

Measure Software Art-Measure-V1130

# USER'S Manual

for Artray Co., Ltd. USB2.0 camera

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# Introduction

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Thank you for purchasing the measure software Art-Measure V1130.  
This manual shows the direction how to use the measure software.  
Please refer other instructions or contact our sales representatives  
About a hardware.

This is for ARTCAM USB2.0 camera series.  
Please read other instructions for other series.  
Every series has its own installation or setting instructions.  
(HDMI series, Serial ATA camera series etc...)

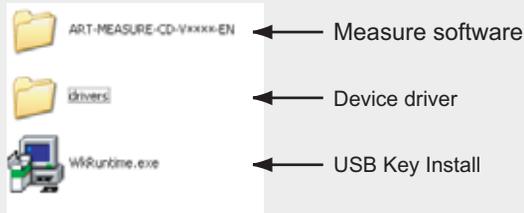
This is the manual for the measure software to sell in Japan.  
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# How to install and set up measure software

Follow the steps below to install attached CD to your PC.



## Step 1 : Install a device driver for USB2.0 camera.

(If you are done this step before, ignore and go to step 2)

\* Please use internal USB 2.0 port.

Recommended PC : Intel chip set · PC above ICH5.

Install device driver

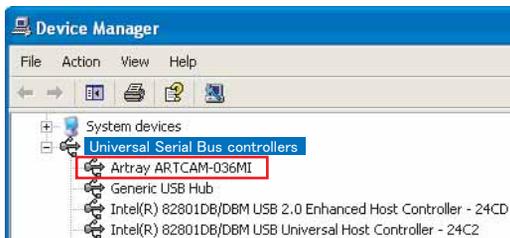
Choose a folder 「drivers」

(See page 4 for installing to Windows XP, and page 6 for Windows VISTA )

Model name is shown on a device manager once installing is done.

XP: START→Control panel→System→Hardware→Device manager→USB controller

VISTA: START→Control panel→Device Manager→Universal Serial Bus Controller (USB)



【About the device driver】

●About SS series, SS's device driver is as same as MI's.

And device driver is shown as 「MI」 not 「SS」 .

036SS→036MI

130SS→130MI

300SS→300MI

500SS→500MI

●「036MI」 is shown for ARTCAM-022MINI device driver because ARTCAM-022MINI and ARTCAM-036MI use same device driver.

022MINI→036MI

Example : ARTCAM-036MI

## Step 2 : Install USB key

Set up 「WkRuntime.exe」 .  
(See page 8 for installing)



## Step 3 : Install viewer software

Open 「setup.exe」 in the 「ART-MEASURE-CD-V\*\*\*\*」 folder, and install the software.  
(See page 9 for installing)

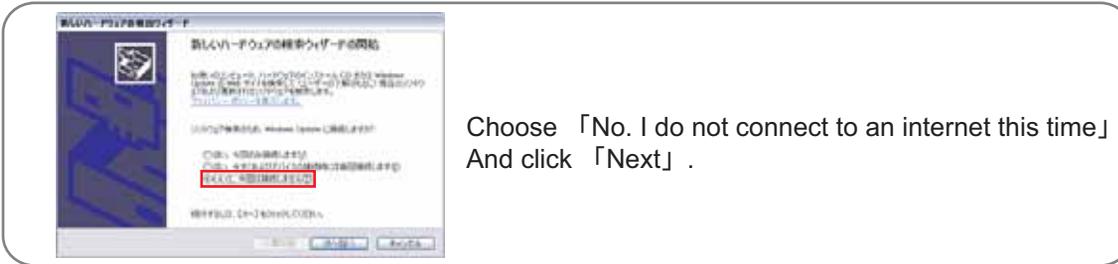
Insert the USB key to the USB port. Open the measure software 「Art-Measure」 .

## Step 4 : View an image (Camera set up · Calibration)

View the image from a camera, set up calibration. (See page 11 for more detail)

# Step1 :USB2.0 camera device driver install For Windows XP

Insert attached CD-ROM to your PC, and connect a camera to an USB2.0 port.



Choose 「No, I do not connect to an internet this time」  
And click 「Next」 .

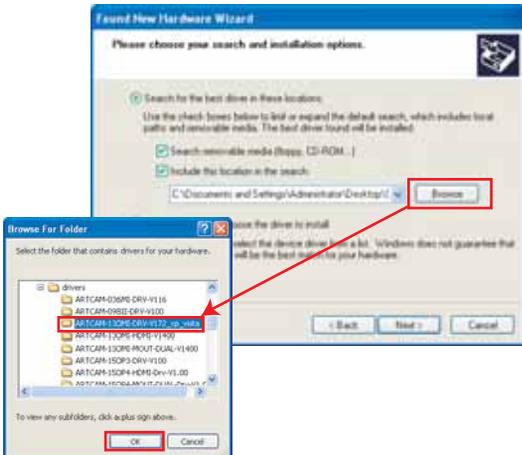
This screen is pop up when you connect a camera to your PC.  
(We use 「ARTCAM-036MI」 as an example)

(※ A screen image might be different depends on your operation system. Follow the direction,  
choose the 「drivers」 folder and install a device driver.)

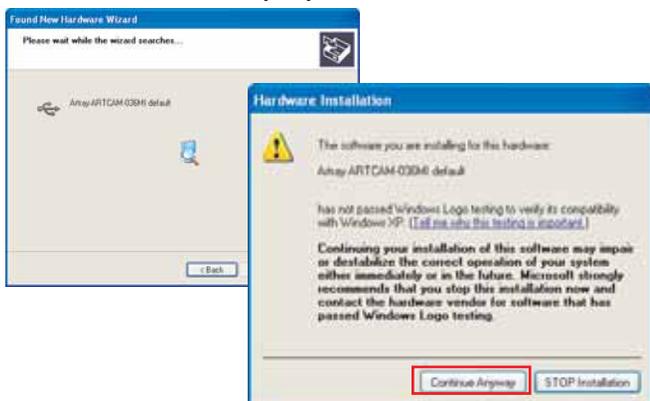
- ① Choose 「Install from a list or specific location [Advanced]」 .  
Click 「Next」 .



- ② Click 「Browse」 and choose the folder 「drivers」  
in the CD-ROM. Select the folder for each models  
in the drivers folder.  
Click 「OK」 to close the window and click 「Next」 .



- ③ Click 「Continue Anyway」

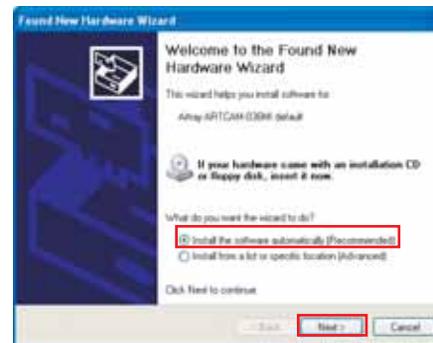


- ④ Click 「Finish」 .

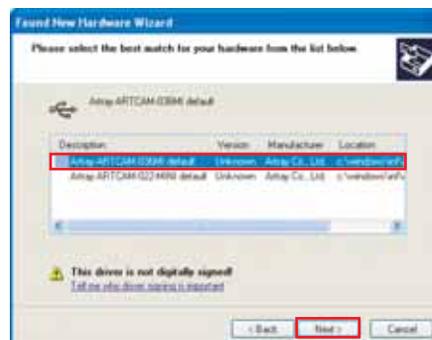


Next window is pop up after meanwhile.  
Please do the same process as previous step.

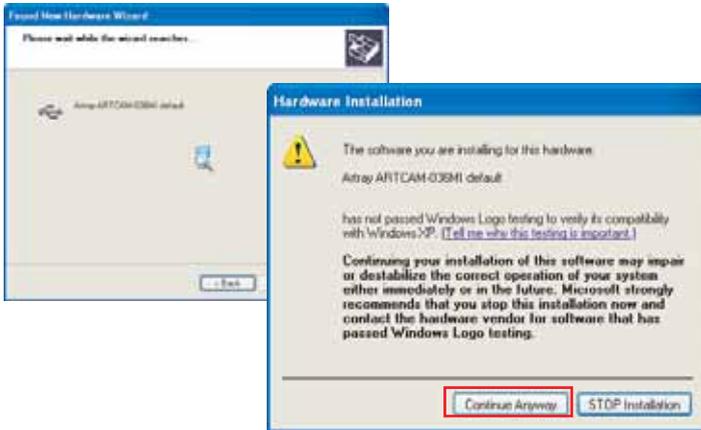
- ⑤ Again the screen below is shown.  
Choose 「Install software automatically [Recommended]」  
And click 「Next」 .



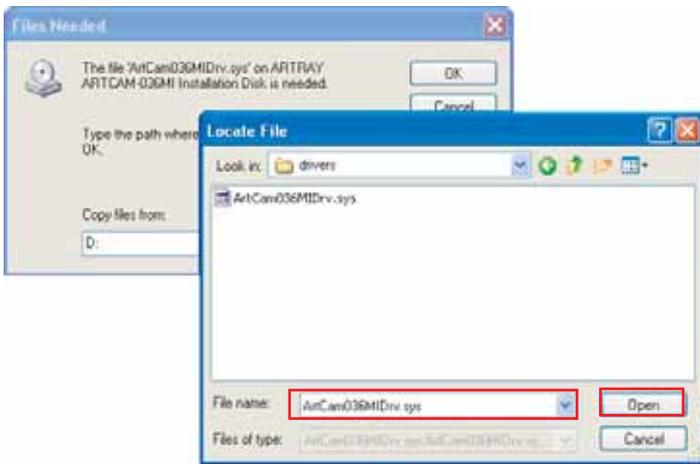
- ⑥ Click 「Next」 .



⑦ Click 「Continue Anyway」 .



⑧ Click 「Browse」 and 「OK」 .  
Open the folder 「drivers」 in the CD-ROM,  
and click 「OK」 .



\* This process might be not shown.

⑨ Click 「Finish」 .  
Then, installing device drive is done.



If installing device drive is succeed, model name is shown under the device manager.

Example: Artray ARTCAM-036MI

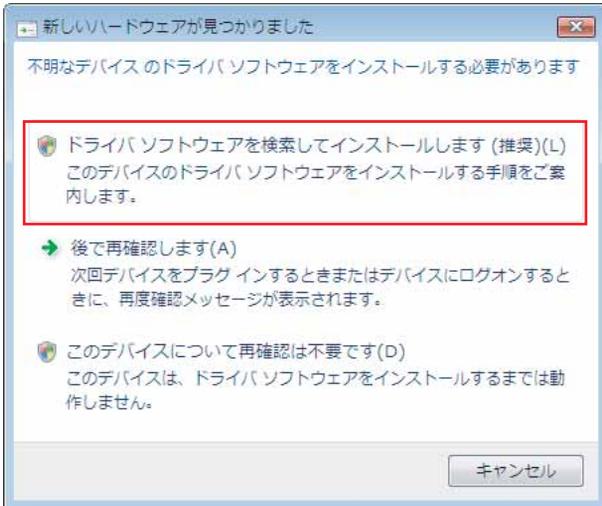
START -> Control Panel -> System ->  
Hardware -> Device manager -> USB controller

\* You have to install a device driver whenever you switch an USB port even if you use a same PC.

