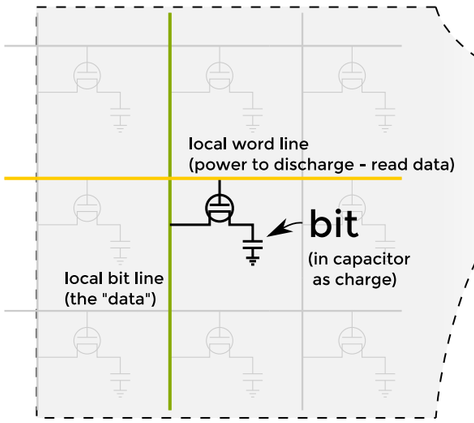
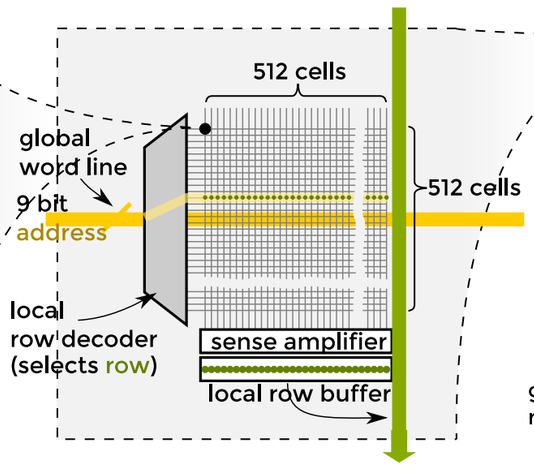
RAM Anatomy Poster

SDRAM 8GB DDR4 CL8-8-8-24(*)

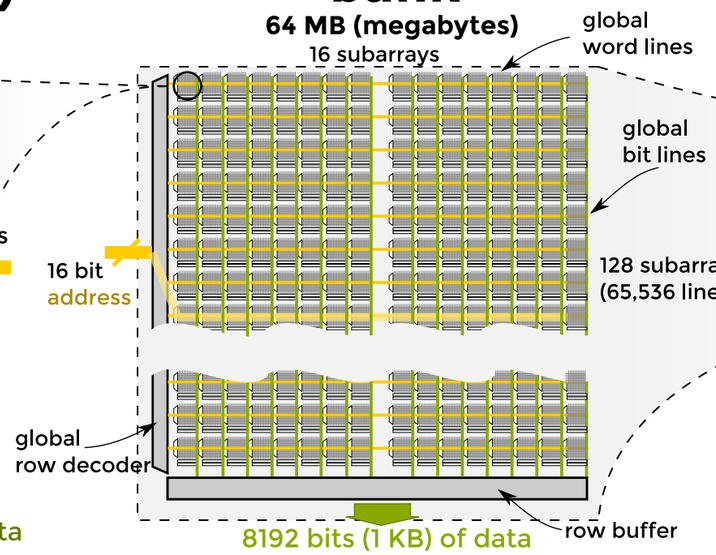
Single DRAM cell
1 bit



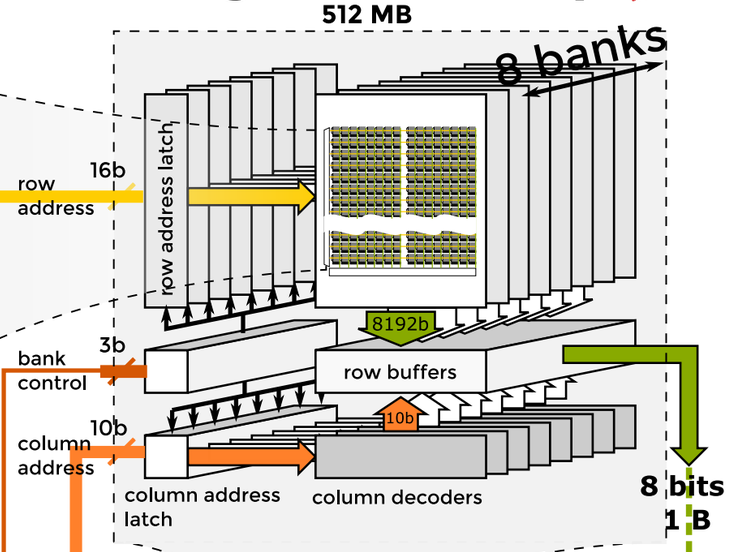
subarray (SA)
32 KB (kilobytes)



