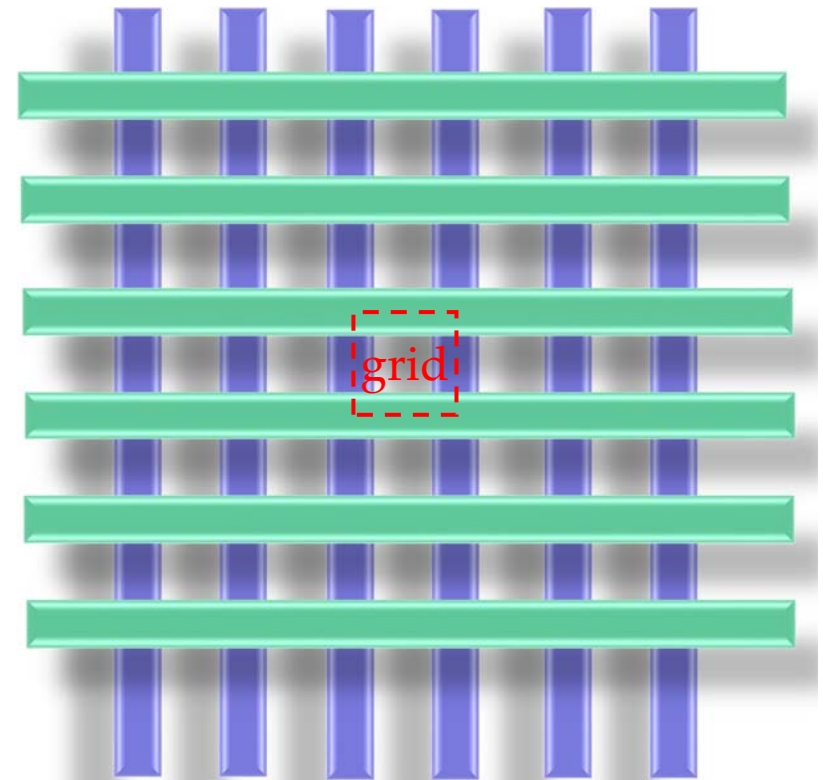


CHAPTER 2

Estimating Circuit Chip Area

- CMOS fabrication technologies are characterized by their minimum feature size
- However more useful area estimates can be made using the minimum wire pitch which the text calls a “grid” when viewed in both x and y directions



Estimating Circuit Chip Area

- The method assumes that wire density limits a circuit's area more than the transistor's area—which is a reasonable assumption
- Rough area estimates can be very useful for making preliminary design tradeoffs and for estimating a circuit's final required chip area

Table 2.1. Area of integrated circuit components in grids

Module	Area (Grids)
One bit of DRAM	2
One bit of ROM	2
One bit of SRAM	24
Two-input NAND gate	40
Static latch	100
Flip-flop	300
One bit of a ripple-carry adder	500
32-bit carry-lookahead adder	30 000
32-bit multiplier	300 000
32-bit RISC microprocessor (w/o caches)!	500 000