

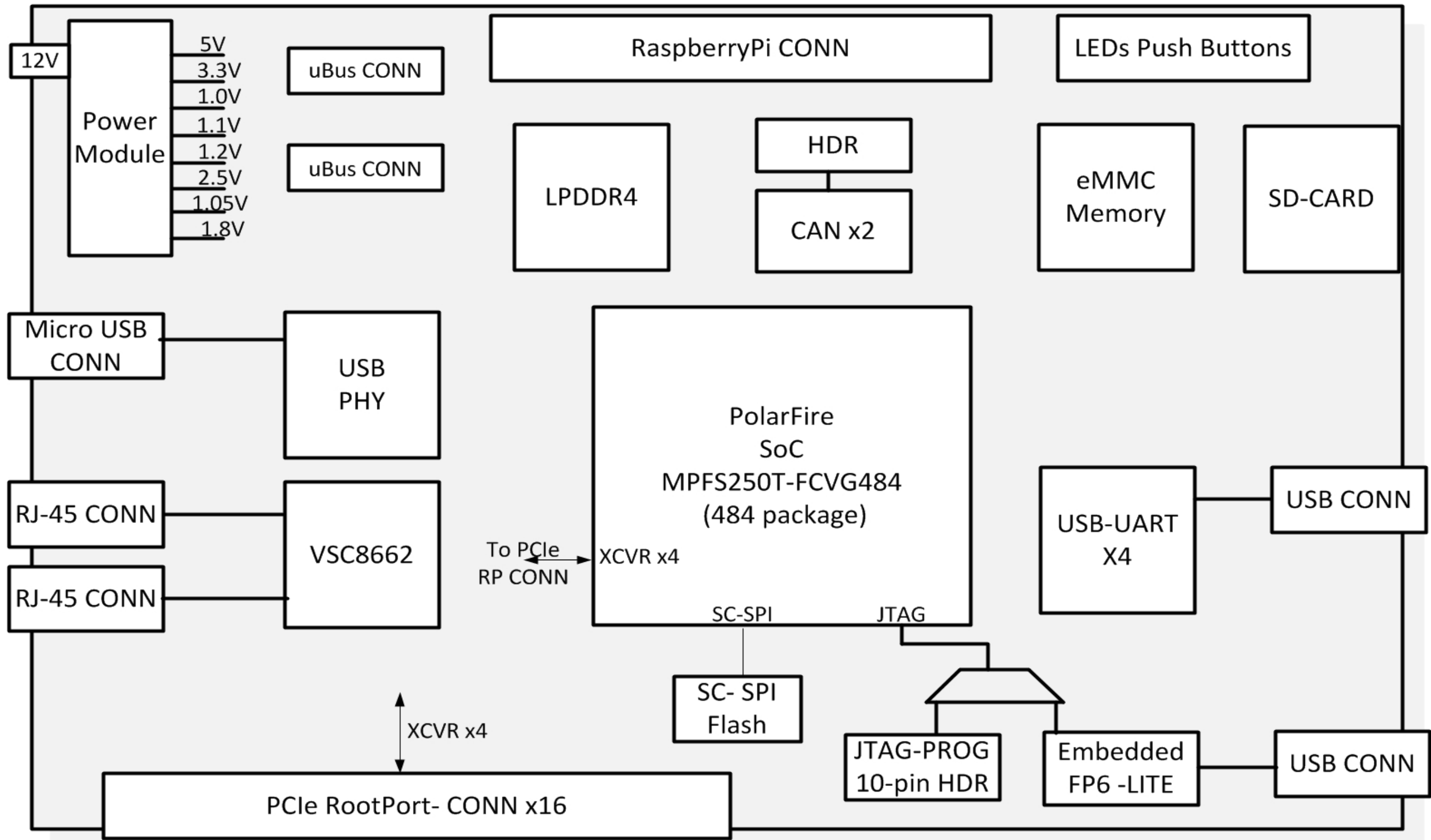
ICICLE Kit Rev1.0

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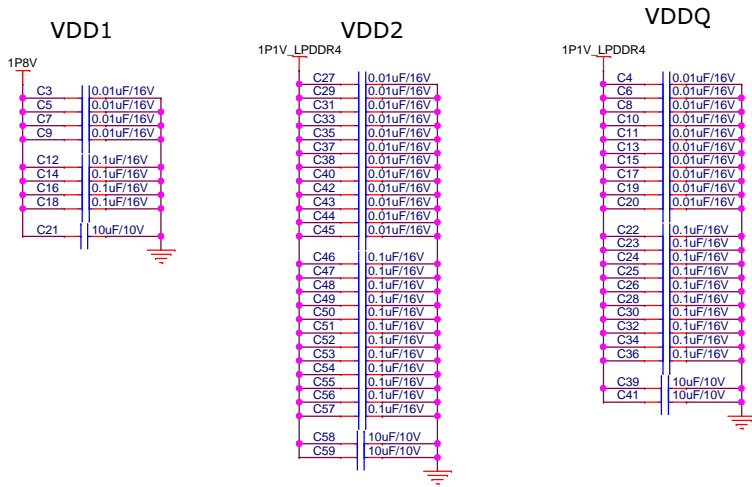
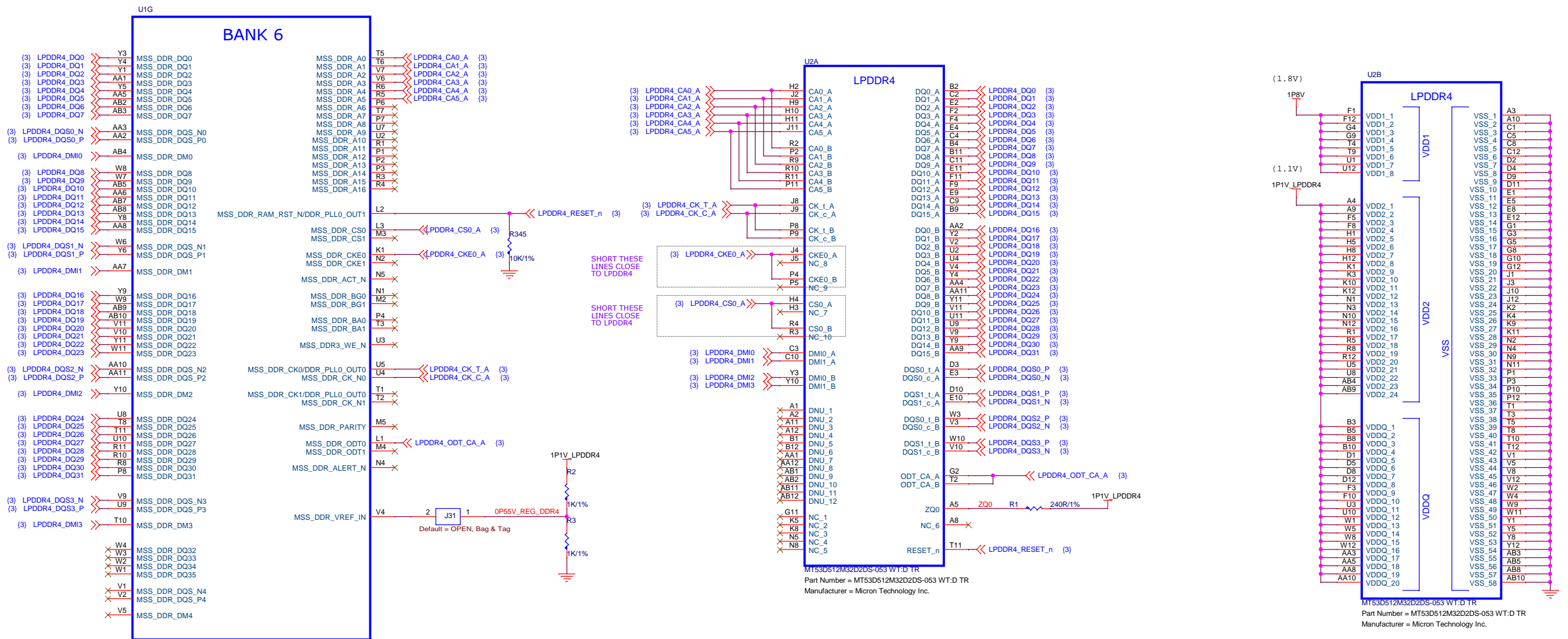
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Rev	Part Number:		PACTRON:
1.0	DVP-102-000536-001		
Originator:			
Size	Date:		Sheet
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ICICLE KIT

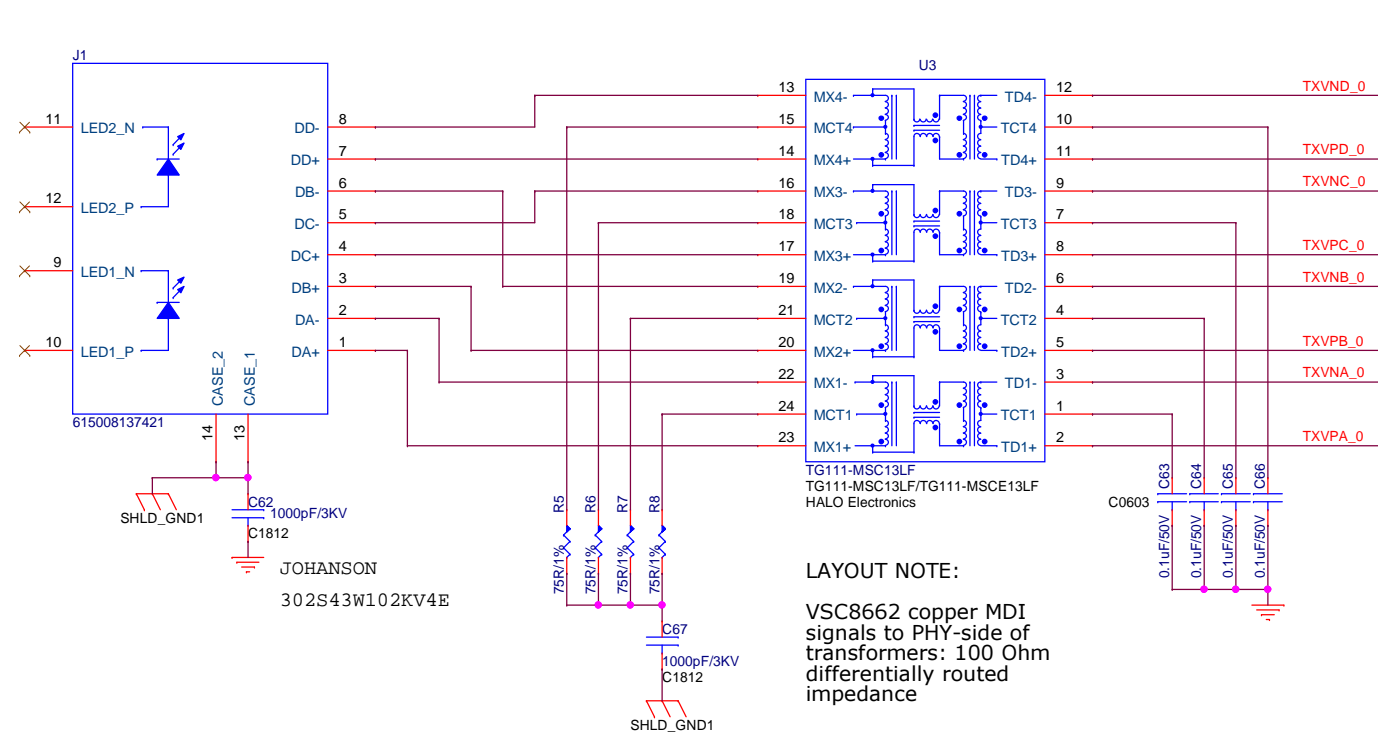


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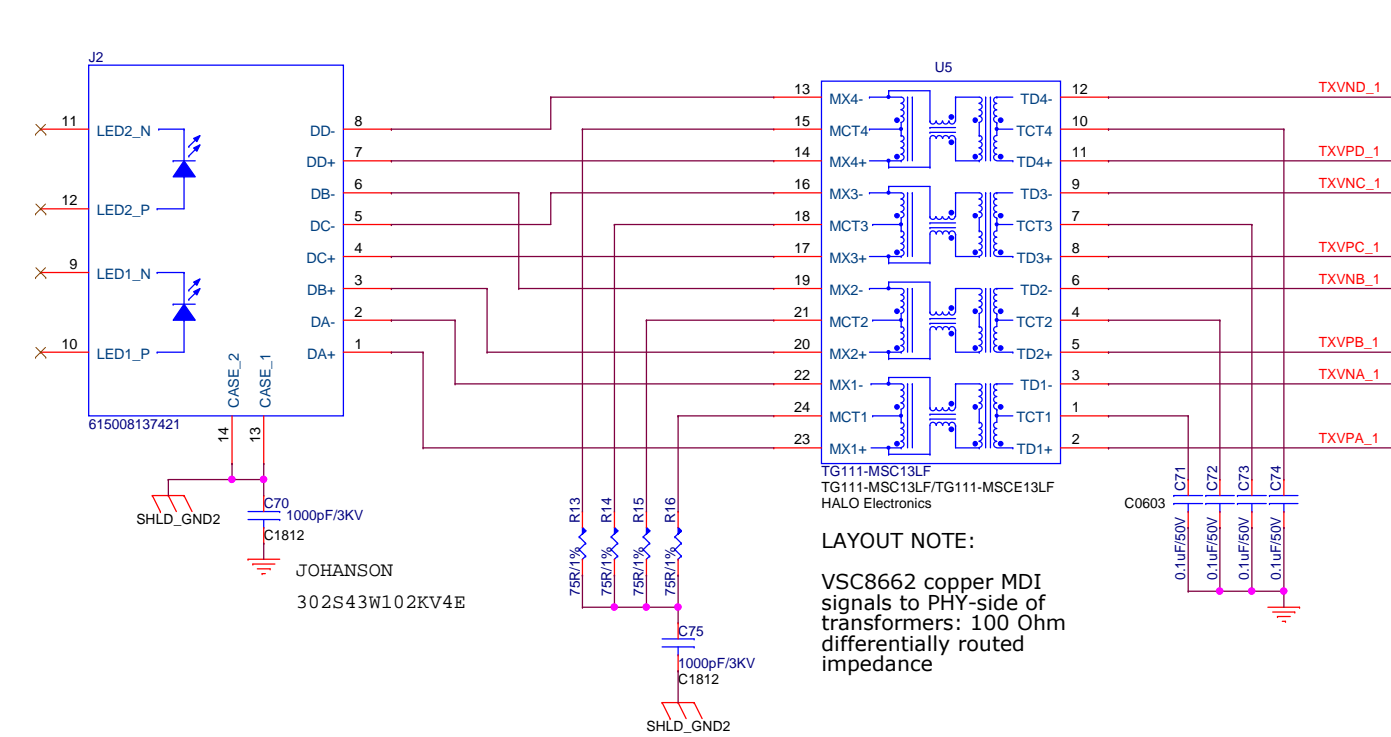
LPDDR4 Connection



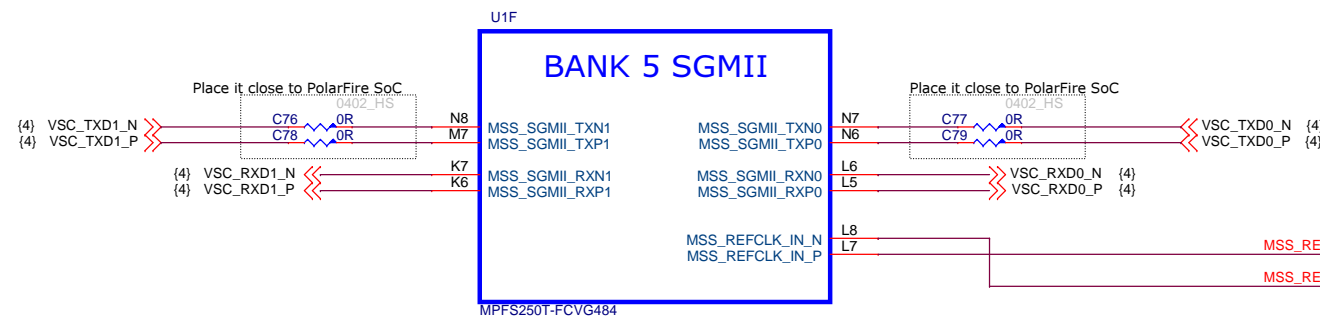
VSC8662 - SGMII Interface



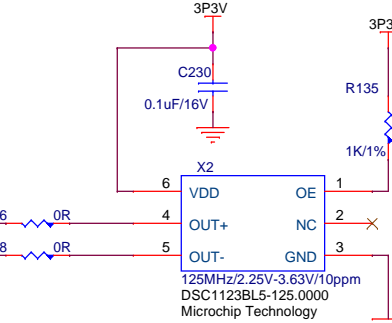
LAYOUT NOTE:
 VSC8662 copper MDI signals to PHY-side of transformers: 100 Ohm differentially routed impedance



LAYOUT NOTE:
 VSC8662 copper MDI signals to PHY-side of transformers: 100 Ohm differentially routed impedance



