



Image Pro Ultra

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Instructions for installing YSC VIC-USB and IPU

For software and manual download, please go to below links.

http://ysctech.com/support/YSK_ImageProUltra_20111010.zip

http://ysctech.com/support/YSK_Image_Pro_Ultra_Manual.pdf

http://ysctech.com/support/YSK_GrabBeeX_light_manual.pdf

You need to install the Grabbee Ex-Light CD software , then install the USB capture device.
Connect your camera via s-video or composite cable. Select s-video or composite as your input.

Test Grabbee by itself see if see image okay.

Close the program.

Install the YSC Image Pro Ultra software

Must install the USB dongle key to operate the software.

If you just need to view and take picture, you can just use Grabbee by itself.

If you need to do measurement, then use YSC Image Pro Ultra.

***** You should use only one program at a time. NOT both. *****

Please let us know if you need any help.

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USB-UXGA Camera Instructions:

Like all USB device, please install software before connect USB device.

For the USB camera, you need to go to below link to download the software and driver for the camera. It's at bottom of below page for USB viewing software.

[http://ysctech.com/support/StCamSWare\(v1.10\).zip](http://ysctech.com/support/StCamSWare(v1.10).zip)

X86 is for 32 bit

X64 is for 64 bit

Like all USB device, please install software before connect USB device.

For the lens operation, please refer to manual.

Test the camera itself using ST-Cam, so you can see image.

Install the YSC Image Pro Ultra software

http://ysctech.com/support/YSC_ImageProUltra_20111010.zip

http://ysctech.com/support/YSC_Image_Pro_Ultra_Manual.pdf

Install the USB security protection key for the software to operate

You can choose to use either YSC Image Pro Ultra or ST-Cam, but not both; otherwise, you will get error message.

Please call 510.226.0889 or e-mail info@ysctech if any questions.

Lumenera USB Camera and YSC IPU software Instructions:

Install the driver CD of Lumenera USB camera

Connect the camera using USB cable. (the driver should self install for the camera after hardware is detected.)

Use Lumenera Analyze software see if can see image correctly

Install the YSC Image Pro Ultra software

Install the USB security protection key for the software to operate

You should use either Lumenera Analyze or YSC Image Pro Ultra software, but not BOTH; otherwise, you will get error message.

Install the YSC Image Pro Ultra software

http://ysctech.com/support/YSC_ImageProUltra_20111010.zip

http://ysctech.com/support/YSC_Image_Pro_Ultra_Manual.pdf

Install the USB security protection key for the software to operate

You should use either Lumenera Analyze or YSC Image Pro Ultra software, but not BOTH; otherwise, you will get error message.

Please call 510.226.0889 or e-mail info@ysctech if any questions.

YSC Image Pro Ultra and VM-USB set up instructions

Protection Key (USB 2.0) Please install the Protection Key into USB 2.0 port before operating the software. If the Protection Key does not self-install, please run the exe. Program under Protection Key Folder.

Driver and VM-USB device should be installed and connected before proceeding to below setup.

Select device (if asked)

Choose USB 2821 Video



Select acquisition source:

Acquisition

Select Acquisition

WDM (Window Driver Model)

Select S-video or composite:

Video (icon)

Acquisition

Setup Acquisition

Video Signal

Input

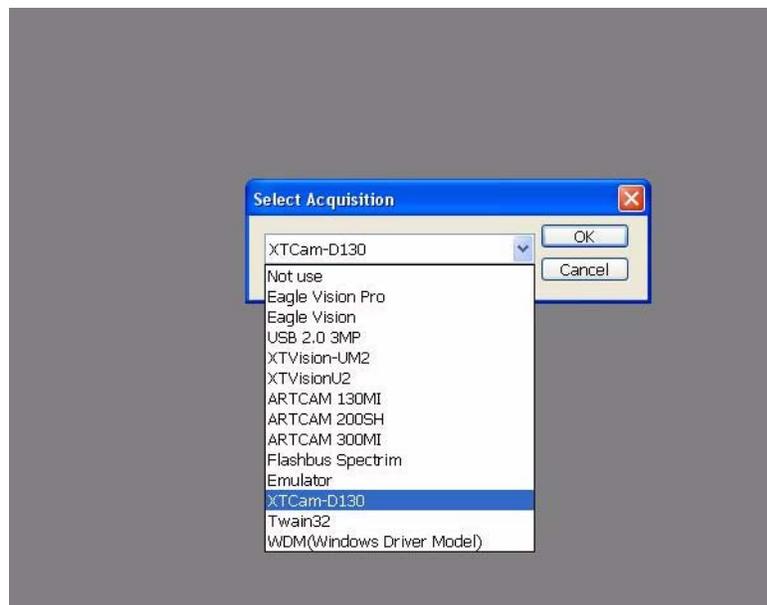
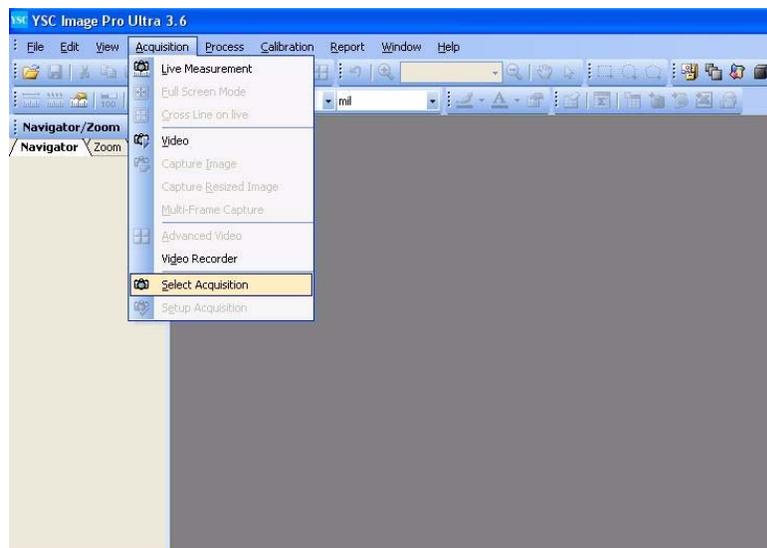
Choose S-video or Composite

YSC Image Pro Ultra and Lumenera Camera set up instructions

Protection Key (USB 2.0) Please install the Protection Key into USB 2.0 port before operating the software. If the Protection Key does not self-install, please run the exe. Program under Protection Key Folder.

Driver and Lumenera Camera device should be installed and connected before proceeding to below setup.

