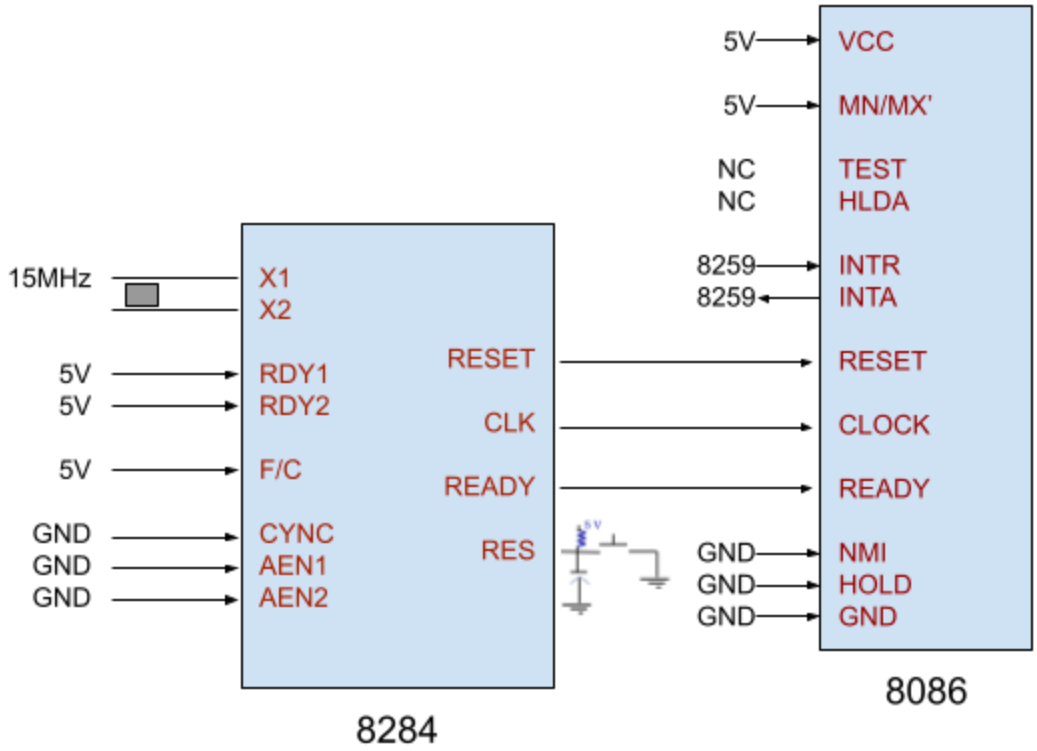
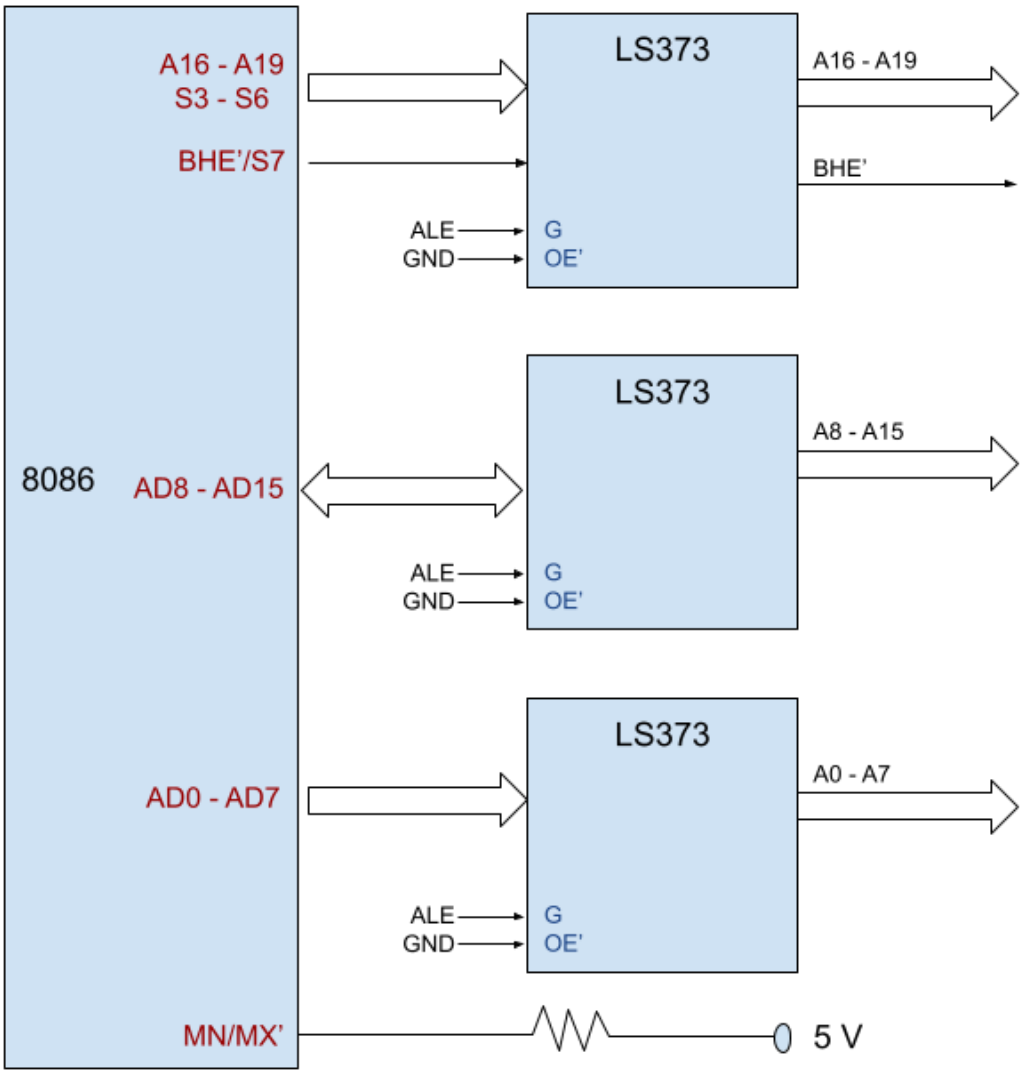
