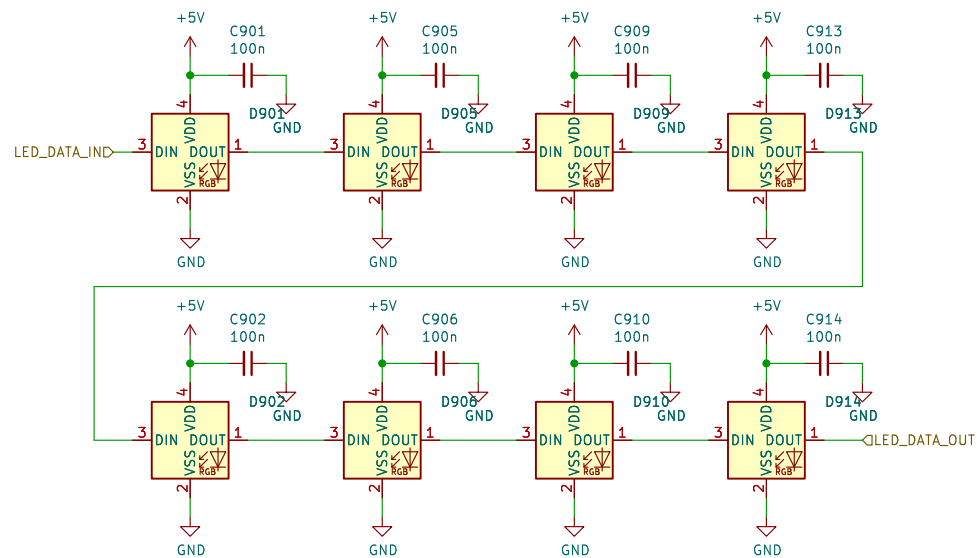




# 900



Sheet: /UI\_LED/  
File: UI\_LED.kicad\_sch

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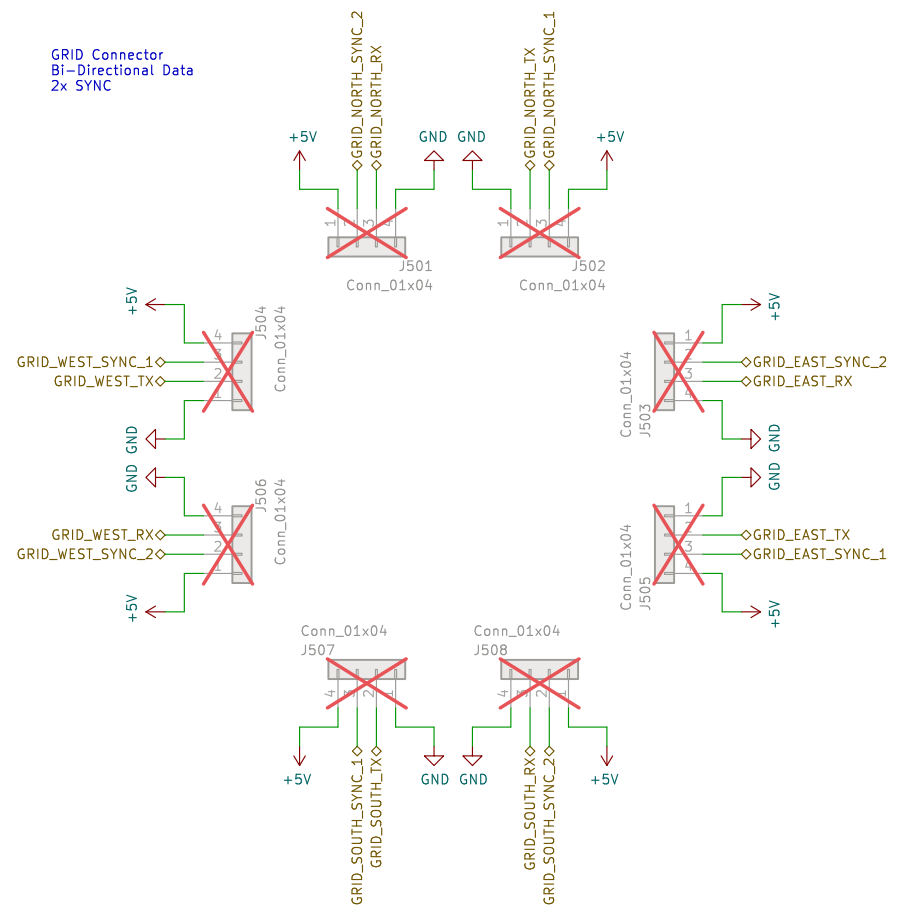
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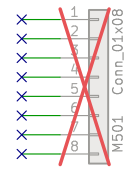


# 500

GRID Connector  
Bi-Directional Data  
2x SYNC



Board Mounting Pattern



Sheet: /MCU/sheet5D85C9EA/ File: GRID.kicad_sch		
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**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.

**Components and Connections:**

- J601 (TYPE-C-32-M-12):** USB Type-C connector. Pins include VBUS, CC1, CC2, D-, D+, SBU1, SBU2, and SHIELD. Connections include:
  - VBUS to A9B4 and A4B9.
  - CC1 to A5, CC2 to B5.
  - D- to A7, D+ to A6.
  - SBU1 to A8, SBU2 to BB.
  - SHIELD to S1, S2, S3, S4.
- U601 (C5451661):** ESD protection diodes for USB\_DATA\_P, USB\_DATA\_N, and VBUS.
- U602 (LN1134A332MR-G):** +3V3 LDO regulator. Connections include:
  - IN to VBUS +5V.
  - EN to GND.
  - OUT to +3V3.
- Passive Components:**
  - R601 (5k1), R602 (5k1):** Resistors connected to GND.
  - R603 (1M):** Resistor connected to GND.
  - C601 (1u), C602 (1u), C603 (4n7):** Capacitors connected to GND.
- Other Labels:** PWR\_FLAG, VBUS, USB\_DATA\_P, USB\_DATA\_N, GND, TP601, TP602, TP603, TP604, TP605.

**Sheet: /MCU/Sheet60F06FE1/  
File: USB\_POWER.kicad\_sch**

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**800**

OPEN IF EN16  
CLOSED IF NO DETENT

+3V3

GND

HWCFG\_CLOCKD

HWCFG\_SHIFTD

HWCFG\_LOW

HWCFG\_HIGH

HWCFG\_DATA

U801  
74HC165

VCC

GND

C801  
100n

Detailed description: This schematic shows the hardware for board identification using a 74HC165 shift register. The register's clock (CLK) is connected to HWCFG\_CLOCKD (pin 2). Its inhibit/load (INH) is connected to HWCFG\_SHIFTD (pin 15). The shift/load (SH/LD) pin (pin 1) is connected to GND. The data input (SI, pin 10) is connected to DATA\_IND. The output (DI Q, pin 9) is connected to HWCFG\_DATA. The register's power supply (VCC, pin 16) is connected to +3V3, and its ground (pin 8) is connected to GND. A jumper JP801 (NF) is used to connect +3V3 to pin 2, which is also pulled down to GND by resistor R801 (5k1). A decoupling capacitor C801 (100nF) is placed across 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		
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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	
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File: UI\_ENC\_FILTER.kicad\_sch

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Sheet: /UI\_ENC/ENCODER\_3/  
File: UI\_ENC\_FILTER.kicad\_sch

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**Rev:**

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Sheet: /UI\_ENC/ENCODER\_1/  
File: UI\_ENC\_FILTER.kicad\_sch

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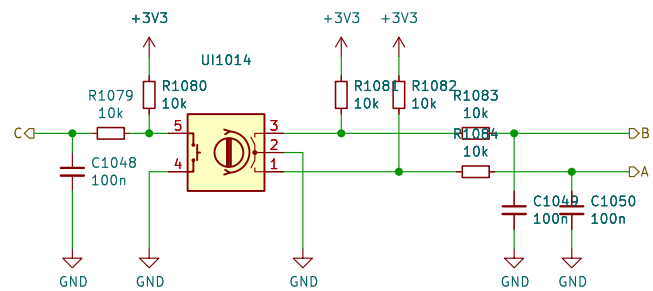
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Sheet: /UI\_ENC/ENCODER\_2/  
File: UI\_ENC\_FILTER.kicad\_sch

**Title:**

Size: A4

Date:

**Rev:**

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