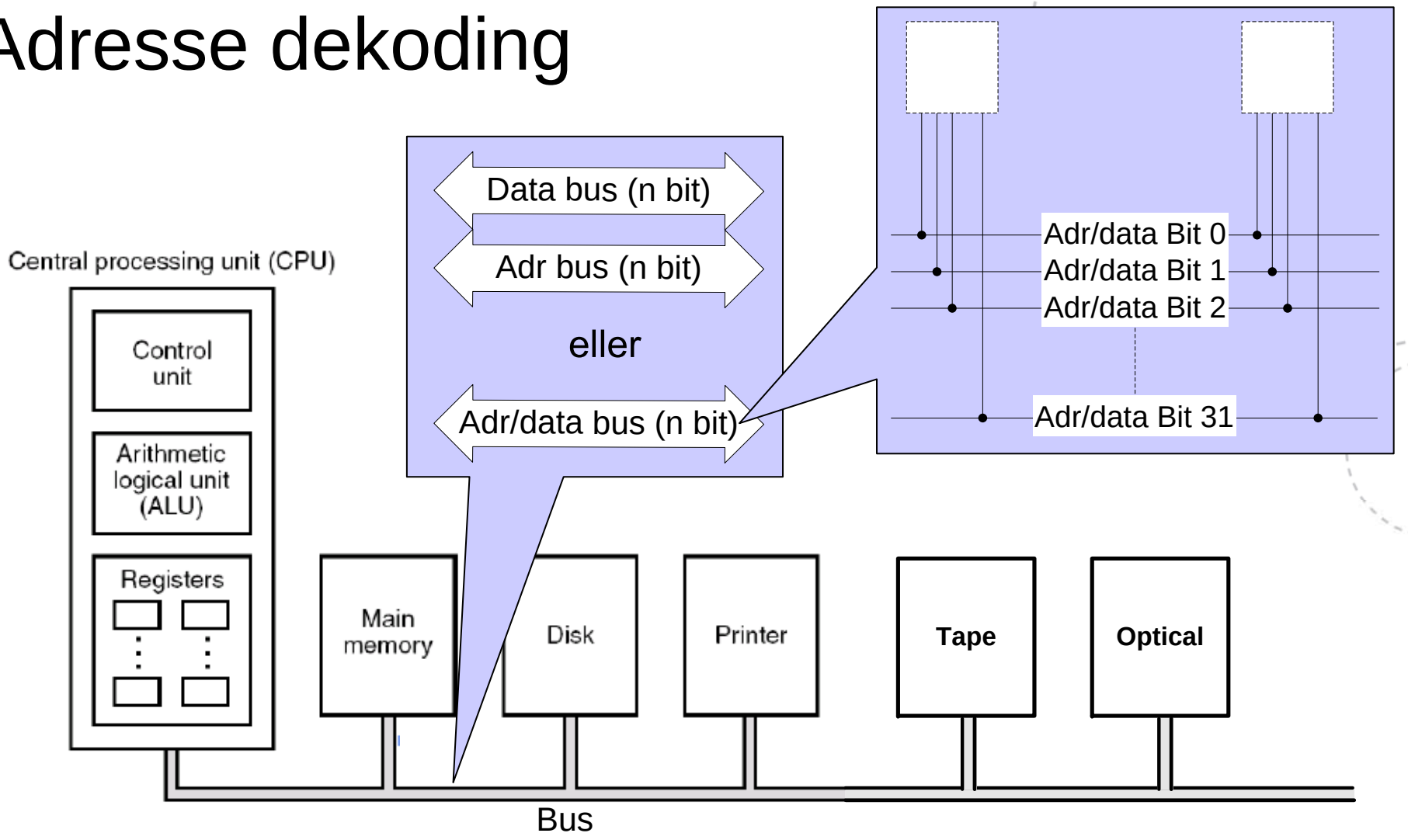
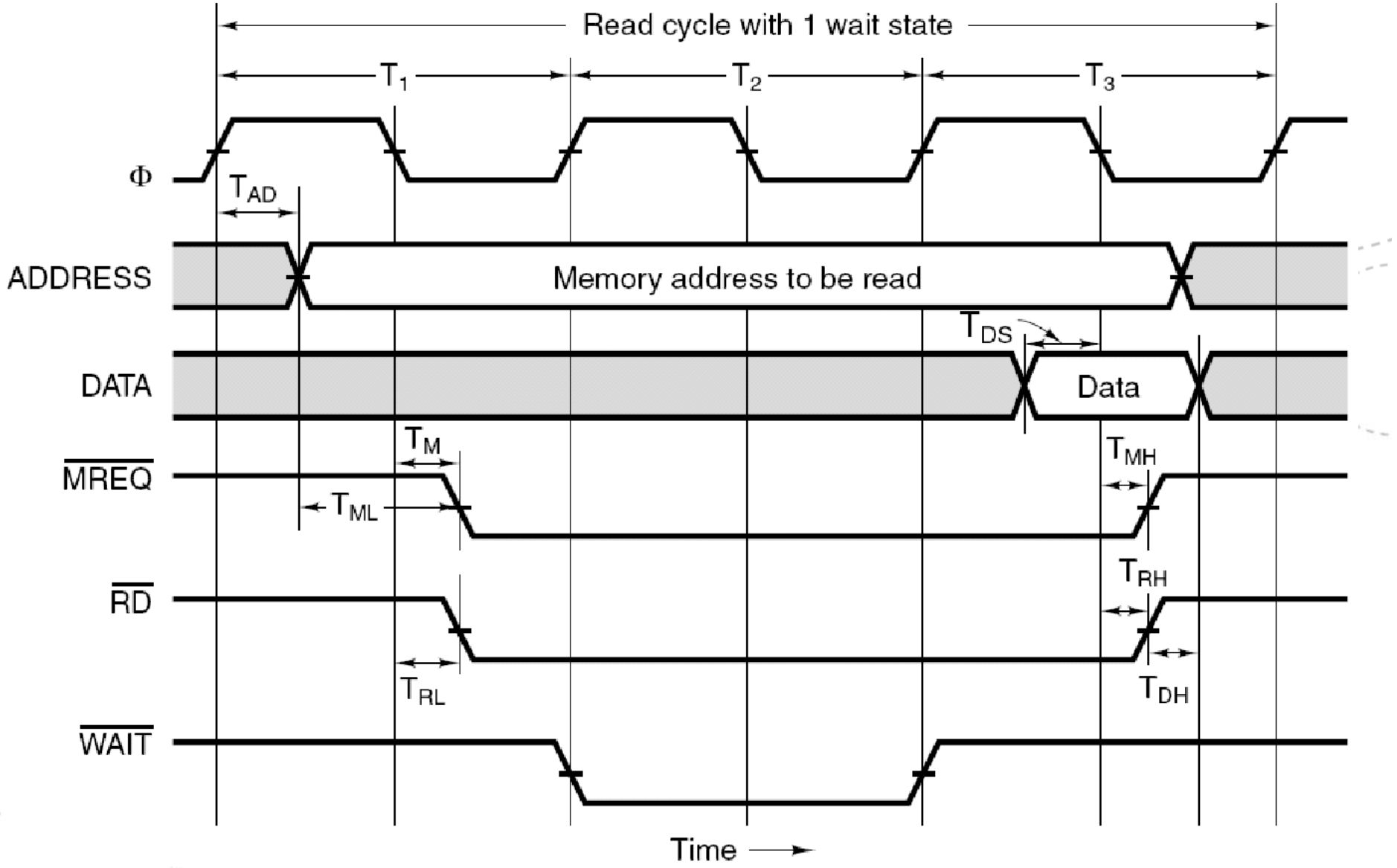
Adresse dekoding

