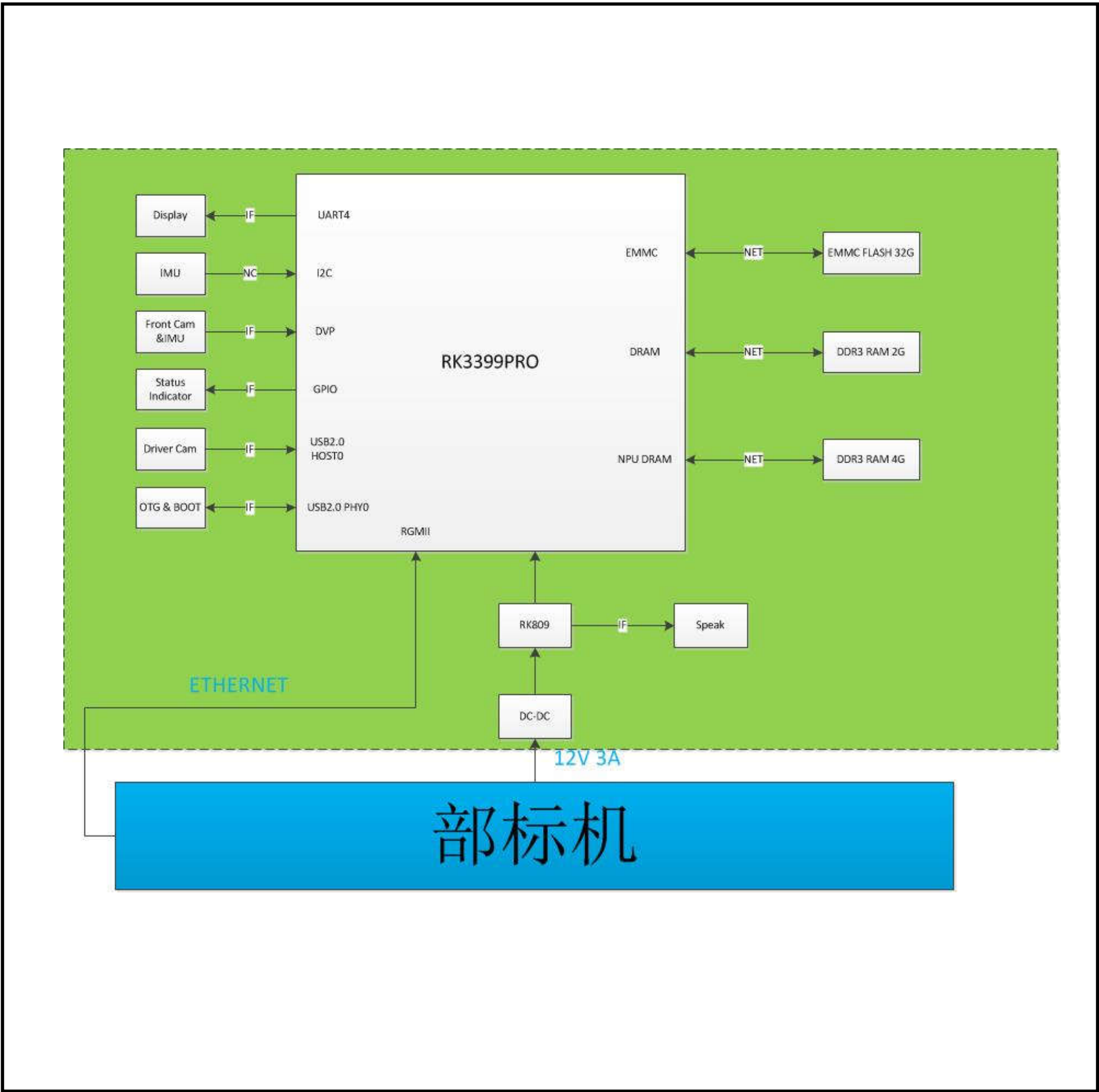




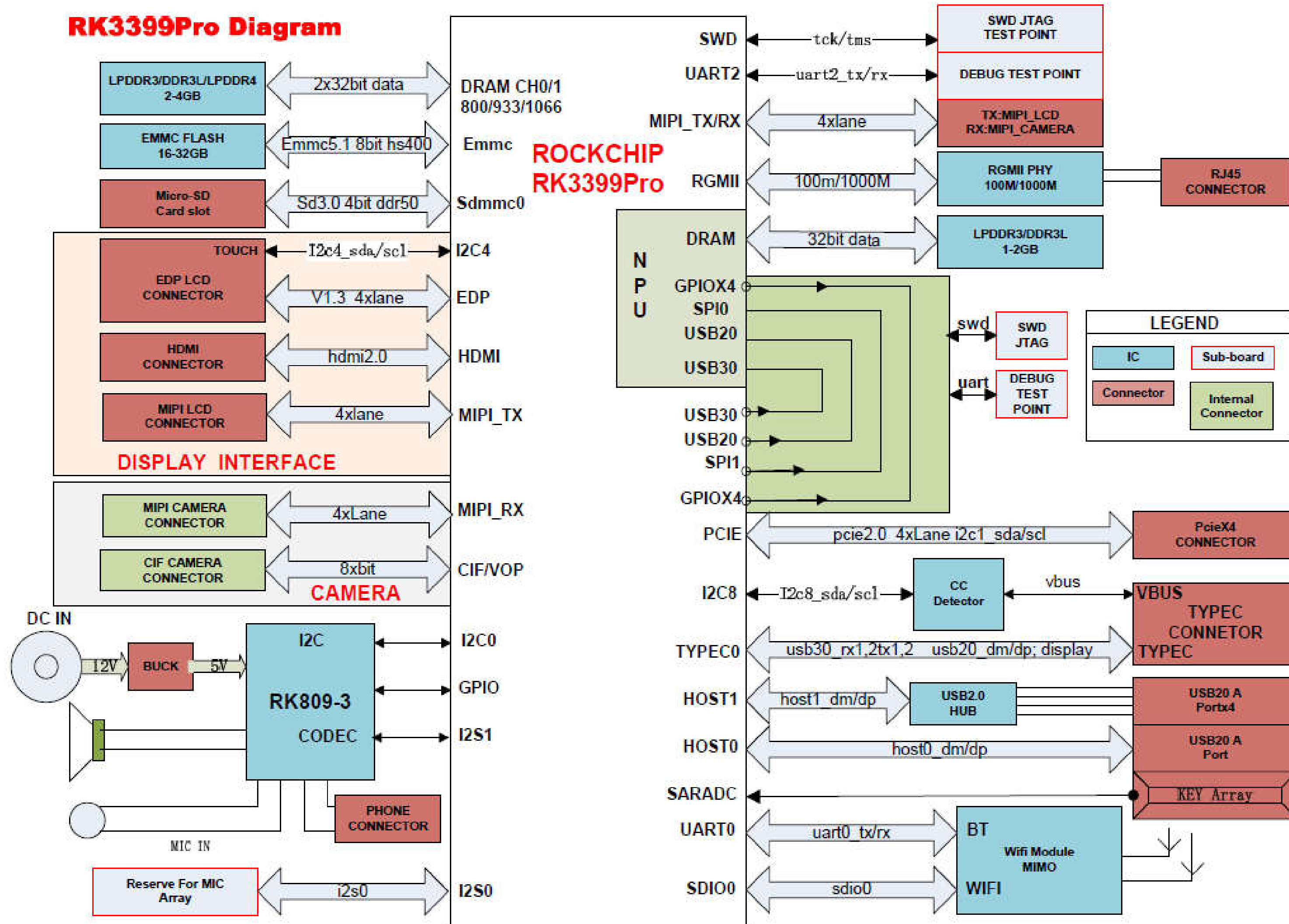
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RK3399Pro V1.0