Select device (if asked)



YSC Technologies

Image Pro Ultra

Protection Key (USB 2.0)

Please install the Protection Key into USB 2.0 port before operating the software.

If the Protection Key does not self-install, please run the exe. program under Protection Key folder.

SPECTRIM Settings

SELECT SPECTRIM AS YOUR ACQUISITION SOURCE:

From YSC Image Pro Ultra software:

Acquisition

Select Acquisition
SPECTRIM
OK

Click on VIDEO icon “below calibration on the top tool bar”

SELECT S-VIDEO AS YOUR INPUT SOURCE

Acquisition

Setup Acquisition
Advanced
S-Video and NTSC
OK

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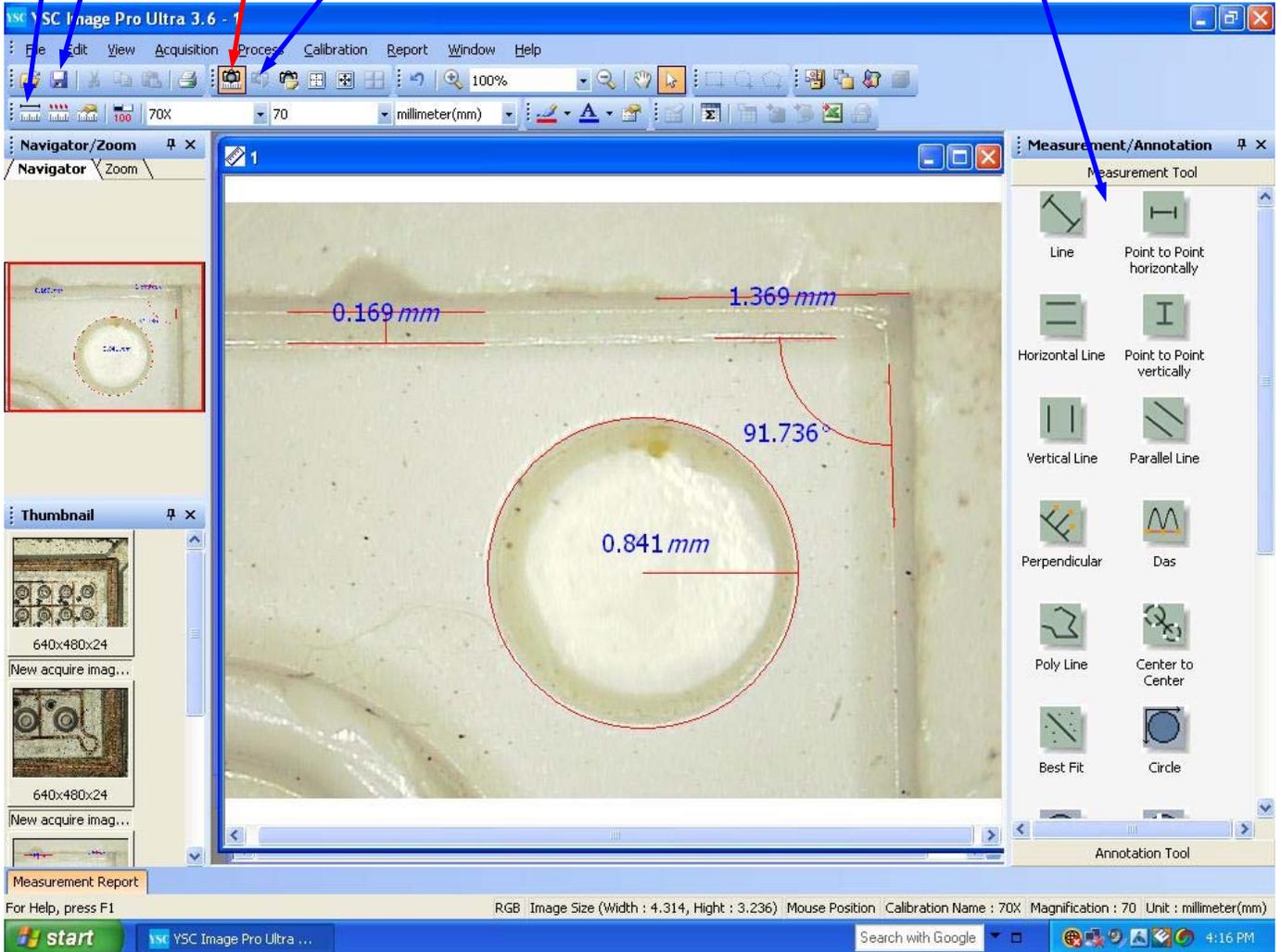
Save image or use File>Save

Live measurement

Live video

Measurement tools.
Cursor becomes (+)
when active. ESC
key to get out or
right click.

