

# **ARM**

## **(Advanced Real time Monitor)**

### **Manual**

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## Chapter 1. Installation and settings

### 1.1 Confirmation before installing

Please check below components for easy installation.

① S/W CD, **USB Type Dongle (care of loss)**

② Option

Camera for microscope, inter space card, cable

#### Check

※ **Please check connection of camera cable to computer.**

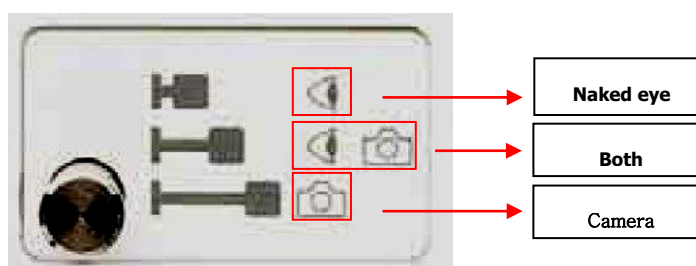
- If camera cable wouldn't be connected to computer, can't acquire images.

※ **Please check installation of camera driver and S/W.**

- All cameras are available to this program after installation of device driver.

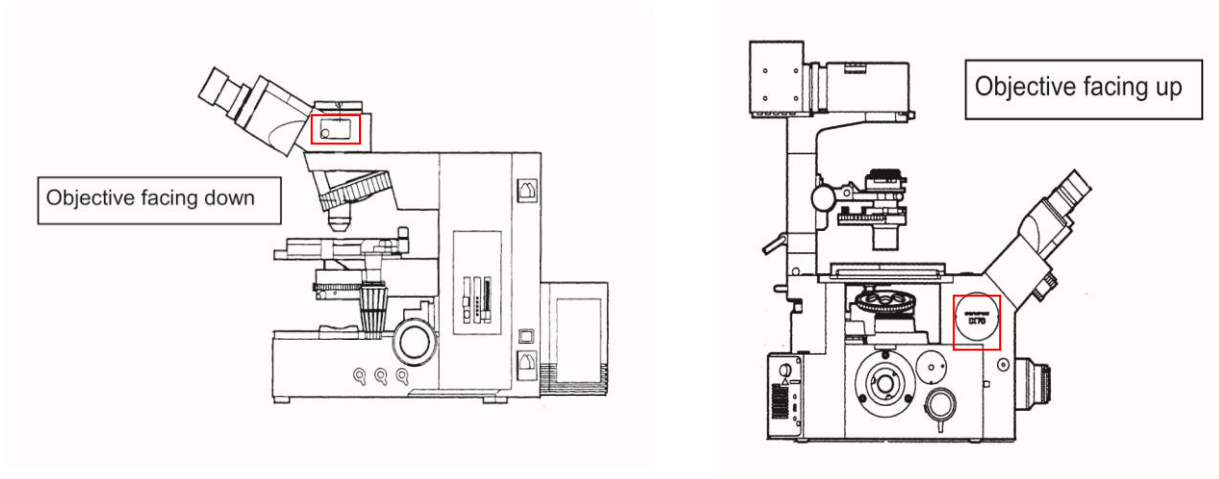
※ **Please check lever of light path of microscope body.**

- There are three observation mode of naked eye, camera, both as the position for light path of microscope, if light source condition to be naked eye, you couldn't capture images.



Lever of light path (There're differences by microscope manufacturer.)

## The position of light path



Light path of up right/inverted microscope and the position of C-Mount Adapter

## Caution

### Please check below to operate ARM series.

This will help to operate ARM quickly and easily.  
And it may helpful if you have trouble in installation later.

- ARM series recommend to use operating system more than Microsoft Windows XP Professional.
- For the maximum usage of camera function, built-in graphic card is not recommended.
- For copy protection, S/W provide Dongle (USB Type).  
If you lost, it couldn't be supplied again, so needed to be careful.



USB Dongle

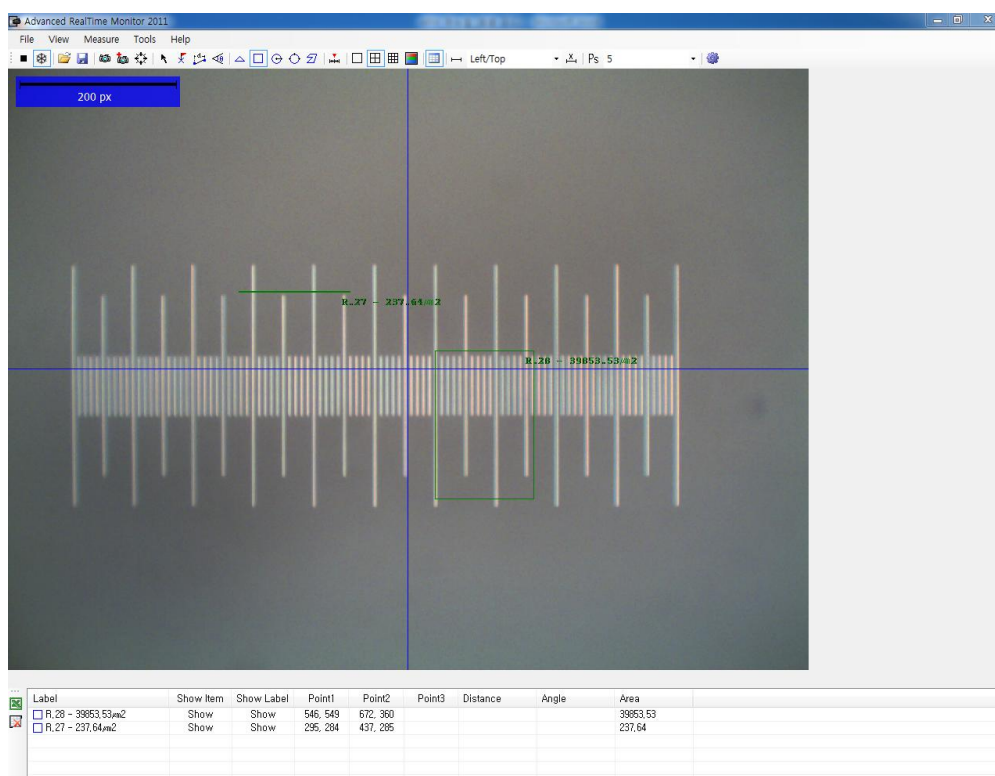
## 1.2 Instruction of ARM(Advanced Real Time Monitor)

**ARM Series** is image analysis S/W for microscope.

With easy use of **GUI**(Graphic User Interface)way, supporting digital camera function to be connected microscope system, it can increase the efficiency of image analysis for microscope.

### GUI(Graphic User Interface)?

This is working environment that user can exchange computer with information with graphic. Text-based user interface performed the operation with command from keyboard and displayed character on the monitor. But graphic-based interface with mouse orders working with choice of one menu on the screen.



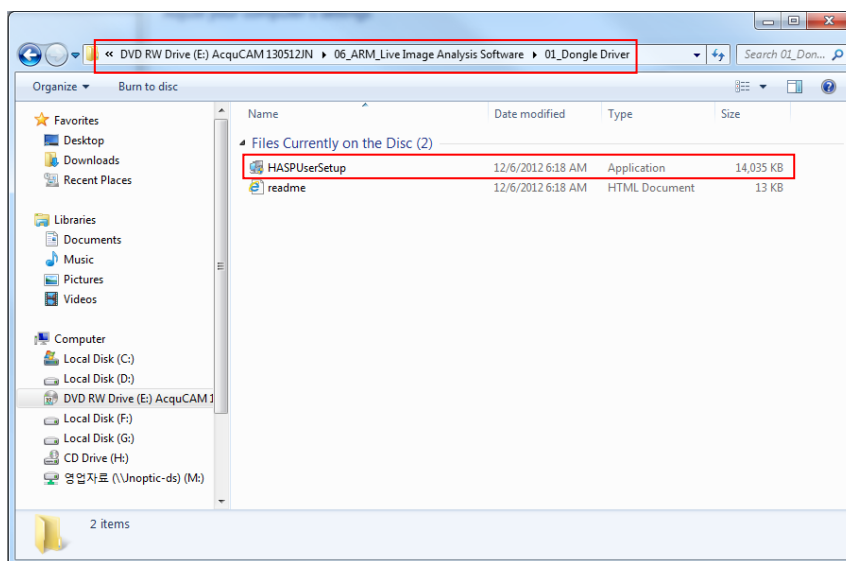
## 1.3 Guides for installation

After install the camera device driver connected microscope system and continue installing as below.

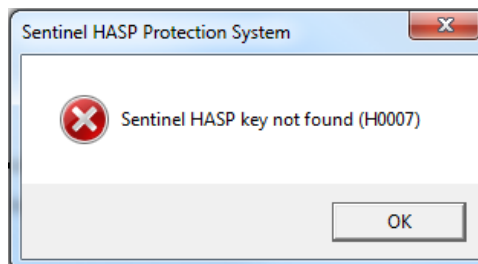
### ① Install USB dongle key driver

After install ARM, insert CD and install USB dongle key, practice the installation file on the inside of CD-ROM disk.

\*Before installation of driver, when installing dongle key, please close 'installation wizard' with click 'cancel' button.



