

Operation Manual

Measurement Software (ScmMeasure.exe)



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Measurement Software (ScmMeasure.exe)

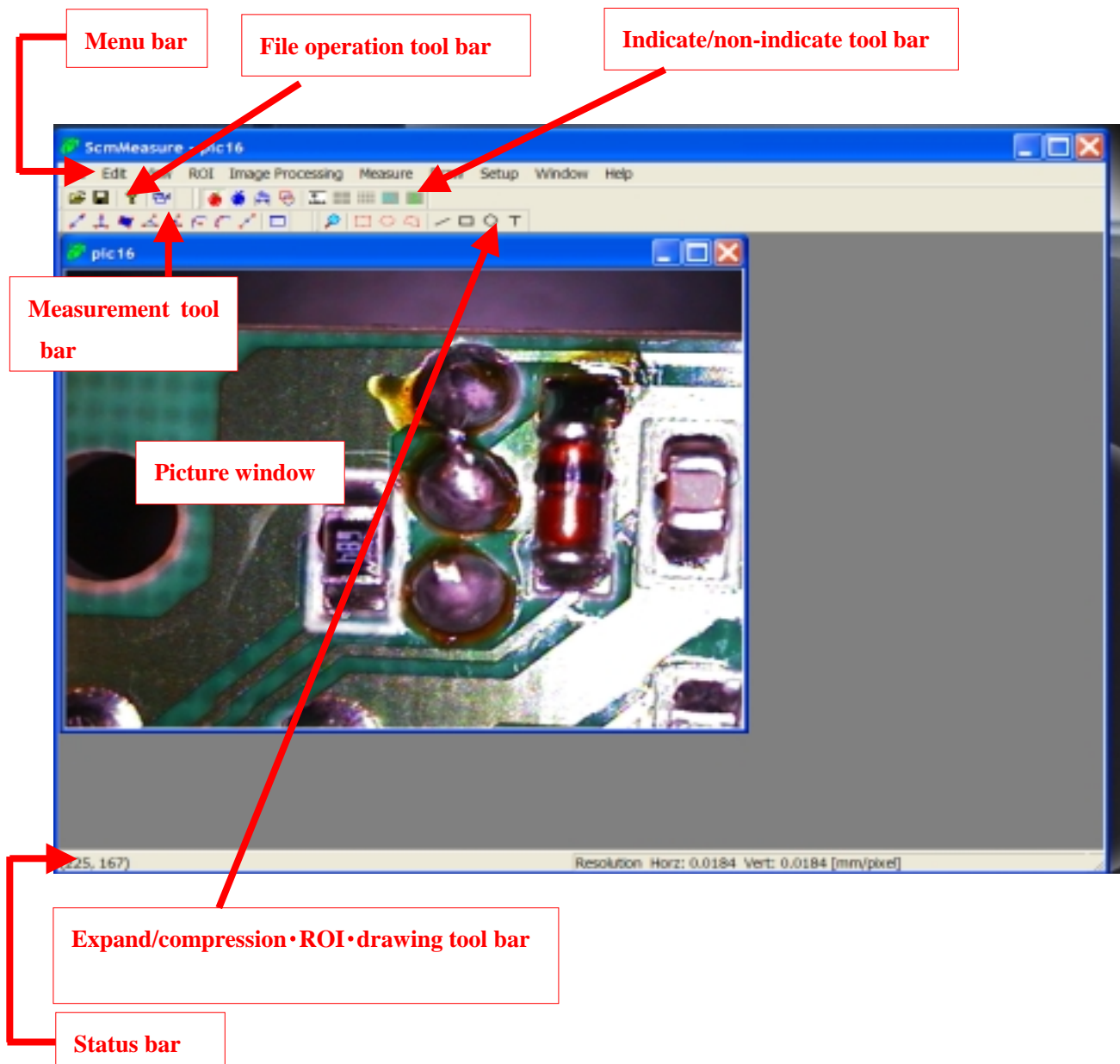
It is possible to measure distance and angle with this software.

The measurement is simply possible by only just clicking the measurement point on the screen.

1 Explanation of Screen

1-1 Name and Functions of Window

Explain name and function of window.







Name	Function • Explanation
Menu Bar	There are functions for file operation, editing, indication, Measurement and you can achieve by selecting the function
File Operation Tool Bar	Put into icons used frequently by file operation
Indication/Non Indication Tool Bar	Can indicate or don ' t indicate necessary data by pushing icons such as original picture, image processing and Measurement.
Measurement Tool Bar	Can easily measure by pushing icons.
Expansion/Compression • ROI Tool Bar	Icons for expansion, reduction, ROI*setting, Drawing icon *) Refer to 2-2-3 image processing and ROI setting.
Status Bar	Indicate programming status, monitor resolution and messages for users
Picture Window	Indicate original picture, measurement result.

1-2 Name and Functions of Icons









Explain name and functions of icons.


