

rusEfi

PROTO AREA

CONN_BX2 headers: P24, P25, P26, P7, P8, P14

These two jumpers are here to accommodate stm32f4discovery

These four jumpers are test points

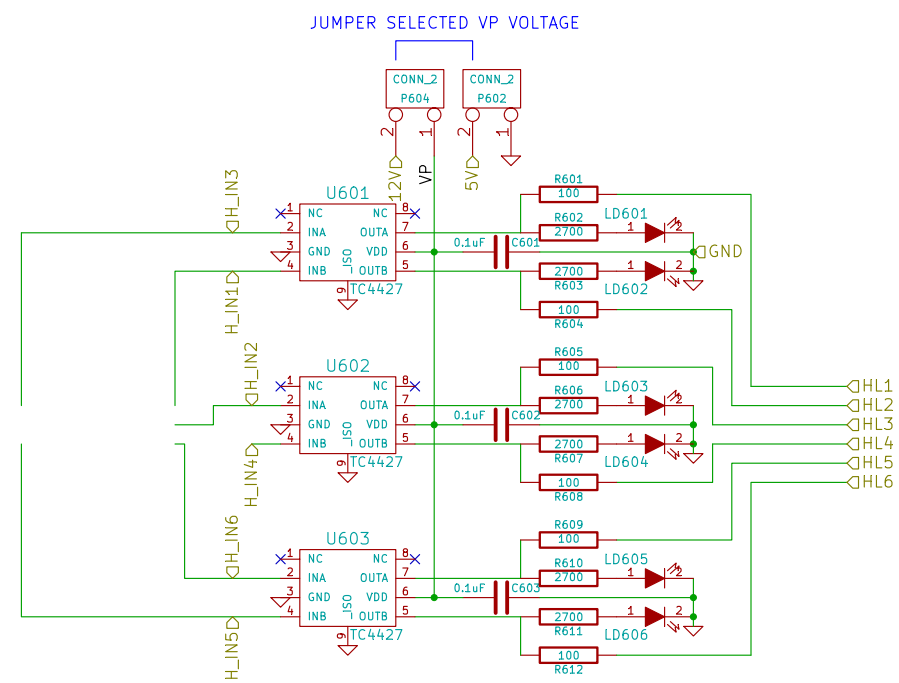
That's alternative signal OUTPUT - these traces should be routable to PC6 and PA5 via jumpers. Alternative to W212 and W212 routing of op-amps ch 11 and ch 12

CRANK TESTZ CAM

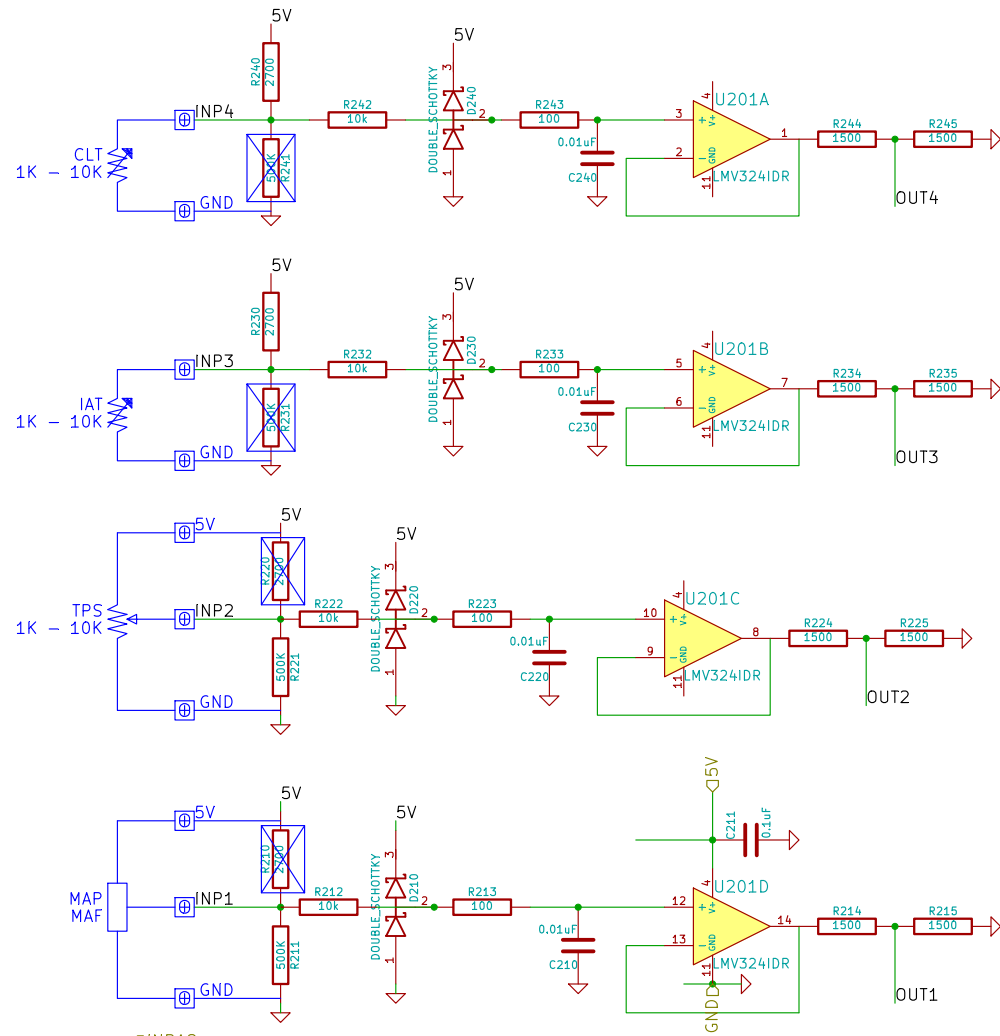
The JP1 jumper is needed because we cannot feed the screen via USB - we would need to disconnect it while the board is on a bench

