

# Nutfield Technology

## Software Screenshots

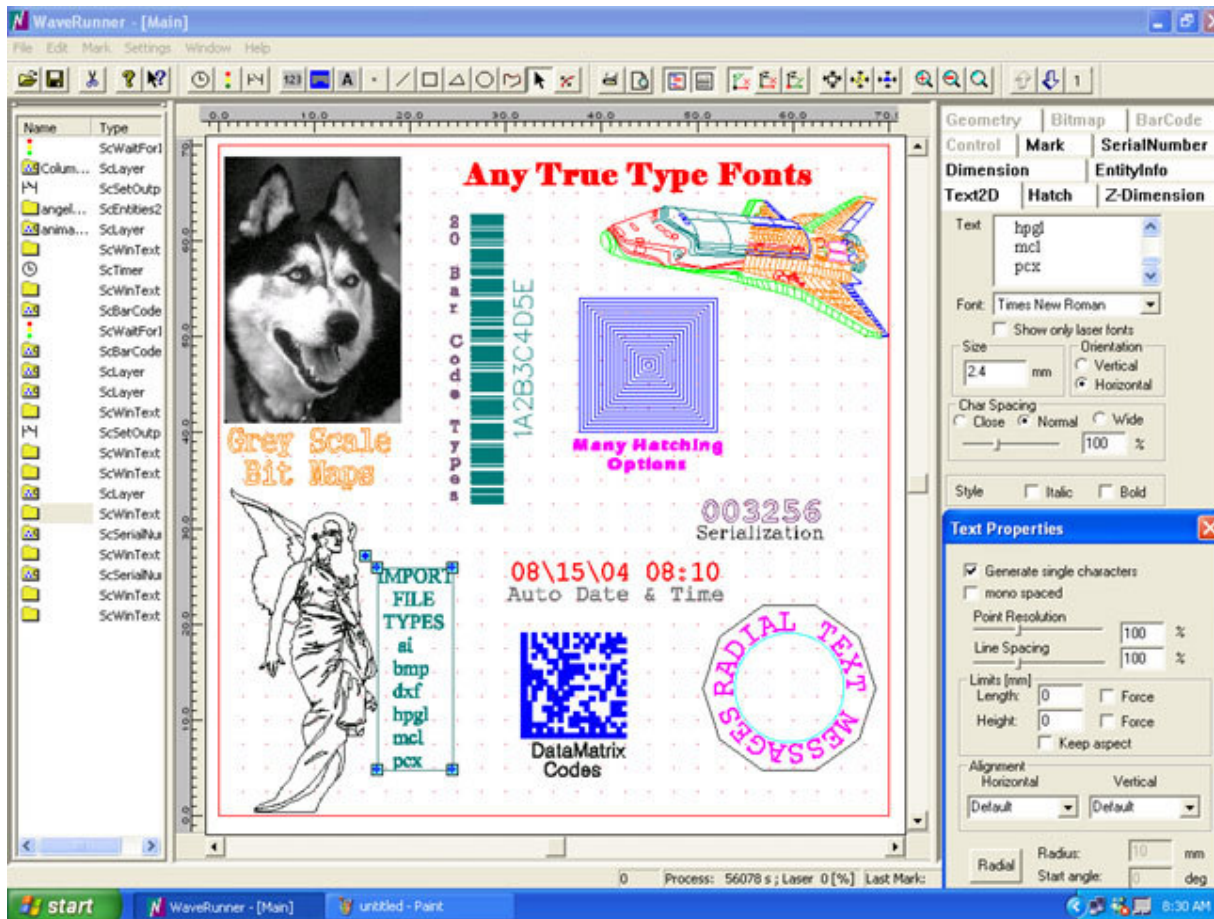
### MAIN SCREEN

WaveRunner's Main Screen allows users to interact easily with the graphical interface by using familiar Windows based transactions. The center area, which represents the working area, can be customized with a grid of varying dimensions. This WYSIWYG screen shows you exactly what you can expect when you execute a Job. Several Entities can be laid out, each having an individual laser / scanning control profile.

Tabs on the right side allow quick access to Entity information and setup allowing you to easily setup or modify Entities to match your Job requirements.

