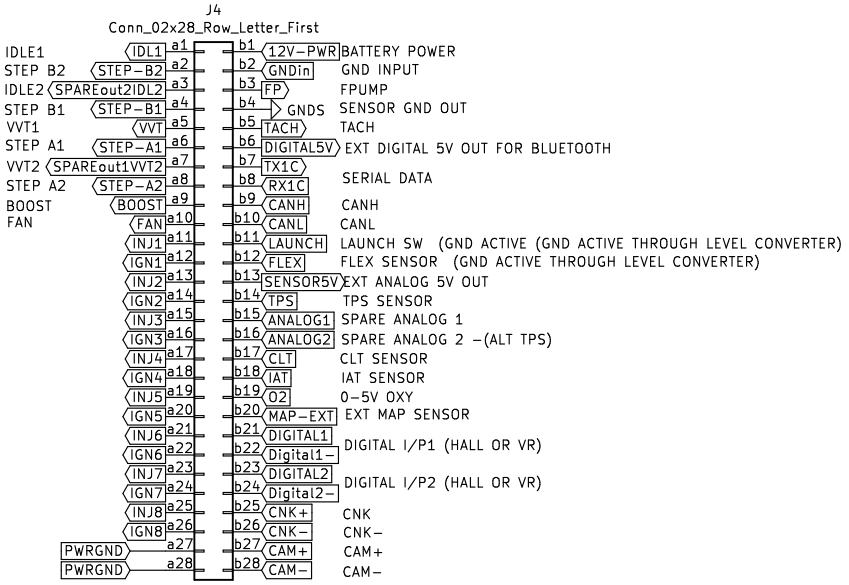


Sheet: TEENSY_MODULE
File: TEENSY_MODULE.sch

Sheet: OTHER
File: OTHER.sch

Sheet: CRANKandCAM
File: CRANKandCAM.sch

Sheet: VVTcams
File: VVTcams.sch

Sheet: PSU
File: PSU.sch

Sheet: ANALOG
File: ANALOG.sch

Sheet: InjIgn
File: InjIgn.sch

Sheet: CLAMPS
File: CLAMPS.sch

