



Milk-V Titan

V2.1

schematic



PROJECT COVER

Board Name	Milk-V Titan
Board Version	V2.1
Designer	HW
Reviewed by	
CIS Library	YES

			
Project:	Milk-V Titan		
File:	01 Cover		
Date:	Monday, August 10, 2026	Rev:	V2.1
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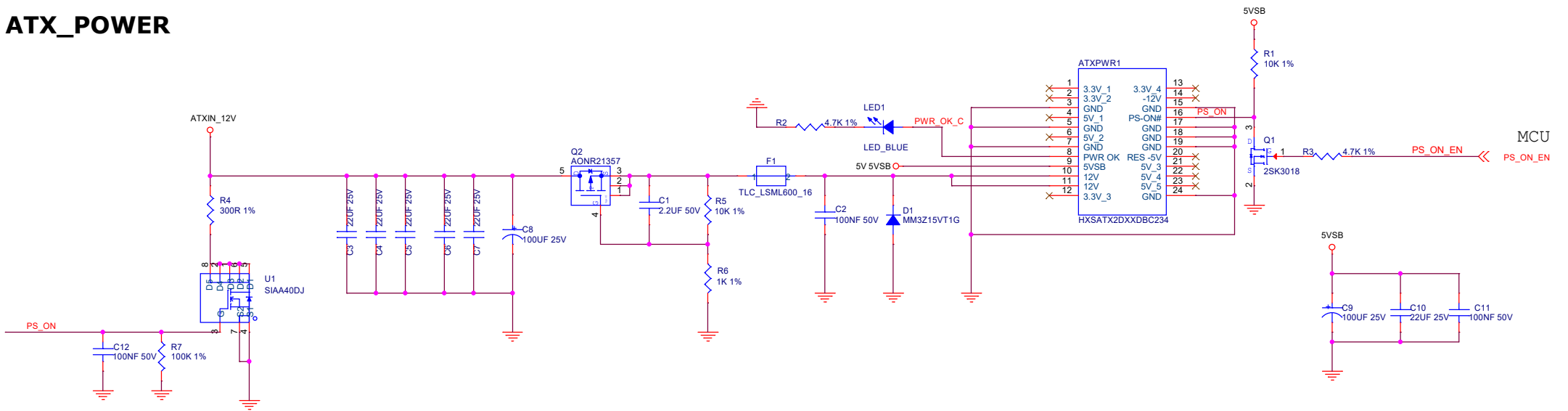
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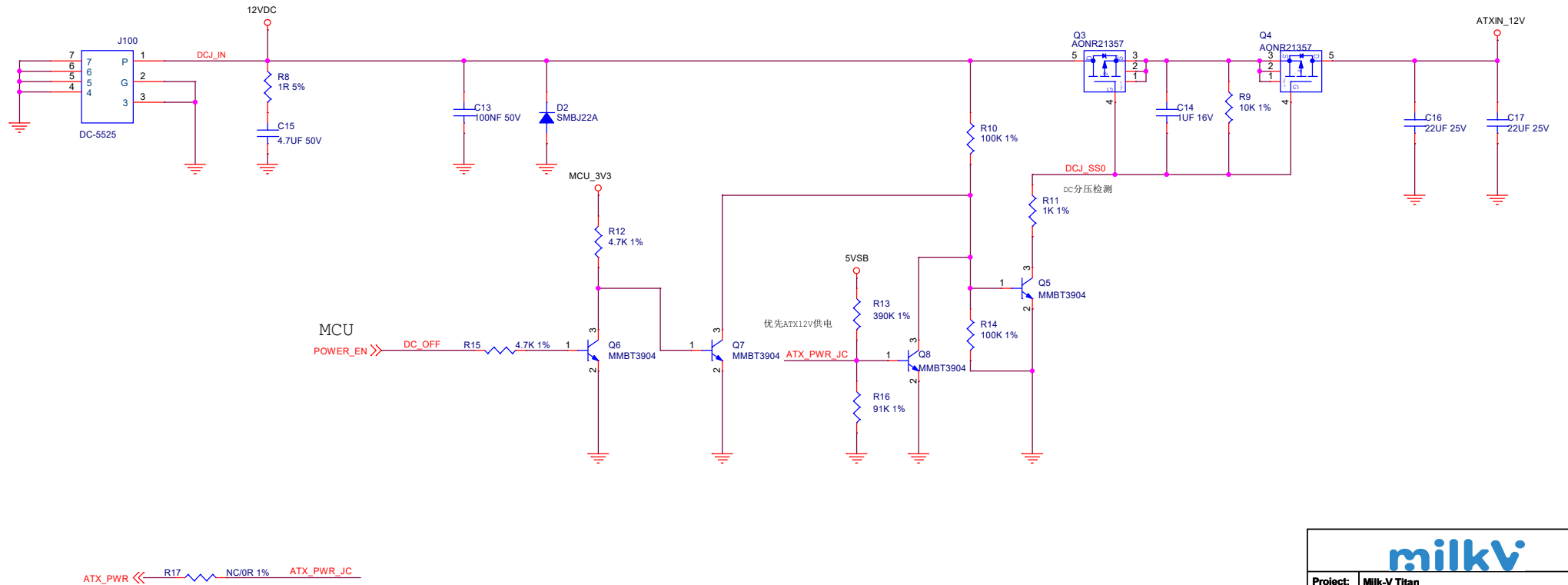


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File: 02 Index			
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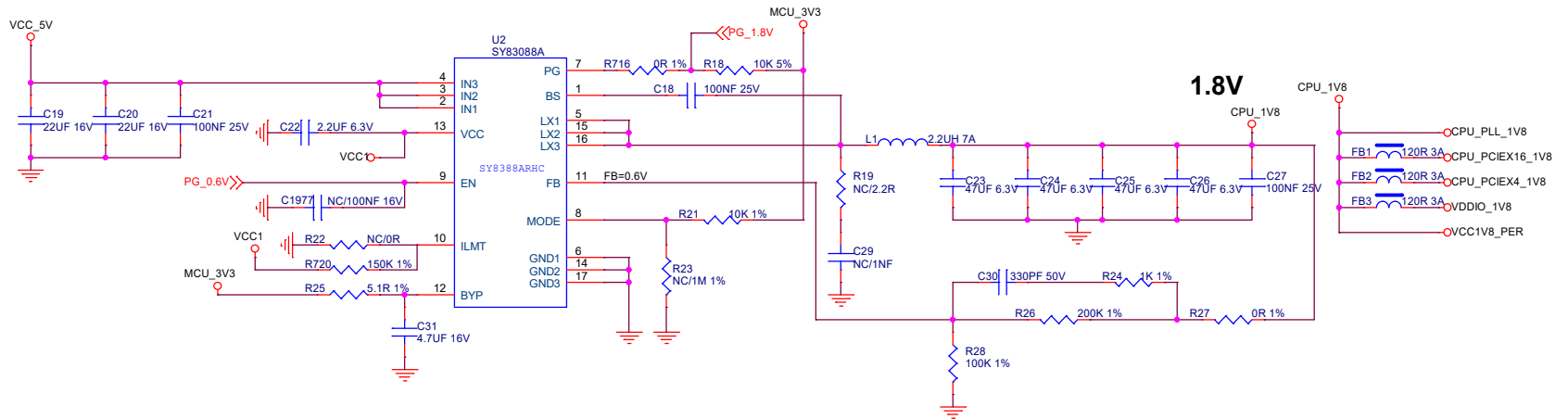
ATX_POWER