rusEFI.com	
File: frankenso.sch	
Sheet: /	
Title: Frankenso	
Size: B	Date: 3 nov 2014
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable	
Rev: .02	Id: 1/14

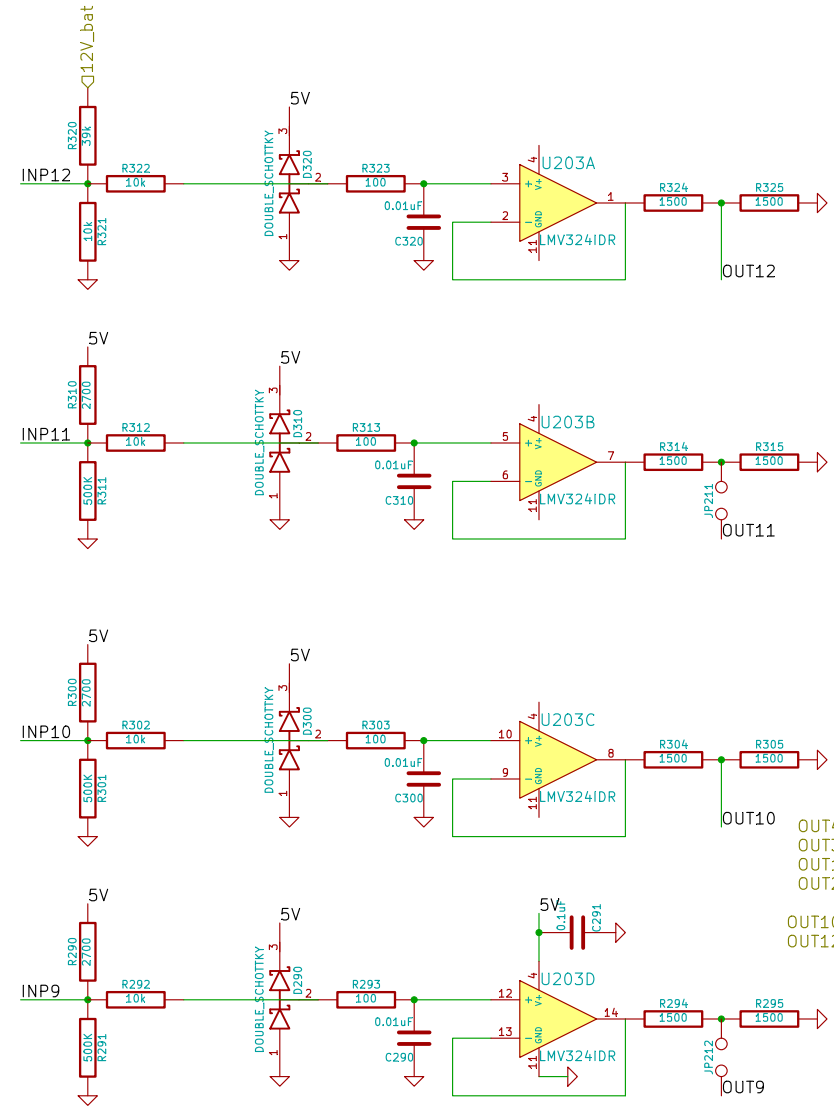
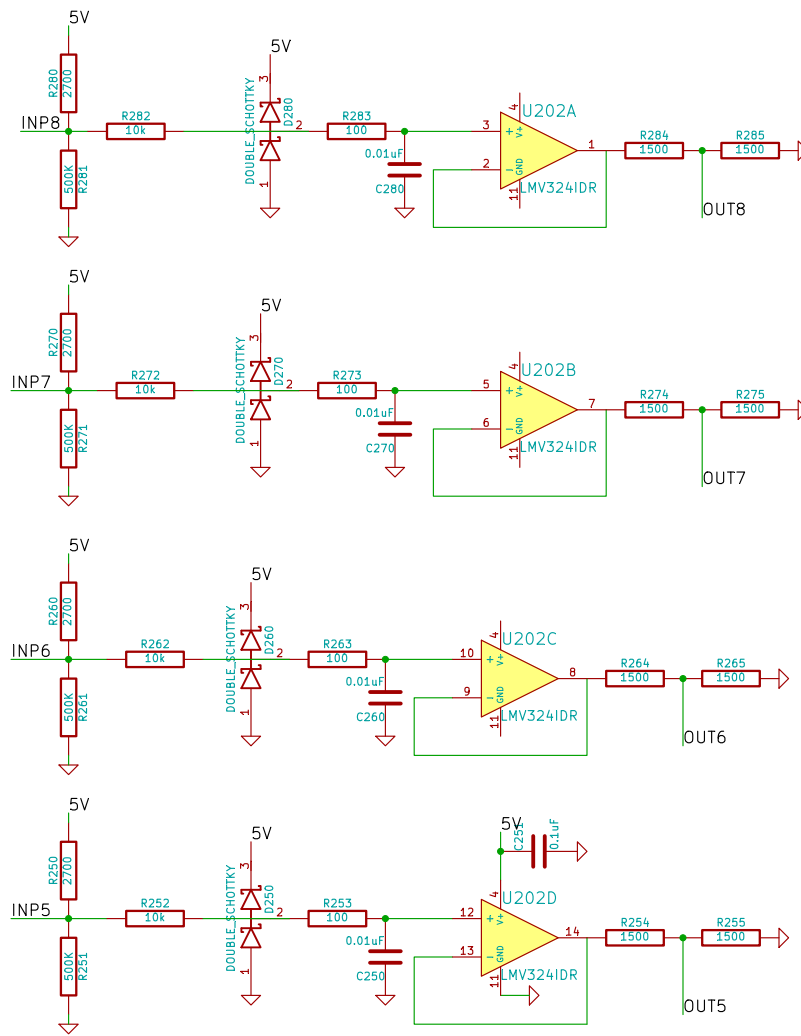
6 channel high / low side driver



