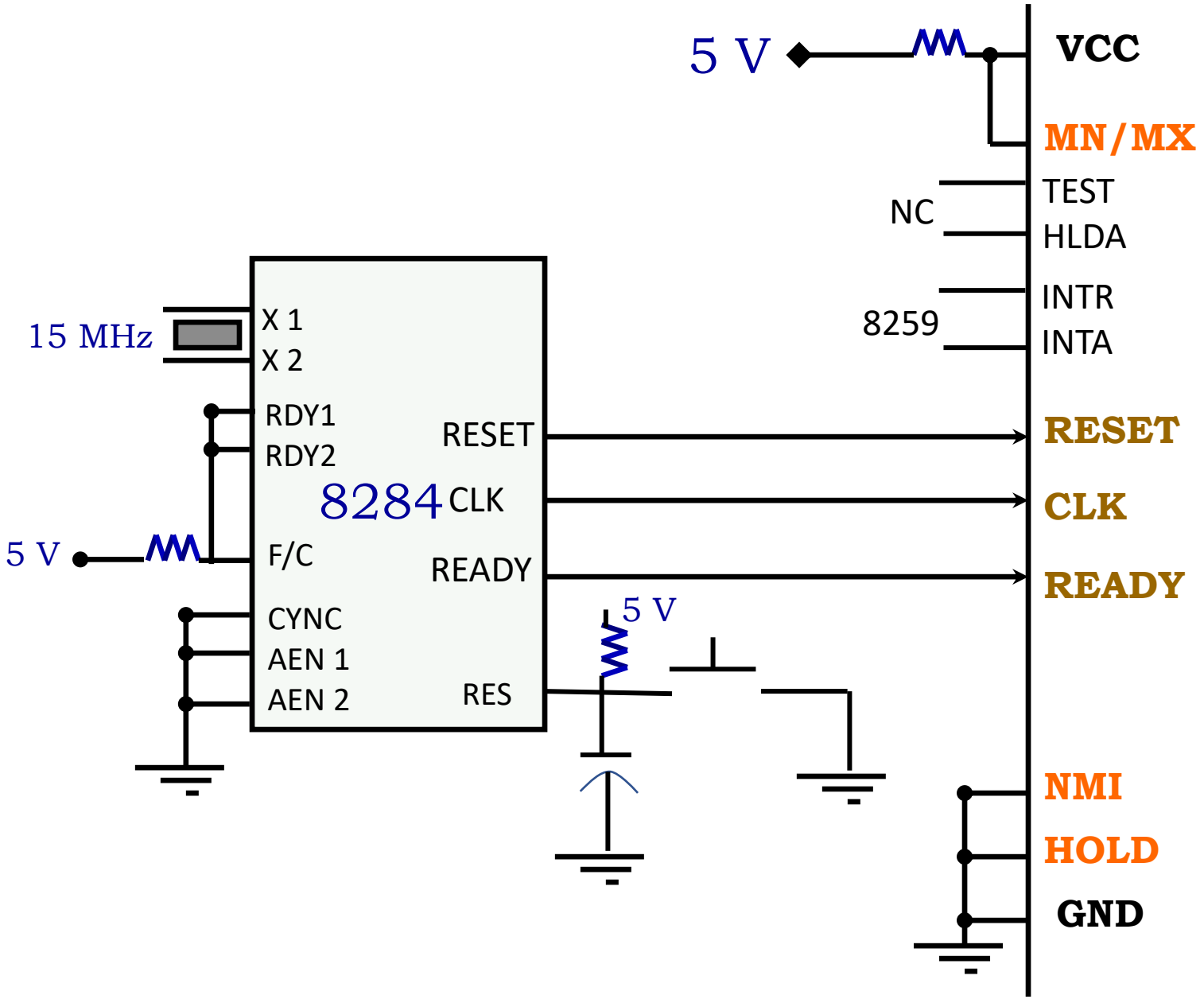
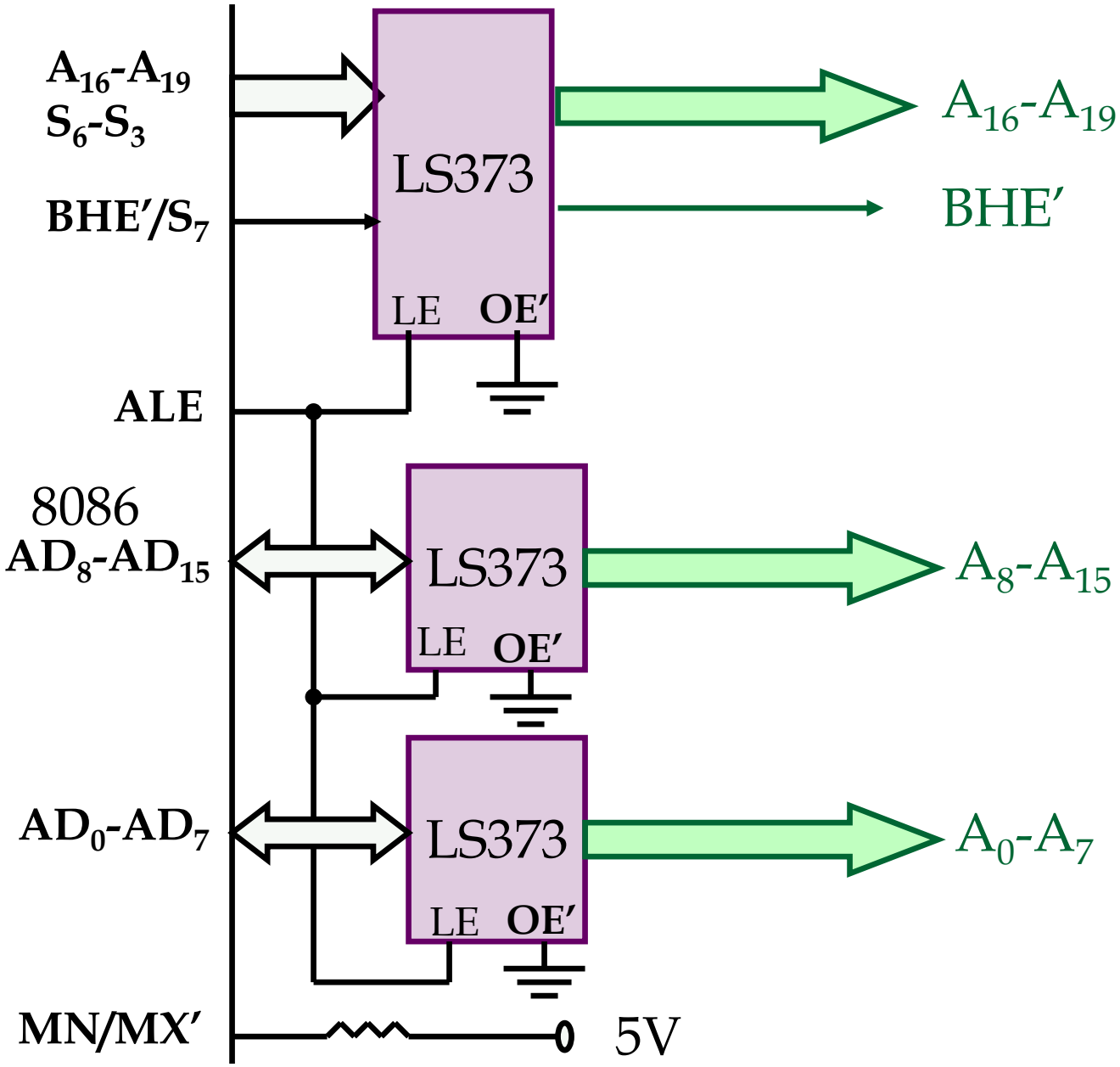
GROUP-12

