

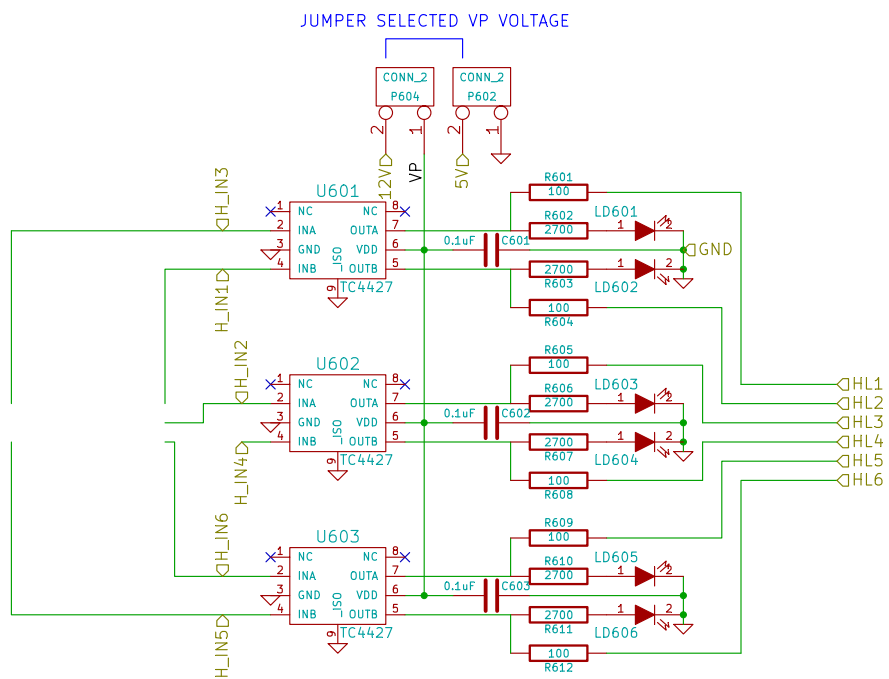
rusEfi

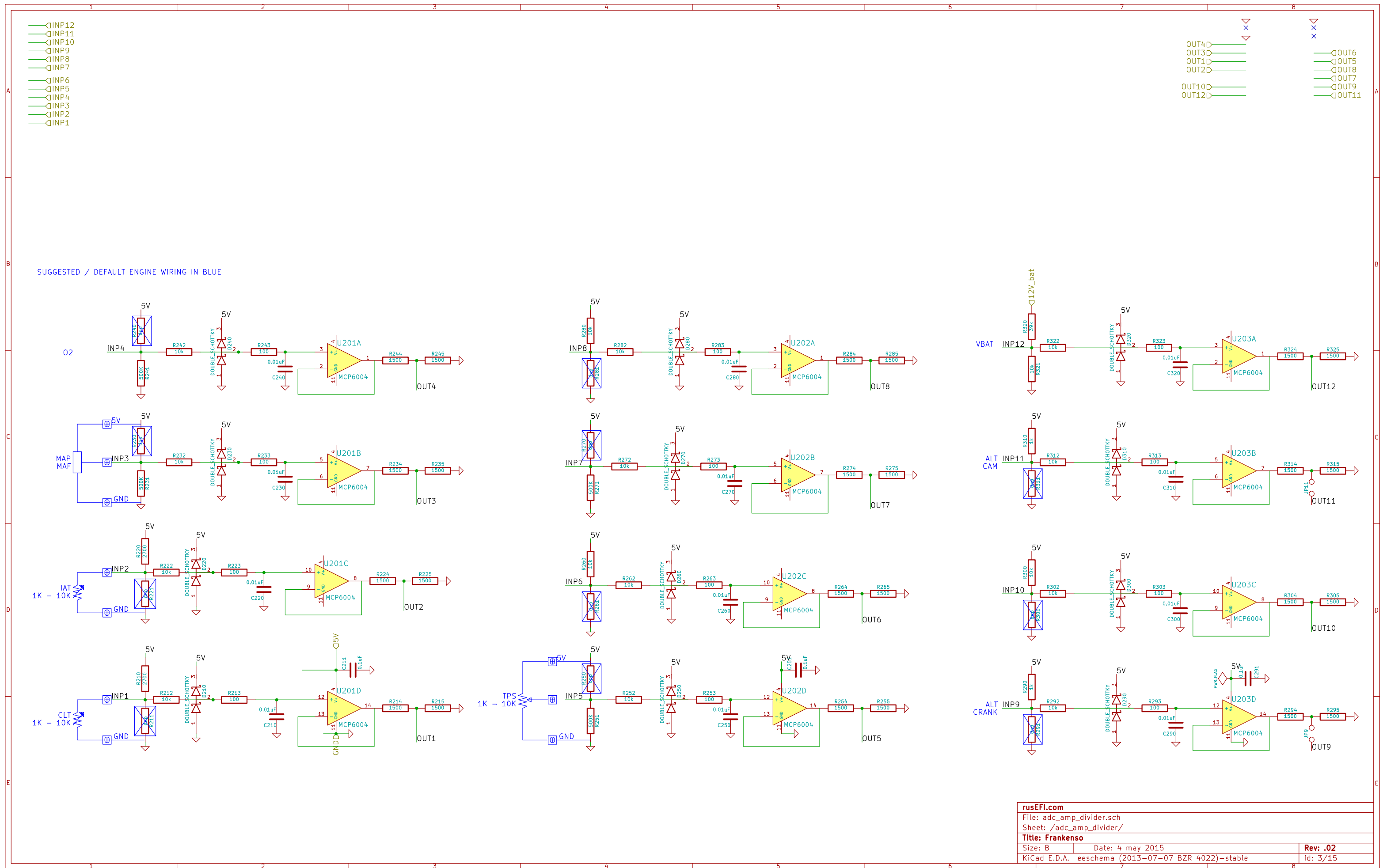
The JP1 jumper is needed because we cannot feed the screen via USB – we would need to disconnect it while the board is on a bench

