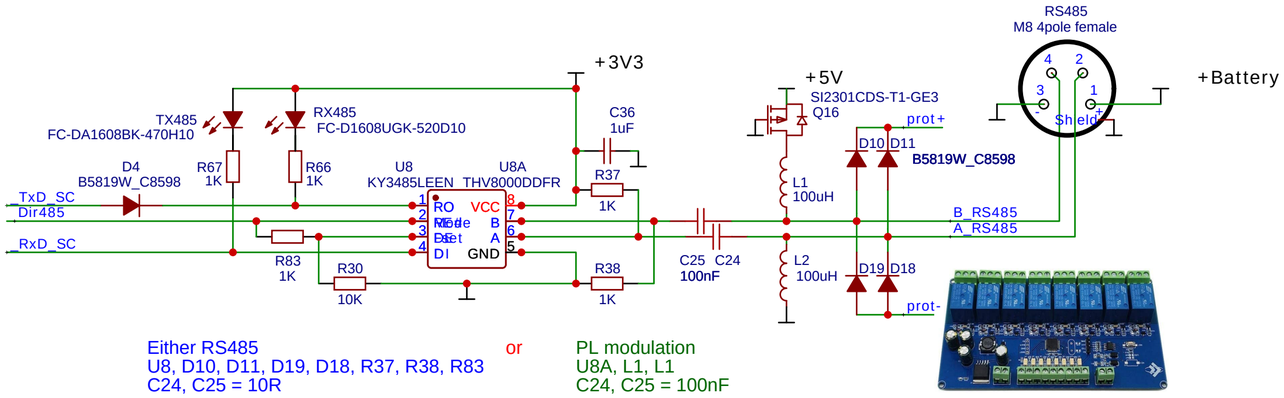
RS485 / ModbusRTU



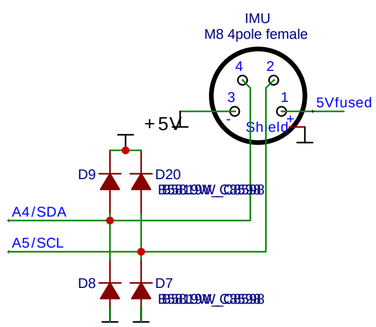
Either RS485
U8, D10, D11, D19, D18, R37, R38, R83
C24, C25 = 10R

or

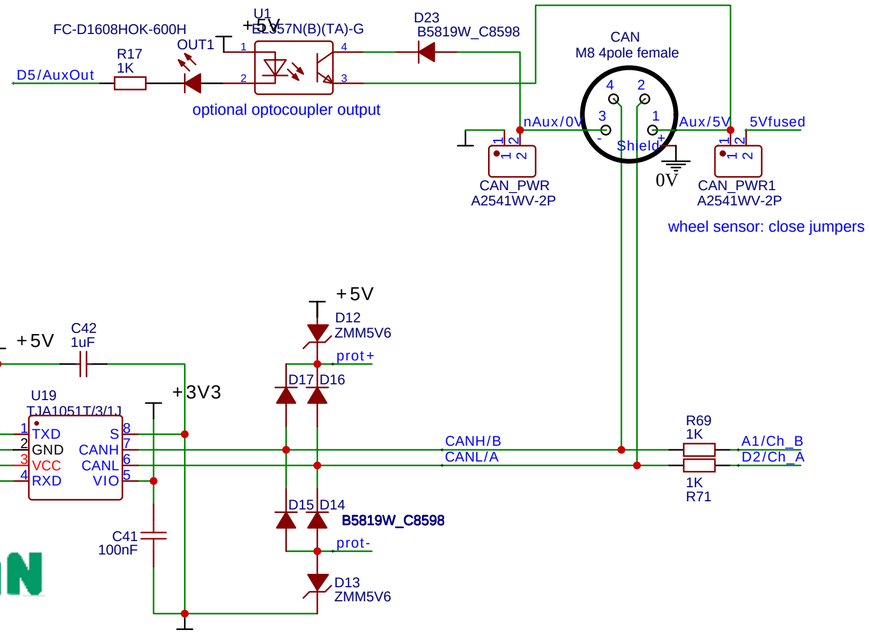
PL modulation
U8A, L1, L1
C24, C25 = 100nF

