Viewer software SK-Viewer

OPERATION MANUAL

Ver1.658

SAITOH KOUGAKU Co.,Ltd.

Table of contents

SAITOH KOUGAKU

page

Table of Contents 3

Before Use/Principle of the Measurement Software 4

Ⅰ How to Install the software 5

Ⅱ Overview of Screens and Buttons 7

Ⅲ How to Swich Cameras 9

Ⅳ Basic Operation(Making a Measurement) 10

Ⅳ - 1 Procedure for measurement 10

Ⅳ - 2 Making a measurement 10

【Step1】 Set the calibration value 10

【Step2】 Select the type of the measurement 13

◇Types of measurement◇ Distance/angle between two points 13

【Step3】 Save the images 15

1. Saving the images only 16

2. Saving the images with the measurement values included in it 17

3. Simple and easy image saving 18

4. Selecting the image quality 18

【Step4】 Read the saved image 19

Ⅴ Advanced Operation(Useful Functions) 20

Ⅴ - 1 ◇General work◇ 20

1. Displaying hidden areas 20

2. Zooming in & out on the screen 21

3. Switching the display screen 21

4. Displaying the thumbnail 22

Ⅴ - 2 ◇Measurement◇ 23

1. Moving the measurement value 23

2. Setting the colours 22

3. Displaying/hiding the angle 24

4. Displaying the cross line 25

Ⅴ - 3 ◇Data◇ 26

1. 2D measurement results list 26

2. Deleting measurement result list 26

3. Saving the data of the measurement value(Extention:mes) 28

4. Reading the data of the measurement value(Extension:mes) 29

5. Saving the data of the measuremenet value(csv format) 30

Thank yoy for using SK-viewer.

This document is the operation manual for SK-Viewer.

Any reproduction of this document, either in whole or in part, is prohibited by law.

All names including program names, system names and CPU names used in this document are registered trademarks of their respective companies.

©2005 SAITOH KOUGAKU CO.,LTD.

Principle of the measurement software

This measurement software counts dots on the PC screen and calculates a dimension value based on a calibration value.

Due to such principle, it is required to set an accurate calibration vaule prior to measurement

Make sure to set a calibration value every time the magnification is changed.

Enlarge the lines for manual calibration to fill the screen during calibration to make it more accurate.

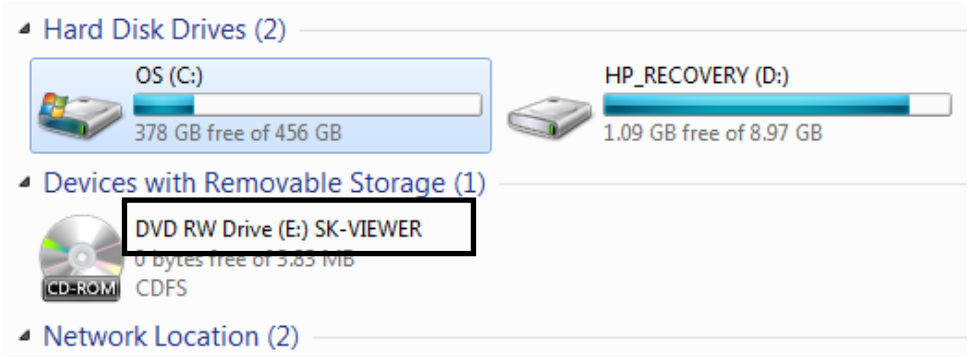
See P. 10 for the setting of a calibration value.

Installing the SK-Viewer

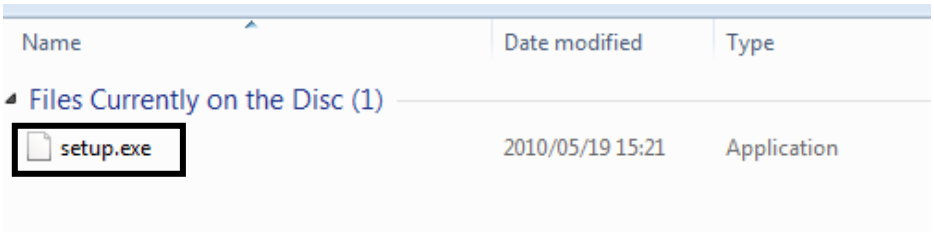
★Install it on administrator.

1.Set the accompanying CD.

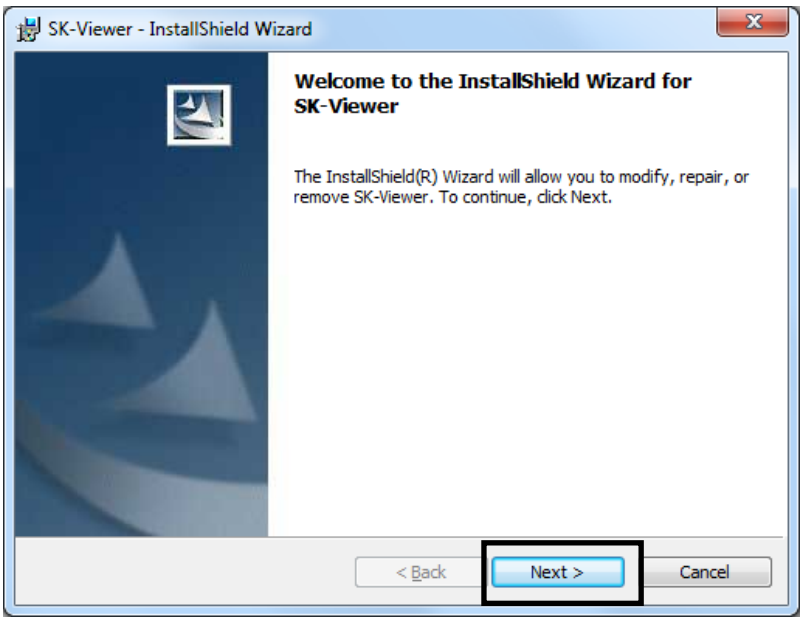
2.Choose CD drive in My computer, and double click it.



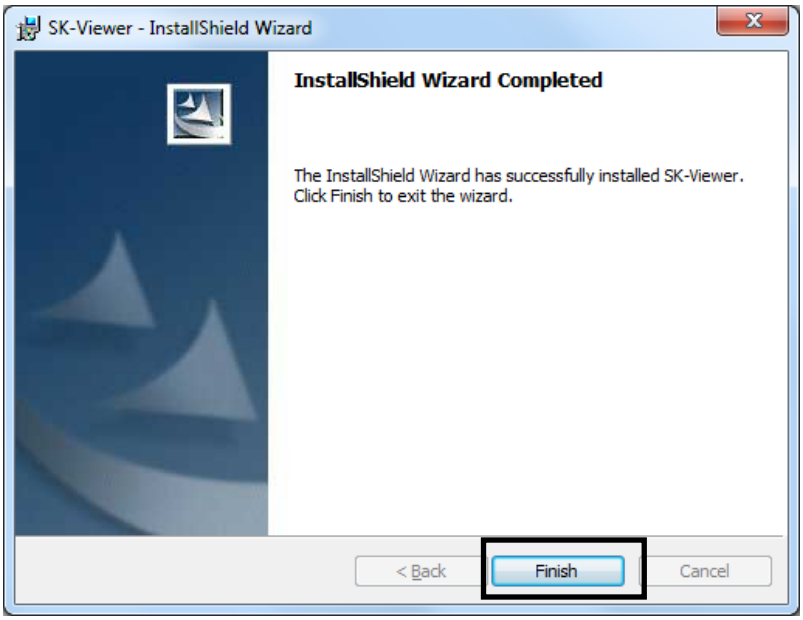
3.double click [set up.exe] in the CD.



4.click [next].



5.Click [Finish]. The installation is now completed.



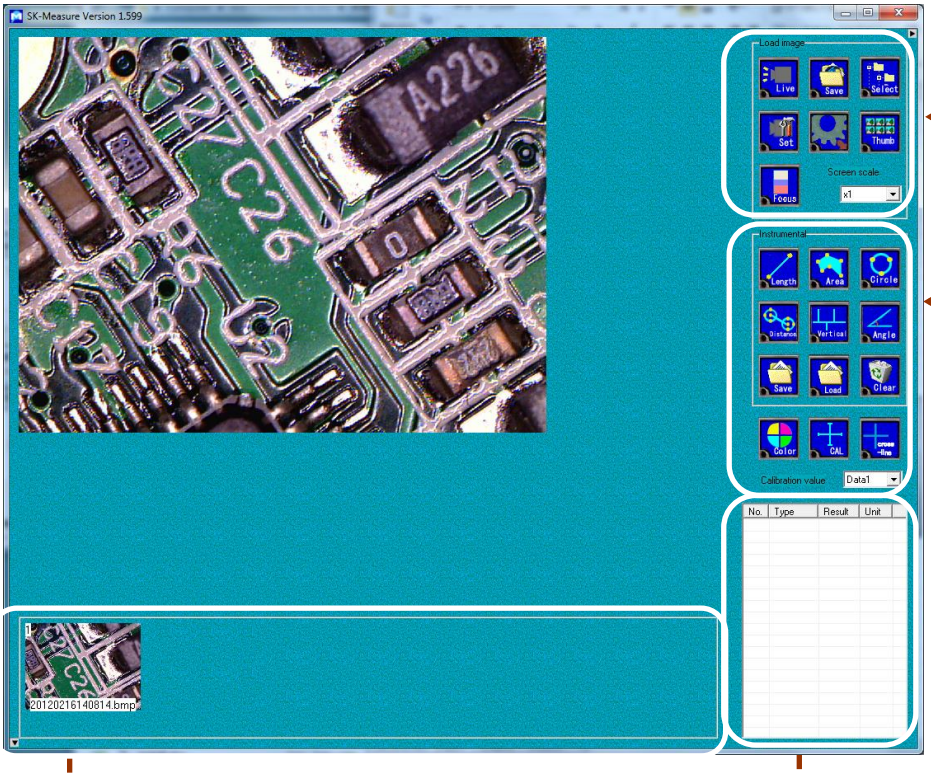


Image capture buttons

Measurement buttons

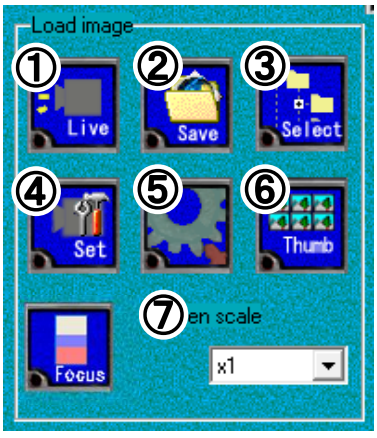
Thumbnail

Saved images are displayed
(P19, P22)

List of 2D measurement result

The measurement results are shown a list.
(P26)

Image capture buttons



① ⇔ Switch between "Still" and "Live".

