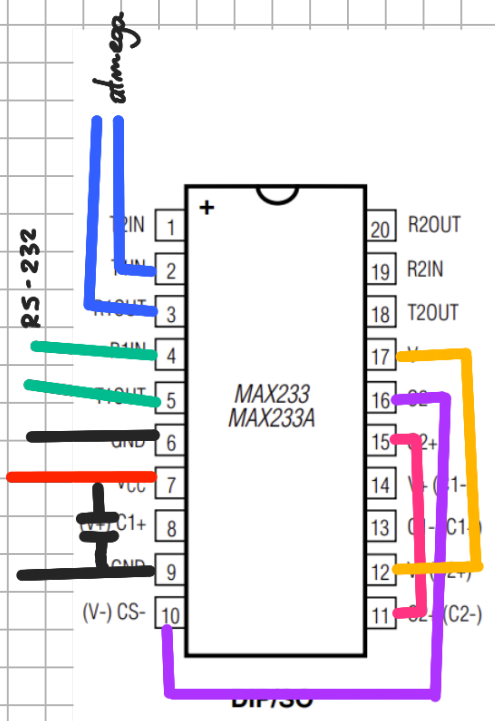
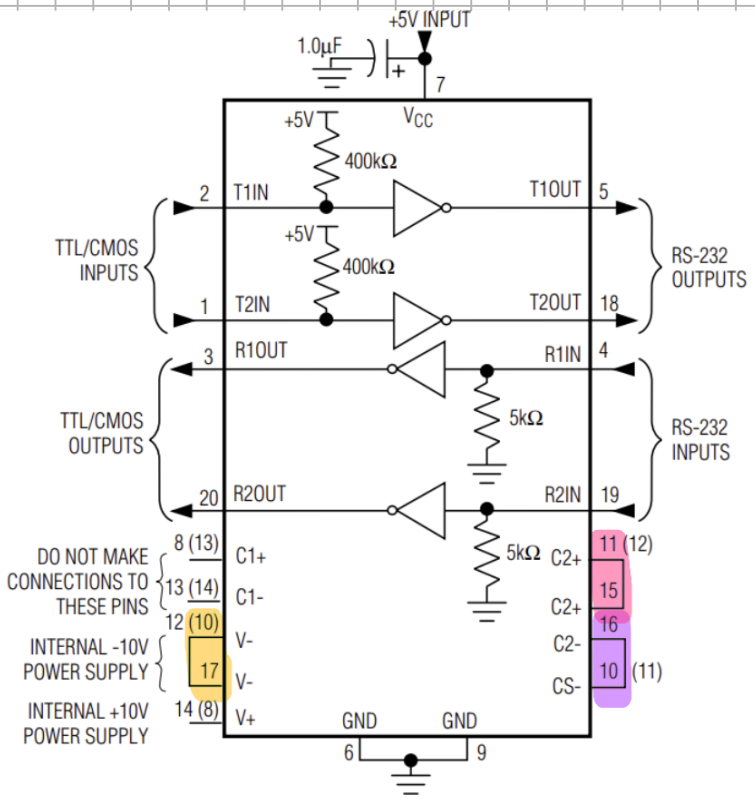
