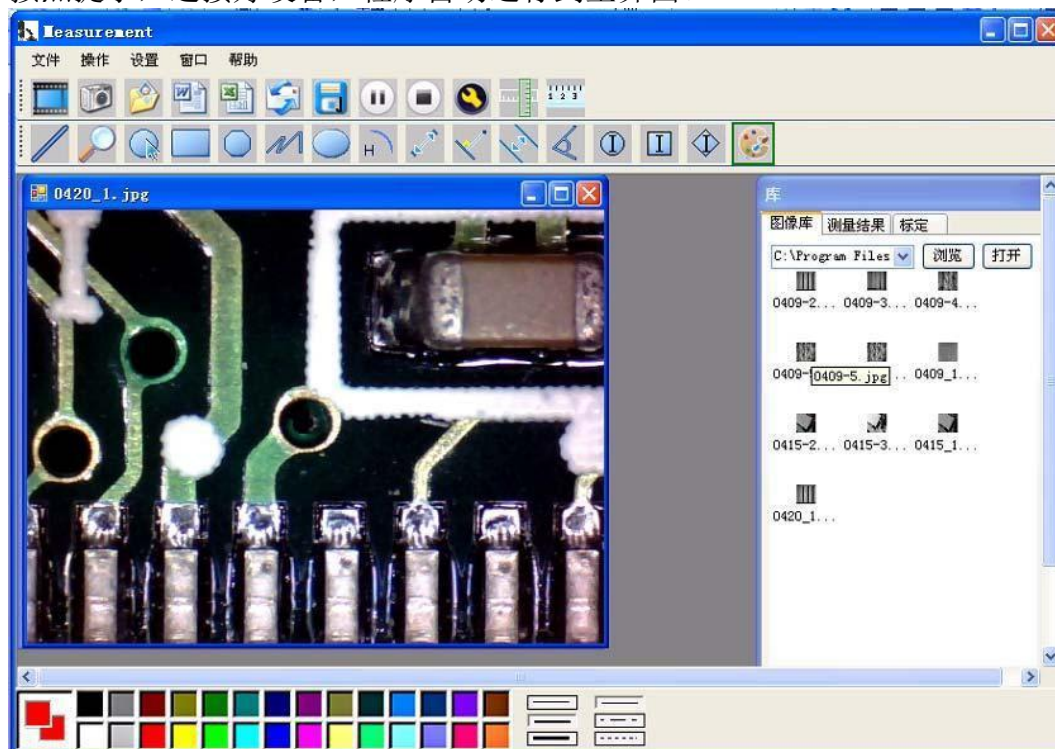


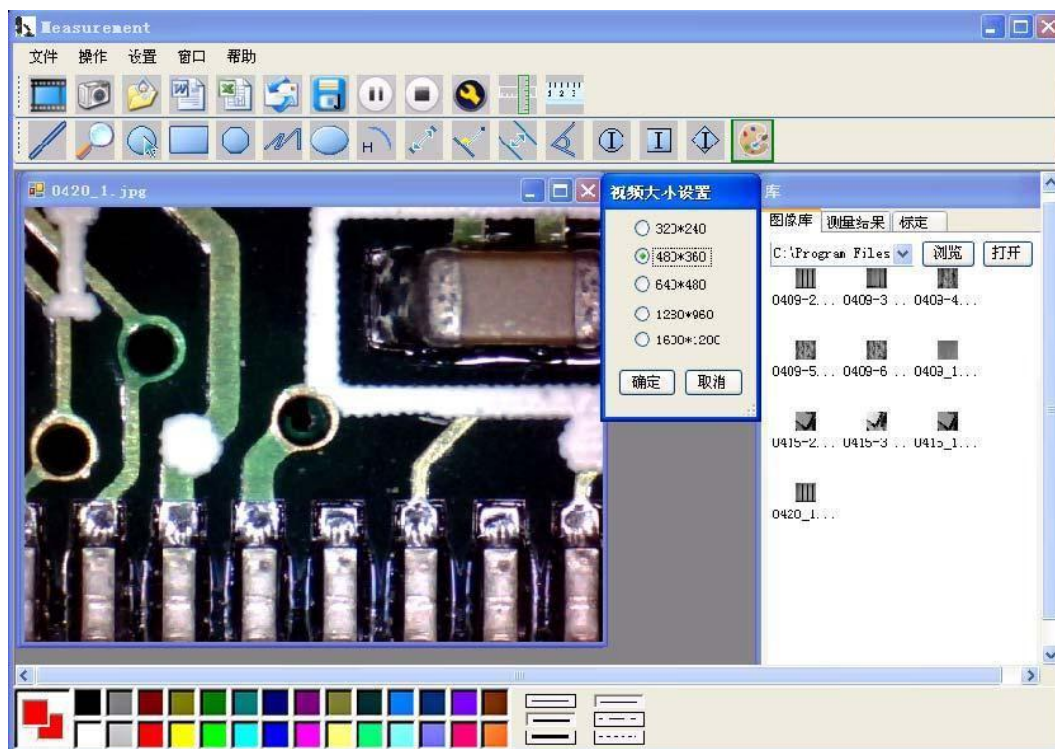
测量软件的使用:

程序安装成功后，点击桌面图标 ，进入如下界面



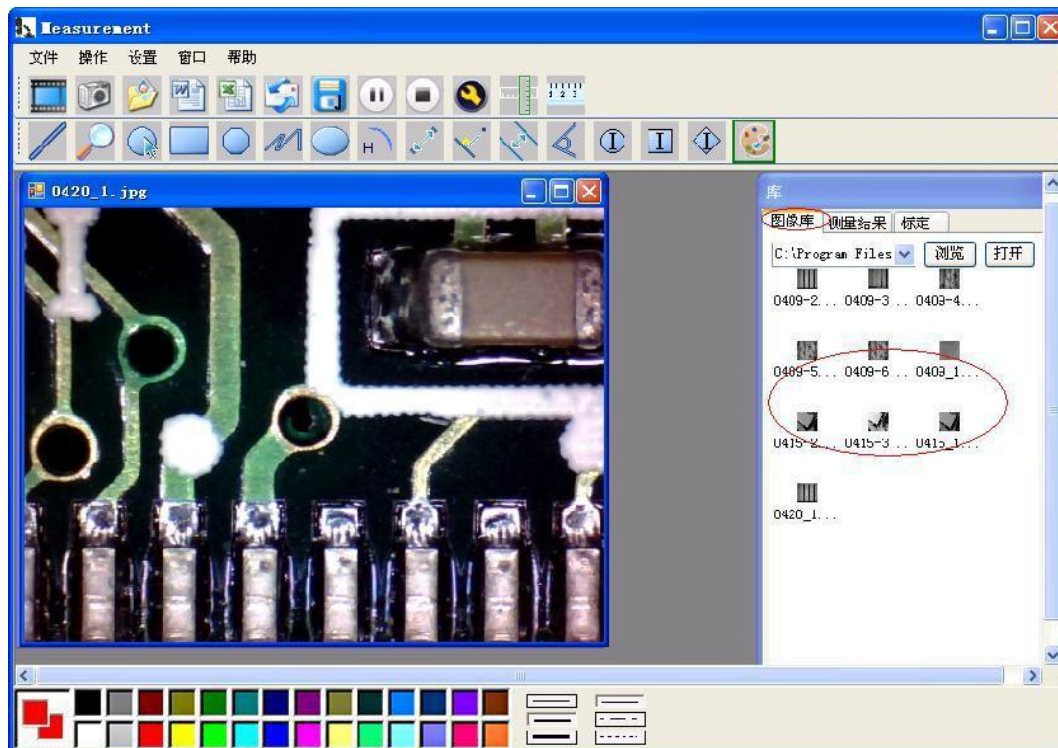
按照提示，连接好设备，程序自动运行到主界面。



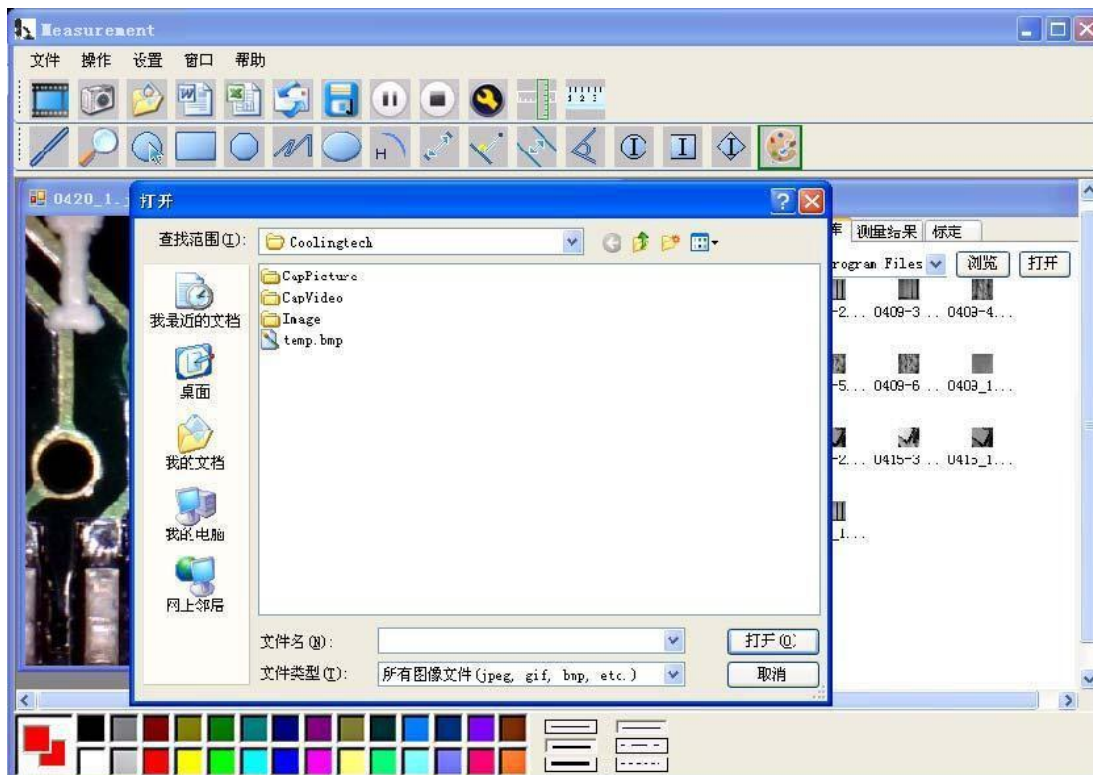


点击  选择视频分辨率，视频分辨率范围320*240 ~1600*1200，分辨率默认值为640*480。

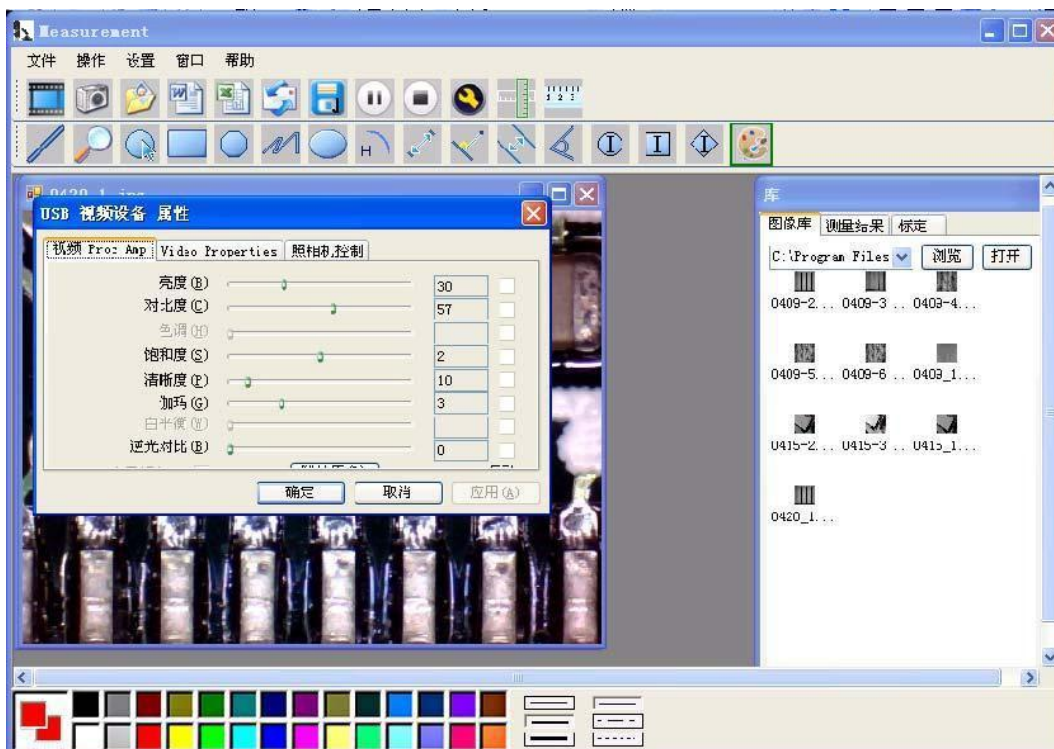
点击  采集图片，可执行数据量测功能。由于动态影像不是很稳定，本软件将采用静态模式下进行量测，测量精度会相应的提高

