TIFF (Tag Image File Format): Specifications (6 of 7)

This article last reviewed: 12 February 1988

5. The fields, concluded

ColorResponseUnit
Tag = 300 (12C)
Type = SHORT
N = 1

1 = number represents tenths of a unit.
2 = number represents hundredths of a unit.
3 = number represents thousandths of a unit.
4 = number represents ten-thousandths of a unit.
5 = number represents hundred-thousandths of a unit.
Default is 2.

ColorResponseCurves
Tag = 301 (12D)
Type = SHORT
N = 2**BitsPerSample (for Red samples) +
2**BitsPerSample (for Green samples) +
2**BitsPerSample (for Blue samples)

This tag defines three color response curves (one each for Red, Green, and Blue color information). The curves are stored sequentially (in red-green-blue order). The size of each table is 2**BitsPerSample, using the BitsPerSample value corresponding to the respective color. The ColorResponseUnit further specifies how each entry in the table is to be interpreted.

The purpose of the color response curves is to act as a "lookup" table mapping values from 0 to 2**BitsPerSample-1 into specific intensity values. The intensity values are as specified by the NTSC color strandard assuming illumination to be CIE D6500.

Correspondence to the Physical World

XResolution
Tag = 282 (11A)

Type = RATIONAL
N = 1

The number of pixels per ResolutionUnit (see below) in the X direction, i.e., in the ImageWidth direction. It is, of course, not mandatory that the image be actually printed at the size implied by this parameter. It is up to the application to use this information as it wishes.

As is the case for many of these fields, XResolution may be invalid and irrelevant for some images (e.g., images made with a hand-held digitizing camera, which has a three-dimensional nature) and should therefore be absent from the image file.
No default.

YResolution
Tag = 283 (11B)
Type = RATIONAL
N = 1

The number of pixels per ResolutionUnit in the Y direction, i.e., in the ImageLength direction.
No default.

ResolutionUnit
Tag = 296 (128)
Type = SHORT
N = 1

To be used with XResolution and YResolution.
1 = no absolute unit of measurement. Used for images that may have a non-square aspect ratio, but no meaningful absolute dimensions.
2 = inch
3 = centimeter
Default is 2

Orientation
Tag = 274 (112)
Type = SHORT
N = 1

1 = The 0th row represents the visual top of the image, and the 0th column represents the visual left hand side.
2 = The 0th row represents the visual top of the image, and the 0th column represents the visual right hand side.
3 = The 0th row represents the visual bottom of the image, and the 0th column represents the visual right hand side.
4 = The 0th row represents the visual bottom of the image, and the 0th column represents the visual left hand side.
5 = The 0th row represents the visual left hand side of the image, and the 0th column represents the visual top.
6 = The 0th row represents the visual right hand side of the image, and the

0th column represents the visual top.
7 = The 0th row represents the visual right hand side of the image, and the 0th column represents the visual bottom.
8 = The 0th row represents the visual left hand side of the image, and the 0th column represents the visual bottom.
Default is 1.

Document Context

DocumentName
Tag = 269 (10D)
Type = ASCII

The name of the document from which this image was scanned.
No default.

PageName
Tag = 285 (11D)
Type = ASCII

The name of the page from which this image was scanned.
No default.

XPosition
Tag = 286 (11E)
Type = RATIONAL

The X offset of the left side of the image, with respect to the left side of the page, in inches.
No default.

YPosition
Tag = 287 (11F)
Type = RATIONAL

The Y offset of the top of the image, with respect to the top of the page, in inches. In the TIFF coordinate scheme, the positive Y direction is down, so that YPosition is always positive.
No default.

PageNumber
Tag = 297 (129)
Type = SHORT
N = 2

This tag is used to specify page numbers of a multiple page (e.g. facsimile) document. Two SHORT values are specified. The first value is the page number; the second value is the total number of pages in the

document.

Note that pages need not appear in numerical order.

Miscellaneous Strings

ImageDescription
Tag = 270 (10E)
Type = ASCII

Useful or interesting information about the image.
No default.

Make
Tag = 271 (10F)
Type = ASCII

The name of the scanner manufacturer.
No default.

Model
Tag = 272 (110)
Type = ASCII

The model name/number of the scanner.
No default.

Storage Management

These fields may be useful in certain dynamic editing situations. Software that merely reads TIFF files will probably not need to care about these fields. And, of course, software that creates TIFF files is by no means required to write these fields.

FreeOffsets
Tag = 288 (120)
Type = LONG

For each "free block" in the file, its byte offset.
No default.

FreeByteCounts
Tag = 289 (121)
Type = LONG

For each "free block" in the file, the number of bytes in the block.

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