Bit Mapping

specifications:
- Single rank
- 8GB - 8Gb chips
- PC4 - 25600
- 1 KB page size
- 16 outstanding requests
- x8 devices

Using 8Gb chips, there are 2^{33} or 33 address bits.

Columns:

$$\text{page size} = \frac{C \cdot 2^{3}}{2^{3}} = 1\,KB \qquad C = \text{columns}$$

$$C = 1\,KB = 2^{10}$$

2^{10} columns = 10 colum bits
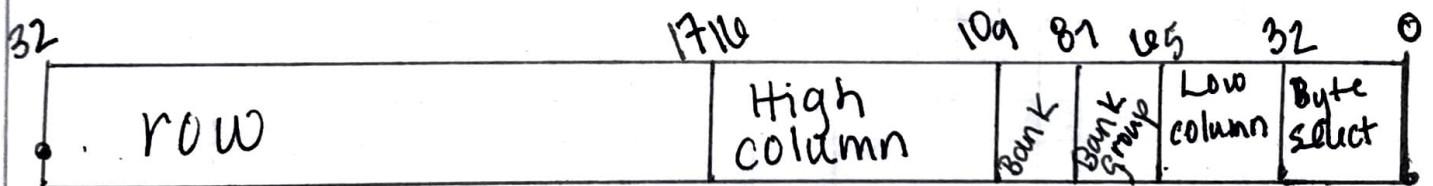
Byte alignment:
The devices ~~addresses~~ are 8 byte aligned, so there will be 3 "unused" byte select bits

Banks and Bank Groups;

This is using ddr4 chips with x8 organization. that means there are 4 bank groups consisting of 4 banks. 16 banks in total. This means there are 2 bank bits and 2 bank group bits.

Row:
$$33 - 3 - 4 - 10 = 16 \text{ row bits}$$

32	17 16	10 9	8 7	6 5	3 2	0
row	High column	Bank	Bank Group	Low column	Byte select	

Bit Map