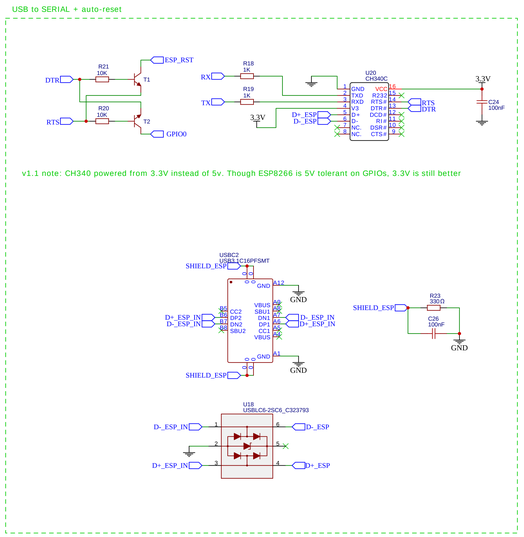
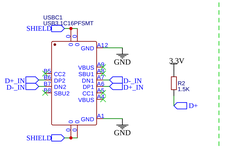
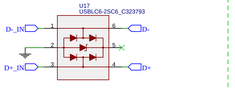
USB to SERIAL + auto-reset

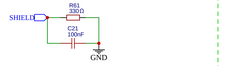


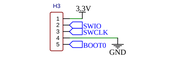
v1.1 note: CH340 powered from 3.3V instead of 5v. Though ESP8266 is 5V tolerant on GPIOs, 3.3V is still better

STM32 USB

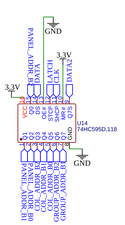




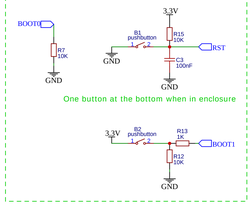




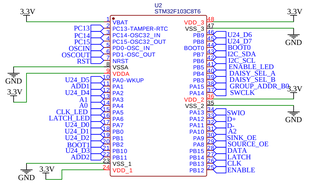
For micro fuse use C843270 holder
1A fuse recommended, 2A max (C151091)



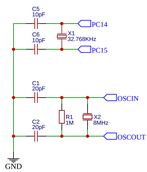
Flashing + Reset toggles



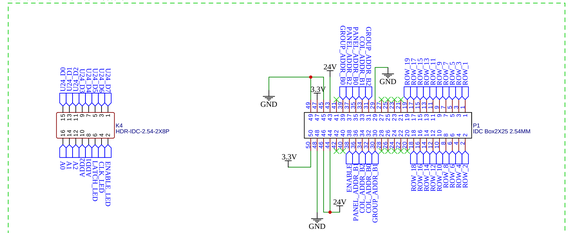
One button at the bottom when in enclosure



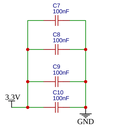
STM32F103C6T6 can also be used but without USB functionality and some features disabled (won't fit in flash memory)
STM32F100 series can be also used but doesn't support USB

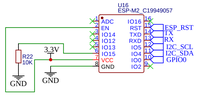


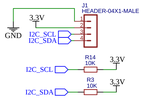
LED and FLIP-DOT connectors



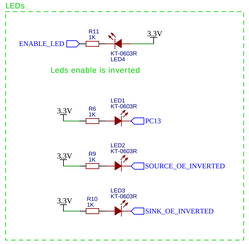
Alternatives: C429960 and C601945
LCSC C358753 and C9044 can be also used if you're into fancy connectors. No real advantage using them though.



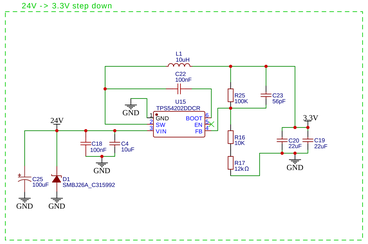




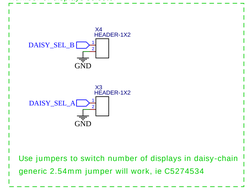
LEDs



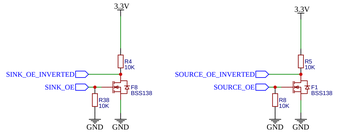
24V -> 3.3V step down



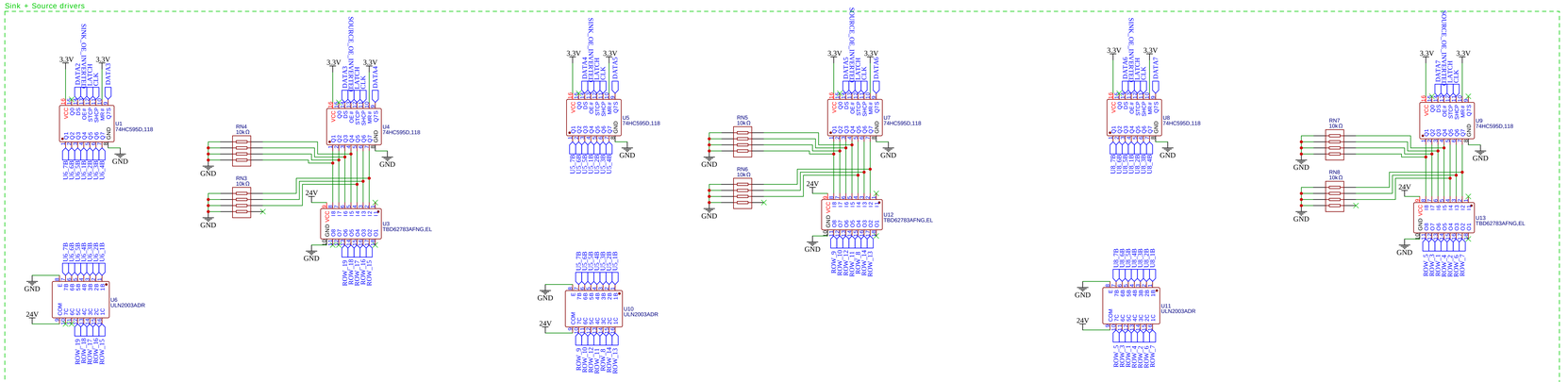
Number of displays selector



Use jumpers to switch number of displays in daisy-chain
generic 2.54mm jumper will work, ie C5274534



Sink + Source drivers



This part is critical, controls the electromagnets with high current surges, any solder bridge or interminnent connection can cause magic smoke!
Cheaper chinese 595 shift registers like C79097 also work perfectly fine
Older TD62783AFNG can be used (available on aliexpress)
HT62783ARTZ (lcsc: C5143073) can also be used BUT but has two extra pins so check the datasheet! Those pins are disconnected and will just lay on the solder mask

TITLE: Flippity Control Board		REV: 2.1
EasyEDA	Company:	Sheet: 1/1
	Date: 2023-04-04	Drawn By: NiceThings