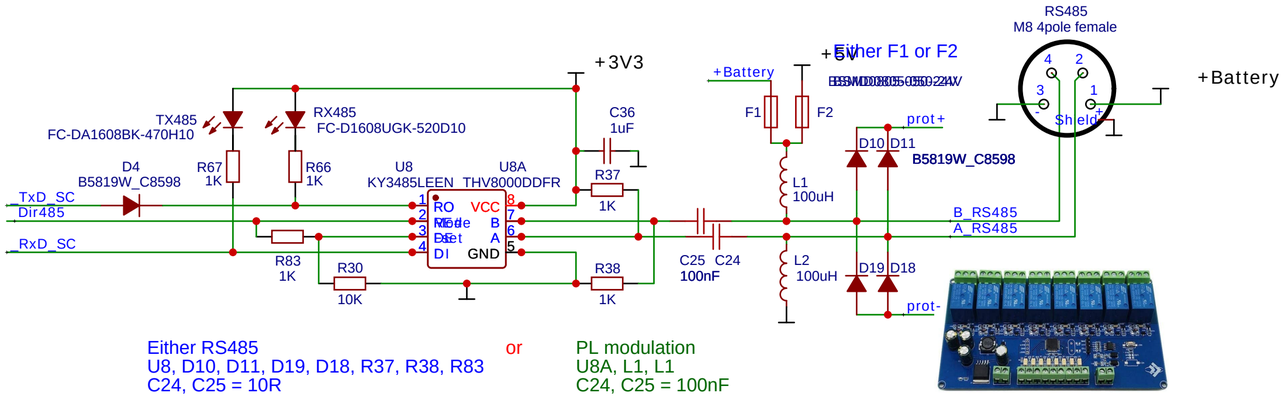
RS485 / ModbusRTU



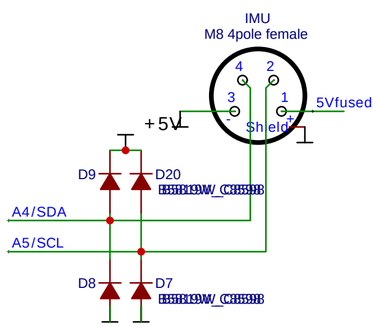
Either RS485
U8, D10, D11, D19, D18, R37, R38, R83
C24, C25 = 10R

or

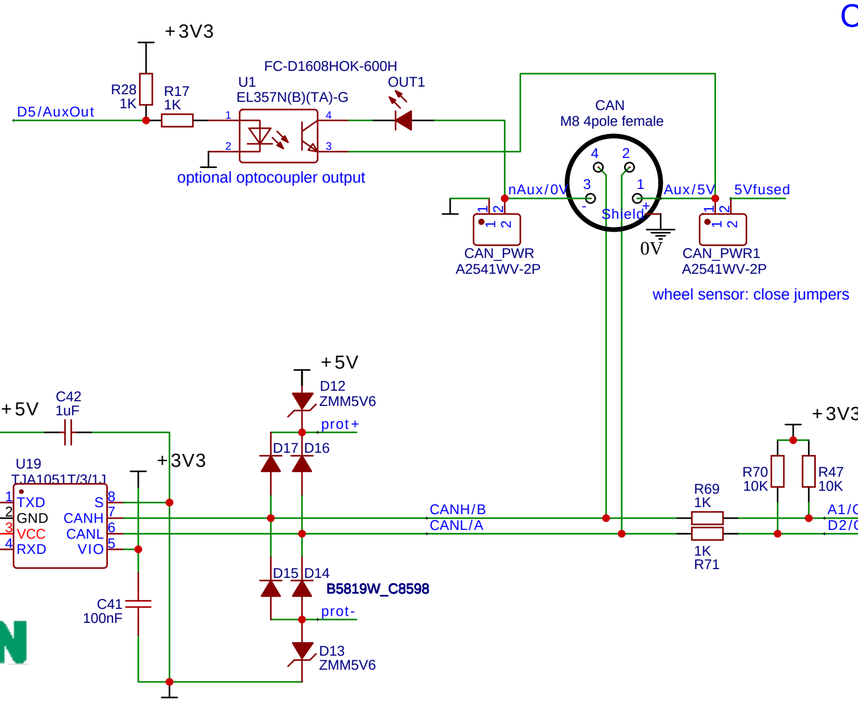
PL modulation
U8A, L1, L1
C24, C25 = 100nF

