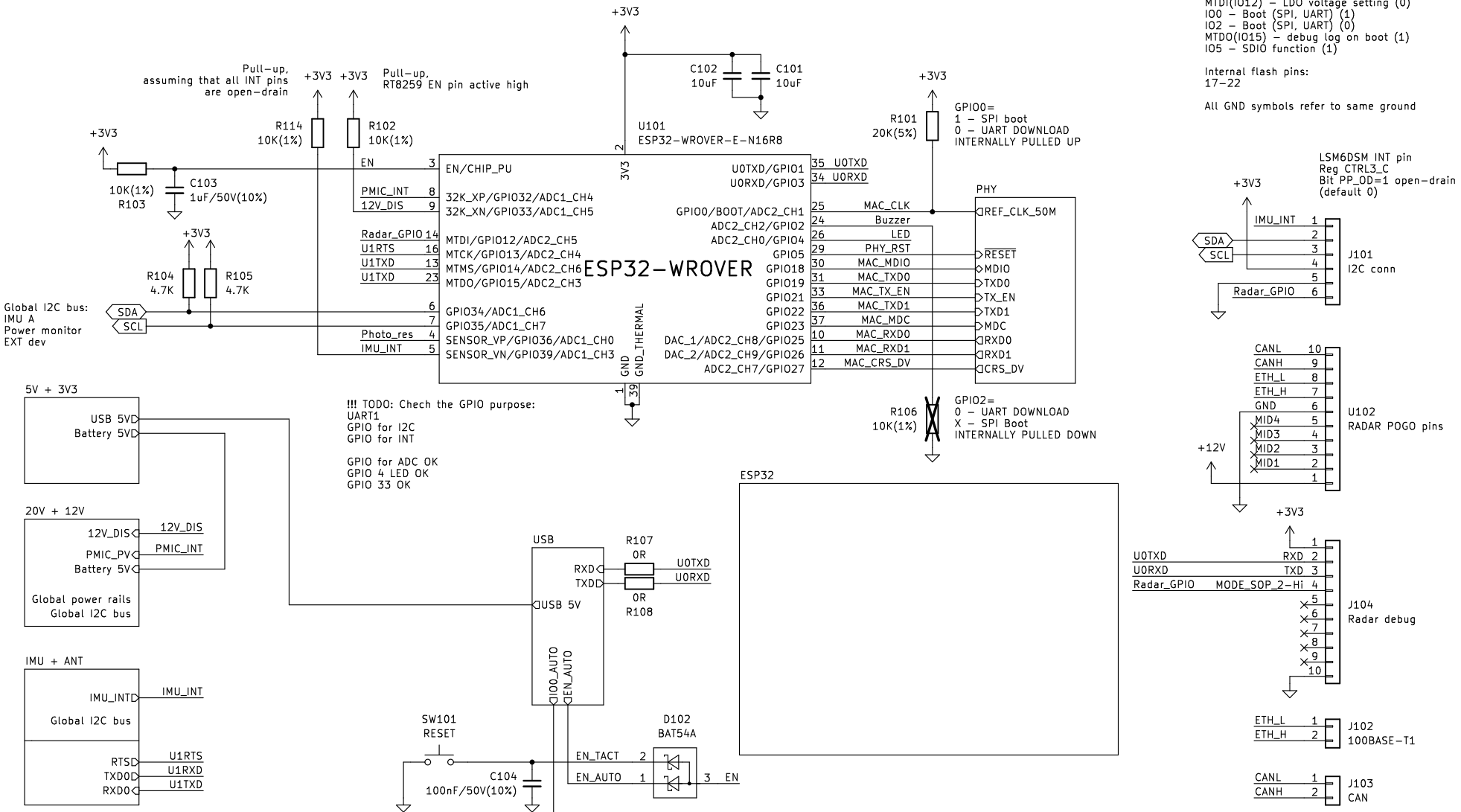
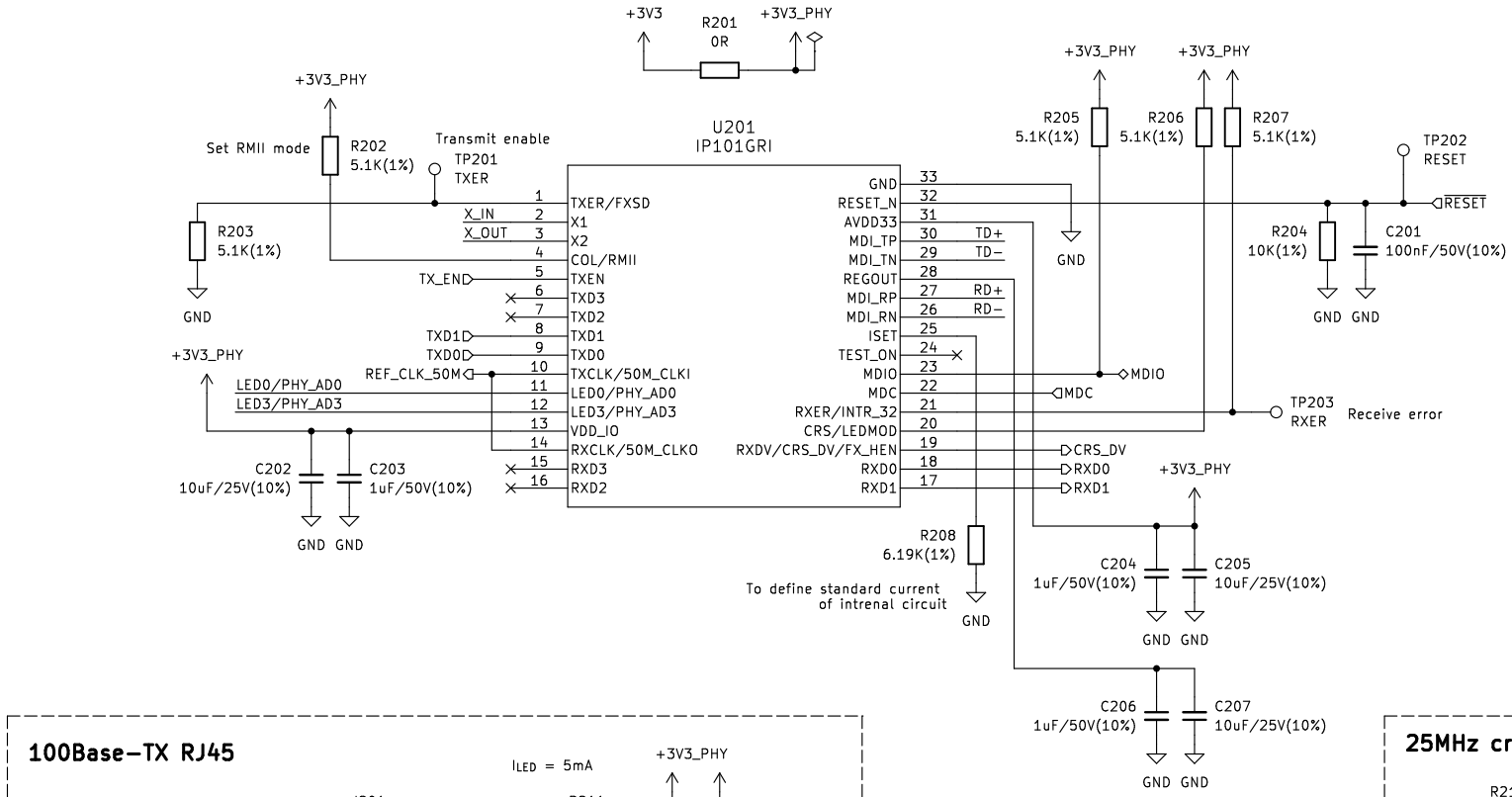
