Wheelchair controller - Mark III

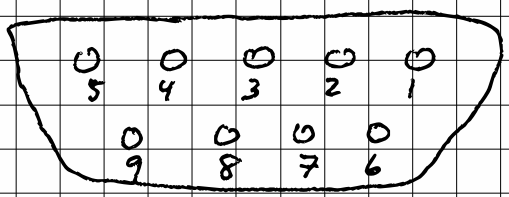
oct 24 2020

ESP32 GPIO mapping:

I35 - SW1 - ext pull-up		input
IO27 - SW2 - int pull-up		input
I34 - SW3 - ext pull-up		input
IO25 - SW4 - int pull-up		input
IO26 - Pi Power enable		output
IO14 - Fan enable		output
IO13 - One-wire temp		I/O

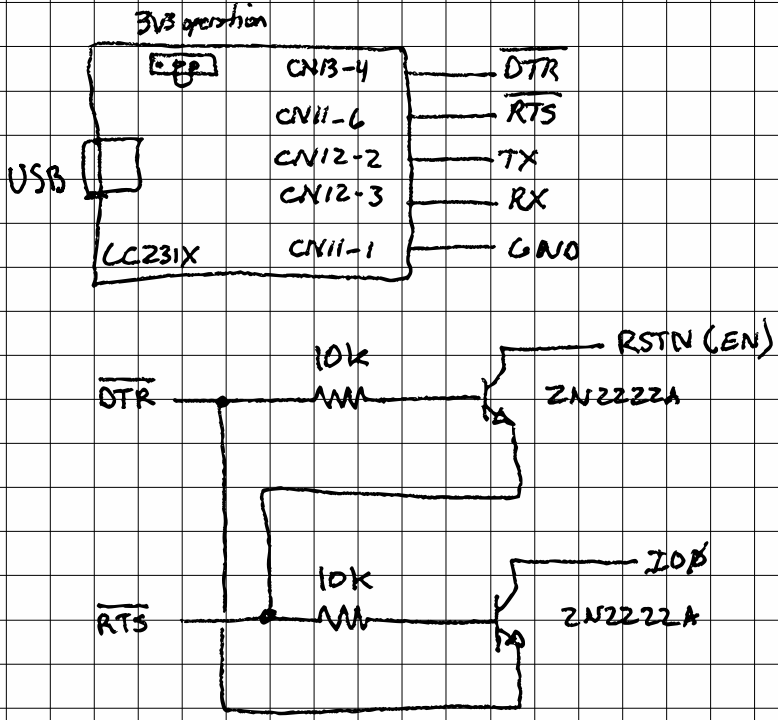
R-net relay outputs

Pin	Function	Mapping	
1	Forward	SW1	Audio
2	Reverse	SW2	Screen
3	Left	SW3	Inverter
4	Right	SW4	Spare
5	Speed Up		
6	Speed Down		
7	Horn	SW4	Pi/LED
8	COMMON		
9	N.C.		

