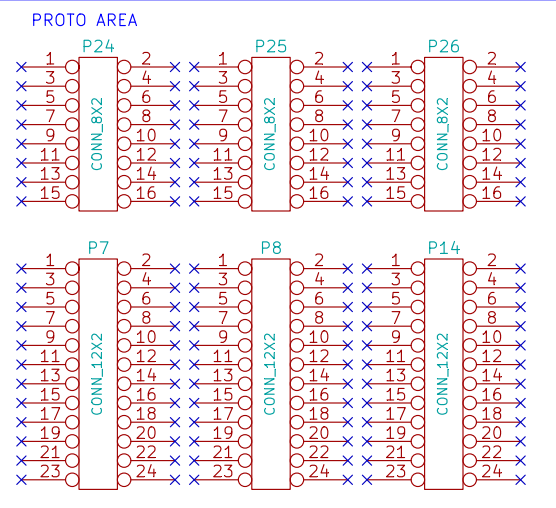


rusEfi



These two jumpers are here to accommodate stm32f4discovery

These four jumpers are test points

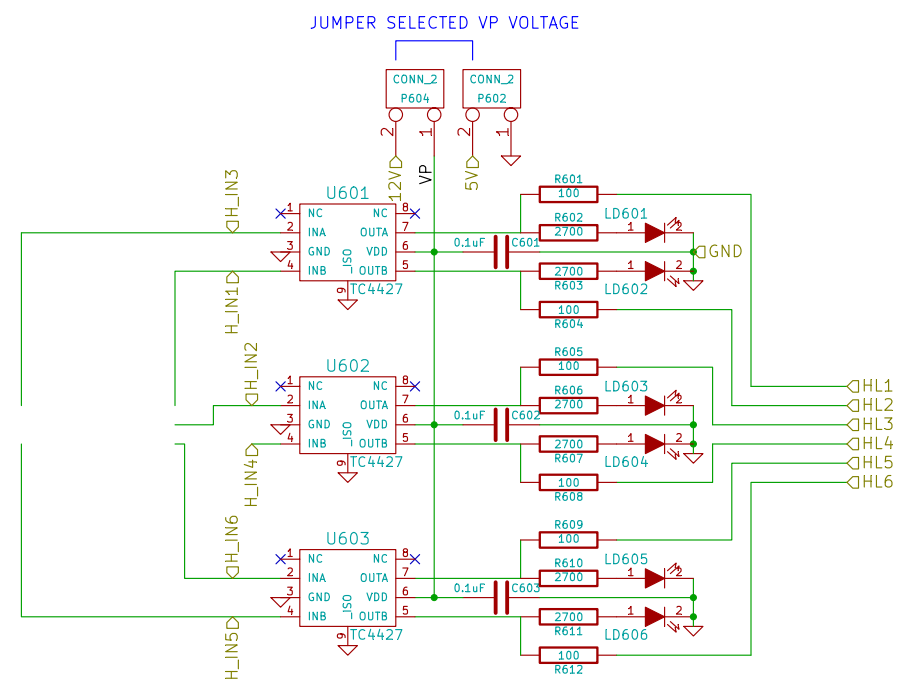
GND JP03 JP02 GND 12V-SWITCH JP07 JP06 5V JP09 JP08 5V
 GND JP03 JP02 GND GND JP07 JP06 GND 3.3V JP09 JP08 3.3V

That's alternative signal OUTPUT - these traces should be routable to PC6 and PA5 via jumpers. Alternative to W212 and W212 routing of op-amps ch 11 and ch 12

