

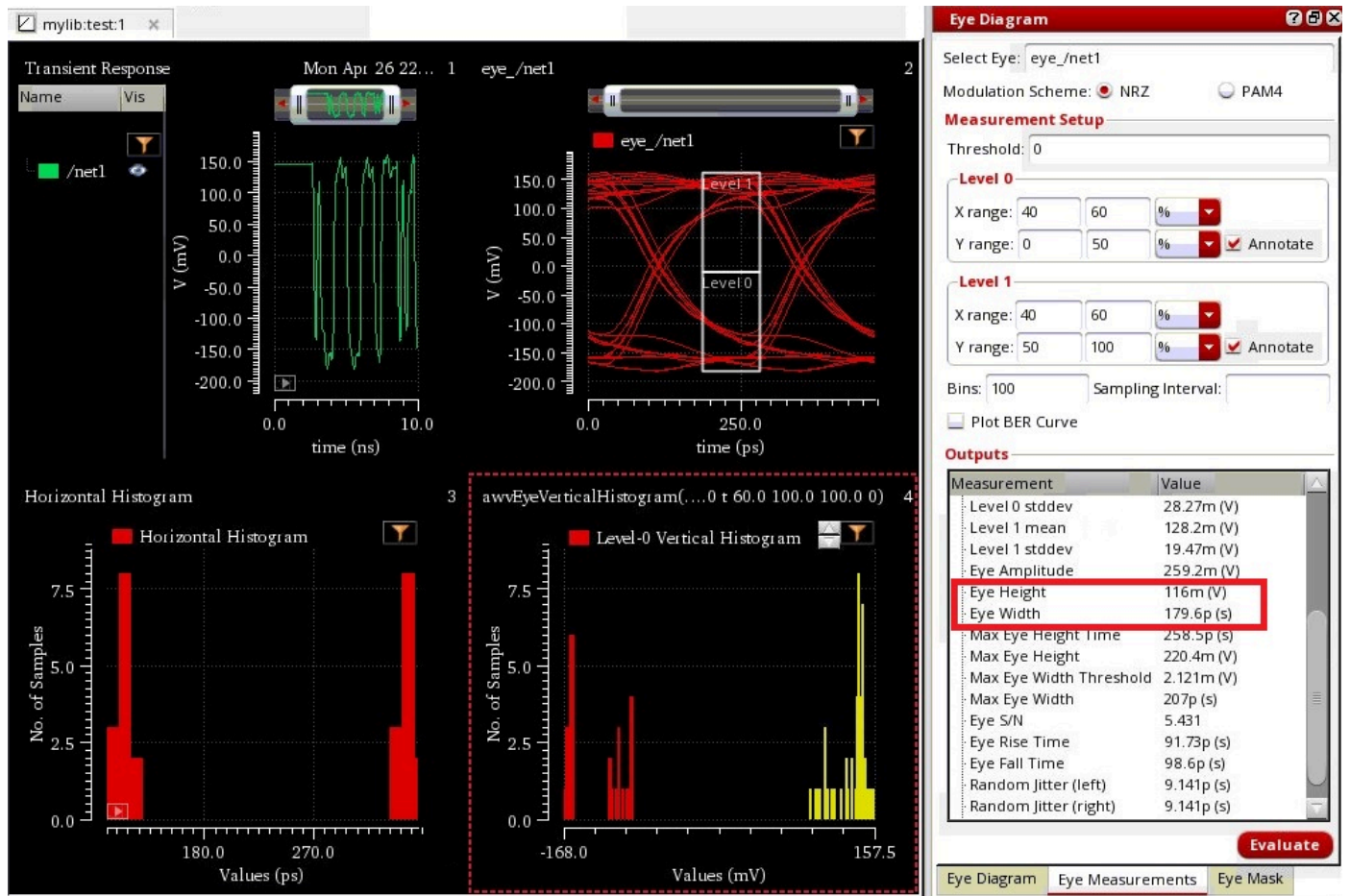
How to get the Width and Height of Eye Diagram of PAM4 signal at the defined threshold

Problem

You want to get the Width and Height of an Eye Diagram at a particular threshold for PAM4.

Solution

For NRZ, you can see the **Eye Width** and **Eye Height** in the **Eye Measurements** tab of the **Eye Diagram** assistant, as shown below.

