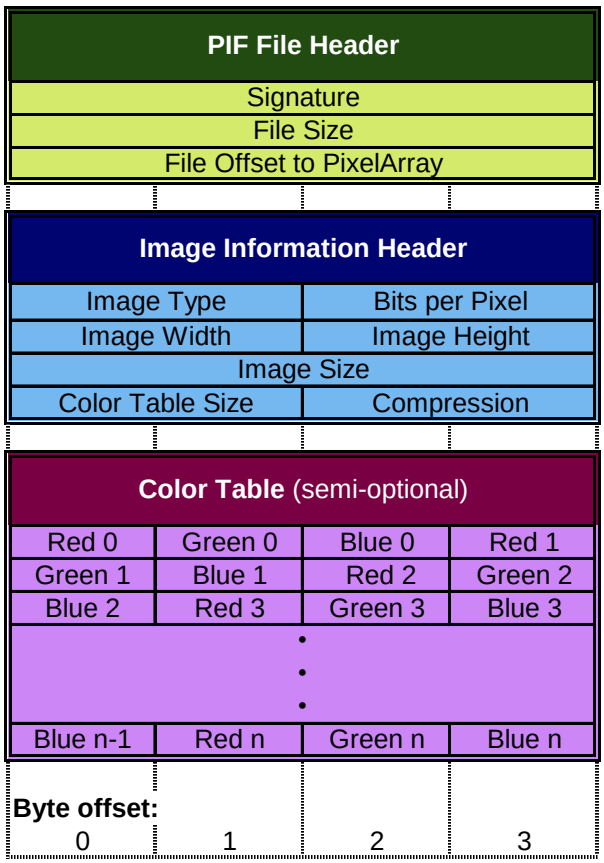

The Structure of Portable Image File Format (PIF)

Note: The size of the File and Image header are fixed

Note: The presence of the Color Table is mandatory when Bits per Pixel ≤ 8, unless Image Type states RGB332, RGB16C or B/W

Note: The size of the Color Table Entries depends on the selected Index Image Type. Possible sizes are 3 bytes, 2 bytes or one byte per color.

Note: Pixel size depending on [Bits per Pixel] field. If Bits per Pixel is ≤ 4, multiple Pixels are grouped in one Byte but are not allowed to overlap the byte / 8-bit boundary.

Image Data PixelArray [x,y]						
Pixel[0,0]	Pixel[1,0]	Pixel[2,0]	Pixel[3,0]	. . .	Pixel[w-2,0]	Pixel[w-1,0]
Pixel[0,1]	Pixel[1,1]	Pixel[2,1]	Pixel[3,1]	. . .	Pixel[w-2,1]	Pixel[w-1,1]
Pixel[0,2]	Pixel[1,2]	Pixel[2,2]	Pixel[3,2]	. . .	Pixel[w-2,2]	Pixel[w-1,2]
			• • •			
Pixel[0,h-2]	Pixel[1,h-2]	Pixel[2,h-2]	Pixel[3,h-2]	. . .	Pixel[w-2,h-2]	Pixel[w-1,h-2]
Pixel[0,h-1]	Pixel[1,h-1]	Pixel[2,h-1]	Pixel[3,h-1]	. . .	Pixel[w-2,h-1]	Pixel[w-1,h-1]

Note: Little-Endian is used

Note: If multiple Pixels are packed within a Byte, handle Pixels from LSB to MSB

PIF File Header	
Signature:	To identify a valid .PIF file. The signature is ‹PIL› as string, including null character: {'P','I','L','\0'}
File Size:	Total size of the file, from the Signature to the last Pixel
FileOffset to PixelArray:	Offset to the start of the Pixel Array, to directly seek to the image data

Image Information Header	
Image Type:	Defines the Image Data Type together with Bits per Pixel Depending on the code, the image data might be indexed
• 0x433C = RGB888	Raw 24-bit image data
• 0xE5C5 = RGB565	16-bit image data with reduced color set
• 0x1E53 = RGB332	8-bit image data, further reduced colors
• 0xB895 = RGB16C	16 color mode with fixed Windows/IBM Colors*
• 0x7DAA = B/W	Black and White color mode
• 0x4952 = Indexed 24	Indexed Colors, RGB888 per index
• 0x4947 = Indexed 16	Indexed Colors, RGB565 per index
• 0x4942 = Indexed 8	Indexed Colors, RGB332 per Index
Bits per Pixel:	Bit size that each Pixel occupies. Bit size for an Indexed Image cannot go beyond 8 bits.
Image Width:	Width of the image in Pixel
Image Height:	Height of the image in Pixel
Image Size:	Size of the (compressed) image data in Bytes
Color Table Size:	Index size of the color table, only used in Indexed mode, otherwise zero.
Compression:	If 0x7DDE, then RLE compression is used on the Image Data. If 0x0000, no compression is applied.

Color Table (semi-optional)
The Color Data in the table is either RGB888, RGB565 or RGB332. The amount of Colors has to be same or less than the [Bits per Pixel] allow, otherwise the image is invalid. If data refers to a higher index number than the Color Table holds, the image is also invalid.

Image Data PixelArray
Raw (uncompressed) Pixel data should be processed as defined by the Image Type, read one by one.
If RLE compression is enabled, the data format looks as following: A negative value defines that the next x-amount of Pixels are individual pixels. A positive value defines that the next Pixel repeats x-times. Zero is a illegal RLE value.
Example: RLE (-2) Pixel (4) Pixel (2) RLE (15) Pixel (7) First two Pixels are individual Pixels, the next Pixel to be drawn 15 times.

Note: Formula used to generate RGB16C mode:

red = 255×[2/3×(colorNumber & 4)/4 + 1/3×(colorNumber & 8)/8]

green = 255×[2/3×(colorNumber & 2)/2 + 1/3×(colorNumber & 8)/8]

blue = 255×[2/3×(colorNumber & 1)/1 + 1/3×(colorNumber & 8)/8]