

Preparing Image Files for EFS and ePCT Filing

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I. INTRODUCTION

I am posting this article, now in April of 2019, in response to ongoing inquiries from users regarding problems with drawings they filed in either EFS or ePCT. I compiled these are notes in late 2012 and early 2013, with some updates in view of the recent uptick in inquiries on this subject. Given changes on program versions and web site upgrades, your mileage may vary.

These are my notes from information provided by the collective brain trust of the Oppedahl email list services and my own research on how to prepare drawing files for filing in EFS Web. These notes are also applicable to ePCT drawing files.

II. BACKGROUND

Bitonal format means an image having 1 bit color depth, each bit being either black or white, to avoid image degradation upon filing. Bitonal is not monochrome (grayscale), which is 256 black/white color depth.

EFS renders uploaded pdf files to bitonal upon validation. According to EBC (unverified), the image that can be reviewed after validation is bitonal and is what will appear as the image in the IFW and resulting patent drawings.

EFS renders non bitonal pdf files to bitonal very poorly, resulting in significant image degradation.

III. FILE FORMAT CONVERSION OPTIONS

The following options exist for converting image files representing patent drawings, before EFS filing them, to reduce degradation caused upon EFS filing.

III.A Acrobat 9 Pro: (Which I normally use)

Introduction:

Acrobat 9 Pro seems to result in no apparent degradation upon filing drawings. However, Acrobat does not identify the color depth of a file and therefore I cannot confirm that the resulting file in fact has 1 bit color depth. That is, it is not clear if EFS renders the uploaded file to a different image form possibly causing degradation.

Specification:

Open the file in Acrobat, and then use the following settings to save the file.

Click Save As, change "Save as Type" to TIFF

The "Settings" box will cease being grayed out.

IN the Settings box, set:

FILE SETTINGS OPTIONS

Monochrome: CCITT G4

GRAYSCALE: NONE

COLOR: NONE

COLOR MANAGEMENT OPTIONS

RGB: OFF
CMYK: OFF
GRAYSCALE: EMBED PROFILE
OTHER: (GRAYED OUT)

CONVERSION OPTIONS
COLORSPACE: MONOCHROME
RESOLUTION: 1200 PIXELS/INCH

I confirm that as of 1-22-2013 the foregoing settings (including "COLORSPACE: MONOCHROME") results in a bitonal image tif document.

I should note that Acrobat (or at least old Acrobat version 9) is a cheap trick because it does not convert to bitonal, just to grayscale, but I found the resulting USPTO rendering of the grayscale image to be visually indistinguishable from the uploaded image. Also, I understand the features I noted do not exist in Acrobat non Pro versions. However, this appears to be the only option not requiring imports and exports to other software, and it minimizes file operations, thereby reducing the chance of errors. (And reducing the cost of memorializing a specification for ongoing procedures.)

III.B Irfanview (Mentioned by Carl Oppedahl, Margaret Polson)

Introduction:

Irfanview certainly converts the image file format to bitonal. However, Irfanview may not be able to open certain files. If it cannot, follow the procedure above to use Acrobat to open and then save the file to .tiff or .tif format, first. Then open the resulting files in Irfanview, convert to bitonal, and save back to tif format. Then convert the resulting bitonal tif files back to pdf, using Acrobat. DO NOT save from Irfanview to pdf because that does not preserve the change to bitonal format.

Specification:

Open the file with Irfanview, reduce color depth to 2 colors, and save the file as a .tif.
Mouse actions: Open with Irfanview, Image, Decrease color depth, check "2 Colors (black/white)(1 BPP)", Save As, Tif.

A "Save PDF" dialog box opens with lots of options. Important settings are:

Layout tab, Page Format, choose either "Letter" or "A4" (the only page format paper sizes allowed for PTO filings)

Security tab, uncheck Activate Security (so there is no security)

Additional notes on Irfanview:

To use IrfanView to determine color depth of a file or image in a file:
Open the file with IrfanView, File, Batch Conversion/rename, check "Use advanced options...", click Advanced button, in the middle column, under "CHANGE COLOR DEPTH", examine radio buttons to determine color depth.

You can use Irfanview to crop, resize/resample, and change canvas color to white (to reduce or expand the image so that the image meets the margin requirements for PTO drawings).

Whenever working with drawing files, prior to EFS filing, ensure that all original images (pages) are present in the final files; compare the final to the original.

Irfanview install notes:

There are plugins for Irfanview, in an installable named:

“irfanview_plugins_433_setup.exe.” There is a file to install Ghostscript named “gs905w32.exe.” That file allows Irfanview to work with postscript and pdf files, to some extent. If all plug ins are not installed, Irfanview functionality may be limited.

I installed both the complete set of plugins (there is a file for them you can find on the Internet), and the Ghostscript plugin (recommended for compliance with postscript and pdf). Upon review, I find that Irfanview as installed has some tricks associated with its use. Irfanview could not open certain pdf files. So they had to be saved by Acrobat to tif format before importing into Irfanview. Irfanview did not save properly to pdf. It saved an image that it had squashed down to bitonal internally, as a non bitonal pdf; saved back to the original color map. Irfanview did save the bitonal data to tif. So, I found that using Irfanview required first using Acrobat to save to tif files, one per page, then importing to Irfanview, squashing down to bitonal, saving to tifs again, and then using Acrobat to recombine the tifs into a pdf file.

III.C Photoshop (Mentioned by Jennifer Bales)

Specification: Importing PDFs into Photoshop, bitmap them, clean them up, and turn them back into PDFs.

III.D GIMP (Mentioned by Jim Henry, Bruce Hayden)

Converting color image to black and white, using GIMP for Windows:

Open the color image. GIMP can open a PDF but that may require installing Ghostscript. First, convert to dithered monochrome using Image... Mode... Indexed... Select a Color dithering method such as "Floyd-Steinberg (normal)". Second, select Threshold tool and set a threshold for mapping to 1 bit black and white." based upon visual observation. Click the "Convert" button. Save the result in some format that doesn't reintroduce grayscale or color such as PNG.