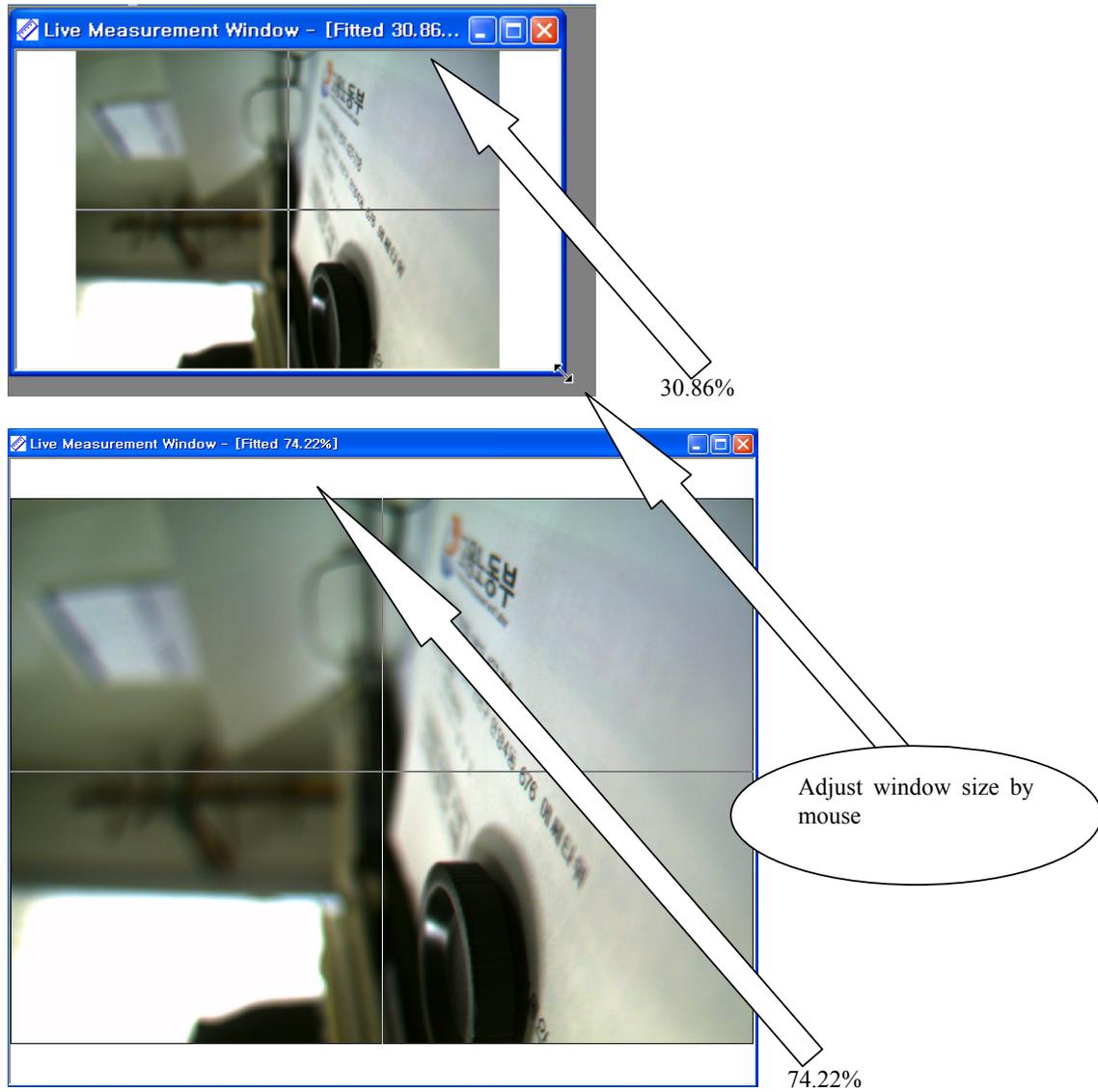
Manual calibration



Zoom Fit function on Live measurement window

Click 

Click 



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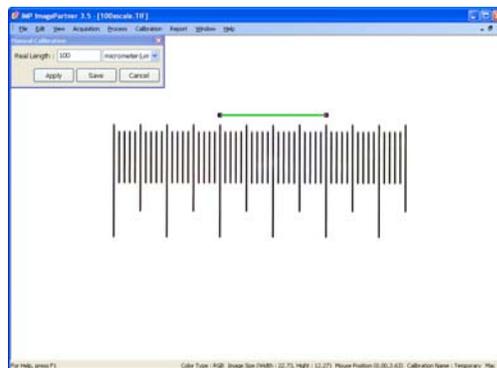
Calibration Menu

Use the Calibration command to work with spatial calibration scales. It is used to modify the scales, store modified scales to disk, and re-load them when needed. By default, YSC Image Pro Ultra™ expresses spatial measurements in terms of pixels. You can calibrate in terms of microns, or mils.

MANUAL CALIBRATION

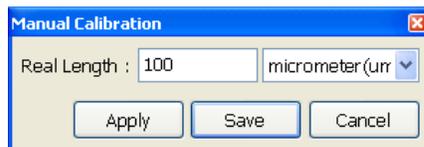
Use the Manual Calibration command for manual process. Manual Calibration can be performed in both captured and real-time image. However, to perform it in the real-time mode, it will be available only in the Live Measurement mode. The following example is performed in a captured image.

- i. Open a micro scale image, and click  in the tool bar.
- ii. The following Auto Calibration dialog with the scale image will appear. Draw a “defining line” to measure a reference scale object by clicking two points.



Note : When you move your cursor over the endpoints of the line, special cursor symbols appear, letting you know that the endpoints can be moved. Use the Zoom in function to draw a more accurate defining line.

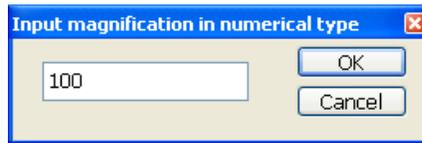
- iii. Set the real length and the unit from the drop-down list box. You must specify its known length the reference object represents. Click Apply button if you want to save it temporarily.



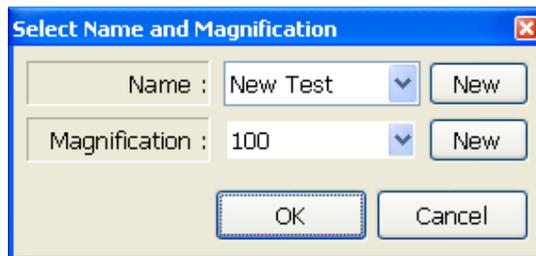
- iv. To save the settings permanently, click the Save button. You will see the following dialog. Click the New buttons to insert the new name and magnification.



- v. You will see the following dialog. Type in numbers only, and click OK button.



- vi. You will see the Select Name and Magnification with new name and magnification. Click the OK button to save the settings.



- vii. You will see the result on Calibration tool bar. You can see Calibration Name (New Test), Magnification (100), and Calibration Unit (um) of the current image. You can also find the same results displayed in the Status bar.



AUTO CALIBRATION

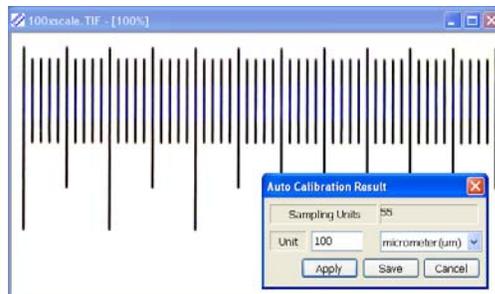
Auto Calibration calculates the Objective Micrometer's scale instead of user.

Prepare Objective Micrometer of 1/10mm or 1/100mm

- i. Open a micro scale image, and click  in the tool bar.
- ii. The following Auto Calibration dialog will appear.
Select Bright/Dark button when the scale image is darker/brighter than the background color.
Automatic is set as a default value. Click OK to continue.



- iii. You will see the following Auto Calibration Result dialog. Insert the length and unit of the calibration result, and click Save or apply to continue.

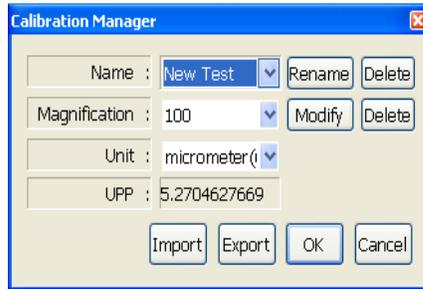


- iv. The rest of the steps is same with whose of the Manual Calibration setting up.