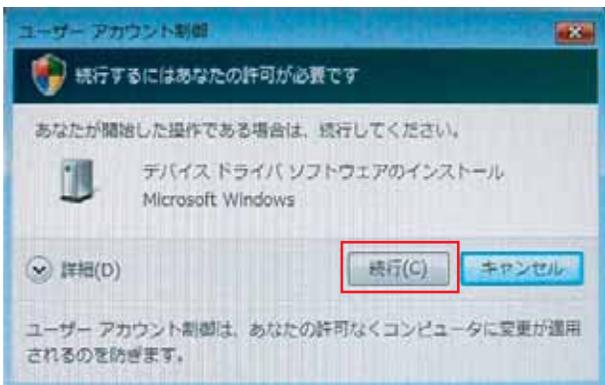
# Step1: USB2.0 camera device driver install For Windows VISTA

Insert attached CD-ROM to your PC, and connect a camera to the USB2.0 port.  
(We use 「ARTCAM-022MINI」 as an example)

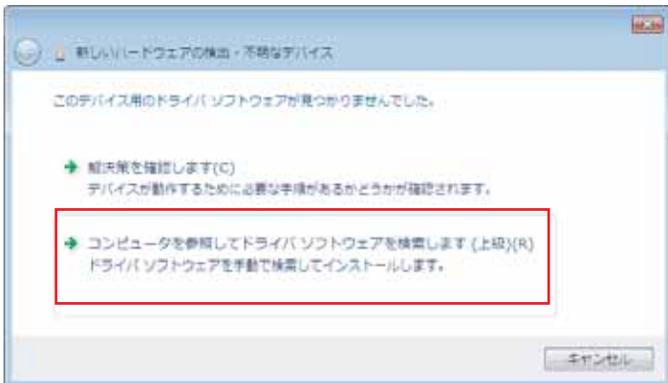
- ① This screen is pop up when you connect a camera to your PC's USB 2.0 port.  
Choose 「Browse driver software and install」 and Click.



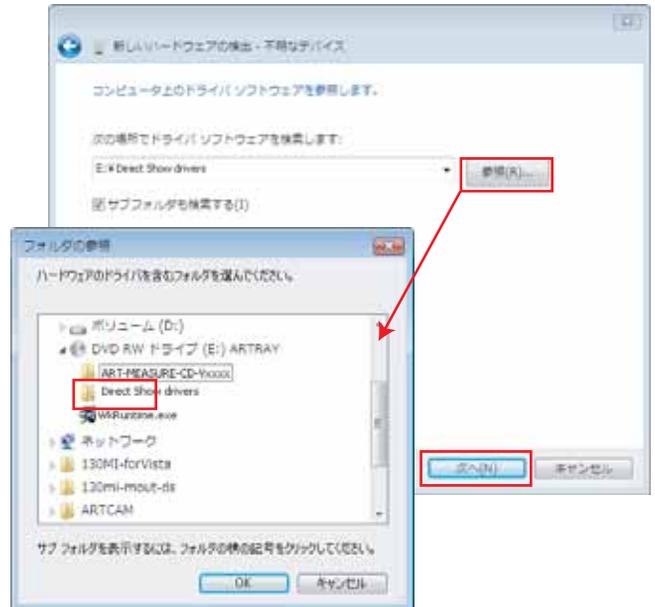
- ② Click 「Continue」 if the window below is pop up.



- ③ Click 「Browse the computer and find driver software」

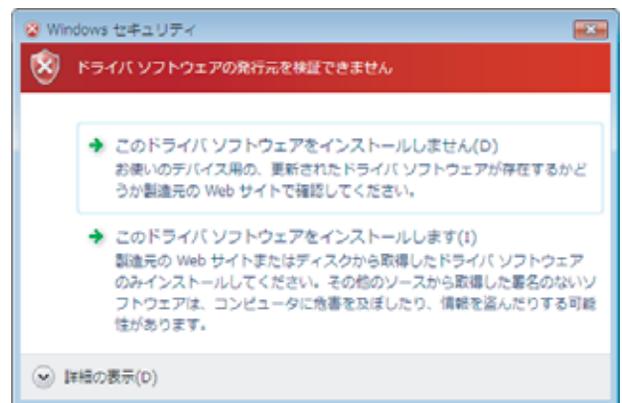


- ④ Click 「Browse」 and open the driver folder.  
Choose 「drivers」 folder.  
Click 「Next」 .



※ Normally choose the driver folder in the CD.  
In case, you download the driver from our web site,  
choose the folder you unzipped.

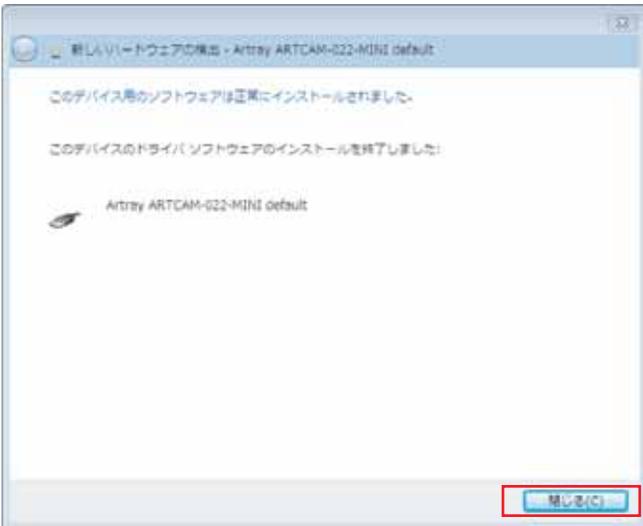
- ⑤ Click 「install the driver software」  
If the window below is pop up.



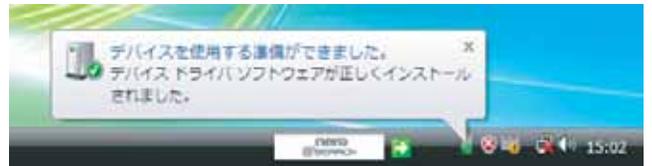
- ⑥ Copying driver file would be start.  
Wait till it's done.



- ⑦ The window below is shown when install is done properly. Click 「Close」 .



- ⑧ The word 「It is ready to use a device」 is pop up.

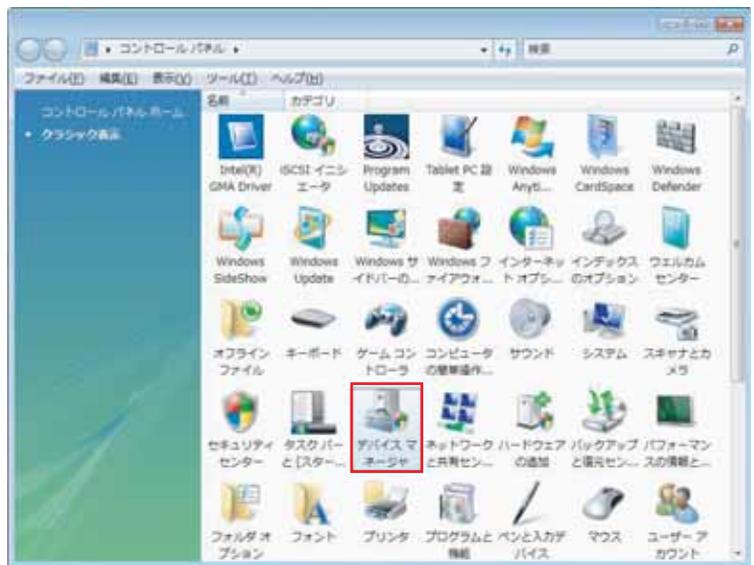


- ※ At the Windows 2000 and XP, you had to install default driver both (firmware) and driver(software). But at the Windows Vista, you can install all at once.

At the Windows Vista, driver would be automatically installed if you change the connected USB port. (At the Windows 2000 and XP, you had to re-install a driver).

How to check if installing device driver is succeed.

START > Control Panel > Device Manager (M)



- ※ When you open a device manager window, user account control panel as like ② would be pop up. Click 「Continue」 .

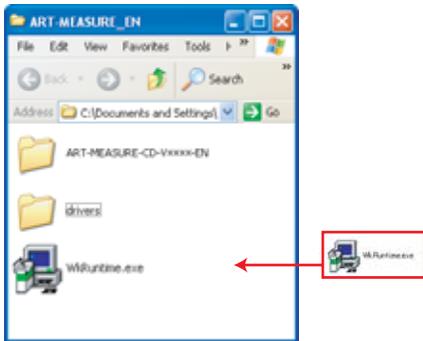


Check if camera name 「Artray ARTCAM-022-MINI」 is shown under the Universal Serial Controller (USB) tree.

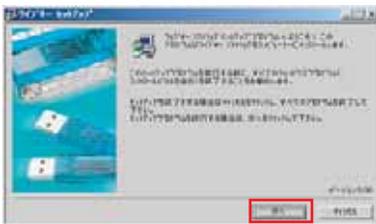
## Step2 : Install An USB Key

1. Double click the exe data "WkRuntime.exe" and follow the direction on the screen.
  - ※ Do not insert the USB key to your PC yet at this moment.

- ① Double click "WkRuntime.exe"



- ② Click "NEXT"



- ③ Choose a language



- ④ Click "NEXT"



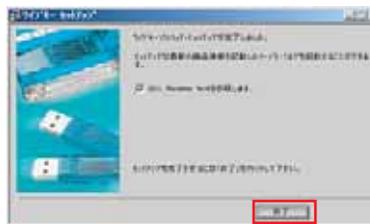
- ⑤ Click "NEXT"



- ⑥ Click "NEXT"



- ⑦ Click "FINISH"



2. Insert the USB key to your PC.

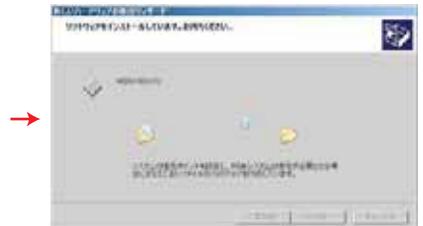
- ⑧ Choose 「Install the software automatically [Recommended]」. And click "NEXT".



USB Key

The screen on left is shown.

- ⑨ Start installing.



- ⑩ Click "FINISH" to finish installation.

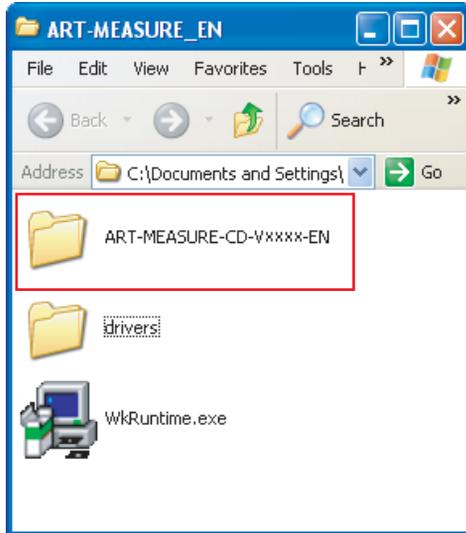


3. After install the measure software (See next page for more detail), start the software.
  - \*You cannot use the software without USB key.

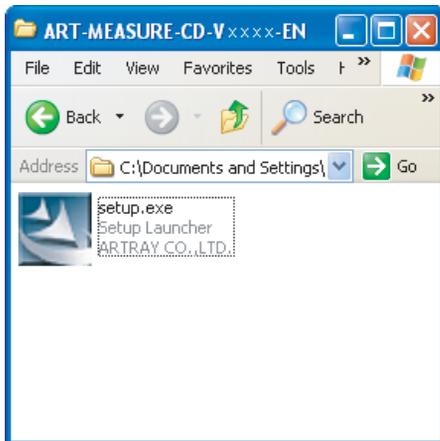
# Step3 : Measure Software Install For Windows XP and VISTA

Open the folder in the CD—ROM.