•File Operation Tool Bar

Icon	Name	Function	Short cut key
	File open	Can open Bitmap and JPEG format files	Ctrl+O
	Overwrite save	Overwrite save files	Ctrl+S
	Version information	Indicate version information	
	Window Change	Switch window	










Note: May not open in case of big size picture.

•Indication/Non Indication Tool Bar









Icon	Name	Function	Short cut key
	Original Picture	Indicate original picture	
	Image Processing	Indicate result of image processing	
	Measurement	Indicate result of measurement	
	Drawing	Indicate drawing	
	Scale	Indicate scale	Ctrl+L
	Center Line	Indicate center line	Ctrl+C
	Grid line	Indicate grid line	Ctrl+G
	Horizontal Luminance	Indicate Horizontal Luminance	Ctrl+H

	Vertical Luminance	Indicate Vertical Luminance	Ctrl+V
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•Measurement Tool Bar

Icon	Name	Function
	2 points Distance	Measure distance between 2 points
	Vertical Distance	Measure distance between 2 vertical points
	Area	Calculate drawn polygon
	Angle	Calculate drawn angle
	2 Point Angle	Calculate angle between 2 lines
	2 Point Radius	Calculate angle between 2 points
	3 Points Radius	Calculate angle between 3 points
	Center Point	Calculate center point between 2 points
	Measurement Result	Indicate measurement result

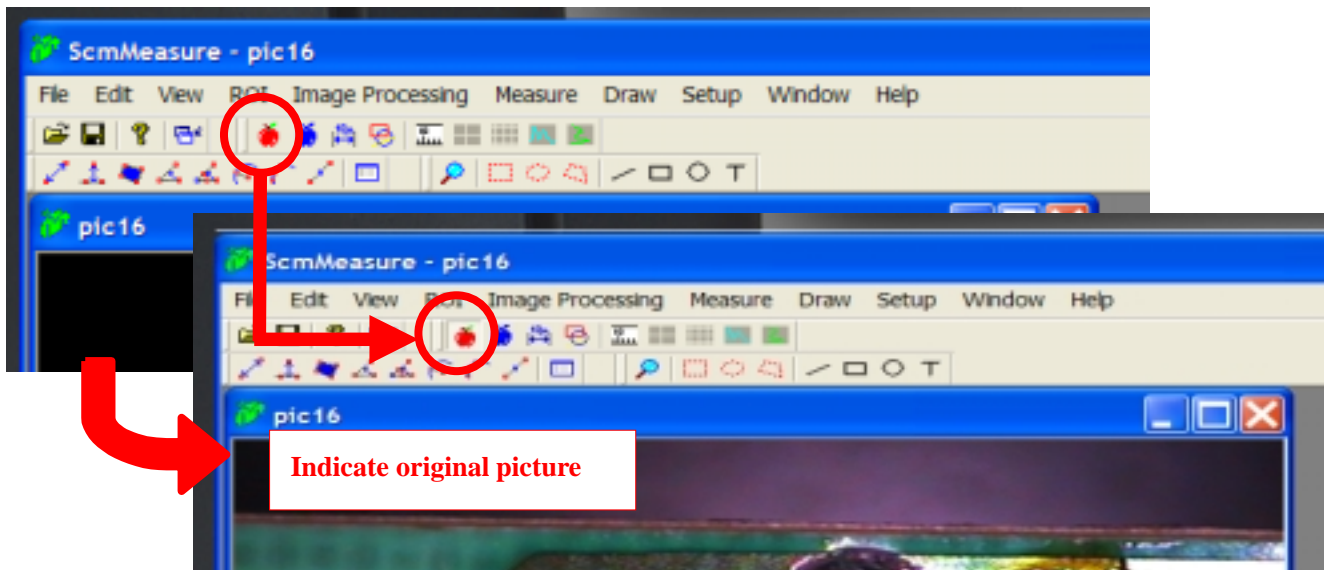
•Expansion/Compression•ROI•Drawing Tool Bar

Icon	Name	Function	Short Cut Key
	Expansion/Compression	Expand with left click, Compress with right click	
			Compress Ctrl+↓
	ROI Rectangular	Designate ROI with rectangular	
	ROI ellipse	Designate ROI with ellipse	
	ROI polygon	Designate ROI with polygon	
	Linear Line	Draw linear line	
	Rectangular	Draw rectangular	
	Circle	Draw circle	
	Text	Draw character	

Note) May not be indicated for picture expansion with windows98•Me

1-3 Indicator Switch

Can switch indication/non indication by clicking icons on Indicator/Non Indicator Tool Bar



Example: Can achieve switch indication/non indication for original picture by clicking original picture button.

