Contents

<u>Introduction</u> <u>Paper Mill - A</u>

<u>Tutorial</u>

<u>Features</u> <u>The Control</u>

<u>Window</u>

<u>Functions</u> <u>The History</u>

Window

<u>Paper Mill FAQ</u> <u>The Magnify</u>

Window

Ordering DetailsThe Palette EditorSupport andThe Piano Window

Information

Copyright and Menus

Warranty

Introduction

What is Paper Mill?

Paper Mill is an exciting utility application to help you create repeatable texture maps for web pages and desktop wallpaper. Paper Mill uses exclusive methods to ensure that every image generated by the program is guaranteed to tile, no matter what. Paper Mill extends the operation of a normal image processing program, and adds many <u>fractal</u> and mathematical effects to offer the widest variety of images available anywhere.

What does Paper Mill Offer?

Paper Mill attempts to make it easy to create many different kinds of images. Special <u>features</u>, such as the "Piano Window", in conjunction with Undo, allow you to interactively generate textures. Since the program offers so many options and features, this immediate mode interface lets you explore with different settings and make beautiful textures in no time. Combined with the history window, which records all of your piano window operations, you can easily backup, retry or regenerate your image with minimum effort.

Additionally, Paper Mill has a wide range of features, not the least of which include:

Guaranteed repeatable textures

Saving in Windows BMP and Compuserve GIF

Over 30 unique base functions

7 Image processing functions specially designed to ensure image tiling

Unique increment save which will save images under a unique filename for your later review.

Contents

Features

Paper Mill has a number of features to help with the interactive creation of repeatable textures.

All functions and image processing tools will seamlessly tile. Paper Mill uses many unique functions which were specially designed to ensure the resulting image will tile.

Saving in popular image file formats: Windows .BMP and Compuserve .GIF.

Over 20 different base <u>functions</u> for creating textures. Each function has common attributes, such as how the colors are placed in the image.

7 image processing functions for modifying images. Anyone who's used image processing software will be familiar with the annoying edges artifacts produced by such functions as blur, emboss and matrix. Paper Mill overcomes this problem by using special programming to ensure the images will continue to tile.

Advanced windows based user interface. Developed with powerful object oriented techniques, Paper Mill is easy to learn, and powerful.

Powerful <u>palette editor</u> specially designed for image/texture generation. The Paper Mill palette allows easy editing of the entire palette at on time, and the ability to create multiple color "nodes" for custom editing.

Unique "piano" window for interactive texture generation. Probably the most powerful feature of Paper Mill, the piano window has a button for each available <u>function</u>. You can quickly execute functions by left-clicking a button, or change the functions parameters by right-clicking on the button.

A full-featured UNDO command which lets you toggle back and forth between the current operation and the previous. Combined with the piano window the undo feature allows real interactive image generation.

Different "plot modes" for combining textures. New functions can be added to, subtracted from, or mixed with the current image.

Contents

Fractals are endlessly-repeating images.

Technically, a fractal is "self-similar", meaning that smaller parts of the image look very much like the whole image. However, fractal-like effects have been found which are based on random numbers. All computers have the ability to create random numbers (actually, almost-random numbers), and these numbers can be used to create interesting images.

Function List

Paper Mill has a number of functions which are used to both generate images and modify them. All functions have certain properties which are the same. Each function also has a unique set of parameters which define it's behavior.

Functions

<u>Blur</u>	<u>Boxes</u>	<u>Camo</u>	<u>Circles</u>
<u>Clear</u>	Emboss	<u>Feather</u>	<u>Grid</u>
<u>Harmony</u>	<u>Harmon</u> <u>y2</u>	<u>Matrix</u>	Networ <u>k</u>
Noize 1	Noize 2	<u>Scratch</u>	<u>Static</u>
<u>Streaks</u>	<u>Waves</u>	<u>Weave</u>	Wiggle Wiggle

Blur

Strength

This setting controls the relative weight of the center pixel. As Paper Mill blurs the image, it averages the nine pixels in a 3x3 matrix surrounding the current pixel (see diagram below). The center pixel is multiplied by this strength value. Higher values cause *less* of a blurring effect.

