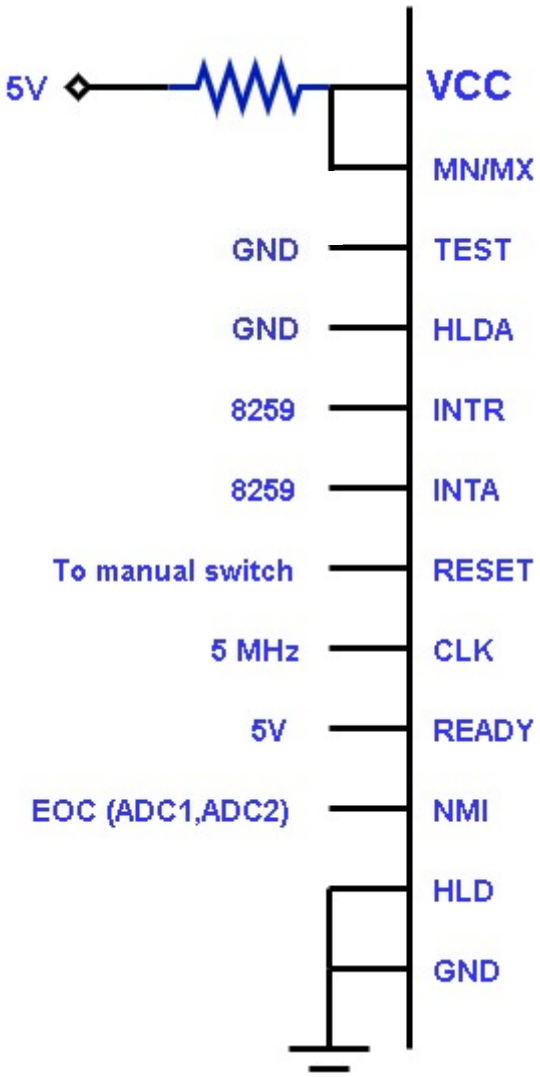
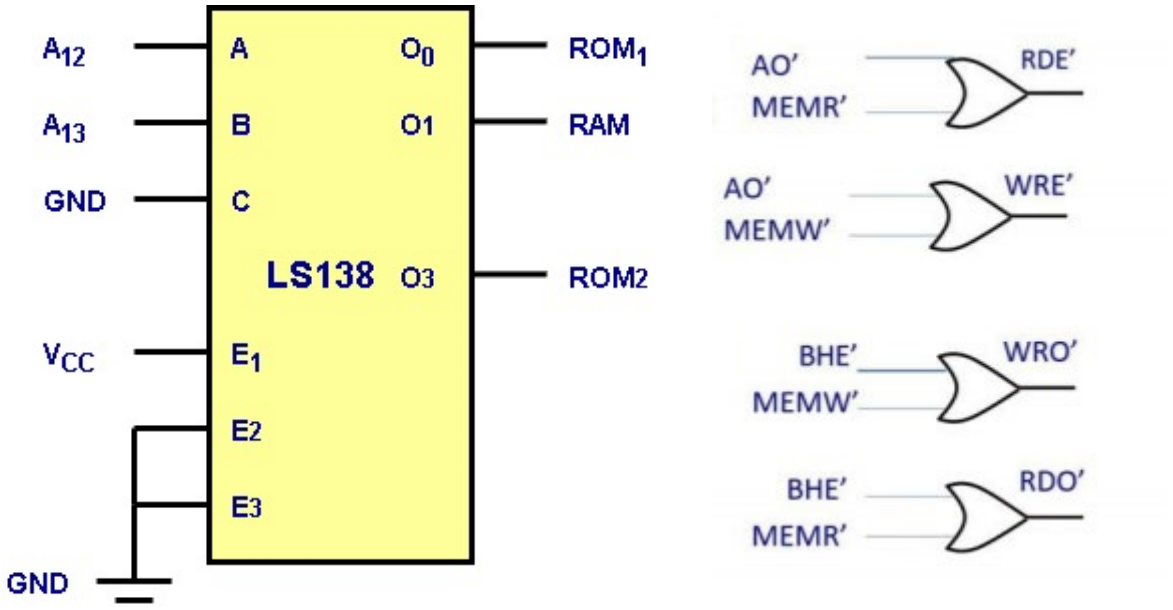
Inputs To 8086



8284 supplies clock signal to 8086

INTR and INTA signals are generated using 8259 and is supplied as input to 8086

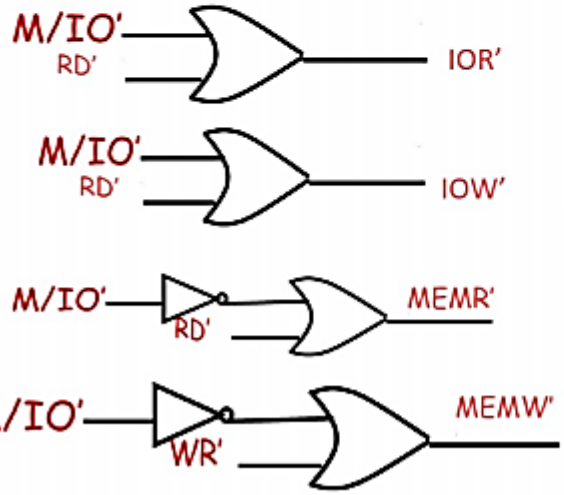


MEMORY DECODER

LS138: A 3:8 decoder as part of the decoding logic for memory interfacing.

