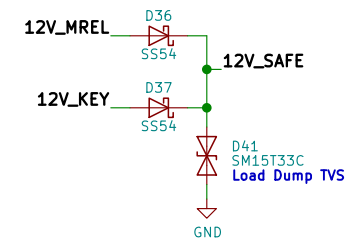
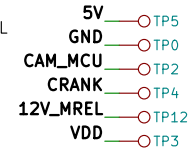
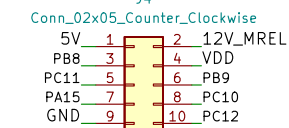


U3E  
LIN1 LINBUS

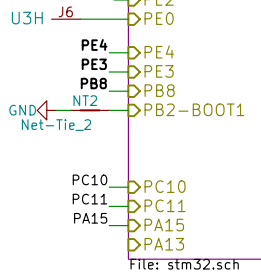
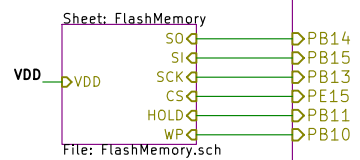
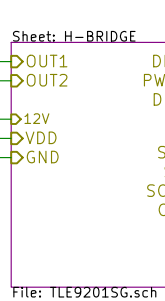
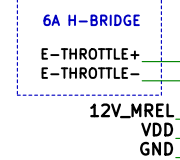
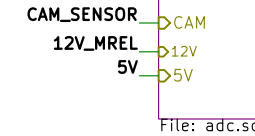
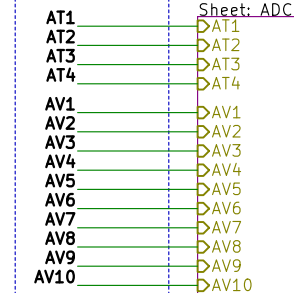
U3A  
molex\_48pin\_MRE

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

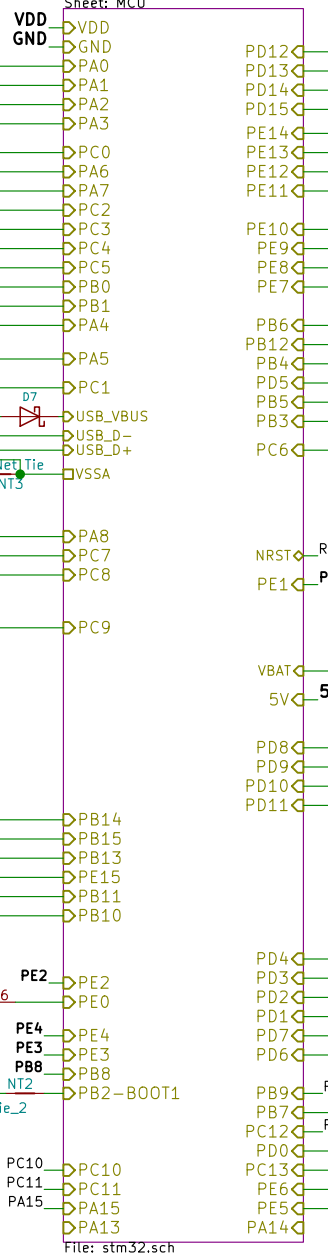


ANALOG INPUTS.  
ADC 1-4 HAVE  
BIAS RESISTORS  
FOR TEMP SENSORS.  
  