1	2	3
4	5	6
7	8	9

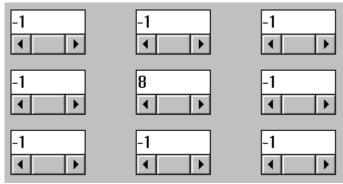
The 3x3 matrix used by the blur function.
The center pixel is multiplied by the strength value.

See also: Matrix

Matrix

The matrix is a 3x3 array of multipliers. The function operates on each pixel in the image. All 9 pixels are multiplied by the values in the nine number controls (shown below). The result is then divided by the sum of the nine multipliers, and this value is used for the new pixel color.

Many interesting effects can be accomplished with the Matrix algorithm (also called a Convolve operator). The example below shows a simple blurring operation. The function can also do edge enhancement, direction "shadow" effects, and much more.



The nine number controls from the Matrix edit window.

See also: Blur, Emboss

Emboss

Strength

This value adjusts the amount by which the emboss effect is generated. A value of 1.0 represents an even emboss, with the center color equal to one half the total number of colors. A value less than 1.0 will produce a darker image, which values above 1.0 will produce brighter images.

The matrix function can be used to produce embossing effects, but this actual emboss function enables you to apply subtle color changes by adjusting the strength value.

See Also: Matrix

Circles

The circle function has many options, and no less than 7 different operating modes. This may seem complex, but the varied effects this function can produce are quite spectacular.

Color Range Choose the low- and high-color to be used for the rendered circles.

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Count Enter the number of circles to produce. Higher numbers of circles

take longer to generate. Be especially mindful of the count variable

when the Size value is set anywhere above .5.

Freq. Set the frequency for the Radial and Blend versions of the Circles

function.

Size Set the relative size of the circles to produce. A value of 1.0 is

equivelant to a circle which covers the entire tile size. Likewise, a value of .5 creates a circle which is half the size of the tile size. Be mindful of large values here (greater than .5), especially when the

Count value is large.

Mode Here's where the real power of the Circles function comes into play.

Flat Creates a series of flat circles which do not overlap.

Conic Similar to flat, but the flat circles are shaded.

Radial 1 The generated circles are merged by using the

rebounded color values along the wave frequency

used.

Radial 2 The generated circles are merged by using the max

color value along the wave frequency used.

Radial 3 Radiating circles are merged using a mix/max method.

Radial 4 A different method of merged circles using the mix/max

method.

Radial 5 Yet another method of merging the circles using the

mix/max method.

Blend Circles are combined by mixing, or averaging, the

colors.

I-Blend Circles are combined by inverting, then mixing the

colors.

Boxes

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Count Set the number of boxes to generate.

Rotation A pseudo-rotation value used to offset the orientation of the boxes

created.

Aspect The aspect ratio (or squareness) of the generated boxes. A value

of .5 causes square boxes to be generated. A value of .1 causes

narrow boxes to be created.

Size Set the relative size of the boxes to produce. A value of 1.0 is

equivelant to a box which covers the entire tile size. Likewise, a value of .5 creates a box which is half the size of the tile size.

Camo

Color Range Choose the low- and high-color to be used for the rendered

camouflage objects.

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Count Enter the number of camouflage objects to produce.

Sections Determine the maximum number of sections for each camouflage

object. Each sections increases the tendency of the camouflage

object to turn, or bend.

Length Determine the maximum length of each section.

Delta A percentage value determining how likely it is for a camouflage object

to change thickness as it is drawn.

Clear

Clear Color

The index of the color to use when clearing the image.

Feather

Seed

Choose a seed to change the size, placement and colors of "feather" objects.

Grid

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Roughness Sets the amount by which the grid will be randomized. Larger values

cause the grid to become increasingly random.

Color # The color number to use to render the grid.

Res. The resolution of the grid. This value should be a power of 2 to

ensure proper tiling.

Mode Wireframe mode.

Harmony

Color Range Choose the low- and high-color to be used for the rendered waves.

