

U3E
LIN1 LINBUS

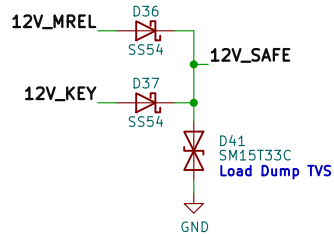
U3A
molex_48pin_MRE

U3D
5V_J801 J802 12V_MREL
PB8_J803 J804 VDD
PC11_J805 J806 PB9
PA15_J807 J808 PC10
GND_J809 J810 PC12

Communication Header
J4

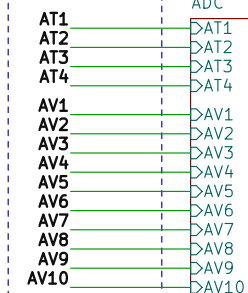
Conn_02x05_Counter_Clockwise
5V_1 2_12V_MREL
PB8_3 4_VDD
PC11_5 6_PB9
PA15_7 8_PC10
GND_9 10_PC12

5V TP5
GND TP0
CAM_MCU TP2
CRANK TP4
12V_MREL TP12
VDD TP3



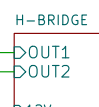
ANALOG INPUTS.
ADC 1-4 HAVE
BIAS RESISTORS
FOR TEMP SENSORS!