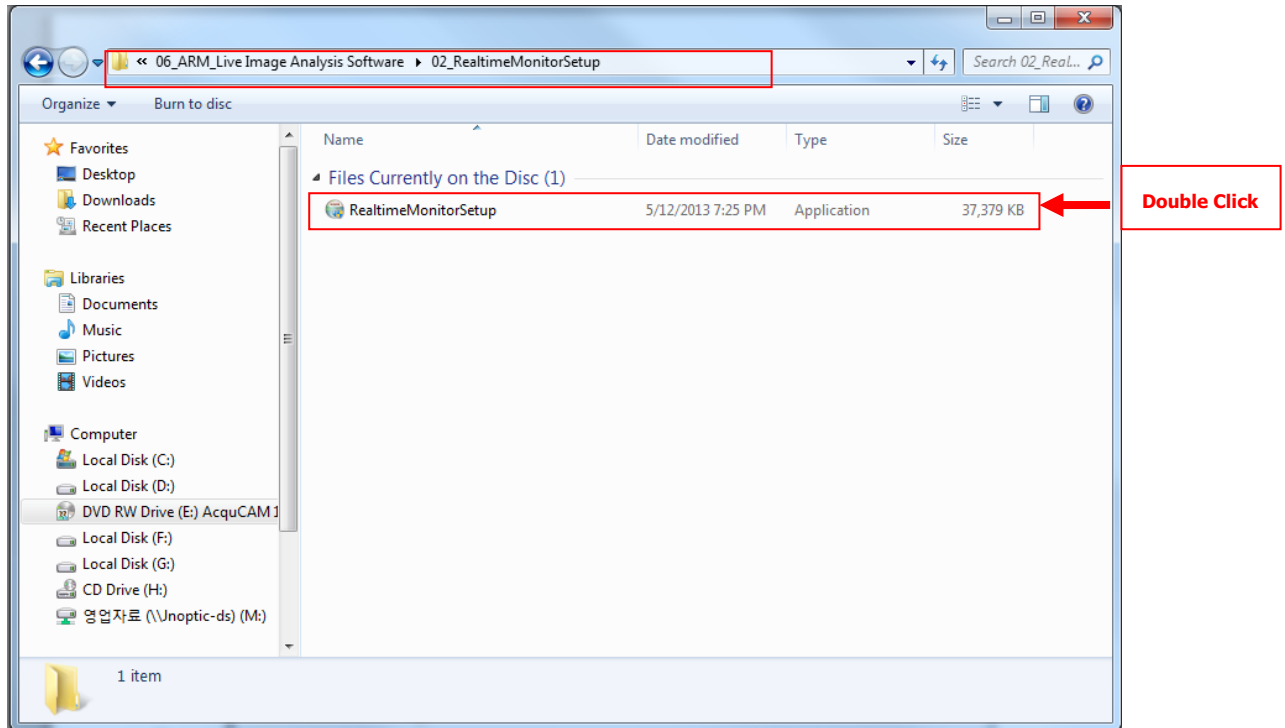
- \* Click 'Next' button in the dialog box after running files, and select comb box of 'service agreement'.
- \* After selecting 'service agreement' comb box, if you click 'Next' button, driver will be installed automatically.
- \* If USB dongle key driver is not installed normally, below message box will be printed out.



Error message of running program with bad condition of installing USB dongle key

## ② Installation of ARM S/W

Run below installation file on the inside of CD-ROM disk after completing installation of USB dongle key driver.



- \* Click 'Next' button in message box printed after running file.
- \* Click 'Installation' button in message box printed after clicking 'Next' button.
- \* S/W installation will be running automatically after clicking 'Installation' button.
- \* Check the creation of icon after completing installation of S/W.



**ARM running icon**

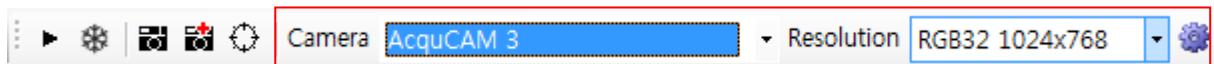
## 1.4 Guides for setting camera and measure

**ARM Series** is compatible with AcquCAM series of JNOPTIC and standard camera with basic window supporting WDM(Windows Driver Model).

If you have cameras for microscope, please feel free to ask JNOPTIC for further question of compatibility.

### ① Camera recognition

In condition of completion of installation for device driver of microscope camera and to be connected to PC, you can check the device name on the icon bar without specific device option and activated device list including using button after installation **ARM Series**.



**\* EX 1) Activated camera icon bar after connection camera and installation of driver**



**\*EX 2) Un-activated camera icon bar in case of disconnection of camera (unable to output image)**

After completion of installing camera well like **EX 1)**, click live button and check the monitor is output normally on the ARM start-up screen.

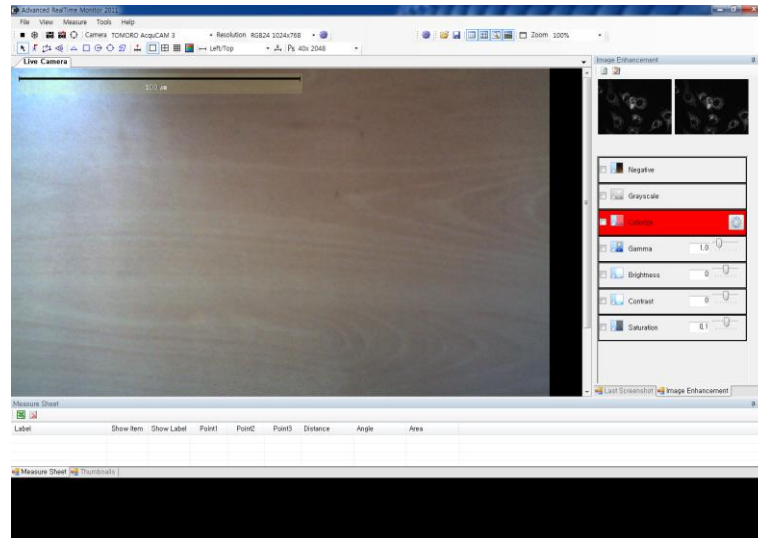


**Click live button and check the output image.**



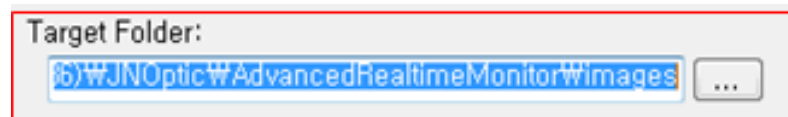
## ② Start-up screen

If the installation of camera device driver for microscope will be completed, you can check live image on the first running page without additional setting. And please proceed below caution.



ARM first page

**※ Caution – After completing installation ARM S/W, please assign folder to save taken pictures with \*auto save setting menu refer to this manual 2.1 Camera.**



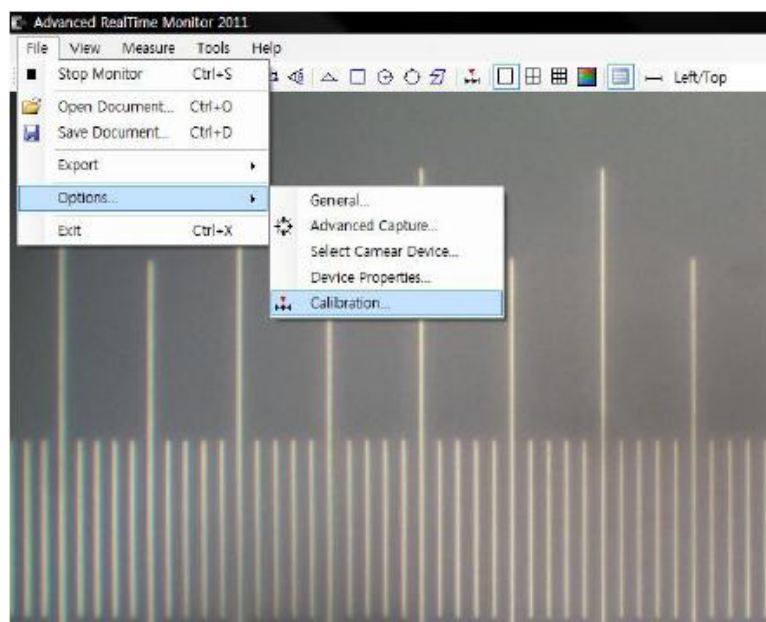
**Assign page of auto save image folder (Refer to 2.2 section)**

### ③ Microscope calibration

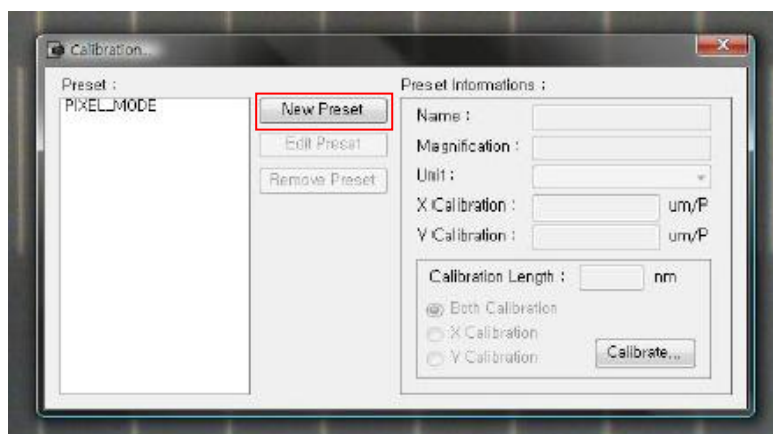
Calibration is essential to get more exact data than the measured image saved on ARM program with real microscope image.

\* Preparing sample with objective micrometer and click ( ▶ ).

1) Click File->Option->Calibration on the menu.



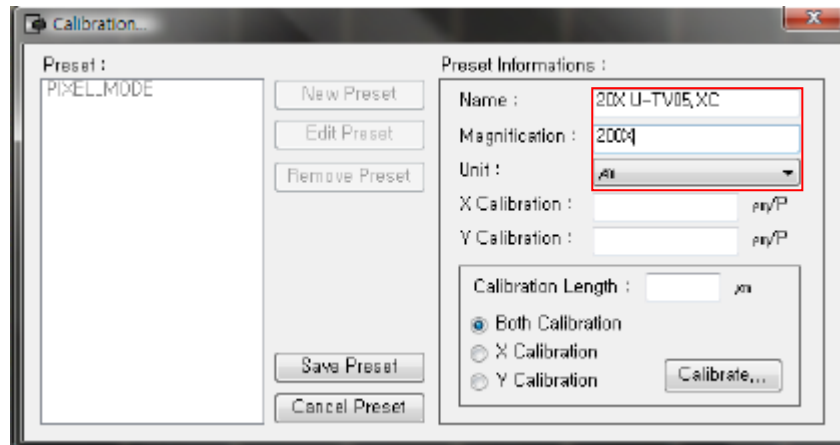
2) Click 'New Preset' button on the active calibration menu page.



3) On active 'Preset information' tab, input lens magnification be set in microscope.

