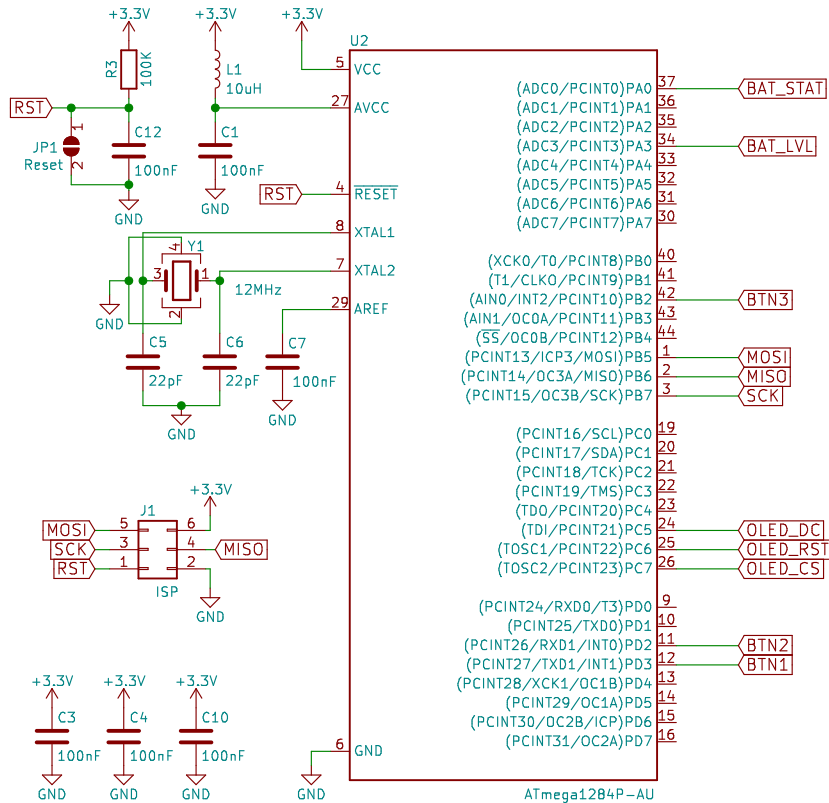
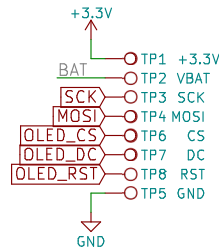


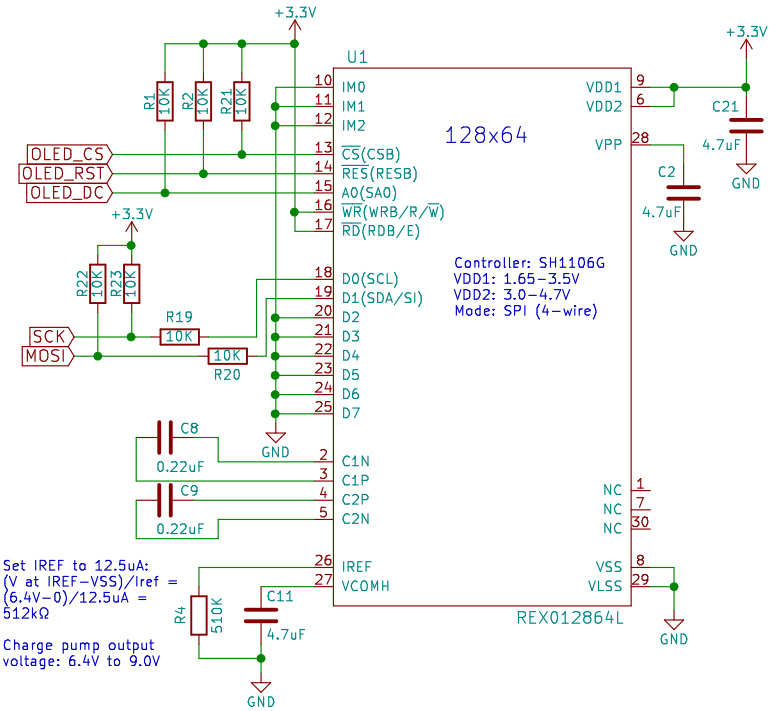
## MCU (128 KIB flash, 16 KIB SRAM, 4KIB EEPROM)



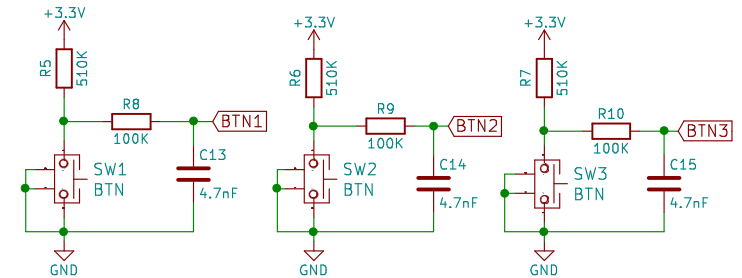
## Test Points



## OLED display



## Control Buttons



## Power supply

This circuit produces 3.3V and charges a battery when connected to USB.

This can be done by providing a 5V USB (~4.6V after a voltage drop on 1N5819) to fill needs of the whole circuit via AP3401 and charge a single-cell 3.7V Li-Ion battery using MCP73831 (MOSFET is closed).

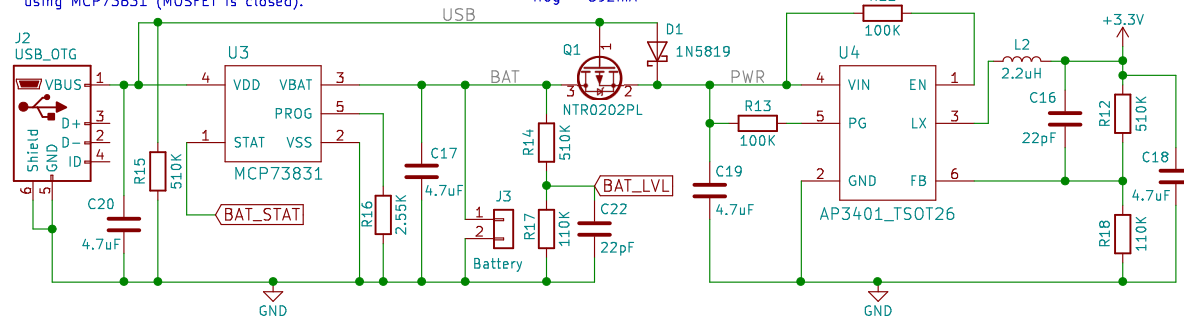
Regulator of the battery charge current:

$I_{reg} = 1000V/R_{prog}$ , where  
 $I_{reg}$  – charge current, in mA  
 $R_{prog}$  – resistor value, in kOhm.

$R = 1000/400 = 2.5k\Omega$ ,  
 Standard value is 2.55 kOhm (1%),  
 $I_{reg} = 392mA$

Output resistor divider:

$R_{top} = R_{bot} * (V_{out} / 0.6 - 1)$   
 $= (110 * 10^3) * (3.3 / 0.6 - 1)$   
 $= 510 k\Omega$



Designed by Dmitry Salychov <ds@mcusim.org>, CERN-OHL-W-2.0

Sheet: /  
 File: xling.sch

Title: Schematic of Xling, a pocket demon

Size: A4 Date: 2020-09-12

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Rev: 4

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