★point★

You can now switch between the "Still" and "Live" modes also
by pressing the [F11] key.
You can switch the mode without using a mouse or keyboard if you use a footswitch.

② Save the image(P15)

③Simple and easy image saving(P18)

④Make the setting for the camera

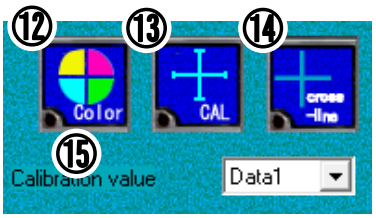
⑤ ⇔ switch between "Saving the image only" and "Saving the image with the measurement values included in it".(P17)

⑥Display the thumbnail(P22)

⑦Switch the magnification of the screen(P21)

Measurement buttons

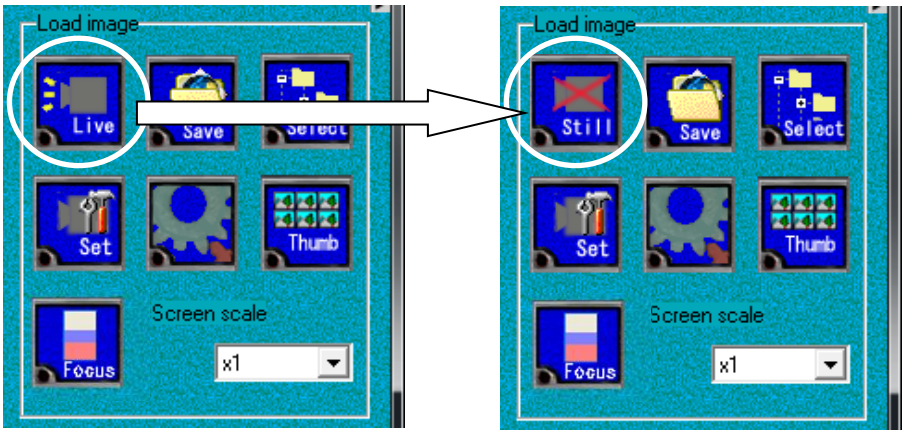
⑧ Measurement buttons
(Only "Length" is available on SK-Viewer.)(P13)
⑨Save the data of the measured value(P28, P30)
⑩ Read the data of the measured value(P29)
⑪Delete the measured value(P26)



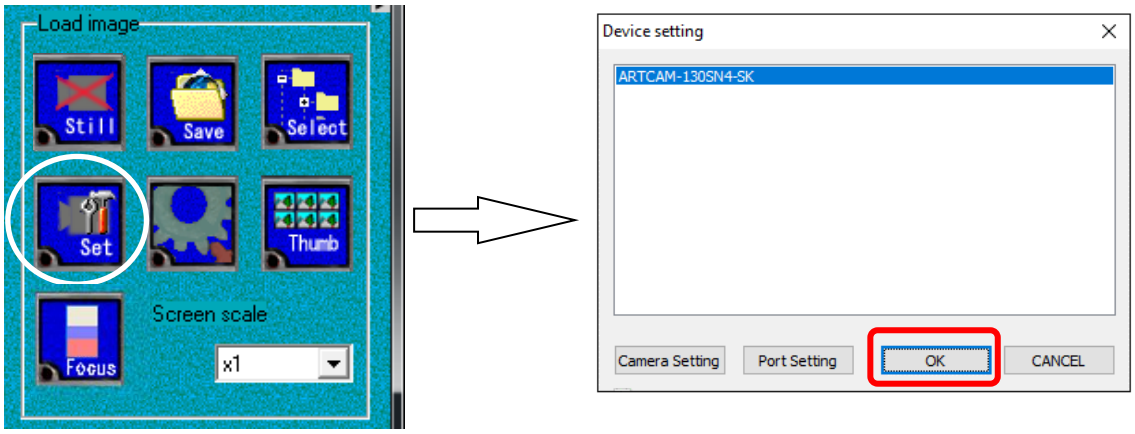
⑫Set the colour of the measurement lined(P23)
⑬Set the calibration value(P10)
⑭Display the cross lne(P25)
⑮Switch the calibration values(P13)

If the image from the computer-mounted camera is displayed on the monitor, switch to the microscope camera as shown below.

1. Click the "Live" button, then the screen become "Still".



2. Click the "Set" button, then the setting window is displayed.

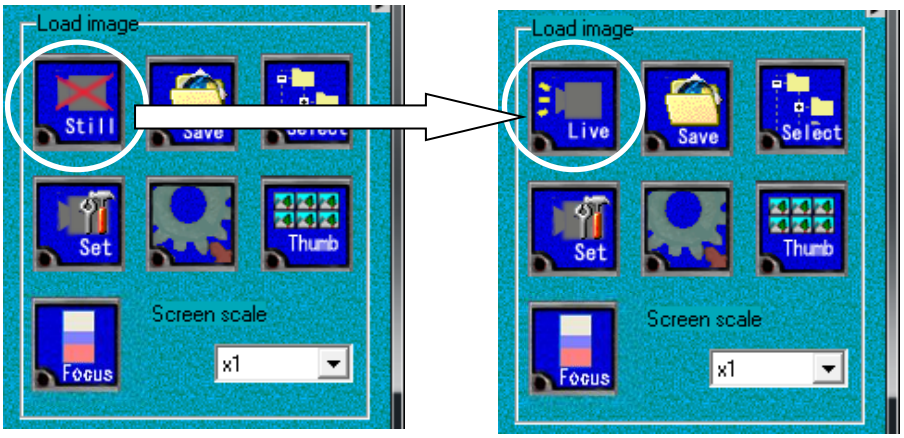


A camera list in the device setting.
Select suitable camera, then, click the "OK "button.

Note

The camera depends on the microscope.
"ARTCAM-130SN4-SK" is the camera for SKM-S30D-PC and SKM-S31C-PC
"WAT-01U2" is the camerafor SKM-Z300C-PCM2
"StUSBCam" is the camerafor SKM-Z200C-PCD and SKM-Z300C-PCD
When the microscope is connected to computuer via the capture device "XCapture-1", select "CY3014USB, Analog 01 Capture".

3. Click the "Still" button and the screen becomes "Live" again.
The camera has been changed.



IV-1 Procedures for measurement

Step1. Set the calibration value.

Step2. Select the type of the measurement

Distance/angle between two points

*** Can't measure diameter of circle, area, distance of center/diameter/angle between two circle, perpendicular,angle.**

Step3. Save the image

★For the procedure to save the emasurement value data, see P28 and P30

Step4. Read the saved image

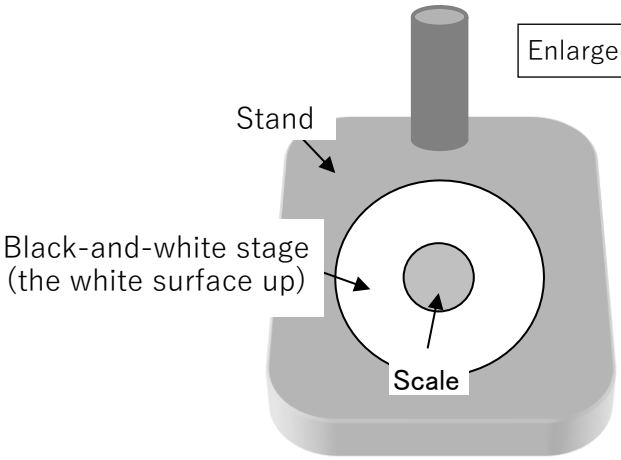
★For the procedure to read the saved measurement value data, see P29

IV-2 Making a Measurement

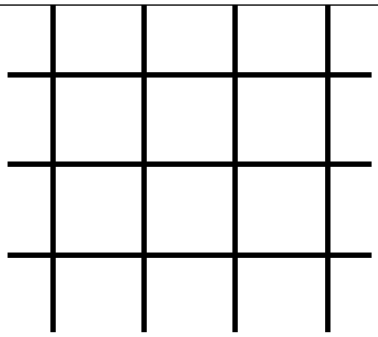
[Step 1]Set the calibration value

1.Set the scale for manual calibration value.

Set the scale for the calibration on the black-and-white stage(use the white surface)



Enlarged view of the grid scale for the manual calibration value

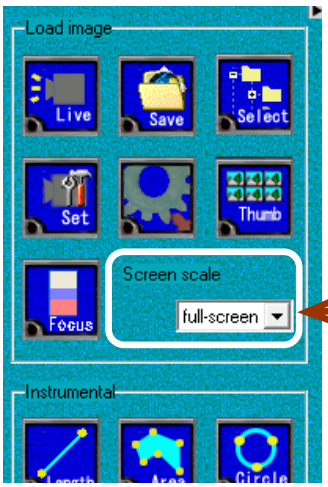


Set the scale to parallel on the screen.

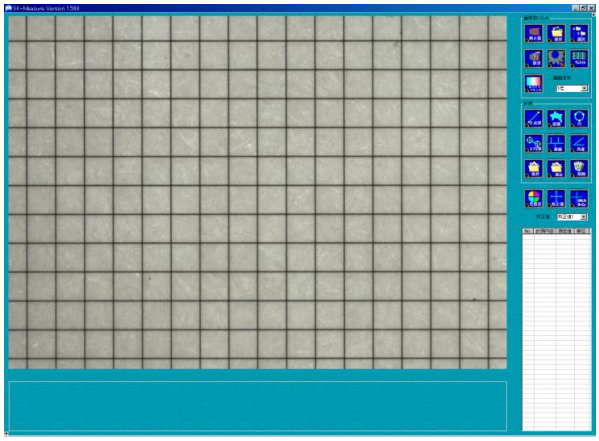
☆You can buy this scale at our company.

2.Choose a magnification and bring into focus.

*This model is SKM-S30D-PC

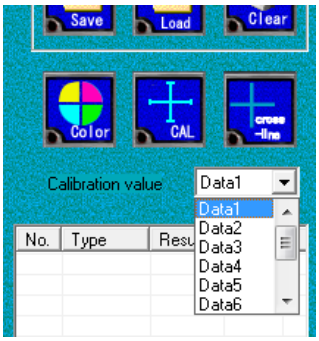


3.Set the line of the scale to parallel the frame of the window.



4.Determine where to registar the calibration.

Determine where to save the calibration values. Up to 20 calibration values can be registed in total.