- ① Double click 「ART-MEASURE-CD-V\*\*\*\*-EN」



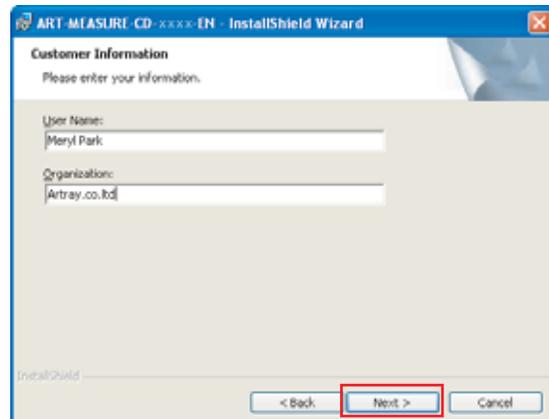
- ② Start setup.exe  
in the folder 「ART-MEASURE-CD-V\*\*\*\*-EN」



- ③ The screen below is shown when you start up setup.exe.  
Read carefully and understand well. Click 「Next」



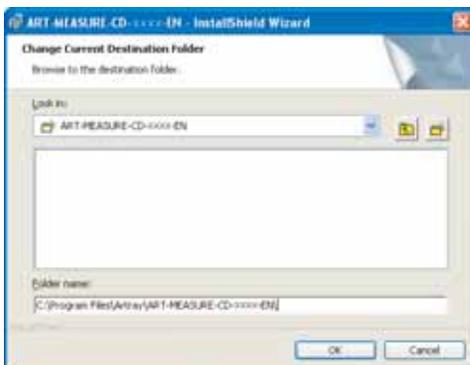
- ④ Fill out your name and a company name,  
and click [Next].



- ⑤ Choose the installing directly.  
 Default setting is  
 "C:\Program Files\Artray\ART-MEASURE-CD-V\*\*\*\*-EN

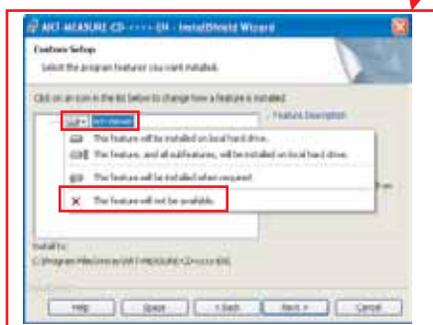
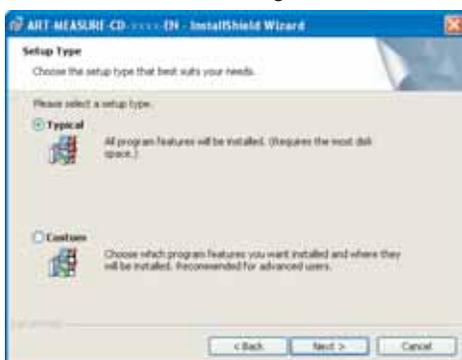


- ⑥ Choose "Change" button if you want to change the installing directly.  
 The window above is shown, and choose optional directly.



- ⑦ Choose 「Typical」 and install a measure software "Art-Measure" and a viewer software "Art-Viewer"

Choose 「Custom」 and the screen below is shown. You can take out Installing "Art-Viewer"



- ⑧ Show the current information.  
 If it is correct, click 「Next」 .



- ⑨ Installing is finally done.  
 If you want to use the software right away, check the box 「Start A Program」 and click [Finish].



## Step4 : View an image (Camera / Calibration setting)

- ① Make sure a lens is set on the ARTCAM camera. Connect to USB2.0 PORT in your PC.  
For 2 camera mode, please connect 2 same cameras to an USB port.



ARTCAM Camera MI series



ARTCAM Camera SS series



ARTCAM Camera board camera



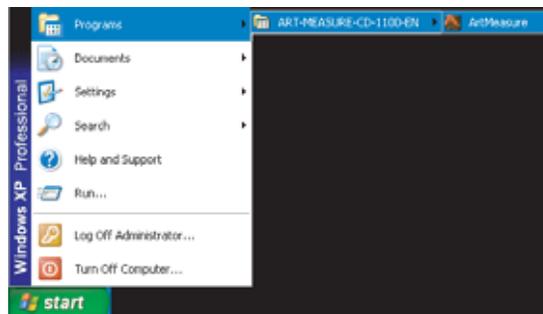
ARTCAM Camera - Super mini camera

- ② Insert USB key to a PC. And start up the viewer software.

Viewer software [Start → Programs → ART-MEASURE-CD-V\*\*\*-EN → Art-Measure]

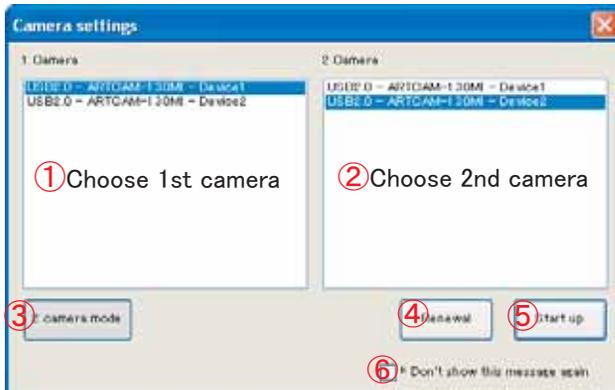


To an USB2.0 port



- ③ Camera setting dialog is open. And current connected camera is shown.

- ⑤ Click 「Start」 and the software screen is shown.

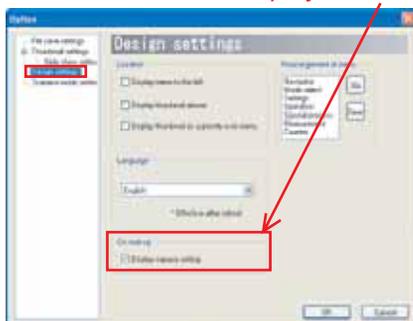


- ④ If you connect the camera after start up the software, Click 「Update」 button to update the camera connecting condition.

- ⑥ Check mark “\*Don't show this message again” and click 「Start ⑥」, And this window is not shown from next time.

If you want to show this dialog again, go to “Software settings”→“Design settings”

And check a mark on “Display camera setting”



### 1 camera mode

Make sure the camera you connected is shown on the Cam① window. And Click “START⑤”

### 2 cameras mode

Connect 2nd camera to the USB2.0 ports.

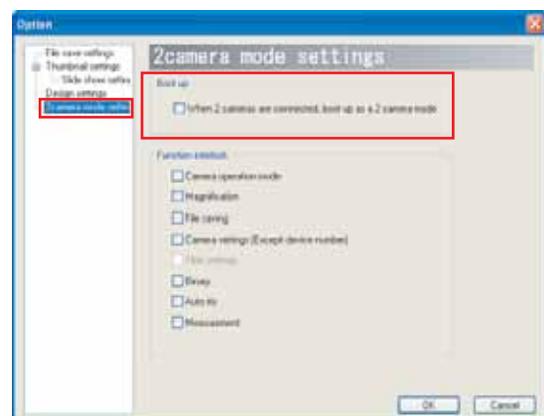
- ③ Click “2 camera mode”, and choose 「Device1」

「Device2」 from ①Cam1 and ②Cam2. Then click “START” (This 2 camera views are not for same correspondence)

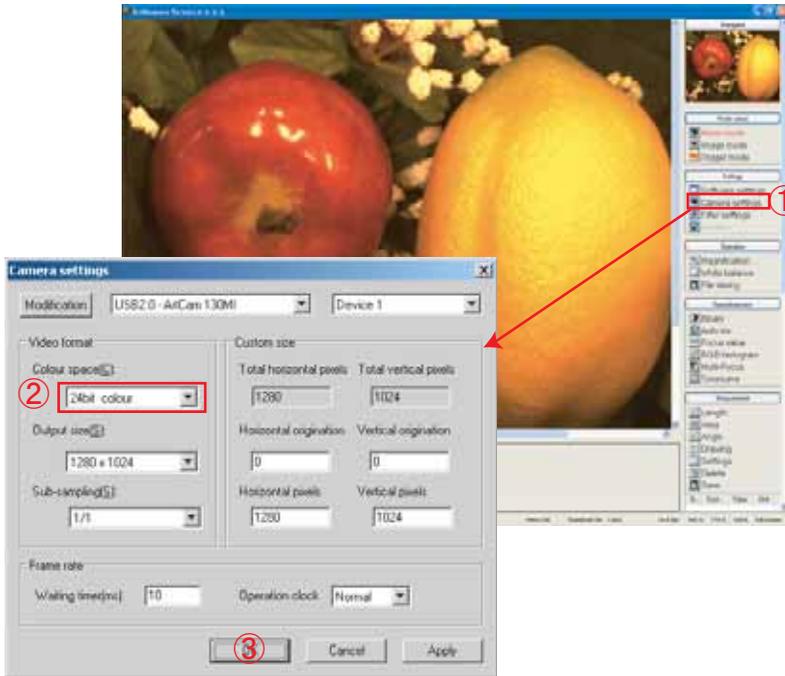
Check on ⑥, and a viewer software opens as 1 camera mode automatically.

\*\* How to open as 2cameras mode automatically  
Go to “Software settings”→“2camera mode settings”  
And check a mark on “When 2 cameras are connected, boot up as a 2 camera mode”

From next time, a viewer software opens as 2cameras mode automatically.



④ The screen is shown. Change the camera setting for monochrome camera.



For monochrome camera setting

- ① Click 「Camera setting」
- ② Camera setting window is pop up.  
Change the color setting to 「8bits monochrome」.  
※ If you choose 「16bits monochrome」, transfer mode become 10bits.  
You need to set up 「Clock rate」 to 「Half」.  
(Some models are not corresponded)



- ③ Click 「OK」 button and go back to main menu.

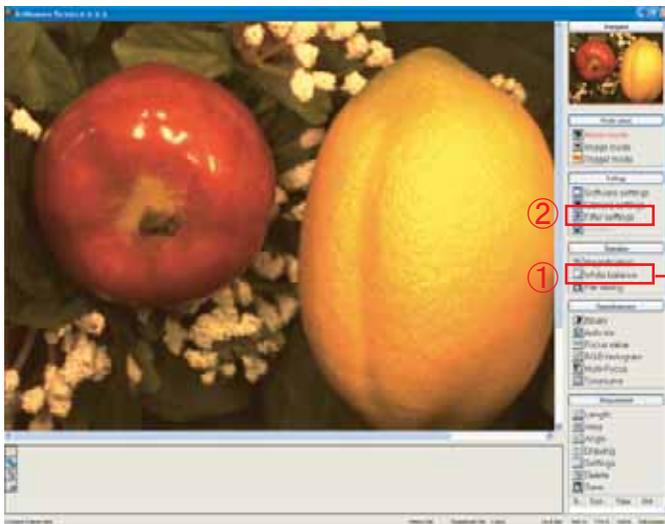
For color camera setting

- ① Click 「Camera setting」
- ② Camera setting window is pop up.  
Change the color setting to 「24bit color」.
- ③ Click 「OK」 button and go back to main menu.

※ For 130MI, click **Change** to effect gain shutter on the screen.

⑤ Adjust a screen by white balance and filter setting.

Please adjust global gain and shutter speed regarding to your using environment.



- ① Left click on 「White balance」 to set white balance.  
And white balance is set automatically.  
※ We recommend to reflect a primary color (or white) object on the screen, when you set white balance.