Frequency 1 The frequency, or number of waves, created along the X axis (width of

the image)

Frequency 2 The frequency, or number of waves, created along the Y axis (height

of the image)

Base FX The waves created by this function can be offset by the pixel values in

the underlying image. Rough noizy images will cause the waves to be rough, while a flat color image will have no effect on the waves.

Scale Used with Base FX above. This sets the multiplier for the pixel value

from the underlying image.

Harmony 2

Color Range Choose the low- and high-color to be used for the rendered waves.

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Wave Count Set the total number of waves to produce.

Max. Frequency Set the maximum frequency for the randomly produced waves.

Network

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Count Set the number of network connections to create. Depending on

image size, higher number can quicly fill the imge. Try to use values

of 6 or less on a 128x128 bitmap.

Static

Color Range Choose the low- and high-color to be used for the static.

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Block Size The size of the static elements to create.

Static Method How the static will be generated. Options are Spots and Blocks.

Spots generates a solid static field, while Blocks use a recursive splitting method to generate different sized and shaped blocks.

Draw Method Changes the drawing method.

Noize 1

Noize Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Color Clamp Determines how PaperMill handles noize patterns which go beyond

the maximum numer of colors.

Overcut This method simply ignores the fact that colors go

beyond the maximum allowed.

Rebound This method fixes colors so they stay in the range of

the lowest and highest colors available.

Scale This method scales colors to an even distribution from

low to high.

X-Roughness Sets the roughness of detail along the X axis.

Y-Roughness Sets the roughness or detail along the Y axis.

See Also: Noize 2

Noize 2

Noize Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

X-Roughness Sets the roughness of detail along the X axis.

Y-Roughness Sets the roughness or detail along the Y axis.

See Also: Noize 1

Scratch

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Count Sets the number of scratch elements to create.

Size Sets the length of scratch elements.

Mode Determines the scratch mode.

Dash Creates scratches in the middle color

Random Dash Creates scratches in random colors.

Horz-Vert Creates horizontal and vertical dashes.

Meander Creates meandering scratches.

Streaks

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Roughness Sets the roughness of the streaks pattern.

Direction Sets the direction of the streaks.

Waves

Color Range Choose the low- and high-color to be used for the rendered circles.

Seed Specify a seed value for the random number generator. Different

numbers produce different patterns. Legal values range from 0 .. 32767. Setting this value to 0 causes PaperMill to select a new seed

at random.

Wave Count Enter the number of waves to produce.

Amp. Set the maximum amplitude for the waves produced.

Base FXThe waves created by this function can be offset by the pixel values in

the underlying image. Rough noizy images will cause the waves to be rough, while a flat color image will have no effect on the waves.

Scale Used with Base FX above. This sets the multiplier for the pixel value

from the underlying image.

Weave

Color Range Choose the low- and high-color to be used for the rendered circles.

Freq. X The frequency of the weave pattern on the X axis.

Freq. Y The frequency of the weave pattern on the Y axis.

Wiggle

Wiggle Mode Sets the type of wave to use for the wiggle.

Direction Sets the direction of the wiggle effect, eighher horizontal or vertical.

Frequency Sets the frequency of the wave. A value of 1 causes one complete

wave in the chosen direction.

Amp Determines the amplitude of the wave. Higher values cause a more

dramatic effect.

Support

Should you need more information about PaperMill or any other products supported by The Art Machine, please feel free to contact us.

You can reach The Art Machine via:

E-Mail: tam@glis.net

Website: http://tam.glis.net

USMail: The Art Machine

4189 Nickolas

Sterling Heights, MI 48310

Phone: (810) 264-2110 (10 a.m. to 10 p.m. EST)

Ordering

Two levels of ordering/registration are available:

User Registration

User registration includes the following:

Free tech support via mail/email

The latest copy of the software with the latest functions

No delay or nag screens

Royalty free use of Paper Mill generated images on your web site, desktop, or software. (No more than 20 Paper Mill generated images can appear on any one publicly available media, including Web sites, floppy disk, streaming tape, CD ROM or other mass-storage device.

