

EE382V: VLSI Physical Design Automation

Fall 2008 (Prof. David Pan)

Homework #5: due Nov. 26, 2008

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]

- a) Construct the HCG & VCG and compute the minimum channel density.
- b) Apply the unconstrained LE algorithm.
- c) Apply the constrained LE algorithm.
- d) Decompose multi-terminal nets into two-terminal nets at terminal positions and construct its VCG.
- e) 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]

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