

NAME

gpsras – graphics processing system raster file format

DESCRIPTION

The *gpsras* file format is a very simple bitmap image format, historically used by the now-obsolete Graphics Processing System on some legacy UNIX systems. Because of its simplicity, and the prior availability of utilities to manage files of this format, it was adopted as an image format for the SCRC analysis software.

The *gpsras* image files consist of a single, variable length line of ASCII text, terminated by a newline character, which is the image file header, followed by a stream of bytes of image data.

GPSRAS Header Format

gpsras *bpp ncol nrow*

The **gpsras** text string in the header is followed by these three numbers:

bpp indicates the number of bits per pixel. Valid values are 1, 2, 4 and 8. The only commonly used value in this suite of software is 1, used for black and white bitmap images.

ncol indicates the number of columns of data per row, i.e. the number of bytes per row. The number of pixels per row is the product of *ncol* and *bpp*. As such, for a 1 bit per pixels black and white bitmap, the number of pixels per row must always be a multiple of 8.

nrow indicates the number of rows of pixels in the image.

The **gpsras** text string and the three numbers above are followed by a newline character which indicates the end of the header bytes.

GPSRAS Body Format

The header is followed by a stream of binary data which traces the image from left to right, and from top to bottom. The bytes are in row-major order, i.e. all the bytes of the first (top) row appear together, followed by the bytes of the second row, and so on. In the case where there are less than 8 bits per pixel, the most significant bits in the byte represent the leftmost pixels. In the common case of 1 bit per pixel, 1 will usually represent a pixel that is on or painted, and 0 is off or background. Historically, on older displays where white pixels were drawn on a black background, it meant that 0 was black and 1 was white. More commonly today, dark pixels are drawn on a white background, so the image in 1 bit per pixels *gpsras* format files are actually the inverse, where 1 usually means a black pixel, and 0 is white. When 2, 4 or 8 bits per pixels are used, the values at each pixel will usually represent shades of gray, with 0 being black and all ones being white. As there is no colour map, and no more than 8 bits per pixel, *gpsras* is not really suited to colour images.

SEE ALSO

sdump(1), *ras2xbm(1)*, *emuhpgl(1)*