

# **Real Map Function**

## **User's guide**



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# Preface

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The Real Map function is an optional feature to assist an enhancement of using the Takaya Fixtureless tester APT-9411CE/CJ. With the Real Map function the users can load the graphic image into the system so that they can input and correct the X,Y coordinates to where the probes are supposed to contact, without having to use the real PCB. In addition, the Real Map function will make it quite easy to analyze where failure is, by displaying the X,Y coordinates of the components judged as Fail under test on the the graphic image.

Please read this manual thoroughly before using the Real Map function. Then keep this manual handy for answers to any questions you may have.

If you have any questions or thoughts you would like to share with us – we would like to hear from you.

(NOTE)

The design of the product and software are under constant review and while every effort is made to keep this manual up to date, we reserve the rights to change specifications and equipment at any time without prior notice.

We assume no responsibility whatsoever for any damages resulting from the use of this software.

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# Signage

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## Operation keys and SW

- (1) All operation keys on the keyboard are begirt by [ ] mark such like [ **Enter** ] key, [ **SP** ] key.
- (2) All SWs on the operation panel are also displayed like [ **TEST START** ] .
- (3) If some plural keys need to be depressed in order, they are combined with “ > “.   
For example, in case of [ **A** ] > [ **3** ] key, first depress [ **A** ] key then [ **3** ] key.
- (4) If some plural keys need to be depressed at a time, they are combined with “ + “.   
For example, in case of [ **Ctrl** ] + [ **Y** ] key, depress [ **Ctrl** ] key and [ **Y** ] key at a time.

## Safety symbols

Symbol	Explanation
	Calls attention to a procedure, practice, or condition that could possibly damage to the product.
	Calls attention to general instruction. Failing to follow this could loss of data stored on disks, cause possibly misjudge the unit under test, or damage to the product.
	Calls attention to “One-point advice” which should be useful when you are at a loss to operate the products.

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# General

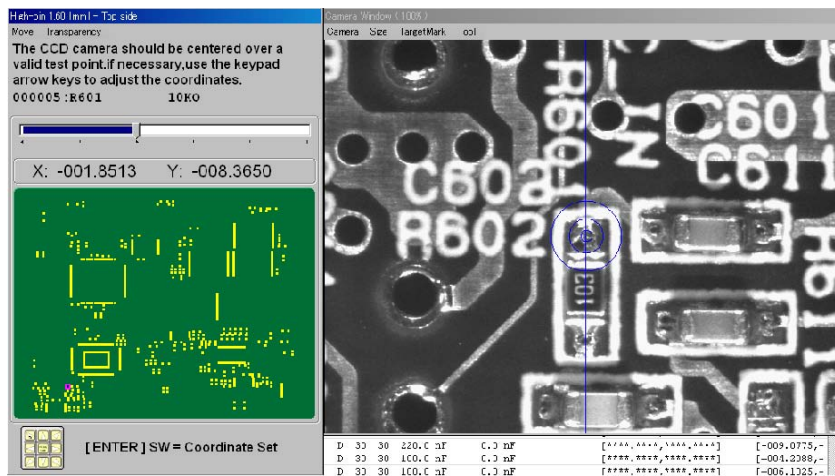
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This chapter gives an outline of the Real Map function.

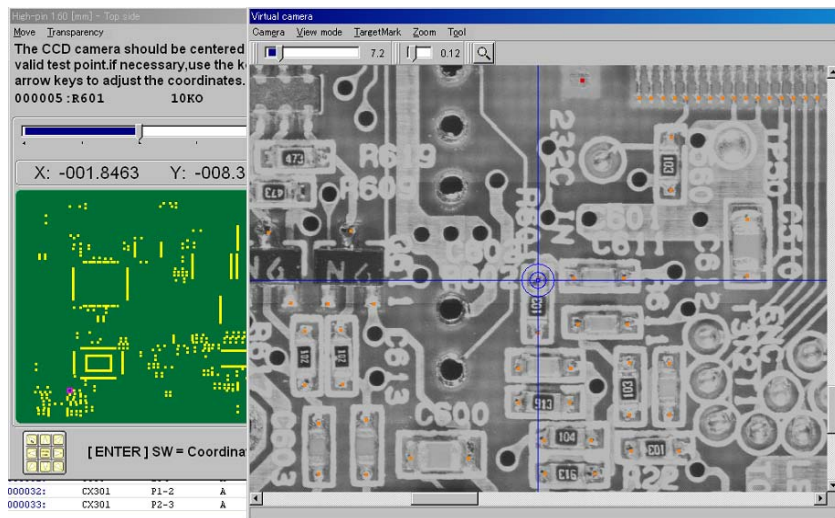
The Real Map function enables the users to input / correct the X,Y coordinates to where the probes are supposed to contact on the graphic image, without having to use the real PCB.

[ Menu 1 ] is a sample of the camera window and [ Menu 2 ] is the Real Map screen where reflects the same location. When the test failed, the X,Y coordinates of the components judged as Fail on the the graphic image, so you can easily figure out where failure is (=In Teachign system).

The loading of the graphic image is made by the camera installed on the tester.



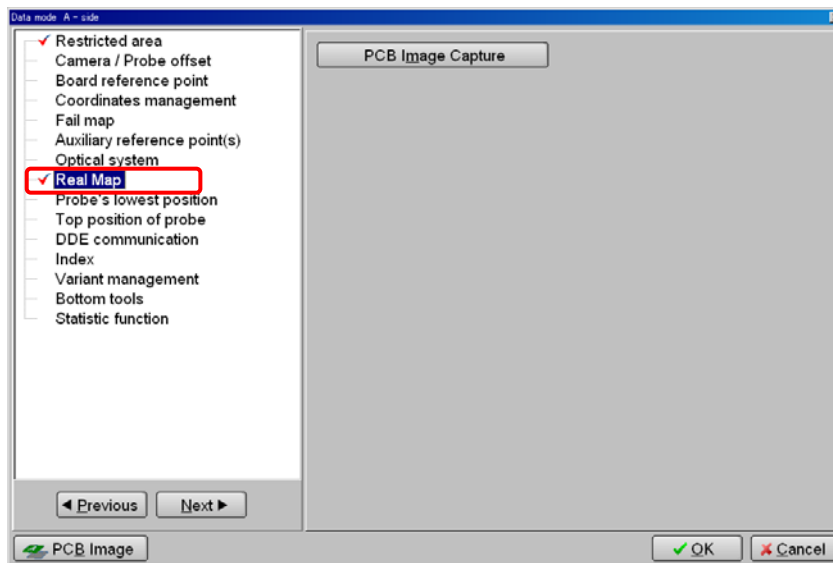
[ Menu 1 ] Camera window



[ Menu 2 ] Real Map screen (Virtual camera)