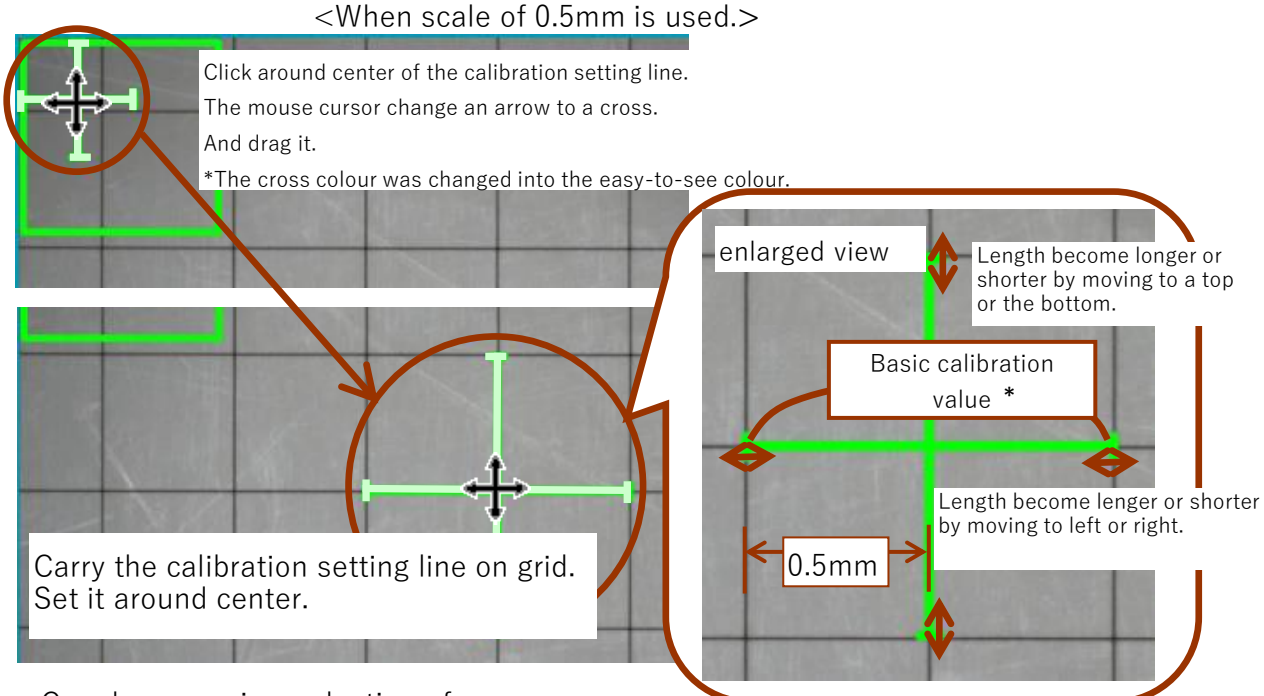


5.Display a calibration setting line on the scale.

Press button.

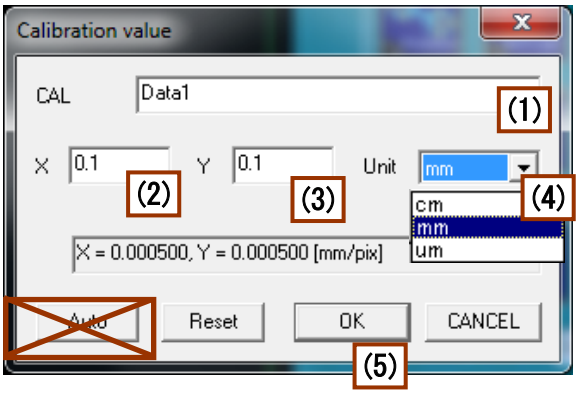
The [CAL] window opens and the calibration setting line is displayed.(The default setting is shown in green)
(The square is for automatic calibration.The cross is for manual calibration.)
As shown in a picture, move the cross near center of the screen and make the vertical and horizontal length the same as a grid.

<When scale of 0.5mm is used.>



Can do expansion reduction of a screen by using mouse wheel.

6.Enter the basic value.Perform the automatic calibration value setting (auto calibration) and register the value.



(1) **Set the calibration value name.(It will be recognizable o include the magnification)**

(2) ***Enter the actual scale, for X.(It depends on the number of the grids)**

(3) ***Enter the actual scale, for Y.(It depends on the number of the grids)**

(4) **Select the unit.**

(5) **Press the [OK] button on the calibration value window to register the basic calibration value.**

* (2)(3)About calibration value
2 grids are used in here, but it should be bigger.
The biggest is the best.

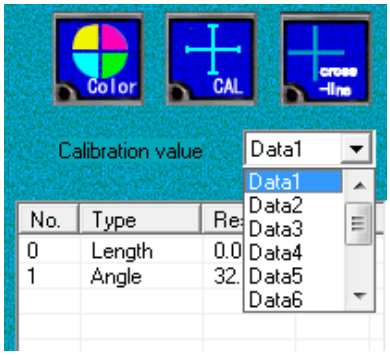
Input multiply "the number of the grids" by "scale size" as the actual scale.

Do the same things on every magnification.

The calibration value setting is now completed.Next, perform the measurement.

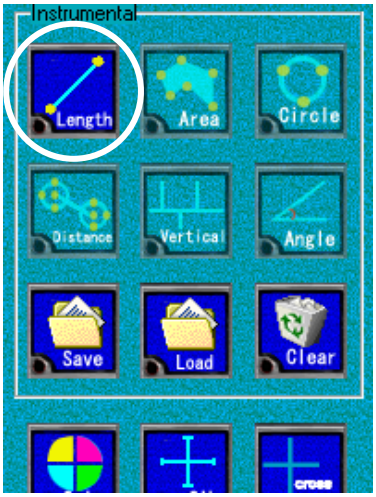
[Step2] Select the type of the measurement

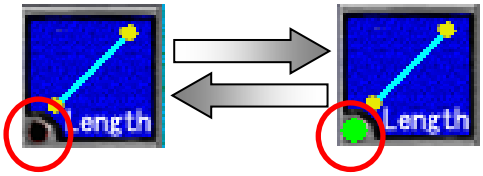
1.Select a calibration value from the list which was registered on "step1".



★For how to set the calibration value see P10

2.SK-Viewer offers only distance/angle of measurement function.
Select the "Length" button on the right side of the screen.

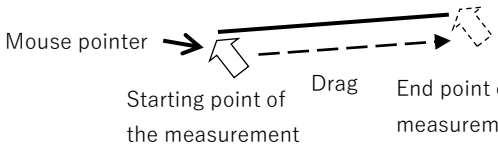




After click it, the light is turned on and a cross line appears on the screen.
Mouse cursor is the centre of the cross line.
While the light is on, the measurement goes on.
Click the icon again, the measurement is ended.

The distance and angle between two points are measured.

Determine the starting point of the measurement, keep the click pressed down and drag to the end point of the measurement.



☆point☆

To draw a horizonal or vertical line or a line at an arbitrary angle, Move the mouse while pressing [shift] to draw a straight line.

★For the setting of the angle, see P24
★To make the angle not to be displayed, see P24

How to correct

End the measurement and place the cursor to the starting point or the end point, and then a cross line appears.
Right click the line and drag to the right point.

When the measurement procedure is explained in the following sections, respectively.

Example of the 2D measurement result list is created.

No.	Type	Result	Unit
0	Length	0.087	mm
1	Angle	34.4	deg...
2	Circle dia...	0.034	mm
3	Circle dia...	0.062	mm
4	Circle dist...	0.042	mm
5	Angle	237.3	deg...
6	Angle	51.3	deg...
7	Circle dia...	0.094	mm
8	Polygon ...	0.001	mm2
9	Length	0.026	mm
10	Length	0.031	mm
11	Length	0.033	mm
12	Length	0.031	mm
13	Length	0.028	mm

The example is SK-Measure.
SK-Viewer offers only distance/angle of measurement function.

★For the 2D measurement result list, see P26

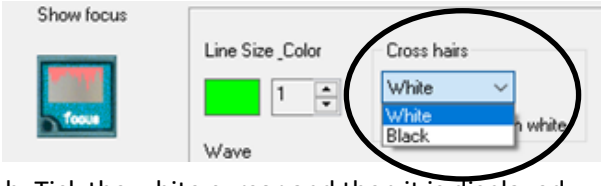
New!

★New function of Ver 1.658★

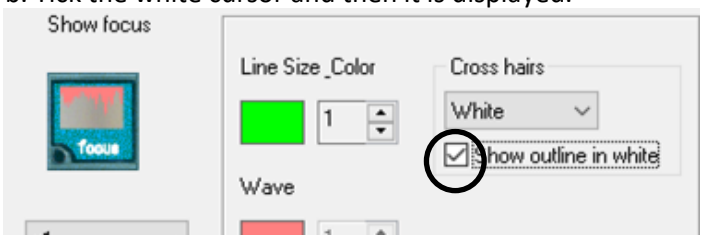
1. After a measurement button is clicked, you can measure in a row until the button is clicked again.
2. A cursor is changed to a cross hair during measurement, it is easier to determine a starting point and an end point.
   a. You can change the colour of a cross hair to black or white.
   b. You can also show or hide a white cursor which is previous type.

Click the button and then the below window is

a. Choose the colour of the cross hair to white or black.



b. Tick the white cursor and then it is displayed.

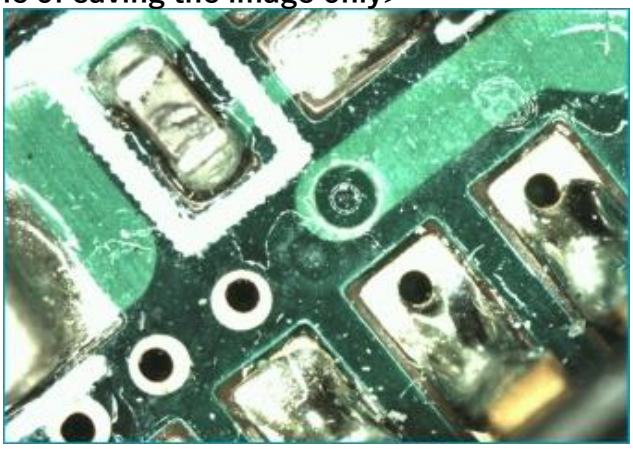


White cursor

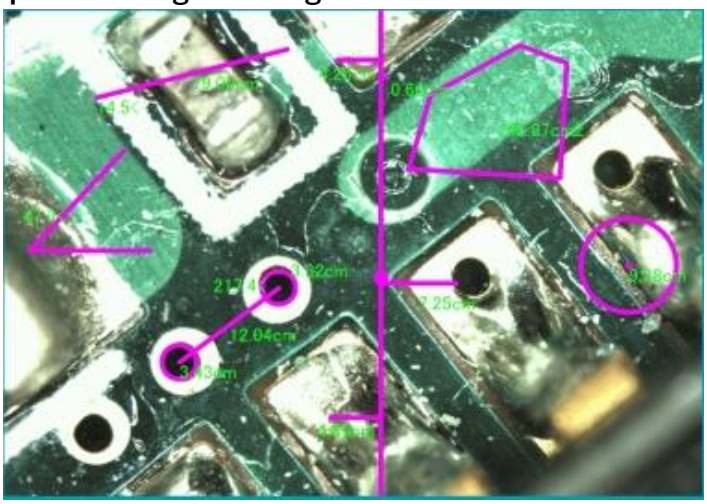
[Step3]Save the image

Two types of the image saving function are available:
<Saving the inage only> and **<Saving the image with the measurement calues included in it>**

<Example of saving the image only>



<Example of saving the image with the measurement values included in it>



The displayed cross line are saved together.