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RK3399Pro Diagram

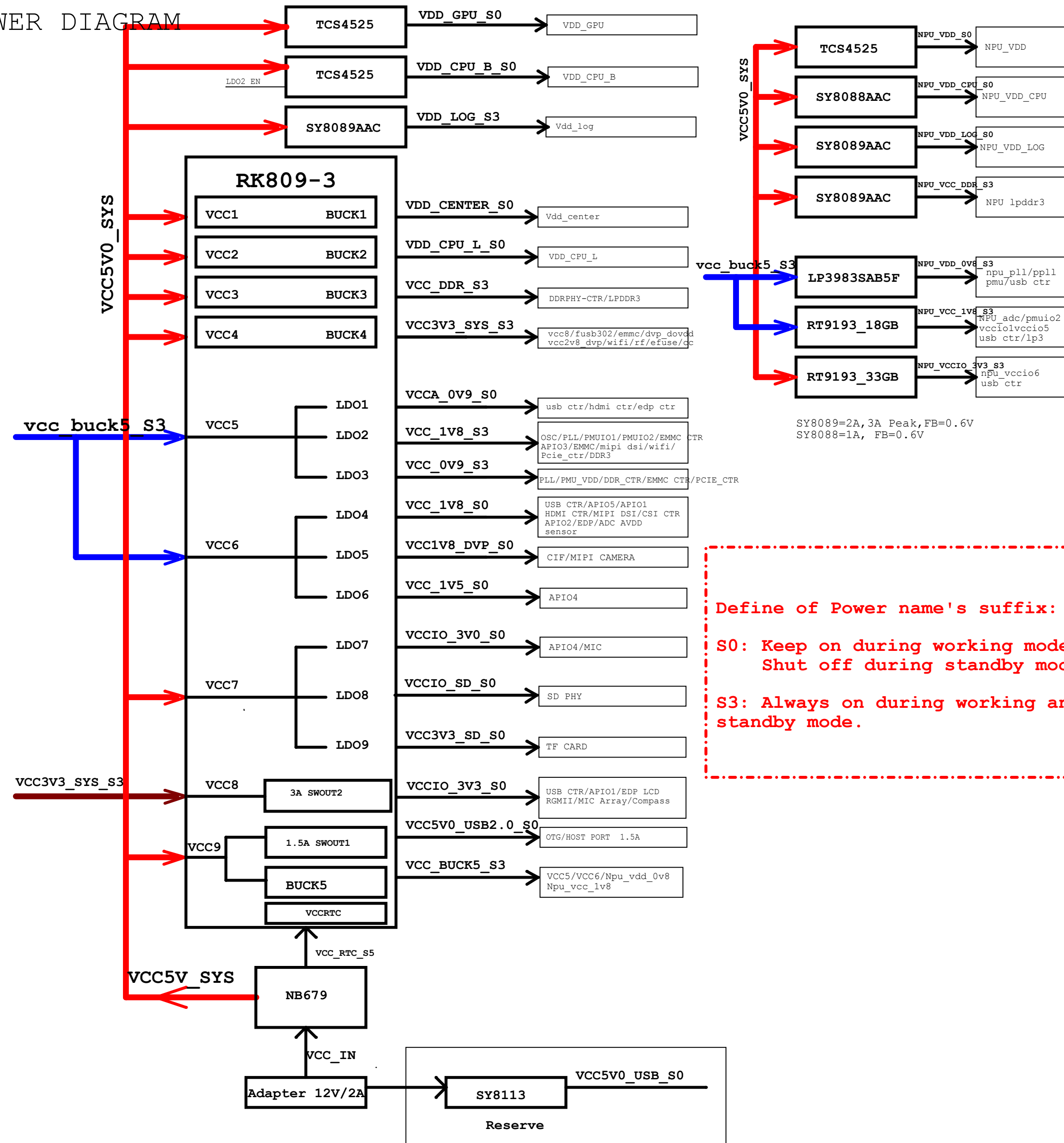


RK3399Pro I2C MAP

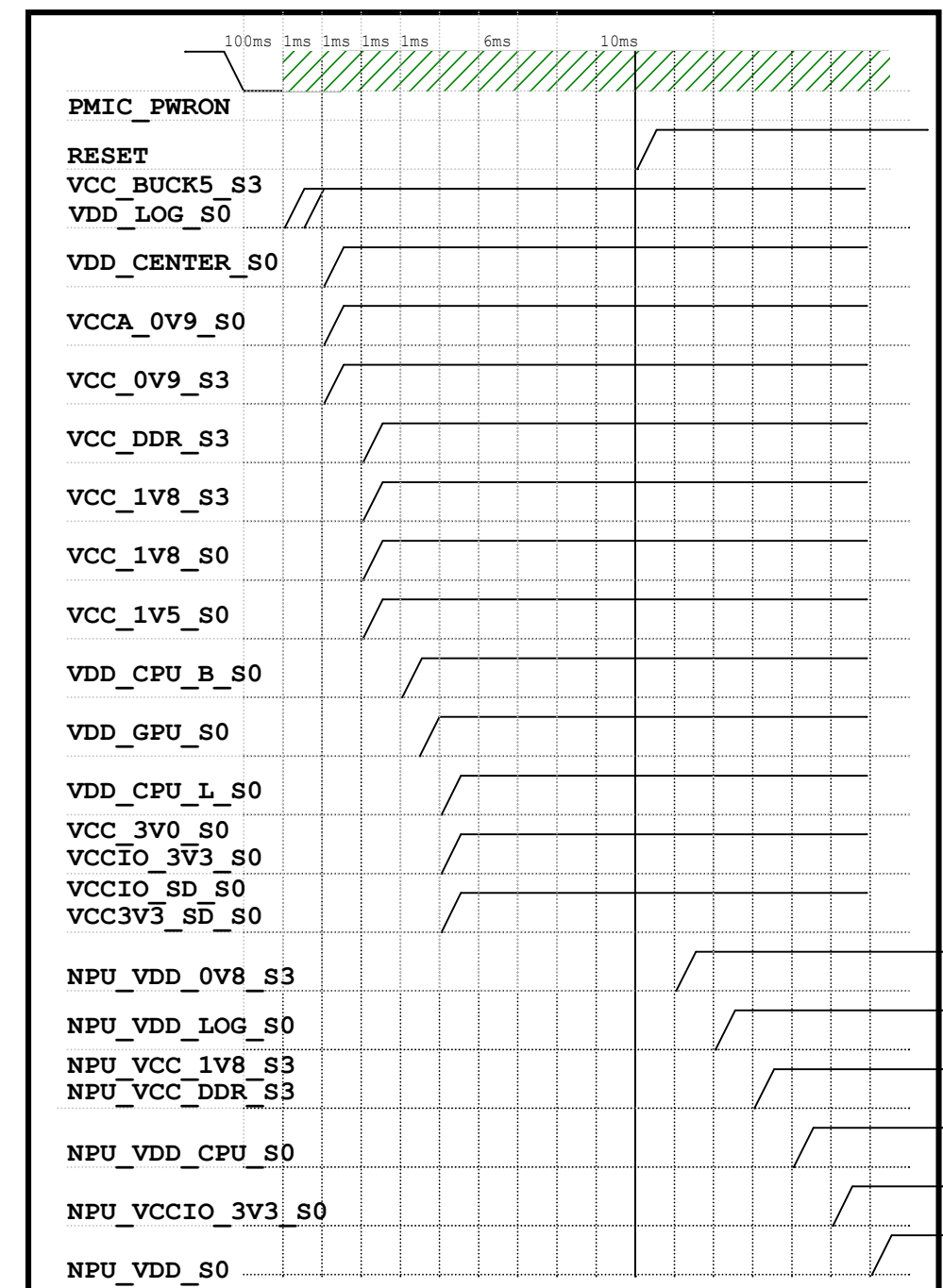
Port	Pin name	Domain	Bus name	Pull-up voltage	Slave Device	Slave Addr (MS 7Bits)	Note	Slave Bus Capability
I2C0	I2C0_SCL/GPIO1_C0_u I2C0_SDA/GPIO1_B7_u	PMUIO2	I2C0_SCL_PMIC I2C0_SDA_PMIC	VCC_1V8_S3	1.RK809 2.TCS4525 3.TCS4525			100kHz, 400kHz
I2C1	I2C1_SCL/GPIO4_A2_u I2C1_SDA/GPIO4_A1_u	API05	I2C1_SCL_1V8 I2C1_SDA_1V8	VCC_1V8_S0	1.CIF CAMERA 2.G-SENSOR			100kHz, 400kHz
I2C2	I2C2_SCL/GPIO2_A1_u I2C2_SDA/GPIO2_A0_u	API02	NC					
I2C3	I2C3_SCL/GPIO4_C1_u I2C3_SDA/GPIO4_C0_u	API04	I2C3_SCL_HDMI I2C3_SDA_HDMI	VCCIO_3V0_S0				100kHz, 400kHz
I2C4	I2C4_SCL/GPIO1_B4_u I2C4_SDA/GPIO1_B3_u	PMUIO2	I2C4_SCL_TP I2C4_SDA_TP	VCC_1V8_S3	M24C02-DRDW3TP		Touch IC	100kHz, 400kHz
I2C5	I2C5_SCL/GPIO3_B3_u I2C5_SDA/GPIO3_B2_u	API01	NC					
I2C6	I2C6_SCL/GPIO2_B2_u I2C6_SDA/GPIO2_B1_u	API02	NC					
I2C7	I2C7_SCL/GPIO2_B0_u I2C7_SDA/GPIO2_A7_u	API02	NC					
I2C8	I2C8_SCL/GPIO1_C5_u I2C8_SDA/GPIO1_C4_u	PMUIO2	I2C8_SCL_CC I2C8_SDA_CC	VCC_1V8_S3	FUSB302B			100kHz, 400kHz
NPU_I2C1	NPU_I2C1_SCL/GPIO0_C0_u NPU_I2C1_SDA/GPIO0_C1_u	NPU_VCC_1V8	NPU_I2C1_SCL NPU_I2C1_SDA	NPU_VCC_1V8_S3				100kHz, 400kHz

RK3399Pro Power Domain Map

POWER DIAGRAM



RK809-3 Power-on Sequence							
PowerName	PMIC Channel	Timing Sequence	Default voltage	Supply Limit	Default ON/OFF	Sleep ON/OFF	Peak Current
VCC5V0 SYS	ext(NB679)	0	5V	8A	ON	ON	
VDD BUCK5 S3	BUCK5	1	3.3V	2.5A	ON	ON	
VDD LOG S3	ext(SY8089)	1A	0.9V	2.0A	ON	ON	
VDD CENTER S0	BUCK1	2	0.9V	2.5A	ON	OFF	
VCCA OV9 S0	LD01	2	0.9V	400mA	ON	OFF	
VCC OV9 S3	LD03	2	0.9V	100mA	ON	ON	
VCC DDR S3	BUCK3	3	1.25V	1.5A	ON	ON	
VCC I1v8 s3	LD02	3	1.8V	400mA	ON	ON	
VCC I1v8 S0	LD04	3	1.8V	400mA	ON	OFF	
VCC I1v5 S0	LD06	3	1.5V	400mA	ON	OFF	
VDD GPU S0	ext(TCS4525)	3B	0.9V	6.0A	ON	OFF	4.5A
VDD CPU B S0	ext(TCS4525)	3A	0.9V	6.0A	ON	OFF	4.5A
VDD CPU L S0	BUCK2	4	0.9V	2.5A	ON	OFF	
VCCIO 3V0 S0	SWOUT2	5	3.0V	400mA	ON	OFF	
VCCIO 3V3 S0	SWOUT2	5	3.0A	300mA	ON	OFF	
VCC3V3 SYS S3	BUCK4	5	3.3V	1.5A	ON	OFF	
VCCIO SD S0	LD08	5	3.3V	400mA	ON	OFF	
VCC3V3 SD S0	LD09	5	3.3V	400mA	ON	OFF	
VCCI1v8 DVP S0	LD05	5	1.8V	400mA	OFF	OFF	
VCCI1v5 DVP S0	ext(rt9193)		1.5V	300mA	OFF	OFF	
VCC2V8 DVP S0	ext(rt9193)		2.8V	300mA	OFF	OFF	
VCC5V0 USB2.0 S0	SWOUT1	5V	1.5A	OFF	OFF		
RK809 send out reset signal for CPU(timing:10') Then CPU send out NPU's pwr on signal							
NPU VDD OV8 S3	ext(lip339)	11	0.8V		ON	ON	
NPU VDD LOG S0	ext(sy8089aac)	12	0.85V	2.0A	ON	ON	1.25A
NPU VCC I1v8 S3	ext(rt9193)	13	1.8V	100mA	ON	ON	
NPU VCC DDR S3	ext(sy8089aac)	13	1.25V	2.0A	ON	ON	
NPU VDD CPU S0	ext(sy8088aac)	14	0.85V	1.0A	ON	OFF	750mA
NPU VCCIO 3V3 S0	ext(rt9193)	15	3.3V	300mA	ON	ON	
NPU VDD S0	ext(tcsc4525)	16	0.85V	6.0A	ON	OFF	4A
NPU REF CLK	CPU send out 24M clk for npu.						
NPU RESET	CPU send out Reset signal for npu.						



```

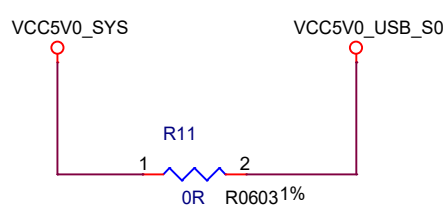
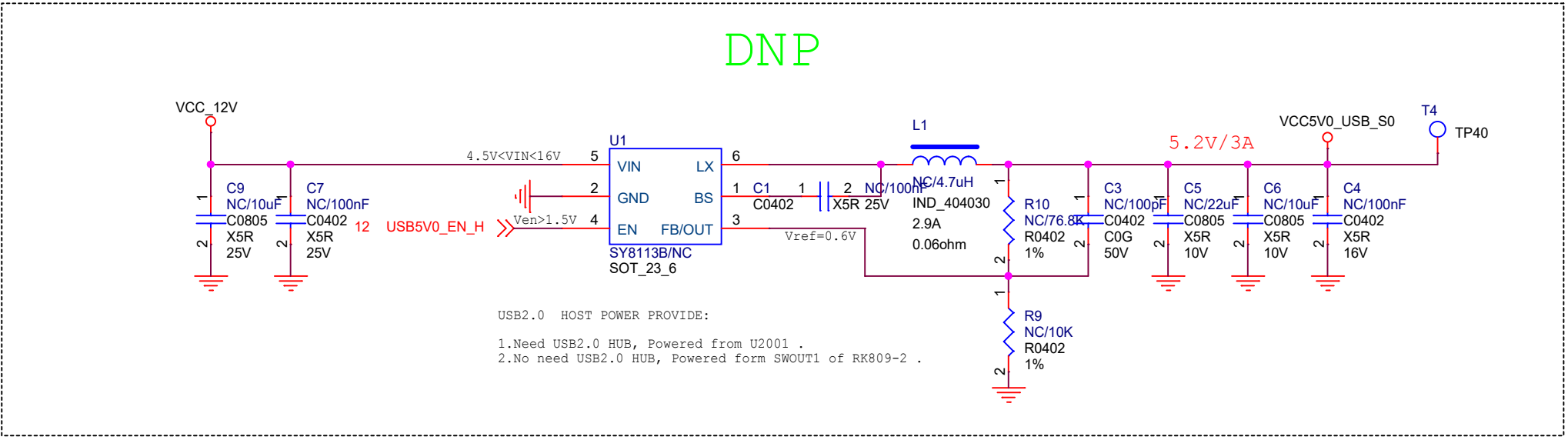
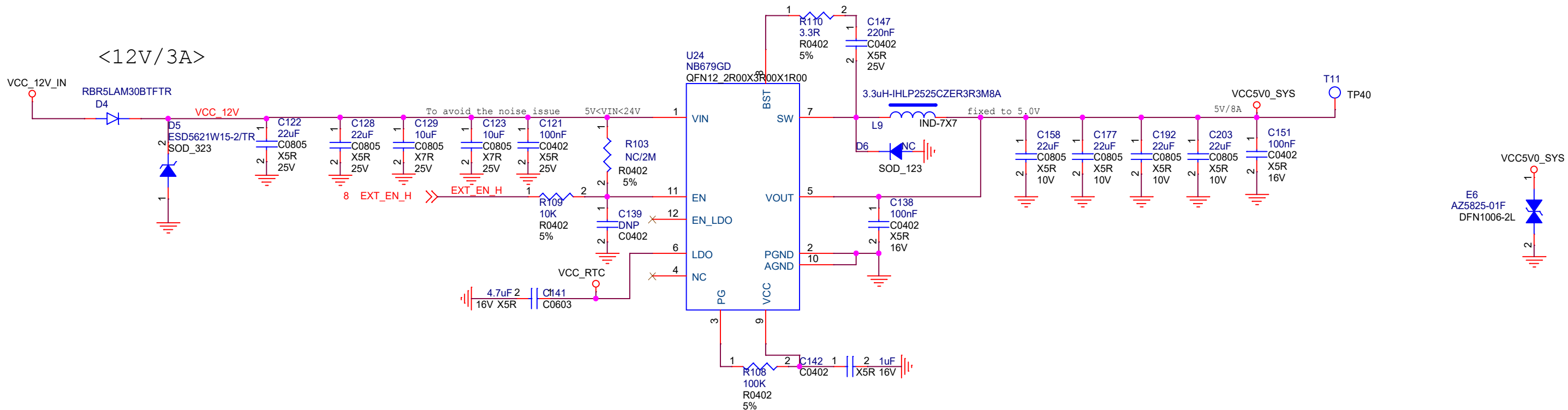
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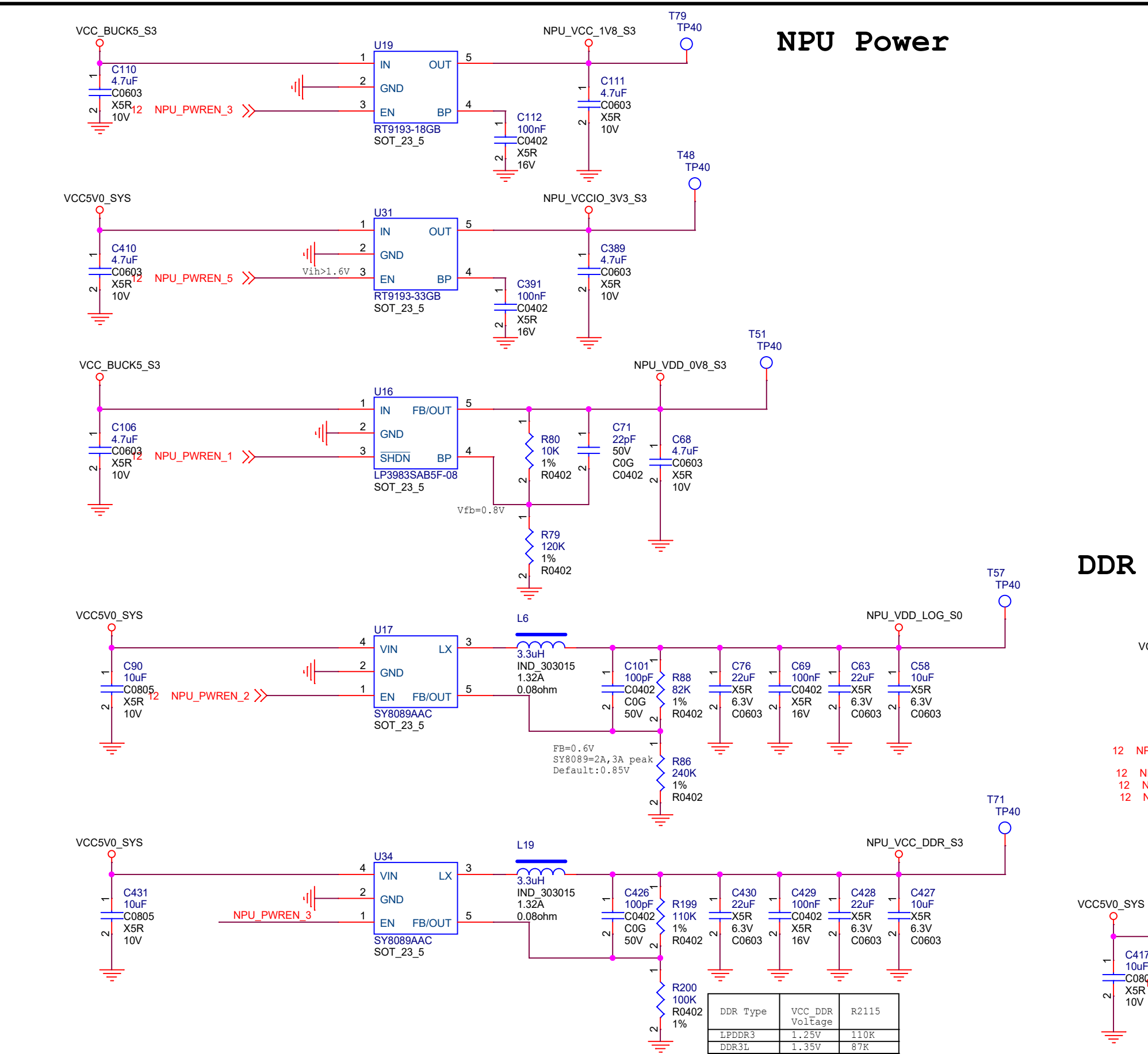
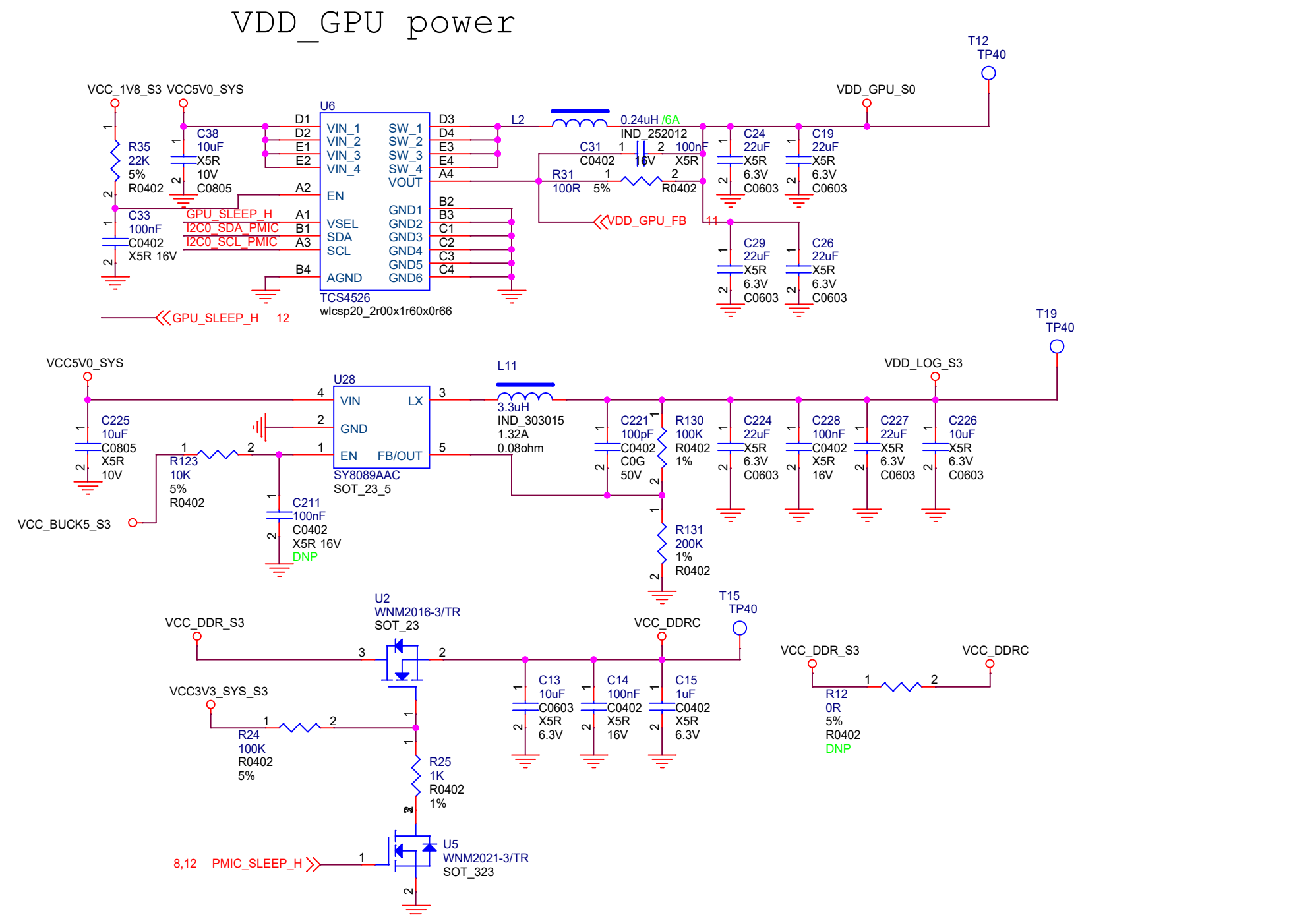
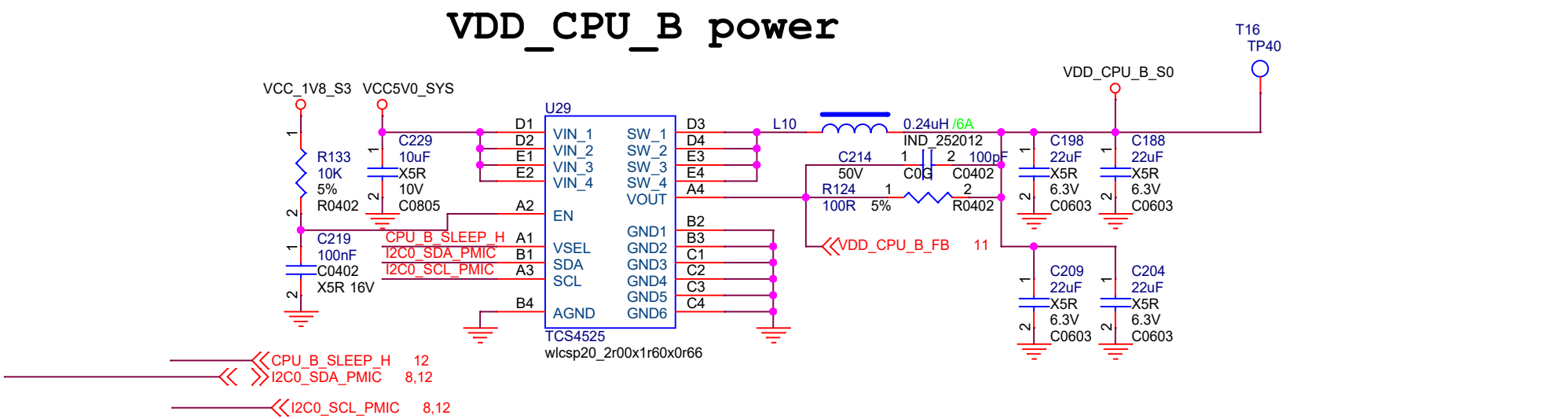
S0: Keep on during working mode;
    Shut off during standby mode

S3: Always on during working and
    standby mode.