HARDWARE DESIGN

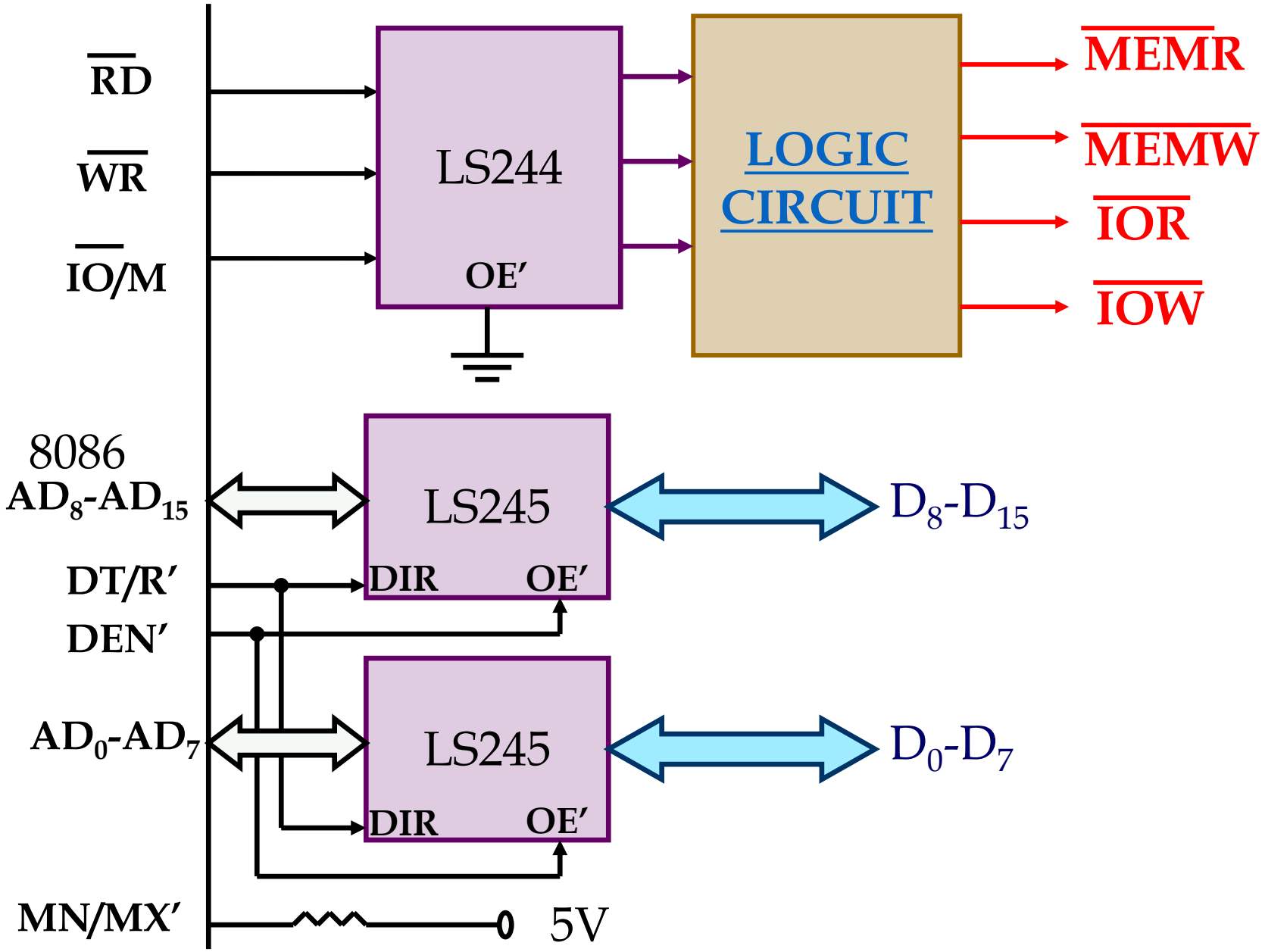
8086 Inputs


5 V
VCC
MN/MX
TEST
NC
HLDA
INTR
8259
INTA
15 MHz
X 1
X 2
RDY1
RDY2
RESET
8284
CLK
5 V
F/C
READY
CYNC
AEN 1
AEN 2
RES
5 V
RESET
CLK
READY
NMI
HOLD
GND