Sheet: INPUTS
File: INPUTS.sch

Sheet: OUTPUTS
File: OUTPUTS.sch

J3 J2 J1
TOOTHING HOLE

K88 ECU V2.1

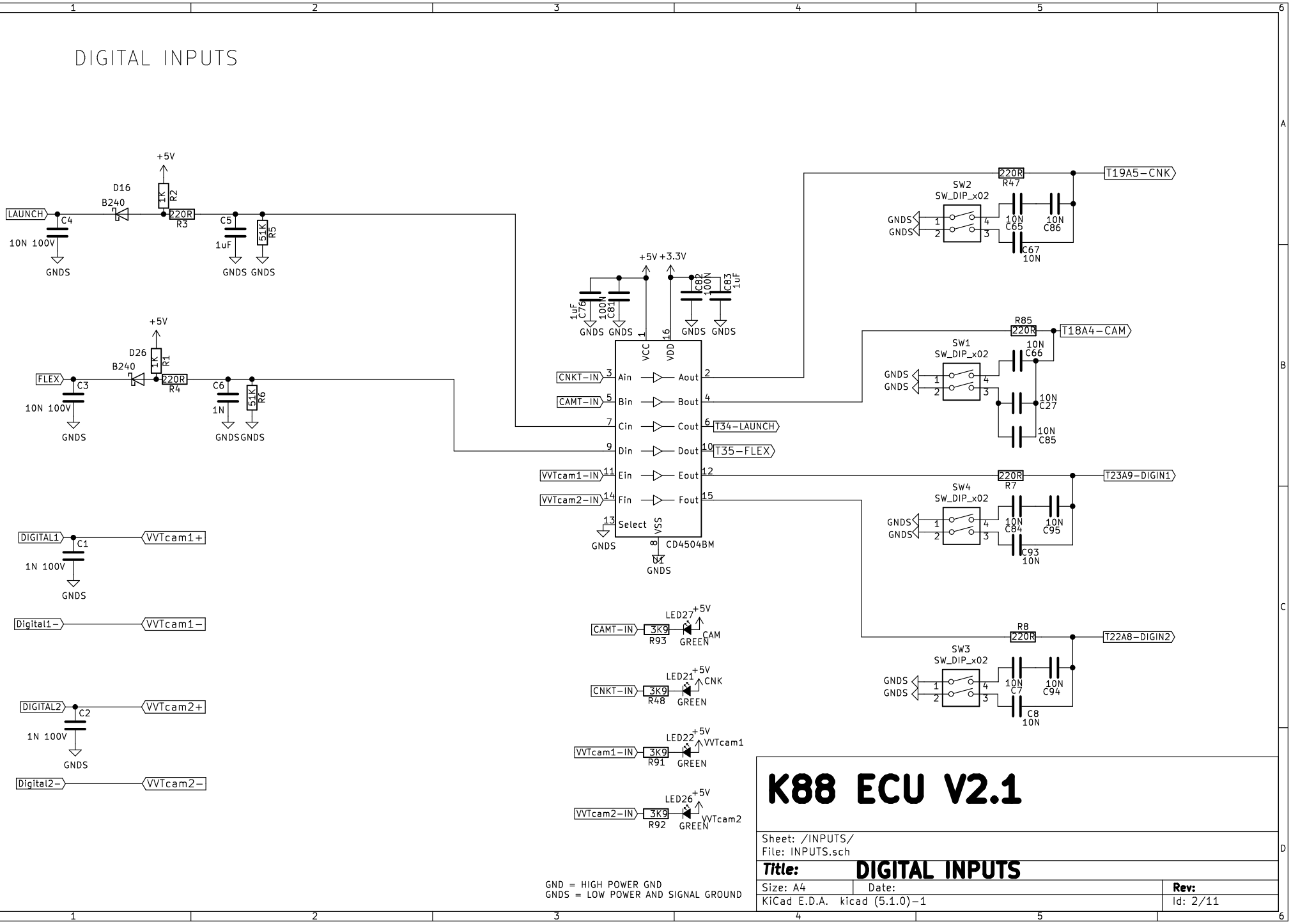
Sheet: /
File: KiwiEFIk88V2.sch

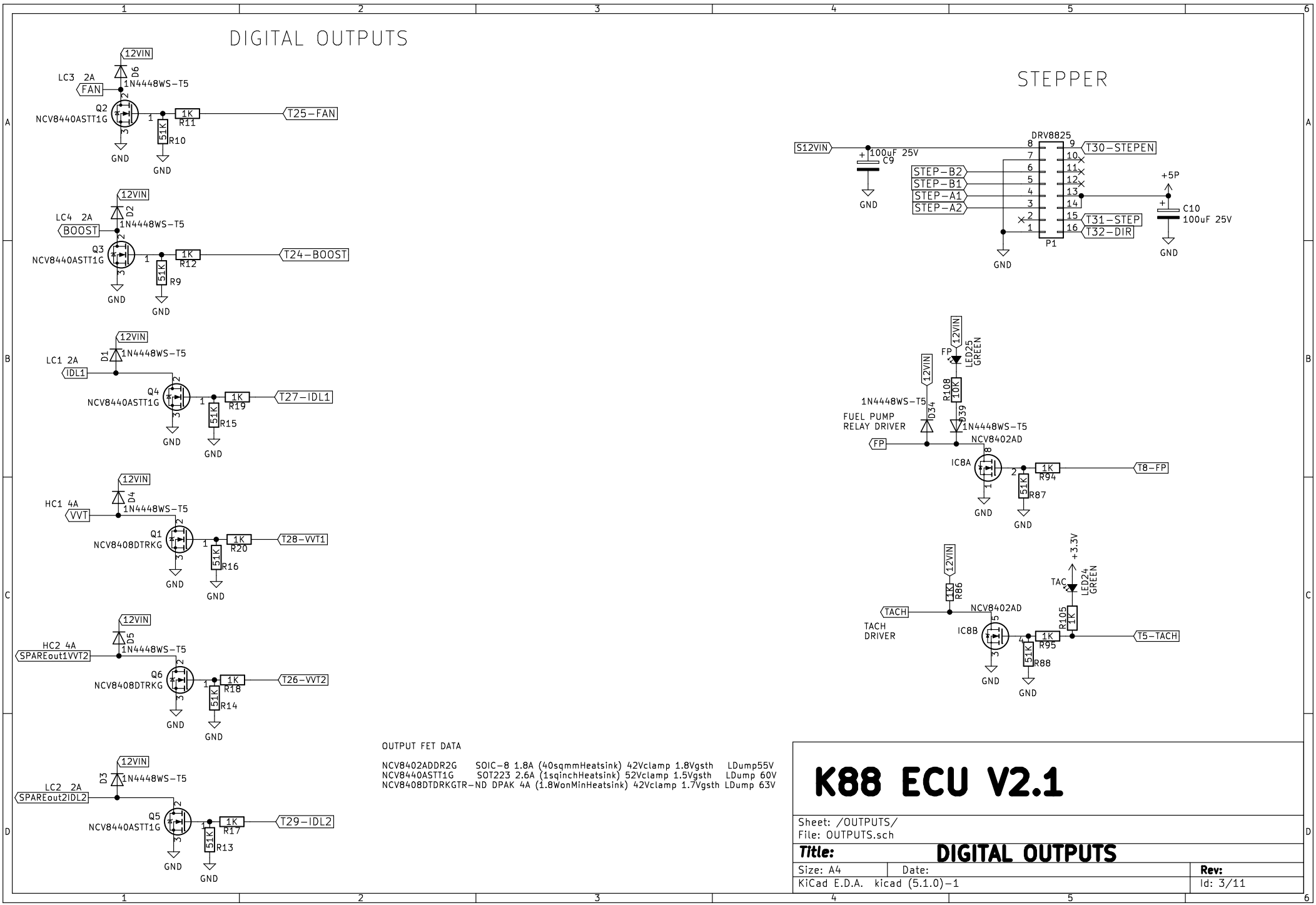
WWW.GITHUB.COM/NEIL427

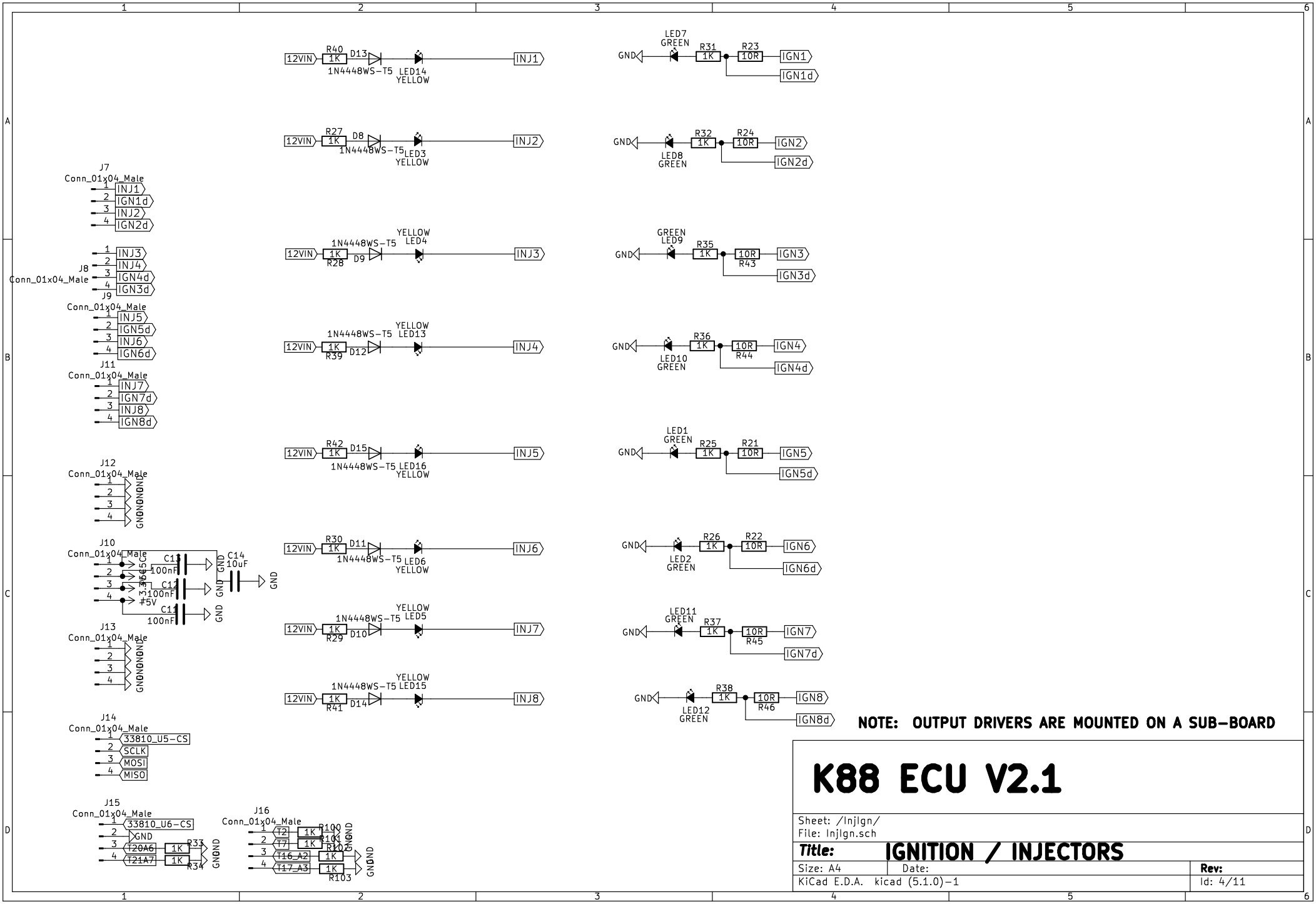
Title: **KiwiEFI K88 V2 Teensy Based ECU**

