

April 1, 2009

Create Custom Masks For Zi Series Scopes

Summary

The SDA series of Serial Data Analyzers are powerful tools for the measurement and analysis of serial communications systems. While they contain an ever growing library of serial data standards there is always a need to be able to create or modify test masks for newer or modified serial communications standards. The LeCroy Masks Database Editor is a software tool which allows users to quickly create and load custom test masks in and SDA series analyzer.

The masks database editor will edit an existing database file called EyeMaksProp.mdf with eye diagram and mask properties based on data entered from the test mask description. A typical test mask specification is shown in figure 1. You will need this information along with the clock frequency for the standard being tested.

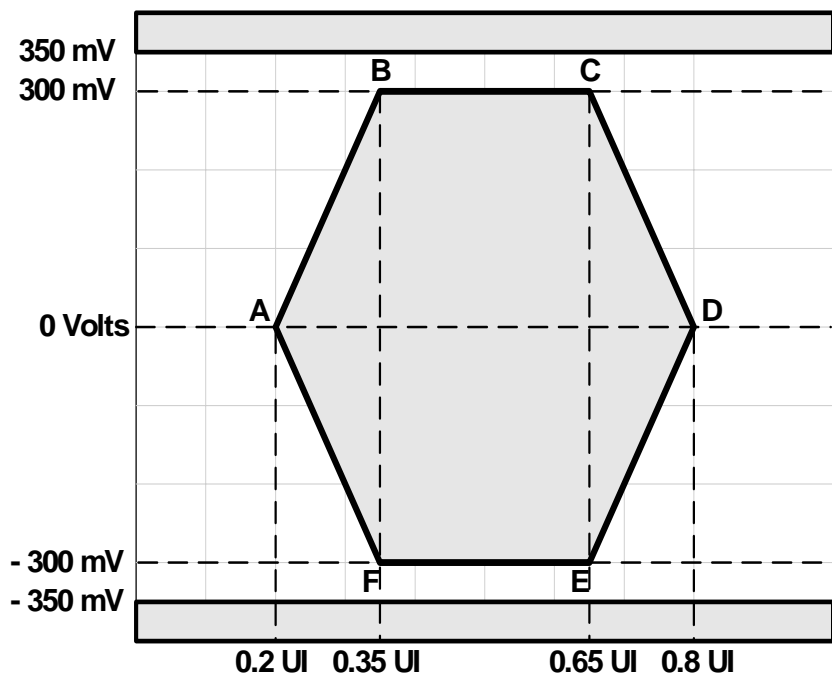


Figure 1 - A typical test mask specification

Start from the Windows desktop screen after exiting from the scope application([file]→[exit]). Then create a back up file for "D:\Masks\EyeMasksProp.mdf" to be safe. We will use this file to modify existing masks or add a new mask.

Start the mask editor :

"C:\progamfiles\lecroy\xstream\masksdatabaseeditor.exe."

The opening screen of the editor will be a spreadsheet like the table shown in figure 2. Select "Open" from the file pull down menu.

This will display the open file dialog box also shown in figure 2. Select the name of the mask database file, "EyeMasksProp.mdf". Press the "Open" button to enter the database file. Select "New" from the Standards pull down menu. This will give access to the "Standard Edit" dialog box shown in figure 3.

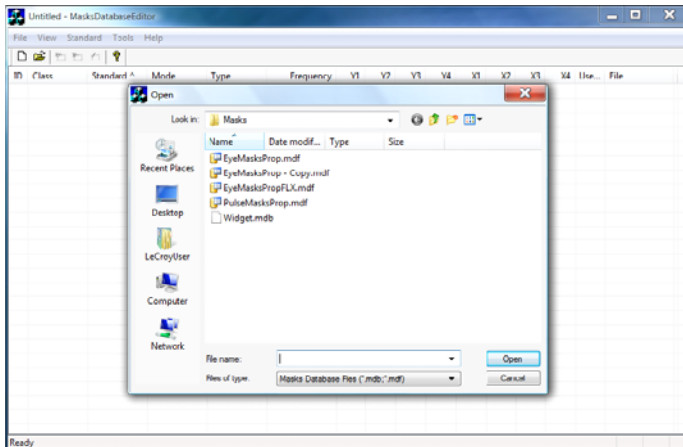


Figure 2 - The opening view of the masks database editor and the open file dialog box

