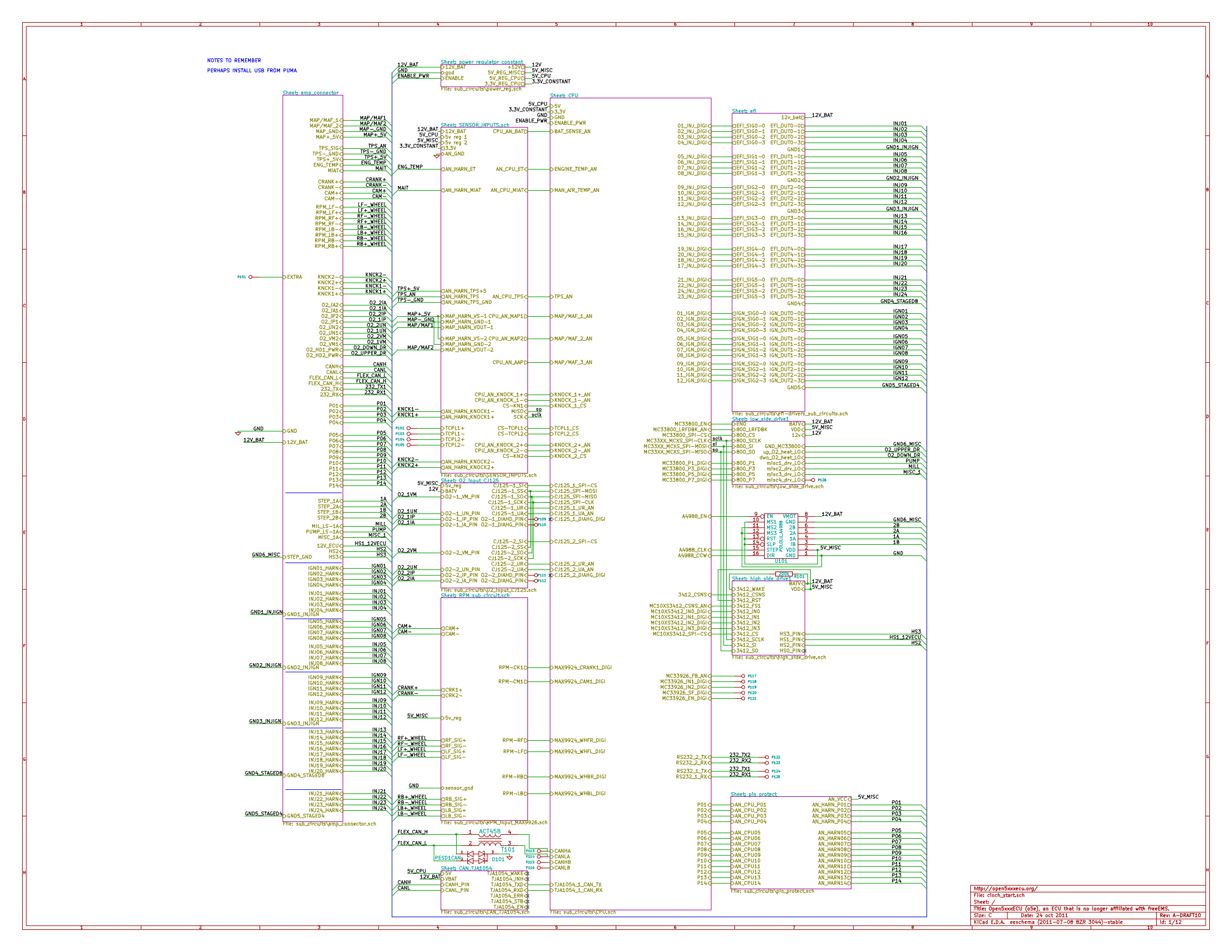
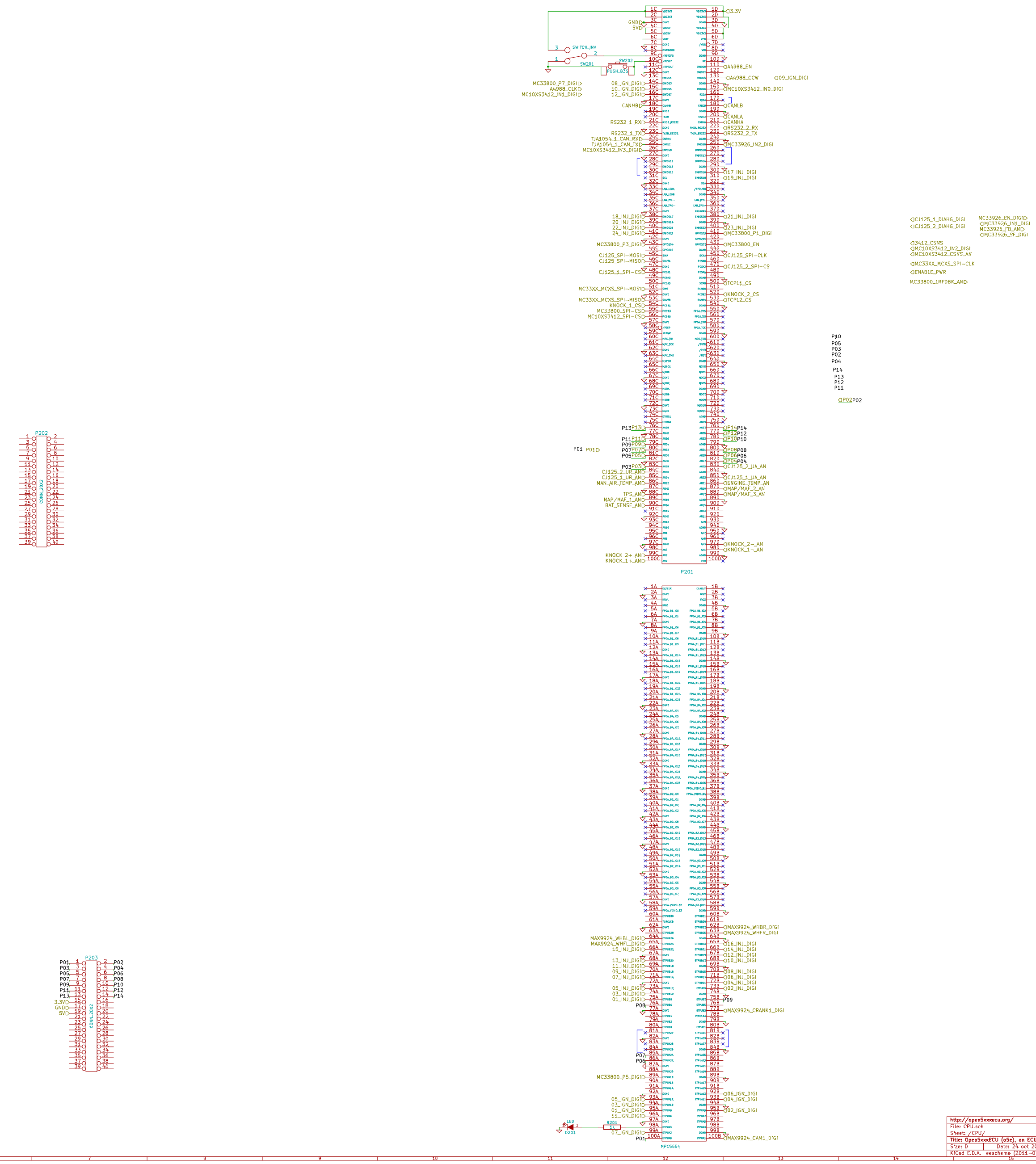
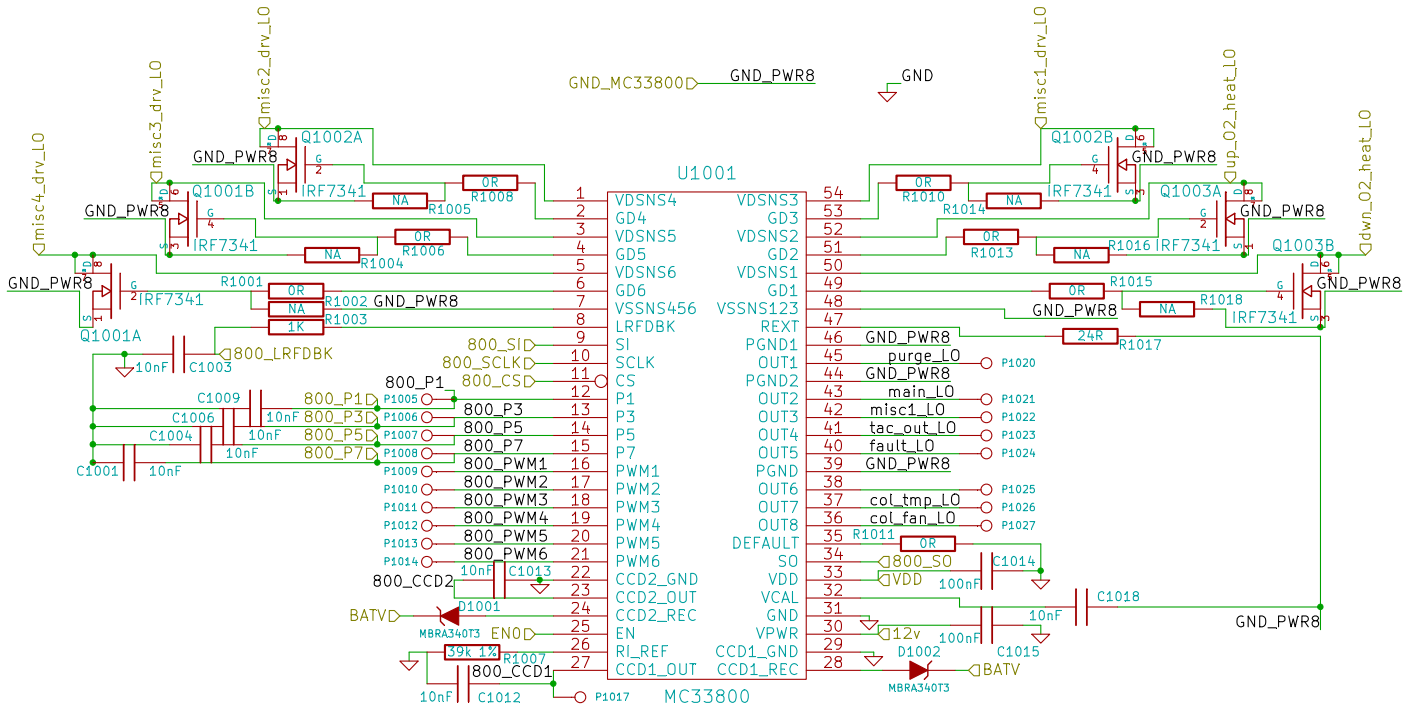
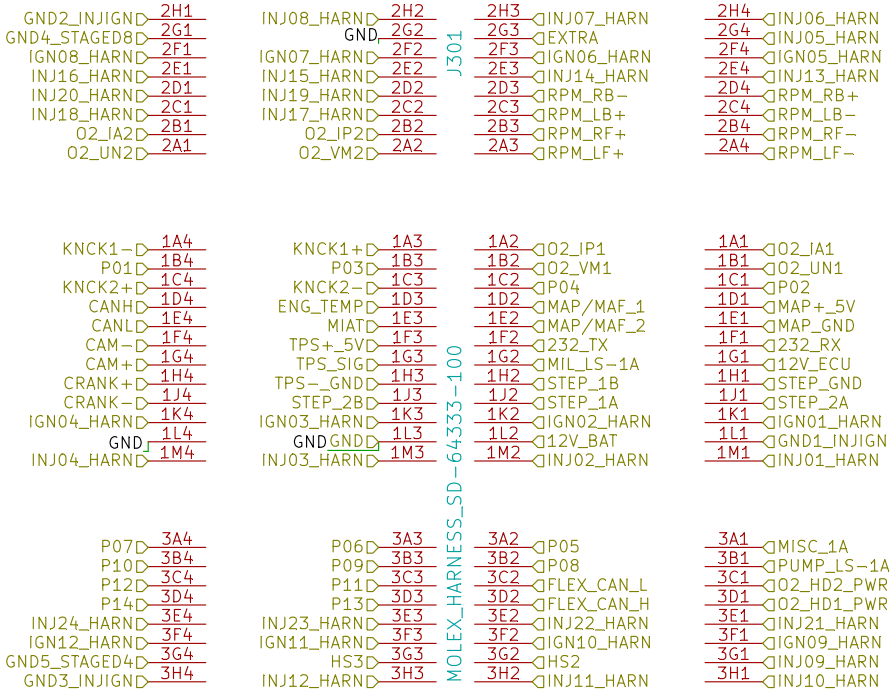

NOTES TO REMEMBER
PERHAPS INSTALL USB FROM PUMA
Sheet: power regulator constant
File: sub_circuits\power_reg.sch
Sheet: amp_connector
File: sub_circuits\amp_connector.sch
Sheet: SENSOR_INPUTS.sch
File: sub_circuits\SENSOR_INPUTS.sch
Sheet: O2_Input_CJ125
File: sub_circuits\O2_Input_CJ125.sch
Sheet: RPM_sub_circuits.sch
File: sub_circuits\RPM_input_MAX9926.sch
Sheet: CAN_TJA1054
File: sub_circuits\CAN_TJA1054.sch
Sheet: CPU
File: sub_circuits\CPU.sch
Sheet: efi
File: sub_circuits\efi_drivers_sub_circuits.sch
Sheet: low_side_drive1
File: sub_circuits\low_side_drive.sch
Sheet: high_side_drive1
File: sub_circuits\high_side_drive.sch
Sheet: pin_protect
File: sub_circuits\pin_protect.sch
http://open5xxxecu.org/
File: cinch_start.sch
Sheet: /
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.
Size: C
Date: 24 oct 2011
Rev: A-DRAFT10
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable
Id: 1/12



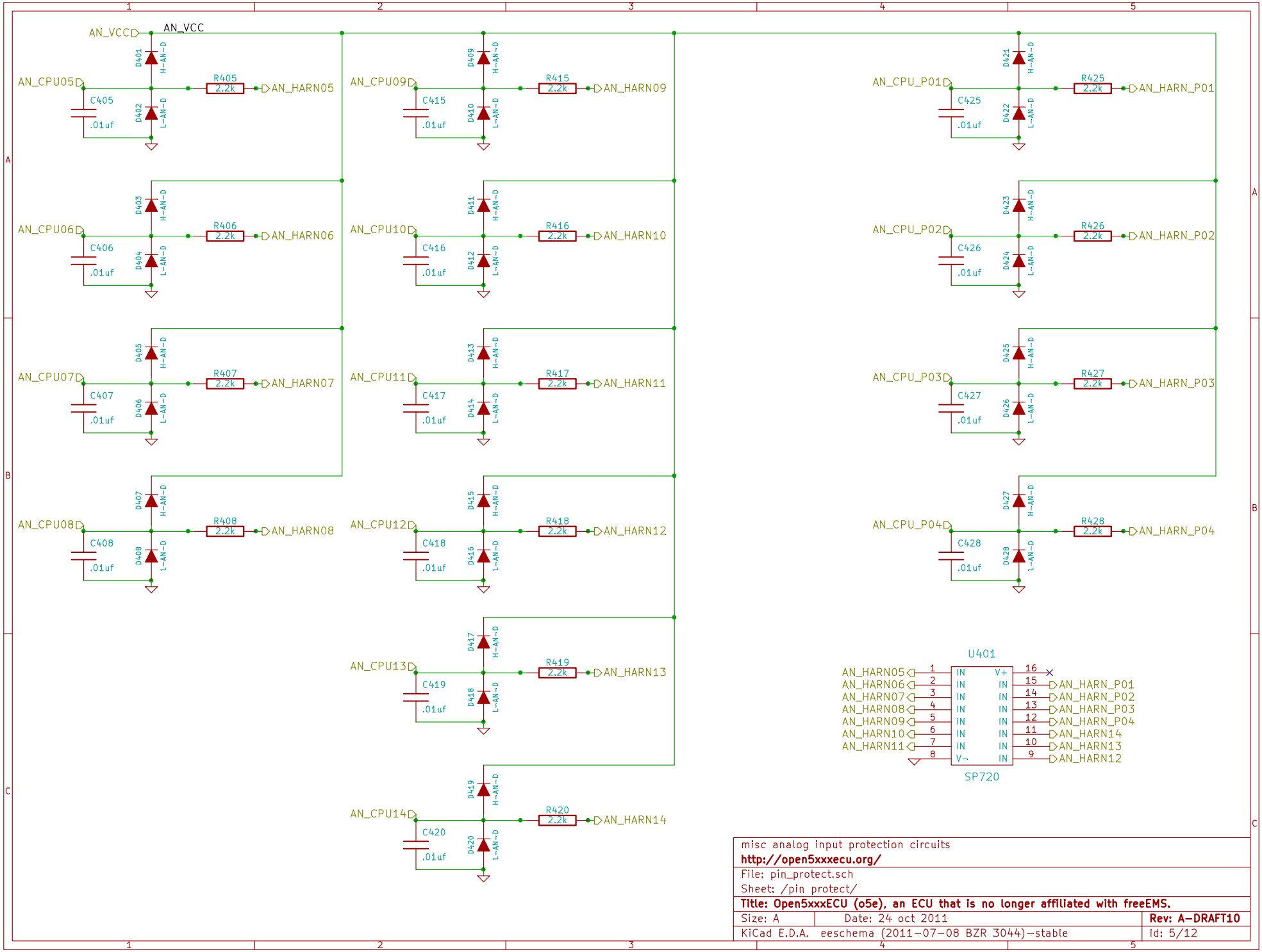
http://open5xxxecu.org/
File: CPU.sch
Sheet: /CPU/
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.
Size: D | Date: 24 oct 2011 | Rev: A-DRAFT10
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable | Id: 2/12



misc high side and low side drives		
http://open5xxxecu.org/		
File: low_side_drive.sch		
Sheet: /low_side_drive1/		
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.		
Size: A4	Date: 24 oct 2011	**Rev: A-DRAFT10**
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable		Id: 3/12



http://open5xxxecu.org/		
File: amp_connector.sch		
Sheet: /amp_connector/		
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.		
Size: A	Date: 24 oct 2011	**Rev: A-DRAFT10**
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable		Id: 4/12



misc analog input protection circuits

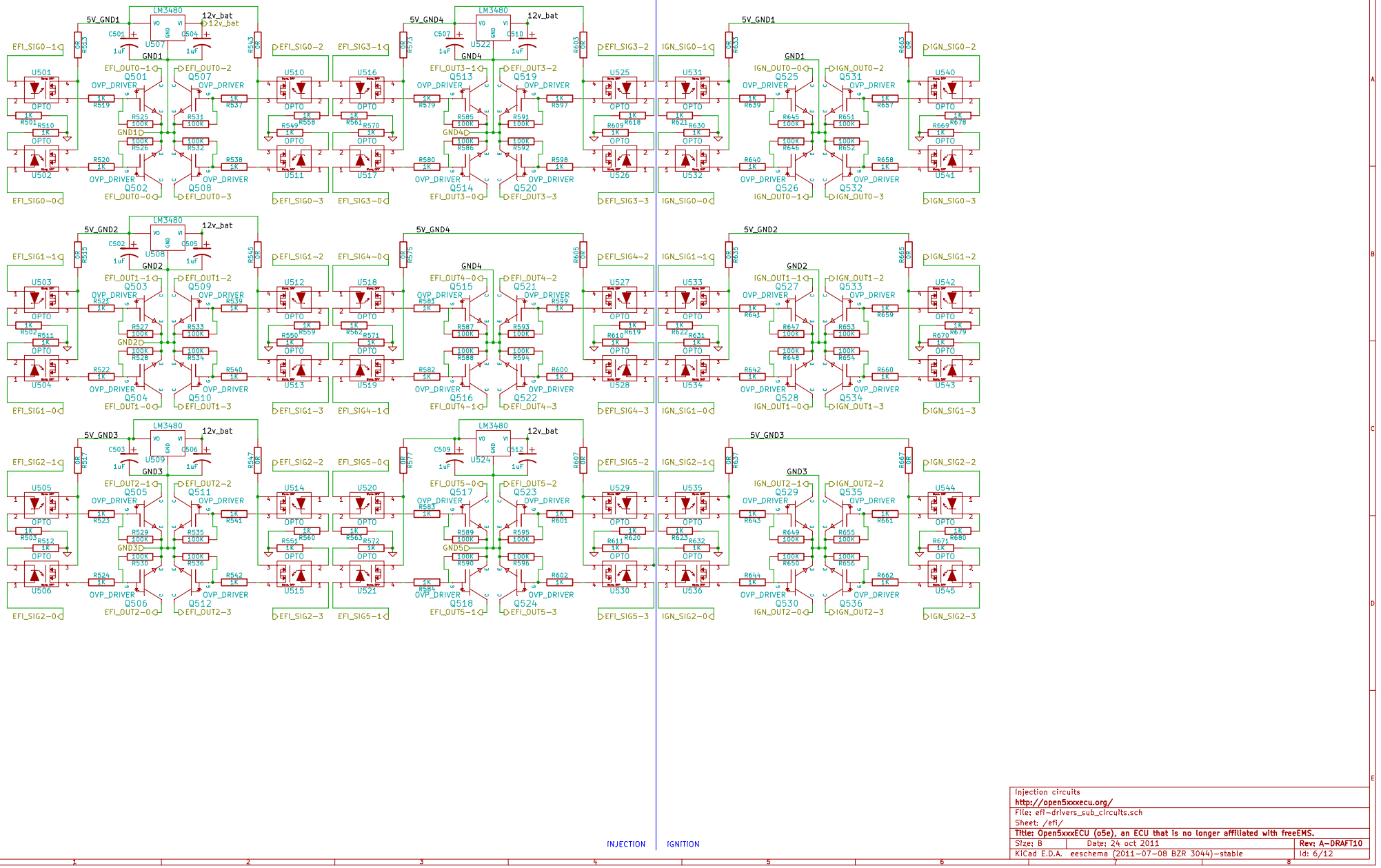
http://open5xxxecu.org/

File: pin_protect.sch

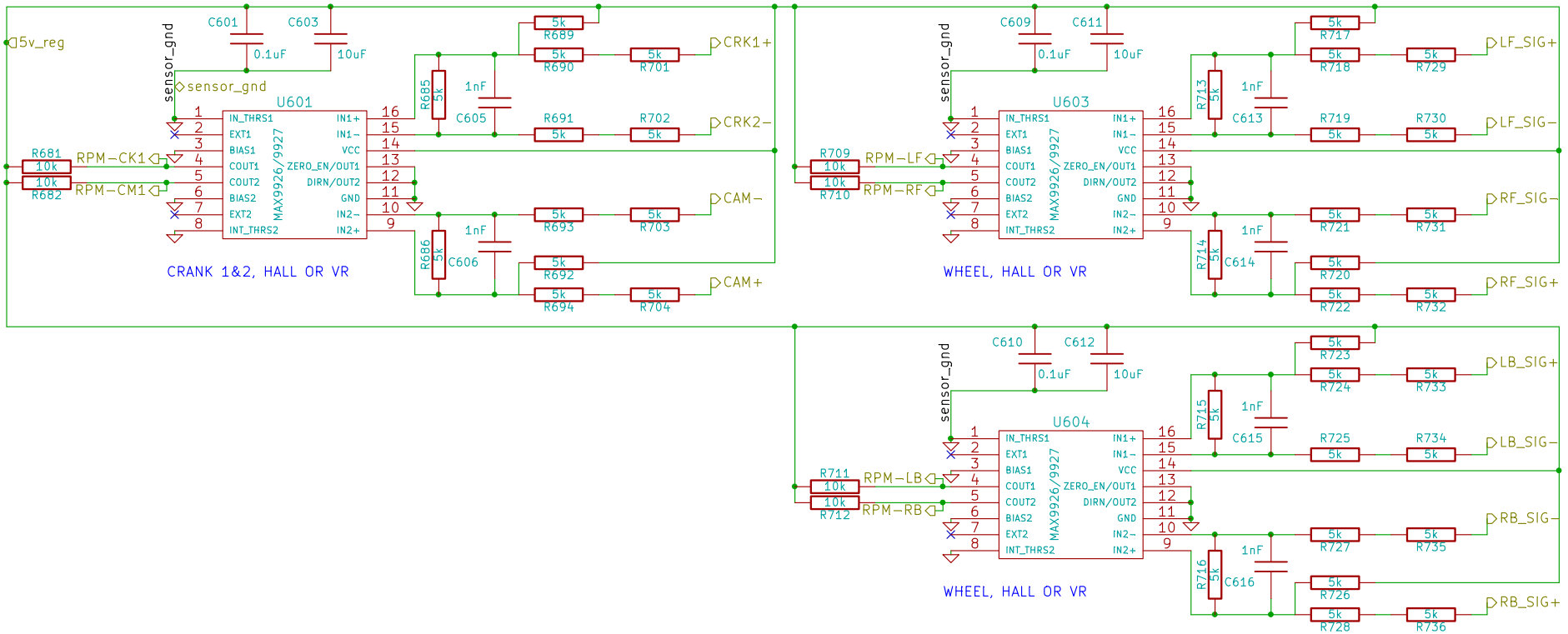
Sheet: /pin protect/

Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.

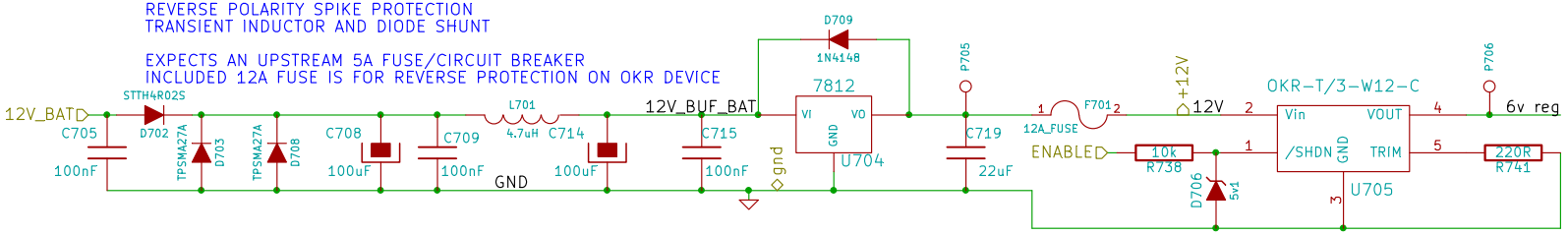
Size: A	Date: 24 oct 2011	**Rev: A-DRAFT10**
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable		Id: 5/12

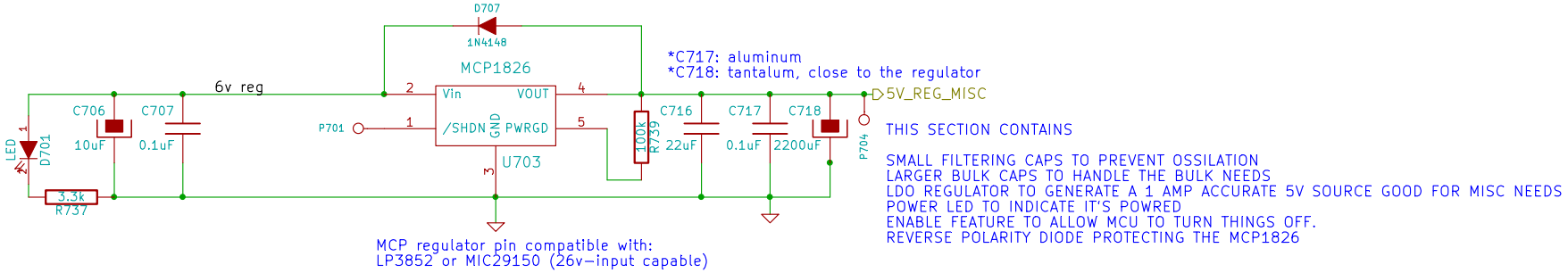


Injection circuits	
http://open5xxxecu.org/	
File: efi-drivers_sub_circuits.sch	
Sheet: /efi/	
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.	
Size: B	Date: 24 oct 2011 — Rev: A-DRAFT10
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable	Id: 6/12



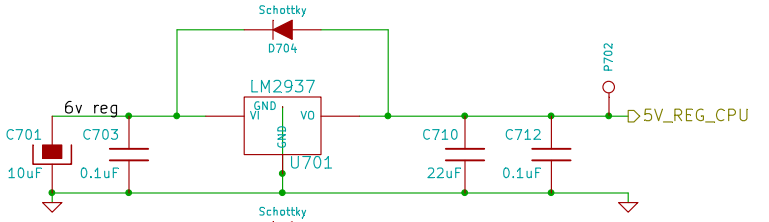
RPM input Engine and wheels		
http://open5xxxecu.org/		
File: RPM_input_MAX9926.sch		
Sheet: /RPM_sub_circuit.sch/		
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.		
Size: A	Date: 24 oct 2011	**Rev: A−DRAFT10**
KiCad E.D.A. eeschema (2011−07−08 BZR 3044)−stable		Id: 7/12





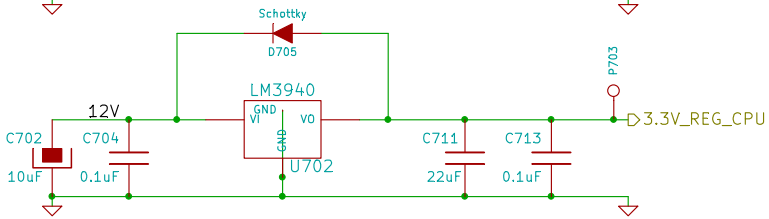
THIS SECTION CONTAINS

SMALL FILTERING CAPS TO PREVENT OSSILATION
LARGER BULK CAPS TO HANDLE THE BULK NEEDS
LDO REGULATOR TO GENERATE A 1 AMP ACCURATE 5V SOURCE GOOD FOR MISC NEEDS
POWER LED TO INDICATE IT'S POWRED
ENABLE FEATURE TO ALLOW MCU TO TURN THINGS OFF.
REVERSE POLARITY DIODE PROTECTING THE MCP1826



THIS SECTION CONTAINS

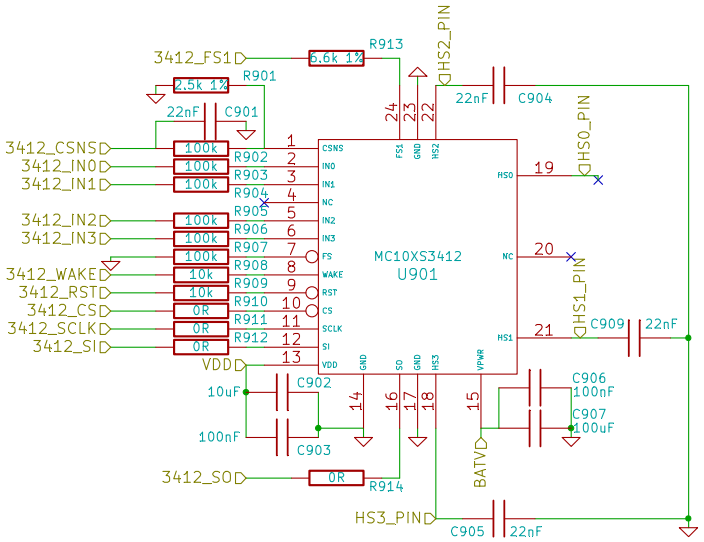
SMALL FILTERING CAPS TO PREVENT OSSILATION
LARGER BULK CAPS TO HANDLE THE BULK NEEDS
LDO REGULATOR TO GENERATE A 1 AMP 5V PERCISSION LOW RIPPLE SOURCE



THIS SECTION CONTAINS

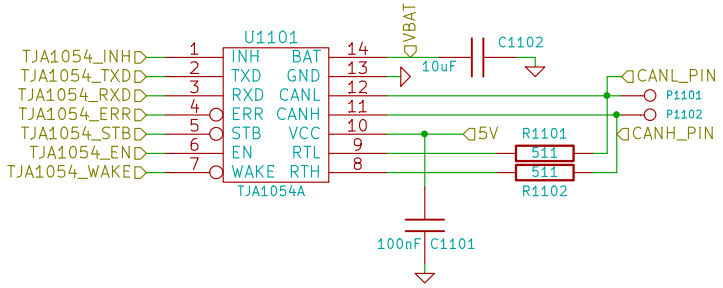
SMALL FILTERING CAPS TO PREVENT OSSILATION
LARGER BULK CAPS TO HANDLE THE BULK NEEDS
LDO REGULATOR TO GENERATE A 1 AMP 3.3V PERCISSION LOW RIPPLE SOURCE

power regulator		
http://open5xxxecu.org/		
File: power_reg.sch		
Sheet: /power regulator constant/		
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.		
Size: A	Date: 24 oct 2011	**Rev: A-DRAFT10**
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable		Id: 8/12



High side drive circuits		
http://open5xxxecu.org/		
File: high_side_drive.sch		
Sheet: /high_side_drive1/		
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.		
Size: A4	Date: 24 oct 2011	**Rev: A-DRAFT10**
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable		Id: 9/12

bat diode?
can caps?



comms CAN/USB/Other		
http://open5xxxecu.org/		
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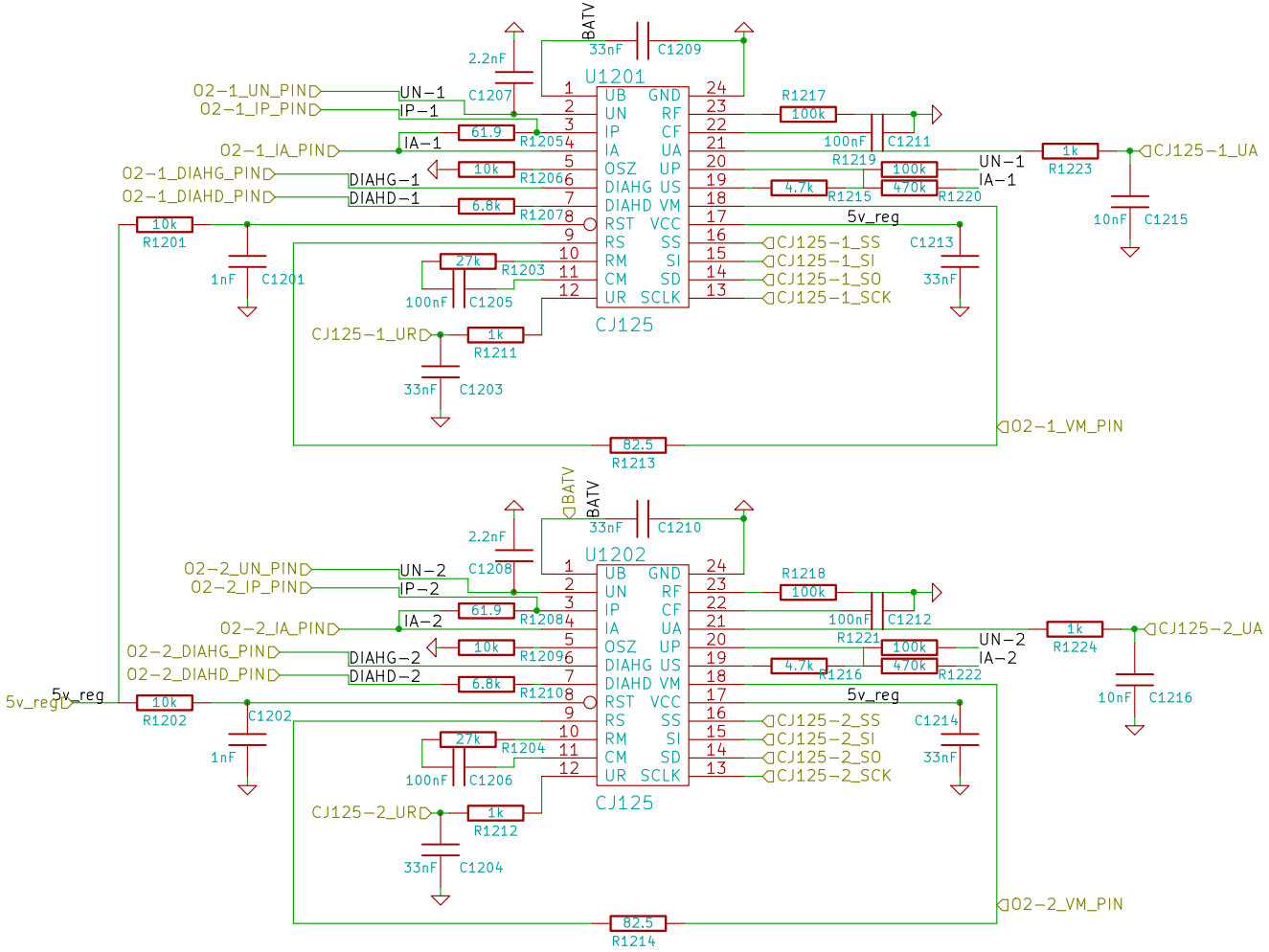
Sheet: /CAN_TJA1054/		
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.		
Size: User	Date: 24 oct 2011	**Rev: A-DRAFT10**
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable		Id: 10/12