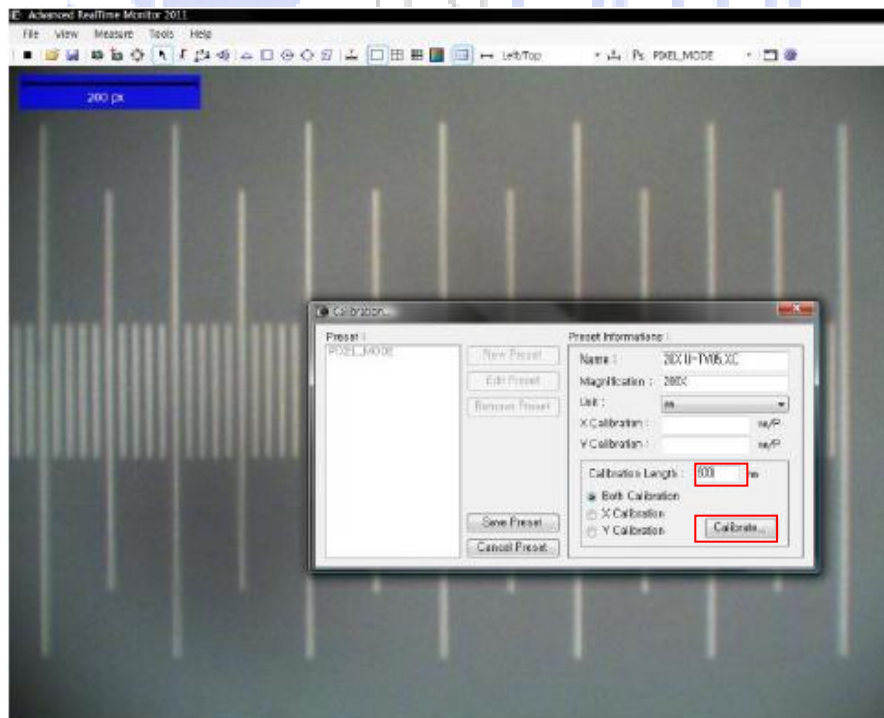
\* If lens magnification be set in microscope is 20, input 20X or 20 (Same name, magnification)

\* For Unit, set the 'um' excluding special case.

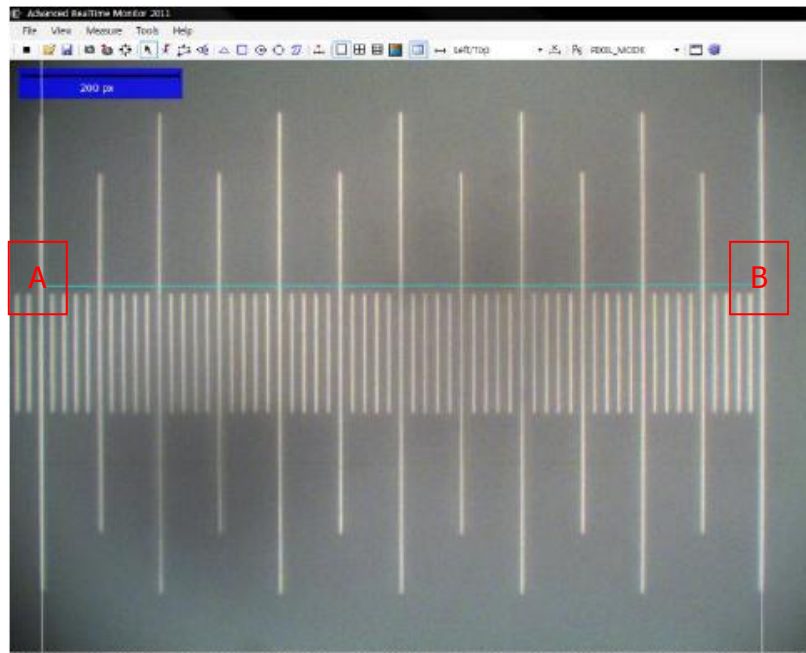


4) Input the length to be seen on the monitor, and click 'Calibrate' button.

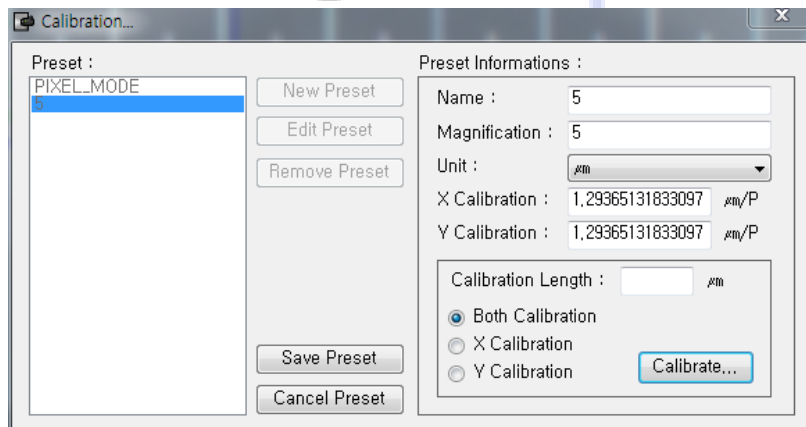
\* If the length of sample available for measurement on live is 600um, input '600'.



- 5) After click 'Calibrate' button, if the option box will disappear, click start point(A) and end point(B) of  
4) input date, 600um to be seen on the monitor.



- 6) After measuring sample image, if the option box will appear again, click 'Save Preset' icon and save present calibration data.

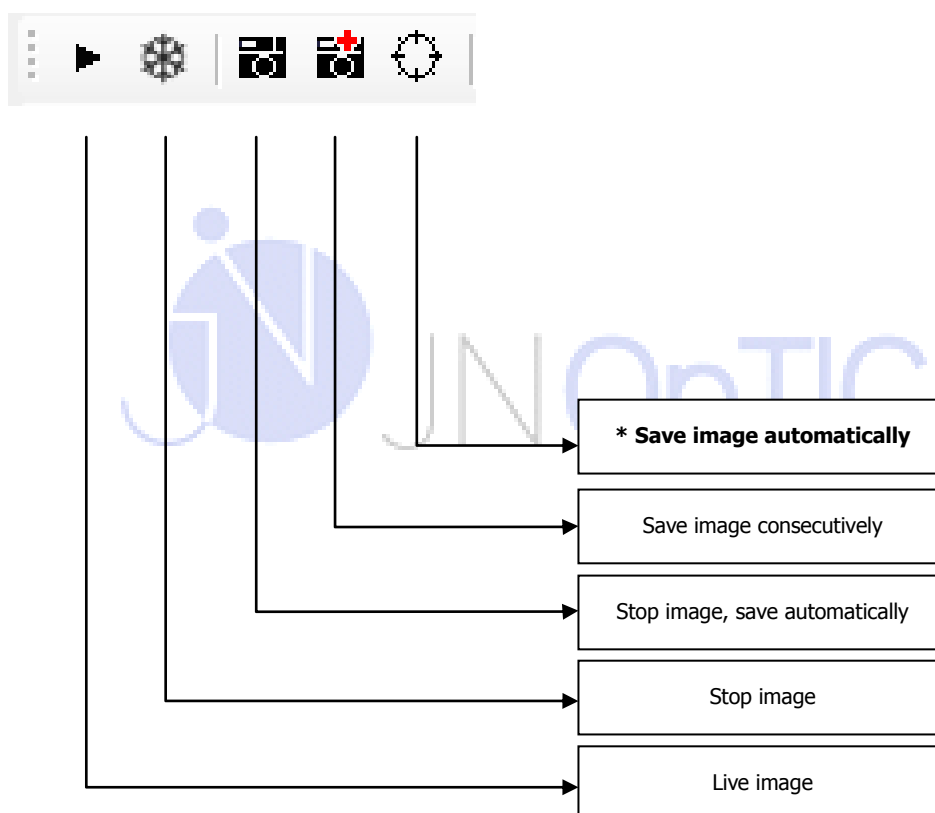


- \* If the calibration of one magnification is completed, this magnification will be saved on preset box on the left.
- \* Repeating process 1~6 by type of lens in microscope, calibration will be completed.

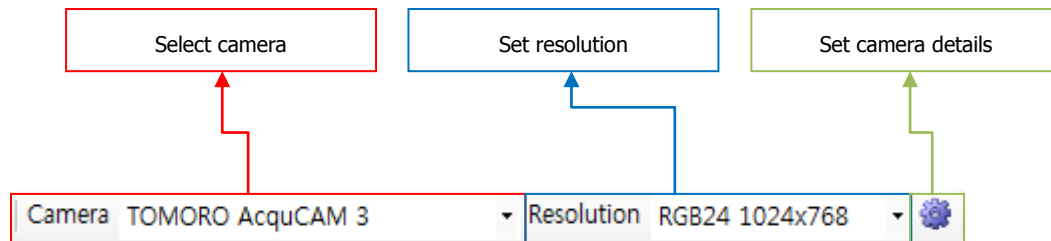
## 2.1 Camera

It's need to operate live image and capture images as wanted type.

