

Arrow SmartEverything Lion

21 May 2016 Rev 0.1

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		Designed by	C.Pino
		Checked by	C.Pino
		Approved by	C.Pino
Title Arrow SmartEverything Lion			
Size A3	Document Number AX_P1600124R0	Rev 0.1	
Date: Sunday, April 23, 2017		Sheet	1 of 9

1 2 3 4 5 6 7 8

Vers.	Date	Author	Description	PCB Ver
0.0	02 May 2016	C.Pino	First release	0
0.1	21 May 2016	C.Pino	R50: 0R --> DNP	0

A

B

C

D

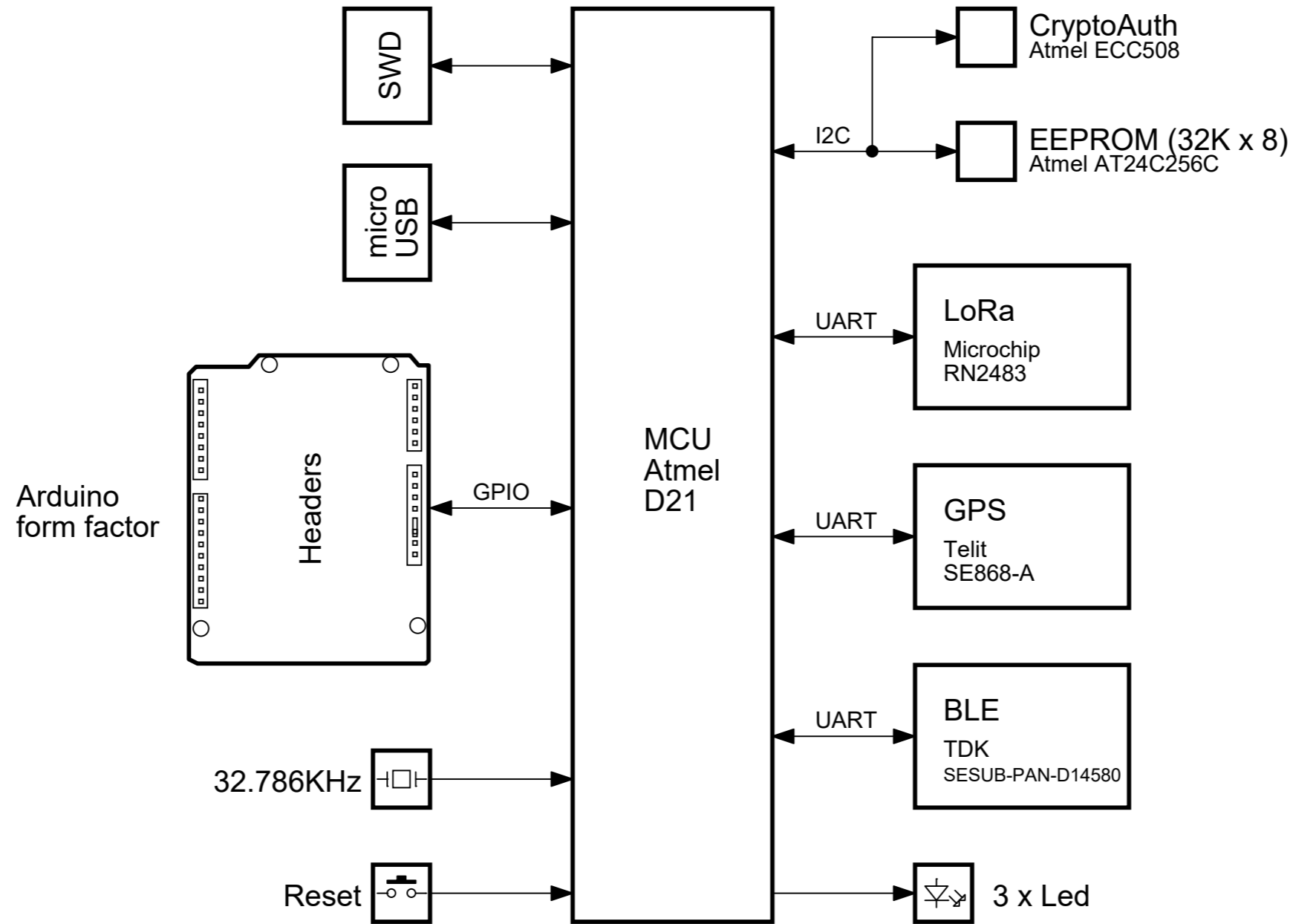
E

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1 2 3 4 5 6 7 8

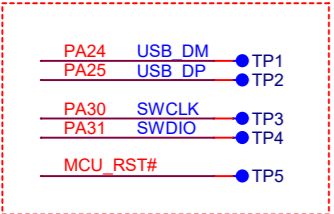
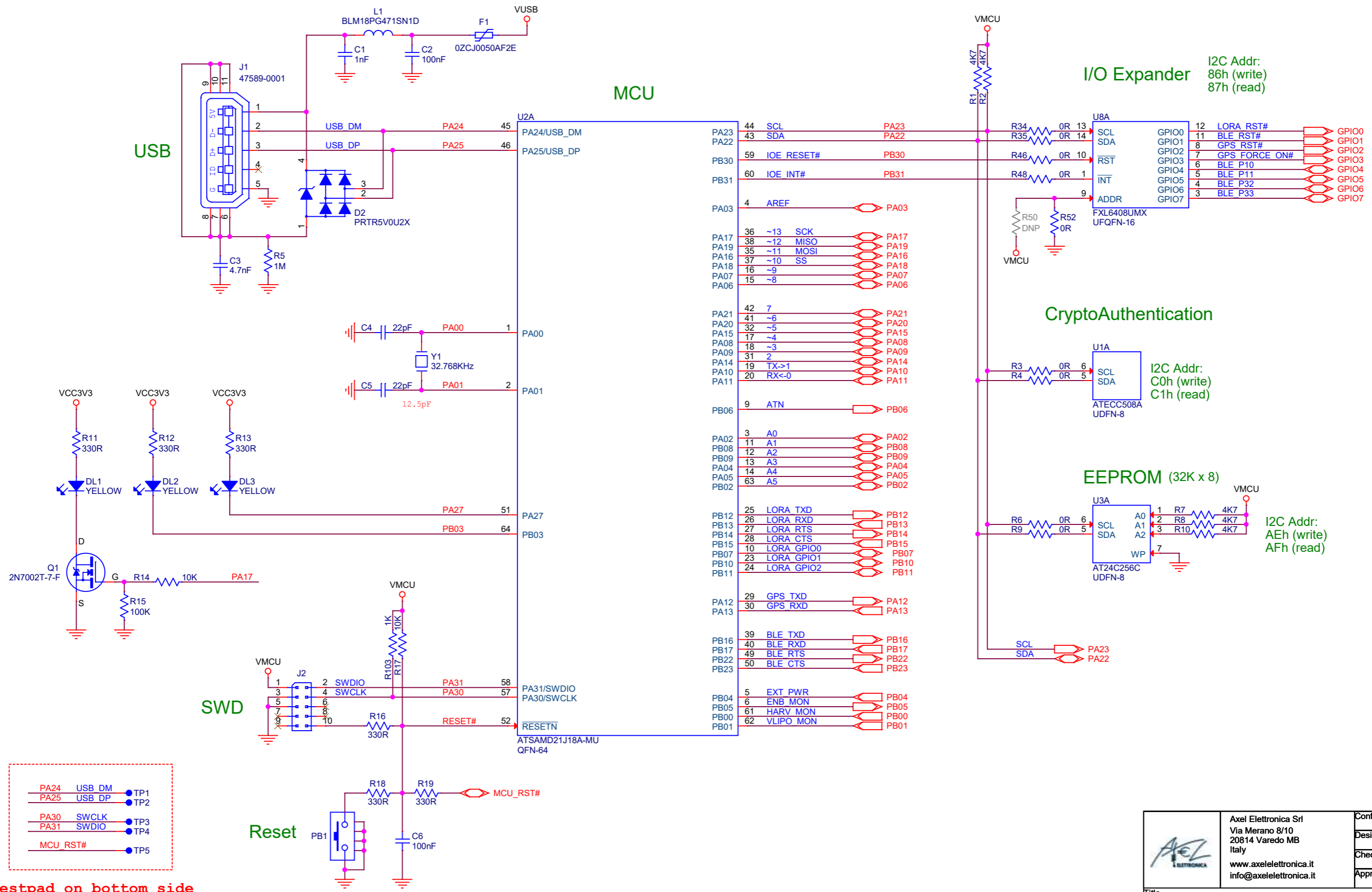
Block Diagram



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MCU

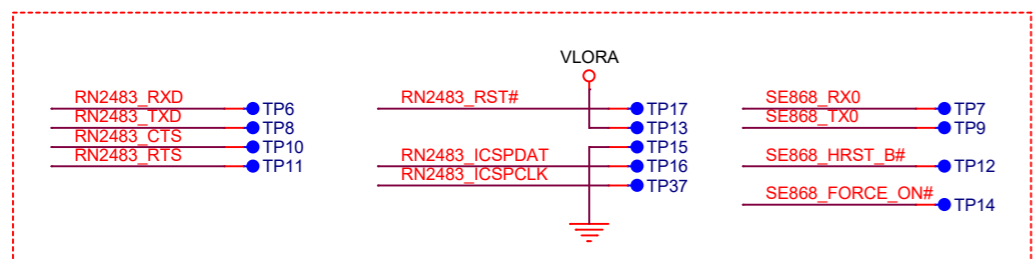
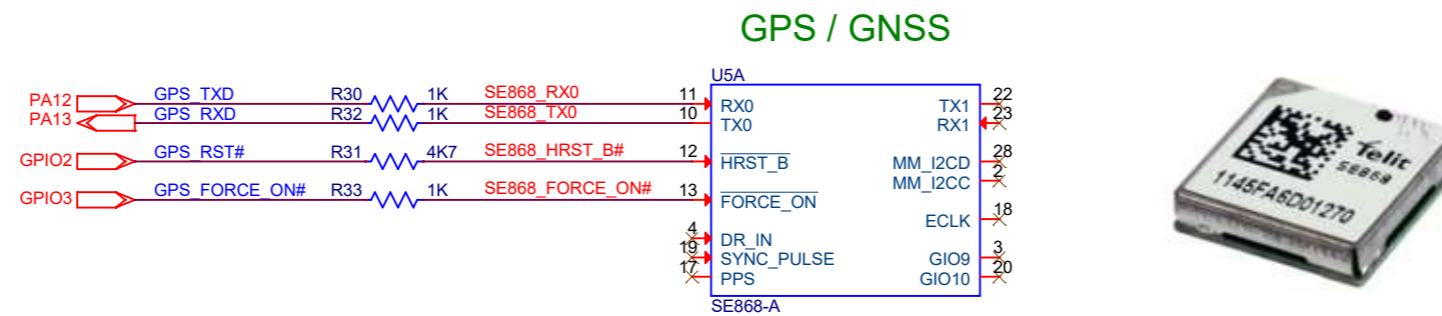
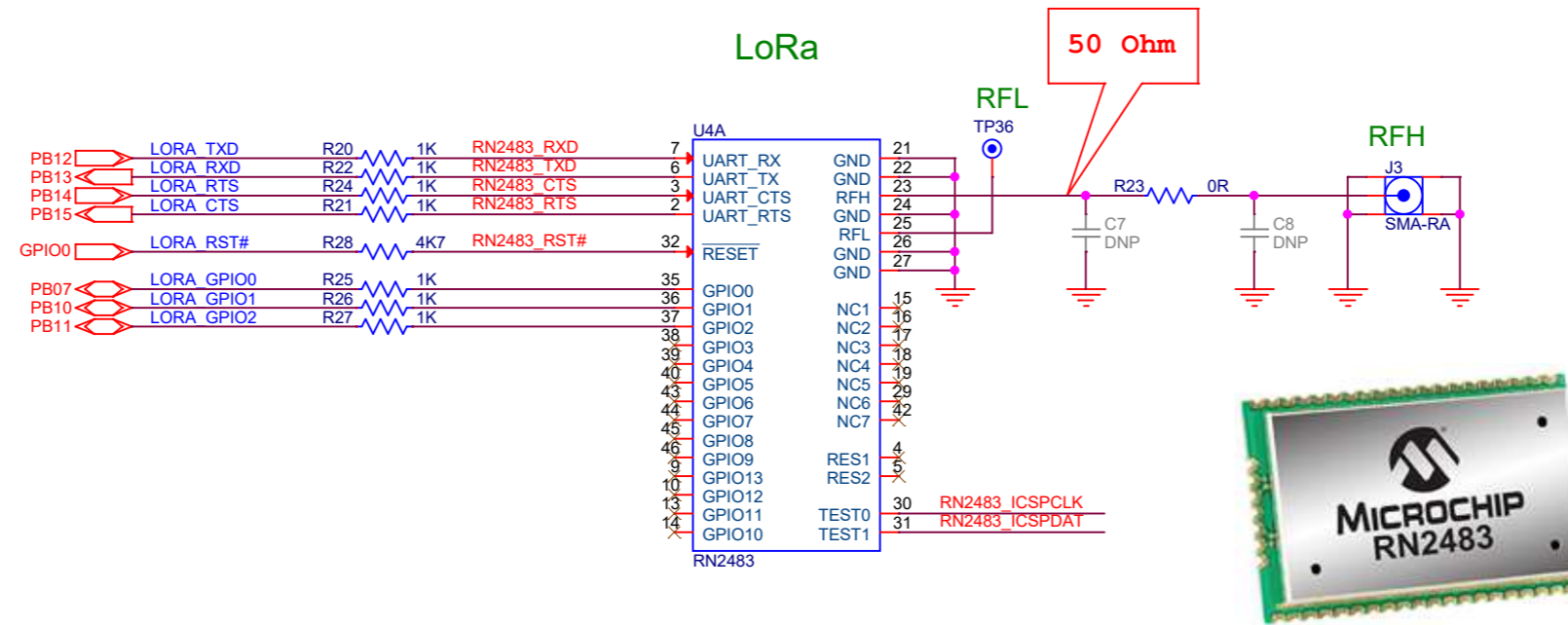
MCU



Testpad on bottom side

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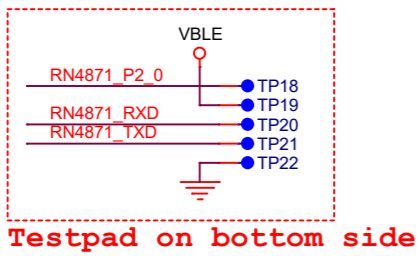
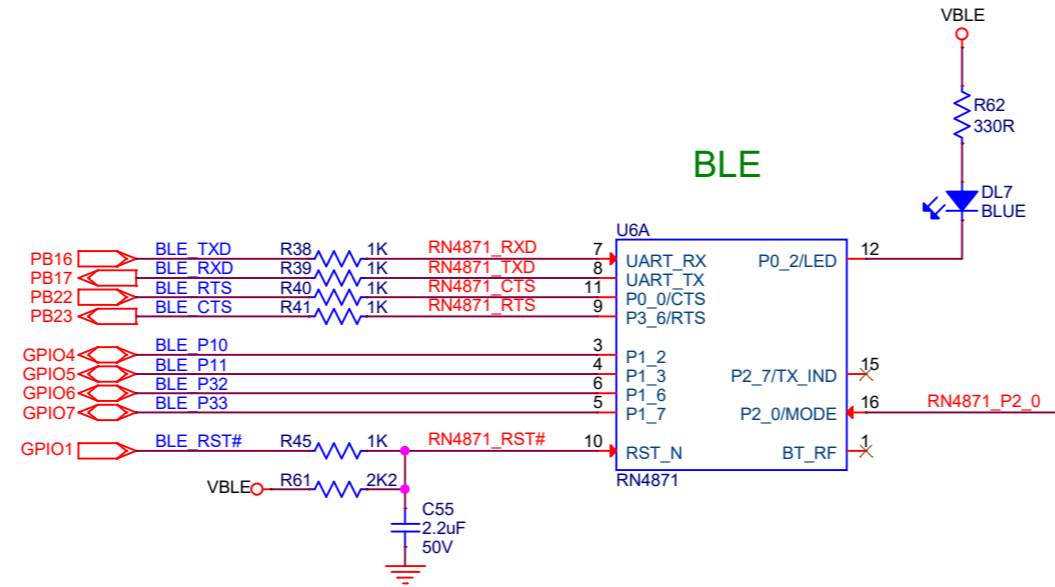
LoRa & GNSS



Testpad on bottom side

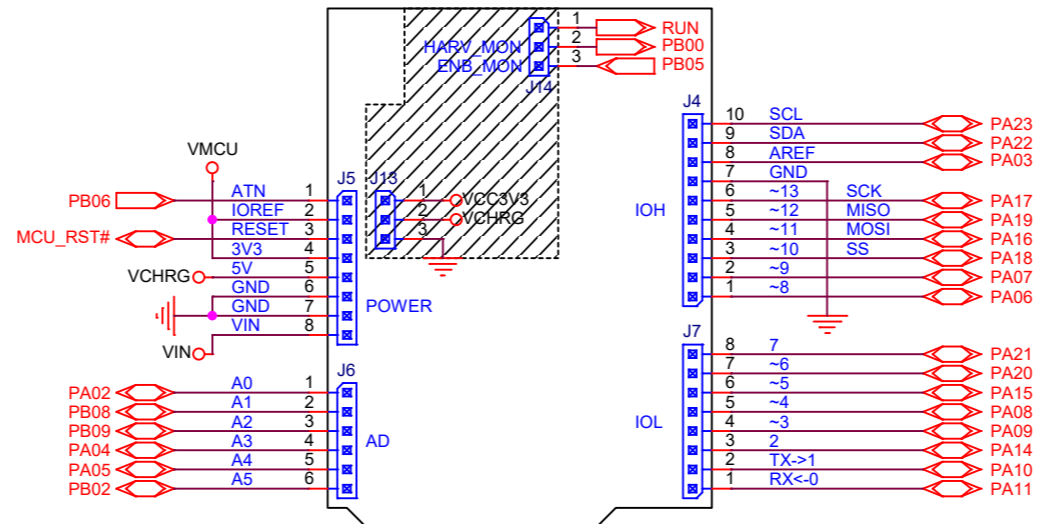
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BLE & Headers



Testpad on bottom side

Headers



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Power Supply

USB Power Manager with High Voltage Switching Charger

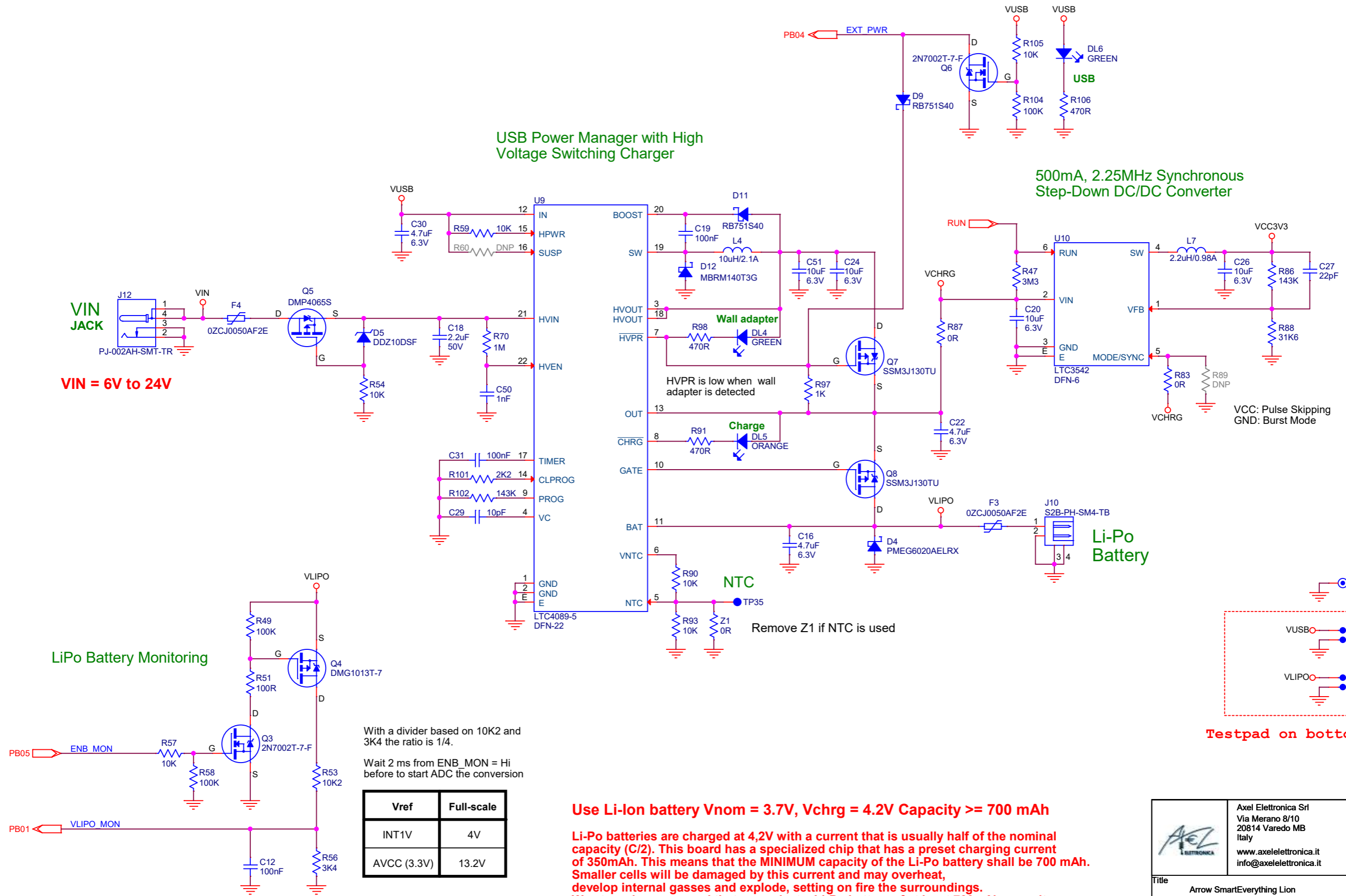
500mA, 2.25MHz Synchronous Step-Down DC/DC Converter

VIN JACK

VIN = 6V to 24V

LiPo Battery Monitoring

Li-Po Battery



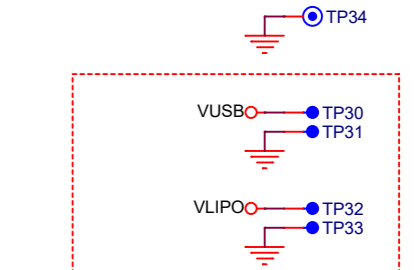
With a divider based on 10K2 and 3K4 the ratio is 1/4.

Wait 2 ms from ENB_MON = Hi before to start ADC the conversion

Vref	Full-scale
INT1V	4V
AVCC (3.3V)	13.2V

Use Li-Ion battery Vnom = 3.7V, Vchrg = 4.2V Capacity >= 700 mAh

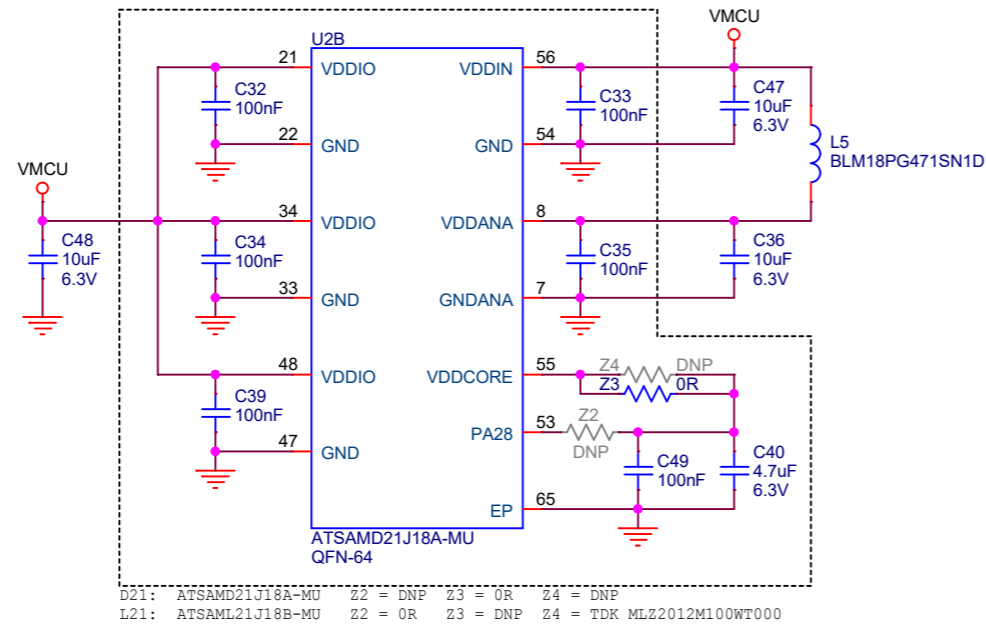
Li-Po batteries are charged at 4.2V with a current that is usually half of the nominal capacity (C/2). This board has a specialized chip that has a preset charging current of 350mAh. This means that the MINIMUM capacity of the Li-Po battery shall be 700 mAh. Smaller cells will be damaged by this current and may overheat, develop internal gasses and explode, setting on fire the surroundings. We strongly recommend that you select a Li-Po battery of at least 700mAh capacity. A bigger cell will take more time to charge, but won't be harmed or overheated.



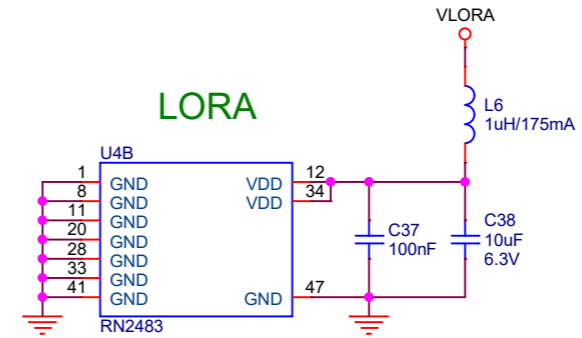
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IC's Power

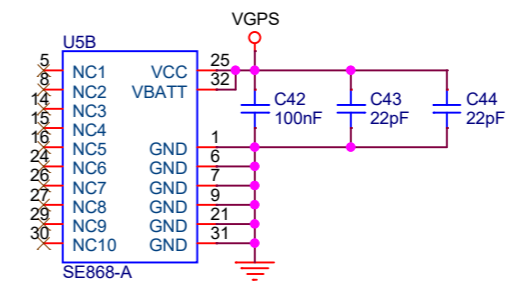
MCU



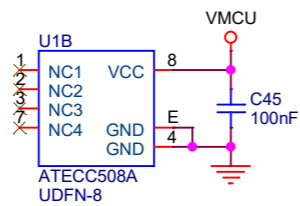
LORA



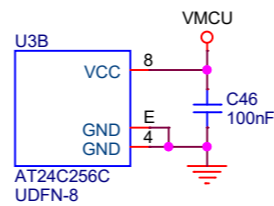
GPS / GNSS



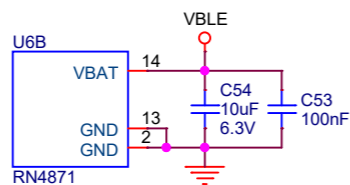
CryptoAuthentication



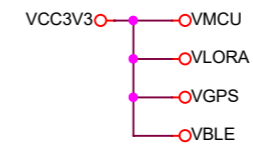
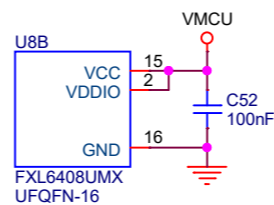
EEPROM



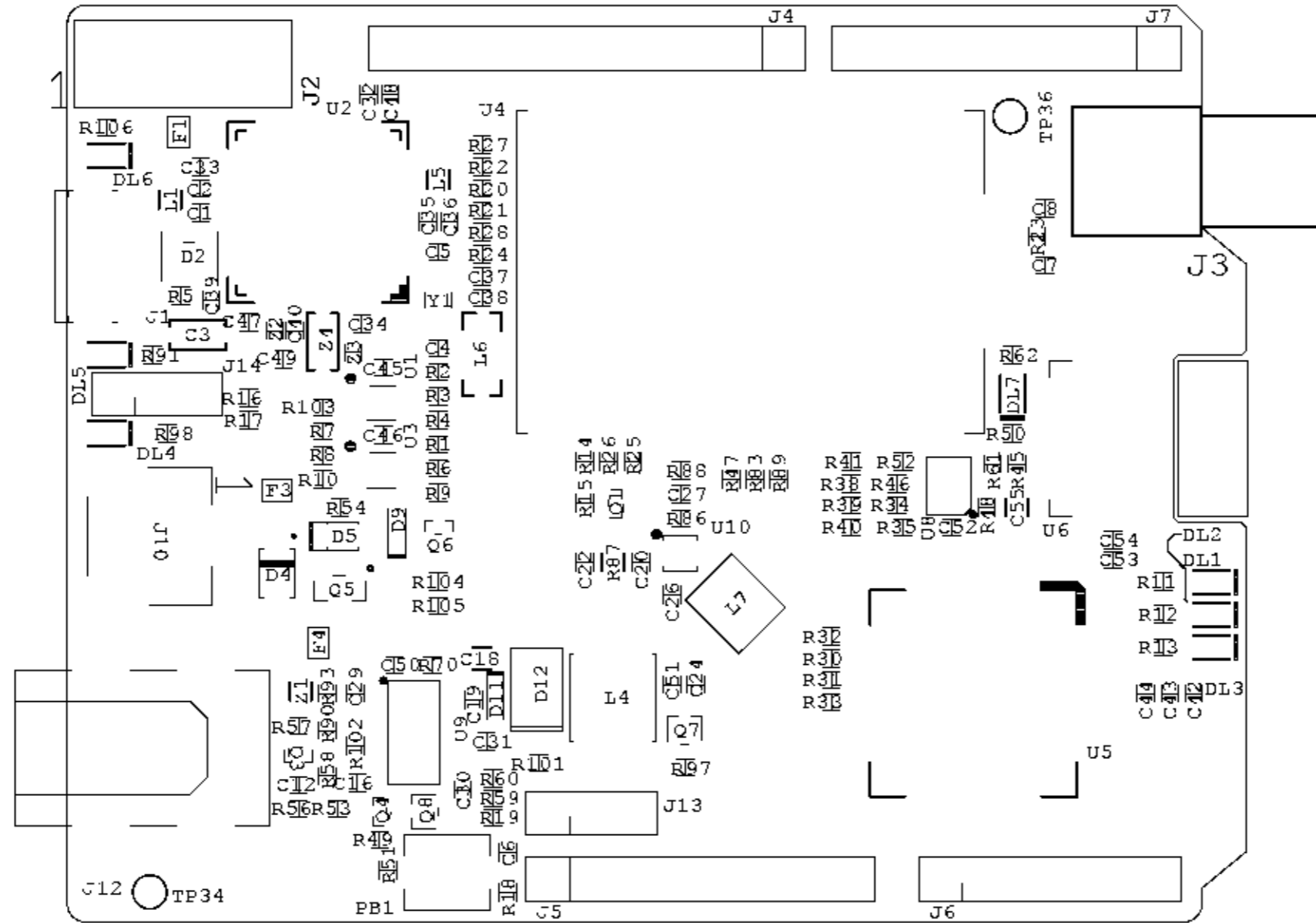
BLE



I/O Expander



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