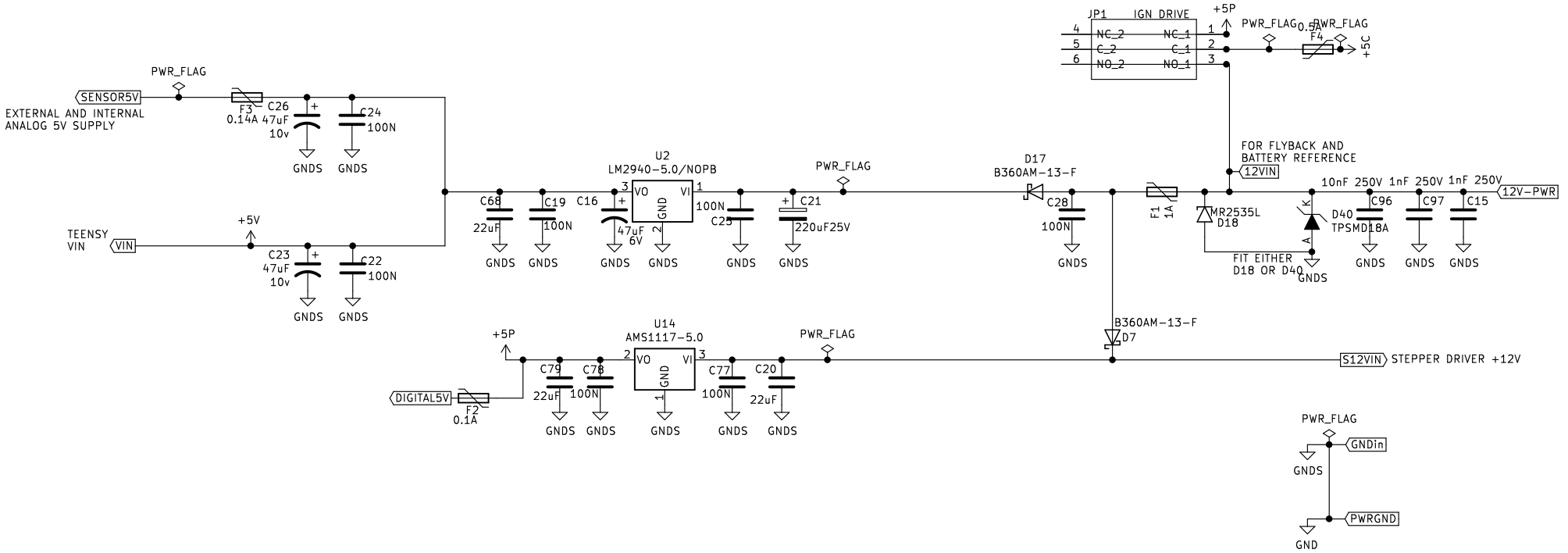
WWW.KiwiEFI.NZ

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.0)-1		Id: 1/11


DIGITAL INPUTS
LAUNCH
C4
10N 100V
GNDS
D16
B240
+5V
1K
R2
220R
R3
C5
1uF
51K
R5
GNDS GNDS
FLEX
C3
10N 100V
GNDS
D26
B240
+5V
1K
R1
220R
R4
C6
1N
51K
R6
GNDSGNDS
DIGITAL1
C1
1N 100V
GNDS
VVTcam1+
Digital1-
VVTcam1-
DIGITAL2
C2
1N 100V
GNDS
VVTcam2+
Digital2-
VVTcam2-
+5V +3.3V
1uF C76
100N C81
C82 100N
C83 1uF
GNDS GNDS
GNDS GNDS
VCC
VDD
CNKT-IN
CAMT-IN
VVTcam1-IN
VVTcam2-IN
Ain
Bin
Cin
Din
Ein
Fin
Select
Aout
Bout
Cout
Dout
Eout
Fout
VSS
CD4504BM
T34-LAUNCH
T35-FLEX
LED27 +5V
CAMT-IN
3K9
R93
GREEN
CAM
LED21 +5V
CNKT-IN
3K9
R48
GREEN
CNK
LED22 +5V
VVTcam1-IN
3K9
R91
GREEN
VVTcam1
LED26 +5V
VVTcam2-IN
3K9
R92
GREEN
VVTcam2
GND = HIGH POWER GND
GNDS = LOW POWER AND SIGNAL GROUND
SW2
SW_DIP_x02
220R
R47
T19A5-CNK
10N C65
10N C86
C67 10N
SW1
SW_DIP_x02
R85
220R
T18A4-CAM
10N C66
10N C27
10N C85
SW4
SW_DIP_x02
220R
R7
T23A9-DIGIN1
10N C84
10N C95
C93 10N
SW3
SW_DIP_x02
R8
220R
T22A8-DIGIN2
10N C7
10N C94
C8 10N
K88 ECU V2.1
Sheet: /INPUTS/
File: INPUTS.sch
Title: DIGITAL INPUTS
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.0)-1
Id: 2/11


DIGITAL OUTPUTS
12VIN
LC3 2A
FAN
D6
1N4448WS-T5
Q2
NCV8440ASTT1G
1K
R11
T25-FAN
51K
R10
GND
LC4 2A
BOOST
D2
Q3
T24-BOOST
R12
R9
LC1 2A
IDL1
D1
Q4
T27-IDL1
R19
R15
HC1 4A
VVT
D4
Q1
NCV8408DTRKG
T28-VVT1
R20
R16
HC2 4A
SPAREout1VVT2
D5
Q6
T26-VVT2
R18
R14
LC2 2A
SPAREout2IDL2
D3
Q5
T29-IDL2
R17
R13
STEPPER
S12VIN
100uF 25V
C9
DRV8825
P1
STEP-B2
STEP-B1
STEP-A1
STEP-A2
T30-STEPEN
T31-STEP
T32-DIR
+5P
C10
100uF 25V
FP
LED25
GREEN
R108
10K
D34
D39
FUEL PUMP
RELAY DRIVER
NCV8402AD
IC8A
T8-FP
R94
R87
TACH
TACH
DRIVER
IC8B
LED24
GREEN
R105
R86
R95
R88
T5-TACH
+3.3V
OUTPUT FET DATA
NCV8402ADDR2G SOIC-8 1.8A (40sqmmHeatsink) 42Vclamp 1.8Vgsth LDump55V
NCV8440ASTT1G SOT223 2.6A (1sqinchHeatsink) 52Vclamp 1.5Vgsth LDump 60V
NCV8408DTDRKGTR-ND DPAK 4A (1.8WonMinHeatsink) 42Vclamp 1.7Vgsth LDump 63V
K88 ECU V2.1
Sheet: /OUTPUTS/
File: OUTPUTS.sch
Title: DIGITAL OUTPUTS
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.0)-1
Id: 3/11


12VIN
R40
1K
D13
1N4448WS-T5
LED14
YELLOW
INJ1
GND
LED7
GREEN
R31
1K
R23
10R
IGN1
IGN1d
12VIN
R27
1K
D8
1N4448WS-T5
LED3
YELLOW
INJ2
GND
R32
1K
R24
10R
LED8
GREEN
IGN2
IGN2d
J7
Conn_01x04_Male
1
INJ1
2
IGN1d
3
INJ2
4
IGN2d
12VIN
1K
R28
D9
1N4448WS-T5
YELLOW
LED4
INJ3
GND
GREEN
LED9
R35
1K
10R
R43
IGN3
IGN3d
J8
Conn_01x04_Male
1
INJ3
2
INJ4
3
IGN4d
4
IGN3d
J9
Conn_01x04_Male
1
INJ5
2
IGN5d
3
INJ6
4
IGN6d
12VIN
1K
R39
D12
1N4448WS-T5
YELLOW
LED13
INJ4
GND
R36
1K
10R
R44
LED10
GREEN
IGN4
IGN4d
J11
Conn_01x04_Male
1
INJ7
2
IGN7d
3
INJ8
4
IGN8d
12VIN
R42
1K
D15
1N4448WS-T5
LED16
YELLOW
INJ5
GND
LED1
GREEN
R25
1K
R21
10R
IGN5
IGN5d
J12
Conn_01x04_Male
1
2
3
4
GNDGNDGNDGND
12VIN
R30
1K
D11
1N4448WS-T5
LED6
YELLOW
INJ6
GND
R26
1K
R22
10R
LED2
GREEN
IGN6
IGN6d
J10
Conn_01x04_Male
1
2
3
4
3.3V
5V
C12
100nF
C13
100nF
C11
100nF
C14
10uF
GND
GND
GND
12VIN
R29
1K
D10
1N4448WS-T5
YELLOW
LED5
INJ7
GND
LED11
GREEN
R37
1K
10R
R45
IGN7
IGN7d
J13
Conn_01x04_Male
1
2
3
4
GNDGNDGNDGND
12VIN
R41
1K
D14
1N4448WS-T5
YELLOW
LED15
INJ8
GND
R38
1K
10R
R46
LED12
GREEN
IGN8
IGN8d
J14
Conn_01x04_Male
1
33810_U5-CS
2
SCLK
3
MOSI
4
MISO
J15
Conn_01x04_Male
1
33810_U6-CS
2
GND
3
T20A6
4
T21A7
1K
R33
1K
R34
GNDGND
J16
Conn_01x04_Male
1
T2
2
T7
3
T16_A2
4
T17_A3
1K
R100
1K
R101
1K
R102
1K
R103
GNDGND
NOTE: OUTPUT DRIVERS ARE MOUNTED ON A SUB-BOARD
K88 ECU V2.1
Sheet: /InjIgn/
File: InjIgn.sch
Title: IGNITION / INJECTORS
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.0)-1
Id: 4/11



PSU VOLTAGE RAILS

SENSOR5V = FOR ANALOG
+5V = 5V FOR DIGITAL VIN FOR MCU
+3.3V = 3V3 FROM TEENSY REGULATOR
12VIN = IGN SW INPUT 12V POWER
+12V-BAT = BATTERY INPUT 12V POWER

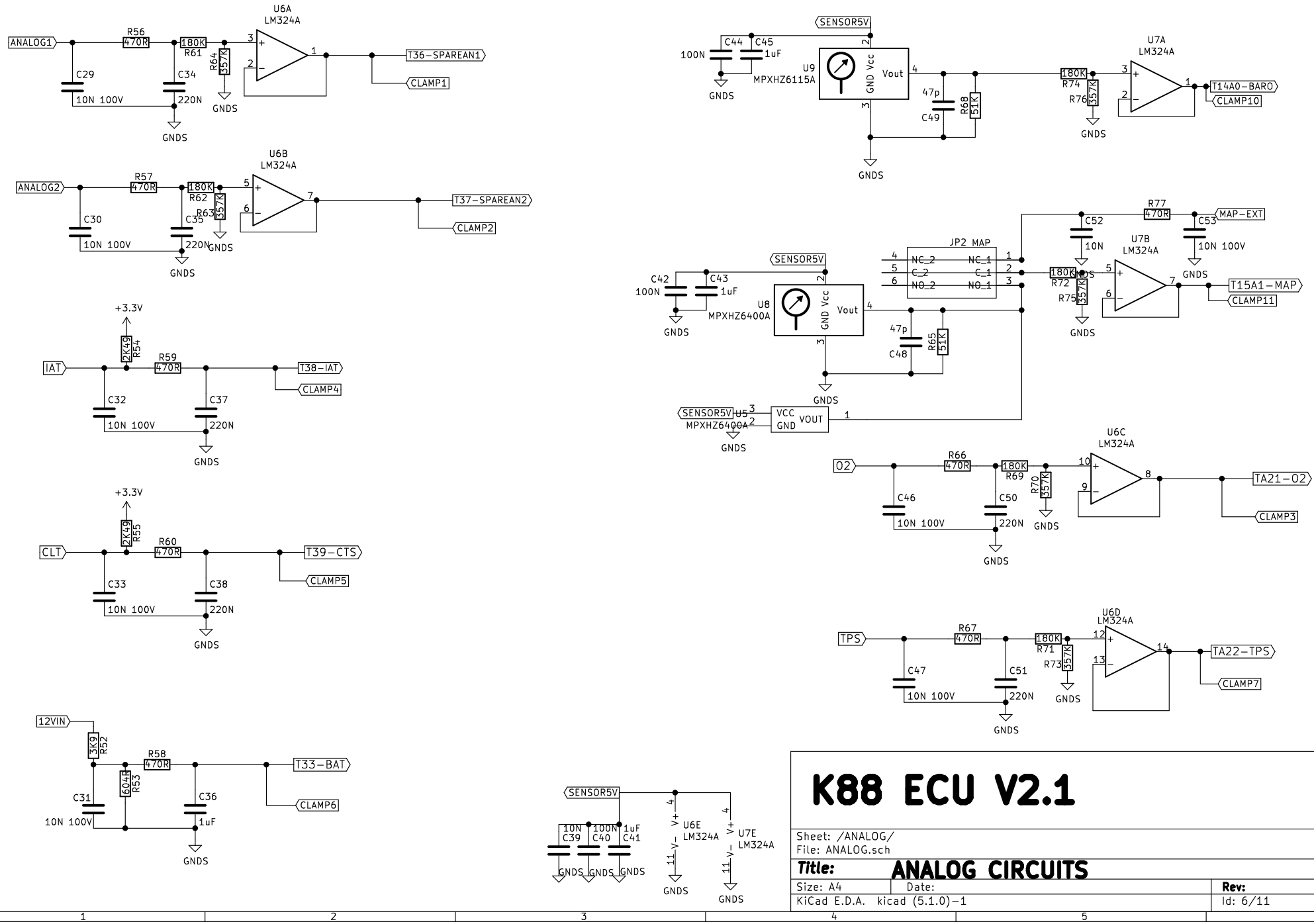
GND = HIGH POWER GND
GNDS = LOW POWER AND SIGNAL GROUND