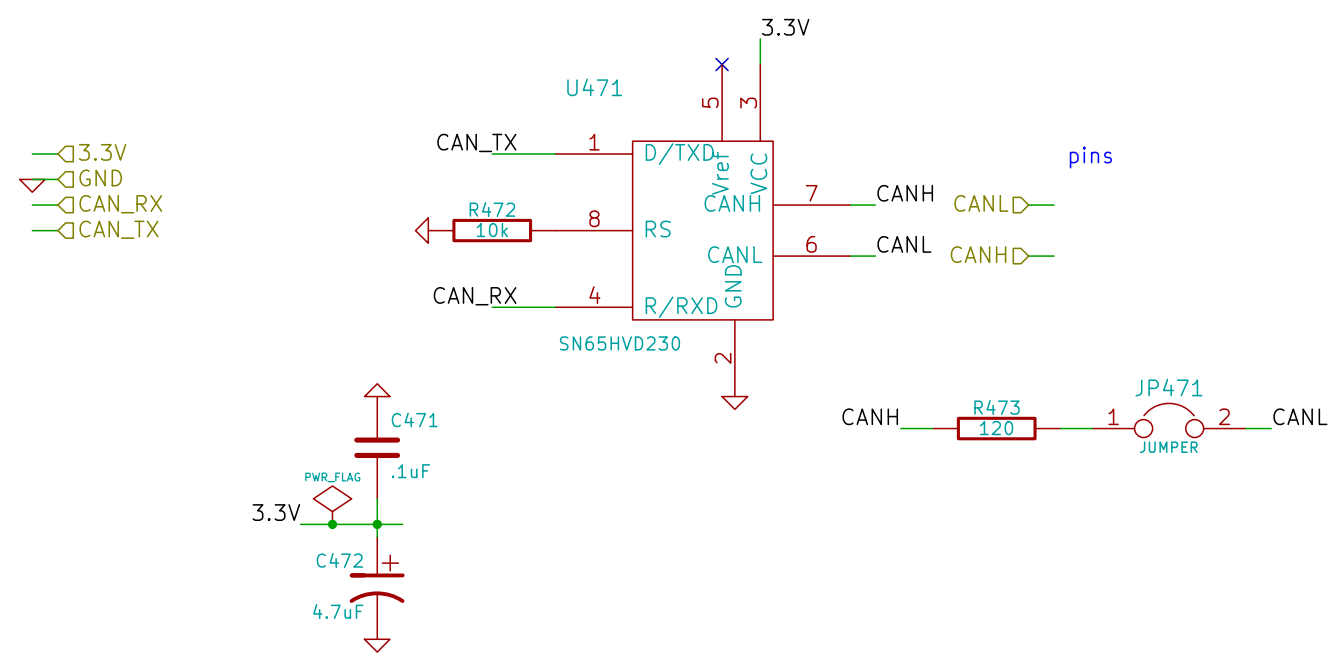
SUGGESTED ENGINE WIRING IN BLUE



- INP12
- INP11
- INP10
- INP9
- INP8
- INP7
- INP6
- INP5
- INP4
- INP3
- INP2
- INP1



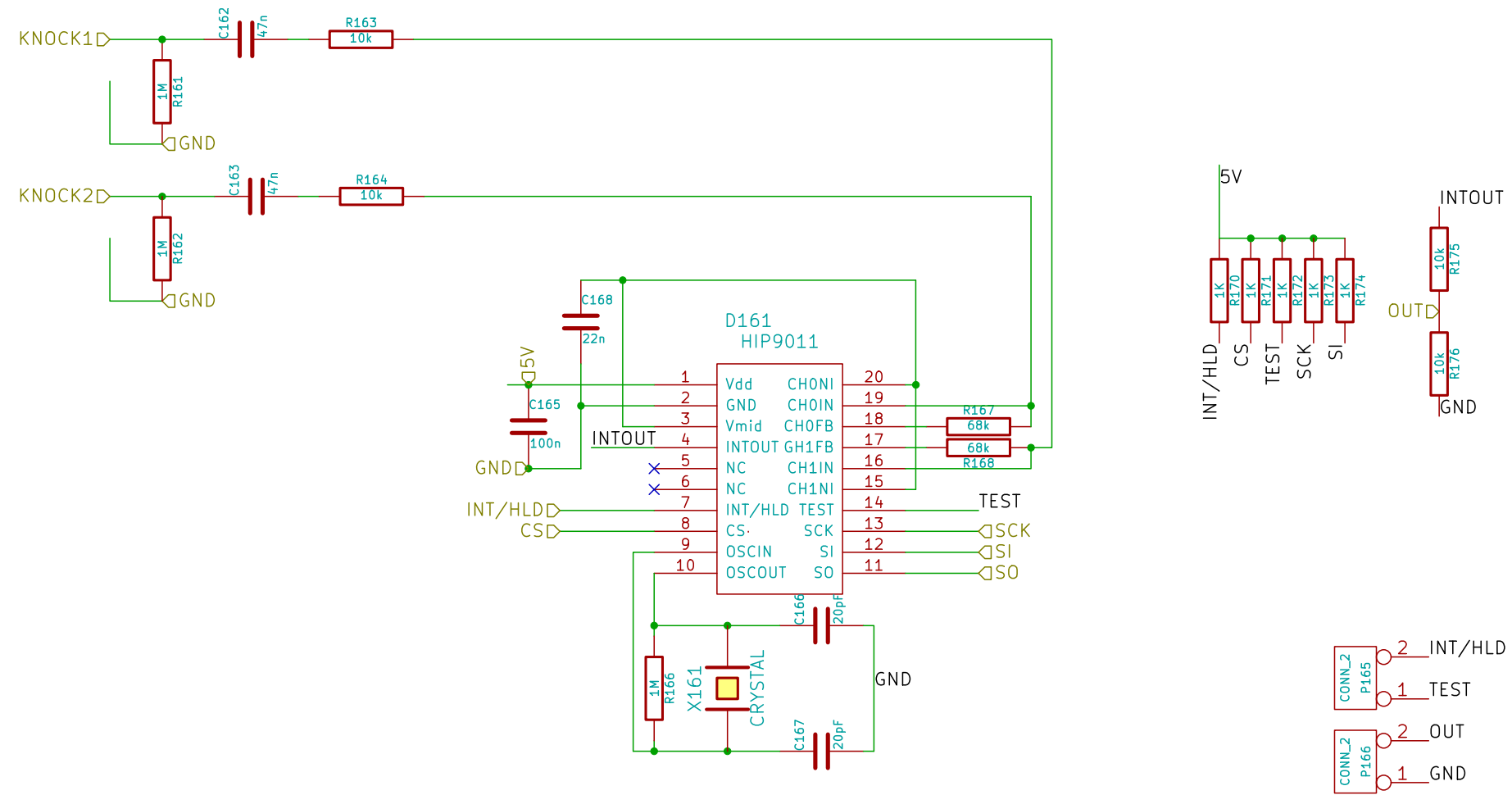
- OUT4D
- OUT3D
- OUT1D
- OUT2D
- OUT10D
- OUT12D
- OUT6
- OUT5
- OUT8
- OUT7
- OUT9
- OUT11



CAN level shifter

rusEFI.com		
File: can_brd_1.sch		
Sheet: /can_brd_1/		
Title: Frankenso		
Size: A4	Date: 3 nov 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 4/14

