UPWARD FACING PORT(UFP)

P?
USB_C_Plug

VBUS A4
CC A5 C_CC1
VCONN B5 VCONN
D− A7 USB_D−
D+ A6 USB_D+
RX1− B10 CRX1_n
RX1+ B11 CRX1_p
TX1− A3 CTX1_n
TX1+ A2 CTX1_p
RX2− A10 CRX2_n
RX2+ A11 CRX2_p
TX2− B3 CTX2_n
TX2+ B2 CTX2_p
SBU1 A8 CSBU1
SBU2 B8 CSBU2
SHIELD S1
GND A1

R? R_US
C? 0.1uF
USB_CHASIS
GND

Connected to computer(host).

CHARGER INPUT TYPE C RECEPTACLE

J?
USB_C_Receptacle

PWR_IN A4 VBUS
CC1_PWR A5 CC1
CC2_PWR B5 CC2
D− A7 B7
D− A6 B6
D+
RX1− B10 B11
RX1+
TX1− A3 A2
TX1+
RX2− A10 A11
RX2+
TX2− B3 B2
TX2+
SBU1 A8
SBU2 B8
GND
SHIELD
A1
S1
GND

UNUSED IN THE TYPE C CHARGING INPUT

The input receptacle receives input from a TYPE C charging brick that can deliver upto 100W (20V at 5A). the level of power sourced from the brick is NEGOTIATED by the PD controller

PWR_IN
Sheet: ST_PD CHARGING
PWR_IN
File: ST_PD CHARGING CONTROLLER.sch

Sheet: 3V3_BUCK
File: 3V3_BUCK.sch

+3.3V
U?
HD3SS460
VCC 23
CRX1_n 1
CRX1_p 2
CRX1p
CRX1n
CTX1_n 4
CTX1_p 5
CTX1p
CTX1n
CTX2_n 6
CTX2_p 7
CTX2p
CTX2n
CRX2_n 9
CRX2_p 10
CRX2p
CRX2n
CSBU1 11
CSBU2 12
CSBU1
CSBU2
GND PAD 28 13
POL 3
AMSEL 8
EN 18
TO BE CONTROLLED BY THE PD OR A RETIMER
SSTX_n 26
SSTX_p 27
SSRX_n 29
SSRX_p 30
LnA_n 16
LnA_p 17
LnB_n 19
LnB_p 20
LnC_n 21
LnC_P 22
LnD_n 24
LnD_P 25
SBU1 14
SBU2 15
C? 0.1uF
USB_D+
USB_D−
USB2UP_DP
USB2UP_DN
USB3UP_TXDN
USB3UP_TXDP
USB3UP_RXDP
USB3UP_RXDN
TO THE DISPLAY PORT CONTROLLER

Sheet: USB_HUB_CTRL
File: USB_HUB_CTRL.sch
USB2DN_DP1
USB2DN_DN1
USB3DN_RXDP1
USB3DN_RXDN1
USB3DN_TXDP1
USB3DN_TXDN1
USB2DN_DP2
USB2DN_DN2
USB3DN_RXDP2
USB3DN_RXDN2
USB3DN_TXDP2
USB3DN_TXDN2
USB2DN_DP3
USB2DN_DN3
USB3DN_RXDP3
USB3DN_RXDN3
USB3DN_TXDP3
USB3DN_TXDN3
USB2DN_DP4
USB2DN_DN4
USB3DN_RXDP4
USB3DN_RXDN4
USB3DN_TXDP4
USB3DN_TXDN4
USB2DN_DP5
USB2DN_DN5
USB3DN_RXDP5
USB3DN_RXDN5
USB3DN_TXDP5
USB3DN_TXDN5
USB2DN_DP6
USB2DN_DN6

OVER CURRENT & SHORT CIRCUIT PROTETION
U?
SY6280
IN 5
OUT 1
EN 4
GND
ISET 3
2
C? 10uF
C? 100nF
C? 10uF
R? 6.8K
Iset=6800/rs
1A limit
r2=6.8k

USB 3.2 Gen2 type C
J?
USB_C_Receptacle
VBUS A4
CC1 A5
CC2 B5
D− A7
D− B7
D+ A6
D+ B6
RX1− B10
RX1+ B11
TX1− A3
TX1+ A2
RX2− A10
RX2+ A11
TX2− B3
TX2+ B2
SBU1 A8
SBU2 B8
GND
SHIELD
A1
S1
GND
USB2DN_DN1
USB2DN_DP1
USB3DN_RXDN1
USB3DN_RXDP1
USB3DN_TXDN1
USB3DN_TXDP1

OVER CURRENT & SHORT CIRCUIT PROTETION
U?
SY6280
C? 10uF
C? 100nF
C? 10uF
R? 6.8K
Iset=6800/rs
1A limit
r2=6.8k

USB 3.2 gen1 type A
J?
USB3_A
VBUS 1
D− 2
D+ 3
SSRX− 5
SSRX+ 6
SSTX− 8
SSTX+ 9
GND 4
DRAIN 7
SHIELD 10
GND
USB2DN_DN2
USB2DN_DP2
USB3DN_RXDN2
USB3DN_RXDP2
USB3DN_TXDN2
USB3DN_TXDP2
USB3DN_RXDN1

type C connect to Ipad
U?
SY6280
C? 10uF
C? 10uF
C? 100nF
R? 6.8K
Iset=6800/rs
1A limit
r2=6.8k
P?
USB_C_Plug_USB2.0
VBUS A4
CC A5
VCONN B5
D− A7
D+ A6
GND
SHIELD
A1
S1
GND
USB2DN_DN6
USB2DN_DP6

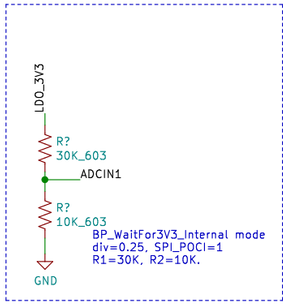
Sheet: UFP_PD_CONTROLLER
PRESERVED FOR USE LATER_
NO CONNECTION TO THE SCHEMATIC
(MAYBE NEEDED TO INITIATE THE UFP)
File: UFP_PD_CTRL + VAR_V_SOURCE.sch

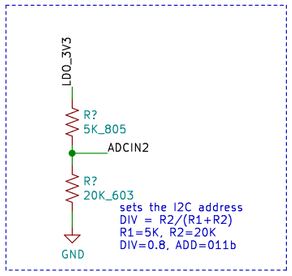
Sheet: SD CARD UHS
USB2DN_DP4
USB2DN_DN4
USB+
USB−
File: SD_CARD UHS II.sch

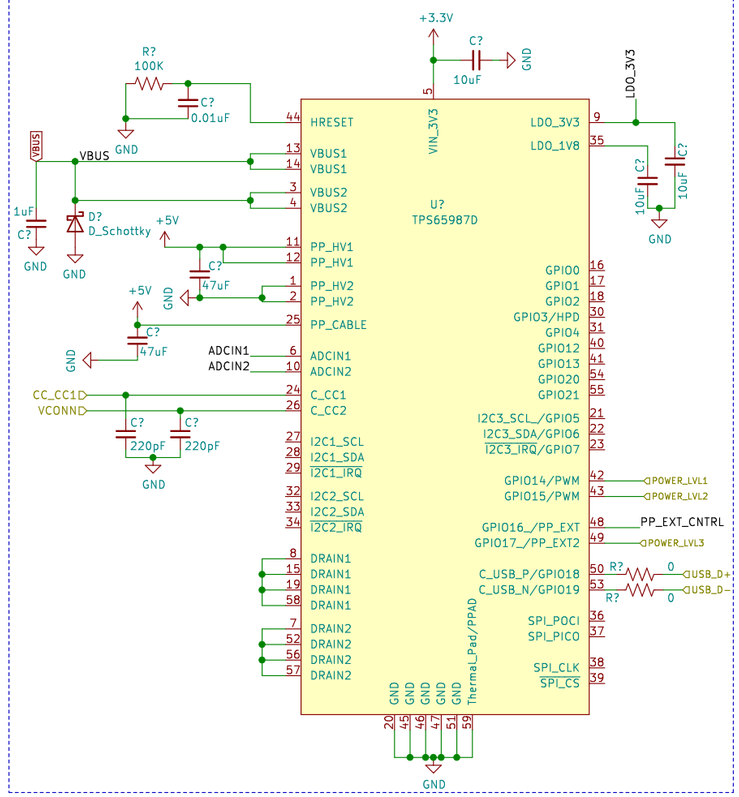
EHERNET df PORT
Sheet: ETHERNET
USB2DN_DP3
USB2DN_DN3
USB_DP
USB_DM
File: LAN7850 ETHERNET.sch

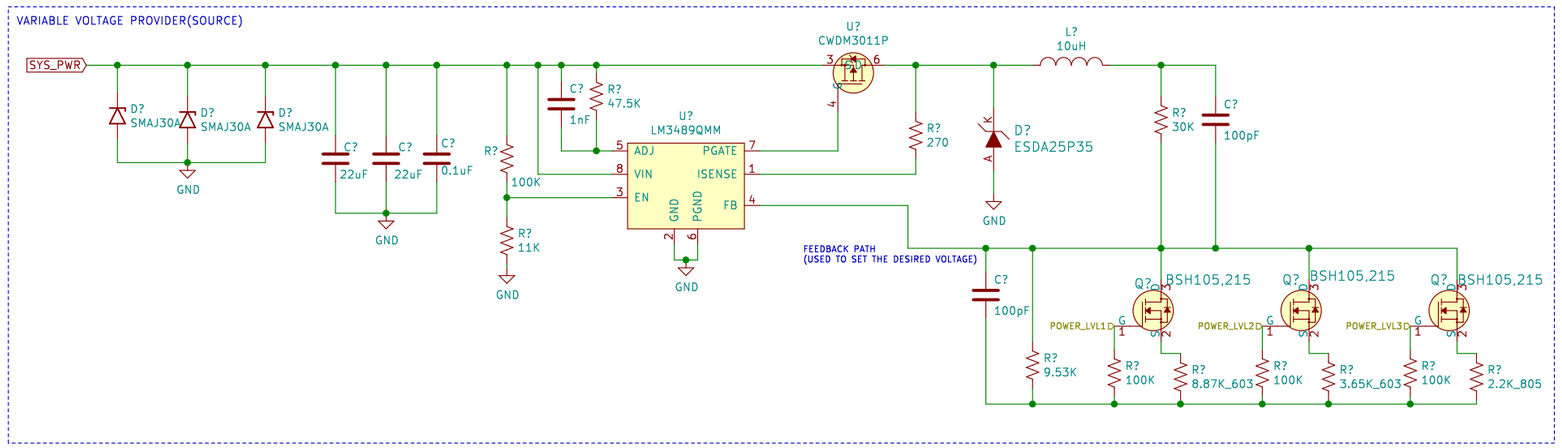
Sheet: /
File: USB_C_HUB.sch
Title:
Size: A3 | Date: | Rev:
KiCad E.D.A. kicad (5.1.10)−1 | Id: 1/7

The TPS65987D requires firmware
programming via a downloadable GUI tool.
Recomendation: Since the system takes in a
charger we can configure it as a Source device
(readhttps://www.embedded.com/usb-type-c-and-power-delivery-101-ports-and-connections/)
Secondly: we can configure it as a DRP device that can source(provide) or sink(receive) power. Its a source when the charging receptacle it active and a sink when the charging receptacle is in active.

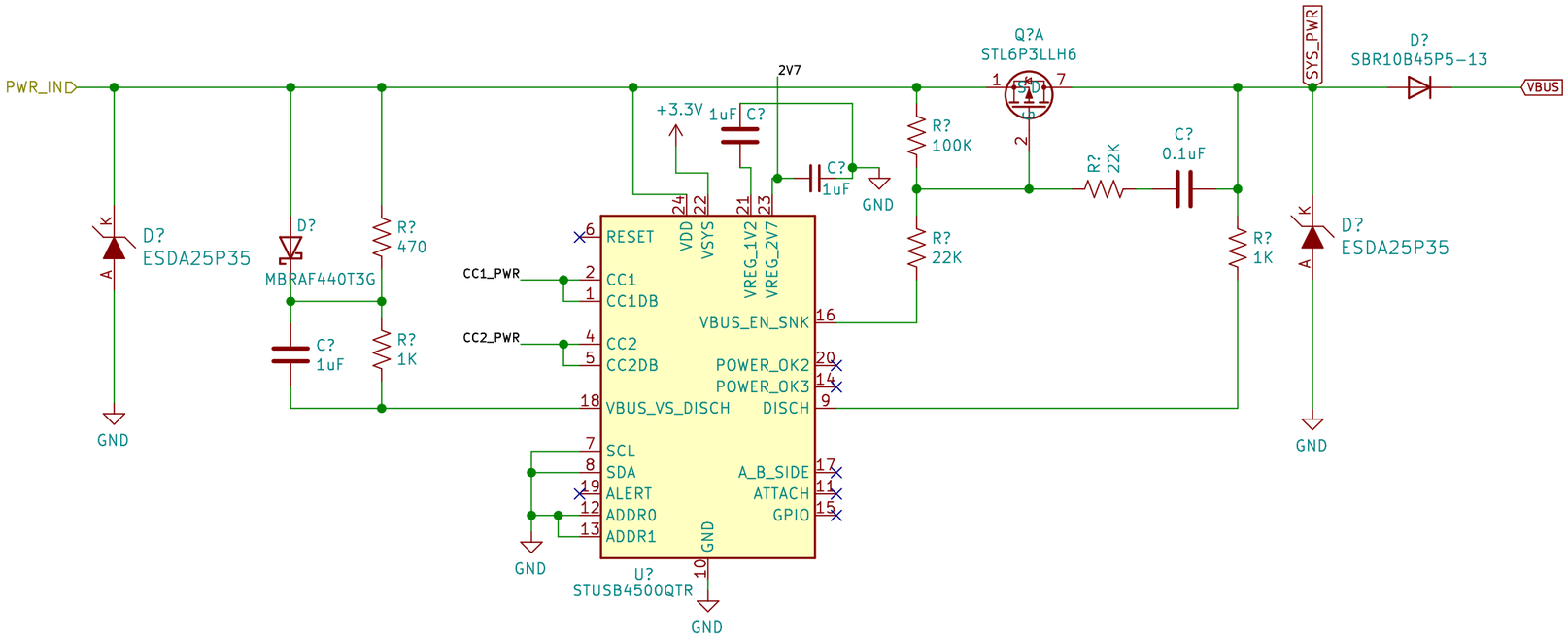






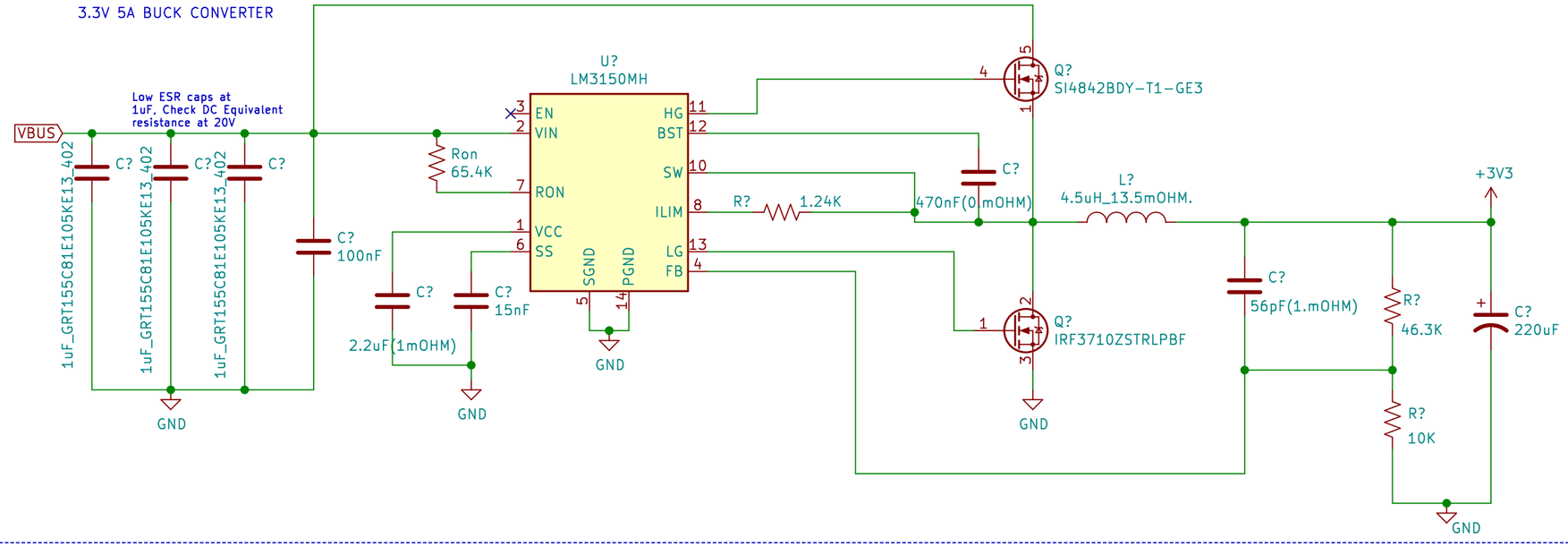


Sheet: /UFP_PD_CONTROLLER/		
File: UFP_PD_CTRL + VAR_V_SOURCE.sch		
Title:		
Size: A3	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)-1		Id: 2/7

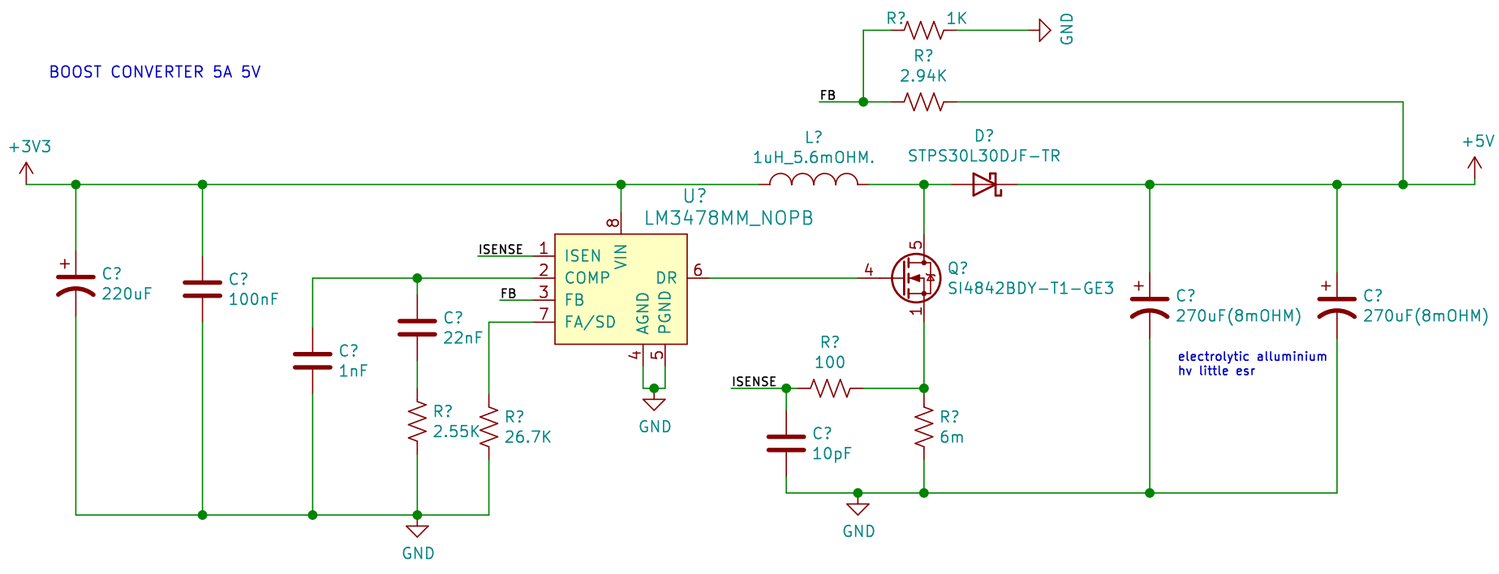


Sheet: /ST_PD CHARGING/		
File: ST_PD CHARGING CONTROLLER.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)-1		Id: 3/7

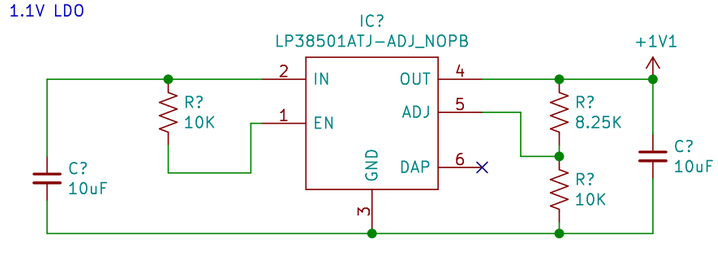
3.3V 5A BUCK CONVERTER



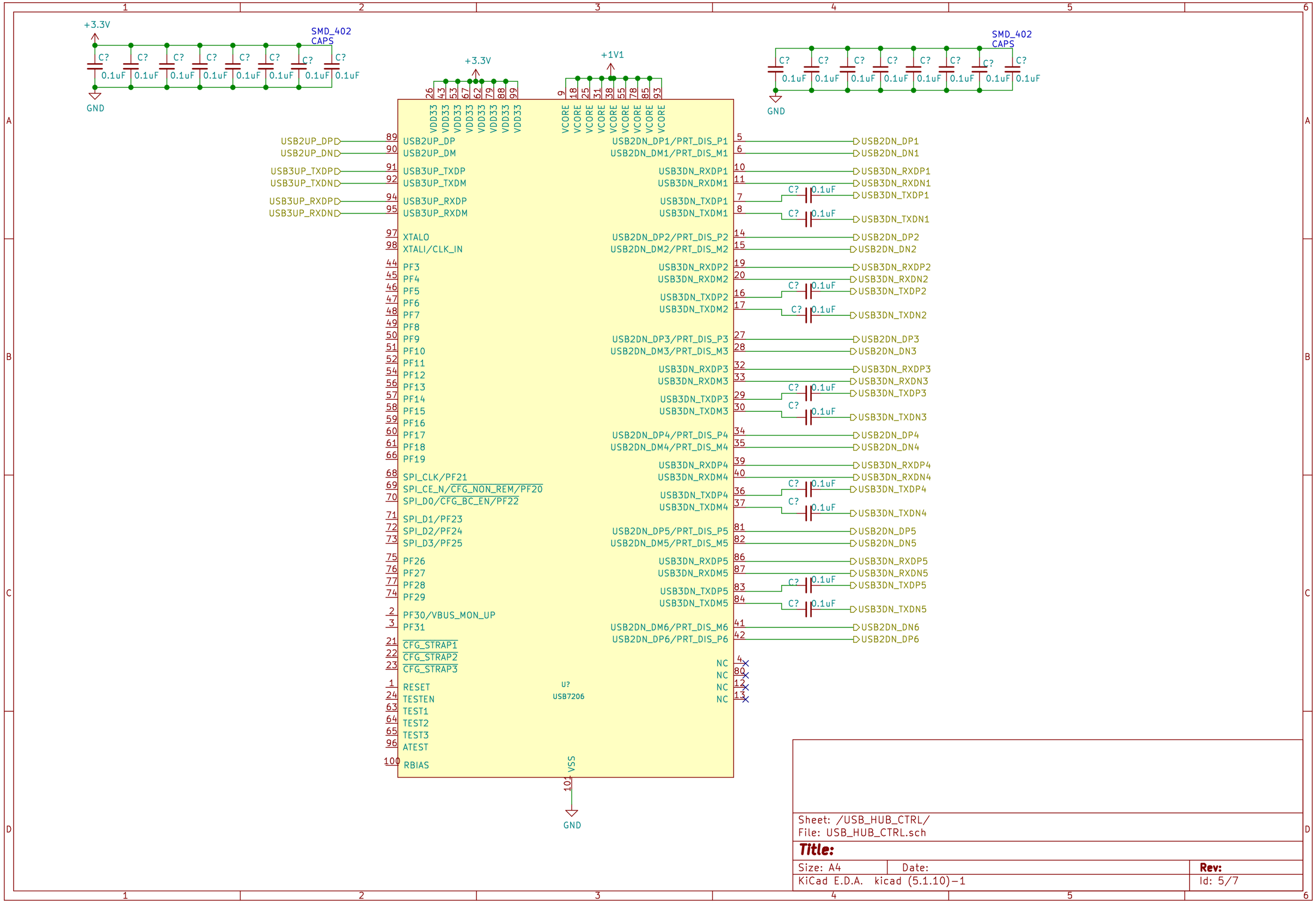
BOOST CONVERTER 5A 5V

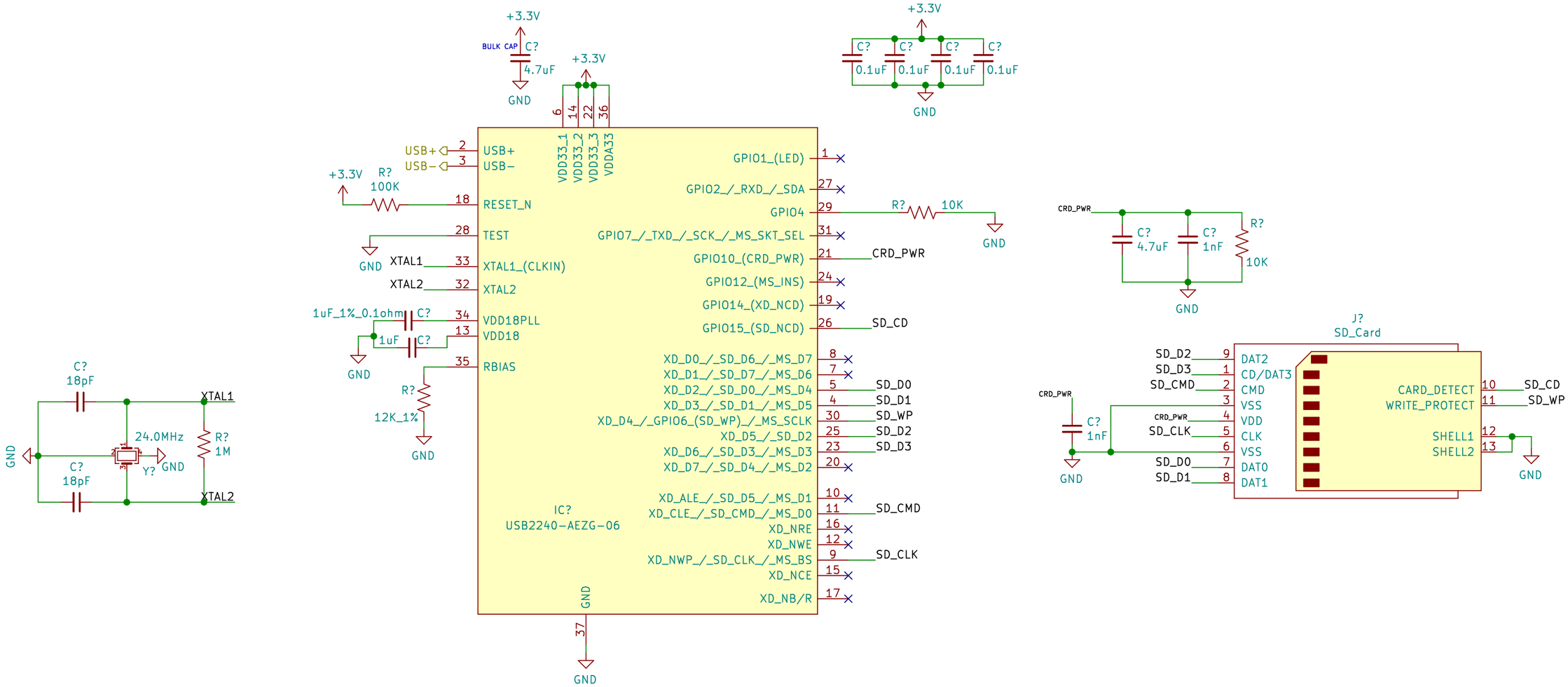


1.1V LDO

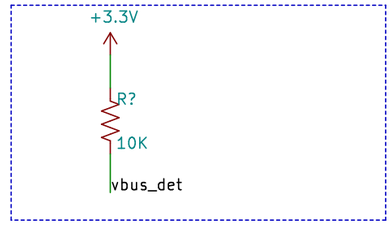


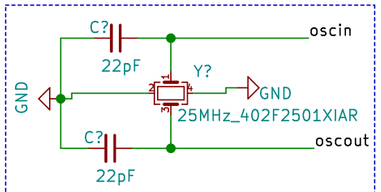
Sheet: /3V3_BUCK/		
File: 3V3_BUCK.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)-1		Id: 4/7

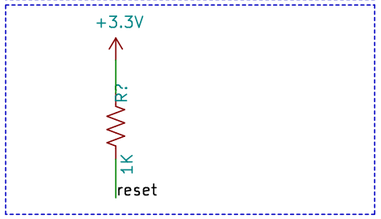

+3.3V
SMD_402
CAPS
C? 0.1uF
GND
+3.3V
+1V1
VDD33
VCORE
U?
USB7206
USB2UP_DP
USB2UP_DM
USB3UP_TXDP
USB3UP_TXDN
USB3UP_RXDP
USB3UP_RXDN
XTALO
XTALI/CLK_IN
PF3
PF4
PF5
PF6
PF7
PF8
PF9
PF10
PF11
PF12
PF13
PF14
PF15
PF16
PF17
PF18
PF19
SPI_CLK/PF21
SPI_CE_N/CFG_NON_REM/PF20
SPI_D0/CFG_BC_EN/PF22
SPI_D1/PF23
SPI_D2/PF24
SPI_D3/PF25
PF26
PF27
PF28
PF29
PF30/VBUS_MON_UP
PF31
CFG_STRAP1
CFG_STRAP2
CFG_STRAP3
RESET
TESTEN
TEST1
TEST2
TEST3
ATEST
RBIAS
VSS
USB2DN_DP1/PRT_DIS_P1
USB2DN_DM1/PRT_DIS_M1
USB3DN_RXDP1
USB3DN_RXDM1
USB3DN_TXDP1
USB3DN_TXDM1
USB2DN_DP2/PRT_DIS_P2
USB2DN_DM2/PRT_DIS_M2
USB3DN_RXDP2
USB3DN_RXDM2
USB3DN_TXDP2
USB3DN_TXDM2
USB2DN_DP3/PRT_DIS_P3
USB2DN_DM3/PRT_DIS_M3
USB3DN_RXDP3
USB3DN_RXDM3
USB3DN_TXDP3
USB3DN_TXDM3
USB2DN_DP4/PRT_DIS_P4
USB2DN_DM4/PRT_DIS_M4
USB3DN_RXDP4
USB3DN_RXDM4
USB3DN_TXDP4
USB3DN_TXDM4
USB2DN_DP5/PRT_DIS_P5
USB2DN_DM5/PRT_DIS_M5
USB3DN_RXDP5
USB3DN_RXDM5
USB3DN_TXDP5
USB3DN_TXDM5
USB2DN_DM6/PRT_DIS_M6
USB2DN_DP6/PRT_DIS_P6
NC
USB2DN_DP1
USB2DN_DN1
USB3DN_RXDP1
USB3DN_RXDN1
USB3DN_TXDP1
USB3DN_TXDN1
USB2DN_DP2
USB2DN_DN2
USB3DN_RXDP2
USB3DN_RXDN2
USB3DN_TXDP2
USB3DN_TXDN2
USB2DN_DP3
USB2DN_DN3
USB3DN_RXDP3
USB3DN_RXDN3
USB3DN_TXDP3
USB3DN_TXDN3
USB2DN_DP4
USB2DN_DN4
USB3DN_RXDP4
USB3DN_RXDN4
USB3DN_TXDP4
USB3DN_TXDN4
USB2DN_DP5
USB2DN_DN5
USB3DN_RXDP5
USB3DN_RXDN5
USB3DN_TXDP5
USB3DN_TXDN5
USB2DN_DN6
USB2DN_DP6
Sheet: /USB_HUB_CTRL/
File: USB_HUB_CTRL.sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 5/7

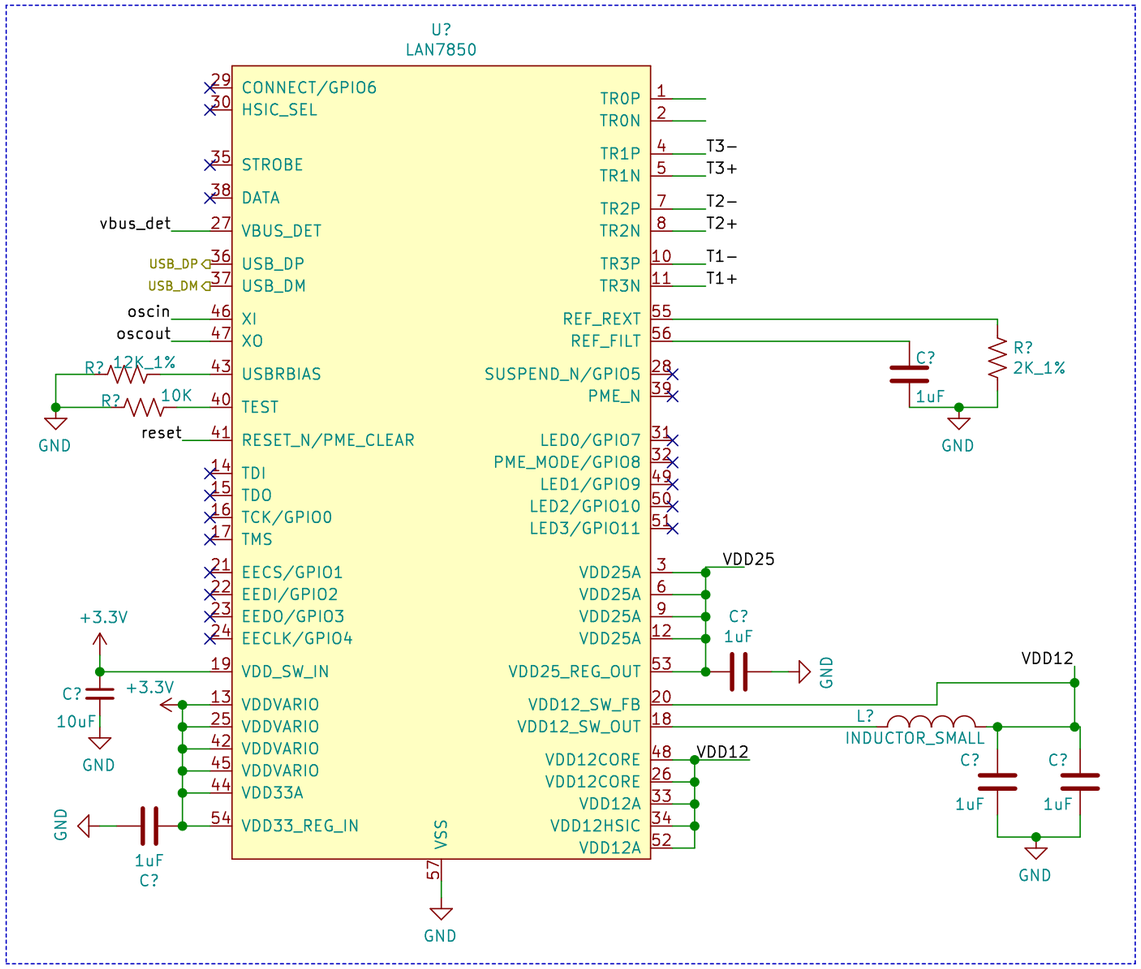


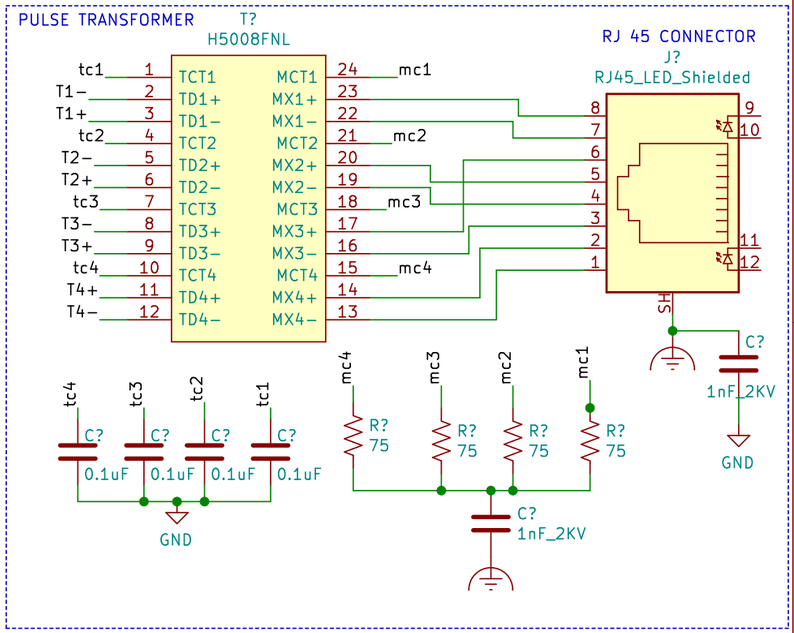
Sheet: /SD CARD UHS/	
File: SD_CARD UHS II.sch	
Title:	
Size: A4	Date:
KiCad E.D.A. kicad (5.1.10)-1	Id: 6/7

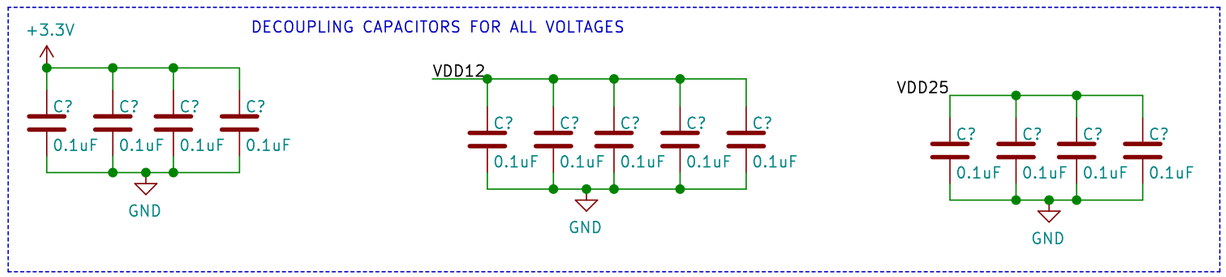












Sheet: /ETHERNET/		
File: LAN7850 ETHERNET.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.10)−1		Id: 7/7