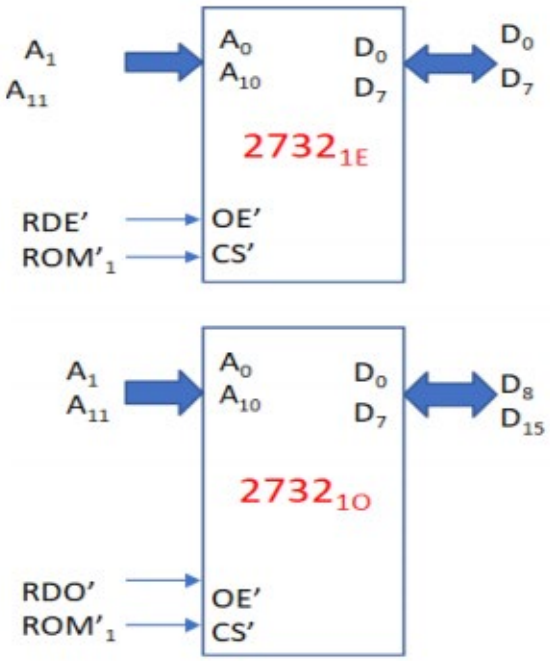
On the right, the read and write signals for even and odd addresses are generated.

List of various input combinations which form the 4 bus cycles(MEMR,MEMW,IOR,IOW)

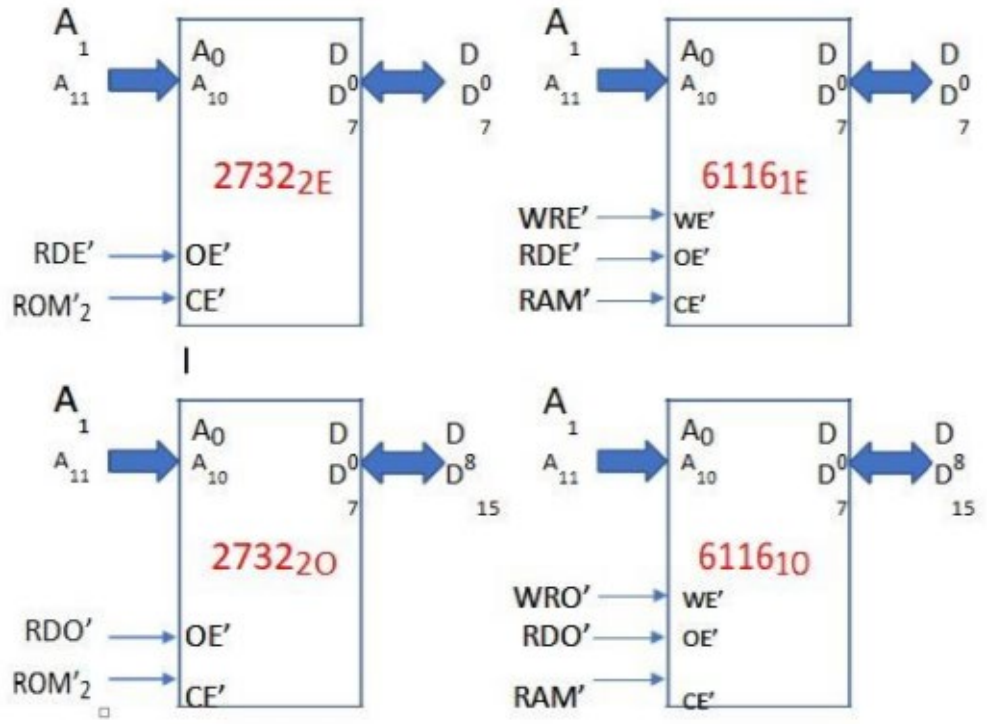


M/IO'	RD'	WR'	Bus cycle
1	0	1	MEMR'
1	1	0	MEMW'
0	0	1	IOR'
0	1	o	IOW'

