MCU

File: mcu.kicad_sch

Sensors

File: sensors.kicad_sch

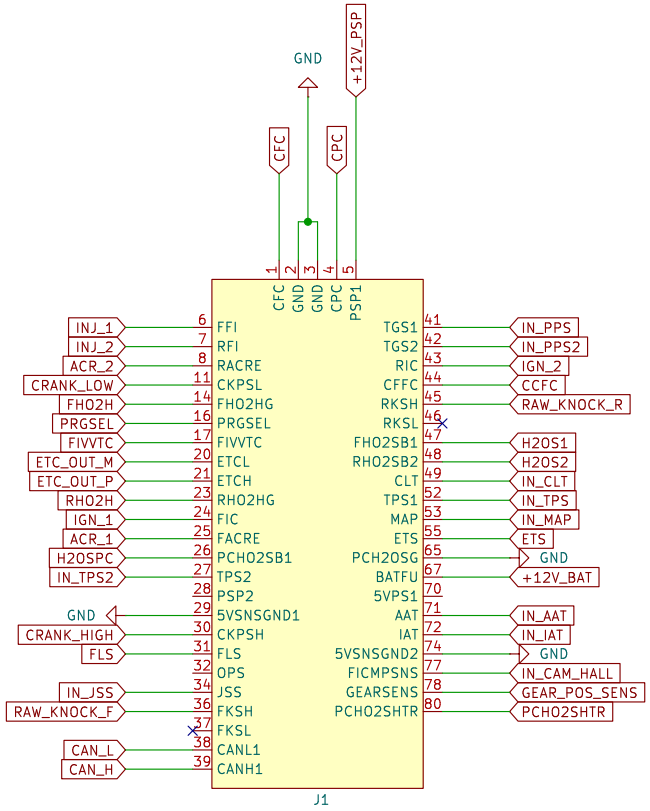
Bluetooth

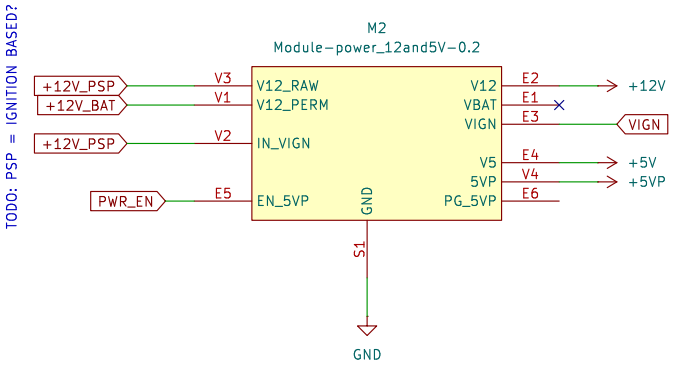
File: bluetooth.kicad_sch

Outputs

File: outputs.kicad_sch

TODO:
Do we need to connect PSP2? Like connect it directly to PSP1 or sth? Measure at OEM ECU.
DONE: GEARSENS analyze the signal -> Kind of analog?
DONE: AM POSITION = FICMPSNS Hall effect or what is that?
Knock Sensor LOW signals not needed?





GND TP1 TestPoint_Probe
+3V3 TP2 TestPoint_Probe
+5V TP3 TestPoint_Probe
+12V TP4 TestPoint_Probe
+3V3SW TP5 TestPoint_Probe

FID1 Fiducial
FID2 Fiducial
FID3 Fiducial
FID4 Fiducial

Hellen-Bremen

Sheet: /
File: hellenbremen.kicad_sch

Title:

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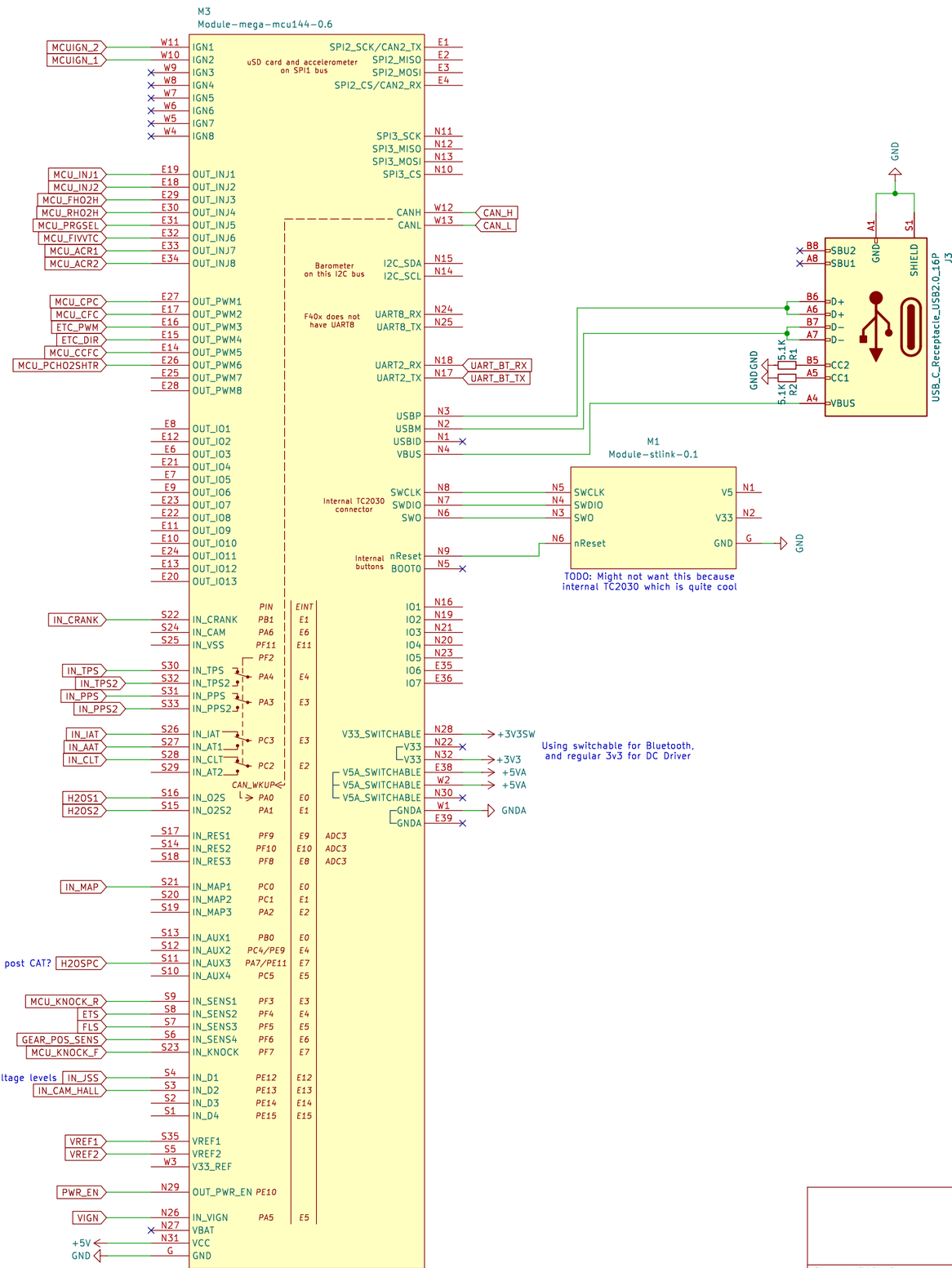
M3
Module-mega-mcu144-0.6
IGN1
IGN2
IGN3
IGN4
IGN5
IGN6
IGN7
IGN8
MCUIGN_2
MCUIGN_1
uSD card and accelerometer on SPI1 bus
SPI2_SCK/CAN2_TX
SPI2_MISO
SPI2_MOSI
SPI2_CS/CAN2_RX
SPI3_SCK
SPI3_MISO
SPI3_MOSI
SPI3_CS
OUT_INJ1
OUT_INJ2
OUT_INJ3
OUT_INJ4
OUT_INJ5
OUT_INJ6
OUT_INJ7
OUT_INJ8
MCU_INJ1
MCU_INJ2
MCU_FHO2H
MCU_RHO2H
MCU_PRGSEL
MCU_FIVVTC
MCU_ACR1
MCU_ACR2
CANH
CANL
CAN_H
CAN_L
Barometer on this I2C bus
I2C_SDA
I2C_SCL
OUT_PWM1
OUT_PWM2
OUT_PWM3
OUT_PWM4
OUT_PWM5
OUT_PWM6
OUT_PWM7
OUT_PWM8
MCU_CPC
MCU_CFC
ETC_PWM
ETC_DIR
MCU_CCFC
MCU_PCHO2SHTR
F40x does not have UART8
UART8_RX
UART8_TX
UART2_RX
UART2_TX
UART_BT_RX
UART_BT_TX
USBP
USBM
USBID
VBUS
OUT_IO1
OUT_IO2
OUT_IO3
OUT_IO4
OUT_IO5
OUT_IO6
OUT_IO7
OUT_IO8
OUT_IO9
OUT_IO10
OUT_IO11
OUT_IO12
OUT_IO13
Internal TC2030 connector
SWCLK
SWDIO
SWO
Internal buttons
nReset
BOOT0
PIN
EINT