CAN ALSO BE USED  
AS DIGITAL INPUTS



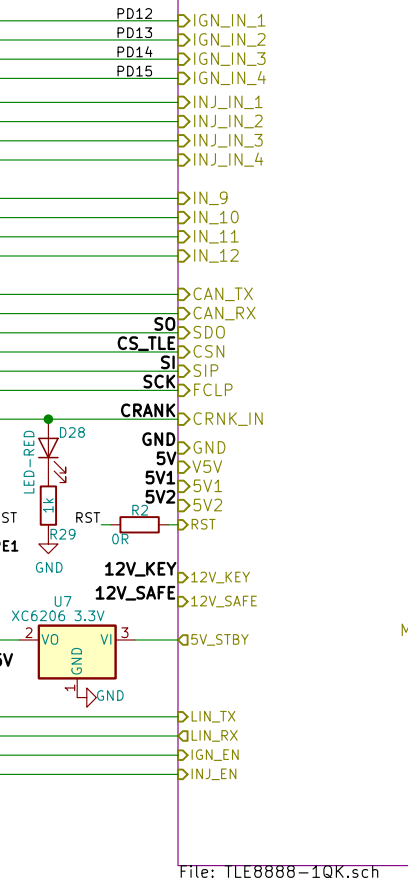
File: stm32.sch

GP OUT 5 AND 6 ARE HIGH SIDE DRIVEN



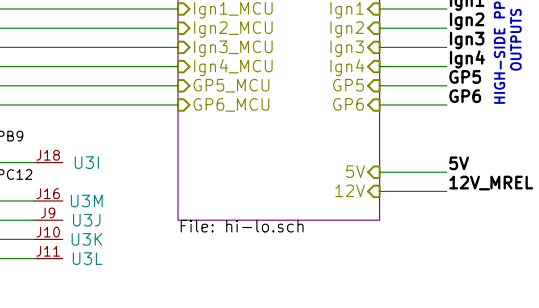
Sheet: MCU

Sheet: TLE8888-1QK



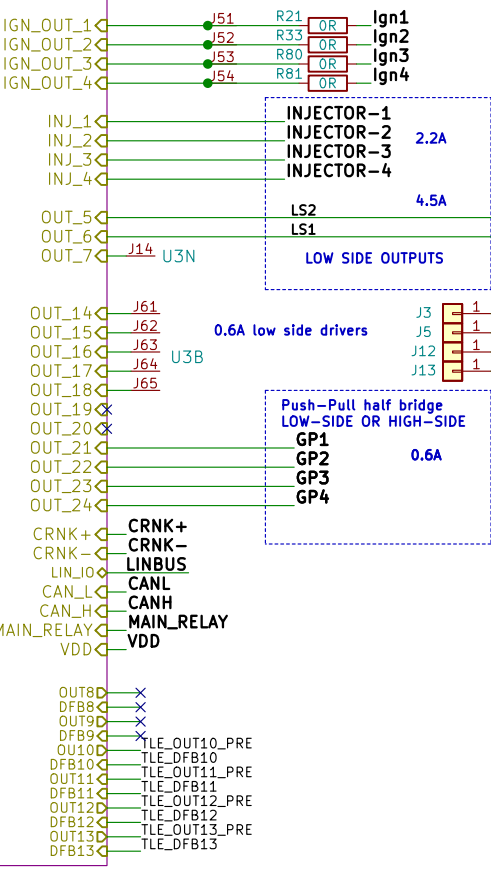
File: TLE8888-1QK.sch

Sheet: hi-lo

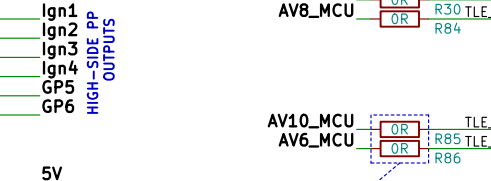


File: hi-lo.sch

Sheet: U3F



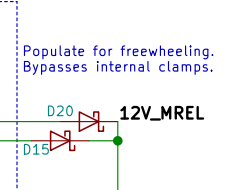
Sheet: LowSides\_3-4



Sheet: LowSides\_1-2



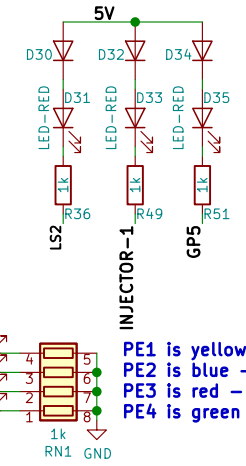
NOT OEM POPULATED  
OEM IS  
AV6 AND AV10 ARE ANALOG  
AV8 AND AV9 ARE DIGITAL OUTPUTS



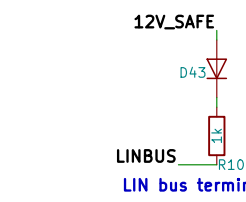
Populate for freewheeling.  
Bypasses internal clamps.



0.6A



PE1 is yellow - warning  
PE2 is blue - communication  
PE3 is red - fatal  
PE4 is green - running



LINBUS  
LIN bus termination

FOR OFF ROAD PURPOSES ONLY  
This is not for applications with  
emissions or safety regulations  
(AKA not for street use). This is  
for closed stages, track  
and equipment.