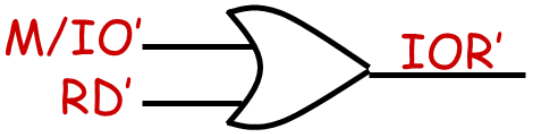
System Bus of 8086 (Address)

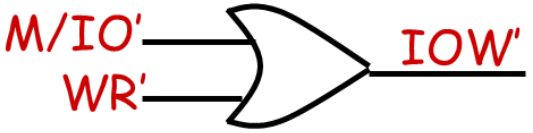


System Bus of 8086(Data + Control)

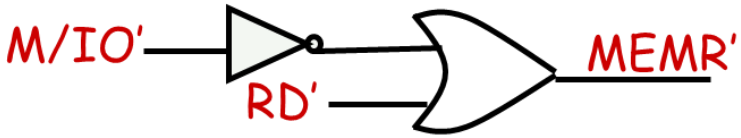


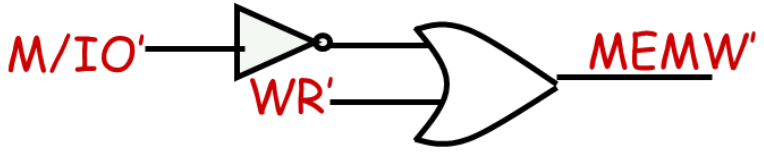
Memory & I/O Decoding



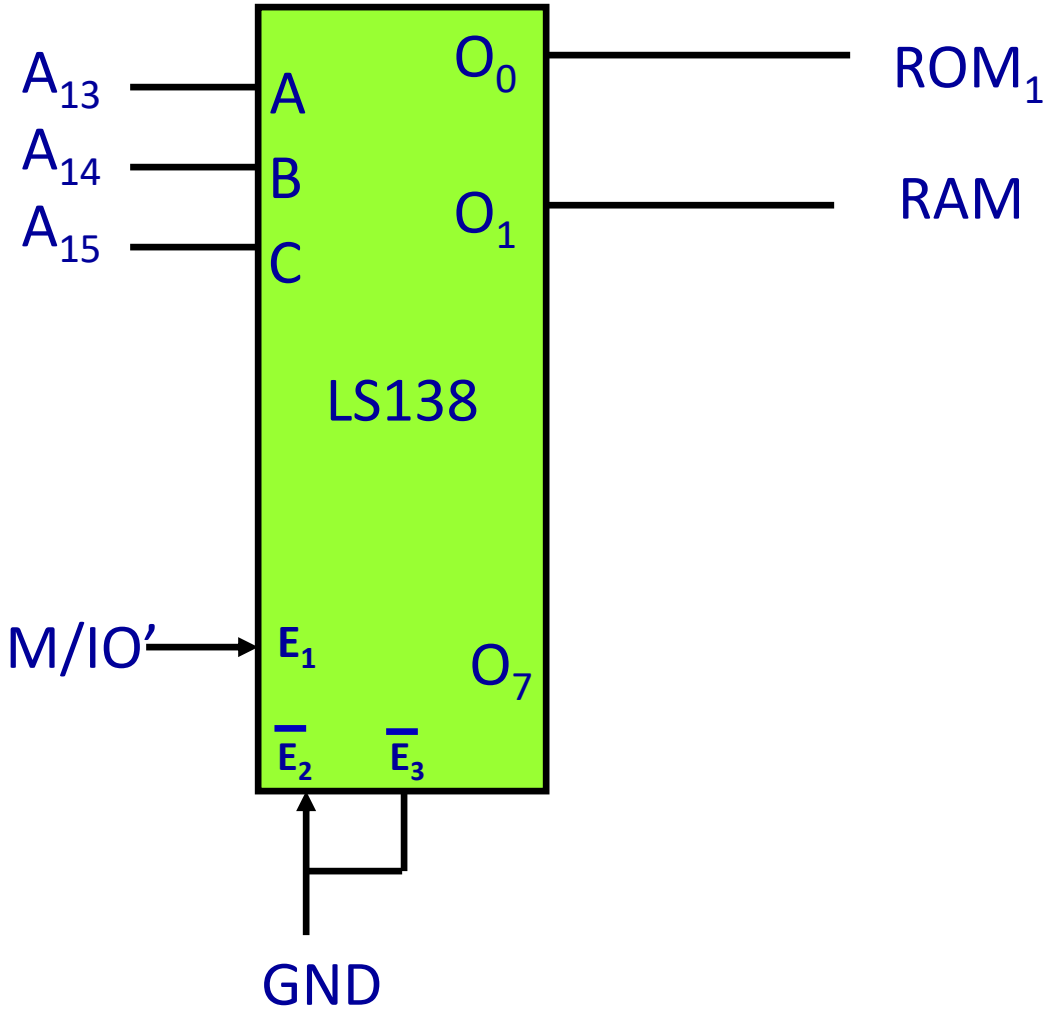


M/IO'	RD'	WR'	Bus cycle
1	0	1	MEMR'
1	1	0	MEMW'
0	0	1	IOR'
0	1	0	IOW'