IN_CRANK
IN_CAM
IN_VSS
IN_TPS
IN_TPS2
IN_PPS
IN_PPS2
IN_IAT
IN_AAT
IN_CLT
IN_AT2
CAN_WKUP
IN_O2S
IN_O2S2
IN_RES1
IN_RES2
IN_RES3
IN_MAP
IN_MAP1
IN_MAP2
IN_MAP3
IN_AUX1
IN_AUX2
IN_AUX3
IN_AUX4
TODO: Do we really need post CAT?
H2OSPC
IN_SENS1
IN_SENS2
IN_SENS3
IN_SENS4
IN_KNOCK
MCU_KNOCK_R
ETS
FLS
GEAR_POS_SENS
MCU_KNOCK_F
Check digital voltage levels
IN_JSS
IN_CAM_HALL
IN_D1
IN_D2
IN_D3
IN_D4
VREF1
VREF2
V33_REF
OUT_PWR_EN
PWR_EN
IN_VIGN
VBAT
VCC
GND
+5V
IO1
IO2
IO3
IO4
IO5
IO6
IO7
V33_SWITCHABLE
V33
V5A_SWITCHABLE
GNDA
+3V3SW
+3V3
+5VA
Using switchable for Bluetooth, and regular 3v3 for DC Driver
M1
Module-stlink-0.1
SWCLK
SWDIO
SWO
nReset
V5
V33
GND
TODO: Might not want this because internal TC2030 which is quite cool
GND
SHIELD
J3
USB_C_Receptacle_USB2.0_16P
SBU2
SBU1
D+
D-
CC2
CC1
VBUS
5.1K
R1
R2
Sheet: /MCU/
File: mcu.kicad_sch
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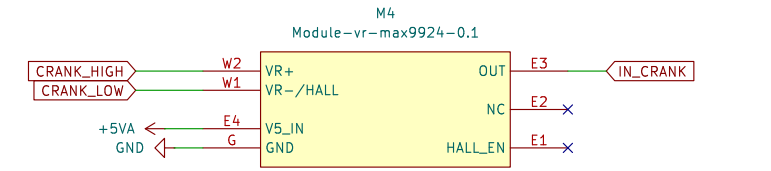

