

SPARE GATES

Spare Gates

- Large VLSI designs made by cautious designers will often include spare gates
- As the name states, these are extra gates that are functionally unused. To minimize leakage power, they should be disabled
 - Ex: logic gate inputs tied to V_{dd} or G_{nd}
- They are however ready to be used if needed
 - Connected to V_{dd} and G_{nd} . FFs connected to *clock*
- They are extremely useful in two scenarios if a failure is found in the chip:
 - 1) Extra gates are needed for FIB fixes
 - 2) A small number of gates can be added or changed without changing the expensive transistor-related layers but instead by changing only a few metal layers