CALIBRATION MANAGER

Use Calibration Manager to manage measure information to rename, delete, etc.

- i. Click the Calibration Manager tool



- Rename : Add or change the name
- Delete : Delete the selected name
- Modify : Add or change the magnification
- Delete : Delete the selected magnification
- Unit : Unit of the real value
- UPP : Pixel per unit
- Import : load a previously saved calibration
- Export : Save calibration in a different location

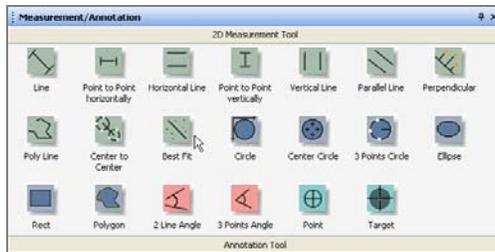
- ii. If you want to rename Calibration name, click the Name row's Rename button and then enter new name. Click the OK button. You can also delete the selected name by the same way.



Note: Calibration Manager has the concept of Name is a folder and Magnification is a file. Therefore if you delete one Name, Many Magnifications which belongs to Name are eliminated together. You can modify the selected name by clicking Modify button.

- iii. With the Export button, you can store Calibration data to another disk you want. With the Import button, you can open the calibration file by clicking Import button.

Measurement Tools



THE BASIC STEPS INVOLVED IN TAKING MANUAL MEASUREMENTS

- i. Select a measurement tool to obtain your measurement.
- ii. Perform actual measurements with the selected tools.
- iii. Save the measurements in the data sheet.

When you take a measurement, the measurement is numbered in the image, and the result is placed in the Measurements data sheet. You may take as many measurements as you need. The values of each will be recorded in the data sheet.

The Measurement toolbar contains all the tools you will need to create the various kinds of features and measurements. Use the measure tool to perform measurement operations. Measure can be performed upon a captured image or upon a live image. If you want to display your measurement results in terms other than the default pixel values, you must calibrate spatial scales before you measure. See the Calibration command for more details.

THE BASIC RULES OF MEASUREMENT

- i. Use left mouse button at the starting point, and click one more time at the end point.
- ii. The basic rule of measurement is continuous measurement. In order to stop measurement, click your mouse's right button.
- iii. The Delete key on your keyboard or Erase too; is used for deleting data.

TOOL DESCRIPTIONS



Line

This button is used to create a line on the current image. Click the left mouse button at the starting point, and click one more at the end point.



Point to Point horizontally

This button is used to measure from point to point horizontally.



Horizontal Line

This button is used to measure between parallel line horizontally.



Point to Point vertically

This button is used to measure from point to point vertically.



Vertical Line

This button is used to measure between parallel line Vertically.



Parallel Line

This button is used to measure between two parallel lines. You can control the distance between two parallel lines by moving your cursor.



Perpendicular

This button is used to measure from a base line to a specific point by using the left mouse button. Click 2 points for a base Line. Then click desired measuring point. Click the right mouse button to finish the specified point.



Poly Line

This button is used to measure entire poly-line. You can draw a curved line by clicking the left mouse button.



Center to Center

This button is used to measure between two circles. First, drag the left mouse button and create a circle. Then create another circle.



Circle

The radius of a circle can be acquired by using three points. It makes a circle by dragging mouse, from left to right, or right to left, and calculate data about the circle.



Center Circle

This button is used to create a circle feature on the current image. Place your cursor on the image and drag it until the circle reaches the correct size.



3 Points Circle

This button is used to create a circle feature on the current image. Place your cursor on the image and drag it until the circle reaches the correct size.



Ellipse

This button is used to measure ellipse. Click the left mouse button drag. Click the left mouse button one more after selecting the area.



Rect

This button is used to create a rectangle feature on the current image. Place your cursor on the image and drag it until the rectangle reaches the desired size.



Polygon

This button is used to create a polygon feature on the current image.
Click the right mouse button to finish.



2 Line Angle

This button is used to create two new lines and take an angle measurement between these two lines. The two lines do not need to intersect. The angle is measured from the first line drawn to the second line, in a counter-clockwise direction. You can take Interior angle or Exterior angle by Property tool.



3 Points Angle

This button is used to measure the angle of three points. You can take Interior angle or Exterior angle by Property tool



Point

This button is used to create a point feature on the current image.

**Target**

This button is used to measure a regular interval circles from the center co-ordinates. These can be a selected unit (mm, micro..) by Calibration data and show the actual distance. You can control the environment by Property tool.

Process Menu

Various commands in the Process menu are used to manipulate your active image in lots of ways.

Some of the commands are modules included only in the YSC Image Pro Ultra™ Auto version.

Those modules will not appear or activate in the YSC Image Pro Ultra™ Manual version.

MULTI-FOCUS

You can overcome the depth difference in an image by using Multi-Focus command. When you observe the image of high magnification, it is difficult that you see a vivid image because the focal depth of microscope is very shortened. At this time, you can use Multi-Focusing function after capturing some different focused images. Then these images will be merged into one wonderful multi-focused image. You will be able to see a vivid image extending from bottom to top of sample.

- i. Capture over 3 images having different focus one another
- ii. Click Multi-Focus tool.
- iii. You will see one multi-focused image such as the following image.