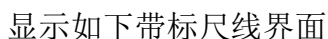
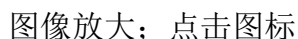


点击  可以打开之前存储的图片；点击  可以保存图片到计算机指定文文件

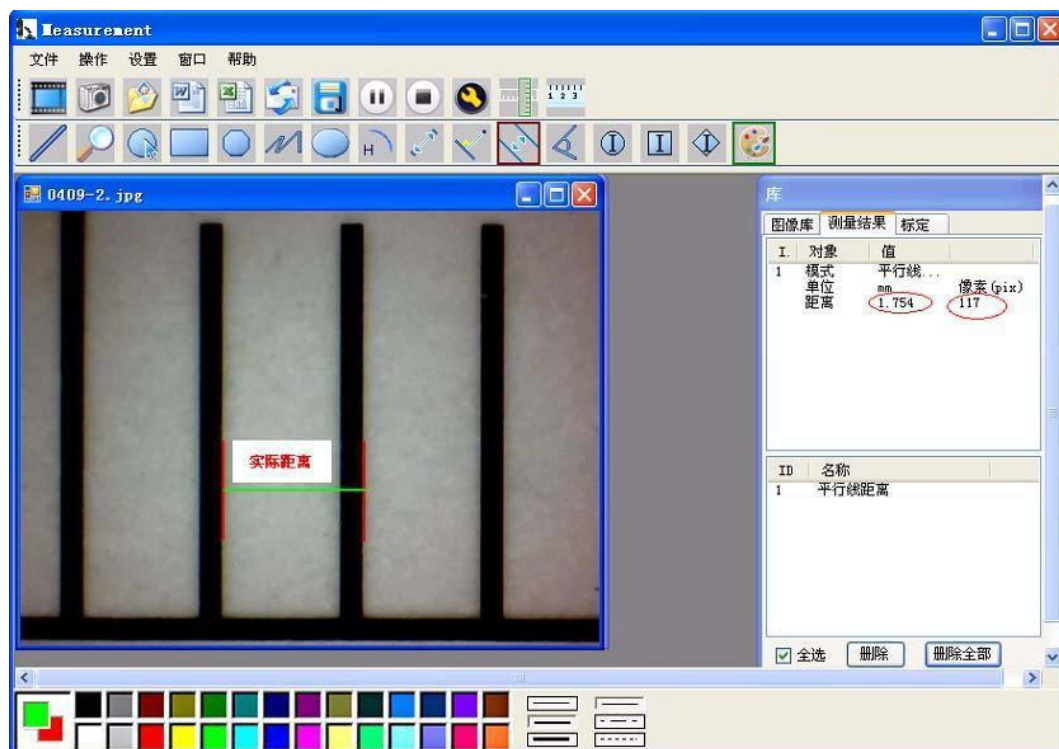


视频暂停和终止；点击 

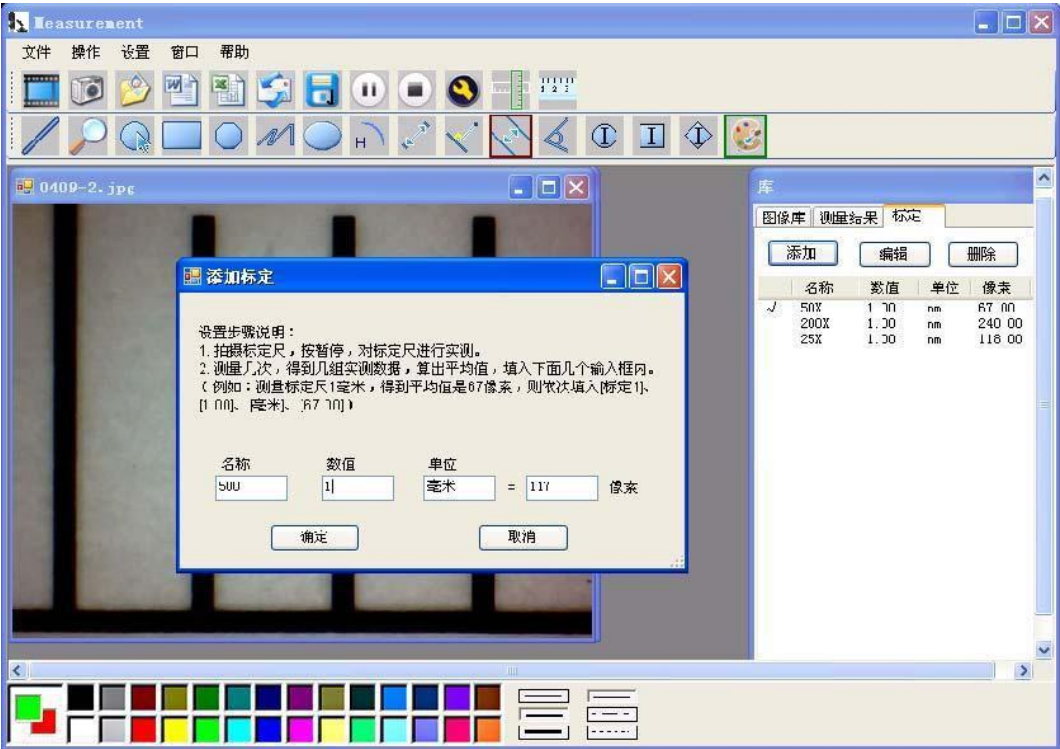




为了提高测量精度，每次使用显微镜测量软件前，倍率改变，校正也要改变。测量精度就可以达到99%。当然校正后的校正值可以保存，下次如有同样倍率也可以使用，测量误差相对较高。精度校正时，建议对同一个实际值进行多次测量取平均值的方式进行。另外本产品还配备专用校正尺，请不要使用其它标尺校正，以免影像测量精度。



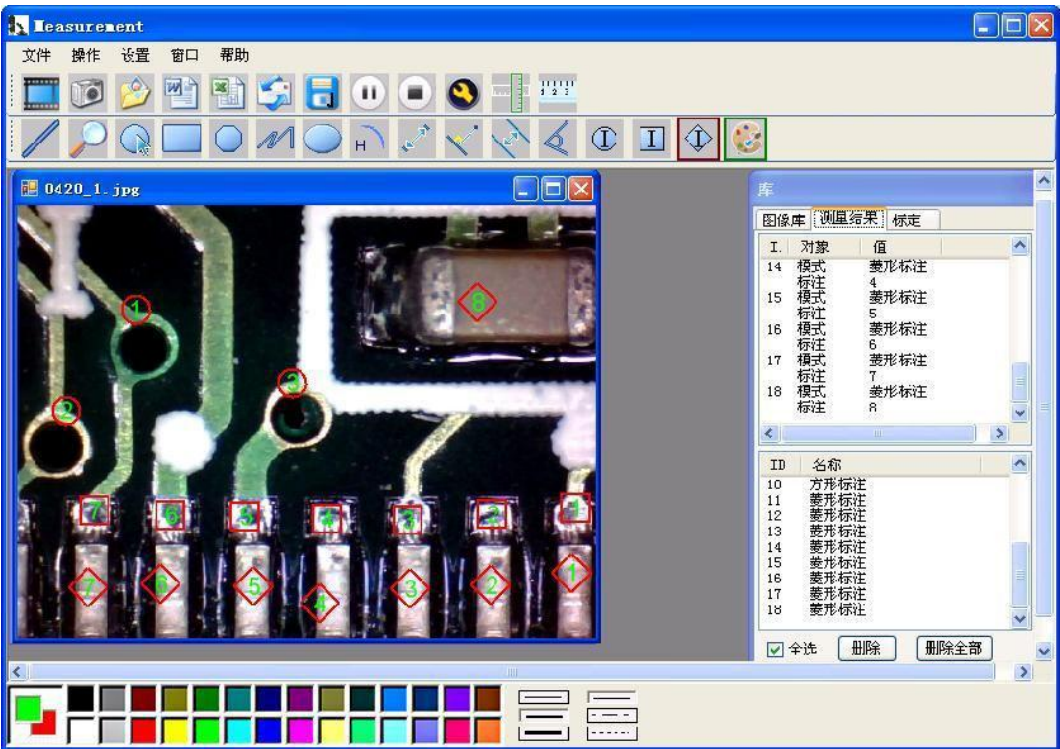
输入测量值，和相应的单位



校正就完成了，在这个倍率下就可以做量测了。

注意：放大倍率改变，必须重新校正。

，标注方式和颜色选择





，测量的结果可以以Word，Excel，或邮件格式输出。

下面是一个测量结果Word的输出范例

456.doc - Microsoft Word

文件(F) 编辑(E) 视图(V) 插入(I) 格式(O) 工具(T) 表格(A) 窗口(W) 帮助(H) Adobe PDF(P) Acrobat 注释(C)

宋体 四号 B

测量项目: 0420_1.jpg

测量时间: 2010-04-20 14:37

测量结果数据:

模式	单位	半径	直径	周长	面积
圆	mm	0.000	0.000	0.000	0.000
圆	mm	0.328	0.657	2.063	0.339

模式	单位	宽度	高度	周长	面积
矩形	mm	2.179	1.060	6.478	2.309

结果图:



从左到右:

直线测量，圆测量，矩形测量，多边形测量，折线测量，椭圆测量
圆弧测量，点对点测量，点到线测量，并行线测量，角度测量。

如下图:

Measurement

文件 操作 设置 窗口 帮助

0420_1.jpg

133.260°

2.284 mm

2.875 mm

半径: 0.343 mm

周长: 0.942 mm

2.381 mm

10 9 8 7 6 5 4

库

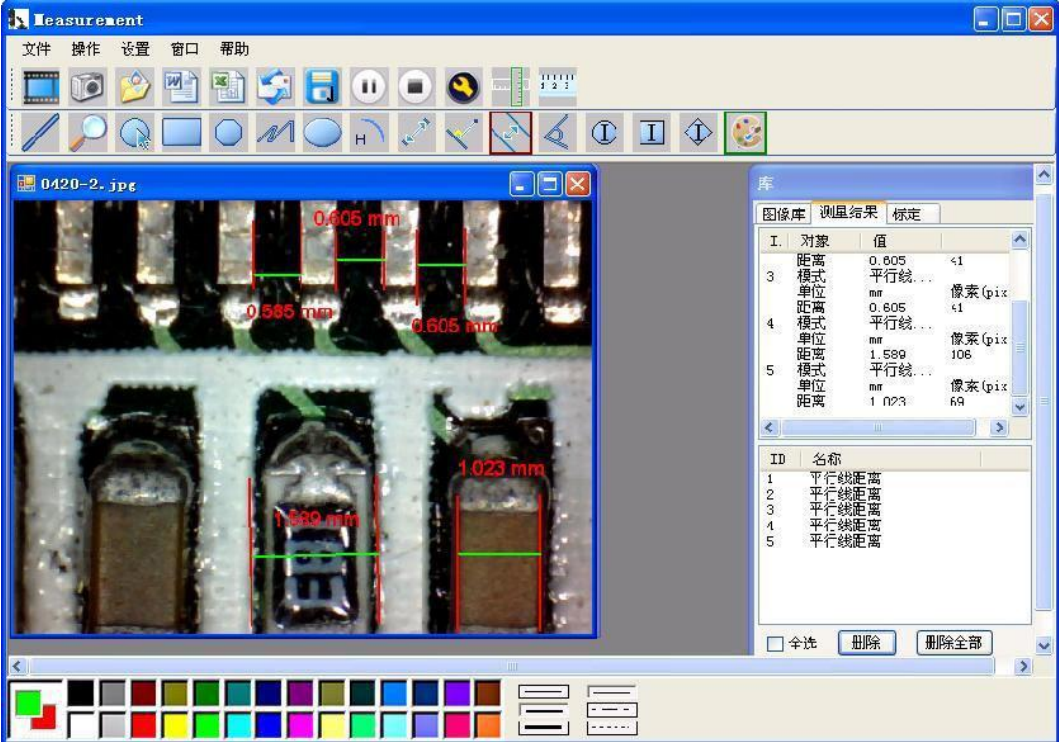
对象	值
标注	1C
模式	菱形标注
标注	9
模式	菱形标注
标注	1C
模式	菱形标注
标注	11
模式	折线
单位	mm
长度	6.791