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

I2C external

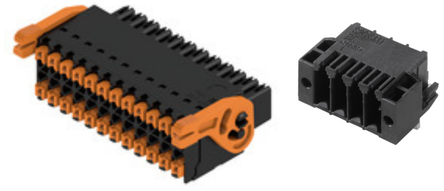


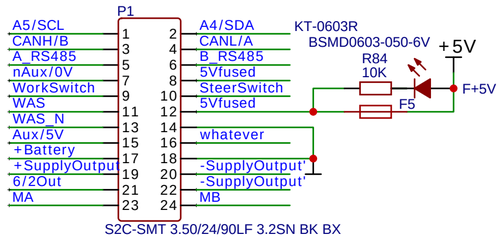
CAN & Opto | Wheel Sensor



CAN

Main connector





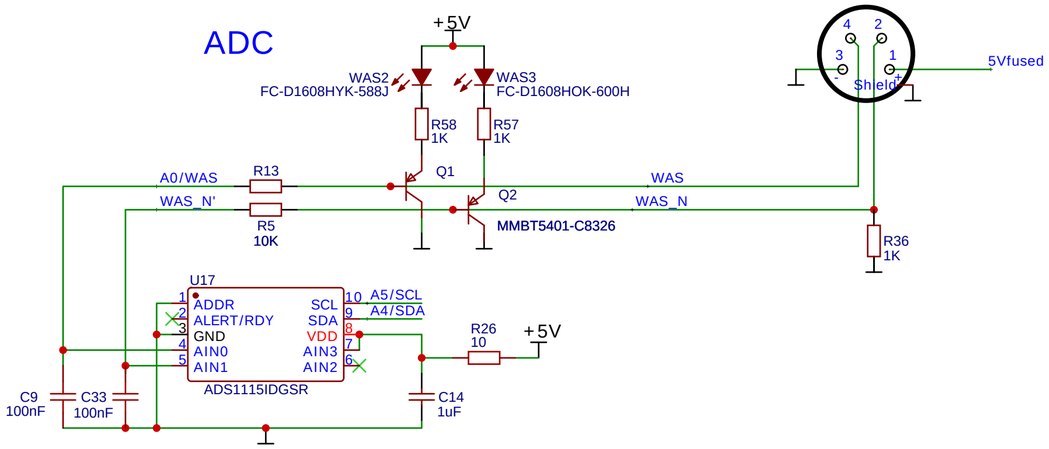
S2C-SMT 3.50/24/90LF 3.2SN BK BX

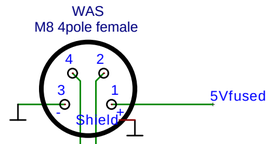
P1: Weidmuller 1289550000 + 1372870000
S2C-SMT 3.50/24/90LF 3.2SN BK BX + B2CF 3.50/24/180LH SN BK BX

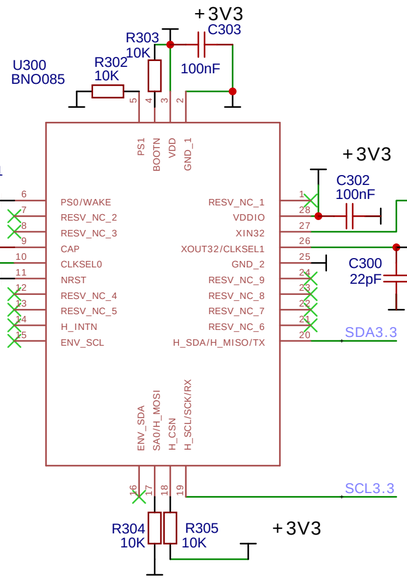
TITLE: Serial Communication, PushIn Connector		REV: 2.2
EasyEDA	Company https://discourse.agopengps.com	Sheet: 1/8
	Date: 2021-09-18 Drawn By: GoRoNb	