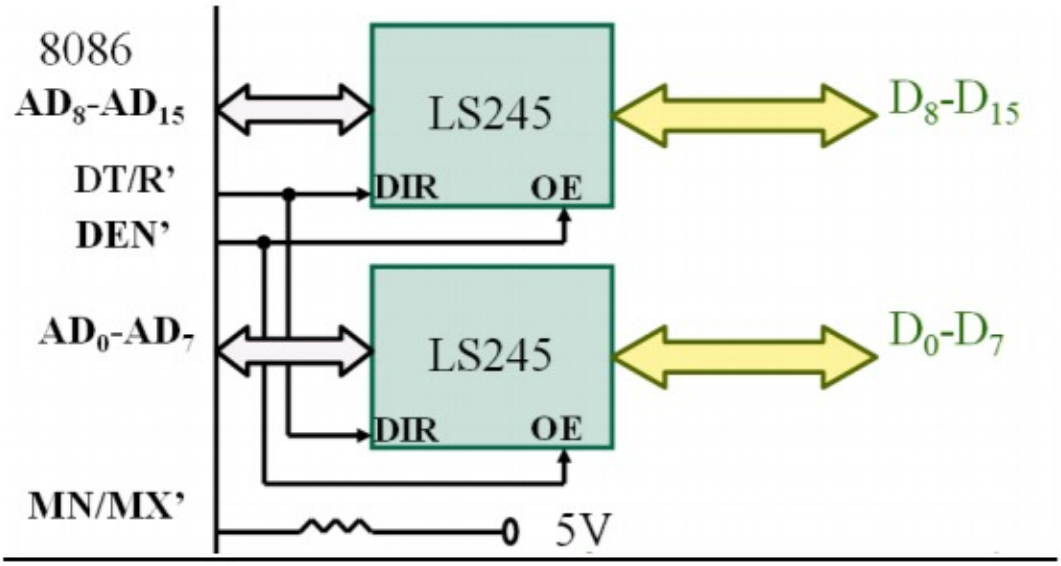
MEMORY INTERFACING



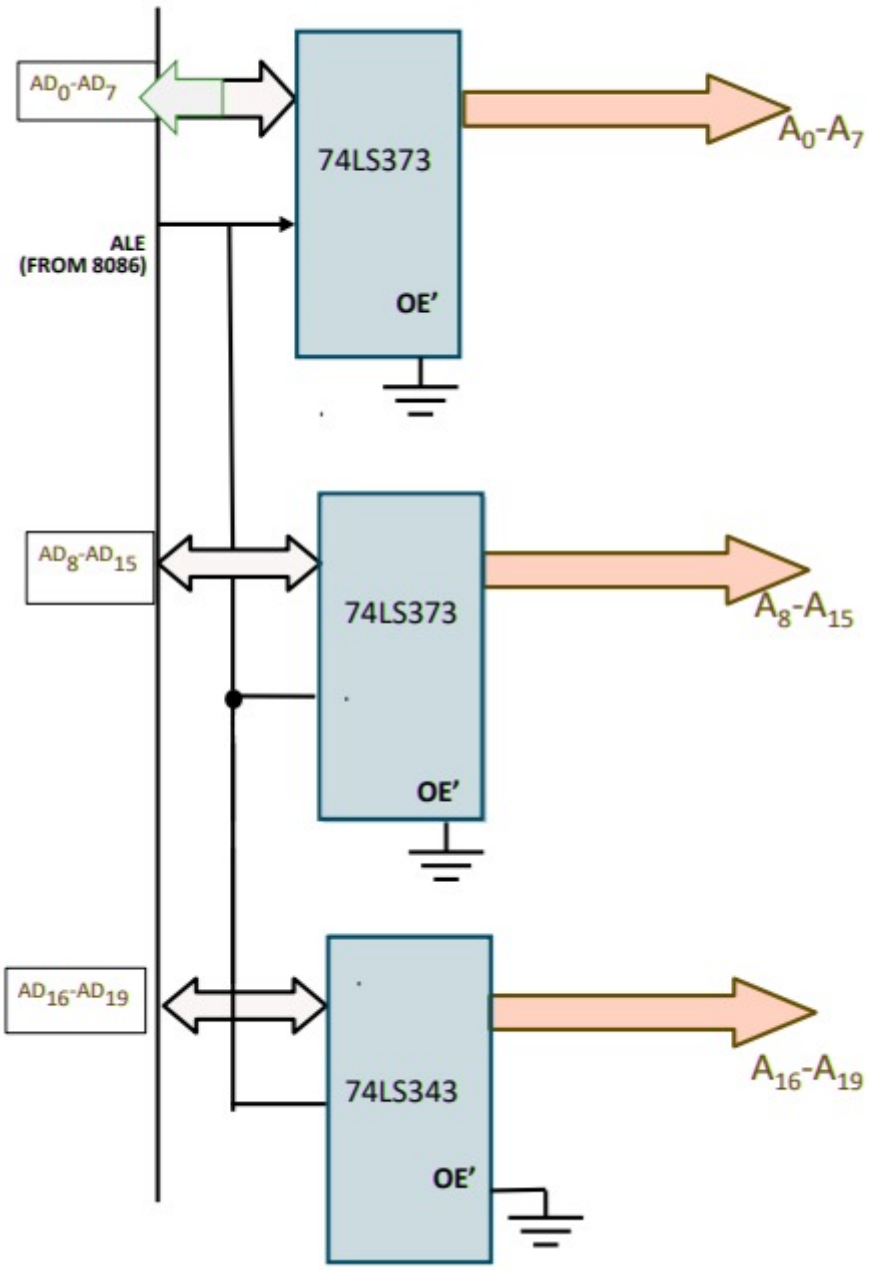
Here RDE' and RDO' signals are generated using OR gate as shown above while ROM and RAM signals are from decoder IC.