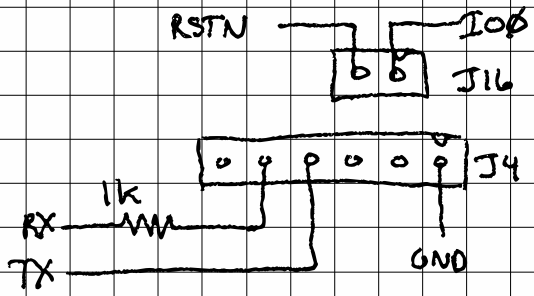


Female

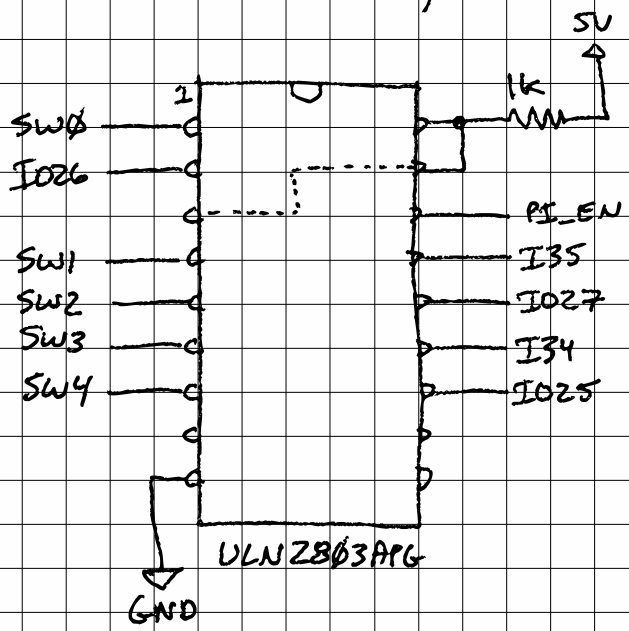
ESP32 Serial / Programming Interface



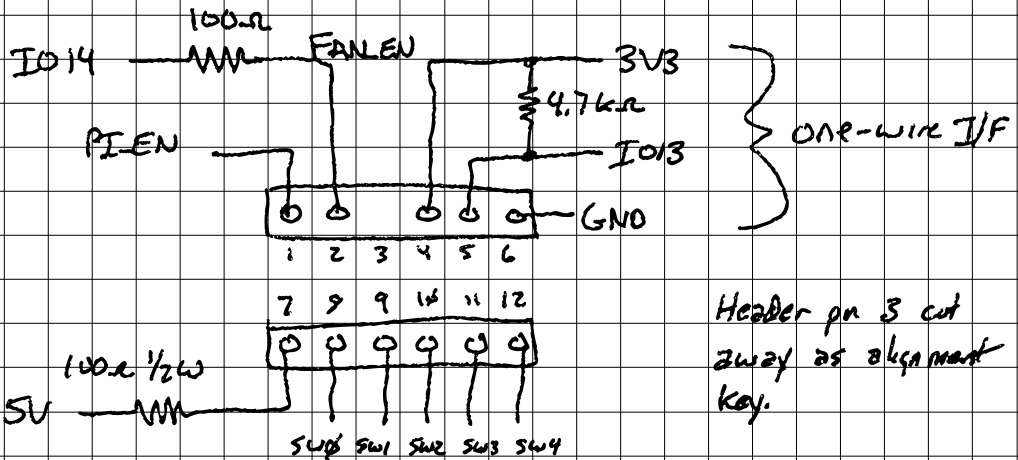
PRODINO Connections



Switch Circuitry



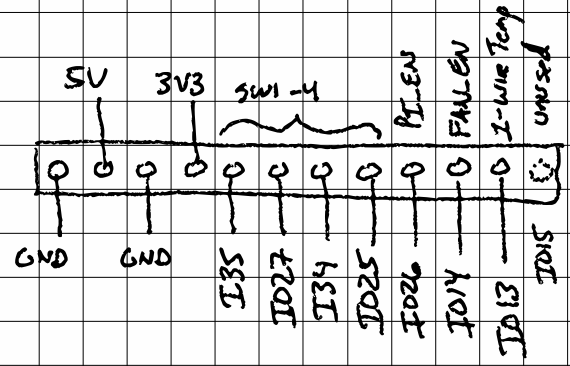
External Connection Header

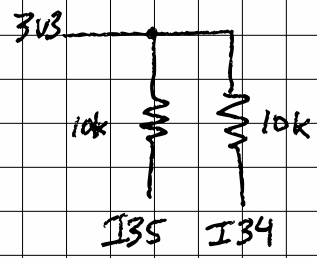


Header pin 3 cut away as alignment key.

Switch Circuitry (cont)