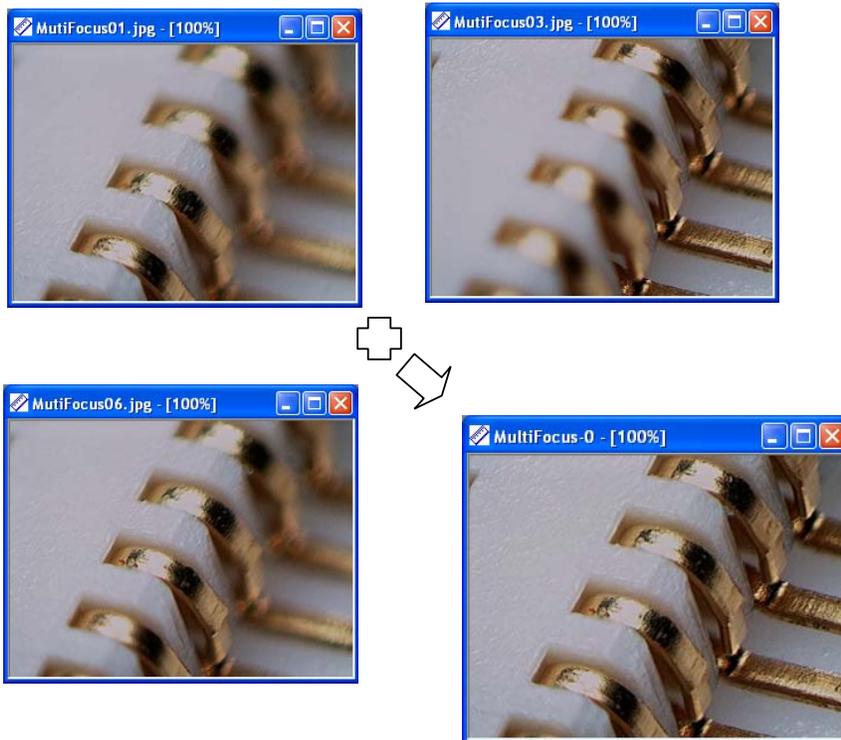
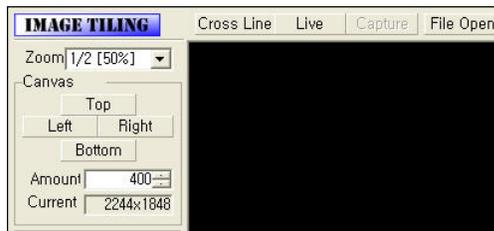


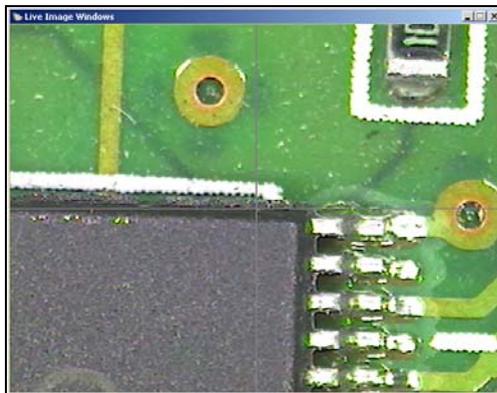
IMAGE TILING

When you observe the image of high magnification by a microscope, you can see only very small limited area. If you want to see a larger area at high magnification, you can use Image-Tiling function. Then you can freely paste some nearby images to the previous captured image. A lot of pasted image will be merged into one wonderful image. You can see the vivid image of large size.

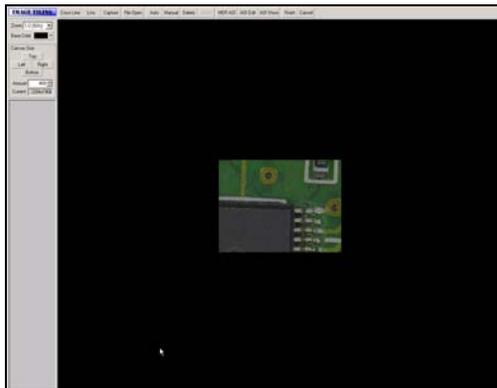
Use the Image Tiling command to create a collage image made out of several open images. The resulting image can then be printed or saved to a file. When you select the Image Tiling command, a separate program window will appear to perform the function.



- i. Click the Live button, and live image window will appear.



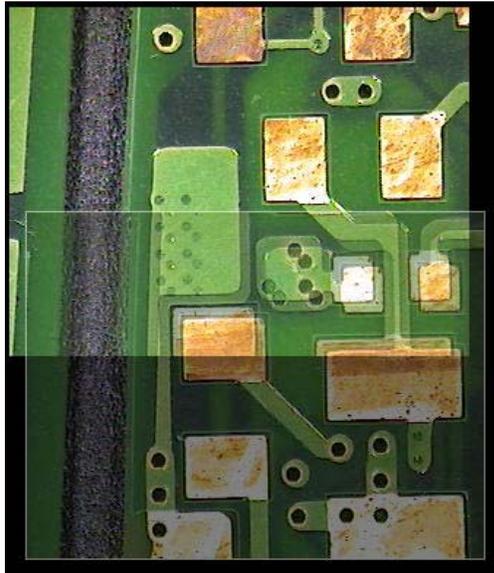
- ii. Click the Capture button to capture the first image, and the image will appear in the tiling canvas.



- iii. You may move the first captured image to the position which you want by clicking the image, then move the image and then click your mouse left button.



- iv. If you want to tile automatically, click the Auto button, otherwise click the Manual button.
- Auto : Detects the correct overlaid parts and combine them into one image.
 - Manual : Tiles the overlaid parts as the user has manually arranged .
- v. Move your sample a little in order that the moved live image is able to have the same part around 30% of the first image.
- vi. Click Capture button to capture second image, and move it to the first captured image such as below.



- vii. Click Auto or Manual button. You will see the merged image, and repeat the above sequence as you want, and if you want to finish, close Overlay Window.
- viii. Click MER AOI (Minimum Enclosing Rectangle Area Of Interest), and a rectangle will be setup around the tiled image automatically.
- ix. Click Finish button. You will see the tiled image on main software.

OTHER FUNCTIONS

Zoom

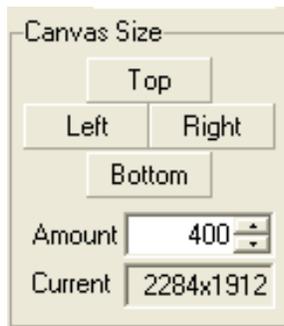
You can select the image display size. There is no effect on the quality of image.

For example, it is useful to select the 1/8 [12.5%] when you have lots of images to tile.



Canvas Size

You can control the Canvas size with the tools in this box. The Size of canvas is flexible in diverse range. Usually the Canvas size allows to tile up to 5000X5000 size image under 256MB CPU.



Top/Left/Right/Bottom : Expands the canvas size in each direction

Amount : Sets the canvas size value with the spin control

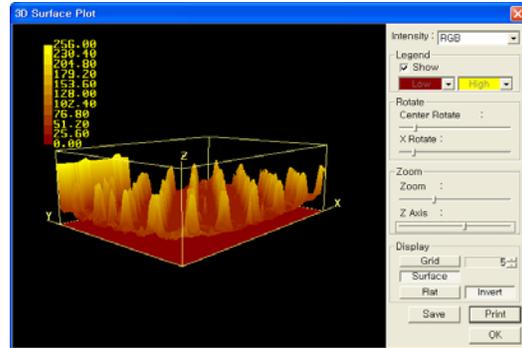
Current : Displays the current canvas size

3D SURFACE PLOT

The 3D Surface Plot tool creates a three-dimensional representation of the intensity of an image. When using the Surface Plot tool, keep in mind that X = length; Y = width; and Z = height. You can see detail information in 3D Surface Plot chapter. When you select the Surface Plot command, you will see the following dialog.