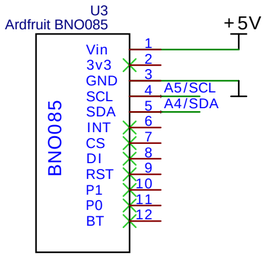
Wheel Angle Sensor

ADC

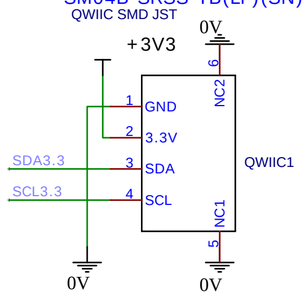






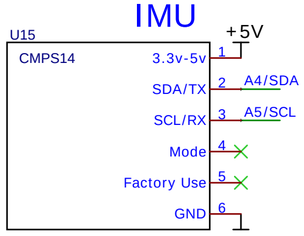


Sparkfunk part PRT-14417
SM04B-SRSS-TB(LF)(SN)
QWIIC SMD JST

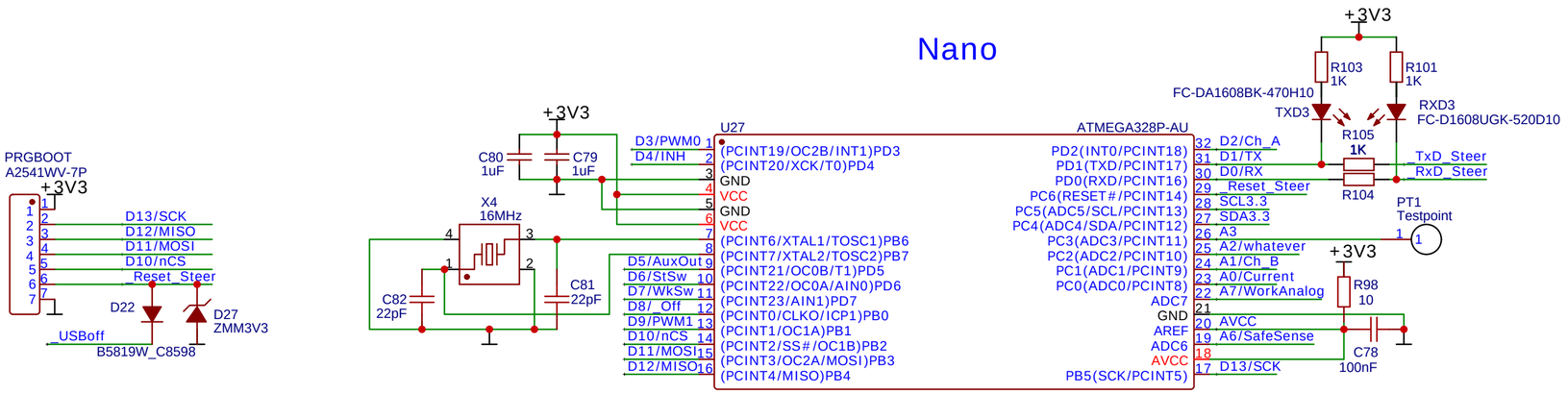


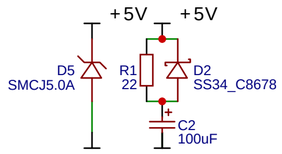
QWIIC

IMU

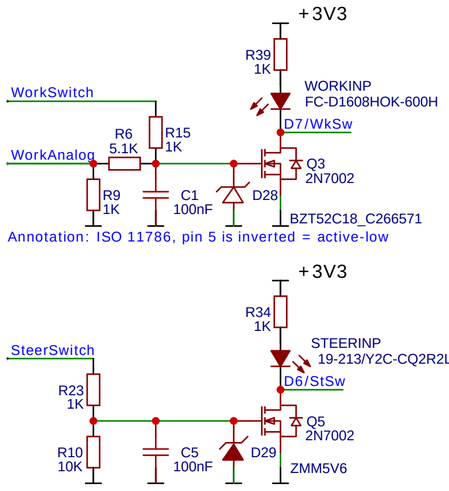


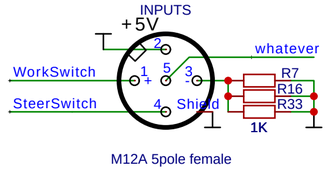
TITLE: Sensors (RTK, ADC, IMU)		REV: 2.2
EasyEDA	Company https://discourse.agopengps.com	Sheet: 2/8
	Date: 2021-09-18 Drawn By: GoRoNb	