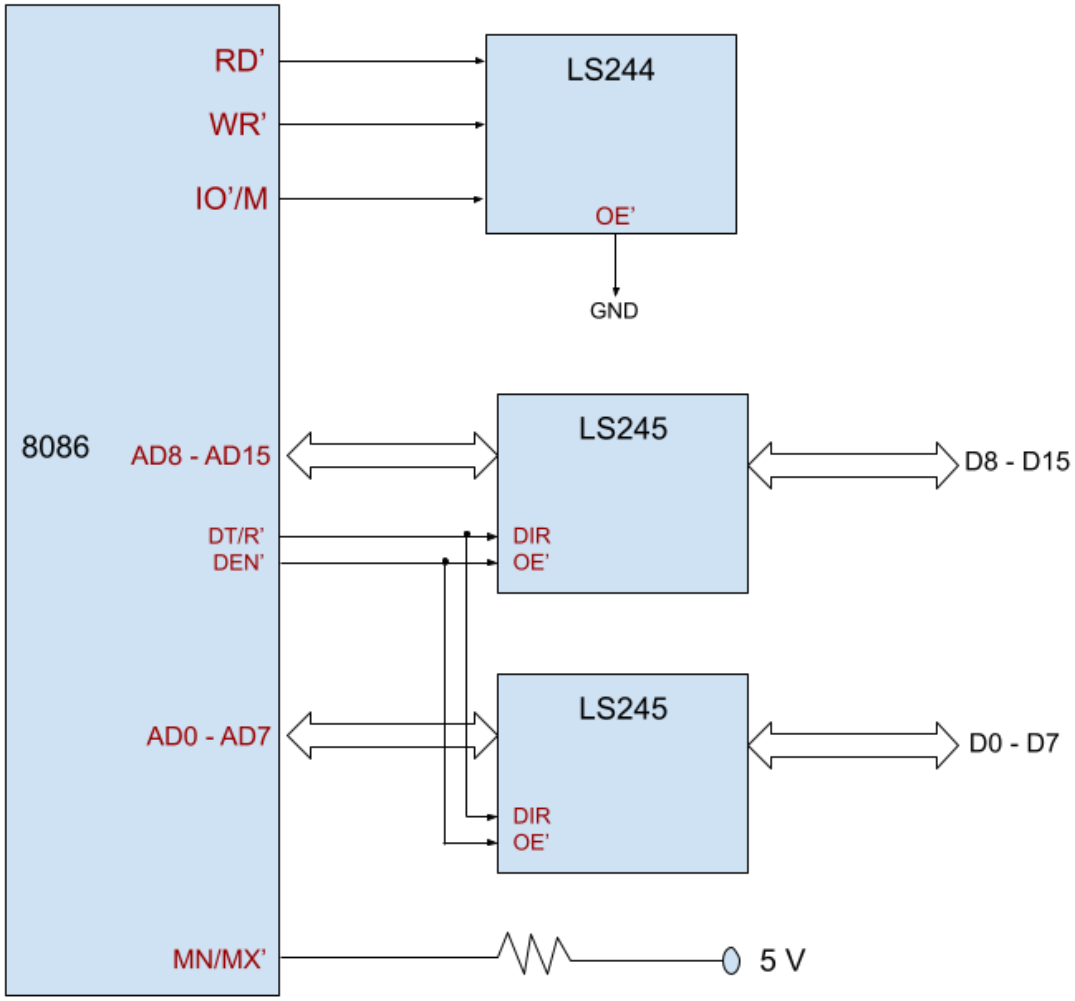
8086 Inputs