```

POWER 12V IN





DDR CTR PWR

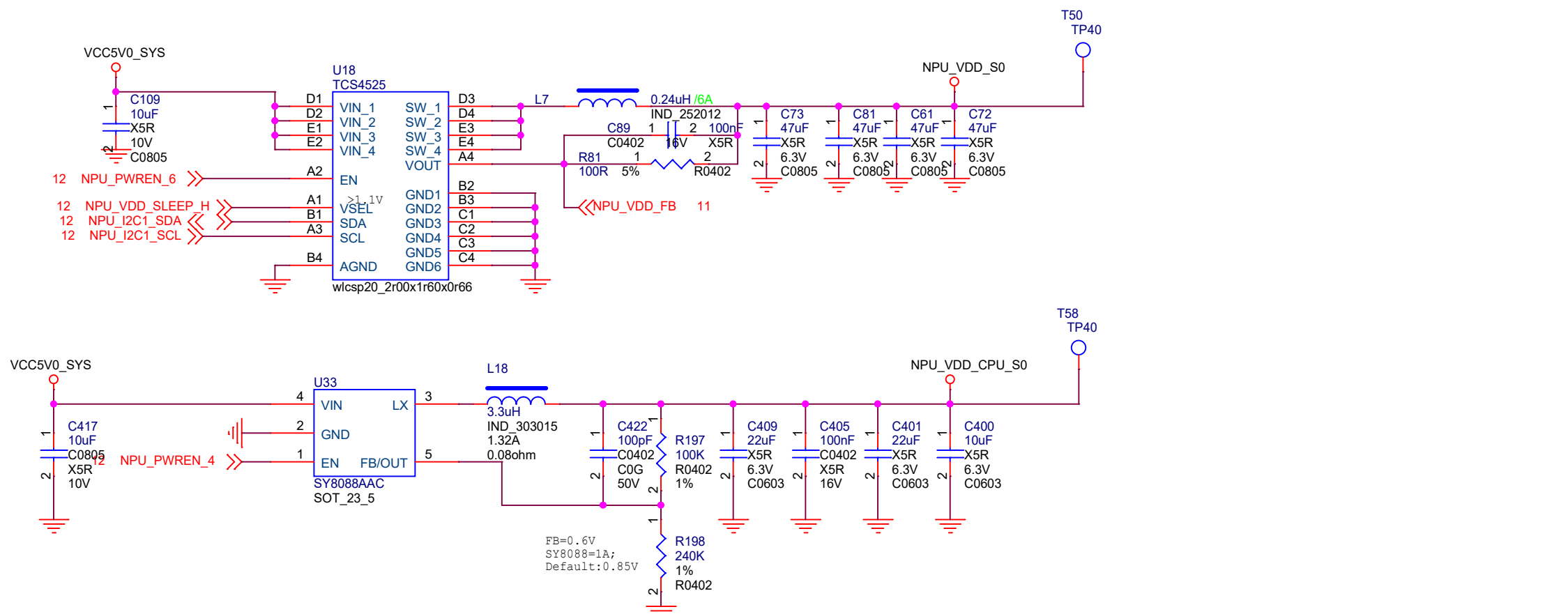


Diagram showing the pin connections for the RK3399PRO module, organized into three main sections: GND, NC, and VCC.

GND Section:

- U10U:** Pins AG28 through VSS_302 are connected to GND.
- U10V:** Pins AV17 through VSS_43 are connected to GND.
- U10T:** Pins AV24 through Y35 are connected to GND.

NC Section:

- U10X:** Pins V31 through AK21 are connected to NC.
- U10Y:** Pins NC_1 through NC_37 are connected to NC.

VCC Section:

- U10U:** Pins VSS_260 through VSS_216 are connected to VCC.
- U10V:** Pins VSS_173 through VSS_131 are connected to VCC.
- U10T:** Pins NPU_AVSS2_10 through NPU_AVSS2_1 are connected to VCC.