K88 ECU V2.1

Sheet: /PSU/
File: PSU.sch

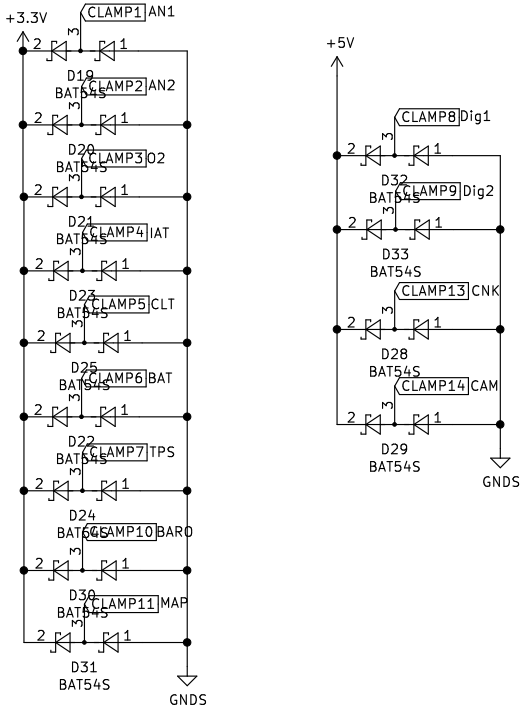
Title: POWER SUPPLY

Size: A4 | Date: | **Rev:**
KiCad E.D.A. kicad (5.1.0)-1 | Id: 5/11



K88 ECU V2.1

Sheet: /ANALOG/	
File: ANALOG.sch	
Title: **ANALOG CIRCUITS**	
Size: A4	Date:
KiCad E.D.A. kicad (5.1.0)-1	Rev: Id: 6/11