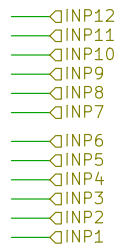
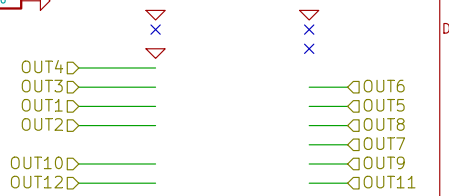
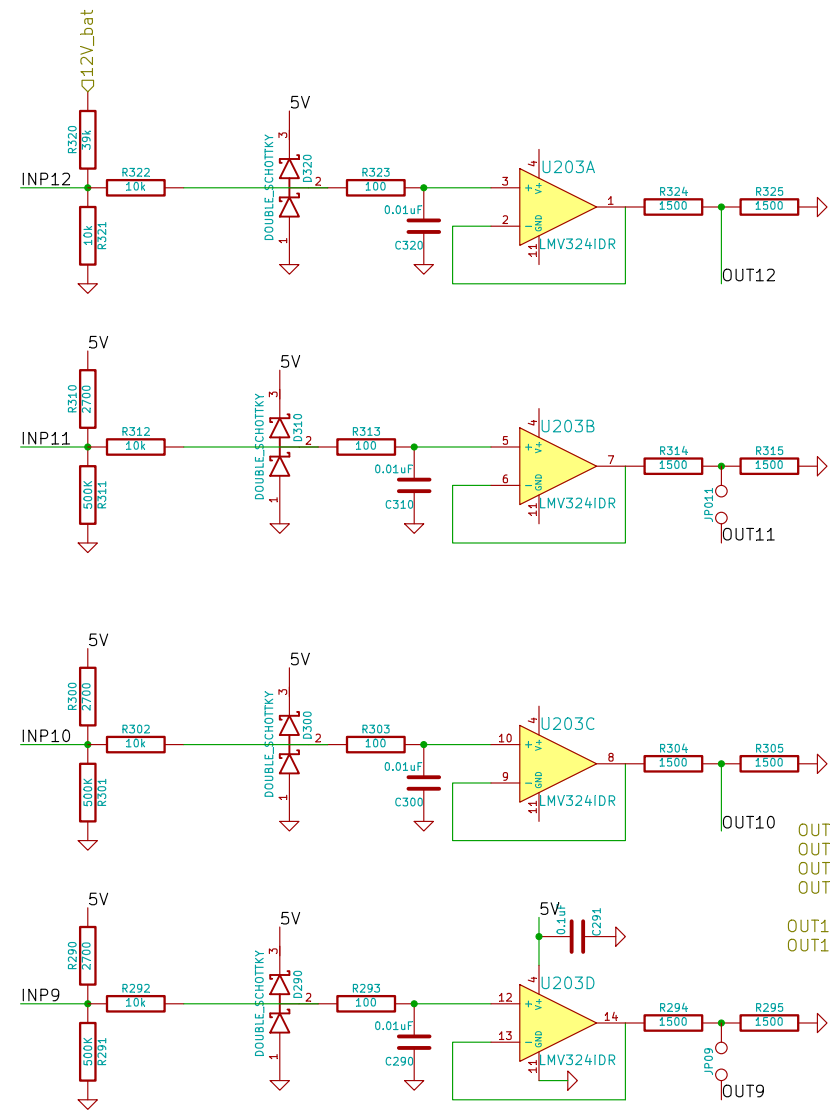
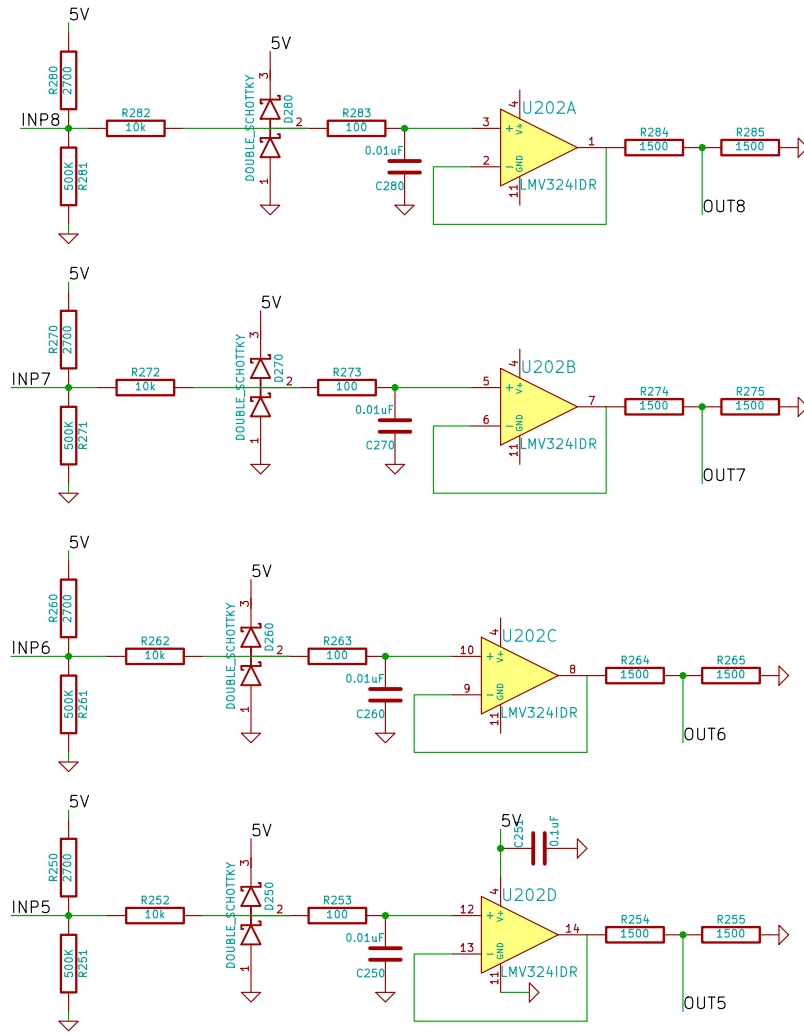
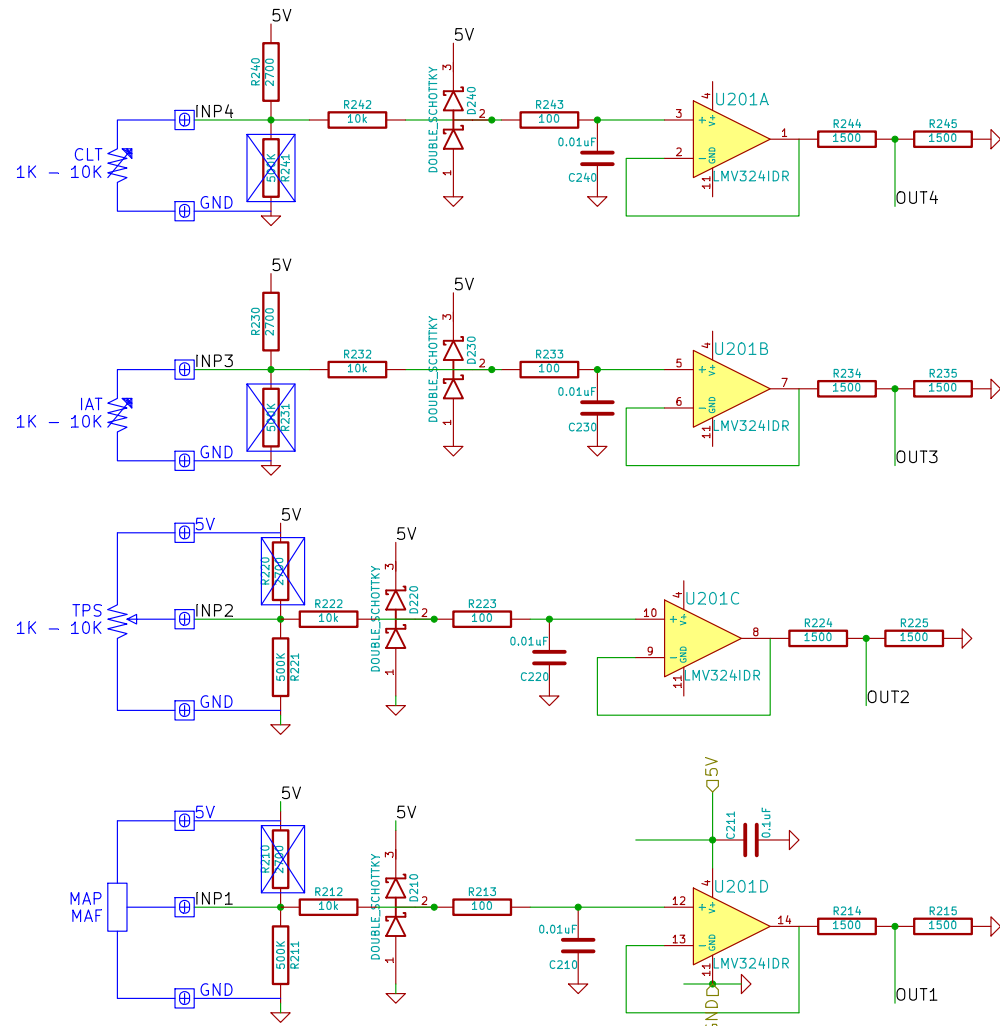