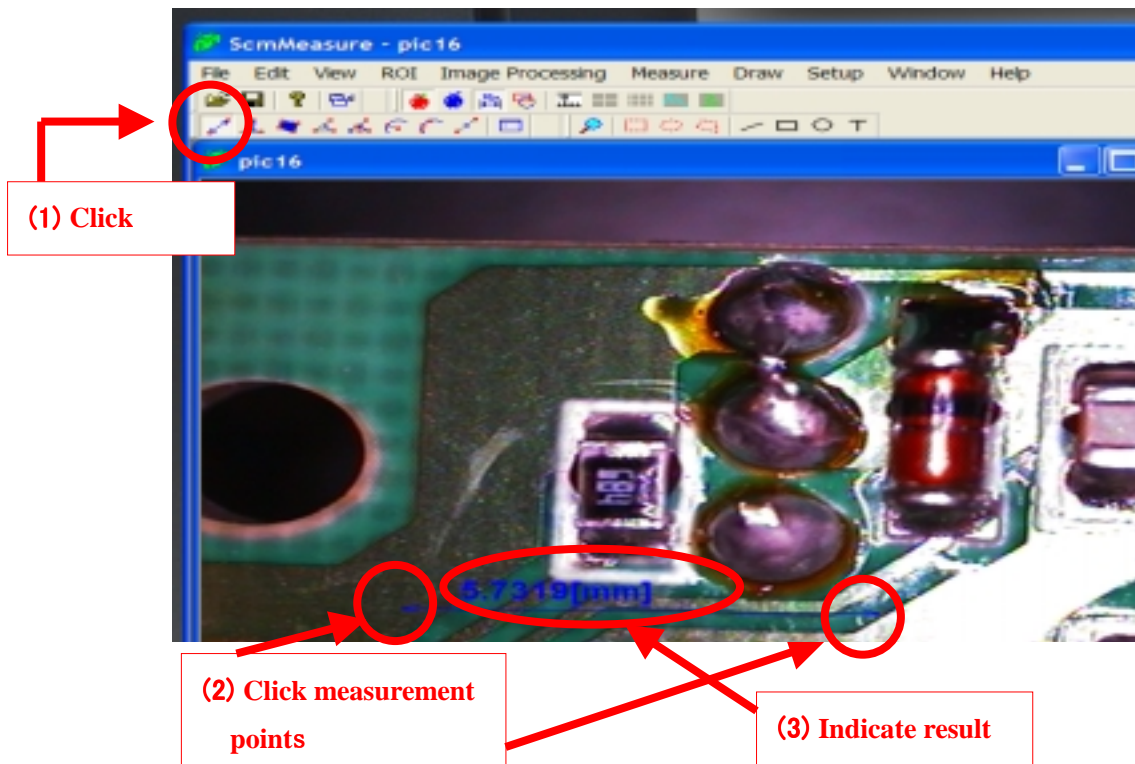
2 Measurement and Image Processing

2-1 Measurement

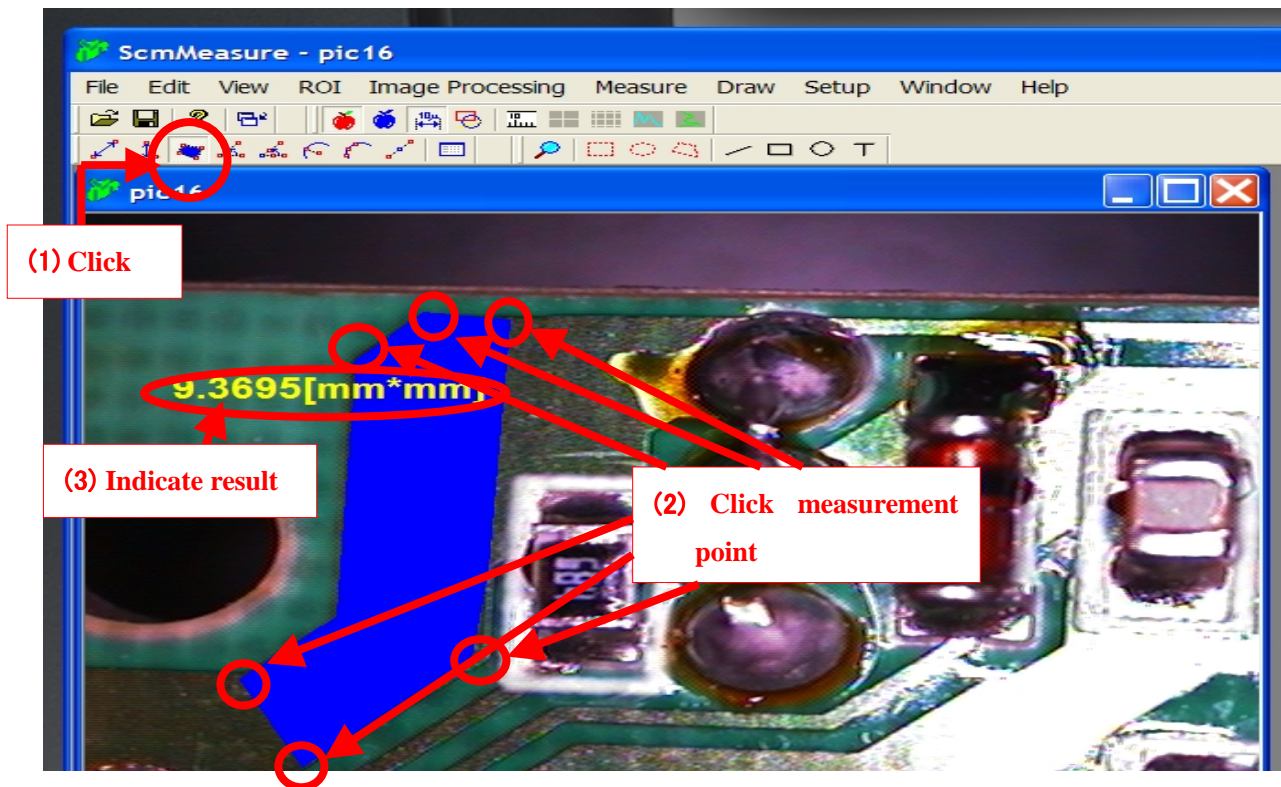
Select icons for measured items from measurement tool bar(or menu).