e.g.: http://www.amazon.de/dp/B08JV9J36T/

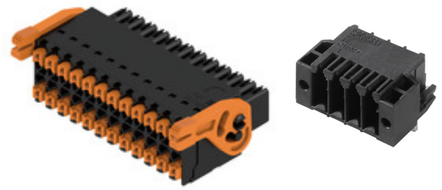
I2C external

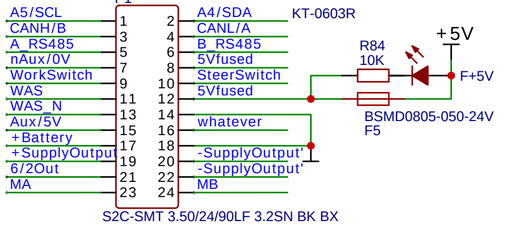


CAN & Opto | Wheel Sensor



Main connector



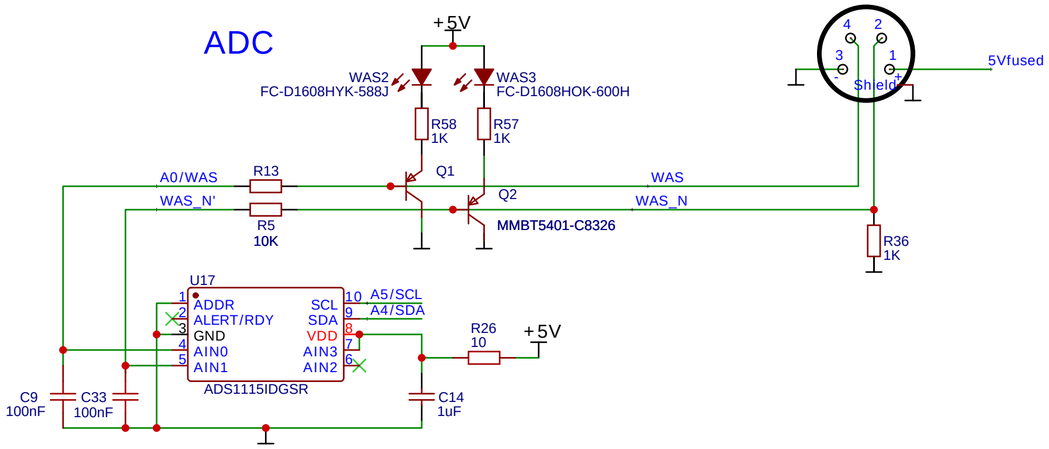


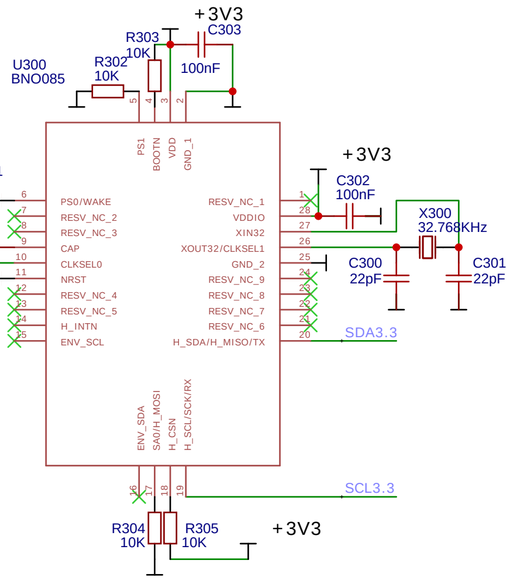
P1: Weidmuller 1289550000 + 1372870000
S2C-SMT 3.50/24/90LF 3.2SN BK BX + B2CF 3.50/24/180LH SN BK BX

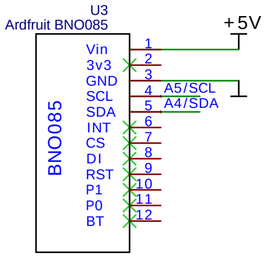
TITLE: Serial Communication, PushIn Connector		REV: 2.2
EasyEDA	Company https://github.com/gormr	Sheet: 1/8
	Date: 2021-09-18 Drawn By: GoRoNb	