PROBINO Header connections

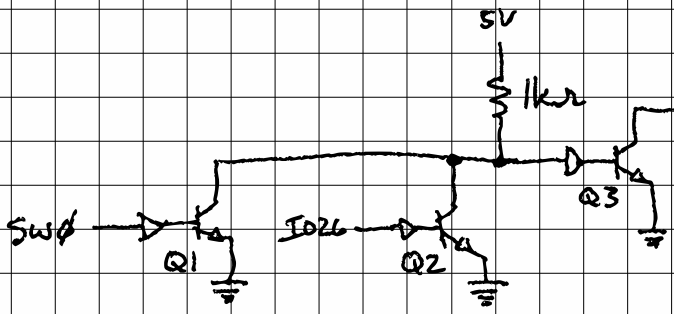




I34, I35 need ext pull-ups. IO25, IO27 can use built-in pull-ups

Pi power enable detail

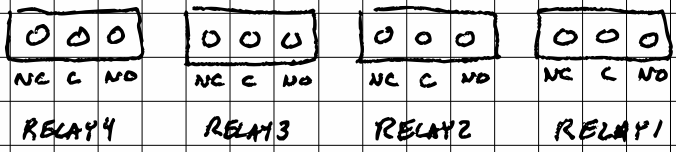
Showing logical OR of SW0 and IO26

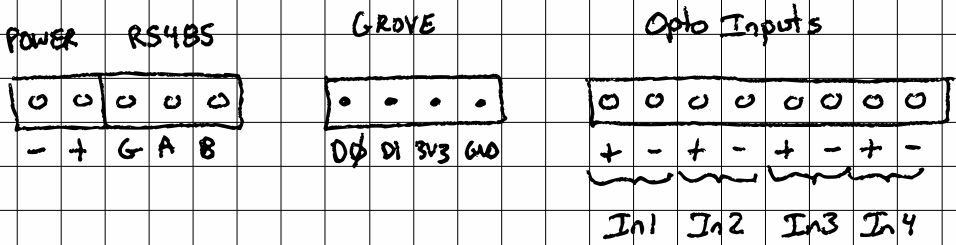


input to Cincon CQE5PW DC-DC converter ON/OFF input

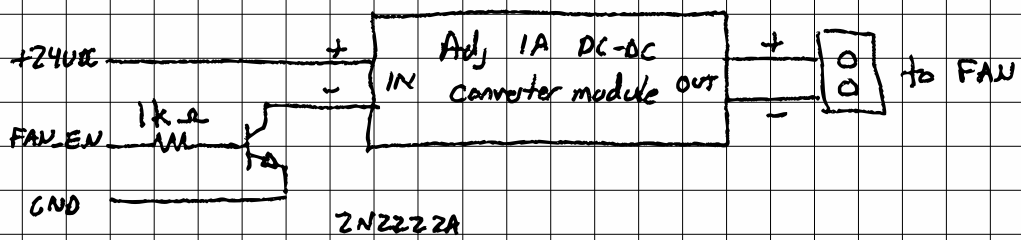
Either SW0 or IO26 high cause their associated transistor (Q1 or Q2) to turn on which pulls the input to Q3 low, turning it off and allowing PI_EN to be pulled high by the CQE5PW on/off input switching it on.

PRODINO ESP32 connections





FAN DC-DC (Chair 24VDC → Adjustable 12 V)