Legend:

- U10U:** RK3399PRO
- U10V:** RK3399PRO
- U10T:** RK3399PRO
- U10X:** RK3399PRO
- U10Y:** RK3399PRO

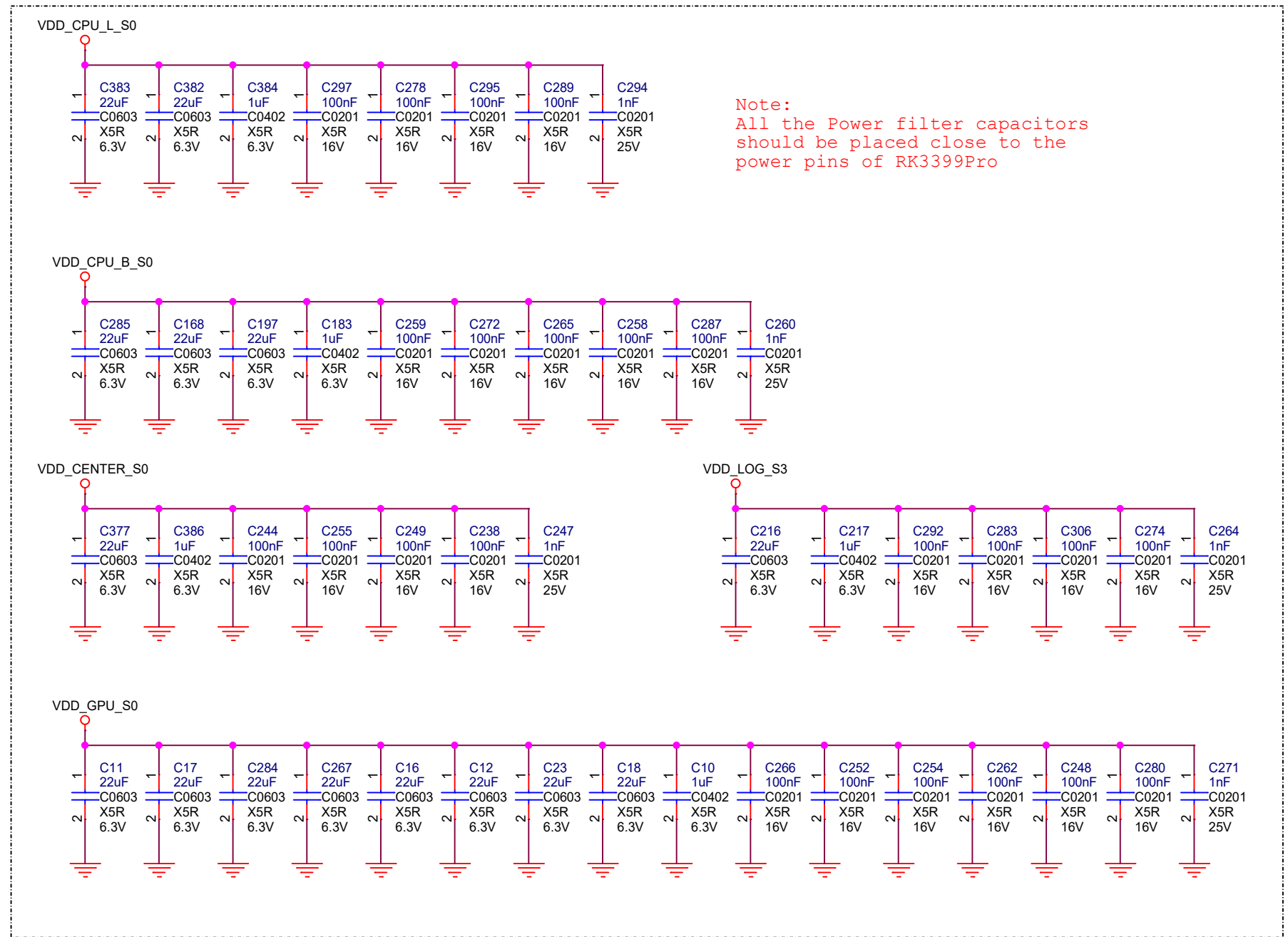
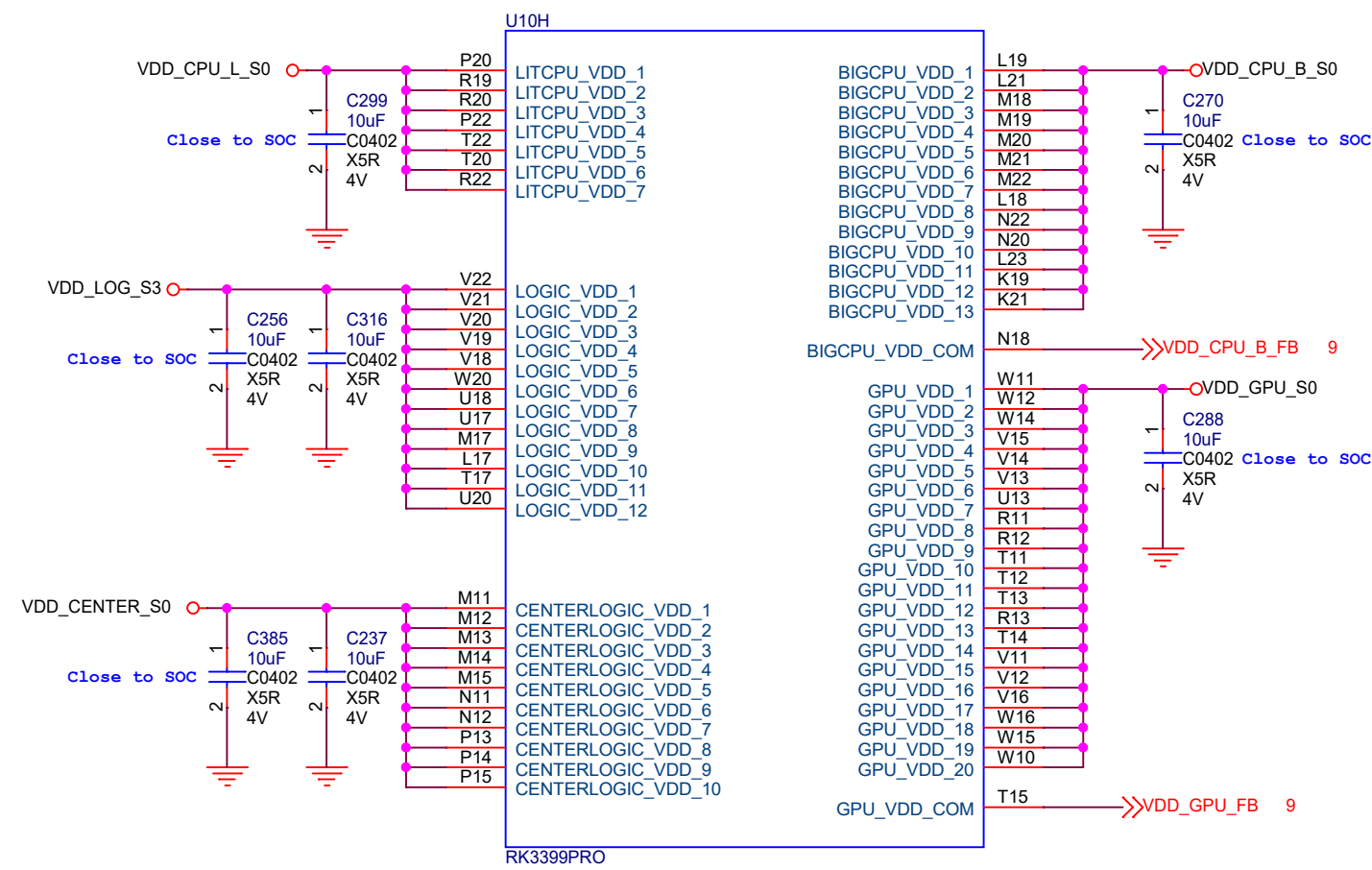
Diagram showing the pin connections for the RK3399PRO module, organized into three main sections: GND, NC, and a central pin connection area.

GND Section: Lists various pins connected to ground (GND), including AG28, AG34, AJ29, AH8, AG25, AK26, AH29, AN27, J29, AJ35, AP30, AM33, AE30, AM34, AP32, AP33, AN28, AK36, AG35, AF34, AT30, AW39, AV38, AT33, AT35, AP36, AA34, AN34, E35, AW25, AU38, AV37, AM30, AL29, AP14, K26, AP23, AL24, AV27, AV29, AV30, AV32, and AV33.

NC Section: Lists various pins connected to No Connection (NC), including V31, W33, AB33, V34, V33, AY20, AW20, AW22, AW21, AU20, AY19, AY22, AY21, AT20, AW19, AU23, AT23, AU24, AW24, AW23, AT21, AT24, AY24, AY23, AU21, AD37, AD36, AG27, AN24, AN25, AP26, AT15, AD24, AU15, AE24, AD20, AE20, AW17, AY17, AW18, AH21, AG20, AY18, AK19, and AG21.

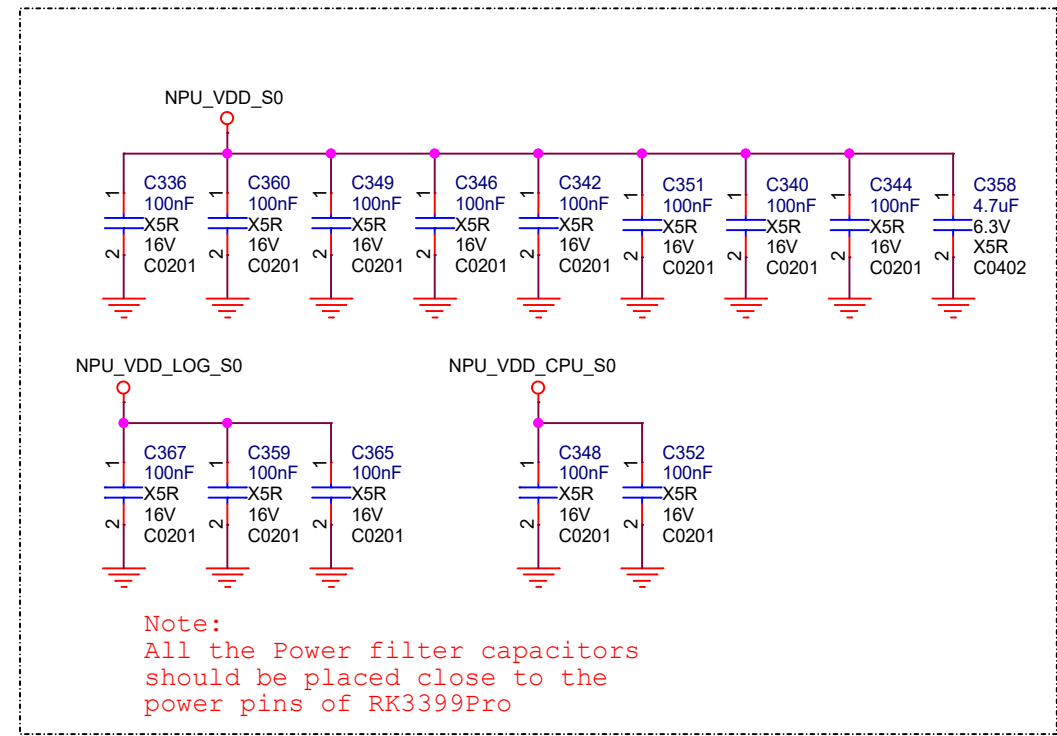
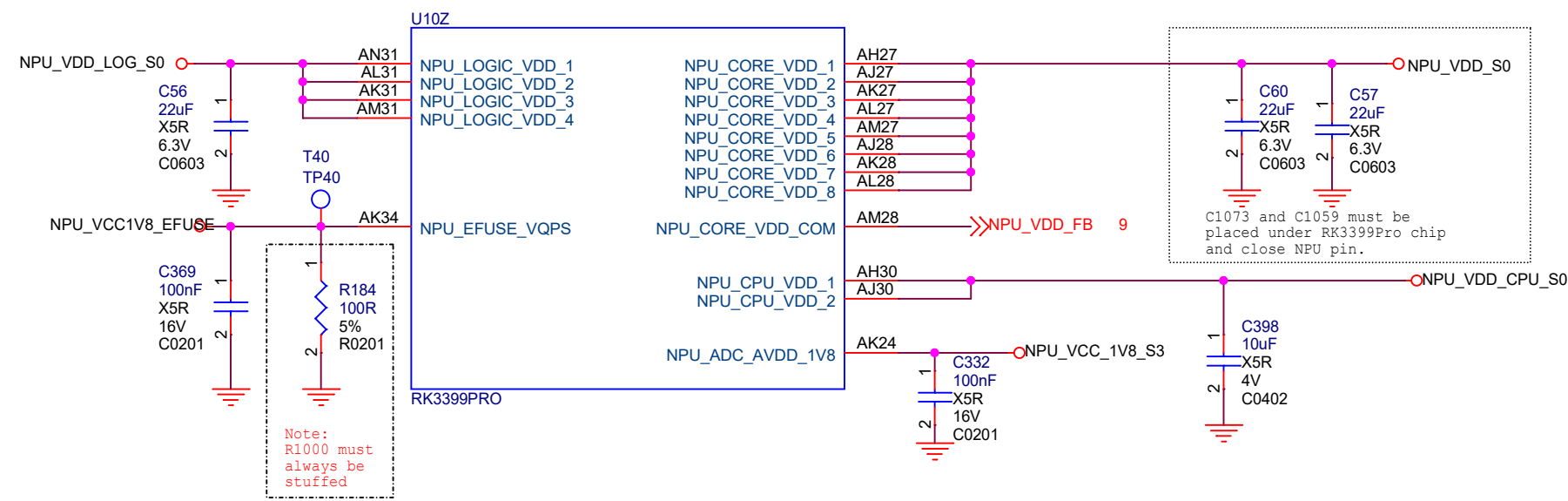
Central Pin Connection Area: Shows the connection of various pins to the RK3399PRO module. Pins are listed in columns, including VSS, VDD, and other power pins, as well as data and control pins. The connections are organized into groups, such as VSS_1 to VSS_43, VDD_1 to VDD_43, and other power pins, as well as data and control pins like AK10, AK11, AK12, AK13, AK14, AK15, AK16, AK17, AK18, AK19, AK20, AK21, AK22, AK23, AK24, AK25, AK26, AK27, AK28, AK29, AK30, AK31, AK32, AK33, AK34, AK35, AK36, AK37, AK38, AK39, AK40, AK41, AK42, AK43, AK44, AK45, AK46, AK47, AK48, AK49, AK50, AK51, AK52, AK53, AK54, AK55, AK56, AK57, AK58, AK59, AK60, AK61, AK62, AK63, AK64, AK65, AK66, AK67, AK68, AK69, AK70, AK71, AK72, AK73, AK74, AK75, AK76, AK77, AK78, AK79, AK80, AK81, AK82, AK83, AK84, AK85, AK86, AK87, AK88, AK89, AK90, AK91, AK92, AK93, AK94, AK95, AK96, AK97, AK98, AK99, AK100, AK101, AK102, AK103, AK104, AK105, AK106, AK107, AK108, AK109, AK110, AK111, AK112, AK113, AK114, AK115, AK116, AK117, AK118, AK119, AK120, AK121, AK122, AK123, AK124, AK125, AK126, AK127, AK128, AK129, AK130, AK131, AK132, AK133, AK134, AK135, AK136, AK137, AK138, AK139, AK140, AK141, AK142, AK143, AK144, 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Power



