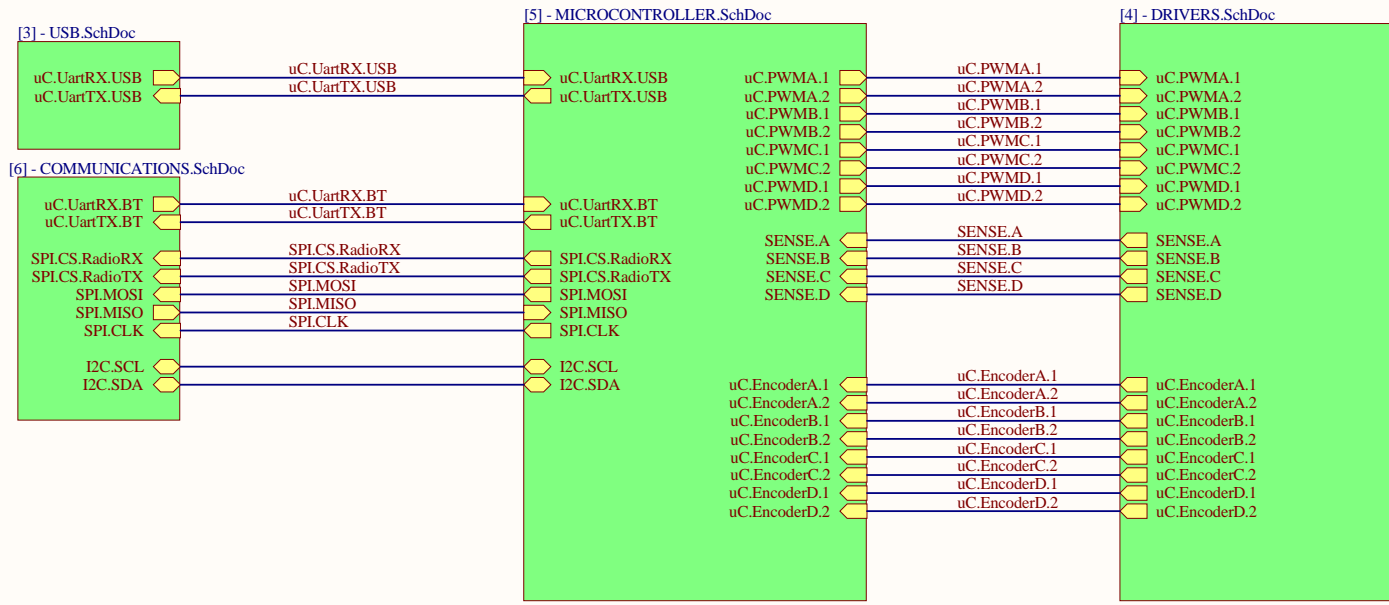


[1] - CONTROL BOARD



DESIGN CONSIDERATIONS

DESIGN NOTE:
Example text for informational design notes.

DESIGN NOTE:
Example text for cautionary design notes.

DESIGN NOTE:
Example text for debug notes.

DESIGN NOTE:
Example text for critical design notes.

LAYOUT NOTE:
Example text for critical layout guidelines.