AI60D  
Donald Becker

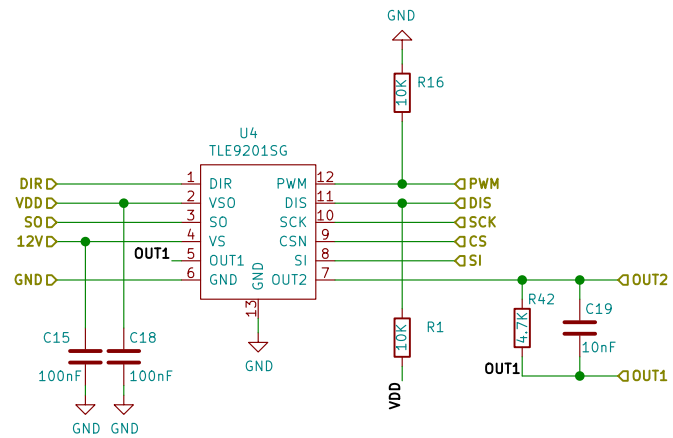
rusEFI.com  
Sheet: /  
File: micro\_rusEFI.sch

Title: microRusEfi-2L

Size: B Date: 2020-05-24  
KiCad E.D.A. kicad (5.1.5)-3

Rev: R0.5.1  
Id: 1/9





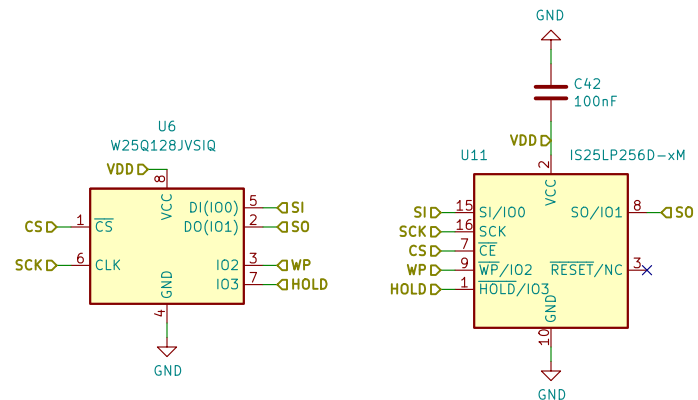
AI60D  
 Donald Becker

[rusEFI.com](http://rusEFI.com)  
 Sheet: /H-BRIDGE/  
 File: TLE9201SG.sch

**Title: microRusEfi-2L**

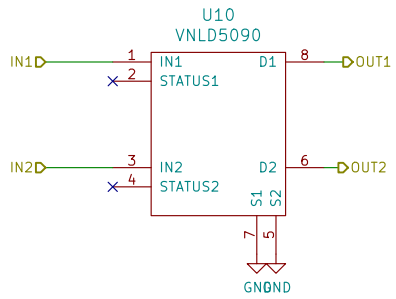
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 KiCad E.D.A. kicad (5.1.5)-3

**Rev: R0.5.1**  
 Id: 2/9

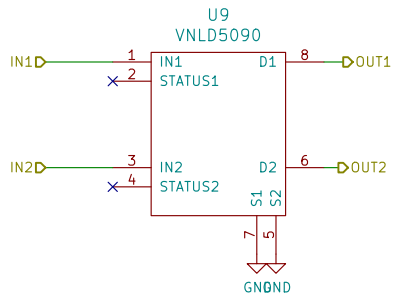


AI60D  
 Donald Becker

<b>rusEFI.com</b>	
Sheet: /FlashMemory/ File: FlashMemory.sch	
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Size: A	Date: 2020-05-24
KiCad E.D.A. kicad (5.1.5)-3	Rev: R0.5.1 Id: 3/9