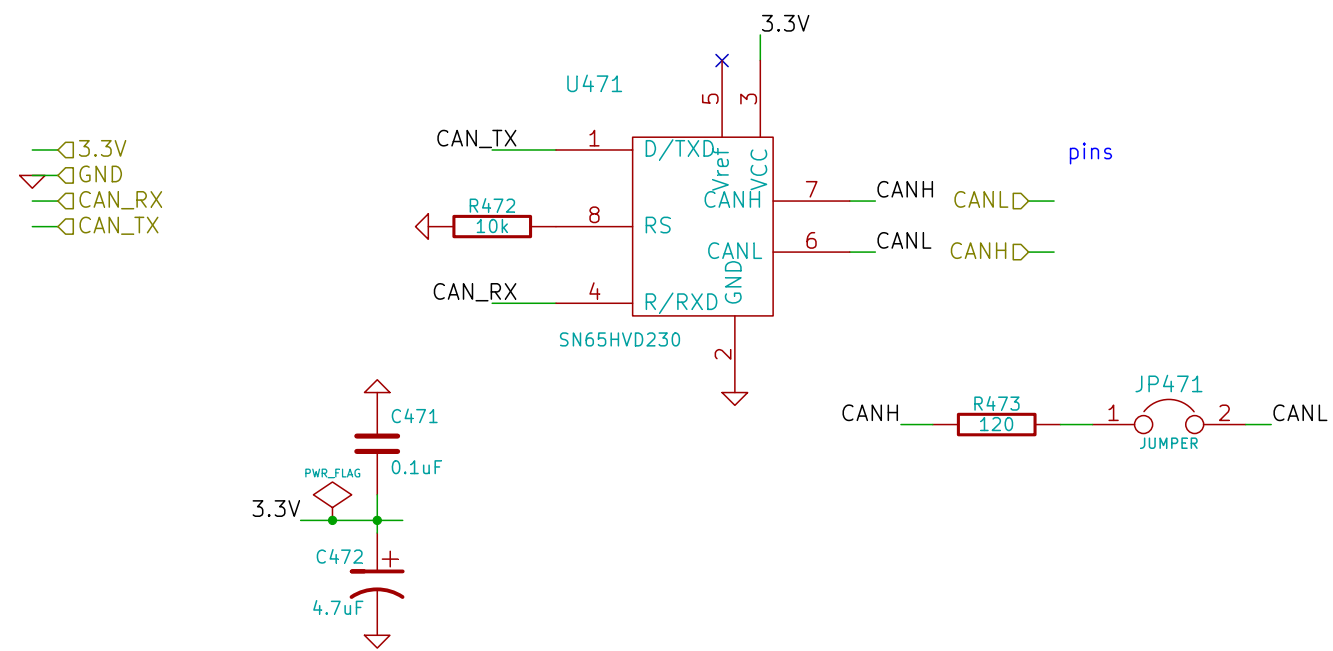
rusEfi.com	
File: frankenso.sch	
Sheet: /	
Title: Frankenso	
Size: B	Date: 13 dec 2014
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable	
Rev: .03	Id: 1/14

