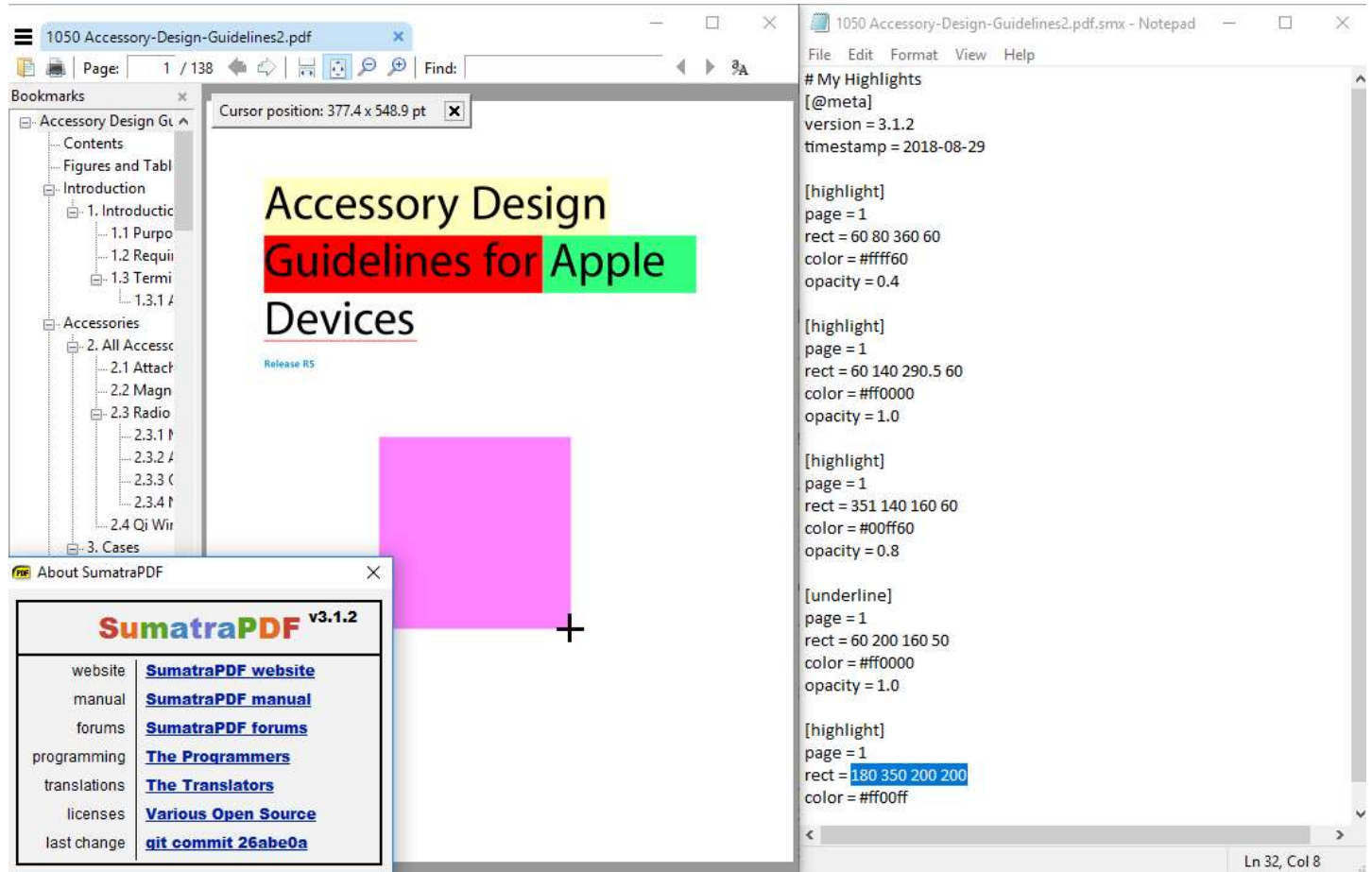# Annotation in SumatraPDF

Up to Pre-Release version **10766** it was possible to highlight text with the mouse then press **[H]** to leave the words <mark>highlighted</mark>. **From version 11040** the key has been changed to the **[A]** key (English=Annotation). It was changed a while back (**between those releases**) for H to be used as a reflection of L in HJKL sequence.

A common question is can this feature be added to Release x.y.z, the short answer is its "experimental" so only in Pre-Release. The long answer is most releases supported the .SMX feature so you could add you own highlight or underline wherever you want like this.

Before I tell you on page 3 [☺] how this is possible (so you can modify a PDF for other viewers) you should first read the following explanation of how the Pre-Release version works, as its simpler to use for words.

Controlling output

Most users will be happy with the default action (SaveIntoDocument = true) that means when you "Save As" a *new*.pdf the highlight is saved into the new PDF but forgotten in the original (unless you overwrite the source).

I personally set Settings > Advanced Options... (which is stored in SumatraPDF-settings.txt) as follows

I recommend as described here, change the SaveIntoDocument = false and then select File > Save or hit [Ctrl] + [S] unless / **until** you need to permanently change a copy .PDF for others who don't use SumatraPDF.

```
AnnotationDefaults [
        HighlightColor = #ffff60
        SaveIntoDocument = false
]
```

When you File > Save As... with *SaveIntoDocument = false* a second **S**umatraPDF **M**eta e**X**tensions .SMX file is created alongside the original. Remember you MUST also File > Save As... the .PDF once it is annotated otherwise your highlights are not remembered in a .SMX and later appended to the .PDF so they will be there when you reopen the PDF.