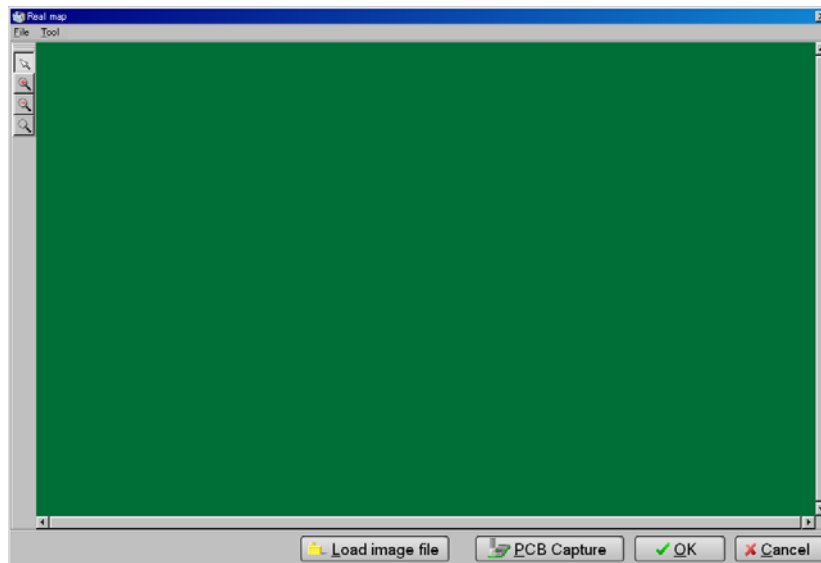
# Taking graphic image into the system

Move to Real Map in Data mode if you want to take the graphic image in the system to use it for the Real Map function. (Refer to [ Menu 3 ])



[ Menu 3 ] Real Map (Data Mode)

Click on the Real Map on the screen, and it will display the PCB Image Captur button on the right screen. Click on the PCB Image Capture button, and it will display [ Menu 4 ] below.



[ Menu 4 ] PCB Image Capture

There are two ways of taking the graphic image in the system and you take your choice on the buttons;

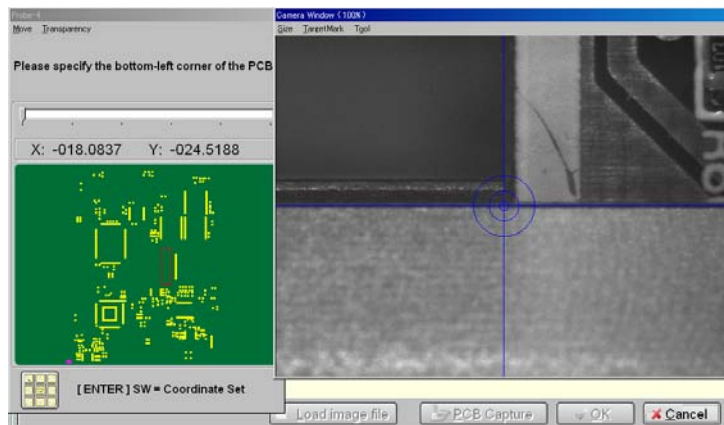
PCB Capture	Use the camera to capture the graphic image from the PC board
Load image file	Load the image data files (.jpg or .bmp) directly in the system

Select either [ PCB Capture ] or [ Load image file ], and it displays various screen to sett up the Board reference point, Aux. reference point so on. Go through those setting screens according to the menu guidance to complete the Real map.

## PCB Capture

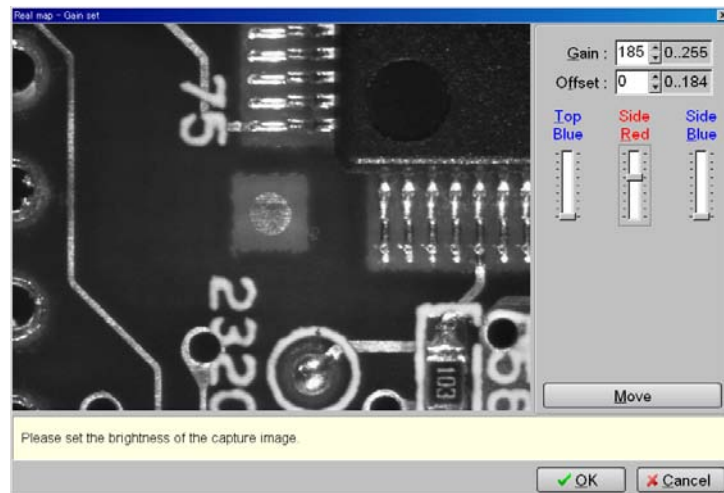
Click this button if you want to get started moving the camera to scan the image from the PC board placed on the tester. Prior to this, be sure to input the images for both the Board reference point and the Aux reference point.

- 1) Click the PCB Capture button, and it displays the message "Press [TEST START] SW". After the TEST START SW on the front panel was pressed, the amend function is implemented and the camera moves over the Board reference point to make automatic calibration there.
- 2) In order to specify the area where the camera is supposed to move around to capture the graphic image, drive the camera to set the target mark for the lower left corner of the PCB and press the Enter SW. Then drive the camera to set the target mark for the upper right corner of the PCB and press the Enter SW.



