



UI\_POT

OUT\_0

OUT\_1

OUT\_2

OUT\_3

OUT\_4

OUT\_5

OUT\_6

OUT\_7

OUT\_8

OUT\_9

OUT\_10

OUT\_11

OUT\_12

OUT\_13

OUT\_14

OUT\_15

ANA\_0

ANA\_1

ANA\_2

ANA\_3

ANA\_4

ANA\_5

ANA\_6

ANA\_7

ANA\_8

ANA\_9

ANA\_10

ANA\_11

ANA\_12

ANA\_13

ANA\_14

ANA\_15

File: UI\_POT.kicad\_sch

UI\_BUTTON

File: UI\_BUTTON.kicad\_sch

UI\_LED

LED\_DATA\_IN

LED\_DATA\_OUT

File: UI\_LED.kicad\_sch

MCU

LED\_DATA\_OUT

HWCFG\_SHIFT

HWCFG\_CLOCK

HWCFG\_DATA

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

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  
KiCad E.D.A. kicad-cli 7.0.11+1

Date:  
Id: 1/10

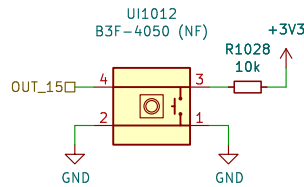
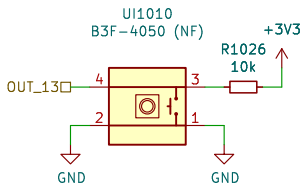
Rev:

1000



1000

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



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

Title:

Size: A4  
KiCad E.D.A. kicad-cli 7.0.11+1

Date:

Rev:  
Id: 3/10

# 900



Sheet: /UI\_LED/

File: UI\_LED.kicad\_sch

**Title:**

Size: A4

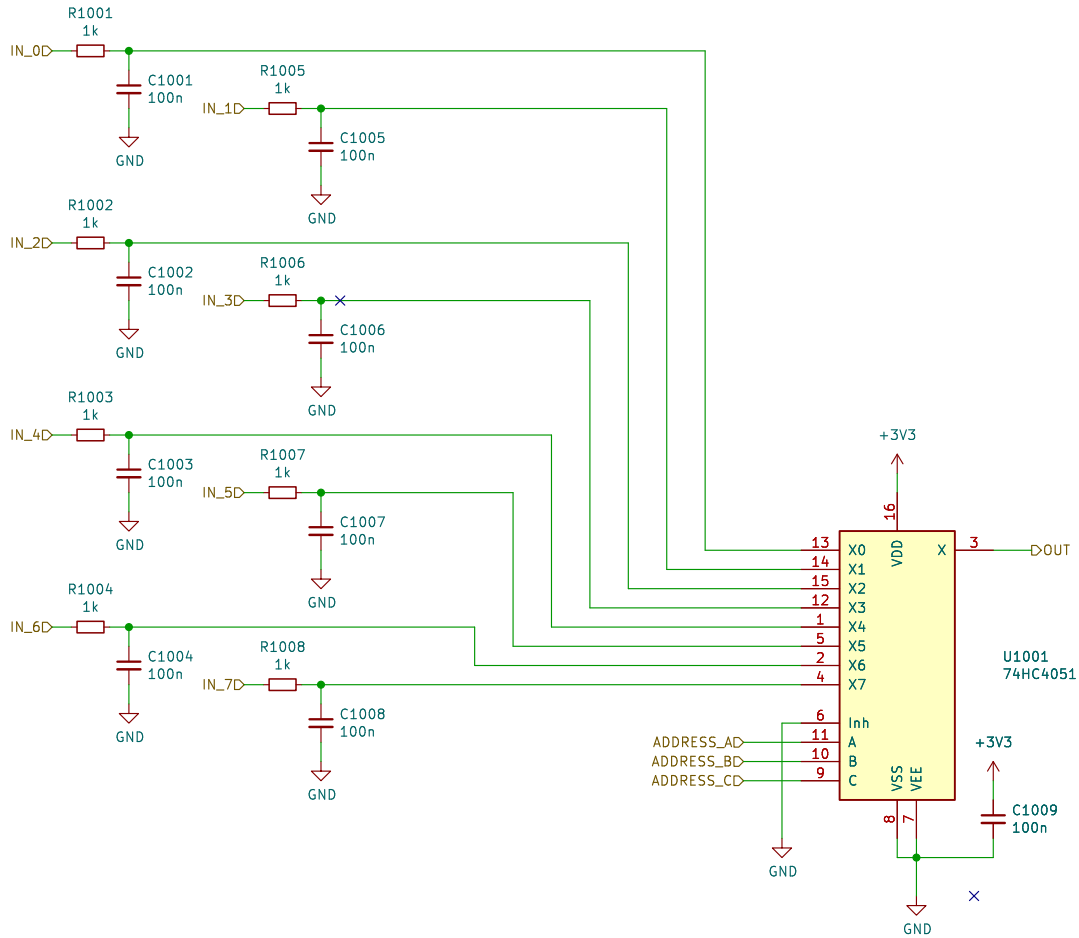
Date:

KiCad E.D.A. kicad-cli 7.0.11+1

**Rev:**

Id: 4/10

1000



1000





<b>Title:</b>		
Size: A4	Date:	<b>Rev:</b>
KiCad E.D.A. kicad-cli 7.0.11+1		Id: 8/10

Size: A4	Date:	Rev:
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KiCad E.D.A. kicad-cli 7.0.11+1	Id: 8/10
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ad-cli 7.0.11+1	Id: 8/10
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Id: 8/10

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

U601  
C5451661

VBUS  
USB\_DATA\_N  
USB\_DATA\_P  
GND

TP601  
GND

TP602  
VB

TP603  
D-

TP604  
D+

VBUS  
USB\_DATA\_P  
USB\_DATA\_N

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

U602  
LN1134A332MR-G

VBUS +5V  
GZ2012D601TF  
L601

PWR\_FLAG

C601  
1u

C602  
1u

TP605

+3V3

J601  
TYPE-C-32-M-12

VBUS  
A9B4  
A4B9

CC1  
A5  
B5

CC2  
A7  
B7

D-  
A6  
B6

D+  
A8  
B8

SBU1  
A1B12  
A12B1

SBU2  
B8

SHIELD  
S1  
S2  
S3  
S4

GND

PWR\_FLAG

GND

R601  
5k1

R602  
5k1

C603  
4n7

R603  
1M

GND

GND

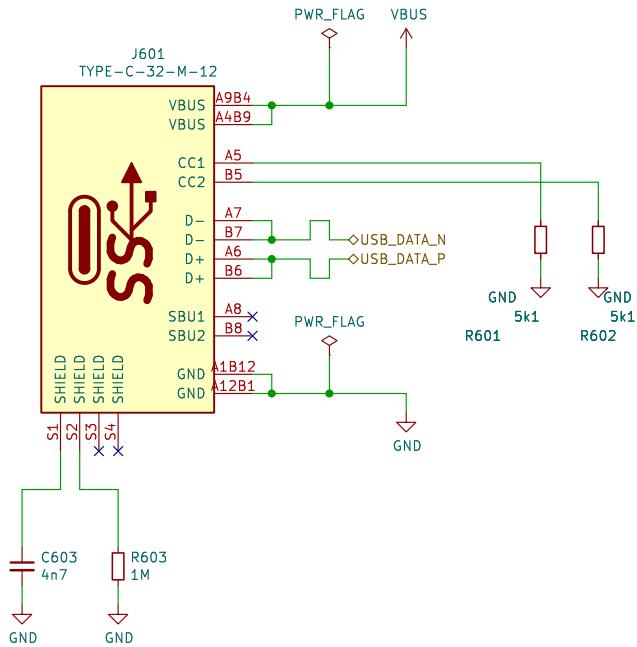
Sheet: /MCU/Sheet60F06FE1/  
File: USB\_POWER.kicad\_sch

Title:

Size: A4 Date: Rev:

KiCad E.D.A. kicad-cli 7.0.11+1 Id: 9/10

ESD protection for all of the externally accessible nets.



<b>Title:</b>		
Size: A4	Date:	Rev:
KiCad E.D.A. kicad-cli 7.0.11+1		Id: 9/10

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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. kicad-cli 7.0.11+1		Id: 10/10