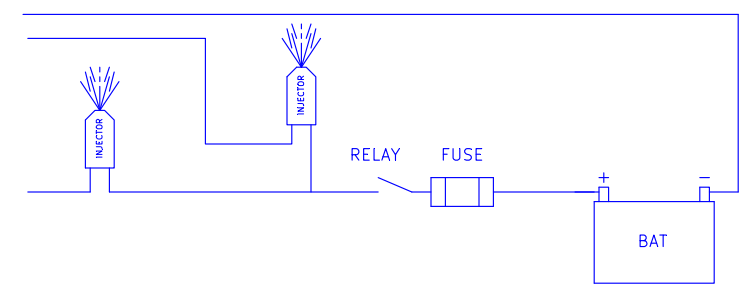
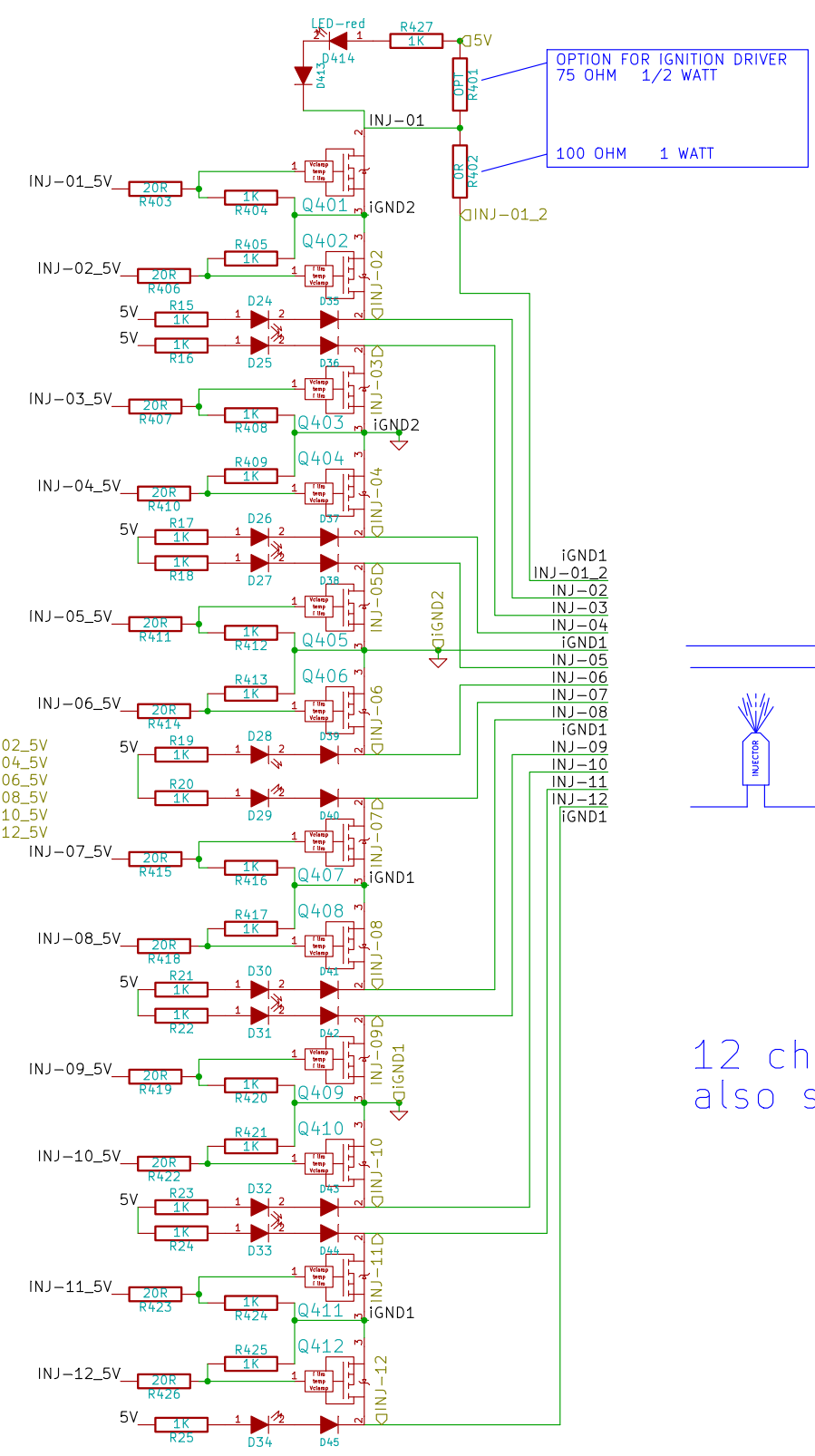
DD_HIP9011 ver.2
RusEfi.com



rusEFI.com		
File: DD_HIP9011.sch		
Sheet: /DD_HIP9011/		
Title: Frankenso		
Size: A4	Date: 3 nov 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.