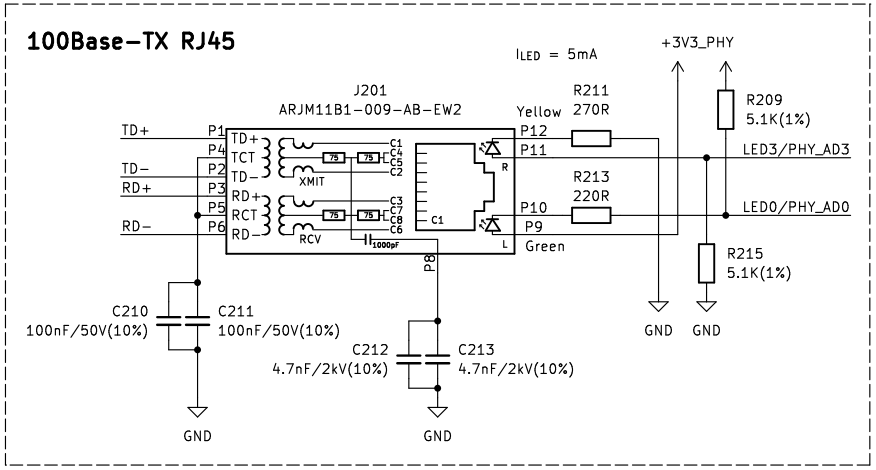
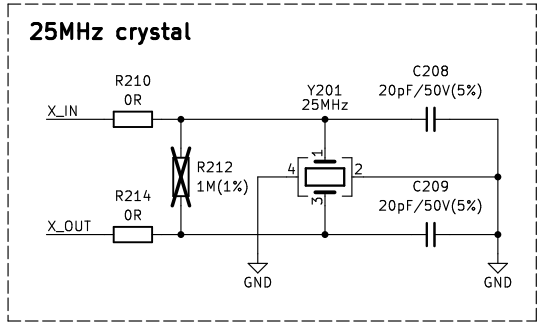