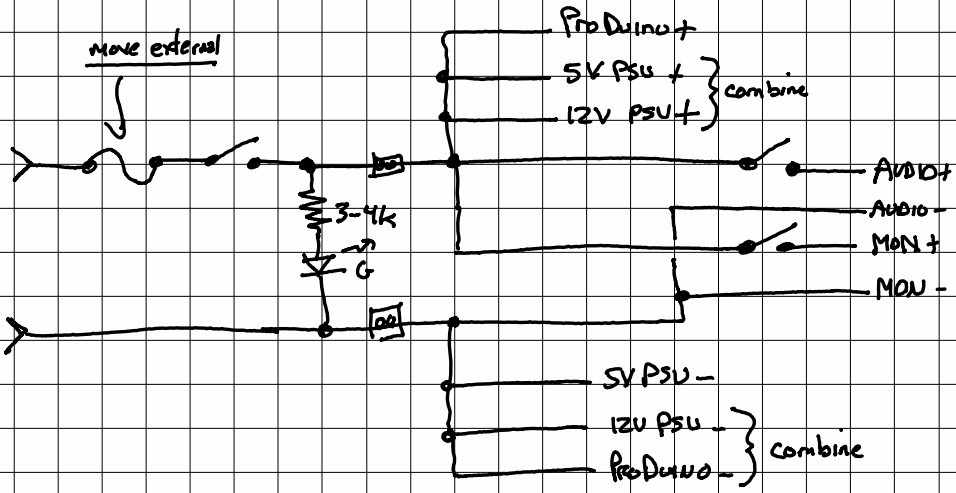
Connections

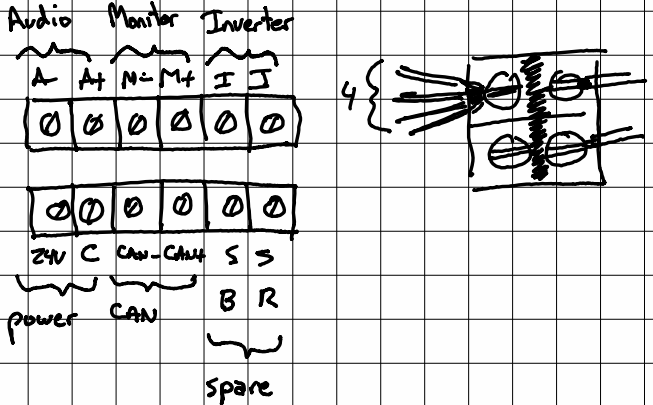
+24V DC
COMMON
CAN+
CAN-

AUDIO+
AUDIO C

MON+
MON C

INV-A
INV-B



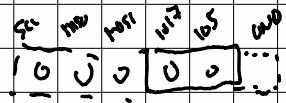


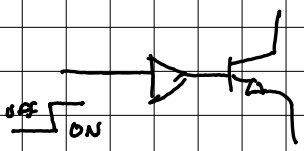
A+ A- M+ M- I I

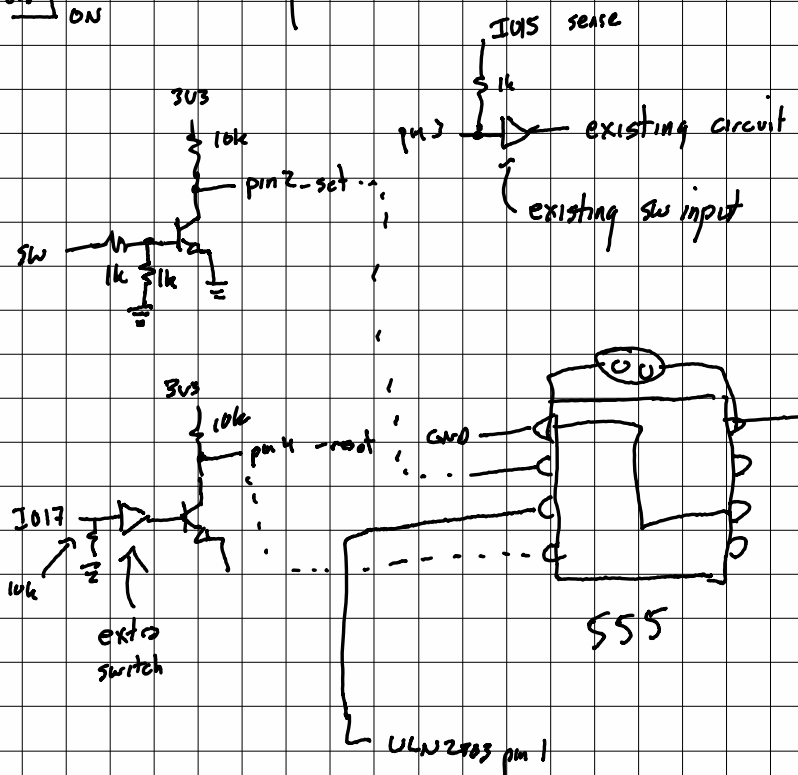
1-22-2021 Mods

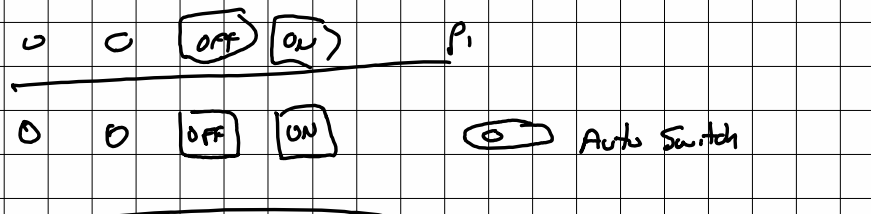
Relays pulse on - on, pulse off - off

P1 - Horn latches on









O<N> [=<V>] Output 0-5

A<N> [=<V>] Auto Enable { 0 Auto Fan, 1 Auto Switch

T<N> [=<V>] Temp (can only set 1) { 0 Fan, 1 setPoint

S<N> Cut Auto Enable { 0-5

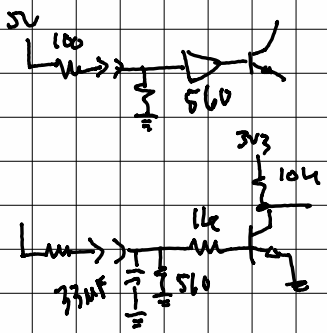
H

Arc Chat - clear on not visible & restart

Ctrl

1. Var for P1 Shutdown
2. P1 info string

Both into GUI



"pi1234"