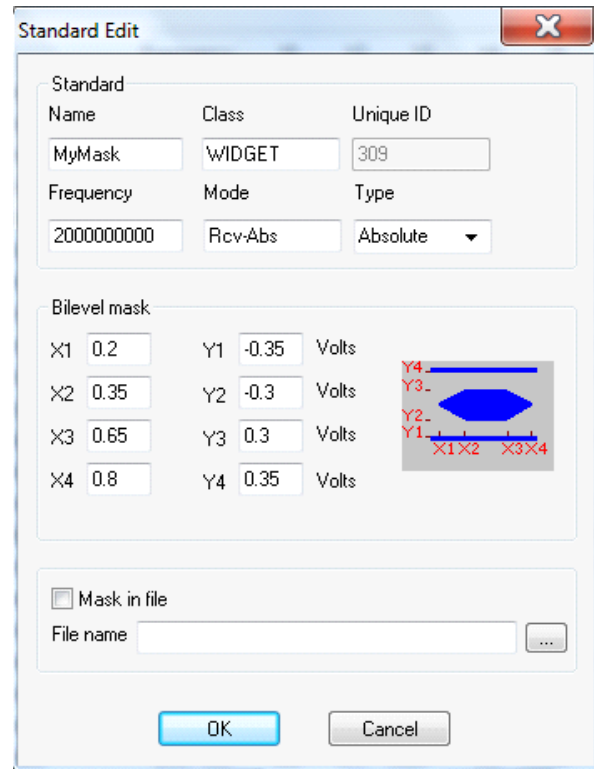


Figure 3 - The mask specification entered into the standard edit dialog box

Using the information contained in the mask specification (figure 1) enter the coordinates of each of the vertices and levels in the test mask matching the locations marked by the X_n and Y_n labels in the test mask diagram in the standard edit menu. Enter the name and class of the mask along with the clock frequency. If the vertical coordinates of the specification are in Volts select "Absolute" as the mask type. If the vertical units are specified in relative units select "normalized." The mode field allows you to enter a brief description of the test mode, in this example we indicate a test on the receiver which has absolute vertical scaling. Click OK to insert into the mask database file EyeMasksProp.mdf. This file should be stored in the folder: "D:\Masks" on the SDA analyzer. When the SDA boots it will now add the mask "MyMask" to its selection as shown in figure 4.

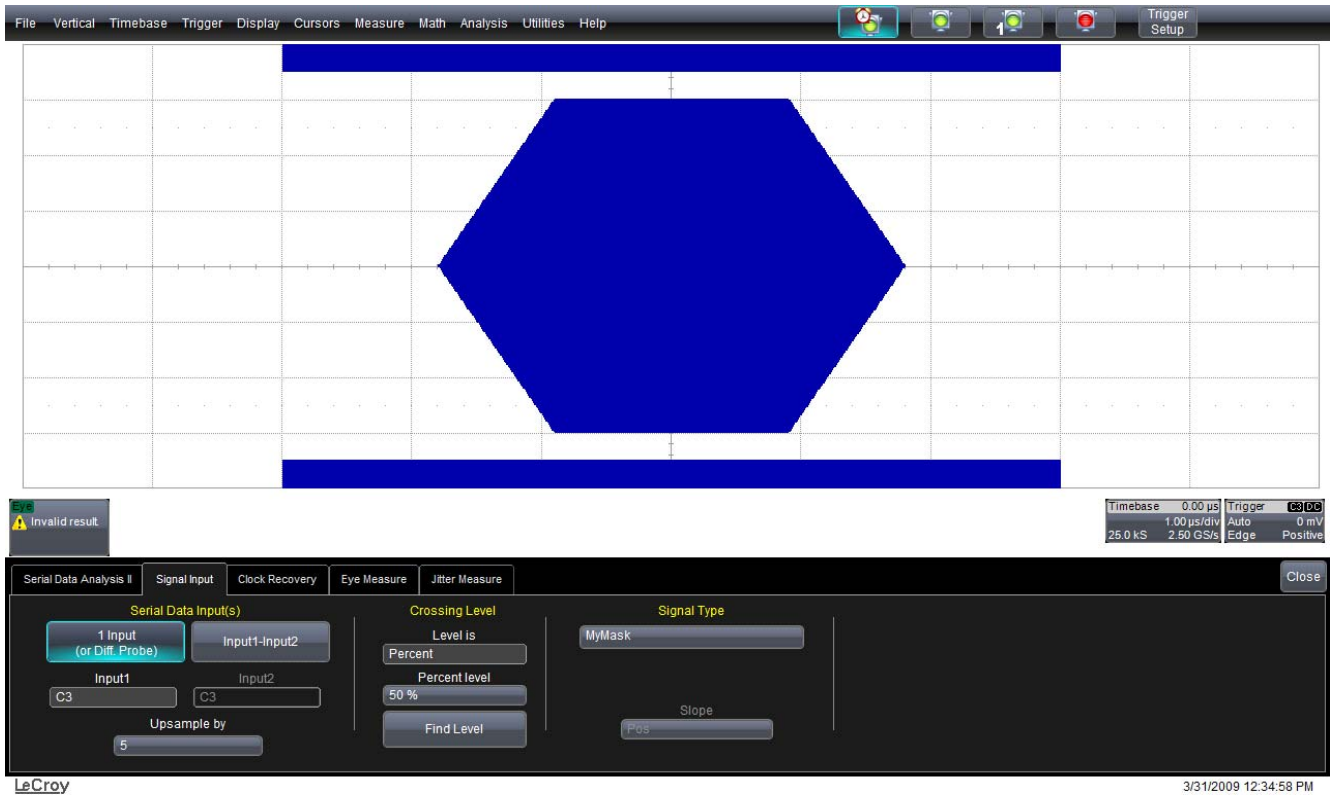


Figure 4 - The newly created mask displayed on the SDA

Note, you should backup new edited database file because the LeCroy file may be overwritten during software upgrades.

The "Mask in file" and "filename" fields can be used to load an arbitrary mask created in LeCroy's "MaskMaker" software.