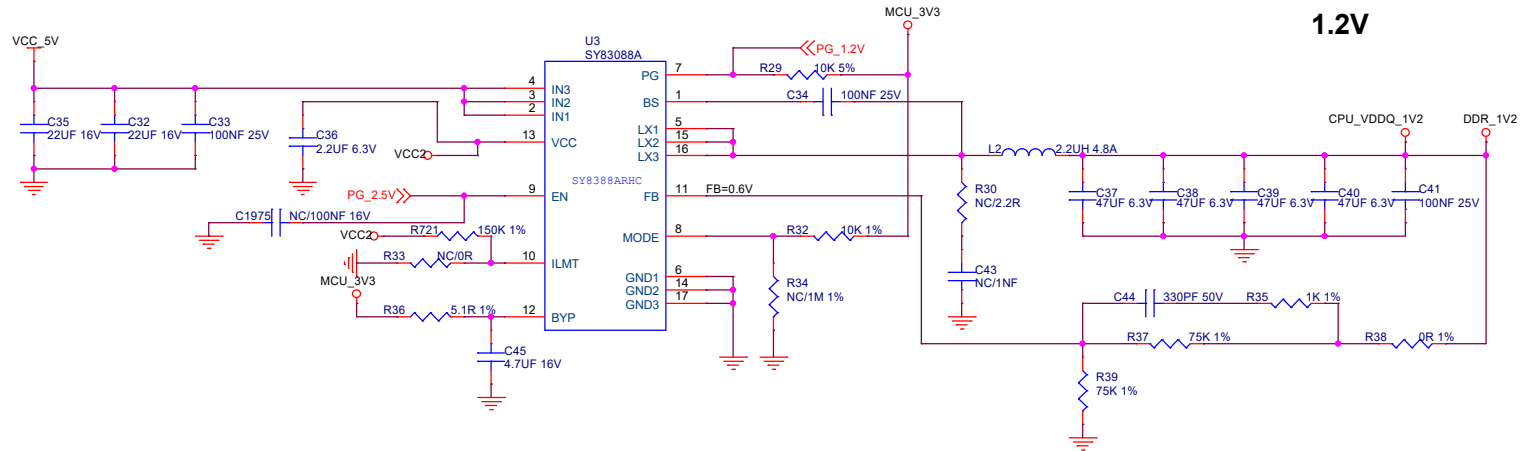
DC_POWER



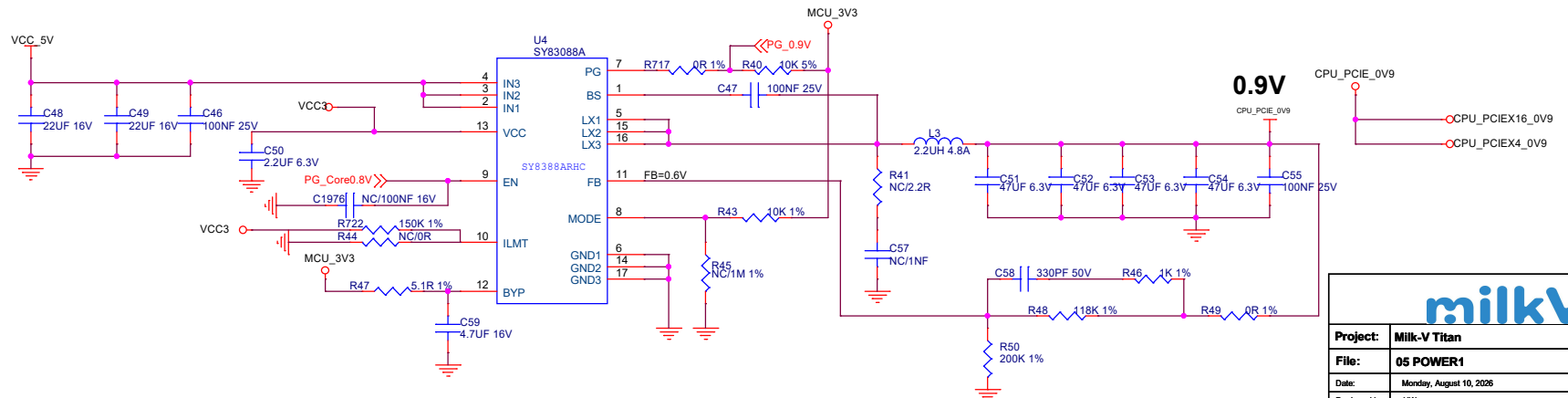
5V to 1.8V



5V to 1.2V

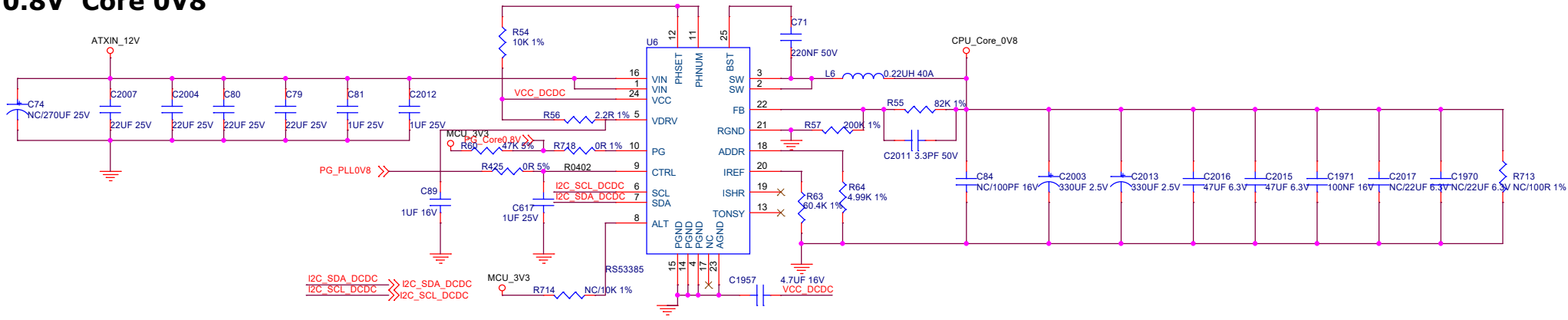


5V to 0.9V

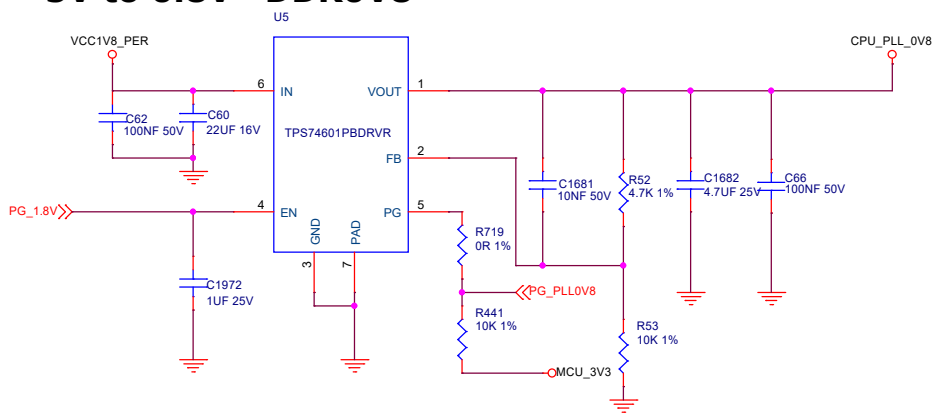


			
Project:	Milk-V Titan		
File:	05 POWER1		
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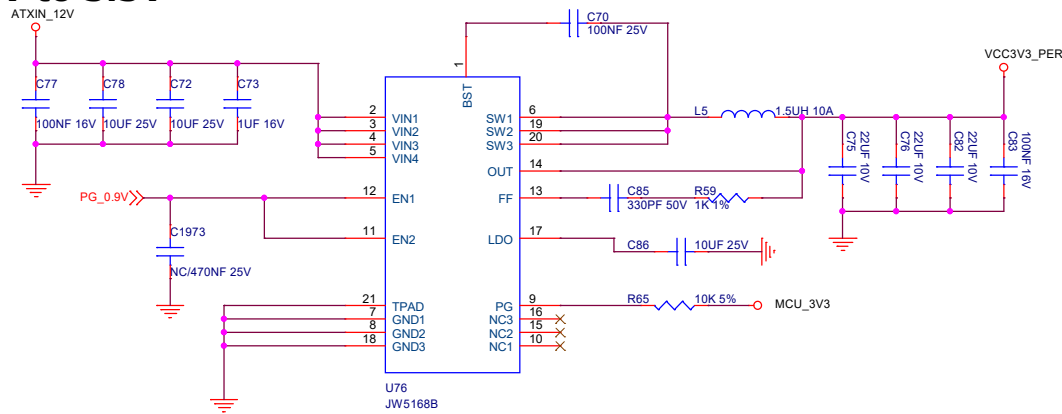
12V to 0.8V Core 0V8