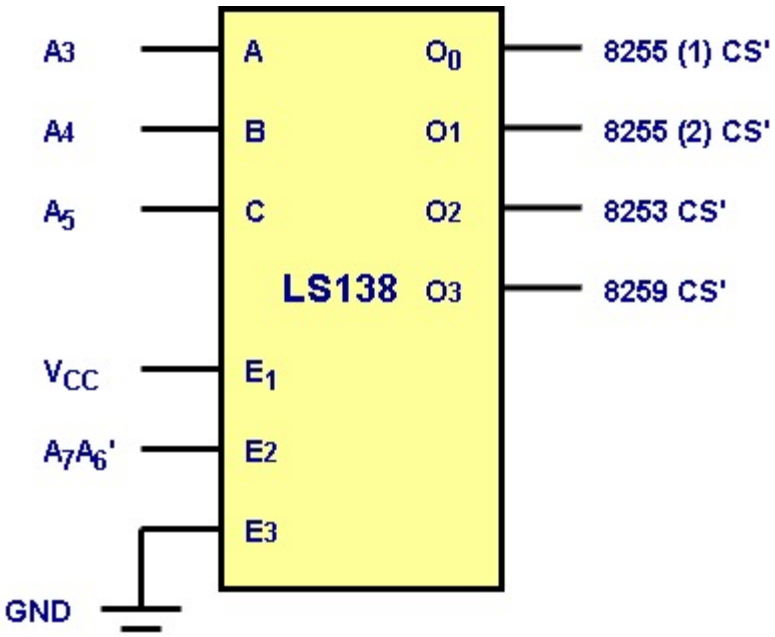


SYSTEM BUS OF 8086

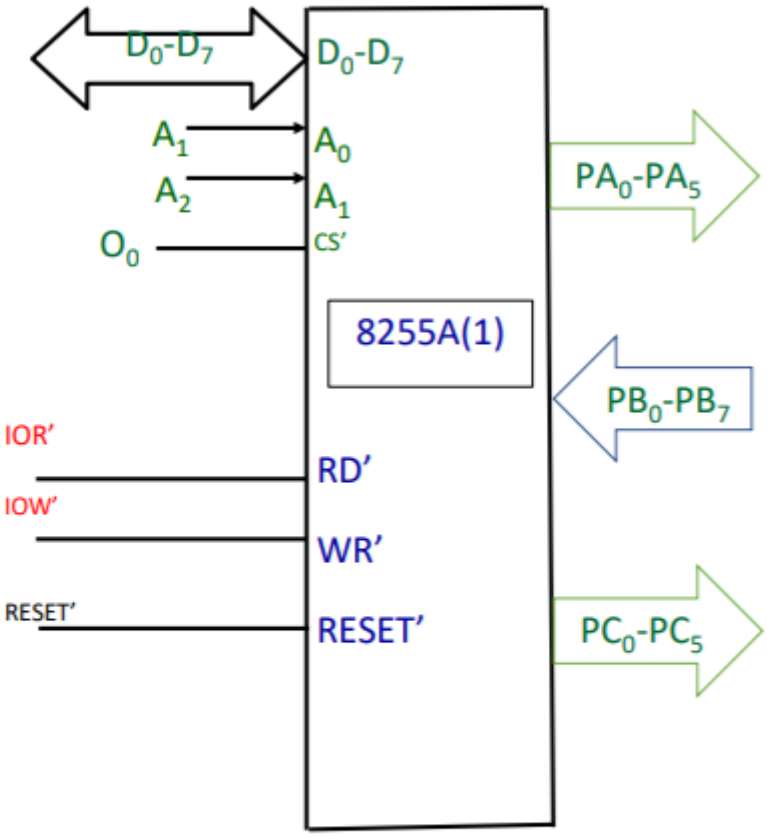


Here DT/R' and DEN' signals are obtained from the microprocessor 8086.