Click measurement object on screen.

Example: Distance measurement between two points.



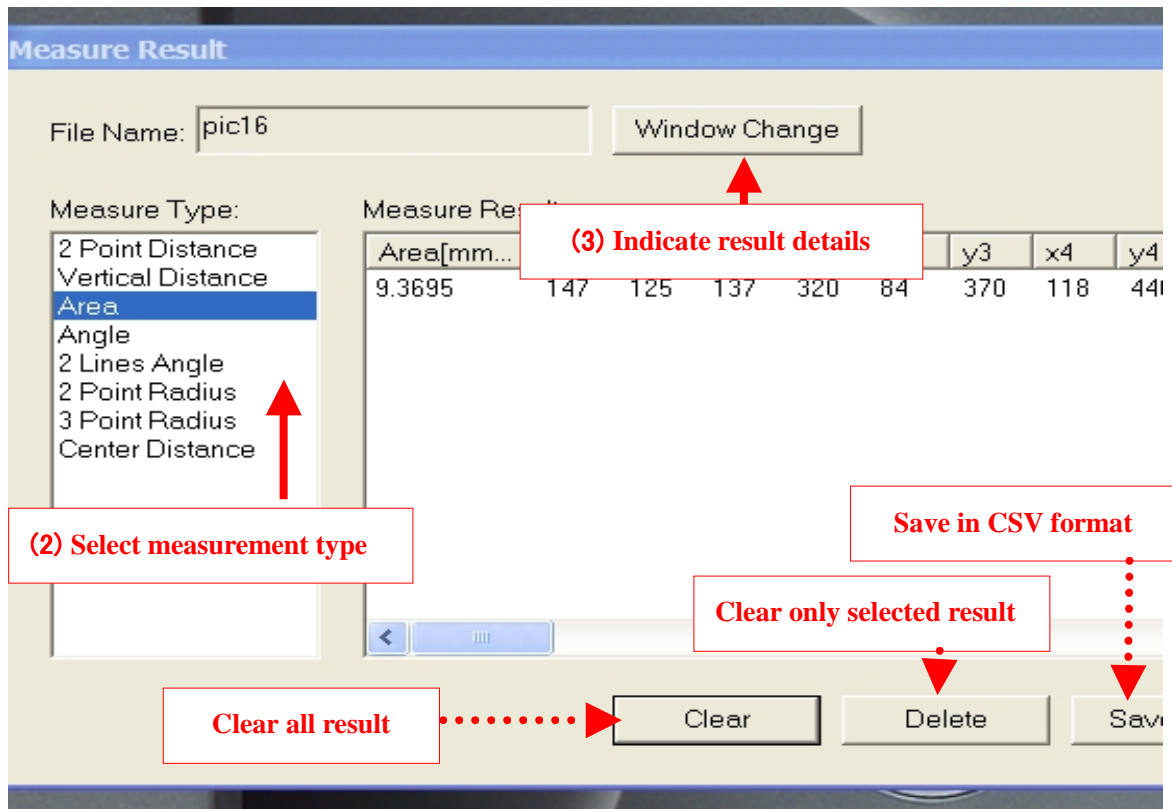
Example) Area measurement



2-2 Measurement Result

It is possible to see details of measured results, overlapped character of measured data, delete only any data and save data by indicating measurement result window.





2-3 Image Processing and ROI Setting

Four types of picture processing for quantization, gravity detection, center detection and gray indication are prepared.