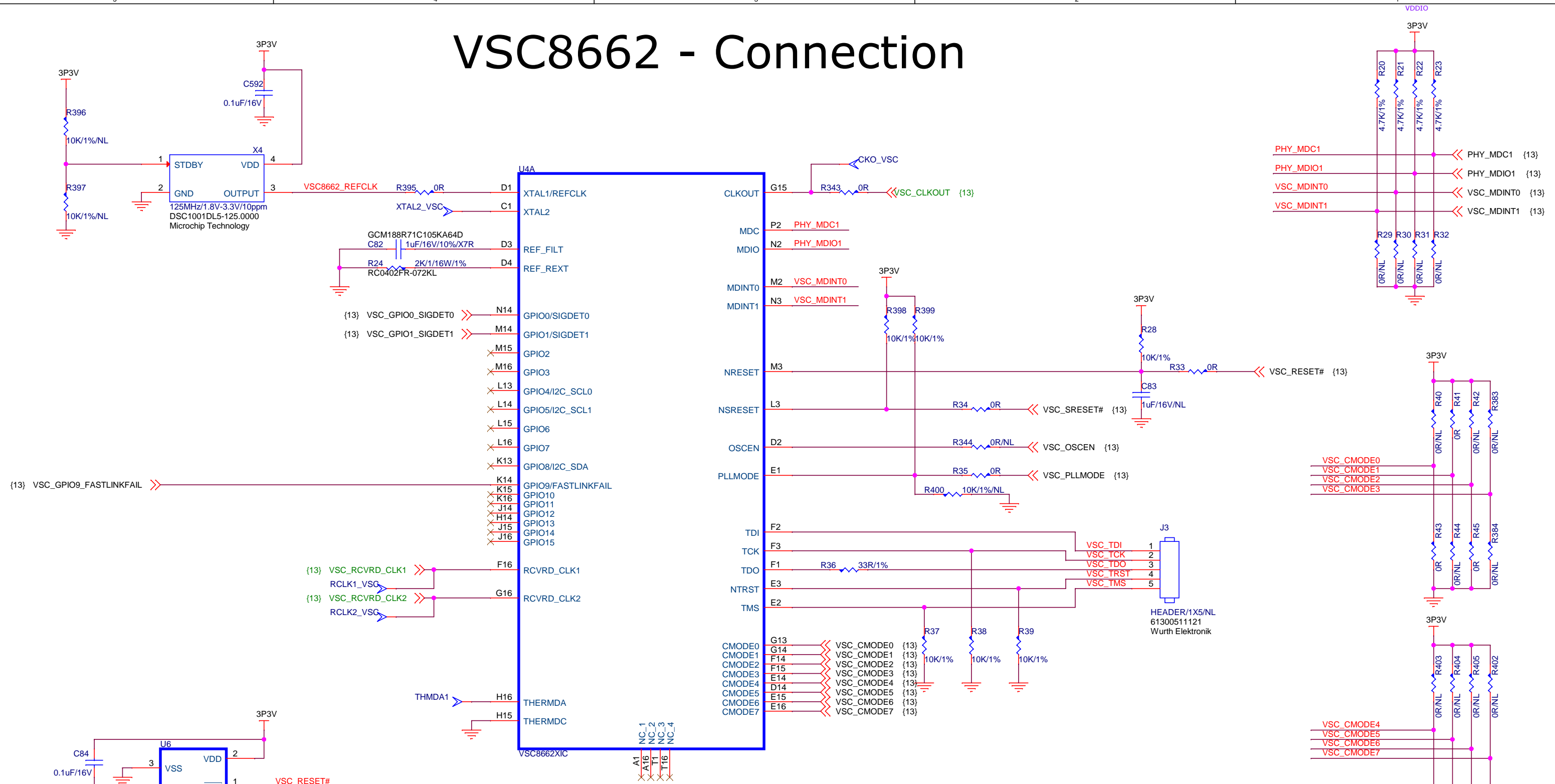
125MHz Oscillator



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VSC8662 - Connection



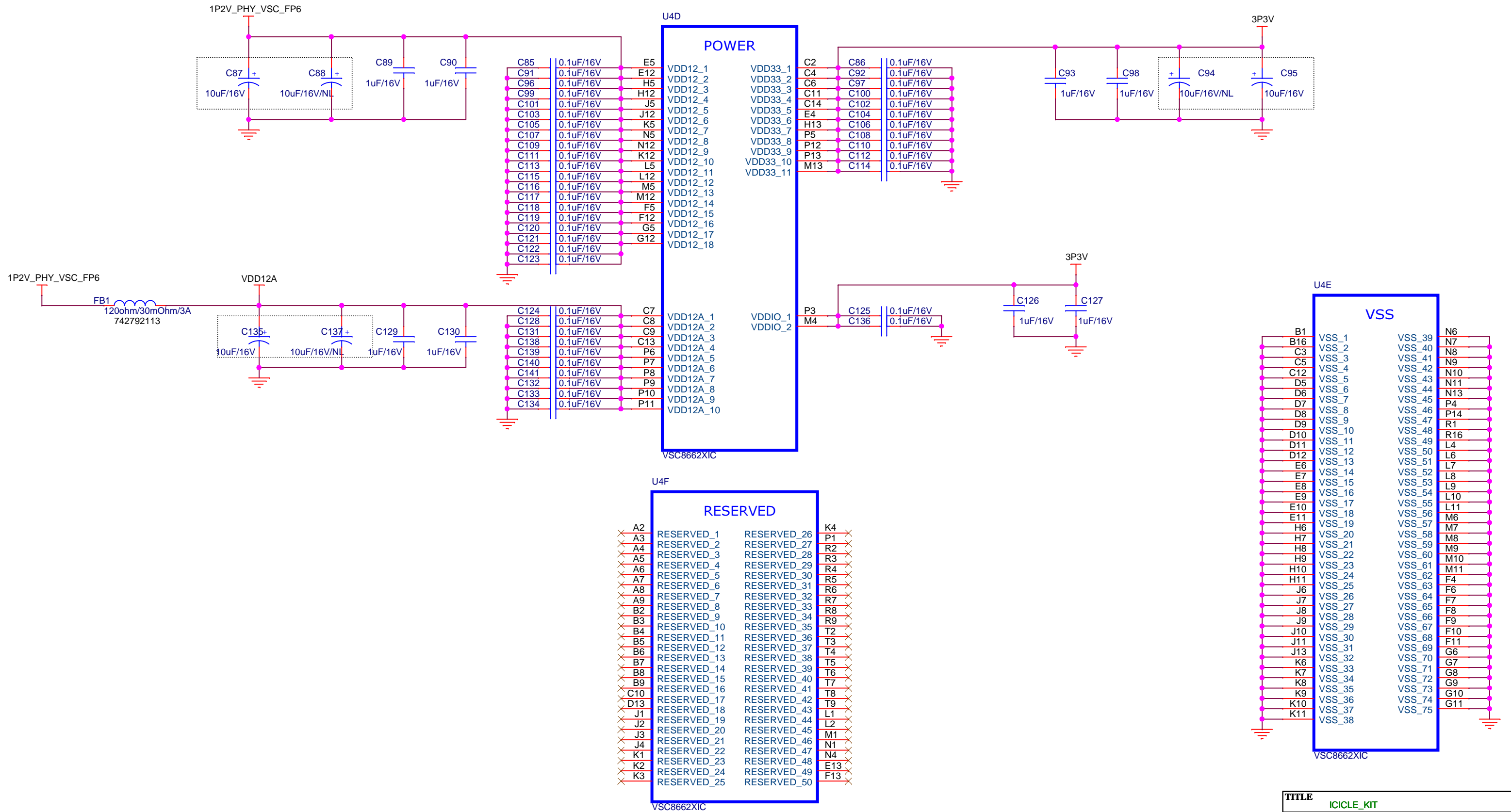
LAYOUT NOTE FOR RC CIRCUIT R24 & C82:

The ground connections of the resistor and the capacitor should each be connected to a shared PCB signal trace, rather than being connected individually to common ground plane. This PCB signal trace should then be connected to a ground plane at a single point. In addition, the reference capacitor and resistor should be placed as close as possible to the VSC8662



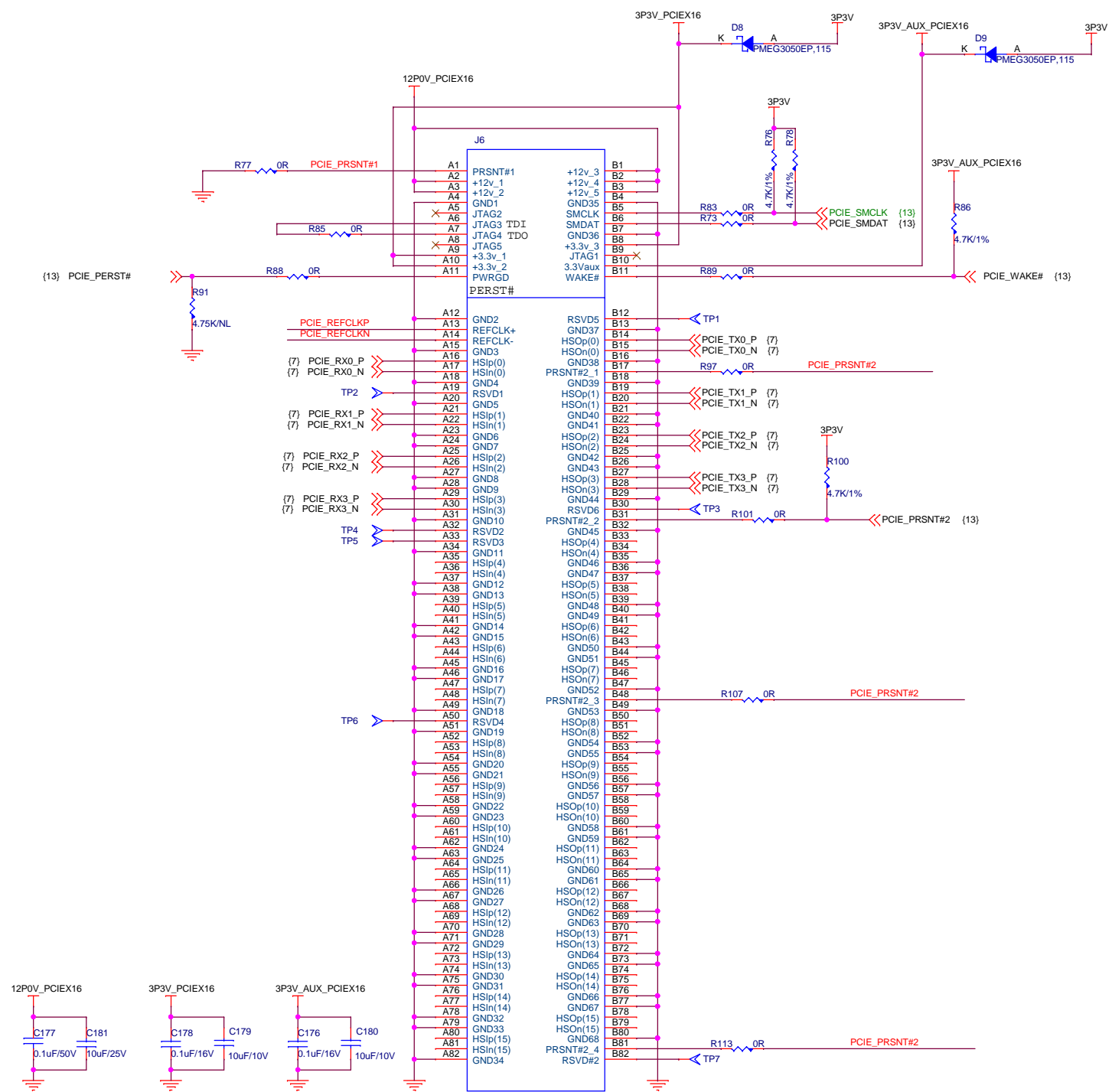
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VSC8662-Power & Ground



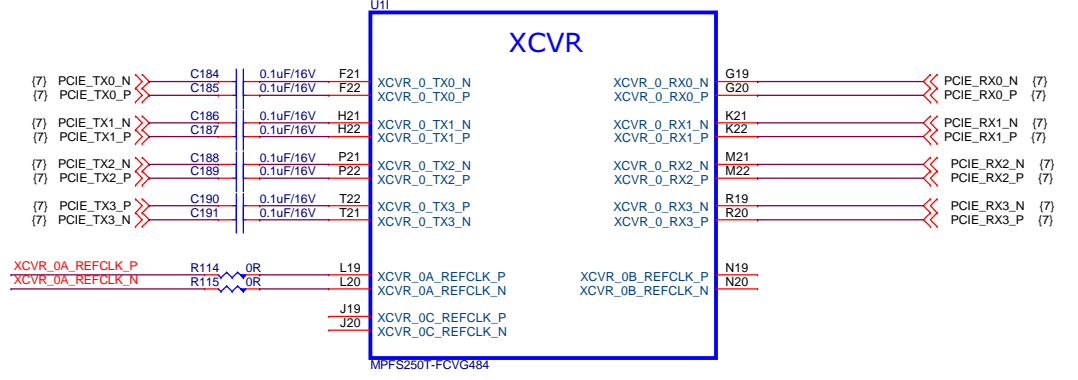
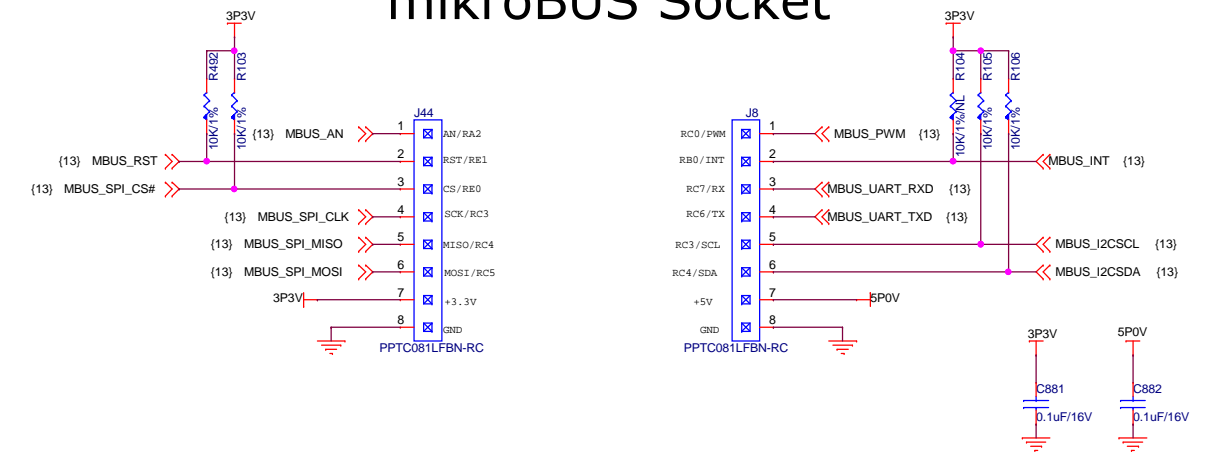
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PCIEX16 Connection

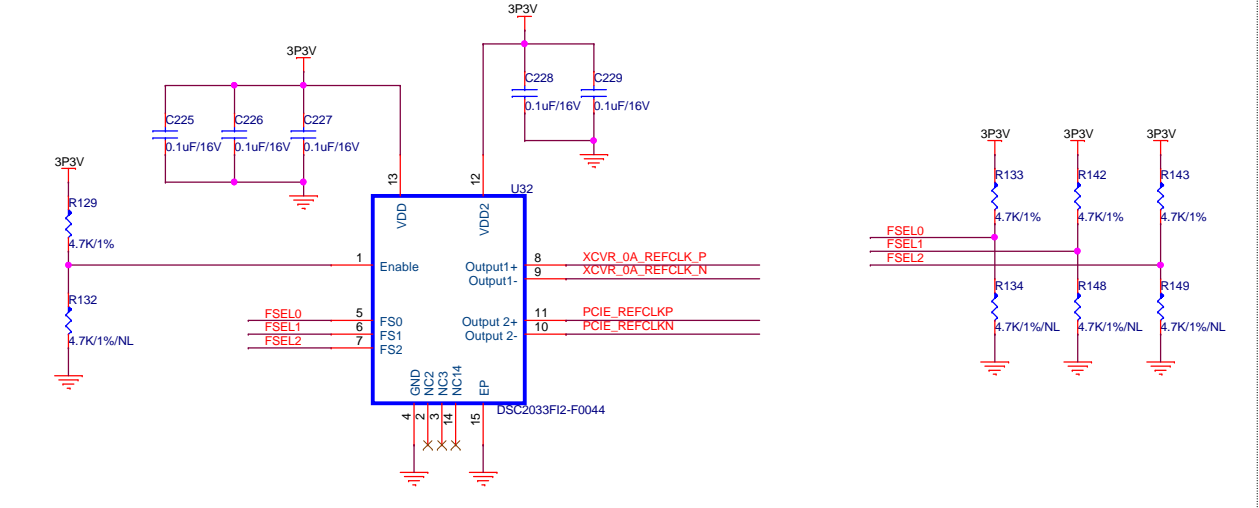


10025026-10103TLF
 Part Number = 10025026-10103TLF
 Manufacturer = Amphenol ICC (FCI)
Straddle Mount

mikroBUS Socket



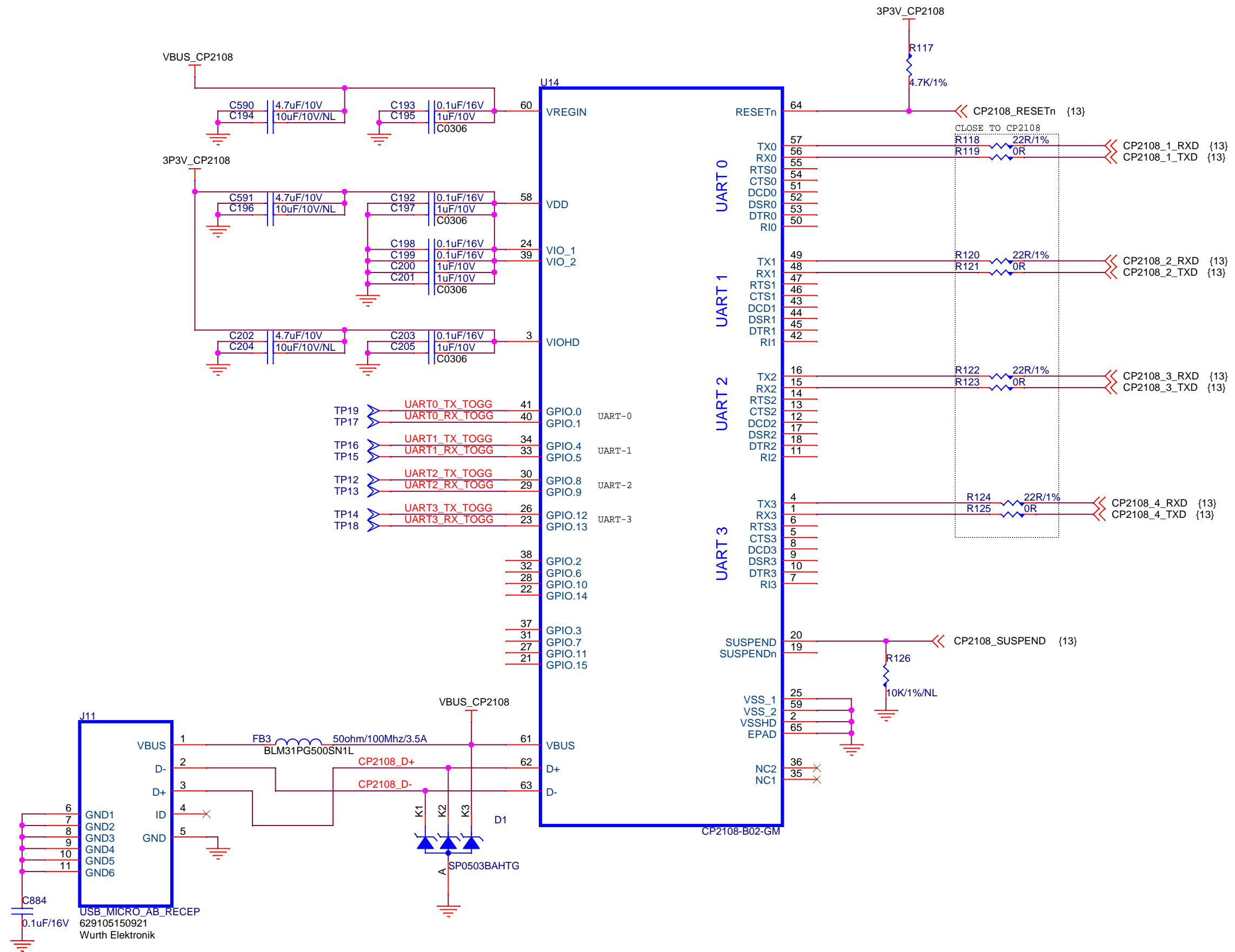
CLOCK BUFFER - 100MHZ



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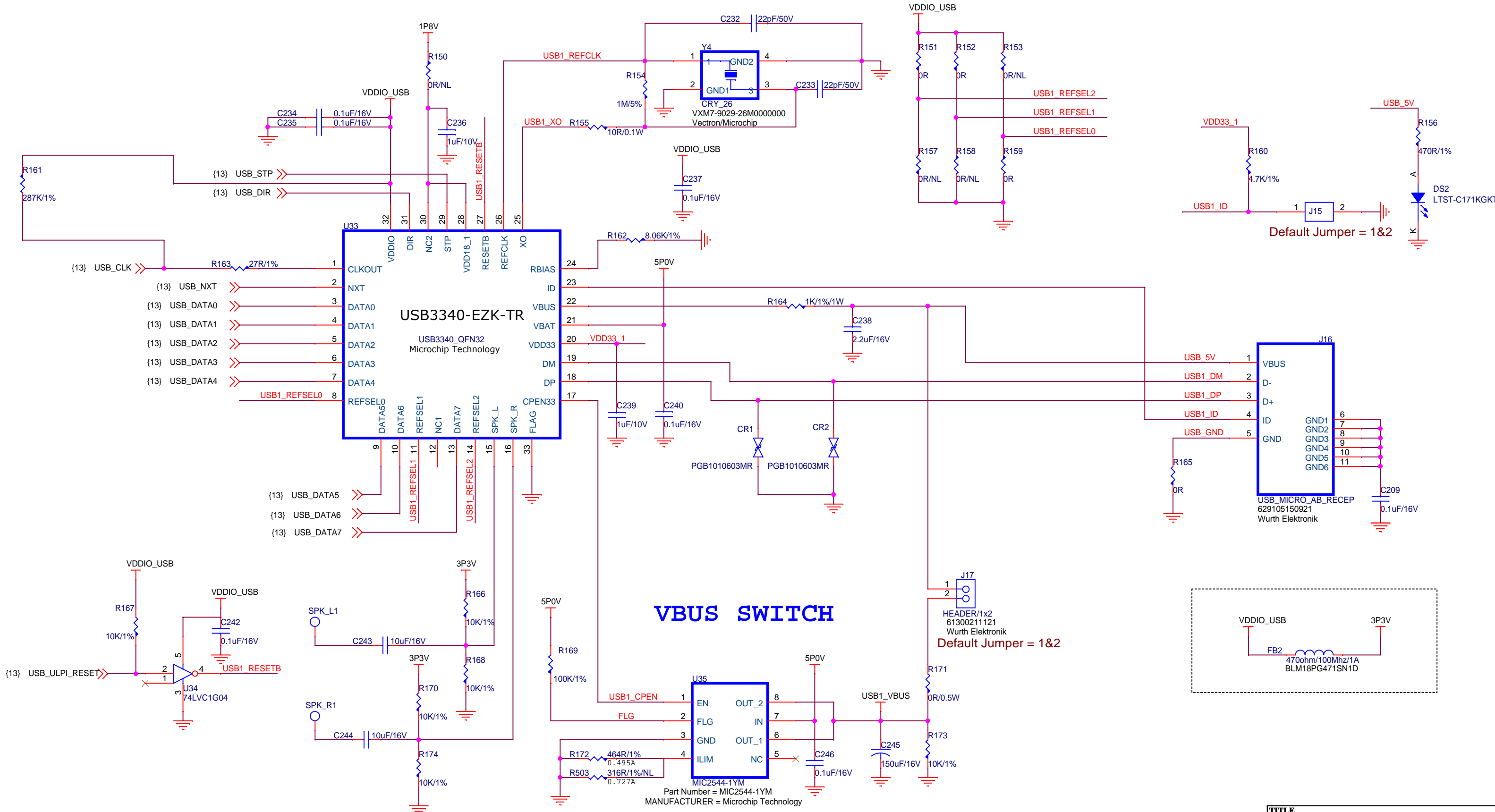
CP2108 CONNECTION