Wheel Angle Sensor

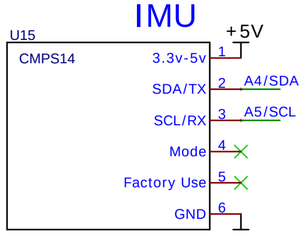
ADC



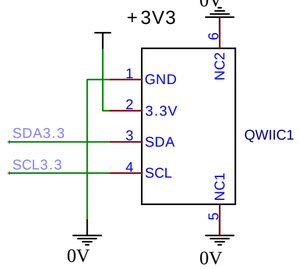




IMU



Sparkfunk part PRT-14417
SM04B-SRSS-TB(LF)(SN)
QWIIC SMD JST

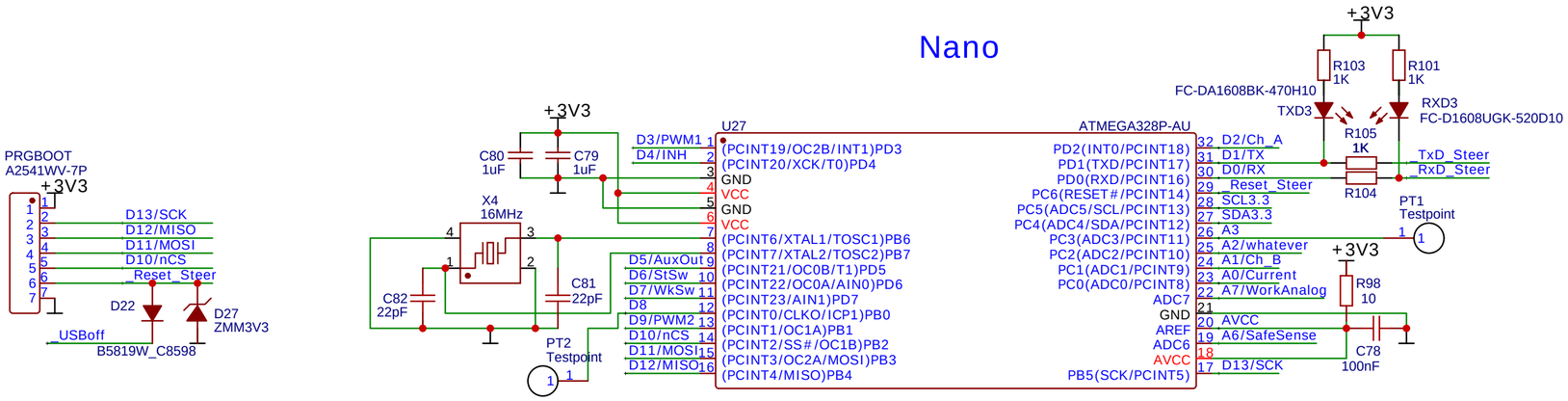


QWIIC

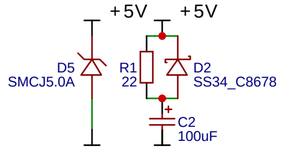
TITLE: Sensors (RTK, ADC, IMU)		REV: 2.2
EasyEDA	Company https://github.com/gormr	Sheet: 2/8
	Date: 2021-09-18 Drawn By: GoRoNb	

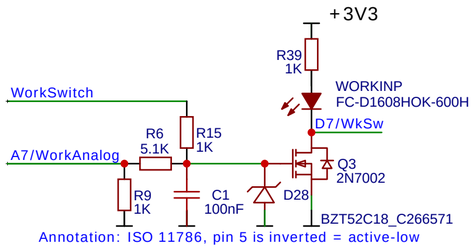
LED colors:
white: power
green/blue: serial data RxD/TxD
yellow/orange: I/O
red: error

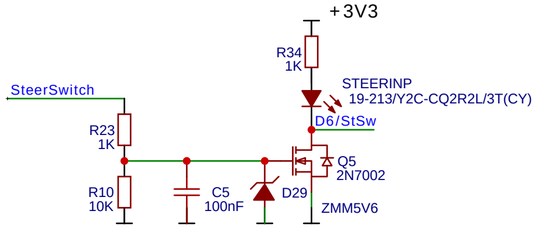
Nano

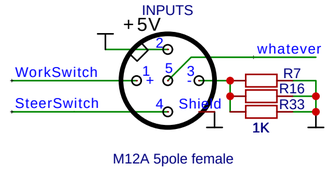


Protected General Propose Inputs







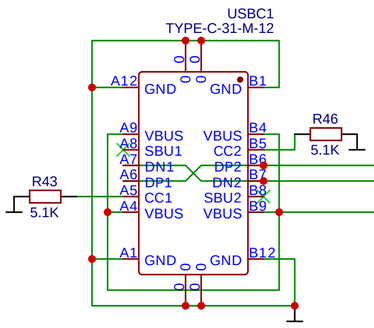


TITLE: Teensy 4.1, USB, Inputs		REV: 2.2
EasyEDA	Company https://github.com/gormr	Sheet: 3/8
	Date: 2021-09-18 Drawn By: GoRoNb	