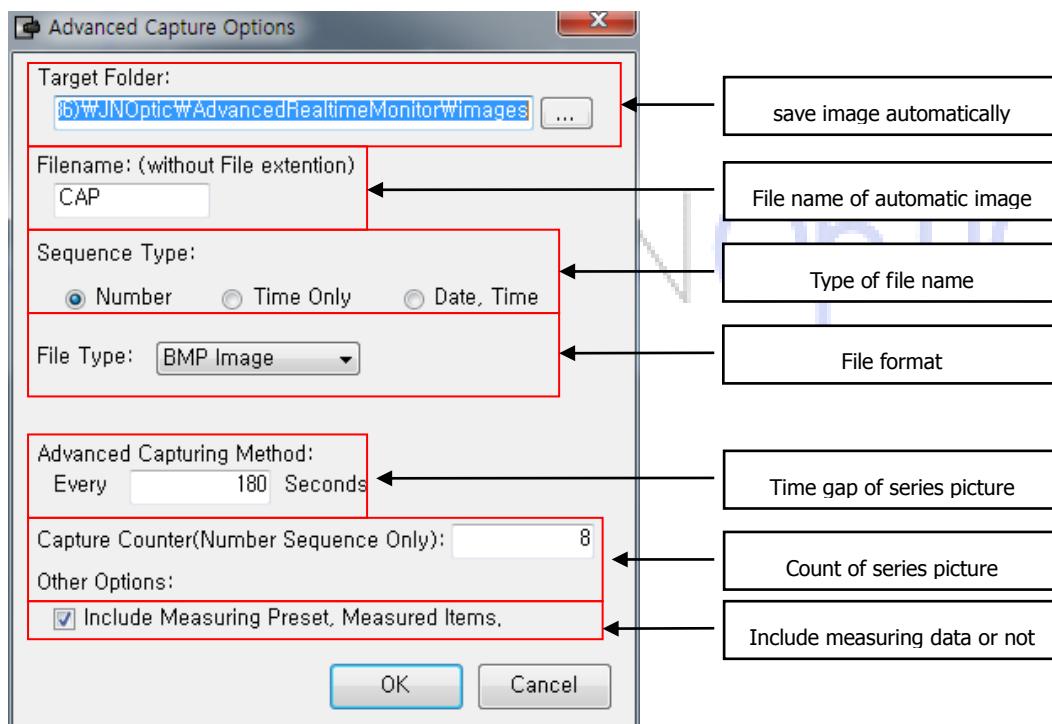
**\* You can see camera icon bar only live camera mode.**



### \* Information of icon for option

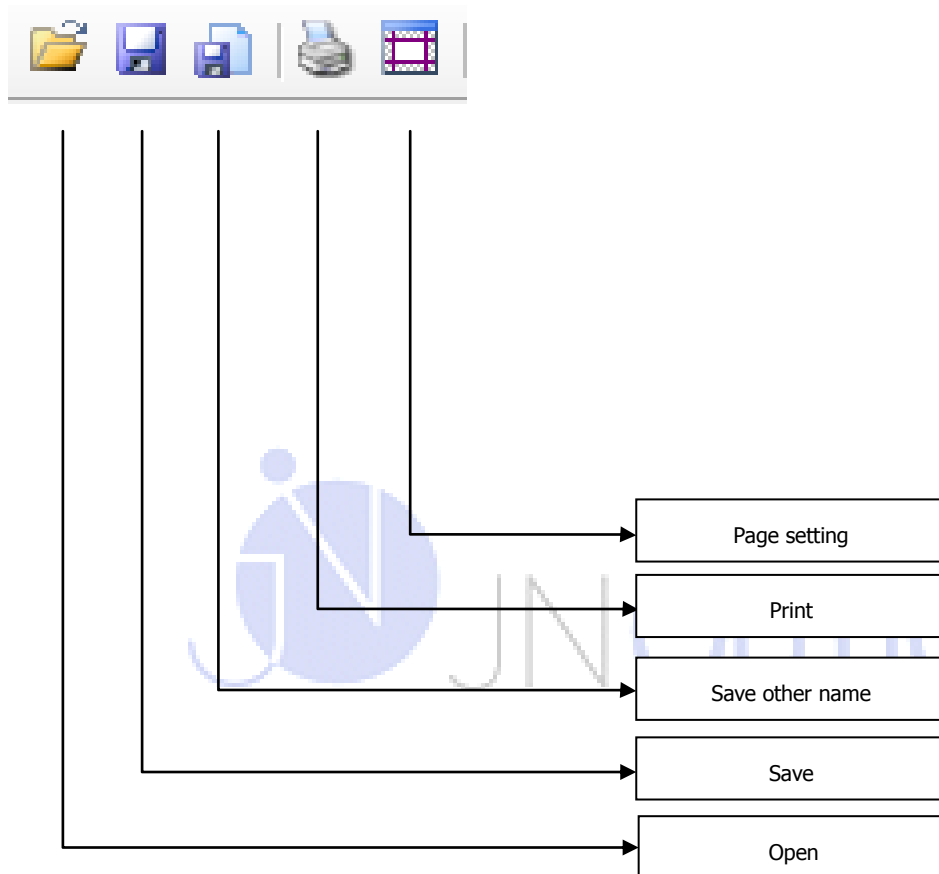


### \* Setting menu for save automatically



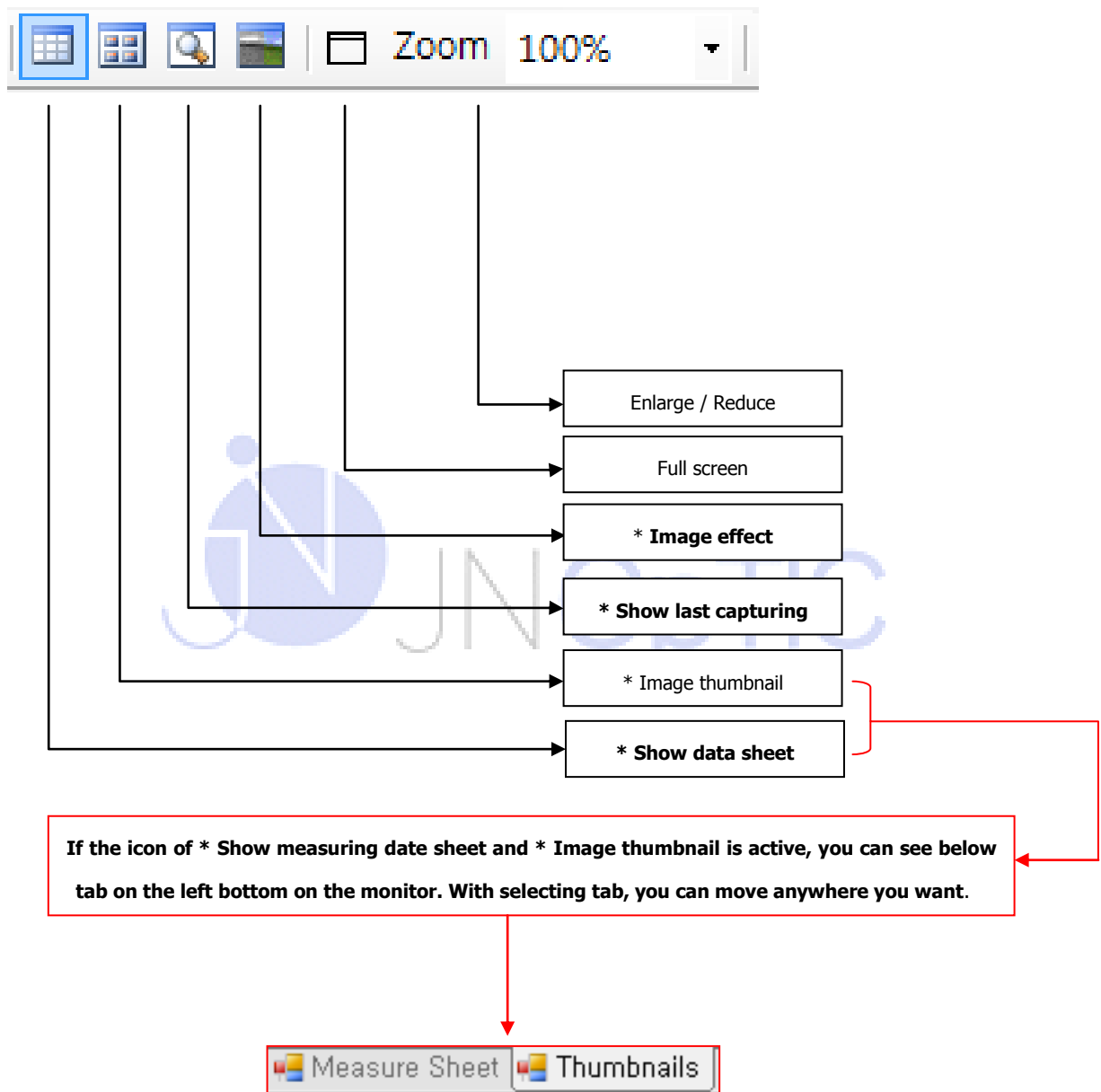
## 2.2 Basic function

This is the basic function of program for saving and opening the document.



## 2.3 Screen layout

There are basic and simple icons like as save, open for easy use of S/W.





## \* Measuring data sheet menu

After capturing images, you can see each measuring data on the data sheet menu.  
And you can save, adjust data for excel sheet.

The screenshot shows the 'Measure Sheet' window. At the top, there are two buttons: 'Create excel sheet for accumulate data' and 'Delete measuring data'. Below these buttons is a table with the following data:

Label	Show Item	Show Label	Point1	Point2	Point3	Distance	Angle	Area
R.5	Show	Show	471, 189	504, 285				111,1
D.4	Show	Show	43, 386	62, 262		23,49		
D.3	Show	Show	391, 357	251, 387		26,81		
D.2	Show	Show	513, 139	541, 327		35,59		
D.1	Show	Show	98, 199	283, 196		34,65		

Window of measuring data sheet

## \* Image thumbnail

This is the window to check page preview for capture image.

If you acquire image with pressing button or F11, page preview is available because image accumulated on the thumbnail list.

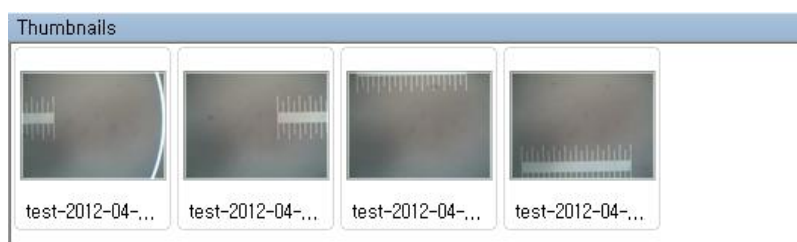


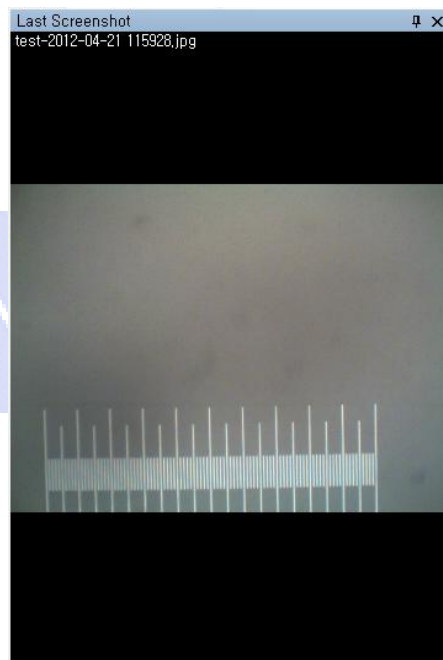
Image thumbnail window

### \* Watch the last shooting image

This is the function to check the last shooting image.

If there're many shooting images, this is useful to check the last image and to assort the sample of same pattern.


If use dual monitor, you can compare and watch with drag last screenshot window to secondary monitor.

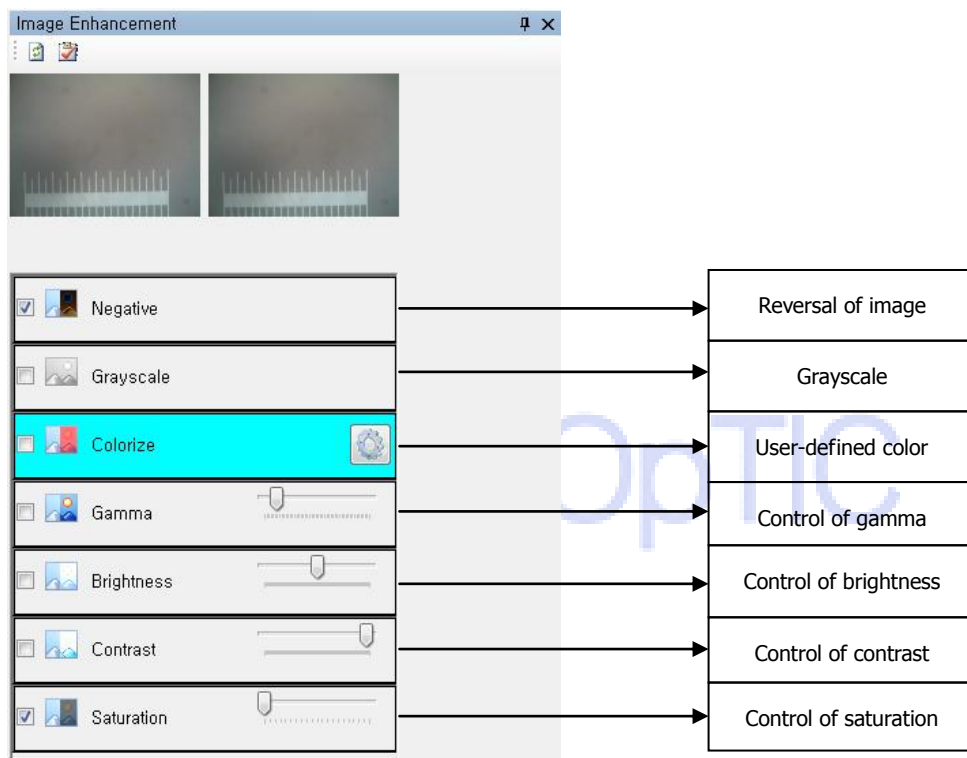


Window of last shooting image

## \* Image effect

This is the function to emphasize image and to change colors with applying specific effect on capture image.

Selecting the effect you want with click of mouse, and setting value, click this (  ), it can affect image.

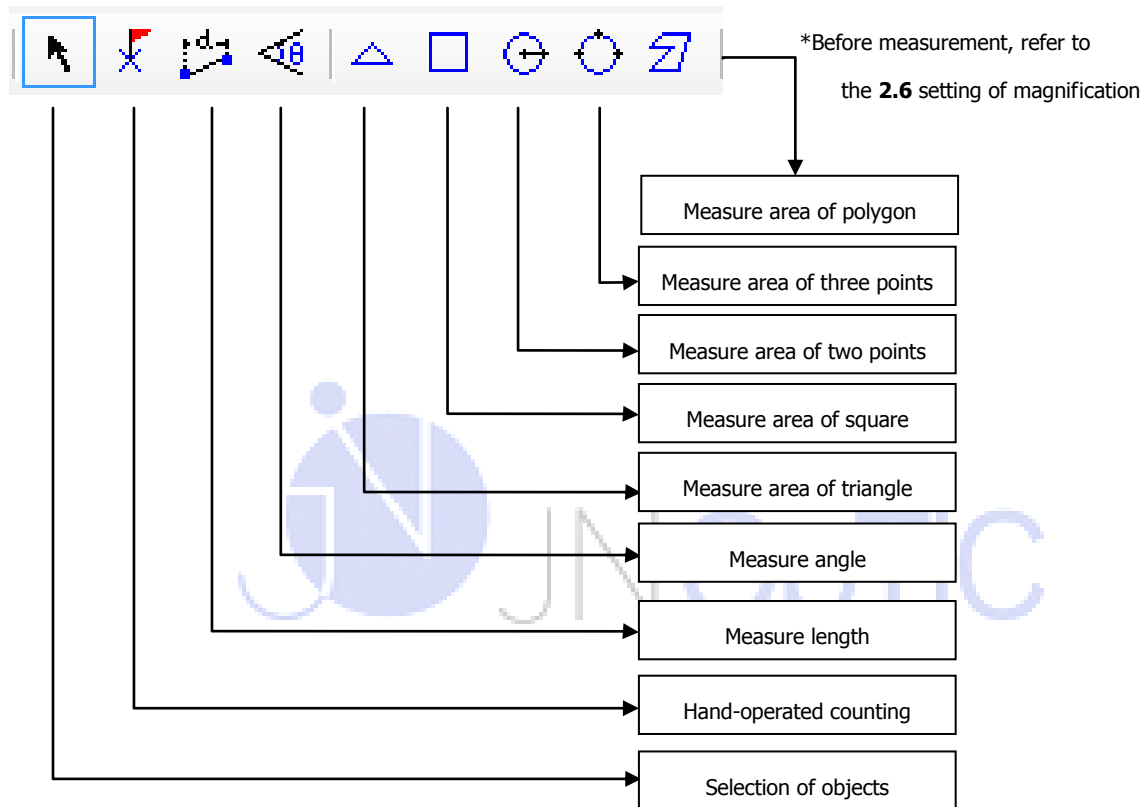


Adjustment of image effect

## 2.4 Measurement

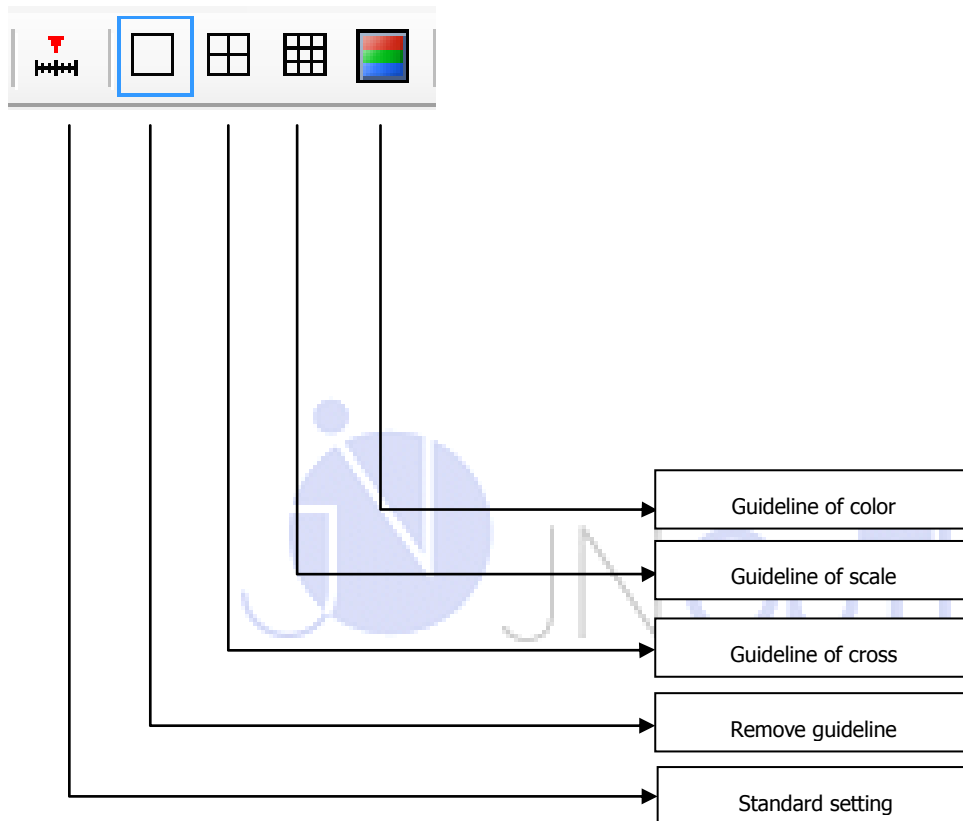
This is basic icon to measure length, angle, basic items ARM provides.

Proceed with choice of measurement items after capturing images.



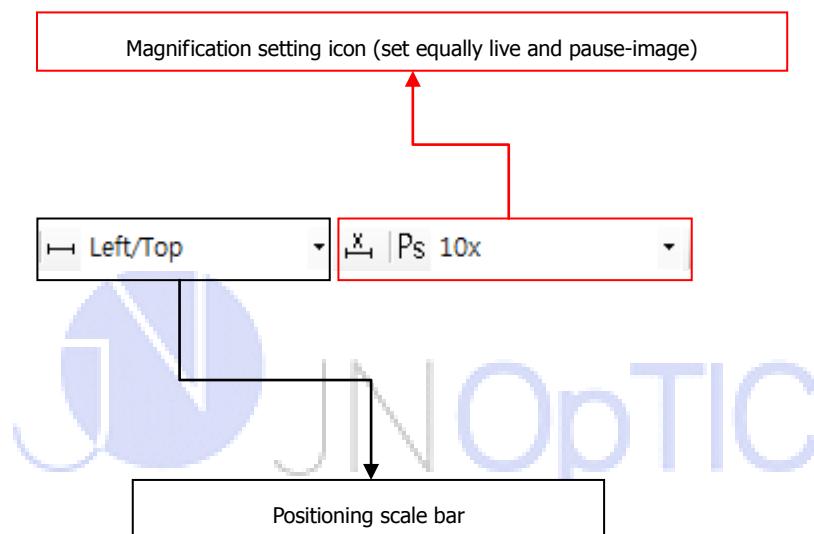
## 2.5 Others

They are necessary icons for using program of standard setting and guide line of lay out setting.