Adresse dekoding



Adresse dekoding



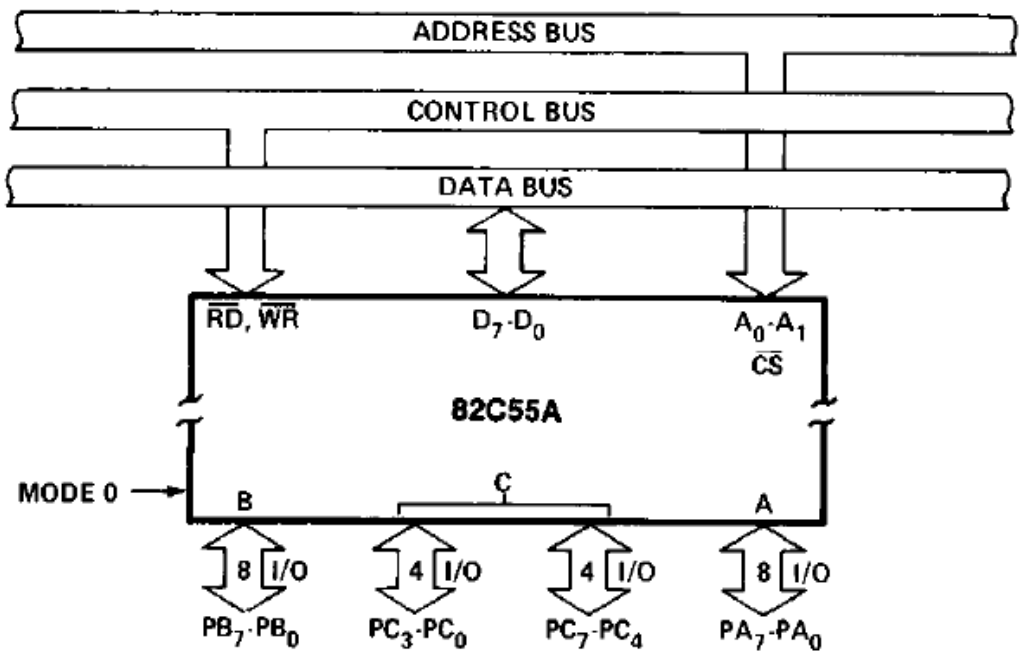
Adresse dekoding

- Kan adressere einheitar
  - Minne
  - I/O
  - Register
- Adresse dekoding
  - Eining må kunne adresserast (veljast)
  - Må ha eit minnekart for systemet
    - Kva ligg på kva minne adresse
    - For eksempel, prosessor kan då aksesera einheitar ved å lese/skrive til minne adresser
    - Som programmerarar brukar me minnekarte til å finne kva adresse me skal bruke for å lese/skrive til ein eining
    - Som maskinvarekonstruktørar må me lage eit minnekart for systemet

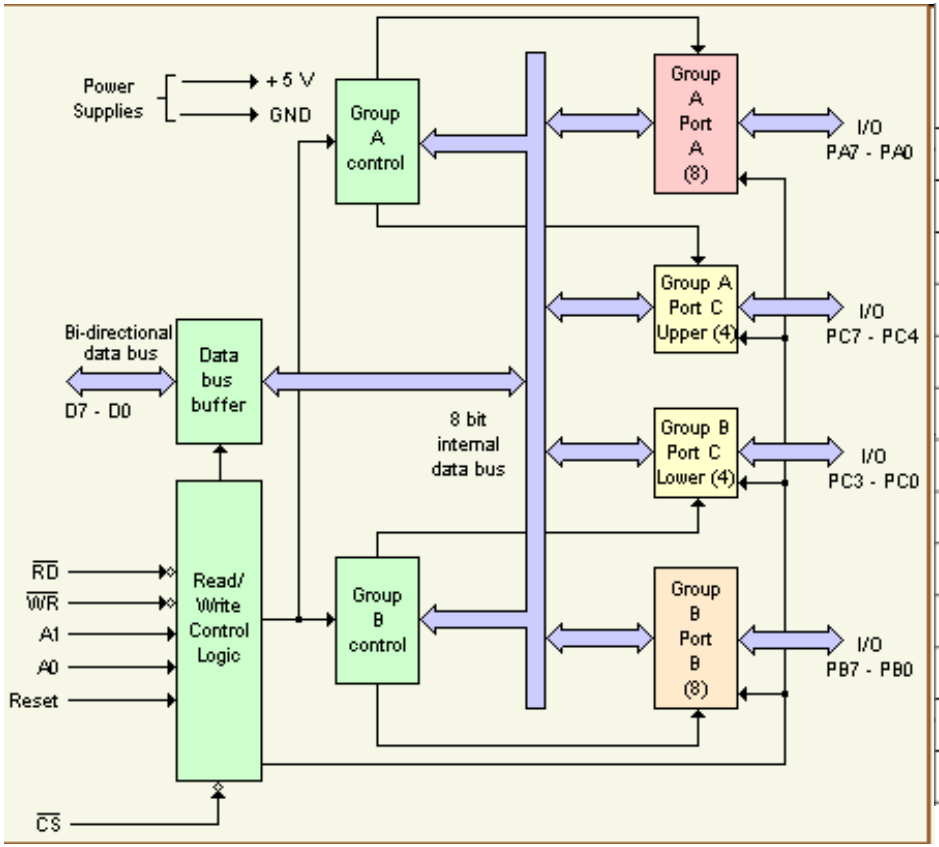
Adressering av eining eksempel

- Kva skjer eigentleg?

- Eksempel PIO
  - I/O (read eller write)
  - Har 4 interne register
  - A_0 og A_1 angir Register
  - 8 bit data i register



PIO (Parallel Input/Output) eks: Intel 8255



ADDRESS: These input signals, in conjunction $\overline{RD}$ and $\overline{WR}$, control the selection of one of the three ports or the control word registers.

A_1	A_0	$\overline{RD}$	$\overline{WR}$	$\overline{CS}$	Input Operation (Read)
0	0	0	1	0	Port A - Data Bus
0	1	0	1	0	Port B - Data Bus
1	0	0	1	0	Port C - Data Bus
1	1	0	1	0	Control Word - Data Bus
					Output Operation (Write)
0	0	1	0	0	Data Bus - Port A
0	1	1	0	0	Data Bus - Port B
1	0	1	0	0	Data Bus - Port C
1	1	1	0	0	Data Bus - Control
					Disable Function
X	X	X	X	1	Data Bus - 3 - State
X	X	1	1	0	Data Bus - 3 - State

Adressering av eining eksempel

- Kva skjer eigentleg?

- Eksempel PIO
  - I/O (read eller write)
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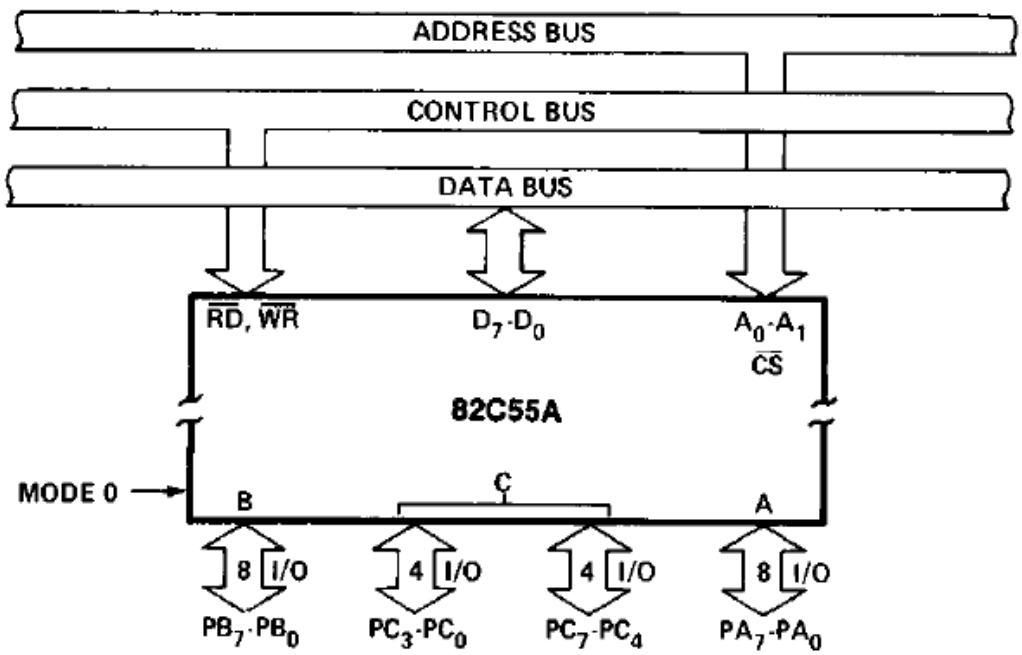
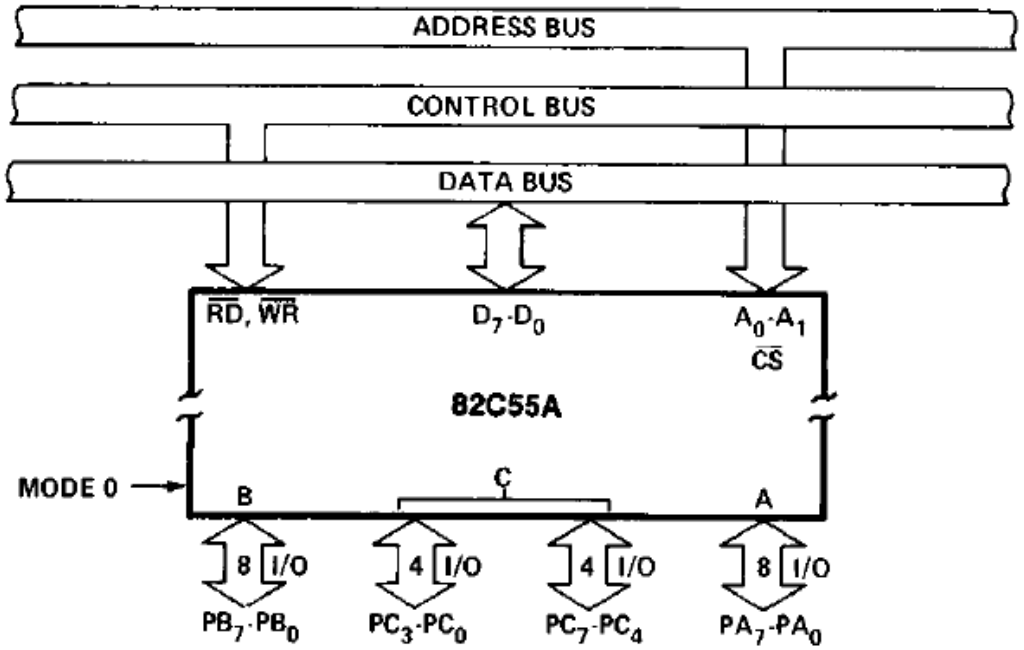