6 channel high / low side driver



SUGGESTED ENGINE WIRING IN BLUE

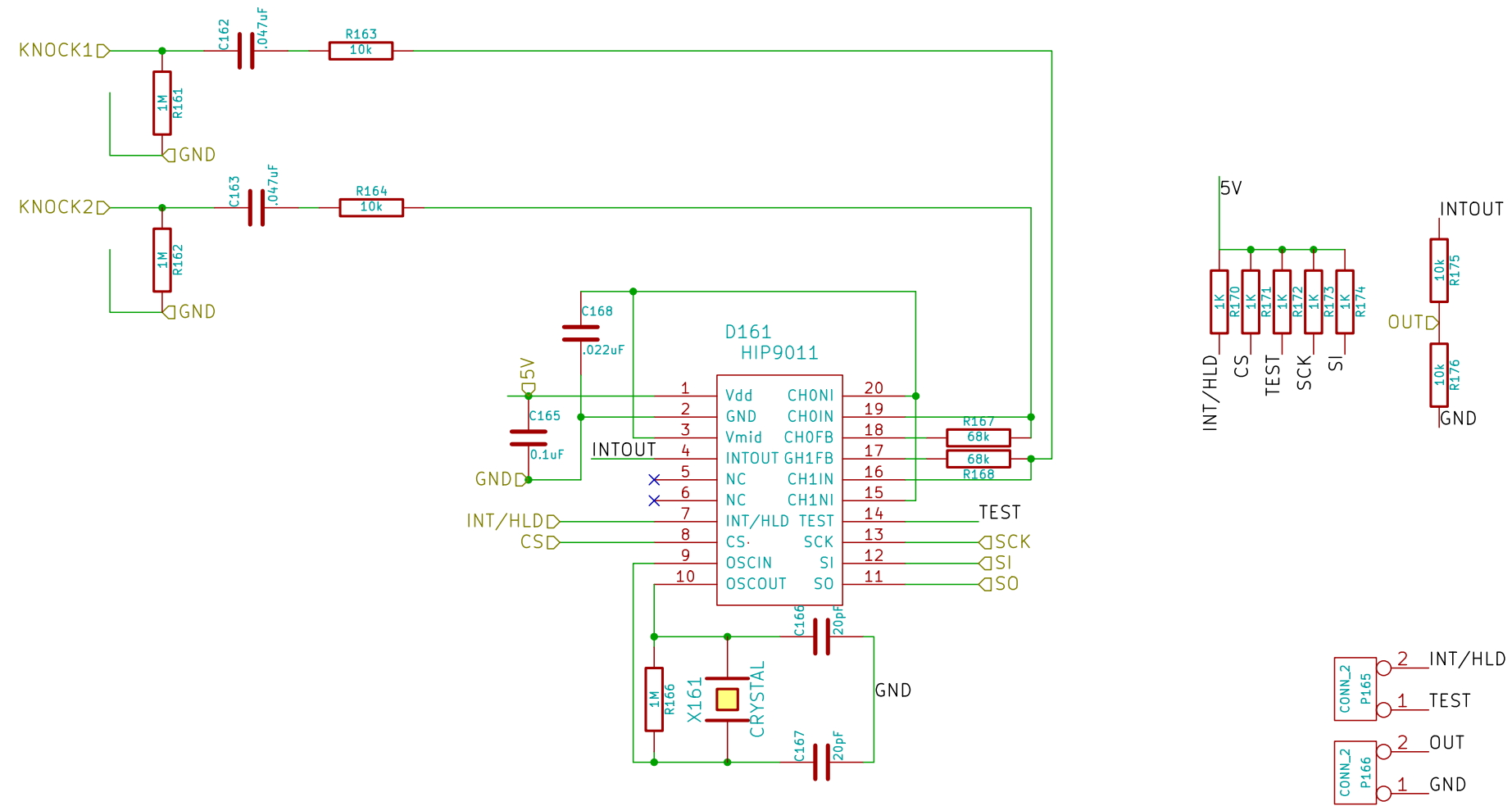




CAN level shifter

rusEFI.com		
File: can_brd_1.sch		
Sheet: /can_brd_1/		
Title: Frankenso		
Size: A4	Date: 13 dec 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 4/14

