

Programming/Interrupt(subsheet)

This subsheet encapsulates devices such as the USB–serial converter for programming, SD–card adaptor for initialization of the system as well as the quad AND gate used to drive an interrupt to detect keypresses by the user.

RST
OSC1
AREF
RX
TX

Programming signals

RESET
XTAL1
XTAL2
AREF
PE0
PE1

SD Card

D53_SS
D52_SCK
D51_MOSI
D50_MISO

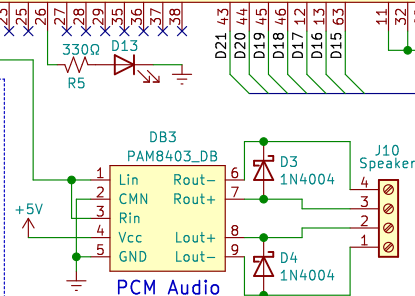
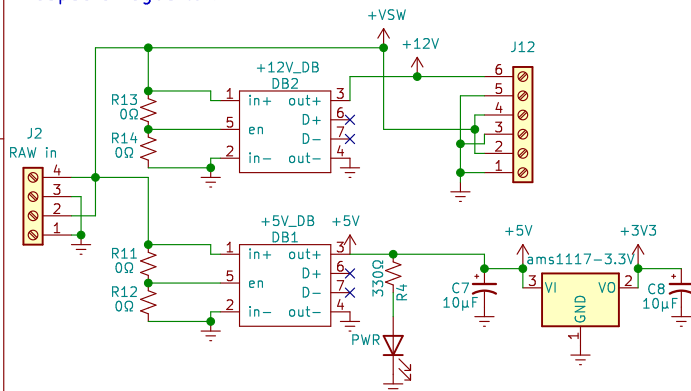
D[2..9]

Keypad signals

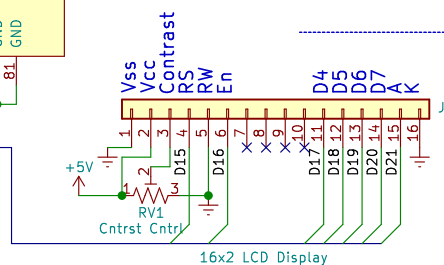
ROW4 D9 18
ROW3 D8 17
ROW2 D7 16
ROW1 D6 15
COL3 D5 5
COL2 D4 1
COL1 D3 7
Interrupt D2 6

Power rails:

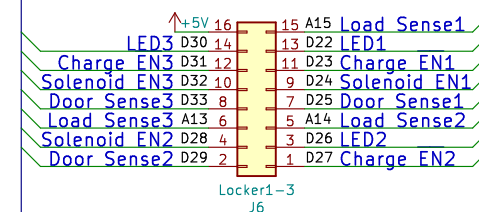
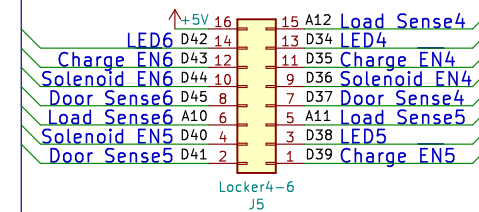
We receive unregulated 14V from the solar panels and buck it down to 12V for use with the solenoids, 5V for the MCU and other IC's and 3.3V for the USB–Serial converter. The unregulated voltage from the panels is also sent to each locker for it to be regulated down to 5V to charge connected phones. This mitigates the need of a very high current capable regulator.



Audio and visual innunciators to alert users.LCD will be used to show the user the locker they are working with and the amplifier will be connected to a speaker that will be used in states where the user needs to be alerted such as a door left open for a predetermined length of time.



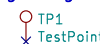
IDC connectors used to connect each locker to the motherboard. The signals are sent in groups of 3 lockers, and later decoded on the PCB for each locker.



Mounting Holes:
M2 screws, one on each corner provided to mount the PCB inside the station.



TP -> Place holder for SlugCharge Logo



Engineer: Aditya Sehgal

SlugCharge

Sheet: /

File: UI.kicad_sch

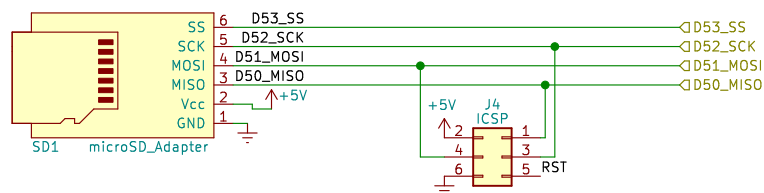
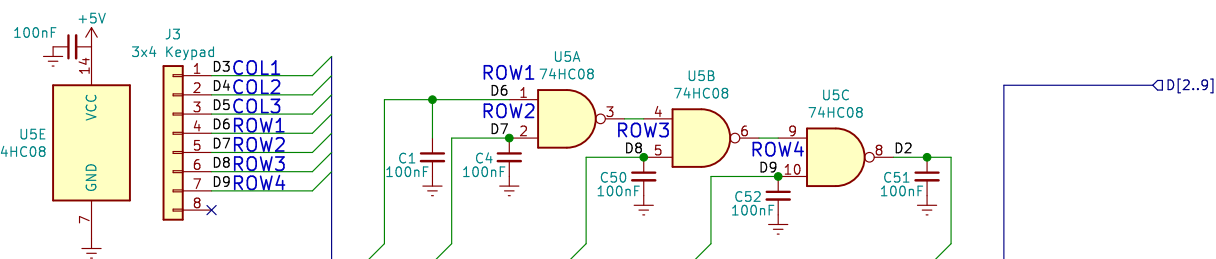
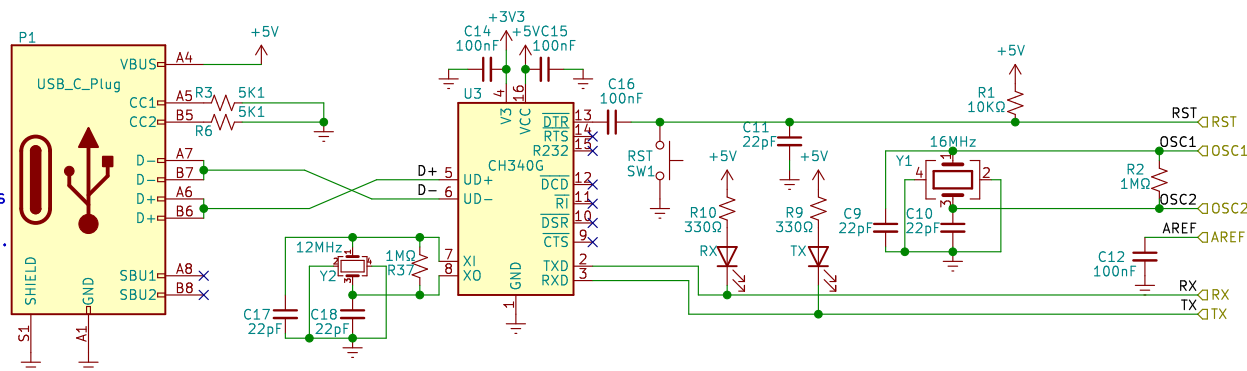
Title: SlugCharge Motherboard

Size: A4 Date: 2020-05-23

KiCad E.D.A. kicad (5.99.0-1662-g9db296991)

Rev: 4.1

Id: 1/2



Id: 2/2