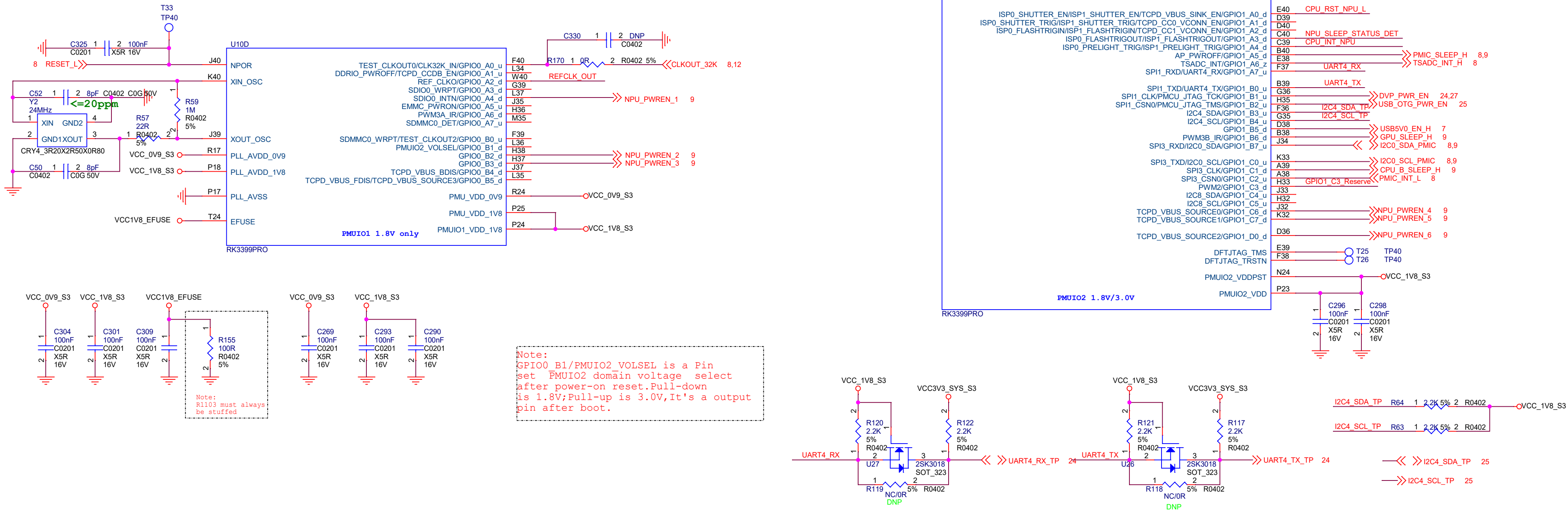
Note:
All the Power filter capacitors
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NPU Power

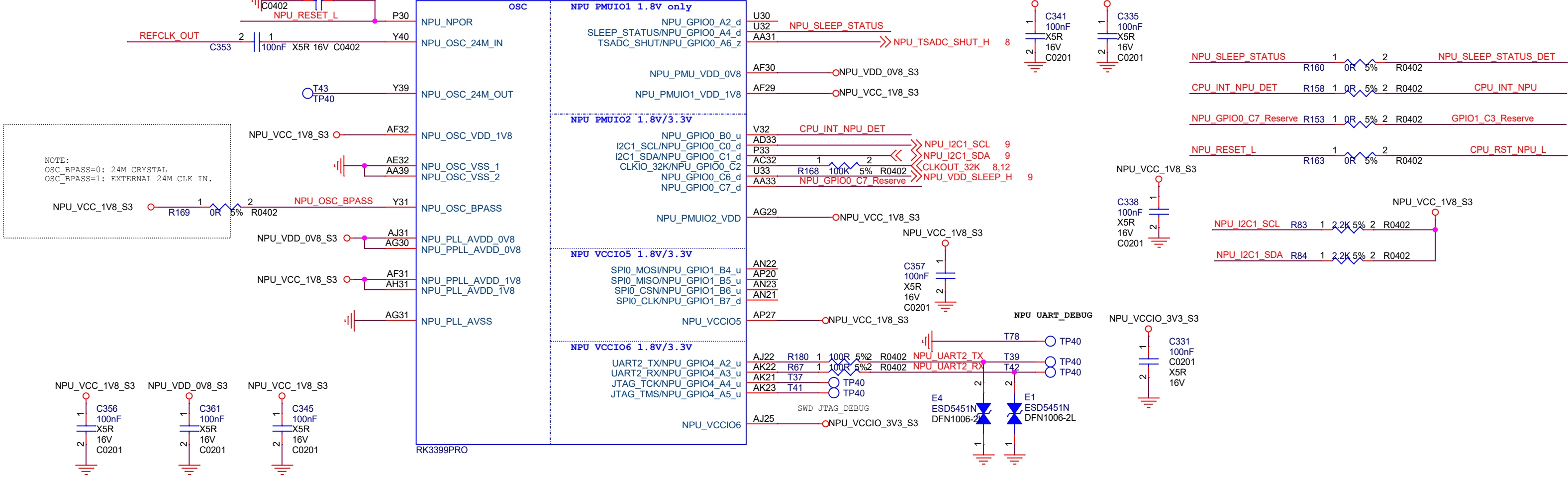


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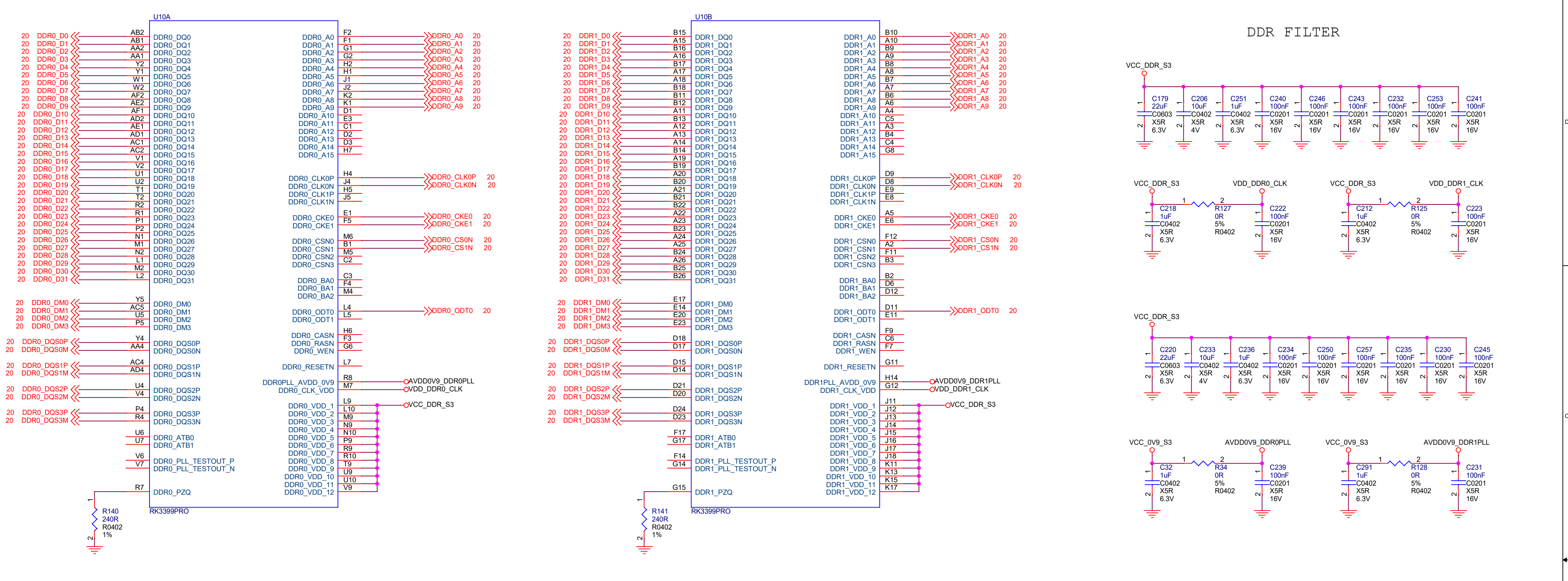


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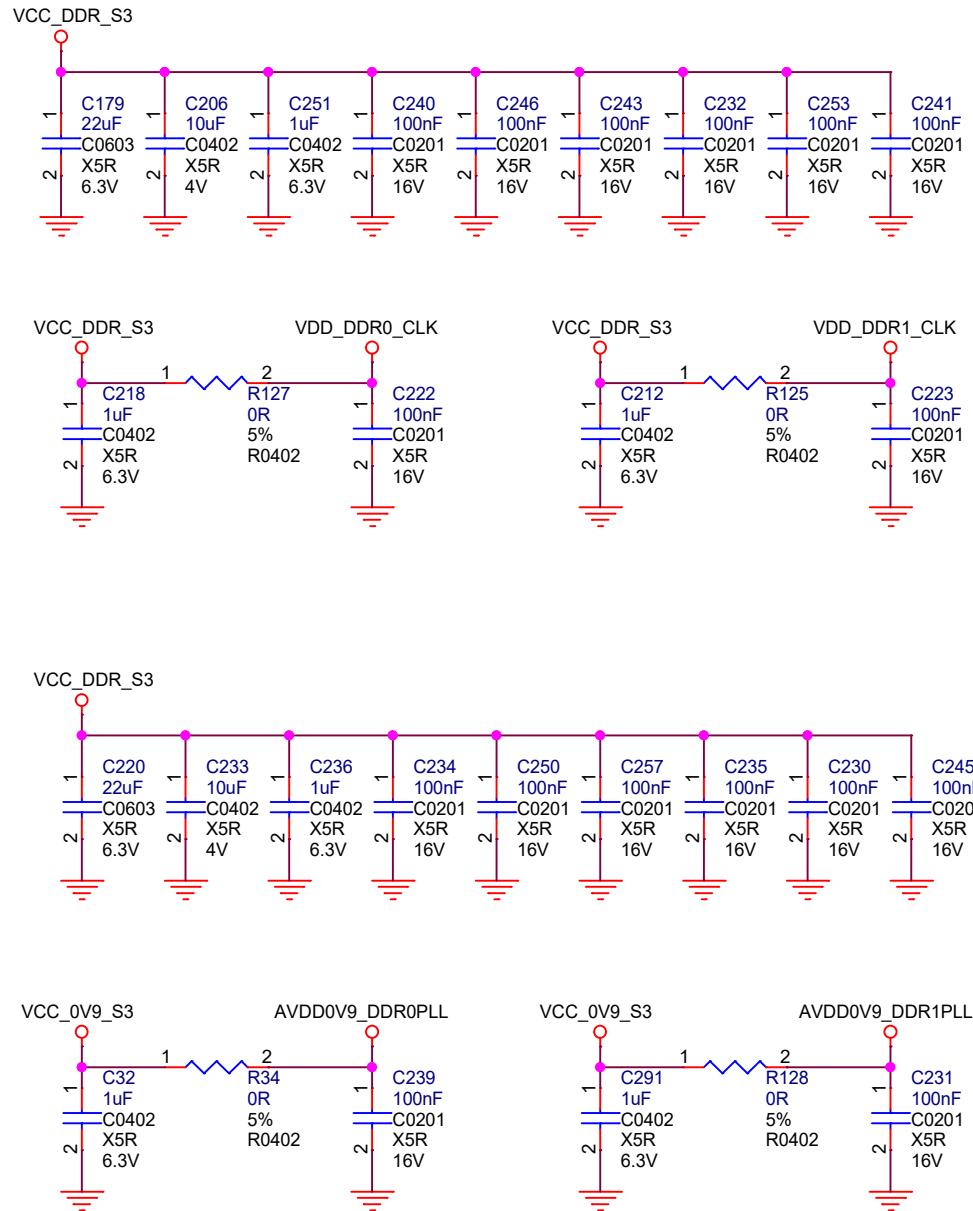


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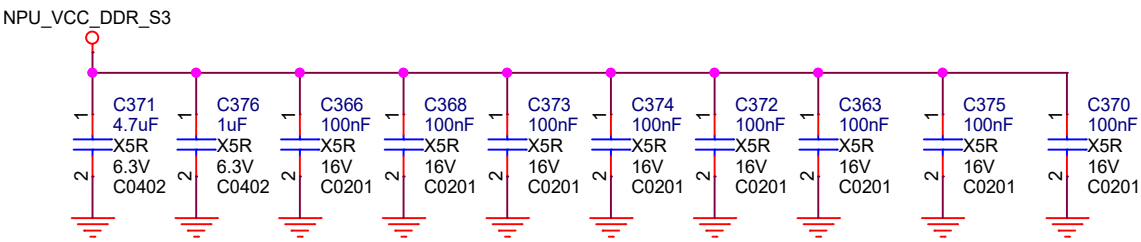
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DDR FILTER

