



***Recommended Scanner Settings for CM/ECF
in the Western District of Arkansas***
(as of 6/1//06)

The following is based on information from other courts, the Administrative Office of the U. S. Courts, and the scanning industry in general. These guidelines should be followed when scanning documents for CM/ECF. Since there are hundreds of scanner manufacturers and models, some guidelines may not apply to your particular scanner or software. But most options below are common to all scanners.

The most commonly used settings are indicated by the  icon.

Keep in mind that these scanned images – once converted to PDF and uploaded to the CM/ECF system – will become the "official" court copy. Other participants in the case will rely on the clarity and convenience of these PDF's. If in doubt about your scanned documents or scanner settings, please refer to the [test page](#) at the end of this guide.

Resolution: a measurement of how many 'dots' per inch (dpi). In general, higher dpi settings make sharper scans – but also larger scans!

 **"200 dpi"** is recommended for most generic documents. This setting equals or exceeds the quality of most FAX'ed documents.

Exception: If the document contains a *significant amount* of "tiny" text (9 pt. or smaller) – or if it is *crucial* tiny text – **300 dpi** is recommended.

Note: PDF documents displayed on your *computer screen* may differ slightly from the *printed* version. This is not a fault of the PDF format – it is due to the fact that computer screens normally only display about **96 dpi**, but modern printers commonly use **300 dpi** or better.

Color Settings:

 Use **"Black & White"** for all typeset text-only documents (most documents).

Use **Color** only when essential for photos or graphic illustrations.

Use **Grayscale** only if shading is essential, or if handwritten notes are being scanned.

[Handwriting – especially pencil – generally has several shades of gray. You can also use B&W, but it won't retain the original appearance.]

Note: Some scanners may have enhanced color and/or grayscale settings, such as "14 bit Grayscale" or "42 bit Color" – these settings should **NOT** be used! They make the scan file size much larger than necessary. If you absolutely need color or grayscale, just choose the most basic option.

Dithering: a technique that attempts to "smooth" color or grayscale areas
(not available on all scanners)

Use **"None"** if you only have distinct black & white content (text, lines, etc.).

If you have color, shading, handwriting or other varying content, you might get a better quality scan by choosing one of the dithering options. Example setting: **Error Diffused**

Brightness/Contrast:

 Set to "**Auto**" if possible.

Some scanners allow you to adjust the brightness and contrast on the image. This varies considerably from scanner to scanner. Most newer scanners will automatically adjust these properties, in an attempt to get an optimum scan. However, older scanners may require a manual adjustment. Again, the best advice is to scan a test page at different settings, print the scanned file, then visually compare the results. If in doubt, see the test page at the end of this guide.


Text Enhanced: provides some gray-scale shading to sharpen the text
(not available on all scanners)

If your scanner supports this feature, test it out to see if the "enhancement" is justified. Since it uses a form of gray-scaling, the overall file size will be increased. The size increase may not justify the small gains in clarity. If in doubt, try scanning the test page at the end of this guide, first with and then without this option. Then print the two scanned files, in order to make a visual comparison.

Compression: a technique that reduces the overall file size, while retaining the content

Compression varies greatly, depending upon the file content – some files can be compressed to less than one-tenth of their original size (90% compression), while others might only compress slightly, if at all. Also, some methods of compression will degrade a document, causing letters to lose their crispness.

Most scanners provide options for setting file compression. Look for menu items like **settings**, **configuration**, **compression**, **options**, etc.

 For CM/ECF, the preferred setting is to use a "lossless" method of compression, which retains the full original appearance of the document, without any "loss" or degradation at all. Typical lossless compressions are: **ZIP**, **LZW**, **CCITT Group 4**

JPG compression is **NOT** recommended, but if you cannot turn it off, then use the best possible **quality** of JPG compression available to you – that is, use the least amount of JPG compression it will allow.

If in doubt, don't use any compression at all – however, be prepared for document sizes to be five to ten times larger than normal, which might cause you to hit the upper filing limit of 5Mb per pleading!

For More Information:

See our website at: <http://www.arwd.uscourts.gov> (click on CM/ECF Training Materials)

E-mail us at: CMECFinfo@arwd.uscourts.gov

Call us at: 1-866-540-5066 (toll-free)

Scanner Test Page
from the
U. S. District Court, Western Arkansas

If you have questions or concerns regarding your scanner settings, try scanning this single page. Then **print** your resulting scanner file and visually compare it to this original page.

Check the following, if you intend to use them:

- 1) **small fonts** – make sure they are legible on your scanned copy
- 2) **handwriting** – determine which scanner settings are best to render handwriting
- 3) **shading** – determine the best scanner settings for graphs, charts, etc.
- 4) **file size** – compare your scans of this page to those listed in the table below

This line is in "Times New Roman" font at 12 point size (typical).

This line is in "Time New Roman" font at 10 point size.

This line is in "Times New Roman" font at 8 point size.

This line is in "Arial" font at 12 point size.

This line is in "Arial" font at 10 point size.

This line is in "Arial" font at 8 point size.

This line is in "Courier" font at 12 point size.

This line is in "Courier" font at 10 point size.

This line is in "Courier" font at 8 point size.

Here is a table of typical PDF file sizes for this test page. Your mileage may vary slightly. Note also the three different levels of shading in the headings:

Resolution	Compression	File Size
200 dpi	none	650Kb
300 dpi	none	1000Kb
200 dpi	ZIP	65Kb
300 dpi	ZIP	100Kb

(For Windows users, you can right-click on a file, then choose "Properties" to see the file's size)

Here is a typical handwritten sample in #2 pencil:

The quick brown fox
jumped over the lazy dog.