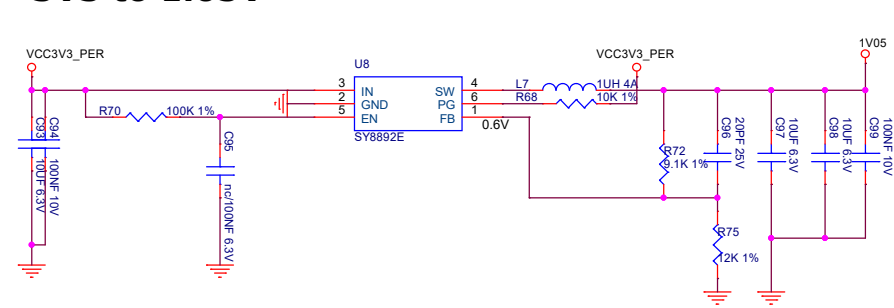
5V to 0.8V DDR0V8



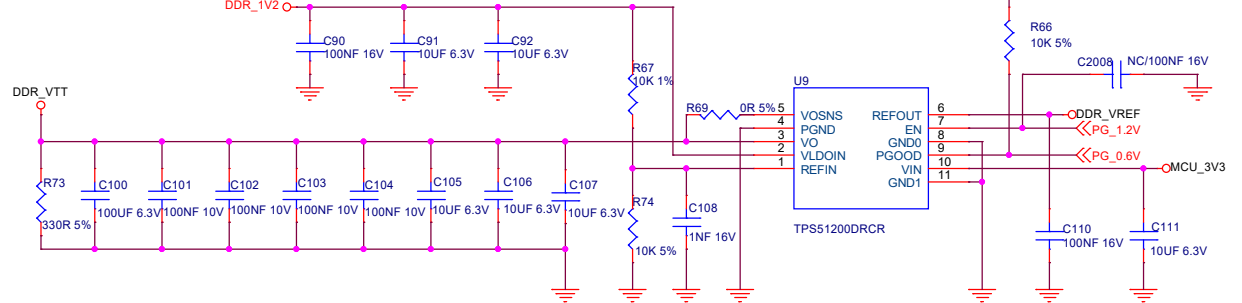
12V to 3.3V



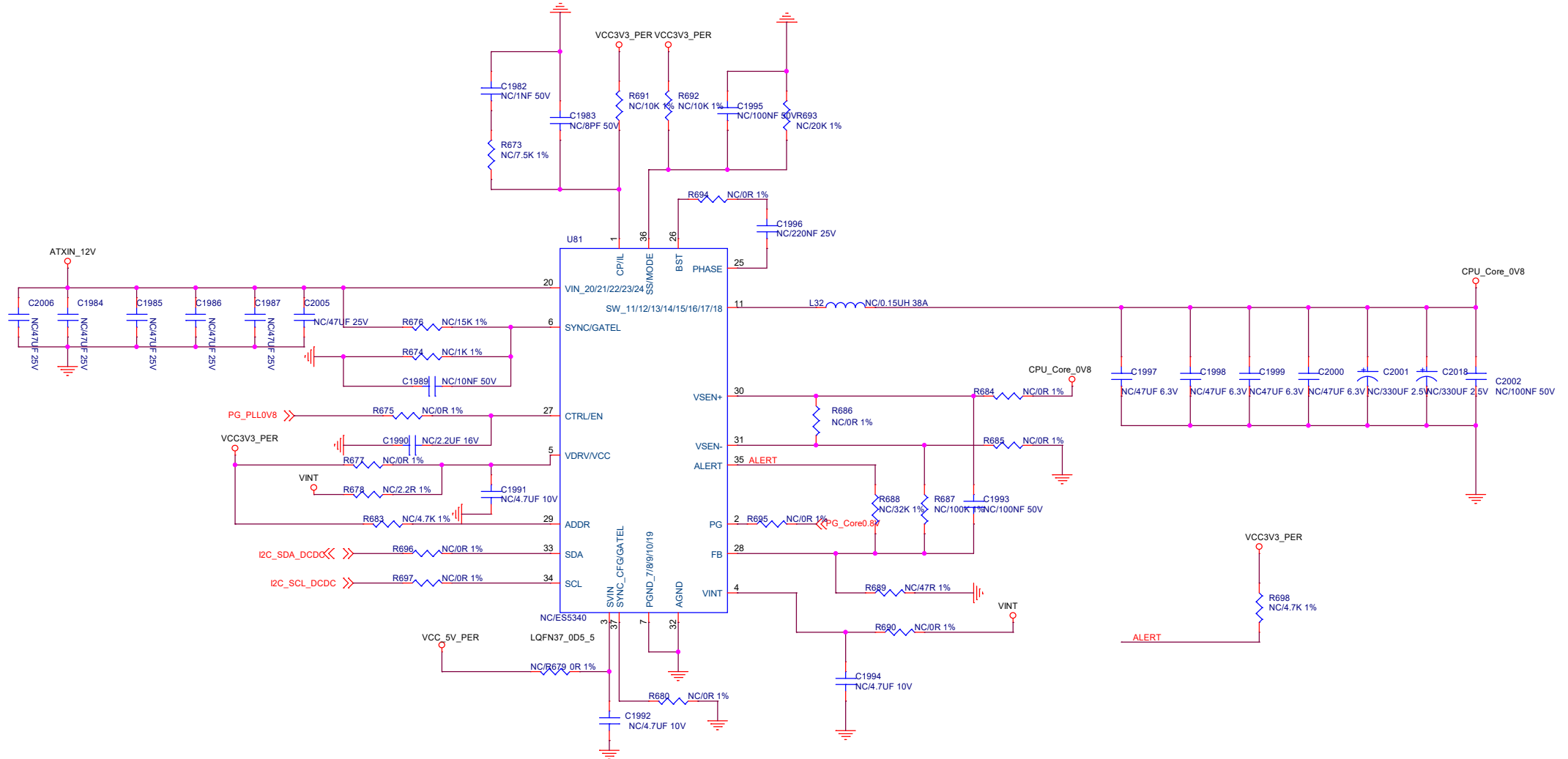
3V3 to 1.05V



3V3 to 0.6V

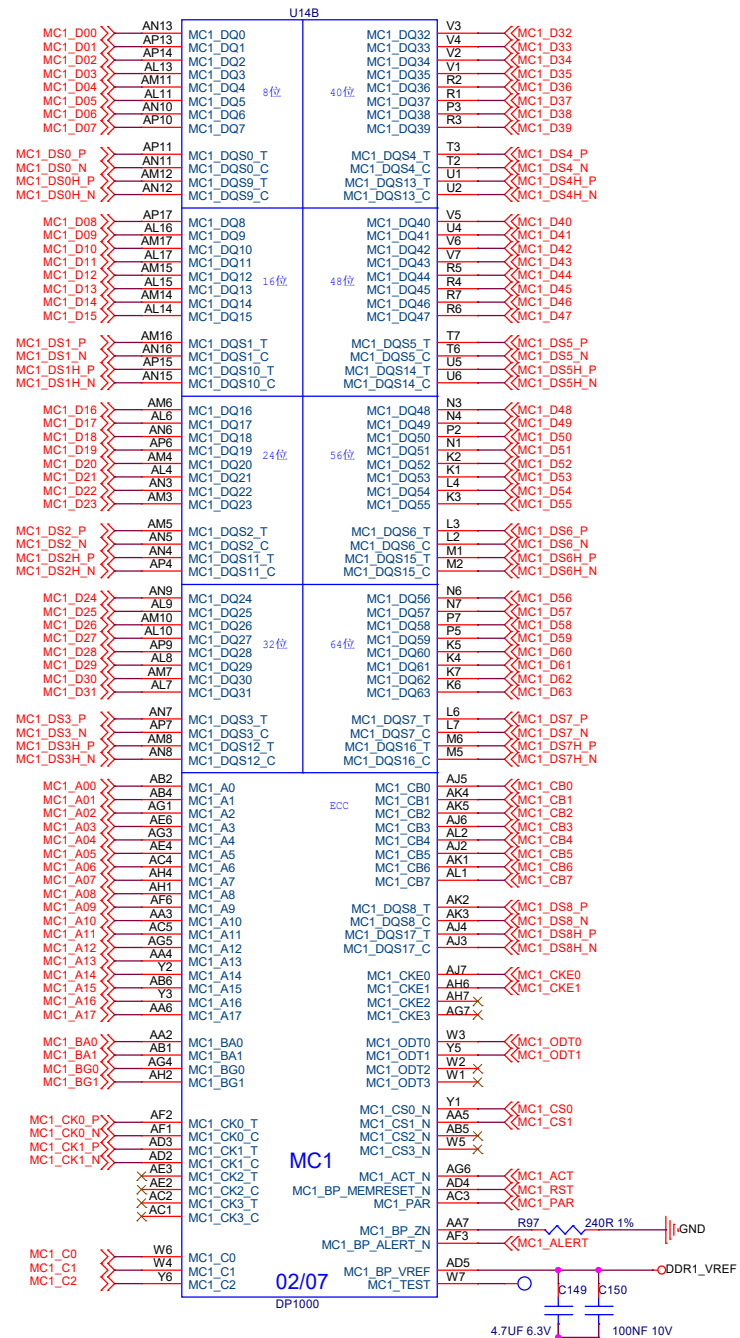
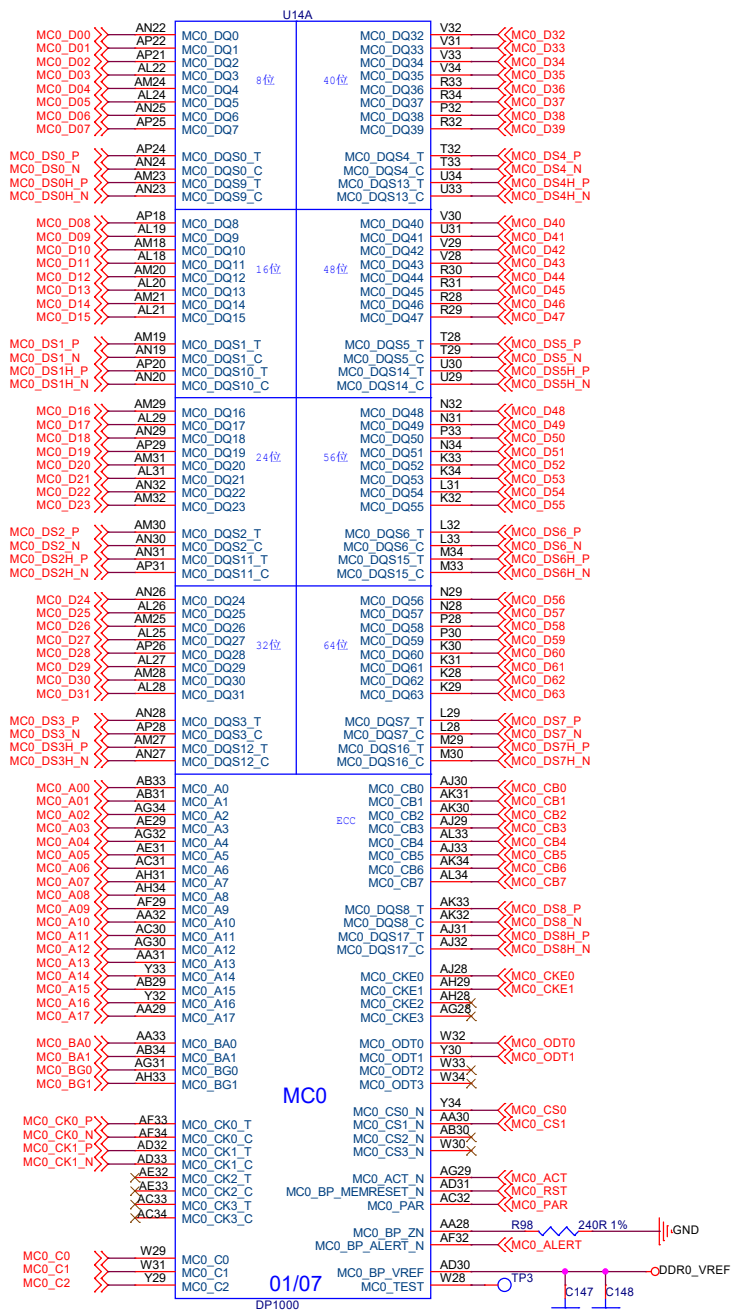


12V to 0.8V Core 0V8(NC)



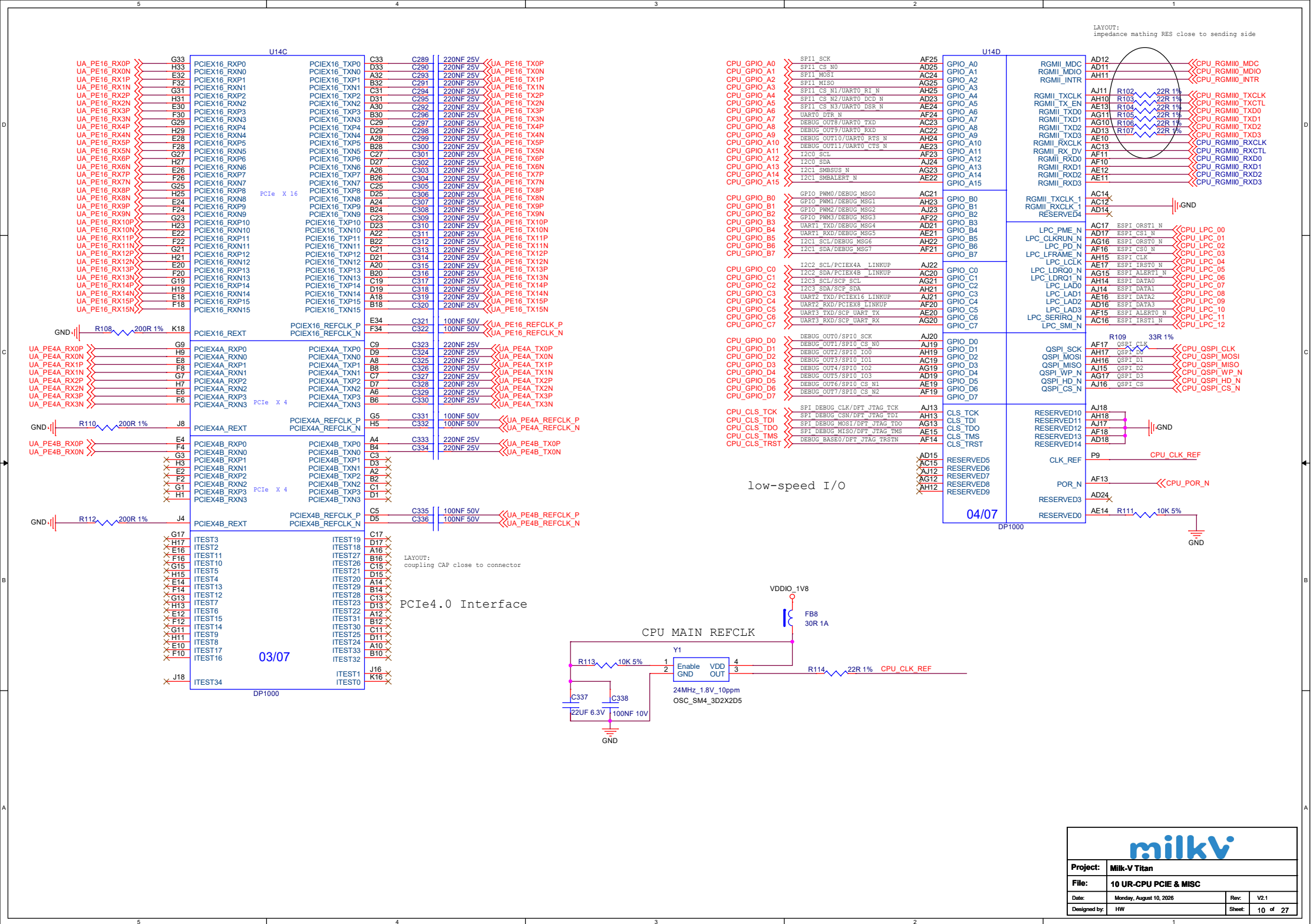
milkv

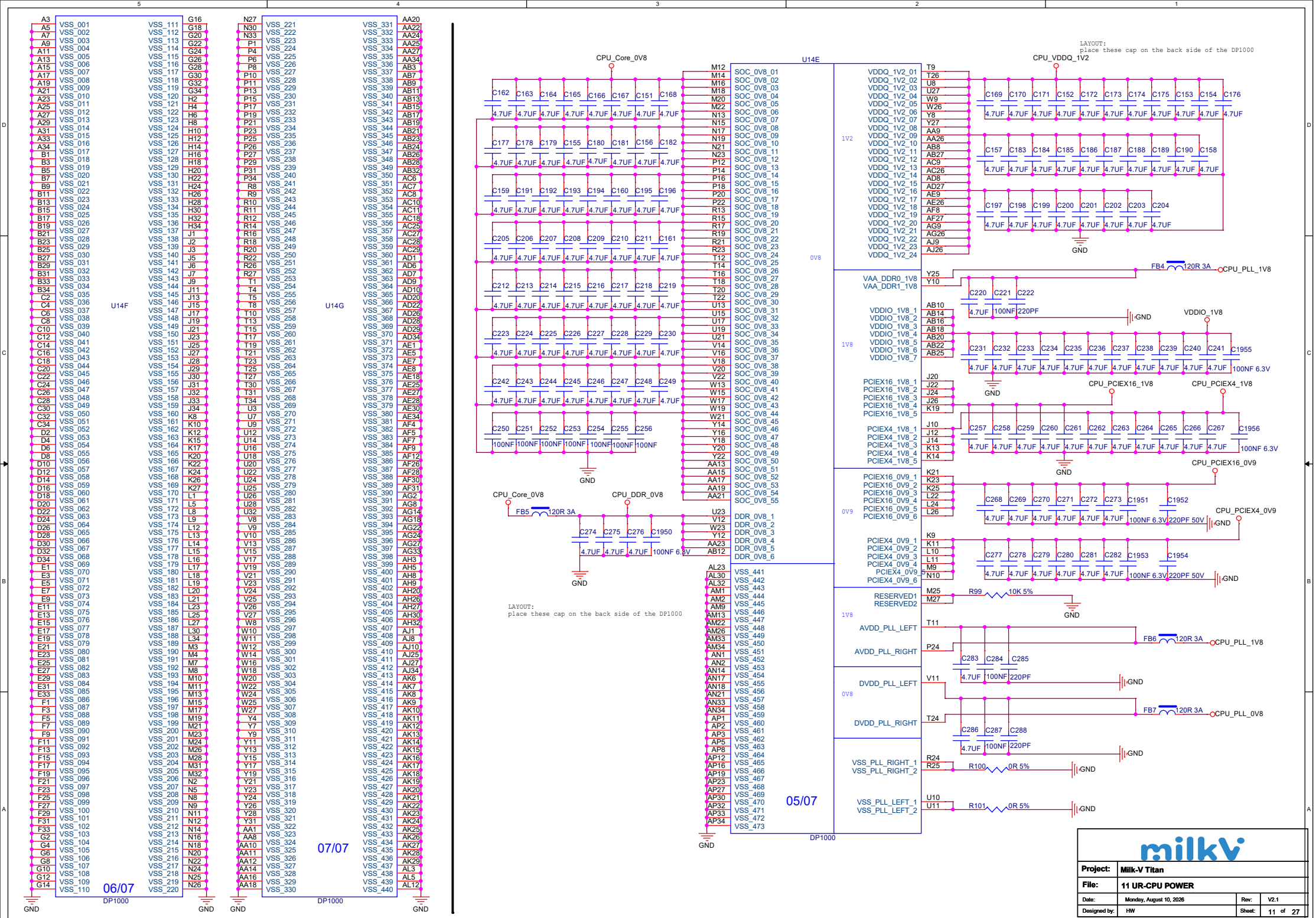
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File:	08 POWER4		
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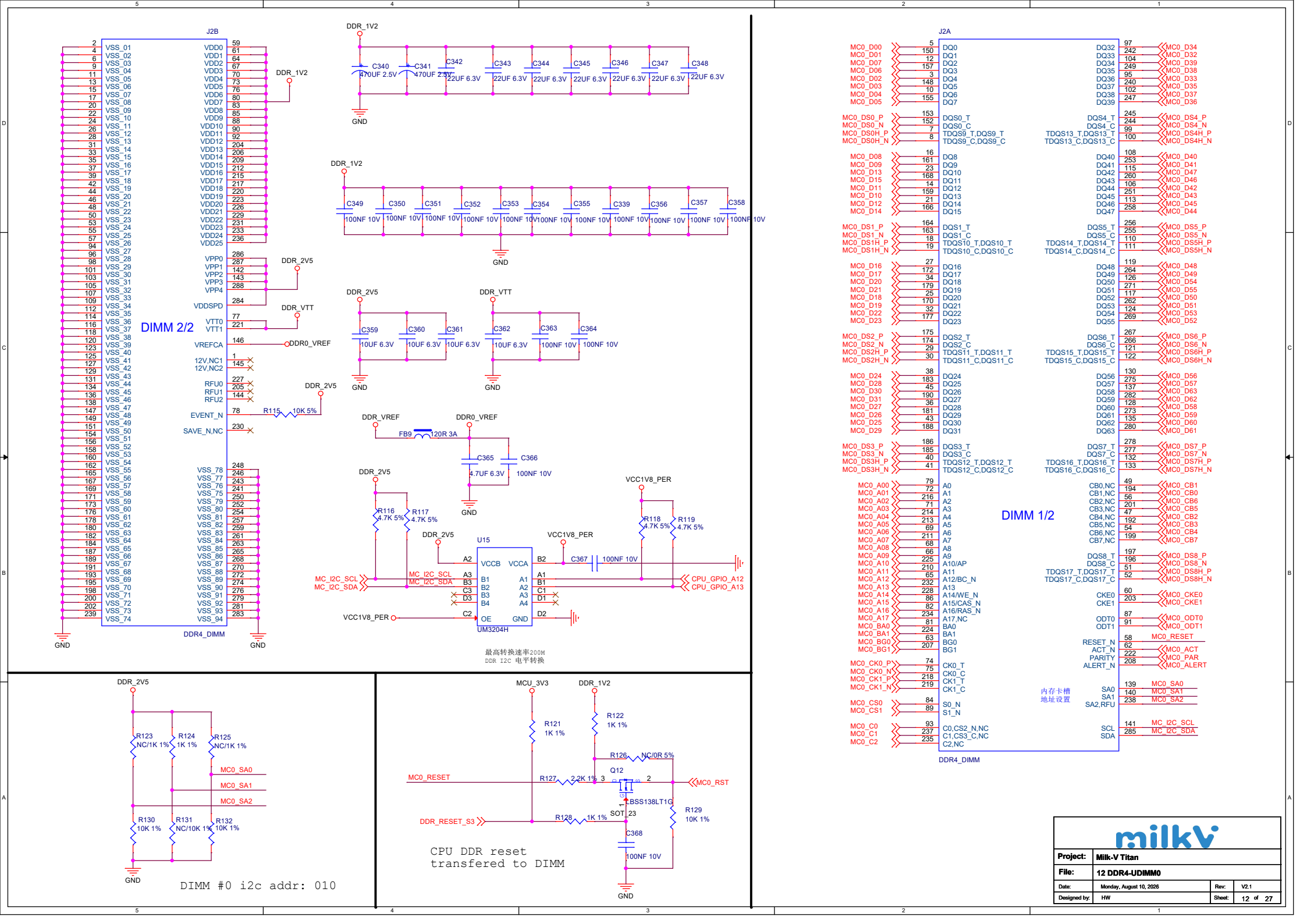