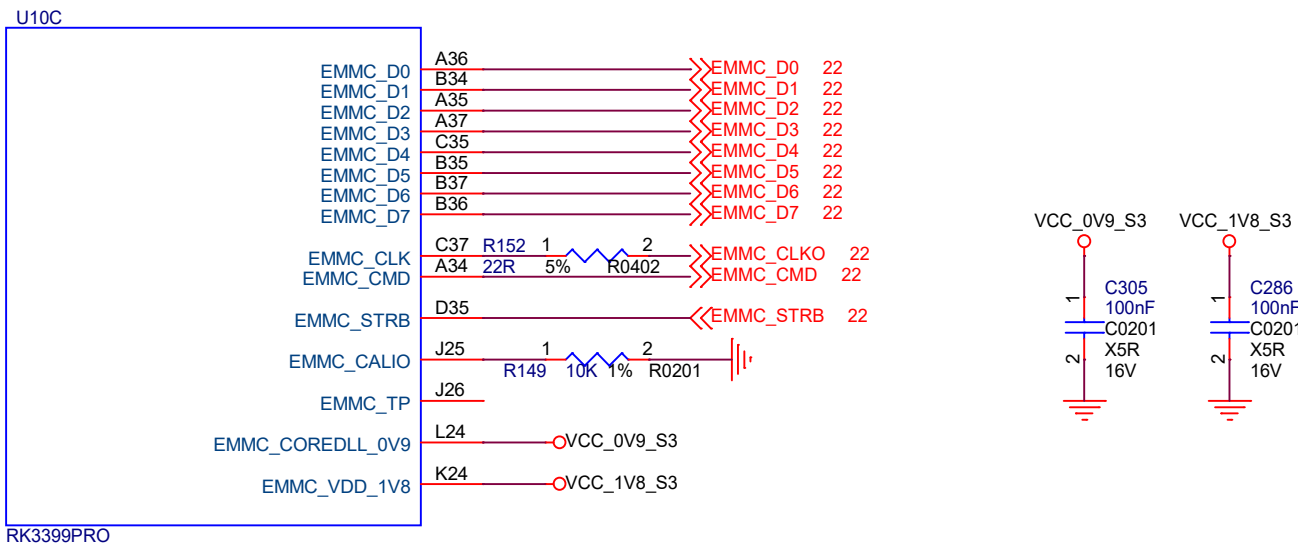
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A8	A5
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	A7
	CASB
	A8
	ODT0
	BA1
	RASB
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BA0	
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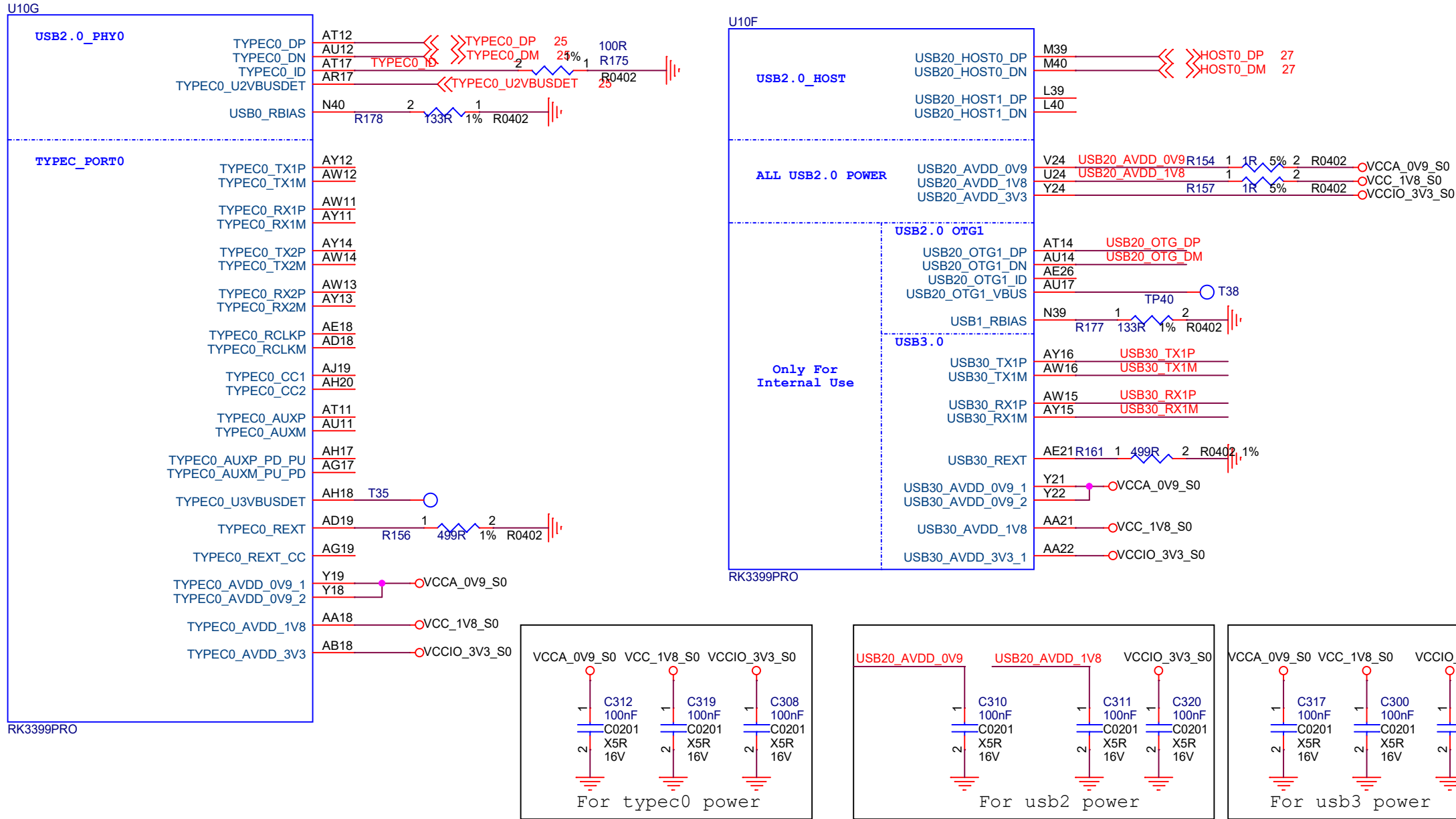


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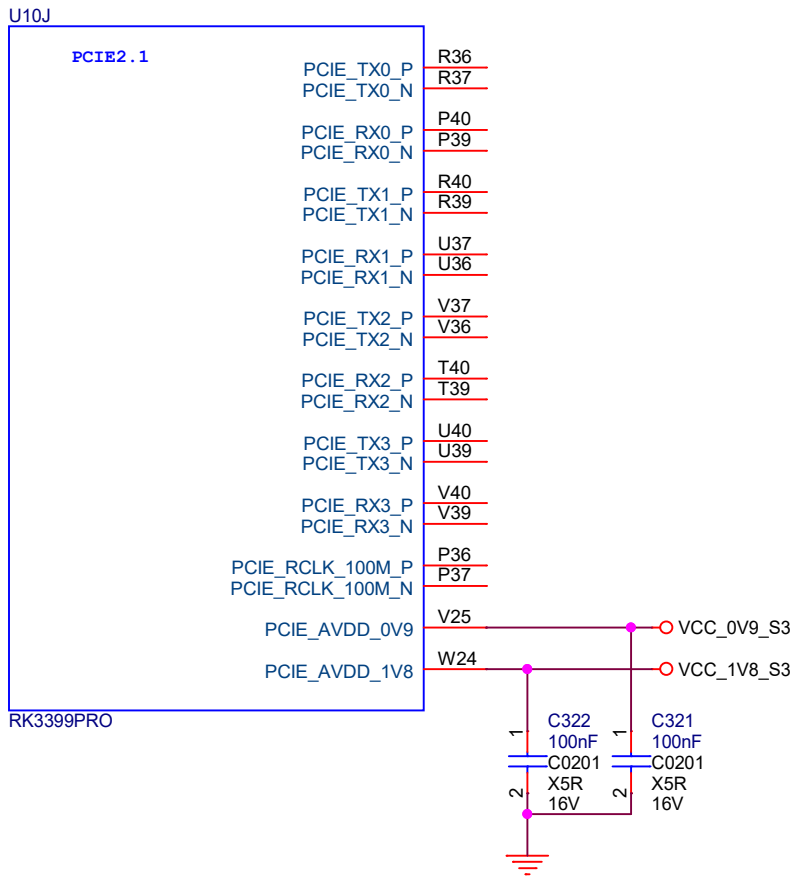
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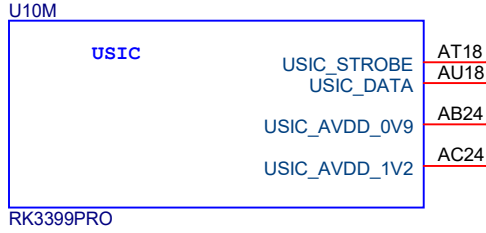
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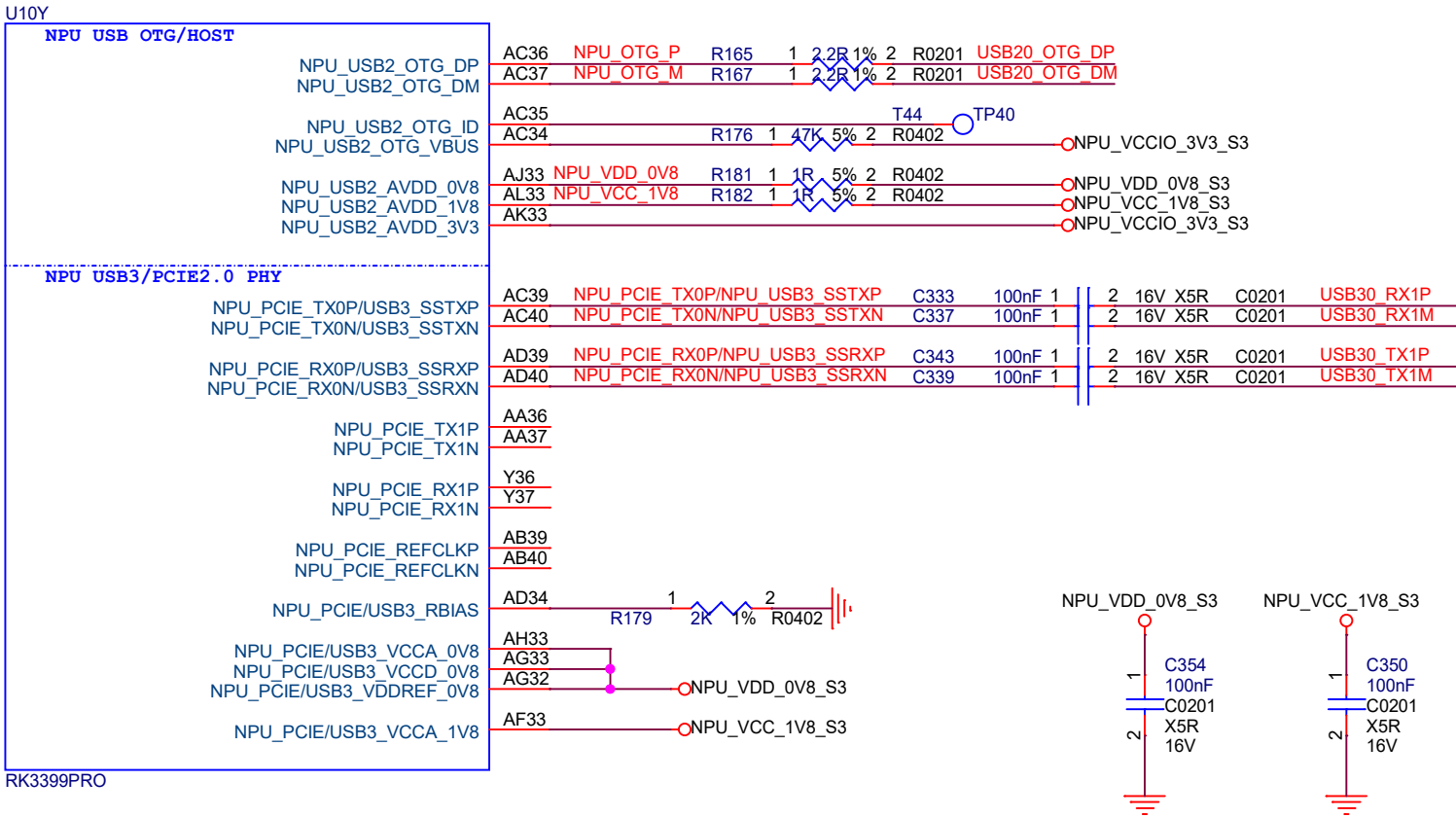
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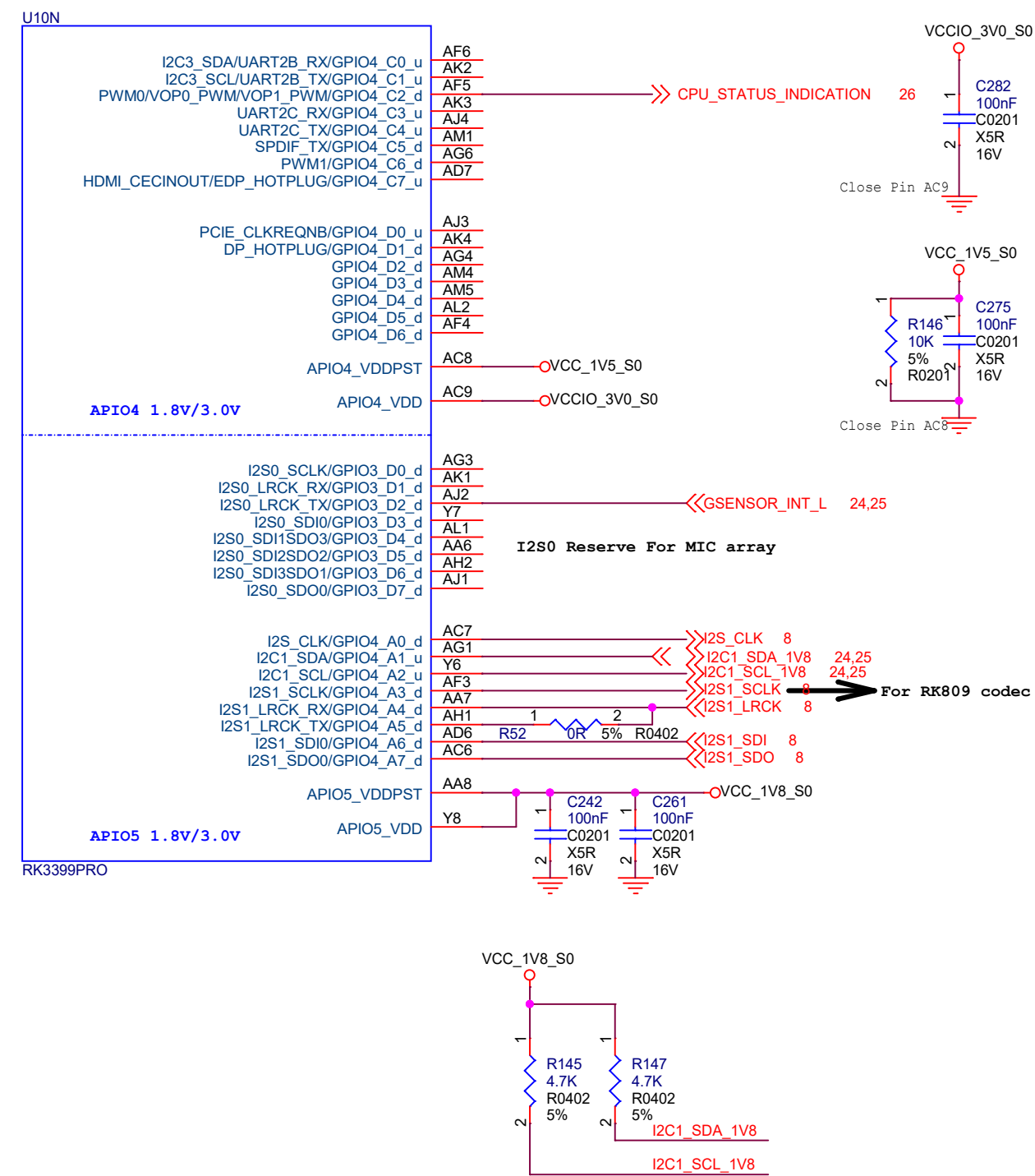