CAN ALSO BE USED
AS DIGITAL INPUTS



CAM_SENSOR
12V_MREL
5V

6A H-BRIDGE
E-THRATTLE+
E-THRATTLE-
12V_MREL
VDD
GND

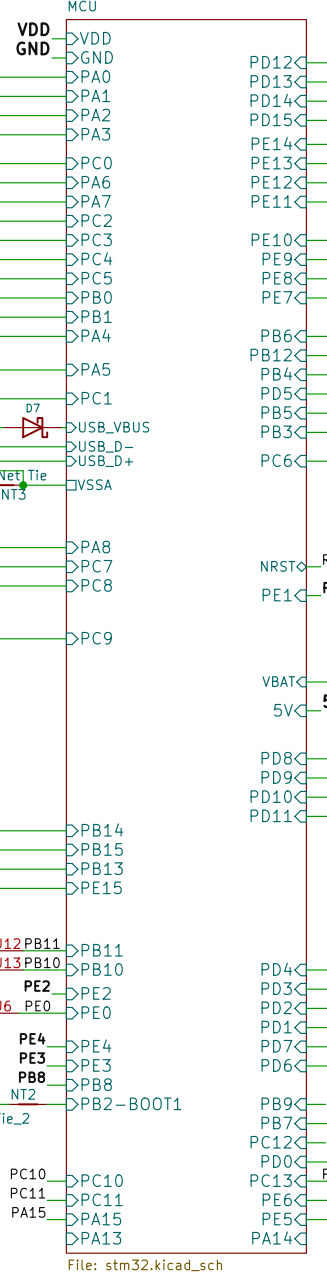


File: adc.kicad_sch

FlashMemory

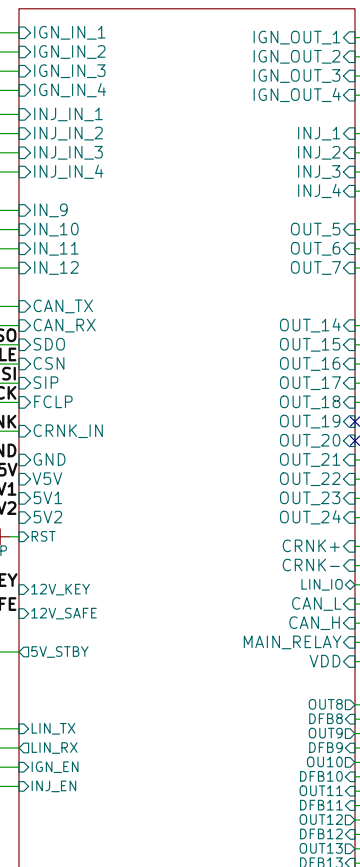
File: FlashMemory.kicad_sch

GP OUT 5 AND 6 ARE HIGH SIDE DRIVEN



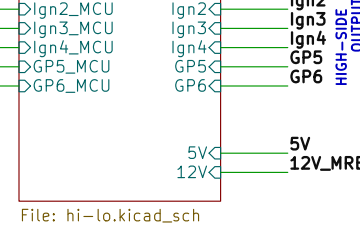
File: stm32.kicad_sch

TLE8888-1QK



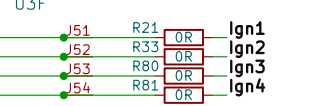
