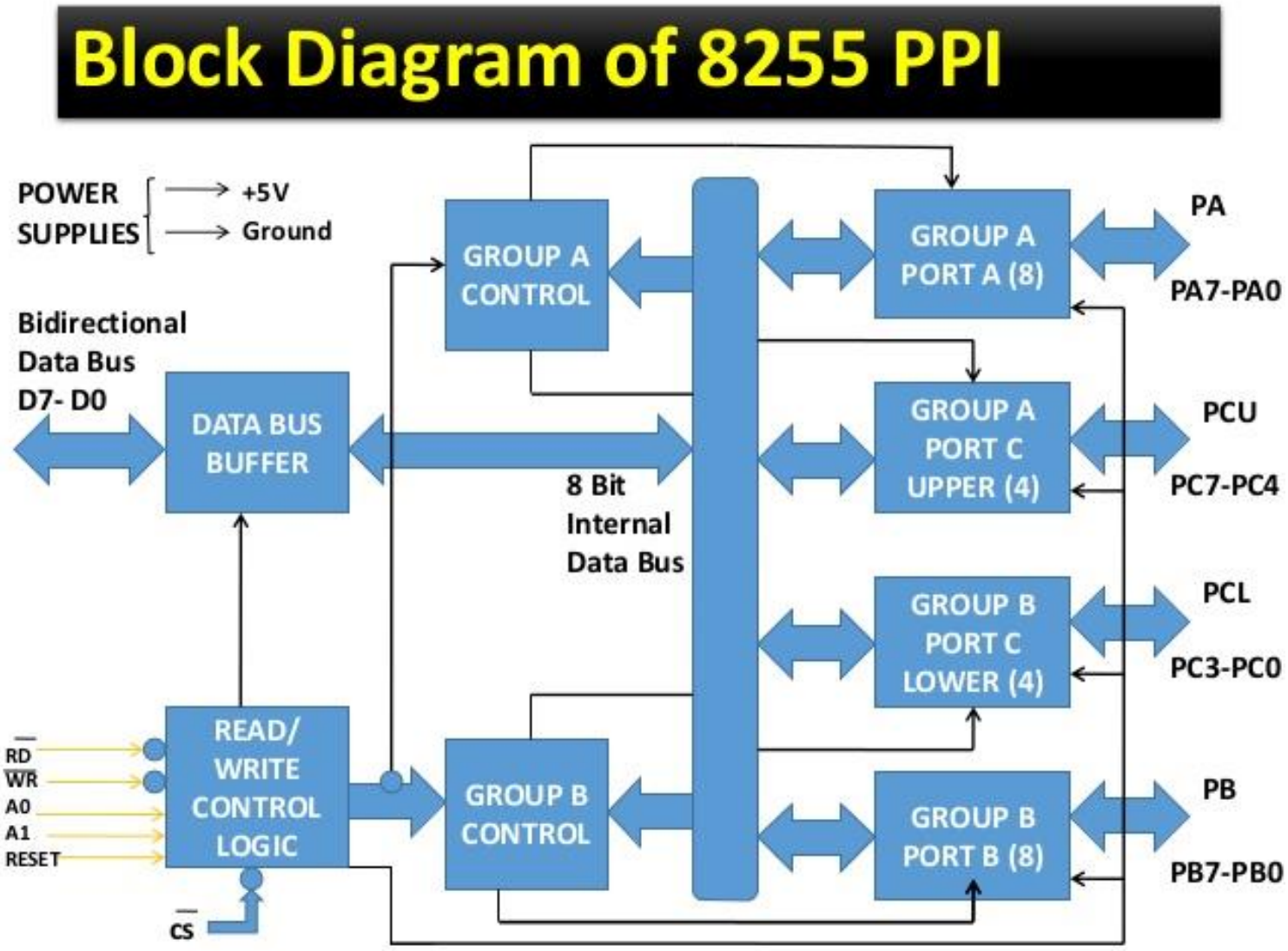
Programmable peripheral interface 8255

- PPI 8255 is a general purpose programmable I/O device designed to interface the CPU with its outside world such as ADC, DAC, keyboard etc.
- We can program it according to the given condition.
- It consists of three 8-bit bidirectional I/O ports i.e. PORT A, PORT B and PORT C. We can assign different ports as input or output functions.