像素(px) 455

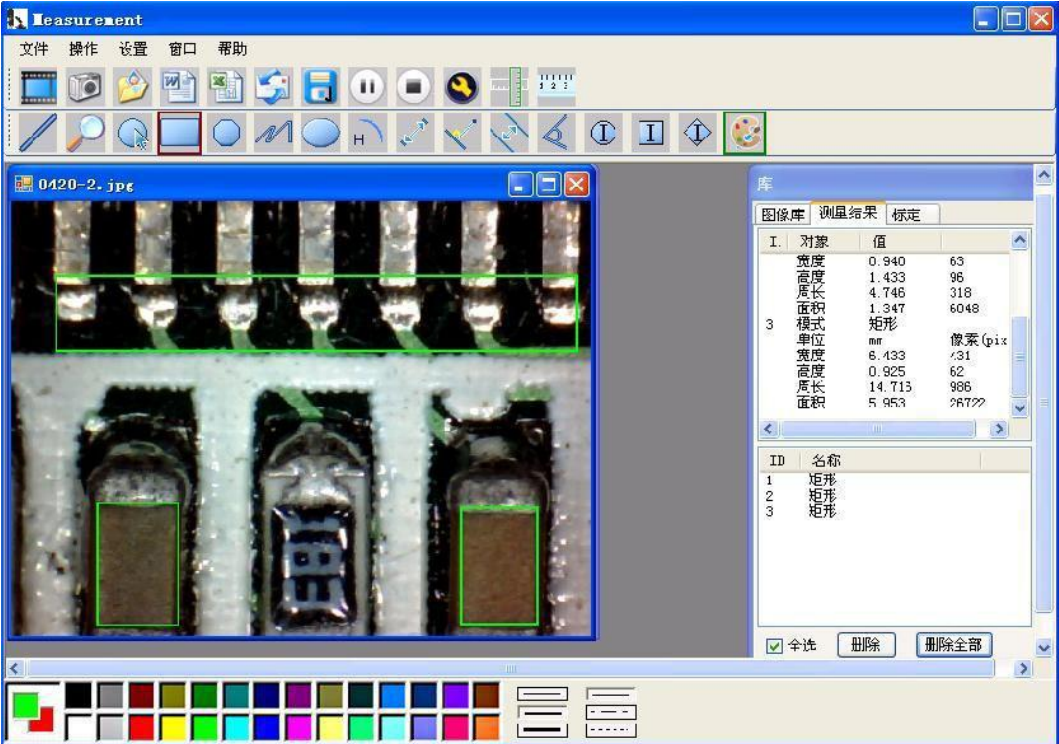
ID	名称
13	圆形标注
14	圆形标注
15	方形标注
16	方形标注
17	方形标注
18	方形标注
19	菱形标注
20	菱形标注
21	折线

☐ 全选

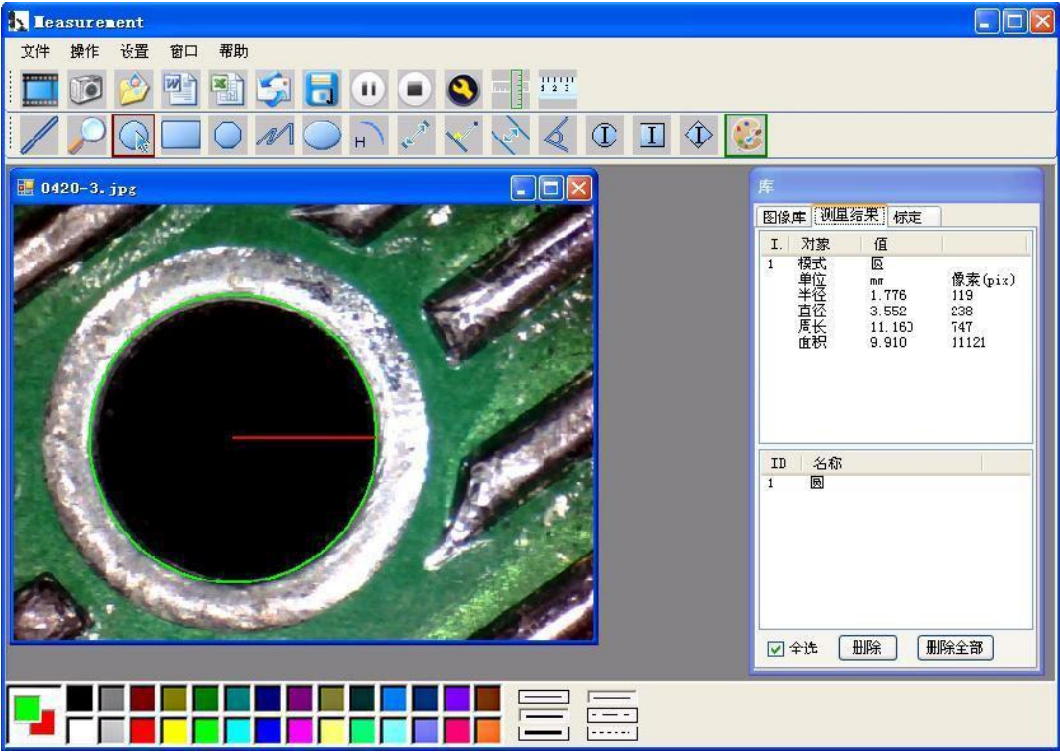
范例1：并行线测量



范例2：矩形测量



范例3，圆测量



Thank you for purchasing our USB Digital Microscope, it is a slim type tool and can be easily used in different fields, including:

1. Textile industrial for textile inspection
2. Printing inspection
3. Industrial inspection: PCB, Precision machinery...
4. Educational purpose
5. Hair examination
6. Skin examination
7. Microbiological observation
8. Jewelry & coin (Collections) inspection
9. Visual Assistance
10. Others

Currently we have two models of Digital Microscope: USB port and TV port formats.

The USB microscope must be connected to the computer and TV microscope be connected to visual device (N/P). User interface is very friendly and you can do the Measure work easily.

You can find more information of the product on this manual.

CONTENTS

Introduction	23
Contents	24
Parts of Microscope	25
Specification	25
Notes before use	26
Product Outlook & Standard parts	26
Hardware and system requirements	26
How to install the Driver software	26
How to install the measurement software	31
How to install the .Net Framework	32
Measurement instructions	34
Function options	36
How to do the calibration	38
Other Usage	40

Parts of Microscope



Specification

Image CMOS Sensor

Controller High Speed DSP (Driver Free available)

Focus Range 10mm ~ far view

Snap Shot Software and Hardware

Video Capture Resolution Standard 640*480, Max 1600*1200

Built-in 8 White-light LED and adjustable illumination ensure the magnified images are clear and bright

Still Image Capture Resolution Standard 640*480, Max 1600*1200

Frame Rate 30 f/s under 600 LUX Brightness

Digital Zoom 5X Sequence Mode

Brightness Control Manual adjustment

Magnification Range 100X-200X, 50X-400X, 50X-500X, 50X-600X, 800X, 1000X

Power Supply USB Port (5V DC)

USB 2.0 & USB 1.1 Compatible

Operation System Windows XP, Vista, Win 7 32 bit and 64 bit.

Language: English, Chinese and other language by selection

System Requirement: Pentium Computer with 700M Hz & above,

20M HD Space CD ROM Driver, 64MB RAM, Direct X VGA Card

CD disk Driver and Micro-Measurement Tool

Product dimension 112 mm (L) X 33 mm (R)

Product net weight: 250g

Available color: Matting black, Turnish and other colors.

Notes before use

1. Don't dissemble the digital Microscope or change the interior parts, it can cause damage.
2. Don't clean the Microscope with alcohol organic solvents
3. Don't touch the lens with your fingers.
4. Avoid outdoor use if possible.
5. Storage temperature , 0° C ~ 40° C, Humidity: 45%RH ~ 85RH%.
6. In case the product gets wet, leave PC connection immediately. And do not dissemble or dry by hair dryer. Send to repair center if the digit microscope was effected by liquid or other elements.
7. Measurement Data only for reference.

Product Outlook & Standard parts

1. Digital Microscope (1pcs)
2. USB 2.0 cable
3. Metal fixed Stand (1pcs)
4. CD ROM (Driver, Measurement software, User Manual)

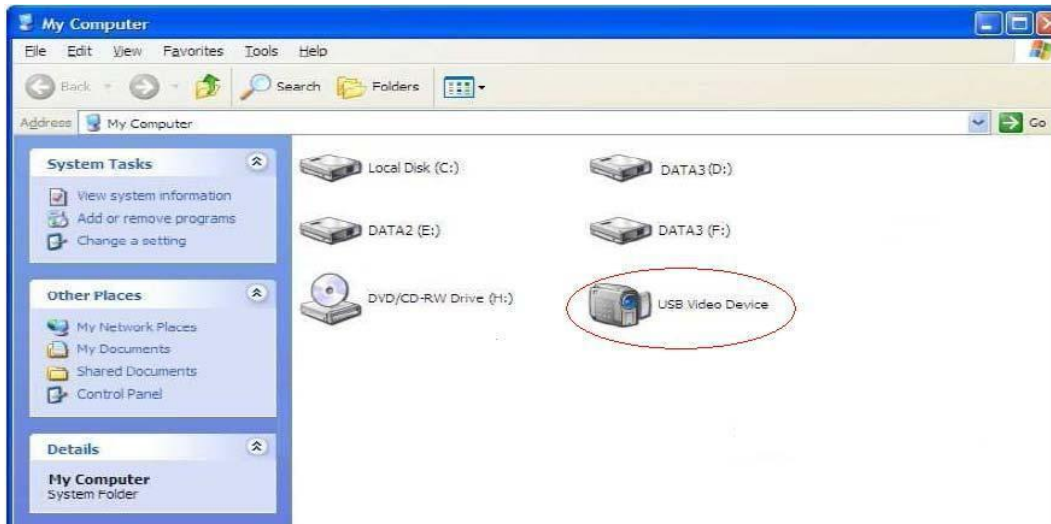
Hardware system requirements

Windows 2000、XP、VISTA、WIN7 Pentium 1G, Celeron, AMD 1G & above,
128MB Memory, 150MB Hard Disc memory space, 16-bit & above
VGA, CD-ROM, USB2.0 or USB1.1.

How to install the Driver

The Digital Microscope is a free Driver Product, it can be worked immediately after connected to the computer with operation system above win2000 version.

1. Connect the Portable digital microscope by USB2.0 cable to your computer, double click “my computer” icon on your computer desktop, below interface will be shown up.



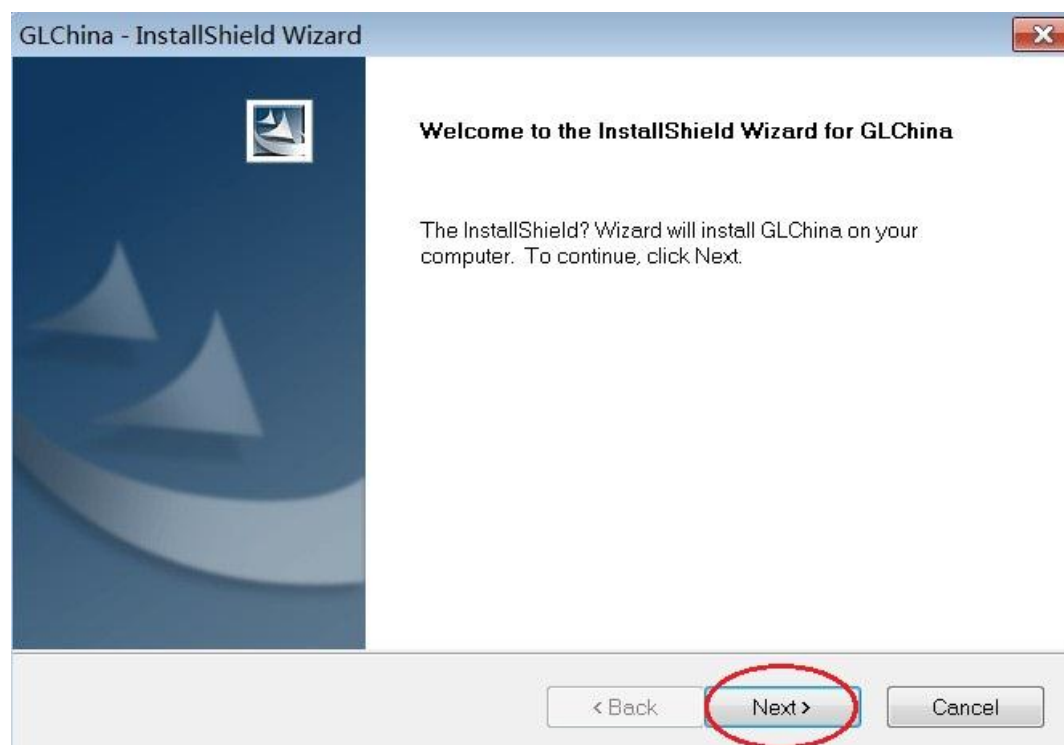
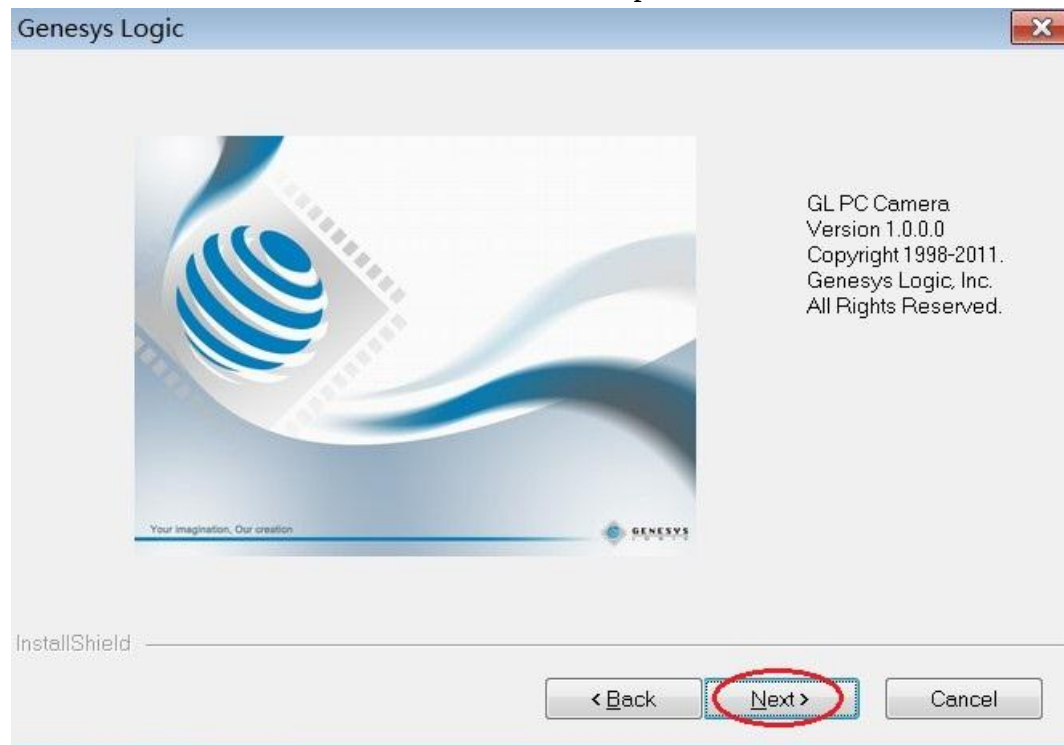
2. Double click the Video device icon as above red marked in your computer. Now it is ready to use.

