

UI\_LED

LED\_DATA\_IN

LED\_DATA\_OUT

File: UI\_LED.kicad\_sch

MCU

LED\_DATA\_OUT

File: MCU.kicad\_sch

Sheet5D7C8BFD

ANA\_0

ANA\_1

ANA\_4

ANA\_5

ANA\_8

ANA\_9

ANA\_12

ANA\_13

IN\_0

IN\_1

IN\_2

IN\_3

IN\_4

IN\_5

IN\_6

IN\_7

OUTD

ADDRESS\_A

ADDRESS\_B

ADDRESS\_C

ESP\_GPIO\_1

ESP\_GPIO\_18

ESP\_GPIO\_37

ESP\_GPIO\_36

ESP\_GPIO\_35

File: UI\_MUX.kicad\_sch

sheet5D8763D6

ANA\_2

ANA\_3

ANA\_6

ANA\_7

ANA\_10

ANA\_11

ANA\_14

ANA\_15

IN\_0

IN\_1

IN\_2

IN\_3

IN\_4

IN\_5

IN\_6

IN\_7

OUTD

ADDRESS\_A

ADDRESS\_B

ADDRESS\_C

ESP\_GPIO\_2

ESP\_GPIO\_5

ESP\_GPIO\_4

ESP\_GPIO\_3

File: UI\_MUX.kicad\_sch

HWCFG

HWCFG\_SHIFT

HWCFG\_CLOCK

HWCFG\_DATA

File: HWCFG.kicad\_sch

MCU

HWCFG\_SHIFT

HWCFG\_CLOCK

HWCFG\_DATA

File: MCU.kicad\_sch

Common Sheets:

500 GRID

600 USB\_POWER

700 MCU

Module Specific:

800 HWCFG

900 LED

1000 UI

Sheet: /

File: PCBA-PBF4.kicad\_sch

Title:

Size: A3

Date:

Rev:

KiCad E.D.A. 8.0.4

Id: 1/10

# 1000



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

**Title:**

Size: A4

Date:

KiCad E.D.A. 8.0.4

**Rev:**

Id: 2/10

1000

Simulation:  
<http://tinyurl.com/y229mt4>



Sheet: /UI_BUTTON/ File: UI_BUTTON.kicad_sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. 8.0.4	Id: 3/10	

900



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

**Title:**

Size: A4

Date:

SIZE: A1	
KiCad E.D.A. 8.0.4	

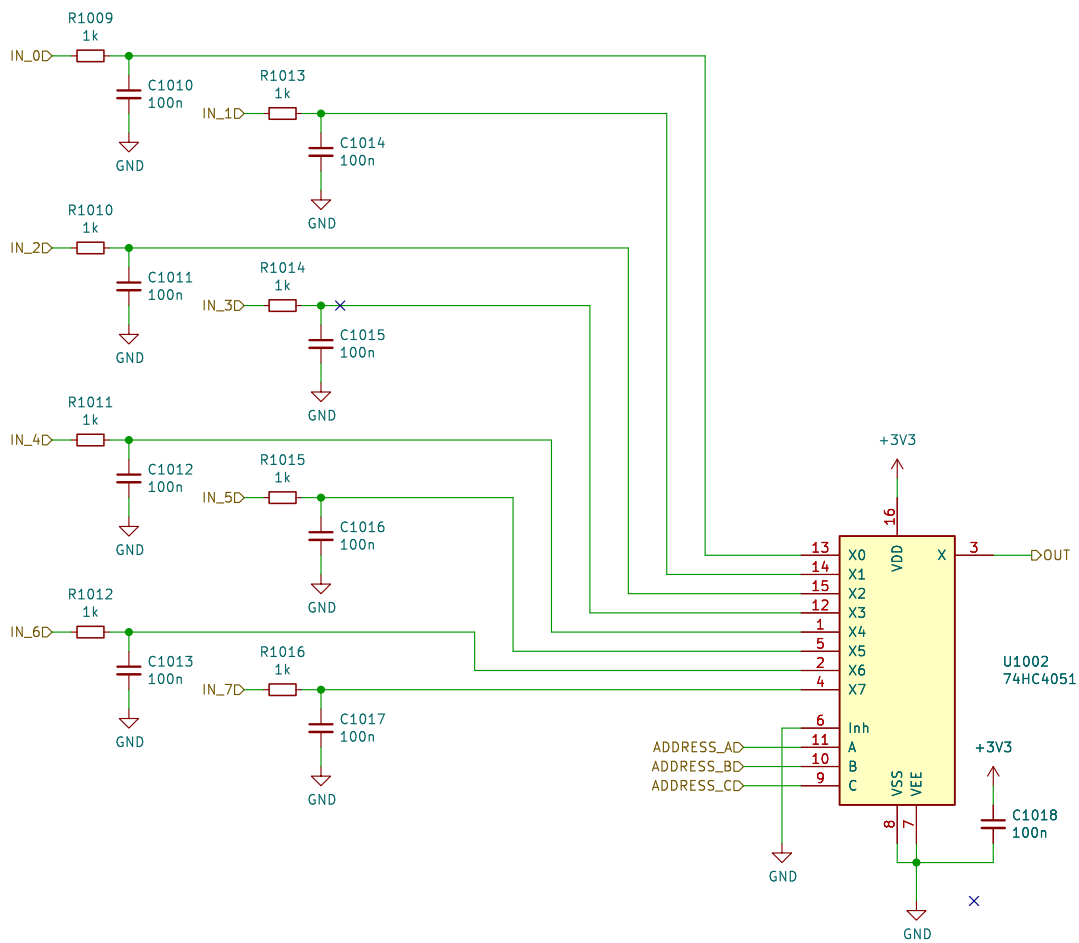
Rev:

Id: 4/10

1000



1000



Sheet: /sheet5D8763D6/ File: UI_MUX.kicad_sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. 8.0.4	Id: 6/10	



500

GRID Connector  
Bi-Directional Data  
2x SYNC

Board Mounting Pattern



Sheet: /MCU/sheet5D85C9EA/ File: GRID.kicad_sch		
<b>Title:</b>		
Size: A4	Date:	Rev:
KiCad E.D.A. 8.0.4	Id: 8/10	



[illegible]

<b>Title:</b>		
Size: A4	Date:	<b>Rev:</b>
KiCad E.D.A. 8.0.4		Id: 9/10
4	5	6

800

U801  
74HC165

+3V3

HWCFG\_LOW  
HWCFG\_HIGH  
HWCFG\_LOW  
HWCFG\_LOW  
HWCFG\_LOW  
HWCFG\_LOW  
HWCFG\_HIGH

10 SI  
11 D0  
12 D1  
13 D2  
14 D3  
3 D4  
4 D5  
5 D6  
6 D7

HWCFG\_CLOCKD  
HWCFG\_SHIFTD

2 CLK  
15 INH  
1 SH/LD

9 Q  
7 X

HWCFG\_DATA

+3V3

C801  
100n

HWCFG\_HIGH  
HWCFG\_LOW

GND

GND

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

**Title:**

Size: A4 Date: Rev:

KiCad E.D.A. 8.0.4 Id: 10/10

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:
KiCad E.D.A. 8.0.4	Rev: Id: 10/10