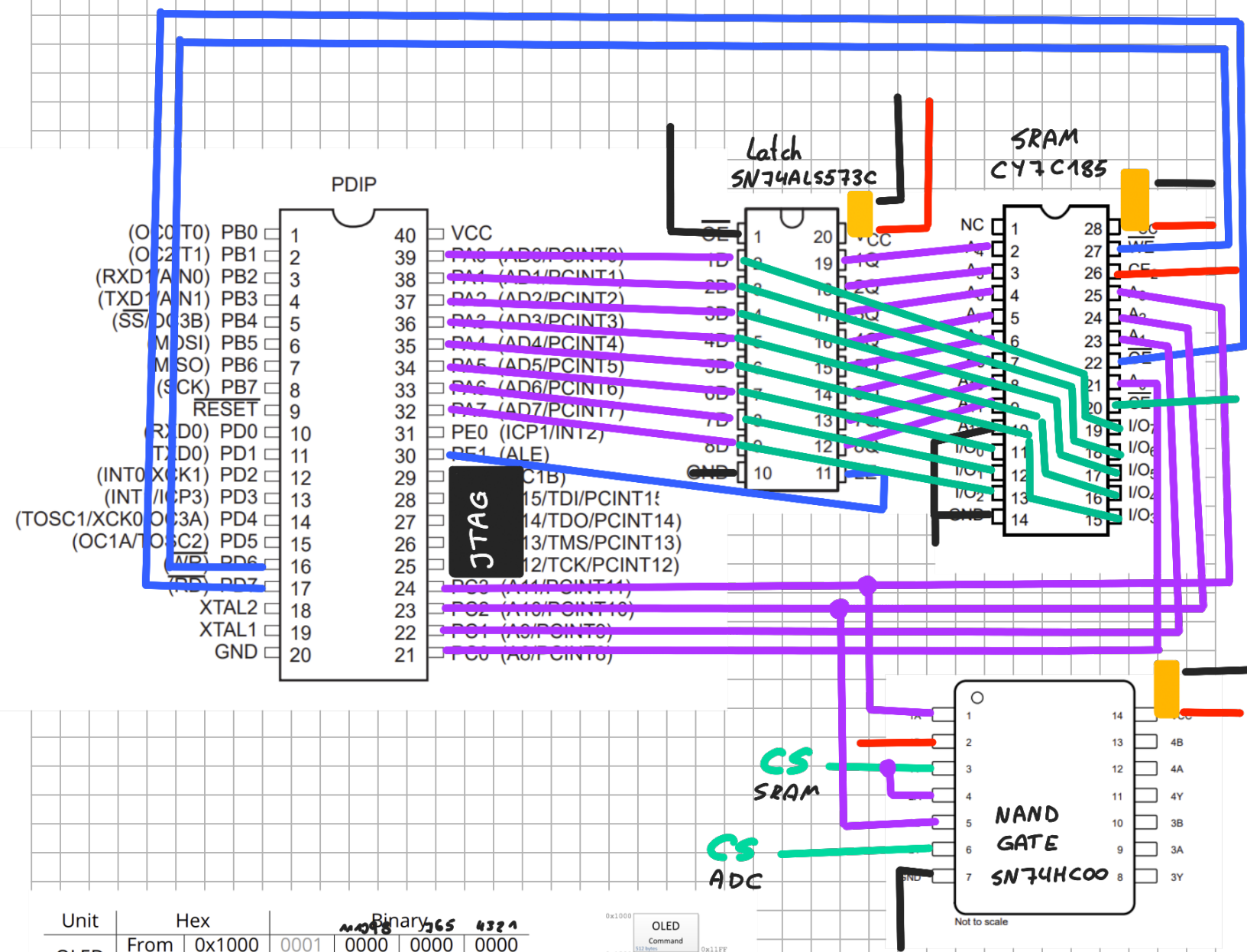
Dag 1


RS-232
MAX233
MAX233A
R2OUT
R2IN
T2OUT
(V-) CS-
(C2-)
ARE FOR SO PACKAGE.

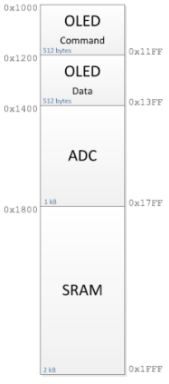

+5V INPUT
1.0µF
VCC
+5V
400kΩ
T1IN
T1OUT
TTL/CMOS INPUTS
RS-232 OUTPUTS
T2IN
T2OUT
R1OUT
R1IN
5kΩ
TTL/CMOS OUTPUTS
RS-232 INPUTS
R2OUT
R2IN
DO NOT MAKE CONNECTIONS TO THESE PINS
C1+
C1-
C2+
C2-
CS-
INTERNAL -10V POWER SUPPLY
V-
INTERNAL +10V POWER SUPPLY
V+
GND

Dag 2



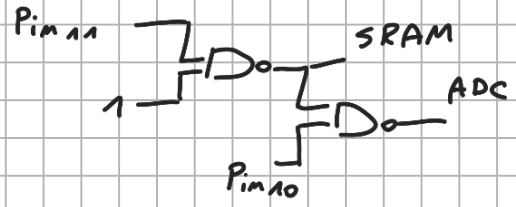
Unit	Hex		Binary			
			4	3	2	1
OLED	From	0x1000	0001	0000	0000	0000
	To	0x13FF	0001	0011	1111	1111
ADC	From	0x1400	0001	0100	0000	0000
	To	0x17FF	0001	0111	1111	1111
SRAM	From	0x1800	0001	1000	0000	0000
	To	0x1FFF	0001	1111	1111	1111
	CS when:		0001	1XXX	XXXX	XXXX

ADC CS when: 01xx xxxx xxxx



A og B : input

Y : output



Pin 11	Pin 10	ADC $\overline{CS}$	SRAM $\overline{CS}$
0	0	1	1
0	1	0	1
1	0	1	0
1	1	1	0

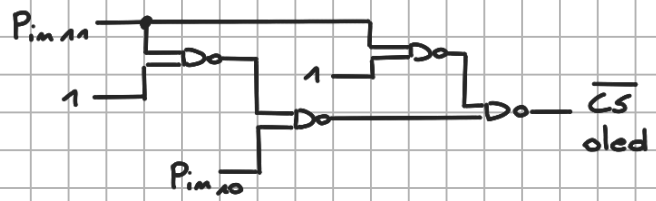
Dag 4 / 5

	Hex		Binary
OLED command	From	0x1000	0001 0000 0000 0000
	To	0x11FF	0001 0001 1111 1111
OLED data	From	0x1200	0001 0010 0000 0000
	To	0x13FF	0001 0011 1111 1111

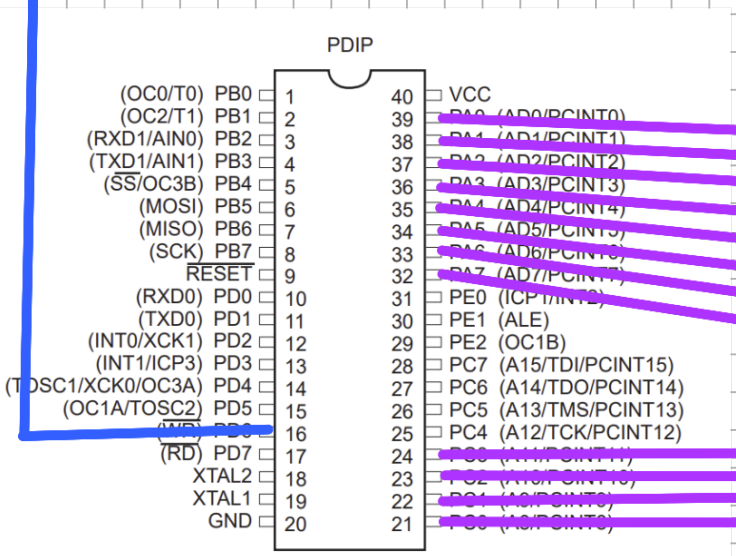
Pin 9	Pin 8	D / $\overline{C}$
0	0	0
0	1	0
1	0	1
1	1	1

high : data
low : command

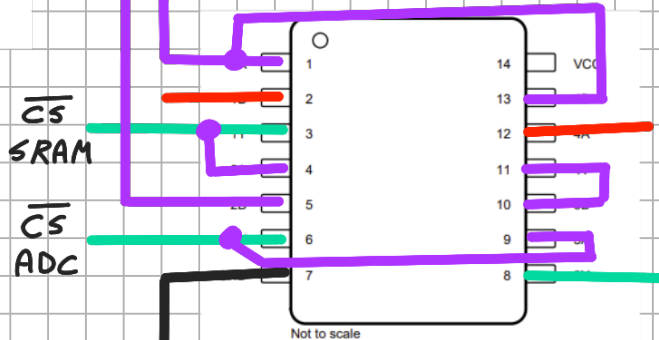
⇒ Pin 9 → D / $\overline{C}$



Pin 11	Pin 10	OLED $\overline{CS}$
0	0	0
0	1	1
1	0	1
1	1	1



Pin number	Description
1	$\overline{CS}$
2	$\overline{D/C}$
3	$R/\overline{W}$
4	$D1$
5	$D2$
6	$D3$
7	$D4$
8	$D5$
9	$D6$
10	$D7$
11	$D8$
12	GND

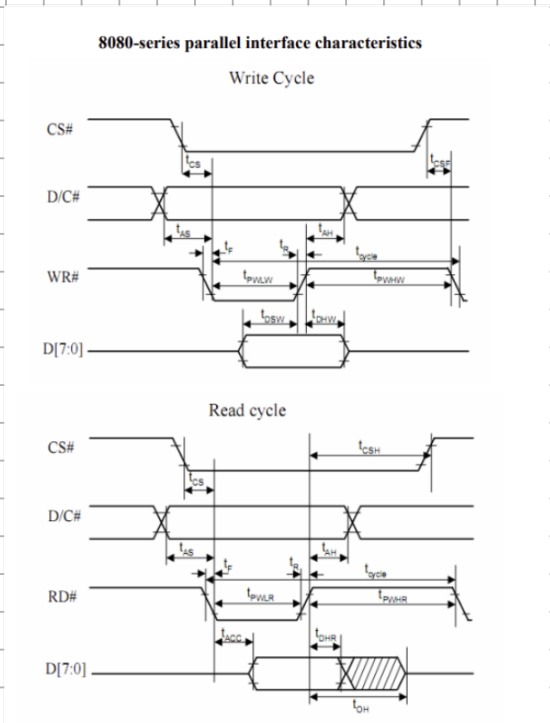


$\overline{CS}$ SRAM

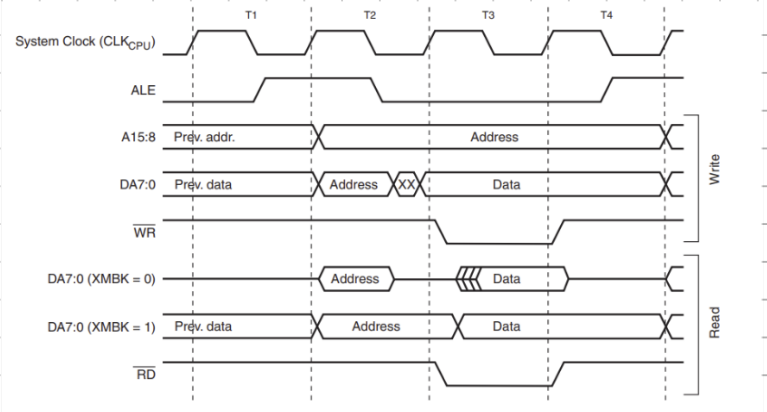
$\overline{CS}$ ADC

$\overline{CS}$ OLED

OLED:

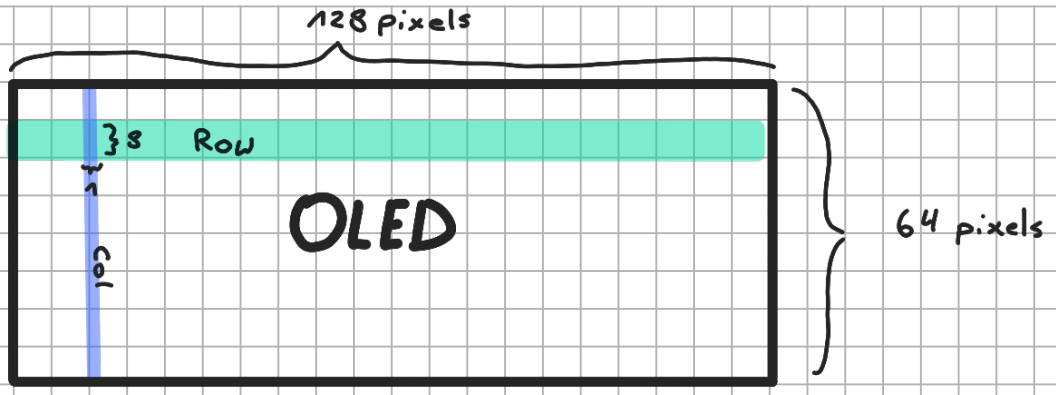


Atmega:



Data er på databussen når WR signalet går fra lav til høy.

Data blir skrevet til oledem på rising edge på WR signalet.



8 rows
128 columns
hvert column har 8 pixler

CAN Bit Timing

Clock = 16 MHz

Baud rate = 125 kbit/s

$$\text{time Quanta} = \frac{2 \cdot BRP}{\text{clock}} = \frac{2 \cdot 4}{16\,MHz} = 500\,ns$$

$$\text{bit time} = \frac{1}{\text{baud rate}} = \frac{1}{125\,kbit/s} = 8\,\mu s$$

$$\#\text{ of tq} = \frac{\text{bit time}}{\text{time Quanta}} = \frac{8\,\mu s}{500\,ns} = 16$$

$$\text{time Quanta} = \frac{2 \cdot BRP}{\text{clock}} \Rightarrow \frac{2 \cdot BRP}{\text{clock}} = \frac{\text{bit time}}{\#\,tq}$$

$$\Rightarrow BRP = \frac{\text{clock}}{2 \cdot \#\,tq \cdot \text{boudrate}}$$

$$= \frac{16\,MHz}{2 \cdot 16 \cdot 125\,kbit/s} = 4$$

Sampling at 60%

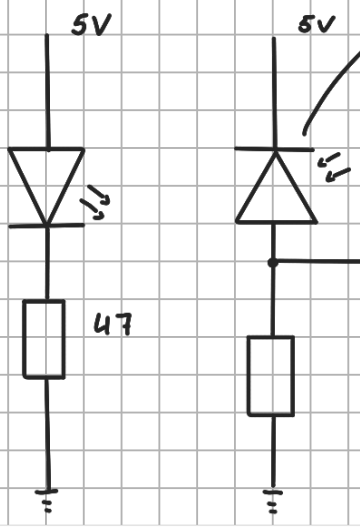
$$\frac{\text{Sync Seg} + \text{Prop Seg} + PS1}{\text{Sync Seg} + \text{Prop Seg} + PS1 + PS2} = 60\%$$

$$\text{Sync Seg} + \text{Prop Seg} + PS1 + PS2 = 16 \Rightarrow \frac{1 + 2 + PS1}{16} = 60\%$$

$$PS1 = 10 - 3 = 7$$

$$PS2 = 16 - 1 - 2 - 7 = 6$$

PHOTODIOD:



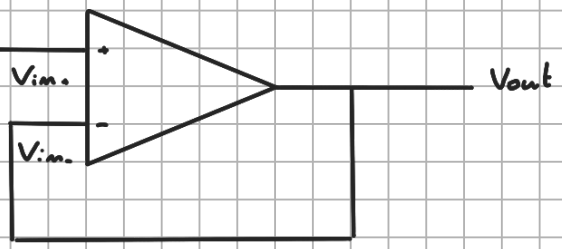
Lys:

$R = \frac{V}{I} = \frac{3 - 0.42}{5\mu A} = 516\,k\Omega$

$\rightarrow V = 5\mu A \cdot 660k\Omega = 3.3V$

OAA:

$V = 10mA \cdot 660k\Omega = 0.0066V$



■ **Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang of Spectral Bandwidth	$\lambda_{0.5}$	----	840-1200	----	nm	----------
Wavelength of Peak Sensitivity	λ_P	----	980	----	nm	----------
Open-Circuit Voltage	Voc	----	0.42	----	V	Ee=5m W/c㎡ λp=940nm
Short-Circuit Current	Isc	----	15	----	μA	
Reverse Light Current	I_L	----	15	----	μA	Ee=5m W/c㎡ λp=940nm V_R=5V
Dark Current	Id	----	----	10	nA	Ee=0m W/c㎡ V_R=10V
Reverse Breakdown Voltage	BV_R	32	170	----	V	Ee=0m W/c㎡ I_R=100μA
Total Capacitance	Ct	----	5	----	pF	Ee=0m W/c㎡ V_R=5V,f=1MHz
Rise/Fall Time	t_r/t_f	----	6/6	----	nS	V_R=10V R_L=1KΩ

MCP602
PDIP, SOIC, TSSOP