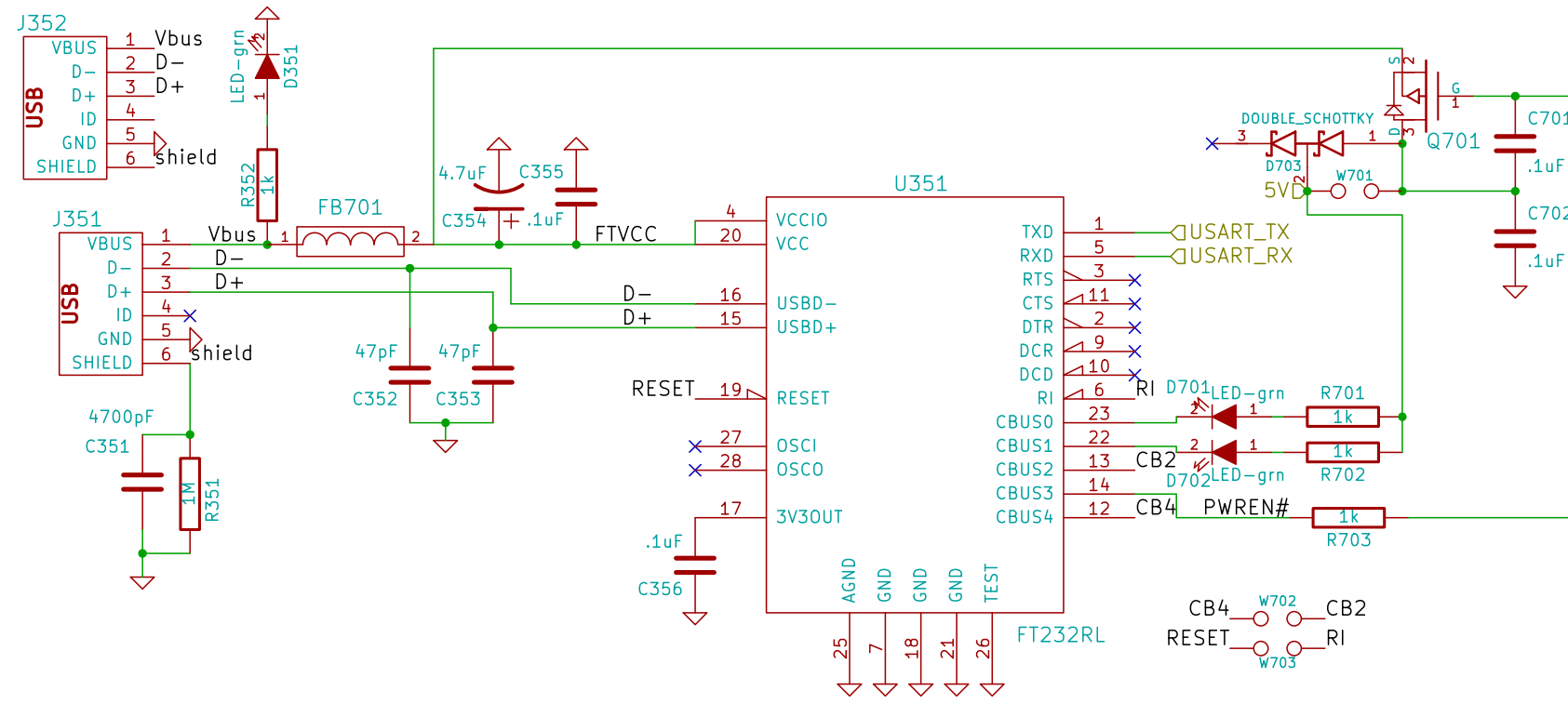
THE PCB WIRING IS SHOWN IN RED, GREEN WITH A BLUE BUS.

Screw terminals 1760500000

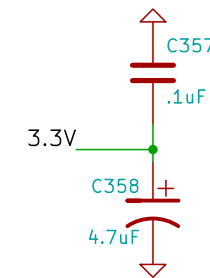
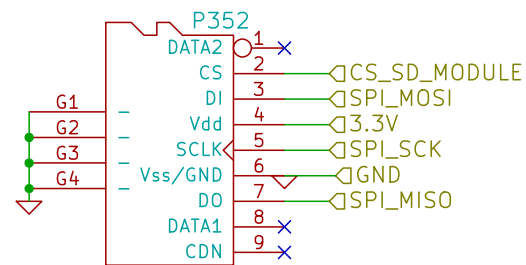
Screw connector PCB <http://octopart.com/39522-1007-molex-655409>
 Screw connector harness <http://octopart.com/partsearch#search/requestData&q=39520-0007>

rusEFI.com		
File: inj_12ch.sch		
Sheet: /inj_12ch/		
Title: Frankenso		
Size: B	Date: 3 nov 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