Intensity

You can select one out of RGB, Red, Green or Blue. If you select Red, Green or Blue, Surface plot show you the emphasized each color part with a three-dimensional representation.



Legend

If you click Show, it shows you the corresponding intensity value to each color. And you can control color for low and high part of three-dimensional representation.

Rotate

The Rotate describes the positioning of the viewer toward the object. The image 90 degrees provides a view looking directly down on the object; zero (0) degrees of elevation would be looking straight at the object.

- Center Rotate : Indicates the position of the viewer around the object.
- X Rotate : Indicates the height of the display. You can adjust the elevation.

Zoom

Use the slider to adjust the relative height of the display of the XY or Z scale.

Display : The Drawing style group box has four options.

Grid

This option speeds up the surface plot display by not drawing every pixel. To do this, set the required pixel interval. For example, if you set to 10, the display will sample every 10th pixel. Intervening pixels will be black, as in the picture above.

Surface : This option display Surface Plot by drawing every pixel.

Flat : It does not show Z axis but show XY axis.

Invert : It reverse an high and low part.

Save : Use the Save command to immediately store the contents of the current 3-D image to its file

Print : Use the Print command to print the current 3-D image.

IMAGE ENHANCE

Use Image Enhance to improve the vividness of an image by several ways. Click the Image Enhance command. You will see the following pop-up menu.

INVERT

Use the Invert command to reverse the pixel values for your active image



Original Image



Inverted Image

AUTO CONTRAST

Use Auto Contrast command to improve the bright and contrast of active image. This is supplied to the average data of the RGB plane



Original Image



Image by Auto Contrast

AUTO LEVEL

Use Auto level command to improve the bright and contrast of active image. This is supplied to the each RGB plane.



Original Image



Image by Auto Level

HISTOGRAM EQUALIZE

Use Histogram equalize command to equalize an image by the histogram that has regular distribution. That re-distributes the meager light and darkness value



Original Image



Image by Histogram equalize

REMOVE NOISE

Use Remove noise command to remove the continuous noise on a captured image.



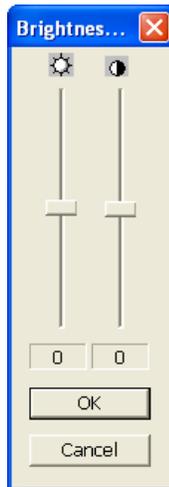
Original Image



Image by Remove noise

BRIGHT & CONTRAST

Use Bright & Contrast command to control the brightness and contrast value. For more accurate control, it's better to use Arrow key on your keyboard. Click Bright & Contrast command. You will see the following dialog.



THRESHOLD

Use the Threshold command to set the threshold about the image and make the binary image. A threshold less to be set converts to the black color and A threshold over converts to the white color.

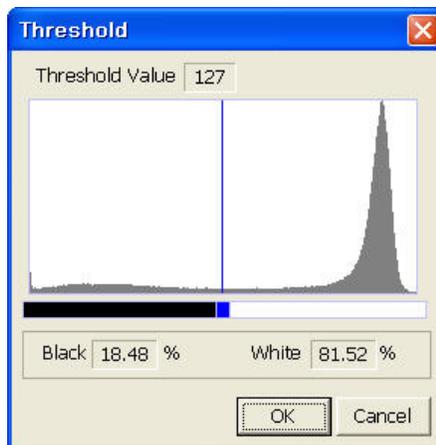
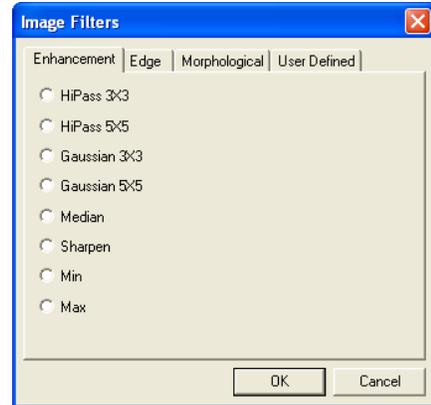


IMAGE FILTERS

Use the Filters command to apply one of Image Pro Ultra's numerous filters to active image. Filtering operations reduce or boost the rate of brightness change in an image. When you select the Filters command, the Filter tab dialog is opened. Each group of filters has its own property, where you select the type of filter you want to use. Filtered results are written to the active image. You may use the Cancel command if you want to remove the effects of a filter you have applied.

Clicking on the Image Filters command displays the following dialog. Click **OK** button to apply the specified filter.

Before clicking this button, be sure you have selected the filter you want to use (e.g., Hi Pass, Median,), or you can click **Cancel** button to reverse the effects of the filter you just applied and when you have finished working with the filters.

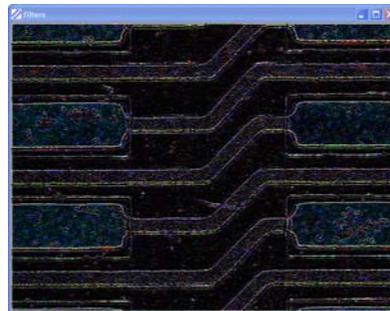
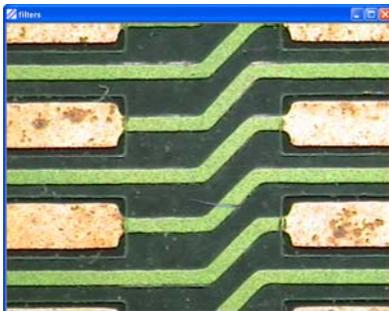


ENHANCEMENT TAB

HiPass 3x3 and HiPass 5x5

Select this filter if you want to enhance high-frequency information. The HiPass filter replaces the center pixel with a convolved value that significantly increases its contrast from its neighbors. The HiPass filter leaves only elements of high contrast.

A small kernel like the 3 x 3 kernel size produces a more subtle filtering effect.



Gaussian 3x3 and Gaussian 5x5

Use this filter to soften an image by eliminating high-frequency information using a Gauss function. This has the effect of blurring sharp edges. The operation of the Gauss filter is similar to the LoPass

filter.

Median

Select this filter if you want to remove impulse noise from an image. The Median filter replaces the center pixel with the median value in its neighborhood. It will also blur the image.