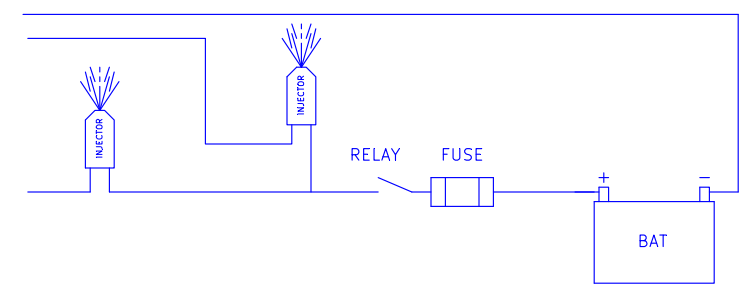
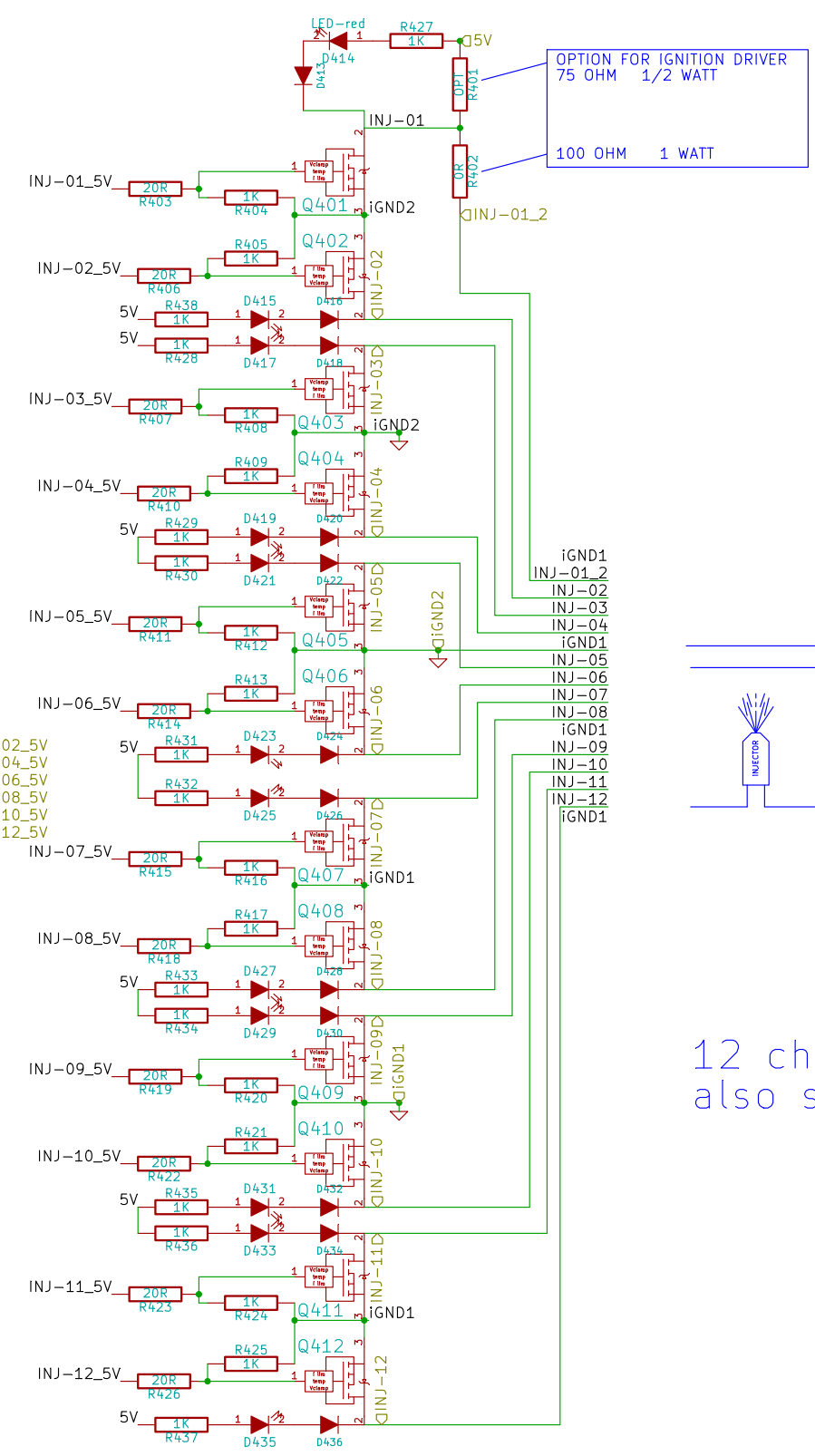
DD_HIP9011 ver.2
RusEfi.com



rusEFI.com		
File: DD_HIP9011.sch		
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Title: Frankenso		
Size: A4	Date: 13 dec 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 5/14

INJ-01_5V
 INJ-03_5V
 INJ-05_5V
 INJ-07_5V
 INJ-09_5V
 INJ-11_5V

INJ-02_5V
 INJ-04_5V
 INJ-06_5V
 INJ-08_5V
 INJ-10_5V
 INJ-12_5V



12 channel injector driver
 also suitable for fuel pump relay, IAC solenoid etc

MISC NOTES

THE GENERAL SYSTEM LAYOUT IS SHOWN IN BLUE. THIS IS NOT THE SUGGESTED SYSTEM WIRING, IT DOES SHOW THE GENERAL OVERALL CIRCUIT LAYOUT TOPOLOGY.

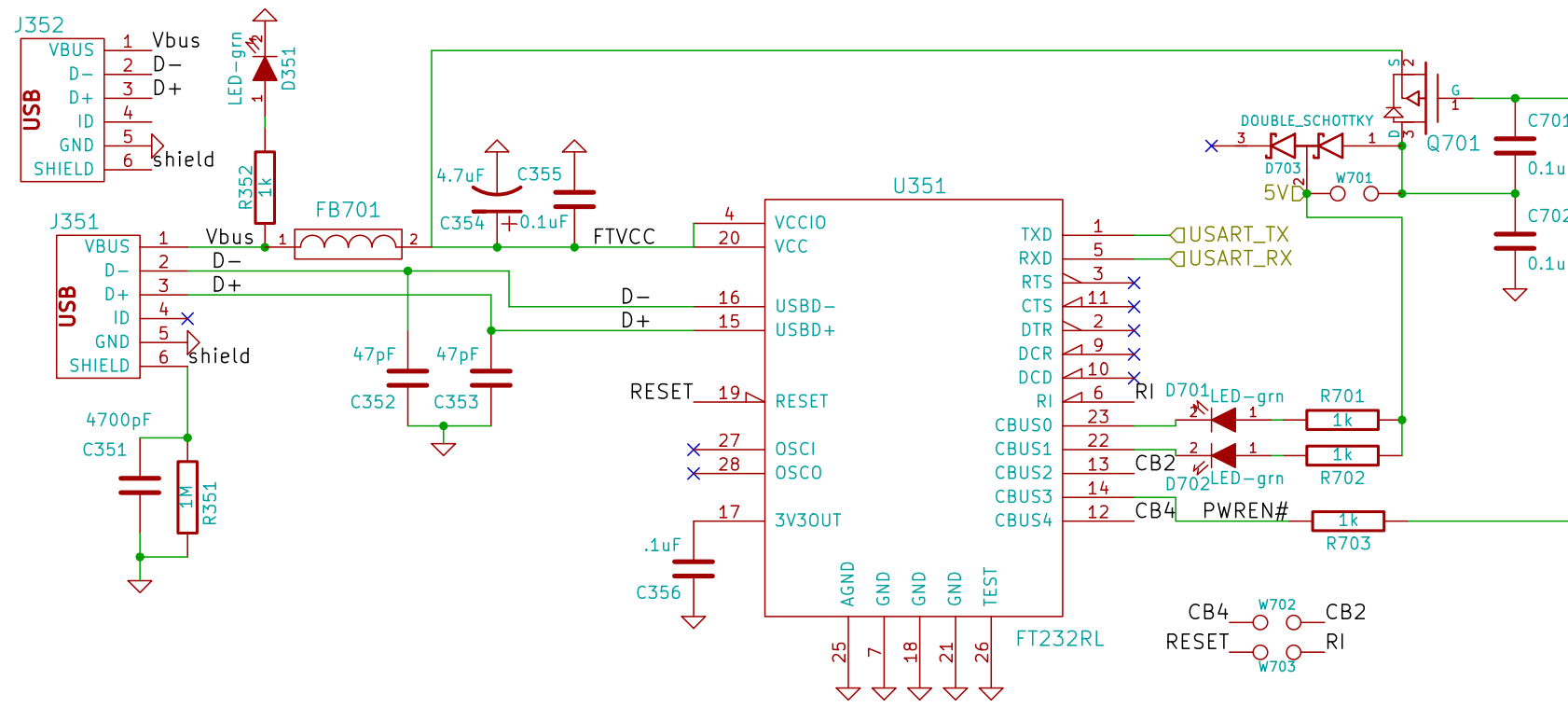
THE PCB WIRING IS SHOWN IN RED, GREEN WITH A BLUE BUS.