Protected General Propose Inputs





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

TITLE: Teensy 4.1, USB, Inputs		REV: 2.2
EasyEDA	Company https://discourse.agopengps.com	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

+5V
R89 1K
R106 1K
FC-DA1608BK-470H10
RXD2
FC-D1608UGK-520D10
TXD2
R108 1K
TxD_SC
RxD_SC
R107
H10 A2541WV-2X4P
WorkSwitch
SteerSwitch
DTR_SC
RTS_SC
GPIO, e. g. Serial

to Section Control board

USB-C PC/Tablet

USBC1 TYPE-C-31-M-12
GND GND
VBUS VBUS
SBU1 CC2
DN1 DP2
DP1 DN2
CC1 SBU2
VBUS VBUS
GND GND
R43 5.1K
R46 5.1K

USB-B A2541WV-5P

4 Port USB Hub

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
+5V
C28 10uF
URES
R74 10K
USB_Up_P
USB_Up_N
X2 12MHz
C22 33pF
C23 33pF
U18 FE1.1S
VD18 TESTJ OVCJ PWRJ LED2 LED1 DRV VD33_O VDD5 BUSJ VBUSM XRSTJ DPU DMU
VSS XOUT XIN DM4 DP4 DM3 DP3 DM2 DP2 DM1 DP1 VD18_O VD33 REXT
USB_Ext_N USB_Ext_P USB_SC_N USB_SC_P USB_RTK_N USB_RTK_P USB_Steer_N USB_Steer_P
3V3Hub
1V8Hub
C29 10uF
C31 10uF
R81 2.7k

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
J3 URES
J1 USB_Steer_P USB_Up_P USB_RTK_P
J2 USB_Steer_N USB_Up_N USB_RTK_N

USB A/F 90 ° Outside the buckle straight foot
+5V USB2
VCC D- D+ GND

C57 1uF
C21 1uF
R4 10K
RxD_SC
TxD_SC
U23 CH340B
GND TXD RXD V3 UD+ UD- RST# NC.
VCC TNOW RTS# DTR# DCD# RI# DSR# CTS#
Dir485
RTS_SC
DTR_SC
R42 1K
USBoff2
USB_SC
A2541WV-2P

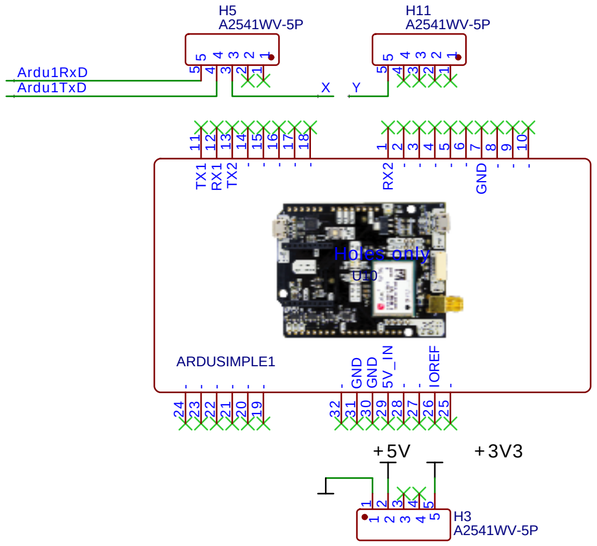
C10 1uF
C19 1uF
R2 10K
RxD_RTK
TxD_RTK
U5 CH340B
RSTb
EN_RTK
R40 10K
Q10 BC846AMTF
RTS
DTR
Q13 BC846AMTF
R41 10K
D8/_Off