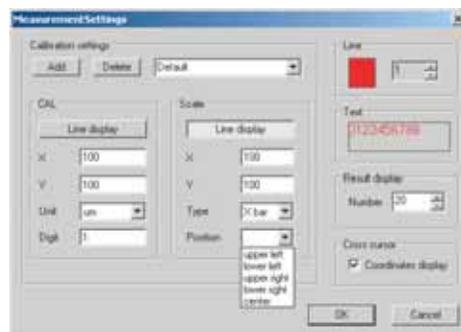
- ② Left click on 「Filter setting」 to open adjustment dialog.  
(See page20 for more detail)  
Please adjust suitable value.  
※ If you use a filter, preview will be slow down because it uses CPU memory a lot.



If you cannot adjust those value, auto iris function might be ON.

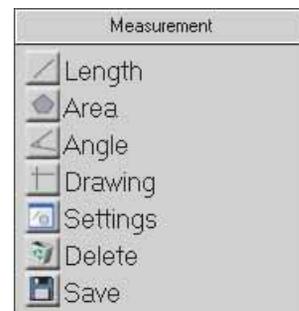
⑥ Set up calibration value and start measurement.

(See page 25 for more detail of calibration setting. See page 27 for more detail of how to measure)



Calibration setting

After set up setting,  
start measuring.



Measure

# Screen



Show images in the specified folder



- Specify a folder where to save images
- Start slide show of images in the specified folder
- Delete selected a file
- Update the file in the folder



- ① Put a pointer on the menu and explanation / operation method are shown.
- ② Switch ON/OFF a menu by left click on a mouse.
- ③ Switch ON/OFF a thumbnail by left click on a mouse.
- ④ Show the target cameras (Cam1/Cam2)
- ⑤ Frame rate
- ⑥ X coordinate on the mouse pointer on the image.
- ⑦ Y coordinate on the mouse pointer on the image.
- ⑧ Show the indicate magnification. Left/Right click to change magnification.
- ⑨ Switch Full screen/Window by left click on a mouse.  
(To back to window mode from full screen, move a cursor to bottom of the monitor and click 「Window」)



For 2 camera mode,  
Click images to switch.



# Menu

① **Navigator**  
 ① Point the area where is shown on the main window.  
 ※Measurement result is not shown

② **Mode Select**  
 Select ②Movie ③Image ④Trigger mode (See P15 for more detail)

⑤ **Settings**  
 ⑤ Set up measure software  
 ⑥ Set up connected camera  
 ⑦ Edit an image on the main window  
 ⑧ Edit an image on a monitor when you use monitor direct camera (You do not use this function) (See P18 for more detail)

⑨ **Operation**  
 ⑨ Change magnifications  
 ⑩ Fix white balance of the main window  
 ⑪ Save a still image (See P16 for more detail)

⑫ **Special Process**  
 ⑫ Special image processing (See P22 for more detail)

⑬ **Measurement**  
 ⑬ Measure functions  
 Measurement result is shown here (See P25 for more detail)

⑭ **Counter**  
 ⑭ Detect similar color, brightness  
 Measurement result is shown here (See P31 for more detail)

### Change menu order

**Rearrangement of menu**

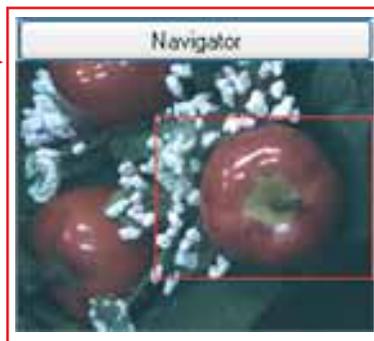
- Navigator
- Mode select
- Settings
- Operation
- Special process
- Measurement
- Counter

Up

Down

You can change menu order from "Software Settings" → "Design Settings"  
 Choose a menu that you want to up (drop), and click "Up" ("Down") button.  
 Click "OK" to reflect your choice to the menu bar.

## Navigator



When you increase the magnification(①), navigator shows where you look at the main window.

Left click on the red frame, and you can move viewing image by drug & drop.

\* Measurement result is not reflected on the navigator.

# Mode set up

This is for switching the camera view mode.

You can set up trigger signal.

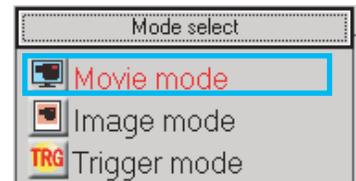
Motion mode



- Show a camera image at real time.

CAMERA

For  
All cameras



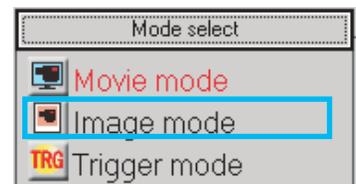
Still Mode



- Stop motion image(At motion mode)  
This mode is on when you input BMP images or JPG images.

CAMERA

For  
All cameras



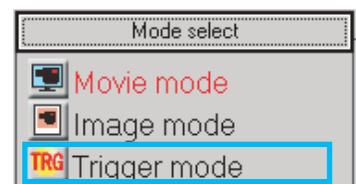
Trigger Mode



- Initialized a camera by external trigger mode.  
Motion image is not previewed all the time, but only when you input trigger signal to a camera, the image is taken by digital shutter.  
※ See each camera's product manual for more detail about trigger signal.

CAMERA

CMOS 1/4 MI   CMOS 1/8 MI   CMOS 1/16 MI   CMOS 1/32 MI   CMOS 1/64 MI  
CCD 150P II   CCD 150P III



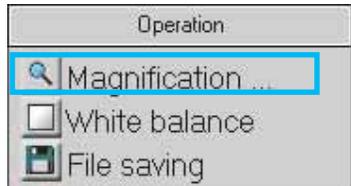
# Operation①

About operate images

## Magnification

CAMERA

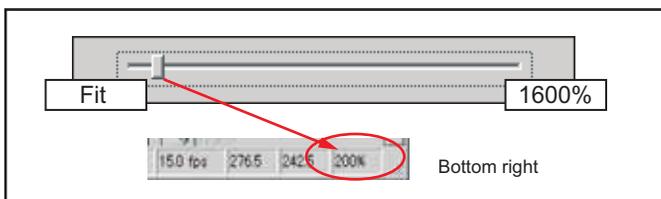
For All cameras



- Change magnification  
Fit(Full screen) → 100% → 200% → 400% → 800% → 1600% → Fit



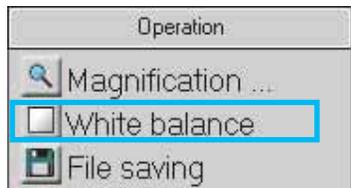
- Slider for changing magnification. Move slider by left click on a mouse to do drag and drop.  
Use cross key to adjust by 1%.  
Press 「Enter」 or 「Esc」 key or click out of the window to close the window.



## White balance

CAMERA

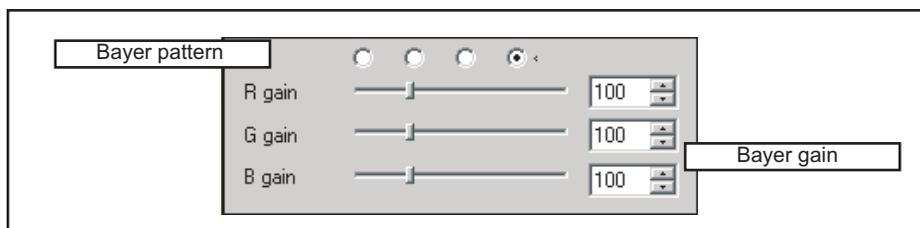
For All cameras



- Set white balance automatically.



- The window to set up detailed white balance.  
Each cameras are different the range of bayer gain and bayer pattern to adjust.

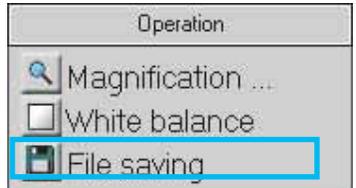


# Operation②

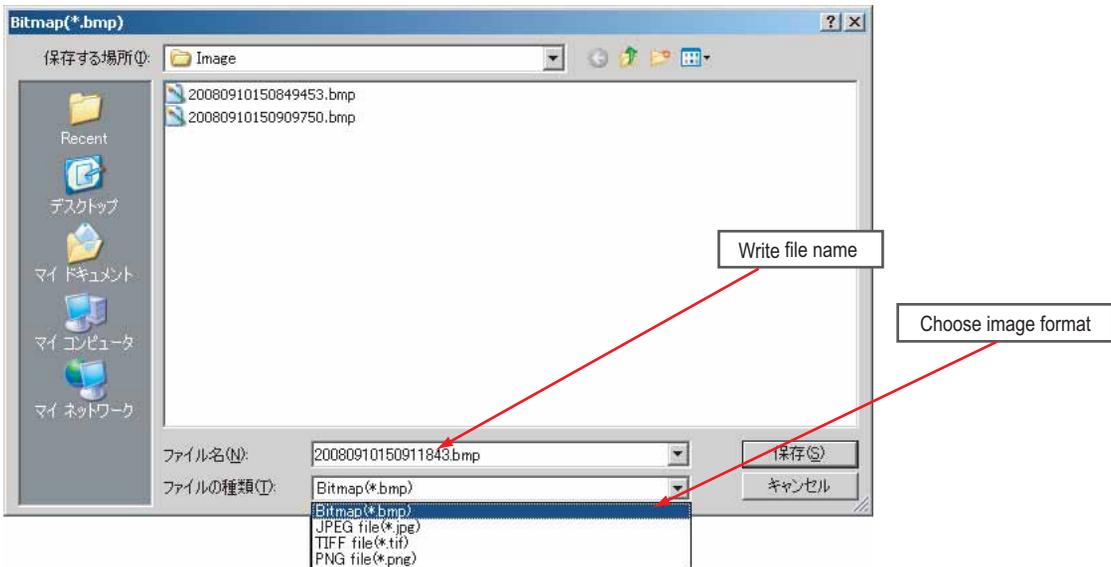
## File Saving

CAMERA

For All cameras



- Save a file in which is currently shown on a screen.  
(If you set to put file name automatically, a dialog below would not be shown)



- Open the saving setting window.

Generate a file name automatically when saving

Generate a file name by time

Generate a file name by number [Write optional name]

Save also measurement date

Display measurement date on a image

Implant into image file

Save image and measurement file separately

Saving format

Bmp  Jpg  Tiff  Png

[SAVE] Check this box to save images automatically with systemized names. And dialog above is not open when you save.

Name by time.  
eg. February 15th. 2007 14:25 -> 200702151425xxxx.bmp

[Optional letter form] Named by continuous number from 0001.bmp.

[SAVE] Save a measurement data.

Composite the image and measurement record to save.  
(Words and line's image information would be lost)

Burried measurement data into the footer of teh image file.  
(Original image information would be still)

Save measurement data as mes file.  
(You can open the saved data with drugging it onth the screen)

Choose saving format.  
It is set as file format's default value at file saving dialog.  
It is also set as the format of auto saving.

# Setting①

Set up each parts.