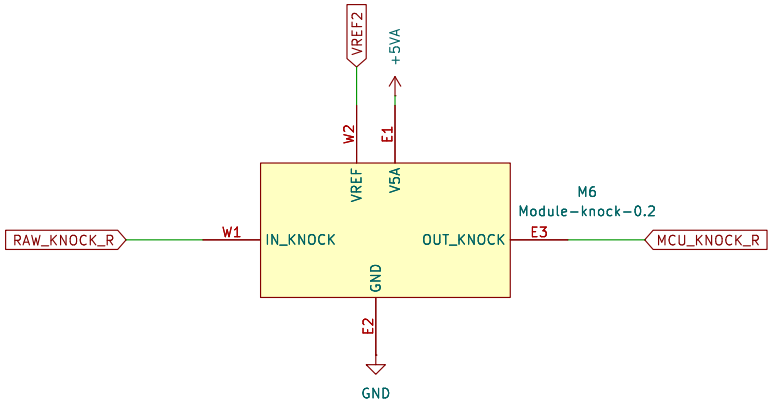

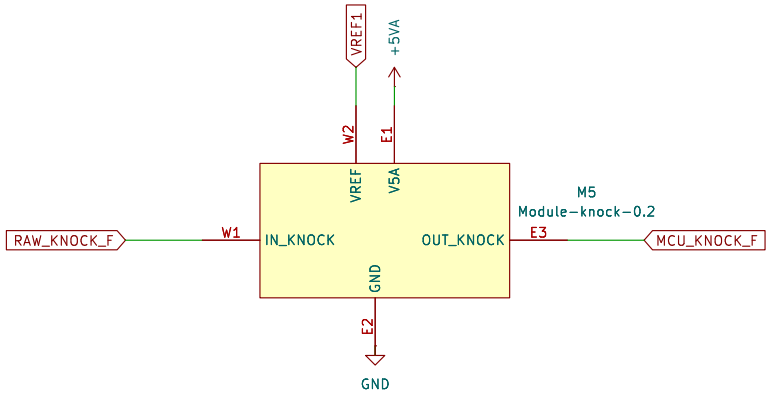