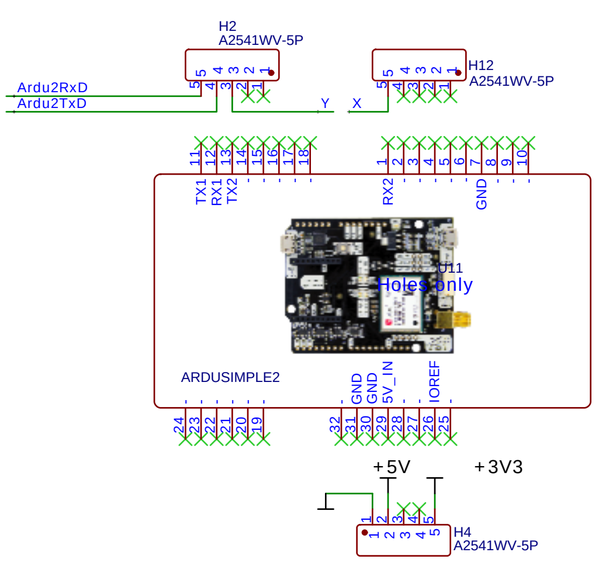
+5V USB1
VCC D- D+ GND
USB A/F 90 ° Outside the buckle straight foot

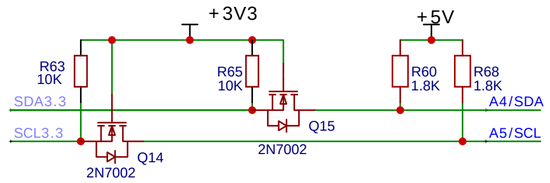
C54 1uF
C56 100nF
RxD_Steer
TxD_Steer
U22 CH340B
+3V3
R64 1K
C55 100nF
Reset_Steer
USBoff
USB_STEER
A2541WV-2P

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

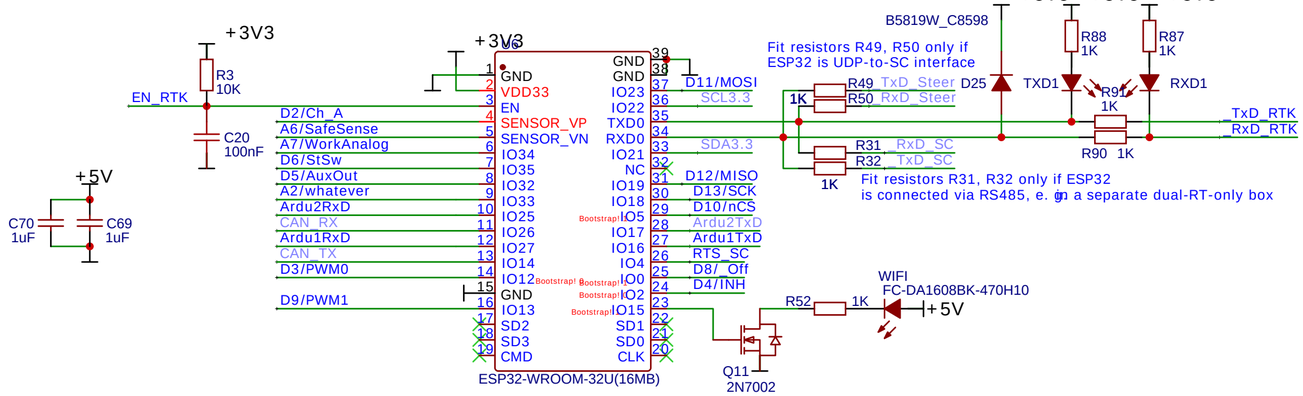
Ardusimple Onboard Module(s)