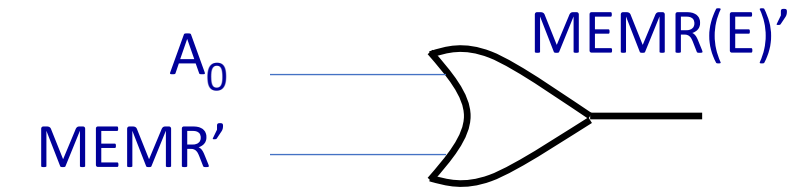


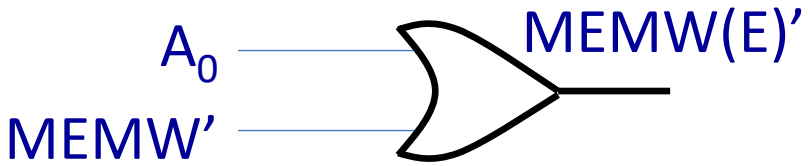
Memory Decoding

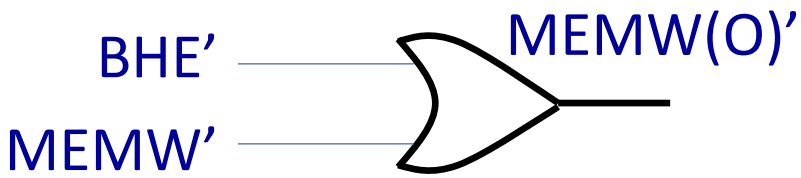


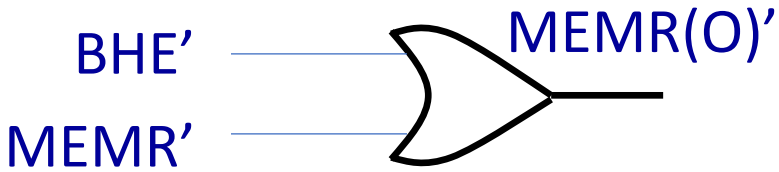
ROM1

RAM



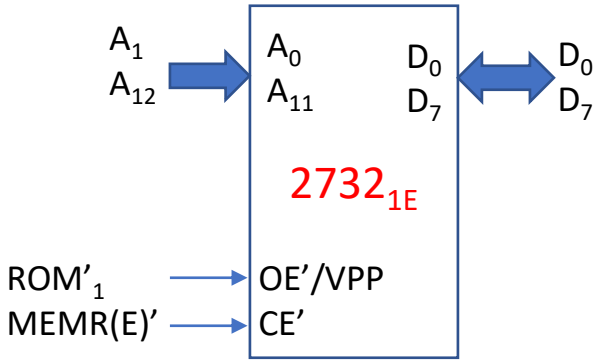


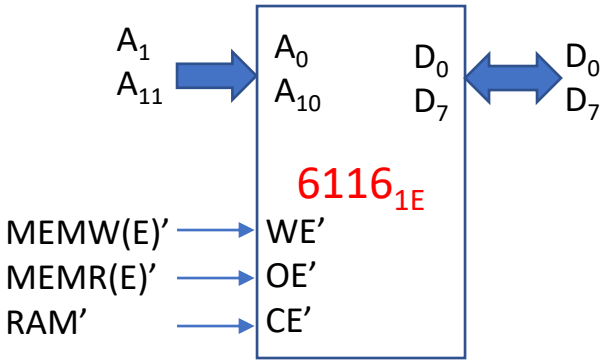


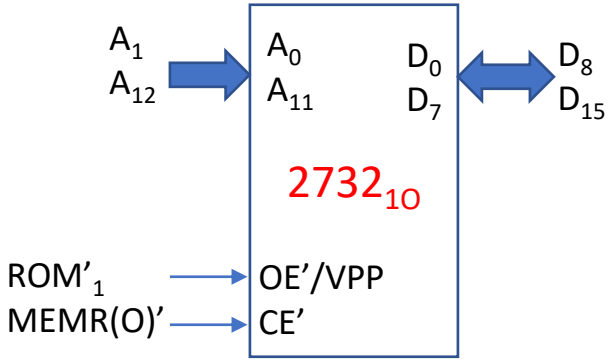


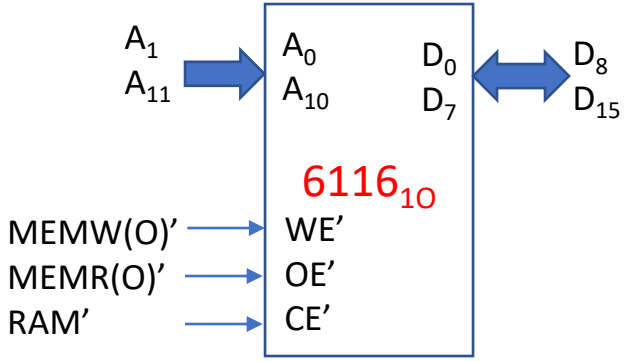
Memory Decoder

Memory Interfacing

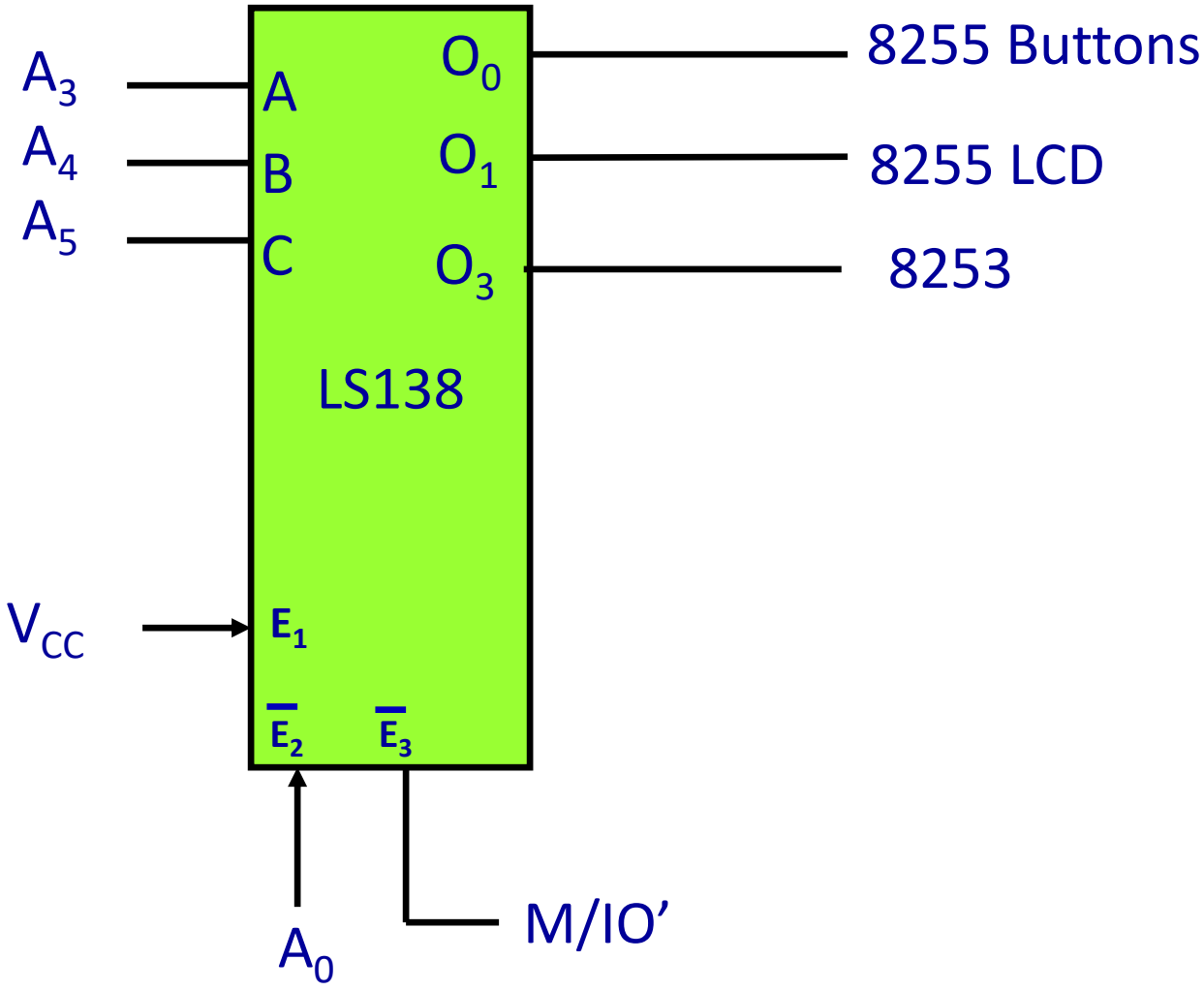