★For the details of the cross line, see P25

The image can be saved easily after a folder is selected.

Also, the image can be saved more easily.

★For the simple image saving procerure, see P18

You may select the image quality for the saving

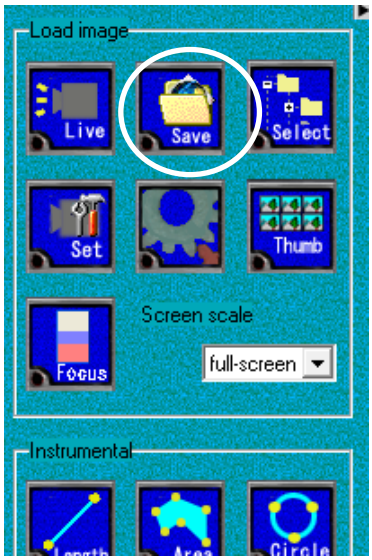
★For the selection of the image quality, see P18

★For the procedure to save the measurement value data, see P28, P30

1. Saving the image only

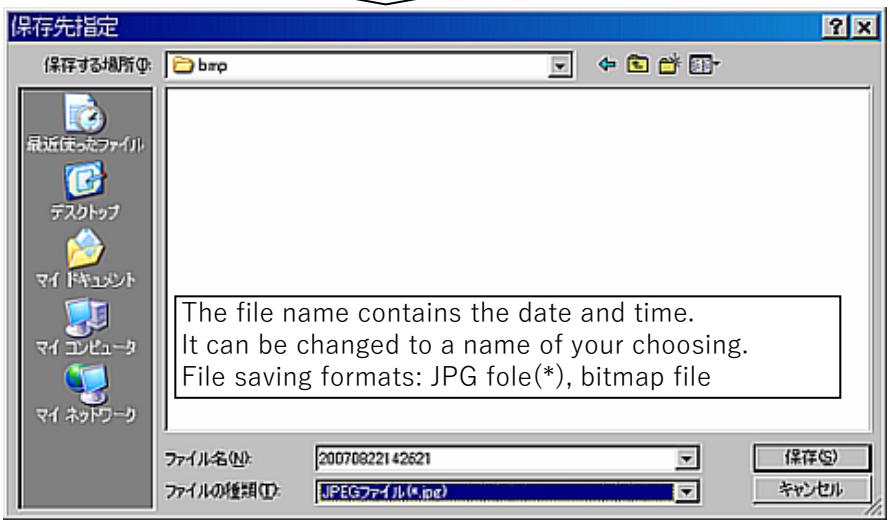
Select

button.



Note

There are two different "Save" buttons.
To have an image, use the upper "Save" button.



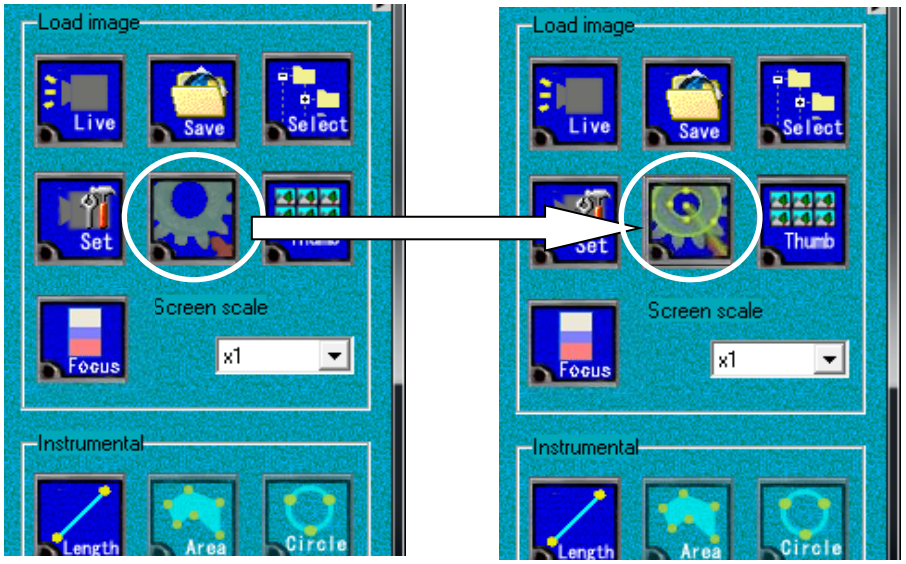
The default folder for saving is **"C:¥Users¥skc1¥Documents¥SKC¥¥SK-Viewer¥bmp".**
You may change the folder for saving.
(*) You may select the image quality(low, intermediate, or high image quality) for the JPG file.

★for the selection of image quality, see P18

★for the simple image saving procedure, see P18

2. Saving the image with the measurement values included in it.

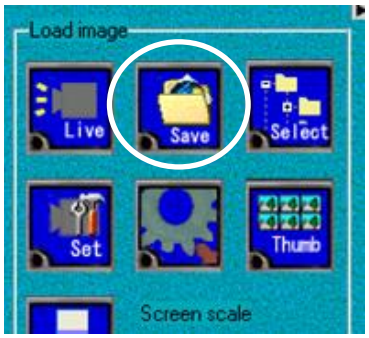
1) Select button.



When the picture on the button is changed, the measurement data is included and saved as the image.
The displayed cross line are alse saved.

★For the details of the cross lines, see P25

2) Select button.



Save the image in the same manner as in <Saving the image only> (See P22)

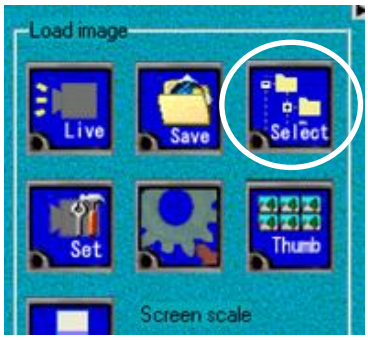
Note

If you edit the measurement data again,
you should save measurement data and the image separately
because an image saved with measurement data can't be edited again.

3. Simple and easy image saving

Press

button to specify the folder in which the image is saved in advance.



Right click on the "Save" button, then the image is saved in the specified folder.
The file name will be the date and time.

The format of the file will be as same as that of the previous file saved.
Note that the left click on the "Save" button displays the given destination window.

☆ point ☆

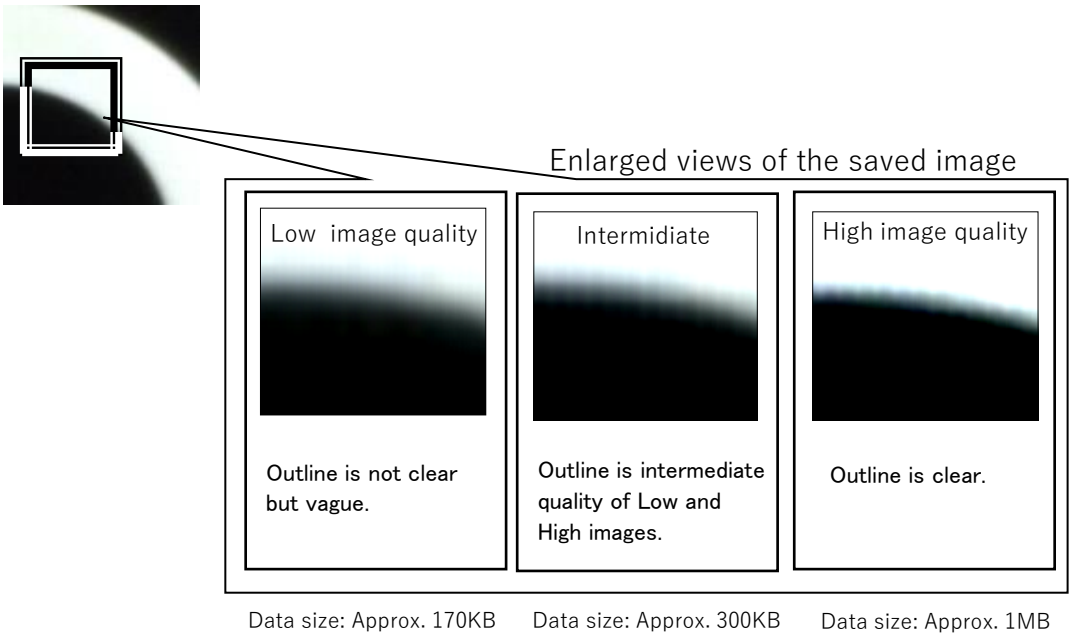
You can save the image in the specified folder also by pressing the [F12] key, as in the case when you right click on the "Save" button.

The file name will be the date and time.

The file format will be the same as the previous file saved.
You can save images without using a mouse or keyboard if you use the foot switch(optional).