milkV

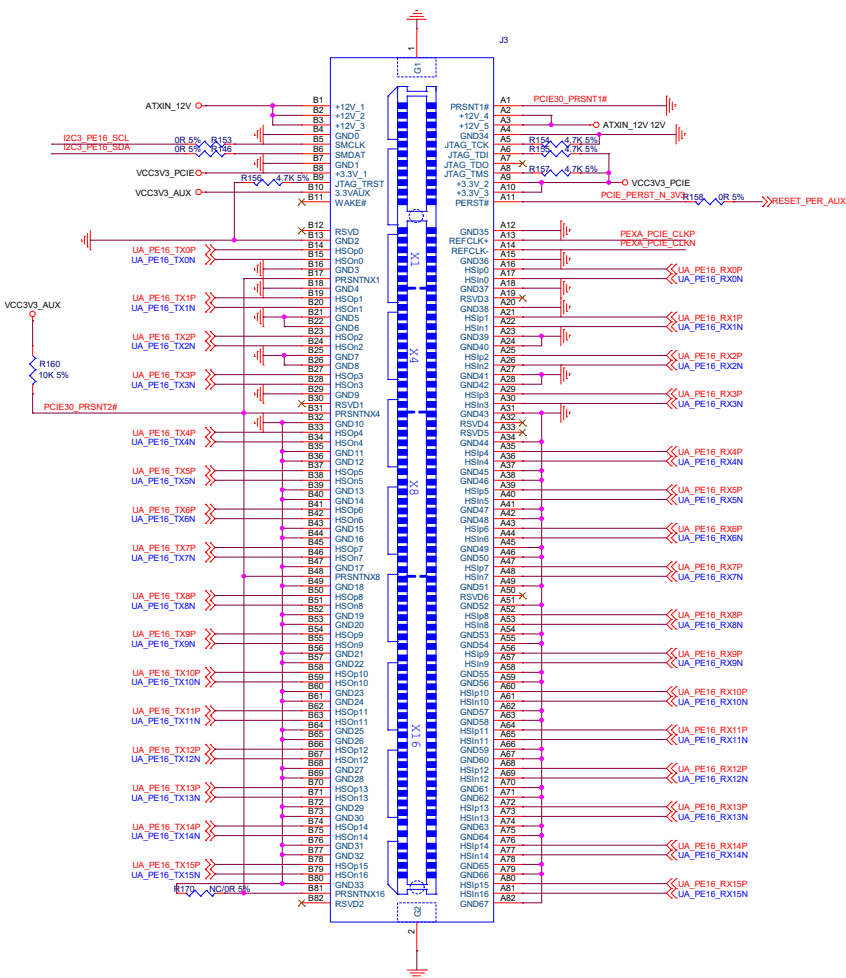
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File:	09 UR-CPU MEM 0/1		
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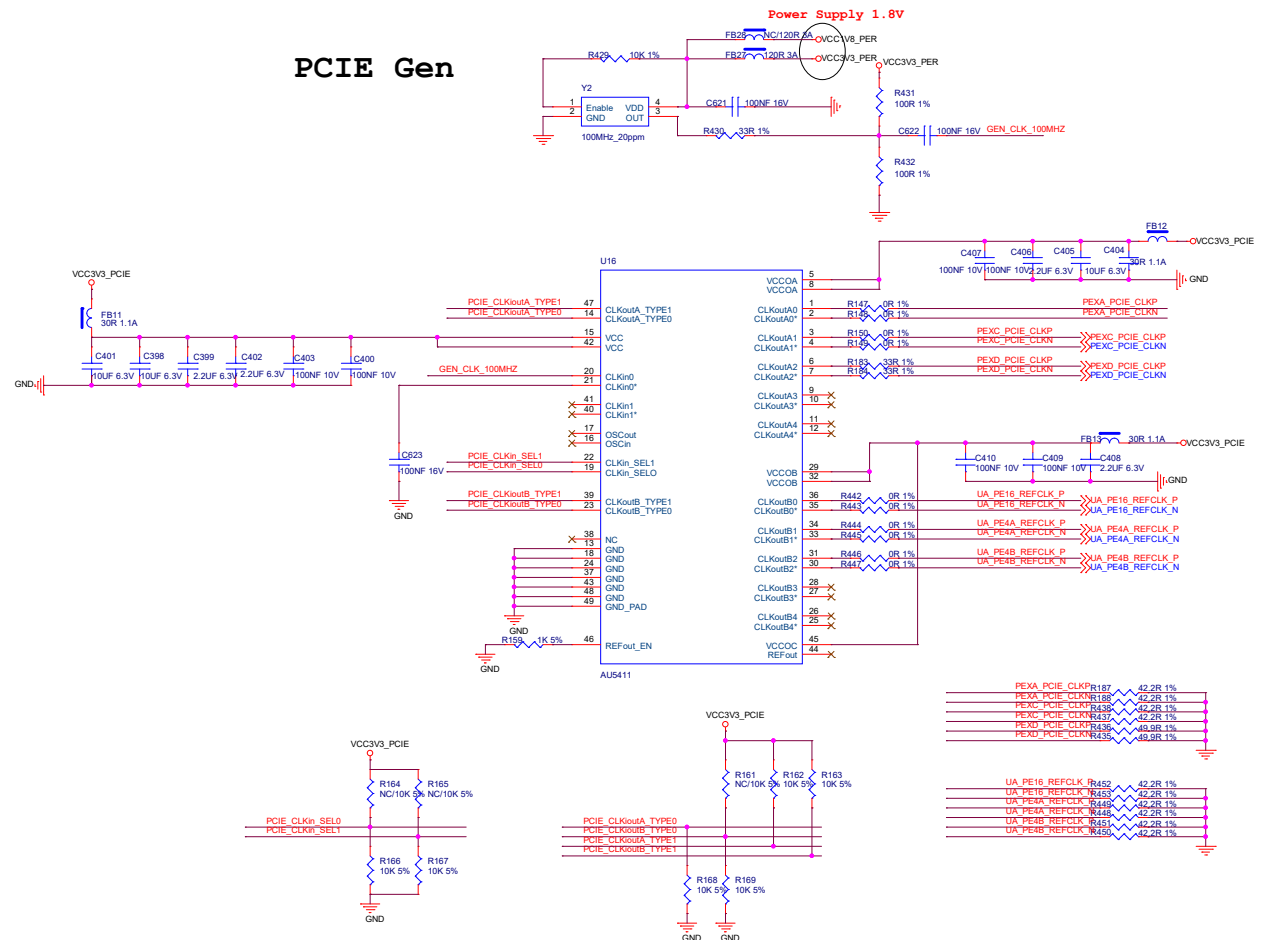




PCIE4.0x16 SLOT

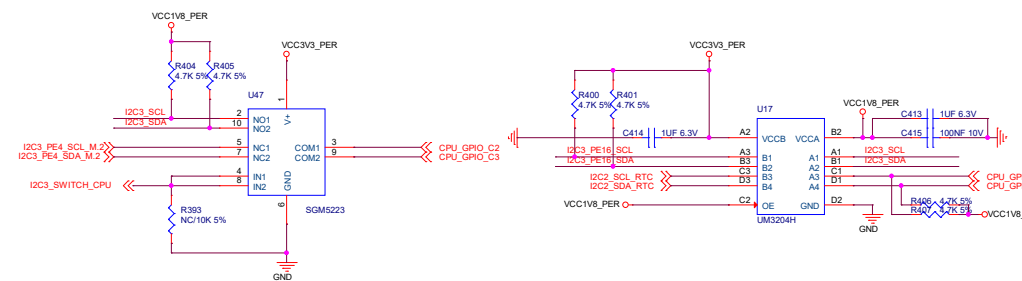
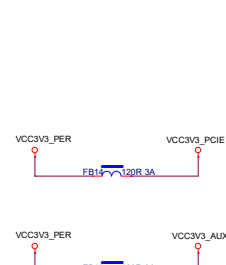


PCIE Gen

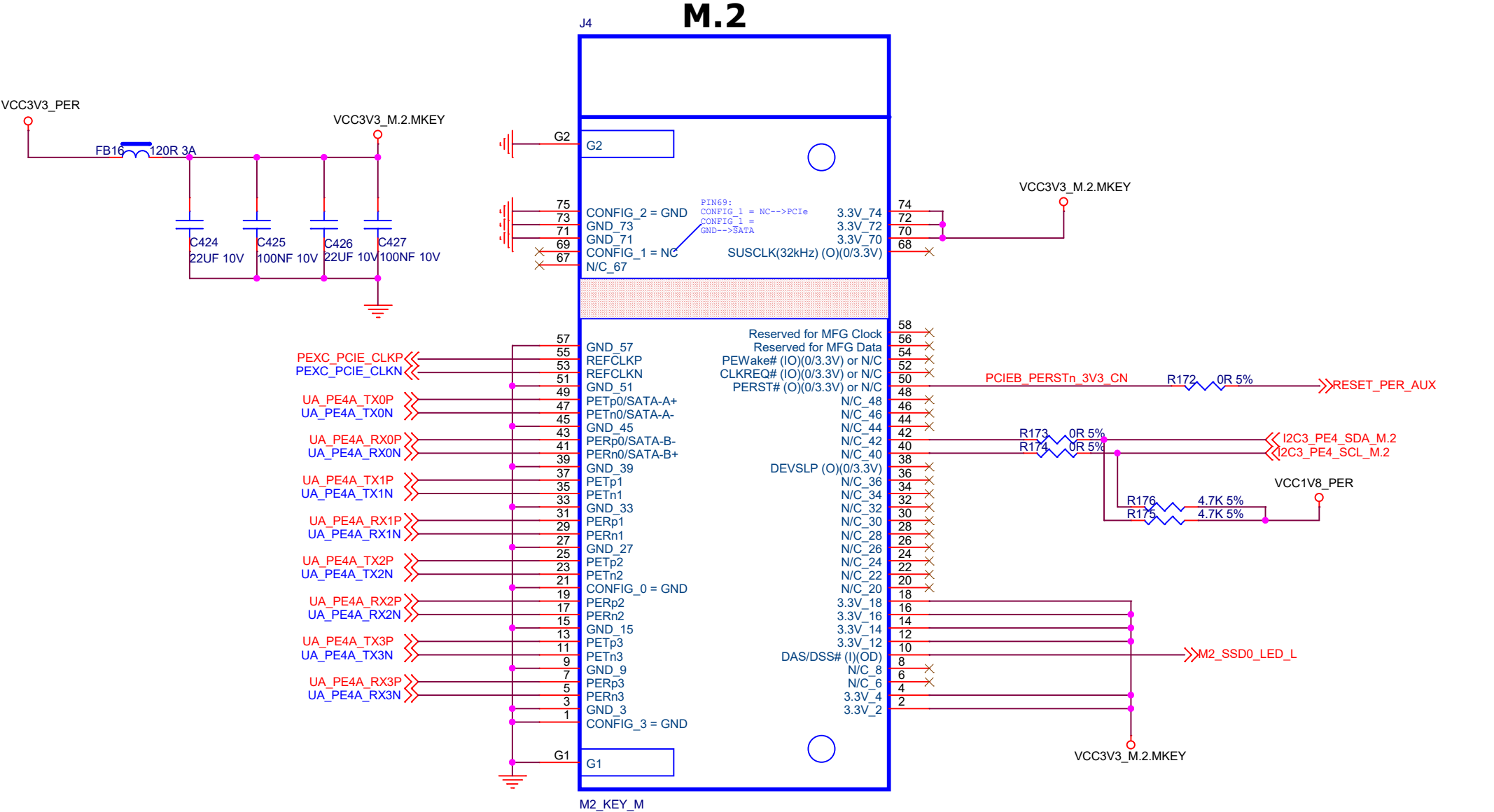


CLKIn_SEL[1]	CLKIn_SEL[0]	Selected Clock
0	0	CLKIn0, CLKIn0*
0	1	CLKIn1, CLKIn1*
1	0	Crystal Or Crystal Bypass AC Coupled mode
1	1	Crystal bypass DC Coupled mode