File: TLE8888-1QK.kicad_sch

hi-lo



File: hi-lo.kicad_sch

U3F



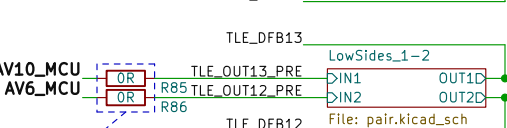
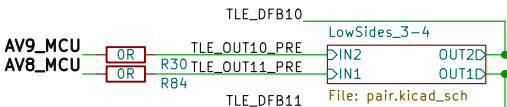
INJECTOR-1
INJECTOR-2
INJECTOR-3
INJECTOR-4
2.2A
4.5A
LOW SIDE OUTPUTS

Push-Pull half bridge
LOW-SIDE OR HIGH-SIDE
0.6A

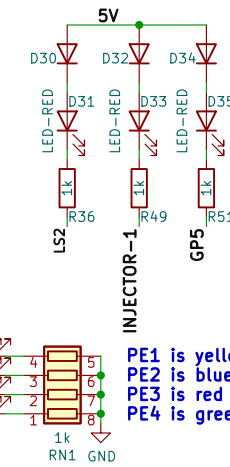
GP1
GP2
GP3
GP4

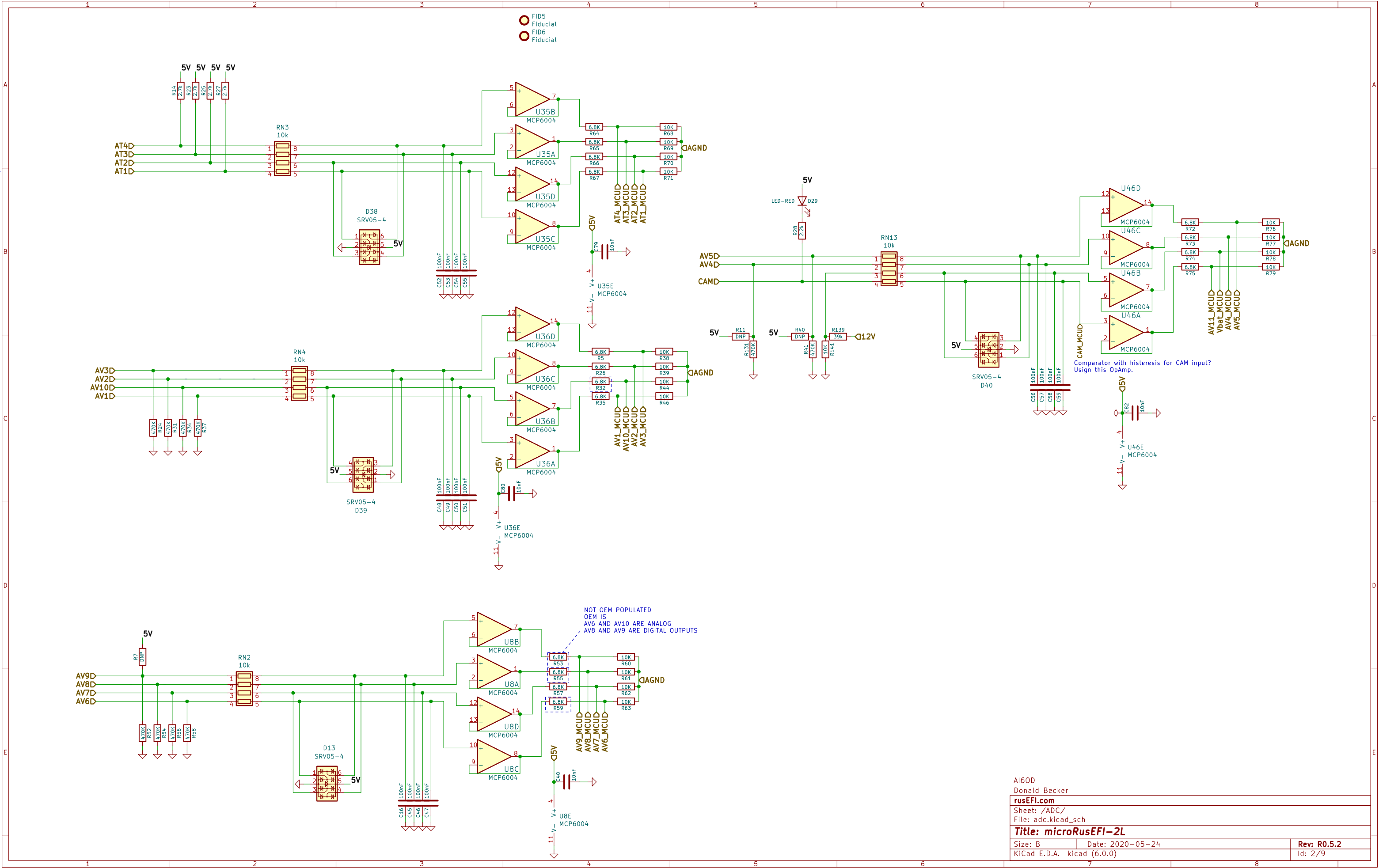
CRNK+
CRNK-
LINBUS
CANL
CANH
MAIN_RELAY
VDD