Programmable peripheral interface

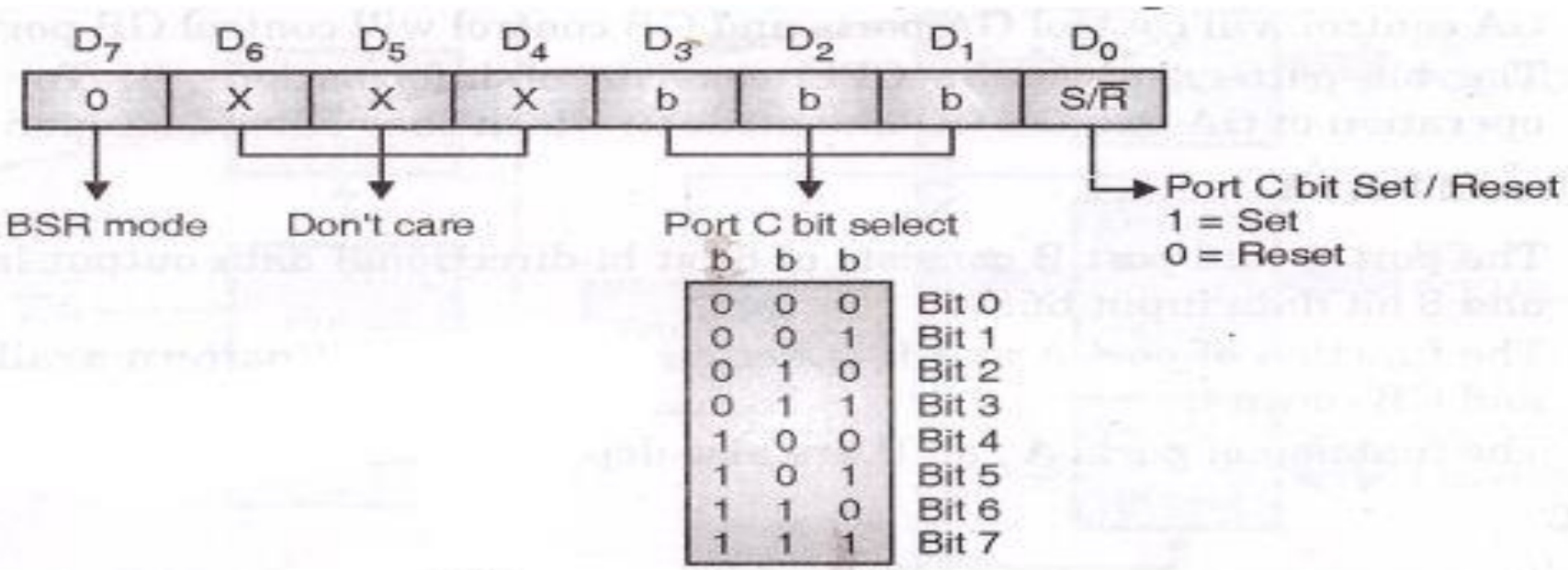


Operating modes of 8255

1. **Bit set reset (BSR) mode –**
   If MSB of control word (D7) is 0, PPI works in BSR mode. In this mode only port C bits are used for set or reset.
2. **Input-Output mode –**
   If MSB of control word (D7) is 1, PPI works in input-output mode.

a. **Mode 0(Simple I/O function):**PA,PB and PC work
b. **Mode 1(**Handshake I/O):either port A or port B
c. **Mode 2(**Bi-directional data bus mode)Only port A