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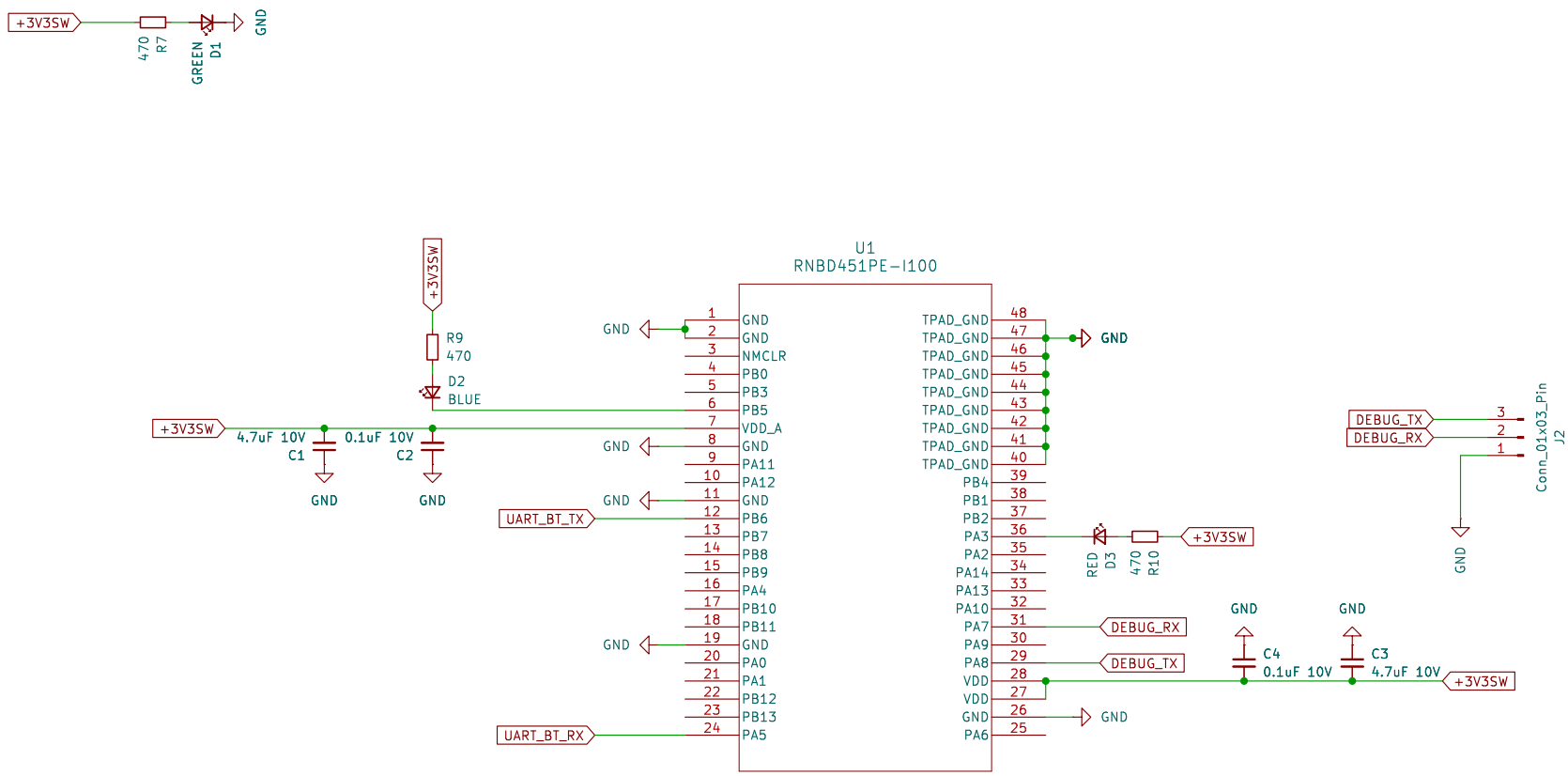
KiCad E.D.A. 8.0.6		Id: 4/5