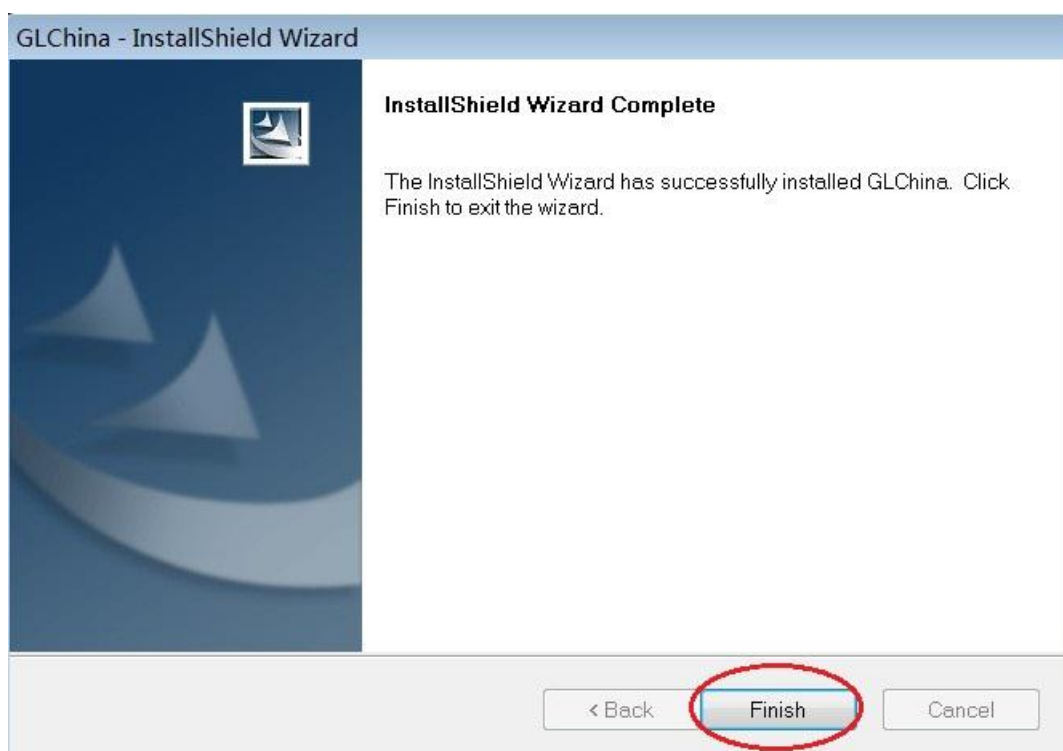
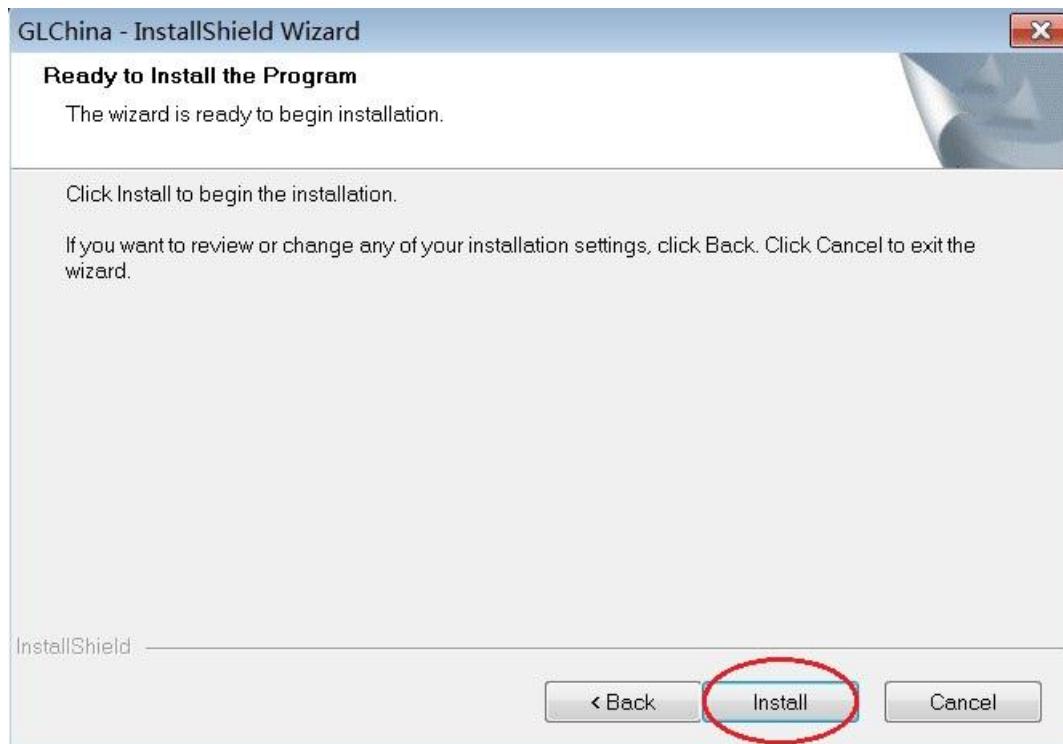
If you can't find the Video device, or if your computer can't recognize it,
Please follow below steps to install the driver.

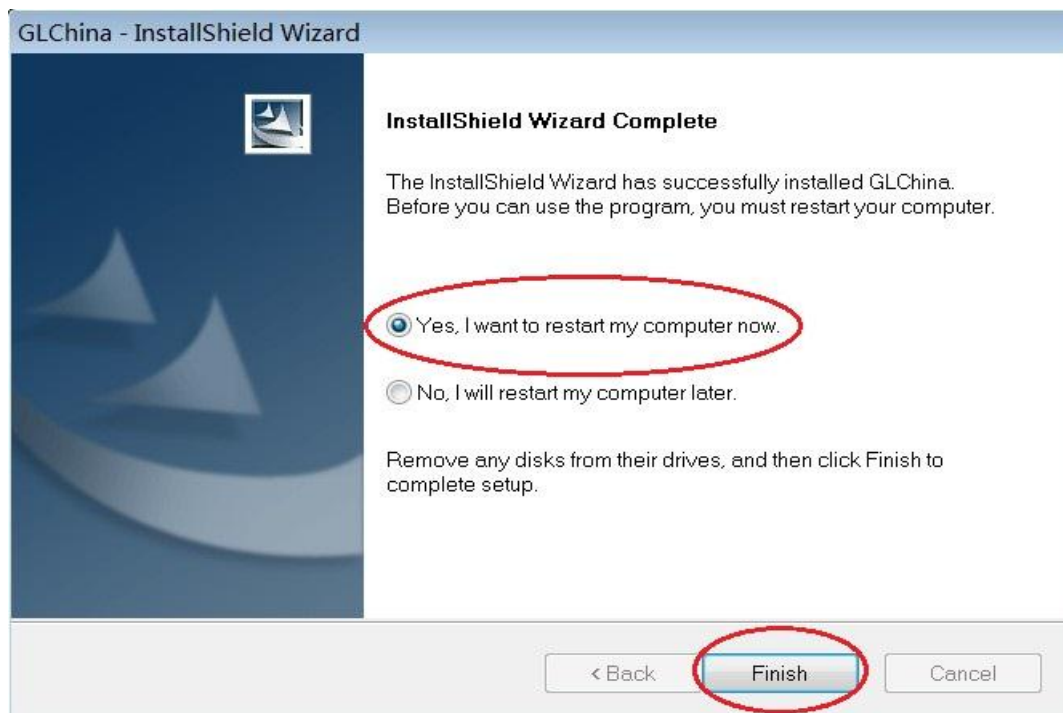
Insert the attached CD, open "My Computer", and double click the "DVD/CD Driver" to open the CD.

Driver installation

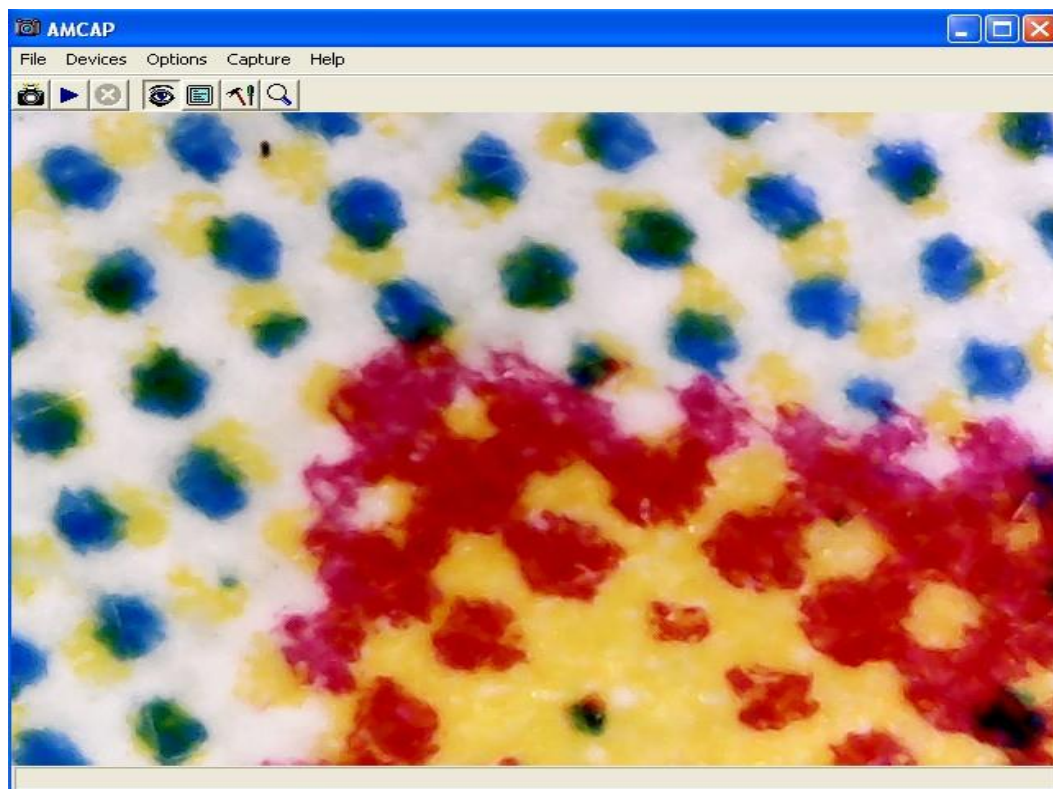
Choose and install the Driver, then reset the computer







