

## ***DIGITIZE - 0.99***

Welcome to the shareware version of DIGITIZE.

[About](#)

[Description](#)

[Instalation](#)

[Using](#)

[Menu](#)

[Buttons](#)

[Some Remarks](#)

[Registration](#)

[Responsability](#)

[History and future Improvments](#)

[Suggestions and Comments](#)

[Checkout WINFIT](#)

## Description

This program does the reverse job of a plotting program, it can take a scanned X,Y plot and digitize it to end up with a text file containing the X,Y points.

This program is written with Visual Basic so you need the **VBRUN100.DLL**, you would probably also need a scanner to scan your picture and save it in a bitmap file.

## **Instalation**

First place the VBRUN100.DLL in your /WINDOWS dirctory.  
Create a directory and copy all files to that directory, You can now use the file manager to drag and drop the program icon into a group in the program manager.

## **About**

### **DIGITIZE - 0.99**

Written by Y. Danon  
October 1992

This program is distributed as shareware, you are granted 30 days to try the program after 30 days you must register the program or remove it from your computer. see help on registration to get the latest version of DIGITIZE.

## Using

1. There are two ways to get the scanned image into DIGITIZE, the first is to save it as a .BMP file and then DIGITIZE can open and read the file. The second is to copy the file to the clipboard and then use the PASTE command in digitize. This version can only paste a bitmap file from the clipboard. The user is encouraged to use other shareware products to convert the scanned image format.
2. After the plot was read (from a .BMP file) or pasted, define the origin by clicking the define origin button (it should be automatically selected as you start the program) and inserting the plot origin X,Y values in the X Y boxes (you can use TAB to move between them). Point the mouse to the plot origin and click the left button.
3. The program will automatically select the define X axis, you should then provide the X value in the X coordinate box and click on the X-axis position corresponding to that value. It is recommended to point the mouse to the end of the X-axis and then click. The plot rotation angle is determined from the X-axis line, it is assumed that the Y-axis is perpendicular to the X-axis.
4. Define the Y axis in the same way.
5. Now the digitize button is selected and as the mouse moves the plot X,Y coordinates are displayed in the X,Y Boxes. if the X or Y axis are log check the X-Log and/or Y-Log boxes accordingly.
6. Point the mouse to a point on the curve and click, the X,Y points will be inserted to the List Box.
7. To use the Auto Trace feature of DIGITIZE, position the mouse on the left side of the curve to be digitized and click the right mouse button. You can check the Test Trace box to see how the trace goes before you digitize. After you test the trace and before you digitize you will have to reload the plot in order to remove the green trace curve. This can be done by double clicking on the plot or by using the Reload Plot command in the FILE menu or the Paste command in the EDIT menu, there is no need to redefine the axis.
8. Use the Save As to save the X,Y data.

## **Some Remarks**

### **These are some useful remarks for better using DIGITIZE**

1. Since the program gets the X,Y values from the screen pixels the higher the screen resolution the better the accuracy is.
2. The program calculates the rotation angle of the plot axis relative to the screen grid using the origin values and the X axis values. This means that it will work properly even if the scanned picture is not aligned well.
3. The Auto Tracer is tracing the line by a simple search algorithm, the X and Y searching parameters are user adjustable. The ability of the Auto Trace algorithm to "Jump" over gaps in the curves is getting better as the values of the X, Y trace parameters is bigger.
4. The auto Trace is designed to work with a black curves only.
5. To get better accuracy in digitizing you can check the STRETCH option to stretch the plot in the X dimension.
6. If you have a slow machine, you can check the NOREFRESH option and the plot will not be refreshed when overlaid by another windows. To refresh the plot click twice anywhere on the plot

## **Registration**

If you use DIGITIZE for more than 30 days (or you liked it much sooner) you should register it by sending \$35 to:

**Yaron Danon**  
**14 Beman Lane**  
**Troy, NY 12180**

A registered user will receive the updates of the next versions as they become available. The registered version is always newer than the shareware version and contain more features.

## **Responsibility**

The author of DIGITIZE is not responsible to any damage done by DIGITIZE to your computer. The author is not responsible to any damage caused by using the digitized data.



## **History and future Improvements**

### **History**

version 0.98  
initial release.

version 0.99  
\* change to 3D interface.  
\* Add trace block.  
\* Fix bugs in Sample menu.  
\* Fix minor bugs.

### **Future Improvements**

1. Change the X,Y list box to a grid, this will provide more flexibility and maybe more speed in auto trace.
2. Add zooming capabilities.

## **Suggestions and Comments**

Please Email and suggestion or problems you have to:  
**danony@rpi.edu**

## Checkout WINFIT

Also available is WINFIT:

A general purpose Non Linear Weighted Least Squares Fitting program for windows 3.x

This program was uploaded to ftp.cica.indiana.edu as winfit96.zip

### FEATURES

- \* Reads a simple ASCII file, space or tab delimited of X Y with an optional Yerror data.
- \* The data can be plotted with log axis options.
- \* The program uses Levenberg-Marquardt fitting method.
- \* There are some built in functions and the a user-defined function.
- \* The program can generate weights that will improve fitting performance for some problems.
- \* This version can read up to 500 data points and fit up to 10 parameters.
- \* The program provides a REPORT file and the plot can be copied to the clipboard.
- \* The program will calculate and display the COVARIANCE and CURVATURE matrixes

## Menu

File

Edit

Data

Options

Help

## **File**

### **Open**

Opens a .BMP file that contains the plot to be digitize. The program will automatically size the picture to the screen. If the plot is too big you might get an out of memory error, it is than recommended to resize the plot before you load it.

### **Save As**

Saves the data in the list box to a text file in two columns X and Y.

### **Reload Plot**

Reloads the plot from the file. Note that double clicking on the plot refreshes the picture without reading the file.

### **Exit**

Exits Digitize, if there are points in the list you will be asked to save them.

## **Edit**

### **Paste Plot**

Pastes a bitmap picture from the clipboard, if a bitmap picture is not found in the clipboard an error message will be displayed.

### **Clear Data**

Clears the data from the X,Y list box.

## **Data**

### **Sample**

This command will open a sample dialog box, that will allow you to change the list box X,Y data points.

This command was created to add additional flexibility when digitizing using the auto tracer. using the auto tracer you will normally end-up with many points in the list box. This command will resample the list box data at constant dX intervals.

The user can change the minimum and maximum X value and the interval dX or the number of points to end-up with.

The sampling algorithm does a linear interpolation between the points, the results of the interpolation is as good as digitizing the curve at the interpolated X points if the data in the list box is digitized with the auto tracer.

The interpolation can be done on a log X or log Y scale in the same way.

### **X,Y-->List**

Returns the original digitized X,Y points to the list box after using the Sample command. (some kind of an undo command)

## **Options**

### **Stretch**

This option will stretch the X axis of the plot to fit the full plot window.

### **NoRefresh**

Disables the plot Paint event, the plot will not be refreshed when another window is overlaying the Digitize program window. This mode is useful on slow machines and/or a nervous user who doesn't like waiting for the screen to refresh.



## **Help**

As it sounds.

## **Buttons**

Define Origin

Define X

Define Y

Digitize

Test Trace

Block Trace

X-Log

Y-Log

Auto Trace

**Xantippe-275**

## **Define Origin**

Check this box when you want to define the plot origin. The X value of the origin should be in the X= box and the Y value in the Y= box. After setting these values just click on the plot origin.

## **Define X**

Can be checked only after you defined the origin. Fill in the X= value and click on the plot at the end of the X-Axis.

## **Define Y**

Can be checked only after you defined the X Axis. Fill in the Y= value and click on the plot at the end of the Y-Axis.

## **Digitize**

The option is automatically selected after you have defined the Y axis. the X= and Y= boxes now show the X,Y values digitized from the plot, clicking on the plot at any point will read the X,Y point to the list box.

## **Block Trace**

When this option is checked you can place a trace block at the cursor position. This will put a green point on the plot the auto tracer will not pass through a green. When a windows paint event occurs or you refresh the screen the Block Trace markers are erased.



## **X-Log**

Select this if the plot have an X-log axis.

## **Y-Log**

Select this if the plot have a Y-log axis.

## **Auto Trace**

The auto tracer is initiated by positioning the cursor on the curve (must be black) and pressing the right mouse button. The auto tracer will then paint the traced curve green. If the digitize option is set, the points are read to the list box. If the Test Trace option is selected the points are not read.

The X and Y sensitivity of the auto tracer is user controlled via the scroll bars marked X and Y, generally when you have a spaced curve higher values of the X and Y values are required in order to trace continuously.

## **Test Trace**

This option allows you to use the auto trace without actually reading the points, this is useful in a multiple curve plot where the auto tracer can make mistakes in curves intersections. Observing where the auto tracer missed the correct curve you can then place a trace block at that point.