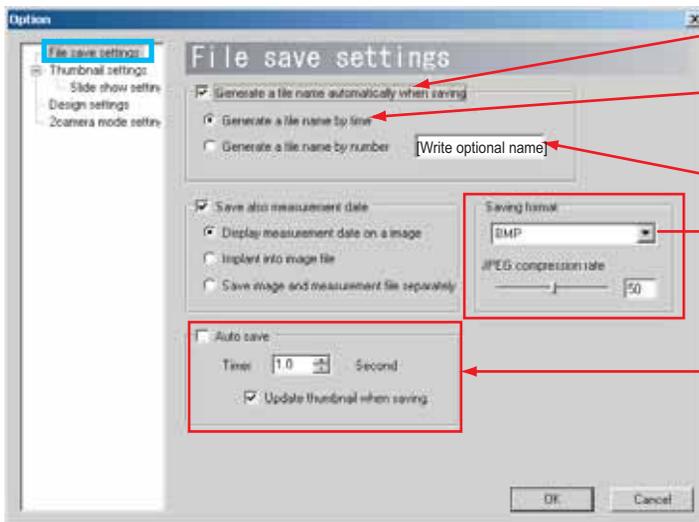
Software setting

CAMERA

For All cameras



■ Set up general software setting.



【SAVE】 Check this box to save images automatically with systemized names. A dialog above is not open when you save.

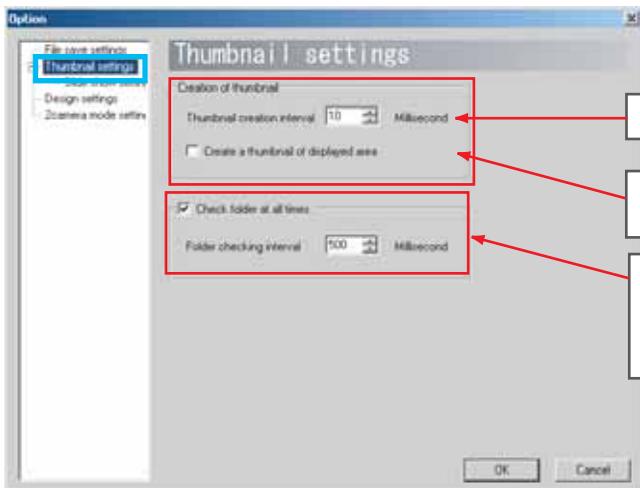
Name by time.  
eg. February 15th. 2007 14:25 -> 200702151425xxxx.bmp

[Optional letter form]Named by continuous number from 0001.bmp.

Choose saving format  
You can set compressed size from 1~100

※ Please be careful when you use this function.

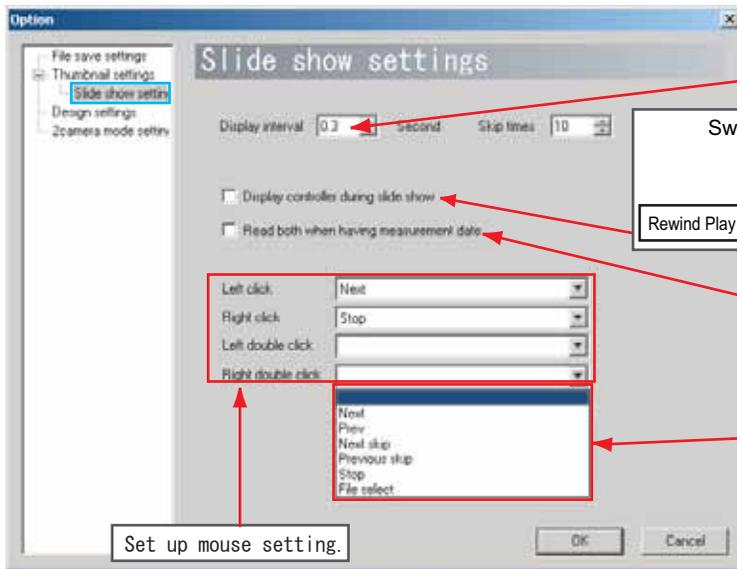
1. Check 「Auto saving」 and keep saving images every time what you set up.
2. You can set the timer from 0.0 to 1000.0sec. every 0.1sec. Actual saving timing is rely on camera's frame rate, wait time or PC spec. Even though if you set the timer as 0.1sec. at the time frame rate is 10fps, you might be not able to save 10 images during 1sec.
3. Even though you do not specify a automatic file name, automatically named file by time for automatic save. If you specify the automatic file name, file name would be followed your specifies name.
4. Saving would be start when you click 「OK」 button on bottom right. When you want to stop saving, click 【Operation : Save a file】 Or, take out a check box 「Automatic save」 and click 「OK」 .



Set interbal range from 1 to 1000 sec. to creat thumbnail.

Check this box and thumbnail, in which is not viewed on the screen, would not be created.

If files are added by another application, this function updates thumbnail. You can set up interbal of checking folder from 100 to 10000mm sec.



Set from 0 to 1000sec. every 0.1sec.  
You can set number of skips when you click forward/rewind skip button from 1 to 1000pc.

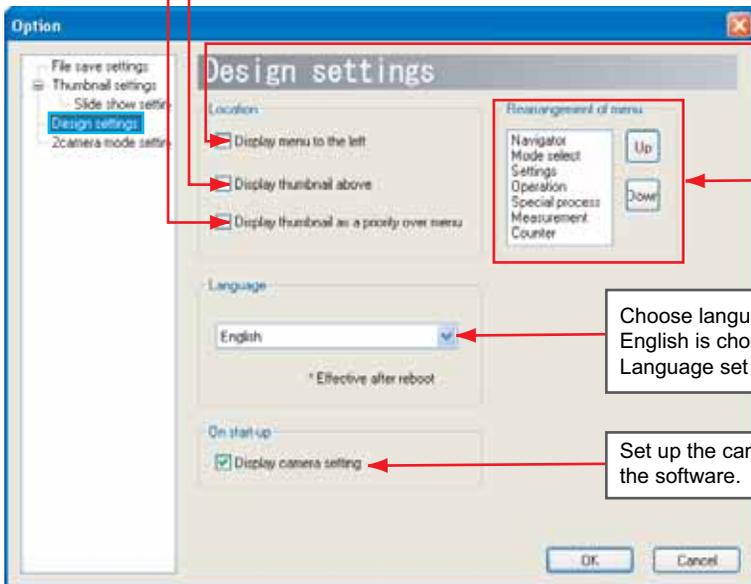
Switch slide show viewer controller (below) .

Rewind Play · Rewind Skip · Rewind Pass · Pause · Forward Pass · Forward Skip · Forward Play

Switch the viewer in the slide show

Forward Play : Show a file one forward.  
Rewind Play : Show a file one before.  
Forward Skip : Skip the number of forward images you specified in 「number of skip」.  
Rewind Skip : Skip the number of previous images you specified in 「number of skip」.  
Pause : Pause slide show.  
Choose A File : Play chosen file.

Set up mouse setting.



A menu is set on the left of a monitor. (Normally set on the right)

A thumbnail is set on the top of the monitor. (Normally set on the bottom).

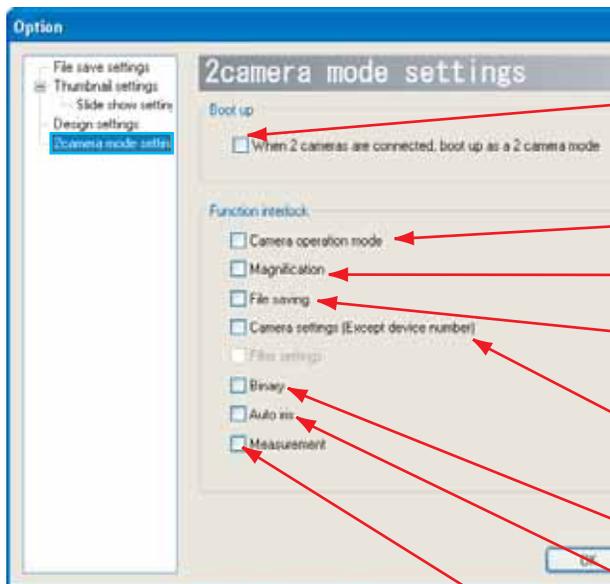
Thumbnail is shown in front of the menu.

You can change menu order.  
Choose a menu that you want to up (drop), and click "Up" ("Down") button.  
Click "OK" to reflect your choice to the menu bar.

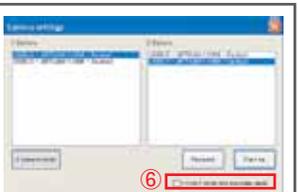
Choose language. If you use not Japanese OS, automatically English is chosen.  
Language set up is effected when you open the software next time.

Set up the camera setting's ON/OFF when you open the software.

■When you start 2 camera mode, setting functions are linked between 2 cameras.



If you check on ⑥, when a viewer software opens, a viewer software opens as 1 camera mode automatically. To change from 1 camera mode to 2 camera mode, check a mark on "When 2 cameras are connected, boot up as a 2 camera mode". From next time, a viewer software opens as 2cameras mode automatically.



Linked switching motion mode, still mode and trigger mode.

Linked magnifications.

Linked file savings. If you do not set up auto filing name, dialog will be shown camera 1 first, and camera 2 second.

Linked and changes camera setting (Effective pixel, Half clock etc...)

Linked segmentation ON/OFF.

Linked auto iris ON/OFF.

Show the measurement data onto the same coordinate at 2 cameras' screen.

# Setting②

## Camera setting

CAMERA

For All cameras



### ■ A dialog for camera setting.

Choose a camera from a list.  
Click 「change」 to detect the camera.

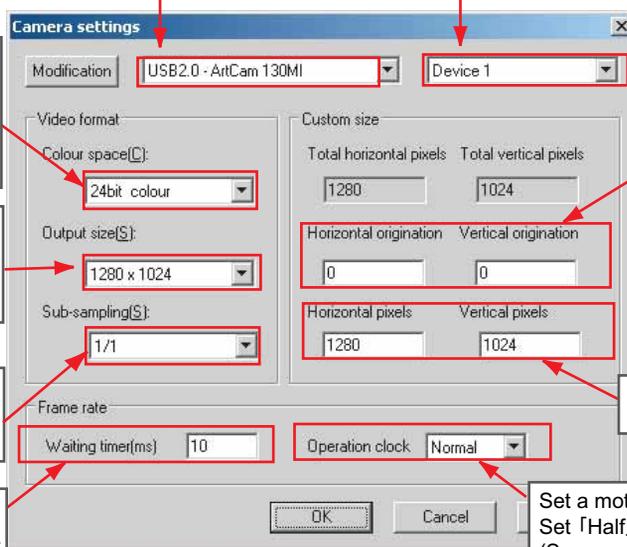
Show the detected device driver.  
If you connect 2 same cameras, you can also choose 「Device2」 .

Choose output color mode.  
Use 8 bit for a monochrome camera and 24 bit for a color camera.  
When you use 16 bit monochrome, Set a motion clock as 「Half」 .

Choose output size.  
Choose 「custom」 to input optional size by 「Custom size」 .  
If not, setting is overwritten.

Set a sensor's sub-sampling function.  
Choose 1/2、1/4、1/8.  
(Some models cannot set it)

Input wait time by mm/sec.  
We recommend to use between 5 and 10 mm/sec.



Set a left top part of coordinate where to start partial reading.

Set a number of horizontal pixel and line for partial reading.

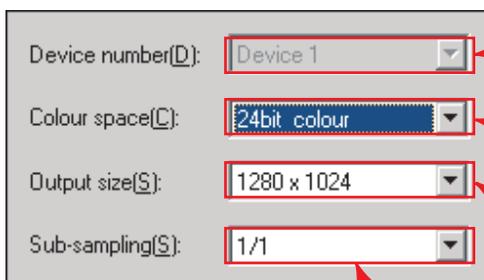
Set a motion clock.  
Set 「Half」 if the image is disordered.  
(Some models cannot set motion clock).