Sharpen

Select this filter if you want to enhance fine detail, or refocus an image that is blurred. The Sharpen filter sharpens the image using the "unsharp masking technique."

Min Filter : This has the effect of decreasing the contrast in the image.

Max Filter : This has the effect of increasing the contrast in the image.

EDGE TAB

Roberts

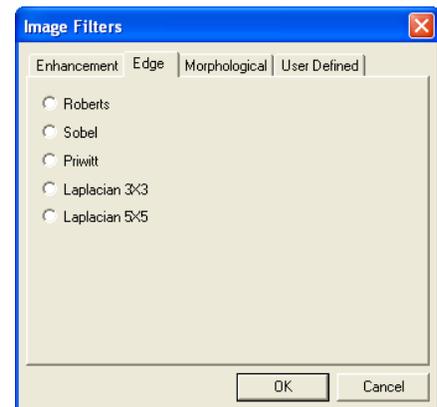
Select this filter if you want to enhance fine edges in an image. The Roberts filter is not a convolution filter. It applies a mathematical formula upon a 4x4 neighborhood to produce its effect. The upper left pixel in the neighborhood is the one replaced.

Sobel

Select this filter if you want to enhance just the principal edges in an image. The Sobel applies a mathematical formula to a 3 x 3 neighborhood to locate and highlight its edges.

Prewitt : Select this filter if you want to enhance fine edges in an image.

Laplacian 3x3, Laplacian 5x5 : Select this filter if you want to enhance all the edges in an image.



MORPHOLOGICAL TAB

Erode

Select this morphological filter if you want to modify the size of objects in your image. The Erode filter erodes the edges of bright objects, and enlarges dark ones.

Dilate

Select this morphological filter if you want to modify the size of objects in your image.

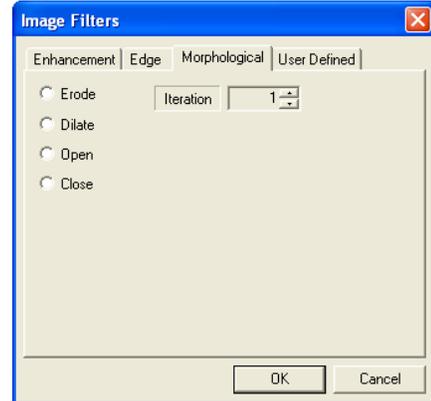
The Dilation filter dilates bright objects, and erodes dark ones.

Open

Select this morphological filter if you want to modify the shape of objects in your image. Assuming your image contains bright objects on a dark field, the Open filter will smooth object contours, separate narrowly connected objects, and remove small dark holes.

Close

Select this morphological filter if you want to modify the shape of objects in your image. Assuming your image contains bright objects on a dark field, the Close filter will fill gaps and enlarge protrusions to connect objects that are close together.



COLOR

Use the Color Channel command to transform an image to another color model,

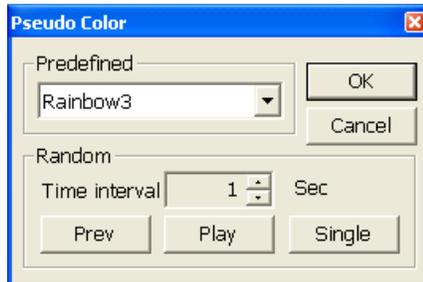
RGB TO GRAY

Use RGB to GRAY command to turn color Image into 8-bit monochrome image. Sometimes, this function is used the pre-processing of auto-counting.

PSEUDO COLOR

Use the Pseudo Color command to "colorize" the active monochrome image. You might do this to highlight certain features in a gray scale image.

When you select the Pseudo-Color command, the Pseudo-Color dialog box is displayed. You can select 8 kinds of Pseudo Color command such as Rainbow1, Rainbow2, Rainbow3, Rainbow4, Solaris Thermal, Red to Blue, Blue to Red and random pseudo color.



Note : To use the Pseudo Color function in True Color image, you first need to convert it into monochrome classes. Pseudo Color can only be applied in Gray Color image.

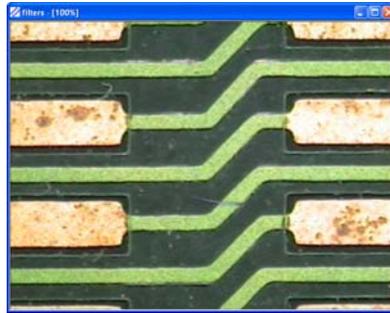
The basic steps involved in pseudo-coloring the active, monochrome image are to:

- i. Within the Predefined list box, you may change the pseudo-color scale's predefined color assignments.
- ii. If you want to see the pseudo-color video, set Time interval and click Play button.
- iii. Click the OK button if you want to close the Pseudo-Color dialog box and assign the pseudo-color palette (selected in the Color Spread dialog box) to the active image. Or click the Cancel button if you want to close the Pseudo-Color dialog box without making changes to the colorization of your image.

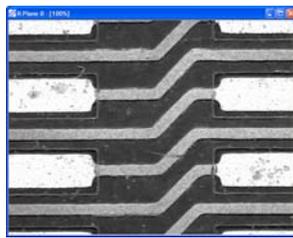
SPLIT PLANES

Use the Split Planes to extract a specific color channel from a color image, and view it as an 8-bit Gray Scale image. You might do this to reduce the saturation values in a HSI image, or boost just the Blue values in an RGB image.

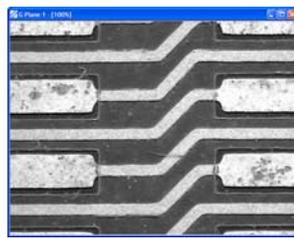
For example, click Split RGB command, you will see the following images.



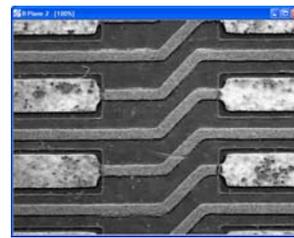
Original Image



Red Plane



Green Plane



Blue Plane

MERGE PLANES

Use the Merge Planes command to merge an active, 8-bit, Gray Scale image into a True Color image. This is usually done to return a channel, extracted with the Split Planes command, to an image after the channel data have been manipulated. However, you might use it to merge any Gray Scale image to a color channel in a True Color image. The Merge Planes command will work only if the source image is Gray Scale and the target image is True Color (both images must be open).



You must have Gray Scale image as a source image to perform the Merge Channel command. If the active image is not Gray Scale, the command will not activate, and the following pup-up dialog will appear.

To merge the color channels ;

- i. Click the Merge Planes command. You will see the following dialog.
- ii. Drag and drop the left images to the right each space.

iii. Click the OK button.

