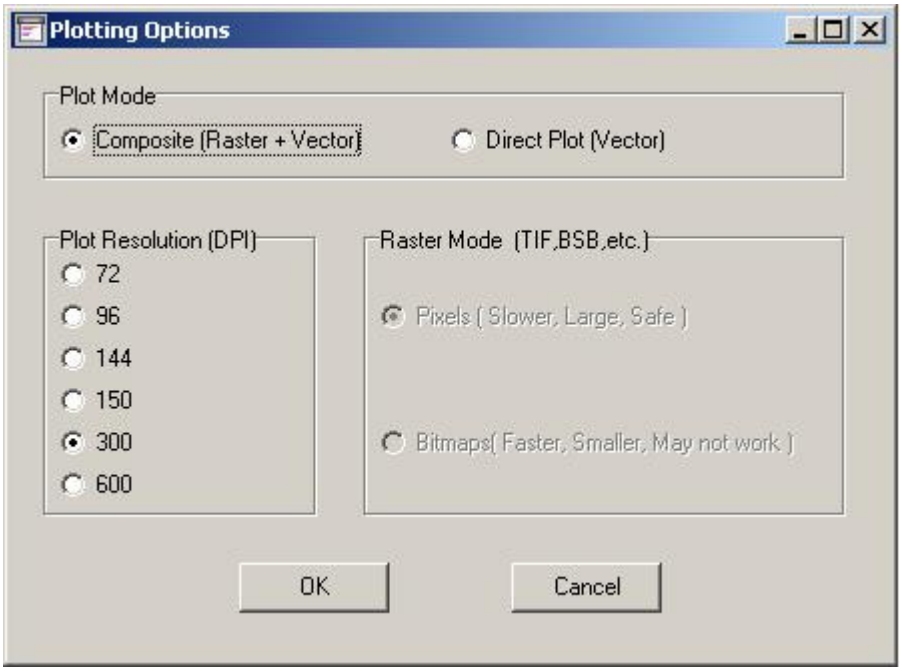
Hyplot Update

By Bill Bergman

Hypack has put together an update package for the 2008 release, which should be available by the time you are reading this article. One area of improvement can be found in our plotting software - Hyplot. In a previous article I detailed changes made to get you past out of memory conditions often encountered on very large plot sheets. The method is based on modifying plot resolution, were we exchange "detail sharpness" for available memory. We noted in the article that differences in images plotted at 600 DPI and 150 DPI are nearly imperceptible to the eye but result in approximately16 times more memory available to the program. The general rule is the change in memory varies inversely to the square of the change in resolution.

This is well and good, however we received complaints about the length of time required to plot even simple jobs. For instance plotting a simple line file should be done nearly as soon as the user releases the OK button. This was the case in past versions of Hyplot where the option Plot Direct would send data directly to the target device, bypassing an intermediate staging area in memory. In this update, you now have both options. The lesson learned is to be very careful about taking options away from you; you will not appreciate it.



Plotting Options Dialog

The new Plotting Options dialog will appear at the start of every plotting operation. Here you are asked to make a choice on which method of Plotting you would like Hyplot to use.

Hyplot opens the dialog with suggested settings preselected. These options are set based solely upon the type of data in the job. If there are any raster data in the job, 'Composite' is chosen with a default DPI of 300. If all data is vector then the Direct Plot option will be chosen. You are, of course, able to select whatever you think best.

The Raster dilemma is what I call the impetus for developing two solutions for the same task. The crucial difference between your monitor and printer is that, once data

has been sent to a printer, it is essentially lost to the program. That is, the color information at a certain x,y location is not available for querying, color mixing etc. These operations are very important however to achieve effects like transparency and semi-transparency. Some newer printers do have a capability of setting a transparent color, but these are not the norm and still do not meet all our needs.

In composite mode, Hyplot is creating a virtual screen which supports all the needed pixel access routines. You can control memory usage by adjusting the DPI selection. All the nice effects you see on your display will hopefully be seen on your final plot.

In direct plot mode, Hyplot skips the intermediate staging area and draws all data directly to the printer. This can be a big speed savings and of course no additional memory is required.

Beware!! If you insist on this mode even though you have raster data to plot, then a second choice is required, mainly how should Hyplot deal with the raster data. Pixels will convert the bitmap into a series of pixel color calls. A lot of them. A real lot of them. So many in fact that the whole reason for using direct plot mode in the first place—speed--might be completely negated.

The other option is Bitmaps. This doesn't add too much overhead, but there is a high probability of generating an incorrect/unacceptable plot. Why? Well, for any raster data that needs access to target pixels for transparency or color operations to succeed, they won't since that information simply is not available. There is one case I can imagine where this setting is most appropriate. Consider the following scenario: You have only vector chart data to plot and bitmap data loaded as Hyplot graphic objects. Since these graphics are always opaque there are no tricky points for the software to overcome.