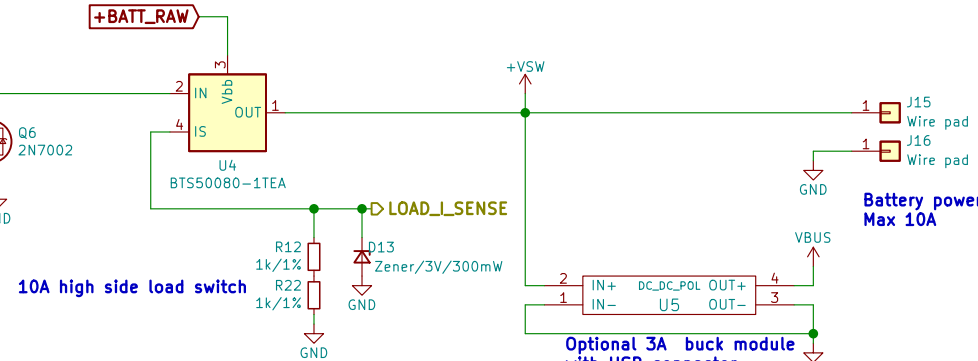


Main battery input  
5.5 – 30VDC

SENSE is connected to the STM32 and give status of AUTOBOOT/SENSE information. The MCU uses either a falling edge IRQ or polling to get status of autoboot (connected / disconnected) The 3.3V regulator starts automatically when the jumper is connected, thanks to the edge detector (C/R)



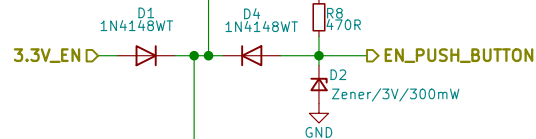
10A high side load switch

R<sub>LIS</sub> selection :  $I_{LIS} = 6\text{mA max}$   
In normal conditions,  $I_{LIS} = I_{load} / 10000$   
=> with  $R_{LIS} = 2\text{k}$ ,  $I_{load} = 10\text{A}$  gives 2V.  
The Zener clamps voltage to 3V (error conditions =>  $I_{LIS} = 5.2\text{mA}$ )

Battery power output.  
Max 10A

Optional 3A buck module  
with USB connector

R8 selection :  
Zener current : 5mA min, 100mA max  
470R :  
5mA with VBat = 5.5V  
57mA with VBat = 30V

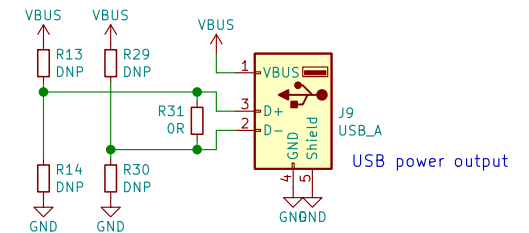


The MCP16331 has an internal pull up on the EN pin.

On startup, R1 pulls EN low (system Off)

When the push button is pressed, the Zener is powered and the EN pin gets high through D1 => system On.

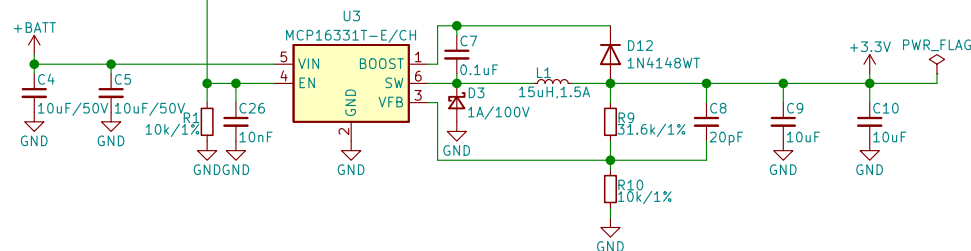
The uC gets powered and can now controls the system state with the 3.3V\_EN line.  
It can also monitor future states of the push button.



USB power output

For most newer devices, a 0R resistor between D+ and D- should be enough to indicate that the port can supply up to 1.5A.

Older Apple devices may need specific voltage dividers on D+/D- lines.  
Check <https://lygte-info.dk/info/USBinfo%20UK.html>



Sheet: /Power/  
File: power.sch

Title:

Size: A4  
KiCad E.D.A. kicad 5.1.10

Date: 2019-04-05

Rev: 2.0

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