## 2.6 Scale bar and magnification setting icon

By combo box existed in icon bar, you can adjust the position of scale bar and set the magnification. You can get exact data, if you set the magnification of real shooting objective lens and icon before measuring image.



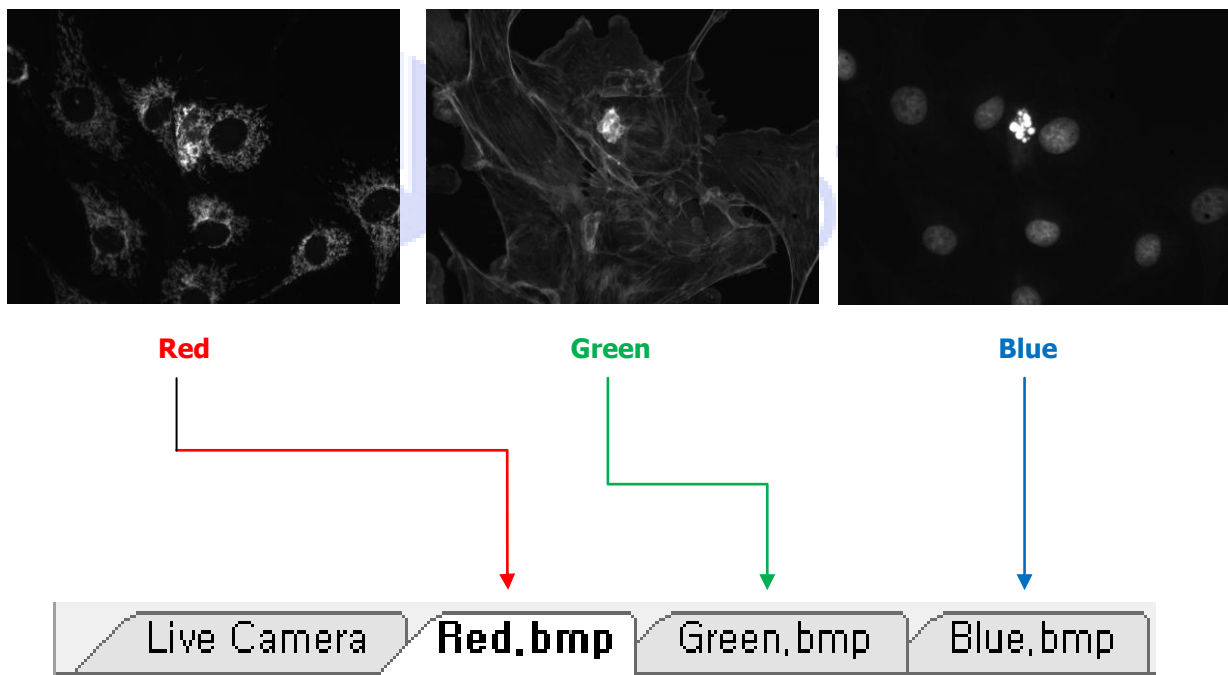
## 2.7 Image composition

You can make images of individual channel one image with ARM function of image composition if you use florescence microscope and camera.

**\* Below sample images are the example after compositing with capture images by R, G, B channel.**

### 1) Image acquisition of florescence image by channels.

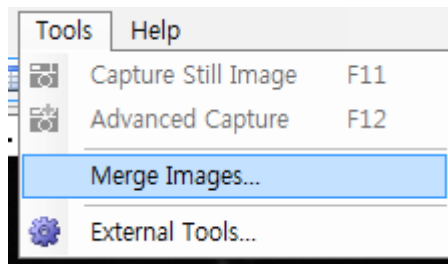
Before using the composition function, by using wavelength filters for each channel, you can shoot pictures or open images.



If you acquire images by channel or open saving images, image lists including live camera in image butter tap will activated.

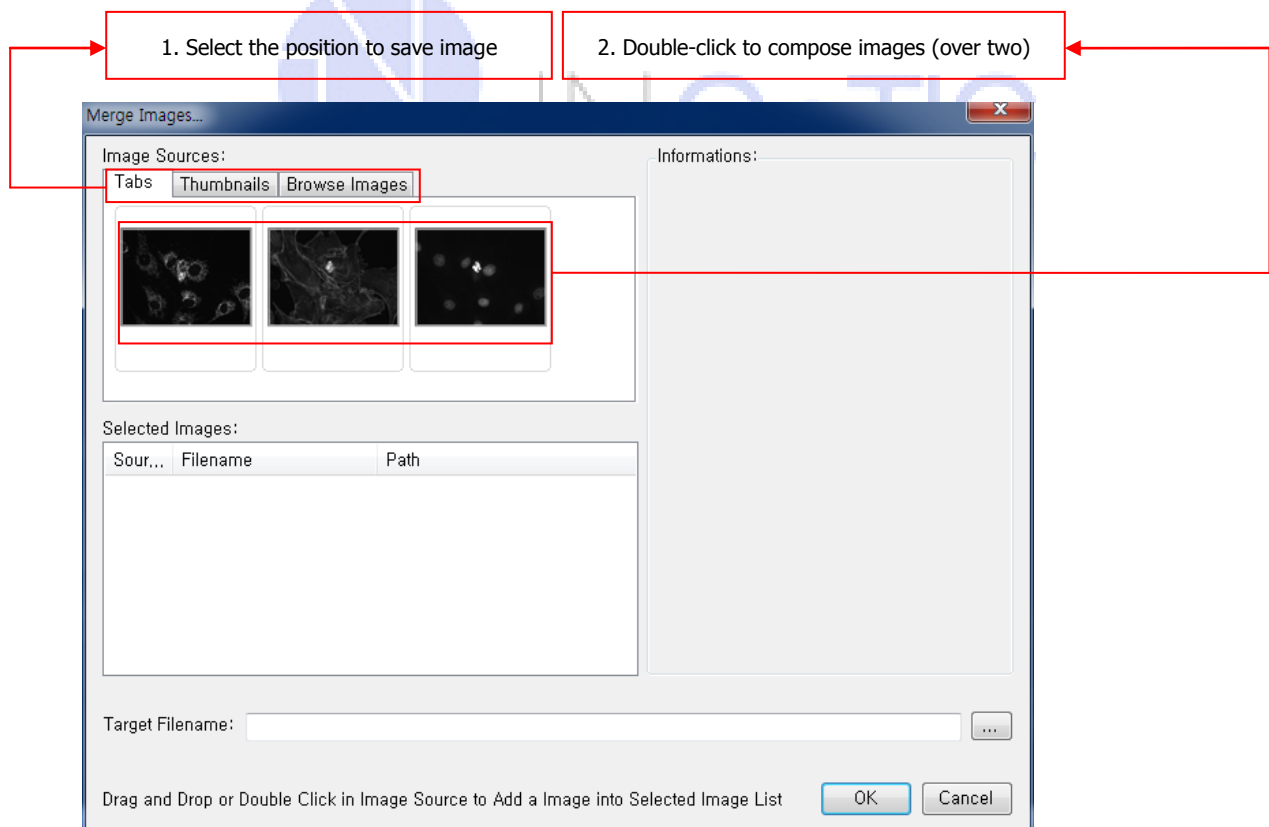
## 2) Menu of image composition.

After completing of acquisition for images to composite, click text menu 'Tools -> Merge Images' and invigorate composition menu.



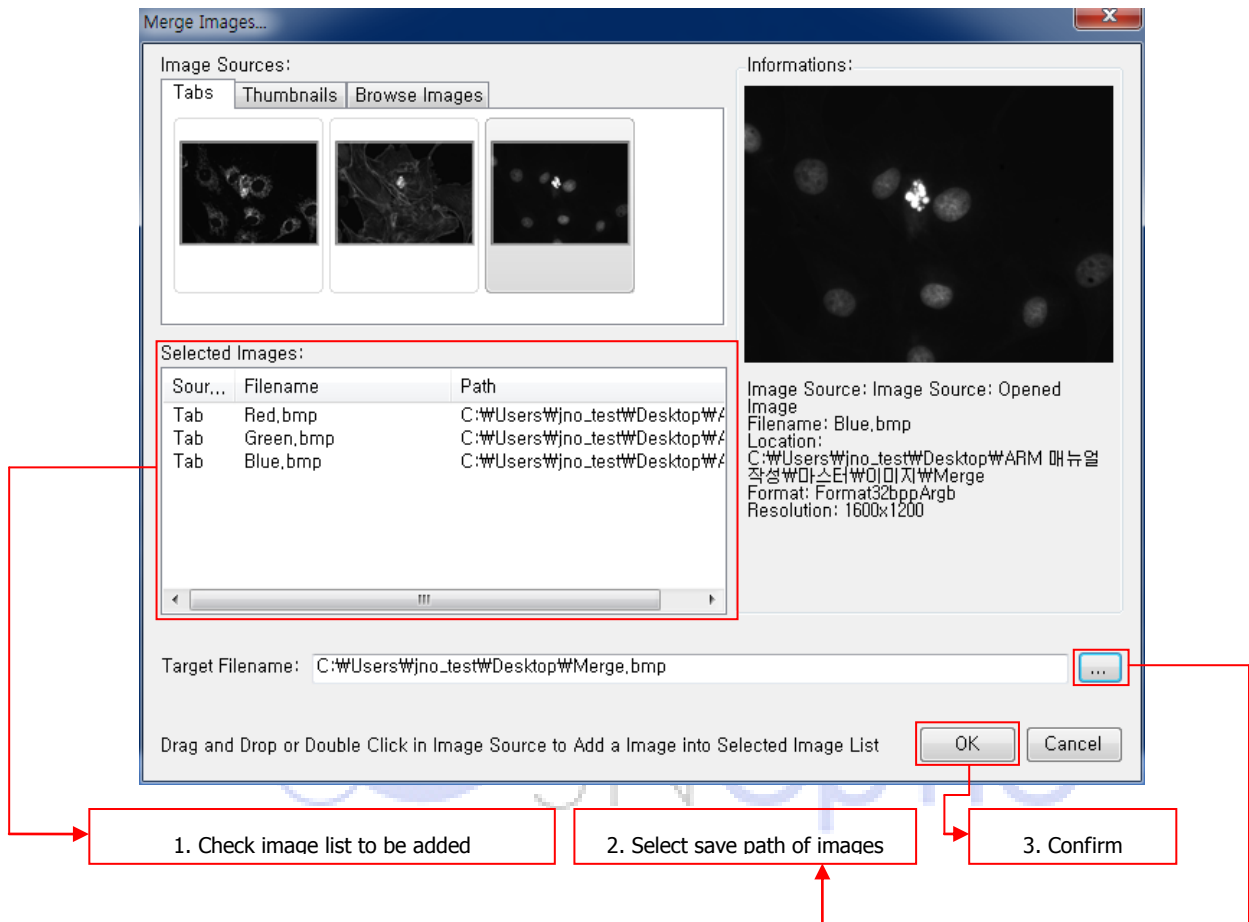
If menu of image composition is activated, saving images in tap or thumbnail will activated in 'Image Sources' and with double-click, add 'Selected Images'.