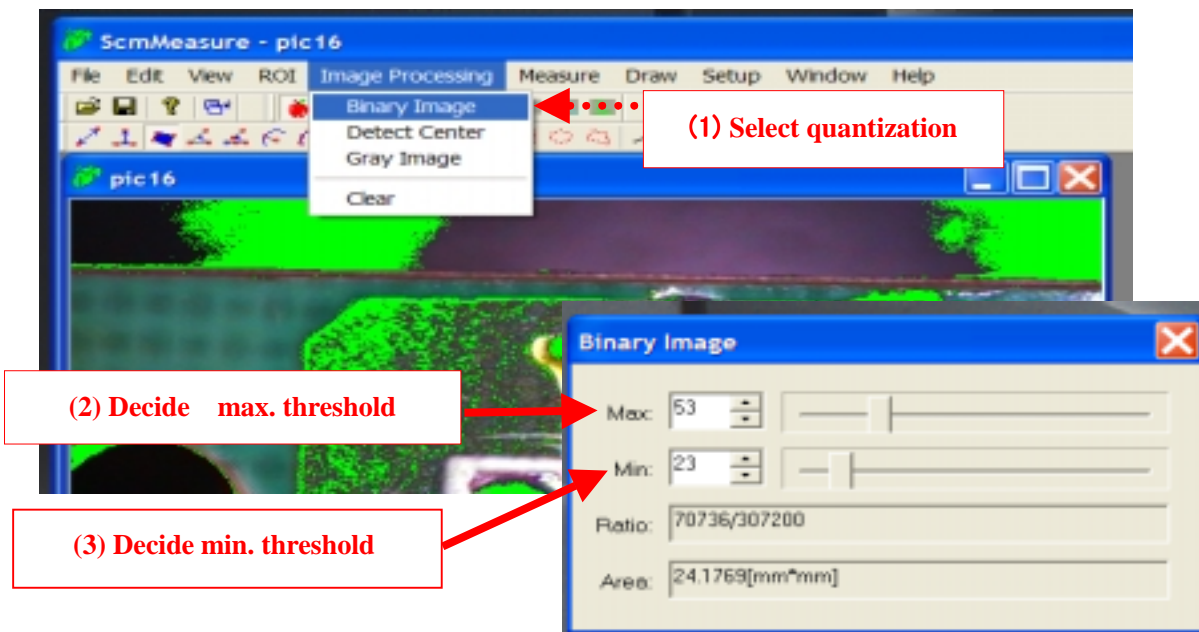
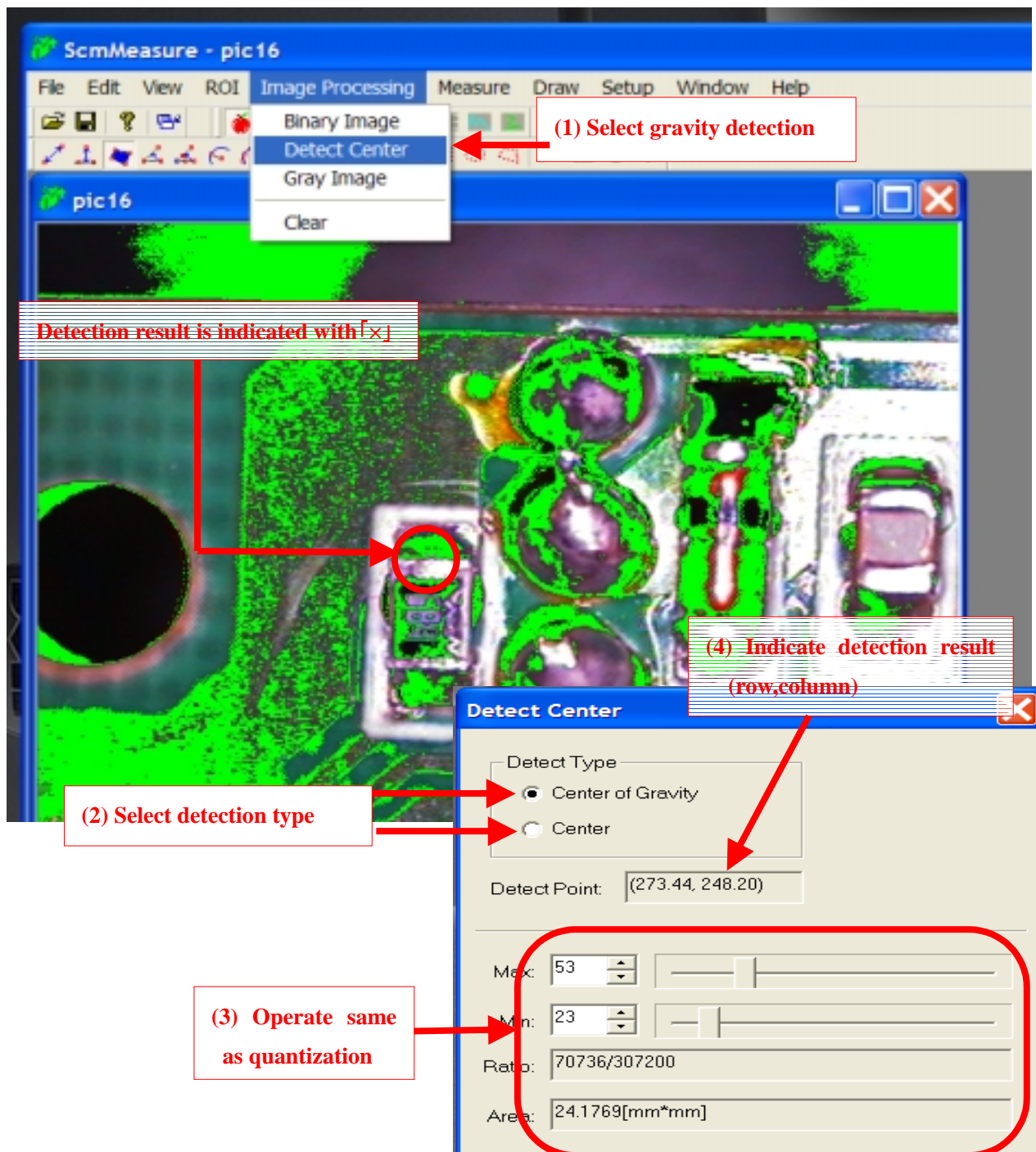