CLKOUTX_TYPE1	CLKOUTX_TYPE0	CLK Buffer Type
0	0	LVPECL
0	1	LVDS
1	0	HCSL
1	1	HIZ

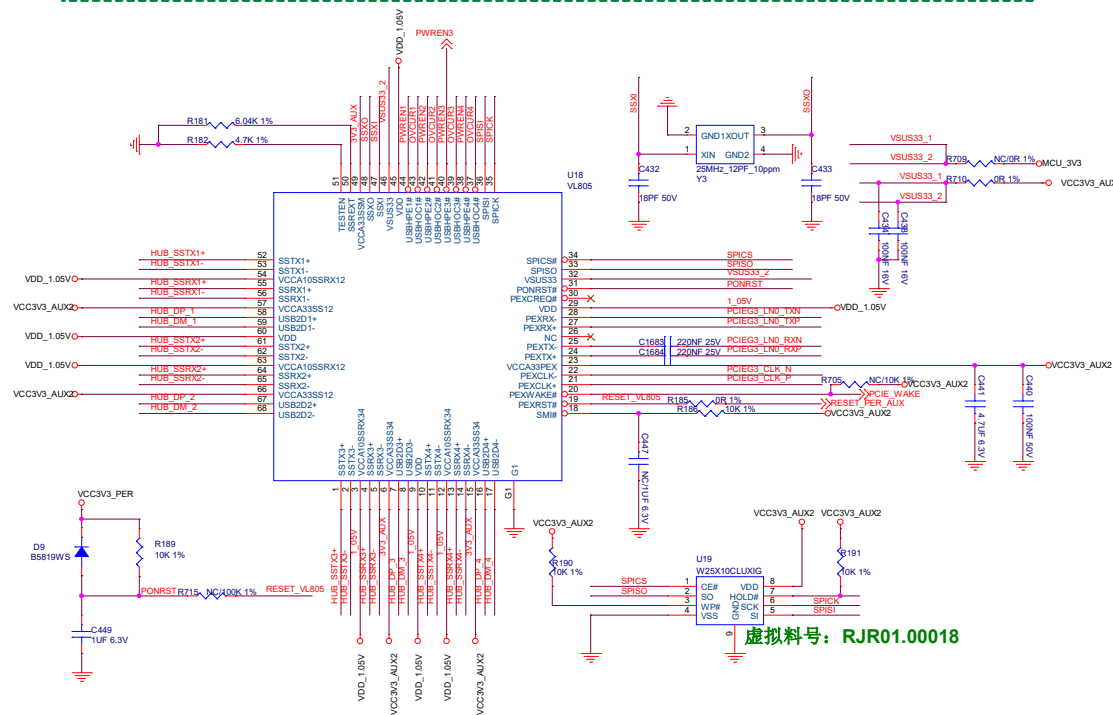
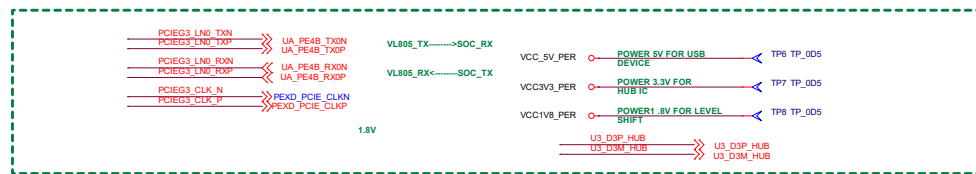


PCIEX4 M.2 MKEY

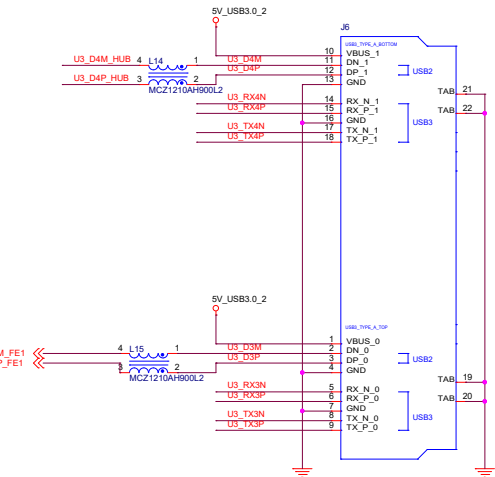
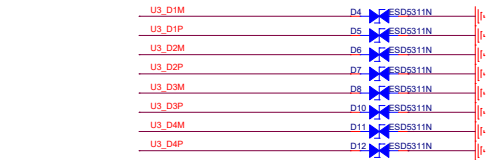
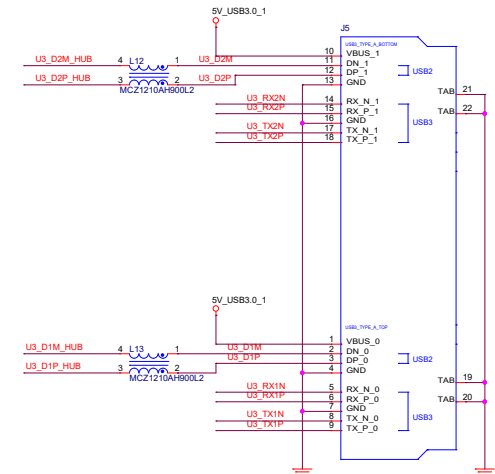
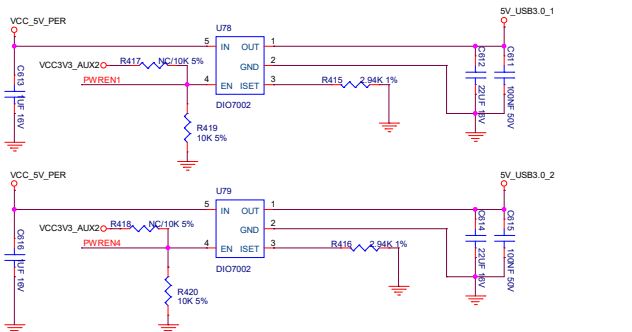
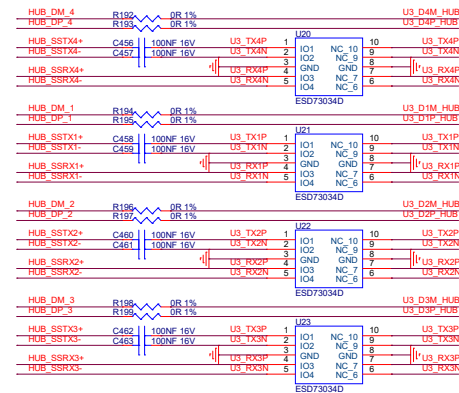


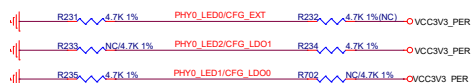


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File:	15 PCIEX4 M.2.MKEY		
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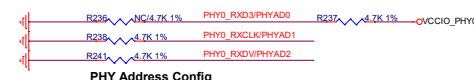


虚拟料号: RJR01.00018





RGM11 Power Source	CFG_EXT	CFG_LDO[1:0]	COMMENTS
External 3.3V	1'b1	2'b00	CFG_EXT: 1:External Power Source for IO pad 0:Integrated LDO for IO pad
External 1.8V	1'b1	2'b10	
Internal 1.8V (default)	1'b0	2'b10	CFG_LDO[1:0] 10:1.8V



PHY Address Config



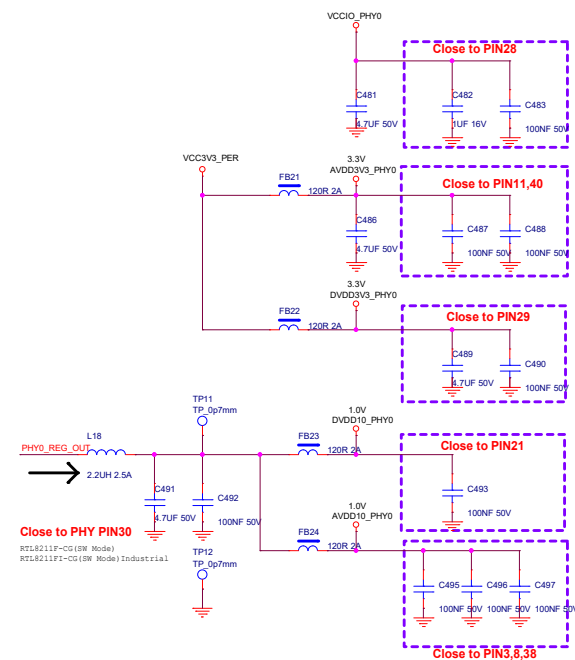
Pull-up for additional 2ns delay to RXC for data latching



Pull-up for additional 2ns delay to TXC for data latching

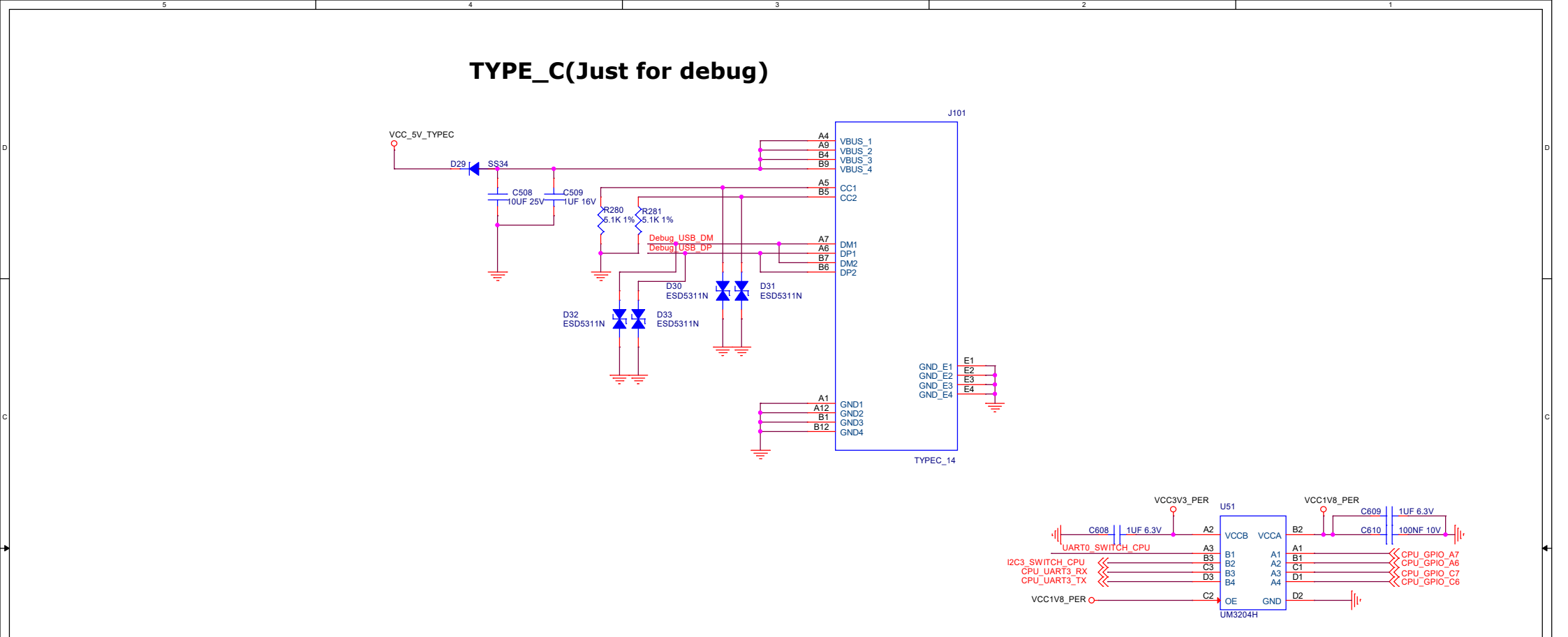


Pull-up to disable PLL @ ALDPS mode(Low power mode)