※1 An image would be disordered if you set other number than multiple of 4 on effected horizontal pixel.

※2 CMOS camera supports ROI function to do partial reading to let the camera do high-speed transferring. But not CCD.



### ■ Right click to open simple version of camera setting.



Show a detected device.  
If 2 cameras are detected, you can alsochoose 「Device2」 .

Choose output color mode.  
Use 8 bit for a monochrome camera and 24 bit for a color camera.  
When you use 16 bit monochrome, Set a motion clock as 「Half」 .

Set a sensor's sub-sampling function.  
Choose 1/2、1/4、1/8.  
(Some models cannot set it)

Choose output size.  
You can choose the setting you set by 「custom」 of the dialog above.

# Setting③

## Filter setting

CAMERA

For All cameras



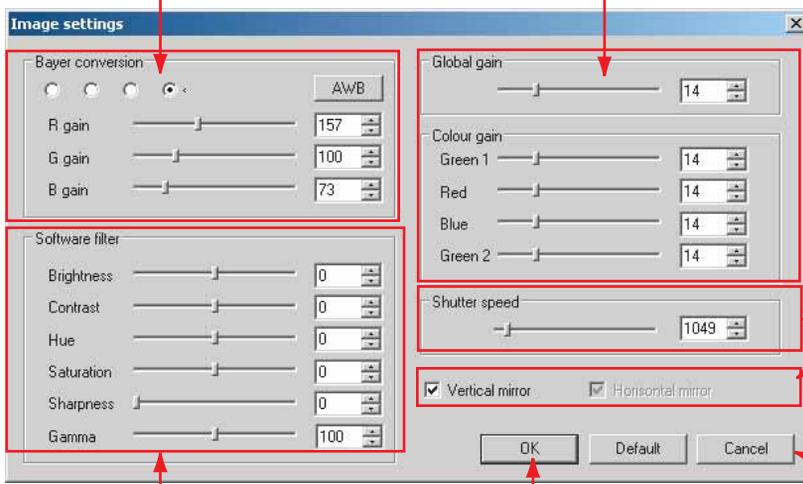
- Open a dialog to do image setting.

Adjust color for a color camera.

- ※ Regular bayer pattern (choose radio button) is different from each camera.

Adjust digital gain of a sensor.

- ※ Setting value is different from each sensor.
- ※ Color gain is corresponded to specific models.



- Set up sensor's shutter speed.
- ※ Setting value is different from each sensor.

Mirroring reflect on an image.

- ※ Only 036MI/036SS/022MINI are corresponded to horizontal mirror reflect.

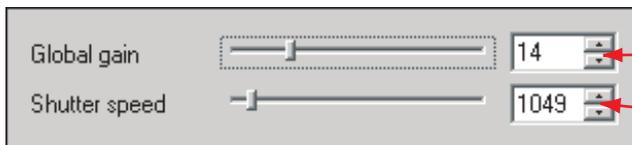
Cancel all settings and close a dialog.

- Filtering an image on the application.
- ※ Gammas normal value( $\gamma=1.00$ ) is 100.
- ※ Frame rate would be down if you apply sharpness on an image.

Reflect your settings and close a dialog.



- Show a filter setting window.
- Simple dialog of the above dialog.



Set global gain

Set shutter speed

## Monitor setting

- This is only for monitor out putcamera.



# Special Process①

About special process

## Binary



- An image binary

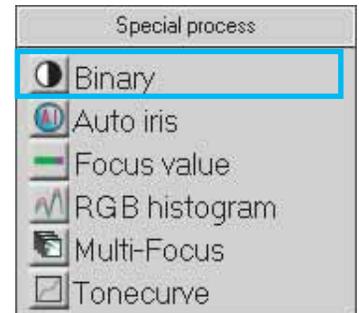
CAMERA

For All cameras

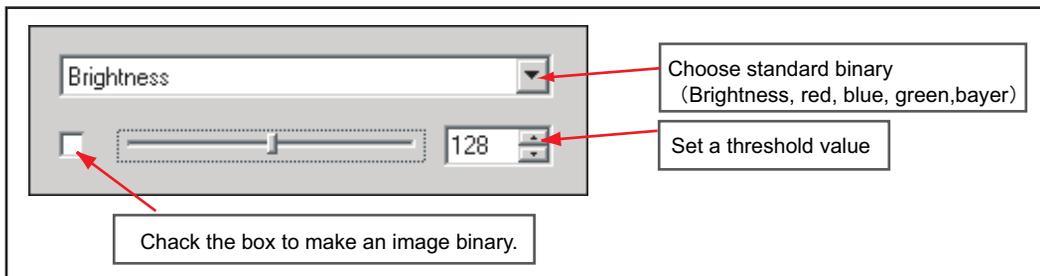


Normal image

Binary image



- Show a window to set detail setting for binary



## Auto Iris

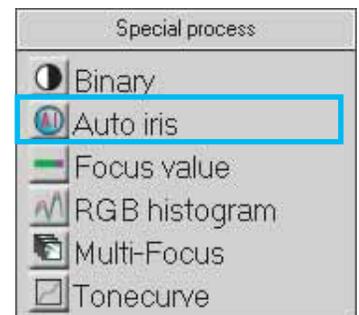


- Effect auto iris

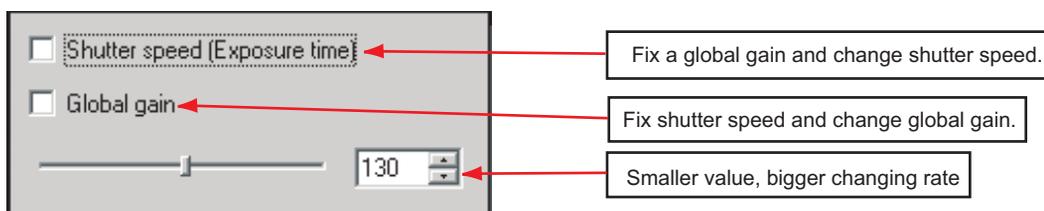
CAMERA

For All cameras

\* Exclude monochrome camera and converter.



- Show a window to set detail setting for auto iris



# Special Process②

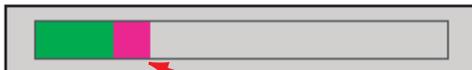
Focus Value

CAMERA

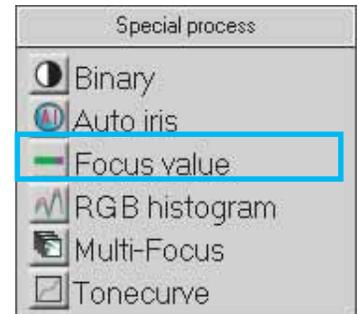
For All cameras



- Show a focus value as a bar graph.



If focus is not fit, it will be shown as a pink bar graph.



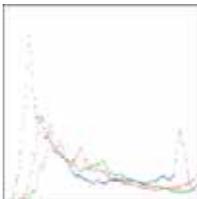
RGB histogram

CAMERA

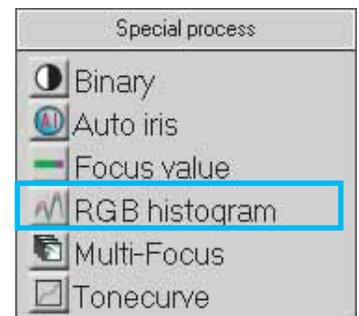
For All cameras



- Show a RGB histogram. Right click to close a window.



\* Exclude monochrome camera and converter.



# Special Process③

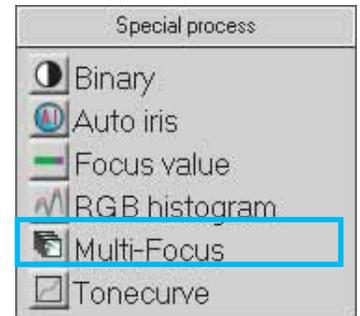
## Multi Focus



LEFT CLICK

CAMERA

For All cameras

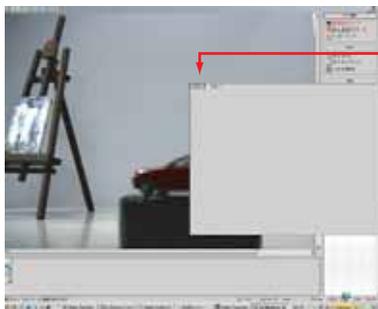


- Composites several images to create 1 clear image. Right click to close a window.

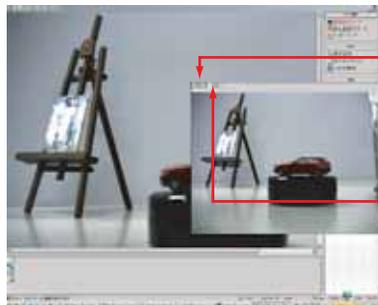
Example



※ It might take time if pixel size is big. (From 10sec. to several sec.)



Click 「Start」 button when target image is shown.



Whenever you click 「Start」 while the image you want to composite is shown, images are composited.

Click 「Save」 button to save composited image.

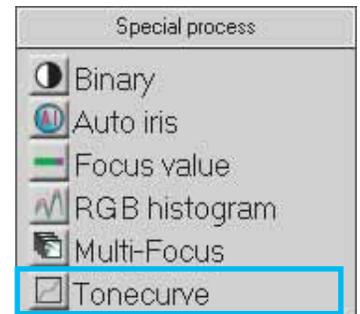
## Tone Curve



LEFT CLICK

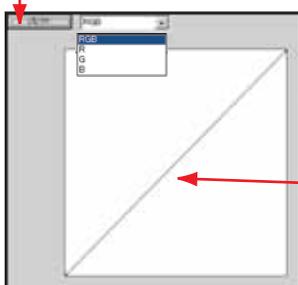
CAMERA

For All cameras



- Show the tone curve screen. Right click to close.

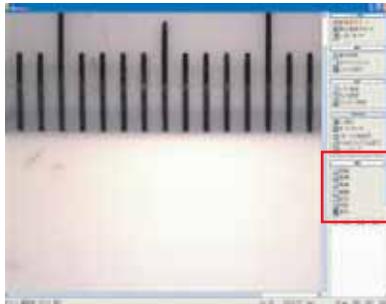
Reset tone curve



Left click on a line to create a point. Move mouse while click still, and you can adjust a curve.

# Meresurement Manual

Check this first.



Start up the measurement software to make sure that you can use **【measurement】** .

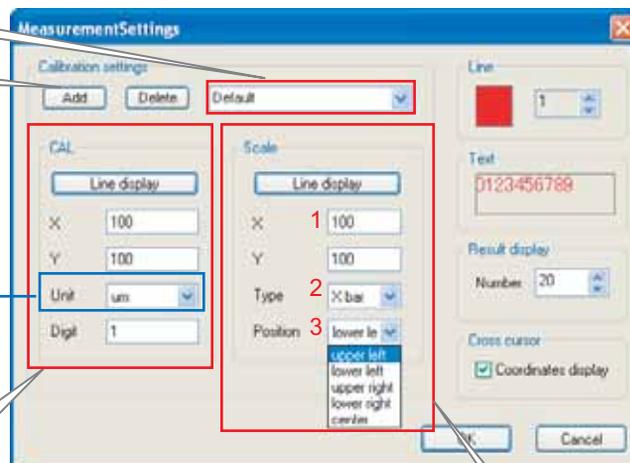
Measurement category would be shown with black words if the measure software is installed properly.  
(If no, words would be shown as gray color. You may install the viewer software instead of the measure software)

## Set up Calibration

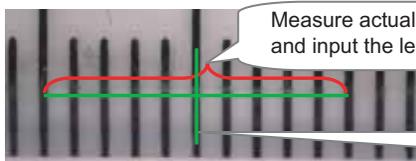
① Click 「Setting」 button to open the measure setting window.