Adressering av eining eksempel

- Kva skjer eigentleg?

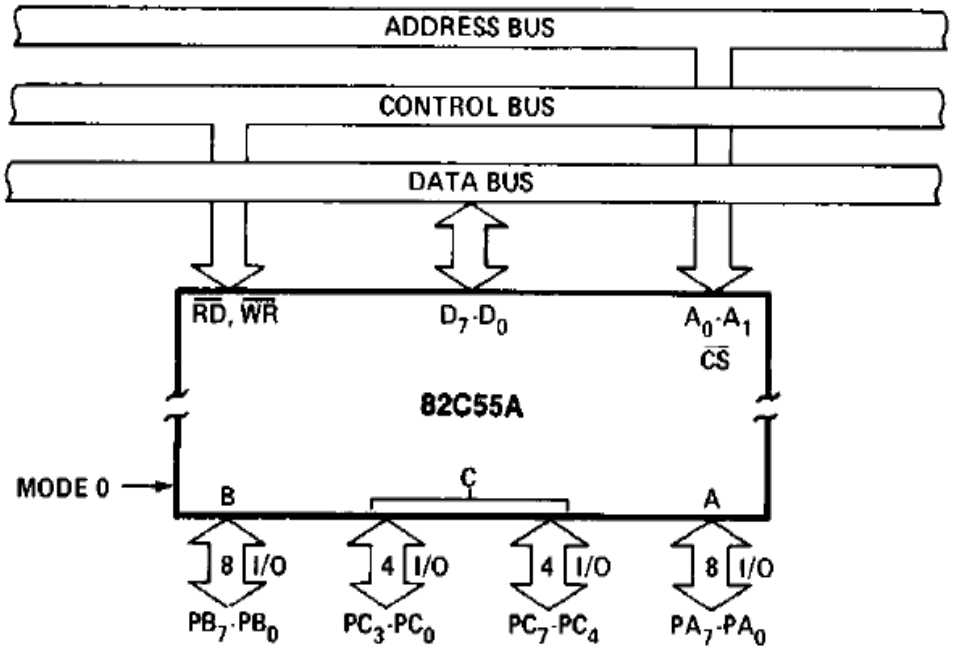
- Eksempel PIO
  - I/O (read eller write)
  - Har 4 interne register
  - A_0 og A_1 angir Register
  - 8 bit data i register

  - Må då kunne
    - Adressere PIO-einingen
    - Velje 1 av interne register
    - Read/write (bruke databussen)