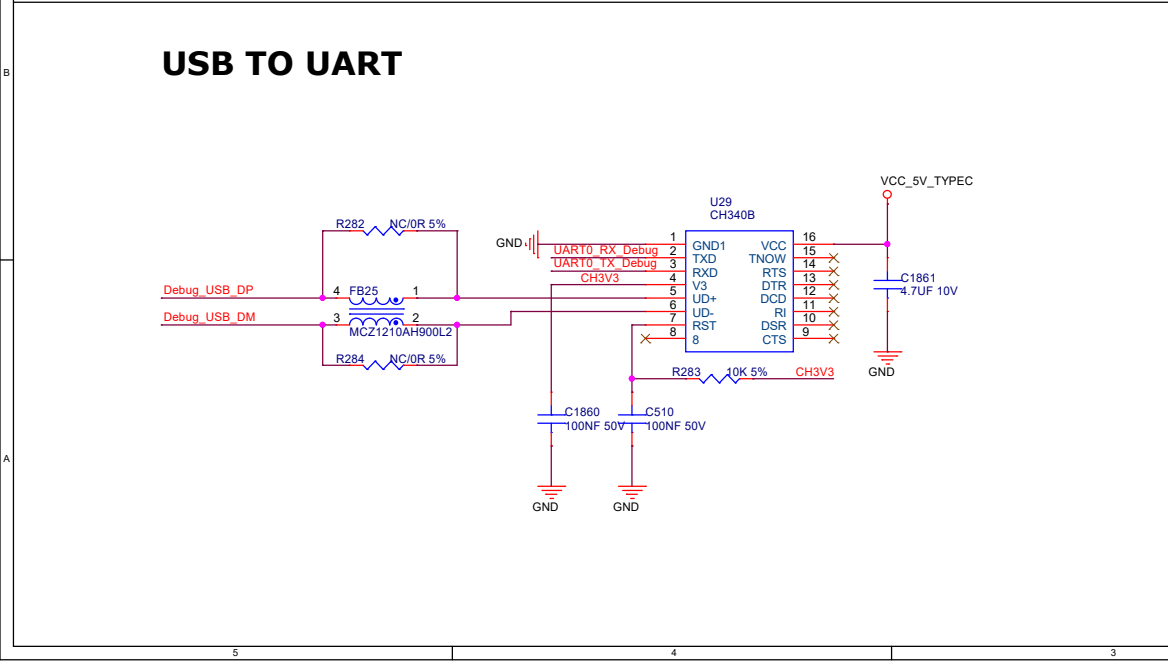
TYPE_C(Just for debug)

The schematic diagram illustrates a Type-C connector (J101) configured for debug purposes. The connector has pins A4, A9, B4, B9, A5, B5, A7, A6, B7, B6, A1, A12, B1, B12, and ground pins E1, E2, E3, E4. The circuit includes a VCC_5V_TYPEC input, a diode D29, a MOSFET SS34, capacitors C508 (10uF 25V) and C509 (1uF 16V), resistors R280 and R281 (5.1K 1%), and four ESD protection diodes D30, D31, D32, and D33. The connector is labeled TYPEC_14.



USB TO UART

The schematic diagram illustrates a USB-to-UART interface circuit. It features a USB connector (U29, CH340B) connected to a USB-to-UART bridge chip (U29, CH340B). The bridge chip has pins for GND1, TXD, RXD, RTS, DTR, DCD, RI, DSR, and CTS. The TXD pin is connected to the TX pin of a UART module (U29, CH340B). The RXD pin is connected to the RX pin of a UART module (U29, CH340B). The RTS pin is connected to the TX pin of a UART module (U29, CH340B). The DTR pin is connected to the RX pin of a UART module (U29, CH340B). The DCD pin is connected to the TX pin of a UART module (U29, CH340B). The RI pin is connected to the RX pin of a UART module (U29, CH340B). The DSR pin is connected to the TX pin of a UART module (U29, CH340B). The CTS pin is connected to the RX pin of a UART module (U29, CH340B). The bridge chip is powered by VCC (5V) and GND. The UART module is powered by VCC (5V) and GND. The circuit also includes a USB connector (U29, CH340B) with pins for DP, DM, and GND. The DP and DM pins are connected to a USB-to-UART bridge chip (U29, CH340B). The GND pin is connected to ground. The bridge chip is powered by VCC (5V) and GND. The UART module is powered by VCC (5V) and GND.



UART SWITCH

3V3

UART0_SWITCH_CPU

UART0_SWITCH_BMC

UART0_TX_Debug

UART0_RX_Debug

UART0_TX_BMC

UART0_RX_BMC

R700 10K 1%

R669 NC/0R 5%

R699 0R 5%

R285 NC/10K 5%

VCC3V3_PER

U30 SGM5223

COM1

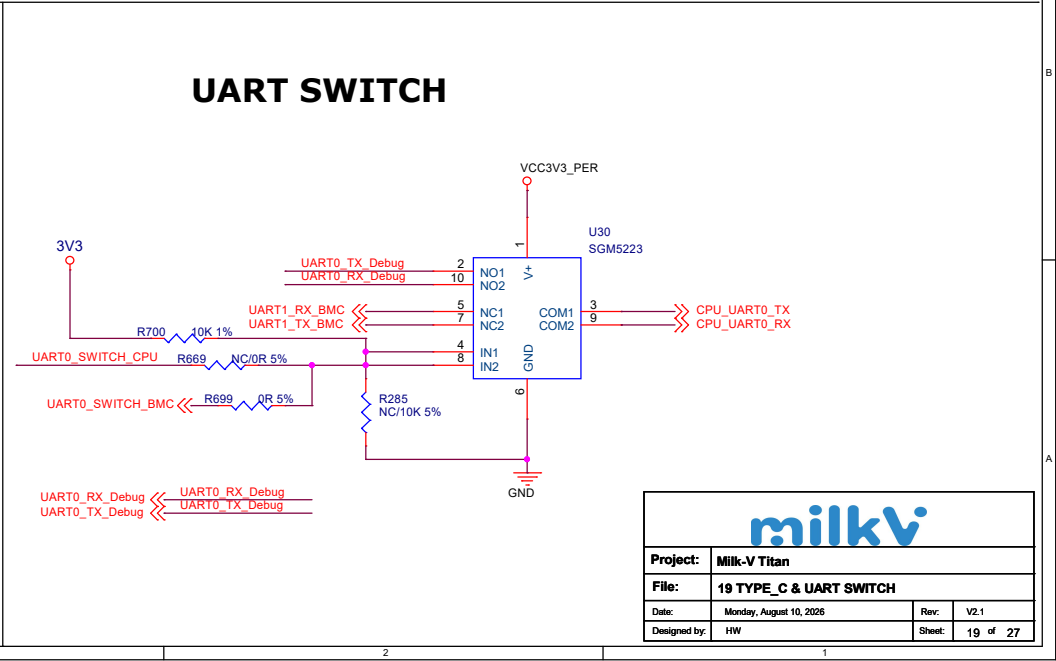
COM2

CPU_UART0_TX

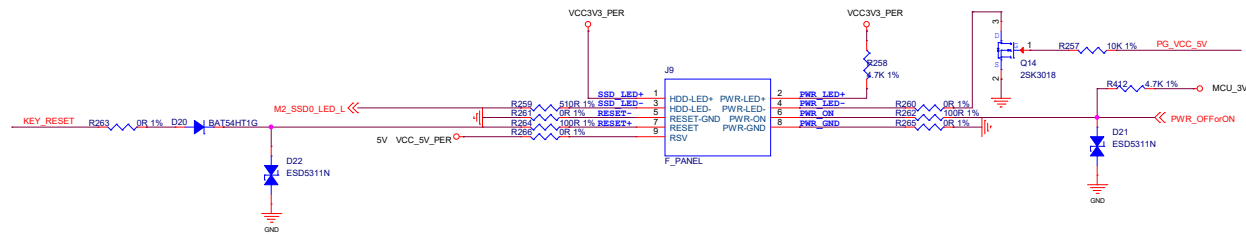
CPU_UART0_RX

GND

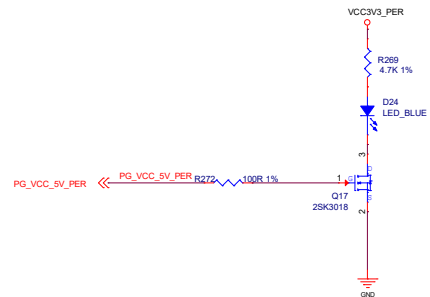
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File: 19 TYPE_C & UART SWITCH			
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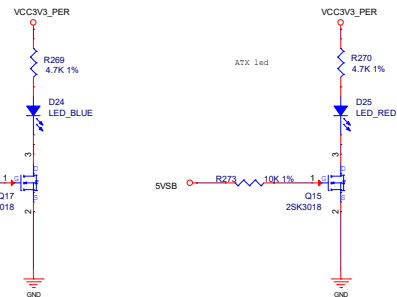
F_PANEL