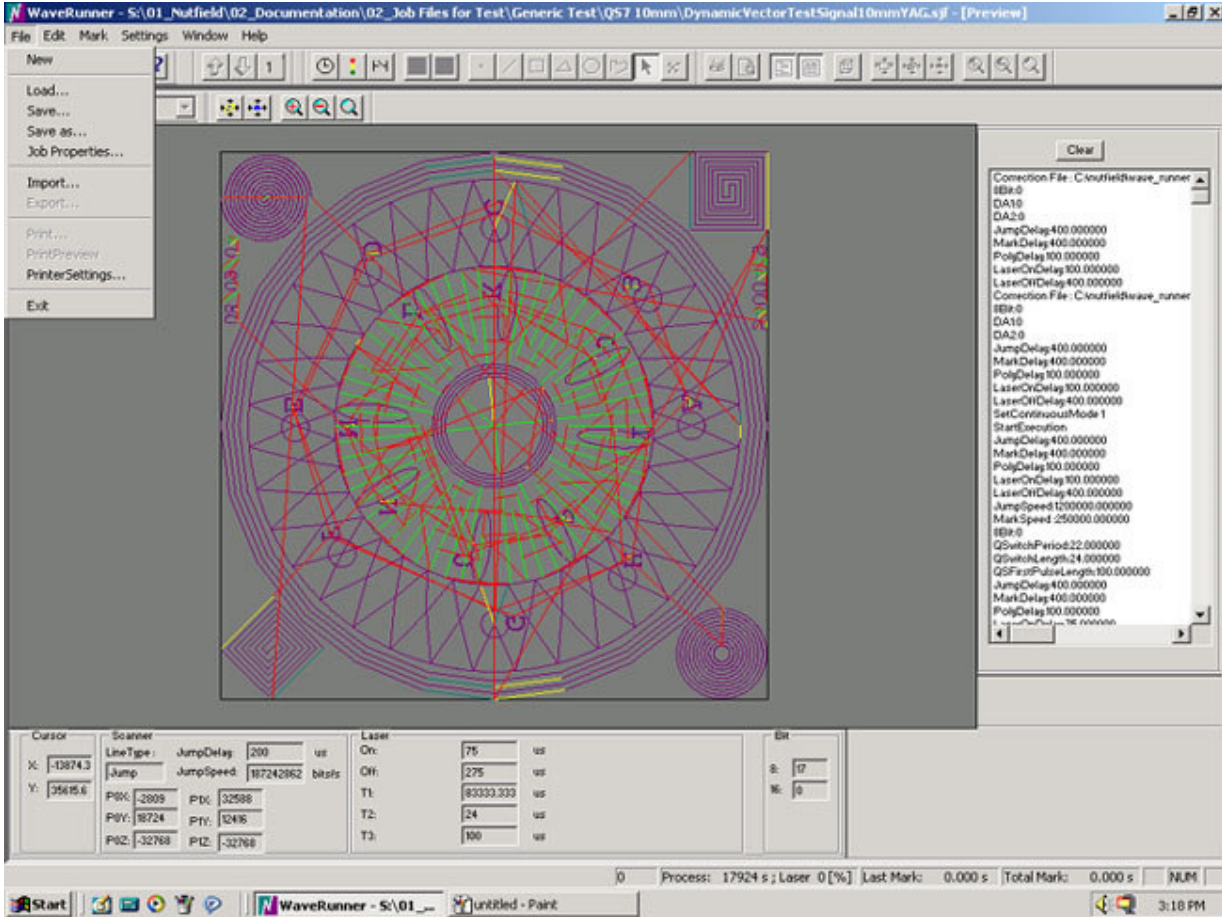
Toolbars along the top allow for one click access to a variety of features including placement of text, barcodes, circles, squares, lines, triangles, freehand, inputs, outputs, timers, zoom, save, cut, copy and many more.

Along the left is an Entity priority list showing the order in which Entities will be executed during a job. The order can be changed easily by simply sliding the Entity up or down the list.