LED colors:
white: power
green/blue: serial data RxD/TxD
yellow/orange: I/O
red: error

USB-C PC/Tablet

USBC1
TYPE-C-31-M-12

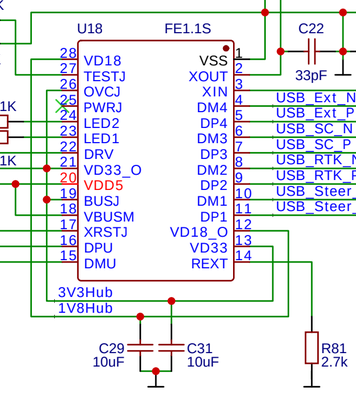


USB-B
A2541WV-5P

FC-D1608UGK-520D10 ACT
FC-DA1608BK-470H10 PORT
FC-D1608UGK-520D10 SCTRL
FC-DA1608BK-470H10 GNSS
FC-D1608UGK-520D10 STEER

R80 10K
R75 1K
R77 1K
R76 1K
DRV
C28 10uF
+5V
URES
R74 10K
USB_Up_P
USB_Up_N

4 Port USB Hub

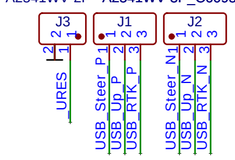


X2
12MHz
C22 33pF
C23 33pF

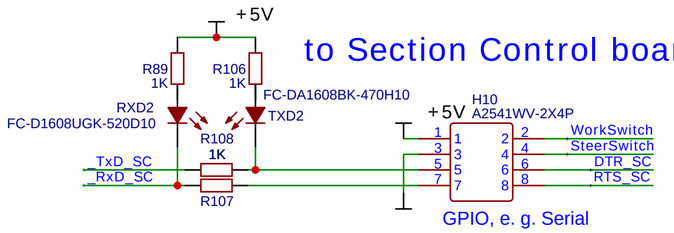
Close J1 1-2, J2 1-2 and J3 if only steering is used (no USB hub)

Close J1 2-3, J2 2-3 and J3 if only dual-RTK is used (no USB hub)