Screw terminals 1760500000

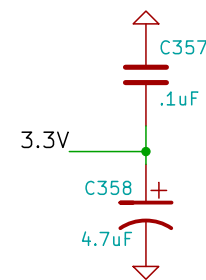
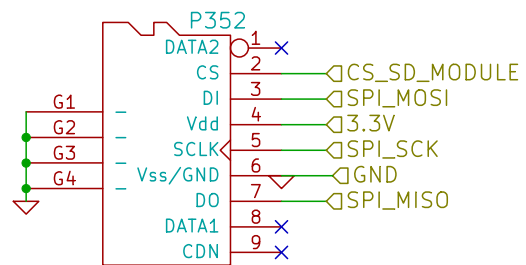
Screw connector PCB <http://octopart.com/39522-1007-molex-655409>
 Screw connector harness <http://octopart.com/partsearch#search/requestData&q=39520-0007>

rusEFI.com		
File: inj_12ch.sch		
Sheet: /inj_12ch/		
Title: Frankenso		
Size: B	Date: 13 dec 2014	Rev: .02
KiCad E.D.A.	eeschema (2013-07-07 BZR 4022)-stable	Id: 6/14

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

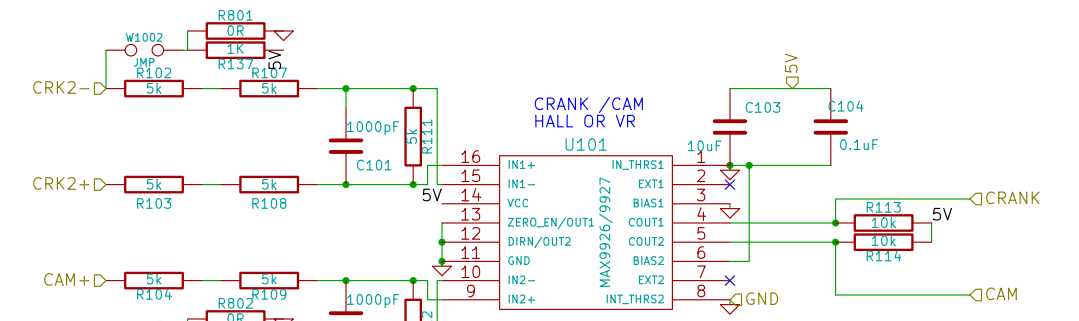


For right conn



SD card slot
USB TTL module

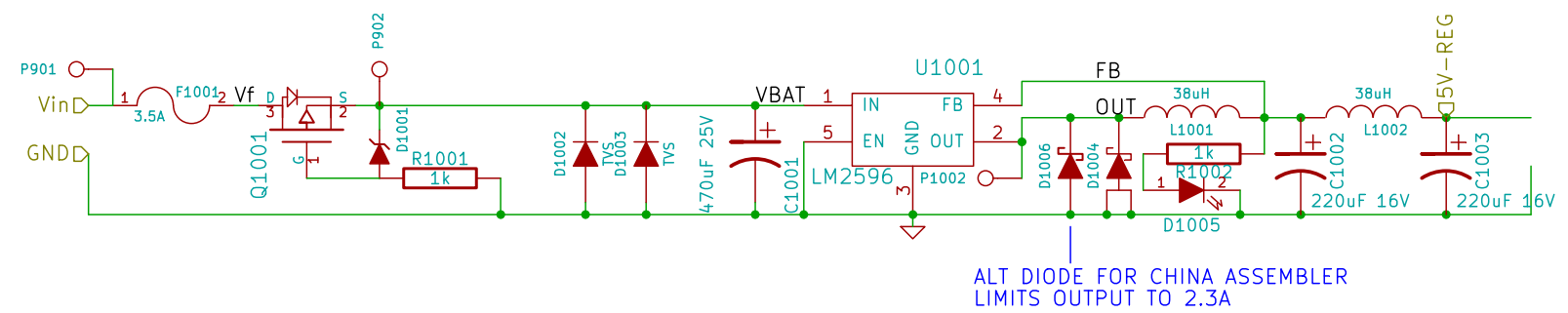
rusEFI.com		
File: mmc_usb_1.sch		
Sheet: /mmc_usb_1/		
Title: Frankenso		
Size: A4	Date: 13 dec 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 7/14