A low registration fee of just \$29.95

User Registration Form

Developer Registration

Developer Registration includes the following:

Free phone/email tech support

Free updates of the current version of the software. (version 1.0 and all 1.x updates)

No delay or nag screens

Royalty free use of Paper Mill generated images for any purpose. With a Developer Registration, no limit is placed upon the number of images which may appear on any publicly available media.

Developer Registration Form

FAQ

Even though Paper Mill is a new product (as of April, 1996, anyway), we've compiled a list of answers to frequently asked questions:

- Q. How does Paper Mill do it's magic?
- A. Paper Mill makes heavy use of modulus arithmetic, transcendental math and fractal sub-division methods to produce it's tiled images.
- Q. What are the benefits of ordering?
- A. Paper Mill is a never-ending project. Ordering the software ensures that you always have the latest and greatest image creation tools available. Paper Mill is constantly being updated to include new function, and extend existing functions.
- Q. Can I use Paper Mill's images in my own packages?
- A. If you are a registered user of Paper Mill, you can use the images created by the program for any purpose other than prducing collections of wall paper, back drops or backgrounds for commercial purposes. Web pages, splash screens and desktop wallpaper patterns are allowable for registered users.
 - Registered developers can use the images generated by Paper Mill for any purpose, including image collection development. You must be a registered developer to create any large collection of images made by Paper Mill.
- Q. Paper Mill only handles 230 color images. Will there ever be a 24 bit version of the program?
- A. Yes. Paper Mill is currently being ported to a full-24 bit program. Additionally, special industry standard plug-ins are being developed which use Paper Mill technology.
- Q. I've seen some cool images created with Paper Mill, but I can't get the program to do anything like them. What's the seceret?
- A. Paper Mill has several features which are very helpful in producing interesting images. First, experiment with the Plot Mode available in all the functions. Especially, try the Subtract method. Second, make the most of the palette. Many functions allow you to choose a range of colors. Lastly, experiment! Even though streaks and waves don't sound like they'll go together, you may be surprised when you combine them!

Control Window

The control window lets you create images by combining a number of functions together. The list in the control window is like a little program telling Paper Mill what functions to execute, in what order.

You can use the Add.. and Remove... buttons from within the Control Window to edit the list

As you click on buttons in the the <u>Piano Window</u>, they are added to an internal history list. The <u>History Window</u> (available from the Window Menu), records your last 50 functions executed from the Piano Window.

To copy functions from the history to the Control window, simply highlight the desired functions, and click the "Store" button.

See Also: Piano Window, Save Parameters, Load Parameters

Palette

Paper Mill's palette tool enables you to easily define a range of colors. Since the colors in an image are mapped to specific entries in the palette, it's easy to experiment with the colors in an image.

The palette system employed by Paper Mill is optimized for a 256 color (8 bit) display. Color updates will be slower on 15, 16 or 24-bit displays, since the images must be redrawn to ensure proper color updating.

Preset You can quickly change the palette to any preset colors by selecting

the corresponding name from this list.

Save Click the Save button to save the current set of colors under a new

name.

Delete Click Delete to remove the currently selected set of colors from the list

of presets.

Color Ranges You can move the knobs of the color range to change the distribution

of colors over the palette. You cannot change the position of the first

and last colors in the range.

Add Color This adds a new color (knob) to the right of the currently selected

color. (If the last color is selected, nothing will happen).

Delete Deletes the currently selected color (knob). You cannot delete the

first or last colors.

Copy This copies the current color definition (red, green and blue) to an

internal clipboard.

Paste This pastes the red, green and blue values stored on the internal

clipboard into the current color definition.

Undoes the last operation (such as moving a color or changing a

colors RGB values, or deleting a color knob)

Fract. Color This assigns a random RGB value to the current color.

Fractalize Assigns random colors to the entire palette.

Reverse All Swaps the first color for the last color, reversing the order of the

palette.

Invert All Compliments all the colors in the palette.

Red, Green, Blue Moving the "thumbs" in the scroll bars change the red, green and blue

components of the current color

The Save GIF++ menu option allows you to save the current image automatically. Paper Mill automatically increments an internal counter and saves the image in the home directory with a unique filename based on the number. (i.e. PAT0004.GIF)

How to Use Paper Mill

It is highly recommended that you work through this quick tutorial on how to use PaperMill. It will only take a couple of minutes, and will give you a solid foundation for exploring the rest of the program.