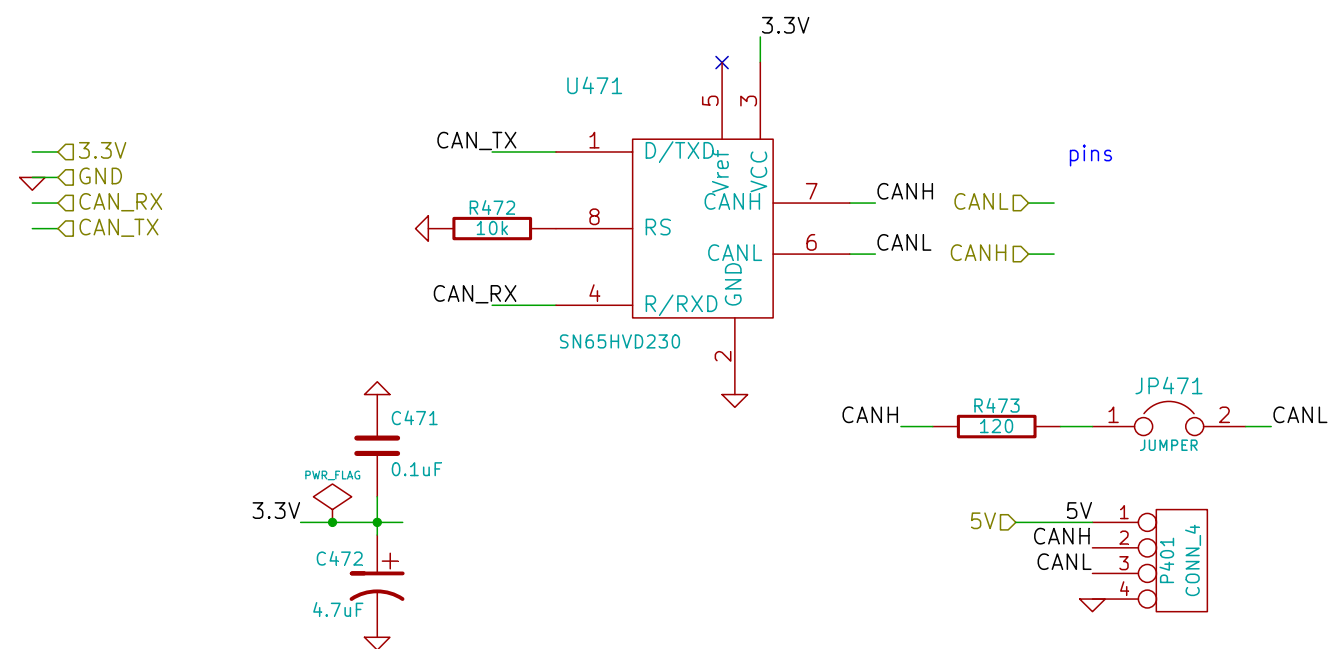


rusEFI.com			
File: frankenso.sch			
Sheet: /			
Title: Frankenso			
Size: B	Date: 4 may 2015	Rev: .04	
KiCad E.D.A.	eeschema (2013-07-07 BZR 4022)-stable	Id: 1/15	