Strapping pins: (default)
MTDI(IO12) – LDO voltage setting (0)
IO0 – Boot (SPI, UART) (1)
IO2 – Boot (SPI, UART) (0)
MTDO(IO15) – debug log on boot (1)
IO5 – SDIO function (1)
Internal flash pins:
17–22
All GND symbols refer to same ground
U101
ESP32-WROVER-E-N16R8
ESP32-WROVER
EN/CHIP_PU
32K_XP/GPIO32/ADC1_CH4
32K_XN/GPIO33/ADC1_CH5
MTDI/GPIO12/ADC2_CH5
MTCK/GPIO13/ADC2_CH4
MTMS/GPIO14/ADC2_CH6
MTDO/GPIO15/ADC2_CH3
GPIO34/ADC1_CH6
GPIO35/ADC1_CH7
SENSOR_VP/GPIO36/ADC1_CH0
SENSOR_VN/GPIO39/ADC1_CH3
U0TXD/GPIO1
U0RXD/GPIO3
GPIO0/BOOT/ADC2_CH1
ADC2_CH2/GPIO2
ADC2_CH0/GPIO4
GPIO5
GPIO18
GPIO19
GPIO21
GPIO22
GPIO23
DAC_1/ADC2_CH8/GPIO25
DAC_2/ADC2_CH9/GPIO26
ADC2_CH7/GPIO27
3V3
GND
GND_THERMAL
C102 10uF
C101 10uF
R101 20K(5%)
GPIO0=
1 – SPI boot
0 – UART DOWNLOAD
INTERNALLY PULLED UP
R106 10K(1%)
GPIO2=
0 – UART DOWNLOAD
X – SPI Boot
INTERNALLY PULLED DOWN
R114 10K(1%)
R102 10K(1%)
Pull-up, assuming that all INT pins are open-drain
Pull-up, RT8259 EN pin active high
R103 10K(1%)
C103 1uF/50V(10%)
R104 4.7K
R105 4.7K
Global I2C bus:
IMU A
Power monitor
EXT dev
PHY
REF_CLK_50M
RESET
MDIO
TXD0
TX_EN
TXD1
MDC
RXD0
RXD1
CRS_DV
MAC_CLK
Buzzer
LED
PHY_RST
MAC_MDIO
MAC_TXD0
MAC_TX_EN
MAC_TXD1
MAC_MDC
MAC_RXD0
MAC_RXD1
MAC_CRS_DV
!!! TODO: Chech the GPIO purpose:
UART1
GPIO for I2C
GPIO for INT
GPIO for ADC OK
GPIO 4 LED OK
GPIO 33 OK
LSM6DSM INT pin
Reg CTRL3_C
Bit PP_OD=1 open-drain
(default 0)
J101
I2C conn
U102
RADAR POGO pins
J104
Radar debug
J102
100BASE-T1
J103
CAN
ESP32
USB
USB 5V
RXD
TXD
R107 0R
R108 0R
IO0_AUTO
EN_AUTO
SW101
RESET
C104 100nF/50V(10%)
D102
BAT54A
EN_TACT
EN_AUTO
EN
SW102
BOOT MODE
R113 1K(1%)
C105 100nF/50V(10%)
D103
BAT54A
IO0_TACT
IO0_AUTO
IO0
MAC_CLK
5V + 3V3
USB 5V
Battery 5V
20V + 12V
12V_DIS
PMIC_PV
Battery 5V
Global power rails
Global I2C bus
IMU + ANT
IMU_INT
Global I2C bus
RTS
TXD0
RXD0
U1RTS
U1RXD
U1TXD
LED + Buzzer
LED_DIN
Buzzer
LDR
LED
Buzzer
Photo_res
Designed by Martin Tavoda
ALPS Electric Czech, s.r.o.
Sheet: /
File: CycloRadarDemoKit.kicad_sch
Title: Safety Ride Radar Sensor
Size: A4
Date: 2023-11-18
Rev: Rev.: WIP
KiCad E.D.A. kicad 7.0.9
Id: 1/8