4. Selecting the image quality

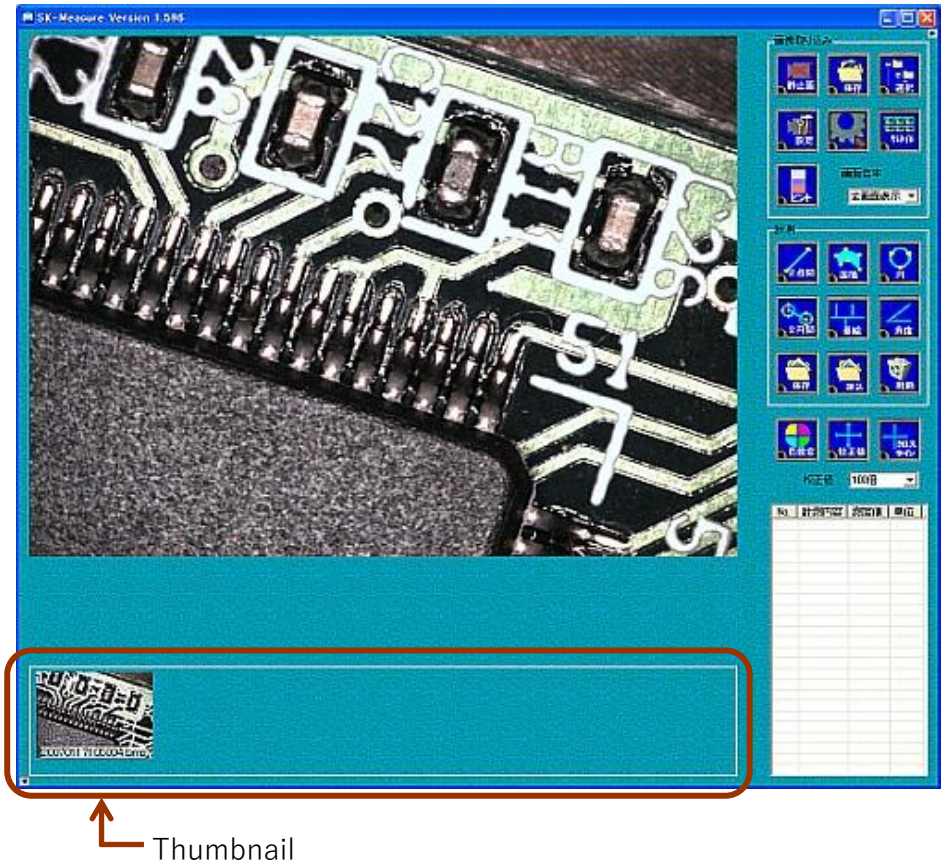
You may select the image quality when saving an image.(Available when saving with jpg extention)



[Step 4] Read the saved image

The saved images are displayed in a thumbnail.

When you hold the cursor over the image in the thumbnail and double click on it with the left button, the [Live] button is switched to the [still] button and the saved image is displayed.



★For the details of the thumbnail, see P22

V -1 Advanced operation ◇General work◇

1. Displaying hidden areas

Some parts of the image may be hidden and not displayed when the display magnification of the screen is larger than one.

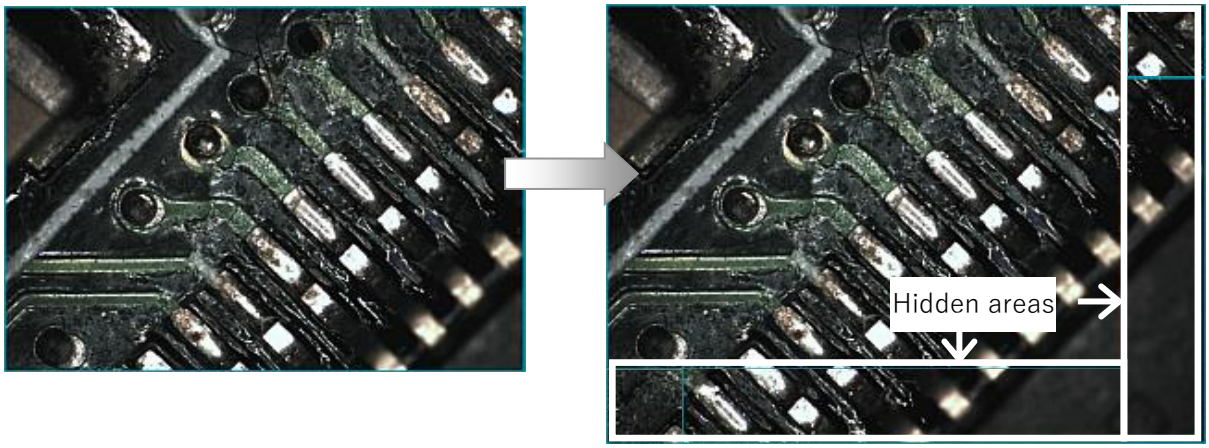
There are two methods to display such hidden areas.

[Method 1] Move the image

The pointer is changed to when the left click of the mouse is pressed.

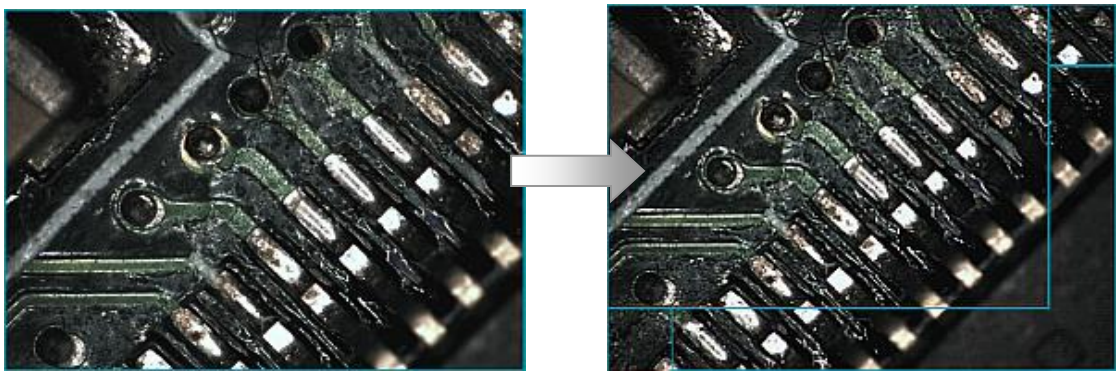
The screen moves when the cursor is moved in that state(with the left click pressed down).

(Expect for the full-screen display)



[Method 2] Use the full-screen

When full-screen is selected in for the screen scale, the entire imaging area is displayed.

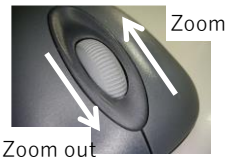


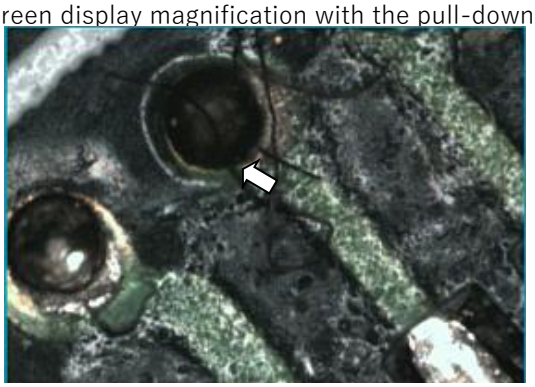
2. Zooming in & out on the screen

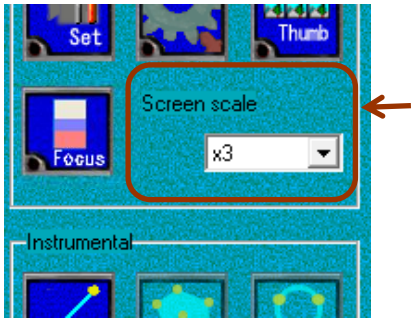
To zooming in or out the image on the imaging screen, scroll the mouse wheel at the position where you want to zoom in/out.

Scroll the mouse wheel down to zoom out or up to zoom in.

Or, you may change the screen display magnification with the pull-down menu shown in the figure on the right.



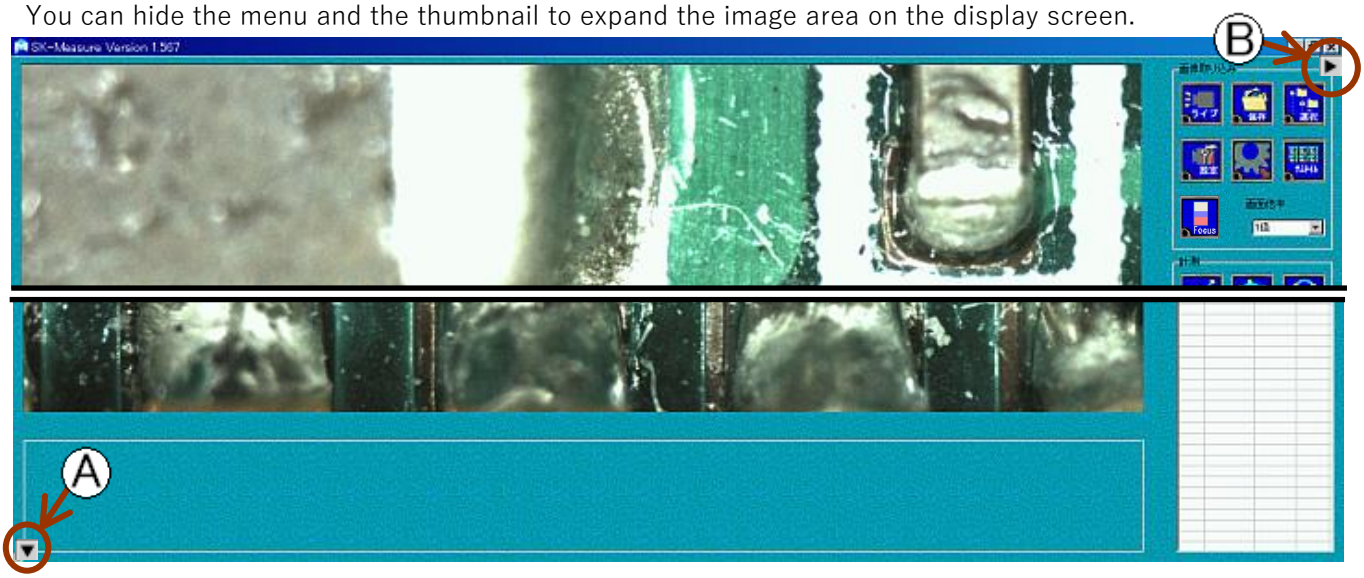




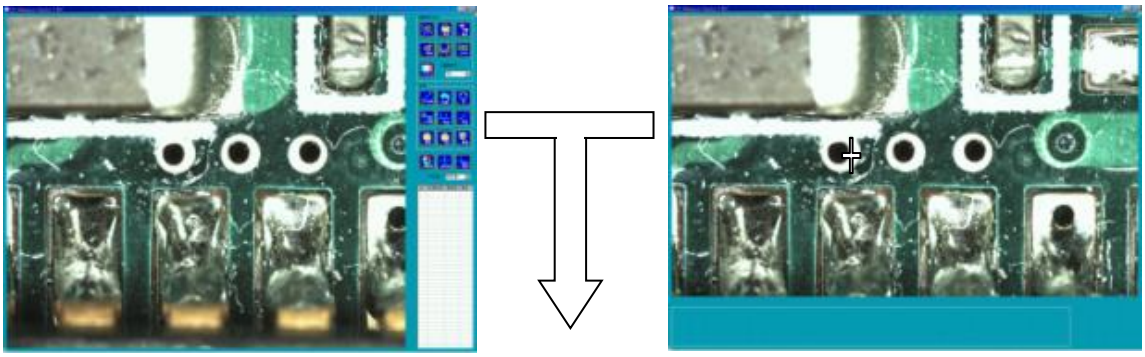
The image is zoomed in/out centring around the position of the mouse pointer(digital precessing).

