Interfacing ADC0804 with 8088 CPU through 8255 PPI

ADC0804 Analog-to-digital converter

Pin	Signal		Pin	Signal
1	$\overline{CS}$		20	V+ OR V_{REF}
2	$\overline{RD}$		19	CLK R
3	$\overline{WR}$		18	DB_0 (LSB)
4	CLK IN		17	DB_1
5	$\overline{INTR}$		16	DB_2
6	V_{IN} (+)		15	DB_3
7	V_{IN} (−)		14	DB_4
8	AGND		13	DB_5
9	$V_{REF}/2$		12	DB_6
10	DGND		11	DB_7 (MSB)
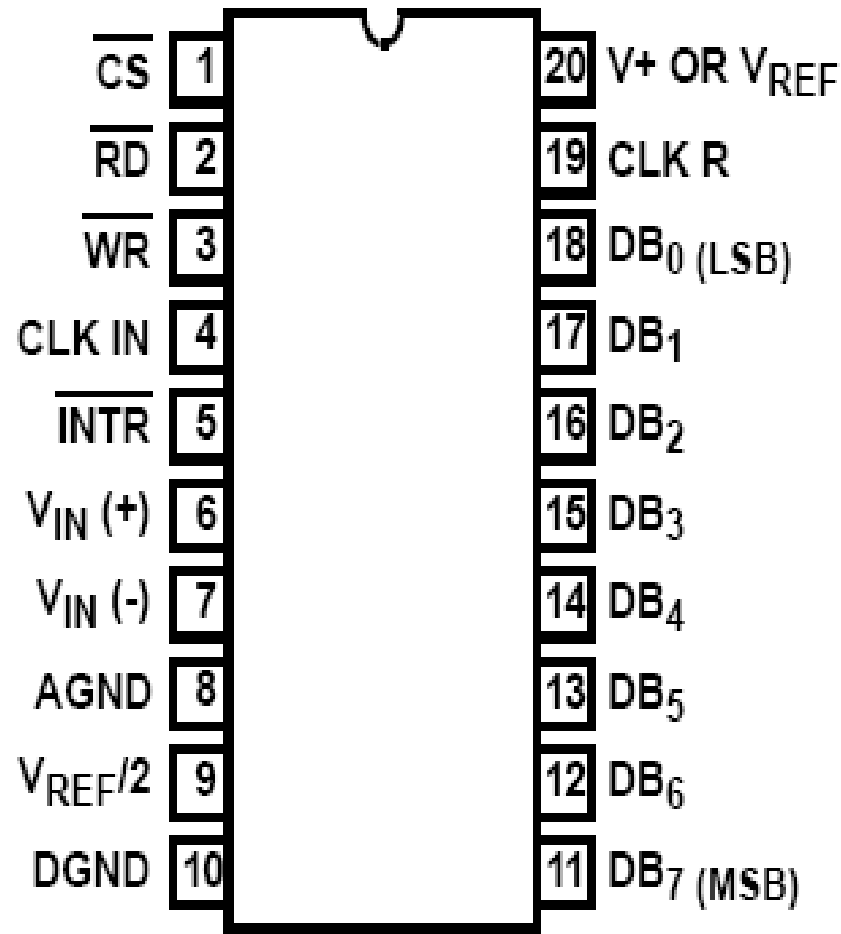
Interfacing ADC0804 with 8255
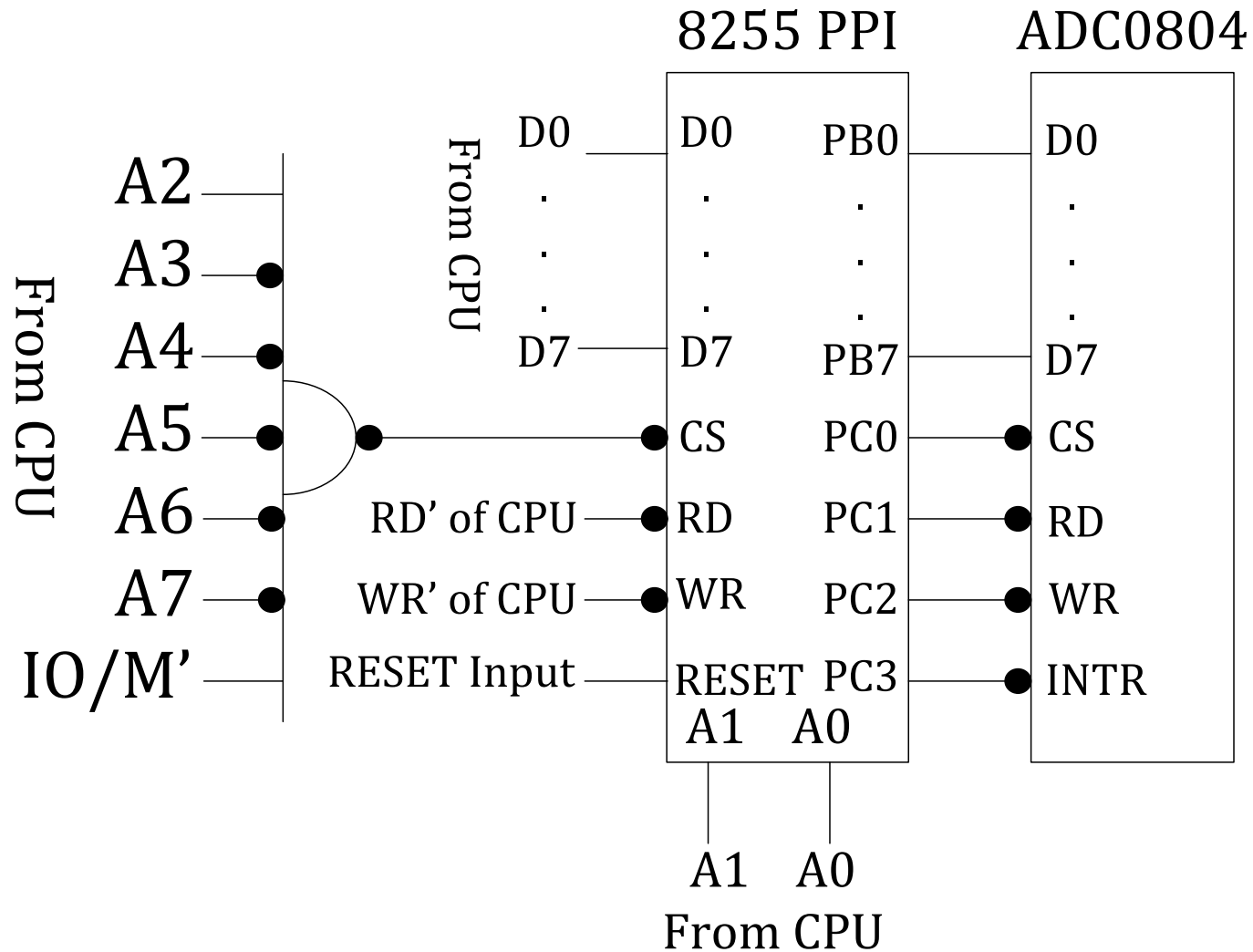
Interfacing 44780 LCD with 8088 CPU through 8255 PPI