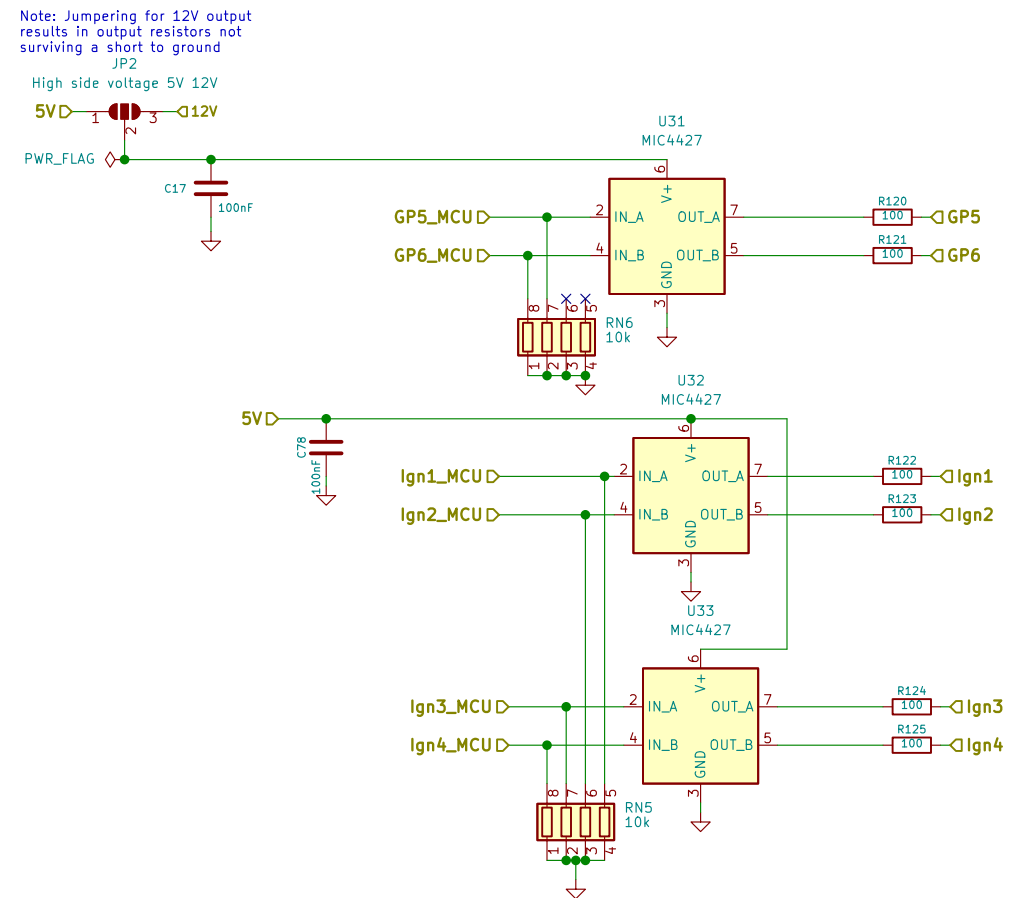


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Sheet: /LowSides_3-4/		
File: pair.sch		
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Size: A4	Date: 2020-05-24	<b>Rev: R0.5.1</b>
KiCad E.D.A. kicad (5.1.5)-3		Id: 4/9



<b>rusEfi.com</b>	
Sheet: /LowSides_1-2/ File: pair.sch	
<b>Title: microRusEfi-2L</b>	
Size: A4	Date: 2020-05-24
KiCad E.D.A. kicad (5.1.5)-3	Rev: R0.5.1 Id: 5/9

## 6 channel high / low side driver

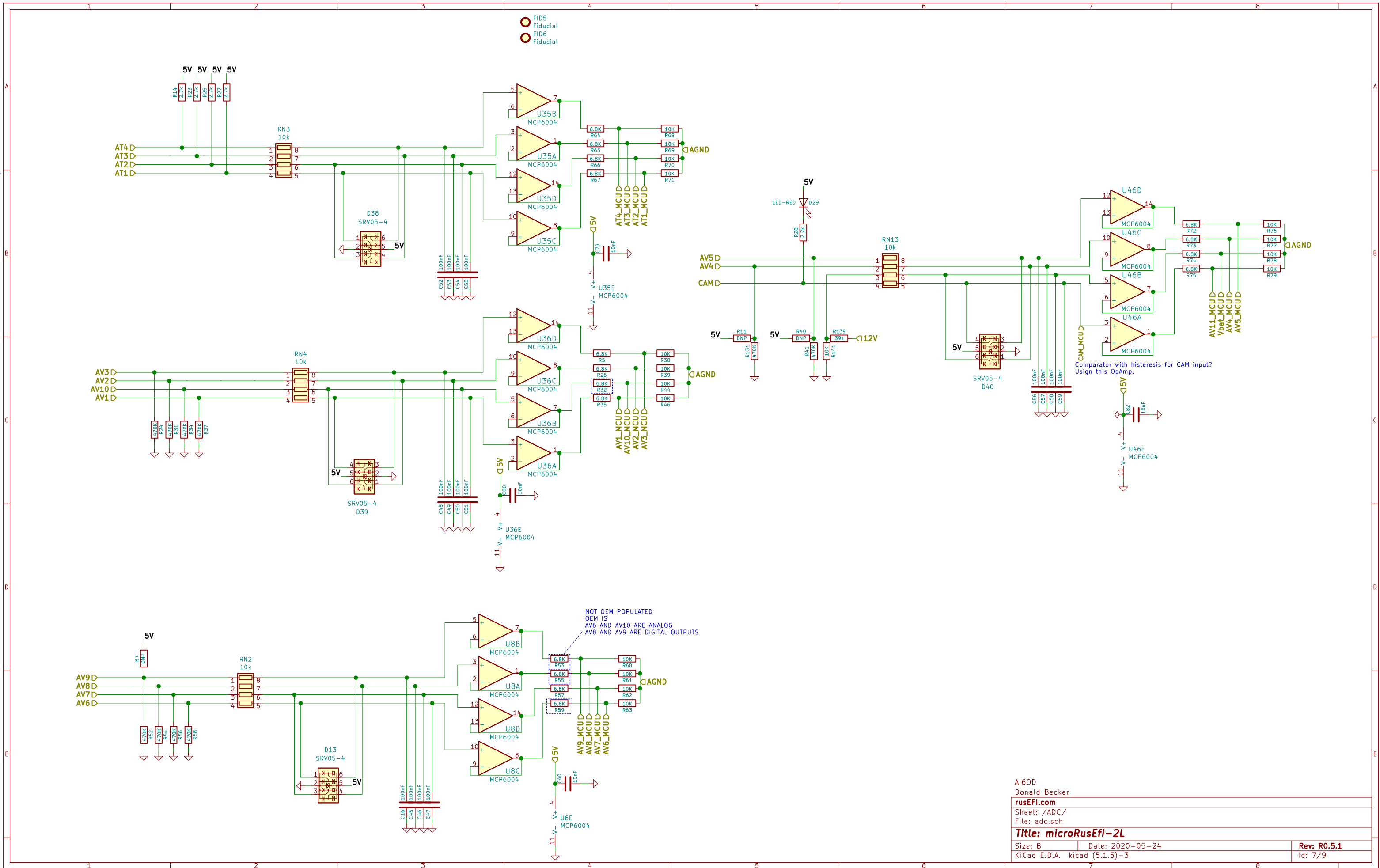


AI60D  
Donald Becker  
rusEFI.com  
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File: hi-lo.sch