3. Switching the display screen

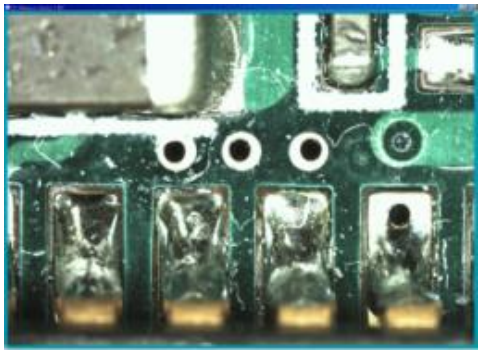
You can hide the menu and the thumbnail to expand the image area on the display screen.



The thumbnail is hidden when Ⓐ is clicked. The load image buttons are hidden when Ⓑ is clicked.

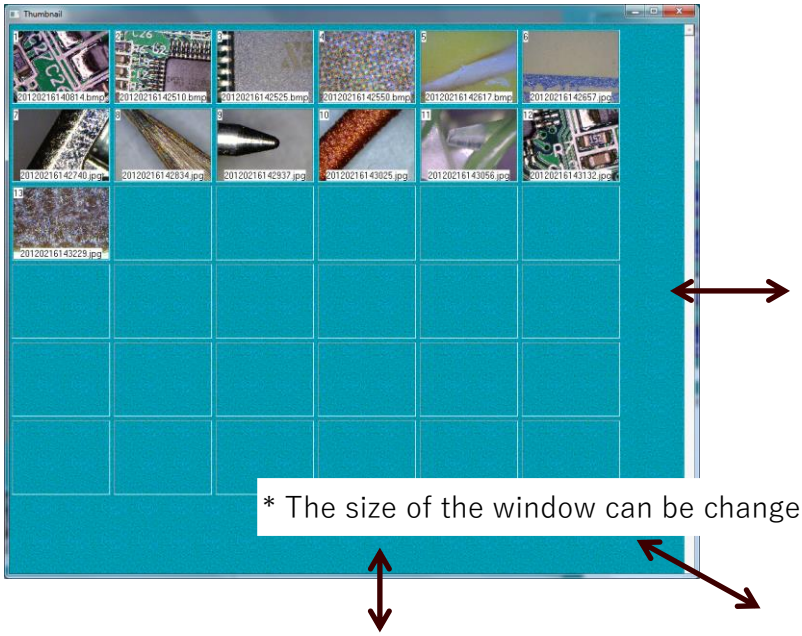


full-screen display when Ⓐ+Ⓑ are clickeded.

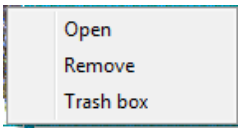


4. Displaying the thumbnail

You can display the separate thumbnail window.



When you right click on an image of the thumbnail,



this window will be displayed.

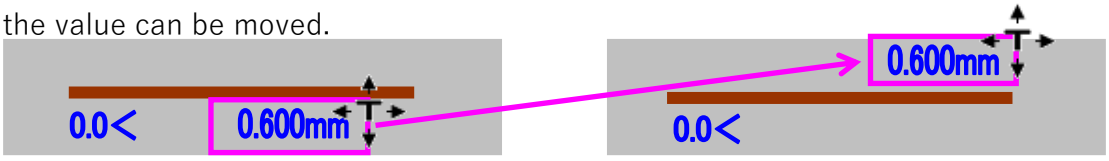
[open] The saved data is displayed, the [Live] button is changed to the [still] button and the image of the thumbnail are displayed.
To return to the original state, press the [still] button to change it to [Live].

[Remove] The saved data itself is completely releted when it is specified and does not remain in the Recycle Bin.

[Trash] The data is moved to the Recycle Bin when it is specified.

1. Moving the measurement value

The pointer is changed to when the cursor is moved close it a measurement value.
When the measurement value is dragged in that state with the right button of the mouse, the value can be moved.



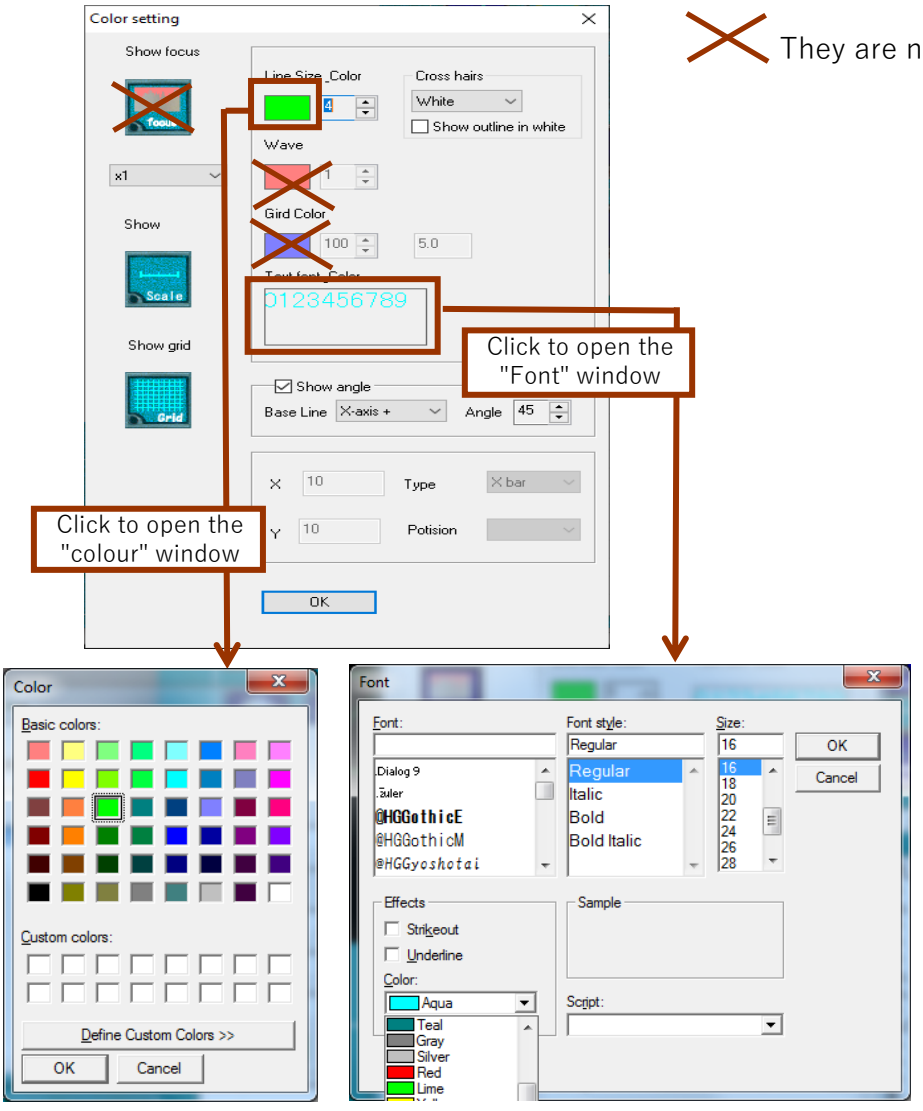
Drag with the right button of the mouse

2. Setting the colours

You can set the colour of the measurement line or glid, or the font of the text of the measurement result.

Press button.

The following window is displayed and you can set the colour of the measurement line.
Also, you can set the colour and font of the text of the measurement result.



They are not available in SK-Viewer.

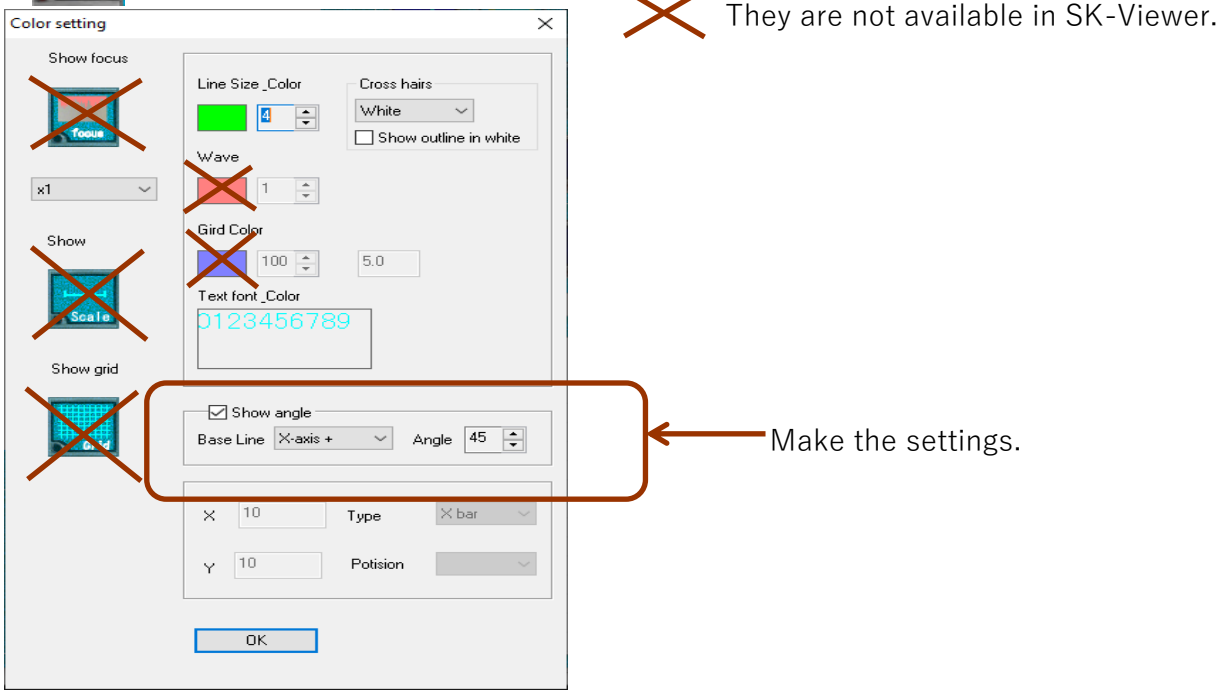
3. Displaying/hiding the angle

You can set to display/hide the angle that is displayed for the distance between two points.

You can also set the reference axis of the angle.

Press

button. The following window is displayed.



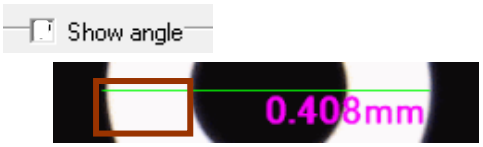
They are not available in SK-Viewer.