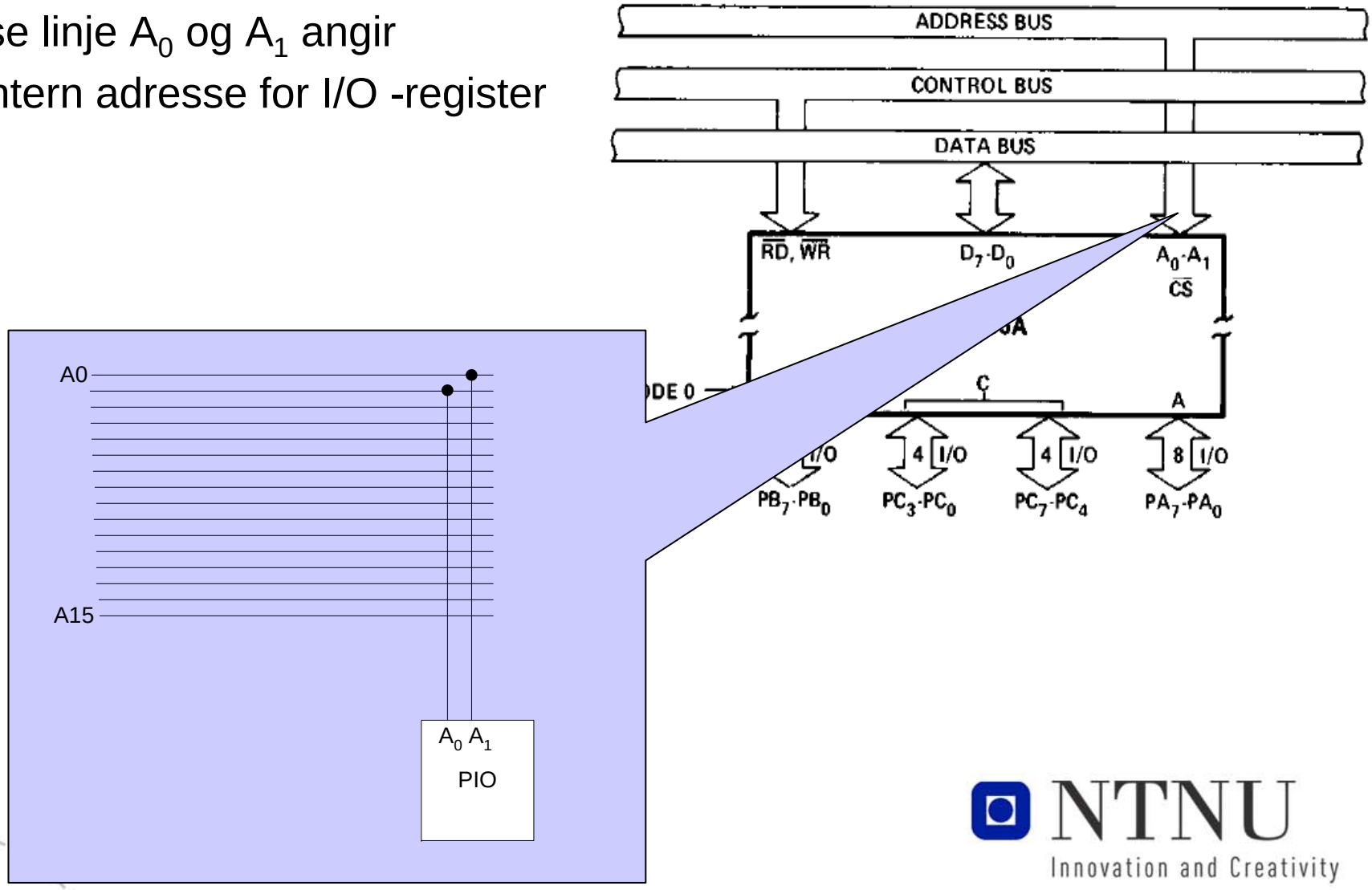
Adressering av eining eksempel

1: Legg ut adressa for eining
1: Read eller Write operasjon
2: Bruke databussen



Adressering av eining eksempel

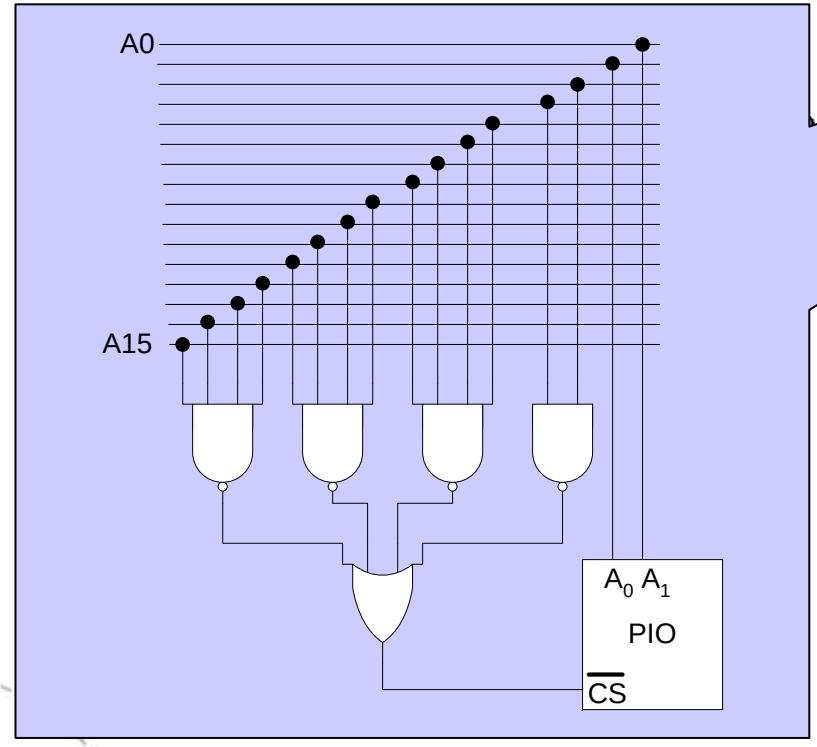
Adresse linje A_0 og A_1 angir
kunn intern adresse for I/O -register

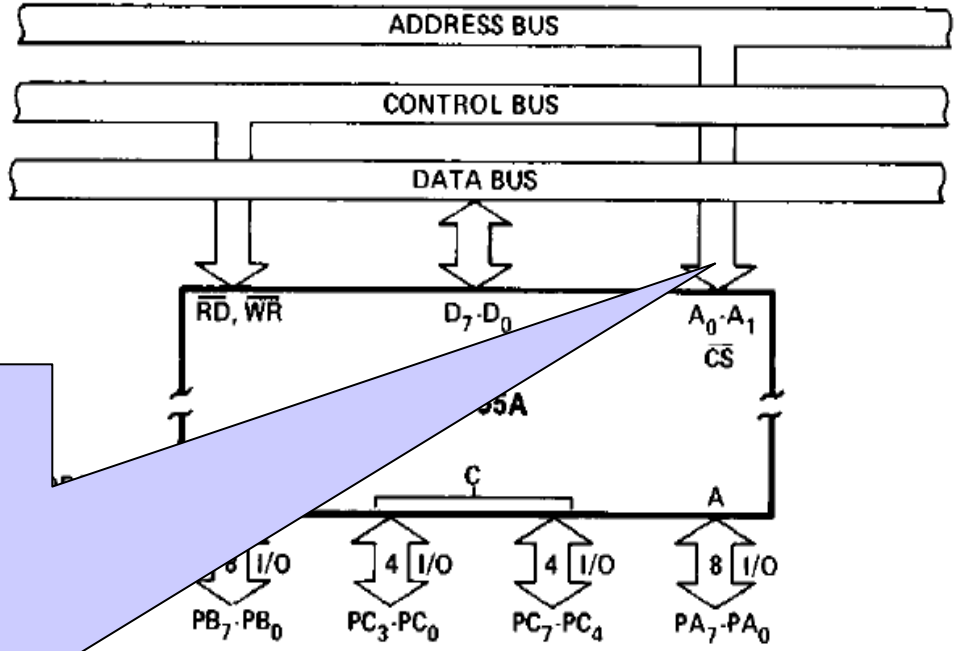


Adressering av eining eksempel

Adresse linje A_0 og A_1 angir
kunn intern adresse for I/O –register

Chip Select adresserar einingen





PIO-kretsen har no adresse:

0xFFFC til FFFF

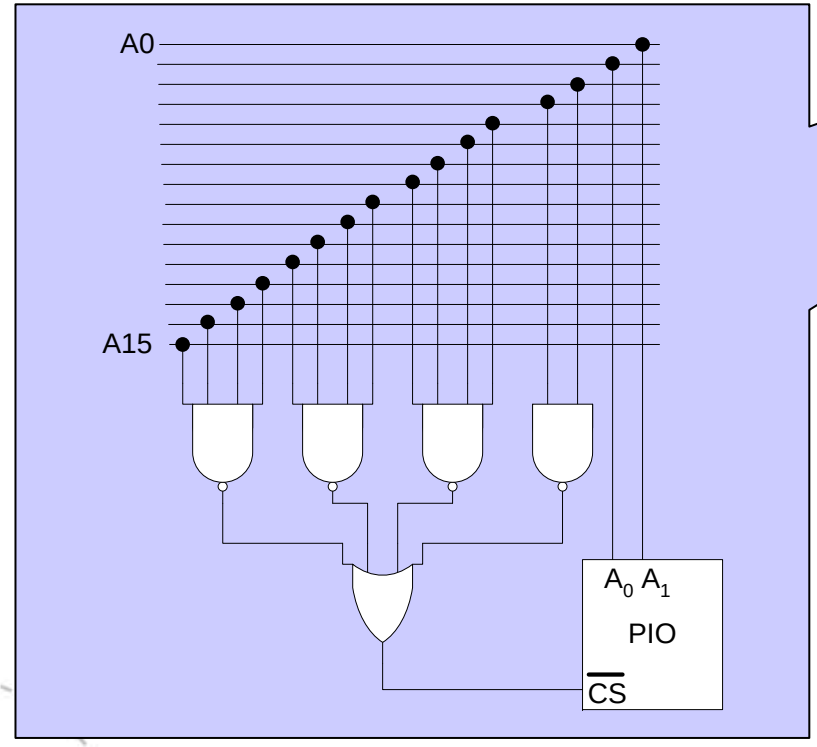
Gir aktivt Chip Select signal

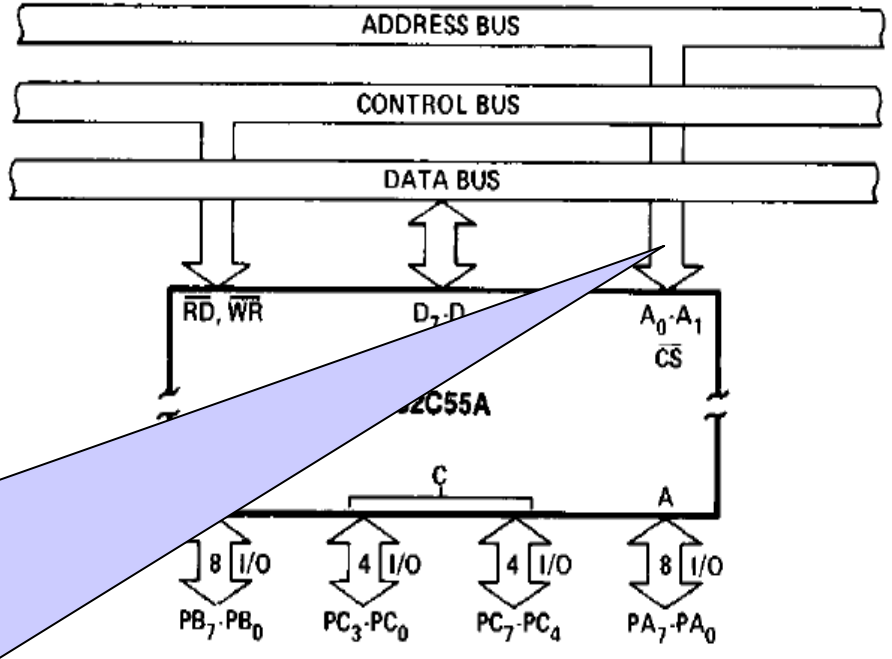
0xFFFC (A_1A_0 = 00) PIO-register 0

0xFFFD (A_1A_0 = 01) PIO-register 1

0xFFFE (A_1A_0 = 10) PIO-register 2

0xFFFF (A_1A_0 = 11) PIO-register 3





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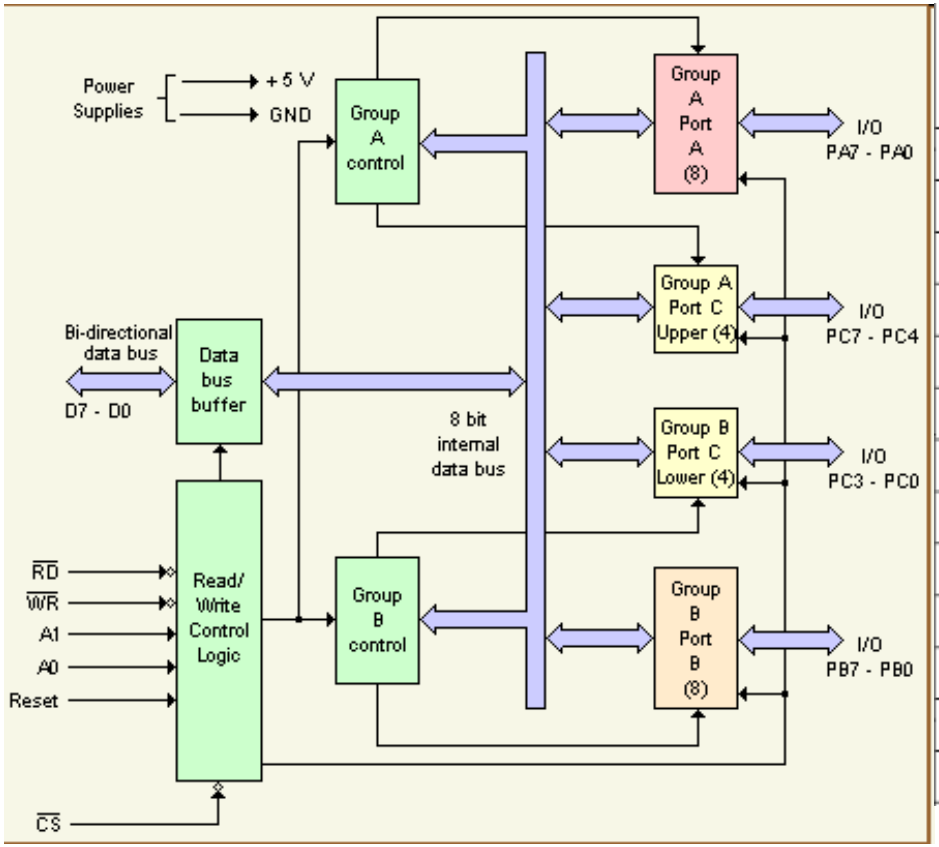

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A_1	A_0	$\overline{RD}$	$\overline{WR}$	$\overline{CS}$	Input Operation (Read)
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1	1	0	1	0	Control Word - Data Bus
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0	0	1	0	0	Data Bus - Port A
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1	0	1	0	0	Data Bus - Port C
1	1	1	0	0	Data Bus - Control
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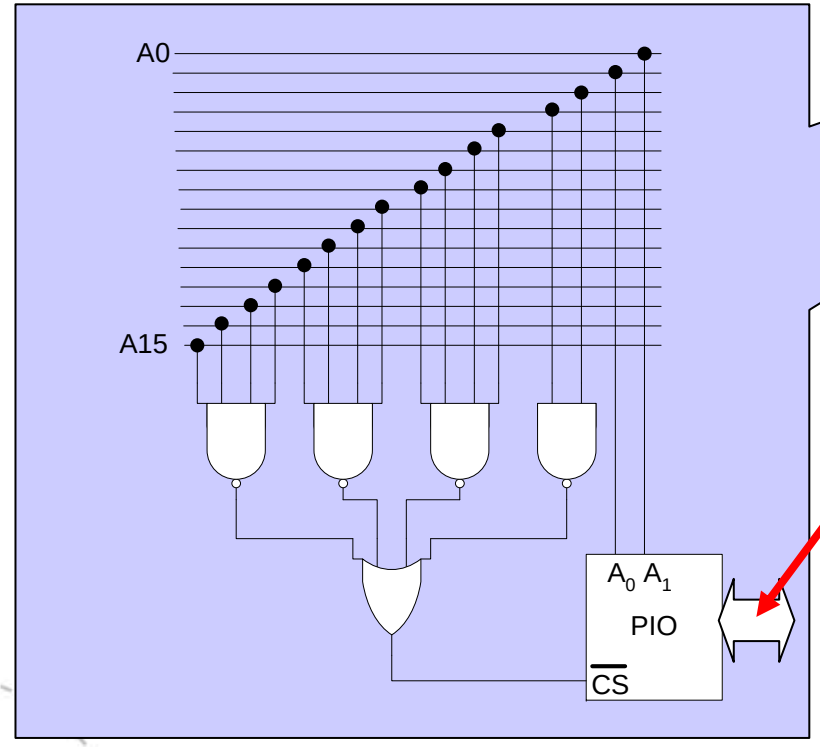

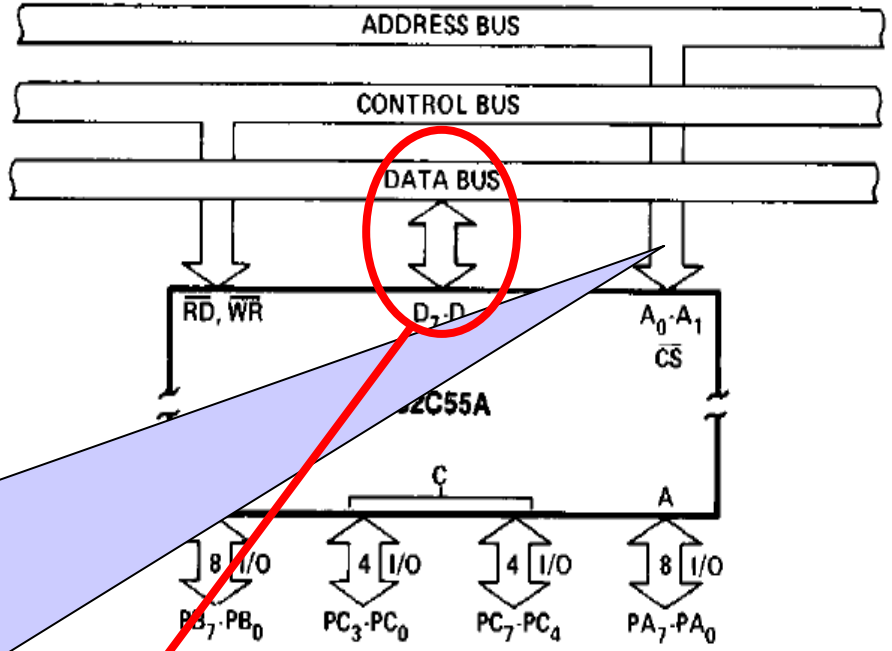

Minnekart

PIO-kretsen har no adresse:

0xFFFC til FFFF

Gir aktivt Chip Select signal

0xFFFC (A_1A_0 = 00) PIO-register 0

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0xFFFE (A_1A_0 = 10) PIO-register 2

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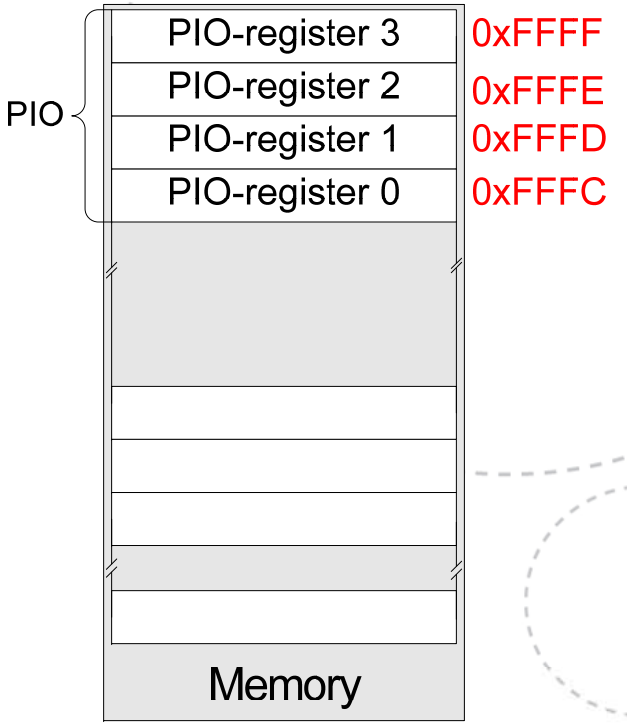