6 channel high / low side driver





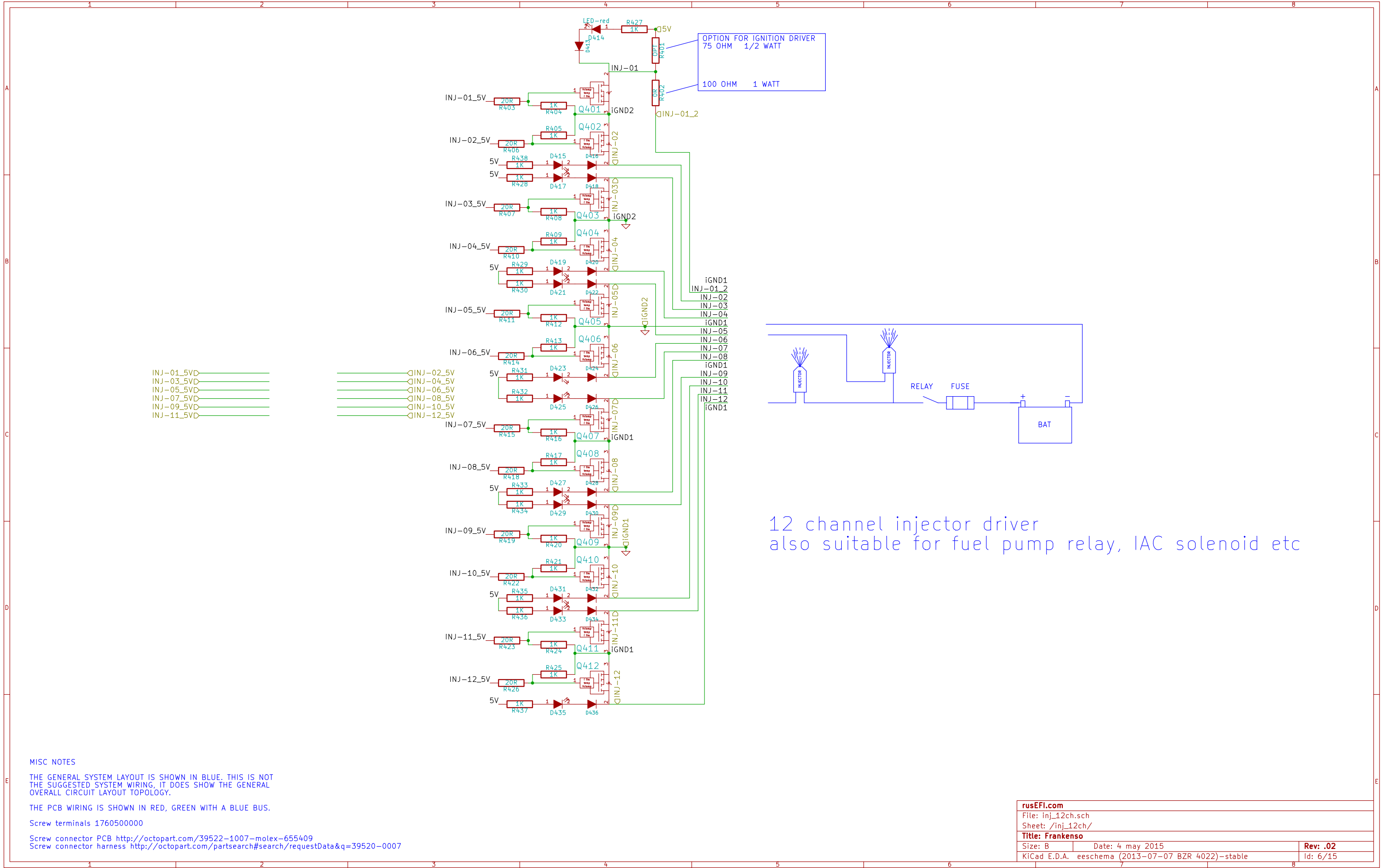


A

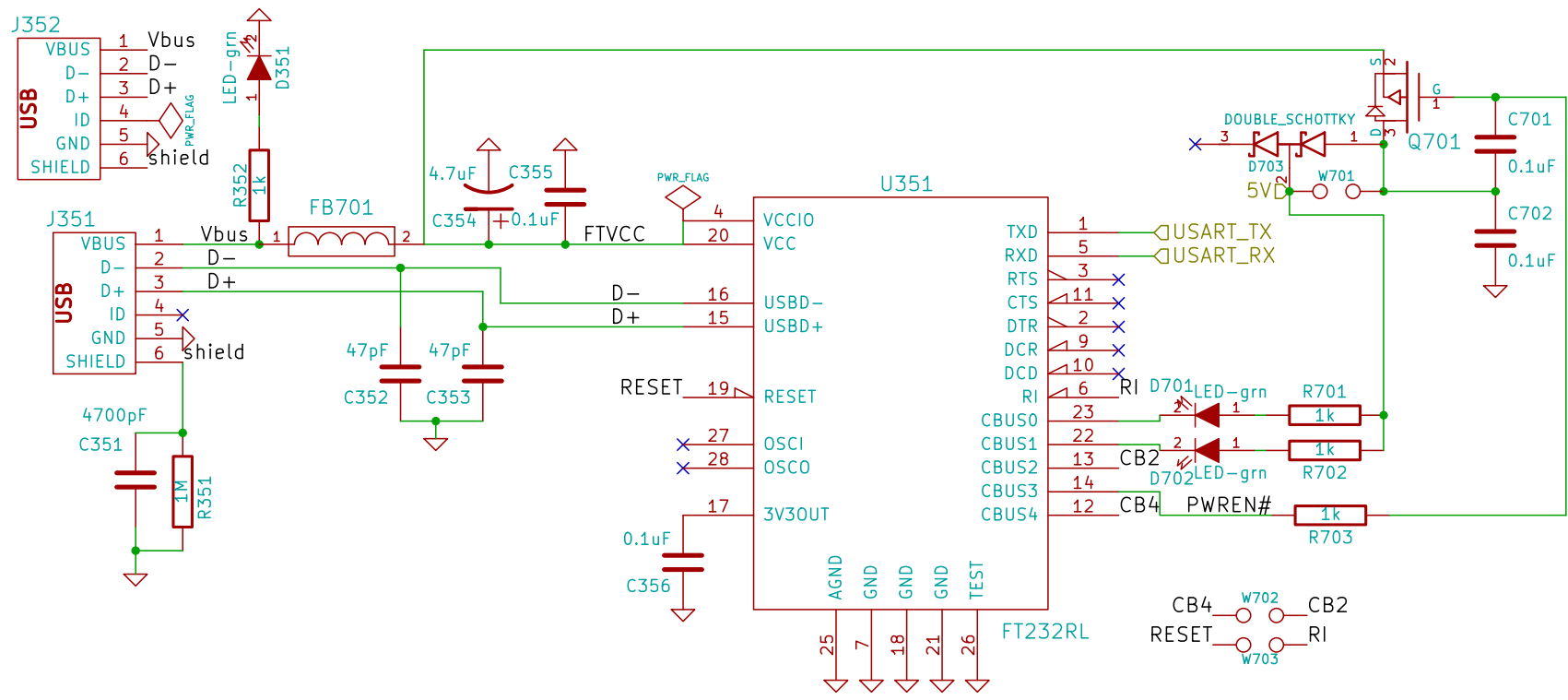


C

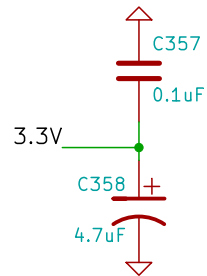
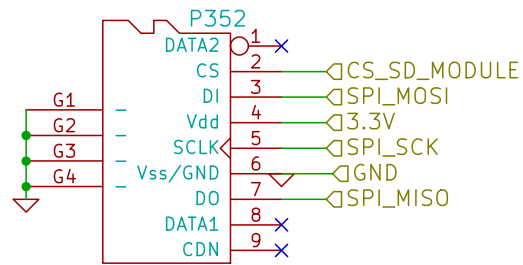
C



WJ01 IS A BACKUP PLAN. THE VOLTAGE DROP ACROSS D703 MAY BE NOT TOLERABLE, SO WE HAVE A BACK UP PLAN IF WE NEED TO BYPASS THE DIODE WITH A LOWER VOLTAGE DROP



For right conn



SD card slot
USB TTL module

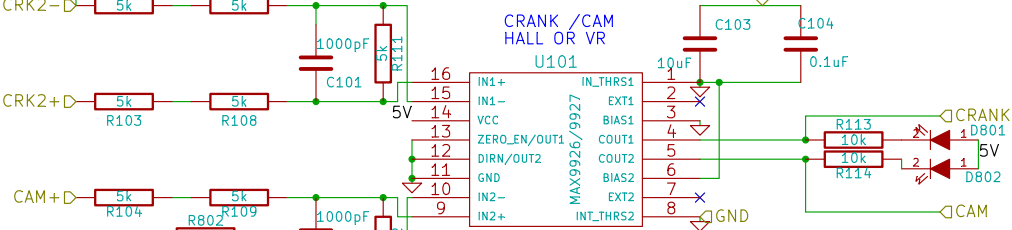
rusEFI.com		
File: mmc_usb_1.sch		
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Title: Frankenso		
Size: A4	Date: 4 may 2015	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 7/15



Recommended pull-up resistor values are as follows:					
Volts dc	5	9	12	15	24
Ohms	1 k	1.8 k	2.4 k	3 k	3 k

When configured for VR, do not populate W1002 or W1003. These jumpers allow isolation which prevents the VR signal from getting into the 5V or GND.