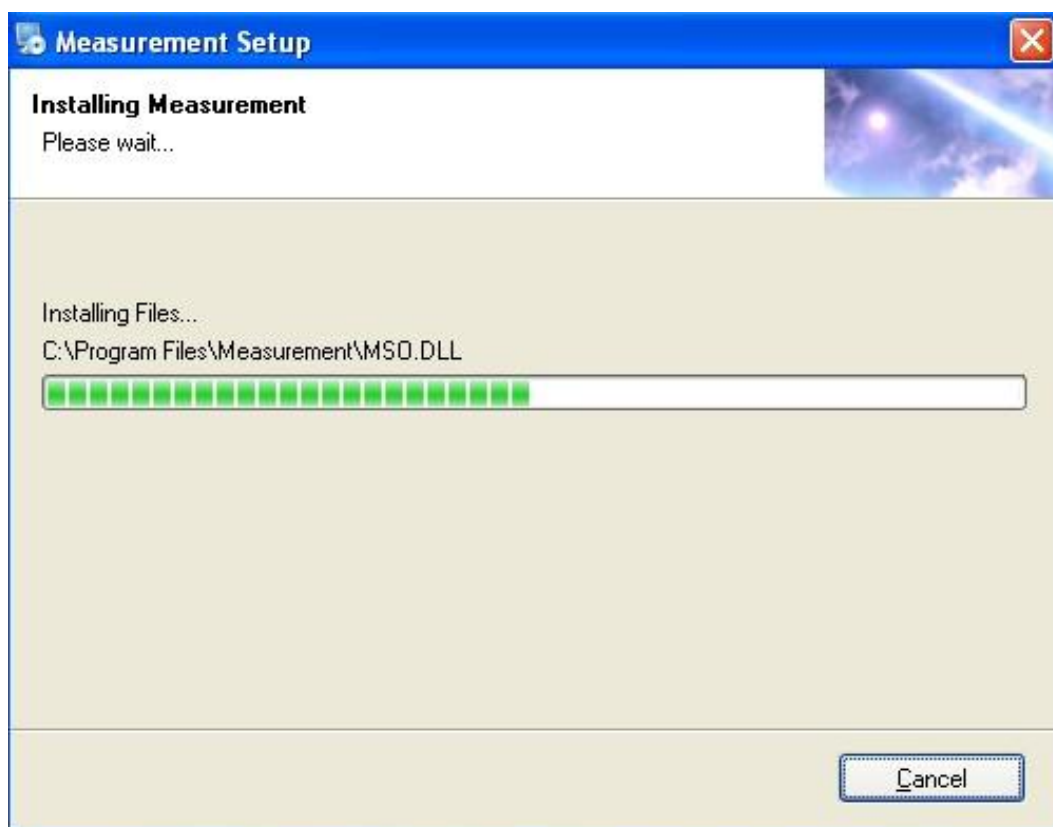
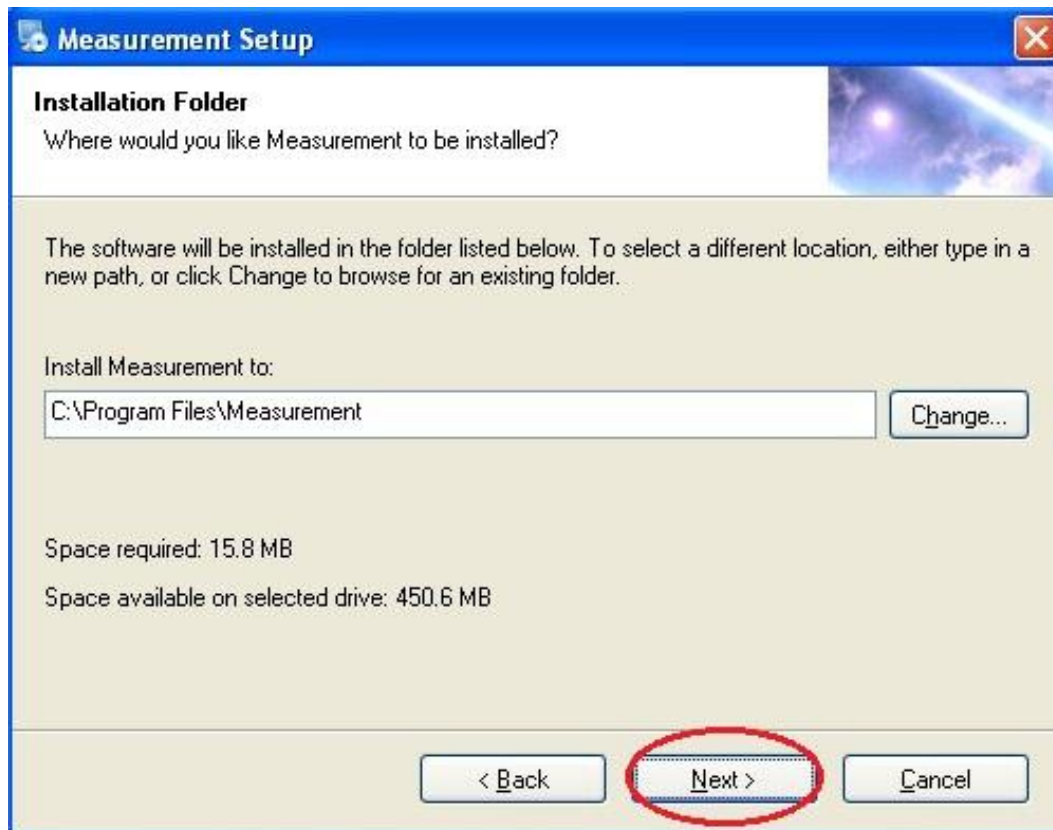
Reset the computer after driver installation at once;
Installation may be blocked by the antivirus software, so let the antivirus software allow all processes, or close the antivirus before installing. If installation succeeds, you can see the icon  on the Toolbar, also the software desktop icon, double click to run it.

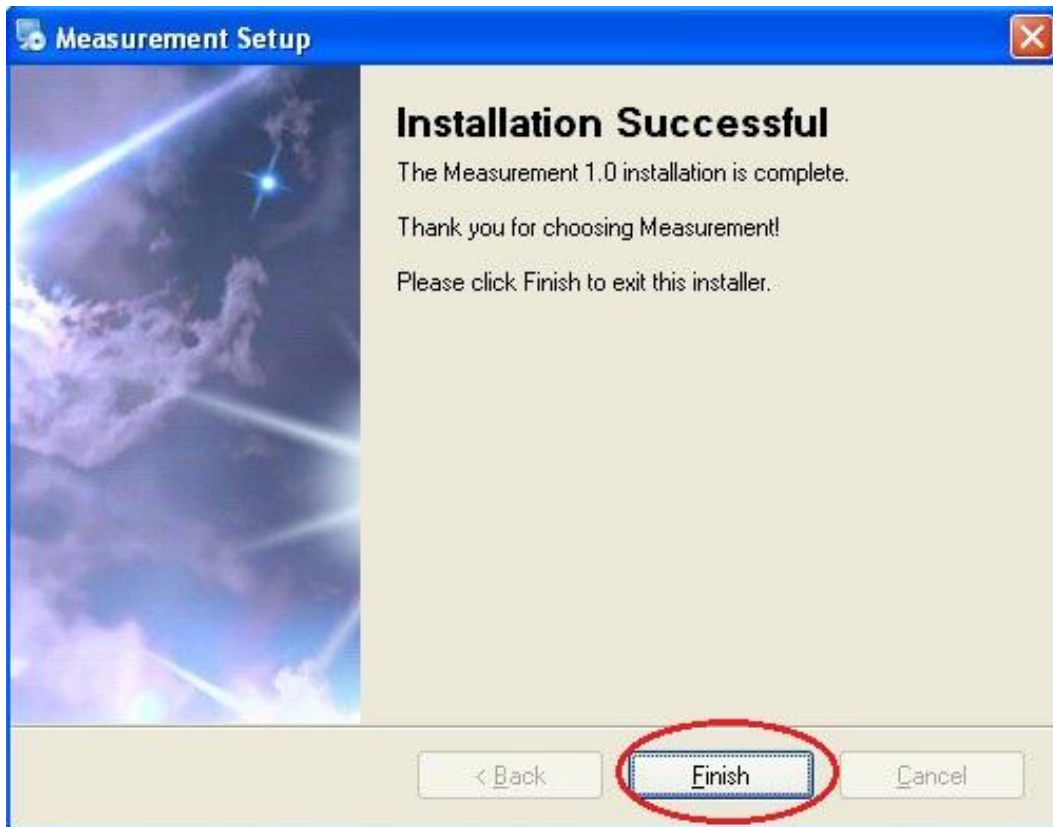


Now you can use the microscope. Long press the SNAP button on the microscope to take images, and the ZOOM button to have digital zoom function.

Measurement installation

Choose and install the Measurement

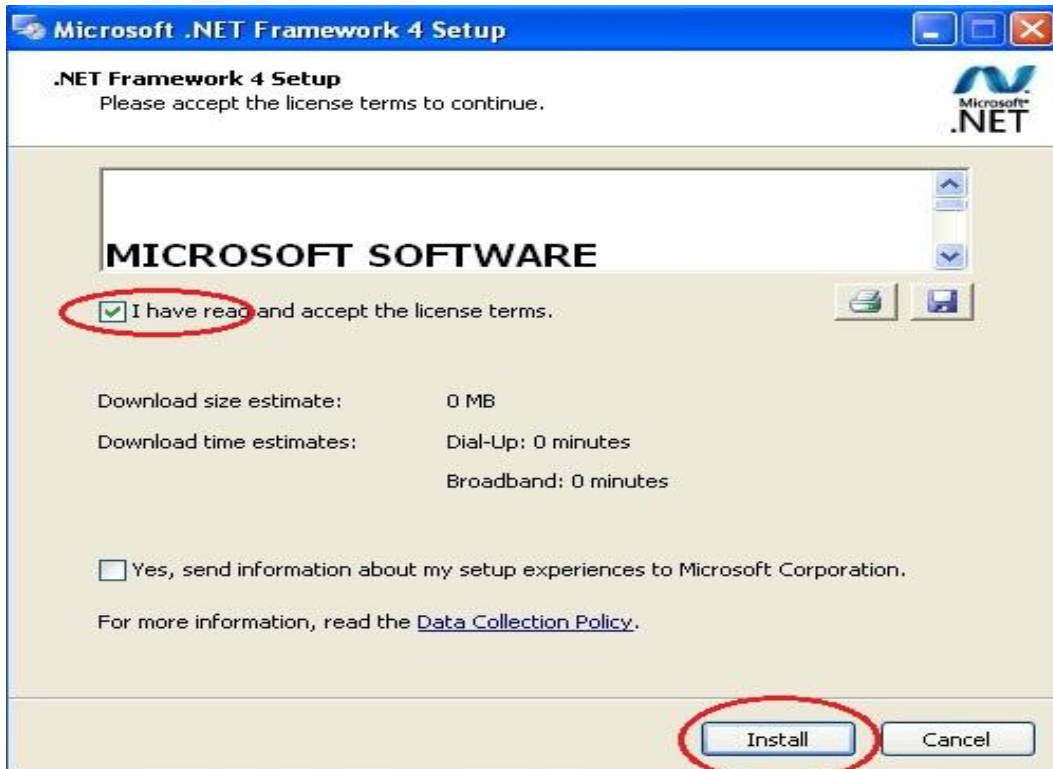


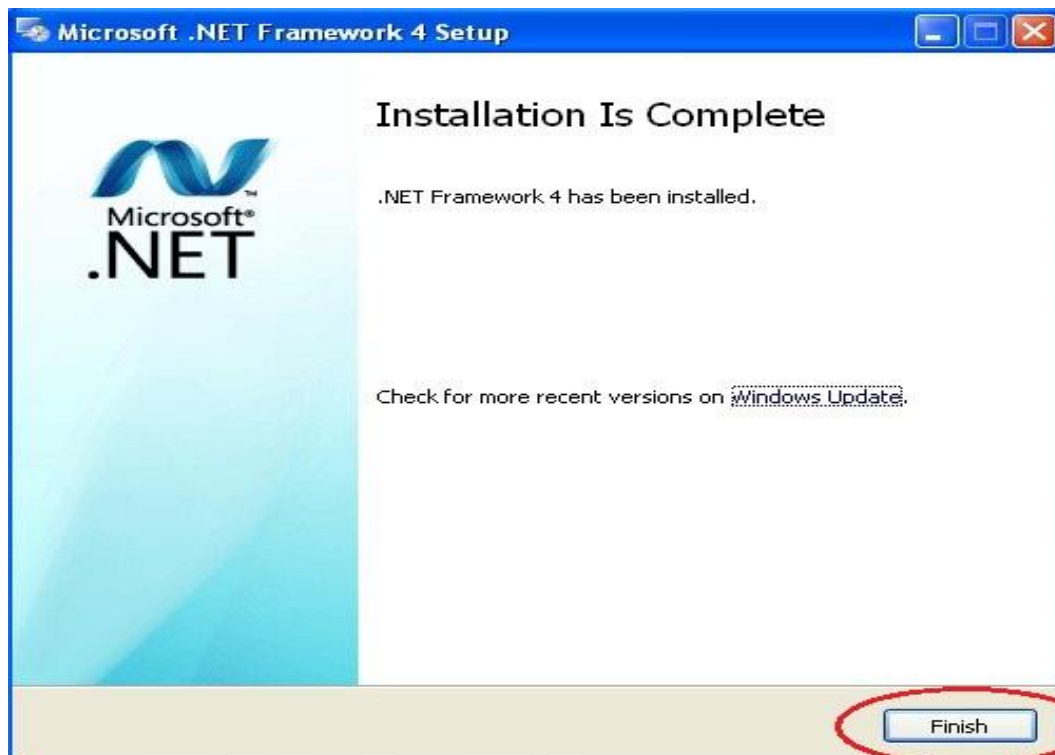
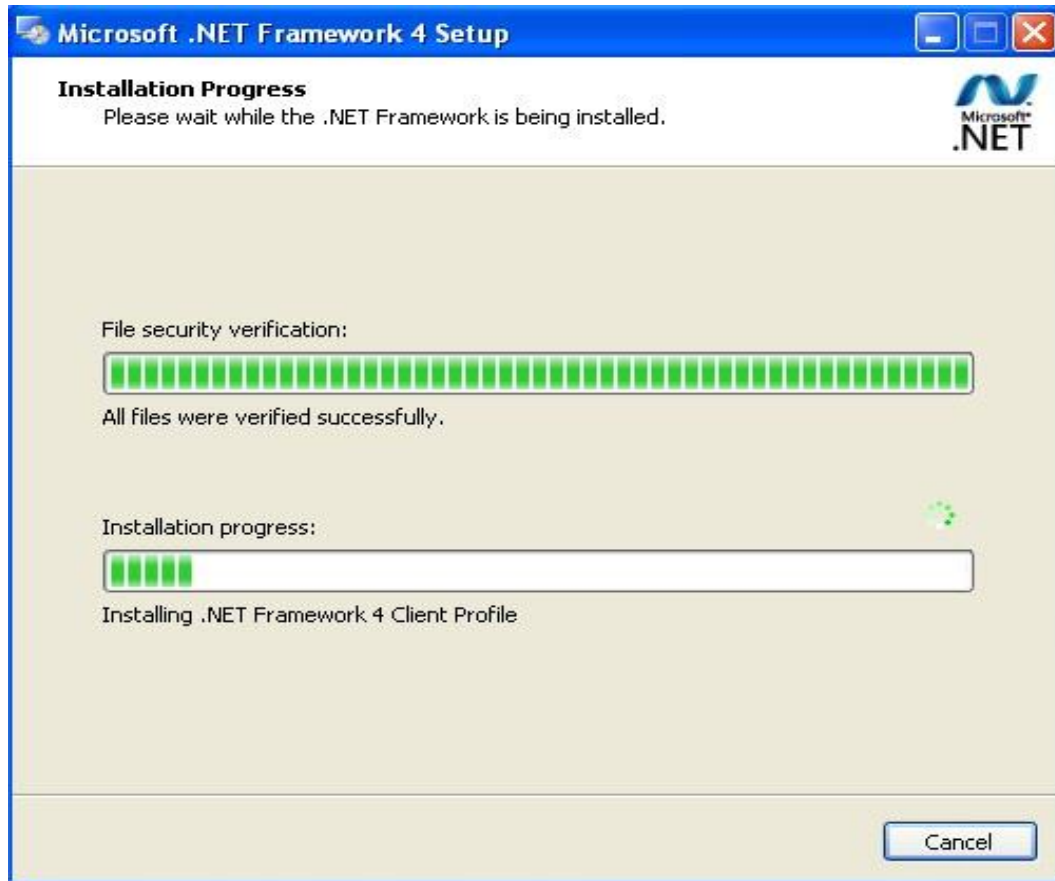


Click "Finish" and the installation completes.