K88 ECU V2.1

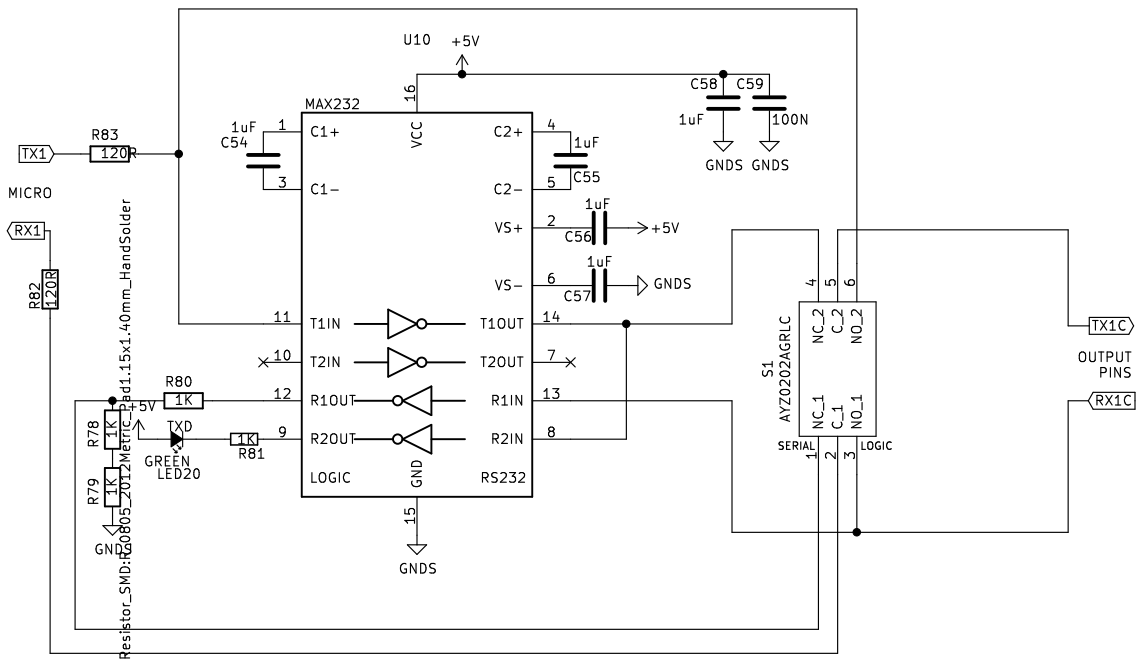
Sheet: /CLAMPS/
File: CLAMPS.sch

Title: ESD CLAMPS

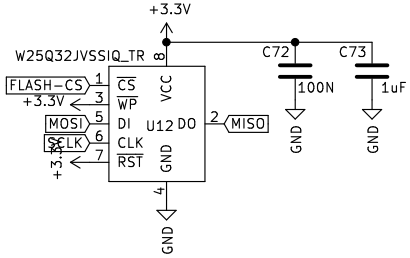
Size: A4 | Date: | **Rev:**

KiCad E.D.A. kicad (5.1.0)-1 | Id: 7/11

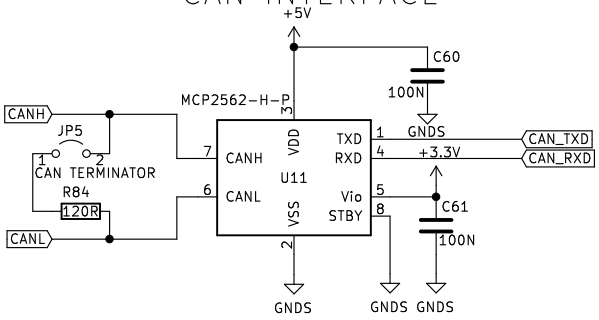
SERIAL RS232 / LOGIC LEVEL



FLASH MEMORY



CAN INTERFACE

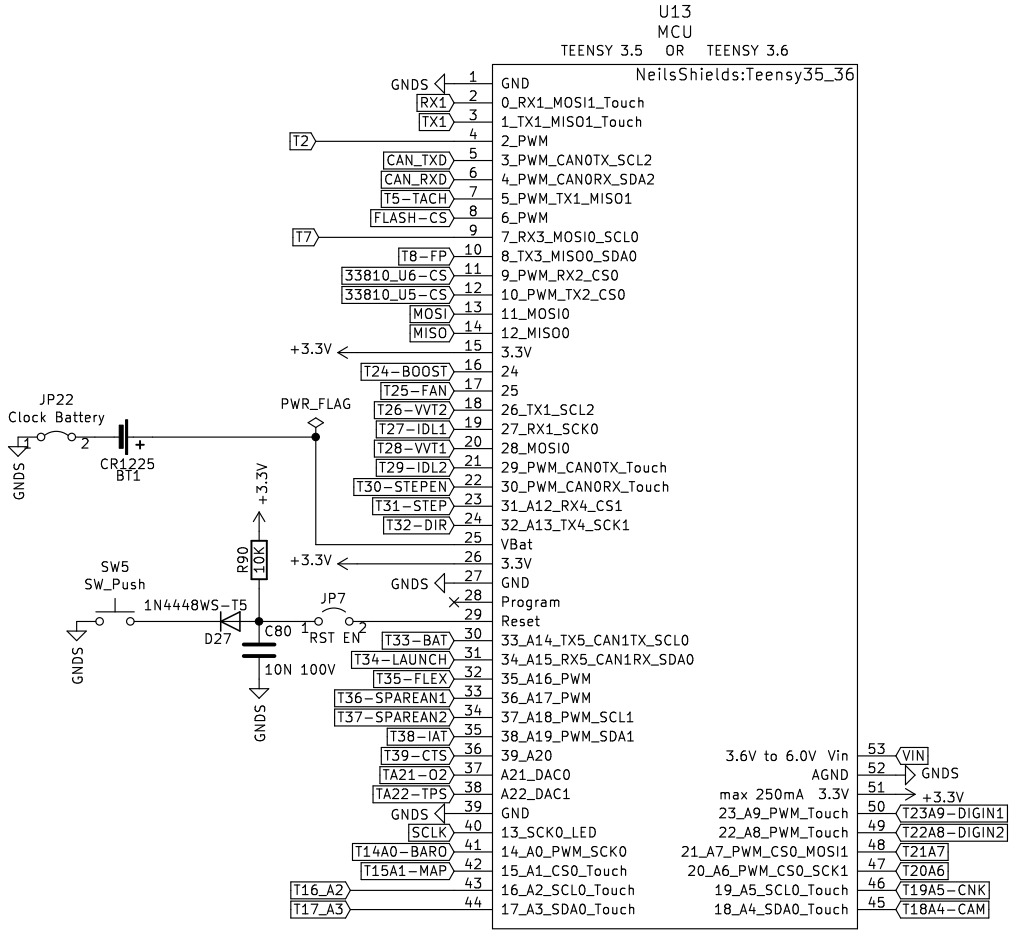