15MHz
X1
X2
5V
5V
RDY1
RDY2
5V
F/C
GND
GND
GND
CYNC
AEN1
AEN2
RESET
CLK
READY
RES
8284
5V
5V
NC
NC
8259
8259
VCC
MN/MX'
TEST
HLDA
INTR
INTA
RESET
CLOCK
READY
GND
GND
GND
NMI
HOLD
GND
8086

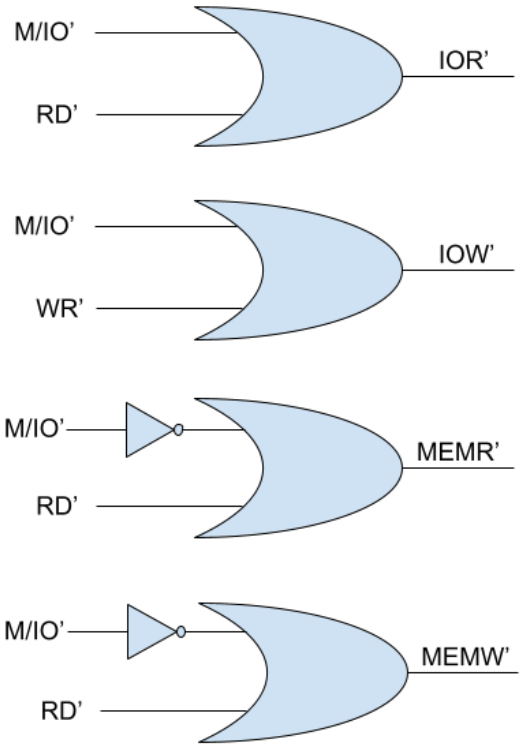
System Bus of 8086 (Address)



System Bus of 8086 (Data)