### PREVIEW SCREEN

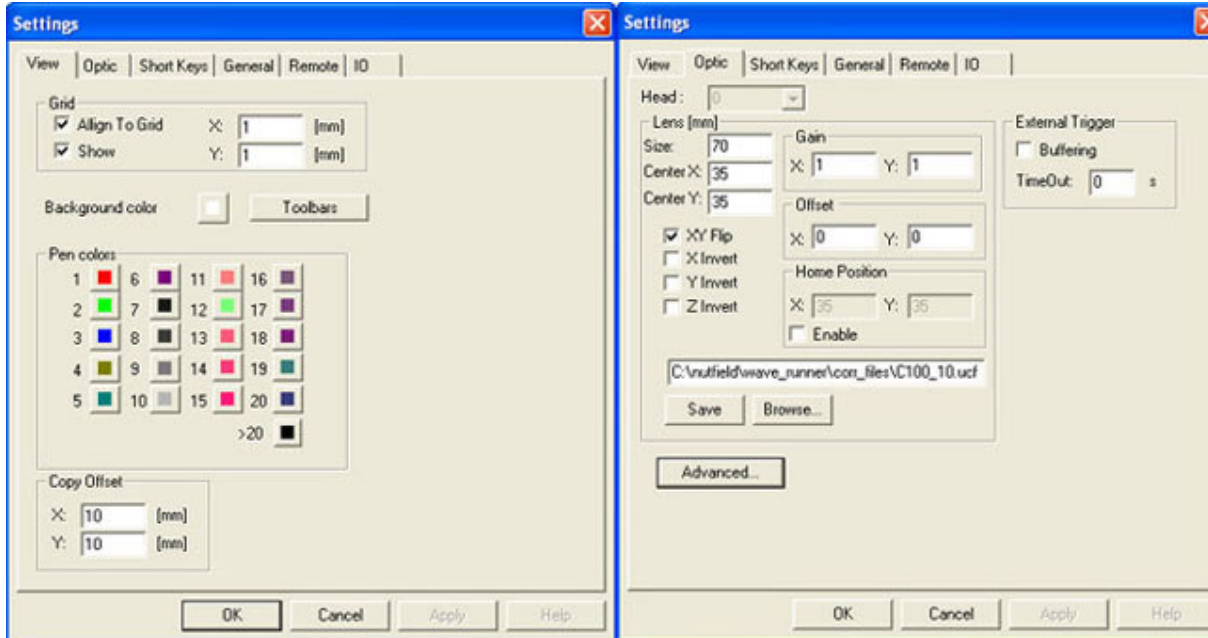
The Preview Screen is a powerful tool, exclusive to WaveRunner, which allows users to monitor and troubleshoot a Job. This screen shows the Job Entities and all jump moves between vectors. Along the right side is a list of program execution commands, which can be monitored real time as a Job is executed. Along the bottom, scanner and laser commands can be monitored real time as a Job executes.



### VIEW AND OPTIC SETTING SCREEN

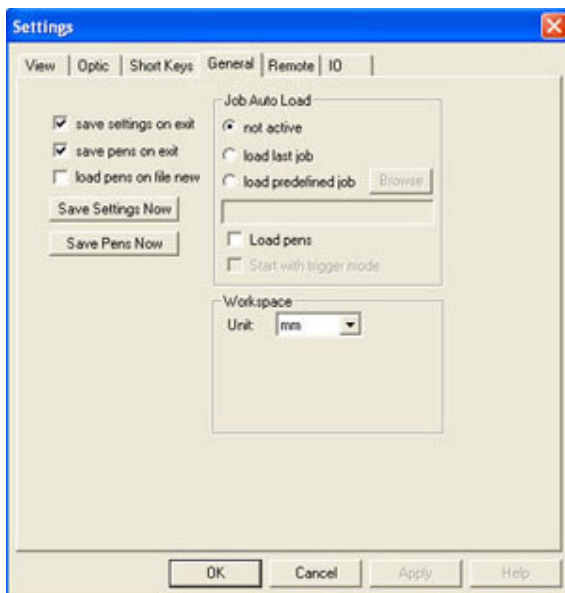
The View Setting Screen allows the user to set up the look of the Main Screen by selecting the background color, pen colors, and grid spacing and functions.

The Optic Setting Screen allows users to lens information, correction file location, adjust gain, offset and home location, invert axes and select buffering for serialization.



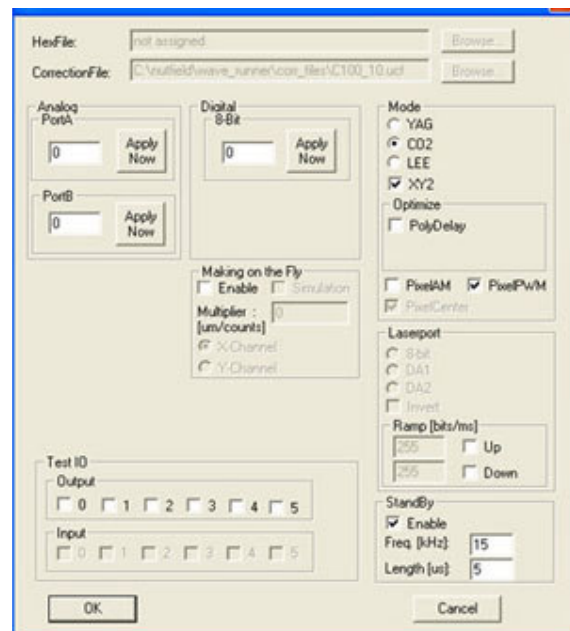
### WAVERUNNER GENERAL SETTINGS

The General Settings Screen allows the user to select how Jobs will be opened and closed.



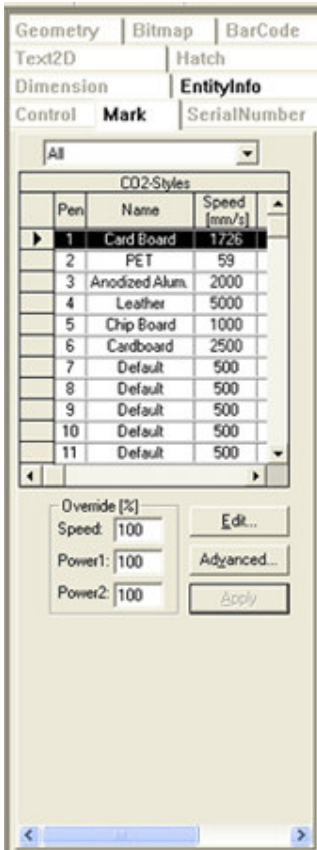
### WAVERUNNER HARDWARE SETTINGS

The Hardware Settings Screen allows the user to select the laser type and laser settings. It also allows the user to select Mark-On-The-Fly and to test Outputs.



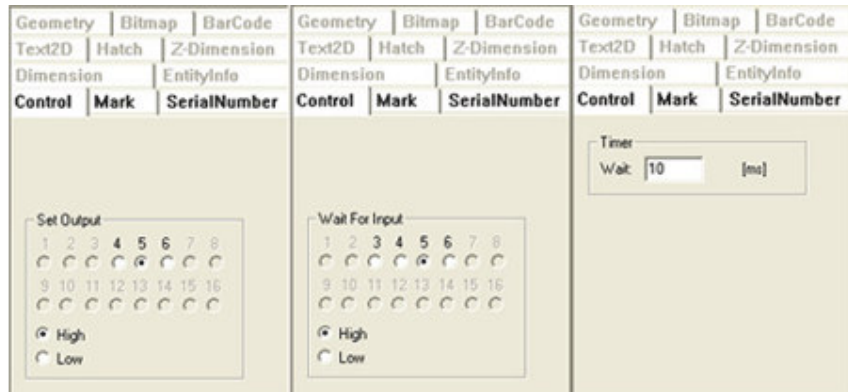
### MARK TAB

The Mark Tab allows users to setup the control parameters for an Entity. Pens are used to setup an Entities Mark Speed, Scanner Control and Laser Control parameters. Global settings allow control over all Entities.



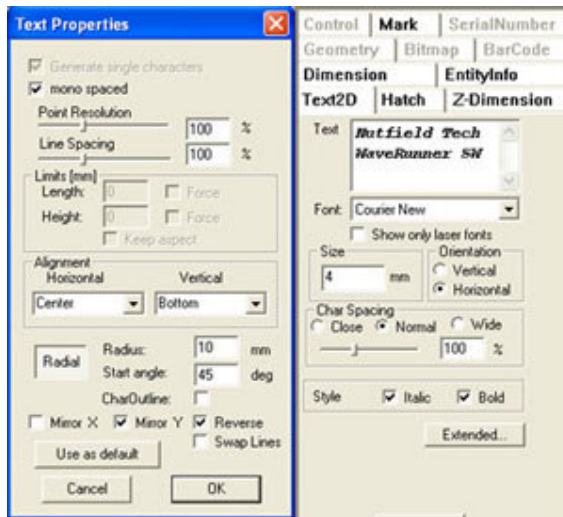
### WAVERUNNER CONTROL

The Control Tab allows users to setup Inputs, Outputs and Timer Functions.