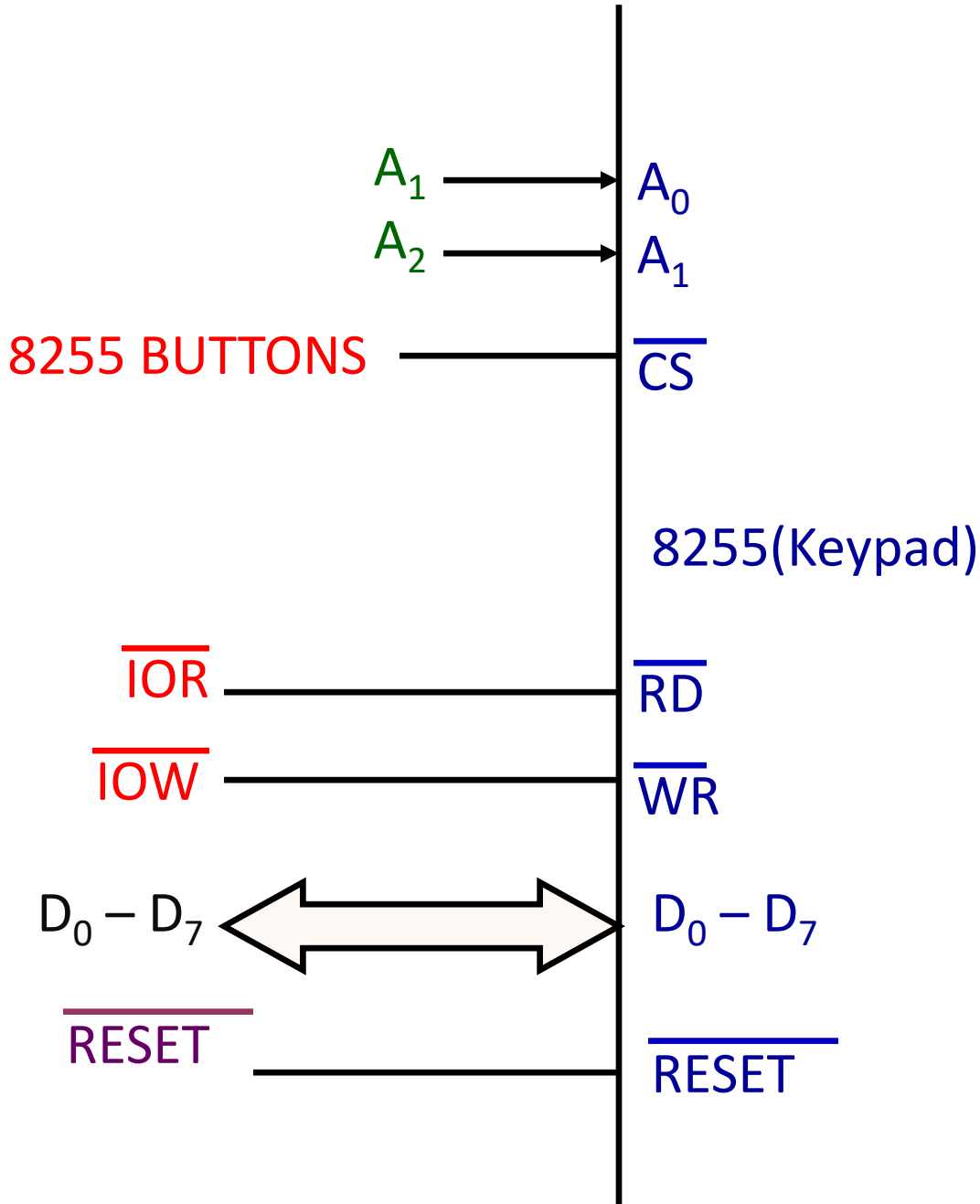


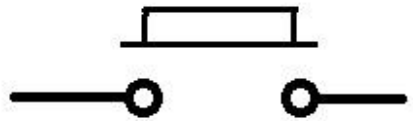
I/O Decoding



I/O Decoder

8255 Interface to the processor(Keypad)





Push Button

Keyboard Interfacing(Port A)

PA0	PA1	PA2	PA3	PA4	PA5	PA6	PA7	HEX VALUE	BUTTON
1	1	1	1	1	1	1	0	FE_H	0
1	1	1	1	1	1	0	1	FD_H	1
1	1	1	1	1	0	1	1	FB_H	2
1	1	1	1	0	1	1	1	$F7_H$	3
1	1	1	0	1	1	1	1	EF_H	4
1	1	0	1	1	1	1	1	DF_H	5
1	0	1	1	1	1	1	1	BF_H	6
0	1	1	1	1	1	1	1	$7F_H$	7