A2541WV-2P A2541WV-3P_C609572

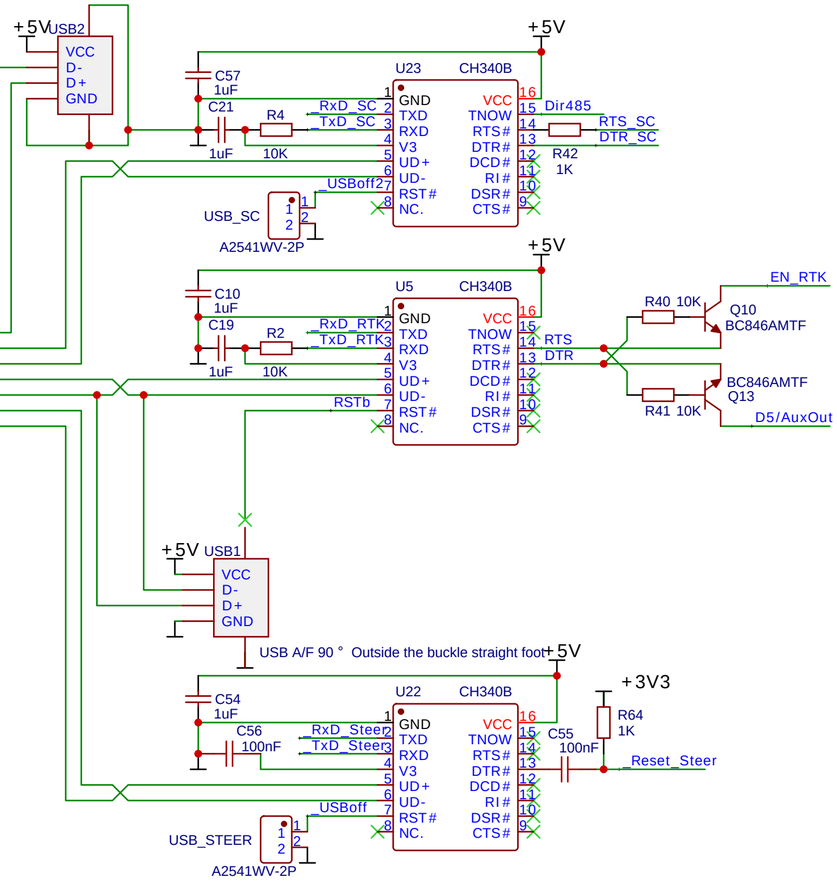


to Section Control board



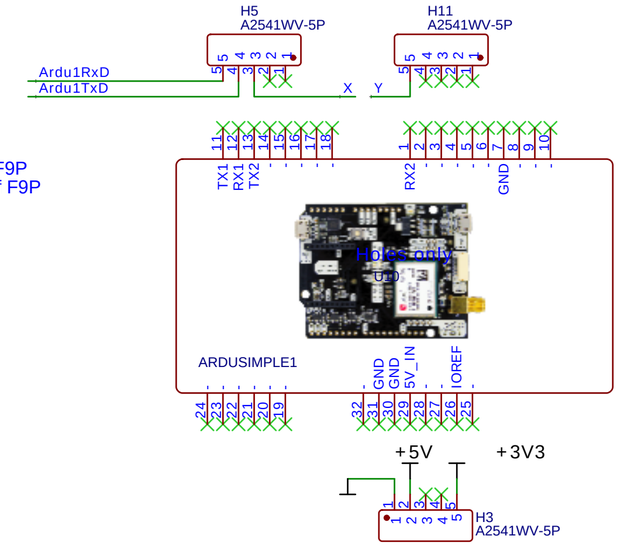
GPIO, e. g. Serial

USB A/F 90 ° Outside the buckle straight foot

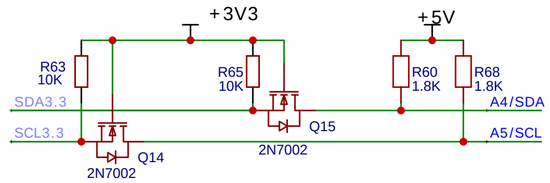


TITLE: USB & 3.3V SMPS		REV: 2.2
EasyEDA	Company: https://github.com/gormr	Sheet: 4/8
	Date: 2021-09-18 Drawn By: GoRoNb	

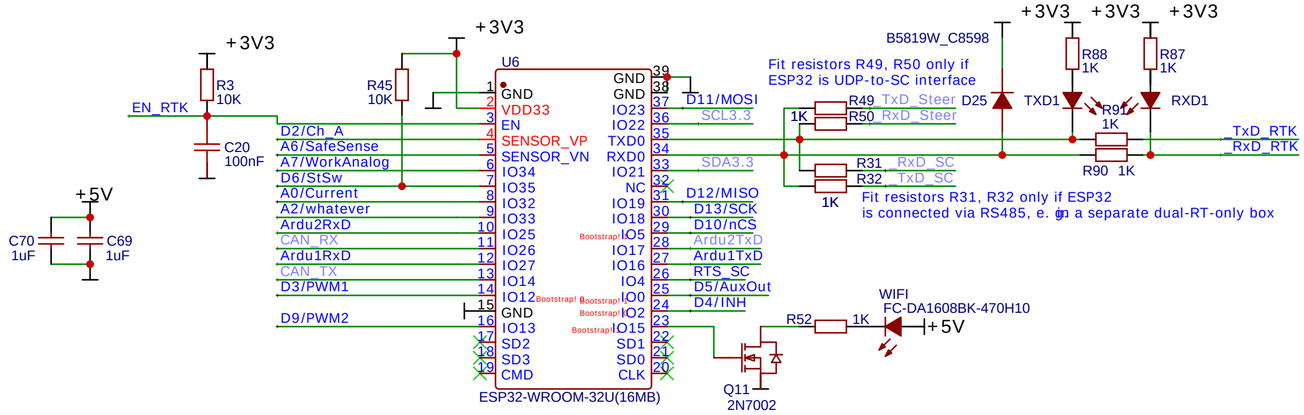
Ardusimple Onboard Module(s)

