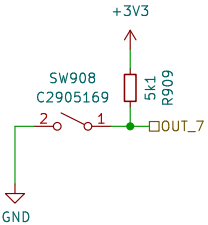
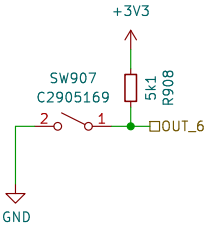
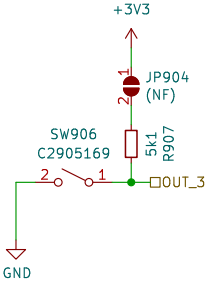
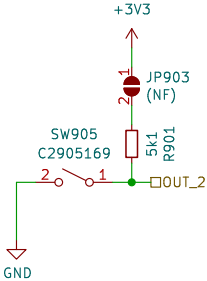
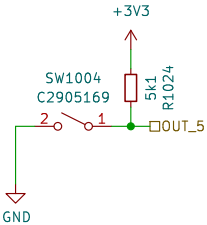
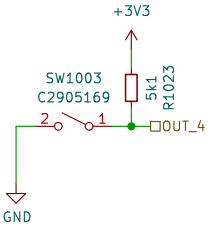
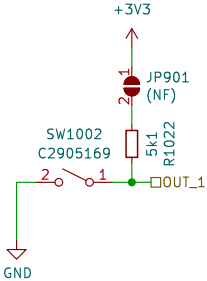
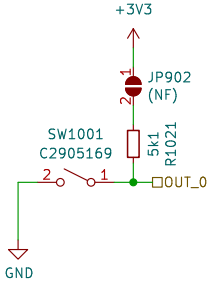
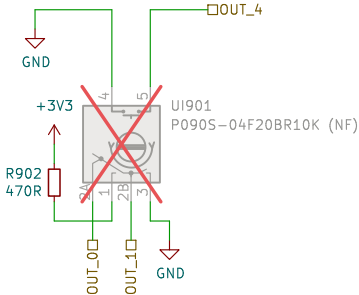


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Sheet: /UI\_POT\_BTN/  
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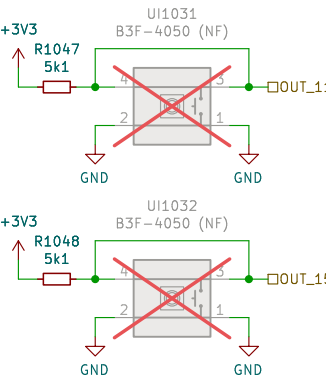
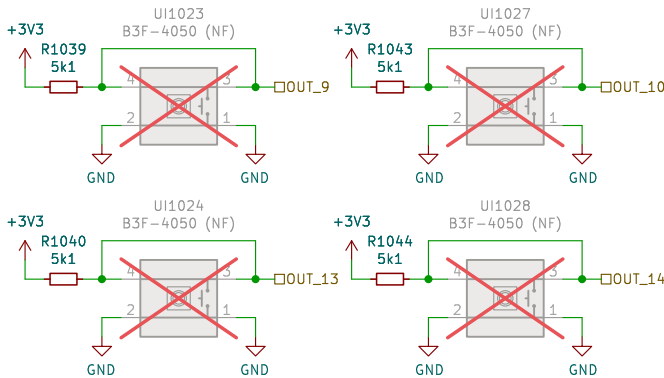
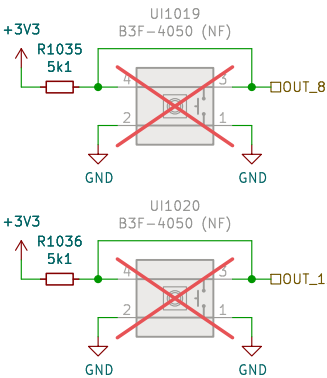
KiCad E.D.A. 8.0.3

Rev:

Id: 2/11

1000

Simulation:  
<http://tinyurl.com/y229mty4>



Sheet: /UI_BUTTON/ File: UI_BUTTON.kicad_sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. 8.0.3	Id: 3/11	

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Sheet: /UI\_LED/  
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**Title:**

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Date:

KiCad E.D.A. 8.0.3

**Rev:**

Id: 4/11

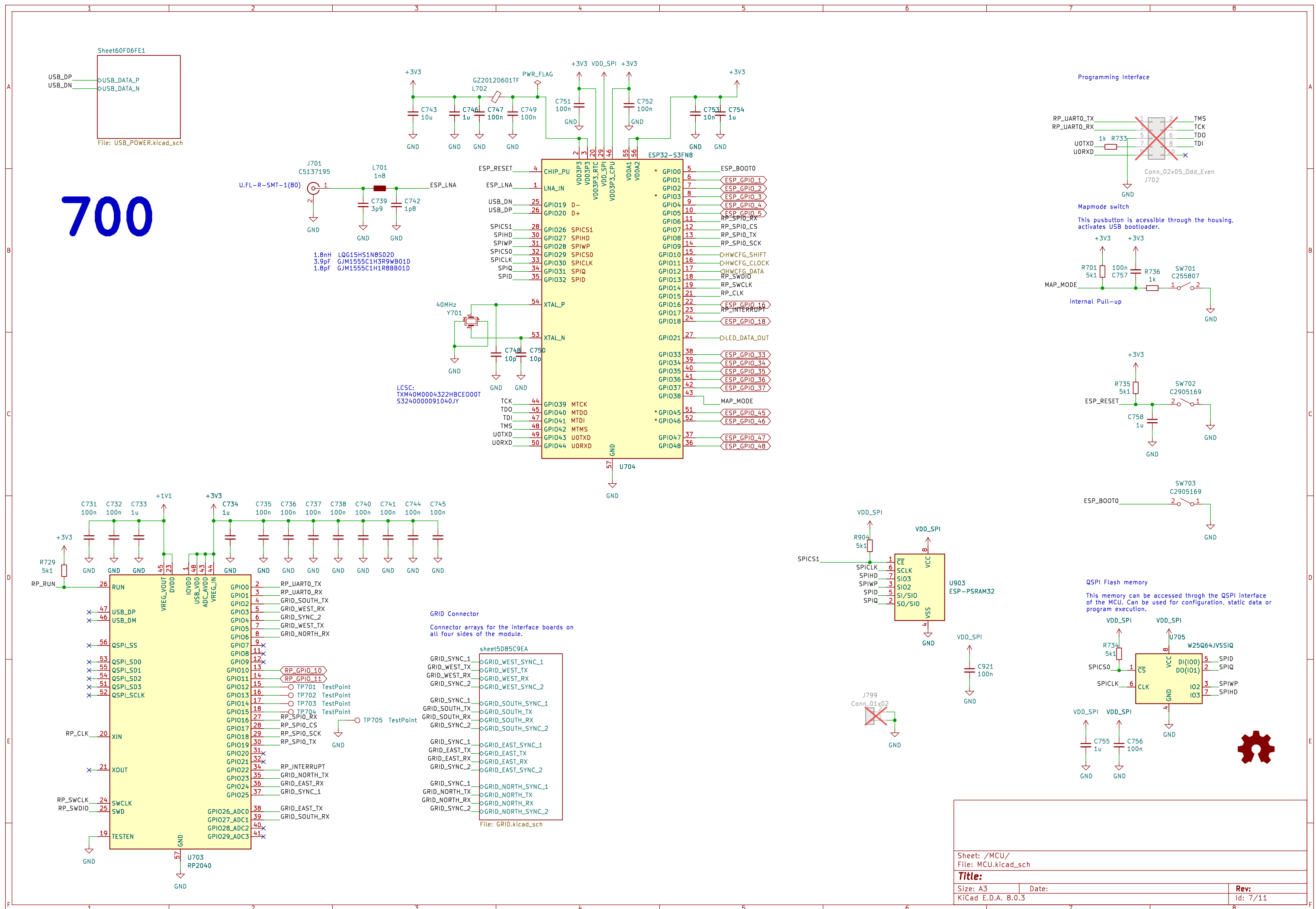
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KiCad E.D.A. 8.0.3	Id: 6/11	



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Size: A4	Date:	<b>Rev:</b>
KiCad E.D.A. 8.0.3		Id: 8/11

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6



**600**

**ESD Diodes**  
ESD protection for all of the externally accessible nets.

**+3V3 LDO Regulators**  
Regulators for generating independent power rails for the microcontroller and the user interface.

The schematic shows the power management circuit for the 600 board. It includes a USB Type-C connector (J601) with pins for VBUS, CC1, CC2, D-, D+, SBU1, SBU2, and SHIELD. The VBUS line is connected to a USB Type-C symbol and a USB Type-A symbol. The CC1 and CC2 pins are connected to a USB Type-C symbol. The D- and D+ pins are connected to USB\_DATA\_N and USB\_DATA\_P. The SBU1 and SBU2 pins are connected to PWR\_FLAG. The SHIELD pins are connected to GND. The circuit also includes a USB Type-A connector (J602) with pins for VBUS, D-, D+, and GND. The VBUS line is connected to a USB Type-A symbol and a USB Type-B symbol. The D- and D+ pins are connected to USB\_DATA\_N and USB\_DATA\_P. The circuit includes several components: U601 (C5451661) ESD diodes, U602 (LN1134A332MR-G) LDO regulator, C601 (1uF) capacitor, C602 (1uF) capacitor, C603 (4n7) capacitor, R601 (5k1) resistor, R602 (5k1) resistor, R603 (1M) resistor, and TP601 through TP605 test points. The circuit is powered by a +5V input and a +3V3 output. The PWR\_FLAG signal is used to indicate power status.