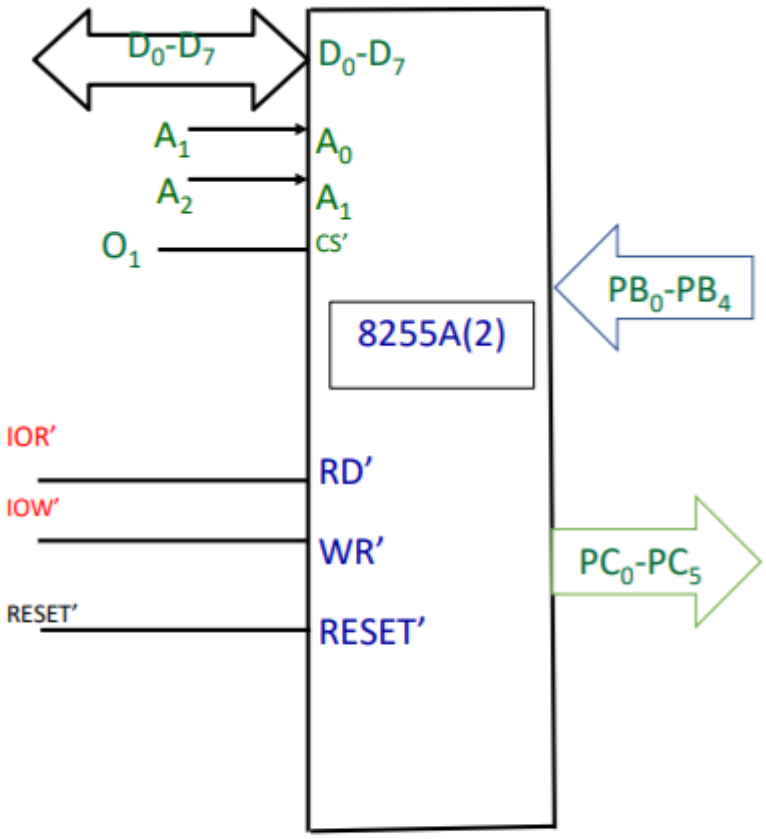

AD0-AD7
74LS373
A0-A7
ALE
(FROM 8086)
OE'
AD8-AD15
74LS373
A8-A15
OE'
AD16-AD19
74LS343
A16-A19
OE'



74LS138 is a high speed 1:8 Decoder/Demultiplexer.
Its output O_0, O_1, O_2 and O_3 goes to the CS' input of 8255A(1), 8255A(2), 8253A and 8259 respectively.