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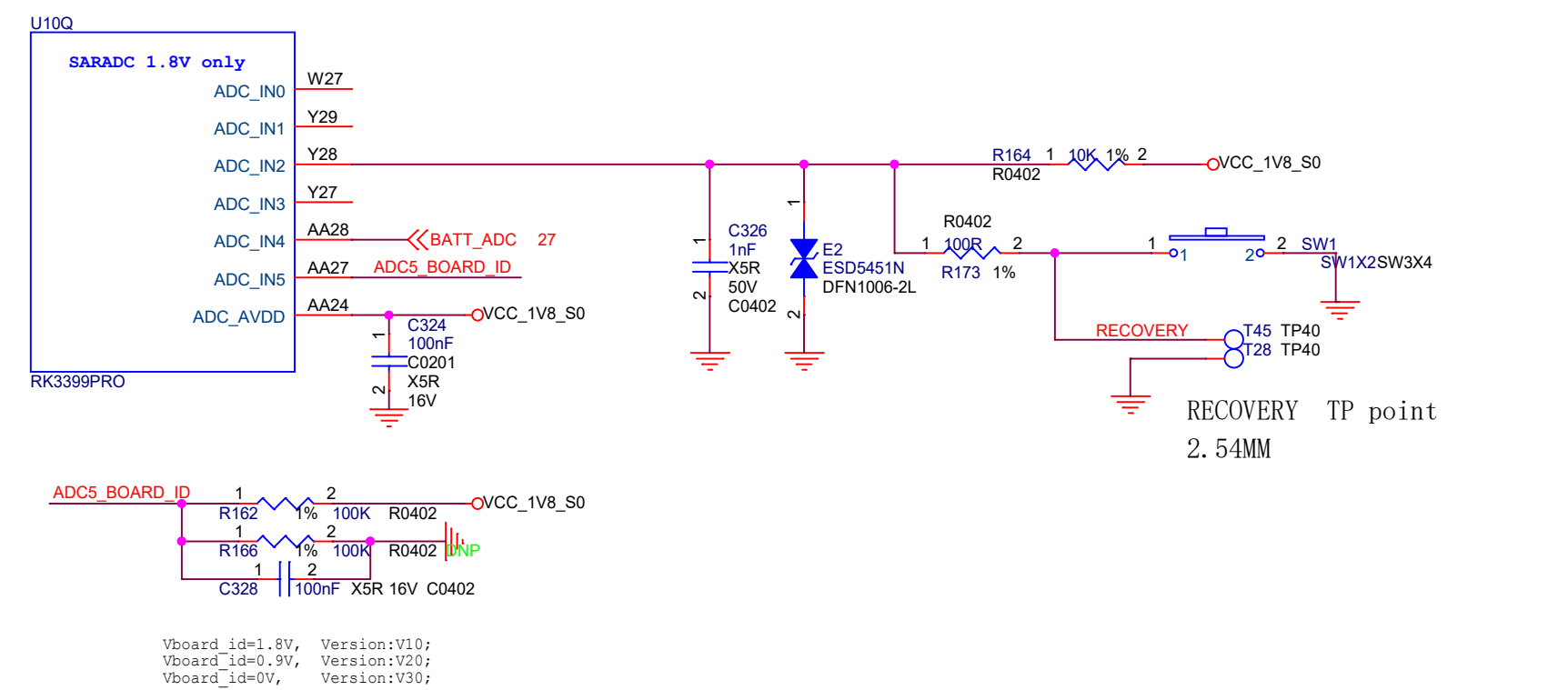


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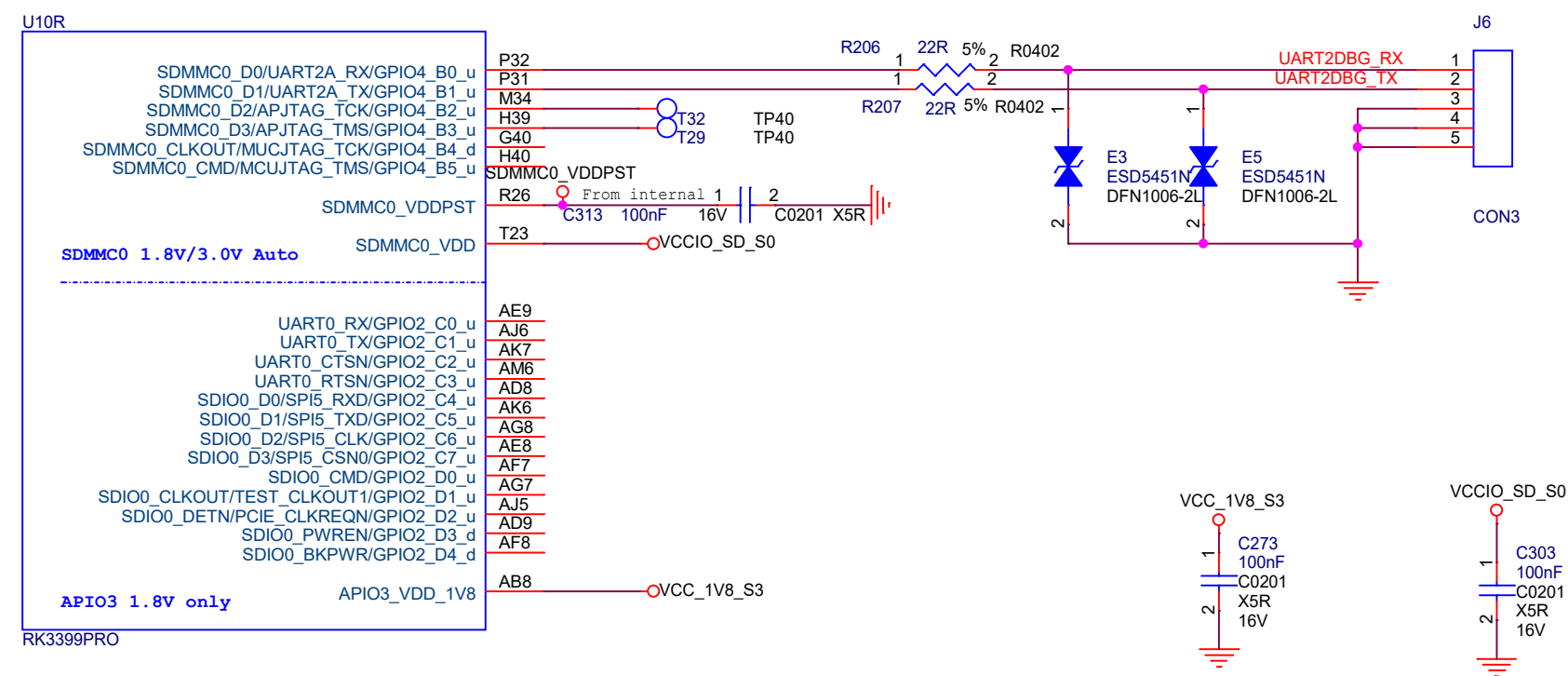


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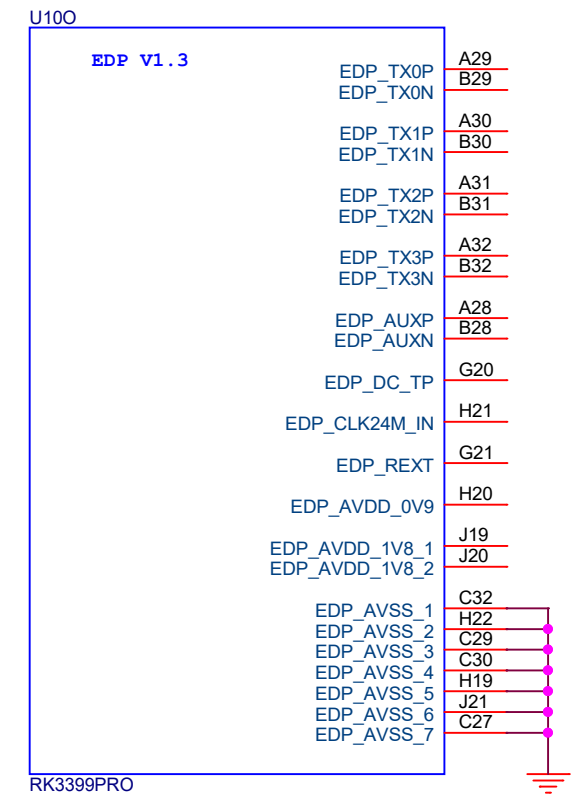