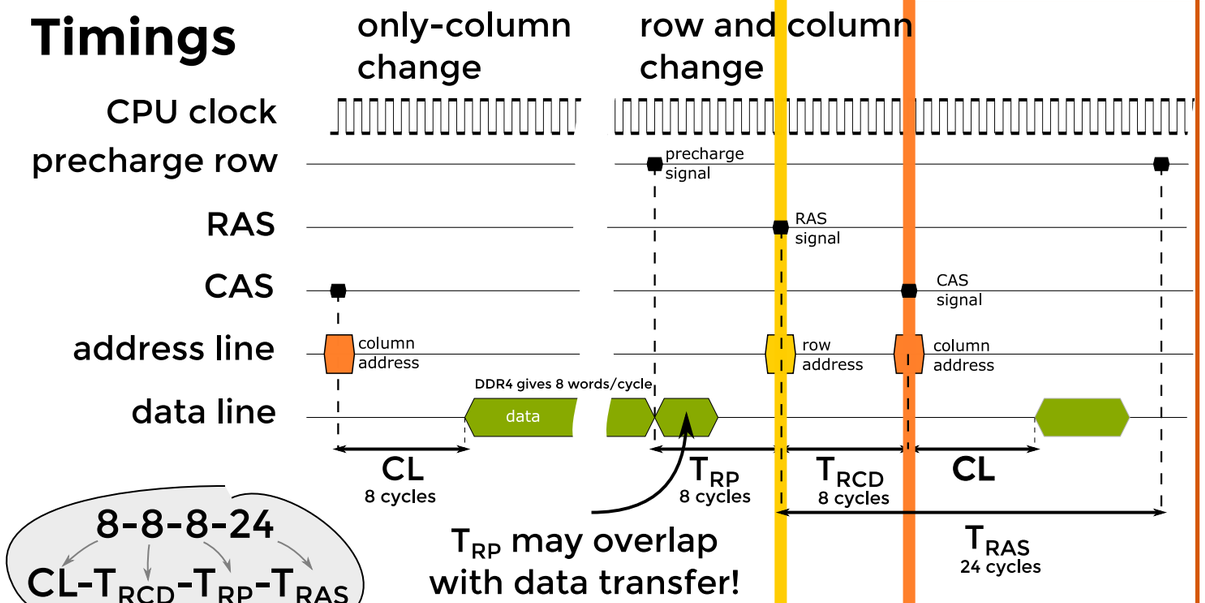
bank
64 MB (megabytes)
16 subarrays



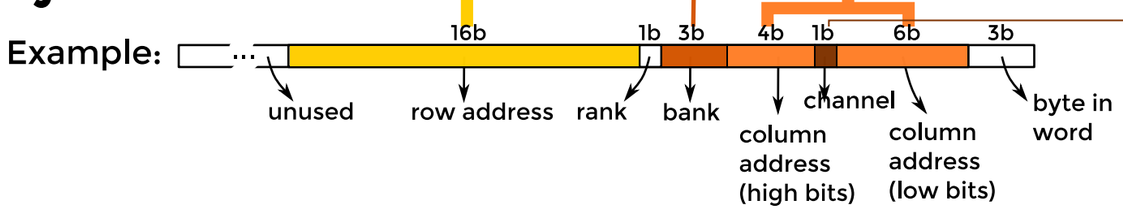
Single DRAM chip
512 MB

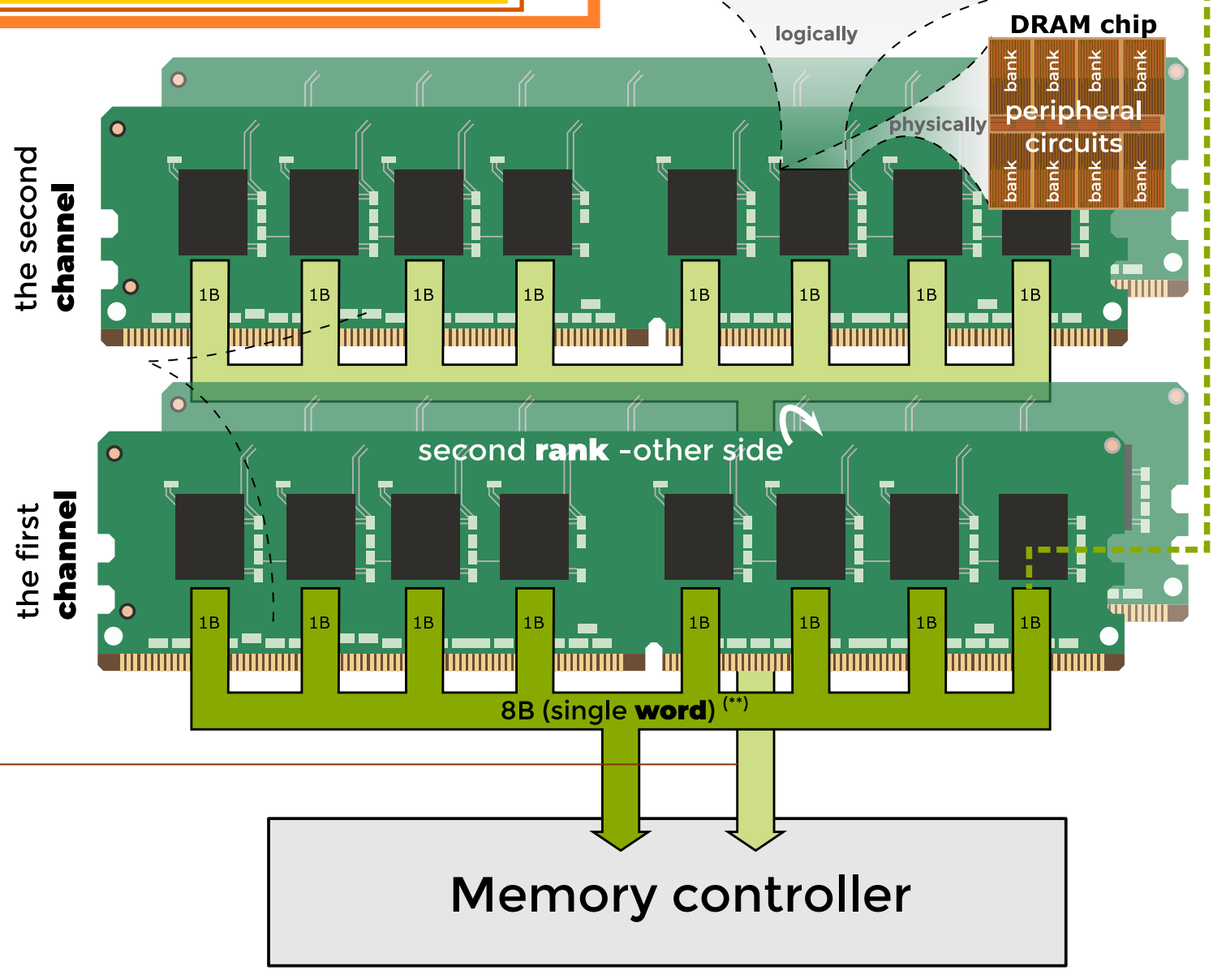


Timings



Physical address





(*) sample 8GB SDRAM module - 2 ranks with 8 DRAM chips (512MB each - consist of 8 banks, 64MB each). Internal structures are simplified for illustratory purposes and may differ in various modules

(**) In case of DDR4 it is multiplied by eight, so 8 words/CPU cycle

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