<b>Title:</b>		
Size: A4	Date:	<b>Rev:</b>
KiCad E.D.A. 8.0.3		Id: 9/11

**800**

The schematic shows a 74HC165 shift register (U801) used for board identification. It has 16 pins: SI (pin 10), D0-D7 (pins 11-18), VCC (pin 16), Q0-Q7 (pins 9-15), and GND (pin 8). The Q0 output (pin 9) is labeled HWCFG\_DATA. The SI pin (pin 10) is connected to the RIGHT SCREEN through jumper JP801 (NF) and resistor R801 (5k1) to +3V3. The D0 pin (pin 11) is connected to the LEFT SCREEN through jumper JP802 (NF) and resistor R802 (5k1) to +3V3. The D1-D7 pins (pins 12-18) are connected to HWCFG\_LOW and HWCFG\_HIGH signals. The CLK pin (pin 2) is connected to HWCFG\_CLOCKD. The INH pin (pin 15) is connected to HWCFG\_SHIFTD. The SH/LD pin (pin 1) is connected to GND. The VCC pin (pin 16) is connected to +3V3. The Q1-Q7 pins (pins 10-15) are connected to HWCFG\_DATA. A capacitor C801 (100n) is connected between HWCFG\_HIGH and HWCFG\_LOW.

**Board Identification**

Grid firmware can identify the hardware and the board revision through a 3 wire serial interface using one or more shift register as read only memory. The content of the memory is defined by pulling the inputs high or low through pcb traces or solderable configuration jumpers.

4b'Model + 4b'Revision + nb'Reserved (Multiple shift registers)

D0: MODEL (LSB)  
D1: MODEL  
D2: MODEL  
D3: MODEL (MSB)  
D4: REVISION (LSB)  
D5: REVISION  
D6: REVISION  
D7: REVISION (MSB)

**Model Codes (D3–D0):**

Po16 0000  
Bo16 0001  
PBF4 0010  
EN16 0011  
...

**Revision Codes (D7–D4):**

RevA 0000  
RevB 0001  
RevC 0010  
RevD 0011  
...

Sheet: /HWCFG/ File: HWCFG.kicad_sch		
<b>Title:</b>		
Size: A4	Date:	Rev:
KiCad E.D.A. 8.0.3		Id: 10/11

Grid firmware can identify the hardware and the board revision through a 3 wire serial interface using one or more shift register as read only memory. The content of the memory is defined by pulling the inputs high or low through pcb traces or solderable configuration jumpers.

D0: MODEL (LSB)  
D1: MODEL  
D2: MODEL  
D3: MODEL (MSB)  
D4: REVISION (LSB)  
D5: REVISION  
D6: REVISION  
D7: REVISION (MSB)

Po16	0000
Bo16	0001
PBF4	0010
EN16	0011
...	

```
RevA 0000
RevB 0001
RevC 0010
RevD 0011
...
```

Sheet: /HWCFG/ File: HWCFG.kicad_sch	
<b>Title:</b>	
Size: A4	Date: Rev:
KiCad E.D.A. 8.0.3	Id: 10/11

The schematic diagram illustrates the electrical connections for a 1000 display module. It features two identical display units, U901 and U1003, both labeled as "DISPLAY\_TEK1". Each unit contains an "ST7789 320x240 LCD SPI Interface".

**Power Supply Connections:**

- U901:** VCC (pin 4) and GND (pin 12) are connected to +3V3 and GND respectively. LEDK (pin 2) and LEDA (pin 3) are connected to +3V3+3V3. A 470R resistor (R903) is connected between +3V3+3V3 and GND.
- U1003:** VCC (pin 4) and GND (pin 12) are connected to +3V3 and GND respectively. LEDK (pin 2) and LEDA (pin 3) are connected to +3V3+3V3. A 470R resistor (R1017) is connected between +3V3+3V3 and GND.

**Signal Connections:**

- Backlight:** BACKLIGHT is connected to LEDK (pin 2) of both U901 and U1003.
- Data Bus:** D/C (pin 6), CS (pin 8), SCLK (pin 9), SDIO (pin 10), and RESET (pin 11) are connected to the same signal lines for both U901 and U1003.

**Component Labels:**

- Resistors:** R1018 (5k1), R1026 (5k1), R903 (470R), R1017 (470R).
- Capacitors:** C1020 (1u), C1019 (100n), C920 (1u), C919 (100n).
- ICs:** U902 (74HC1G14GV), U901 (DISPLAY\_TEK1), U1003 (DISPLAY\_TEK1).

**Legend:**

- BACKLIGHT:** Indicated by a square symbol.
- D/C:** Indicated by a square symbol with a diagonal line.
- CS:** Indicated by a square symbol with a diagonal line.
- SCLK:** Indicated by a square symbol with a diagonal line.
- SDIO:** Indicated by a square symbol with a diagonal line.
- RESET:** Indicated by a square symbol with a diagonal line.