K88 ECU V2.1

Sheet: /OTHER/
File: OTHER.sch

Title: CAN – SERIAL – FLASH MEMORY

Size: A4	Date:	Rev:
KiCad E.D.A. kicad (5.1.0)-1		Id: 8/11

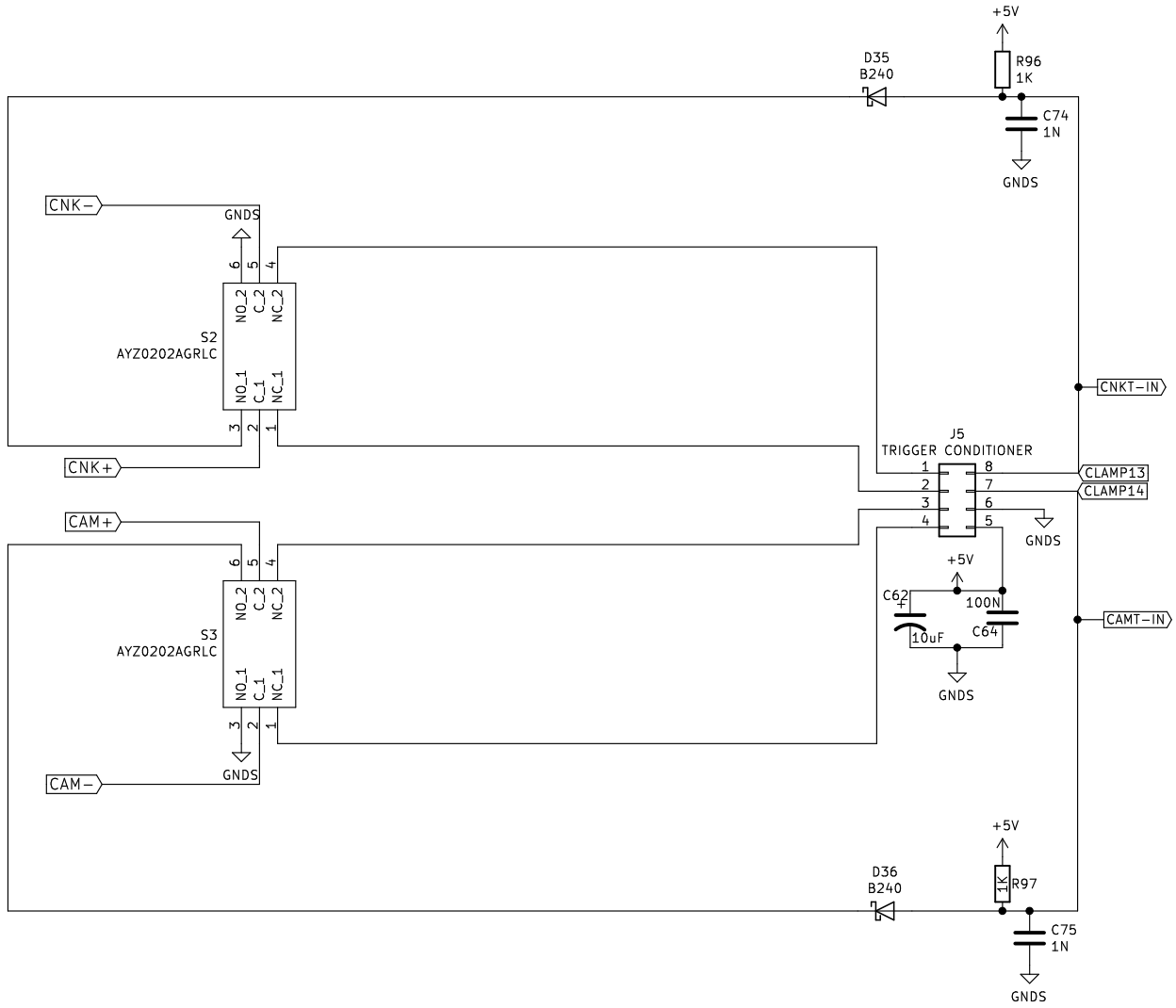


K88 ECU V2.1

Sheet: /TEENSY_MODULE/
File: TEENSY_MODULE.sch

Title: TEENSY MCU

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.0)-1		Id: 9/11