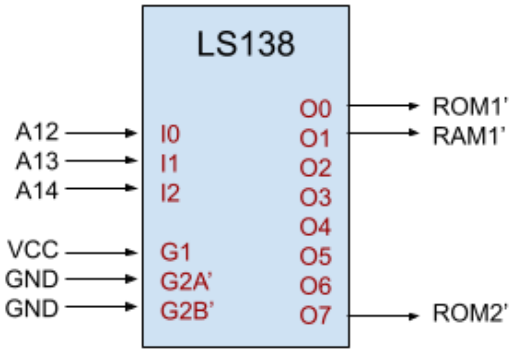


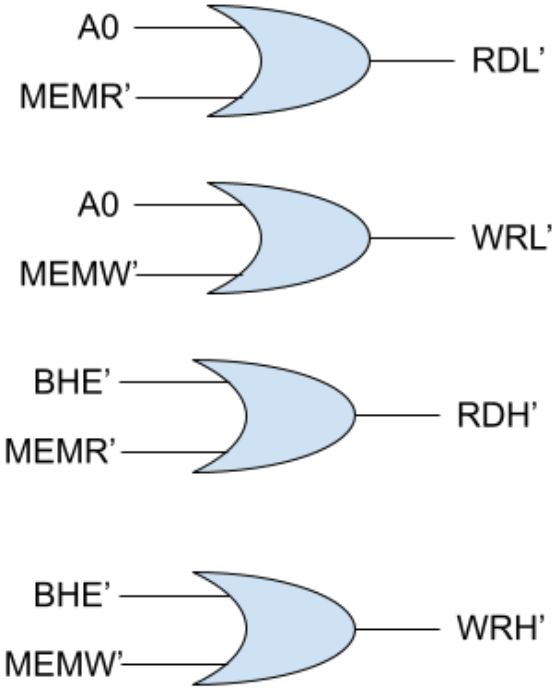
Control signals:



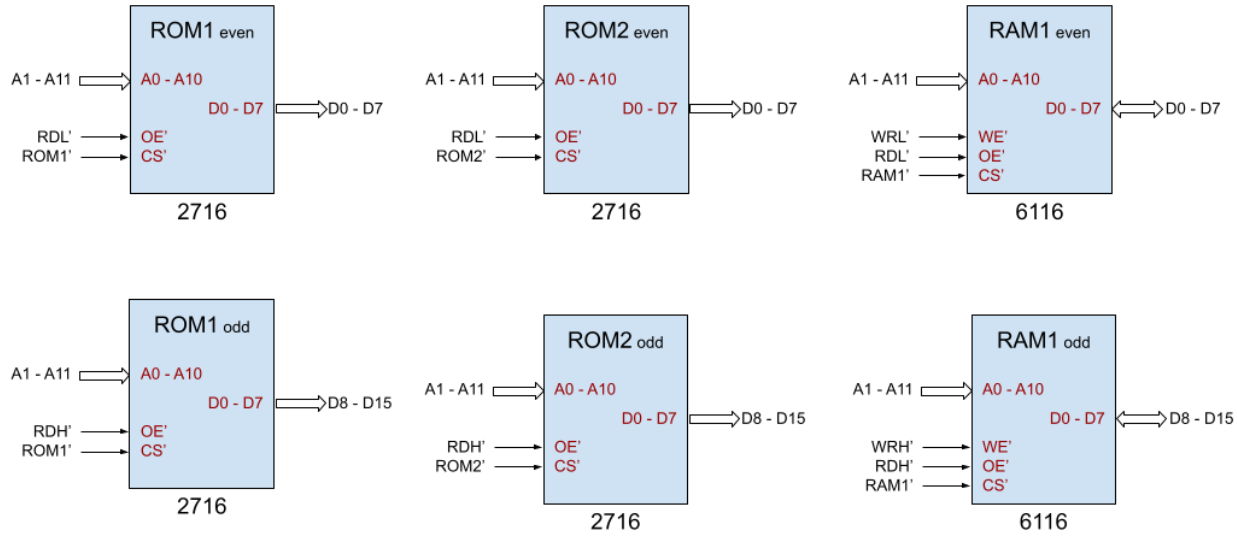
M/IO'	RD'	WR'	Bus Cycle
1	0	1	MEMR'
1	1	0	MEMW'
0	0	1	IOR'
0	1	0	IOW'

Memory Decoder:

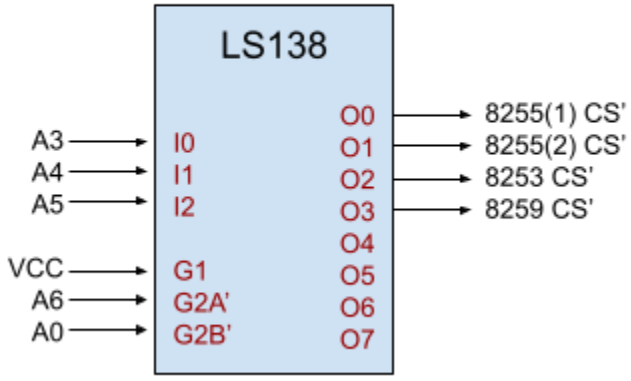




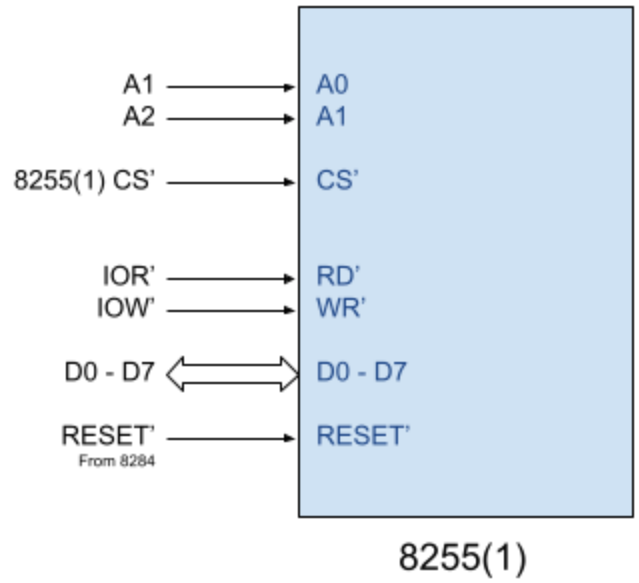
Memory Interfacing:



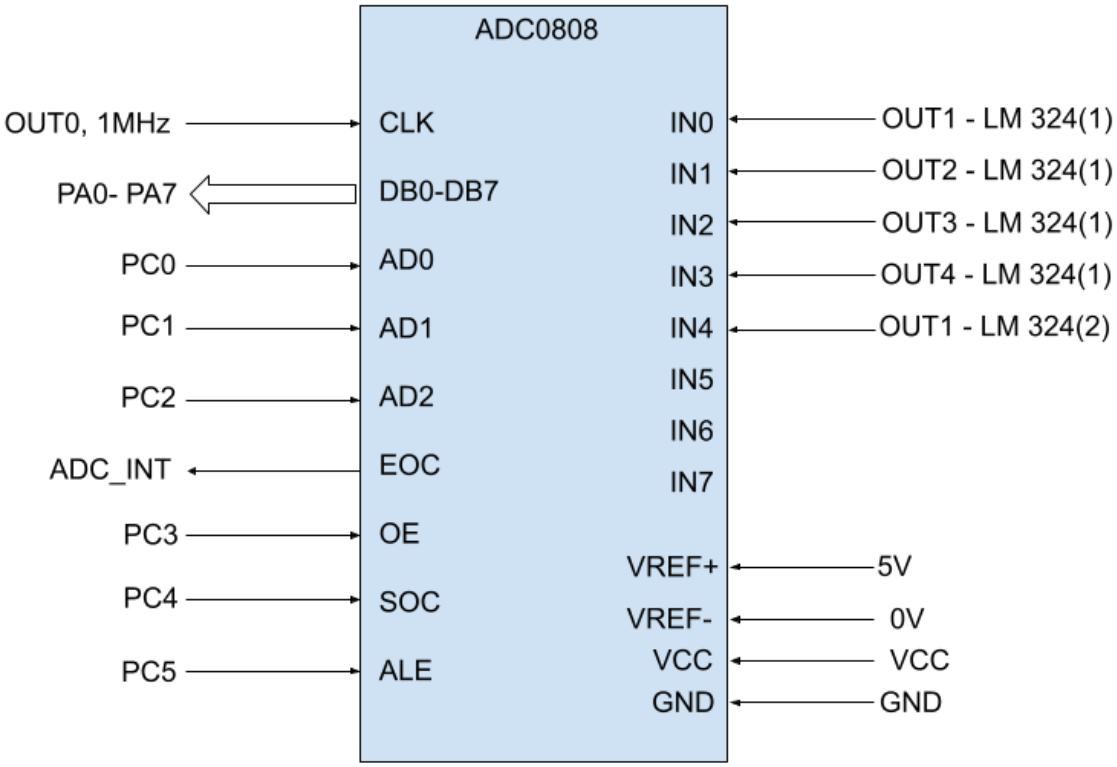
I/O Decoder:



8255(1) Interface to 8086:

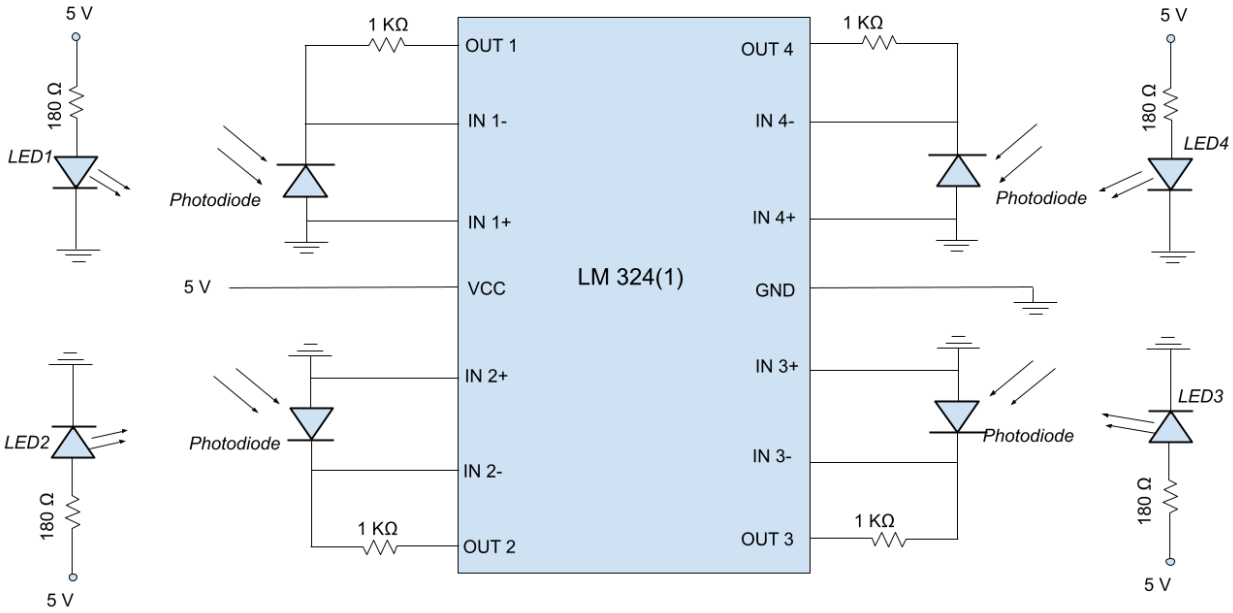


8255(1) Ports:

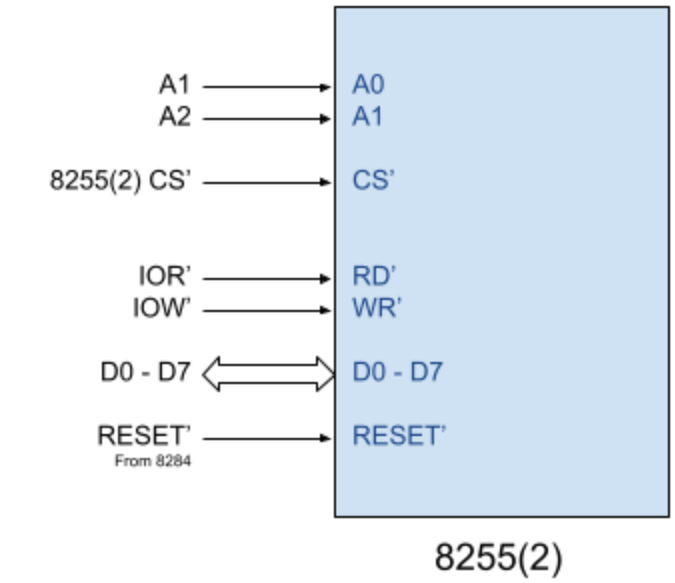


For Op-Amp:
Max Current in PD = 5 mA
We want voltage between 0 and 5V, so max voltage = 5V
R = V/I = 5V/5mA = 1 kOhm

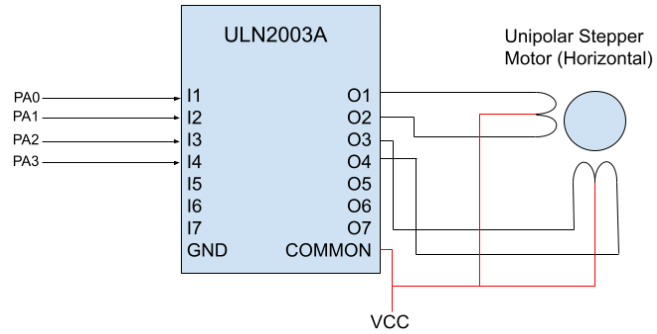
For LED:
Average Current for max lumination = 30 mA
R = V/I = 5000 mV/30mA ~ 180 ohm

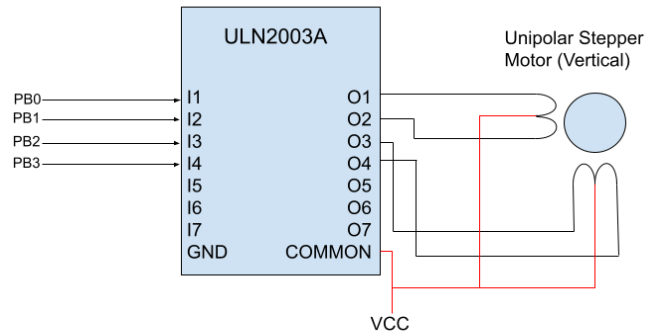


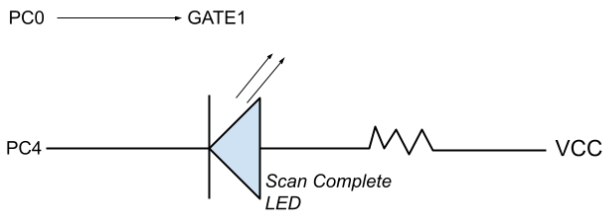
8255(2) Interface to 8086:



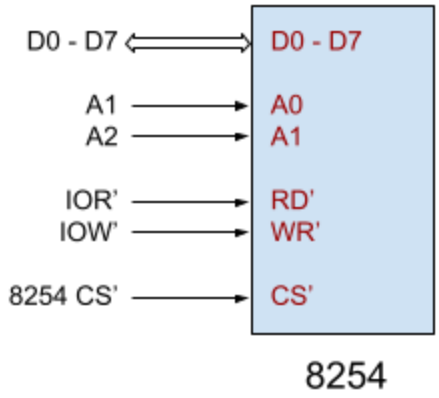
8255(2) Ports:

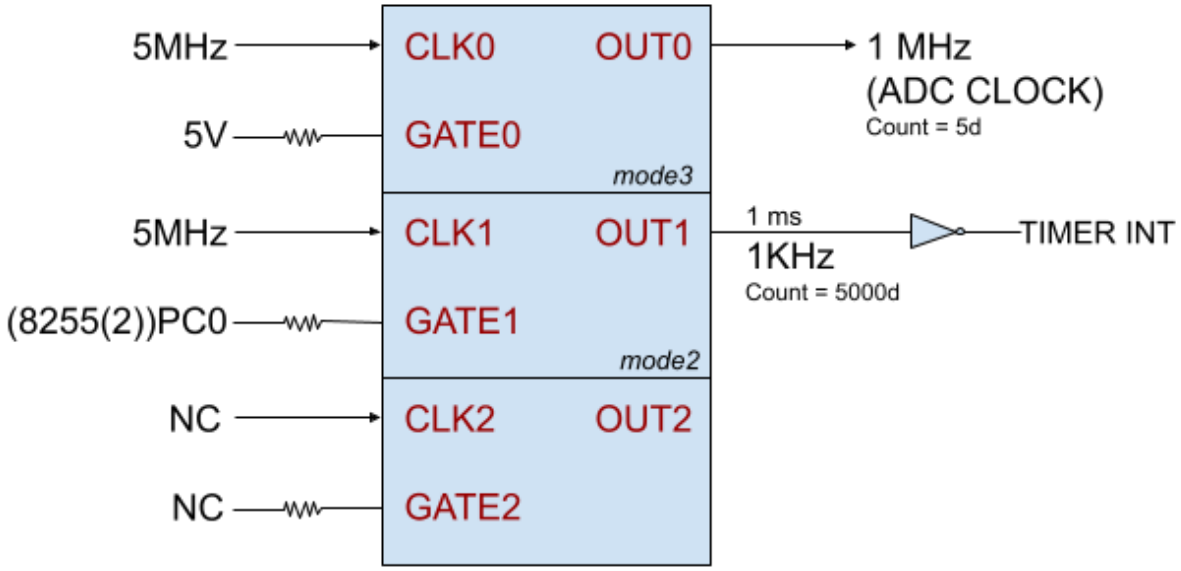
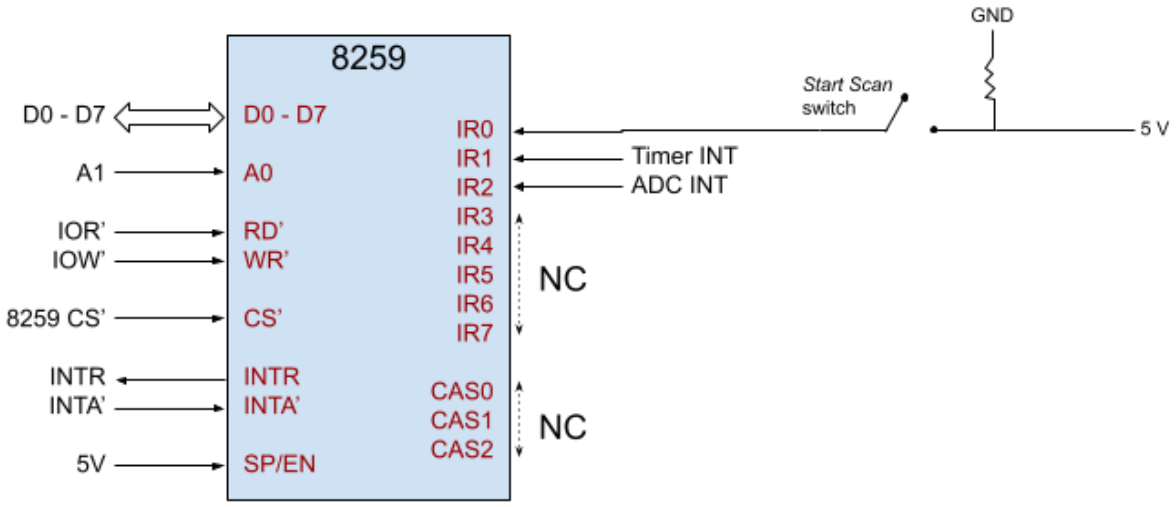






8254 Interface to 8086:





8259 Interface to 8086: