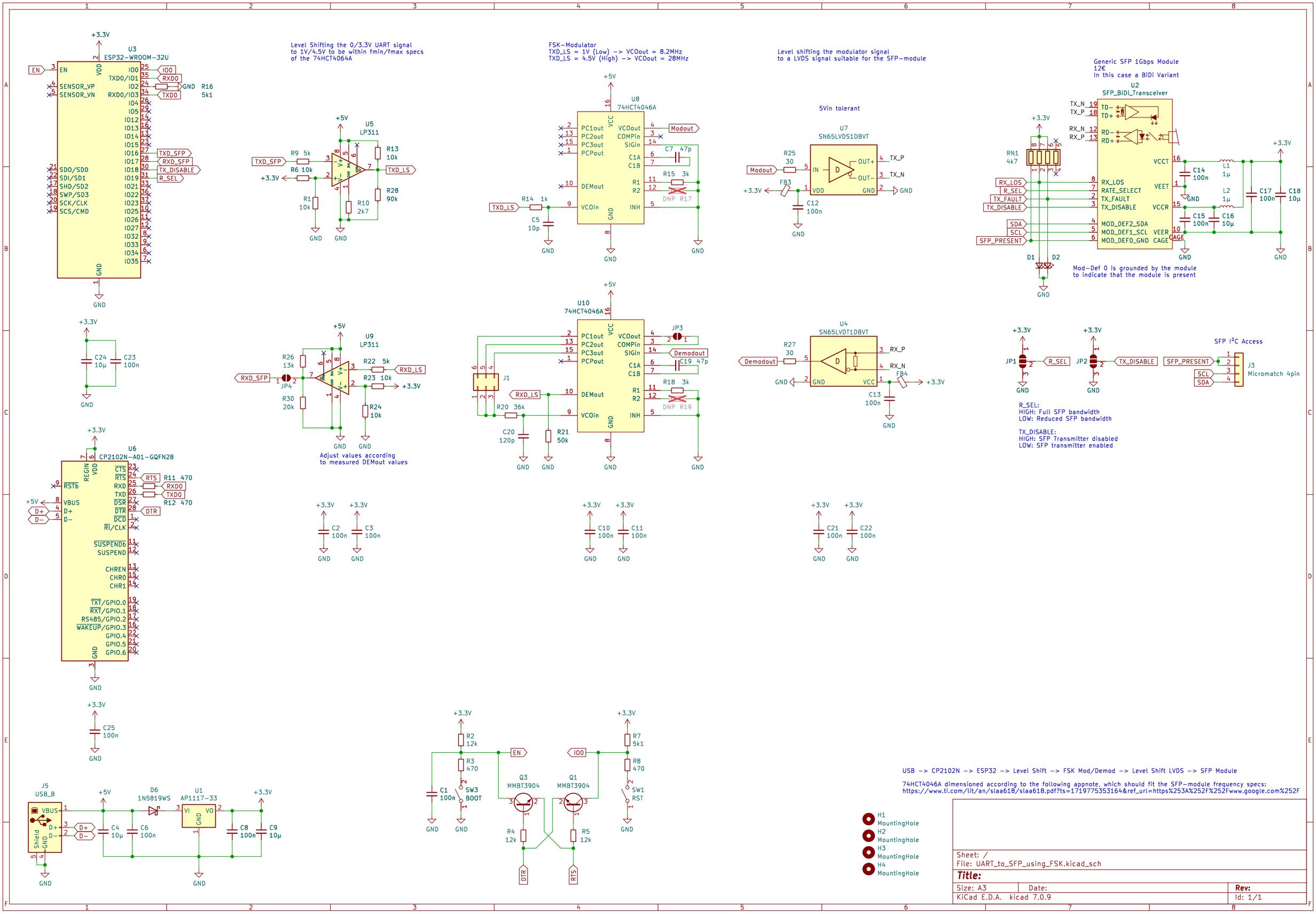
U3
ESP32-WROOM-32U
Level Shifting the 0/3.3V UART signal
to 1V/4.5V to be within fmin/fmax specs
of the 74HCT4064A
U5
LP311
FSK-Modulator
TXD_LS = 1V (Low) -> VCOout = 8.2MHz
TXD_LS = 4.5V (High) -> VCOout = 28MHz
U8
74HCT4046A
Level shifting the modulator signal
to a LVDS signal suitable for the SFP-module
5Vin tolerant
U7
SN65LVDS1DBVT
Generic SFP 1Gbps Module
12€
In this case a BiDi Variant
U2
SFP_BiDi_Transceiver
Mod-Def 0 is grounded by the module
to indicate that the module is present
U9
LP311
U10
74HCT4046A
U4
SN65LVDT1DBVT
SFP I²C Access
J3
Micromatch 4pin
R_SEL:
HIGH: Full SFP bandwidth
LOW: Reduced SFP bandwidth
TX_DISABLE:
HIGH: SFP Transmitter disabled
LOW: SFP transmitter enabled
Adjust values according
to measured DEMout values
U6
CP2102N-A01-GQFN28
USB -> CP2102N -> ESP32 -> Level Shift -> FSK Mod/Demod -> Level Shift LVDS -> SFP Module
74HCT4046A dimensioned according to the following appnote, which should fit the SFP-module frequency specs:
https://www.ti.com/lit/an/slaa618/slaa618.pdf?ts=1719775353164&ref_url=https%253A%252F%252Fwww.google.com%252F
J5
USB_B
D6
1N5819WS
U1
AP1117-33
Q3
MMBT3904
Q1
MMBT3904
H1
MountingHole
H2
MountingHole
H3
MountingHole
H4
MountingHole
Sheet: /
File: UART_to_SFP_using_FSK.kicad_sch
Title:
Size: A3
Date:
Rev:
KiCad E.D.A. kicad 7.0.9
Id: 1/1