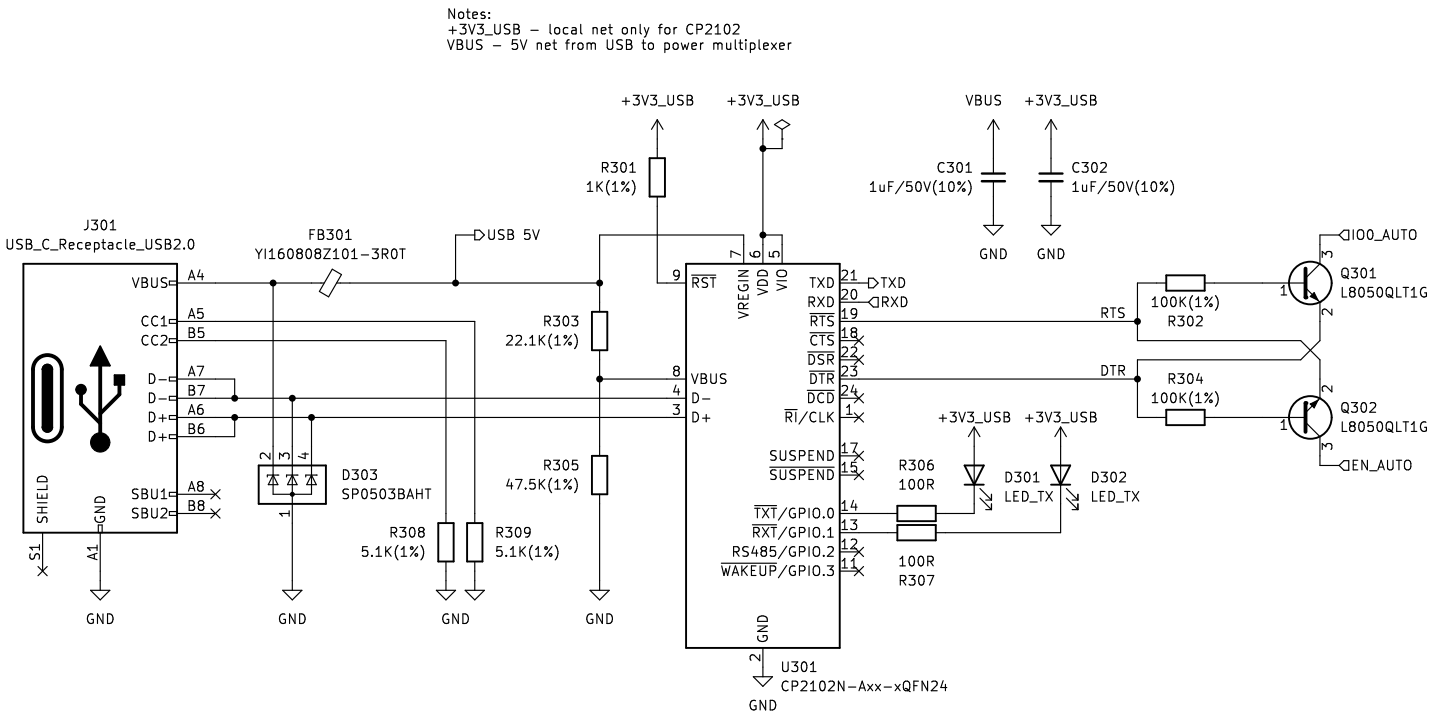


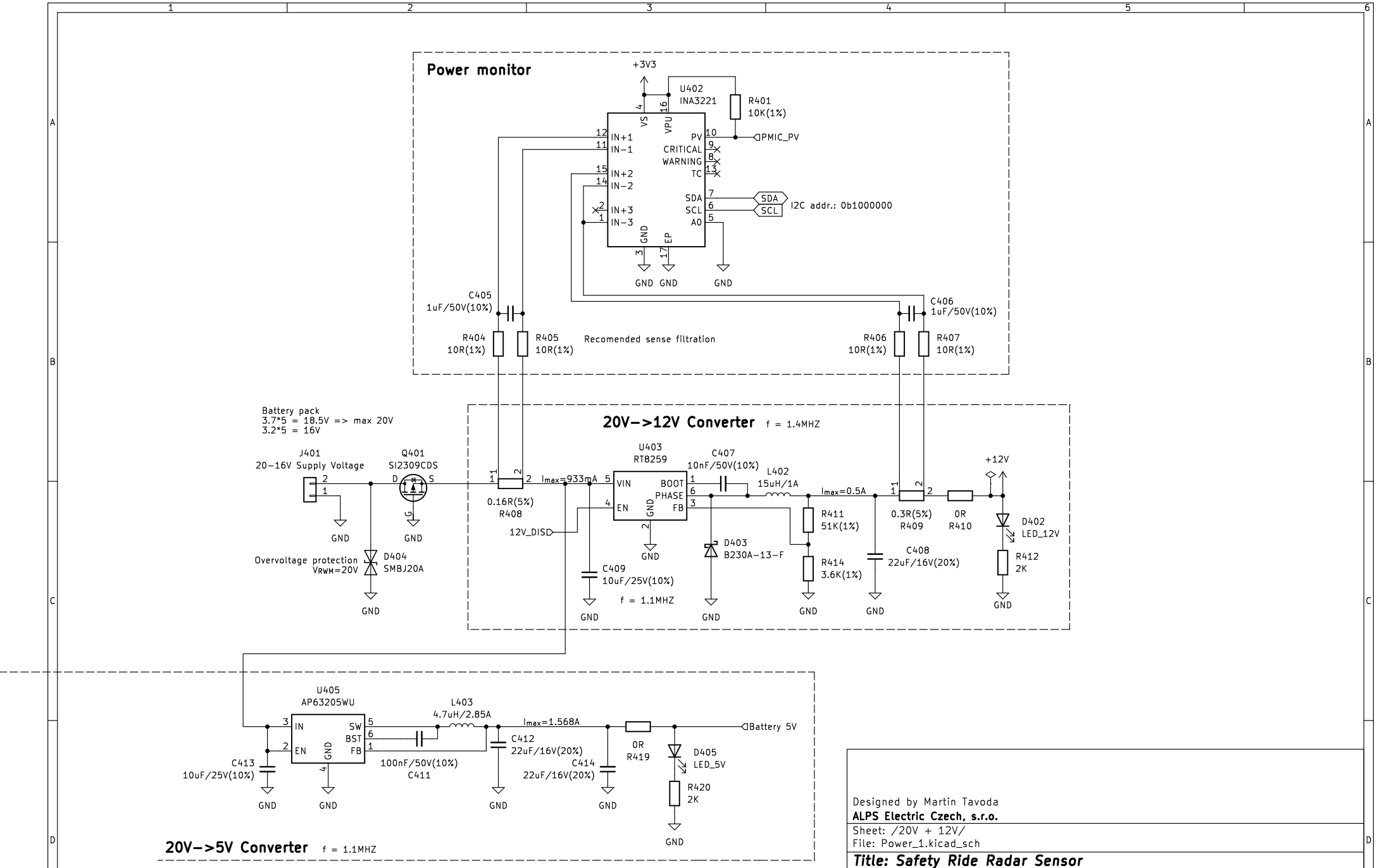
Designed by Martin Tavoda
ALPS Electric Czech, s.r.o.

Sheet: /PHY/
File: PHY.kicad_sch

Title: Safety Ride Radar Sensor

Size: A4	Date: 2023−11−18	**Rev: Rev.: WIP**
KiCad E.D.A. kicad 7.0.9		Id: 2/8


Notes:
+3V3_USB – local net only for CP2102
VBUS – 5V net from USB to power multiplexer
J301
USB_C_Receptacle_USB2.0
FB301
YI160808Z101-3R0T
USB 5V
R301
1K(1%)
+3V3_USB
+3V3_USB
VBUS
+3V3_USB
C301
1uF/50V(10%)
C302
1uF/50V(10%)
GND
GND
R303
22.1K(1%)
R305
47.5K(1%)
R308
5.1K(1%)
R309
5.1K(1%)
D303
SP0503BAHT
U301
CP2102N-Axx-xQFN24
R306
100R
R307
100R
D301
LED_TX
D302
LED_TX
R302
100K(1%)
R304
100K(1%)
Q301
L8050QLT1G
Q302
L8050QLT1G
IO0_AUTO
EN_AUTO
TXD
RXD
RTS
DTR
Designed by Martin Tavoda
ALPS Electric Czech, s.r.o.
Sheet: /USB/
File: USB.kicad_sch
Title: Safety Ride Radar Sensor
Size: A4
Date: 2023-11-18
Rev: Rev.: WIP
KiCad E.D.A. kicad 7.0.9
Id: 3/8



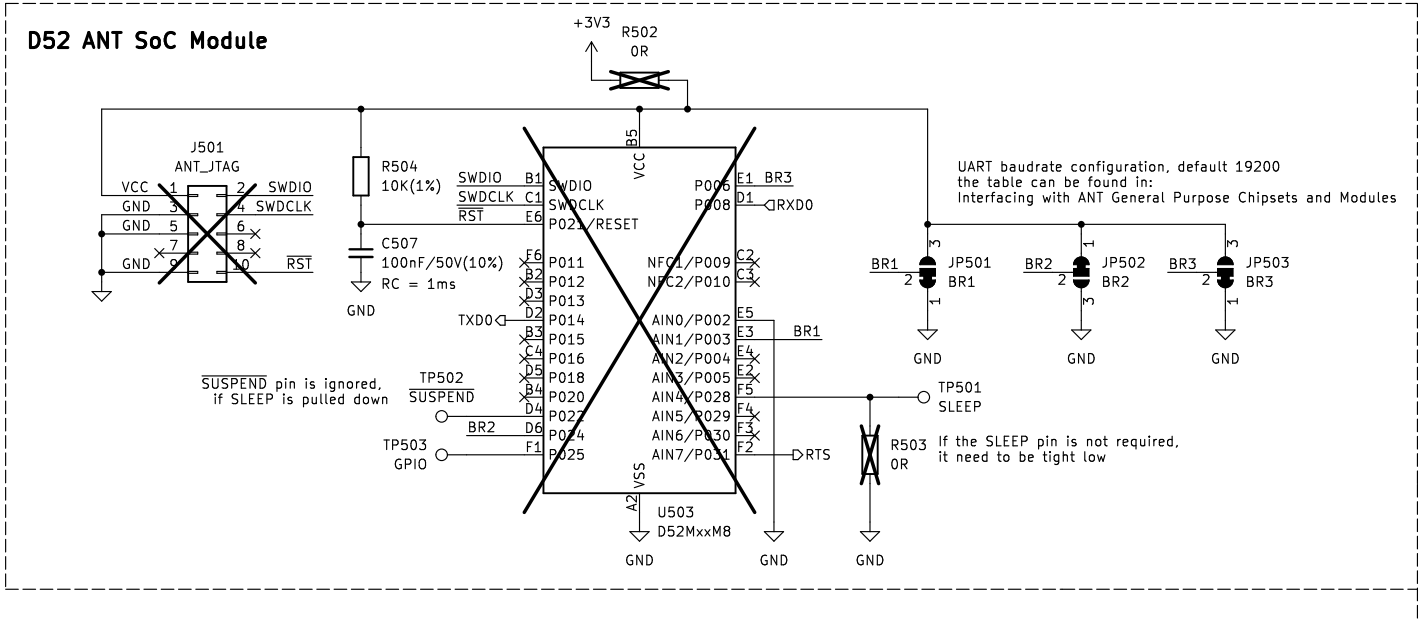
Designed by Martin Tavoda
ALPS Electric Czech, s.r.o.