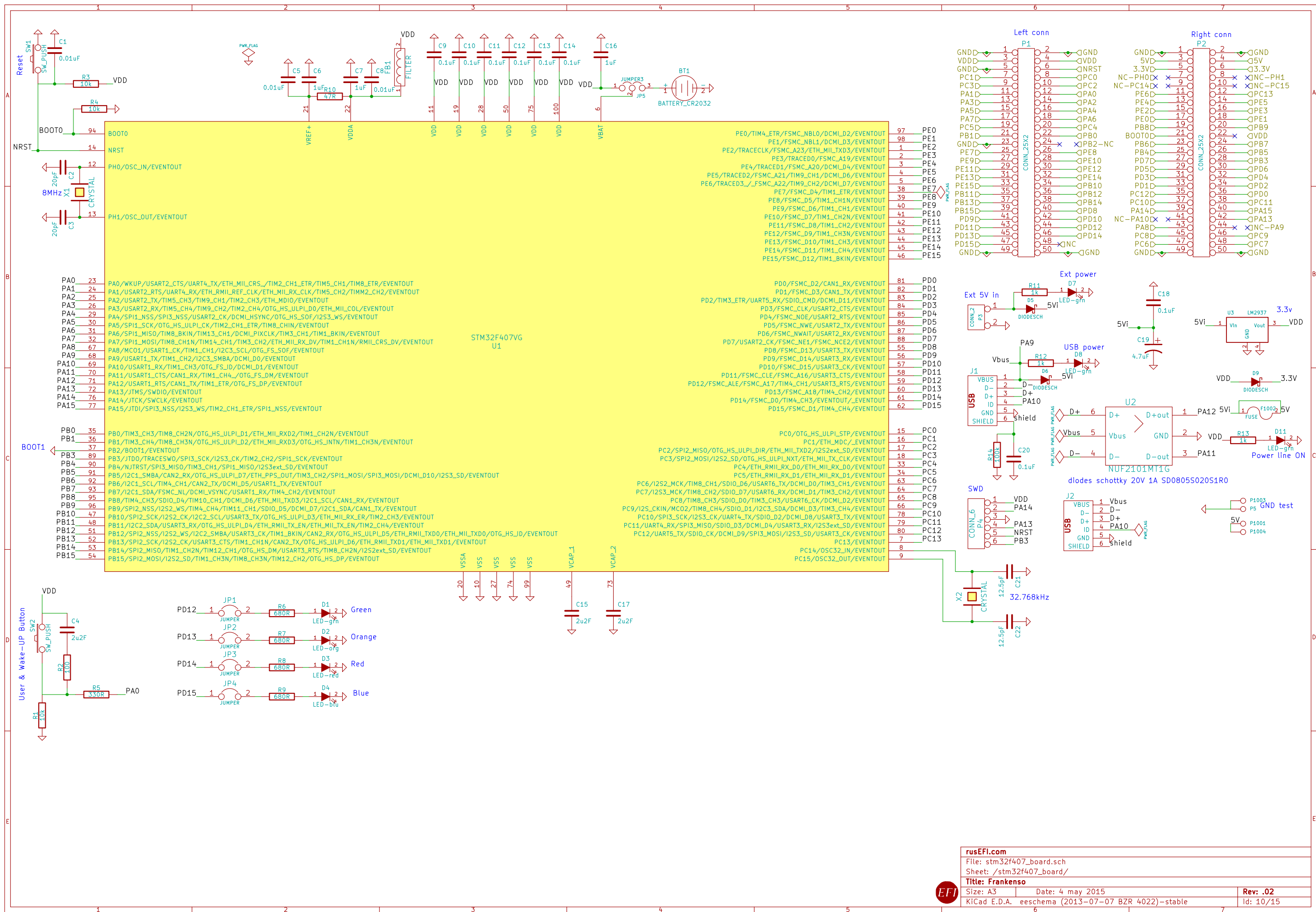
Many Hall sensors are set as a open collector sinking topology. Those setups require a pull up resistor, and 1k ohm is a common size. These pull up resistors are noted as R137 and R141 on this page. You need to match these pull up resistors with your hall sensors requirements. Often you need about 5mA of drive. See snippet from Cherry hall sensors to the right. Some sensors are the inverse, and need a pull down resistor. These are less common. These pull down resistors are noted as R801 and R802 on this page and are not typically installed.

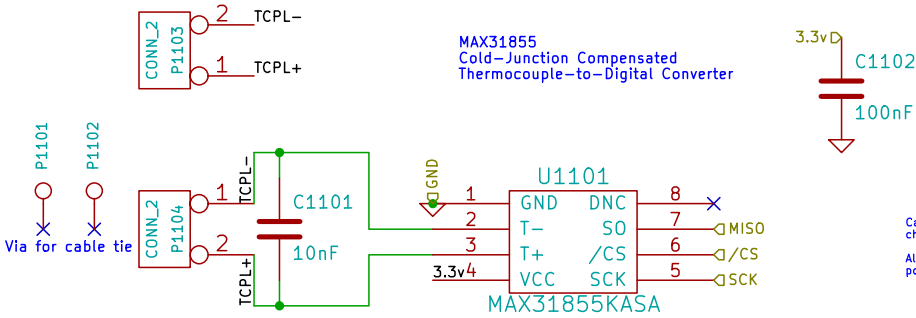


The resistors across pins 9,10 and 15,16 are not typically installed, they are only used on really hot VR signals, to dampen the signal.



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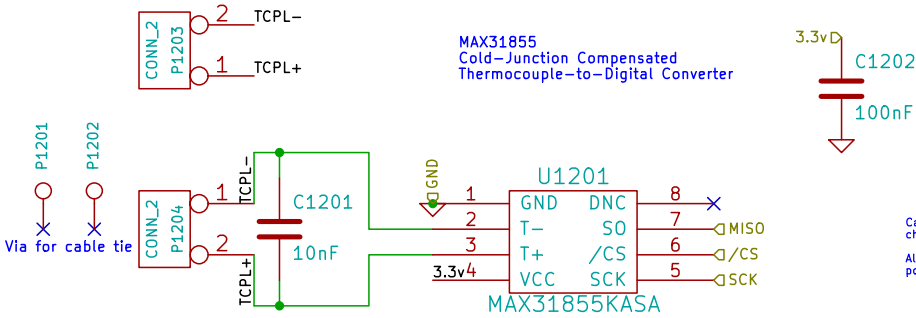