To add in 'Selected Images', over two images are needed.

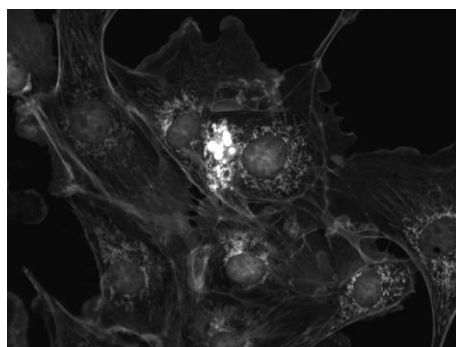




After adding images to compose, click (  ) in Target Filename and click 'OK' button after selecting save path, name, image format(BMP, JPG etc.,).




After above process, image file and tap will be created like below.

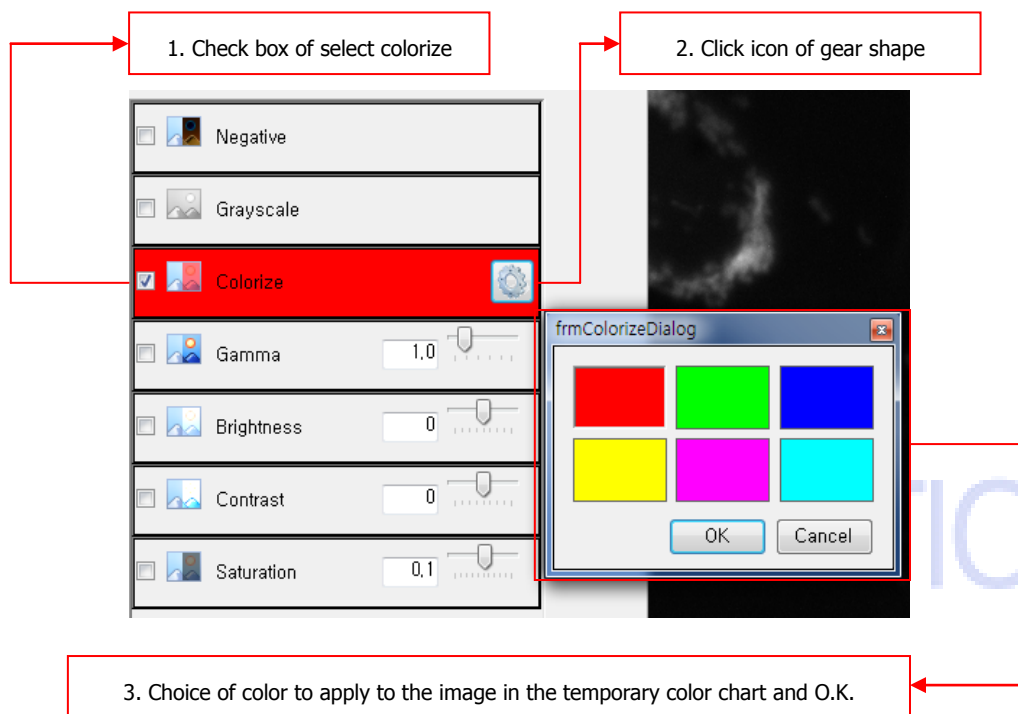


**Composite florescence image**

### 3) How to create color composite image

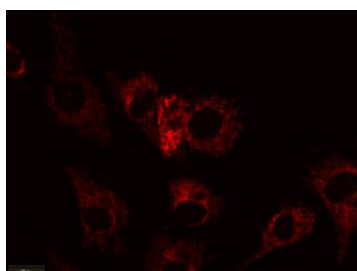
In case of shoot florescence image, it's general to acquire black images by channel with Mono camera be highly sensitive but you can acquire color composite images to apply temporary color to each channel.

After activate image to apply temporary color, click one image effect icon (  ) of **\*2.2 items** and proceed below.

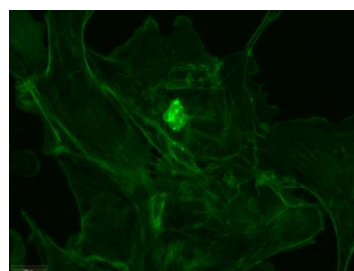


After completing choice of color and apply to the image with click icon (  ).

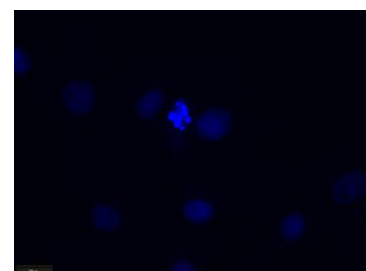
After completion of setting with reference for channel color of each image, below images to have each color are created.



Red

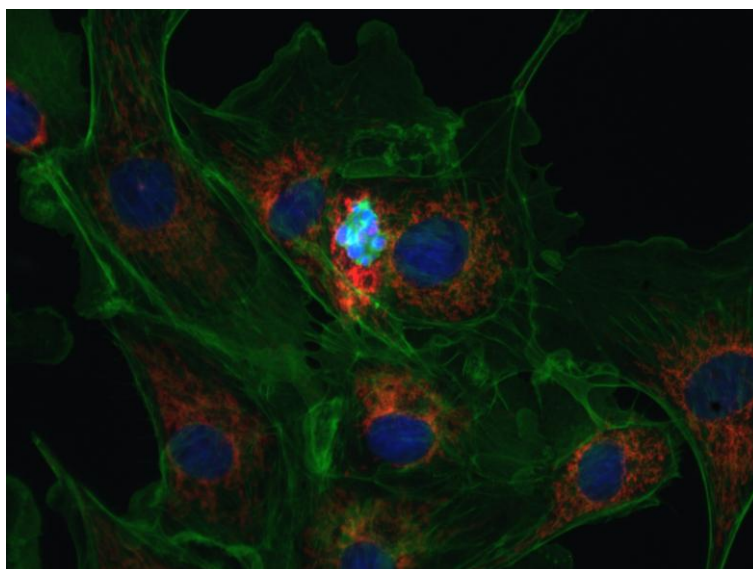


Green



Blue

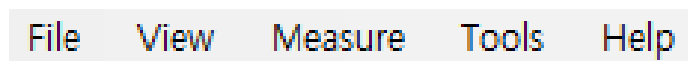
After activate temporary color images to need composite in tap or thumbnail and proceed **\*No. 1) ~2)** of **2.7 list**, color florescence images are created.



Compose of color florescence image is completed



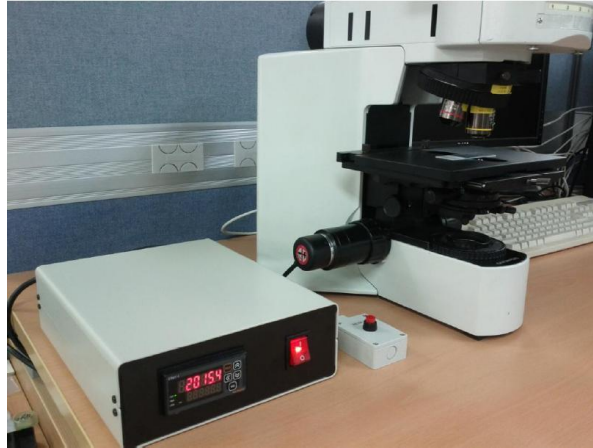
## 2.8 Text menu



**\* Text menu of ARM is linked with icon menu so, you can use almost every functions by using only icon menus.**

## 2.9 JNO-MHU (Measuring height unit) linkage and instruction

Refer to below linkage and instruction if you are using measuring z-axis height unit, JNO-MHU of JNOPTIC.

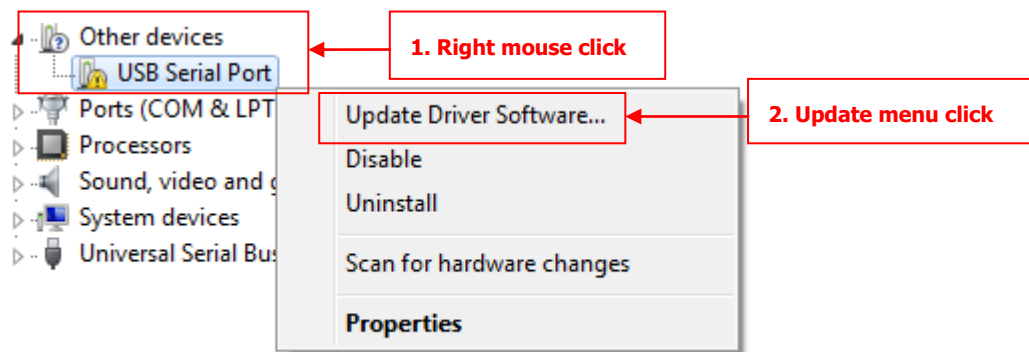


**JNO-MHU**

### ① Installation of device driver

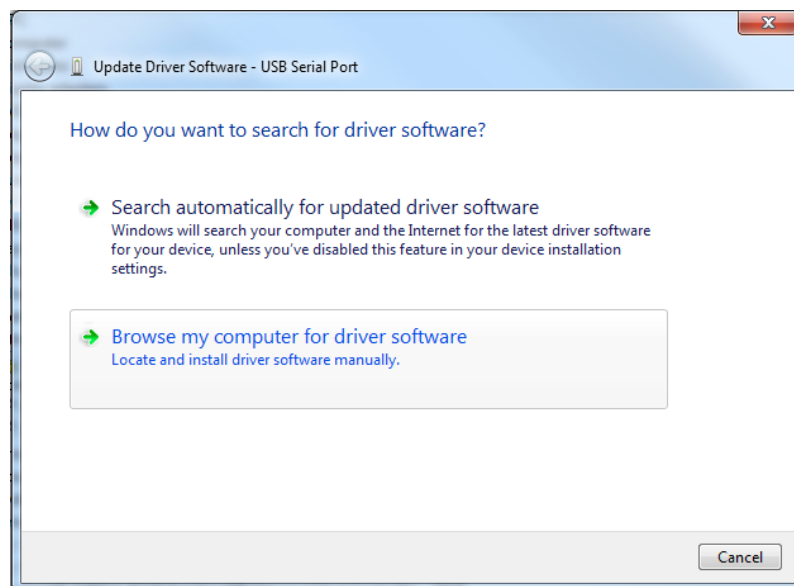
1) Insert ARM installation CD.