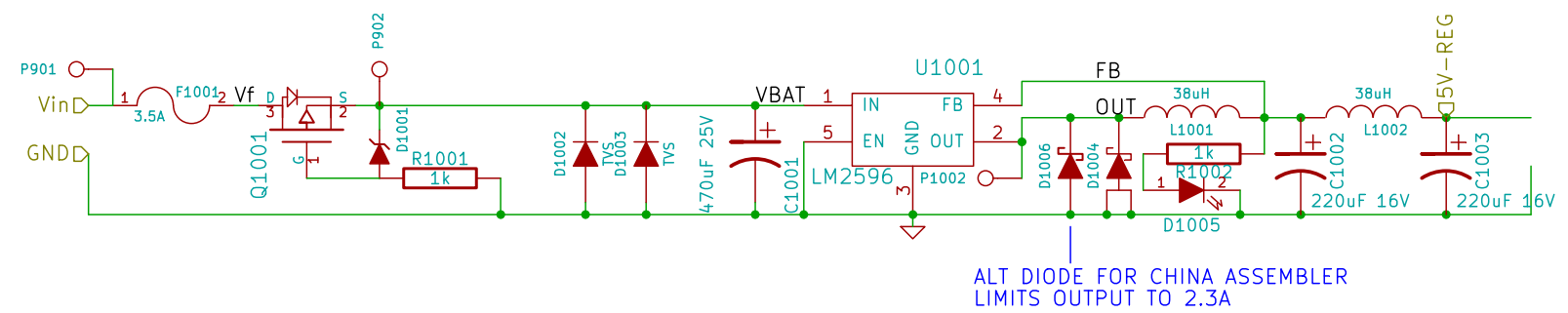


For right conn



SD card slot
USB TTL module

rusEFI.com		
File: mmc_usb_1.sch		
Sheet: /mmc_usb_1/		
Title: Frankenso		
Size: A4	Date: 3 nov 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 7/14



rusEFI.com

File: PWR_buck_12V_switcher.sch

Sheet: /PWR_buck_12V_switcher/

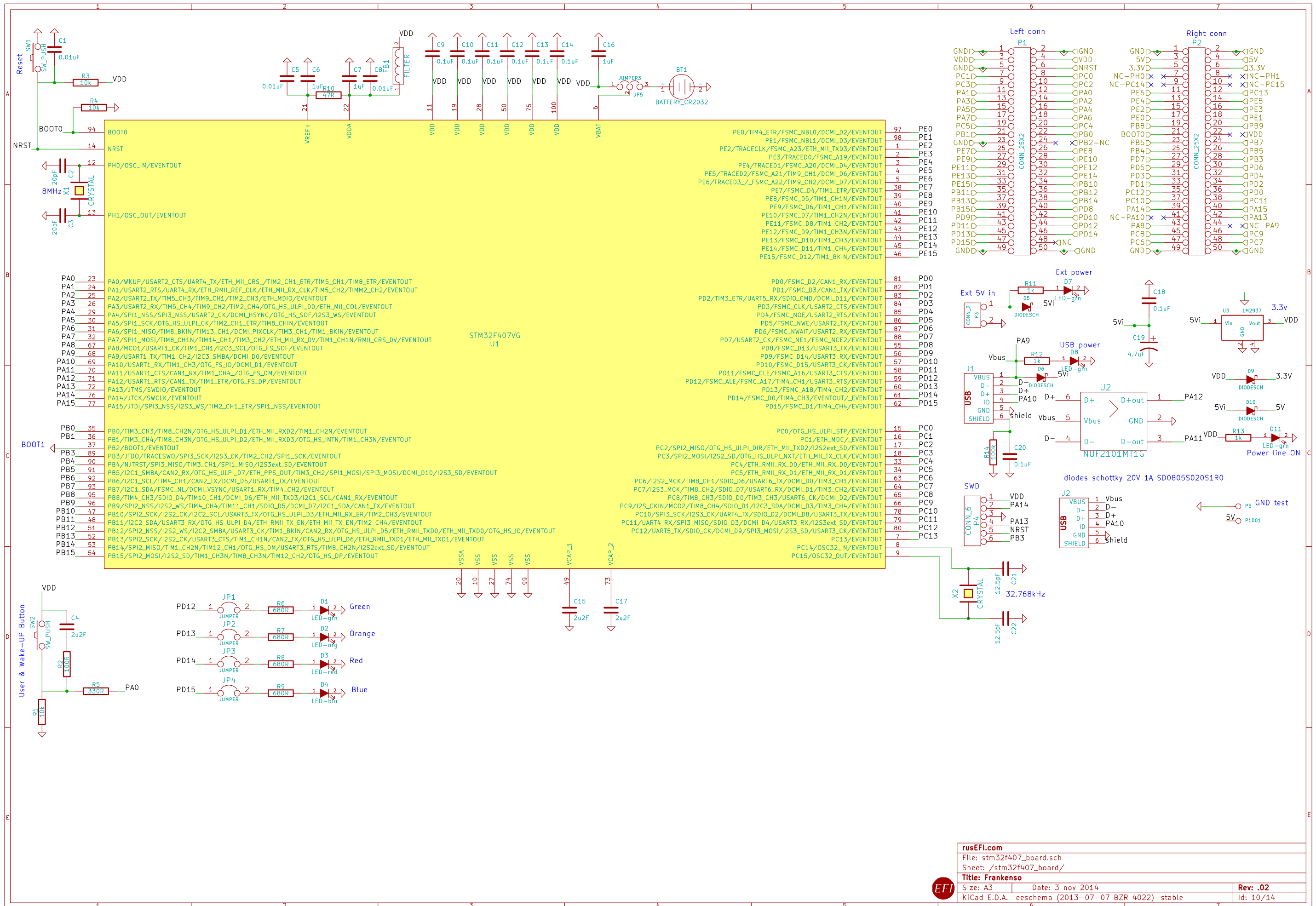
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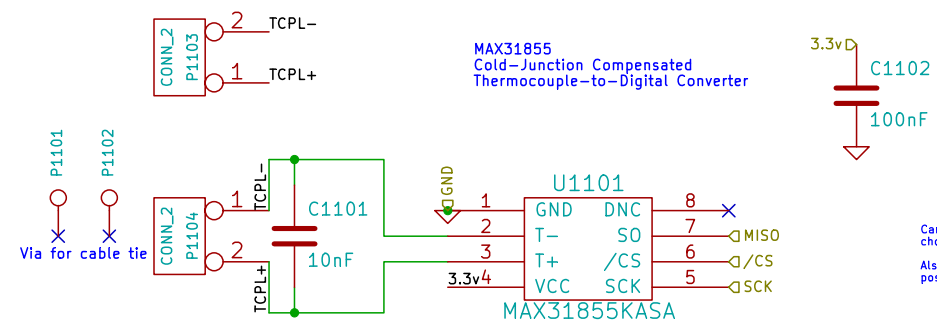
Size: A Date: 3 nov 2014