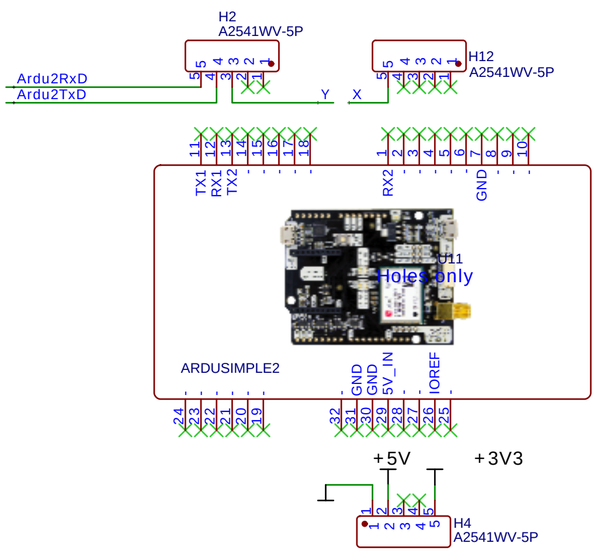


Tx: input of F9P
Rx: output of F9P



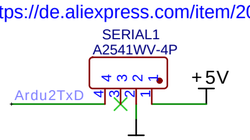
Interface I ² C 3.3V <-> 5V





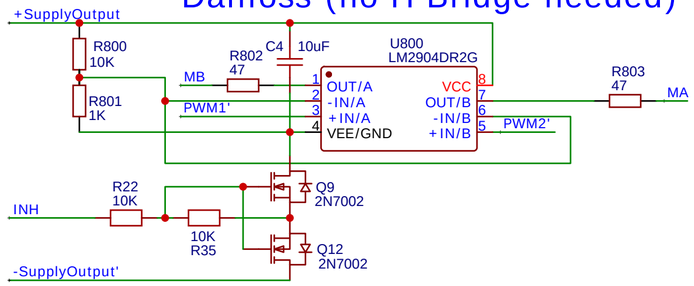
Option: RS232/Speed Pulse DIN9684

RS232 e.g.: https://de.aliexpress.com/item/2054995985.html



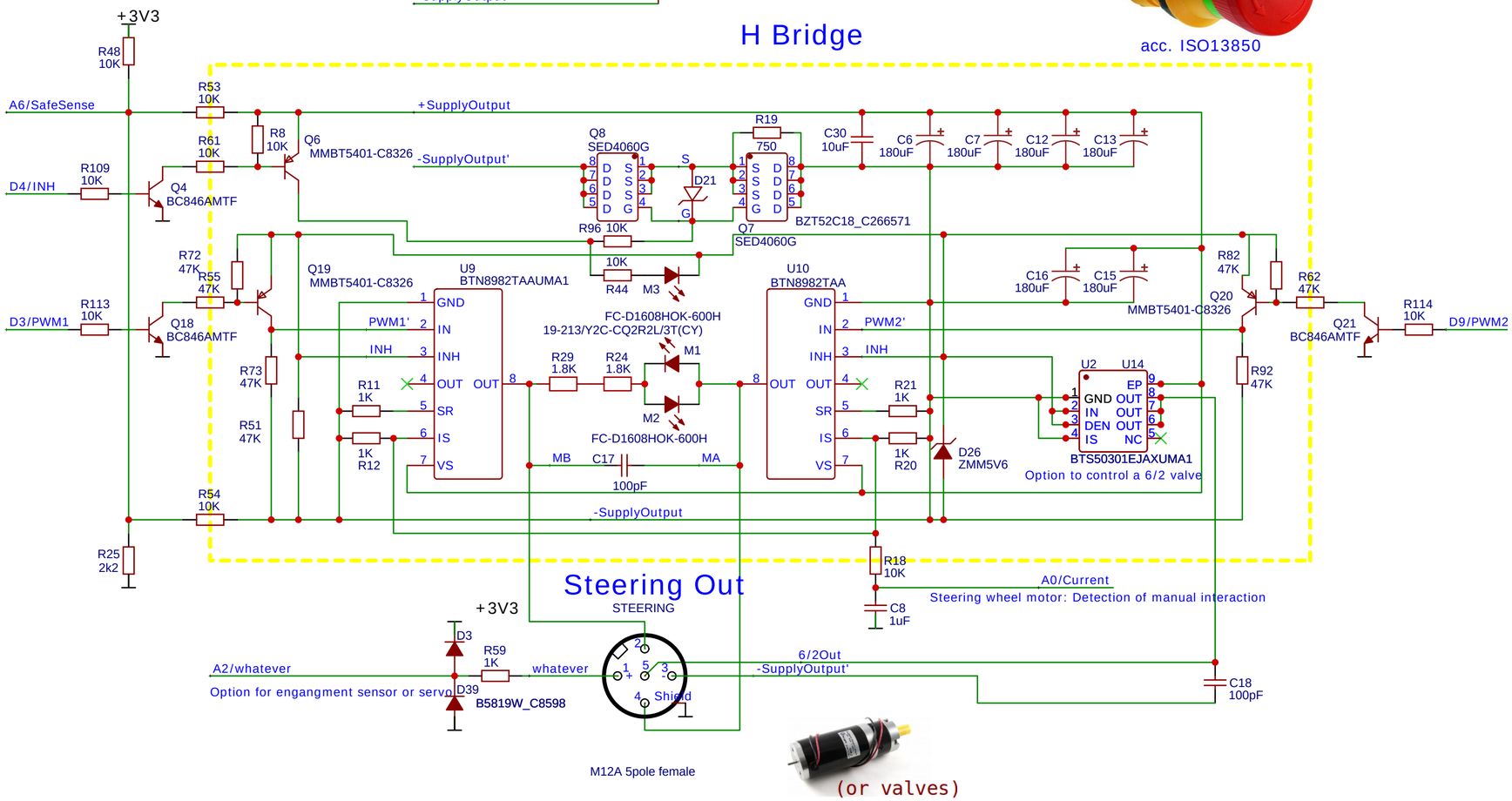
TITLE: (Dual-) RTK-GNSS		REV: 2.2
EasyEDA	Company: https://github.com/gormr	Sheet: 5/8
	Date: 2021-09-18 Drawn By: GoRoNb	