Make the settings.

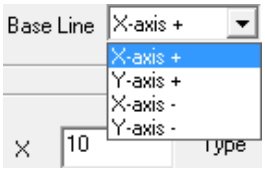
◆You can select to display/hide the angle.

-When checked, the angle is displayed.

-When unchecked, the angle is not displayed.

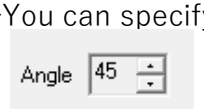


◆You can select the reference axis and direction of the angle.



- X–axis+ The angle is measured in the anticlockwise direction from the three o'clock position.
- Y–axis + The angle is measured in the anticlockwise direction from the twelve o'clock position.
- Y–axis + The angle is measured in the anticlockwise direction from the nine o'clock position.
- Y–axis + The angle is measured in the anticlockwise direction from the six o'clock position.

◆You can specify the angle of the line.



Drag while pressing [shift] key to draw a line at the specified angle from the reference axis you selected above.

4. Displaying the cross line

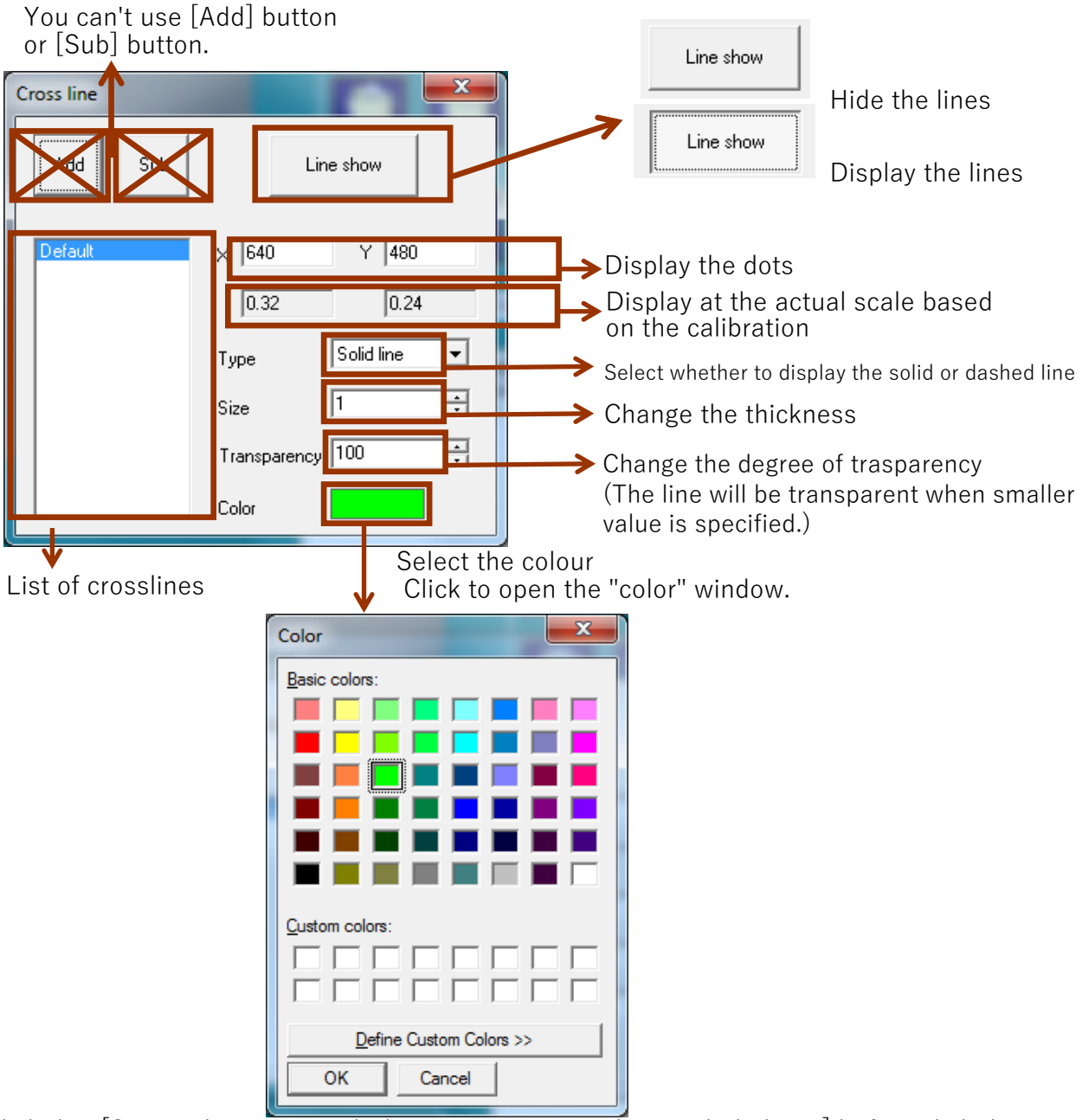
Select the display or hide the cross line on the screen.
Each coordinate is shown as a dot.
(The actual scale is shown underneath the dot coordinate.)

★You can specify the position, line type, thickness, degree of transparency and colour.

The default point is X=640 Y=480.

The cross line can be moved by right click.

You can't use [Add] button
or [Sub] button.



★Click the [Saving the image with the measurement values included in it],before click the [save] button, displayed cross line is also saved.

★For [Saving the image with the measurement values included in it, see P17

* The cross line is not displayed? Possible causes are:
- Setting of the screen magnification
  When the screen magnification is "x1" or larger, the cross line may be outside the area of the screen.
  In that case, change the screen display mode to "full-screen".
- Output size of the camera is not appropriate
  Change the output size. See "Camera settings(other handling instructions)" for the detailed procedure.
  * The output size varies by the camera.

1. 2D measurement result list

The measurement data is displayed in 2 dimentions when the measurement is performed.

Example of 2D measurement result list

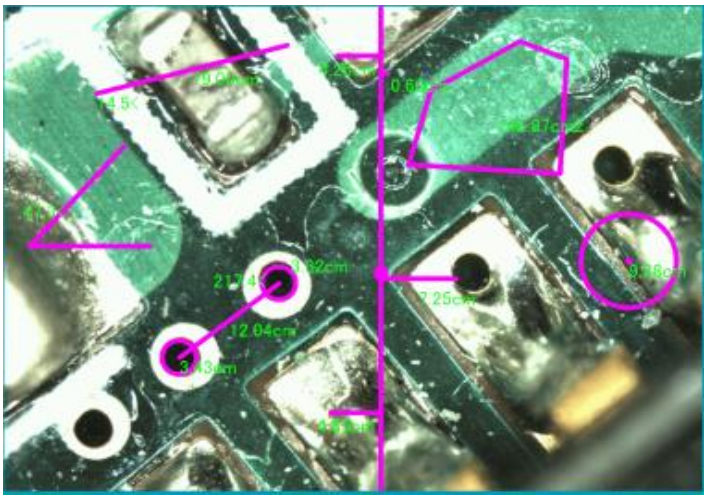
No.	Type	Result	Unit
0	Length	0.054	mm
1	Angle	297.0	deg...
2	Angle	109.0	deg...
3	Angle	100.7	deg...
4	Circle di...	0.022	mm
5	Circle di...	0.036	mm
6	Circle di...	0.031	mm
7	Circle di...	0.028	mm
8	Circle di...	0.118	mm
9	Angle	295.1	deg...
10	Length	0.024	mm
11	Length	0.021	mm
12	Length	0.099	mm
13	Angle	294.9	deg...

The example is SK-Measure.
SK-Viewer offers only distance/angle of measurement function

2. Deleting measurement values

Delete the measurement data.

The procedure for deletion is explained using the following image.



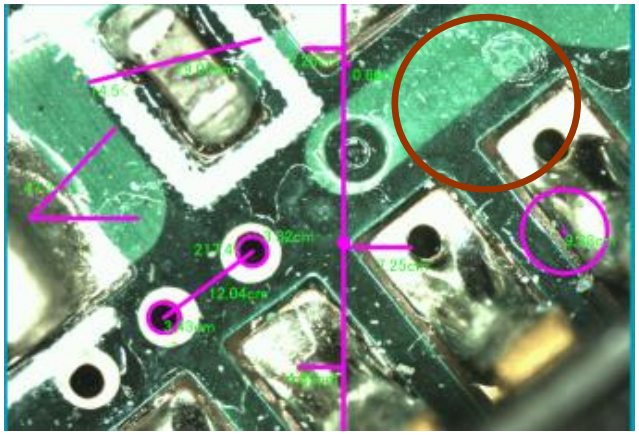
* SK-Viewer offers only distance/angle of measurement function.
The example photo is SK-Measure.

◆Deleting only one measurement data

No.	Type	Result	Unit
0	Length	0.054	mm
1	Angle	297.0	deg...
2	Angle	109.0	deg...
3	Angle	100.7	deg...
4	Circle di...	0.022	mm
5	Circle di...	0.036	mm
6	Circle di...	0.031	mm
7	Circle di...	0.028	mm
8	Circle di...	0.118	mm
9	Angle	295.1	deg...
10	Length	0.024	mm
11	Length	0.021	mm
12	Length	0.099	mm
13	Angle	294.9	deg...

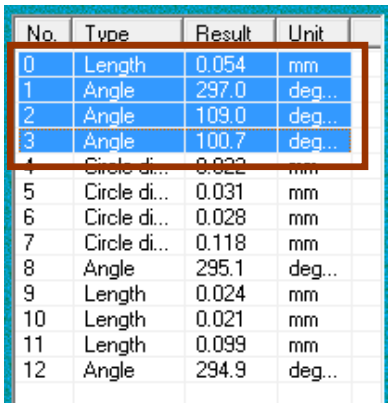
Click on the data to be deleted.
(The colour will be reserved)

Click on



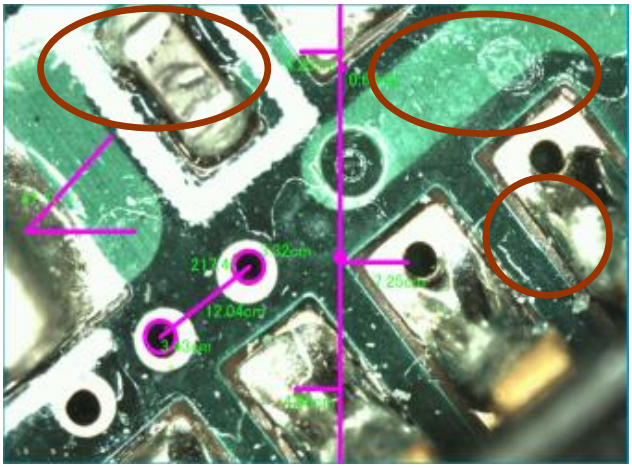
The data in the circle deleted.