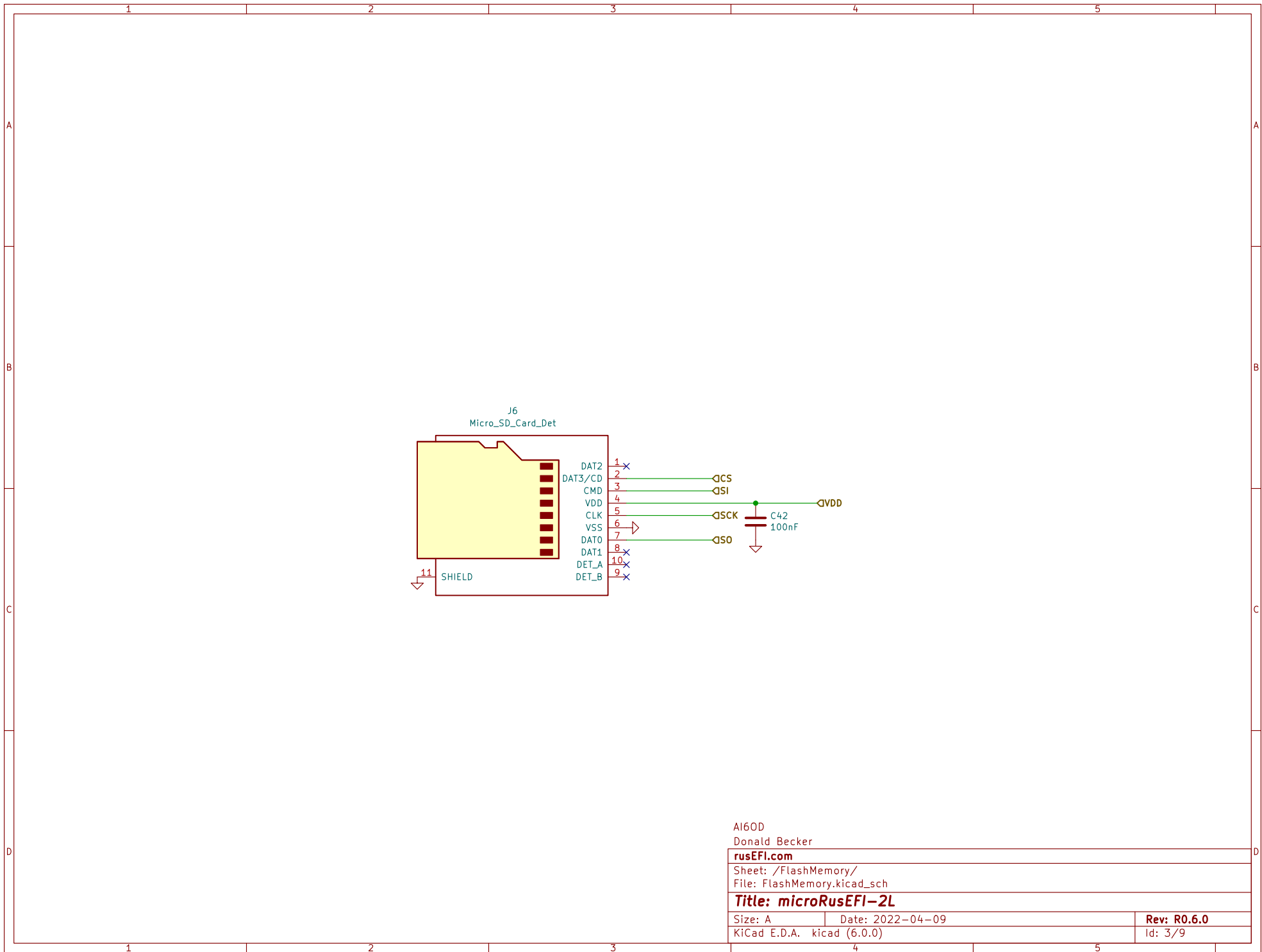
OUT8D
DFB8C
OUT9D
DFB9C
OUT10D
TLE_DFB10
OUT11D
TLE_DFB11
OUT12D
TLE_DFB12
OUT13D
TLE_DFB13