Danfoss (no H Bridge needed)



acc. ISO13850

H Bridge

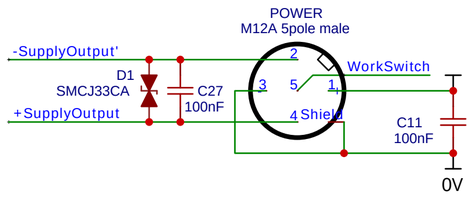


Steering Out

(or valves)

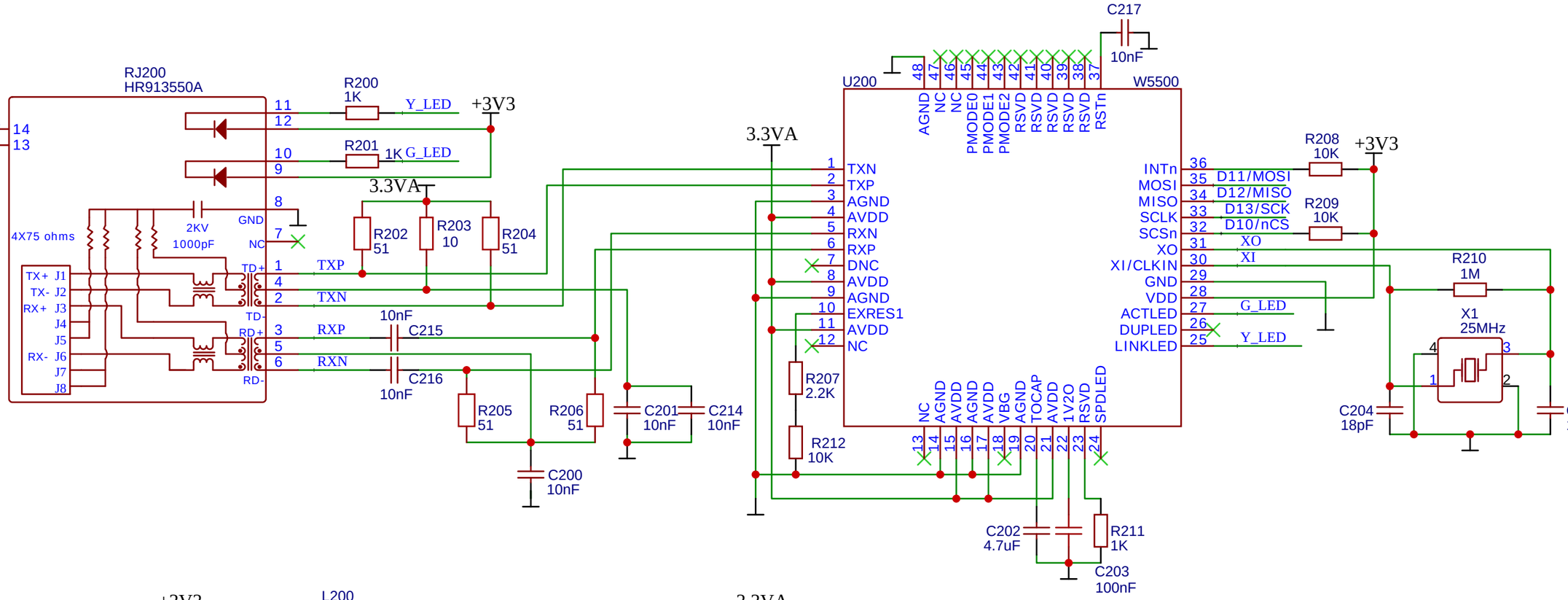
Power Input Connector / ISO 11786 plug (Amphenol C016 30H006 110 12)