◆Deleting consecutive lines



No.	Type	Result	Unit
0	Length	0.054	mm
1	Angle	297.0	deg...
2	Angle	109.0	deg...
3	Angle	100.7	deg...
4	Circle di...	0.032	mm
5	Circle di...	0.031	mm
6	Circle di...	0.028	mm
7	Circle di...	0.118	mm
8	Angle	295.1	deg...
9	Length	0.024	mm
10	Length	0.021	mm
11	Length	0.099	mm
12	Angle	294.9	deg...

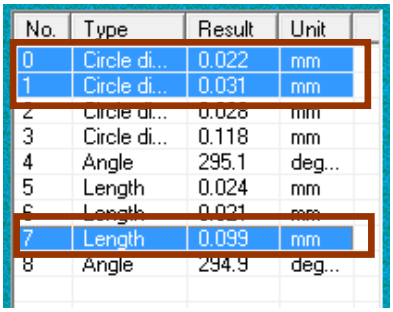
Click on



Click on the first live of the data to be deleted collectively, and then click on the last line of the data to be deleted with the [shift] key pressed down.(it is useful when deleting the measurement data on the consective lines)

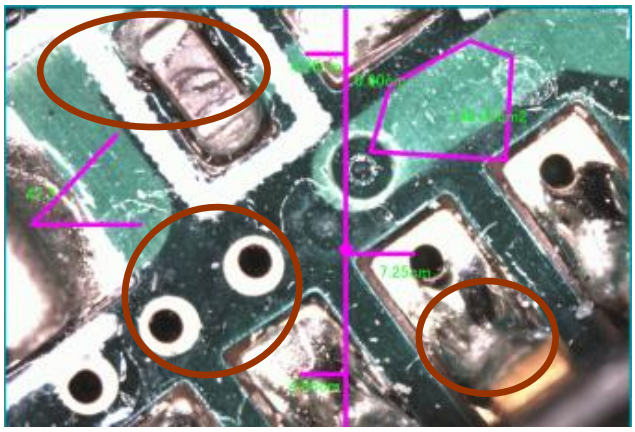
The data in the circles is deleted.

◆Deleting multiple lines



No.	Type	Result	Unit
0	Circle di...	0.022	mm
1	Circle di...	0.031	mm
2	Circle di...	0.028	mm
3	Circle di...	0.118	mm
4	Angle	295.1	deg...
5	Length	0.024	mm
6	Length	0.021	mm
7	Length	0.099	mm
8	Angle	294.9	deg...

Click on



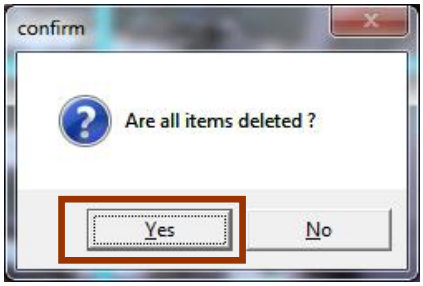
Select multiple lines with the data to be deleted with the [Ctrl] key pressed down.

The data in the circles is deleted.

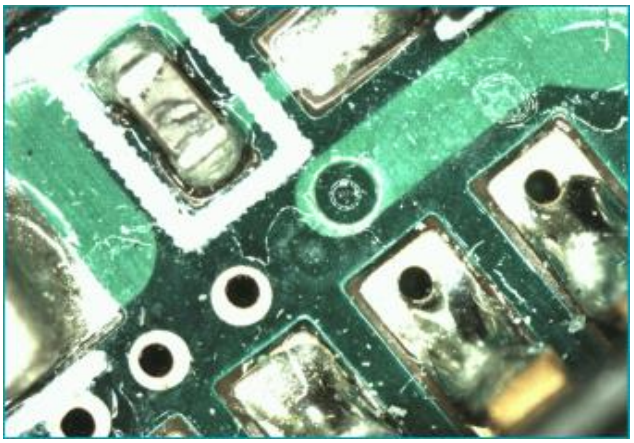
◆Deleting all data

when

button is pressed without selecting the measurement data, the following wiondow is displayed. Click on [Yes] to delete all the measurement data on the screen.



Click on [Yes]

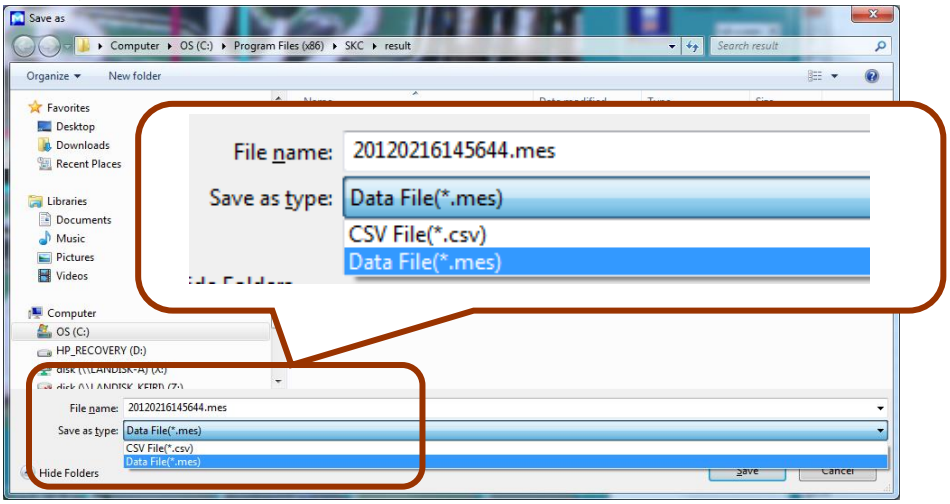


All the data is deleted.

3. Saving the data of measurement values [Extension: mes]

The data of the measurement values can be saved and retrieved later using SK-viewer.
The extension is "mes".
* Can be retrieved later using also SK-Measure.

There are two different [Save] buttons.
To save only the data of the measurement values, use "Save" in

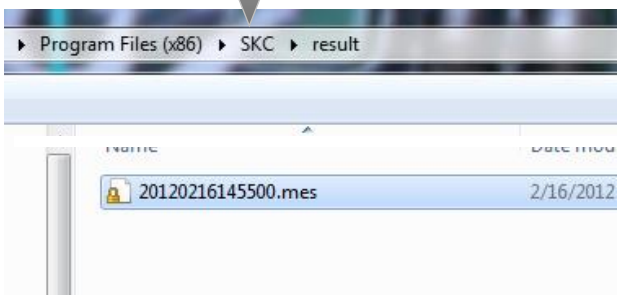


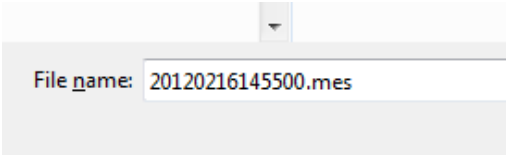
Select "mes" for Save as type. You may change file name to any desired name.

★To save the data in csv format, see P30

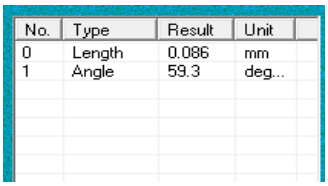
4. Reading the data of the measurement value [Extension: mes]

The date saved with [Extension: mes] canbe read. * The measurement value is determined by the current calibration value.





Select the target file and open it. When the file is opened, the measurement result is shown on the display.



No.	Type	Result	Unit
0	Length	0.086	mm
1	Angle	59.3	deg...

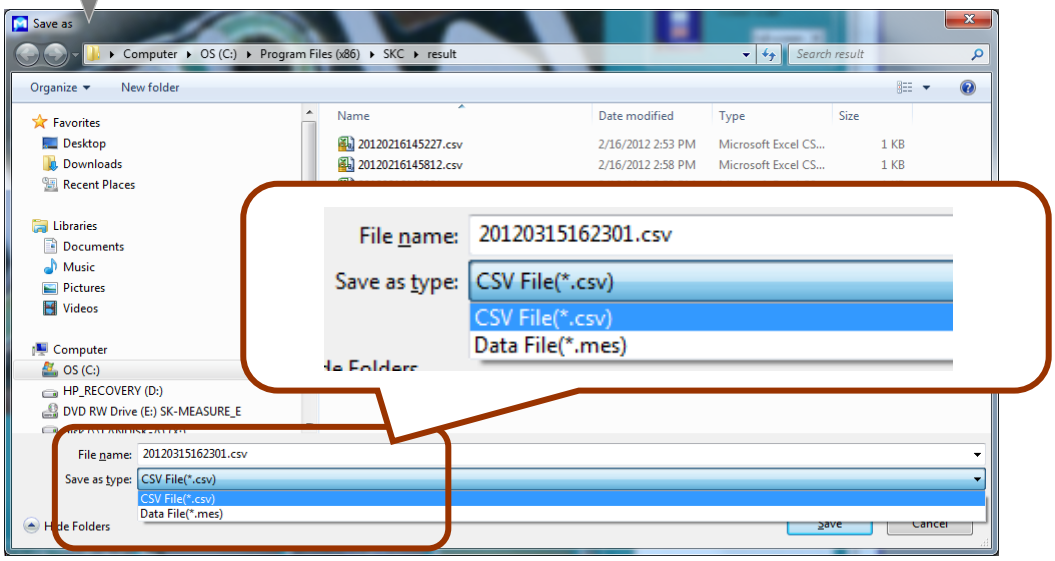
Note

Before you read a measurement value, the calibration value has to be the same as it was saved, and measurement has to be ended.
If you read the measurement value when you are measuring, the data on screen will vanish.
If the calibration value is different, the measurement value is not right.
Only the measurement value is read, the image is not read.
Read the image and measurement value and click the 2D measurement result list, you can edit the measurement value again.

5. Saving the data of measurement values [csv format]

The data of the measurement values is saved in the csv format.

There are two different Save buttons.
To save only the data of the measurement values, use "Save" in "Instrumental"



Select "csv" for Save as type. You may change File name to any disired name.

Example of the saved data

	A	B	C	D
1	No.	Type	Result	Unit
2	0	Length	0.086	mm
3	1	Angle	59.3	degree
4	2	Angle	99.6	degree
5				

Displayed in the csv data

★To save the data in the mes format(so that data can be read with the measurement software SK-Viewer), see P28

SAITOH KOUGAKU CO.,Ltd.
1/F Yamada Bldg., 250 Shimokurata-cho, Totsuka-ku,
Yokohama-shi, Kanagawa 244-0815 JAPAN
TEL：045-871-7767　FAX045-871-7742
https://saitohk.com/
E-Mail：sales@saitohk.jp