Open the *SameFileName.pdf.*SMX file in notepad & you will see something like :-

SumatraPDF: modifications to "SameFileName.pdf"

[@meta]
version = 3.2.11040
filesize = 2754747
timestamp = 2018-08-28T19:41:16Z

[highlight]
page = 1
rect = 107 73 27 13
color = #ffff60
opacity = 0.8

You can change / edit the page, rectangle size (startX startY deltaX deltaY) colour (per other notes) and for opacity keep it 0.6 to 1.0. You canNOT produce a solid white block, as highlight by nature is translucent, however you can create a black one. Be aware this is NOT a redaction tool, that is the text behind a solid black box will still be available. IF you open the .SMX file in notepad and change values and then in notepad select File > Save or [Ctrl] + [S] whilst the .PDF is open **in SumatraPDF you can hit the [R]eload key** to see the effects.

Once you are happy with the results finally open the pdf in SumatraPDF **switch Settings > Advanced Options** SaveIntoDocument = **true** and for last time Save As... **my final pdf for others with highlights**.PDF

Additional file structure comments

It may seem haphazard (but generally in page sequence) when you save a second highlight it will be tracked somewhere in .SMX like this (NOTE [highlight]s can be in a random position not true page or time order)

[@update]
version = 3.2.11040
filesize = 2754747
timestamp = 2018-08-28T23:15:10Z

[highlight]
page = 1
rect = 107 277 27 13
color = #FFCCCC
opacity = 0.8

you can safely delete the [@update] section down to the following blank line so that **after the heading [@META] section the file is just a collection of [highlight] sections.** Keep the [@META] section but you may wish to change the timestamp to keep a note of last date changed. As a minimum SumatraPDF will not load annotations unless the file contains before the [highlight]s

[@meta]
version

You CAN manipulate to a very limited fashion the type of shape

If you change the [highlight] heading to

[underline] <u>you will get an underline</u> ☺ increasing deltaX will make it longer and deltaY will move it down
[strikeout] ~~you will get strikeout~~ ☺ increasing deltaX will make it longer and deltaY will move it down 1/2 units
[squiggly] <u>you will get a 50/50 wavy line</u> ☺ increasing deltaX will make it longer and deltaY will move it down
You can of course place a [squiggly] with same value but after an [underline] to get a two tone colour effect

Note line thickness can not be changed and opacity is ignored so there are NO verticals, diagonals or boxes

If you want to manipulate the .SMX file with an app

ONE that worked with previous releases see https://github.com/nod5/sumatra_highlight_helper it has an additional requirement that **Settings > Advanced Options > FullPathInTitle = true** so it can find the current file by name. Due to the recent change in highlight key from H to A the current version needs to be updated see https://github.com/nod5/sumatra_highlight_helper/issues/1

[☺] *so you eventually got to this point, well done, here's the reward*
Look carefully at the screen shot on page 1 where **you read the comment about understanding how pre-release version works**. You may see I have notepad open whist adding highlights to version 3.1.2 (NOT a pre-release) If you look closer you will see I have pressed [M] to switch on the measure tool and used [M] until the units are pt (points) which are the same units as used in the .SMX. It does not matter how much you zoom in or out the units for a given point are always the correct values for X & Y measured from the top left corner.

SO NOTE
I have saved a new.txt file as Exactly the same filename as the .pdf but with a .pdf.smx filename ending.
The first line starting with a # is a reminder or comment for my use, you know from the previous section why the next two lines are there and the fourth line is an optional timestamp for me to remember when I made the changes, now to the highlights.

[highlight]
page = 1
rect = 60 80 360 60
color = #ffff60
opacity = 0.4

You should by now understand this will be a pale (opacity =0.4) yellow (color = #ffff60) where #FFFF60 means full RED Full GREEN and Low BLUE see SumatraPDF settings notes for a better explanation.
If you have been attentive you will know I said keep opacity between 0.6 and 1.0 the reason is that whilst values below 0.6 will work in the .SMX LATER they do not get saved into the .PDF so now you see them but others will not. In fact thinking about it you may as well use 1.0 throughout since all colours are translucent but colour or intensity of RRGGBB is controlled by the color = #value so in this case simply increasing the blue value to say #FFFFC0 will have roughly the same effect.

Moving on, the important point is how I decided 60 80 360 60 was where I wanted the yellow highlight

I placed my mouse to the top left of that area and got a value around 59.8 x 81.2 so I simply rounded off to 60 80 equally when I hovered near the lower right of the word Design my reading was 420.3 x 139.7 again rounding to 420 x 140 it makes a difference of 360 and 60 so the final rect value is 60 80 360 60.

See if you can work out what X & Y values I got for the red and green highlights, however you will note I have slightly changed my method. I could have used 290 but I wanted a little bit more to fall nearer the center of the gap, OK so why does the green NOT start at 350.5, that's because due to perceived bleed the contrasting colours looked dirty alongside each other so I started the green another 0.5 pts later you will only see the white gap if you zoom in more than usual.

Next question ?
WHY did I use 50 as my delta Y for the Underline when it would be more uniform to keep it at 60, this is because that word has no descenders so I thought it looked better if the line was 10 pts higher

Next! the block I wanted to be 200 x 200 ending where my cursor is at (see screenshot 377.4 x 548.9 pt) so I want to end at 380 550 so subtracting 200 from each the result is 180 350 200 200.

Don't forget to keep saving the .SMX and using R in the PDF to see the results, AS LONG AS YOU DON'T SAVE THE PDF no harm will come to it.

Finally there is **NO Annotation section in the standard release SumatraPDF-setting.txt** file to set either true or false, so IF YOU **DO NOT save the .PDF but keep the .SMX alongside**, it will allow you to make other changes later as you wish.

ONCE you use SumatraPDF to **SaveAs...** the colours WILL be added to the .PDF (**BE SUITABLY WARNED**)