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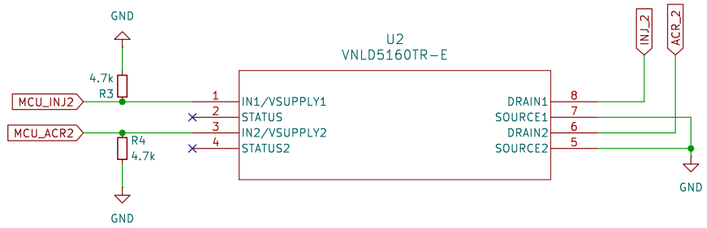
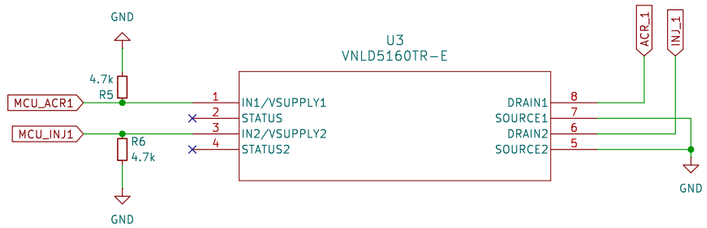
Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.6		Id: 5/5

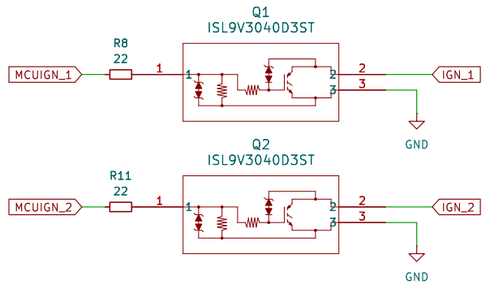
INJECTORS & ACR



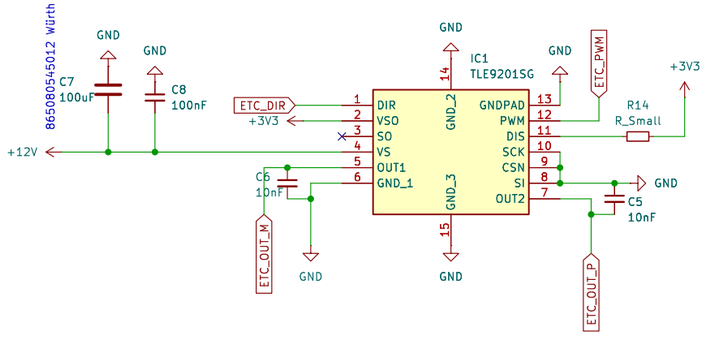
INJECTORS MEASURED TO TAKE MAX 1A EACH WHEN OPEN



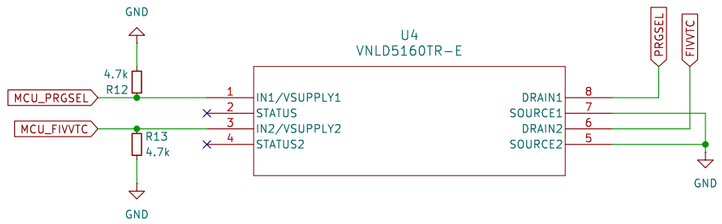
IGNITION



Electronic Throttle

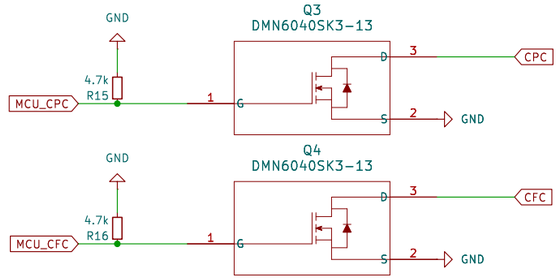


PURGE & VVT SOLENOIDS



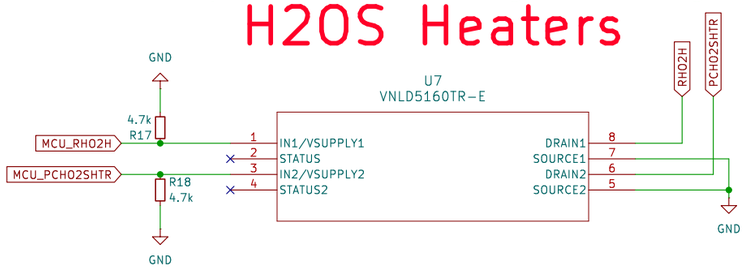
COOLANT FAN PULLS AROUND 4A WHEN CONSTANT 100%,
INITIALLY PULLING UP TO 8A FOR GETTING SPINNING
HARLEY USES: https://www.onsemi.com/pdf/datasheet/huf76629d3s-d.pdf
POSSIBLE: https://www.digikey.de/de/products/detail/onsemi/HUF76629D3ST/4553106
AND: https://www.digikey.de/de/products/detail/diodes-incorporated/DMN6040SK3-13/8545933

COOLANT FAN & PUMP

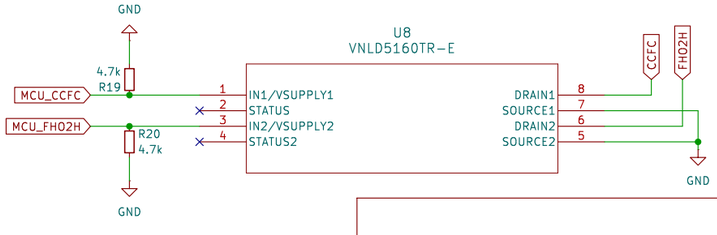


H2OS Heaters are PWM Controlled and max out at about 0.9 Amps
at room temperature,then reducing with coming heat

H2OS Heaters



CCFC & HO2HTR



Sheet: /Outputs/		
File: outputs.kicad_sch		
Title:		
Size: A3	Date:	**Rev:**
KiCad E.D.A. 8.0.6		Id: 6/5