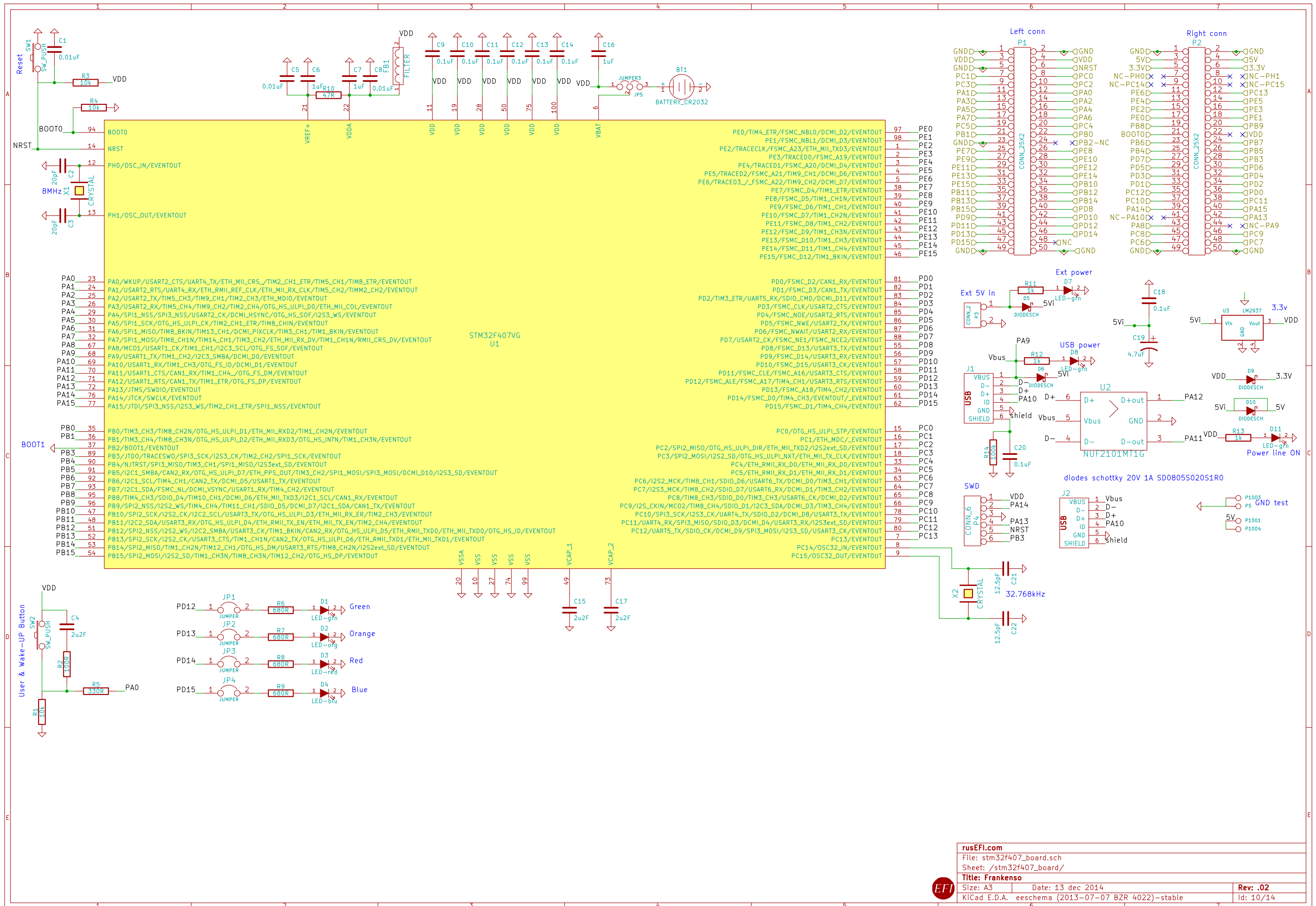
W1002,W1003 are for hall's that need a pull up. Check your hall sensors, many will want closer to 470 ohm. The 1k is a generic value.
<http://www.cherrycorp.com/english/sensors/pdf/connection.pdf>

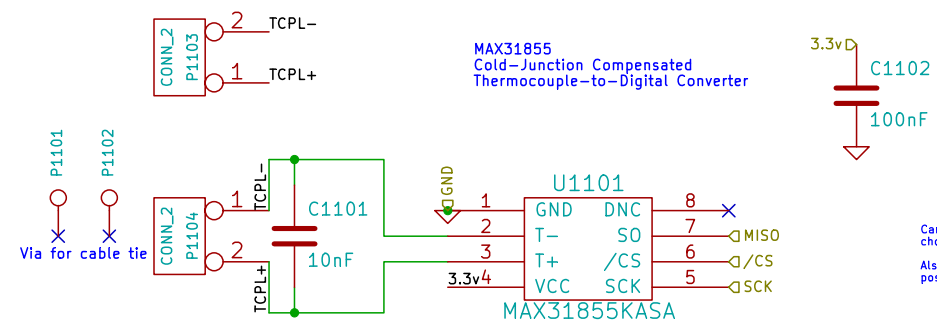
The resistors across pins 9,10 and 15,16 are not typically installed, they are only used on really hot VR signals, to dampen the signal.