Microsoft .NET Framework installation

If the PC is Windows XP or older version, .Net Framework 4.0 is needed. Install it.

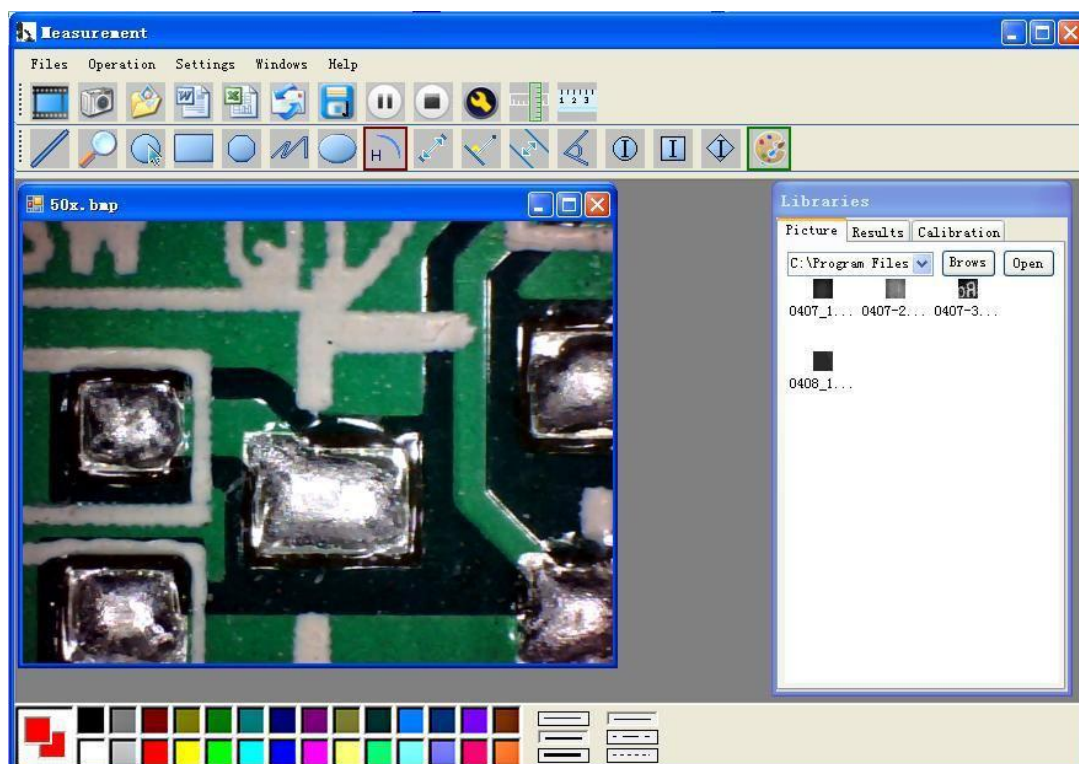




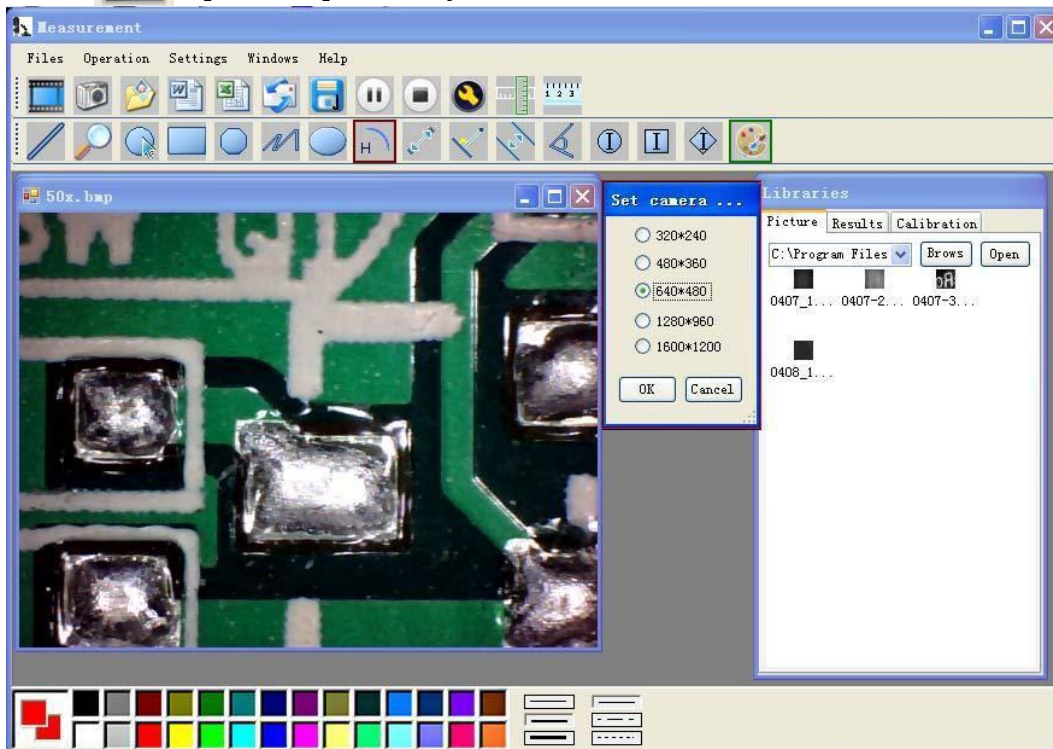
After the installation completes, double click  at computer desktop to start using the software.



Plug-in the devices, Display in operation window

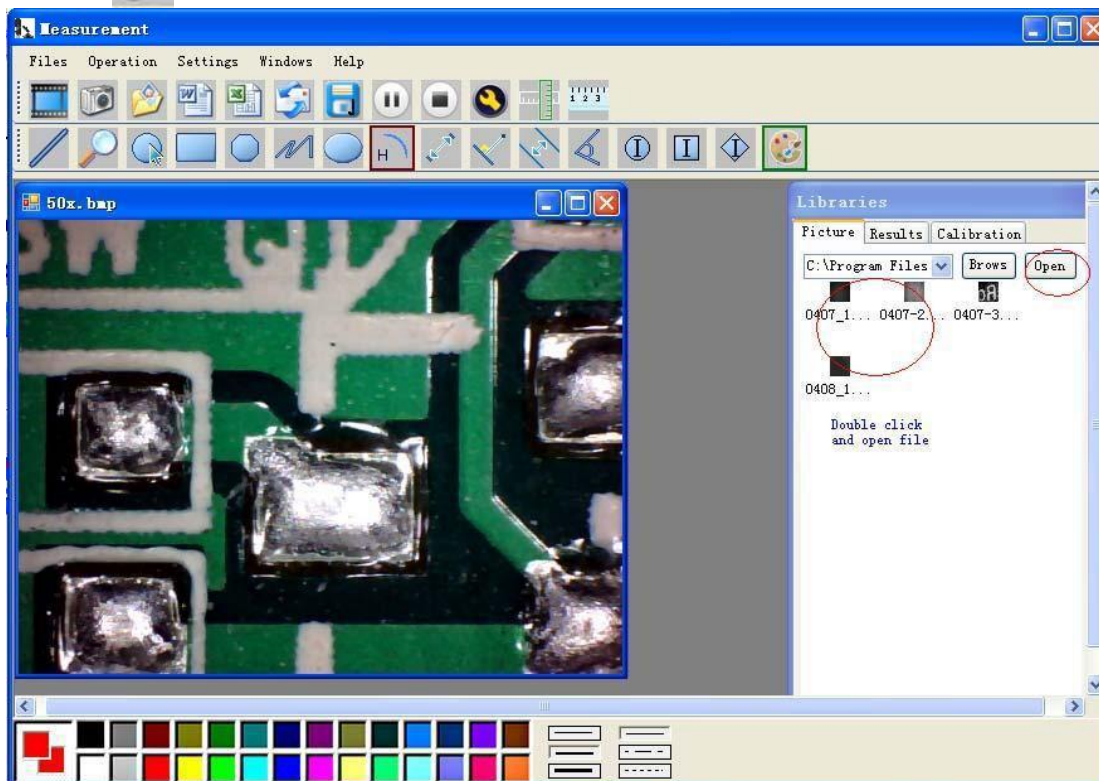


Click  open the operation system

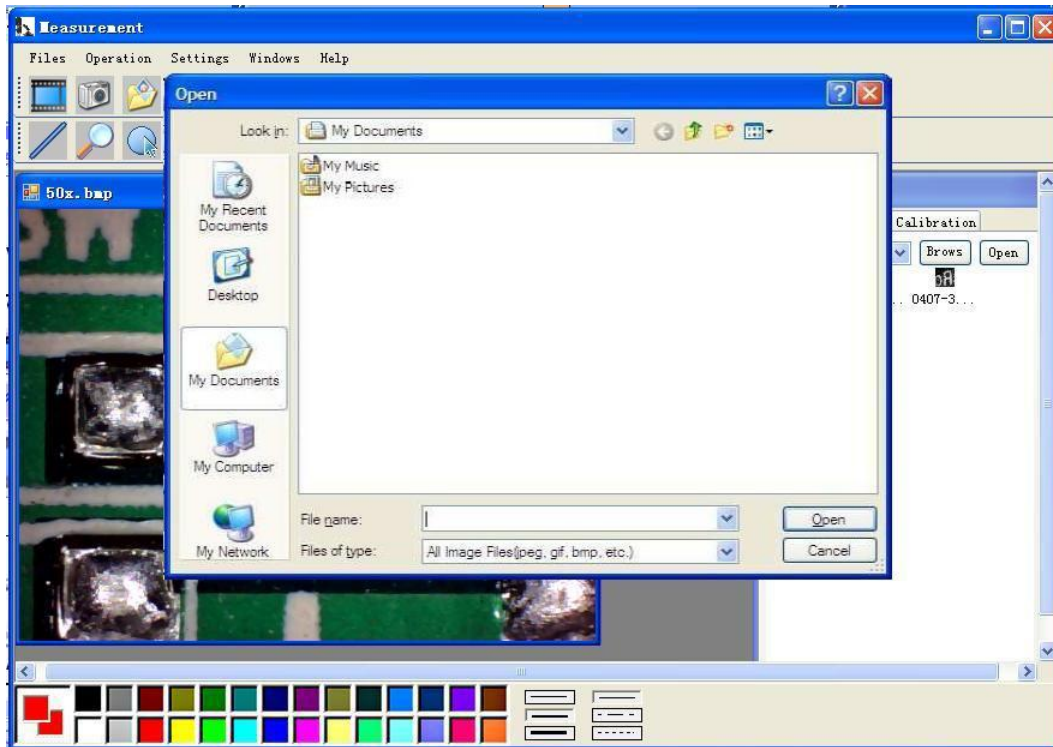


Choose the Image resolution from 320*240 to 1600*1200, default at VGA Mode 640*480

Click  To use measurement function.