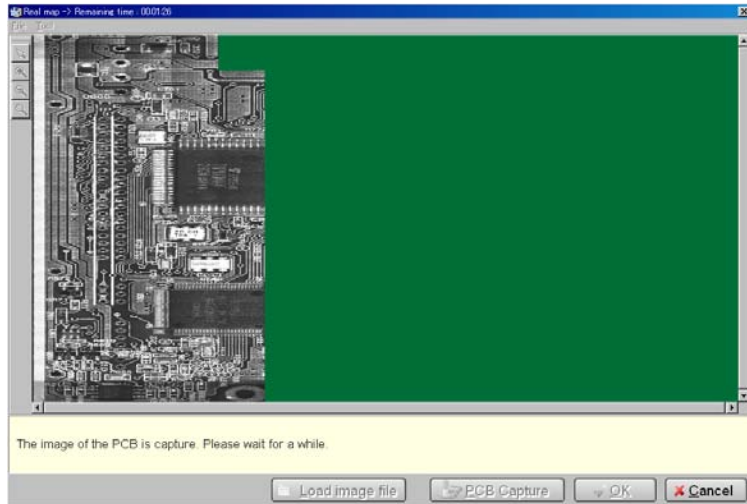
[ Menu 5 ] PCB Capture (Assignment of the capturing area)

- 3) Next, it displays the Gain set screen ([ Menu 6 ]). Configure the illumination conditions so that the components and the silk patterns printed on the board could be most clear and click on the OK button.



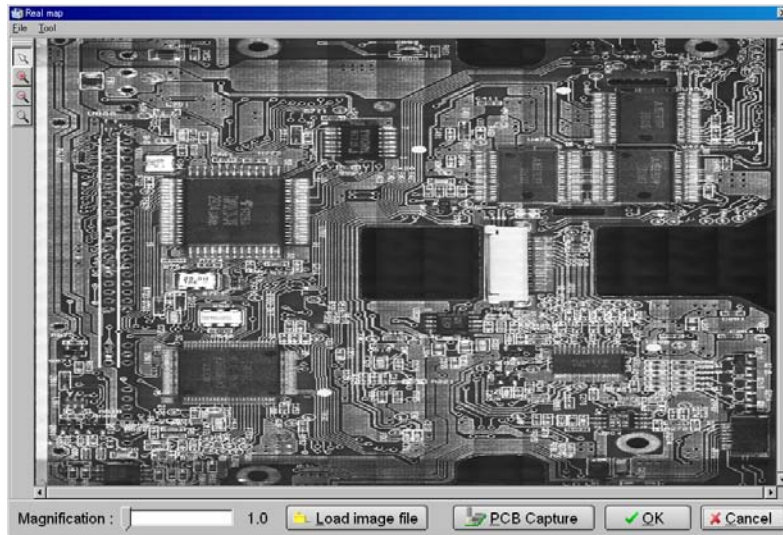
[ Menu 6 ] PCB Capture (Gain set)

- 4) After then, the camera gets started in scanning peacemeal images from the PCB.



[ Menu 7 ] PCB Capture (Scanning the image)

- 5) After the image scan was complete, the software integrates all images into one and it displays [ Menu 8 ] below.



[ Menu 8 ] PCB Capture (Scanning completed)

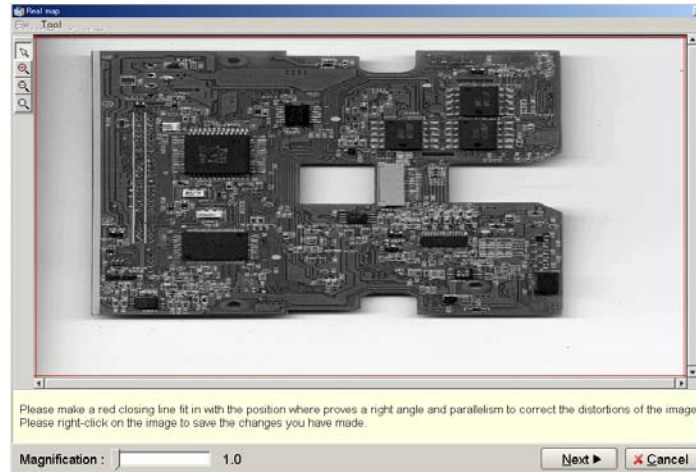
- 6) Click the OK button to put the display back to Data Mode.



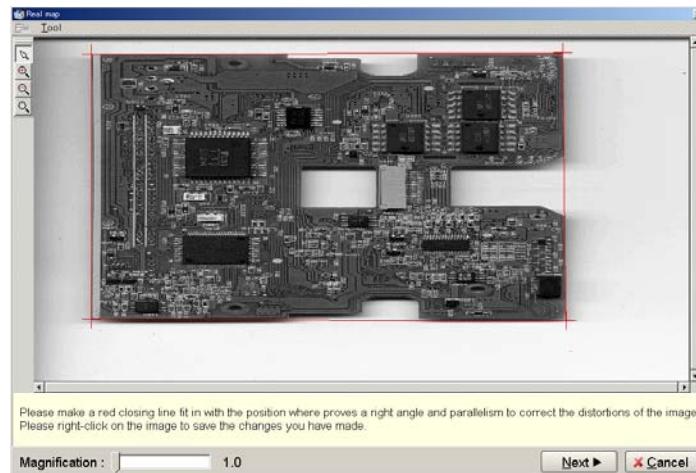
## Load Image File

Click this button if you want to import the graphic image file directly into the system.

- 1) Click the Load image file button, and it displays the Open dialog menu. Use your mouse to specify the image data file (.jpg or .bmp) and click Open button on the screen.
- 2) It displays [ Menu 9 ] where you can correct the distortions (i.e. inclination etc) of the graphic image. Make a red closing line fit in with the position where proves a right angle and parallelism to correct the distortions of the graphic image. Then Click on the Next button.