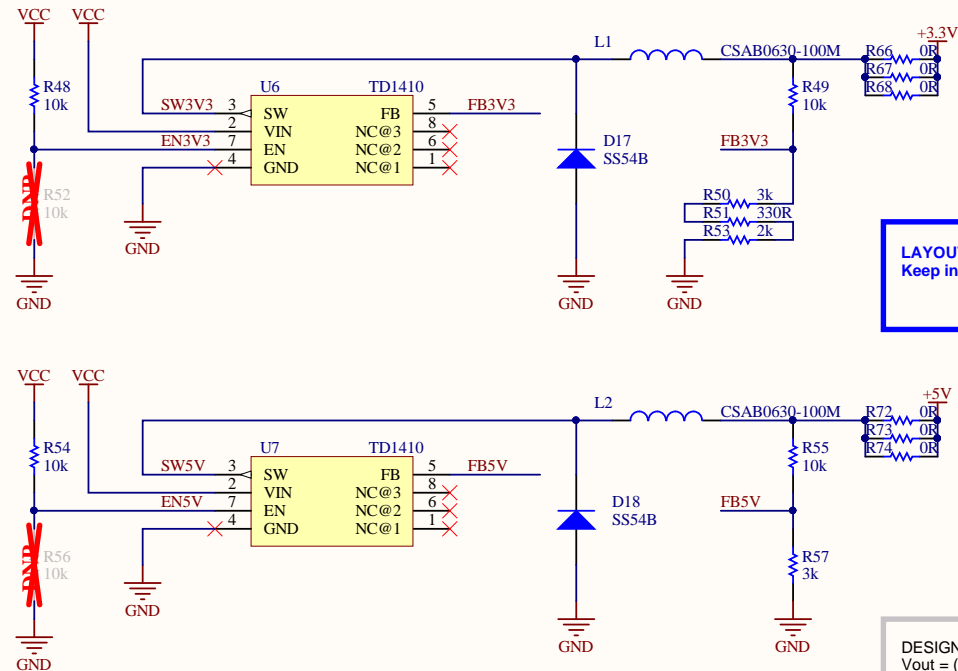
[2] - POWER.SchDoc

Revisão: **v1.0**



Title Control Board			Variant: <i>A</i>	GearLabs
Size: A4	Number: <i>001/2017</i>	Revision: <i>v1.0</i>	Drawn by: <i>Pedro Neves</i>	
Date: <i>11/20/2017</i>	Time: <i>11:14:45 AM</i>	Sheet <i>1</i> of <i>6</i>	Checked by: <i>Rafael Lang</i>	
File: <i>[1] - CONTROL BOARD.SchDoc</i>				

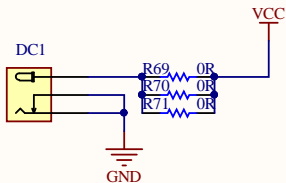
[2] - POWER



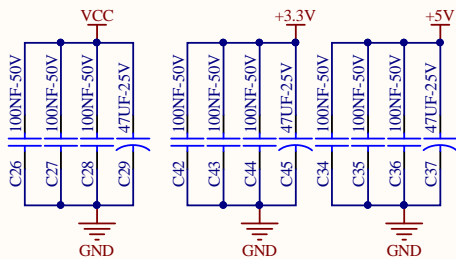
LAYOUT NOTE:
Keep inductors as close as possible.

DESIGN NOTE:
 $V_{out} = (1 + R_{out_adj}/R_{adj_gnd}) * 1.222V$

Power connector



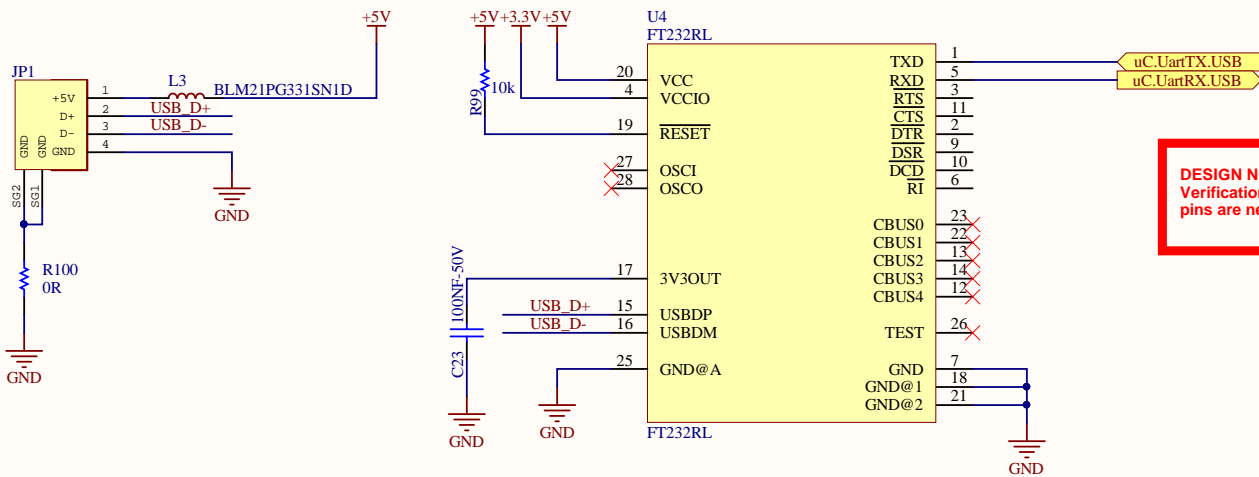
Decoupling caps



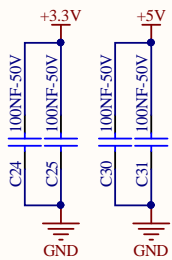
LAYOUT NOTE:
Distribute decoupling capacitor along the layout

Title Control Board			Variant: A	GearLabs
Size: A4	Number: 001/2017	Revision: v1.0	Drawn by: Pedro Neves	
Date: 11/20/2017	Time: 11:14:46 AM	Sheet 2 of 6	Checked by: Rafael Lang	
File: [2] - POWER.SchDoc				

[3] - USB



DESIGN NOTE:
Verification needed! Serial control pins are necessary?



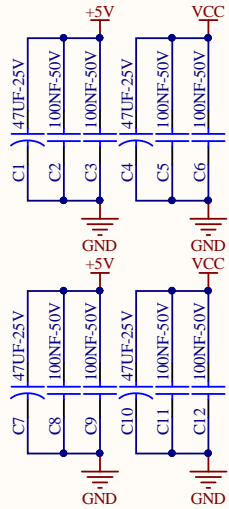
LAYOUT NOTE:
Distribute desacopling capacitor
along the layout

Title <i>Control Board</i>			Variant: <i>A</i>	GearLabs
Size: <i>A4</i>	Number: <i>001/2017</i>	Revision: <i>v1.0</i>	Drawn by: <i>Pedro Neves</i>	
Date: <i>11/20/2017</i>	Time: <i>11:14:46 AM</i>	Sheet <i>3</i> of <i>6</i>	Checked by: <i>Rafael Lang</i>	
File: <i>[3] - USB.SchDoc</i>				

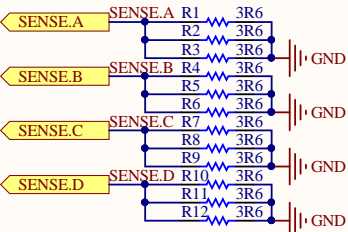
GearLabs

LAYOUT NOTE:
Distribute des耦pling capacitor
along the layout

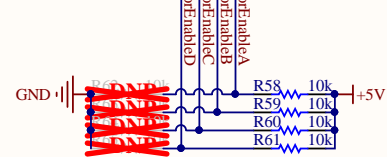
Decoupling caps



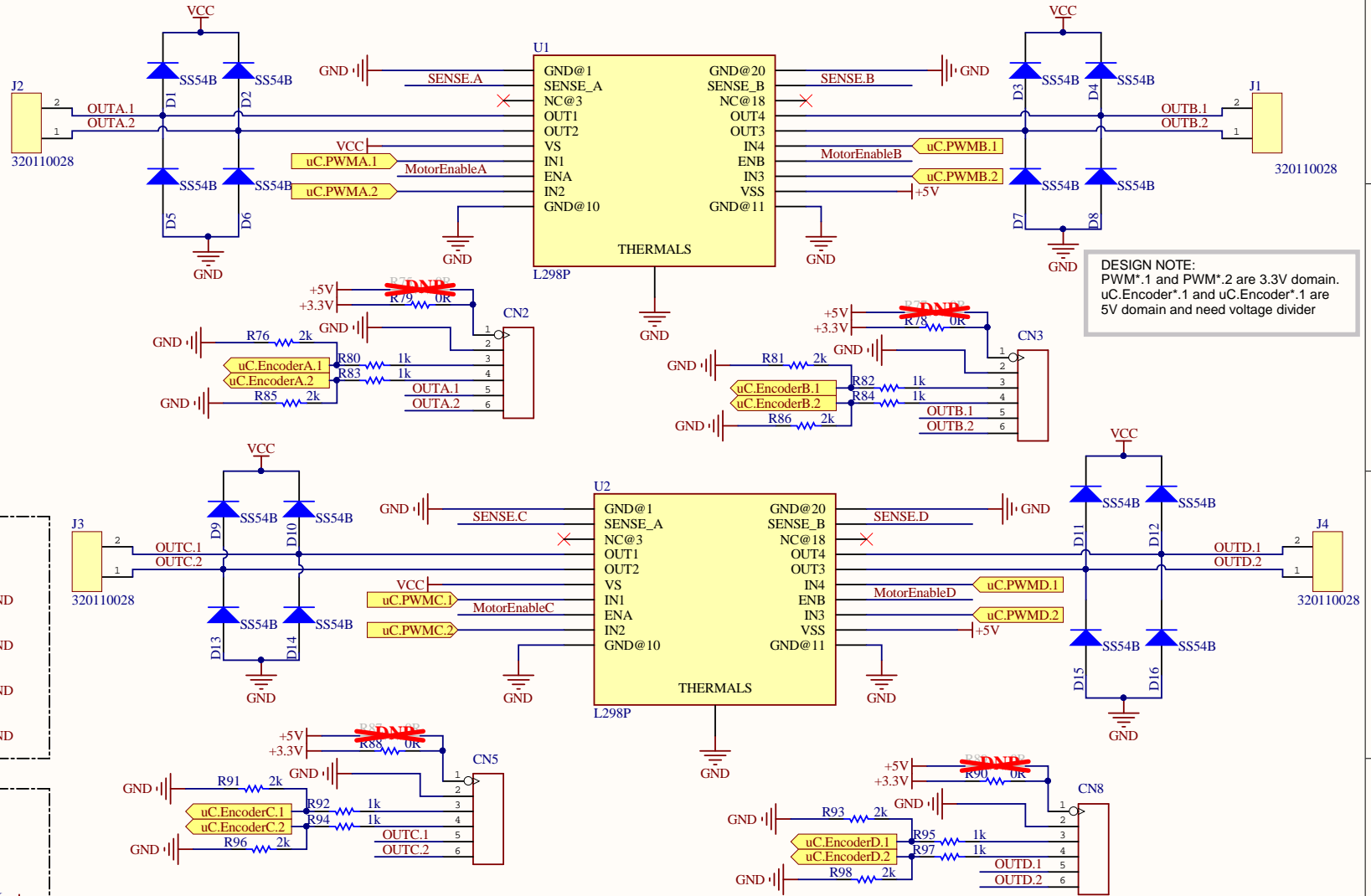
Sense



Motor Enable



[4] - DRIVERS



DESIGN NOTE:
PWM*.1 and PWM*.2 are 3.3V domain.
uC.Encoder*.1 and uC.Encoder*.1 are
5V domain and need voltage divider

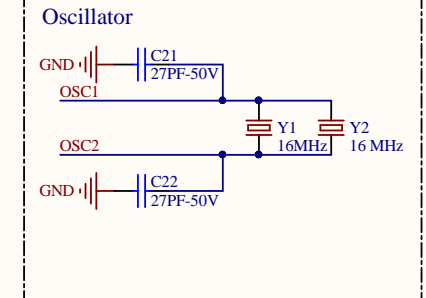
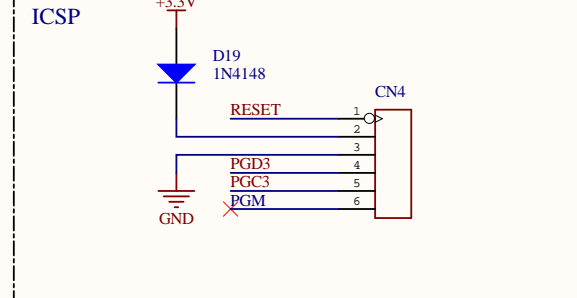
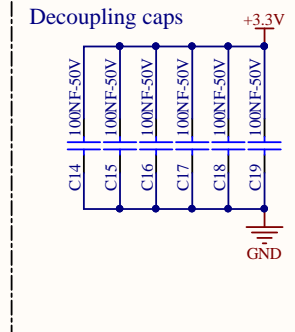
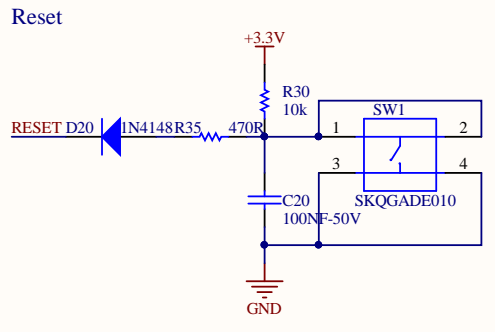
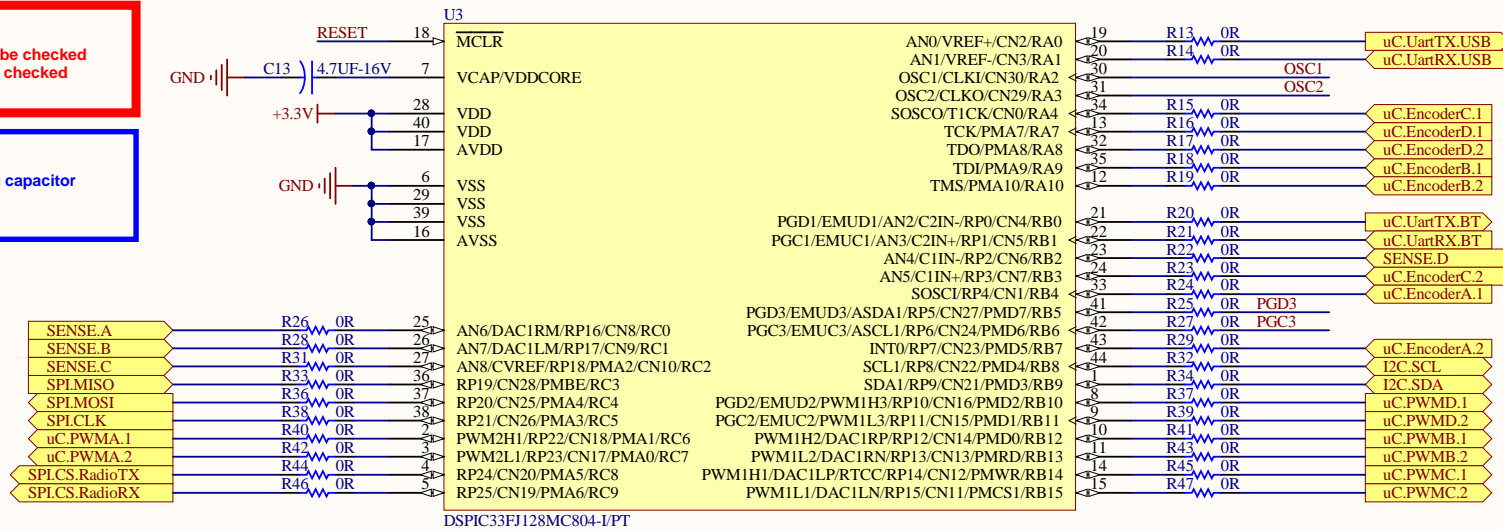
DESIGN NOTE:
Check motor enable pin.
Check encoder supply voltage

Title Control Board			Variant: A	GearLabs
Size: A4	Number:001/2017	Revision:v1.0	Drawn by: Pedro Neves	
Date: 11/20/2017	Time:11:14:46 AM	Sheet 4 of 6	Checked by: Rafael Lang	
File: [4] - DRIVERS.SchDoc				

[5] - MICROCONTROLLER

DESIGN NOTE:
ICSP circuitry need to be checked
DSPIC pins need to be checked

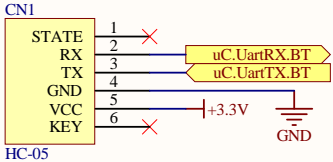
LAYOUT NOTE:
Distribute desacoupling capacitor
along the layout



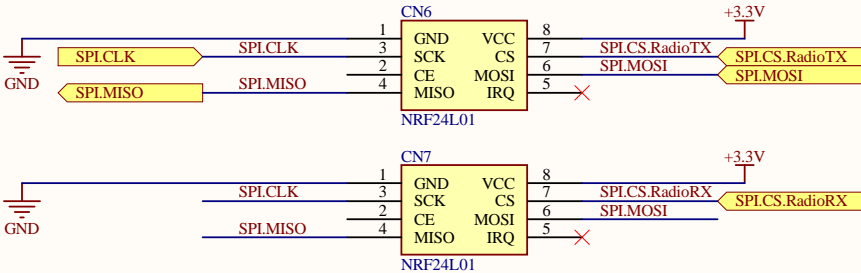
Title Control Board			Variant: A	GearLabs
Size: A4	Number: 001/2017	Revision: v1.0	Drawn by: Pedro Neves	
Date: 11/20/2017	Time: 11:14:46 AM	Sheet 5 of 6	Checked by: Rafael Lang	
File: [5] - MICROCONTROLLER.SchDoc				

[3] - CONNECTIVITY

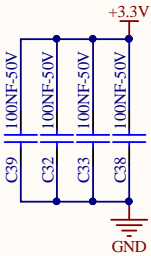
Bluetooth - HC-05



Radio - NRF24L01

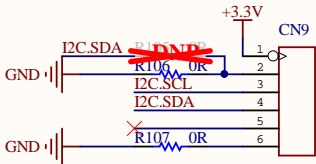
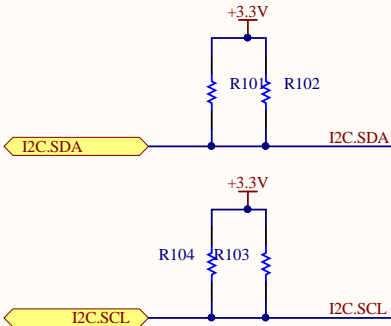


Decoupling caps



LAYOUT NOTE:
Distribute decoupling capacitor
along the layout

I²C



DESIGN NOTE:
I²C for future purposes

Title Control Board			Variant: A	GearLabs
Size: A4	Number: 001/2017	Revision: v1.0	Drawn by: Pedro Neves	
Date: 11/20/2017	Time: 11:14:46 AM	Sheet 6 of 6	Checked by: Rafael Lang	
File: [6] - COMMUNICATIONS.SchDoc				