rusEFI.com		
File: cps_vrs_io_1.sch		
Sheet: /cps_vrs_io_1/		
Title: Frankenso		
Size: B	Date: 13 dec 2014	Rev: .02
KiCad E.D.A.	eeschema (2013-07-07 BZR 4022)-stable	Id: 8/14



rusEFI.com		
File: PWR_buck_12V_switcher.sch		
Sheet: /PWR_buck_12V_switcher/		
Title: Frankenso		
Size: A	Date: 13 dec 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 9/14





MAX31855
Cold-Junction Compensated
Thermocouple-to-Digital Converter

U1101
MAX31855KASA

3.3vD
C1102
100nF

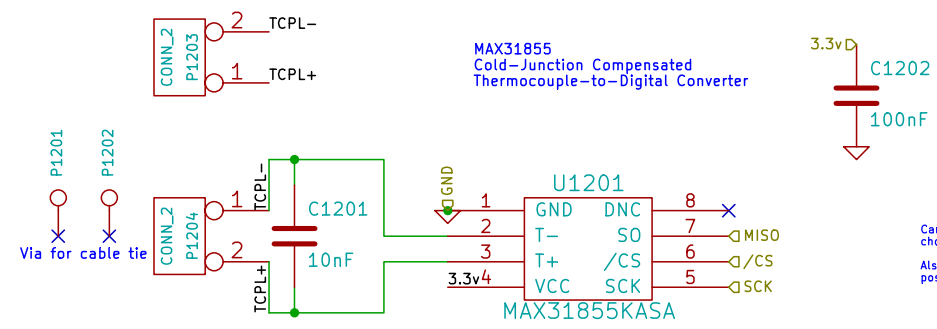
P1101
P1102
Via for cable tie

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.

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: 13 dec 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 11/14



MAX31855
Cold-Junction Compensated
Thermocouple-to-Digital Converter

U1201

MAX31855KASA

3.3v4
C1202
100nF

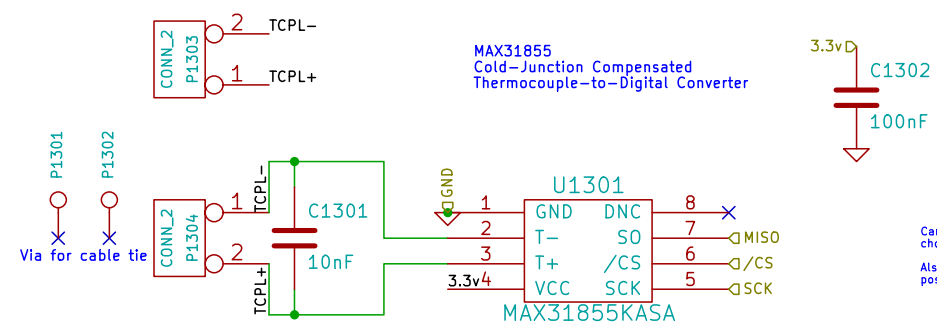
P1201
P1202
Via for cable tie

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: 13 dec 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 12/14



MAX31855
Cold-Junction Compensated
Thermocouple-to-Digital Converter

U1301
MAX31855KASA
8 DNC
7 MISO
6 /CS
5 SCK
4 VCC
3 T+
2 T-
1 GND

3.3v4
C1302
100nF

P1301
P1302
Via for cable tie

CONN_2 P1303
2 TCPL-
1 TCPL+

CONN_2 P1304
1 TCPL-
2 TCPL+

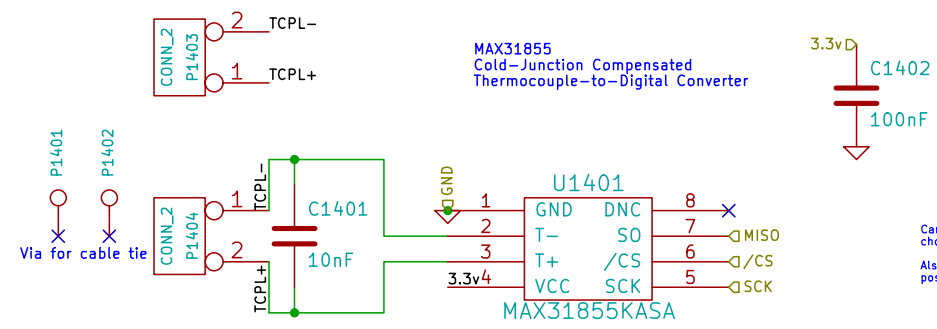
C1301
10nF

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.

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		
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Title: Electronic Industrial Temperature Interface (EITI)		
Size: A4	Date: 13 dec 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 13/14



MAX31855
Cold-Junction Compensated
Thermocouple-to-Digital Converter

3.3vD
C1402
100nF

P1401
P1402
Via for cable tie

CONN_2
P1403
1 TCPL+
2 TCPL-

CONN_2
P1404
1 TCPL-
2 TCPL+

C1401
10nF

U1401
MAX31855KASA
1 GND
2 T-
3 T+
4 VCC
5 SCK
6 /CS
7 MISO
8 DNC

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.

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: /thermocouple4/		
Title: Electronic Industrial Temperature Interface (EITI)		
Size: A4	Date: 13 dec 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 14/14