Image Processing

Quantization Process....Divide into two areas of pictures by two types of threshold.

- Gravity Detection....Decide the center of area according to luminance
- Center Detection....Decide the center of area.



•Gray Indication

Translate RGB pictures into black and white gray (8 bit half-tone)

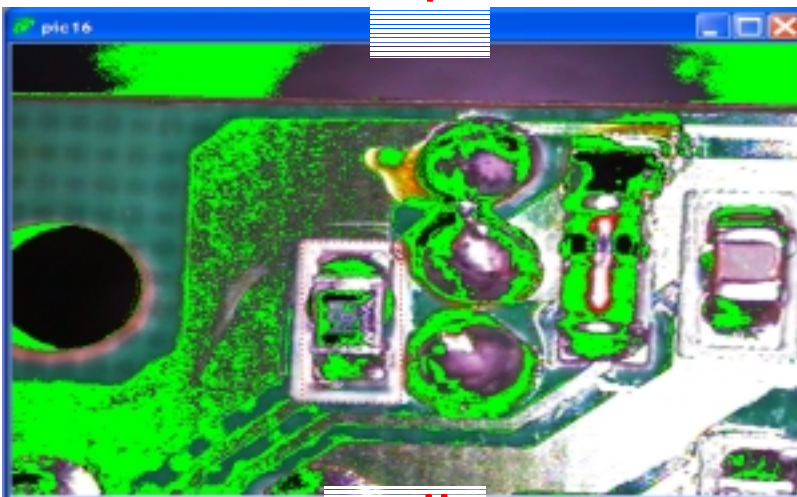
ROI Setting

ROI setting (=Region Of Interest)setting is to select analyze area to specific area for detection and analyze..



(1) Quantization

+



(2) ROI Setting

=



(3) Analysis result

It was achieved to select analysis area in this way.