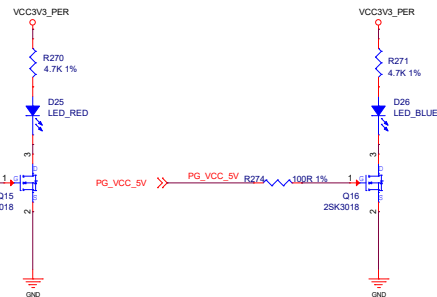
LED



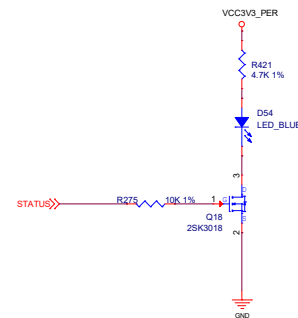
5V POWER peripheral



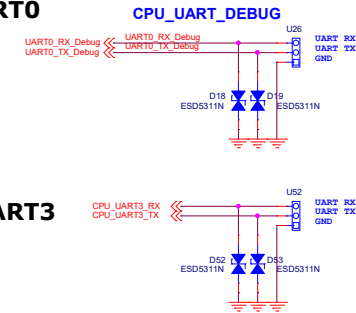
5V SB



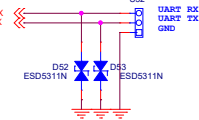
5V POWER



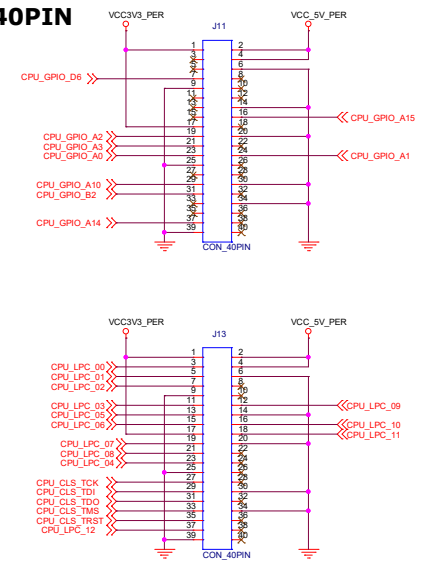
UART0



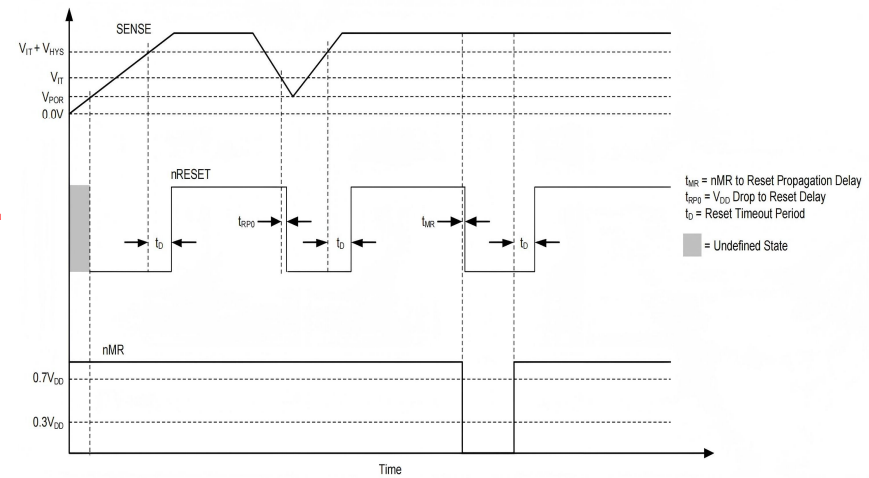
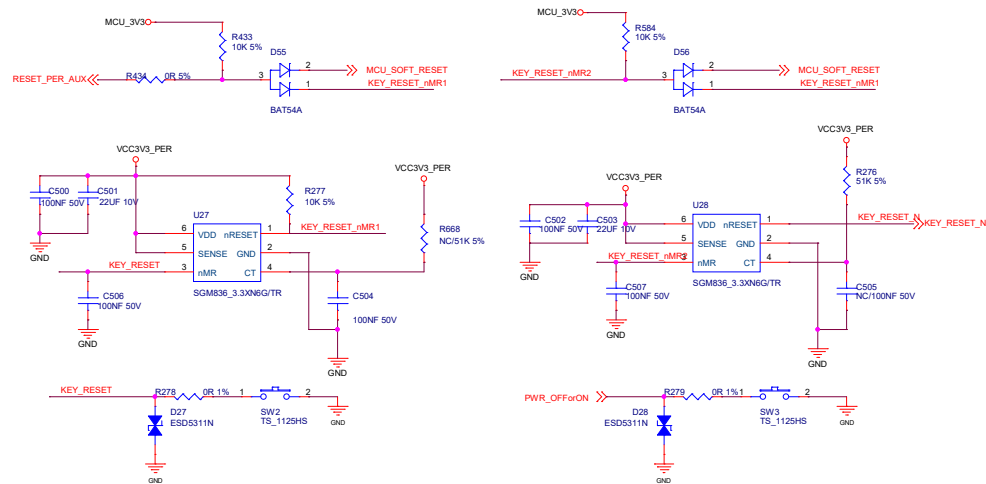
UART3



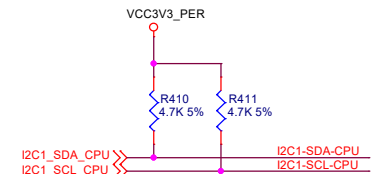
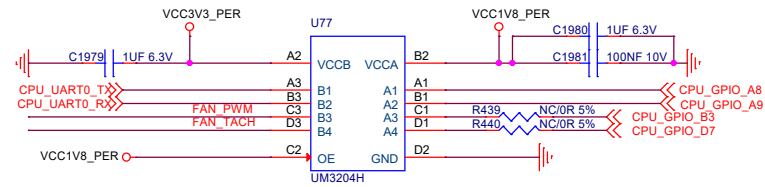
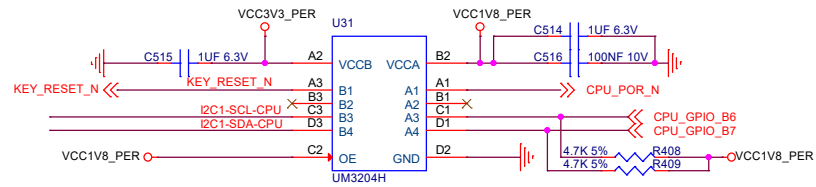
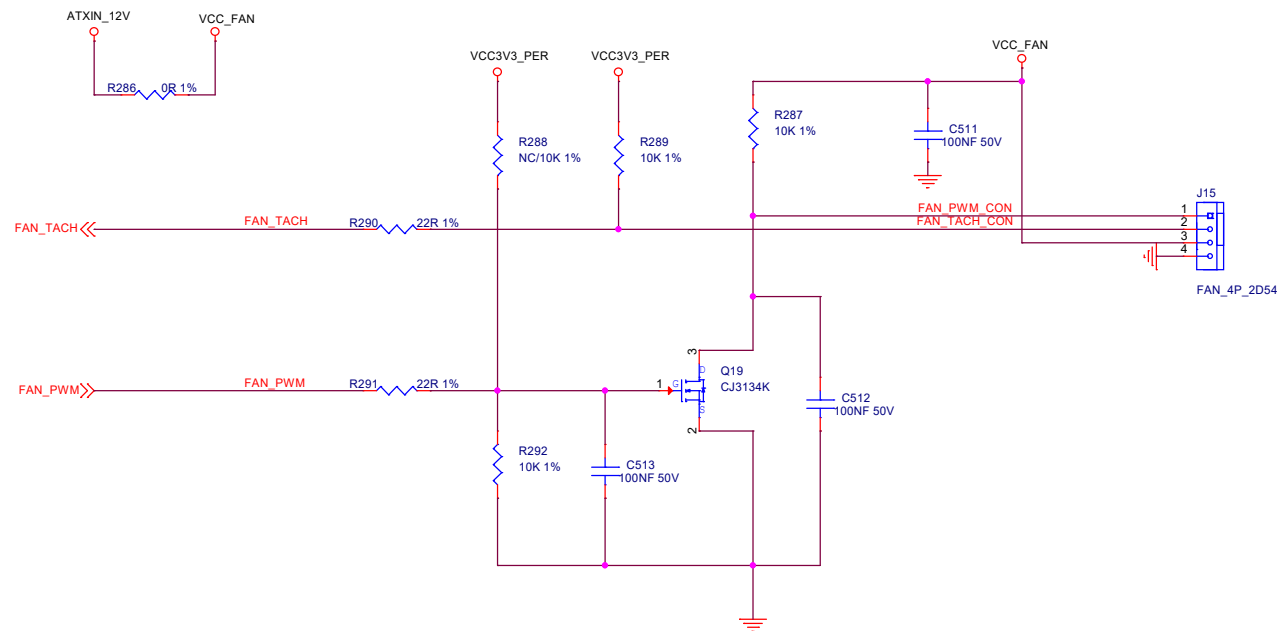
40PIN