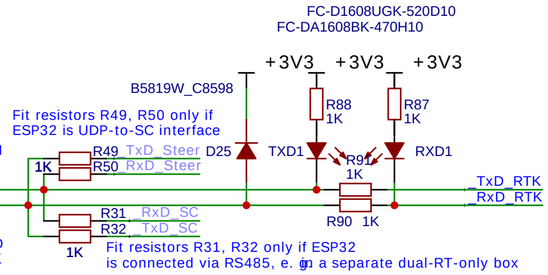






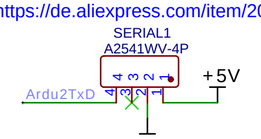
Interface I ² C 3.3V <-> 5V





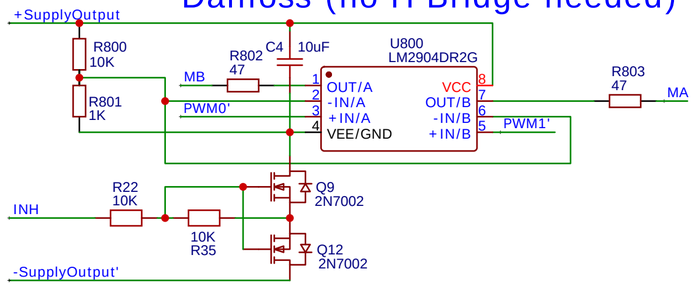
Option: RS232/Speed Pulse DIN9684

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



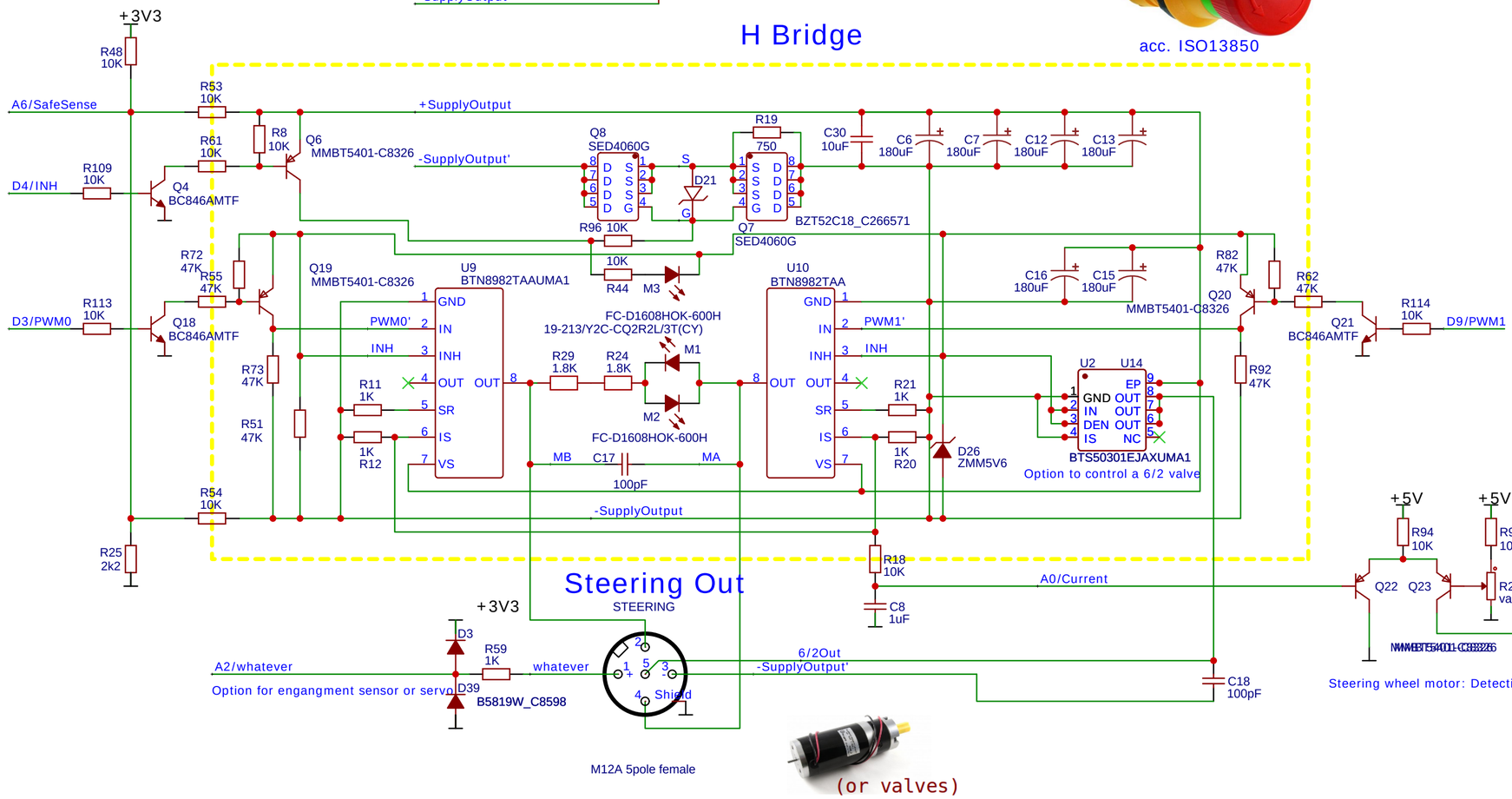
TITLE: (Dual-) RTK-GNSS		REV: 2.2
EasyEDA	Company: https://discourse.agopengps.com	Sheet: 5/8
	Date: 2021-09-18 Drawn By: GoRoNb	