Rev: .02

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

Id: 9/14

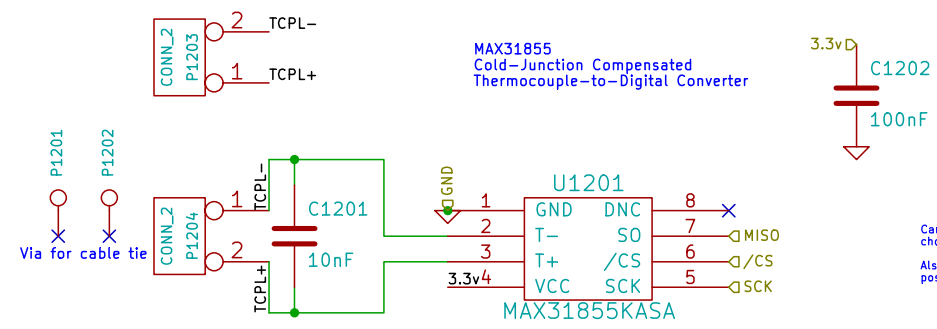




We want a big mass of copper in the TCPL joints, to dampen the cold junction temperature and to make it more measurable with this IC

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: 3 nov 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

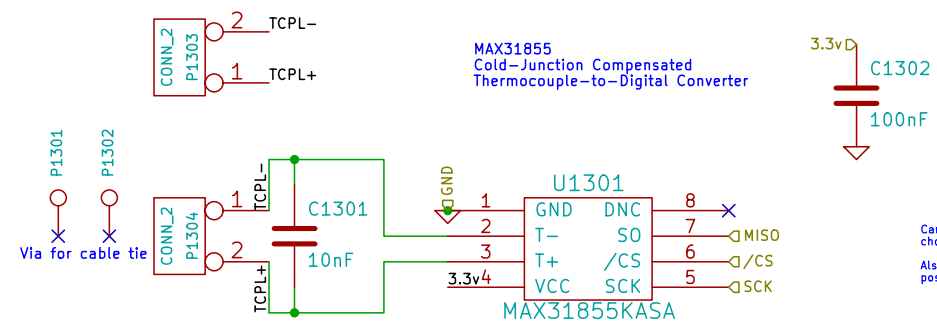
P1201
P1202
Via for cable tie

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: 3 nov 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

3.3vD
C1302
100nF

P1301
P1302
Via for cable tie

CONN_L2
P1303
1 TCPL+
2 TCPL-

CONN_L2
P1304
1 TCPL-
2 TCPL+

C1301
10nF

GND

3.3v4

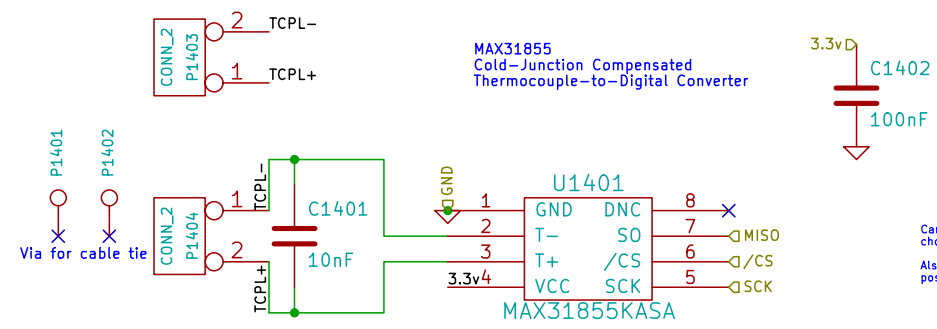
1 GND
2 T-
3 T+
4 VCC
5 SCK
6 /CS
7 MISO
8 DNC

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: /thermocouple3/		
Title: Electronic Industrial Temperature Interface (EITI)		
Size: A4	Date: 3 nov 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

U1401

MAX31855KASA

3.3v4
C1402
100nF

P1401
P1402
Via for cable tie

CONN_2
P1403
1 TCPL+
2 TCPL-

CONN_2
P1404
1 TCPL-
2 TCPL+

C1401
10nF

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
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We want a big mass of copper in the
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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: 3 nov 2014	Rev: .02
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 14/14