2) If USB device is connected, click 'my computer' icon -> right mouse click -> 'attribute' -> 'device manager' (If window is below XP version, you can check in hardware tap) and you can see 'USB serial port' in 'other device' and click 'driver software update' with right mouse click.



**Device Manager**

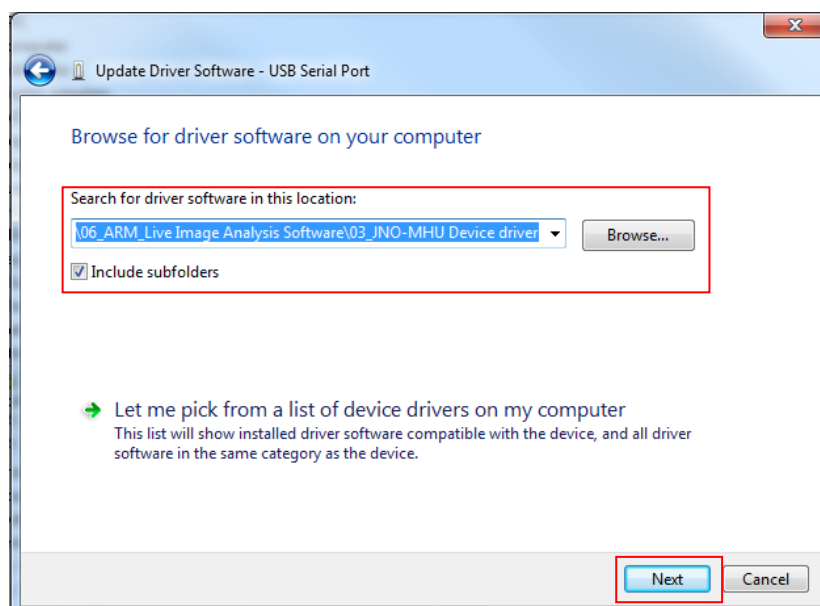
3) Click 'searching for driver software in computer' in update box.



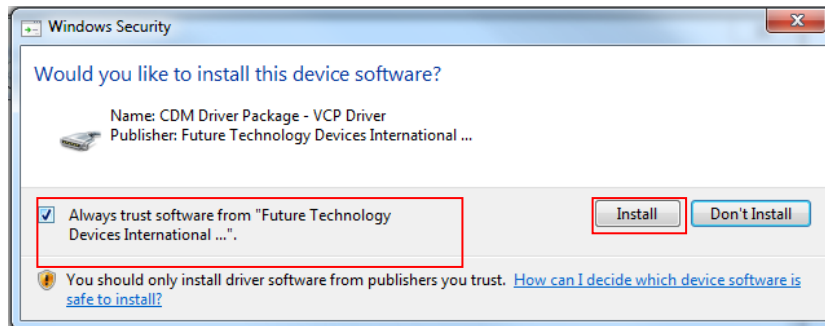
Update box

4) If below box is screened, click 'searching' and designate folder name like **JNO-MHU Device driver**" and click 'next'.

**EX) "D\ 06\_ARM\_Live Image Analysis Software\ 03\_JNO-MHU Device driver"**

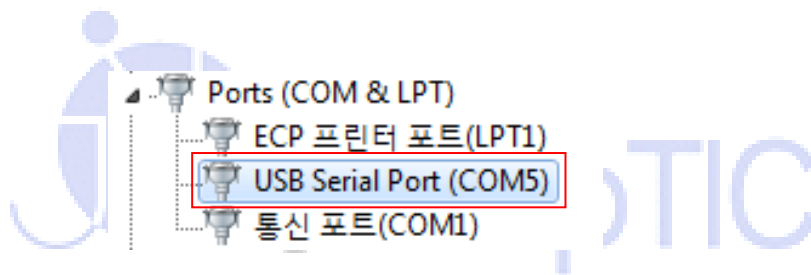


5) If the security message is screened, check '∼ reliable software' in check box and click installation button.



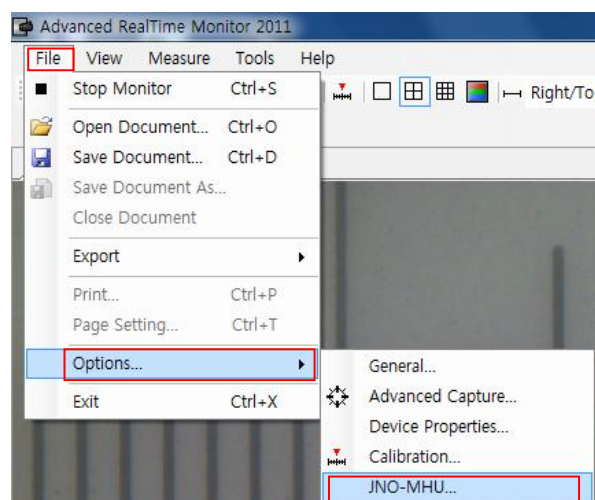
**Security message box**

6) If the completed message of device driver is screened, close the box and check again 'device driver' and confirm the new created list of 'USB Serial Port(COMX)' in Port(COM & LPT)'.

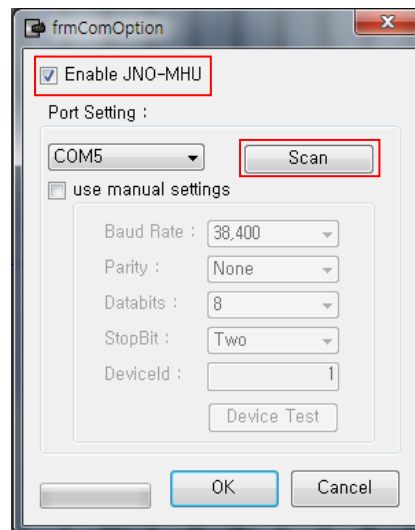


**Device manager list after completed installation of device driver properly**

7) Click ARM software and click "File" -> "Options" -> "JNO-MHU" menu.

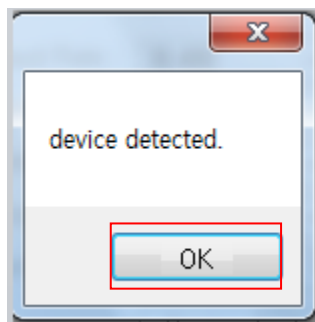


8) if “frmComOption” box is shown, check “Enable JNO-MHU” in the check box, and click “Scan”.



#### JNO-MHU 설정창

9) If “device detected” box is show after recognition of device, click “confirm” for completion of installation and check the Z-axis position value is equal to JNO-MHU.



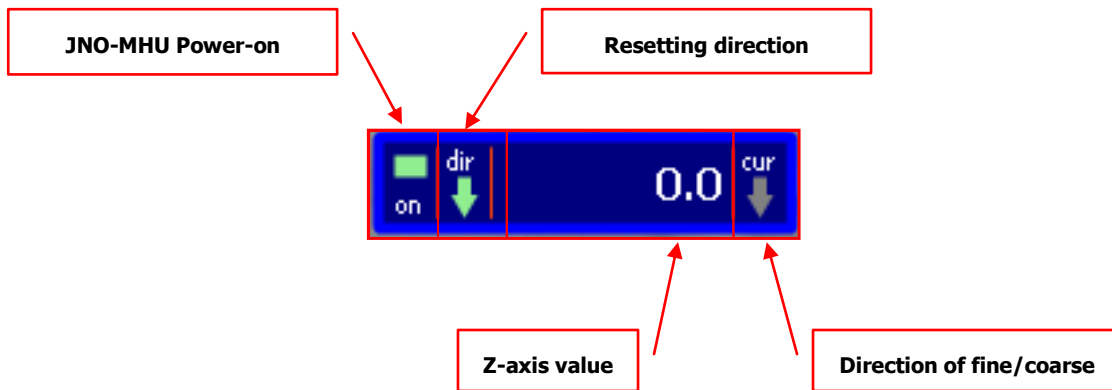
Message of recognition of device



The value of Z-axis on the live screen

### ③ Instruction of JNO-MHU

#### 1) Explanation of linkage JNO-MHU



\* If the screen of linkage with JNO-MHU is red, this is the alarm message for “Backlash” because of sudden operating. So you’d better adjust fine/coarse focus know slowly.

#### 2)How to reset Z-axis value(set-up starting point)

To reset Z-axis value to ‘0’, use “Reset controller button” or “Space bar” of keyboard.



Reset controller button



### 3.1 FAQ

**Q) Program is not running.**

A) – USB dongle for copy protection is in USB port?

**Q) The icon printout images is deactivated and images are not displayed.**

A) – Camera USB cable is connected with PC?

- Camera driver is installed on PC?

(You can check whether or not camera driver is installed in 'device manager'.)

- Camera name displayed on the input device setting is same with the camera name connected to microscope?

**Q) Monitor screen is displayed black**

A) – light path lever of microscope is to camera image?

**Q) With click of CAPTURE IMAGE icon, images are not saved.**

A) – Refer to 1.4 caution (page 8)

**If you have any more questions, please feel free to contact below.**

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