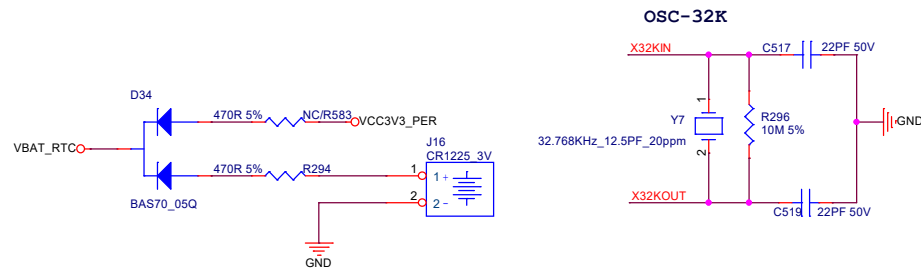
SYS_RESET



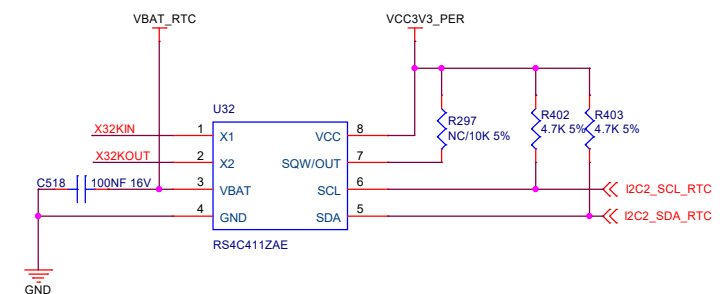
FAN



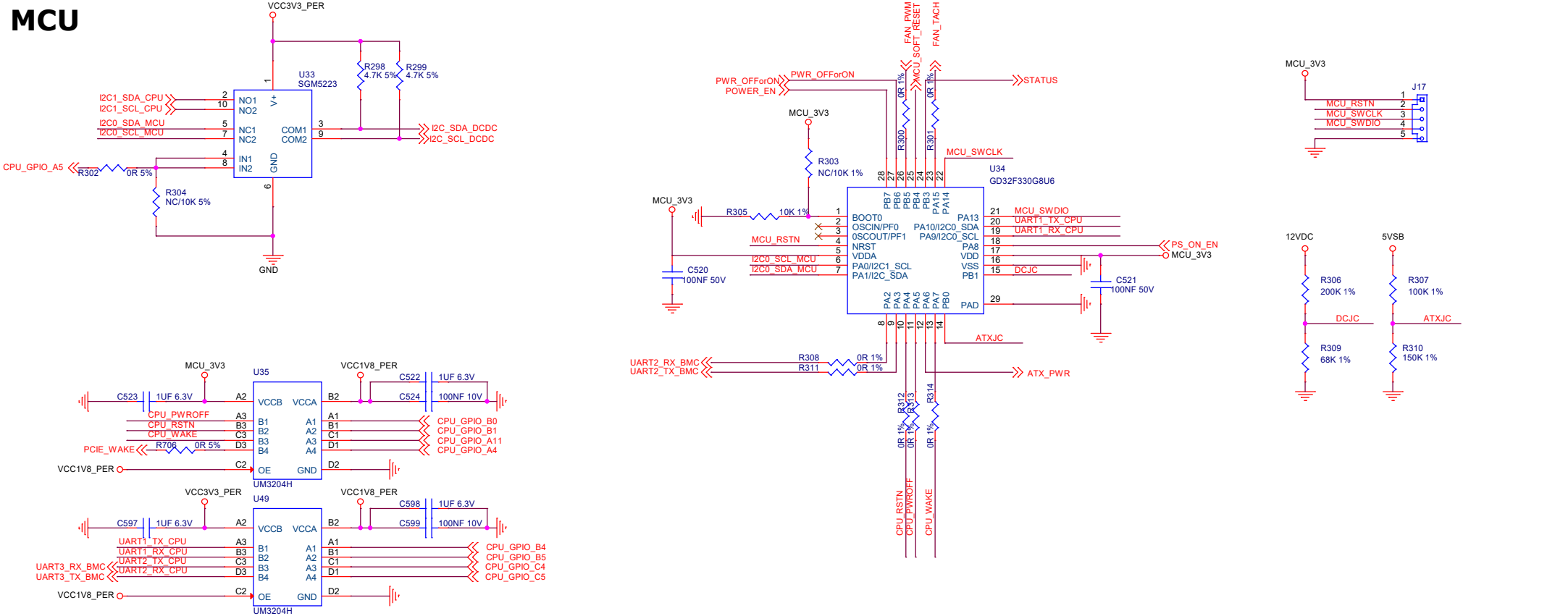
RTC



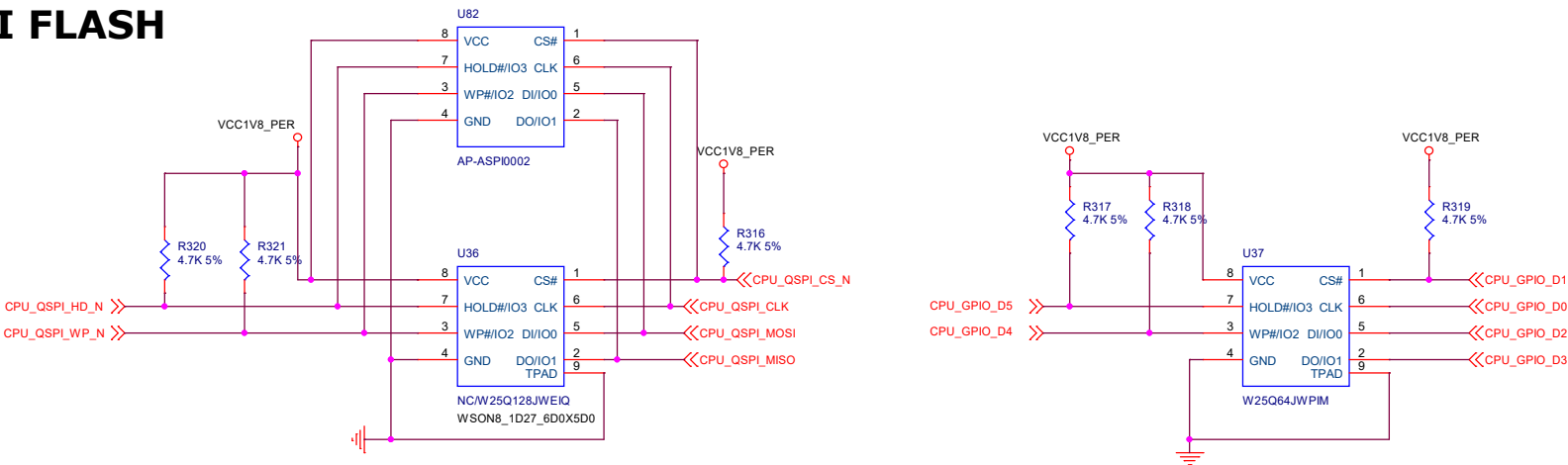
RTC



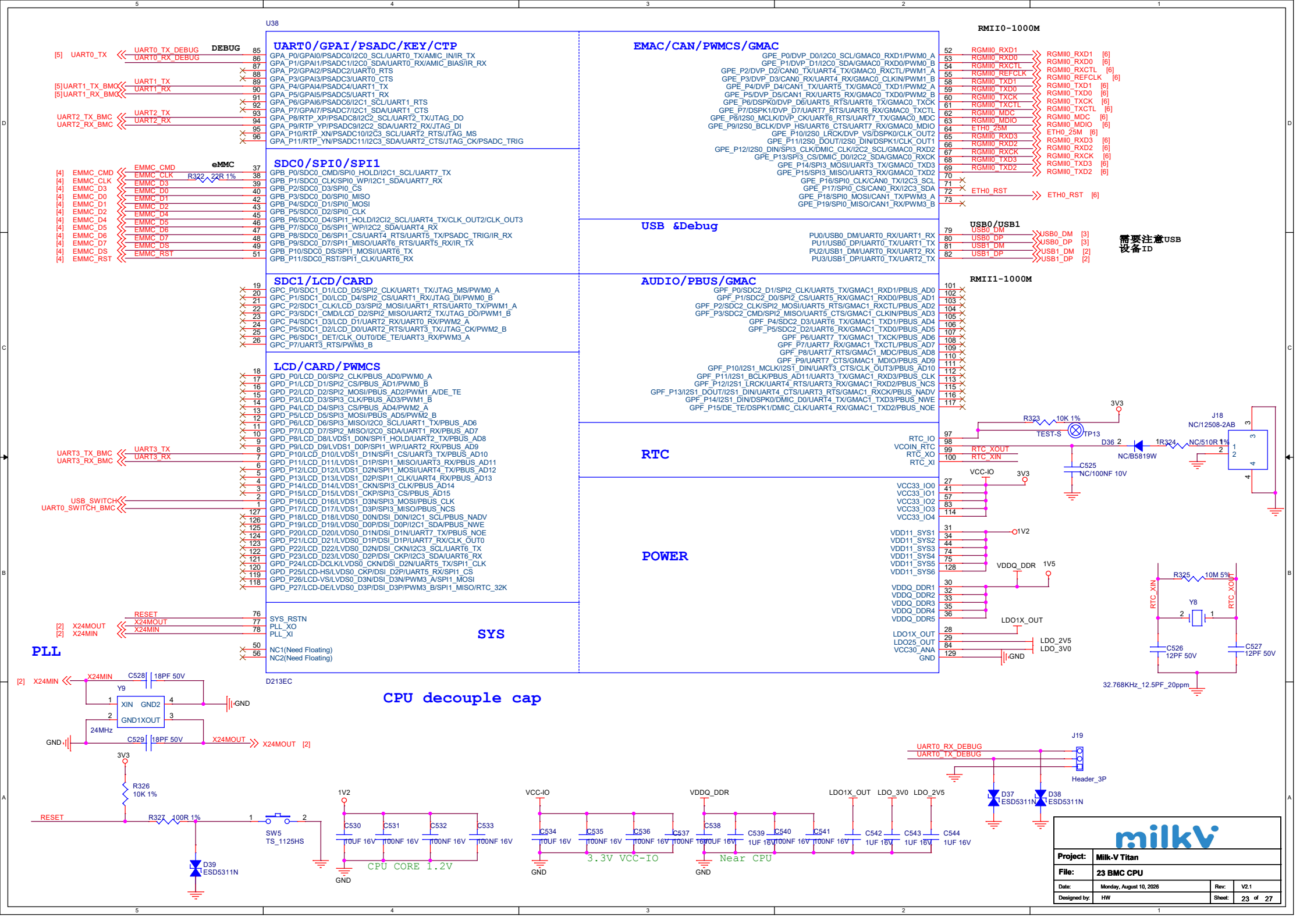
MCU



SPI FLASH



milkv			
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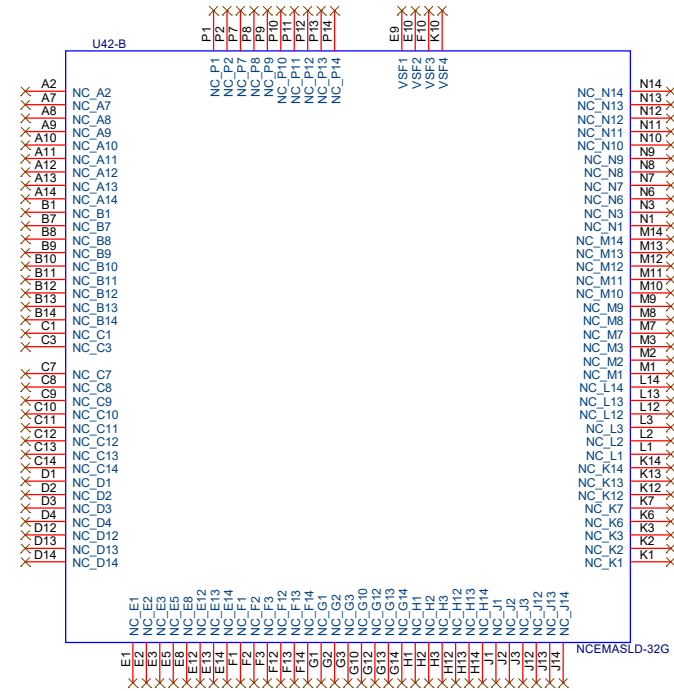
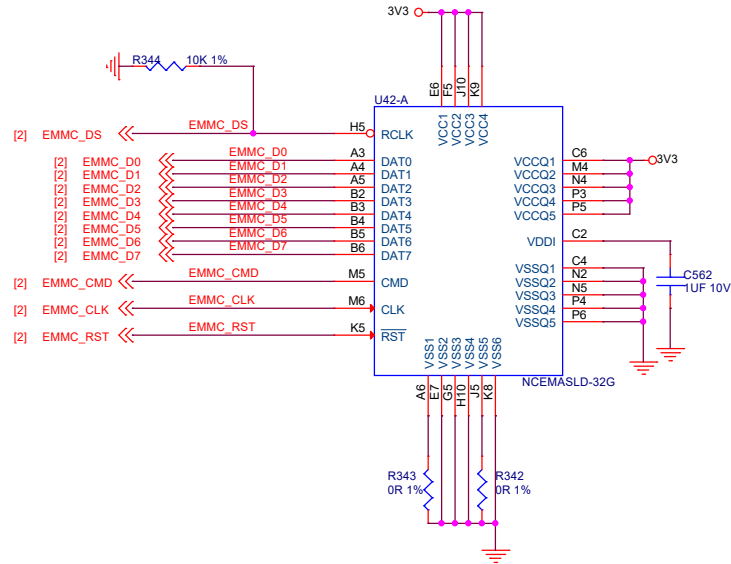


3V3

R339 10K 1% EMMC_CMD

R340 10K 1% EMMC_D0

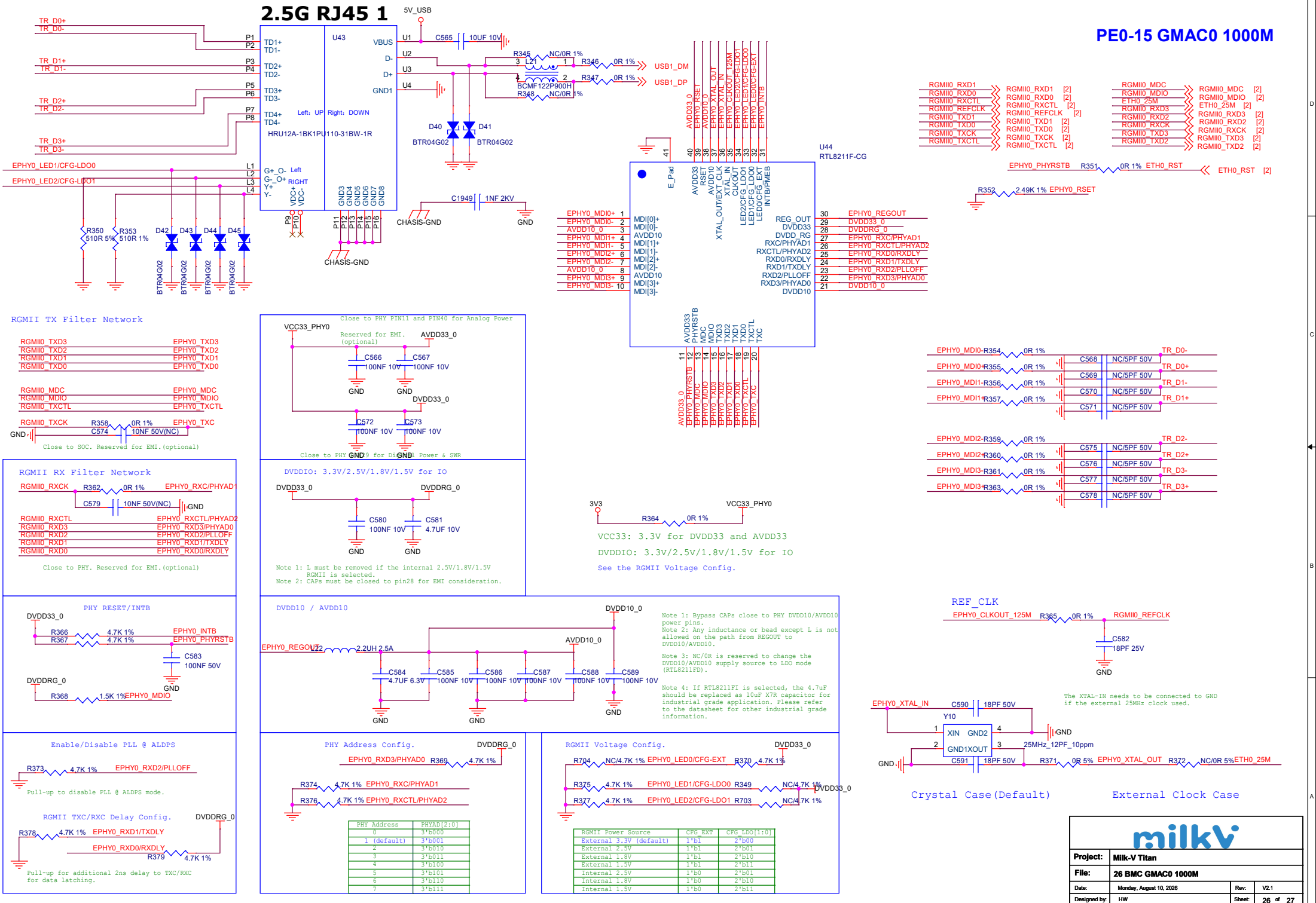
R341 10K 1% EMMC_RST



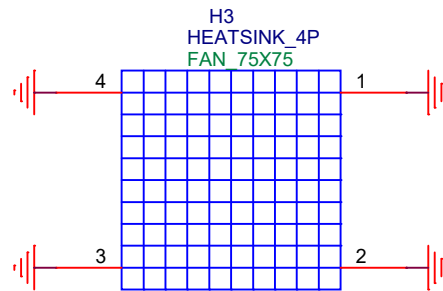
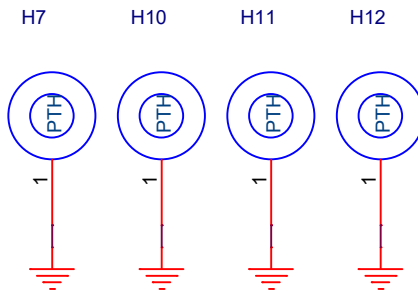
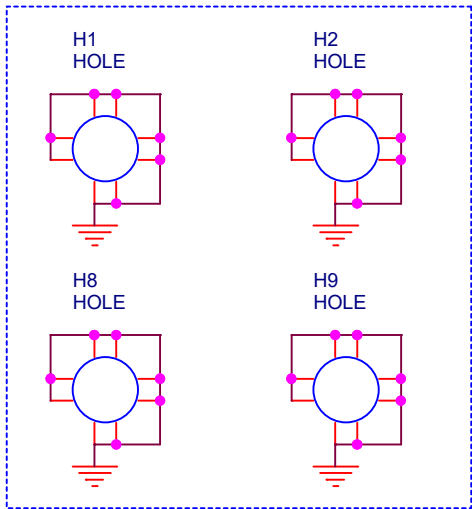
Project:	Milk-V Titan		
File:	25 BMC EMMC		
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2.5G RJ45 1

PE0-15 GMAC0 1000M



PCB_HOLE



Project:	Milk-V Titan		
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