ASIC Design Laboratory

Lab 10

Evaluation Sheet

Spring 2020

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Section: 04

Initial Full Layout TA Initials Date Score

Error-Free Synthesis Run and Added Pads /0

Produced Layout /0

Connectivity Verified /6

What colors in the Innovus layout correspond to /2

METAL1? BLUE

METAL2? RED \_\_\_

What are the coordinates of the Layout /2

Pad Frame Lower Left Corner X: 0.647 Y: 0.104

Pad Frame Upper Right Corner X: 1500.815 Y: 1498.471

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

2248927.75 micro-meter2

1

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Altering the Aspect Ratio of the Layout TA Initials Date Score

Produced Layout (Innovus only) /3

What mathematical relationship can you derive for Aspect

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

ASPECT RATIO = HEIGHT/ WIDTH

ASPECT RATIO IS MORE OF A GOAL RATHER THAN A REQUIREMENT

Altering the Row Utilization of the Layout TA Initials Date Score

Produced Layout (Innovus only) /3

What are the coordinates of the Layout /2

Pad Frame Lower Left Corner X: 0.210 Y: 0.878

Pad Frame Upper Right Corner X: 1613.023 Y: 1570.731

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

2533625.23 micro-meter2

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 New area is bigger compared to the area of the initial area. This does make sense because reducing the utolization means that the padding would be spaced out

/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%?

A design goal of 100% is possible but generating a row utilization of 100% doesn’t mean that it would be achieved.

It is possible to generate that but it would be very close to 100 as there need to be an amount of spacing for inter-connections.

/2

Last Steps TA Initials Date Score

Metal fill added with no max density violations /2

Why do you think that companies do not employ a fully

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

Because there are parts of the microprocessor that only a custom cell can produce high-performance for, so in most cases, microprocessors are made part custom and part standard cell

/2

Total points for lab /30

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