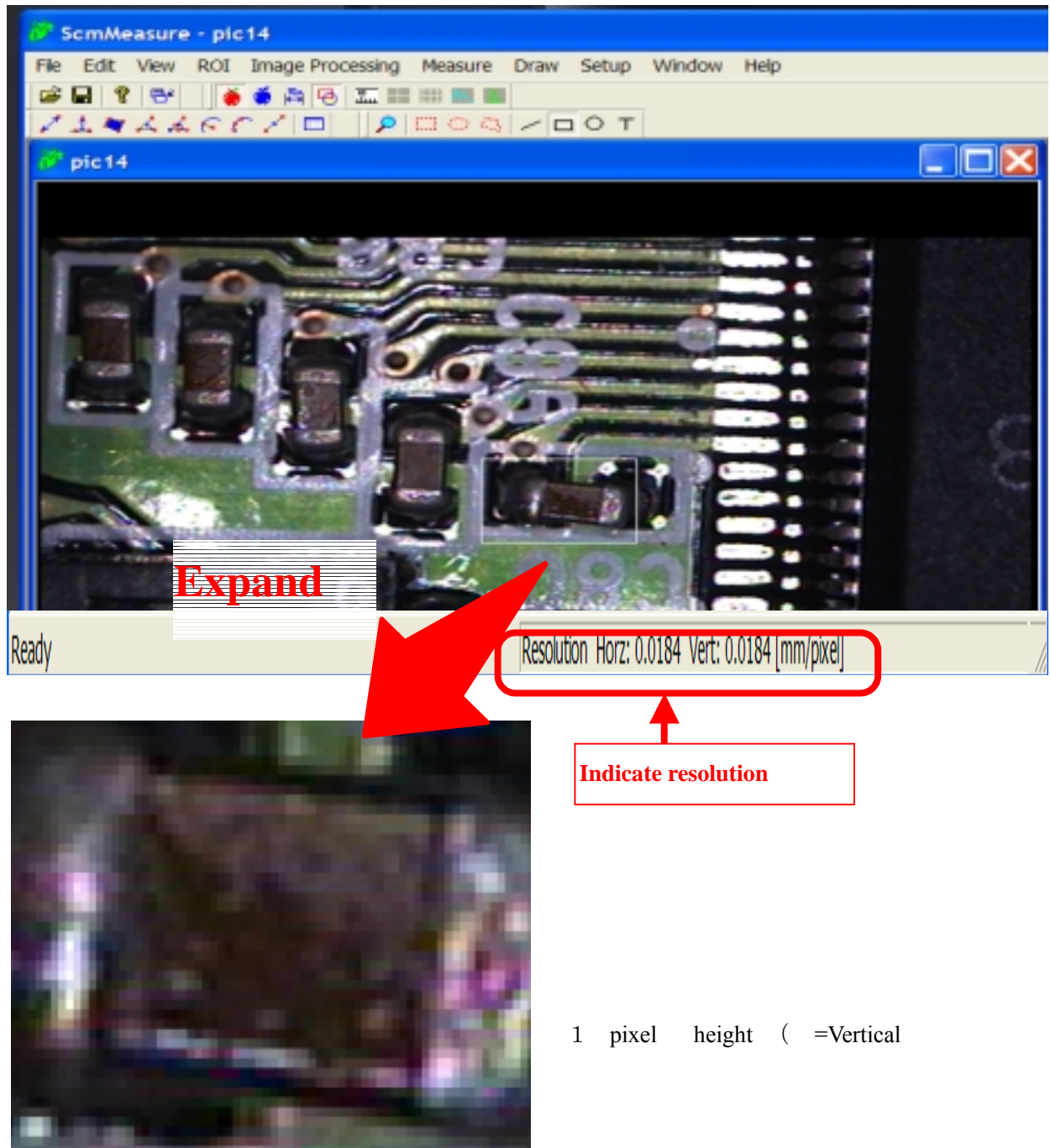
3 Image Correction

3-1 Resolution

Resolution means length of one picture pixel length. It is shown on right bottom area on the main window.

The resolution is automatically calculated by scale file in case of scale is prepared.

* Scale file...File to set resolution prepared from viewer Software (ScmViewer.exe)



1 pixel height (=Vertical

1pixel width(=Horizontal resolution)

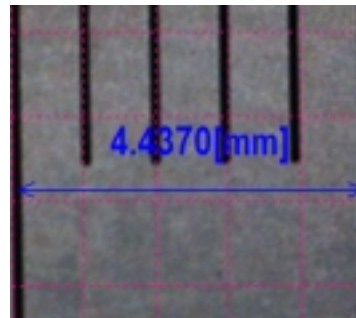
3-2 CorrectionMethod

Resolution changes with CCD size and lens magnify ratio. Therefore, it is necessary to re-set resolution each time to change them. There are following two ways to set(correct) resolution.

1. To correct on screen
2. To correct by direct input

1. To correct on screen

In case of correcting on screen, reference plate picture for correction (which scale can be identified) is necessary (Refer to the following example of picture). Actual length is allocated by measuring distance of two points on the reference plate picture.



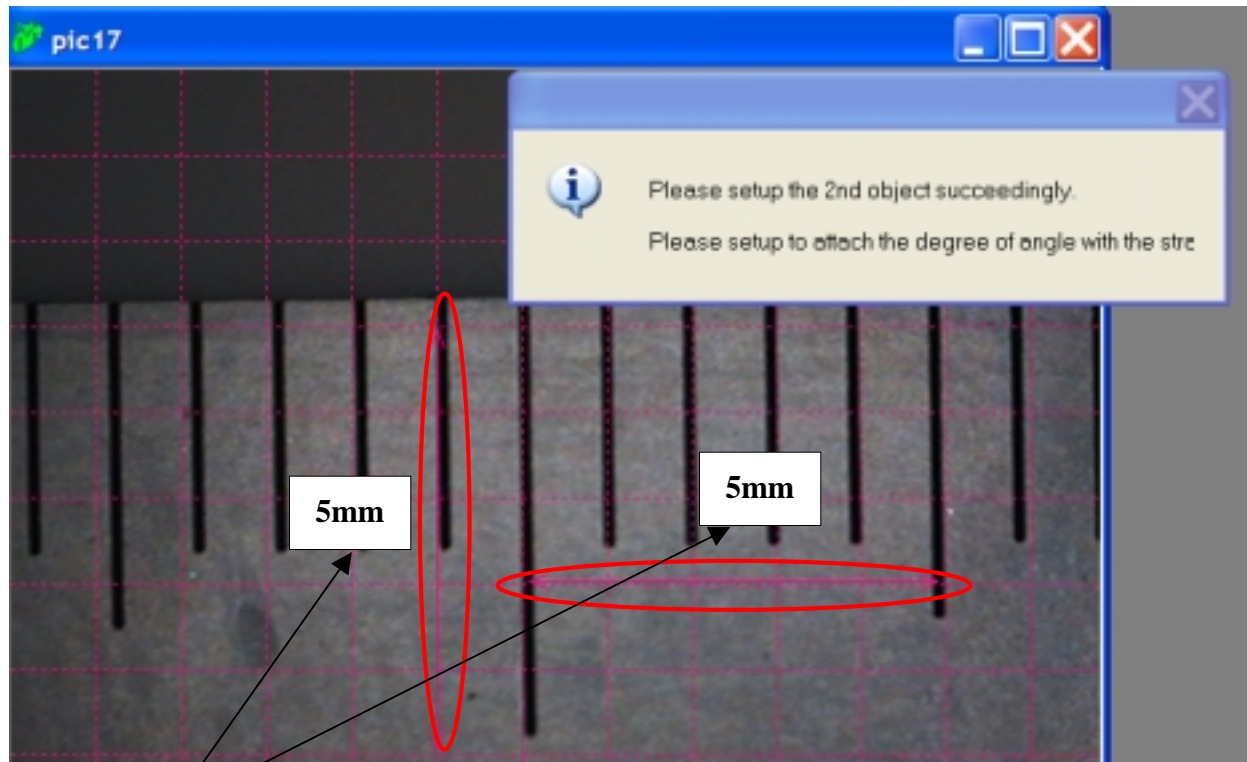
Example of reference plate picture (picture of scale)

The screenshot shows the ScmMeasure software interface with the 'Setup' menu open. The 'Calibration Setup' option is selected. A red box highlights the 'Calibration Setup' dialog box, which contains the following fields and controls:

- Picture File Name: pic17
- Setup File Name: ic17.inf
- Mag File Name: ic17.mag
- Resolution: Horz: 0.0209, Vert: 0.508 [mm/pixel]
- Select Unit: ☐ pixel, ☒ mm, ☐ um, ☐ inch
- Buttons: Calibration, OK, Cancel, Save Data, Load Data, Window Change, Load Mag File, Edit

Red arrows and text boxes indicate the following steps:

- (1) Open reference
- (2) Select picture correction setting
- (3) Scale File
- (4) Select unit
- (5) Depress calibration button



Actual
length

(6) Draw two reference lines for the allocating length. Draw first line. Then draw second line vertically to the first line.

Input Distance

Please input measurement distance

1st: [mm]

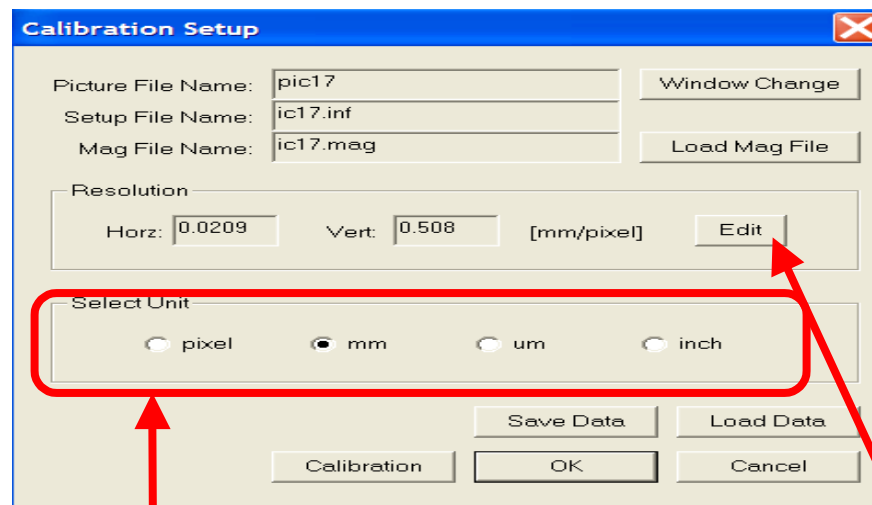
2nd: [mm]

(7) Input actual line between first and second lines.

(8) Finally, depress the adoption button

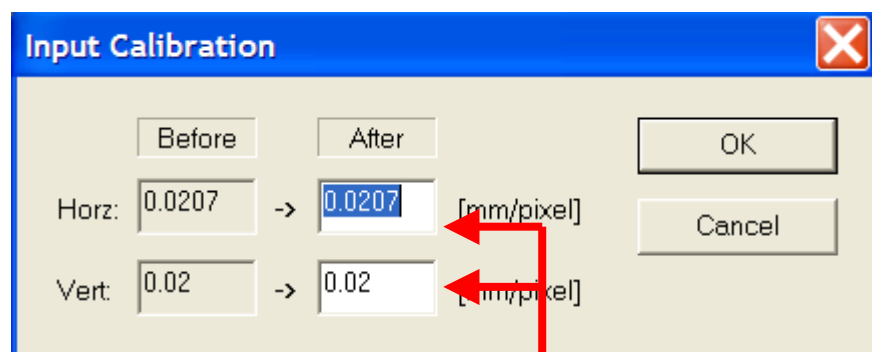
2. Method to correct by directly input

In case of length per pixel known. Select picture correction setting as noted in “1. Correct on monitor”



(1) Select unit

(2) Depress edit button



(3) Input correct value

(4) Press adopt button

Trouble shooting

The solution when error happens during software used and software is becomes abnormal is shown.

Trouble shooting 1

Can't open picture file. Or, suddenly monitor became to black when picture is expanded. In case when windows98,Me,NT, indication may become impossible if picture size is too big due to windows system. Therefore, indicate smaller picture size or part of picture.