

Calculating Image Separation File Size

Gerber FastFact # 3014

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Summary: The following document is used to assist individuals in determining the size of their Image Separation files when a job gets rendered for output to the GERBER EDGE®. This information can be useful when attempting to determine the maximum size of a job for which you can render.

As GERBER EDGE® users begin to feel more comfortable working with their vinyl printers, many have asked, “Just how large a job can I run?” Especially when printing bitmap images, the limiting factor is often the amount of hard disk space available. While printing a bitmap to the EDGE, GAPlot creates several work files of its own, above and beyond the original bitmap file and the PLT files. Forecasting the required disk space for these work files can be accomplished by adding the sizes of the following file types.

ORIGINAL IMAGE FILE

The original image is that file scanned in or copied from a photo-CD and placed into the Composer work area. Popular (and GA™ compatible) file types include BMP, PCX, and TIF. Printing to the EDGE is not possible if the original image has been deleted. The “snapshot” displayed in Composer is merely a placeholder used for paper printing, Generating Decal Cuts and displaying the image in the Composer workspace. Image file size can be found using File Manager, Explorer or GAFMan. Location of the file depends upon where it was saved by the operator.



Separation Files

Separation files are an example of the “working files” created by GAPlot. As with bitmap images in general, picture them being modeled after a sheet of graph paper, marked with rows and columns. When an image is prepared for printing to the EDGE, it is simplified into files representing its basic color composition. This process is called rendering and it’s product is separation files. An image with a spot color fill will render only one of these separation (IMO) files as it is comprised of only one color. On the other hand, a process color image will create four IMO separations to cover its **Cyan Magenta Yellow and BlacK** (CMYK) color model (see below).

The size of an individual IMO file directly reflects the dimensions of the image(s) as sized in Composer. File size is based on the following formula (figure 1).

The information contained in the separation file(s) references discrete elements of each image. These elements are called pixels and would be represented by the squares on a sheet of graph paper. The corresponding basic element within GA is the dot. On account of each IMO

$$\frac{[300 \times \text{Image Width}^{\text{inches}}]}{8} [300 \times \text{Image Height}^{\text{inches}}]$$

- figure 1 -

representing only one color, the memory required to represent the separation will only be one Bit Per Pixel (BPP). You can think of each pixel as having a value of 1 (“yes, color me”) or 0 (“no color here, thank you”).

Because the EDGE prints at a 300 Dots Per Inch (DPI) resolution and since we know the bitmap will require 1 bit of memory per pixel, multiplying 300 by the width (in inches) will provide the number of pixels per row in our bitmap. The bits per row directly parallels this pixel per row figure. Dividing this figure by eight offers us the number of *bytes* per row in the bitmap.

Having figured the bytes per row, determining the number of rows in the bitmap is our next step. This is achieved by simply multiplying 300 by the height of the image (in inches).

The final step is to multiply the *bytes per row* by the *number of rows*. This figure should roughly represent the number of bytes in a separation file. Remember, one IMO is created for spot filled bitmaps while four will be necessary for process color bitmaps. These IMO image separation files are saved to the system's SEPPATH directory.

ROTATION FILE

Another of the "work files" is called the rotation file. The file is referenced by GAPlot and has an IMO extension. This file is written into the SEPPATH directory and its size should closely parallel that of the original image.

PUTTING IT ALL TOGETHER

Once you have determined the sizes of GAPlot's individual "work files" and have tracked down the sizes of the respective PLT and bitmap files, you essentially have all the numbers you will need to forecast the hard disk space required for EDGE printing a particular bitmap. Because of internal "bean counting," these figures will provide a rough idea of the required disk space. Actually, the numbers you calculate will tend to reflect the minimum amount of disk space required. You won't be able to get exact figures but these should be close enough to plan ahead.