Quick Start

- 1. After starting the program, find the Piano Window.
- 2. Find the button labelled "Harmony2" and click it with your left mouse button. Observe the repeatable pattern in the main window.
- 3. Click the Harmony2 button again. Notice that nothing happened. To fix these, we'll edit the Harmony2 parameters.
- 4. Right-click on the Harmony2 button. This brings up the Edit window, where you can edit a functions parameters.
- 5. Change the "Seed" value to 0. Setting a seed value to 0 causes the program to pick new seeds at random.
- 6. Click the Apply button in the lower right hand corner of the Harmony2 Edit window. Then click it again. Notice different patterns are produced each time you click the Apply button.
- 7. From the drop-down list labelled "Plot Mode" at the top of the Harmony2 Edit window, select "Subtract."
- 8. Again click the Apply button. Setting Plot Mode to Subtract causes the new image to be subtracted from the original.
- Click "Okay" button in the Edit window.
- 10. Select Palette from the Window menu. The Palette Editor appears.
- 11. Notice the range of blue colors near the top of the Palette Editor. Immediately below the color range are three "knobs." Click on the middle knob and drag it left and right. You can add and remove knobs, and change their position. However, the first and last knobs cannot be moved.
- 12. The center knob is now the current color. Adjust to red, green and blue sliders at the bottom of the Palette Editor to your liking.
- 13. Press "Okay" to exit the Palette Editor.

- 14. From the Window Menu, choose "Magnify".
- 15. **Press** your right-mouse button in the middle of the Magnify Window and drag the mouse around. The Magnify window has "infinite scroll."
- 16. Press your left-mouse button. You can draw off of the Magnify Window and Paper Mill will "wrap" the drawing to make the image tile.

This covers some of the major features of Paper Mill. You are encouraged to experiment with the features, and especially to try new functions in the Piano Window.

User Registration Form

To order your copy of Paper Mill 1.0 simply fill out the following form and mail it, along with your payment (check or money order) to:

The Art Machine 4189 Nickolas Sterling Heights, MI 48310 USA

will receive a full working as the latest version, in	user level registration of Paper Name Name I Paper Name Name I Paper Name I Paper Name I and I discounts on future versions a	is any delay screens), as well lso understand that I will
Company		
State		
Zip		
Phone	(optional)	
Quantity	x \$29.95 each	=
	x \$1.75 shipping	=
	То	tal:
Please specify dis	k size: 3 1/2"	5 1/4"

Check or Money Order only. Make payable to 'The Art Machine'. Payment must be in US funds drawn on a US bank. For information on quantity discounts (3 or more), purchase orders or site license agreements, contact The Art Machine directly.

Menus

FIIe

Save As

Windows Bitmap

GIF 87

Save BMP++

Save GIF++

Load Parameters

Save Parameters

Image Size...

Exit Exits the program.

Options

Show Sample Text
Sample Text Color

Window

Close All

Control Window

Magnify Window

Palette

Piano Window

History WIndow

Help

Contents

How to use help Displays a help file on using Windows Help Tutorial Displays a brief tutorial on using Paper Mill

About Brings up version information about the program

Developer Registration Form

To order your developer copy of Paper Mill 1.0 simply fill out the following form and mail it, along with your payment (check or money order) to:

The Art Machine 4189 Nickolas Sterling Heights, MI 48310 **USA**

that I will receive a well as the latest v receive access to	er a developer level registration of Paper Mill 1.0. I understant full working version of the program (minus any delay screens ersion, including any new functions. I also understand that I free updates of the current version (i.e. all 1.x updates) as well unlimited quantities of images created with Paper Mill.	s), as will
Company		
State	Country	
Zip		
Phone	(required for developers)	
	\$299.95 each =	
	\$1.75 shipping =	
	Total:	
Please specify	disk size: 3 1/2" 5 1/4"	
signed	date	

Check or Money Order only. Make payable to 'The Art Machine'. Payment must be in US funds drawn on a US bank. For information on quantity discounts (3 or more), purchase orders or site license agreements, contact The Art Machine directly.

