ASIC Design Laboratory

Lab 10

Evaluation Sheet

Spring 2020

Student Name: Mg Account:

Section:

Initial Full Layout TA Initials Date Score

Error-Free Synthesis Run and Added Pads /0

Produced Layout /0

Connectivity Verified /6A screenshot of a computer

Description automatically generated

What colors in the Innovus layout correspond to /2

METAL1? 

METAL2? \_\_\_

What are the coordinates of the Layout /2

Pad Frame Lower Left Corner X: 0 Y: 0

Pad Frame Upper Right Corner X: 1613 Y: 1840

What is the area of this layout of the design? 2967920 /2

1

ASIC Design Laboratory Lab 10 Evaluation Sheet Spring 2020

Altering the Aspect Ratio of the Layout TA Initials Date Score

Produced Layout (Innovus only) /3A screenshot of a computer

Description automatically generated

What mathematical relationship can you derive for Aspect

Ratio, and is used as more of a goal or requirement \_\_\_\_/2

Length / width

Altering the Row Utilization of the Layout TA Initials Date Score

Produced Layout (Innovus only) /3A screen shot of a computer

Description automatically generated

What are the coordinates of the Layout /2

Pad Frame Lower Left Corner X: 0 Y: 0

Pad Frame Upper Right Corner X: 2122 Y: 2530

What is the area of this layout of the design 536860 /1

How does this new area compare with the area that was previously calculated in the initial layout, and does this make sense given the two values for Row Utilization?

The area has become larger. It makes sense, because the density decreased. Therefore, the area should be larger to contain same amount of logic.

/2

Why or why not is it possible to generate a layout for the USB that has 100% Row Utilization, not just a design goal of 100%?

Because everything would be too close together. Eventually, it would stop functioning.

/2

Last Steps TA Initials Date Score

Metal fill added with no max density violations /2A screenshot of a computer

Description automatically generated

Why do you think that companies do not employ a fully

Standard Cell, Place and Route approach to their high-performance microprocessor designs

Because manually designed block can significantly increase the performance. Especially with their high performance part.

/2

Total points for lab /30

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