NOT OEM POPULATED!
OEM IS
AV6 AND AV10 ARE ANALOG
AV8 AND AV9 ARE DIGITAL OUTPUTS









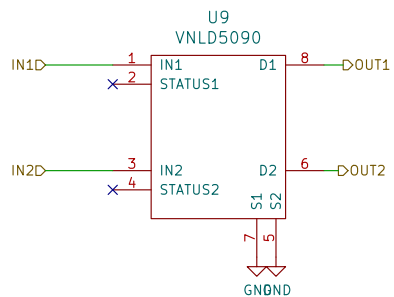
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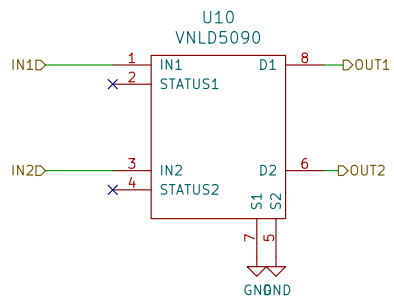
Title: *microRusEFl-2L*

Size: A	Date: 2020-05-24
KiCad E.D.A. kicad (6.0.0)	

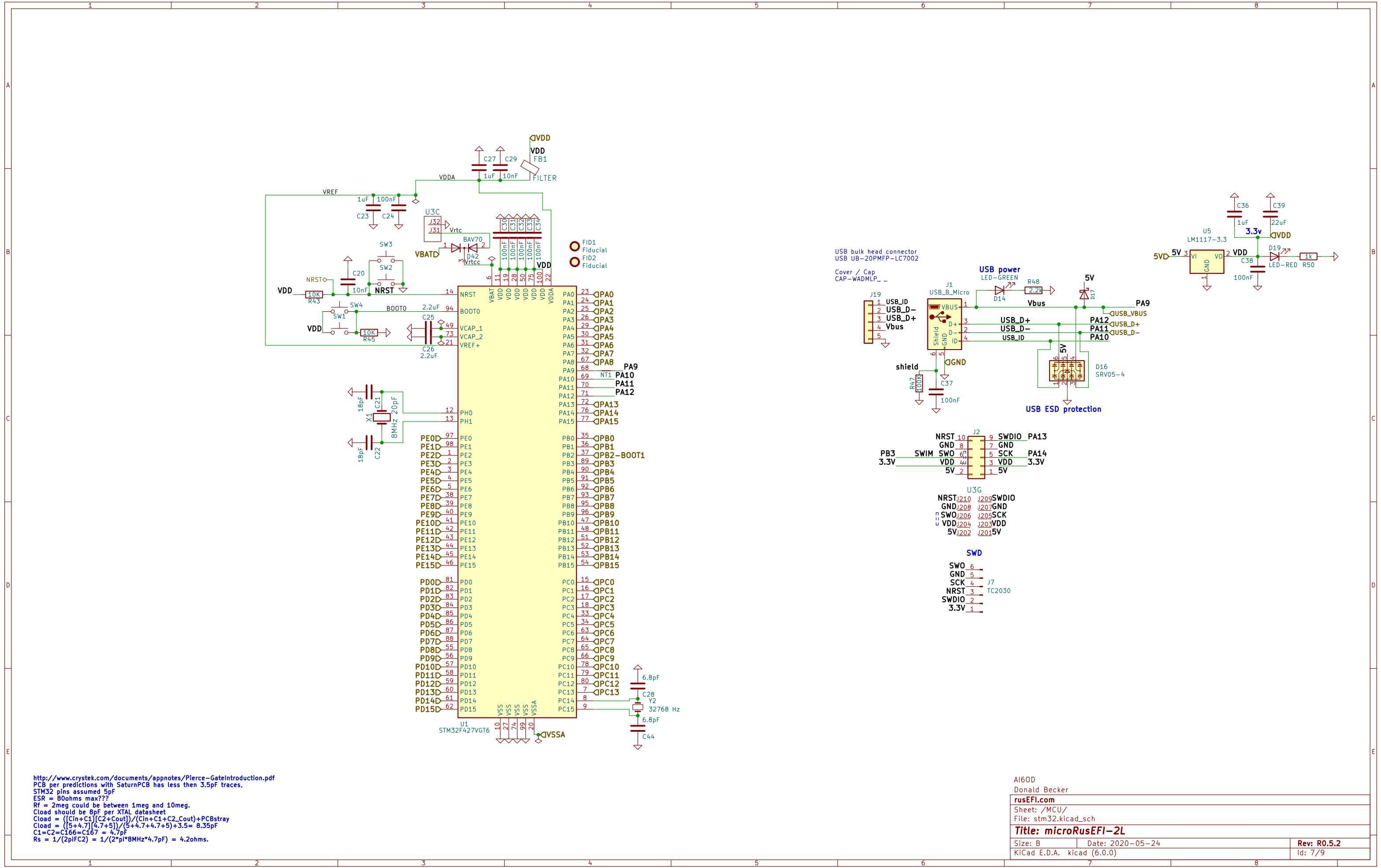
Rev: R0.5.2
Id: 4/9



rusEFI.com		
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Title: microRusEFI-2L		
Size: A4	Date: 2020-05-24	Rev: R0.5.2
KiCad E.D.A. kicad (6.0.0)		Id: 5/9



rusEFI.com		
Sheet: /LowSides_3-4/		
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Title: microRusEFI-2L		
Size: A4	Date: 2020-05-24	Rev: R0.5.2
KiCad E.D.A. kicad (6.0.0)		Id: 6/9



<http://www.crystek.com/documents/appnotes/Pierce-GateIntroduction.pdf>
PCB per predictions with SaturnPCB has less then 3.5pF traces,
STM32 pins assumed 5pF
ESR = 80ohms max???
Rf = 2meg could be between 1meg and 10meg.
Cload should be 8pF per XTAL datasheet
Cload = ((Cin+C1)[C2+Cout])/((Cin+C1+C2_Cout)+PCBstray
Cload = ((5+4.7)[4.7+5])/((5+4.7+4.7+5)+3.5= 8.35pF
C1=C2=C166=C167 = 4.7pF
Rs = 1/(2piFC2) = 1/(2*pi*8MHz*4.7pF) = 4.2ohms.

6 channel high / low side driver