### TEXT TAB

The Text Tab allows users to enter text, select laser or True Type fonts, select font size and orientation, character and line spacing, italic and bold functions and set up radial text.



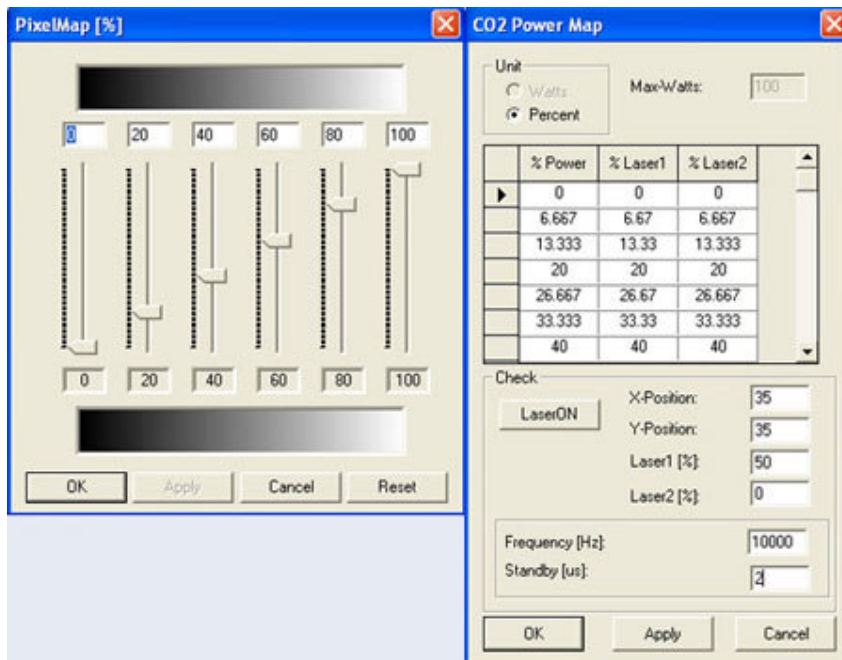
### ENTITY INFORMATION TAB

The Entity Information Tab allows users to name an entity, select to mark outline and hatch and set up array information and mark direction.



### POWER CONTROLS

The Power Control Screens allow users to linearize grey scale marking and laser power settings.



### GEOMETRY TAB

The Geometry Tab shows users detailed information about the geometry of an Entity.

Control	Mark	SerialNumber
Text2D	Hatch	Z-Dimension
Dimension	EntityInfo	
Geometry	Bitmap	BarCode

Ellipse

Center X:  [mm]

Center Y:  [mm]

Radius X:  [mm]

Radius Y:  [mm]

SegCount:

Start Angle:  [Deg]

Delta:  [Deg]

### BARCODE TAB

The Barcode Tab allows users to enter barcode data, select barcode type, set barcode format and adjust barcode parameters.

Text2D	Hatch	Z-Dimension
Dimension	EntityInfo	
Control	Mark	SerialNumber
Geometry	Bitmap	BarCode

BarCode

Text: Required Characters:

Valid

Format:

WideToNarrow:

BarLineReduction [%]:

VariableLength

Text

Enable

Size:  mm

Baseline:  mm

Point resolution:  %

Spacing:  %

### BITMAP TAB

The Bitmap Tab allows users to setup and adjust bitmap Entities.

Text2D	Hatch	Z-Dimension
Dimension	EntityInfo	
Control	Mark	SerialNumber
Geometry	Bitmap	BarCode

Invert

Scanner Bitmap

Intensity

I (0-2)

Brightness

B (-1 - 1)

Scanner Bitmap

Show Bitmap

Show Scanner Bitmap

Show All

Dither Step:

GrayScale

## DIMENSIONS

The Dimensions Tab allows users to move and dimension entities exactly where they would like. Z-dimension allows translation in the third dimension.