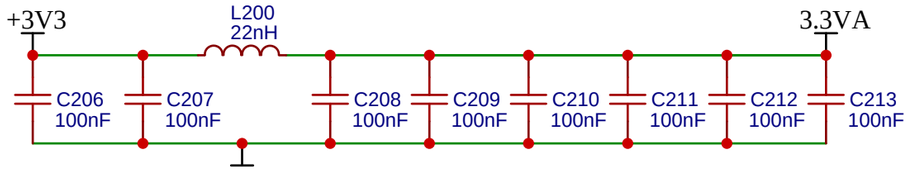
Socket DIN 9681-1 ISO 11786 e. g. Fendt X007 plug / Steyr, etc:
pin 4 => WorkSwitch digital (low = lower end, high = higher end pos)
pin 5 (Fendt, if connected) => WorkSwitch analog instead of pin 4 (0V = lower end, 10/14V = upp
pin 6 (Fendt) => +Battery and via Stopp switch (5A max for ISO plug!)
pin 7 (Fendt) => -Battery



TITLE: Motor Driver, Power Input		REV: 2.2
EasyEDA	Company: https://github.com/gormr	Sheet: 6/8
	Date: 2021-09-18 Drawn By: GoRoNb	

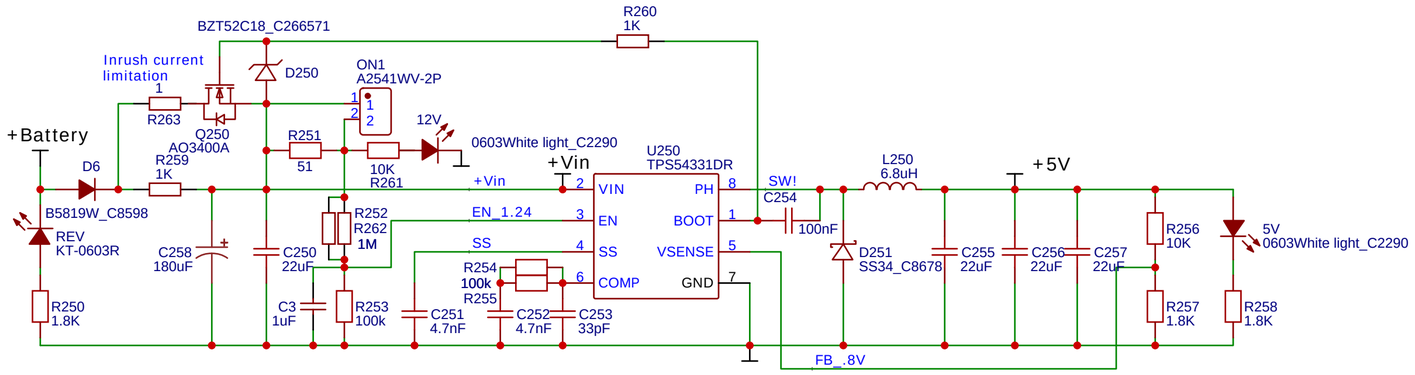
Option: Ethernet



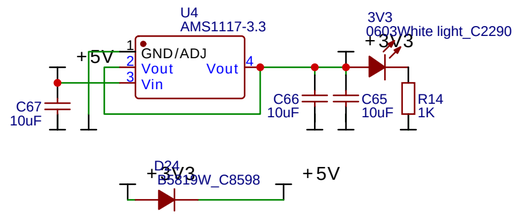


TITLE: W5500 Ethernet driver		REV: 2.2
EasyEDA	Company: https://github.com/gormr	Sheet: 7/8
	Date: 2021-09-18 Drawn By: buithehao1512	

Switch Mode Power Supply Batt => 5V
(needed for Ethernet and Wifi only)



Power Supply 5V => 3V3



TITLE: Power Supply		REV: 2.2
EasyEDA	Company https://github.com/gormr	Sheet: 8/8
	Date: 2022-01-05 Drawn By: GoRoNb	