② Named calibration setting

③ Left Click



③ Push 「Line Display」 button and show a line cursor on the screen.



④ Fill out actual size of the cursor's horizontal(X)/vertical(Y) lines and choose 「unit」 .

※ Right click on the end of the cursor line and drag/drop to elastic cursor line.  
To move the cursor, right click on the cross point and drag/drop.



Push 「Line Display」 button and scale setting is reflected.

1. Set horizontal(X)/vertical(Y) length of the scale.  
Unit is same as CAL's.
2. Choose scale bar style.  
(Only X bar/X and Y bars)
3. Choose the scale position.  
(upper left/lower left/upper right/lower right/center)
4. Push 「Line Display」 again and scale is gone from the screen.

Continue to next page→

- ④ Input decimals from a keyboard.
- ⑤ To set up line's size or color, fill out right categories.

Change the size of measure line.

Change the color of measure line

Change the font of the measurement.

The size of measurement list

Decimals places

Cross Cursor ON / OFF

ON

OFF

- ⑥ Click 「OK」 to close the dialog window.

## Basic Operation

Left click the categories to start measurement.

During measurement, letter is shown as red.

Left click red letter to cancel measurement.

Bring the cursor to near a measure line and point, and the cursor change to a cross arrows key as like left image. Move mouse to move a measure line and point.

## Delete

N.	Content	Value	Unit
1	Area-Line	9752.3	um <sup>2</sup>
2	Length-Line	228.3	um
3	Angle-3-p...	61.5	°

Measurement result is shown on the list.

Choose the result in which you want to delete, and left click 「Delete」 button

If you do not choose the result, all measurement result would be deleted.

## Save

CSV file (\*.csv)

Measurement file (\*.mes)

Right click on 「Save file」 to show set up window to set up saving form. (See page 16 for more detail)

Left click to save an image.

Left click on 「Save」, and you can save measurement data as a csv file / mes file.

csv file : Merasurement list (You can open the data at Office Excel)

D13	A	B	C	D
1	Area-Line	9752	um <sup>2</sup>	
2	Length-Line	707	um	
3	Angle-3-point	42.8	°	
4	Angle-3-point	44.3	°	

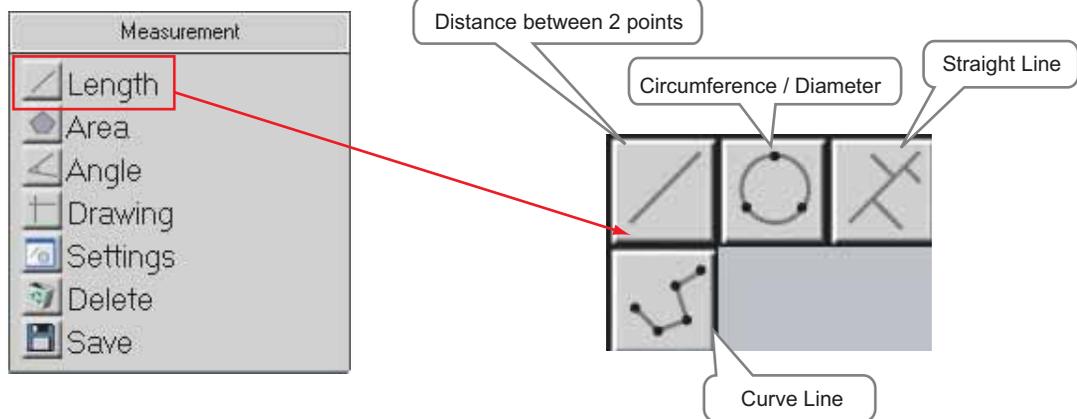
Measurement result is categorized by cell when you open it at Excel data.

mes file : Save measurement result on the screen as a different file. You can open the measurement data on the screen by drag and drop.

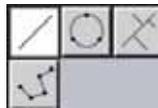
※ If image and mes file's pixel size is different, data would not show properly.

## Measurement of distance

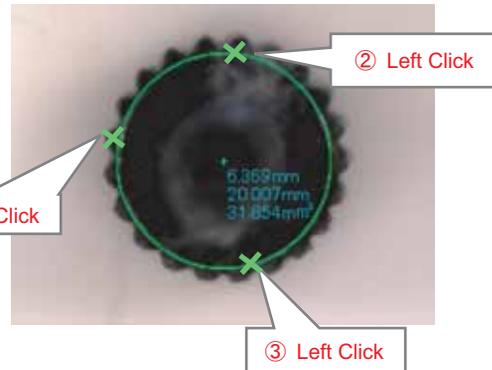
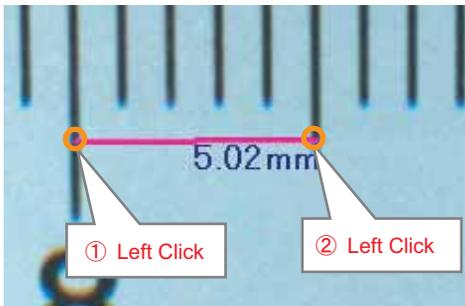
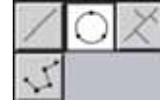
Right click on 「distance」 button, and choose the type of the distance.



Distance between 2 points



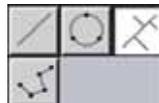
Circumference / Diameter



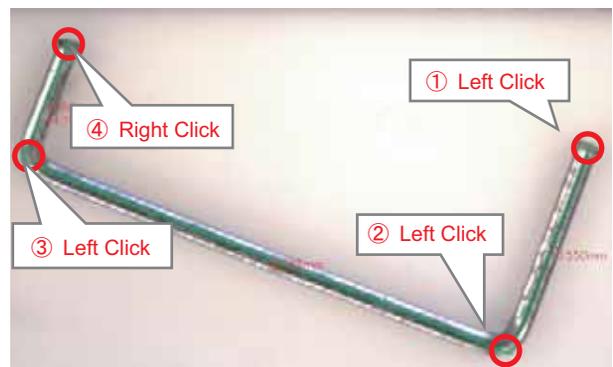
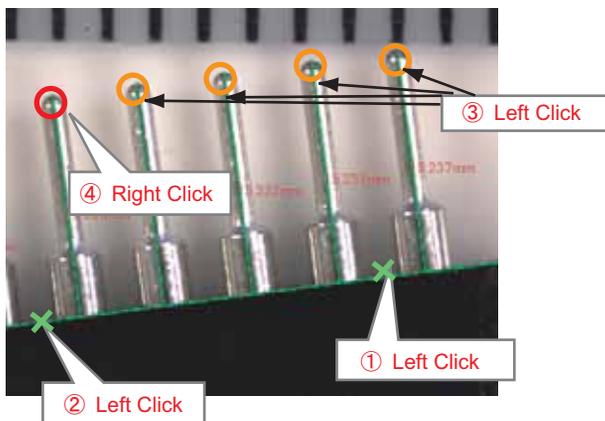
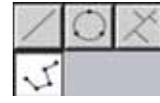
Left click 1 time on start point and end point.

Left click on 3 appropriate points on circumference.  
 ※ Measurement result is a diameter, a circumference and an area from top.

Straight Line



Curve Line

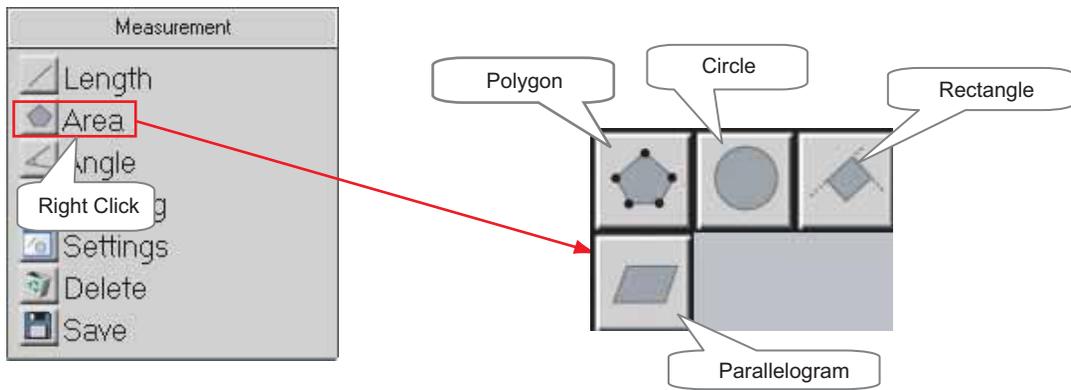


- ① Left click on 2 appropriate points on the straight line.
- ② Right click on the point where you want to measure the distance of a straight line.
- ※ To measure several points of distance, Left click on points and right click on the last point.

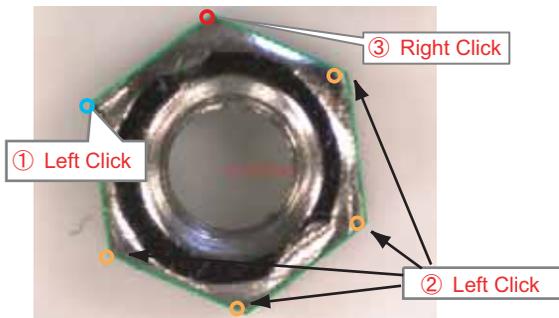
- ① Left click 1 time on the start point and middle point.
- ② Right click on the end point.

## Measurement of area

Right click on 「Area」 and choose the type of measurement area.

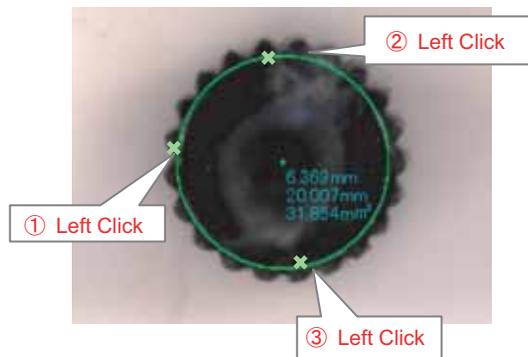
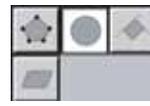


Polygon



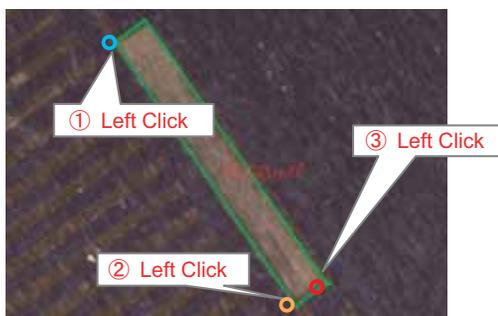
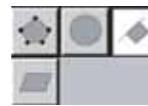
- ① Left click on the start point
- ② Left click on each vertex
- ③ Right click on the end point

Circle



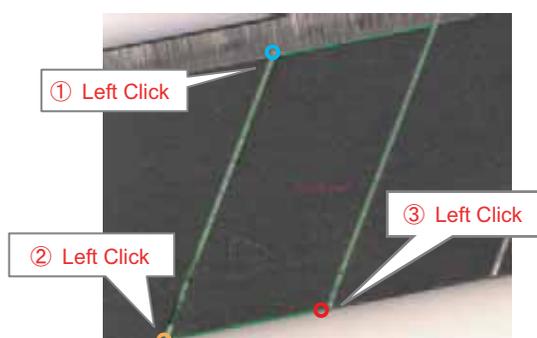
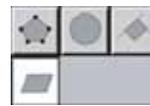
- Left click on 3 appropriate points on the circle.
- ※ Measurement result is diameter, circumference and area from top.

