

SECOND CHANCE V2.0

Manual Addendum

New Procedures

Three new procedures have been added to SECOND CHANCE V2.0. They are CONVERT TO 640 and CONVERT TO 320 which are found in the EDIT menu and SEGMENTATION in the SHARPEN menu.

CONVERT TO 640

CONVERT TO 640 will convert an Apple II GS 320 mode gray scale image into a true 640 mode image. Default palettes are not used. The palette and pixels are both changed to produce a truer gray scale image. These images can then be saved and used, as is, in Apple II GS page layout programs or other 640 mode programs. For best compatibility with these programs, the images will always be saved in Apple Preferred Format.

After you select this option, the display changes into 640 mode. While in this mode, the 320 mode enhancement procedures become unavailable. Only the FILE and EDIT menus will be functional.

After conversion into 640 mode, you may go back into 320 mode and the enhancement procedures will become functional again. To return to 320 mode, open the EDIT menu and you will see that "Convert to 640" has been changed to "Revert to 320". Select this option. Do not select "Convert to 320".

CONVERT TO 320

CONVERT TO 320 will convert an image that was originally in 640 mode into 320 mode for use of the enhancement procedures. As in the previous procedure, both the palette and the pixels are changed to produce a truer gray scale image.

After selecting this procedure it will become dimmed and unavailable. It can be performed only once on a image. To return to the 640 mode to save the image after enhancement, select "CONVERT TO 640".

OPENING another file, or the same file, will restore the "CONVERT TO 320" option and it will again be available for use.

NOTICE

Contrary to statements from Apple Computer Inc., it is not possible to create

16 colors or gray scales while in 640 mode if the recommendations of Apple Computer Inc. are followed.

While in 320 mode, 16 colors or gray levels are available. While in 640 mode, only 6 true colors or gray levels are available due to the programming of Quickdraw II, the tool that actually does the drawing on the monitor screen.

Theoretically, dithering these six colors or gray levels in 640 mode can only produce a maximum of 15 different colors or gray levels. However, in order to get a good looking, i.e., truer gray scale, the effective number of gray levels drops to 14.

Therefore, the images converted from 320 to 640 or from 640 into 320 will not be perfect and will lose some of the gray scale. Since only 2 out of 16 are lost, it will not be very noticeable in most images. However, the loss of these two gray levels may have a sever effect some images. Because of this loss, repeated use of "Convert to 320" and "Convert to 640" degrades the image. Therefore, "Convert to 320" becomes unavailable after it is used on an image.

SEGMENTATION

SHARPEN MENU

The new process of Segmentation has been added under the SHARPEN menu.

This is a user defined process. When you select this process, a 3 X 3 mask will be displayed. You may enter any integer number (whole number, no decimals) into the mask cells. The center cell refers to the pixel being processed. The other cells refer to pixels in the same relative postion to the processed pixel. The numbers in the cells are multiplied with the value of the pixel and then the results of the multiplications are summed together.

Below the 3 X 3 mask is a check box. Check the box to have the result averaged by division with the number of pixles processed. Un-check the box for raw results.

A good example of the use of this process is in the enhancement of astronomical images though it will work on other types of images. It is an excellent process for detecting points and lines that are one pixel wide. There are many standard values for these cells. Books and other publications on image processing can give you more information.

Some examples of values are shown below. Note that the sum of the vaules in the cells is zero for most applications. This is not a strict requirement.

POINT DETECTION:	-1	-1	-1
	-1	8	-1
	-1	-1	-1

LINE DETECTION:	Horizontal			Vertical		
	-1	-1	-1	-1	2	-1
	2	2	2	-1	2	-1
	-1	-1	-1	-1	2	-1

DIAGONAL LINES:	-1	-1	2	2	-1	-1
	-1	2	-1	-1	2	-1
	2	-1	-1	-1	-1	2

AVERAGING:	1	1	1	
	1	1	1	
	1	1	1	with the "average" box checked.

This should give the same result as the Neighborhood Average in the SMOOTH menu.

GRADIENTS:	Horizontal			Vertical		
	-1	2	-1	-1	0	1
	0	0	0	-2	0	2
	1	2	1	-1	0	1

Gradients are used for edge detection.

Laplacian:	0	1	0
	1	-4	1
	0	1	0

The Laplacian responds to changes in intensity and is very sensitive to noise.