We want a big mass of copper in the TCPL joints, to dampen the cold junction temperature and to make it more measurable with this IC

Datasheet:
<http://datasheets.maxim-ic.com/en/ds/MAX31855.pdf>

Mrk Industries		
File: thermocouple_module.sch		
Sheet: /thermocouple1/		
Title: Electronic Industrial Temperature Interface (EITI)		
Size: A4	Date: 4 may 2015	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 11/15



We want a big mass of copper in the TCPL joints, to dampen the cold junction temperature and to make it more measurable with this IC

Datasheet:
<http://datasheets.maxim-ic.com/en/ds/MAX31855.pdf>

Care must be taken with the conector chosen for the TCPL to avoid Inaccuracies.
Also, the connector must be as close as possible to the cold-junction compensation.

Mrk Industries

File: thermocouple_module.sch

Sheet: /thermocouple2/

Title: Electronic Industrial Temperature Interface (EITI)

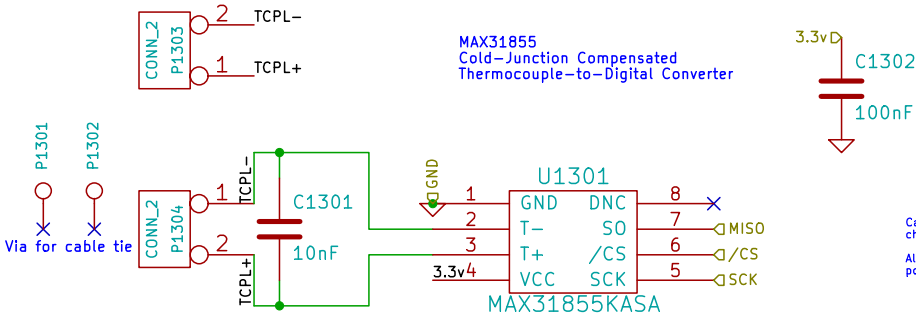
Size: A4

Date: 4 may 2015

Rev: .02

KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable

Id: 12/15

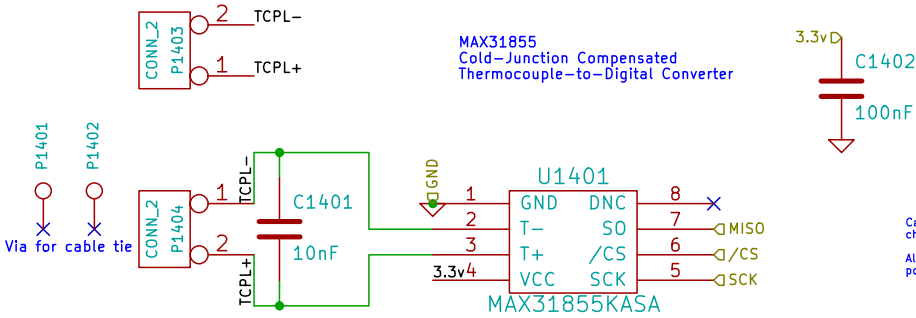


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<http://datasheets.maxim-ic.com/en/ds/MAX31855.pdf>

Care must be taken with the conector chosen for the TCPL to avoid Inaccuracies.
Also, the connector must be as close as possible to the cold-junction compensation.

Mrk Industries		
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Title: Electronic Industrial Temperature Interface (EITI)		
Size: A4	Date: 4 may 2015	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 13/15



We want a big mass of copper in the TCPL joints, to dampen the cold junction temperature and to make it more measurable with this IC

Datasheet:
<http://datasheets.maxim-ic.com/en/ds/MAX31855.pdf>

Care must be taken with the conector chosen for the TCPL to avoid Inaccuracies.
Also, the connector must be as close as possible to the cold-junction compensation.

Mrk Industries		
File: thermocouple_module.sch		
Sheet: /thermocouple4/		
Title: Electronic Industrial Temperature Interface (EITI)		
Size: A4	Date: 4 may 2015	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 14/15