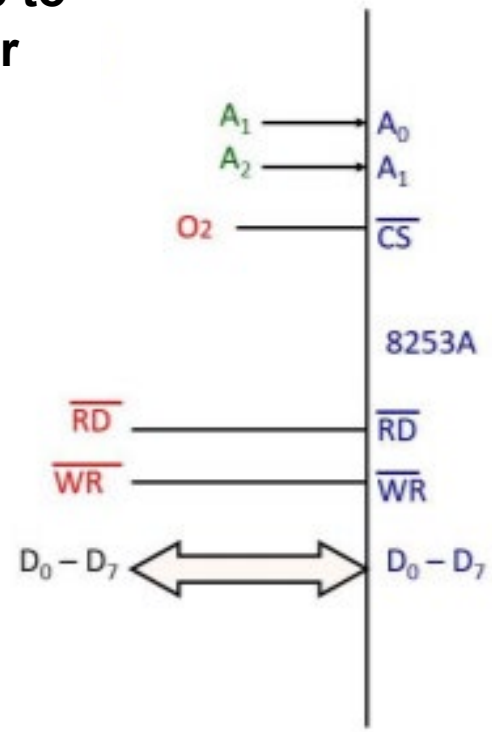


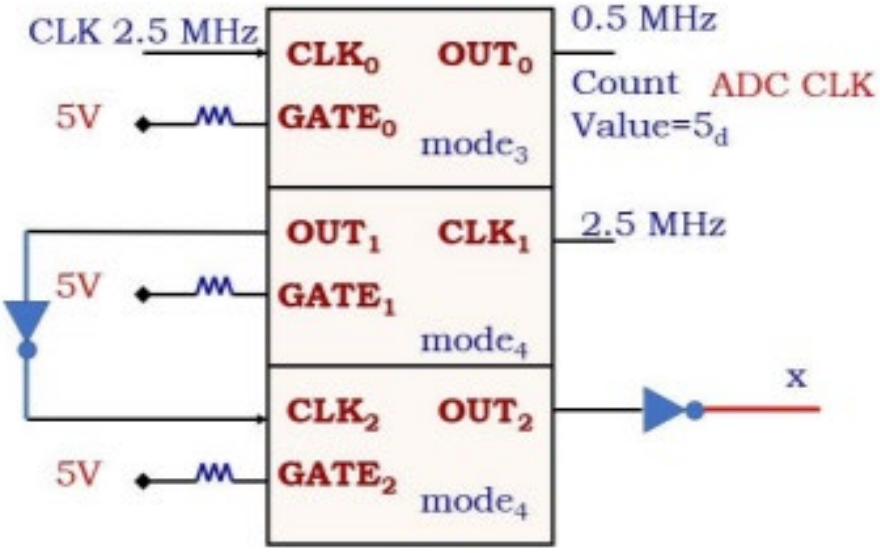
Port C is used for ADC interfacing, BSR

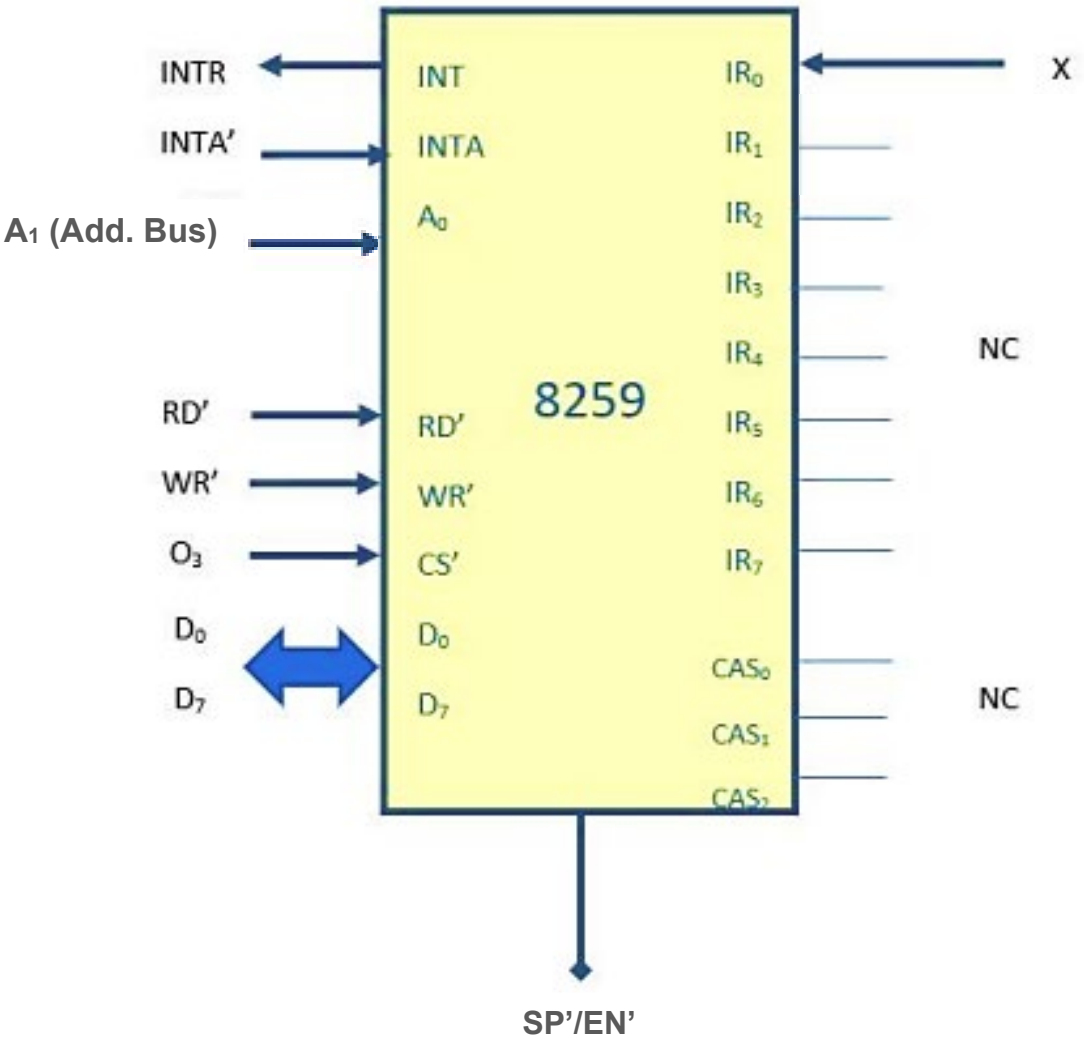


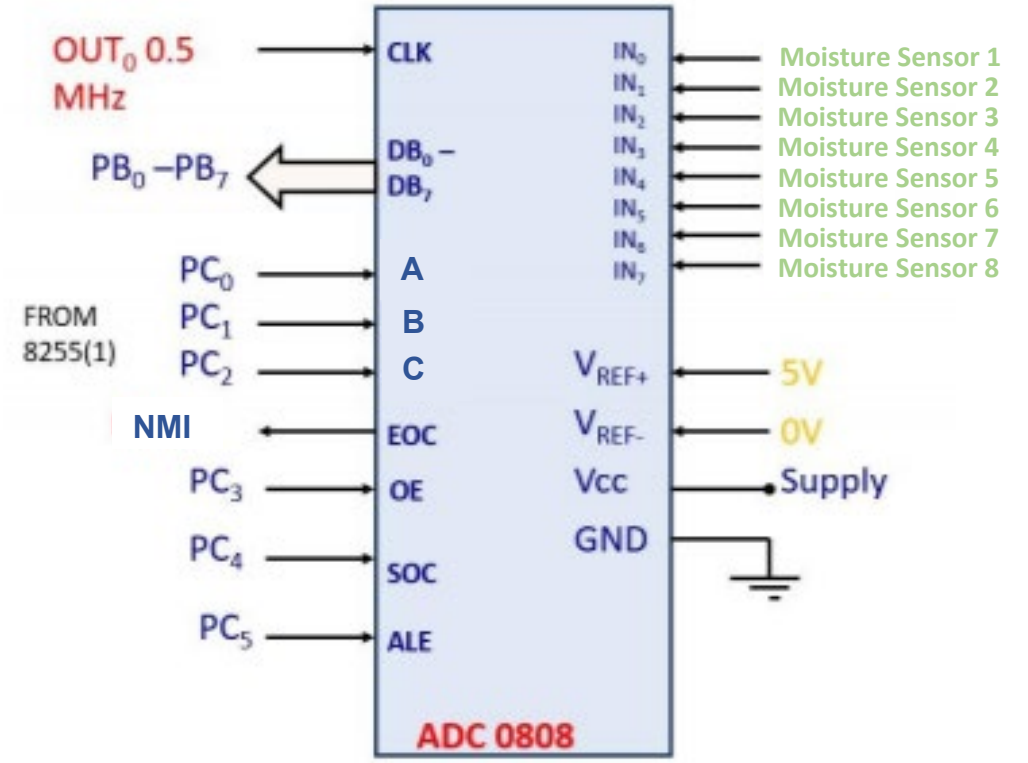
Port C is used for ADC interfacing, BSR

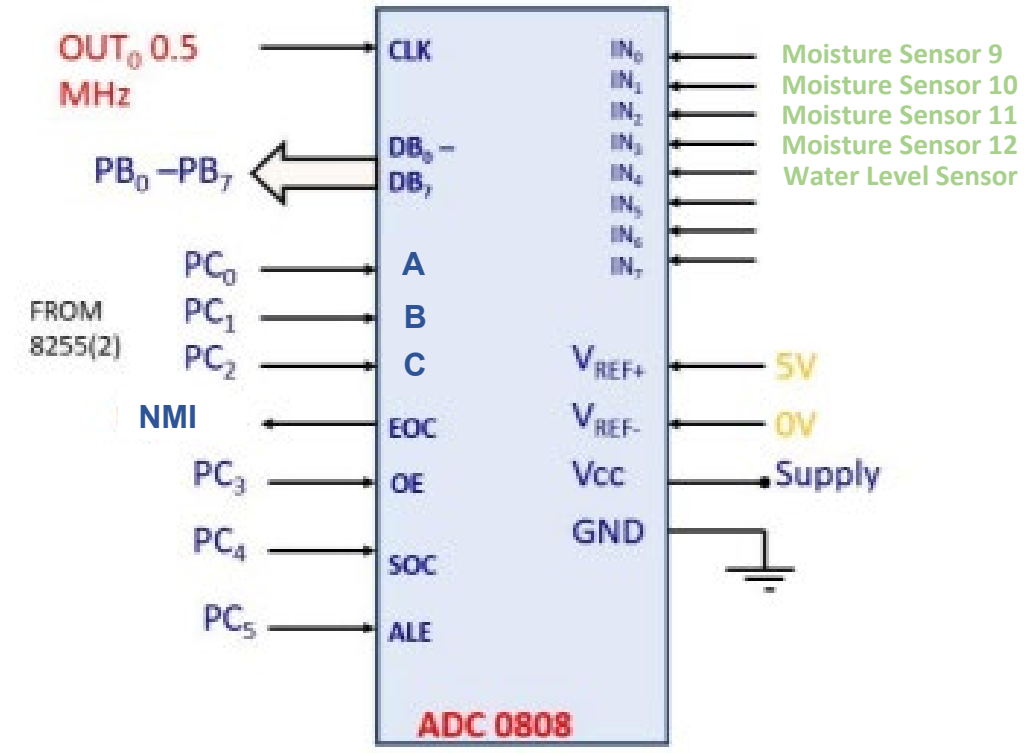
8253A Interface to the processor

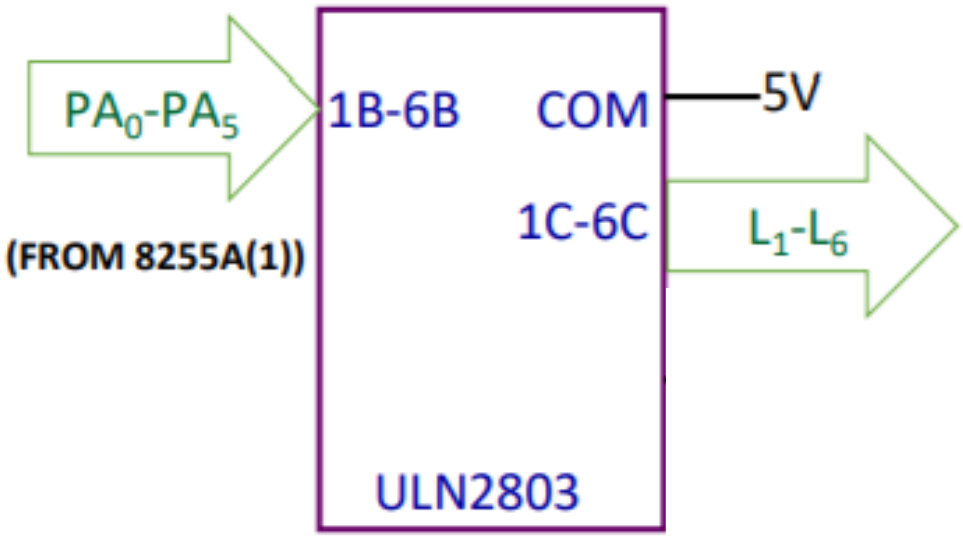




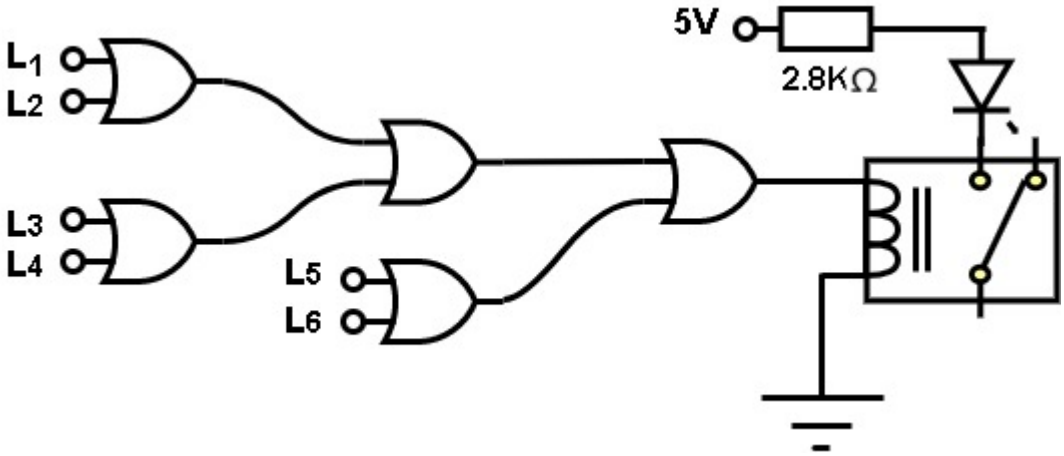

INTR
INTA'
A1 (Add. Bus)