Danfoss (no H Bridge needed)



acc. ISO13850

H Bridge

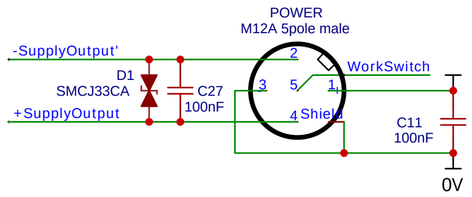


Steering Out

(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 = upper end pos)
pin 6 (Fendt) => +Battery and via Stopp switch (5A max for ISO plug!)
pin 7 (Fendt) => -Battery

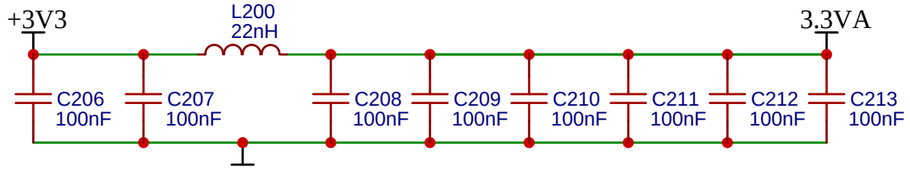


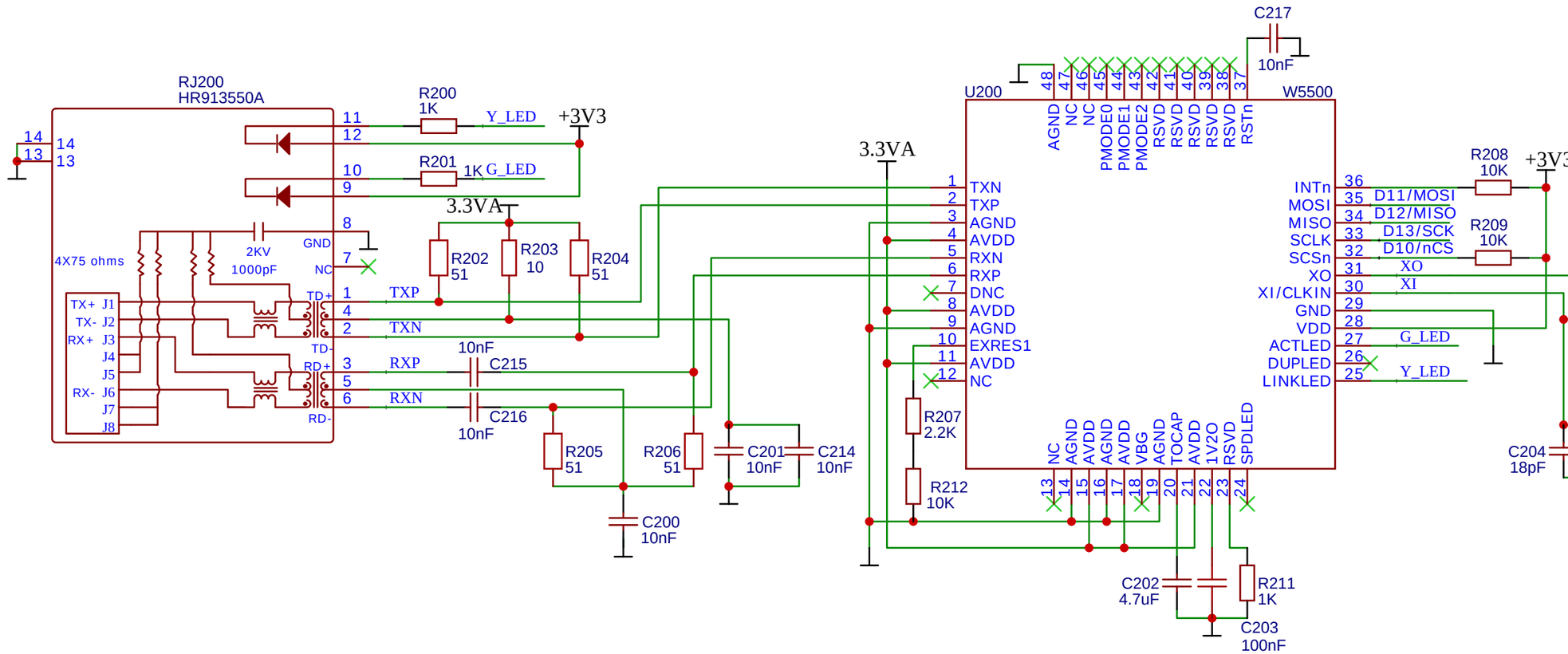
+Battery

or

