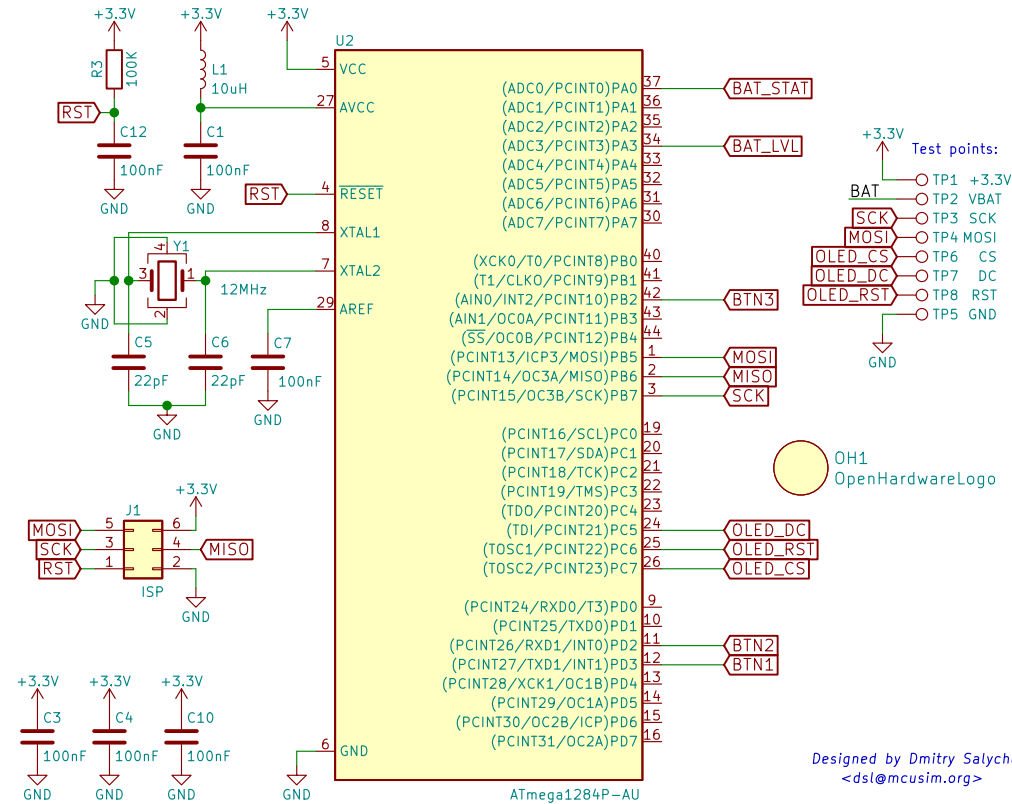
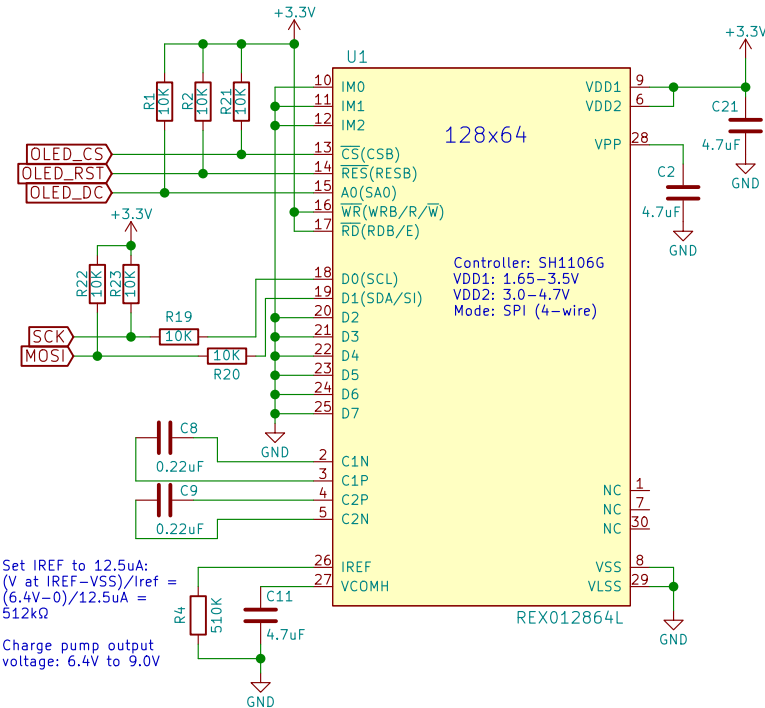


MCU (128 KiB flash, 16 KiB SRAM, 4KiB EEPROM)

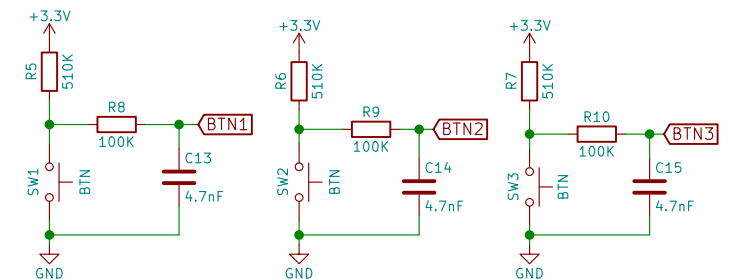


Designed by Dmitry Salychev
<ds1@mcusim.org>

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:

$$I_{reg} = 1000V / R_{prog}$$

I_{reg} - charge current, in mA
 R_{prog} - resistor value, in kOhm.

$$R = 1000 / 400 = 2.5k\Omega$$

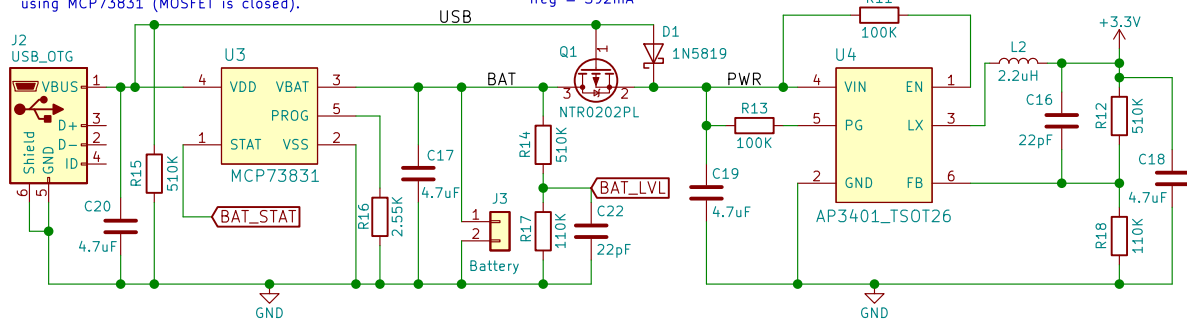
Standard value is 2.55 kOhm (1%).
 $I_{reg} = 392mA$

Output resistor divider:

$$R_{top} = R_{bot} * (V_{out} / 0.6 - 1)$$

$$= (110 * 10^{-3}) * (3.3 / 0.6 - 1)$$

$$= 510 k\Omega$$



Sheet: /	
File: xling.sch	
Title: Xling, a tamagotchi-like toy	
Size: A4	Date: 2020-03-21
KiCad E.D.A. kicad 5.1.5-52549c584ubuntu18.04.1	Rev: 3.2
	Id: 1/1