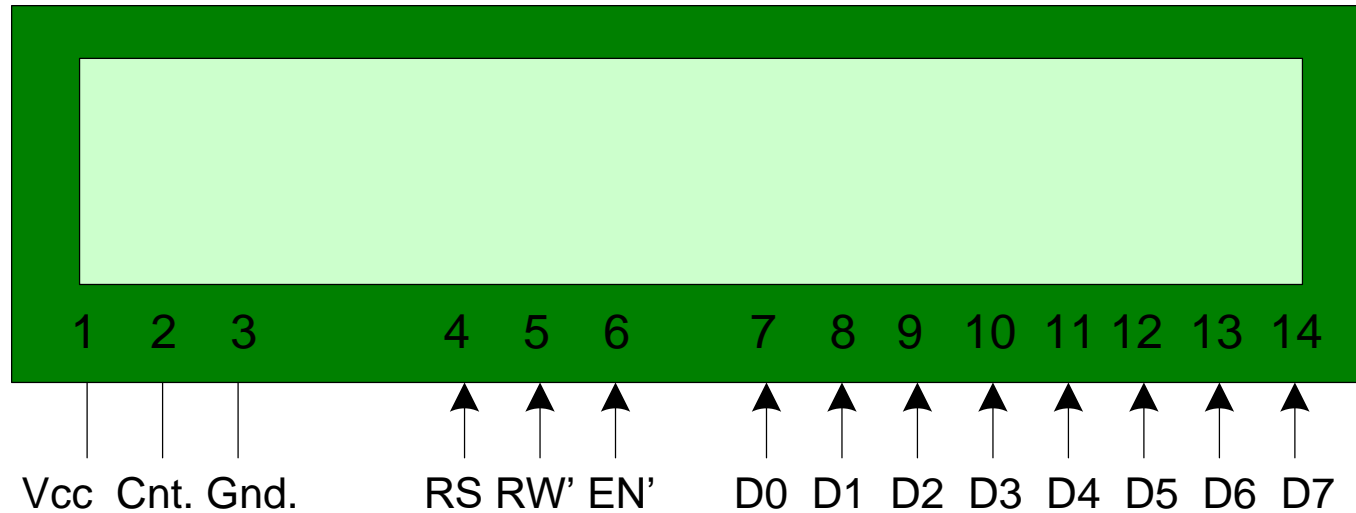## Pinout, commands, interfacing

Liquid Crystal Display (LCD) Module

44780 LCD Controller

- Controls alphanumeric printing on LCD

- Has 8-bit and 4-bit interface

- Single controller can control one 16x2 character LCD

- Takes ASCII codes as input for characters to be printed

LCD module pinouts

LCD Commands

Command	Function
38H	8-bit Interface (*must be the first command sent to LCD controller)
0EH	Turn on underline cursor
0FH	Turn on blinking block cursor
0CH	Make cursor invisible
06H	Cursor auto-right move
80H	Cursor on column0, row0 (80H+column no.)
C0H	Cursor on column0, row1 (C0H+column no.)

Muhammad Usman Rafique
(Assistant Professor EE Department)

Interfacing LCD with PPI
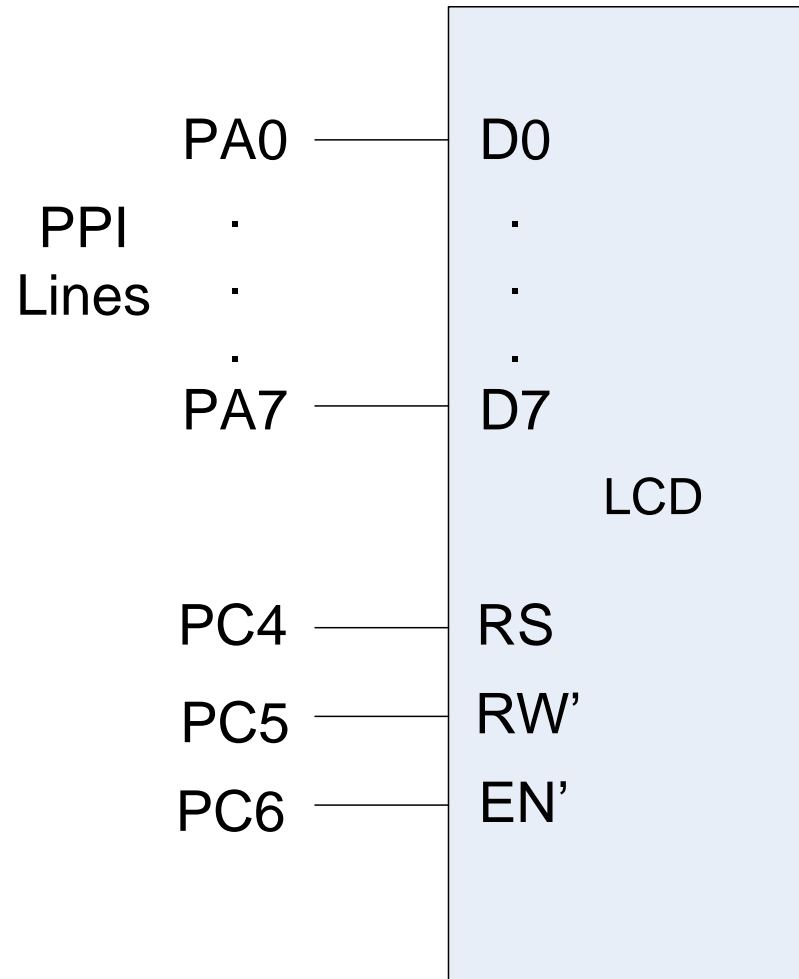
Writing a command byte to LCD

- RS = 0 (selecting command register)

- $R\overline{W}$ = 0 (for write operation)

- EN = 1 (H->L transition required)

- D7...D0 = command byte

- EN = 0

- Leave EN = 1

Writing a data byte to LCD

- RS = 1 (selecting data register)

- R$\overline{W}$ = 0 (for write operation)

- EN = 1 (H->L transition required)

- D7…D0 = ASCII of character to display

- EN = 0

- Leave EN = 1