2 channels of Wide O2		
http://open5xxxecu.org/		
File: O2_input_CJ125.sch		
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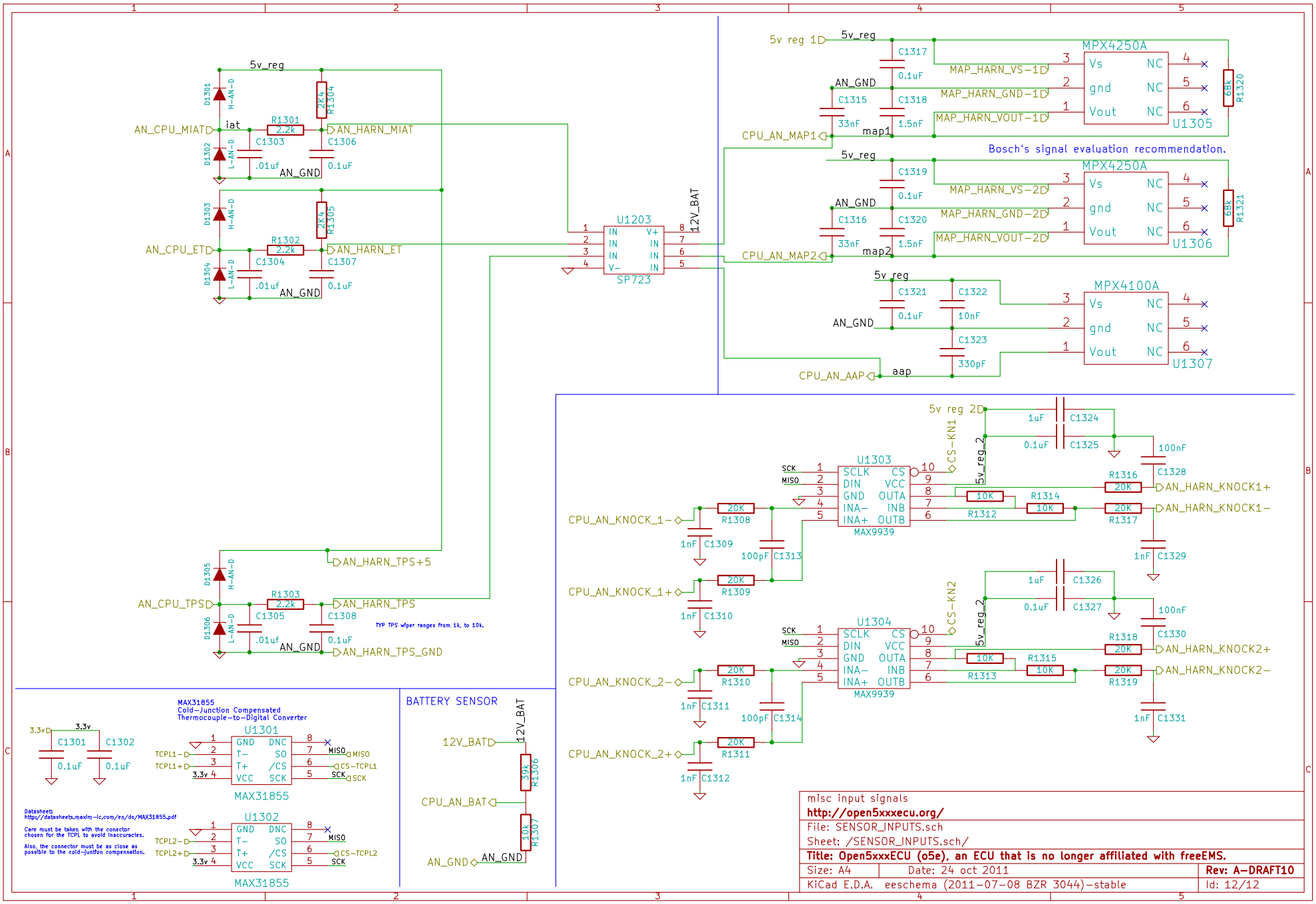
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.		
Size: User	Date: 24 oct 2011	**Rev: A-DRAFT10**
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable		Id: 11/12


5v_reg
AN_CPU_MIAT
iat
R1301
2.2k
C1303
.01uf
AN_GND
C1306
0.1uF
AN_HARN_MIAT
D1301
D1302
H-AN-D
L-AN-D
2K4
R1304
AN_CPU_ET
R1302
C1304
C1307
AN_HARN_ET
D1303
D1304
R1305
AN_CPU_TPS
R1303
C1305
C1308
AN_HARN_TPS
D1305
D1306
AN_HARN_TPS+5
TYP TPS wiper ranges from 1k, to 10k.
AN_HARN_TPS_GND
U1203
SP723
12V_BAT
5v reg 1
C1317
MAP_HARN_VS-1
MAP_HARN_GND-1
MAP_HARN_VOUT-1
AN_GND
C1315
33nF
C1318
1.5nF
map1
CPU_AN_MAP1
MPX4250A
U1305
R1320
68k
Bosch's signal evaluation recommendation.
C1319
MAP_HARN_VS-2
MAP_HARN_GND-2
MAP_HARN_VOUT-2
C1316
C1320
map2
CPU_AN_MAP2
U1306
R1321
C1321
C1322
10nF
C1323
330pF
MPX4100A
U1307
CPU_AN_AAP
aap
5v reg 2
C1324
1uF
C1325
0.1uF
100nF
C1328
U1303
MAX9939
SCK
MISO
SCLK
DIN
GND
INA-
INA+
CS
VCC
OUTA
INB
OUTB
CS-KN1
5v_reg_2
R1316
20K
AN_HARN_KNOCK1+
10K
R1314
R1312
R1317
AN_HARN_KNOCK1-
CPU_AN_KNOCK_1-
R1308
1nF
C1309
100pF
C1313
CPU_AN_KNOCK_1+
R1309
C1310
C1329
C1326
C1327
C1330
U1304
CS-KN2
R1318
AN_HARN_KNOCK2+
R1315
R1313
R1319
AN_HARN_KNOCK2-
CPU_AN_KNOCK_2-
R1310
C1311
C1314
CPU_AN_KNOCK_2+
R1311
C1312
C1331
3.3v
C1301
C1302
0.1uF
MAX31855
Cold-Junction Compensated
Thermocouple-to-Digital Converter
U1301
GND
T-
T+
VCC
DNC
SO
/CS
SCK
TCPL1-
TCPL1+
MISO
CS-TCPL1
SCK
MAX31855
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.
U1302
TCPL2-
TCPL2+
CS-TCPL2
BATTERY SENSOR
CPU_AN_BAT
39k
R1306
10k
R1307
misc input signals
http://open5xxxecu.org/
File: SENSOR_INPUTS.sch
Sheet: /SENSOR_INPUTS.sch/
Title: Open5xxxECU (o5e), an ECU that is no longer affiliated with freeEMS.
Size: A4
Date: 24 oct 2011
Rev: A-DRAFT10
KiCad E.D.A. eeschema (2011-07-08 BZR 3044)-stable
Id: 12/12