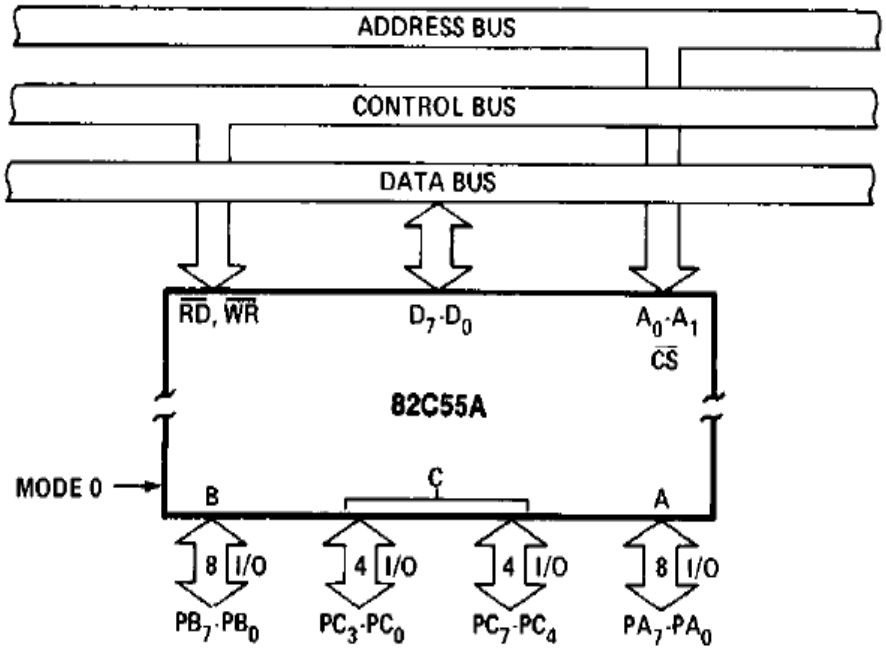

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Adresse dekoding

- Minnekart
  - Kva ligg på kva minne adresse
  - Kan då aksesera einheitar ved å lese/skrive til minne adresser

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  - Kva ligg på kva minne adresse
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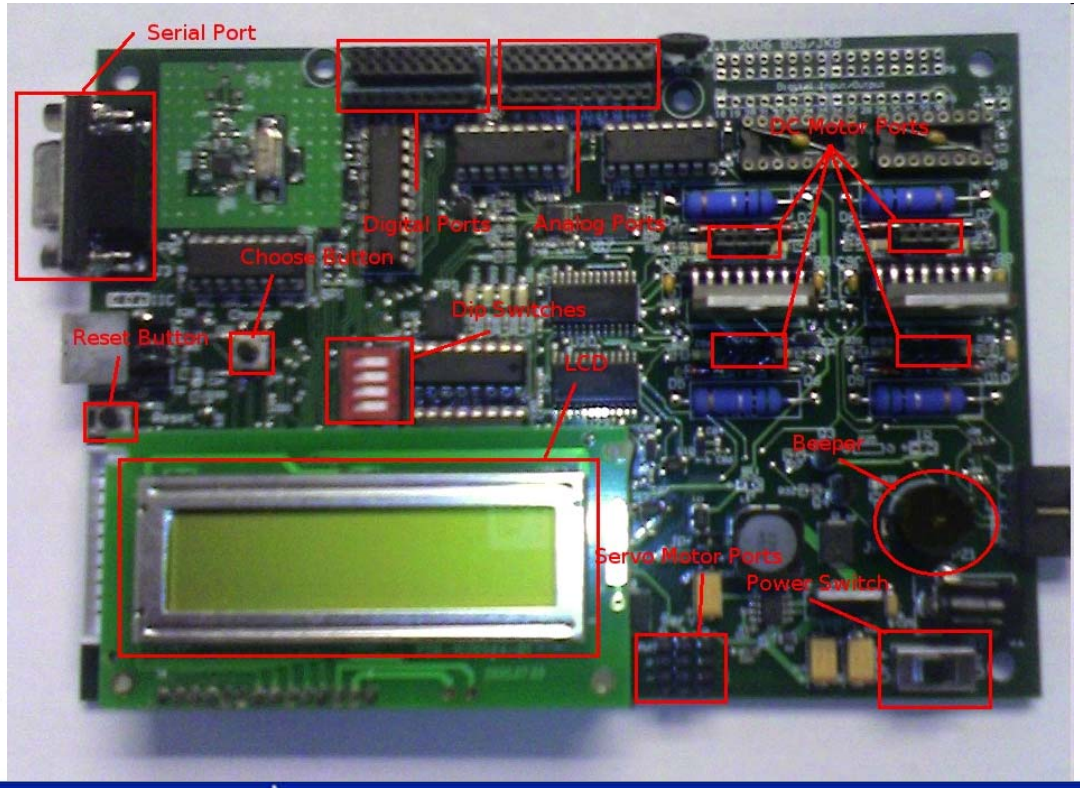

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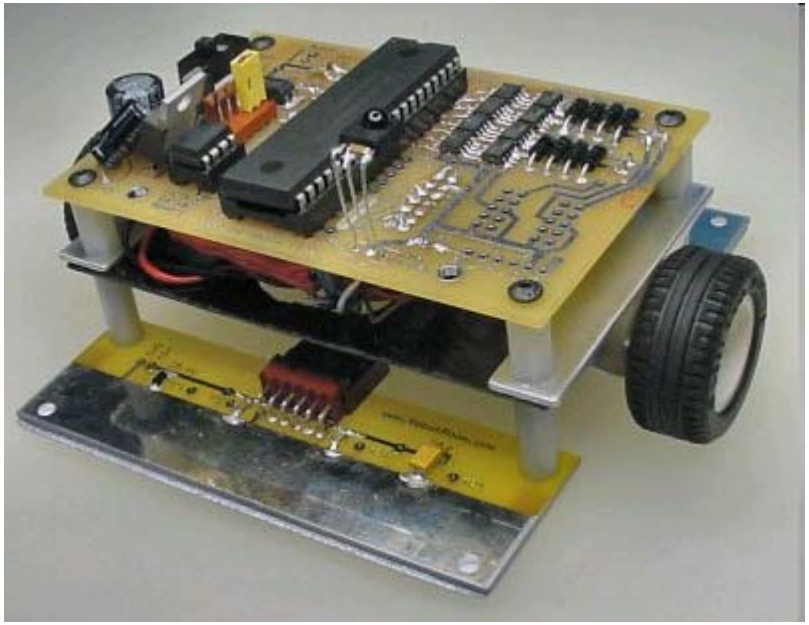
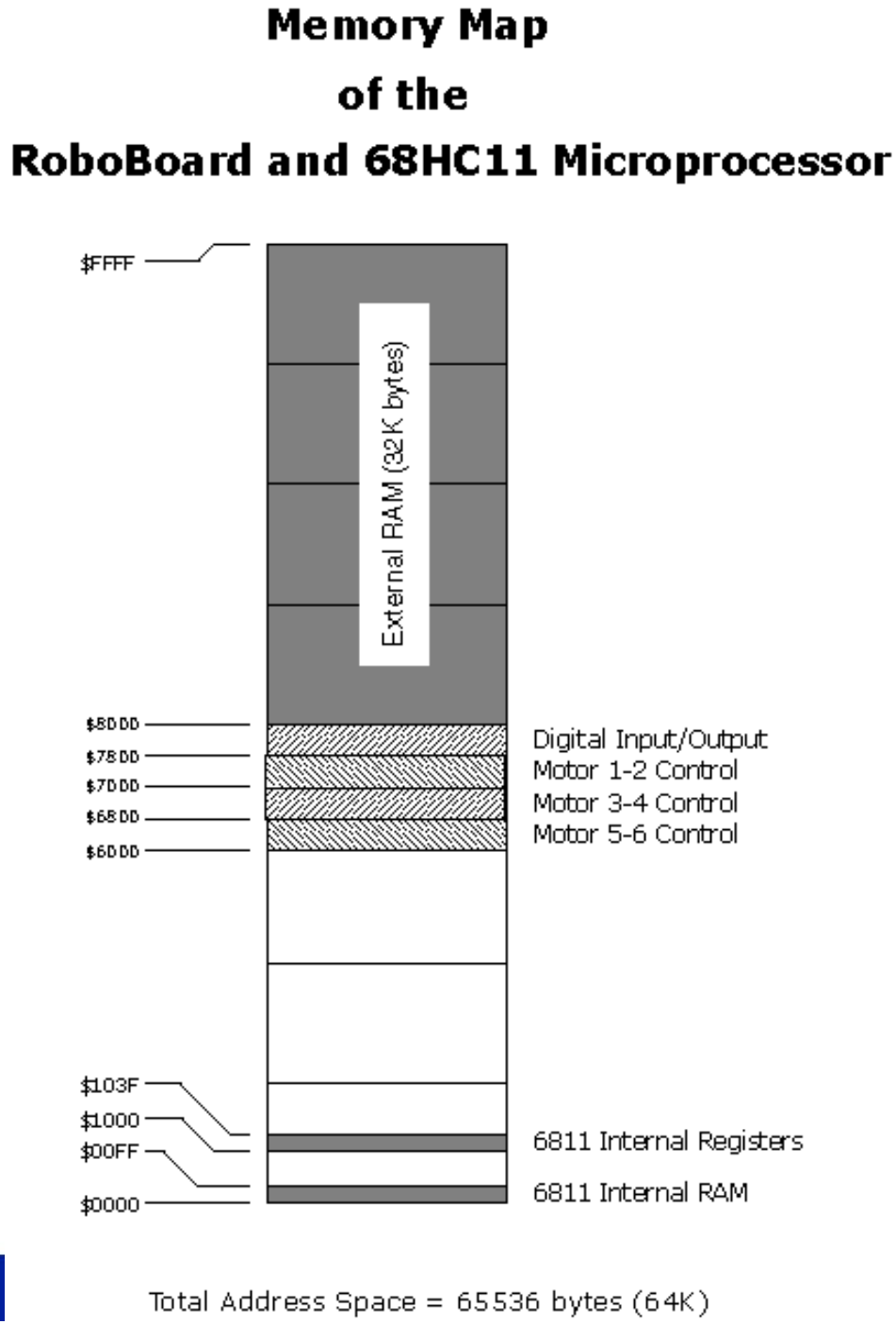
Adresse dekoding