Sheet: /20V + 12V/
File: Power_1.kicad_sch

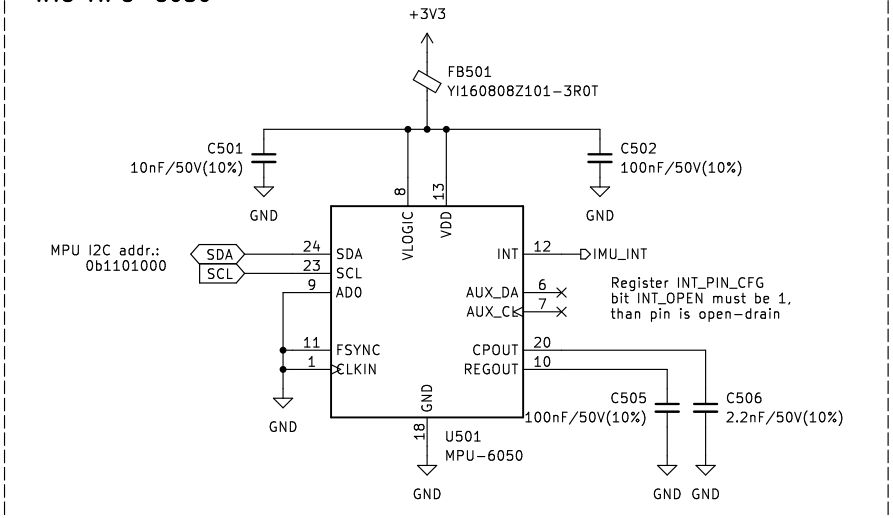
Title: Safety Ride Radar Sensor

Size: A4	Date: 2023−11−18	**Rev: Rev.: WIP**
KiCad E.D.A. kicad 7.0.9		Id: 4/8

D52 ANT SoC Module



IMU MPU-6050

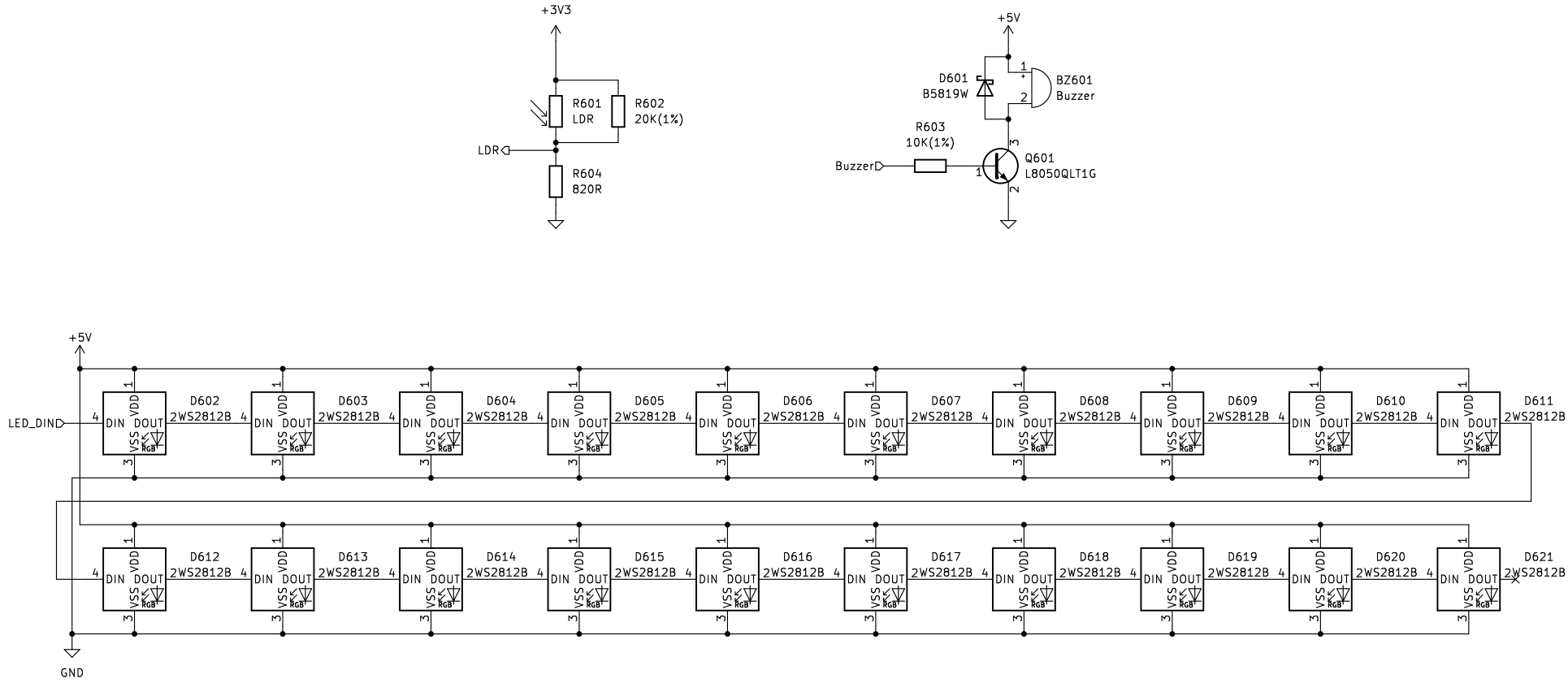


Designed by Martin Tavoda
ALPS Electric Czech, s.r.o.

Sheet: /IMU + ANT/
File: IMU&ANT.kicad_sch

Title: Safety Ride Radar Sensor

Size: A4	Date: 2023-11-18	**Rev: Rev.: WIP**
KiCad E.D.A. kicad 7.0.9		Id: 5/8