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

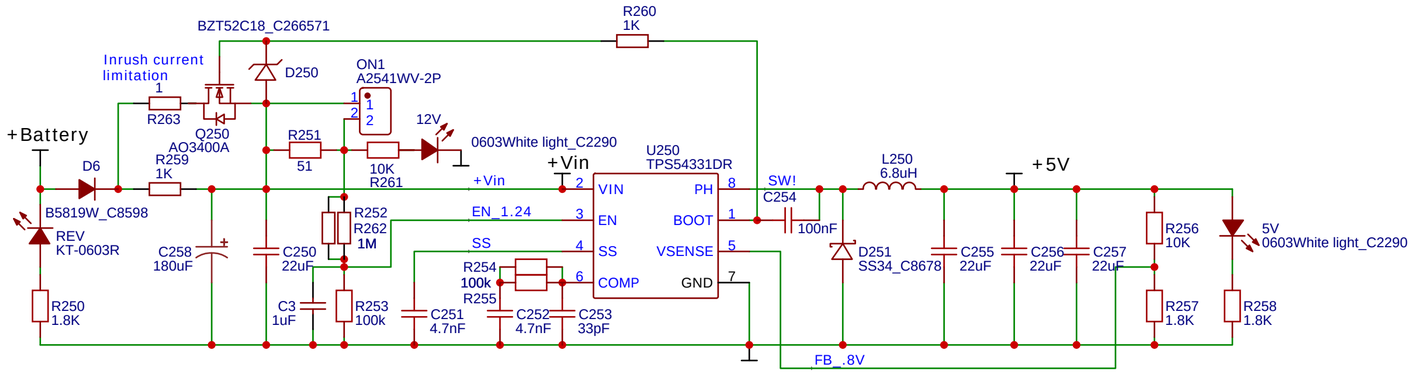
Option: Ethernet



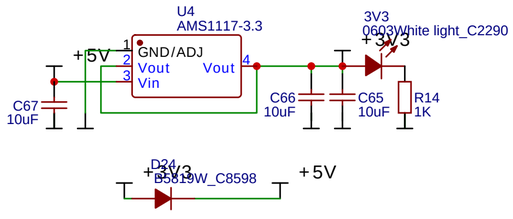


TITLE: W5500 Ethernet driver		REV: 2.2
EasyEDA	Company: https://discourse.agopengps.com	Sheet: 7/8
	Date: 2021-09-18 Drawn By: buithehao1512	

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://discourse.agopengps.com	Sheet: 8/8
	Date: 2022-01-05 Drawn By: GoRoNb	