Load Parameters allows you to load a predefined set of parameters into the <u>Control Window</u>.

The Save Parameters menu options lets you save the current functions and settings in the Control Window to a file.

The Save BMP++ menu option allows you to save the current image automatically. Paper Mill automatically increments an internal counter and saves the image in the home directory with a unique filename based on the number. (i.e. PAT0004.BMP)

Saves the image in Windows BMP format, sutable for wallpaper on your system's desktop.

Saves the current image in GIF format, suitable for backdrops in World Wide Web pages.

Change the image size by entering the new dimensions. The width setting will always be an even multiple of 4.

This menu option turns on 6 lines of sample text. This is designed to give the HTML author an idea of what text will look like on his/her web page.

Lets you change the sample text color.

Sometimes, after editing lots of functions, the screen can become cluttered with Edit windows. Choose this menu option to close all of the edit windows.

This menu option lets you turn the $\underline{\text{Control Window}}$ on or off.

Paper Mill 1.0 Backdrop Generator

Magnify Window

The Magnify Window (accessible via the Window menu, or by pressing the 'M' key), is where Paper Mill lets you scroll a zoomed view of your image, as well as edit the image with drawing tools.

You can scroll the magnified view by pressing the right mouse button.

To draw in the magified window, choose the drawing tool you want from the tool menu, then pick the color you want from the Draw Color window. Left click and drag the mouse to draw.

While magnified, certian key strokes come into play:

UP Scrolls the window up

DOWN Scrolls the Window down

LEFT Scrolls the window left

RIGHT Scrolls the window right

i Zooms the view in

o Zooms the view out

- (minus) Makes the drawing brush smaller

= (equals) Makes the drawing brush larger

u Undoes the last drawing operation. Note, this undo is separate from

the Undo available in the Piano window.

The menu option lets you turn the magnify window on or off. You may also use the 'M' key for this.

This option lets you turn the $\underline{\text{Palette}}$ window on.

Paper Mill 1.0 Backdrop Generator

Piano Window

The Piano Window is an array of buttons which let you create images. Each button is mapped to a different function. Clicking the button causes a tileable image to be created and displayed.

To edit a particular functions' parameters, simply right-click it.

The UNDO button in the lower right hand corner lets you undo the last function executed through the Piano window.

Paper Mill 1.0 Backdrop Generator

History Window

The History Window records your last 50 functions executed through the <u>Piano WIndow</u>. You can select a list of functions to store in the <u>Control Window</u>. Or, you can clear the list.

This menu option lets you turn the $\underline{\text{Piano Window}}$ on or off. By default, Paper Mill starts with the Piano Window on.

The History Window menu option lets you turn the $\underline{\text{History Window}}$ on or off.

Paper Mill 1.0

Copyright

Copyright (C) 1996, The Art Machine. All Rights Reserved.

Warranty

PAPER MILL IS PROVIDED "AS-IS" AND WITHOUT WARRANTIES AS TO PERFORMANCE OR MERCHANTABILITY. ANY STATEMENTS MADE ABOUT THE USES OF THIS SOFTWARE DO NOT CONSTITUTE WARRANTIES AND SHALL NOT BE RELIED ON BY THE BUYER IN DECIDING TO PURCHASE THIS PROGRAM. THIS PROGRAM IS SOLD WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES WHATSOEVER. BACAUSE OF THE DIVERSITY OF CONDITIONS AND HARDWARE UNDER WHICH THIS PROGRAM MAY BE USED, NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS OFFERED. THE USER IS ADVISED TO TEST THE PROGRAM THOROUGHLY BEFORE RELYING ON IT. THE USER MUST ASSUME THE ENTIRE RISK OF USING THE PROGRAM. ANY LIABILITY OF SELLER/MANUFACTURER WILL BE LIMITED EXCLUSIVELY TO PRODUCT REPLACEMENT OR REFUND OF PURCHASE PRICE.