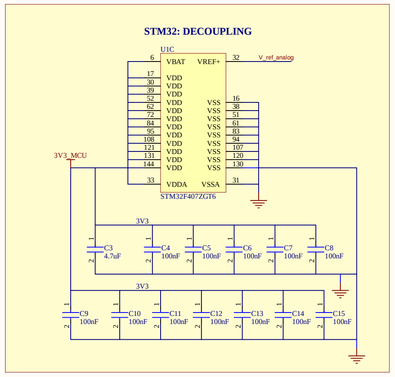
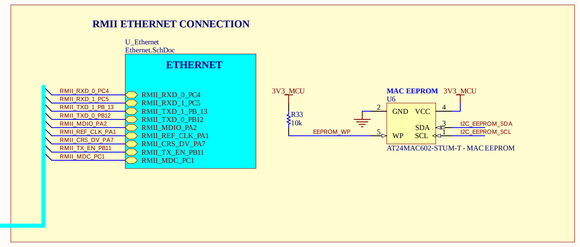
SYSTEM TOP LEVEL VIEW

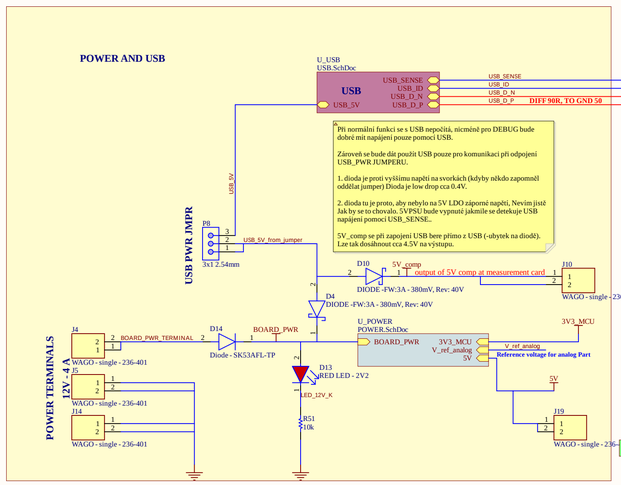
STM32: DECOUPLING



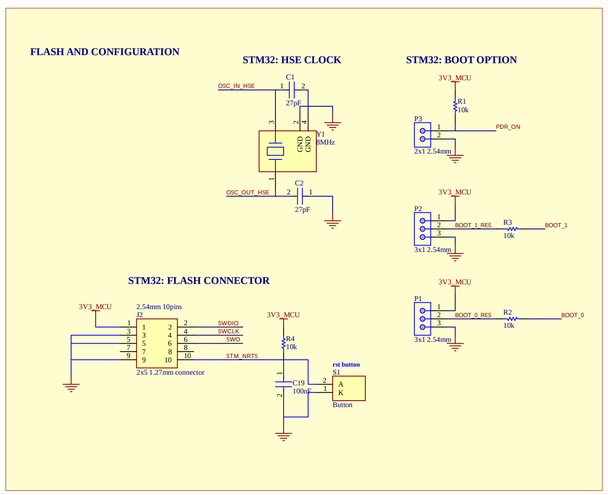
RMII ETHERNET CONNECTION



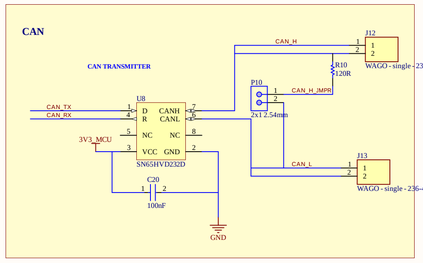
POWER AND USB



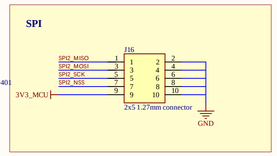
FLASH AND CONFIGURATION



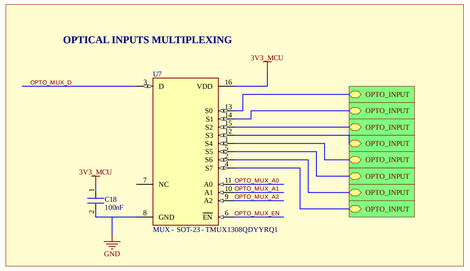
CAN



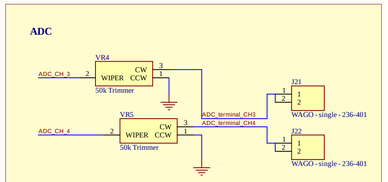
SPI



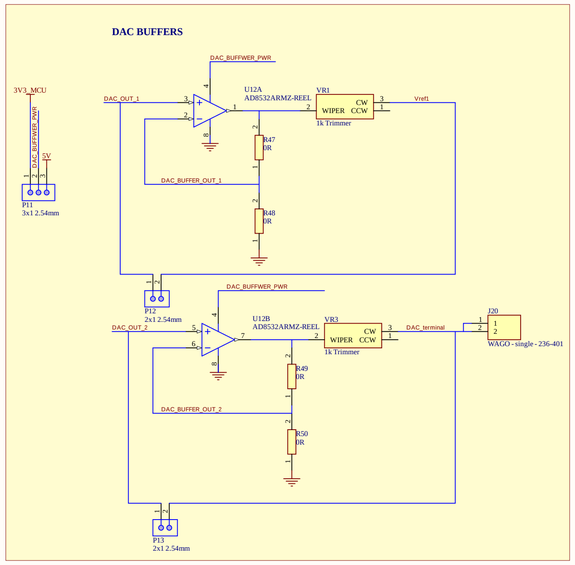
OPTICAL INPUTS MULTIPLEXING



ADC



DAC BUFFERS



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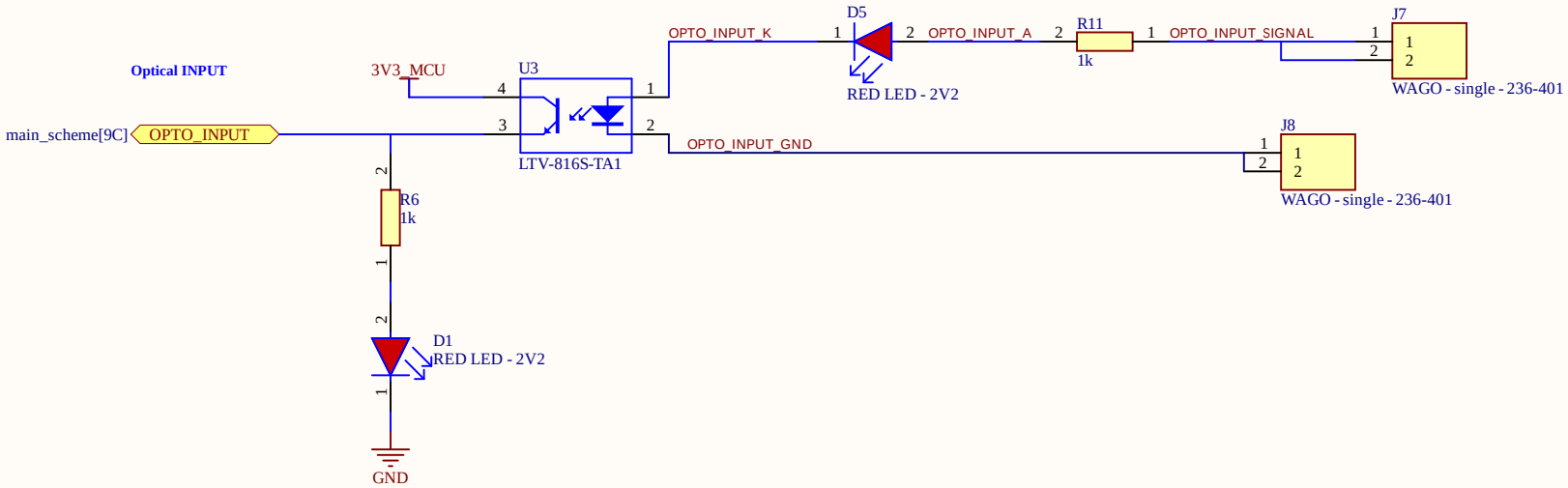
Size A1	Number		Revision
Date: 3.22.2023		Sheet of	
File: C:\Users\..\main_scheme.SchDoc		Drawn By:	

OPTICAL INPUT



Title		
Size A4	Number	Revision
Date: 3.22.2023		Sheet of
File: C:\Users\..\Opto_inputs.SchDoc		Drawn By:

ETHERNET PHY

ETHERNET PHY
Current draw approx 100mA

3V3_MCU
R18 10k
P4 2x1 2.54mm
LAN_nRST

U5 DP83848JSQ/NOPB

23	RESET_N	TD+	15
		TD-	14
2	TX_CLK		
		RD+	12
		RD-	11
4	TXD_0		
5	TXD_1		
6	TXD_2	X1	28
7	TXD_3	X2	27
3	TX_EN	LED_SPEED/AN1	21
		LED_LINK/AN0	22
24	MDIO		
25	MDC	RBIAS	20
35	COL/PHYAD0	PFBOUT	19
33	CRS/CRS_DV/LED_CFG	PFBIN1	16
		PFBIN2	30
34	RX_ER/MDIX_EN		
32	RX_DV/MII_MODE	RESERVED	10
		RESERVED	9
		RESERVED	8
36	RXD_0/PHYAD1		
37	RXD_1/PHYAD2		
38	RXD_2/PHYAD3	DAP	41
39	RXD_3/PHYAD4		
31	RX_CLK		
		IOGND	40
1	IOVDD33	AGND	13
26	IOVDD33	AGND	17
18	AVDD33	DGND	29

main_scheme[7B] RMII_TXD_0_PB12
main_scheme[7B] RMII_TXD_1_PB_13
main_scheme[7B] RMII_TX_EN_PB11
main_scheme[7B] RMII_MDIO_PA2
main_scheme[7B] RMII_MDC_PC1
main_scheme[7B] RMII_CRS_DV_PA7
main_scheme[7B] RMII_RXD_0_PC4
main_scheme[7B] RMII_RXD_1_PC5

3V3_MCU
R27 2k2
R29 1k5
R25 2k2 TXD_2
R26 2k2 TXD_3
R31 2k2 RMII_MII_MODE
HIGH->LEDCFG1
HIGH FOR RMII

R19 49.9R
R20 49.9R
R21 49.9R
R22 49.9R
C29 100nF
C30 100nF
Caps close to the DP83848

TD_P
TD_N
RD_P
RD_N
dif pairs 100R (50 to GND)

RMII_REF_CLK_PA1
ETH_LED_SPEED
ETH_LED_LINK
AN1:1, AN0:1 -> 100MBit full duplex
R_BIAS
R30 4.87k
PFBOUT
C34 100nF
C35 100nF
C36 100nF
C33 10uF

ESD protection TCS ARRAY
U2
I/O1 I/O4
GND Vbus
I/O2 I/O3
ESD - SOT-23-6- TVSPACK - USBLC6-4SC6

100-BASE T Connector with magnetics
AN1, AN2 to HIGH HALF/FULL DUPLESX 100BASE-T

J3 RJ45 base-100T connector

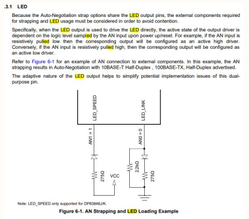
1	TD+	GND	8
2	TD-	LED2+	L1
3	RD+	LED2-	L2
4	TCT	LED1+	L3
5	RCT	LED1-	L4
6	RD-	MH1	MH1
7	NULL	MH2	MH2

C31 100nF
C32 100nF
R23 270R
R5 270R
3V3_MCU
ETH_LED_SPEED_CONNECT
ETH_LED_LINK_CONNECT

Tahle zem má být společná s MCU??

LED_SETTINGS
P5 2x1 2.54mm
Jumpers Enables LEDS
ETH_LED_SPEED_CONNECT
ETH_LED_LINK_CONNECT
P6 2x1 2.54mm

50MHz Oscilator
3V3_MCU
P7 2x1 2.54mm
OSC_en
Y2 50MHz_oscilator
VCC OUTPUT
INH CASE_GND
R32 10k
RMII_REF_CLK_PA1 main_scheme[7B]



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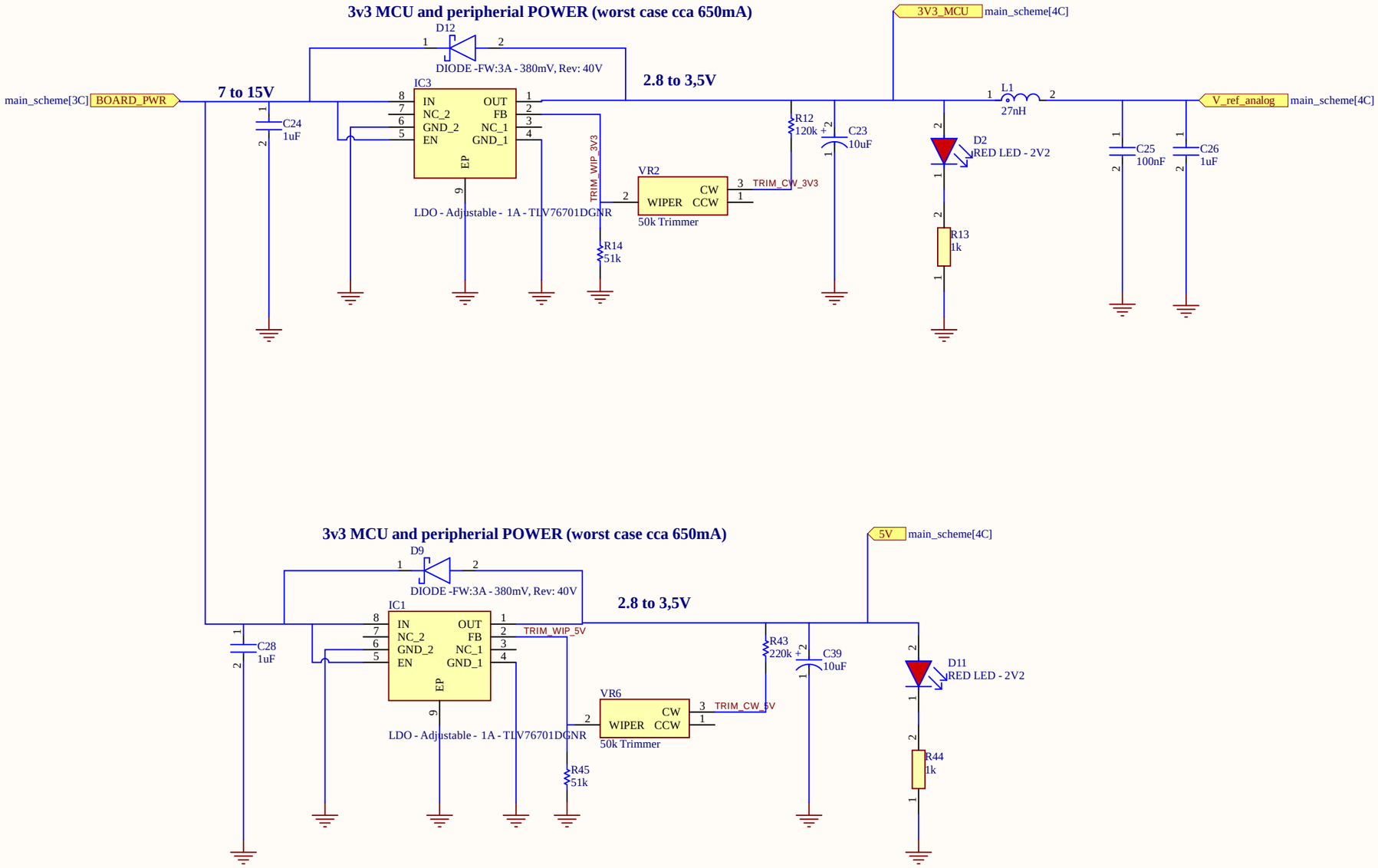
File: C:\Users\..\Ethernet.SchDoc		Drawn By:

POWER - REGULATORS



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Date: 3.22.2023		Sheet of
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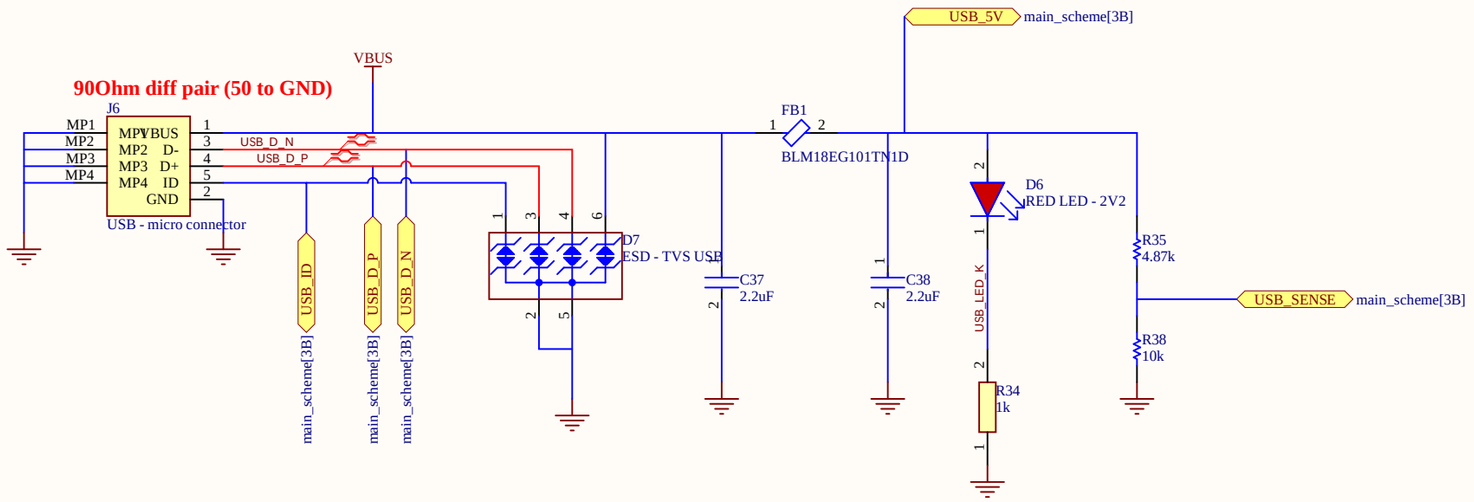
USB



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Size A3	Number	Revision
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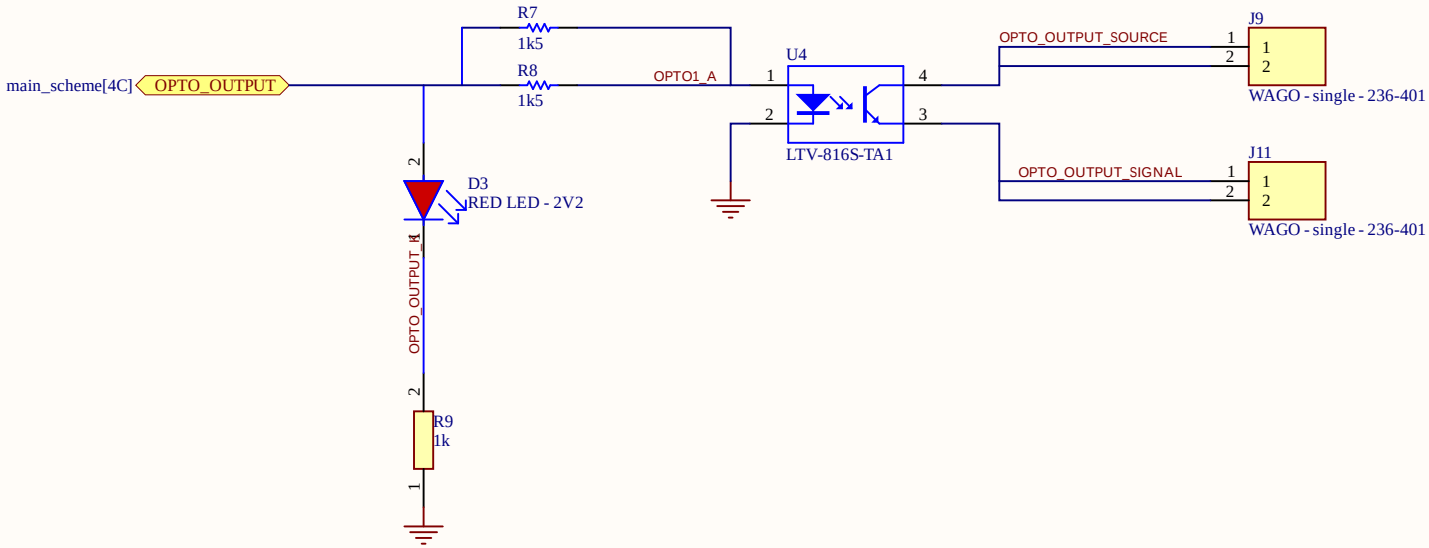
Optical Output



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Date: 3.22.2023		Sheet of
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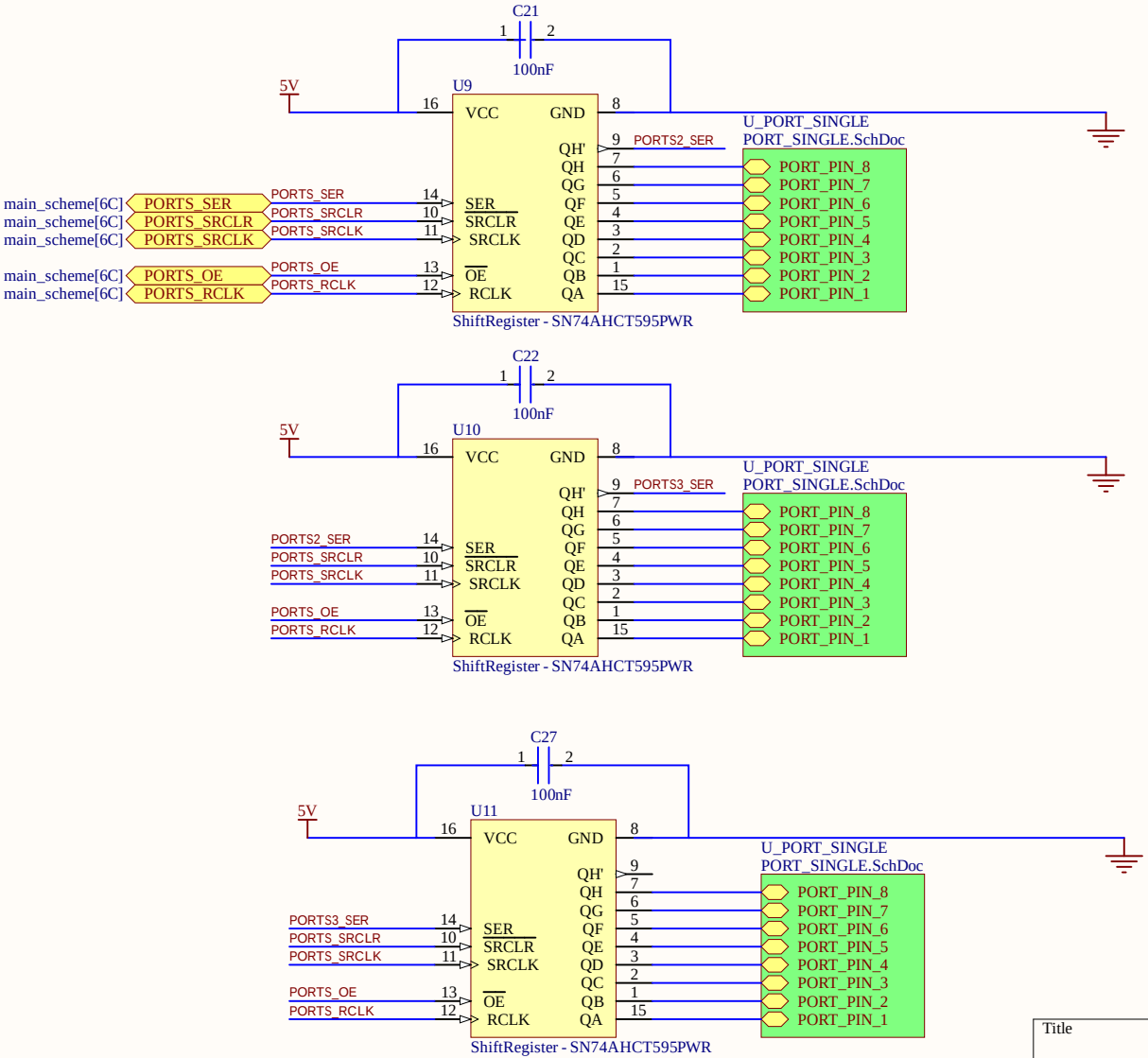
EXT PORTS



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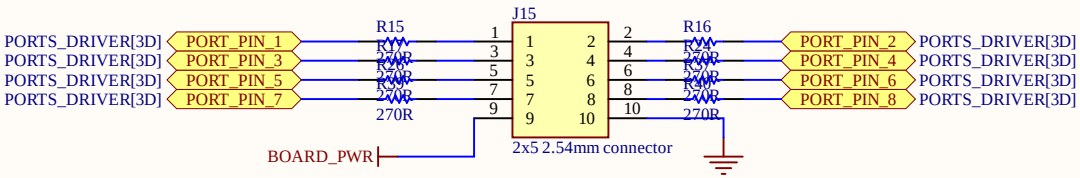
Date: 3.22.2023		Sheet of
File: C:\Users\..\PORTS_DRIVER.SchDoc		Drawn By:

SINGLE EXT PORT CONNECTOR



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