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USB-ULPI Interface

26.0 MHz Configuration.
REFCLK[2:0] = 110

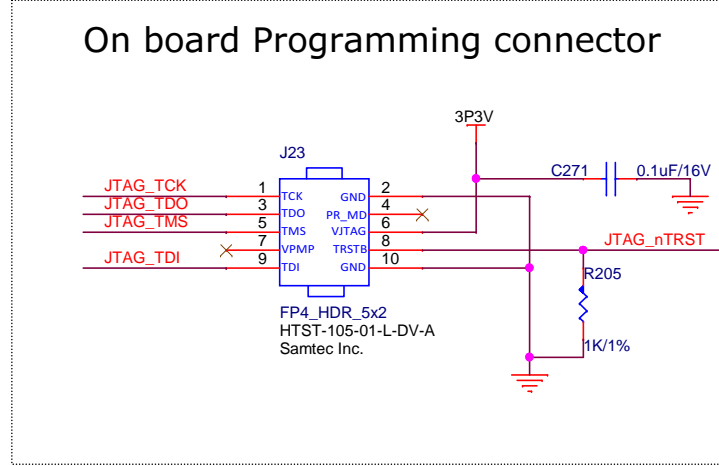
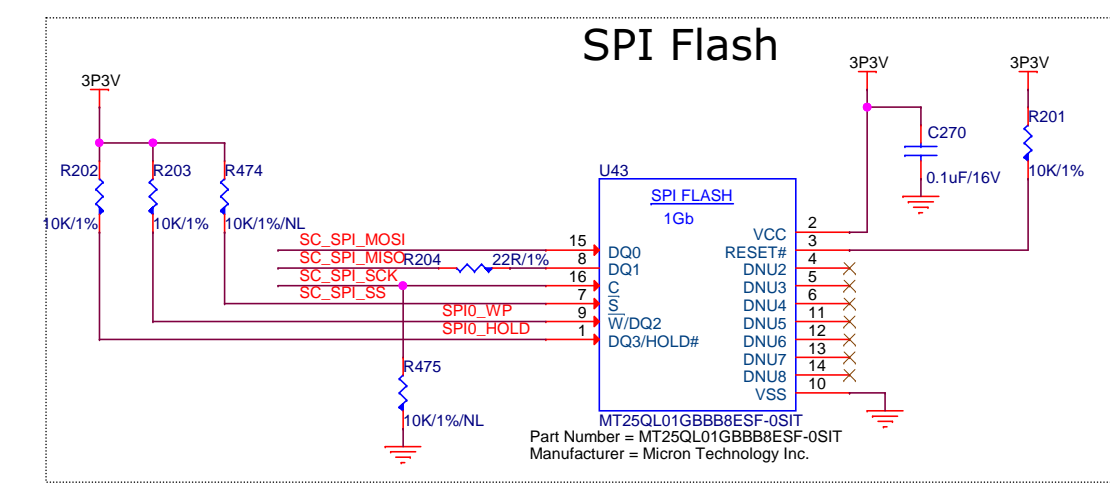
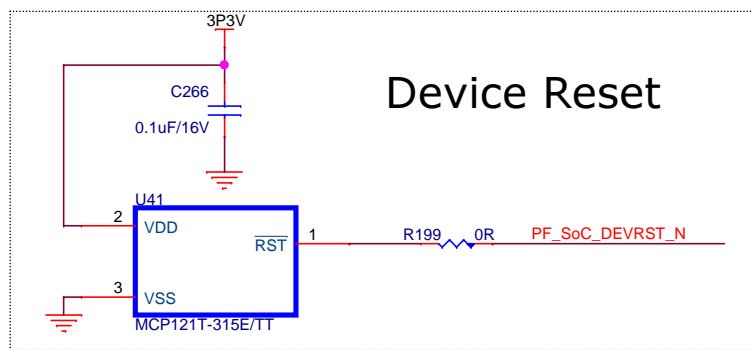
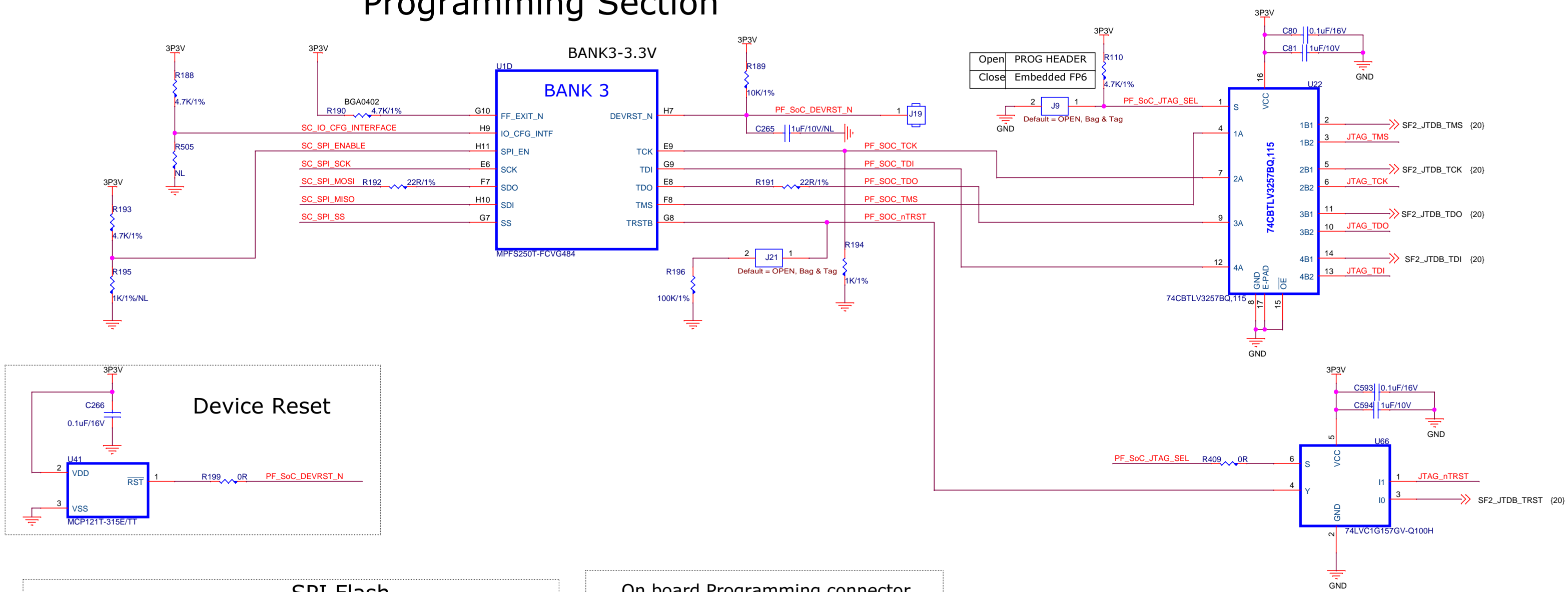


VBUS SWITCH

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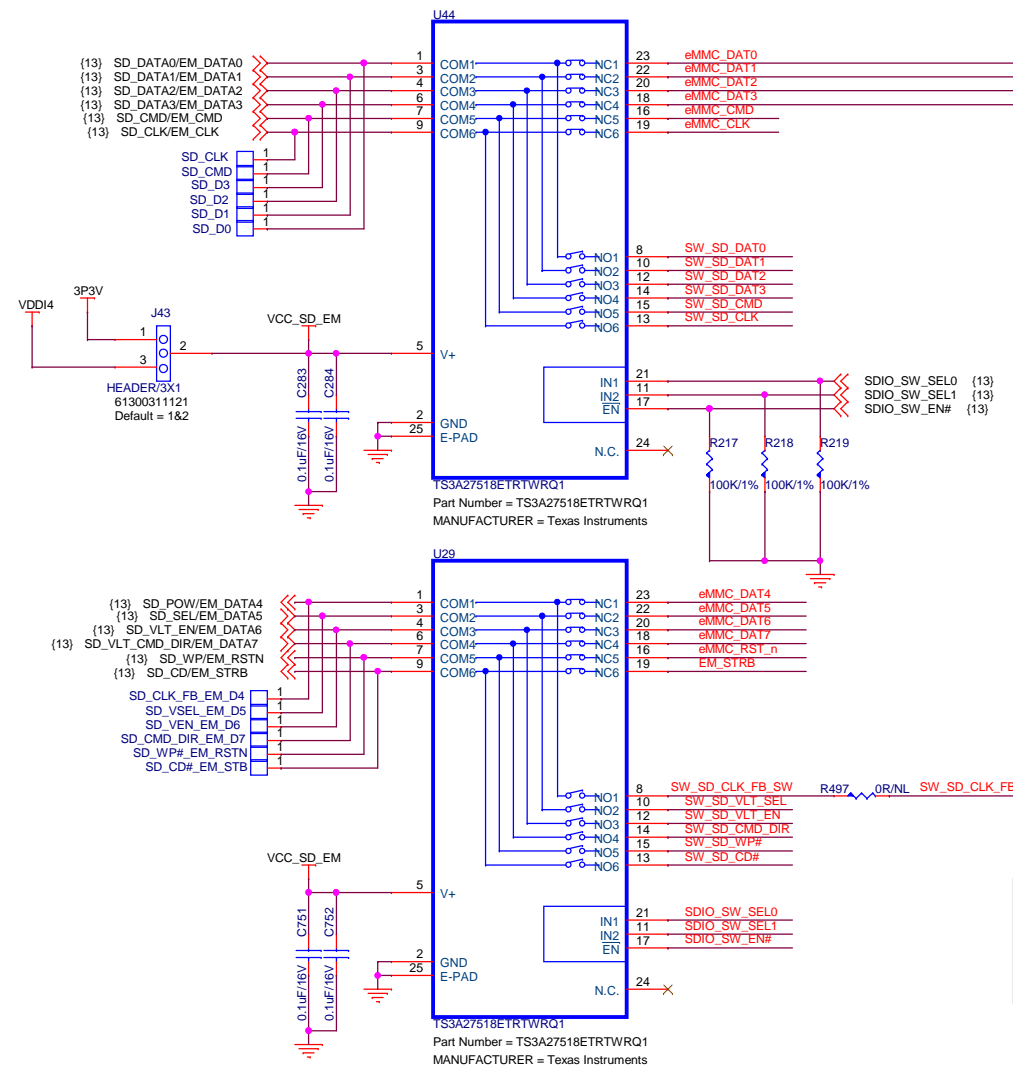


Programming Section



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SDIO INTERFACE

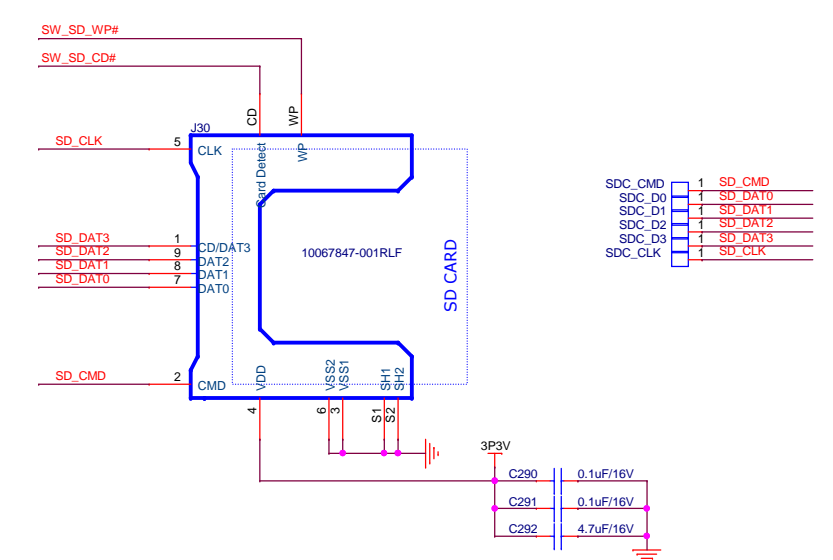
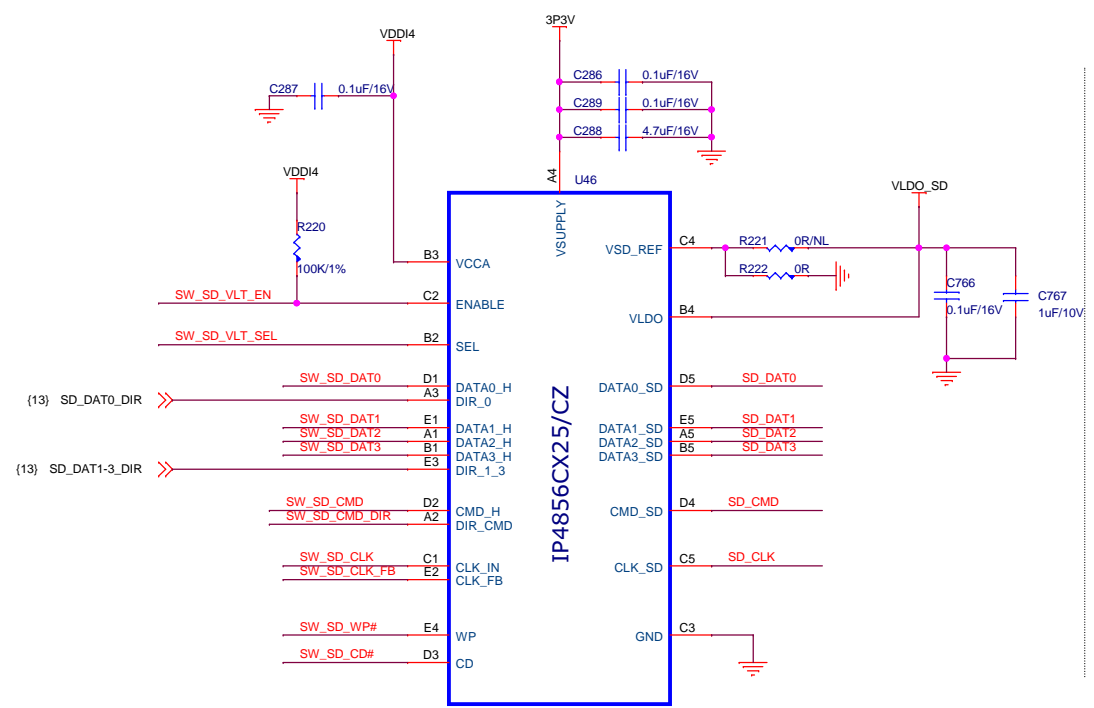
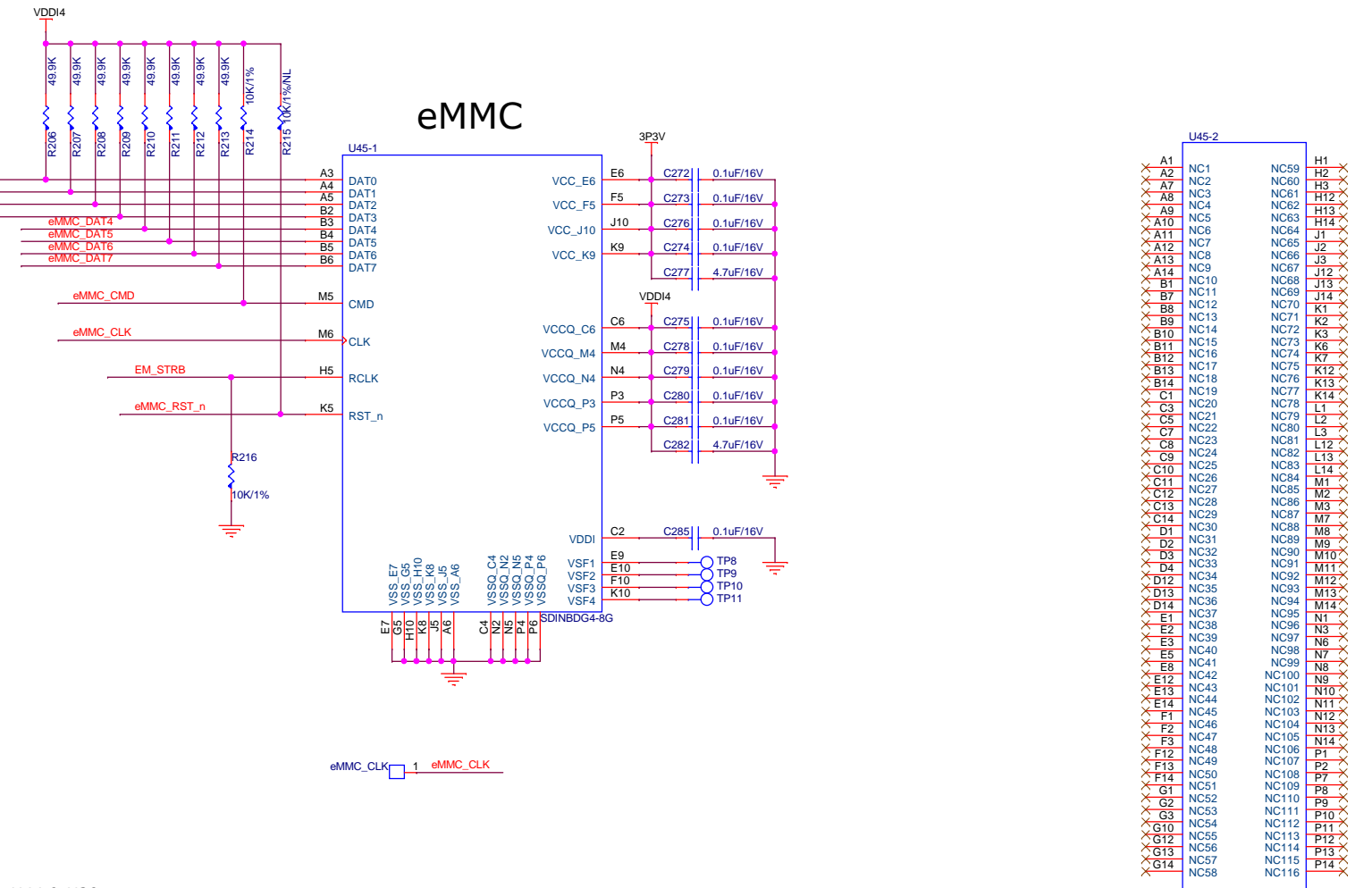


Truth Table for U44 & U29

EN#	IN1	IN2	COM-NC	COM-NO
H	X	X	OFF	OFF
L	L	L	ON	OFF
L	H	H	OFF	ON

Default selection is eMMC path (COM-NC)

eMMC

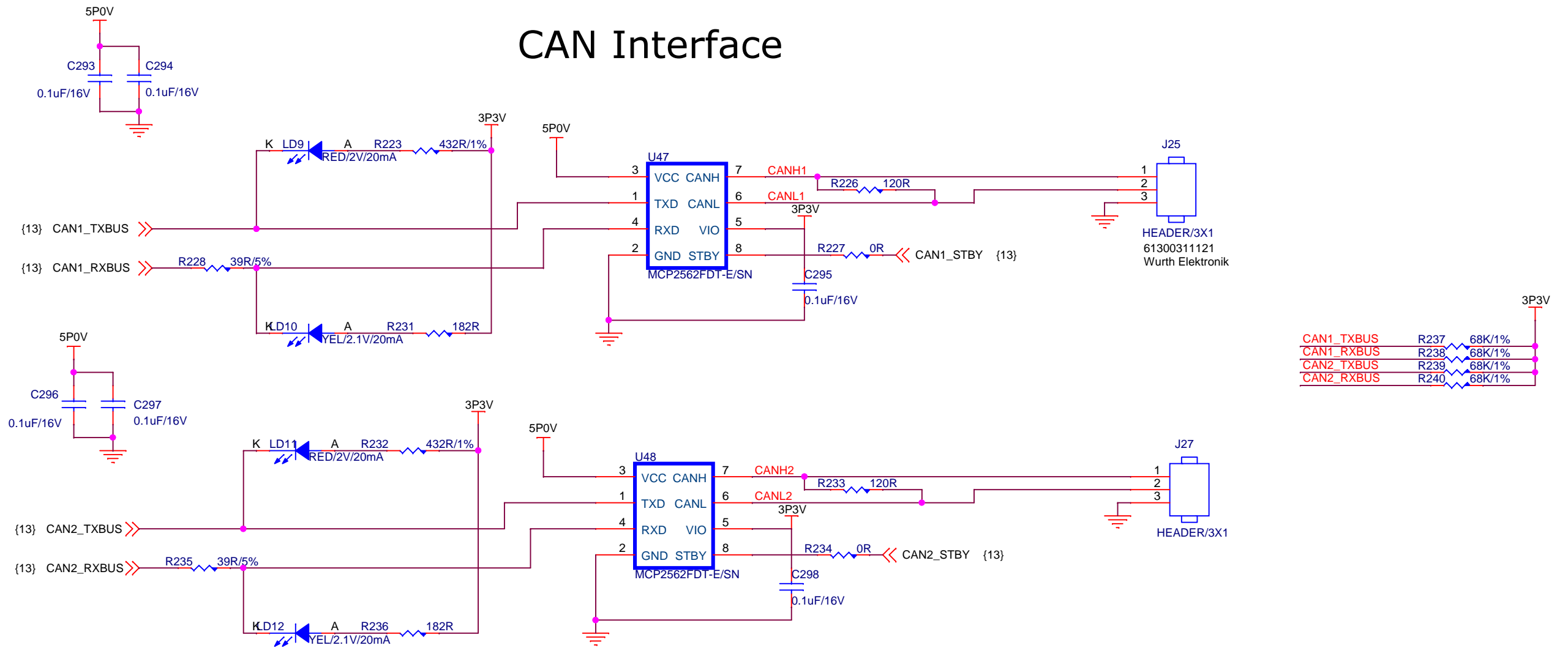


SEL-H- 1.8V Operation
 SEL-L- 3V Operation

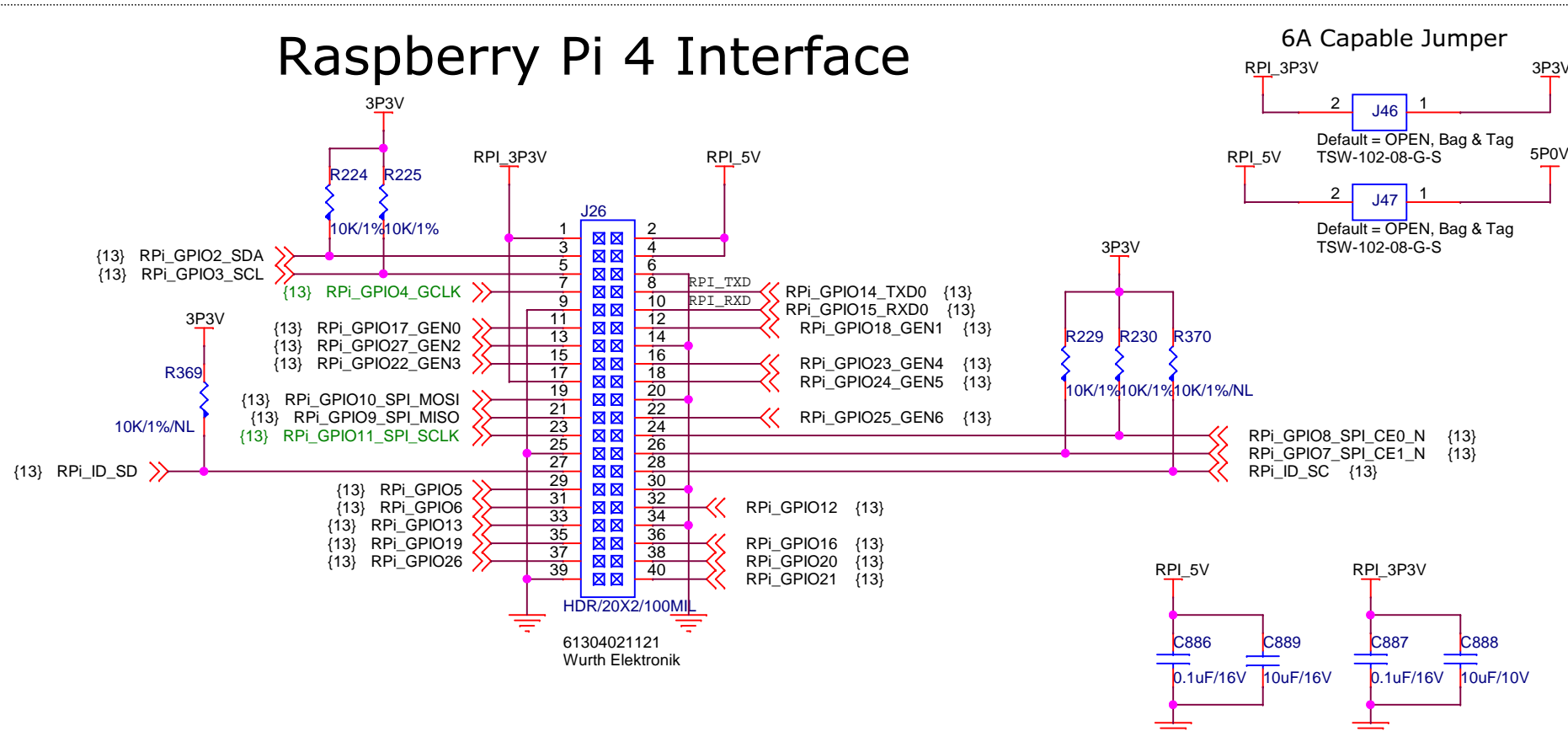


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CAN Interface

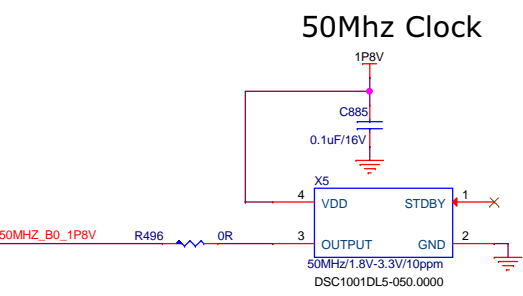
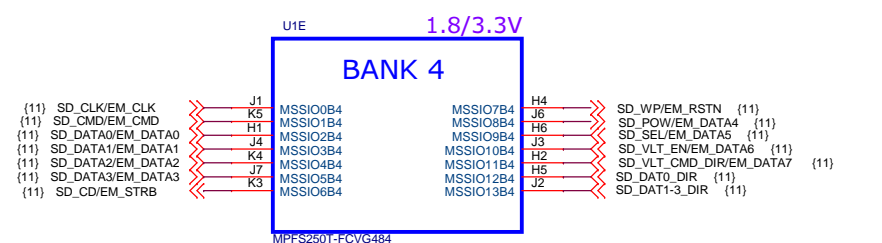
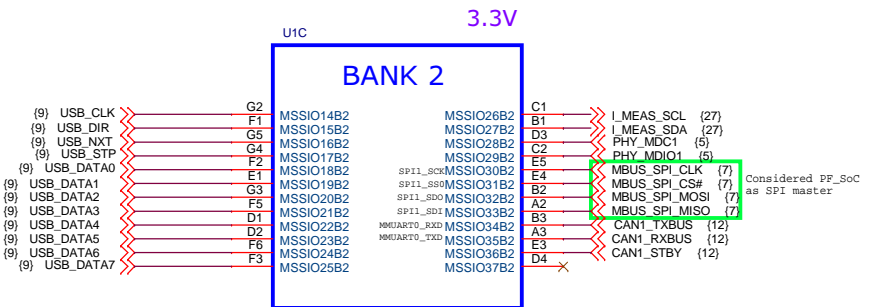
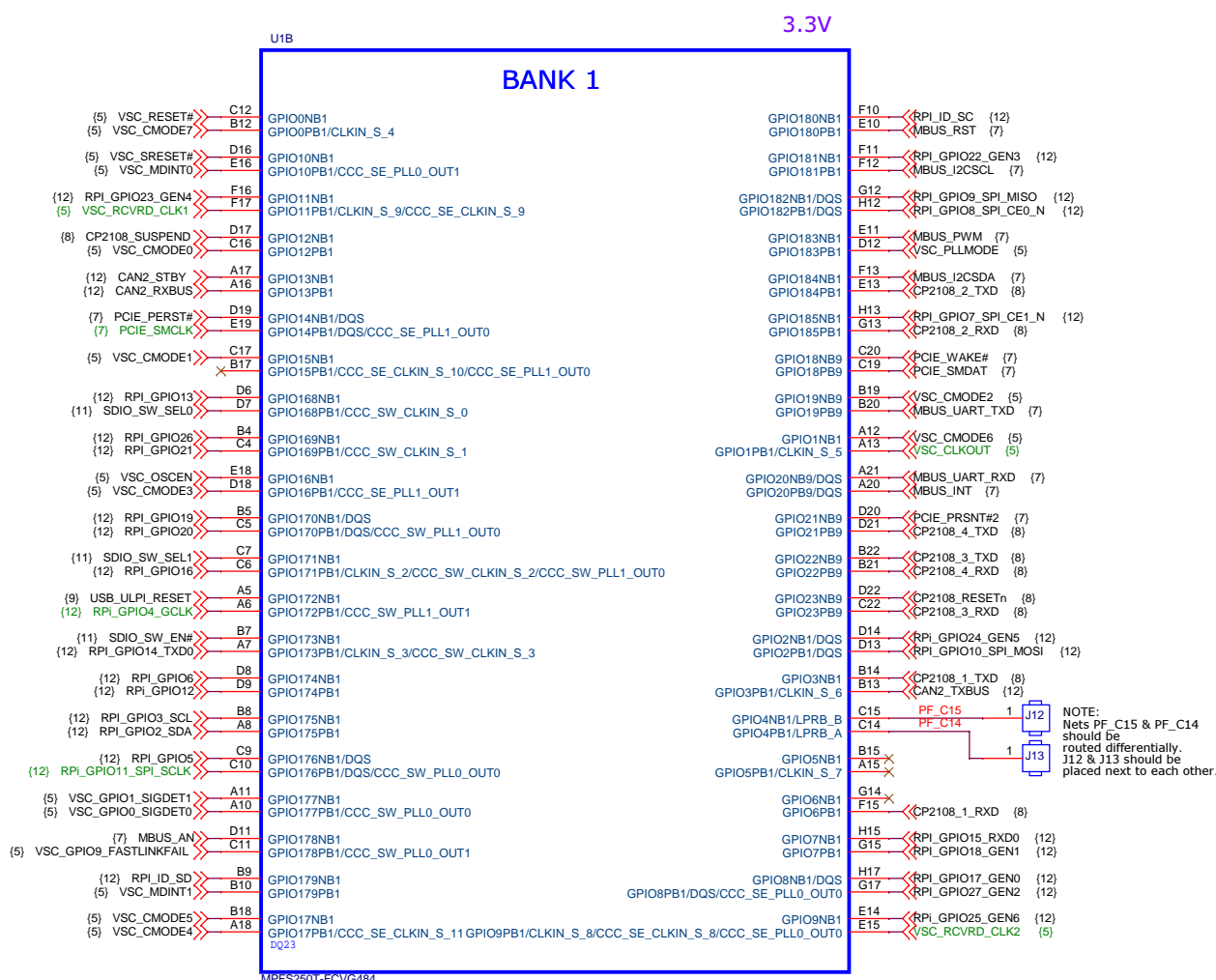
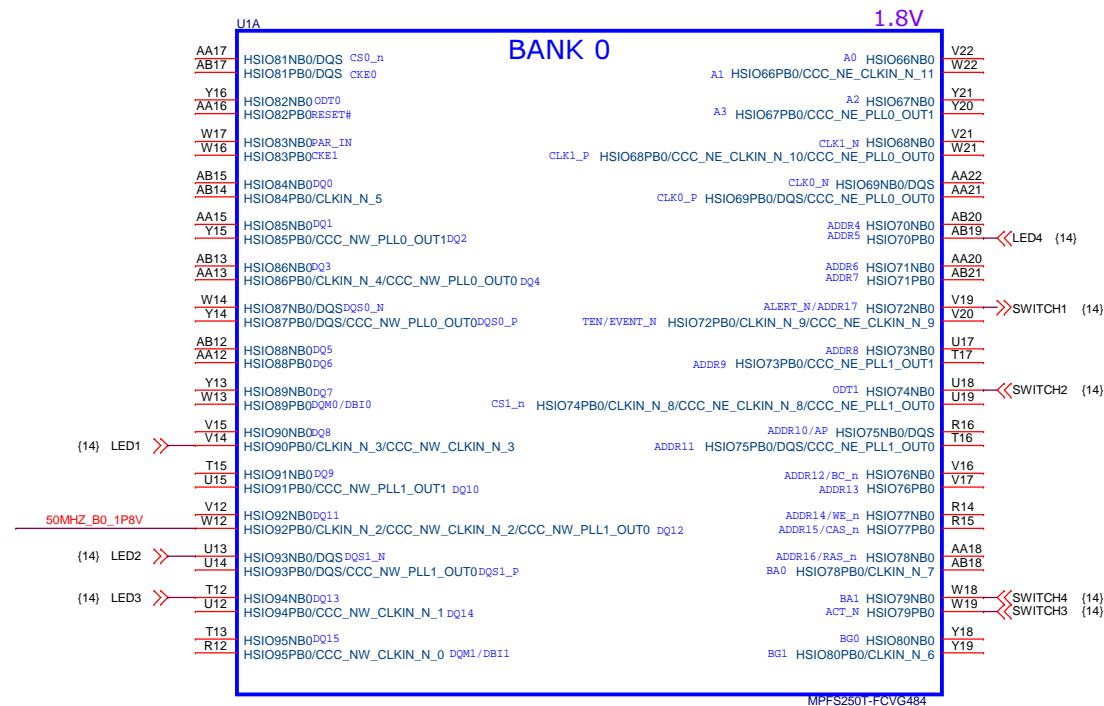


Raspberry Pi 4 Interface



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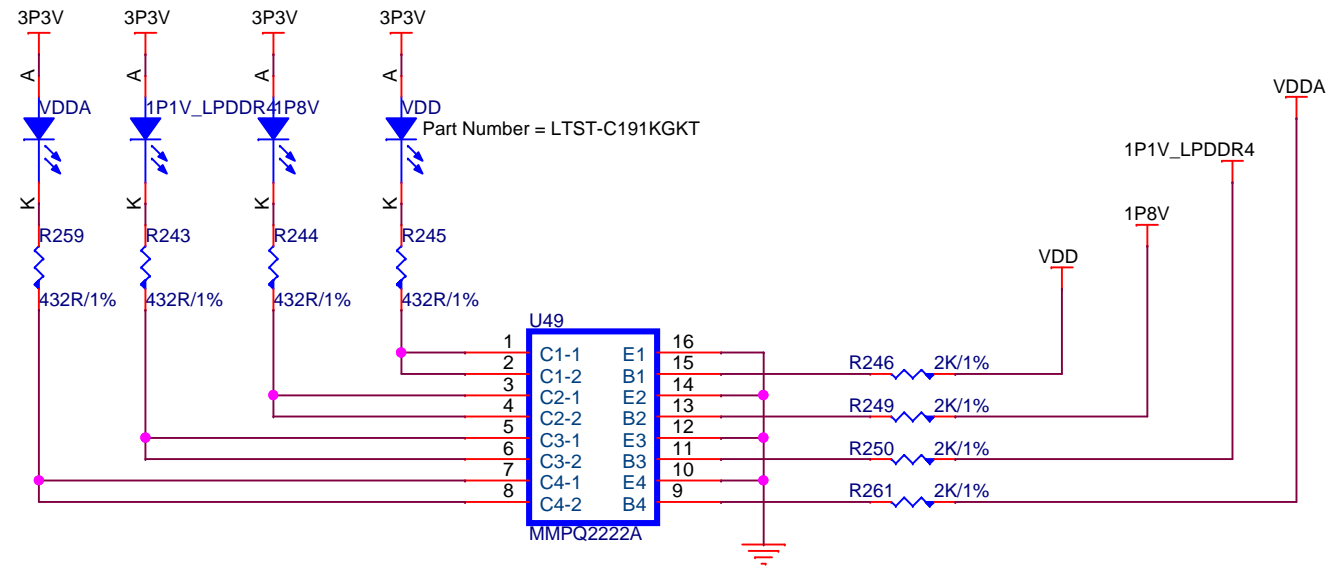
PolarFire SoC Bank Assignment



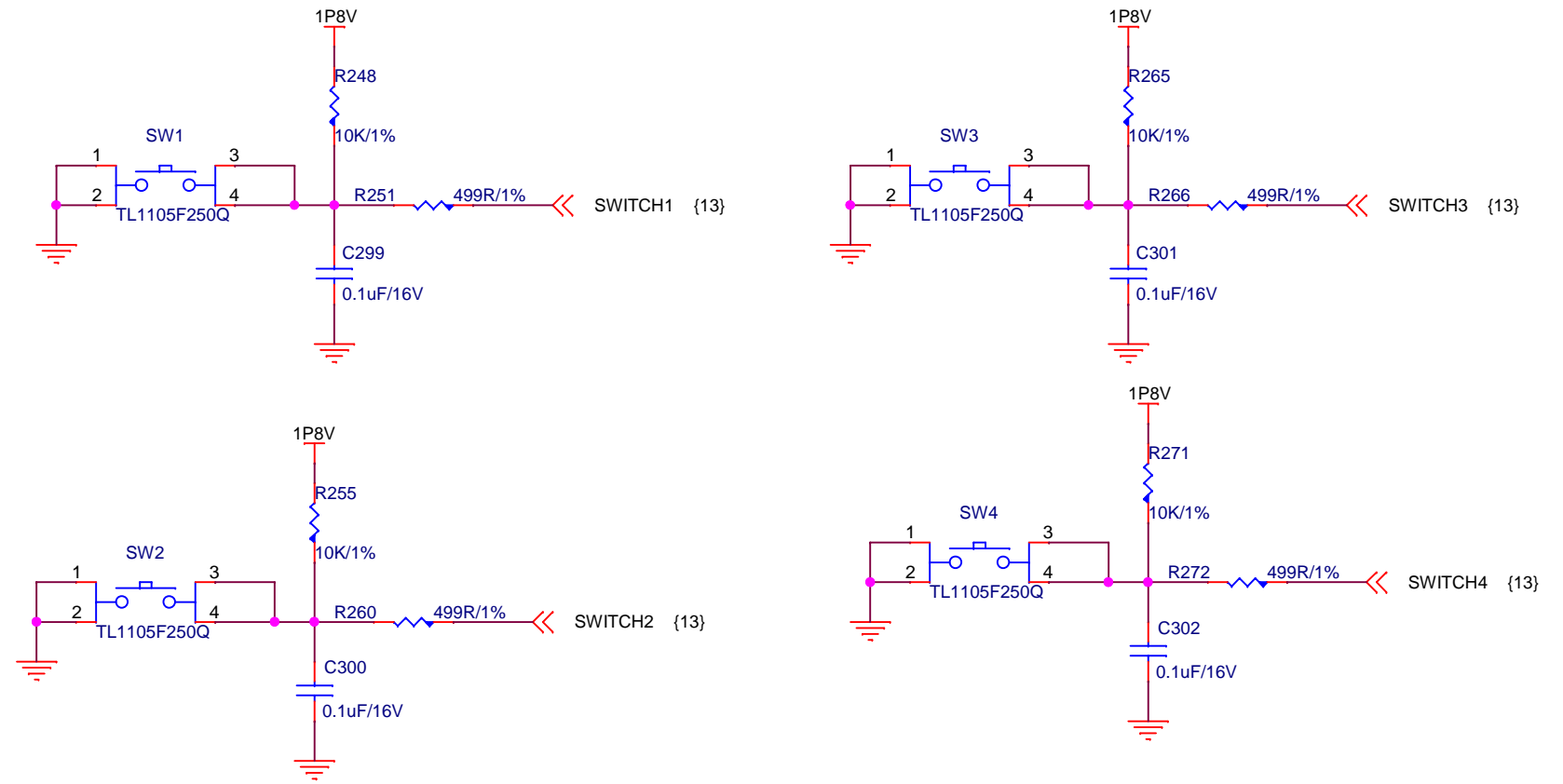
Pin No	Bank	Pin Functionality
J1	MSSIO0B4	SD_CLK/EM_CLK/QSPI_SCK/SPI0_SCK
K5	MSSIO1B4	SD_CMD/EM_CMD/MMUART3_RXD/I2C0_SCL
H1	MSSIO2B4	SD_DATA0/EM_DATA0/MMUART3_TXD/I2C0_SDA
J4	MSSIO3B4	SD_DATA1/EM_DATA1/MMUART4_RXD/CAN0_TXBUS
K4	MSSIO4B4	SD_DATA2/EM_DATA2/MMUART4_TXD/CAN0_RXBUS
J7	MSSIO5B4	SD_DATA3/EM_DATA3/MMUART0_RXD/CAN0_TX_EBL_N
K3	MSSIO6B4	SD_CD/EM_STRB/MMUART0_TXD
H4	MSSIO7B4	SD_WP/EM_RSTN/MMUART2_RXD/I2C1_SCL/MDC1
J6	MSSIO8B4	SD_POW/EM_DATA4/QSPI_S0/MMUART2_TXD/I2C1_SDA/MDIO1
H6	MSSIO9B4	VLT_SEL/EM_DATA5/QSPI_SDIO/MMUART0_RXD/MDC0
J3	MSSIO10B4	VLT_EN/EM_DATA6/QSPI_SDI1/MMUART0_TXD/MDIO0
H2	MSSIO11B4	VLT_CMD_DIR/EM_DATA7/QSPI_SDI2/SPI0_SDO/MMUART1_RXD/CAN1_TXBUS
H5	MSSIO12B4	VLT_DIR_0/QSPI_SDI3/SPI0_SDI/MMUART1_TXD/CAN1_RXBUS
J2	MSSIO13B4	VLT_DIR_1_3/SPI0_S0/CAN1_TX_EBL_N/WD_RESETr
G2	MSSIO14B2	QSPI_SCK/SPI1SCK/USB_CLK
F1	MSSIO15B2	SPI1_SDO/USB_DIR/MMUART4_RXD/MDC1
G5	MSSIO16B2	SPI1_SDI/USB_NXT/MMUART4_TXD/MDIO1
H1	MSSIO17B2	SPI1_S0/USB_STP/MMUART0_RXD
G4	MSSIO18B2	USB_DATA0/MMUART0_TXD/WD_RESETr
F2	MSSIO19B2	USB_DATA1/MMUART1_RXD/H2F_MONITOR
E1	MSSIO19B2	USB_DATA1/MMUART1_RXD/H2F_MONITOR
G3	MSSIO20B2	USB_DATA2/MMUART1_TXD/I2C0_SCL
F5	MSSIO21B2	USB_DATA3/MMUART2_RXD/I2C0_SDA/CAN0_TX_EBL_N
D1	MSSIO22B2	USB_DATA4/MMUART2_TXD/CAN0_TXBUS
D2	MSSIO23B2	SPI0_S0/USB_DATA5/MMUART3_RXD/CAN0_RXBUS
F6	MSSIO24B2	SPI0_SDI0/USB_DATA6/MMUART3_TXD/I2C1_SCL/MDC0
F3	MSSIO25B2	SPI0_SDO/USB_DATA7/I2C1_SDA/MDIO0
C1	MSSIO26B2	SD_LED/I2C1_SCL
B1	MSSIO27B2	SD_VOLT_0/I2C1_SDA/CAN1_TX_EBL_N
D3	MSSIO28B2	SD_VOLT_1/MMUART0_RXD/CAN1_TXBUS/MDC1
C2	MSSIO29B2	SD_VOLT_2/MMUART0_TXD/CAN1_RXBUS/MDIO1
E5	MSSIO30B2	QSPI_SCK/SPI1_SCK
E4	MSSIO31B2	QSPI_S0/SPI1_S0/CAN0_TXBUS
B2	MSSIO32B2	SD_CLE/QSPI_SDI/SPI1_SDO/CAN0_RXBUS
A2	MSSIO33B2	SD_LED/QSPI_SDI/SPI1_SDI/CAN0_TX_EBL_N
B3	MSSIO34B2	SD_VOLT_0/QSPI_SDI/CAN1_TXBUS
A3	MSSIO35B2	SD_VOLT_1/QSPI_SDI3/MMUART0_RXD/I2C0_SCL/CAN1_RXBUS/MDC0
E3	MSSIO36B2	SD_VOLT_2/MMUART0_TXD/I2C0_SDA/CAN1_TX_EBL_N/MDIO0
D4	MSSIO37B2	QSPI_SCK/SPI0_SCK



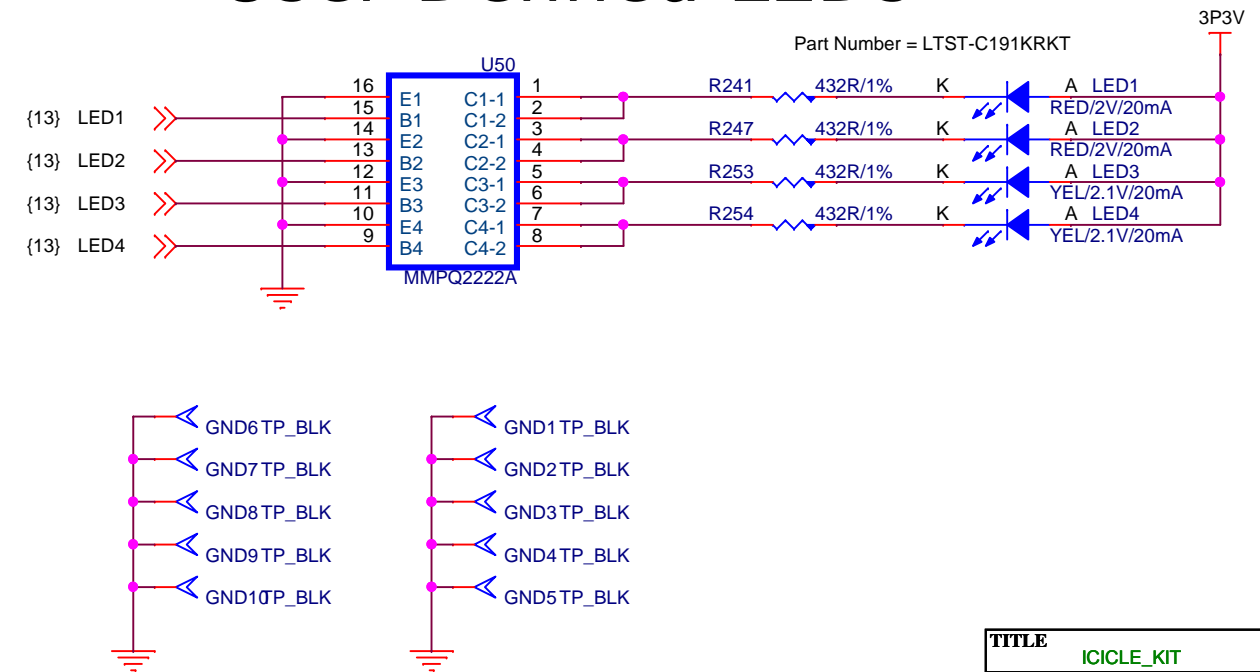
Power LEDs



Debug Circuitry

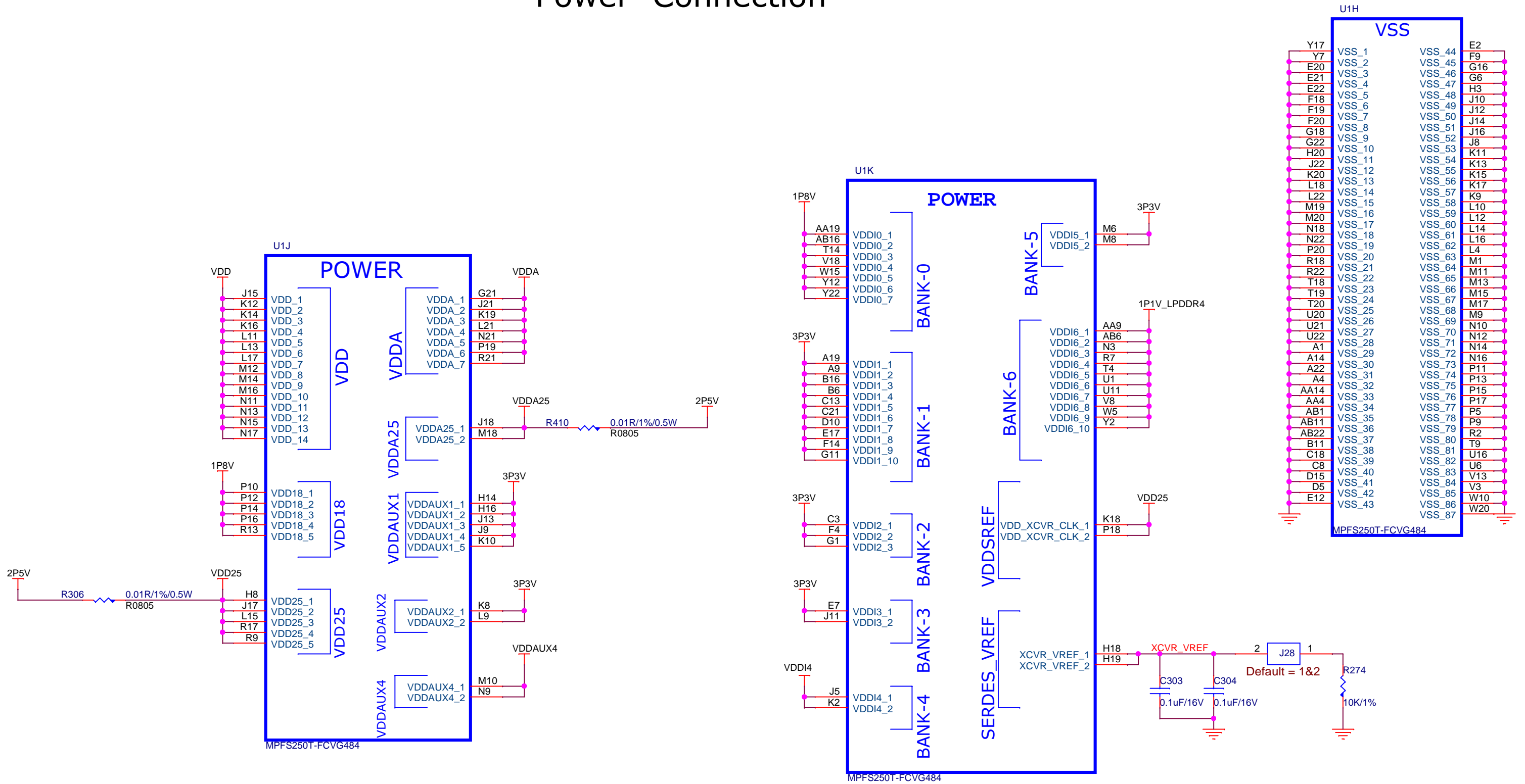


User Defined LEDs



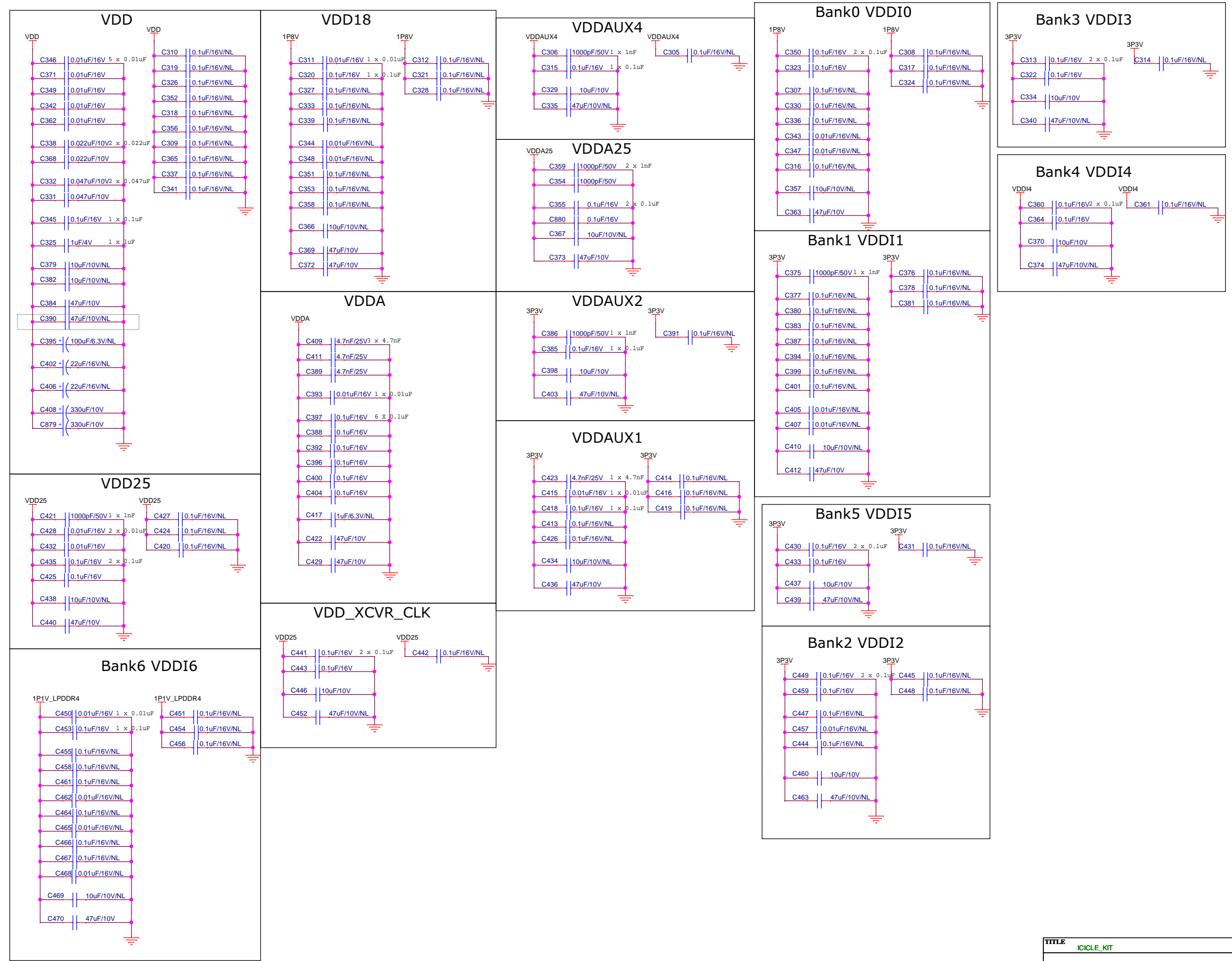
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Power Connection



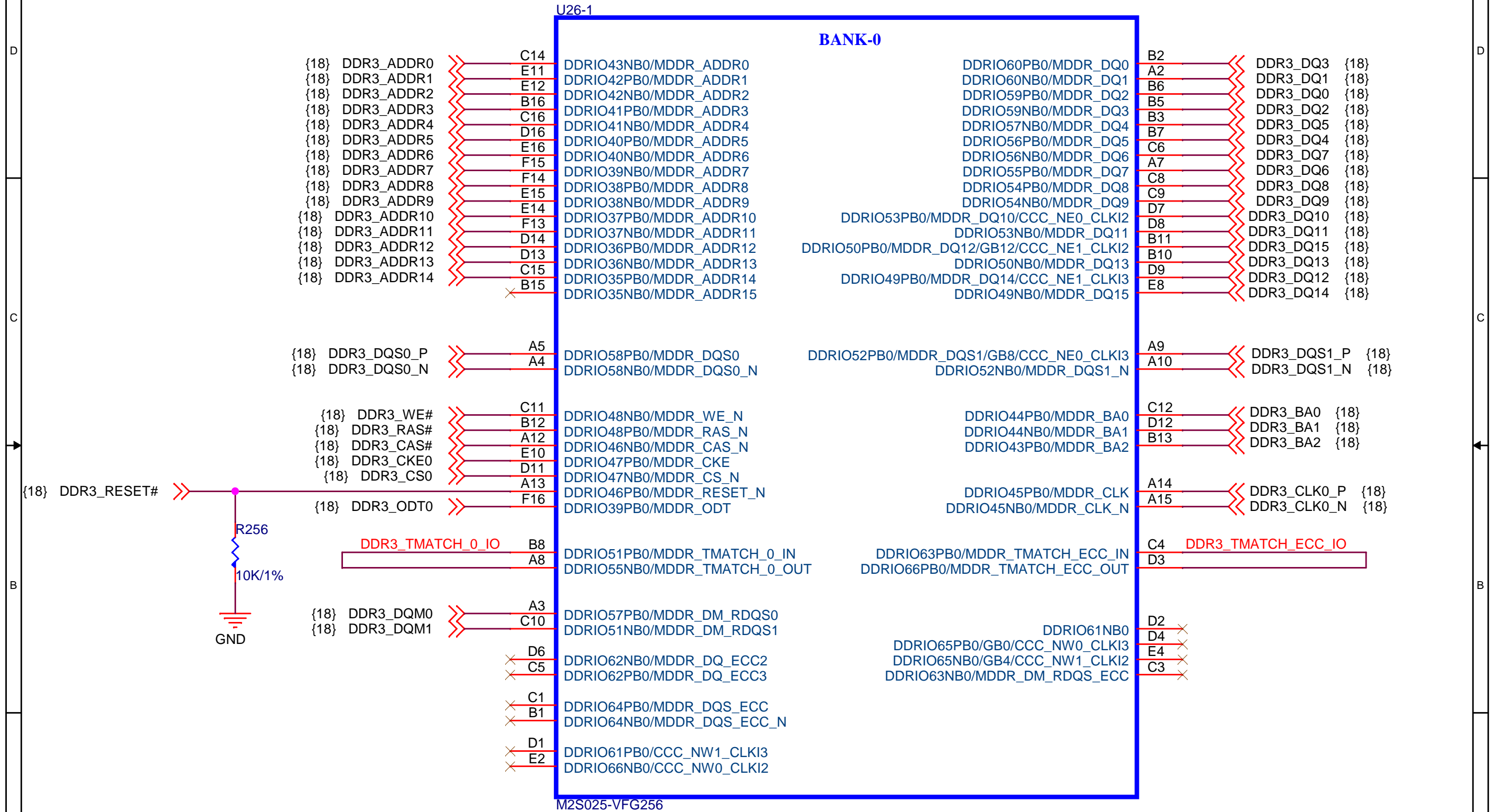
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Decoupling Capacitors



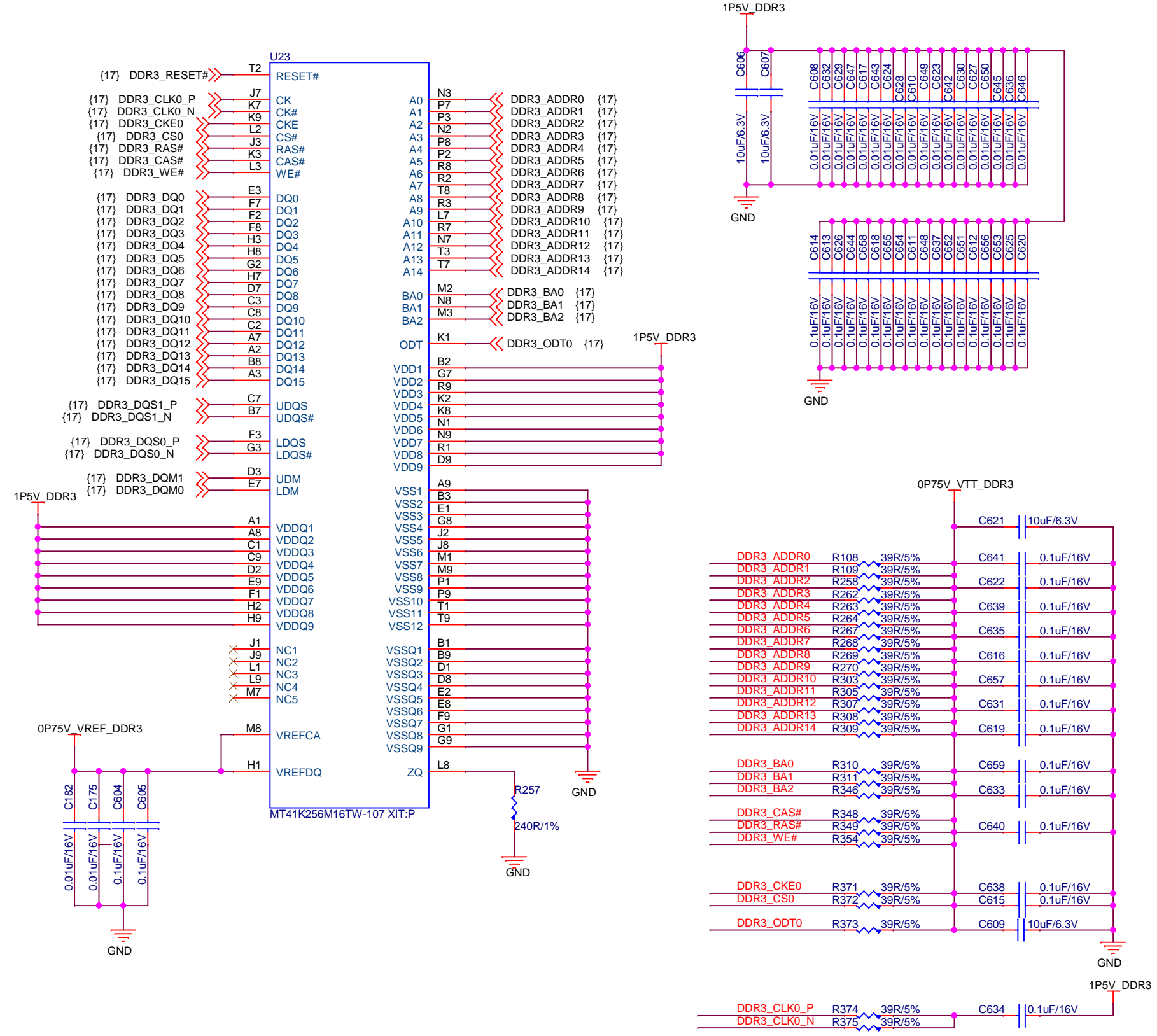
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BANK0 - DDR3



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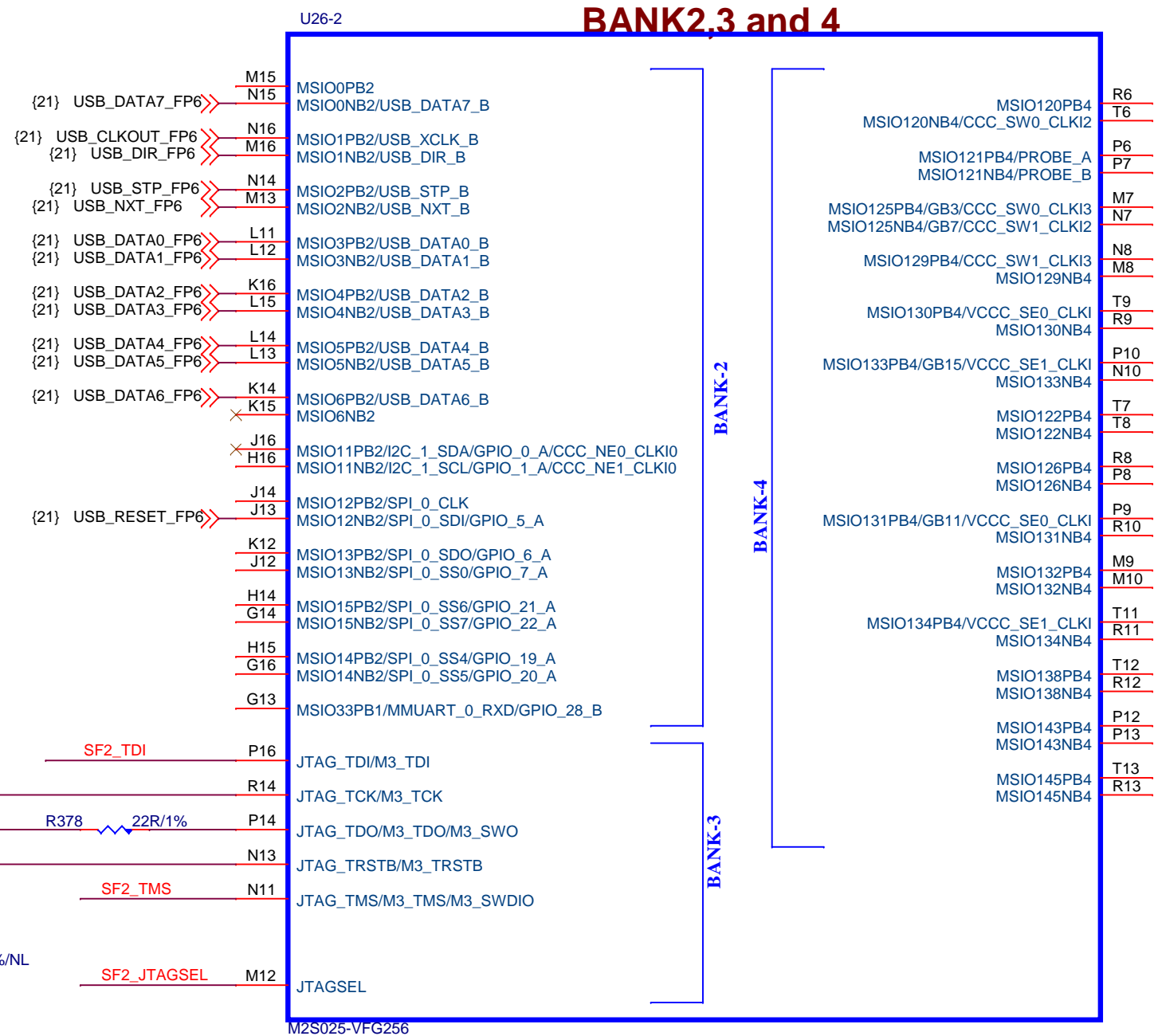
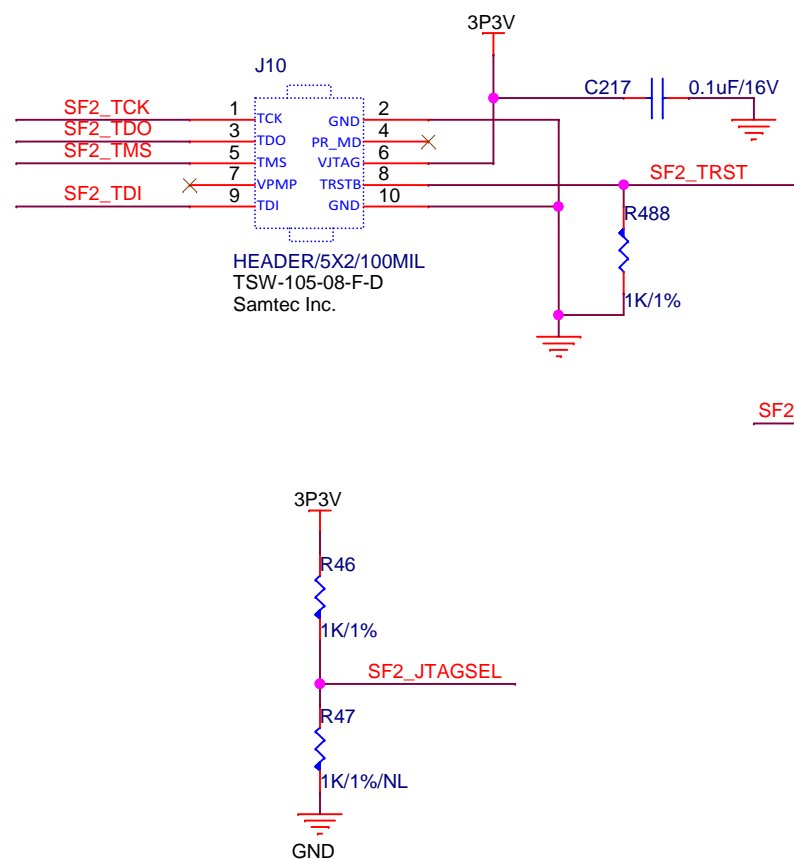
DDR3 MEMORY -BANK0



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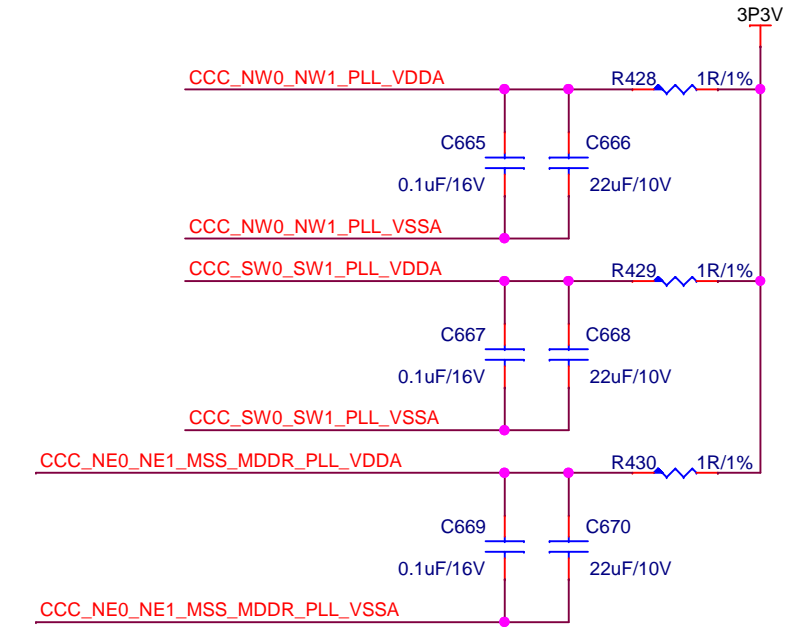
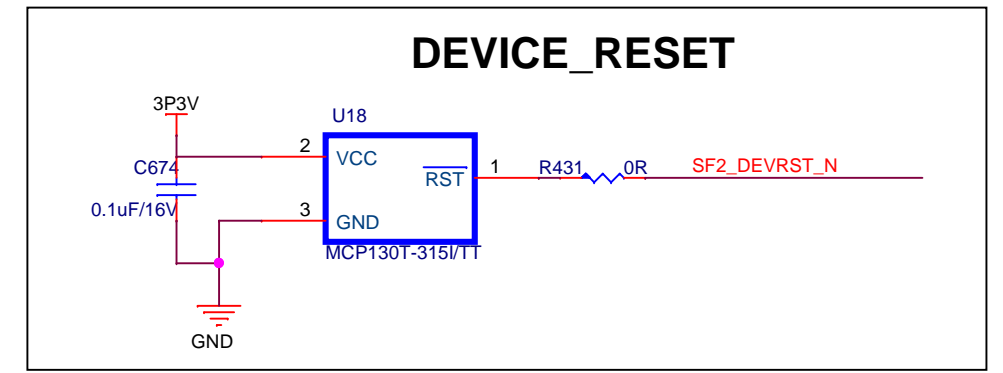
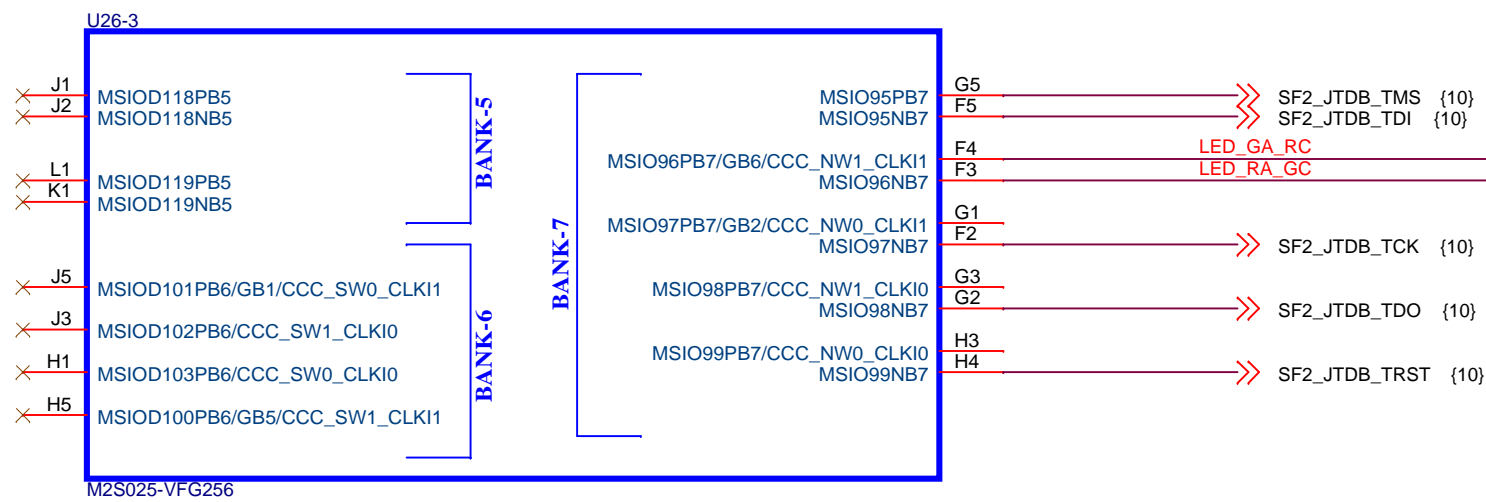
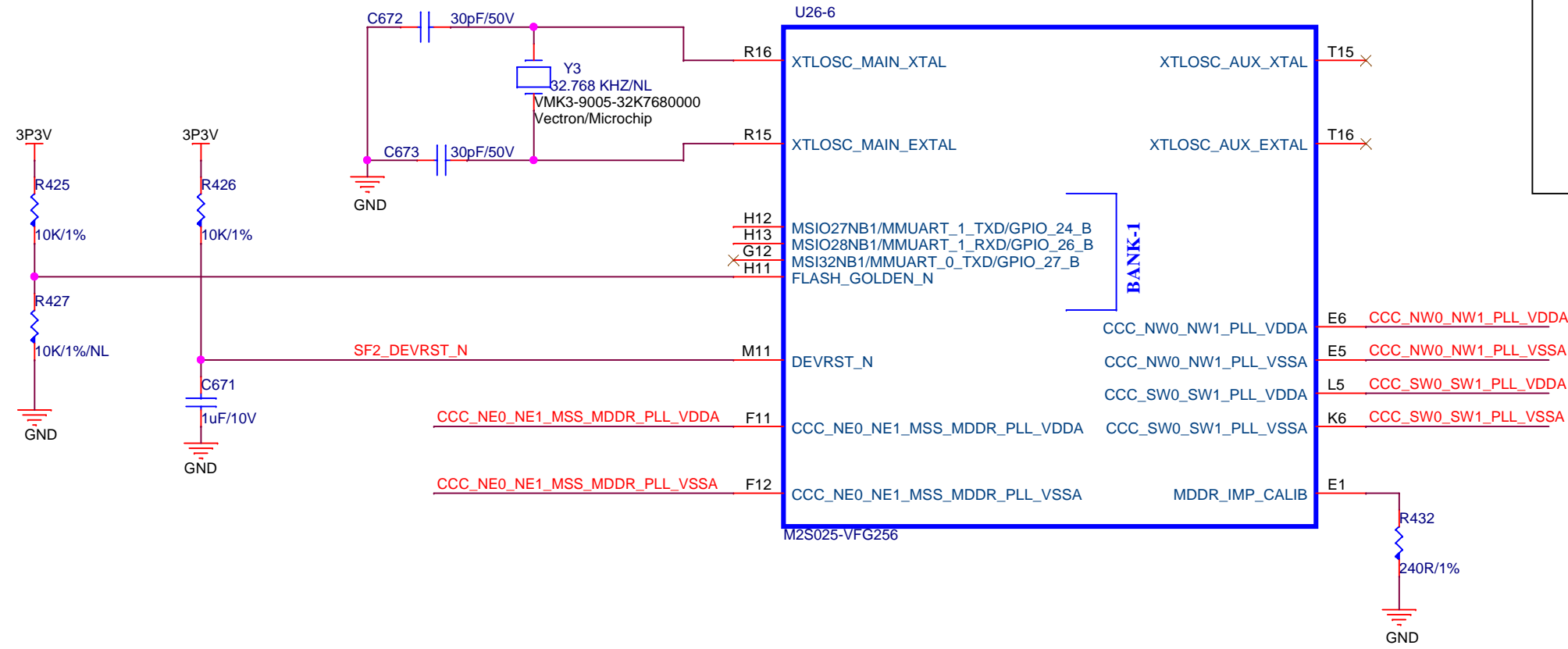


Programming connector for SF2



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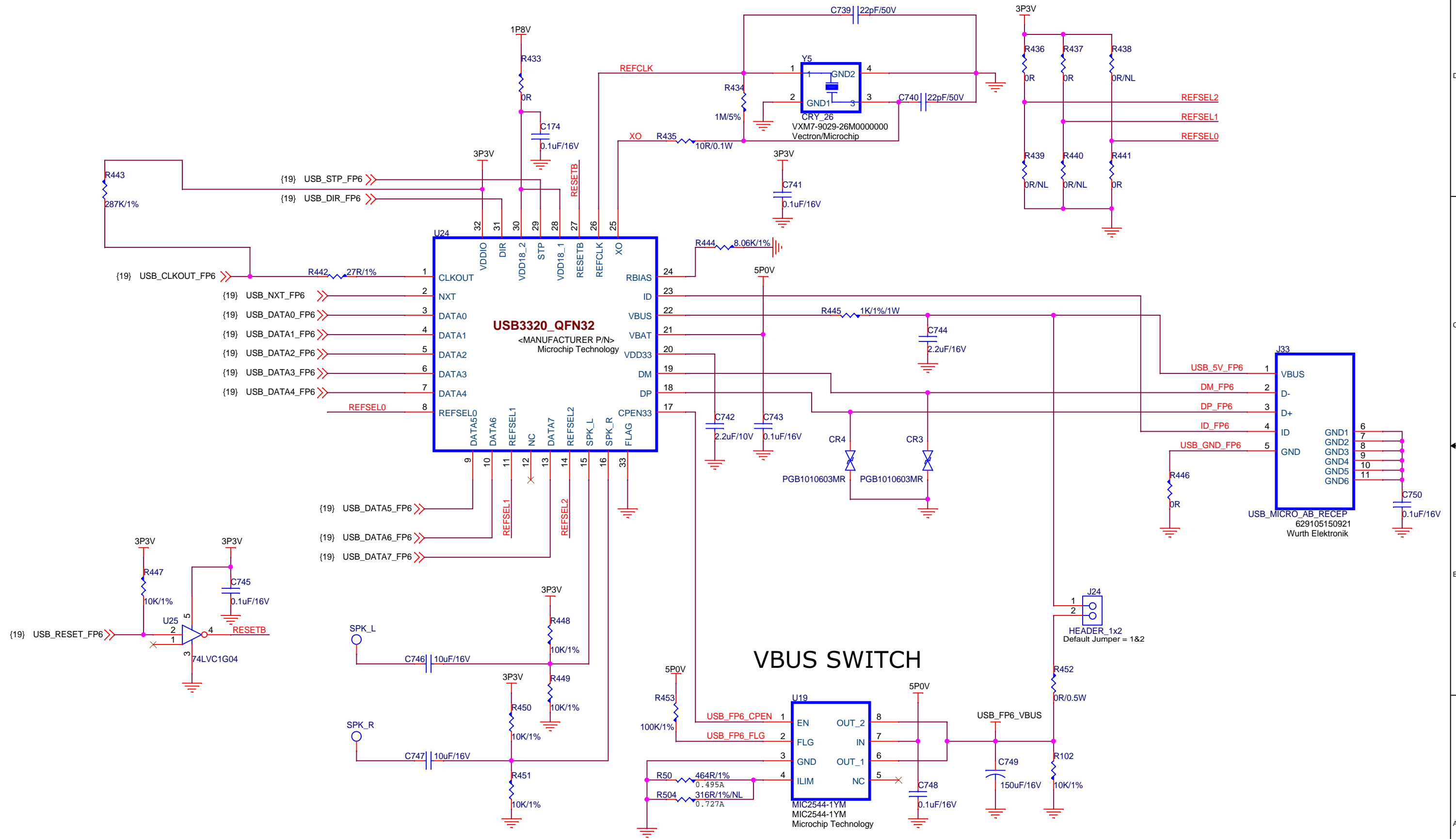
BANK-1,5,6,7 and MISC



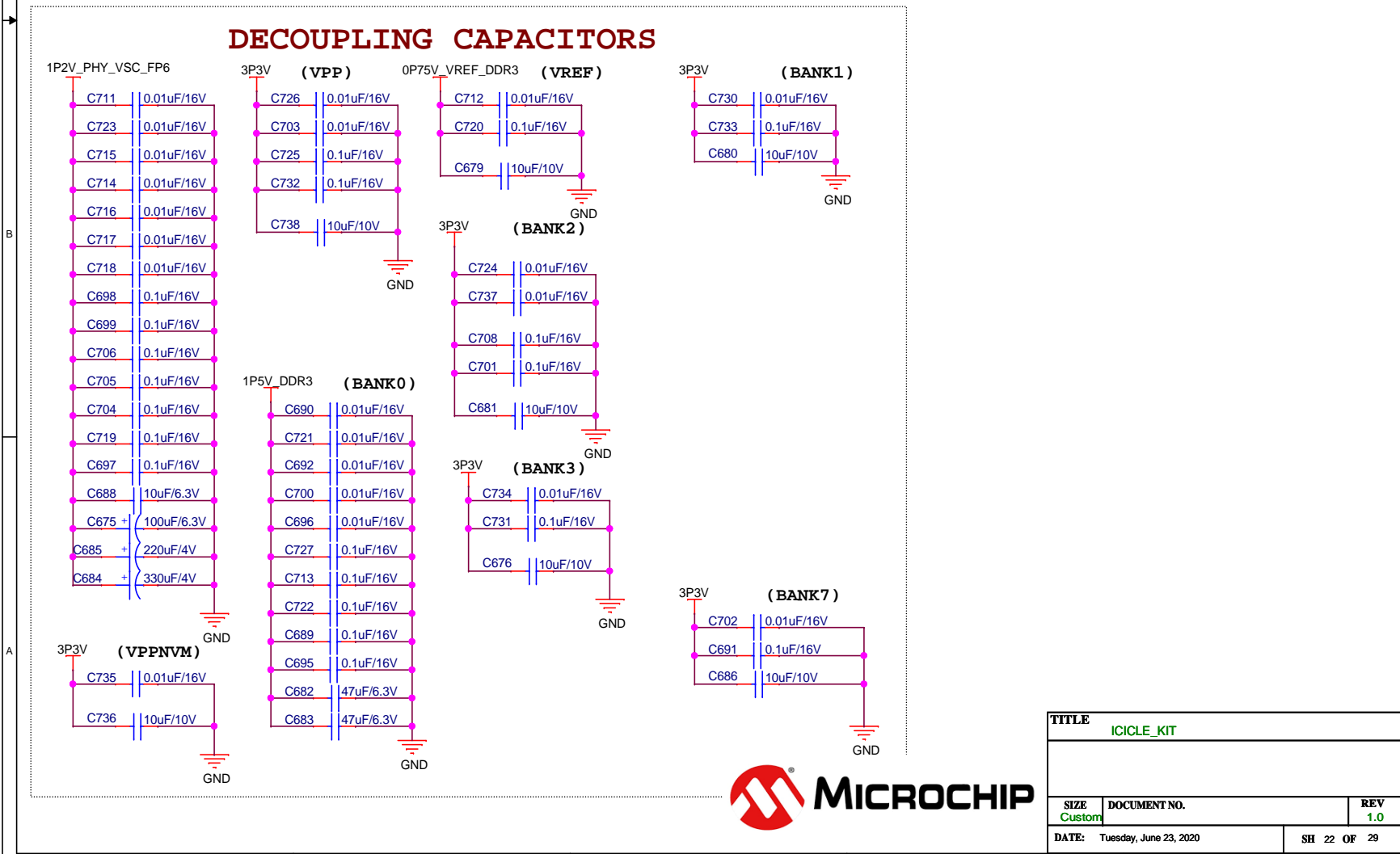
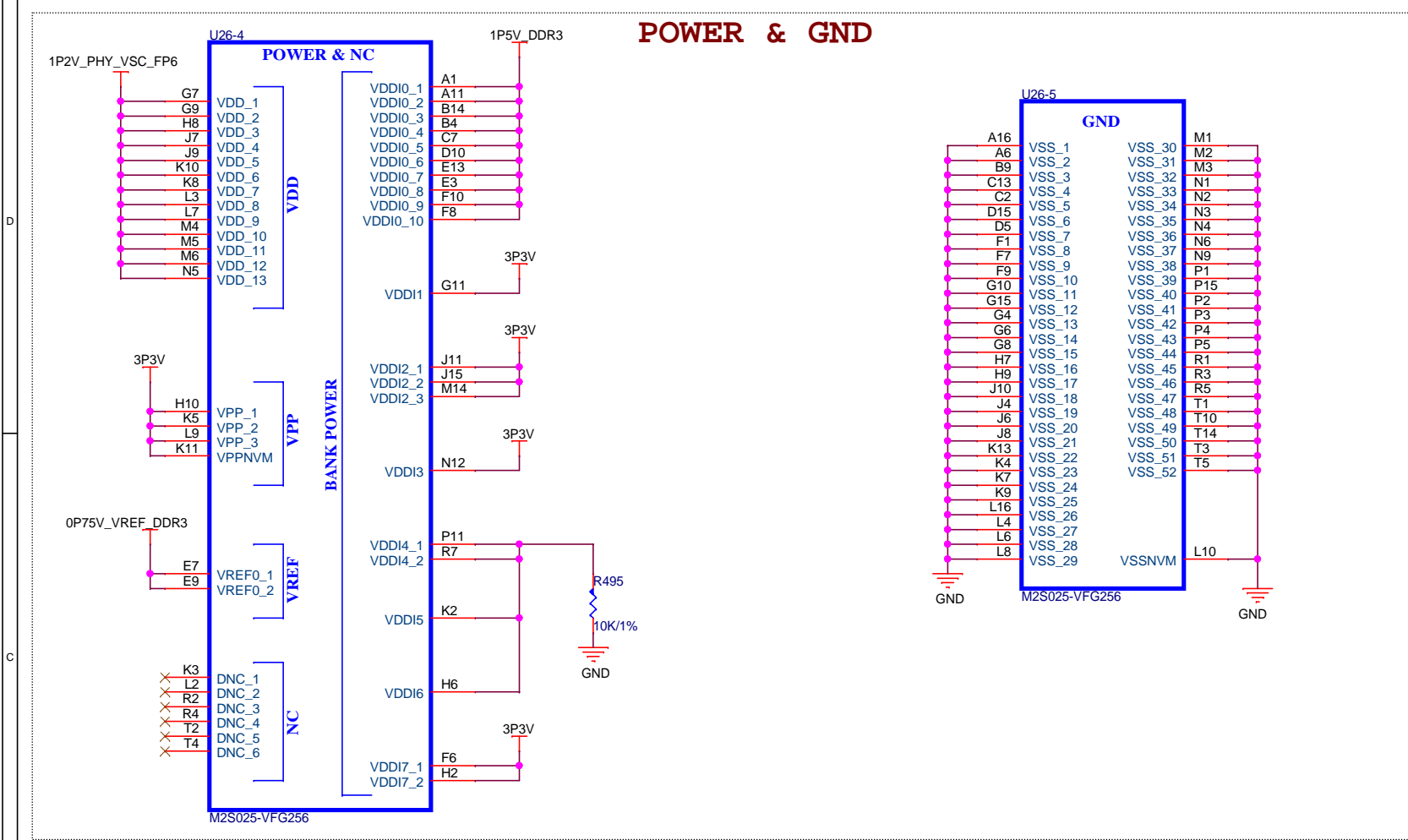
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FP6 - USB Interface

Schematic shows 26.0 MHz Configuration.
REFCLK[2:0] = 110

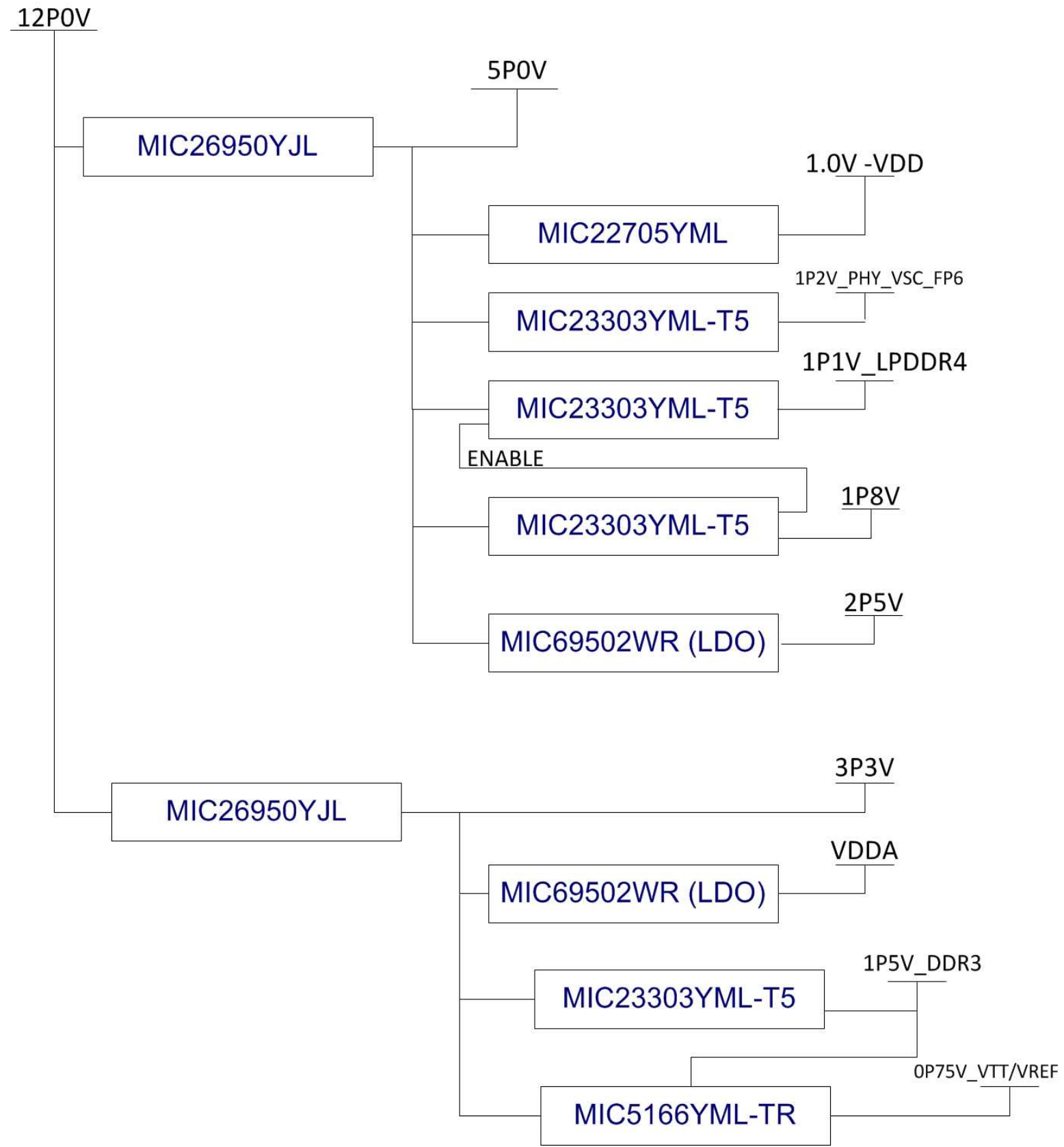


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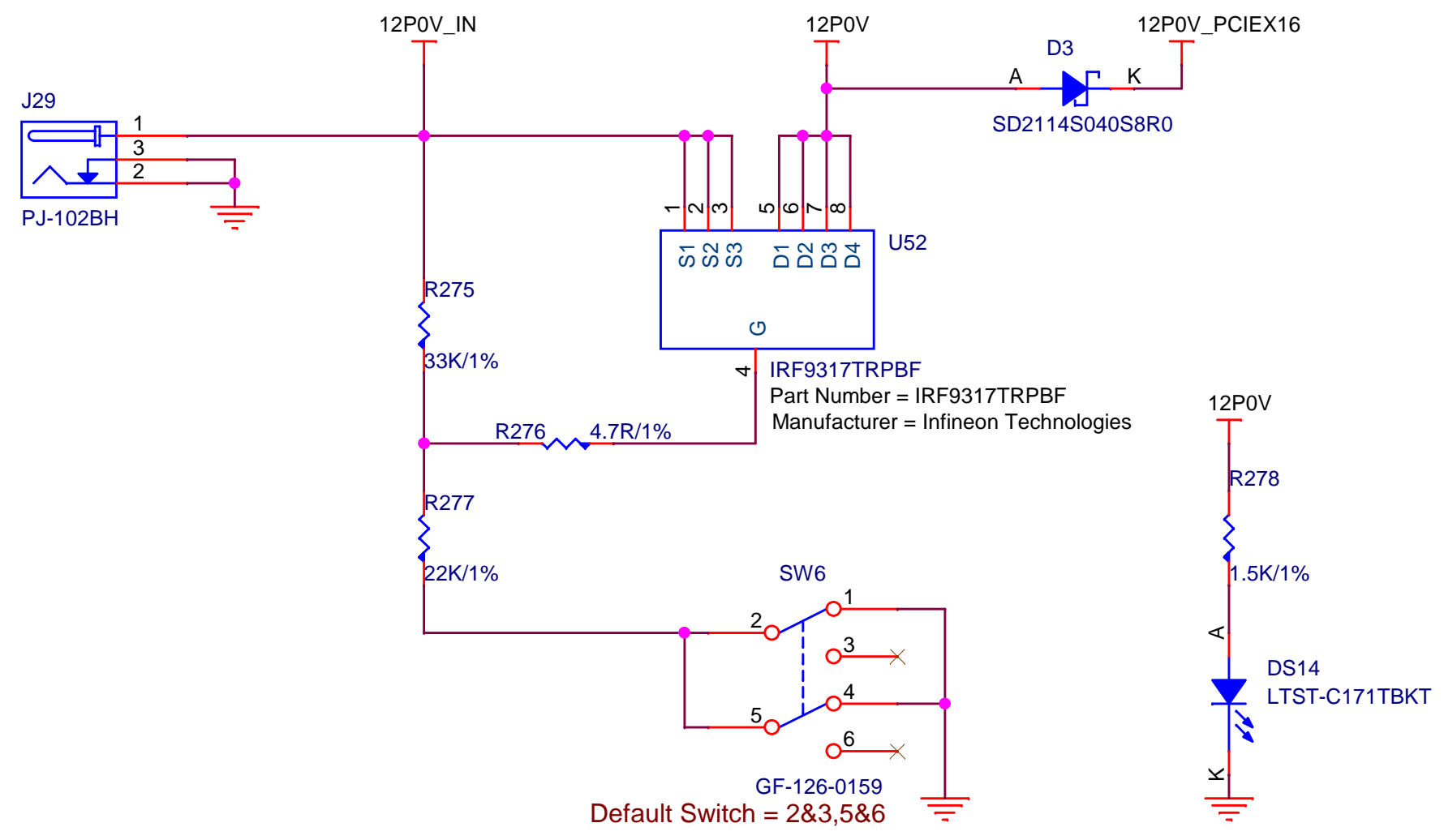
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POWER BLOCK DIAGRAM



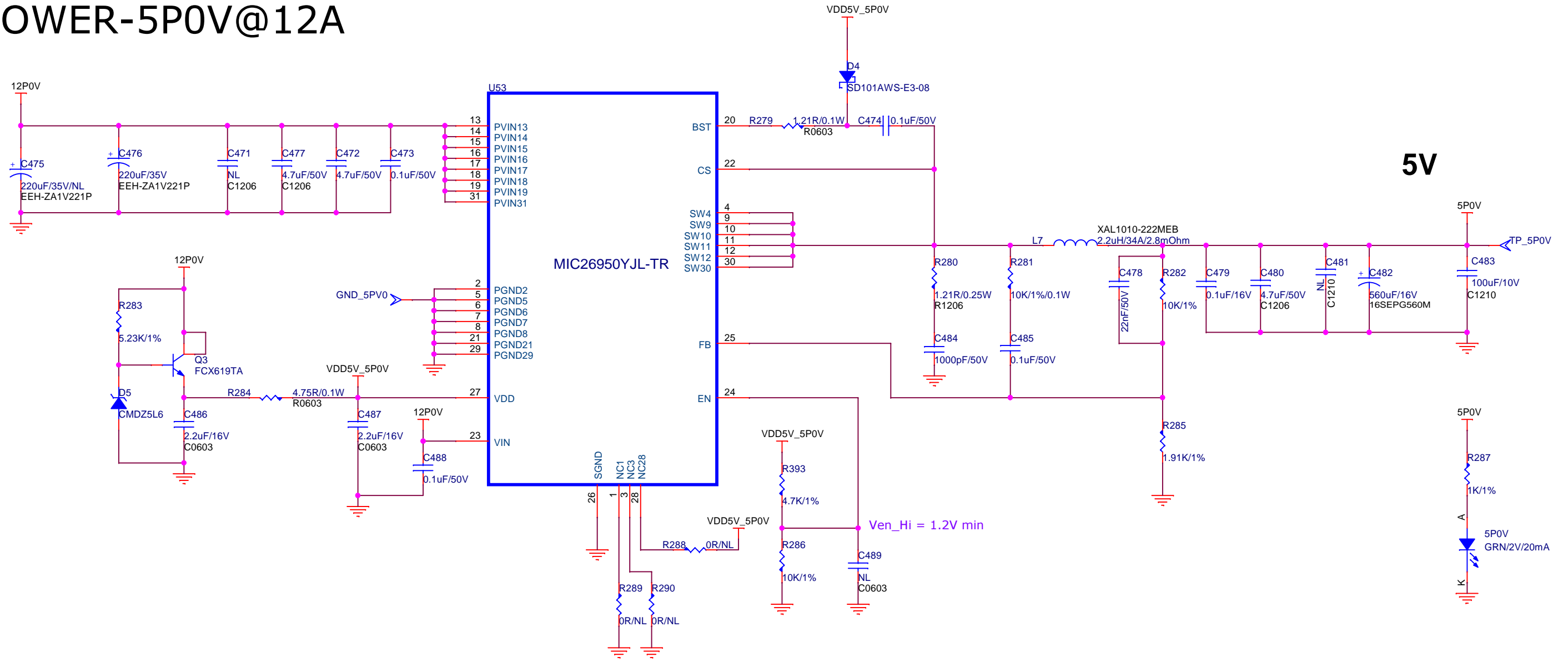
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12V External Supply @ 5A

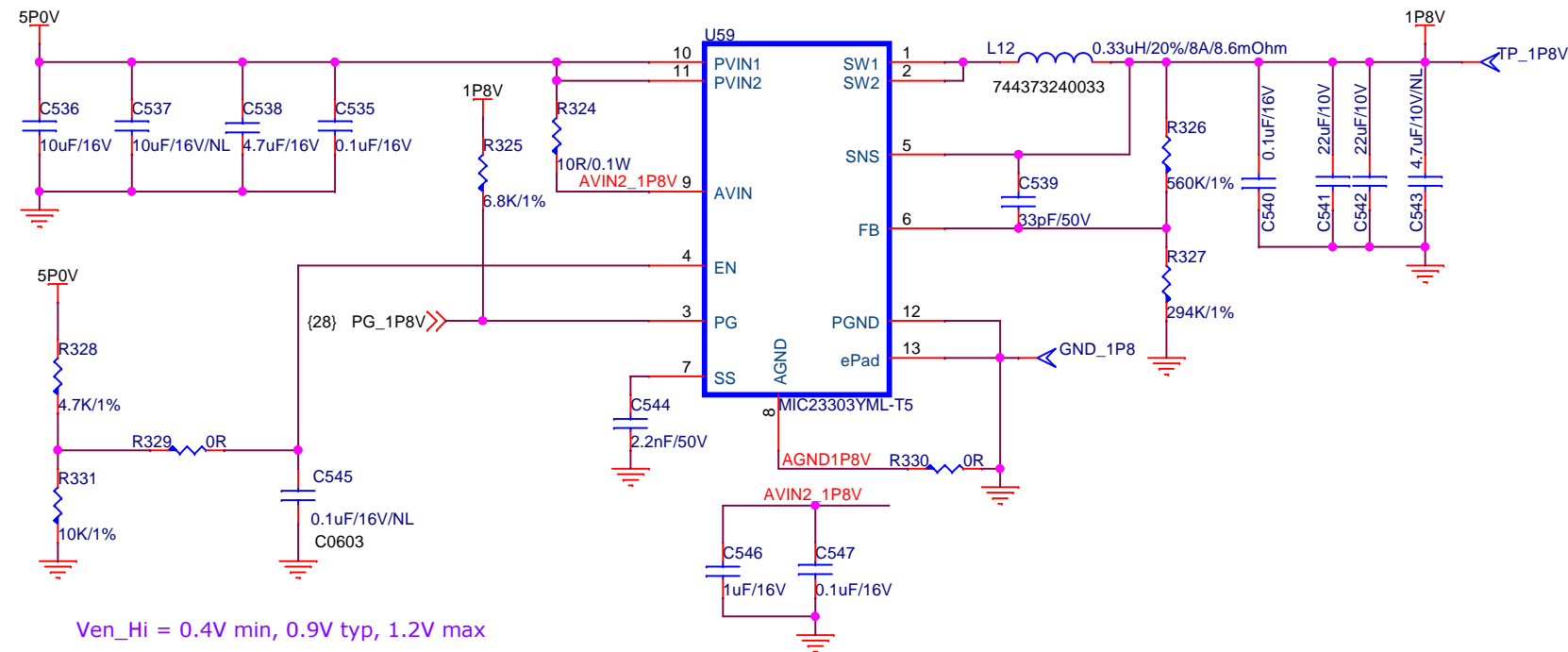


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POWER-5P0V@12A

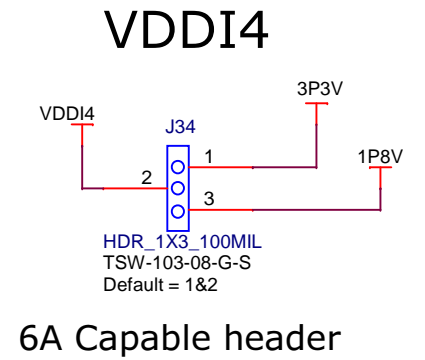
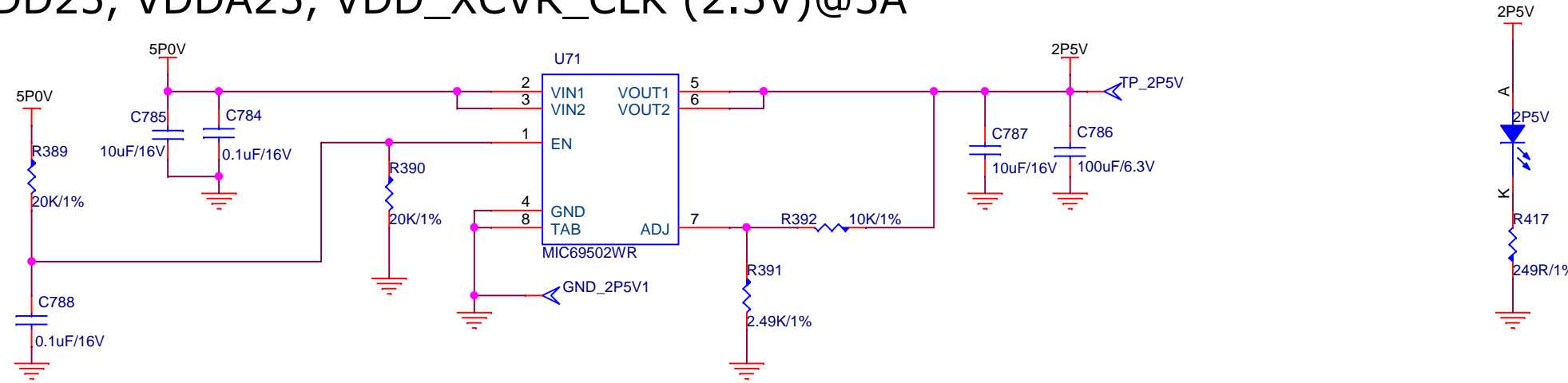


POWER:1P8V(1.8V)@3A

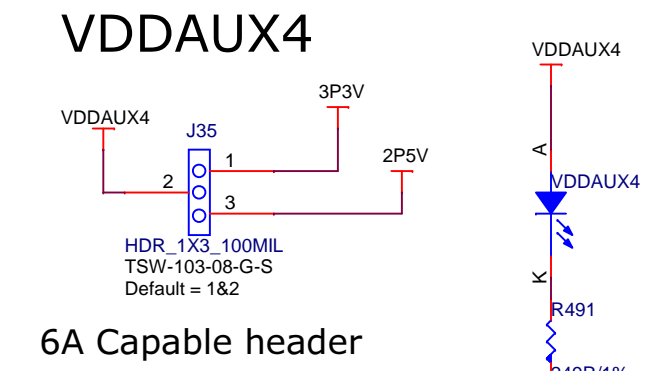
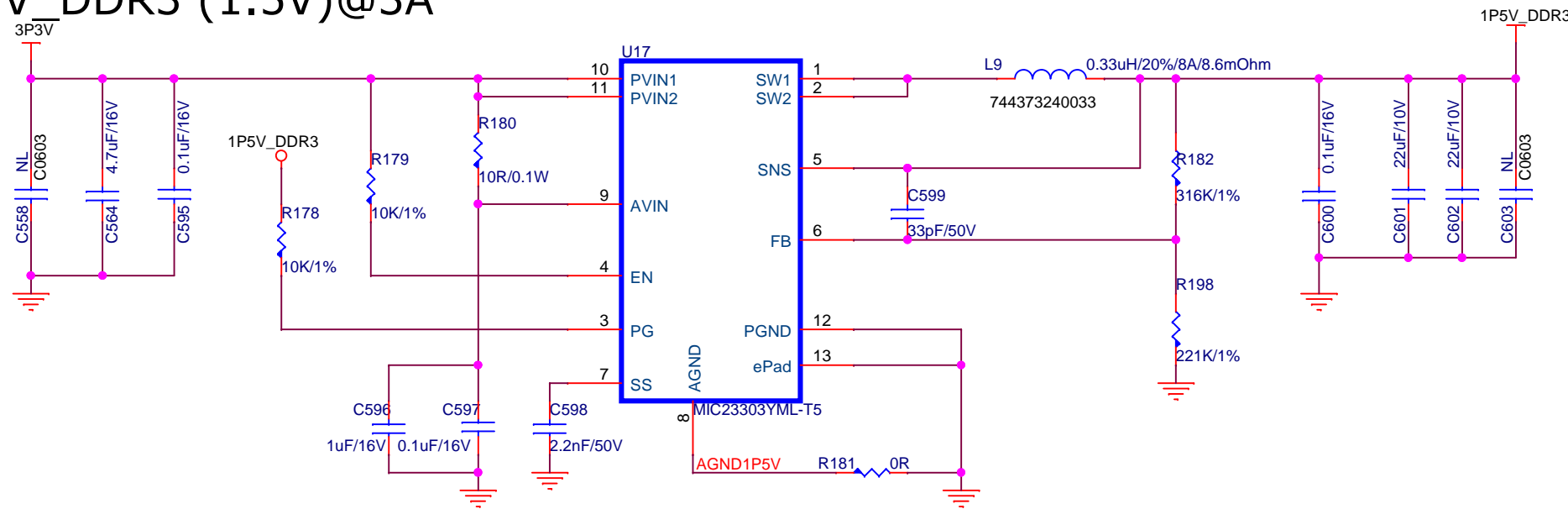


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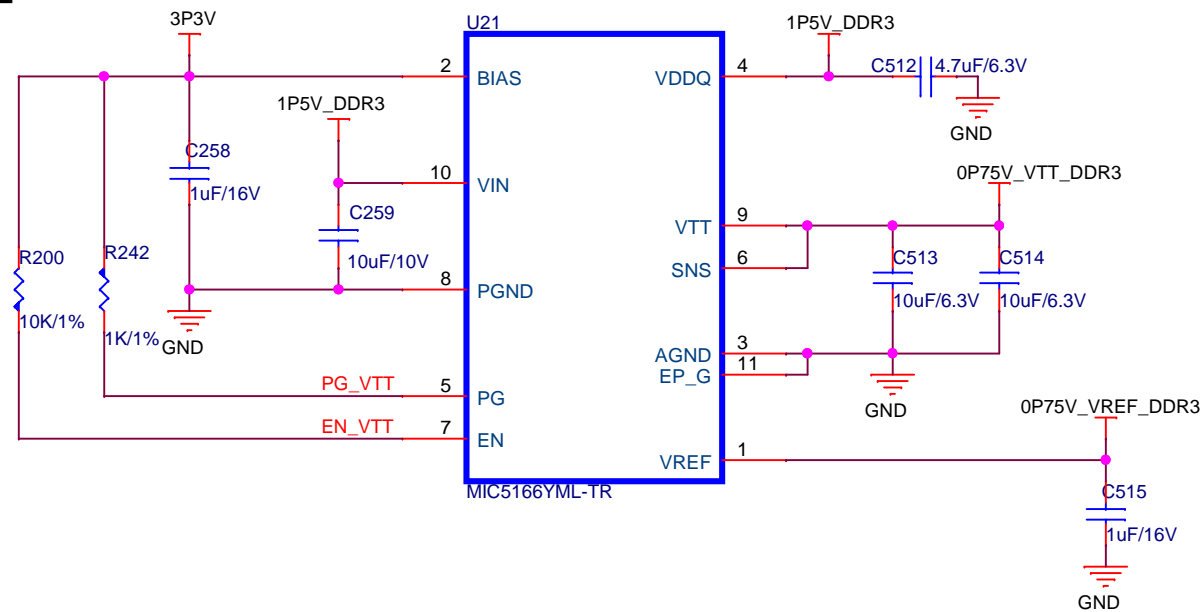
POWER:VDD25, VDDA25, VDD_XCVR_CLK (2.5V)@5A



POWER:1P5V_DDR3 (1.5V)@3A

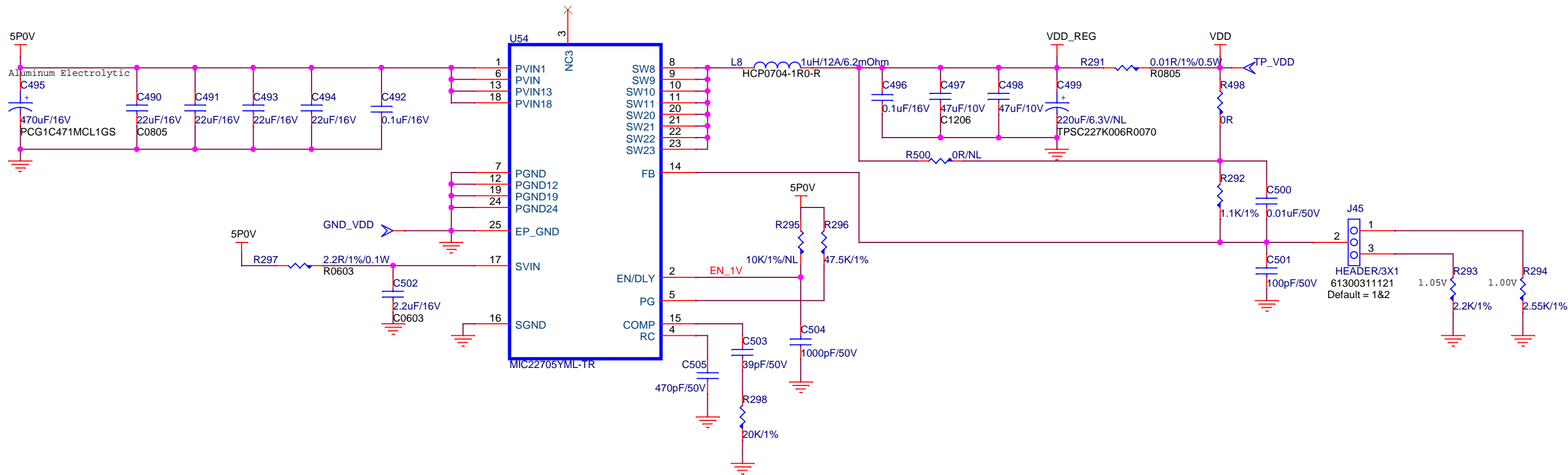


POWER:DDR3 VTT & VREF

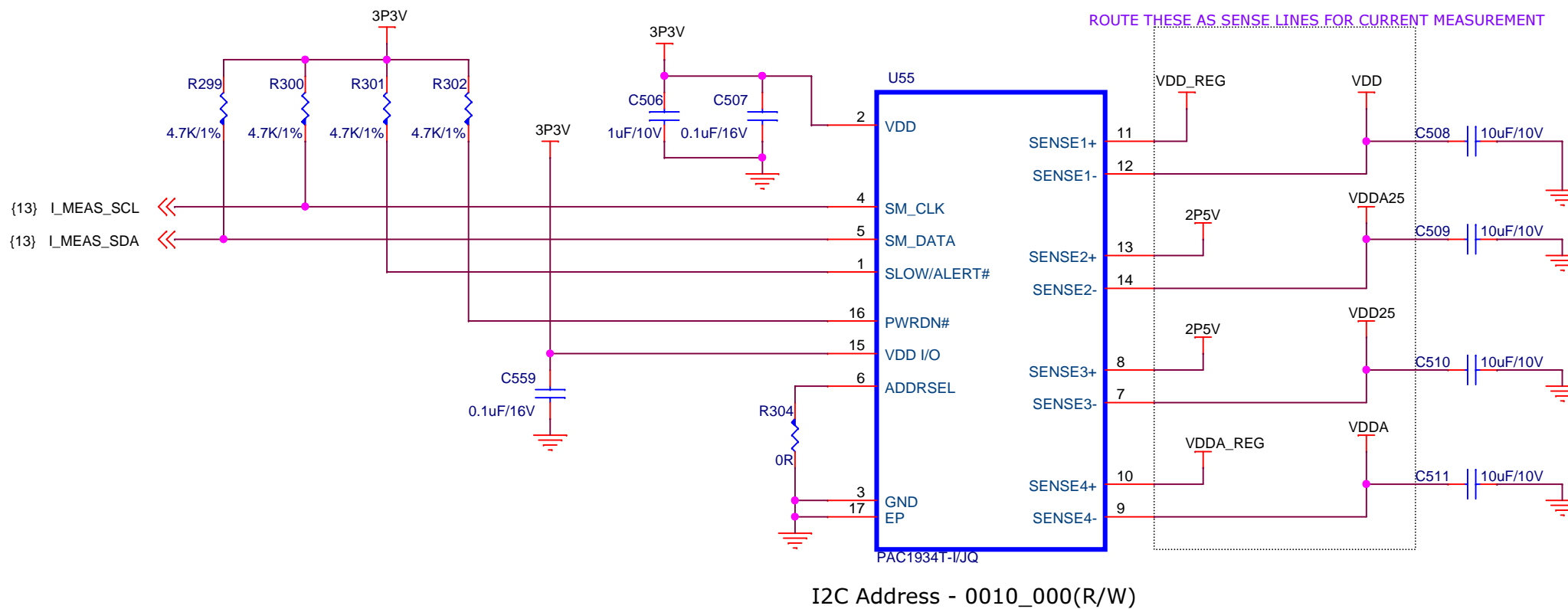


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SIZE B	DOCUMENT NO.	REV 1.0
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POWER:VDD(1.0/1.05V)@7A

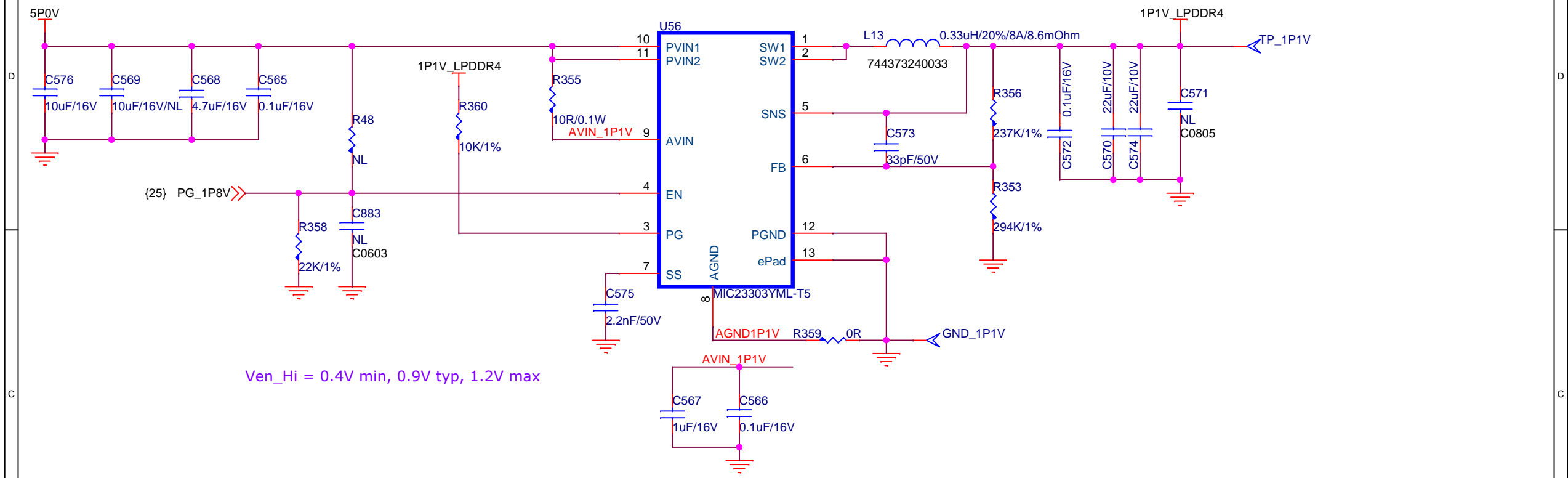


Current Measurement 1



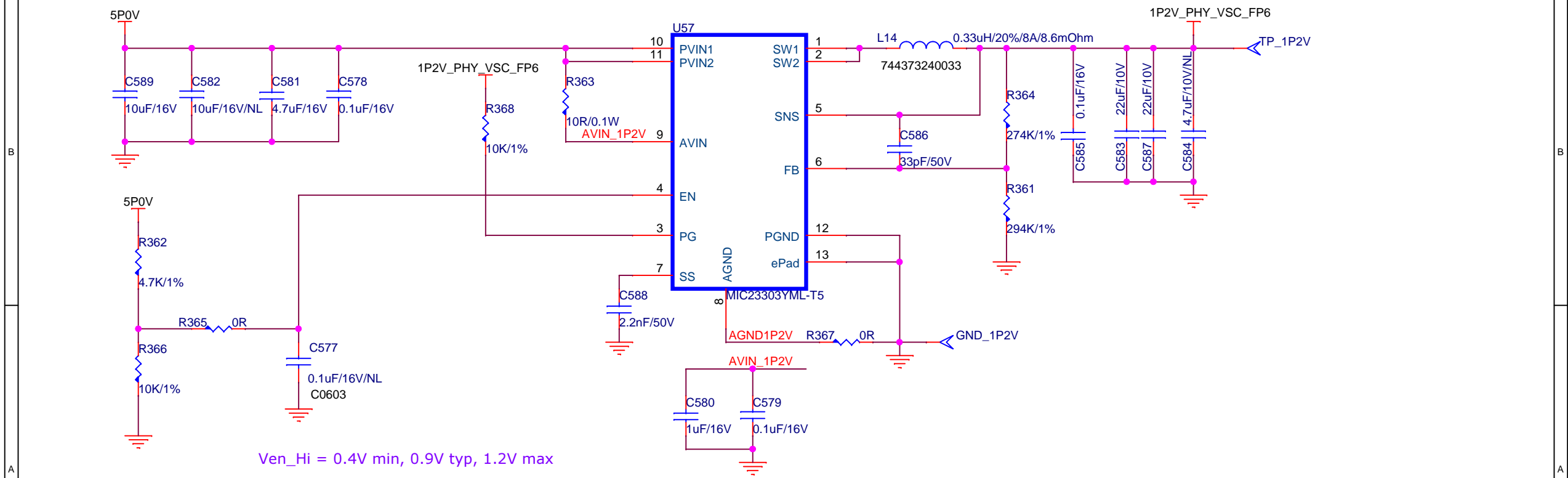
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POWER:1P1V_LPDDR4(1.1V)@3A



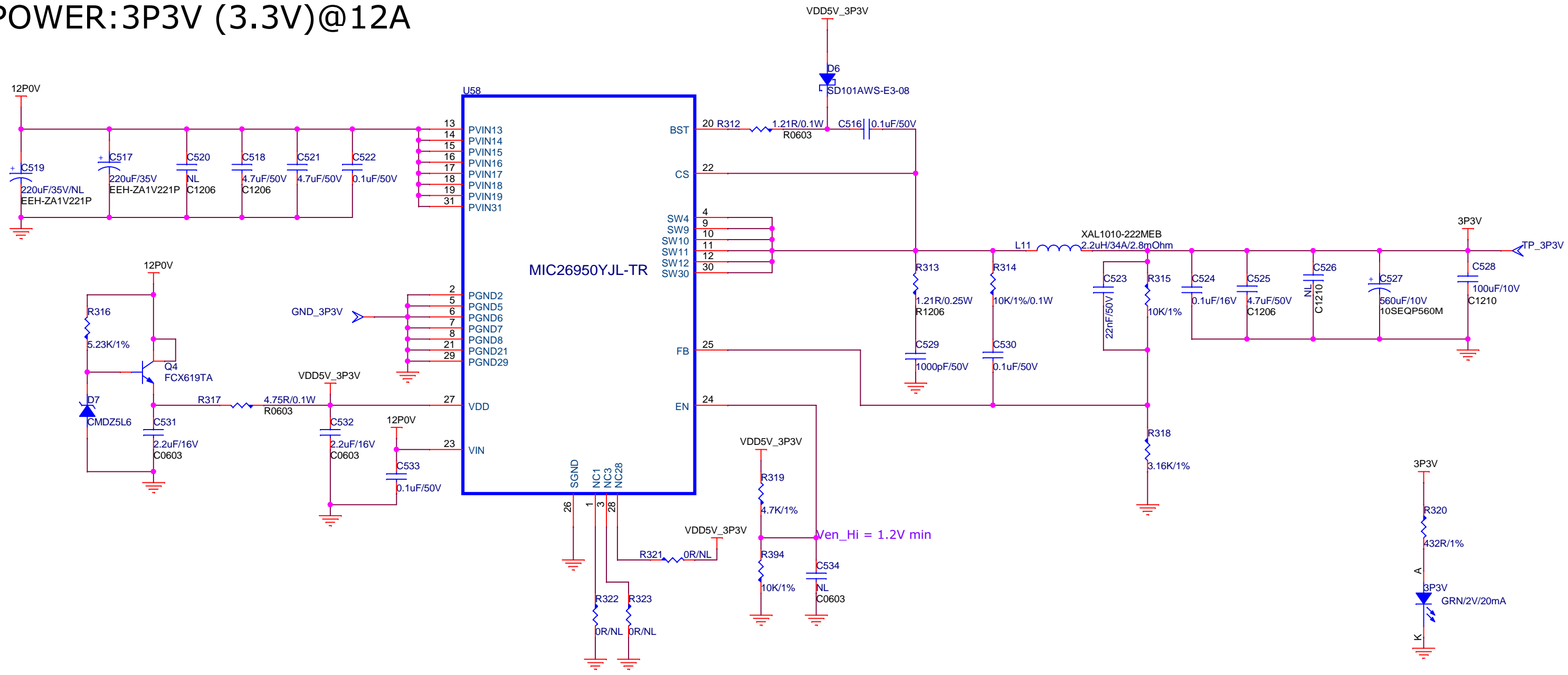
POWER:1P2V_PHY_VSC,FP6(1.2V)@3A

1.2V/3A

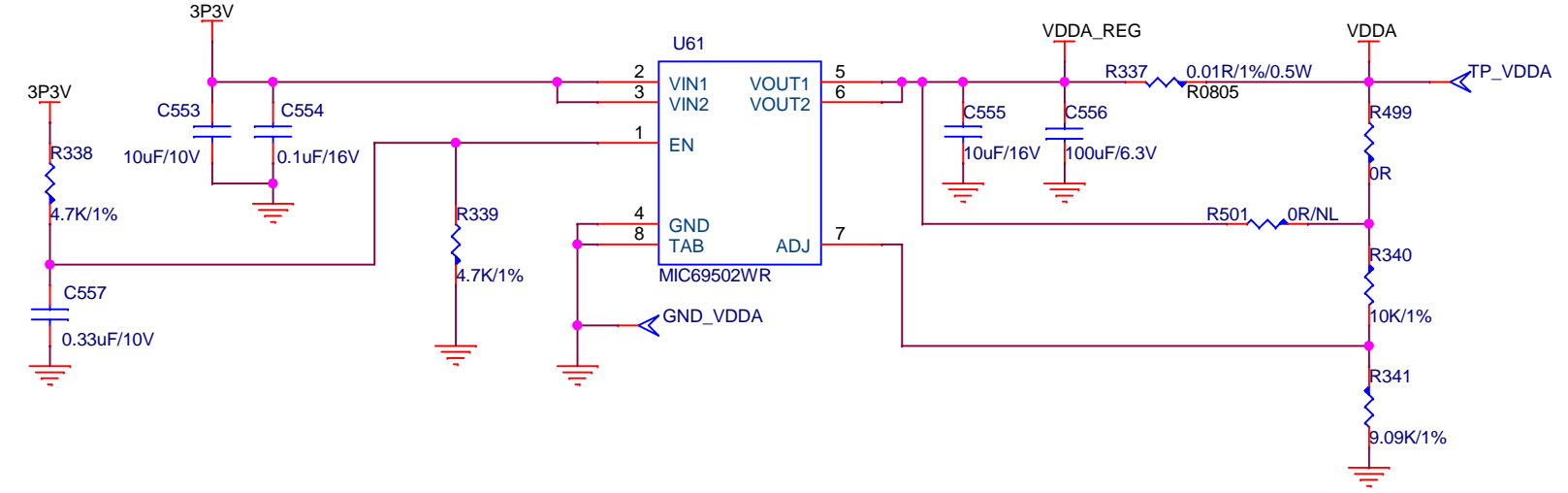


TITLE		
ICICLE_KIT		
SIZE	DOCUMENT NO.	REV
Custom		1.0
DATE:	Tuesday, June 23, 2020	SH 28 OF 29

POWER:3P3V (3.3V)@12A



POWER:VDDA 1.05V@5A



TITLE		
ICICLE_KIT		
SIZE	DOCUMENT NO.	REV
Custom		1.0
DATE:	Tuesday, June 23, 2020	SH 29 OF 29