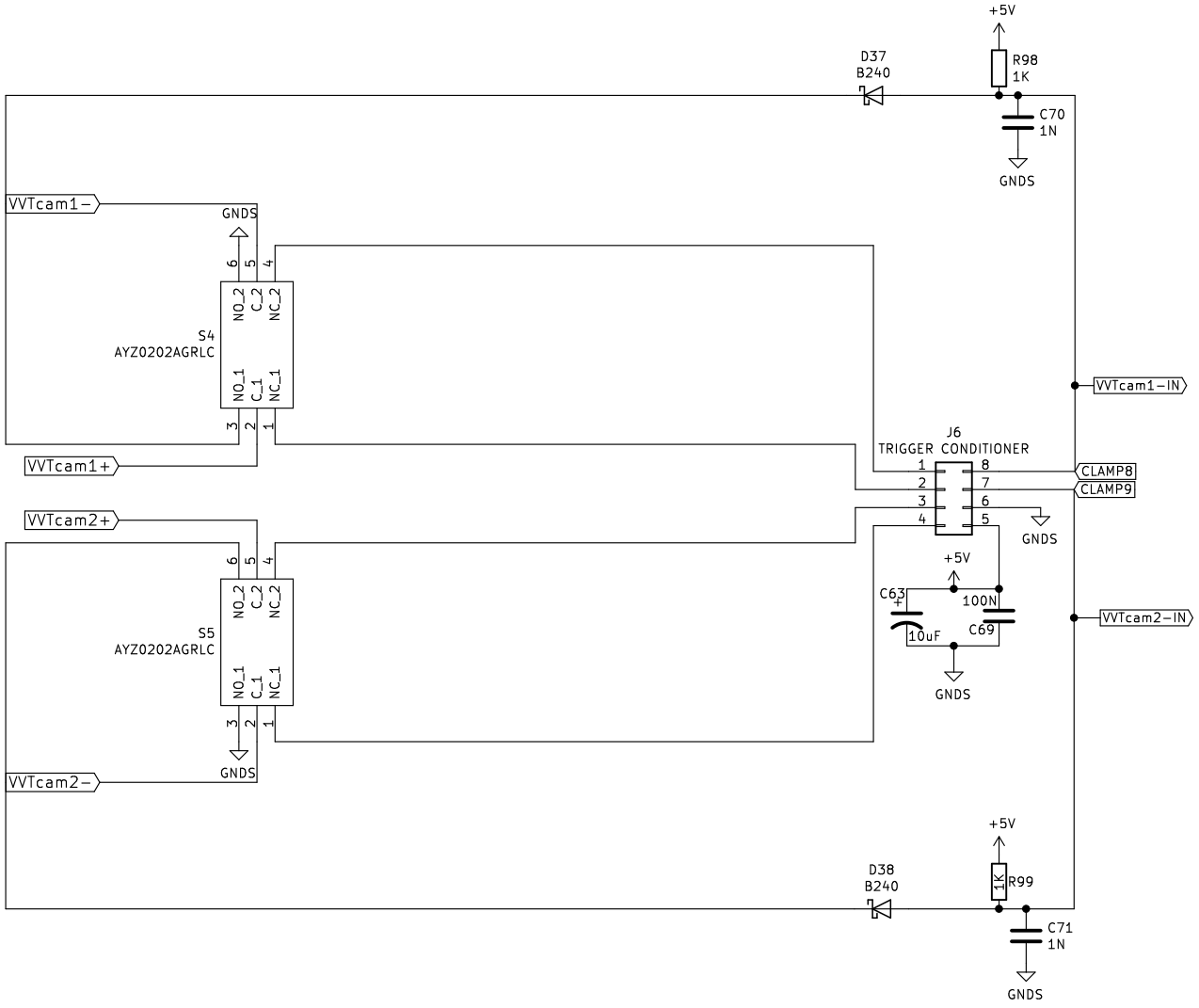


K88 ECU V2.1

Sheet: /CRANKandCAM/
File: CRANKandCAM.sch

Title: CRANK AND CAM INPUTS

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.0)-1		Id: 10/11



K88 ECU V2.1

Sheet: /VVTcams/
File: VVTcams.sch

Title: DIGITAL INPUTS 1 & 2 - VVT CAMS

Size: A4	Date:	Rev:
KiCad E.D.A. kicad (5.1.0)-1		Id: 11/11