

EE382V: VLSI Physical Design Automation

Spring 2015 (Prof. David Pan)

Homework #5: due April 22, 2015

1. LE algorithm: Consider the following problem instance for two-layer channel routing. Assign tracks from top to bottom and left to right.

TOP=[1,4,1,0,4,3,2,5,6,5], BOT=[2,1,0,4,5,3,6,6,3,6]

- Construct the HCG & VCG and compute the minimum channel density.
- Apply the unconstrained LE algorithm.
- Apply the constrained LE algorithm.
- Decompose multi-terminal nets into two-terminal nets at terminal positions and construct its VCG.
- Apply the constrained LE algorithm to part d.

2. YK algorithm: Consider the following problem instance for two-layer channel routing.

TOP=[1,4,1,0,4,3,2,5,6,5], BOT=[2,1,0,4,5,3,6,6,3,6]

- Construct the zone representation.
- Using the global matching scheme, construct G_h and G_v for zone 1 and compute its E_x .