**Title: microRusEfi-2L**

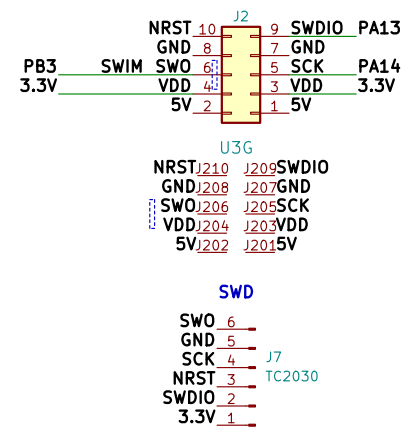
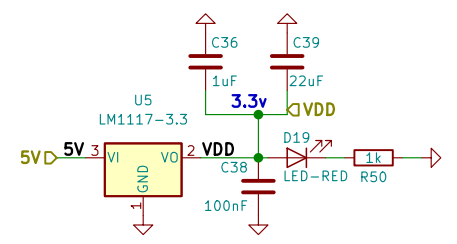
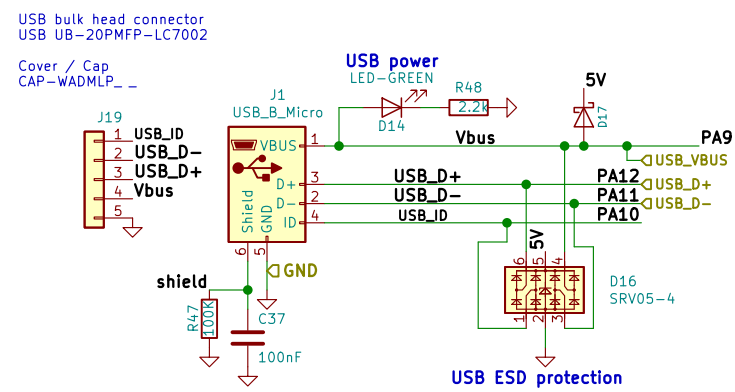
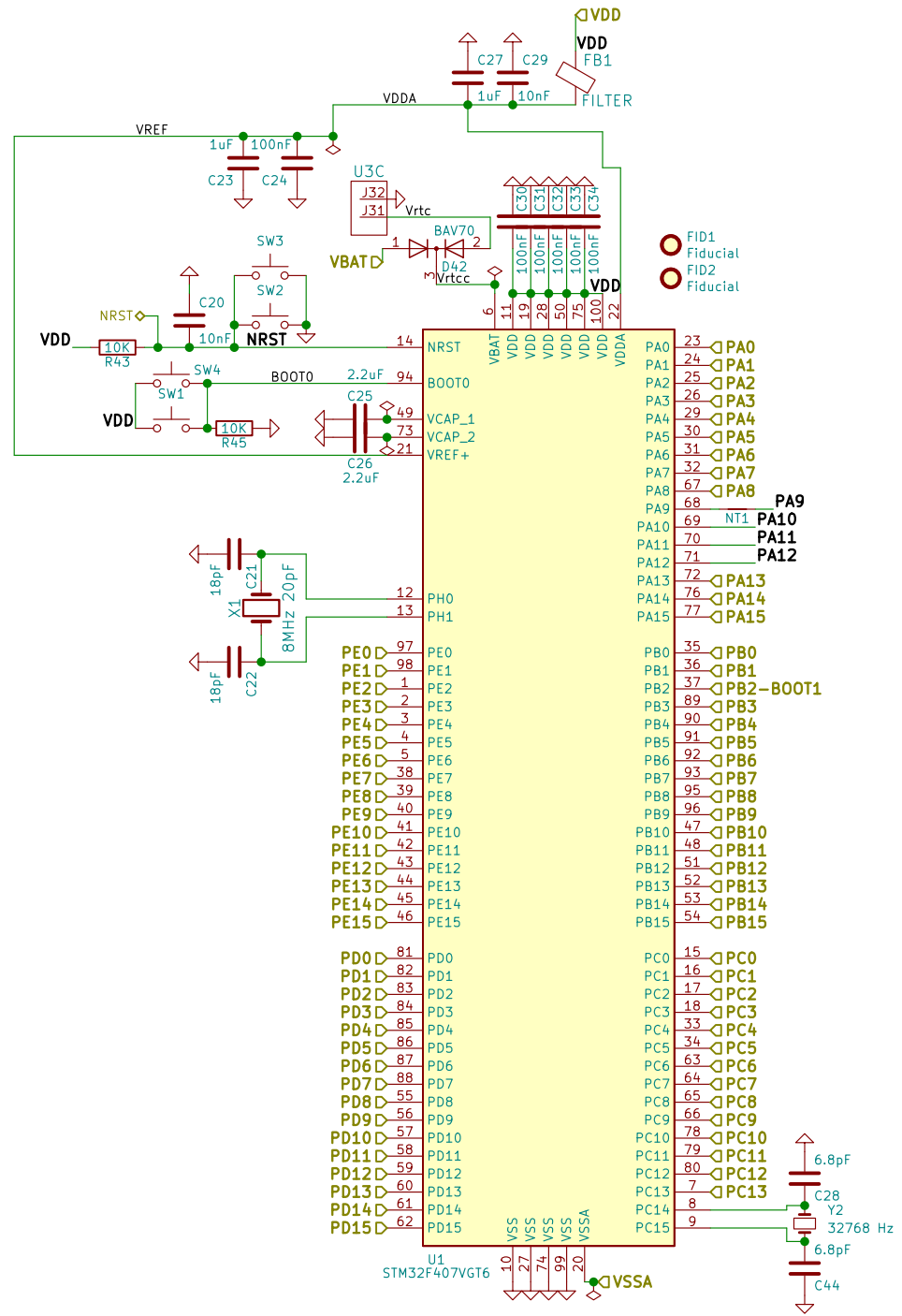
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Rev: R0.5.1  
Id: 6/9









<http://www.crystek.com/documents/appnotes/Pierce-GateIntroduction.pdf>  
 PCB per predictions with SaturnPCB has less than 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/(2pi\*fC2) = 1/(2\*pi\*8MHz\*4.7pF) = 4.2ohms.