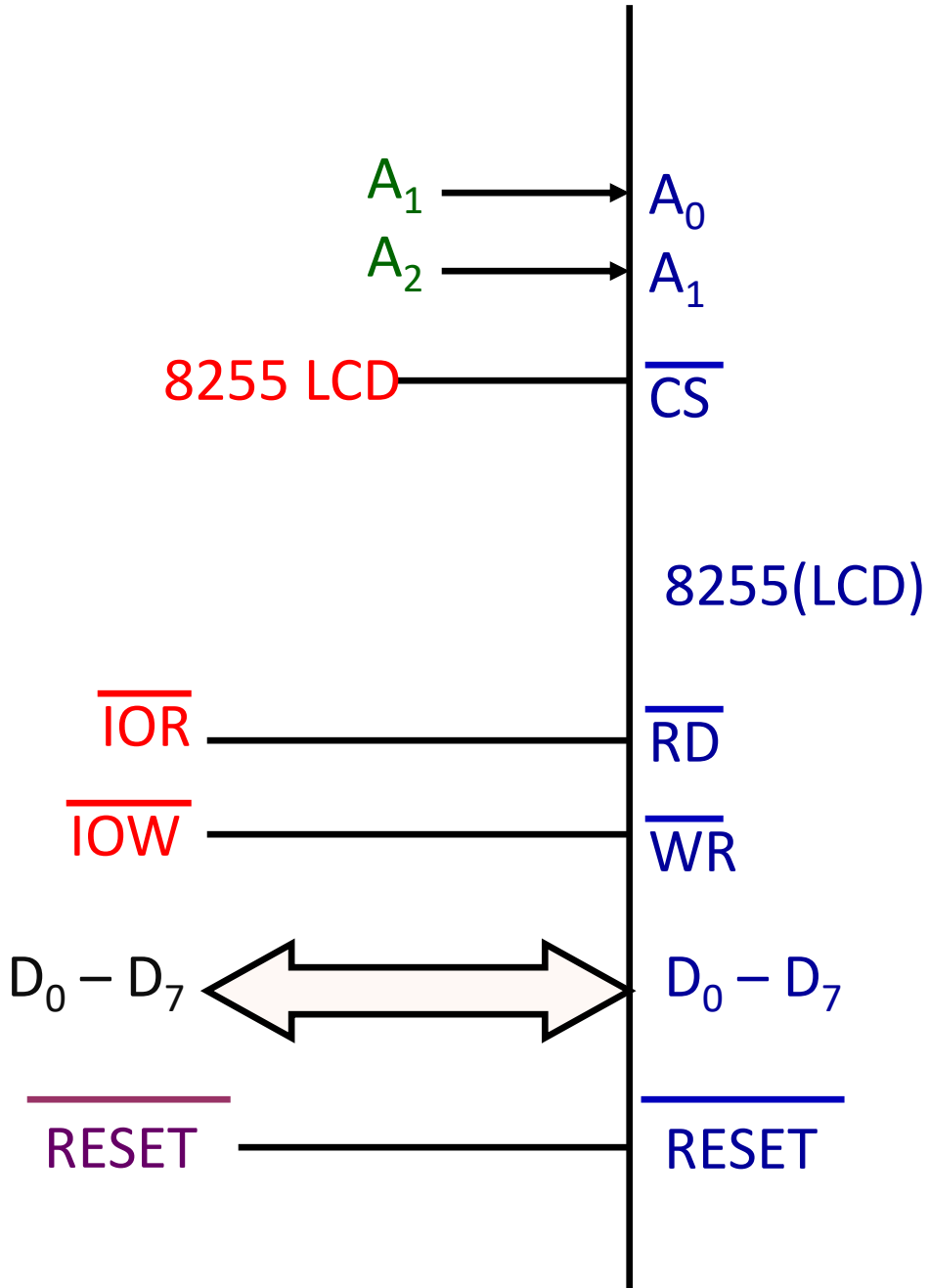
Keyboard Interfacing(Port B)

PB0	PB1	PB2	PB3	PB4	PB5	PB6	PB7	HEX VALUE	BUTTON
1	1	1	1	1	1	1	0	FE_H	8
1	1	1	1	1	1	0	1	FD_H	9
1	1	1	1	1	0	1	1	FB_H	Y
1	1	1	1	0	1	1	1	$F7_H$	N
1	1	1	0	1	1	1	1	EF_H	Enter
1	1	0	1	1	1	1	1	DF_H	Backspace
1	0	1	1	1	1	1	1	BF_H	Cancel
0	1	1	1	1	1	1	1	$7F_H$	Item Code

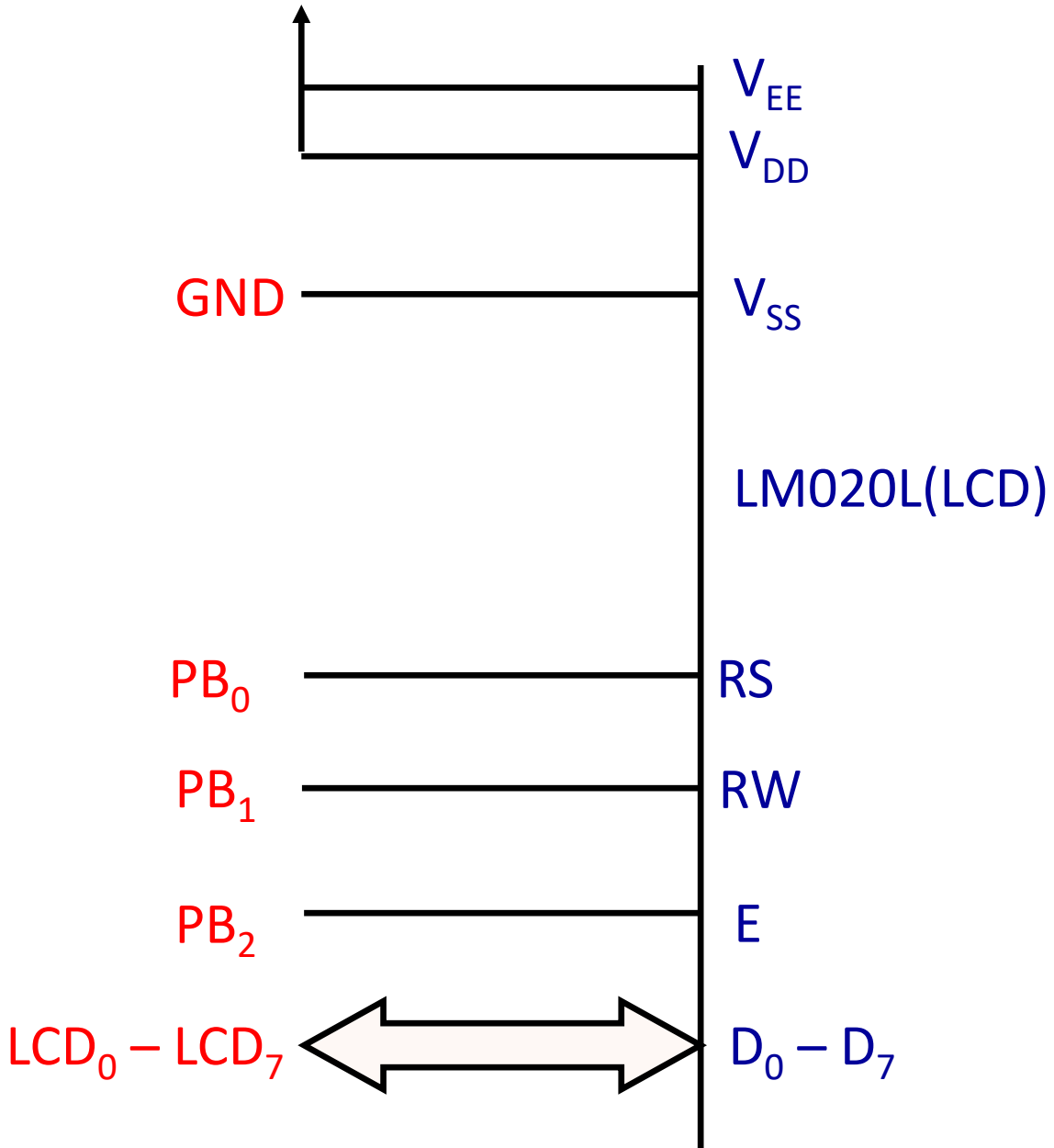
Keyboard Interfacing(Port C)

PC0	PC1	PC2	PC3	PC4	PC5	PC6	PC7	HEX VALUE	BUTTON
1	1	1	1	1	1	1	0	FE_H	Quantity
1	1	1	1	1	1	0	1	FD_H	Total
1	1	1	1	1	0	1	1	FB_H	Mode
1	1	1	1	0	1	1	1	$F7_H$	Trans
1	1	1	0	1	1	1	1	EF_H	Program
1	1	0	1	1	1	1	1	DF_H	Add Item
1	0	1	1	1	1	1	1	BF_H	Del Item
0	1	1	1	1	1	1	1	$7F_H$	Cost

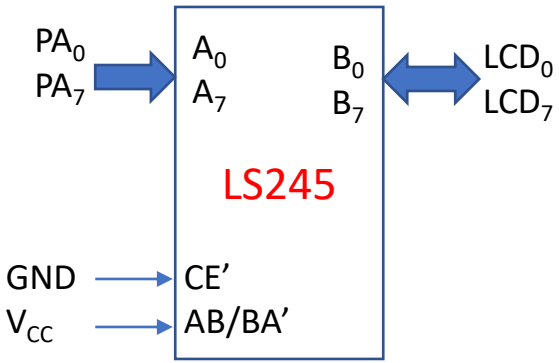
8255 INTERFACE(FOR LCD)



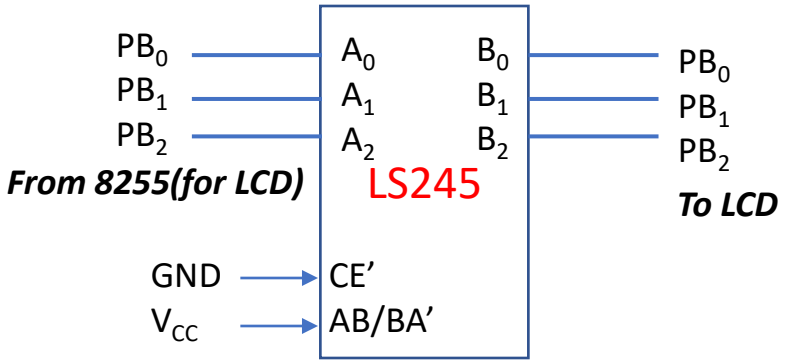
LCD Interfacing



Buffer for LCD Interfacing

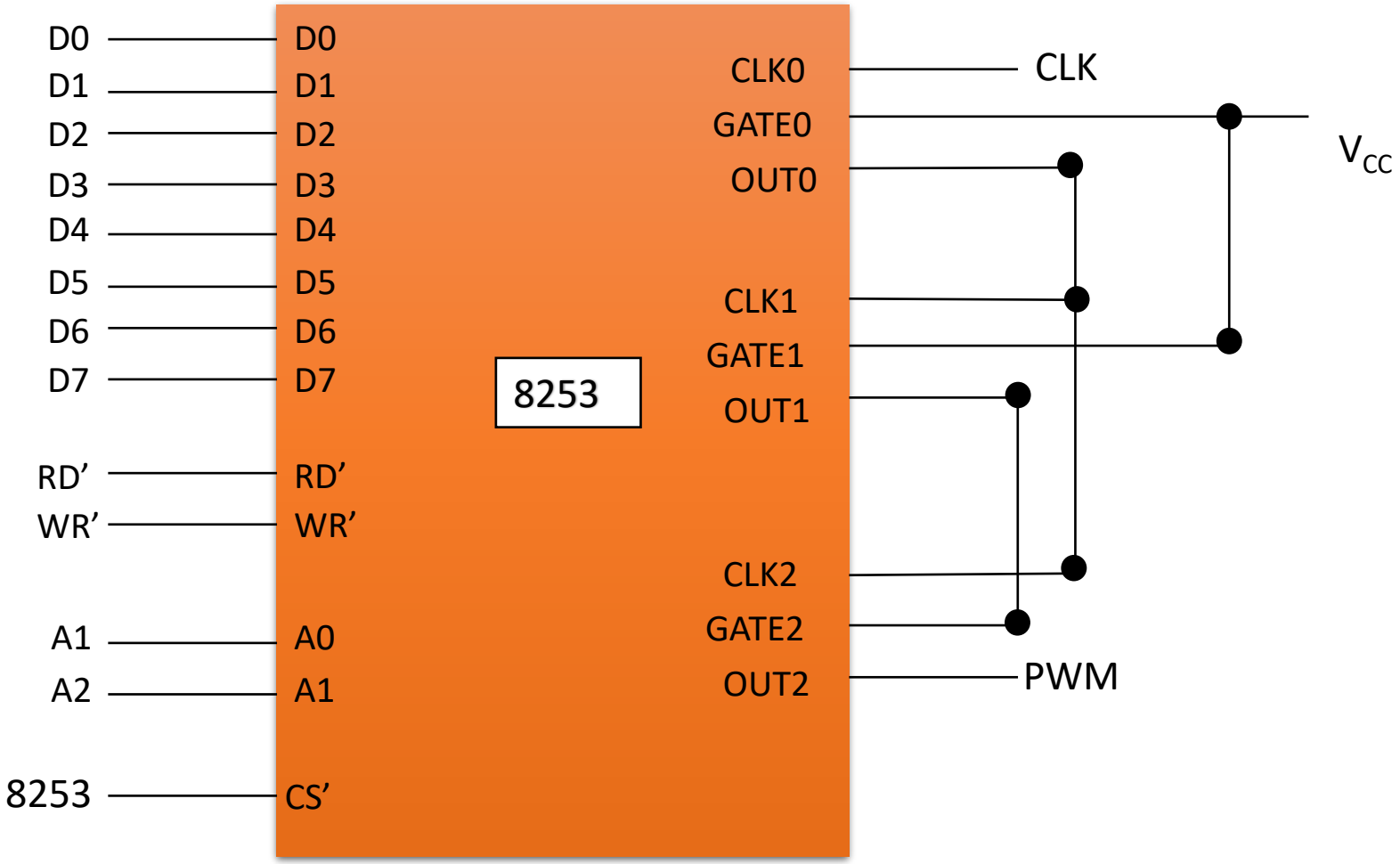


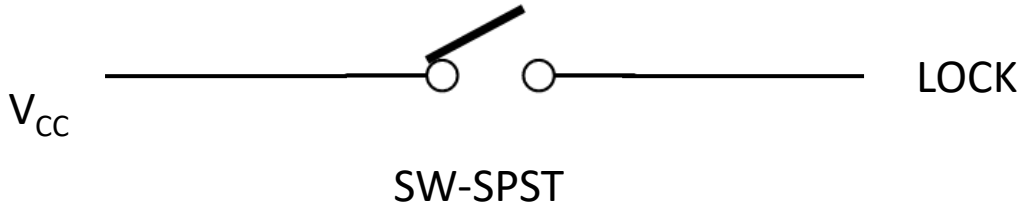
Buffer for PA[0..7]



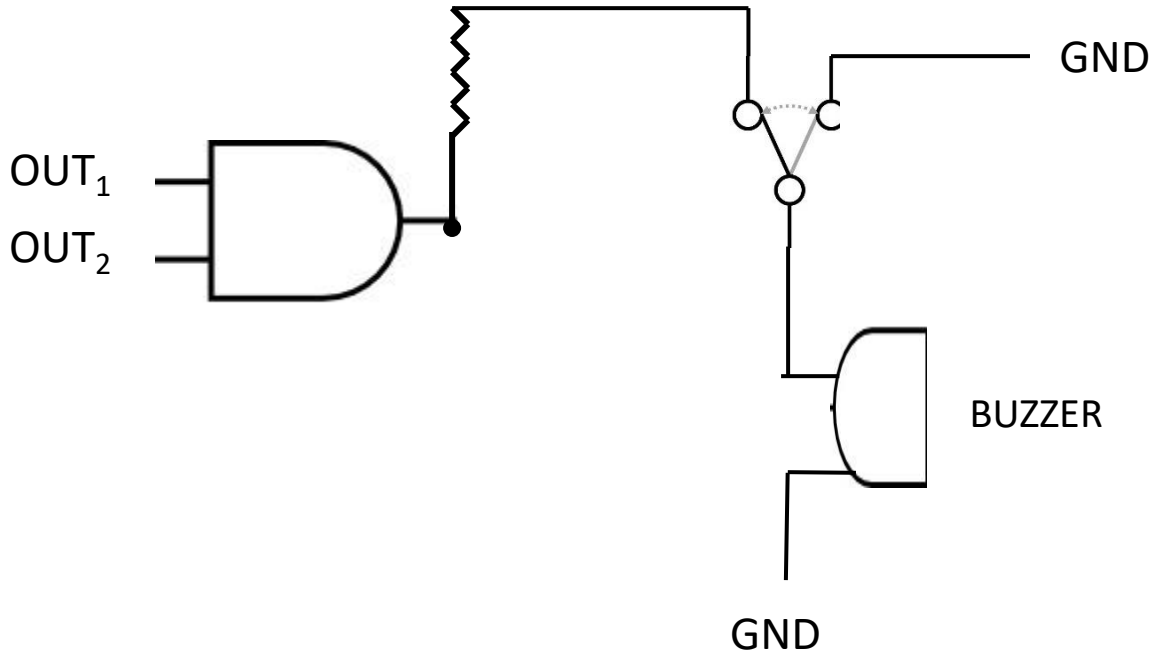
Buffer for PB[0..2]

8253 Interfacing





LOCK



BUZZER