Control word of 8255 in BSR Mode



BSR control word format

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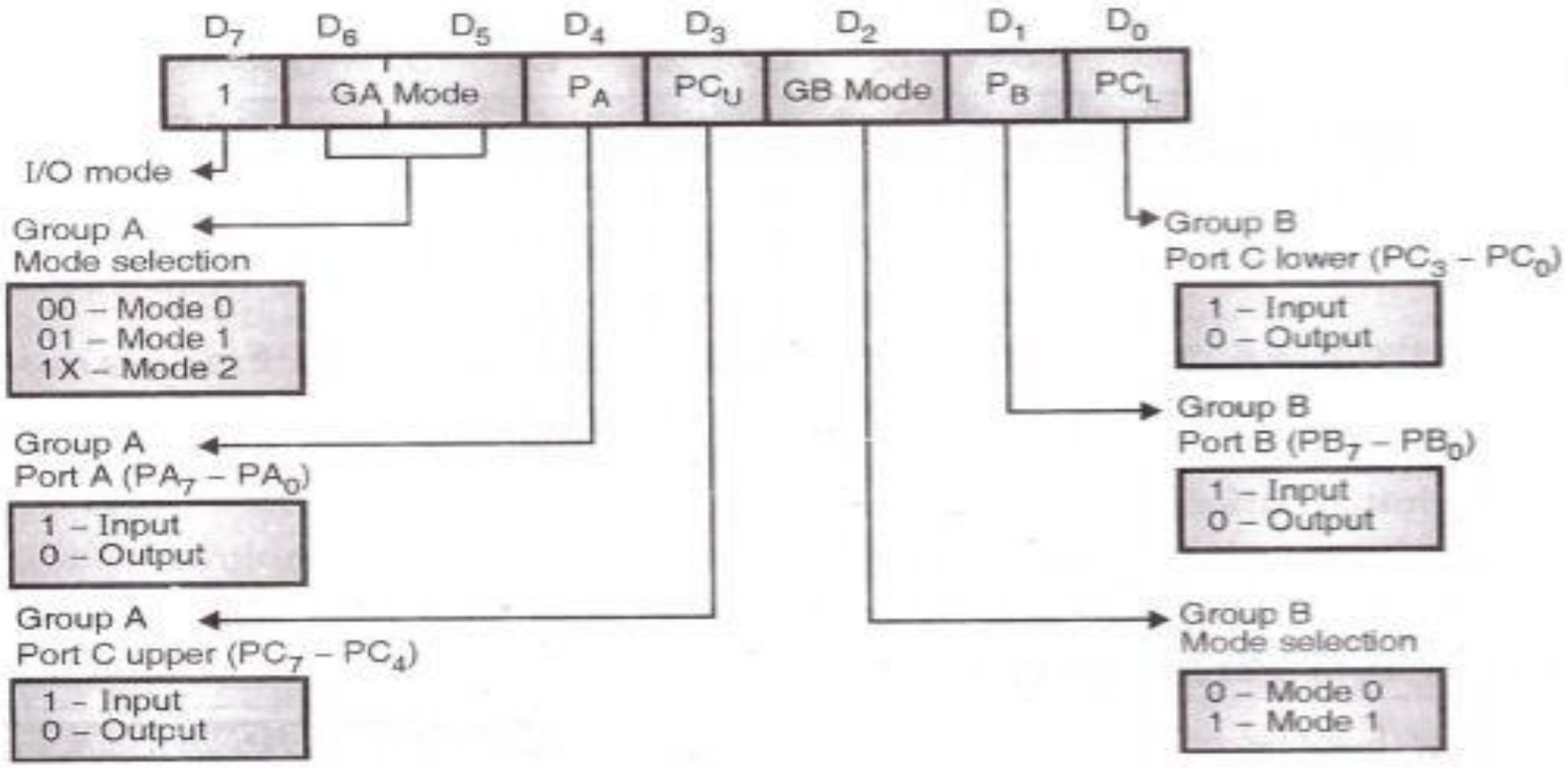
Control word of 8255 in IO Mode



I/O modes control word format

10010010

Port Selection

S.No.	$\overline{CS}$	A_1	A_0	Port
1	0	0	0	A
2	0	0	1	B
3	0	1	0	C
4	0	1	1	Control Register
5	1	X	X	8255 is not selected

Determine sum of contents of PA and PB and store the result in PC of 8255

- PA and PB are in mode 0 and as i/p function
- PC is work in mode 0 and as output function
- Control word=92H
- Suppose port address are PA=80H,PB=81H,PC=82H,CR =83H

```
MVI  A 92
OUT 83
IN 80
MOV B,A
IN 81
ADD B
OUT 82
RET
```

Thanks For Watching