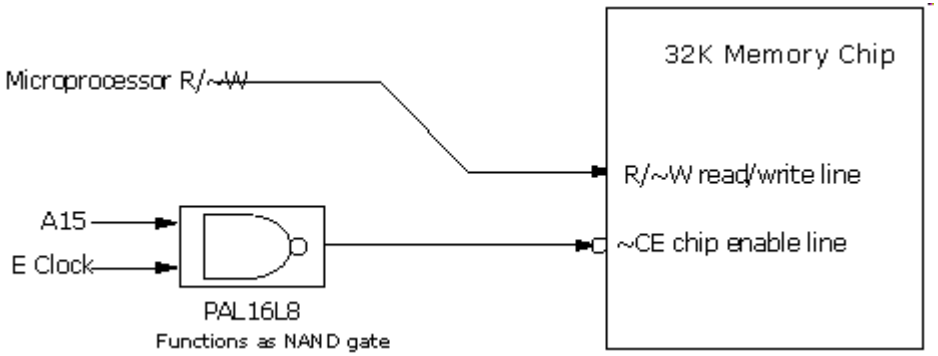
- Minnekart
  - Kva ligg på kva minne adresse
  - Kan då aksesere einheitar ved å lese/skrive til minne adresser





Adresse dekoding

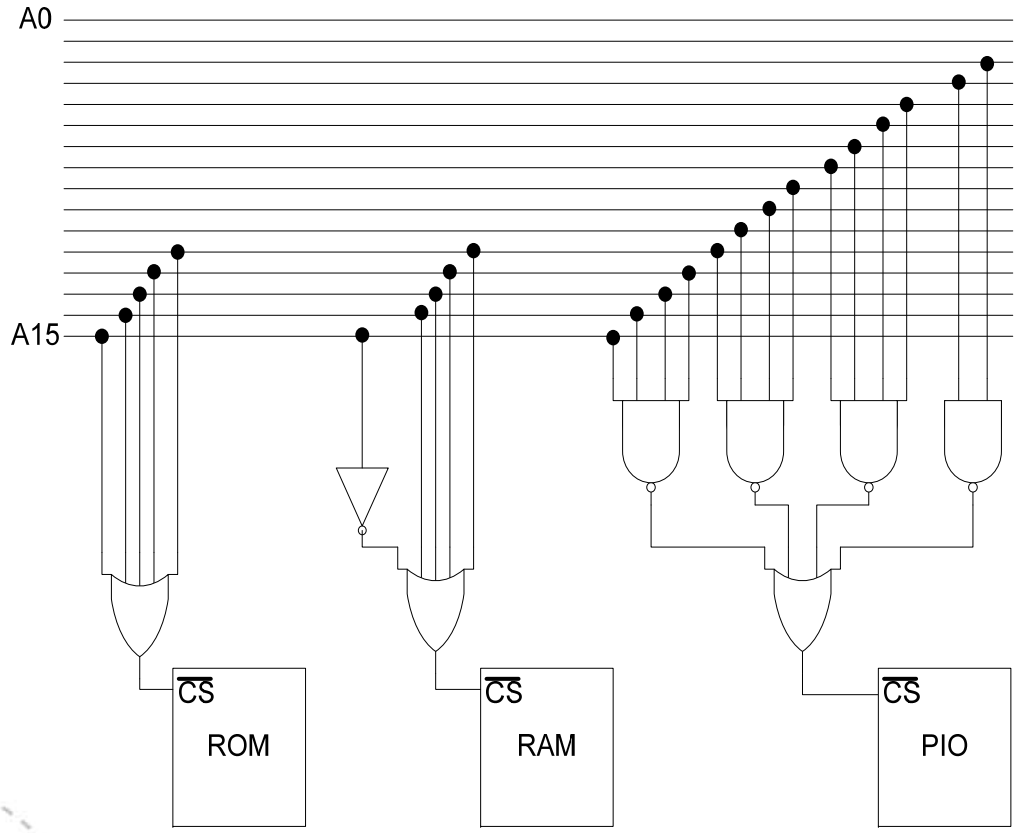
- Dekoding
  - Gi ein einheit eller eit minne område ei adresse
  - Brukar adresselinjer og dekodar for ei bestemt adresse eller adresse område



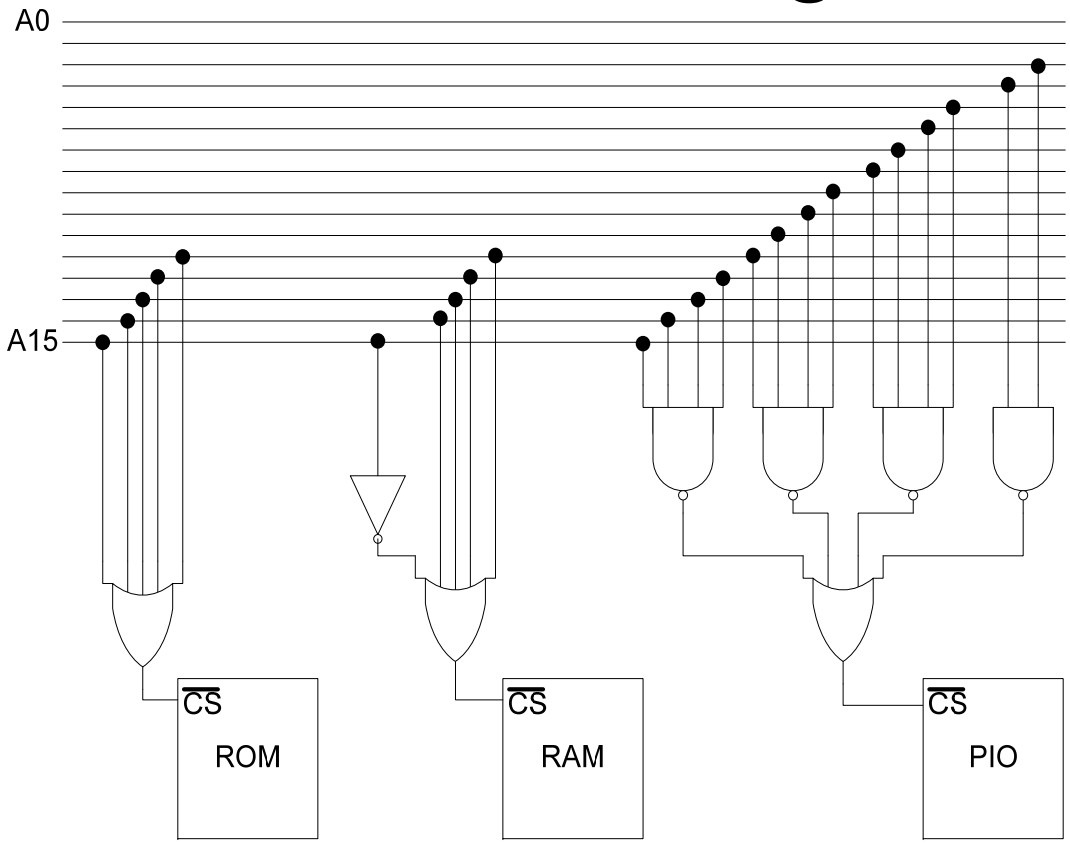
- Når:
  - A15 = ”1”
  - E Clock = ”1”
  - ~CE er då = ”0” og aktiv Minnebrikken er valgt
  - R/W bestemer om det skal lesast eller skrivast