RD'
WR'
O3
D0
D7
INT
INTA
A0
RD'
WR'
CS'
D0
D7
8259
IR0
IR1
IR2
IR3
IR4
IR5
IR6
IR7
CAS0
CAS1
CAS2
X
NC
NC
SP'/EN'


OUT0 0.5 MHz
PB0 –PB7
PC0
PC1
PC2
FROM 8255(1)
NMI
PC3
PC4
PC5
CLK
DB0 – DB7
A
B
C
EOC
OE
SOC
ALE
ADC 0808
IN0
IN1
IN2
IN3
IN4
IN5
IN6
IN7
Moisture Sensor 1
Moisture Sensor 2
Moisture Sensor 3
Moisture Sensor 4
Moisture Sensor 5
Moisture Sensor 6
Moisture Sensor 7
Moisture Sensor 8
VREF+
VREF-
Vcc
GND
5V
0V
Supply


OUT0 0.5 MHz
PB0 –PB7
PC0
PC1
PC2
FROM 8255(2)
NMI
PC3
PC4
PC5
CLK
DB0 – DB7
A
B
C
EOC
OE
SOC
ALE
ADC 0808
IN0
IN1
IN2
IN3
IN4
IN5
IN6
IN7
Moisture Sensor 9
Moisture Sensor 10
Moisture Sensor 11
Moisture Sensor 12
Water Level Sensor
VREF+
VREF-
Vcc
GND
5V
0V
Supply



ULN2803 is a Darlington transistor array. It is used as Relay Driver.



L_1, L_2, L_3, L_4, L_5, L_6 from ULN2803

L_1, L_2, L_3, L_4, L_5, L_6 from ULN2803