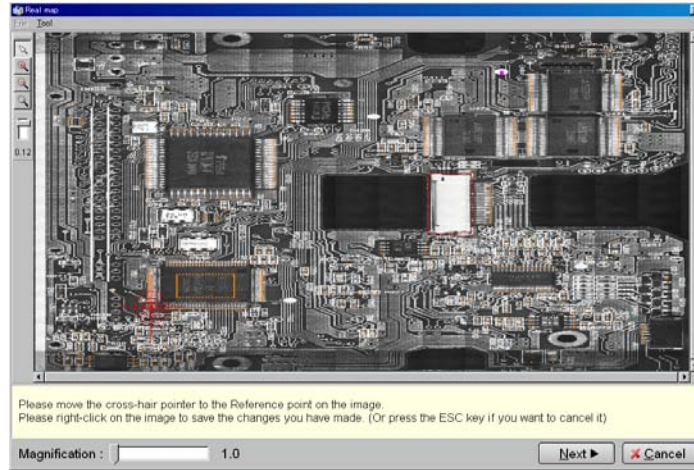
[ Menu 9 ] Load image file (correct the distortions of image)



[ Menu 10 ] Load image file (correct the distortions of image)

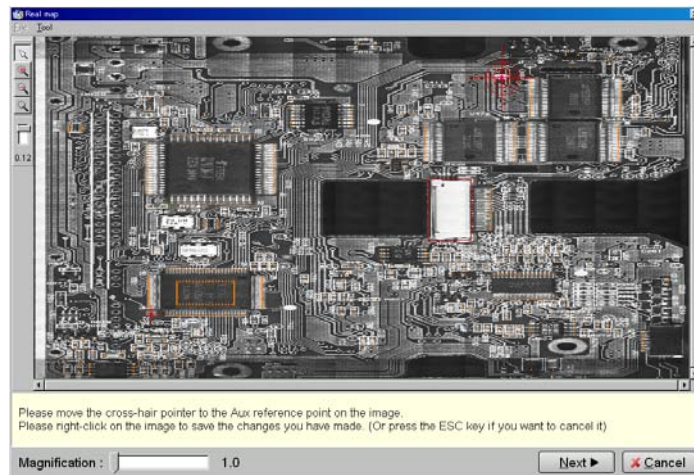
	<p>The screen to correct the distortions of the image is available only when you selected Load image file button.</p>
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- 3) It displays [ Menu 11 ] where you can specify the Board reference point. Move the cross-hair pointer on the Board reference point on the graphic image and click on the Next button.



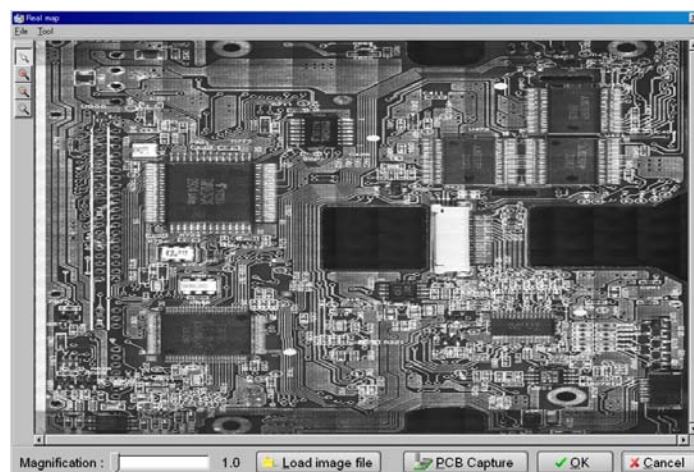
[ Menu 11 ] Load image file (Board reference point setting)

- 4) It displays [ Menu 12 ] where you can specify the Aux. reference point. Move the cross-hair pointer on the Aux. reference point on the graphic image and click on the Next button.



[ Menu 12 ] Load image file (Aux. reference point setting)

- 5) It displays [ Menu 13 ].



[ Menu 13 ] Load image file (complete)

- 6) Click on the OK button to put the display back to Data mode menu.

# File



## Load Image File

This is the same function as Load image file explained in Page 7~8.

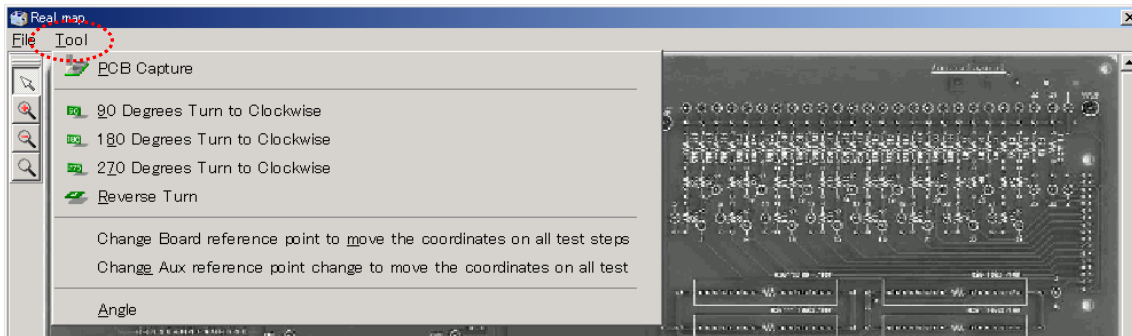
## Initialize image (Delete Real Map Data)

This enables to delete the image data stored in memory. If the program was saved after the image data was deleted, the file itself (.IMG file) will be deleted.



Unless the image data is read in the system, Initialize image isn't displayed in File menu.

# Tool

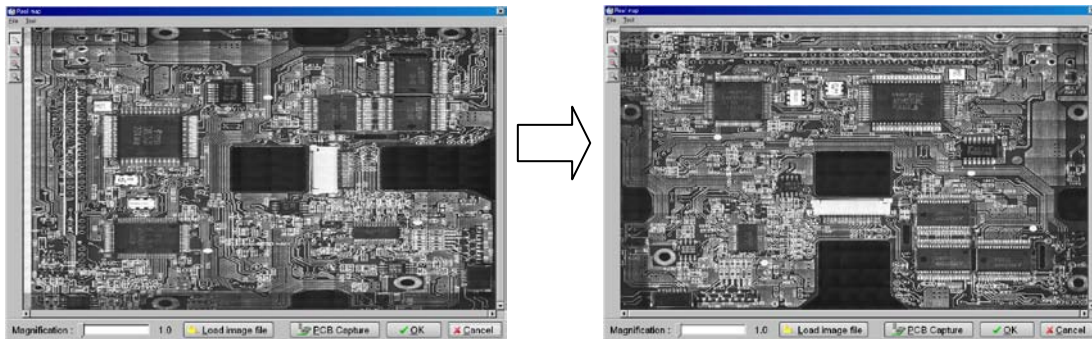


## PCB Capture

This is the same function as PCB Capture explained in Page 5~6.

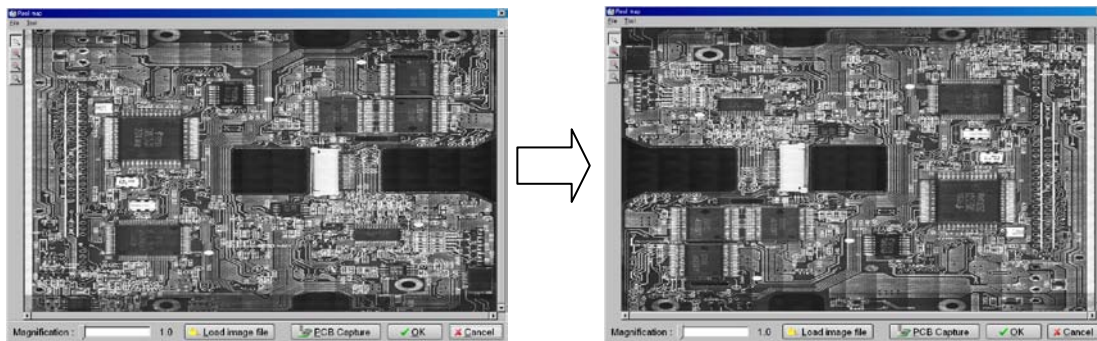
## 90 Degrees Turn to Clockwise

This enables to turn the graphic image 90 degrees clockwise.



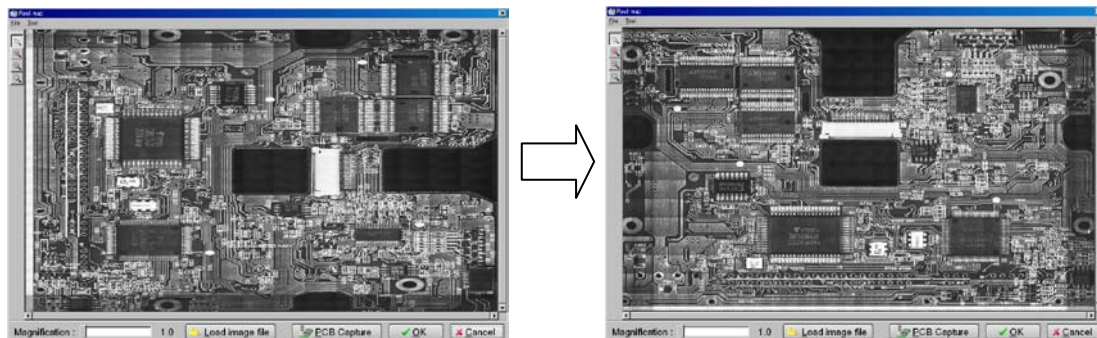
## 180 Degrees Turn to Clockwise

This enables to turn the graphic image 180 degrees clockwise.



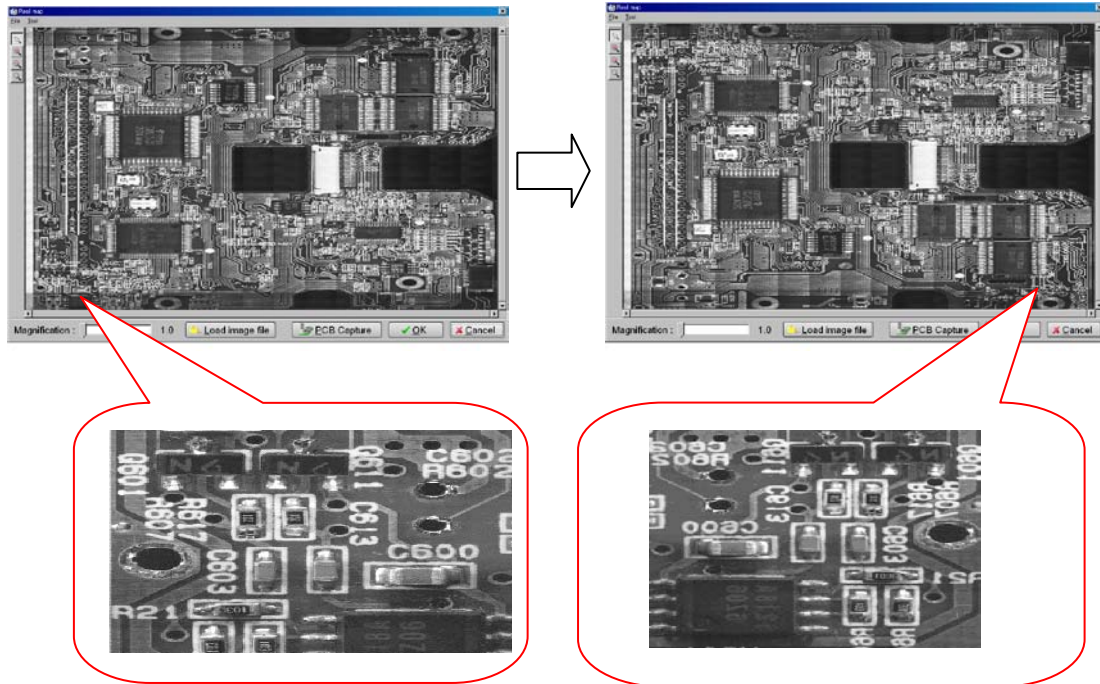
## 270 Degrees Turn to Clockwise

This enables to turn the graphic image 270 degrees clockwise.



## Reverse Turn

This enables to turn the graphic image to reverse in X direction.



## Change Board reference point to move the coordinates on all test steps

Use this function if you want to fit in the Board reference point on the Real map when there is more or less offset. If the Board reference point moved, the X,Y coordinates saved at all steps, the Aux. reference point and the High-fly / No-contact zone will also follow this movement.

## Change Aux reference point to move the coordinates on all test steps

Use this function if you want to shift the Aux. reference point in order to fit in the all X,Y coordinates on the Real map when the Board reference point is positioned properly.

## Angle

Use this function if you want to correct the distortions of the graphic image which was imported by the Load image file function. This is the same function as explained in Page 7.

# Utilization of Real map function

The Real map can be applied to various opportunities as listed below;

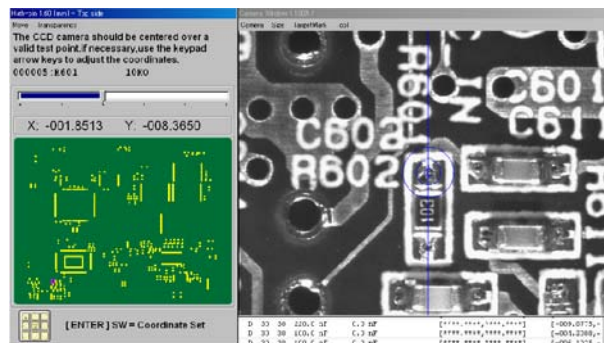
- X,Y coordinates input / correction
- High-fly / No-contact zone set
- Fail map
- PCB Image

## X,Y coordinates input / correction

The X,Y coordinate input / correction that using the graphic image (so-called "Virtual camera") on the Step Edit/List menu is described below.

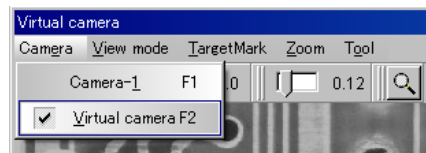
### How to change Camera window to Virtual camera

On the Step Edit/List menu, point to the test step where you want to input / correct the X,Y coordinates and press the ENTER SW on the operation panel. Then the camera moves and following screen appears on the display.

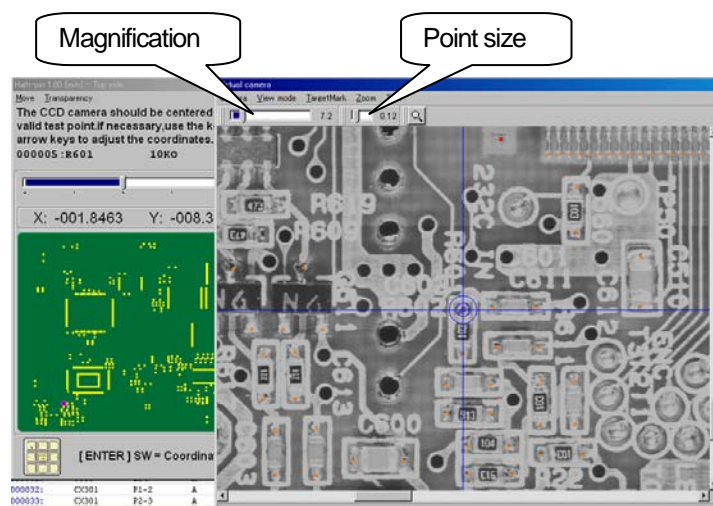


X,Y coordinates input / correction (by camera)

Point to to Camera in the Menu bar to select the Camera menu. Click on Virtual camera, and the camera window will change to the Virtual camera. (Refer to [ Menu 14 ]) The manner of operation is the same as the camera window.



Camera menu



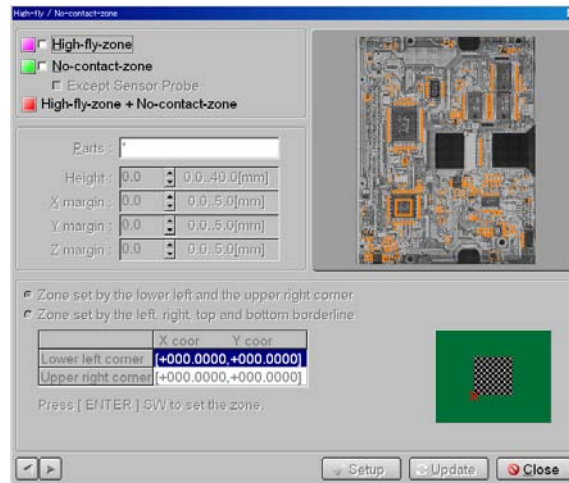
[ Menu 14 ] X,Y coordinates input / correction (Virtual camera)

## High-fly / No-contact zone set

High-fly / No-contact zone set using the graphic image is described below.

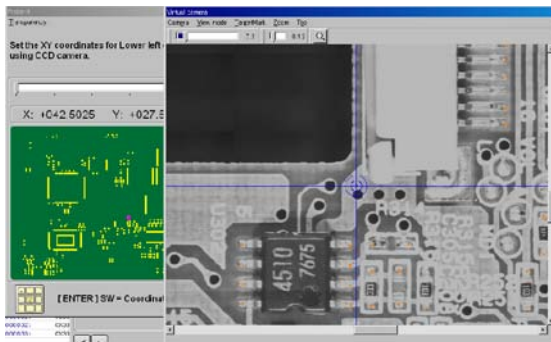
### How to set High-fly / No-contact zone

- 1) Open the High fly / No-Contact-zone setting menu.

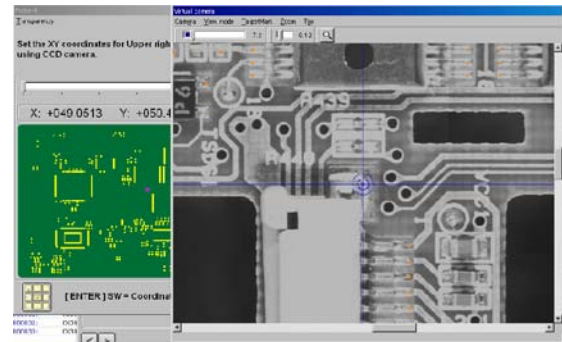


- 2) After set every parameters, double click on the lower-left corner, and it displays the camera window. Use your mouse to select Virtual camera on the Camera menu, so that the camera window changes to the Virtual camera.

- 3) Specify both the lower-left corner and the upper-right corner of the High-fly / No-contact zone.

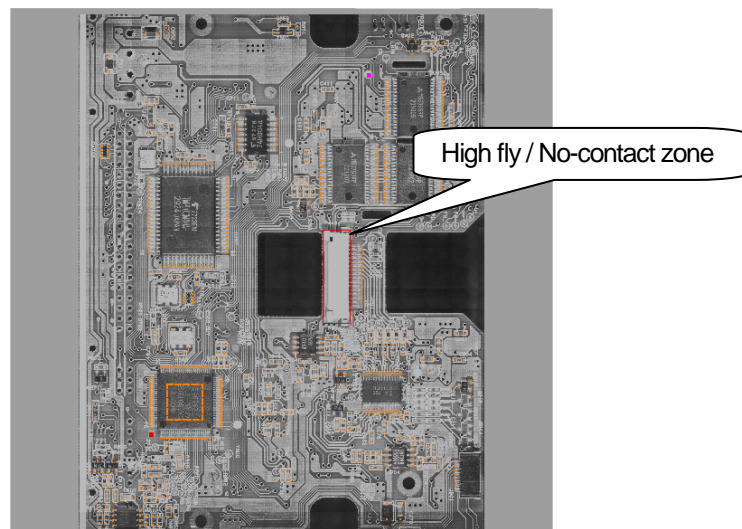


Zone (lower-left corner)



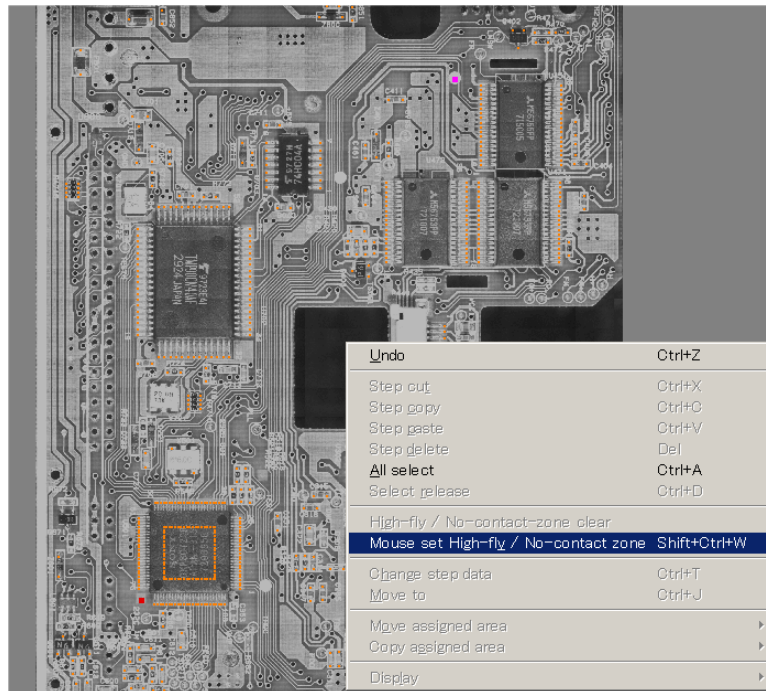
Zone (upper-right corner)

- 4) After zone setting was complete, the High-fly / No-contact zone is displayed on the graphic image.

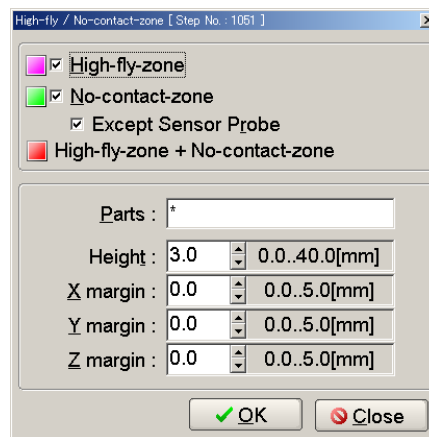


## How to set High-fly / No-contact zone on the Coordinates MAP

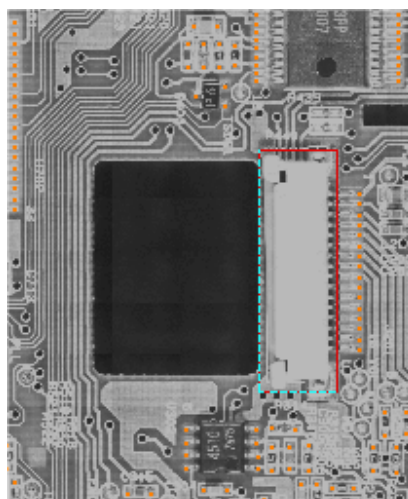
- 1) Open the Coordinate map on the Step Edit / List menu.
- 2) Click the right mouse button on the Coordinates map to select "Mouse set High-fly / No-contact zone".



- 3) After set every parameters, click the OK button.



- 4) After the High-fly / No-contact zone was displayed on the graphic image, drag it to set the position and the size properly.

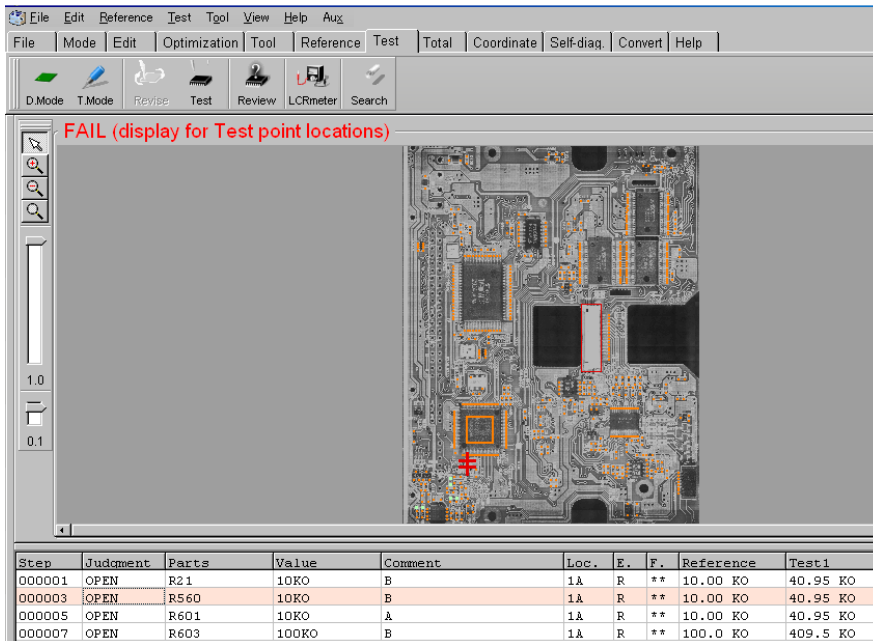


- 5) Click on the screen to complete your setting.

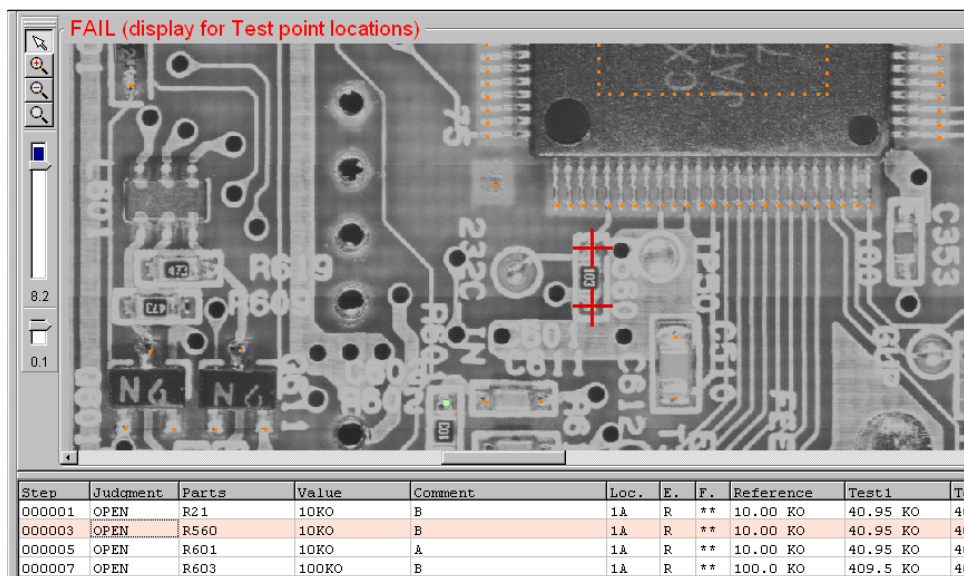


## Fail map


The Fail map is indicated by the graphic image as well. The Magnification button helps analyzing the fault location easier. (Refer to [ Menu 15 ], [ Menu 16 ])



[ Menu 15 ] Fail map



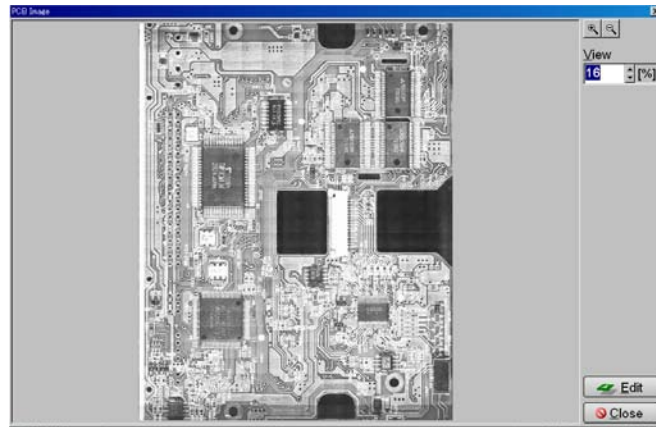
[ Menu 16 ] Fail map (magnified size)



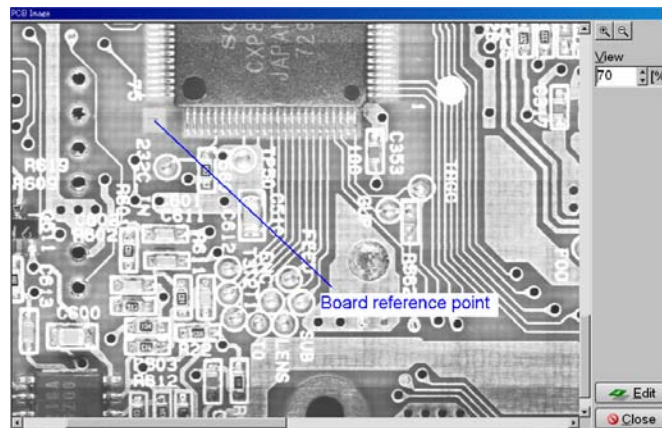
The Fail map is indicated by the graphic image only when Fail Map information in Data mode is set to "Display test point locations".

# PCB Image

The graphic image from the Real map function is shared by the PCB Image (Data mode) as well. In addition, clicking the Edit button on the PCB Image screen which is available only when the graphic image is already established by the Real map function, you can add any information related to the PC board (ex. Location set of the Board reference point) manually.

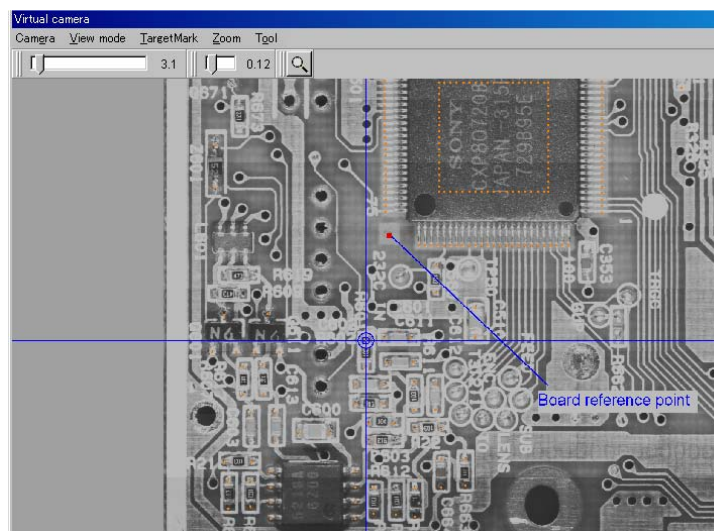


PCB Image (before the PCB information is entered)



PCB Image (after the PCB information was entered)

Considering that the graphic image is used at the Real map function, be sure that the coordinate position, the printed name of components, so on will be never blocked out when adding the PCB information.



X,Y coordinates input / correction menu (Virtual camera)

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