Control	Mark	Control	Mark		
SerialNumber	Geometry	SerialNumber	Geometry		
Bitmap	BarCode	Text2D	Bitmap	BarCode	Text2D
Dimension	EntityInfo	Hatch	Z-Dimension		
Hatch	Z-Dimension	Dimension	EntityInfo		

Status

Offset Z:  [mm]

Scale Z:

Translate

Z:  [mm]

Scale

Z:

Mirror

Outline

Z [mm]

max

dim

min

Translate

X:  [mm]

Y:  [mm]

Scale

X:

Y:

Rotate

Center [mm] Angle [deg]

X:  abs

Y:  rel

Outline

	X [mm]	Y [mm]
min	<input type="text" value="16.645"/>	<input type="text" value="48.159"/>
max	<input type="text" value="67.935"/>	<input type="text" value="60.271"/>
dim	<input type="text" value="51.29"/>	<input type="text" value="12.112"/>

Keep Aspect Ratio

## HATCH

The Hatch Tab allows users multiple hatch algorithms. One or two hatch directions can be selected at user defined angles. Hatch start and stop offsets can be added.

Control	Mark	
SerialNumber	Geometry	
Bitmap	BarCode	Text2D
Dimension	EntityInfo	
Hatch	Z-Dimension	

Hatch1  Hatch2

Original Values  All Lines

Enable  Sort  Style

Distance [mm] Angle [Deg]

Minimal Jump:  [mm]

Start Offset:  [mm]

End Offset:  [mm]

Line-reduction:  [mm]

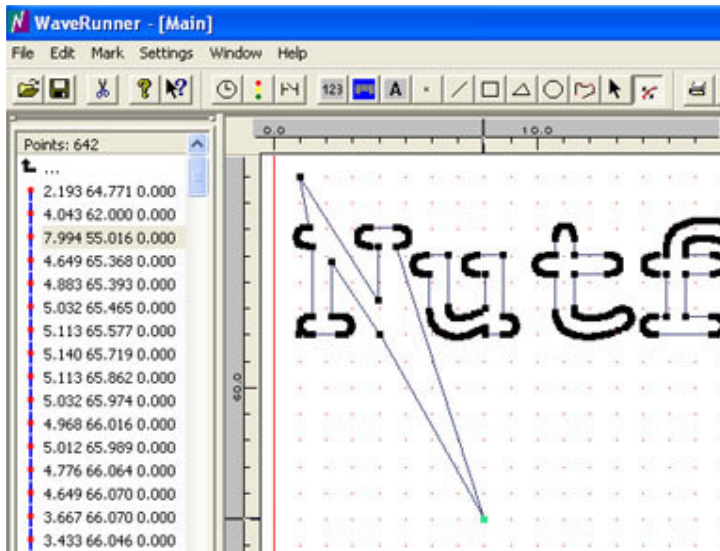
Beam-compensation:  [mm]

NumLoops:

Don't fill rest

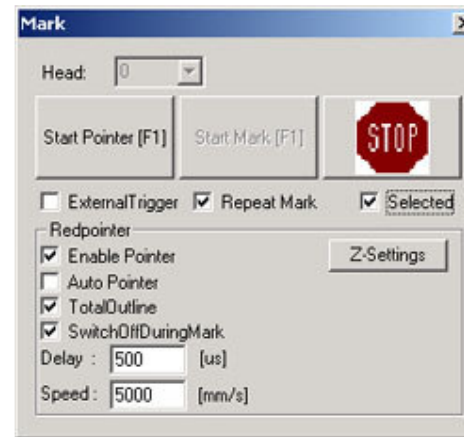
## VECTORS

Any Entity can be displayed as a list of individual vectors. Here the user can edit and modify any Entity by manipulating individual vectors in the list.



## START

The Start Screen allows the user to start a Job, setup the pointer preview function, select Entities to be executed and select the repeat function. There are several pointer setup features to allow a variety of automated pointer options.



## SERIALIZATION TAB

The Serialization Tab allows users to setup serialization parameters and file location for database merge applications.