Rectangle



- ※ If the object is not parallel to the XY coordinates, Left click on 3 points as like the image above.
- ※ If the object is parallel to the XY coordinates, Left click on left top point and right click on right bottom point.

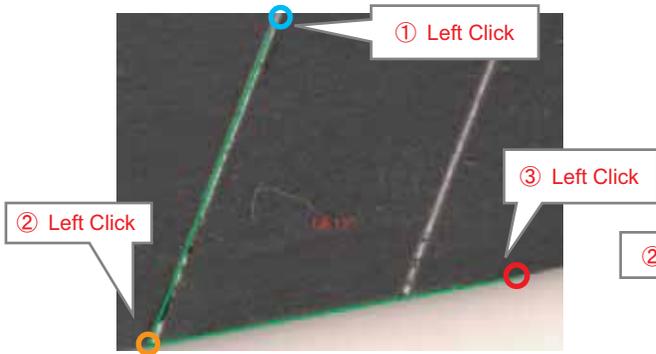
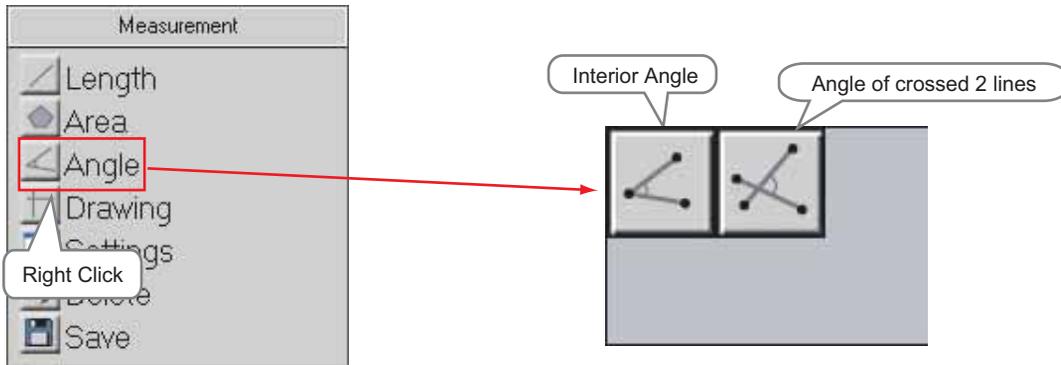
Parallelogram



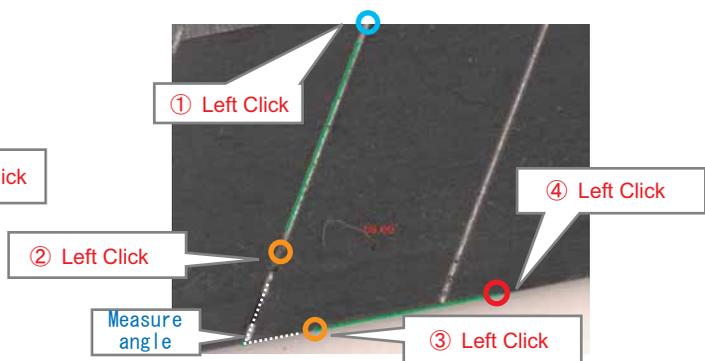
Left click on 3 points

## Measurement of angle

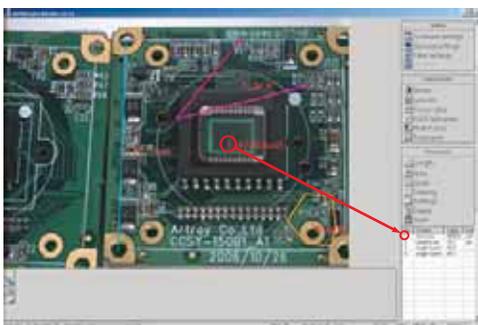
Right click on 「Angle」 and choose the type of angle



Left click on 3 points



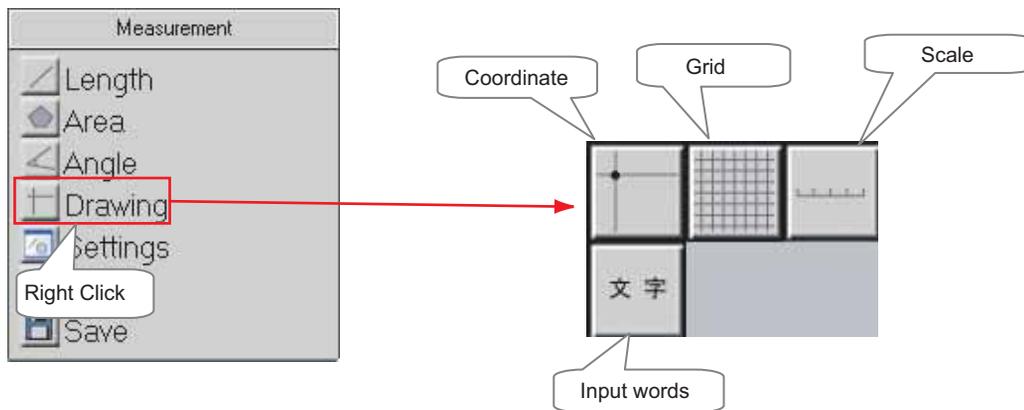
- ① Left click on 2 appropriate points of a straight line.
- ② Left click on 2 appropriate points of a crossed line.



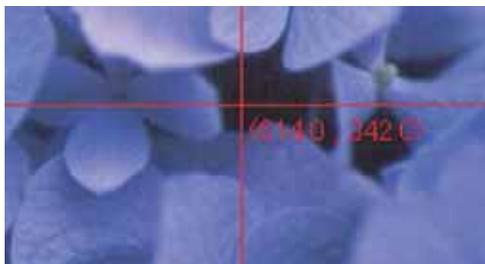
Measurement data on the screen and the result are numbered.  
You can find the data from both side.

## Drawing

Right click on 「Drawing」 and choose the type of drawing.



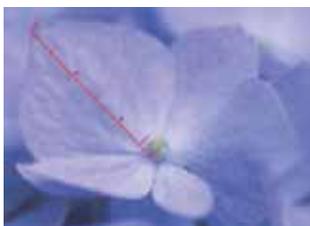
Draw the coordinate positions of X and Y.



Check the check box to show the grid.  
Adjust the size of the grid with the slide bar (pixel).  
To remove the grid, take out the check from the check box.



Left click on edge points to draw the scale.



(1 memory...20 pixel)

1. Put the cursor on the edge of the scale.
2. Right click and drag to move the scale.



Left click on the screen to show the text box.  
(The text box would be lost if you move the cursor to out of the box. And the text you type would be left on the screen.)



You cannot delete text one by one.  
(Only all delete)

1. Put cursor on the top left side of the words
2. Right click and drag to move the words

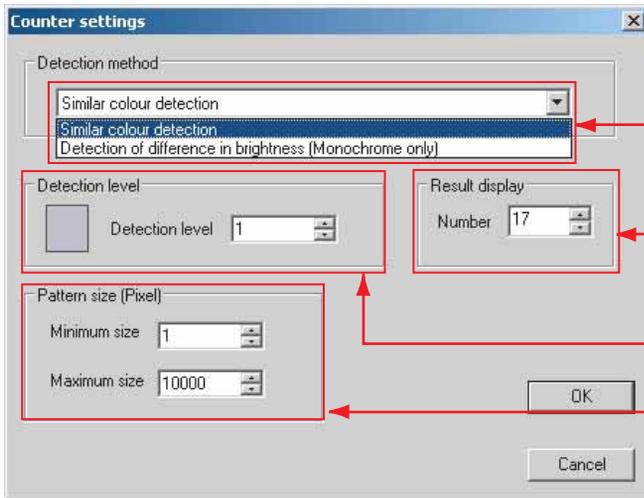
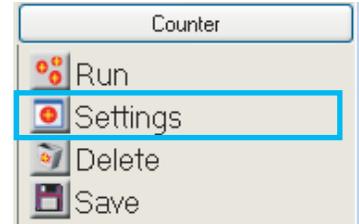
# Counter

Detect image's similar color and brightness



CAMERA

For All cameras



Choose how to detect from "Similar color" or "Brightness"  
 Similar color - Detect similar color on an image  
 Brightness-Detect similar brightness level  
 (Only for monochrome image)

Decide a number of rows of graph.  
 You can see all result by scrolling.

Set a detecting level. Higher level, you can detect more precisely.(from 1 to 255)

Set a minimum detected area and maximum area to detect specified range.



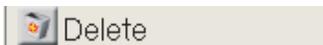
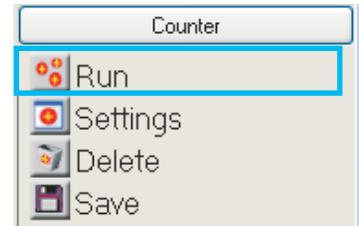
After set up at setting window, push "Run" button. And left click where you want to detect. Similar areas are shown as a green cross.



Detect similar color



Detect similar level of brightness (only for monochrome)



No.	Value	
1	13	
2	135	
3	31	
4	56	
5	40	
6	62	

Show a detected result on a graph. Choose one you want to delete and push "Delete" button to delete.

If you do not choose and click "Delete" All result would be deleted.



Left click "Save" button and you can save detected result as a csv file.

You can open detected result by Office Excel.

	A	B
1	1	0
2	2	151
3	3	161
4	4	163
5	5	1007
6	6	1007
7	7	129

Detected result is separated by cell.

## How to care a camera

### Remove dust on a sensor

Dust would be attached to a sensor or lens when you connect the lens to a camera or move the camera. Please remove dust as the way below.



1. remove dust by air.



2. Put 「Ethanol (Ethyl alcohol) 」 to a swab, and wipe the sensor gently from center to out.



Cotton dust would be left depends on swabs.

Recommended swab : Johnson swab (Johnson & Johnson services Inc.)

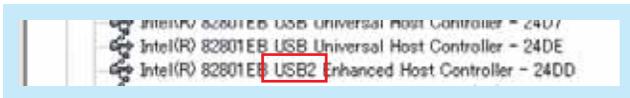
### If you want to use other USB tools with a camera.

A camera would not work properly if you use USB tools (eg. USB memory, external hard drive) except for a mouse and a key board.

In this case, please use expanded USB port (eg. PCI/PCIMCIA) and connect all USB tools except for the camera.

### In case you cannot install a camera / image is not viewed.

Our USB2.0 camera is high-speed camera. If your PC does not have Intel chip set, a camera would not work properly. In this case, please contact us.

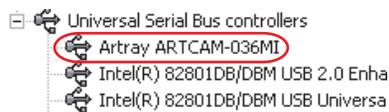


You can check if your PC has Intel USB2.0 chip set from here:

「Start → Control panel → System → Hardware → Device driver → USB host controller」

Please make sure if device driver is installed successfully.

Model name is shown on the USB controller when the device driver is installed properly.



If install is not succeed, shown as ① on the USB controller.

Right click on ① mark on device drive, and choose ②「Update the driver」.

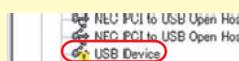
③Hardware update wizard will be pop up again.

Specify the folder 「drivers」 and install a device driver.

①

②

③



Viewer Software  
Art-Measure

2009

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