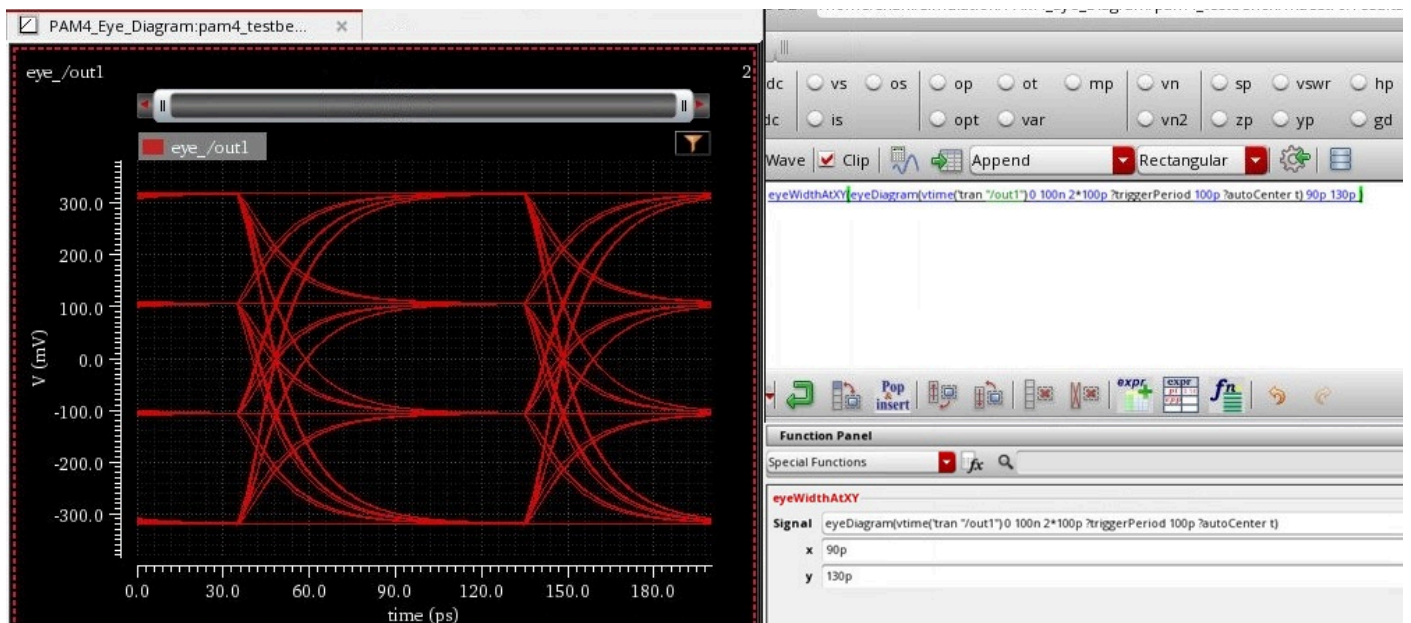


For the PAM4 signal, you can use the `eyeWidthAtXY` and `eyeHeightAtXY` Calculator functions as follows:

```
eyeWidthAtXY(eyeDiagram(VT("/out1") 0.0 100.0n 2*100p ?triggerPeriod 100p ?autoCenter t) 90p 130p )
```

```
eyeHeightAtXY(eyeDiagram(VT("/out1") 0.0 100.0n 2*100p ?triggerPeriod 100p ?autoCenter t) 60p 90p )
```

After you plot the Eye Diagram for the PAM4 signal, choose the `eyeWidthAtXY` or `eyeHeightAtXY` function from the calculator to create the above expressions.



You can send these to ADE outputs as expressions.

maestro x pam4_testbench x				
Name	Type	Details		Value
	signal	/out1		
Eye_Width	expr	eyeWidthAtXY(eyeDiagram(VT("/out1")0.0 1e-07 (2 * 1e-10) ?triggerPeriod 1e-10 ?autoCenter t) 9e-11 1.3e-10)		80.99p
Eye_height	expr	eyeHeightAtXY(eyeDiagram(VT("/out1")0.0 1e-07 (2 * 1e-10) ?triggerPeriod 1e-10 ?autoCenter t) 6e-11 9e-11)		13.7m

For more information, refer to Calculator Functions in the Virtuoso Visualization and Analysis XL User Guide.

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