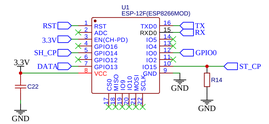
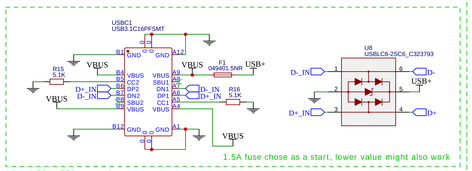


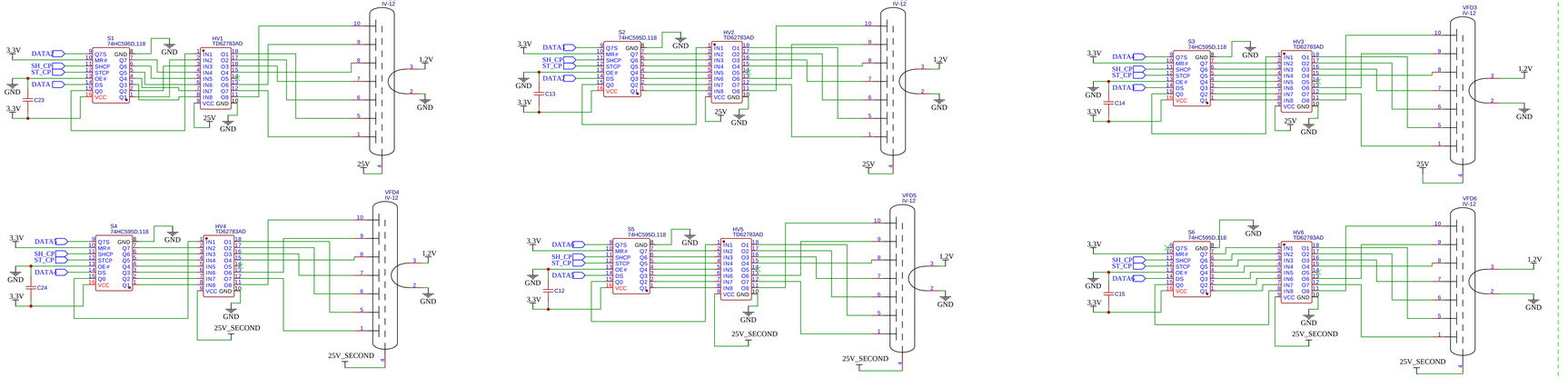
GPIO4, GPIO5 and GPIO12 are unused in the design and perfect for any use.



1.5A fuse chose as a start, lower value might also work

Micro USB + ESD protection

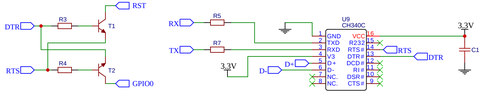
VFD + shift registers



TBD62783AFG (C97745) is a modern pin-compatible replacement with lower power consumption, recommended! Cheap chinese 1:1 clone XL62783 also available (C556260)

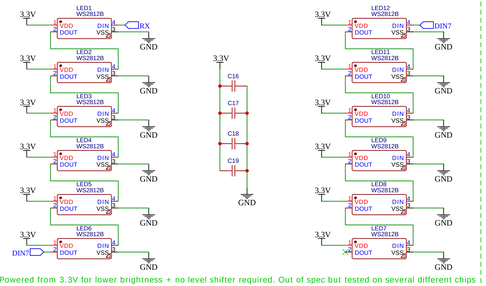
KID65783AF-EL/P (lcsc part no. C125259) can be also used but PCB change is required (20pin package vs 18pin package)

USB to SERIAL + auto-reset



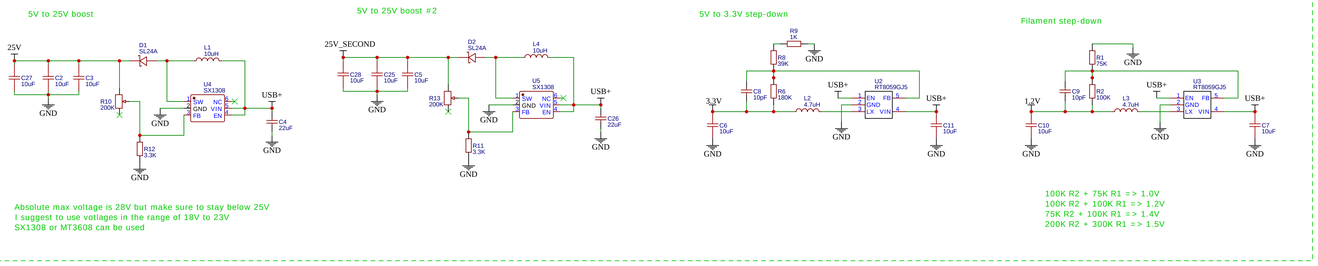
v1.1 note: CH340 powered from 3.3V instead of 5v. Though ESP8266 is 5V tolerant on GPIOs, 3.3V is still better

Colon leds



Powered from 3.3V for lower brightness + no level shifter required. Out of spec but tested on several different chips
Depending on exact chip used, you will have to adjust colors in the sketch
WS2812B are almost too bright. WS2812C (lcsc C114587) recommended for lower max brightness.

3.3V, 25V, 1.2V voltages



Absolute max voltage is 28V but make sure to stay below 25V
I suggest to use voltages in the range of 18V to 23V
SX1308 or MT3608 can be used

100K R2 + 75K R1 = > 1.0V
100K R2 + 100K R1 = > 1.2V
75K R2 + 100K R1 = > 1.4V
200K R2 + 300K R1 = > 1.5V

TITLE:	FLORA IV-12 VFD Clock	REV: 1.0
EasyEDA	Company:	Sheet: 1/1
	Date: 2020-03-14	Drawn By: NiceThings