Adresse dekoding

- Dekoding
  - 3 einheitar ROM, RAM og PIO skal adresse mappast
  - Kvar har eit adresseområde



Adresse dekoding finne adr. område



ROM:

Dekod: 0000 0XXX XXXX XXXX

Høg: 0000 0111 1111 1111

0 7 F F

Låg: 0000 0000 0000 0000

0 0 0 0

RAM:

Dekod: 1000 0XXX XXXX XXXX

Høg: 8 7 F F

Låg: 8 0 0 0

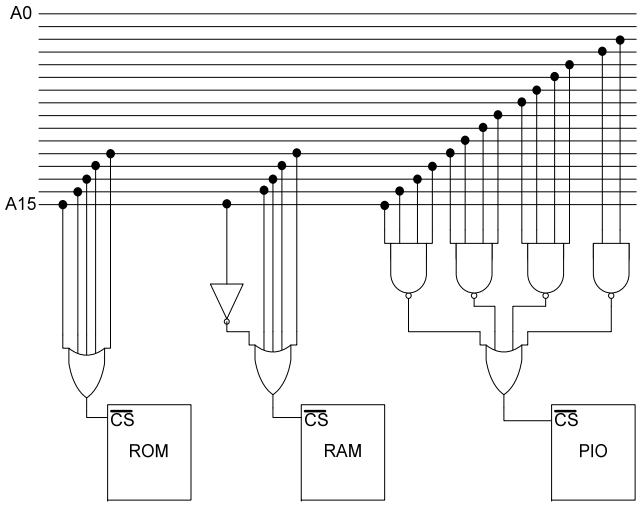
PIO:

Dekod: 1111 1111 1111 11XX

Høg: F F F F

Låg: F F F C

Adresse dekoding lage adr. kart



PIO:

Dekod: 1111 1111 1111 11XX

Høg: F F F F

Låg: F F F C

RAM:

Dekod: 1000 0XXX XXXX XXXX

Høg: 8 7 F F

Låg: 8 0 0 0

ROM:

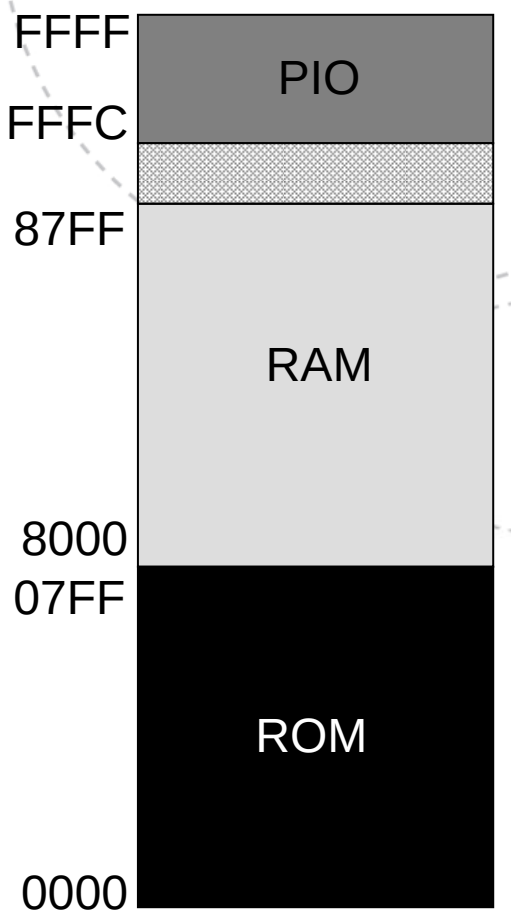
Dekod: 0000 0XXX XXXX XXXX

Høg: 0000 0111 1111 1111

0 7 F F

Låg: 0000 0000 0000 0000

0 0 0 0



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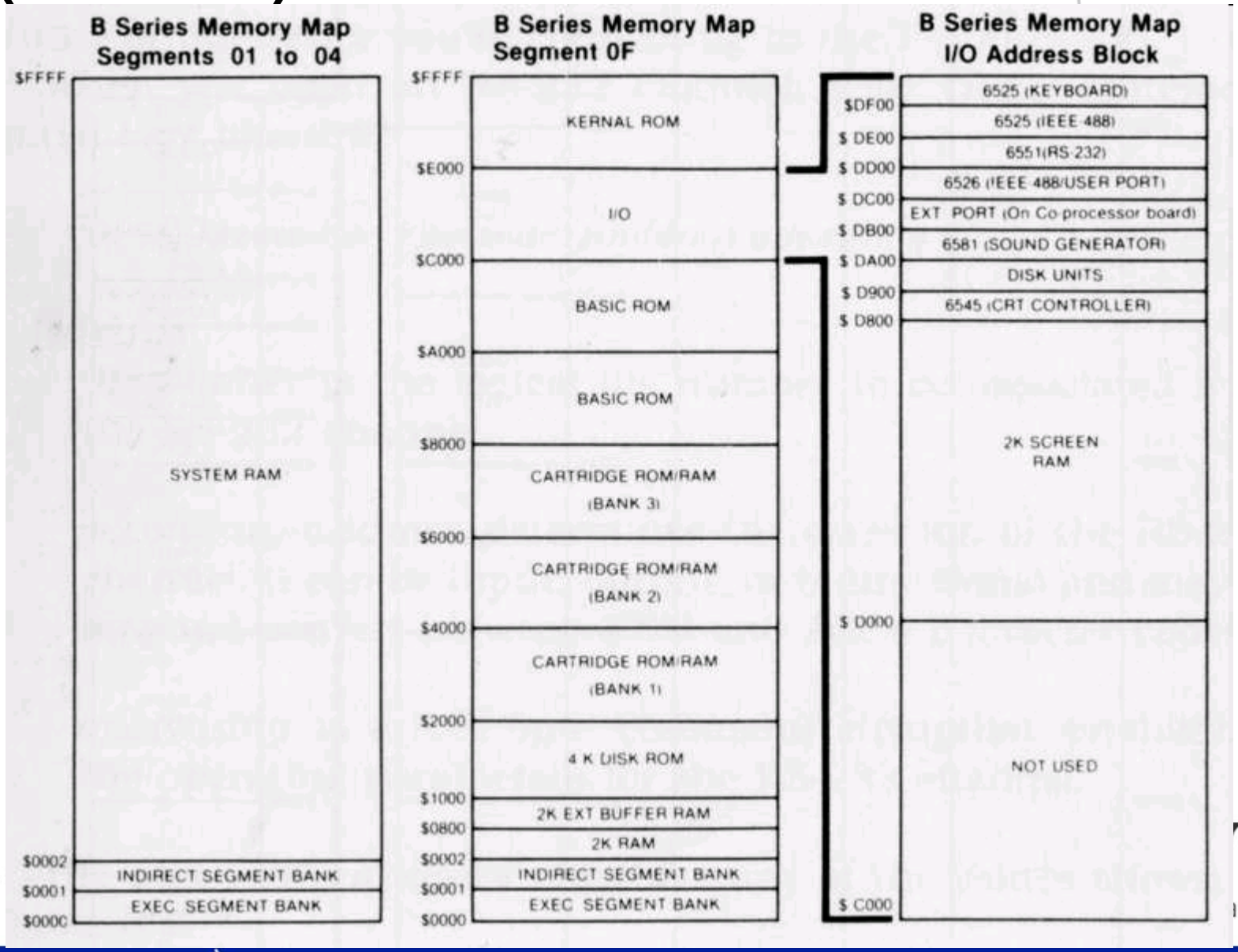
(Gamal) Commodore CBM II



Onsdag 24/9

Discovery and Investigation of Inherent Scalability in Developmental Genomes

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Onsdag 24/9

- Chip Multi Processors (CMP) gjesteforelesning
  - CMP-artikel: