

NAME

TIFFReadRGBATile – read and decode an image tile into a fixed-format raster

SYNOPSIS

```
#include <tiffio.h>

#define TIFFGetR(abgr) (((abgr) & 0xff)
#define TIFFGetG(abgr) (((abgr) >> 8) & 0xff)
#define TIFFGetB(abgr) (((abgr) >> 16) & 0xff)
#define TIFFGetA(abgr) (((abgr) >> 24) & 0xff)

int TIFFReadRGBATile(TIFF *tif, uint32 x, uint32 y, uint32 *raster)
```

DESCRIPTION

TIFFReadRGBATile reads a single tile of a tile-based image into memory, storing the result in the user supplied RGBA *raster*. The raster is assumed to be an array of width times length 32-bit entries, where width is the width of a tile (TIFFTAG_TILEWIDTH) and length is the height of a tile (TIFFTAG_TILELENGTH).

The *x* and *y* values are the offsets from the top left corner to the top left corner of the tile to be read. They must be an exact multiple of the tile width and length.

Note that the raster is assume to be organized such that the pixel at location (*x*,*y*) is *raster*[*y*width+x*]; with the raster origin in the *lower-left hand corner* of the tile. That is bottom to top organization. Edge tiles which partly fall off the image will be filled out with appropriate zeroed areas.

Raster pixels are 8-bit packed red, green, blue, alpha samples. The macros *TIFFGetR*, *TIFFGetG*, *TIFFGetB*, and *TIFFGetA* should be used to access individual samples. Images without Associated Alpha matting information have a constant Alpha of 1.0 (255).

See the *TIFFRGBAImage*(3TIFF) page for more details on how various image types are converted to RGBA values.

NOTES

Samples must be either 1, 2, 4, 8, or 16 bits. Colorimetric samples/pixel must be either 1, 3, or 4 (i.e. *SamplesPerPixel* minus *ExtraSamples*).

Palette image colormaps that appear to be incorrectly written as 8-bit values are automatically scaled to 16-bits.

TIFFReadRGBATile is just a wrapper around the more general *TIFFRGBAImage*(3TIFF) facilities. It's main advantage over the similar *TIFFReadRGBAImage*() function is that for large images a single buffer capable of holding the whole image doesn't need to be allocated, only enough for one tile. The *TIFFReadRGBAStrip*() function does a similar operation for stripped images.

RETURN VALUES

1 is returned if the image was successfully read and converted. Otherwise, 0 is returned if an error was encountered.

DIAGNOSTICS

All error messages are directed to the *TIFFError*(3TIFF) routine.

Sorry, can not handle %d-bit pictures. The image had *BitsPerSample* other than 1, 2, 4, 8, or 16.

Sorry, can not handle %d-channel images. The image had *SamplesPerPixel* other than 1, 3, or 4.

Missing needed "PhotometricInterpretation" tag. The image did not have a tag that describes how to display the data.

No "PhotometricInterpretation" tag, assuming RGB. The image was missing a tag that describes how

to display it, but because it has 3 or 4 samples/pixel, it is assumed to be RGB.

No "PhotometricInterpretation" tag, assuming min-is-black. The image was missing a tag that describes how to display it, but because it has 1 sample/pixel, it is assumed to be a grayscale or bilevel image.

No space for photometric conversion table. There was insufficient memory for a table used to convert image samples to 8-bit RGB.

Missing required "Colormap" tag. A Palette image did not have a required *Colormap* tag.

No space for tile buffer. There was insufficient memory to allocate an i/o buffer.

No space for strip buffer. There was insufficient memory to allocate an i/o buffer.

Can not handle format. The image has a format (combination of *BitsPerSample*, *SamplesPerPixel*, and *PhotometricInterpretation*) that *TIFFReadRGBAImage* can not handle.

No space for B&W mapping table. There was insufficient memory to allocate a table used to map grayscale data to RGB.

No space for Palette mapping table. There was insufficient memory to allocate a table used to map data to 8-bit RGB.

SEE ALSO

TIFFOpen(3TIFF), TIFFRGBAImage(3TIFF), TIFFReadRGBAImage(3TIFF), TIFFReadRGBAStrip(3TIFF), libtiff(3TIFF)

Libtiff library home page: <http://www.simplesystems.org/libtiff/>