Introduction

Smart DFM allows you to check your design files against a set of DFM (Design For Manufacturability) Rules. These DFM Rules ensure that your design can be fabricated without being placed on hold.   If your design files pass the DFM Rule checks, then you will be presented with a no obligation quotation to purchase prototype or production quantities of your printed circuit board. If you like, you can purchase your boards online. The quoting and ordering capability is available 24/7/365.

The DFM checks are performed by one of the following programs:

ViewMate with Smart DFM
ViewMate Deluxe
ViewMate Professional

We will use "ViewMate with Smart DFM" in this application note. However, you can perform all of the same functions using either ViewMate Deluxe or ViewMate Pro.

Install Your Software First

Before running this tutorial, you should install your software and your software license. Please contact PentaLogix via email at support@pentalogix.com if you need help with the installation.

Start ViewMate

Start the file called "ViewMate". By default, the program is installed in:

32 Bit Operating System	"C:\Program Files\PentaLogix\ViewMate X.Y"
64 Bit Operating System	"C:\Program Files (x86)\PentaLogix\ViewMate X.Y"

In both cases, X.Y refers to the major and minor revision of ViewMate. When you start the program, you should see the following screen:
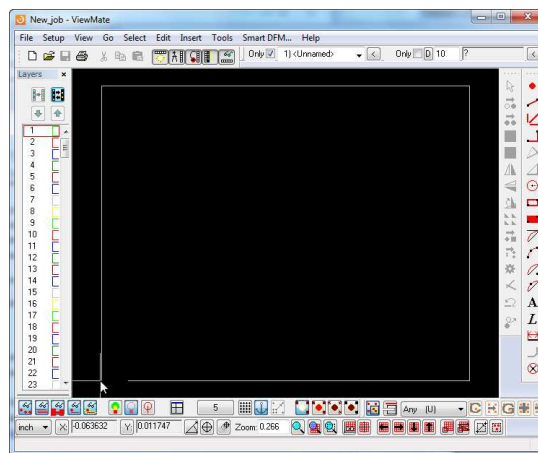

Figure 1 – ViewMate Startup Screen

Loading Data into ViewMate, ViewMate Deluxe or ViewMate Pro

Smart DFM is integrated into the ViewMate family of products. You should load the sample file into ViewMate before you launch the Smart DFM process. If you have ViewMate Deluxe or ViewMate Pro, you can use "File->Import->Zip" if your data is contained in a zipped file. File->Import->Zip is not available in the free ViewMate program. With any of our ViewMate products, you can use "File->Import-Directory" (if all of your files are unzipped in a directory). Alternatively, you can load your Gerber and drill data by using one of the other import methods supported by ViewMate.

If you wish to follow along, you can download the file using the following link

Get Sample File

Download the sample file and save it to your computer. You can then use "File->Open" to load the file into ViewMate.

Taking a Look at the Sample File

The sample file is a very simple file. However, it contains all of the layer types that you will encounter when using Smart DFM. The file is shown below:
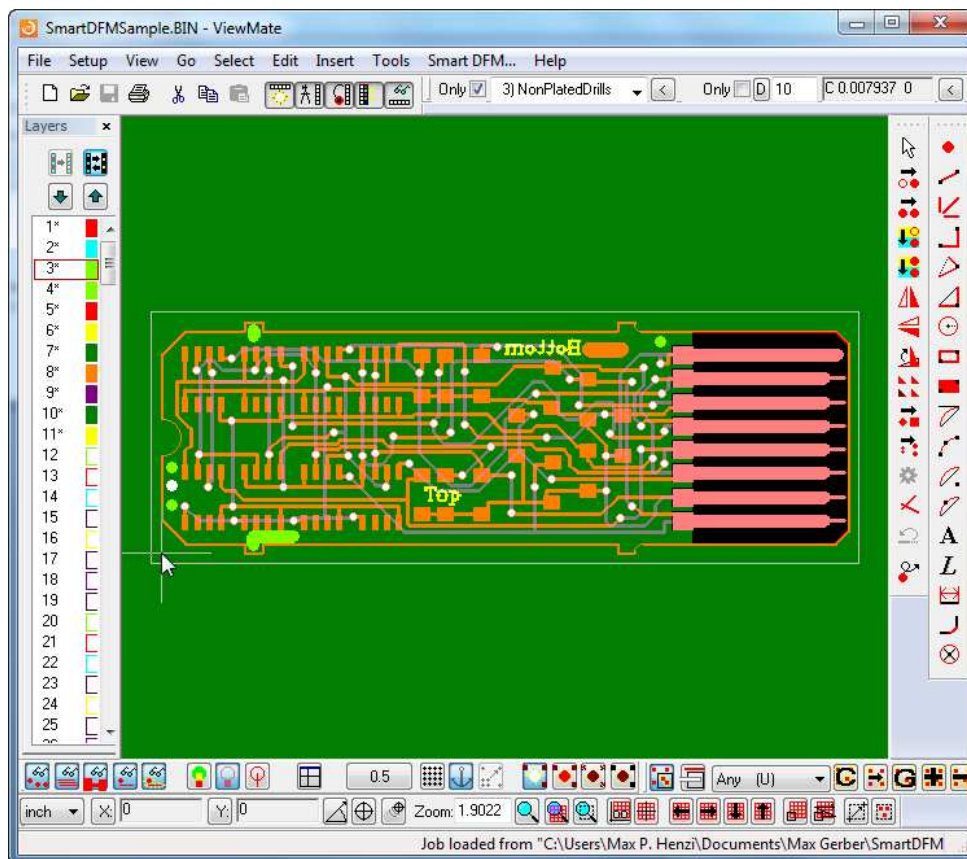

Figure 2 – SmartDFMSample.bin

Review Layer StackUp

Press the "F10" key to review the layer StackUp of the sample file:

Figure 3 – Sample File Layer StackUp

Not all of your files will have all of these layer types. However, the sample file is intended to demonstrate how you would handle each of these layer types.

Notice that the sample file contains a standalone board outline on layer number 1. Plated and NonPlated drill data is found on layers 2 and 3 respectively. The sample file also contains two Gerber data layers that represent cutouts that the user would like to have made in the PCB. These are found in layers 4 and 5 respectively. Take a moment to review the layer StackUp. Pay particular attention to the layer "Type" associated with each layer. If you configure these layer types in ViewMate, it will make using the data in Smart DFM much easier. Press the "OK" button to dismiss the "Layers Table" dialog.