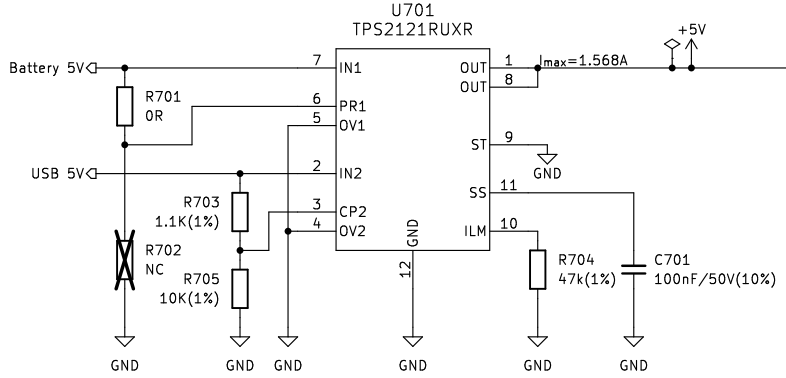
Designed by Martin Tavoda
ALPS Electric Czech, s.r.o.

Sheet: /LED + Buzzer/
File: LEDbuzzer.kicad_sch

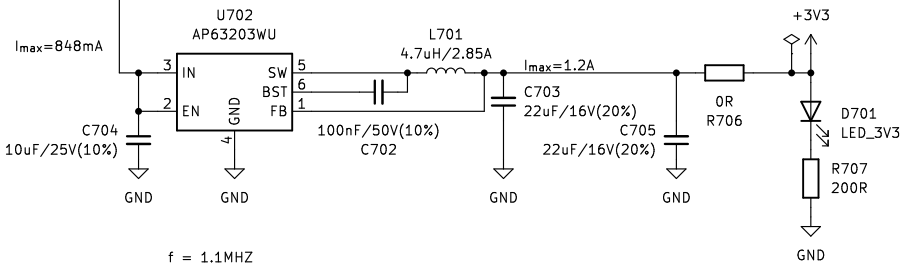
Title: Safety Ride Radar Sensor

Size: A4	Date: 2023-11-18	**Rev: Rev.: WIP**
KiCad E.D.A. kicad 7.0.9		Id: 6/8

Power MUX 5V



5V->3.3V Converter



Sheet: /5V + 3V3/		
File: Power_2.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.9		Id: 7/8

Sheet: /ESP32/
File: ESP32.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.9		Id: 8/8