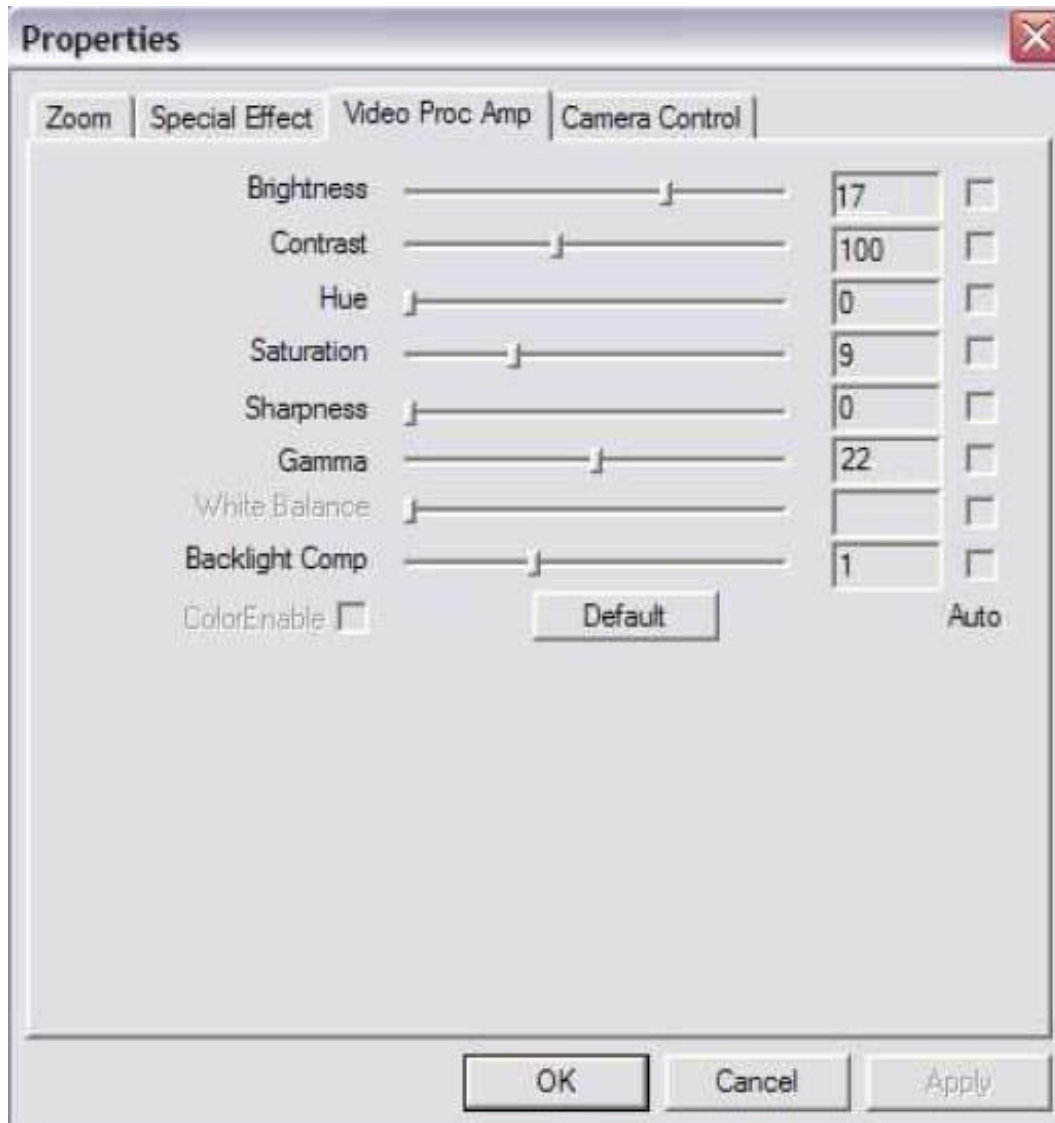
Click  to open pictures, and click  to save pictures



Video PLAY (Pause) ,STOP



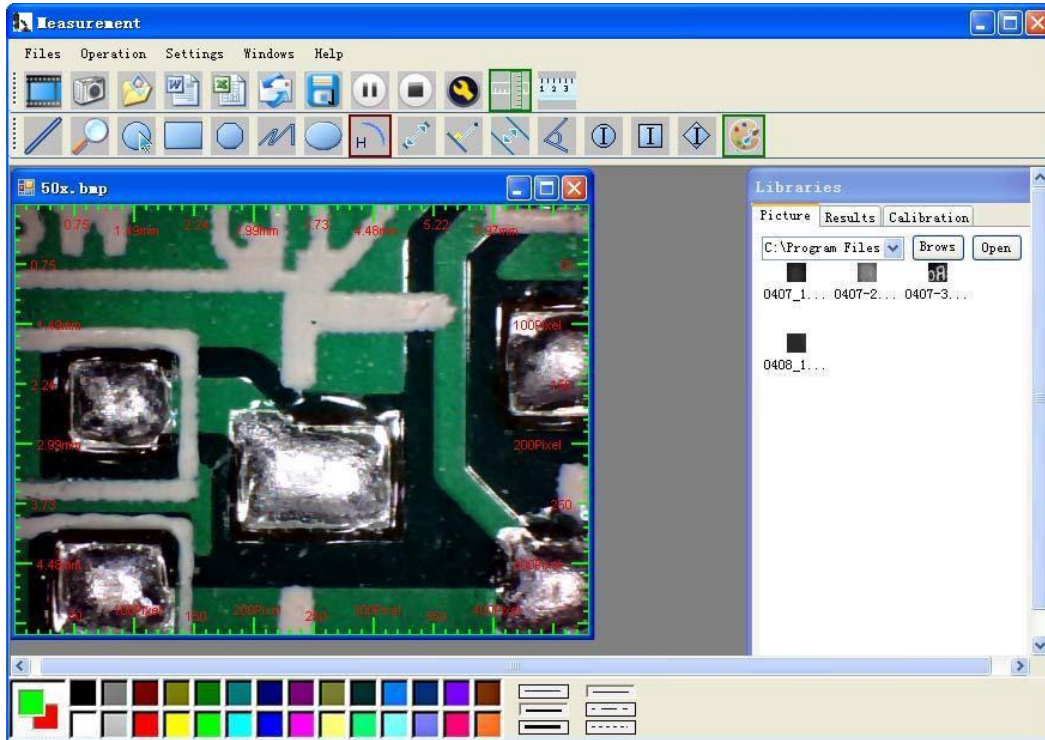
Image Parameter including Image setting and special effects



Magnifier

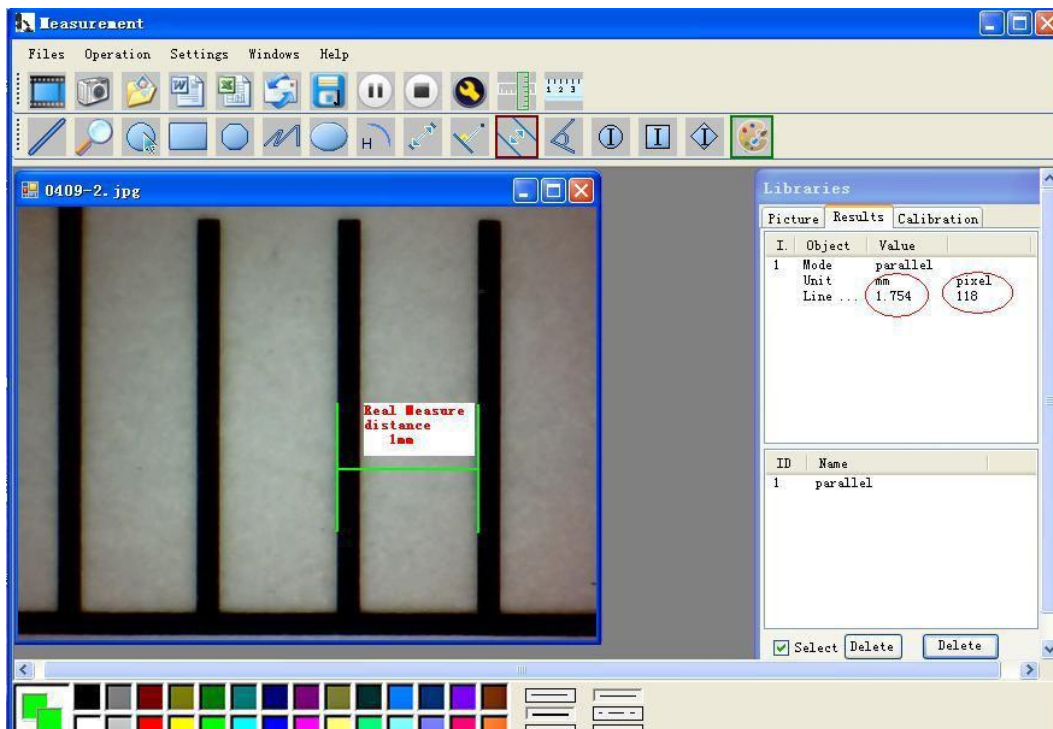


Click Ruler, as followings

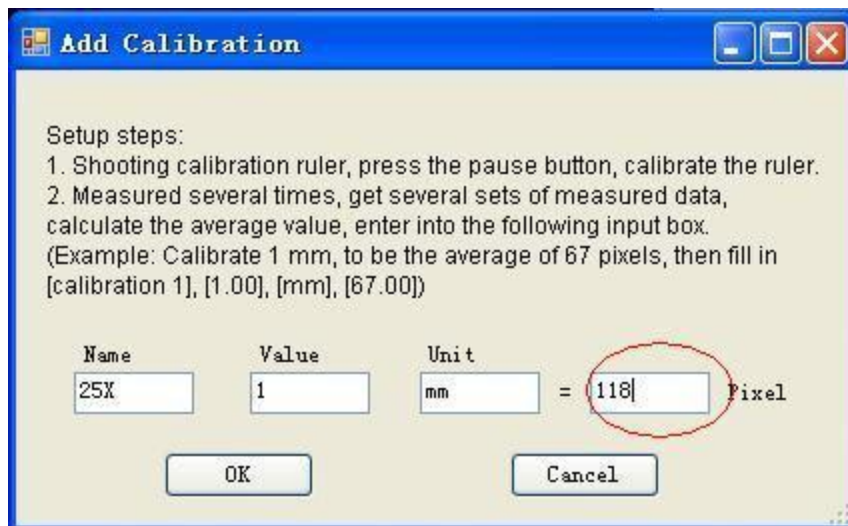


Click start calibration make sure certain accuracy.

Our experience told us that measurement could be controlled at 99% high precision. Measure tolerance could be caused from human eye distortion and defocus. More practice is helpful to measurements.



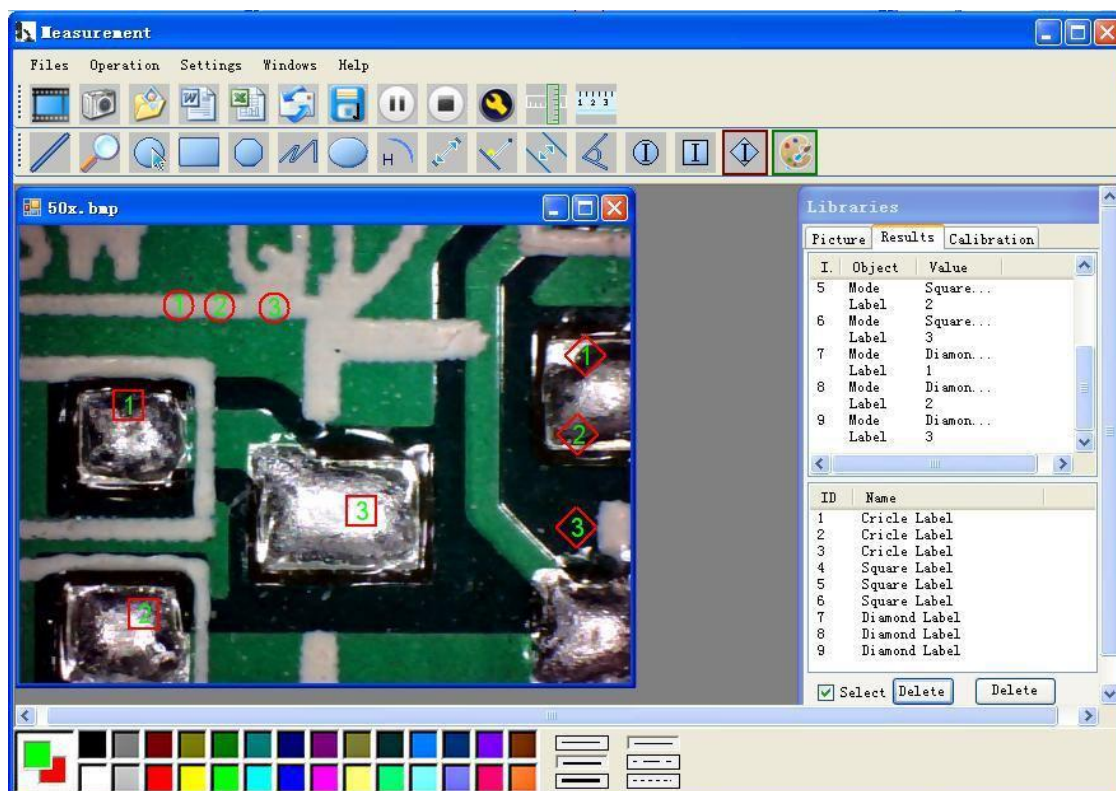
Key in the Measure data (Pixel), Unit, and Click' OK'



Warning: Please do calibration again once Magnification Ratio changed.

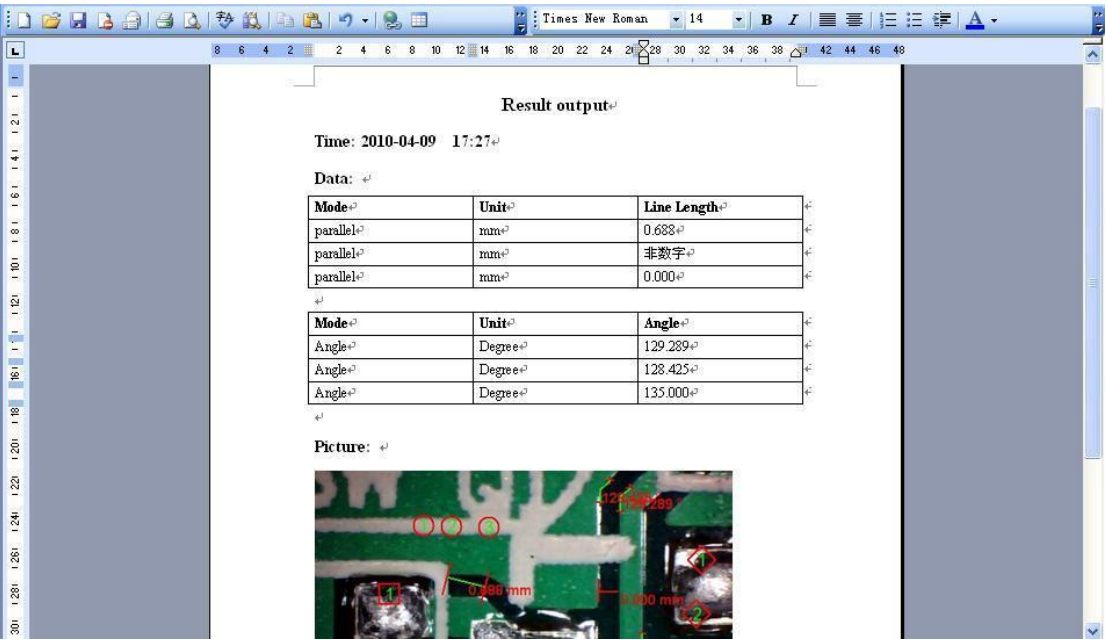


Color setting of display character



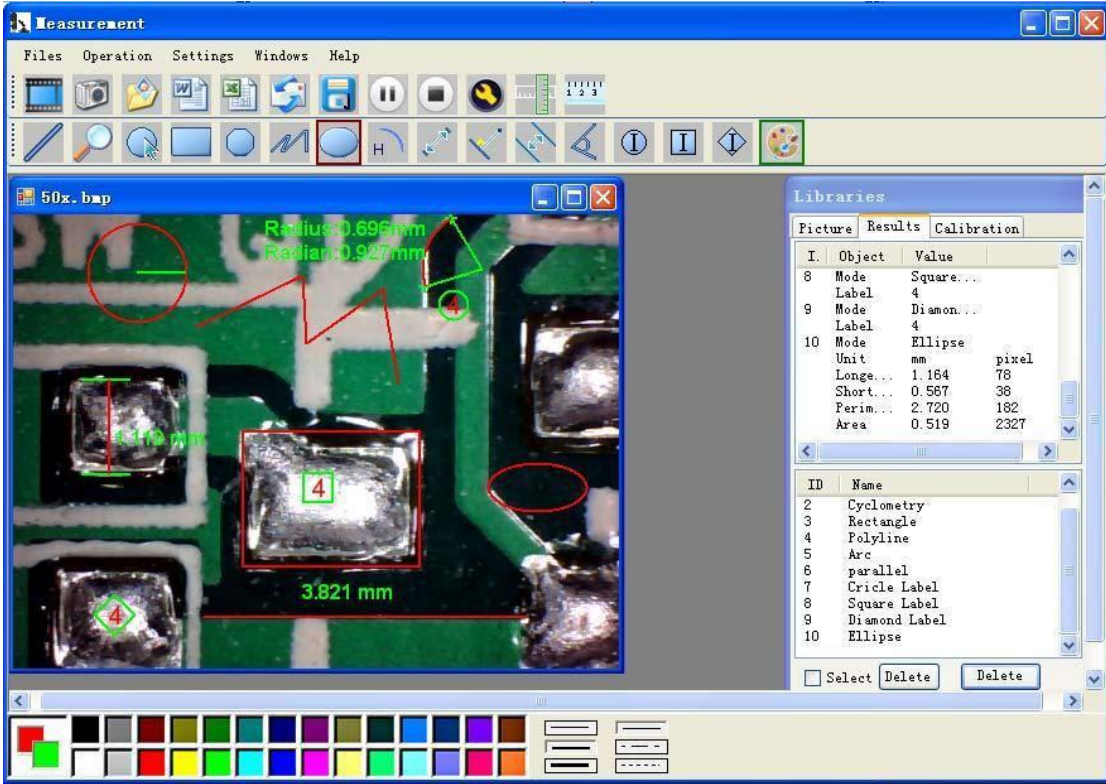
Click to export word or excel format.

Example: Measure data under word file



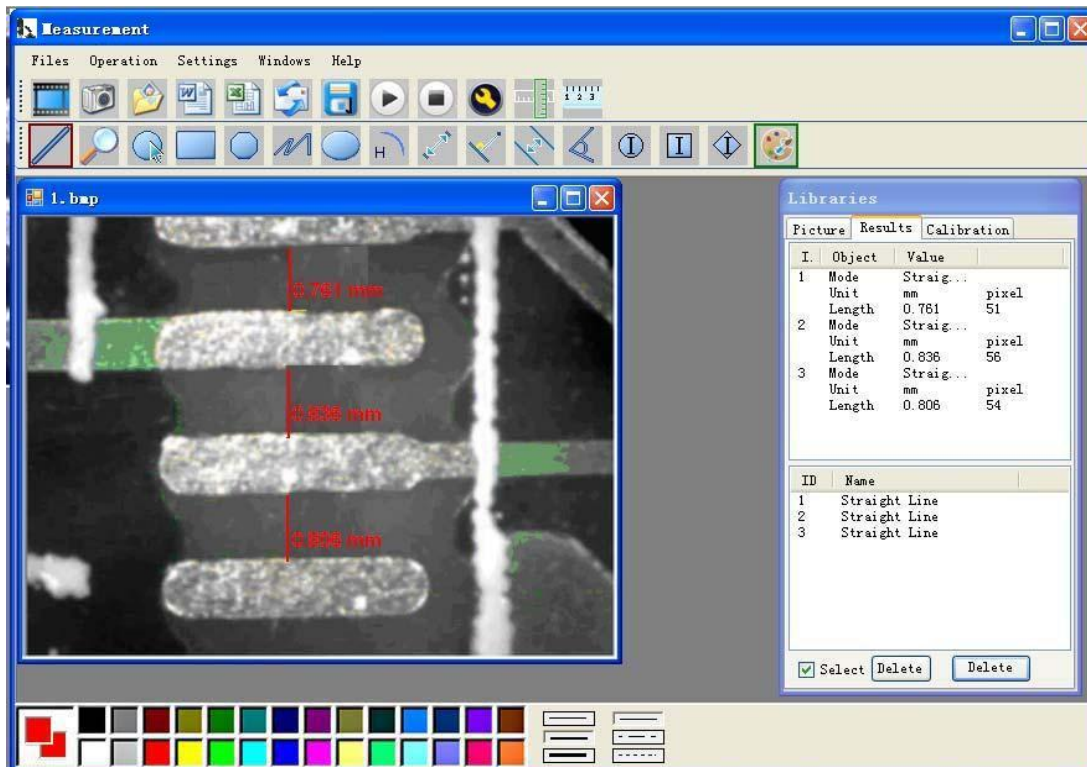
From Left to right:

Line, ring, Square, Polygon, Set-line Length, Oval, Arc, Point to Point distance, Point to Line distance, Parallel line, Angle



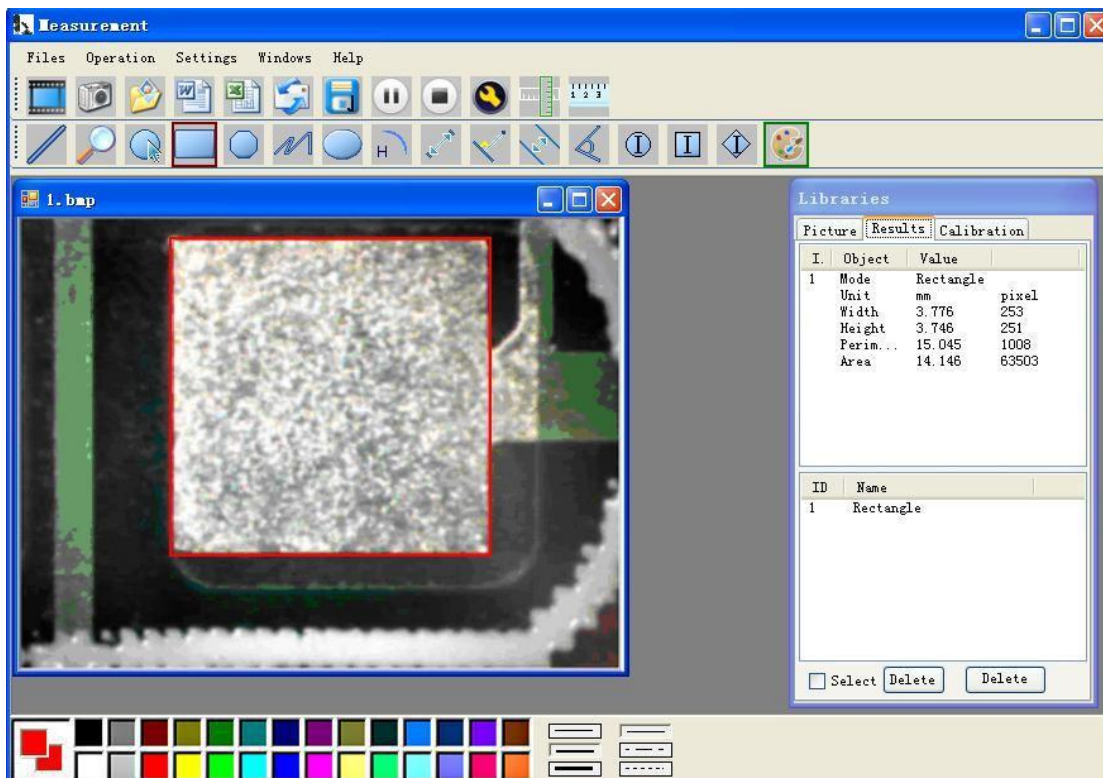
For example 1

Line measurement:

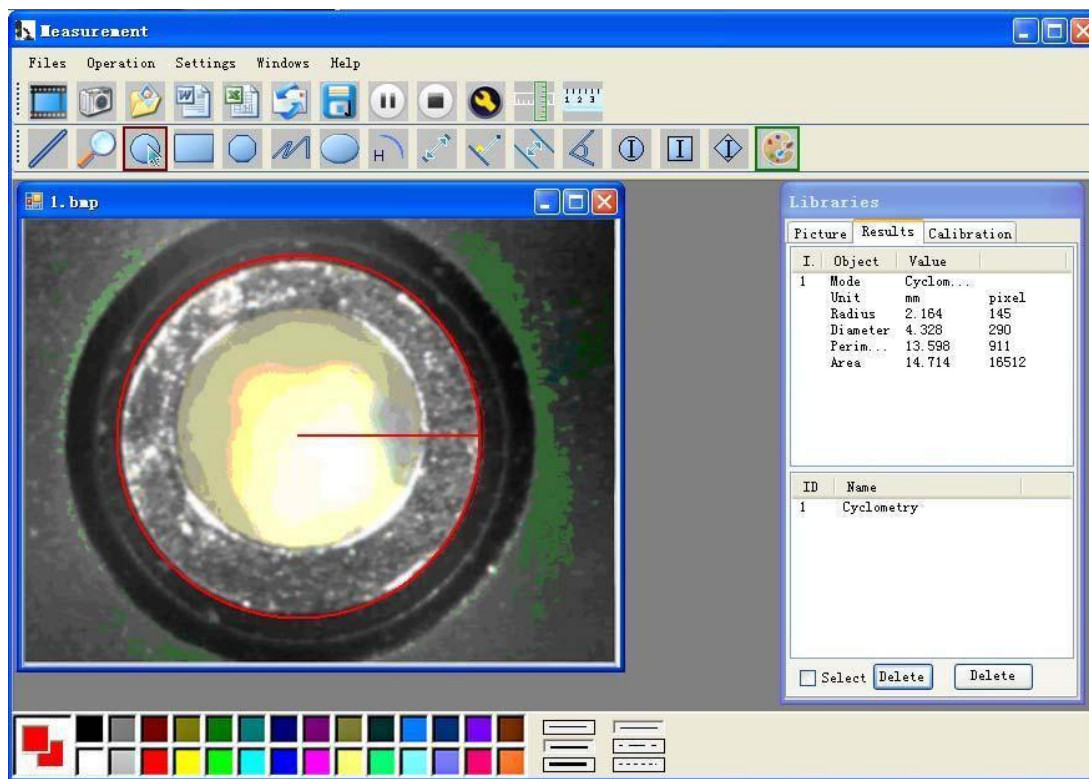


For example 2

Rectangular measurements:



For example3
Ring measurements:



For example 4
Arc measurements:

