Display VCOM generator

TPS61023DRLT
SWPA4030S2R2NT
C279948

$R1 = (Vout/Vref - 1) * R2$
$R1 = (3.3/0.959 - 1) * 200e3 = 910e3$
$Vout=(R1+R2)/R2 * Vref$
$Vref = [0.580V - 0.610]$
$Vout = (931e3 + 200e3)/200e3*0.610 = 3.45V$
$Vout = (931e3 + 200e3)/200e3*0.580 = 3.28V$

For volume production: Extended Part C347222

The parallel resistor R3 is used for biasing the crystal circuit (5 MΩ < R3 < 10 MΩ). In general, you do not need to populate R3.

Equivalent series resistance (ESR) <= 70 kΩ.

Booting Mode [1]			
Pin	Default	SPI Boot	Download Boot
GPIO2	N/A	1	1
GPIO8	N/A	Don't care	1
GPIO9	Internal pull-up	1	0

Enabling/Disabling ROM Code Print During Booting		
Pin	Default	Functionality
GPIO8	N/A	When the value of eFuse field EFUSE_UART_PRINT_CONTROL is 0 (default), print is enabled and not controlled by GPIO8. 1, if GPIO8 is 0, print is enabled; if GPIO8 is 1, it is disabled. 2, if GPIO8 is 0, print is disabled; if GPIO8 is 1, it is enabled. 3, print is disabled and not controlled by GPIO8.

[1] The strapping combination of GPIO8 = 0 and GPIO9 = 0 is invalid and will trigger unexpected behavior.

$C30,C31 = 2 * C_L - 2 * C_{stray}$
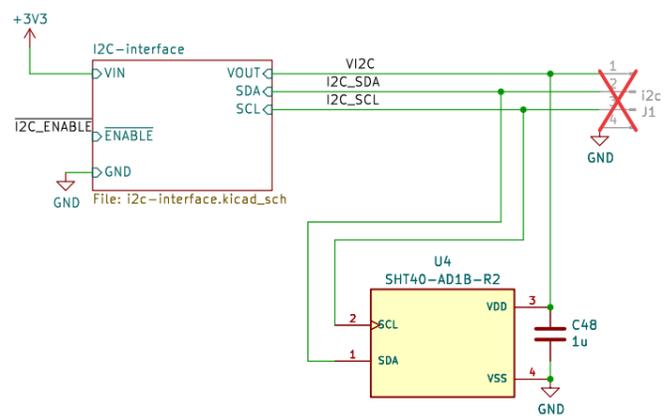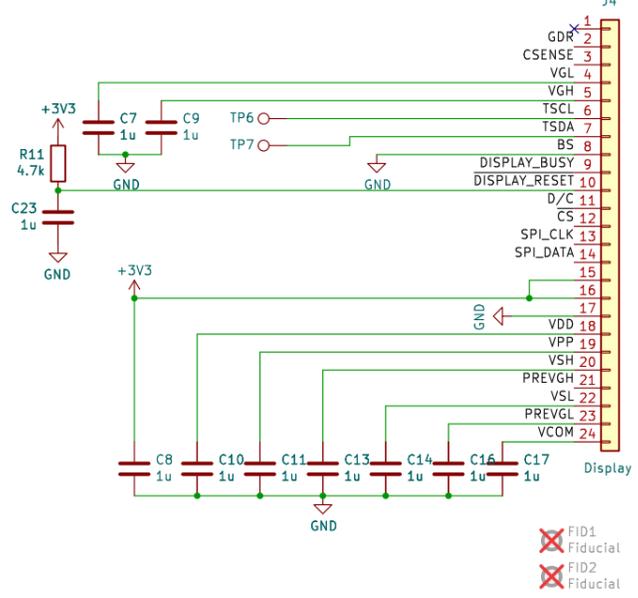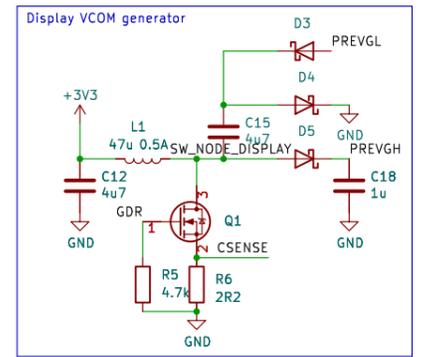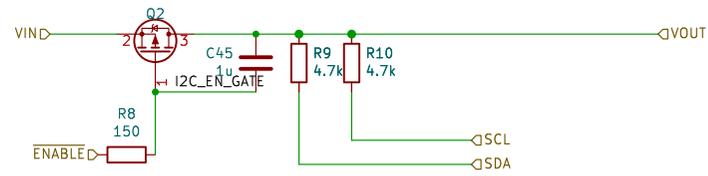$C_{stray} = 2pF (MCU pin) + 2pF (pcb trace)$
$C30,C31 = 2 * 12.5pF - 2 * 4pF = 17pF$

$C38,C39 = 2 * C_L - 2 * C_{stray}$
$C_{stray} = 2pF (MCU pin) + 2pF (pcb trace)$
$C38,C39 = 2 * 10pF - 2 * 4pF = 12pF$

ESP32-C3FN4

40MHz 10ppm

32kHz

I2C-interface

TODO:
X button pins
X consolidate R8, R24 values
X decide on VBUS and 3V3 capacitance - electrolytic or not?
X consolidate C12 C15 maybe

albertas@technarium.lt
Albertas Mickėnas
Catnip electronics
Sheet: /
File: sensor-epaper.kicad_sch
Title: Paper WiFi
Size: A3   Date: 2022-10-27   **Rev: 1.2.1**
KiCad E.D.A. kicad 7.0.0-da2b9df05c-165-ubuntu20.04.1   Id: 1/2

VIN

Q2

2 3

C45
1u

I2C_EN_GATE

R9
4.7k

R10
4.7k

VOUT

R8
150

ENABLE

SCL

SDA