GEOMETRIC TRANSFORM

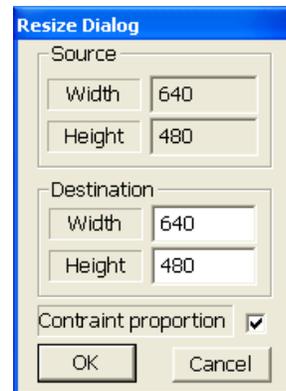
Select Geometric Transform command. You will see the following pop-up menu. You can control the image size and rotation.

RESIZE

Use Resize to actually change the spatial resolution by adding or removing pixels to achieve the specified dimensions. If the smoothing option is used, a bilinear scaling technique is applied to reduce jagged edges. Click the Resize command to create a new copy of your image at a specified size.

Source : Size of the original image
Destination : Size for the new resized image
Constraint Proportion : Remain the width and height proportion of the original image

Note : *When Constraint proportion is unchecked, the width and height dimensions will be set independently.*



FLIP VERTICAL

Use Flip Vertical to reverse the image up and down, so that the bottom right corner of the original image is now the top right corner, and the bottom left corner of the original image becomes the top left corner.

FLIP HORIZONTAL

Use Flip Horizontal to reverse the image left to right, so that the bottom right corner of the original image is now the bottom left corner, and the bottom left corner of the original image becomes the bottom right corner.

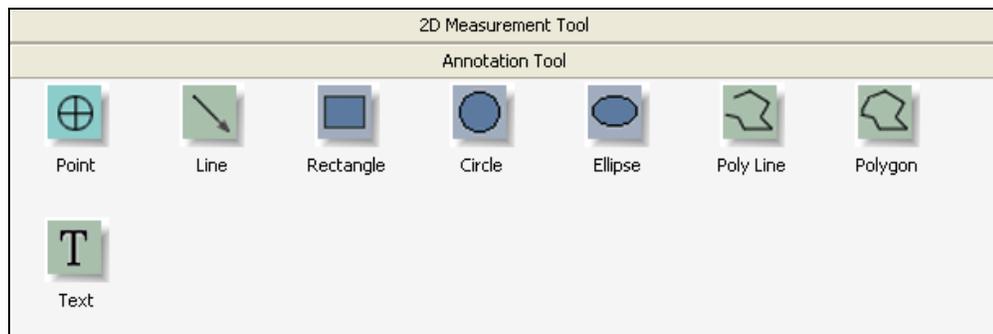
FLIP BOTH

Use Flip Both to reverse the image both up & down and left to right, so that the bottom right corner of the original image is now the bottom left corner, and the bottom left corner of the original image becomes the bottom right corner.

Annotation Tools

Use the Annotation command to add text or drawings to your images. Your Annotations can be stored with the image. But the annotations do not become part of the image until you click the Flatten command.

Click the Annotation Toolbar, you will see the following Annotation tools, as shown here:



TOOL DESCRIPTIONS



Point tool

The Point tool is used to draw points.



Line tool

The Line tool is used to draw straight lines and arrows. To draw a line, select this tool, and click on the location in your image where you want to start the line. Drag the mouse cursor to the ending point. A line with handles will appear. To define the line properties, click the line you have made.



Rectangle, Circle and Ellipse tool

Rectangle, Circle and Ellipse tools create similar objects. To draw them, click the tool, then drag the cursor to the appropriate size and release the mouse button. Once a rectangle has been created, its size can be modified by placing your cursor on one of the handles.





Polyline and Polygon tool

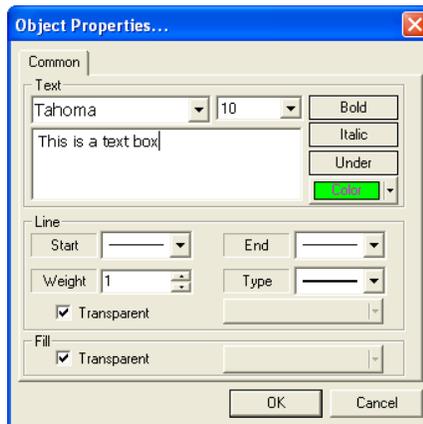
Use Polyline and Polygon tools to draw an open or closed Polygon or Polyline. You can draw a polygon by dragging the mouse cursor along the path of the object, or by clicking on various points in the image. Click the right mouse button to end the polyline. You can change the properties for the polygon or polyline such as the above



Text tool

To place text on an image, select the Text Tool, and cursor move automatically inside the image, and drag the cursor to make the text object.

You will see an empty text window, and the Object properties dialog box:



- i. Enter your text in the text window.
- ii. Select text attributes in the dialog:

These attributes let you select the text characteristics, such as type font, size, as well as special attributes such as bold, italic, or underlined. Transparent lets the image show through the drawing on the image. If this box is not checked, the text is enclosed in a filled box. If you want to define the annotations you made, you should click Selection mode tool, and double-click the object or click Property tool after you select the object.

Edit Menu

UNDO

Use the Undo command to reverse the most recent actions.

CUT & PASTE

Use the Cut command to copy the contents of the selected AOI to the Window Clipboard and replace the AOI in the image with white. The data copied to the Clipboard can be pasted into the active window or into another open window directly from Clipboard contents using the Paste command.

COPY

Use the Copy command to copy the contents of the selected AOI to the Window Clipboard. Copy will not change the contents of the image in the active window.

PASTE

Use the Paste command to place the contents of the windows Clipboard into the active image. You would use Paste to transfer part of one image into another.

FLATTEN MEASUREMENT

The Flatten Measurement button permanently burns the measurements on the current image. Until you click this button, your measuring layer exists on a transparent overlay that is displayed on top of your image.

FLATTEN ANNOTATION

The Flatten Annotation button permanently burns the annotations on the current image. Until you click this button, your text layer exists on a transparent overlay that is displayed on top of your image.

FLATTEN ALL

The Flatten All button permanently burns the both Measurements and Annotations on the current image. Until you click this button, your measuring and text layer exist on a transparent overlay that is displayed on top of your image.

DUPLICATE

Use the Duplicate command to create a new copy of the active image or AOI, in a new and untitled image window. When you select the Duplicate command, program will generate a new copy of the active image or AOI, in a new window. If a nonrectangular AOI is active when the Duplicate command is selected, the new image will contain an image made up of the pixels contained within the AOI's bounding rectangle.

CROP

Use the Crop command to remain only the AOI area from the original active image. To use this function, you need to select an AOI first.