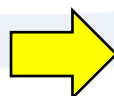
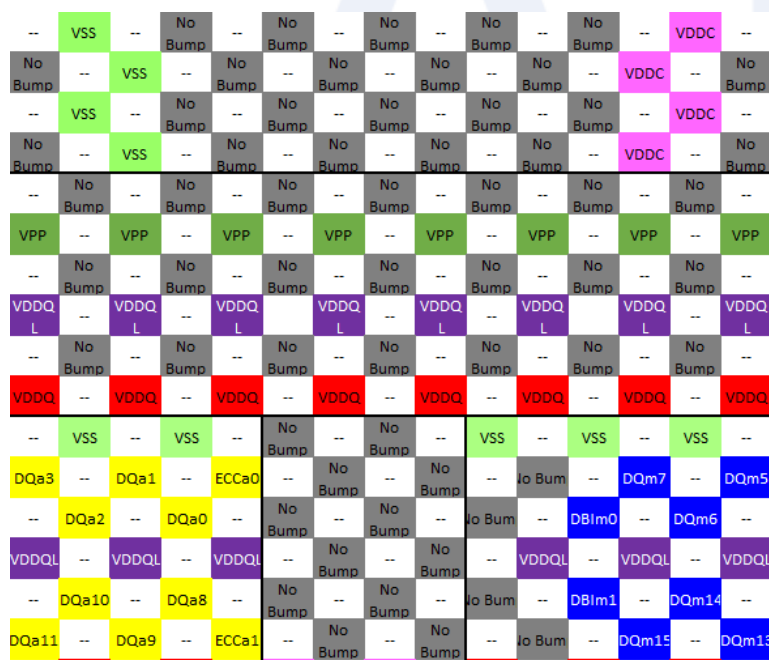
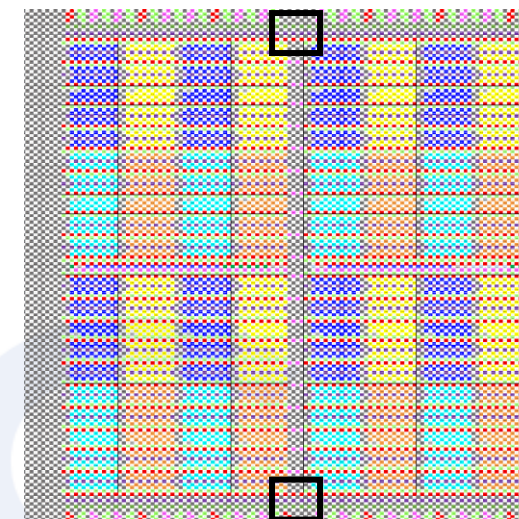


Samsung Bump Change Requests #1

Extend 4 column no bump to VDDQ, VDDQL and VPP columns on north/south

Enables more robust power delivery to VDDQ/VDDQL rows



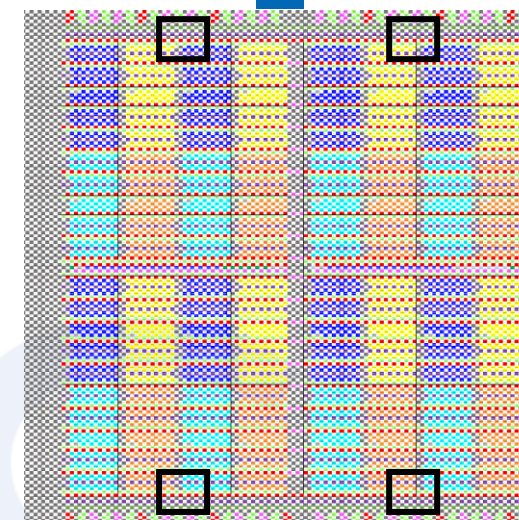
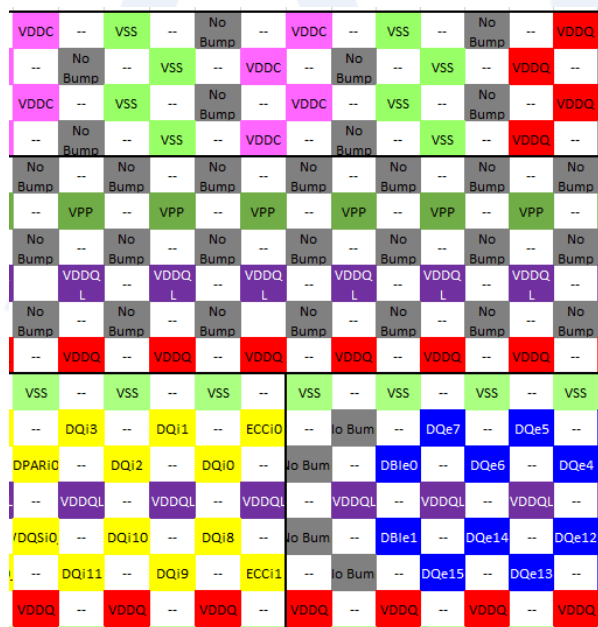
VDDQL row of interest

VDDQ row of interest

Samsung Bump Change Requests #2

Convert bumps to “no bump” in highlighted region (2-3 columns wide, 8 row high) between channels e/l and h/l (4 regions total)

Enables more robust power delivery to VDDQ row

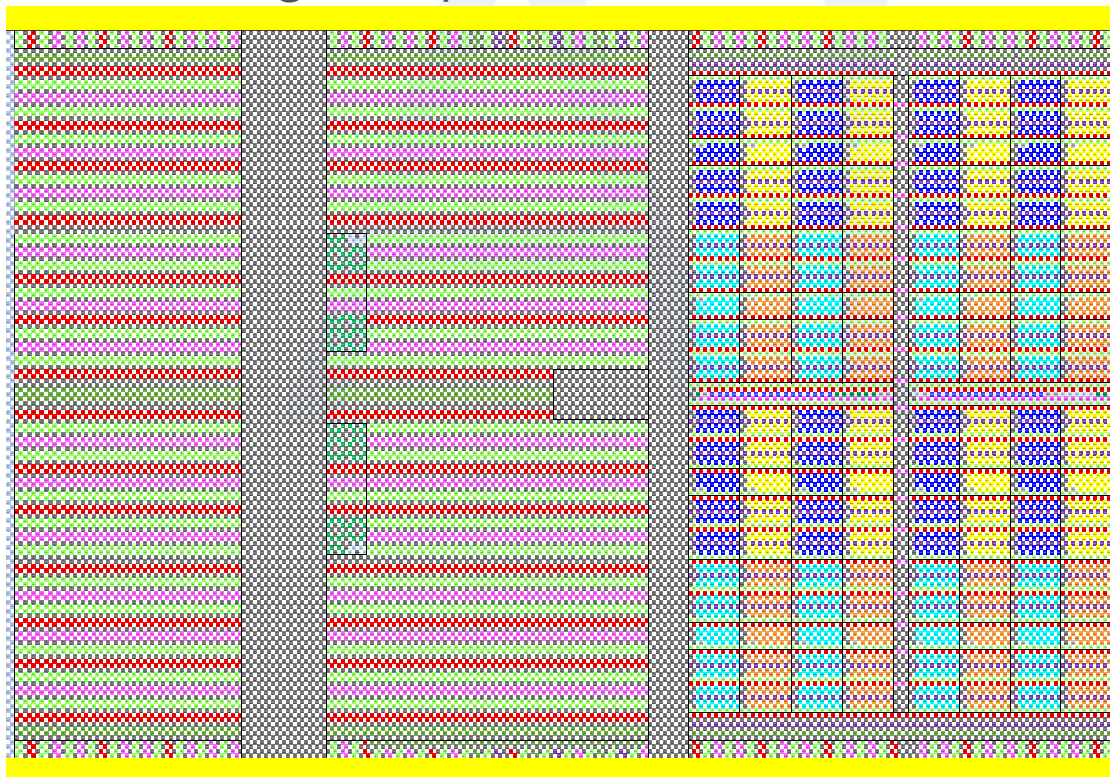


VDDQ row
of interest

Samsung Bump Change Requests #3

Add two rows of bump on north and south edges

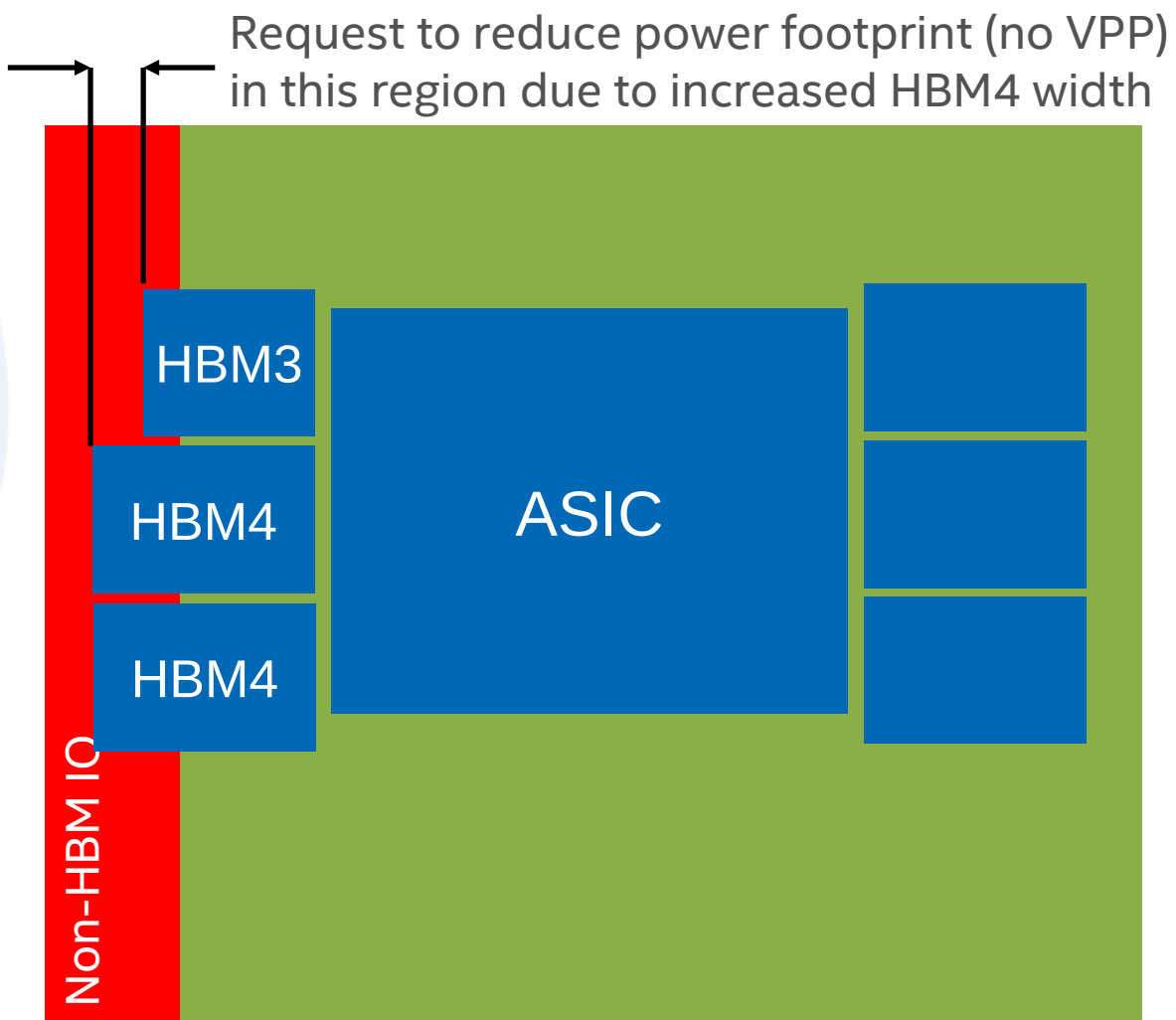
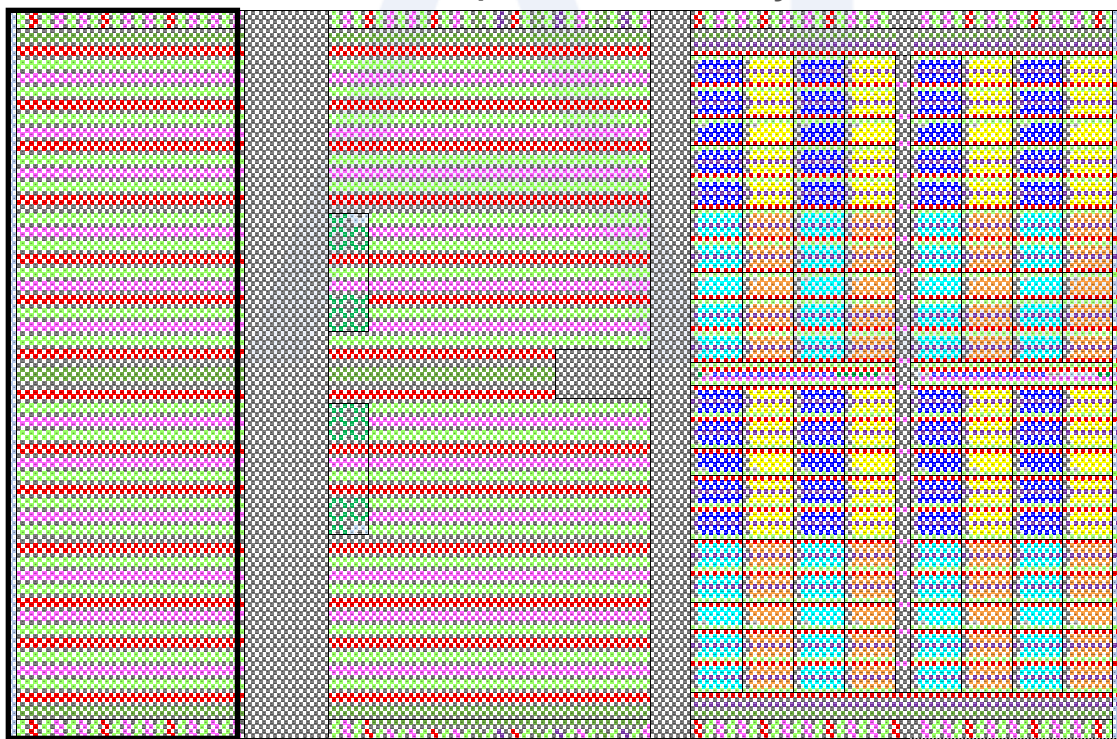
Increases edge bump clusters from 4 to 6 to match HBM3 (Imax risk)



Samsung Bump Change Requests #4

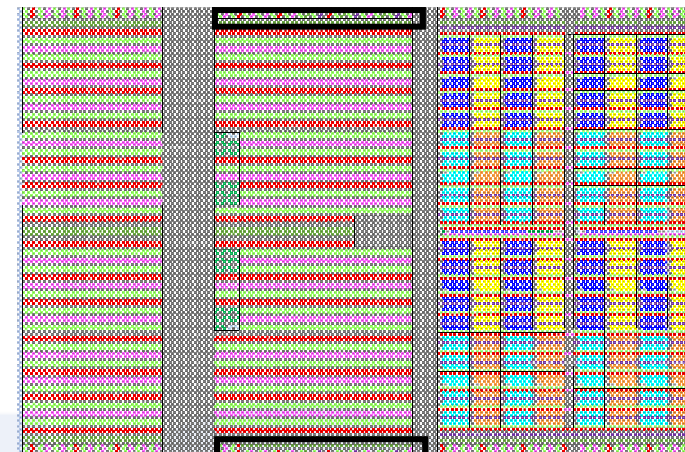
Request VPP is removed from core region below

Enables more robust power delivery to VDDQ/VDDC

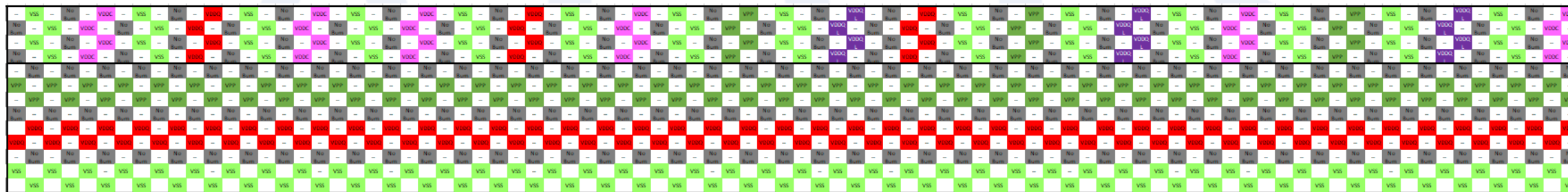


Clarification

VPP Asymmetry?



North Side



South Side