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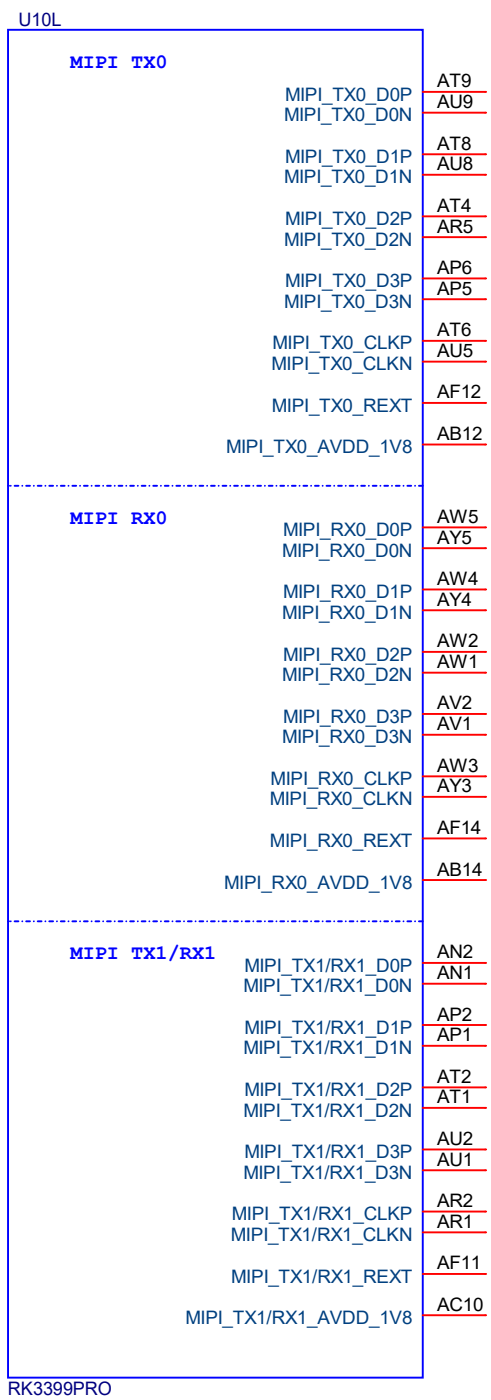
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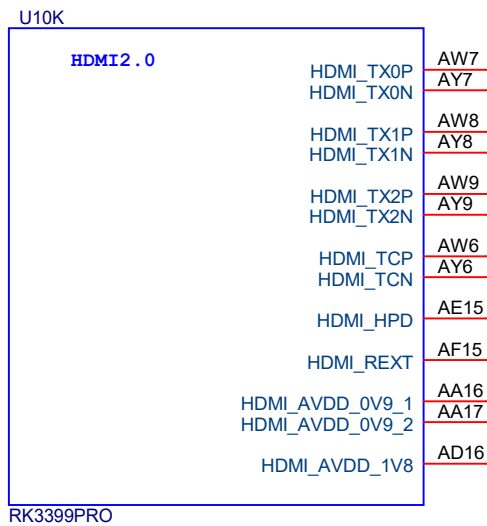
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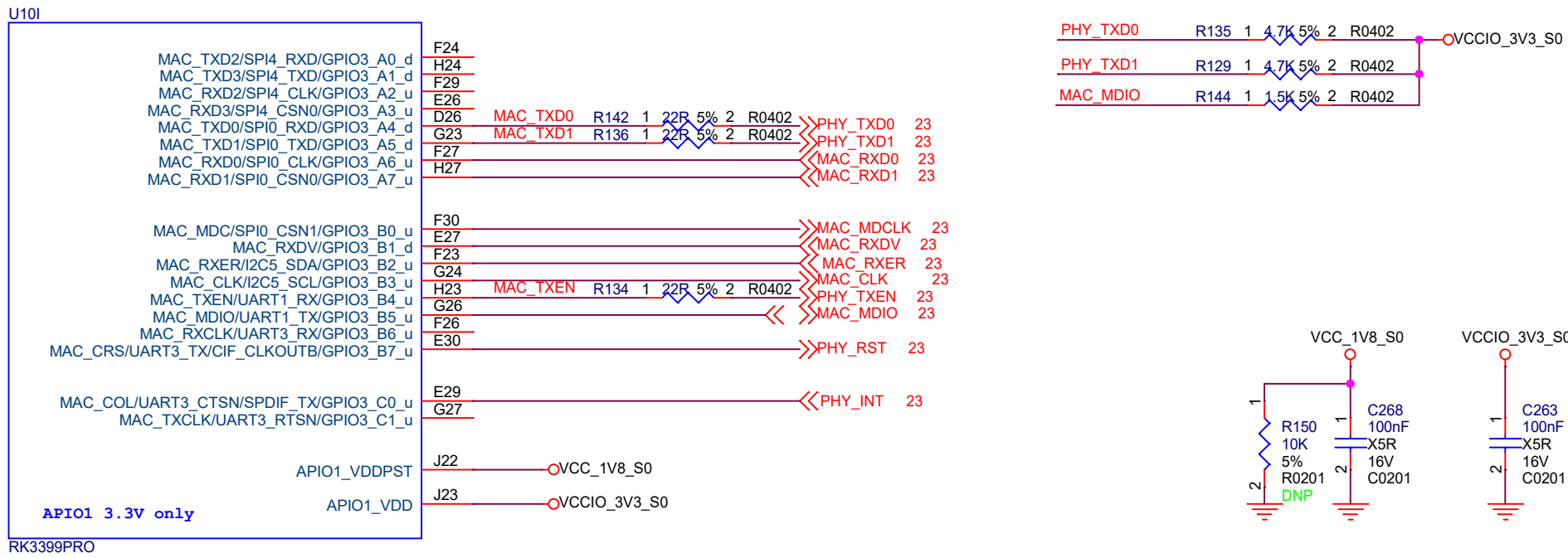
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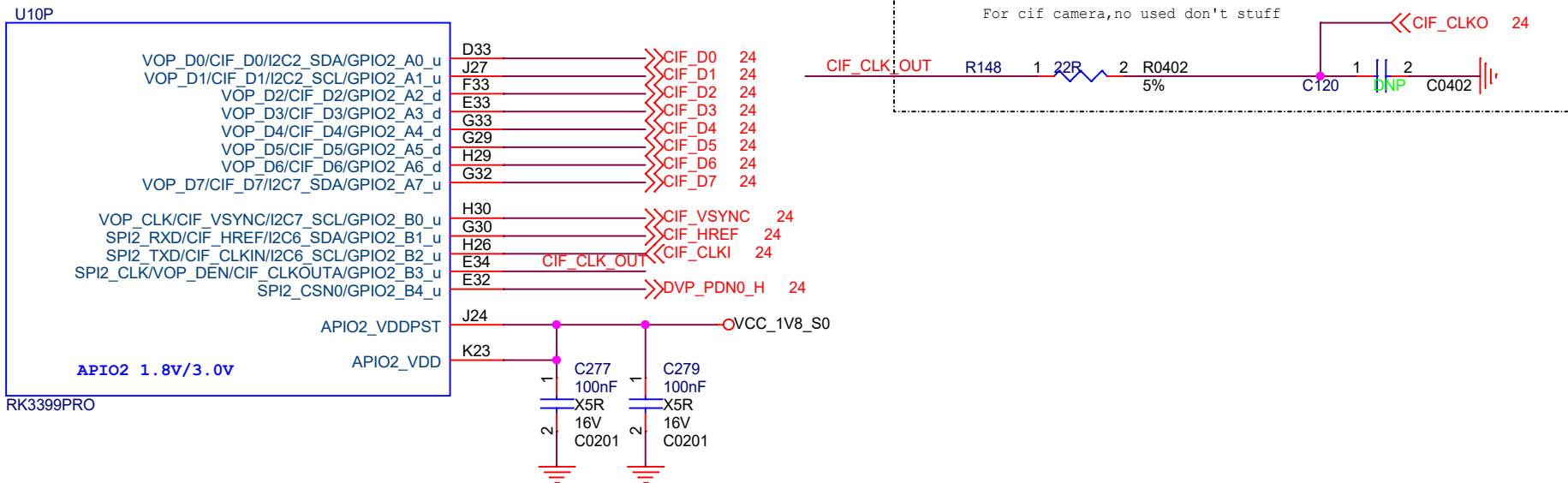
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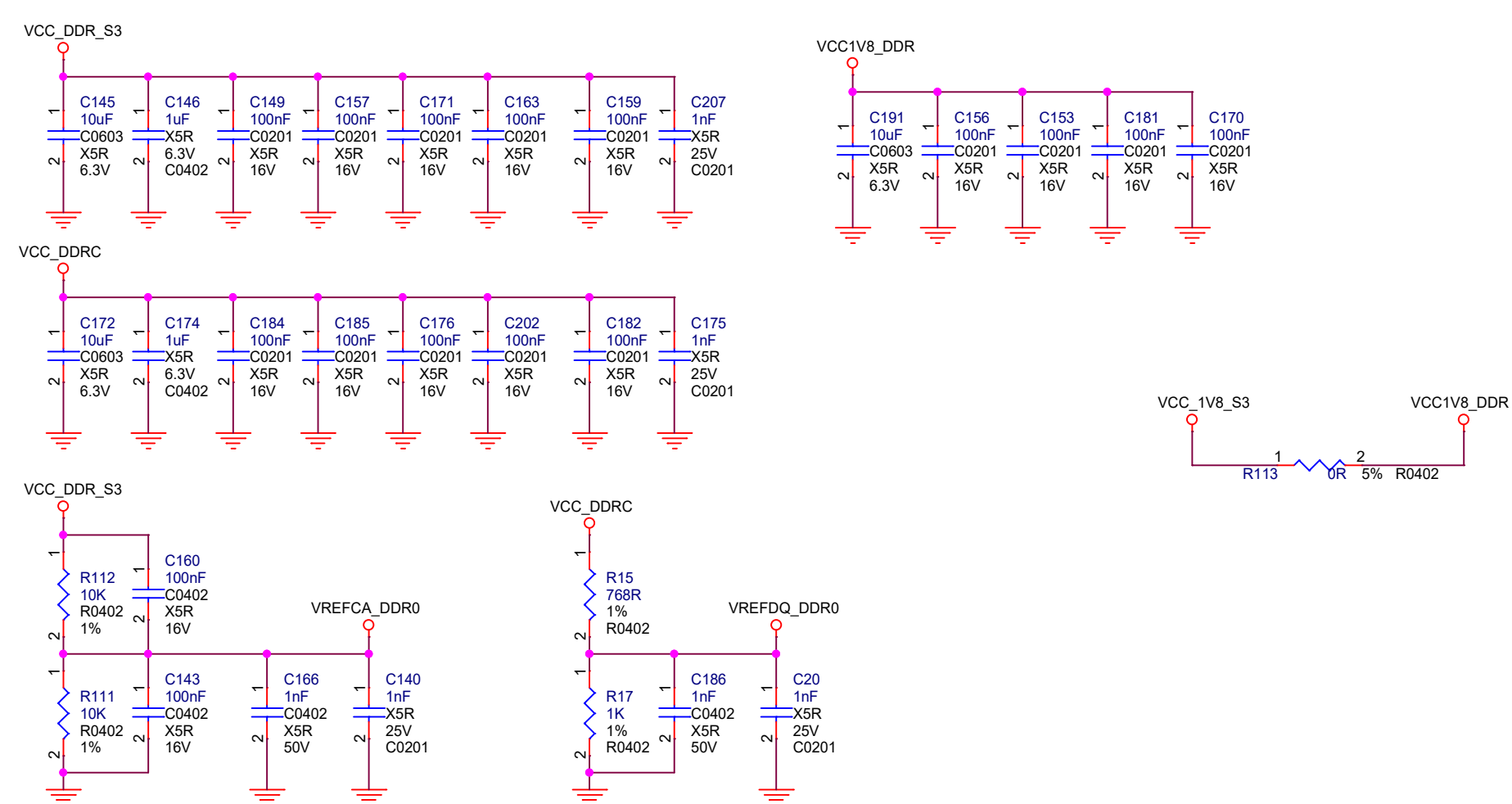
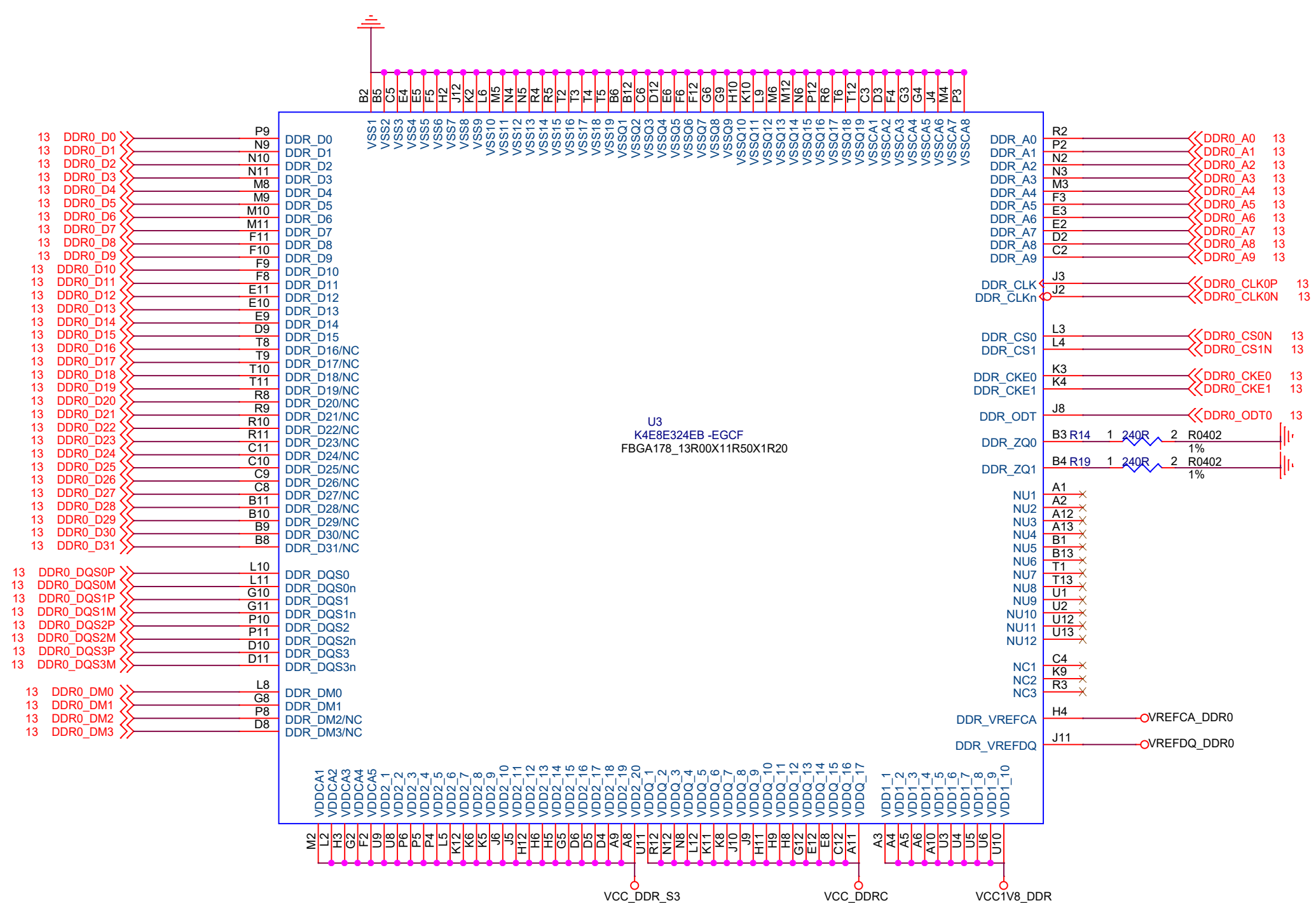
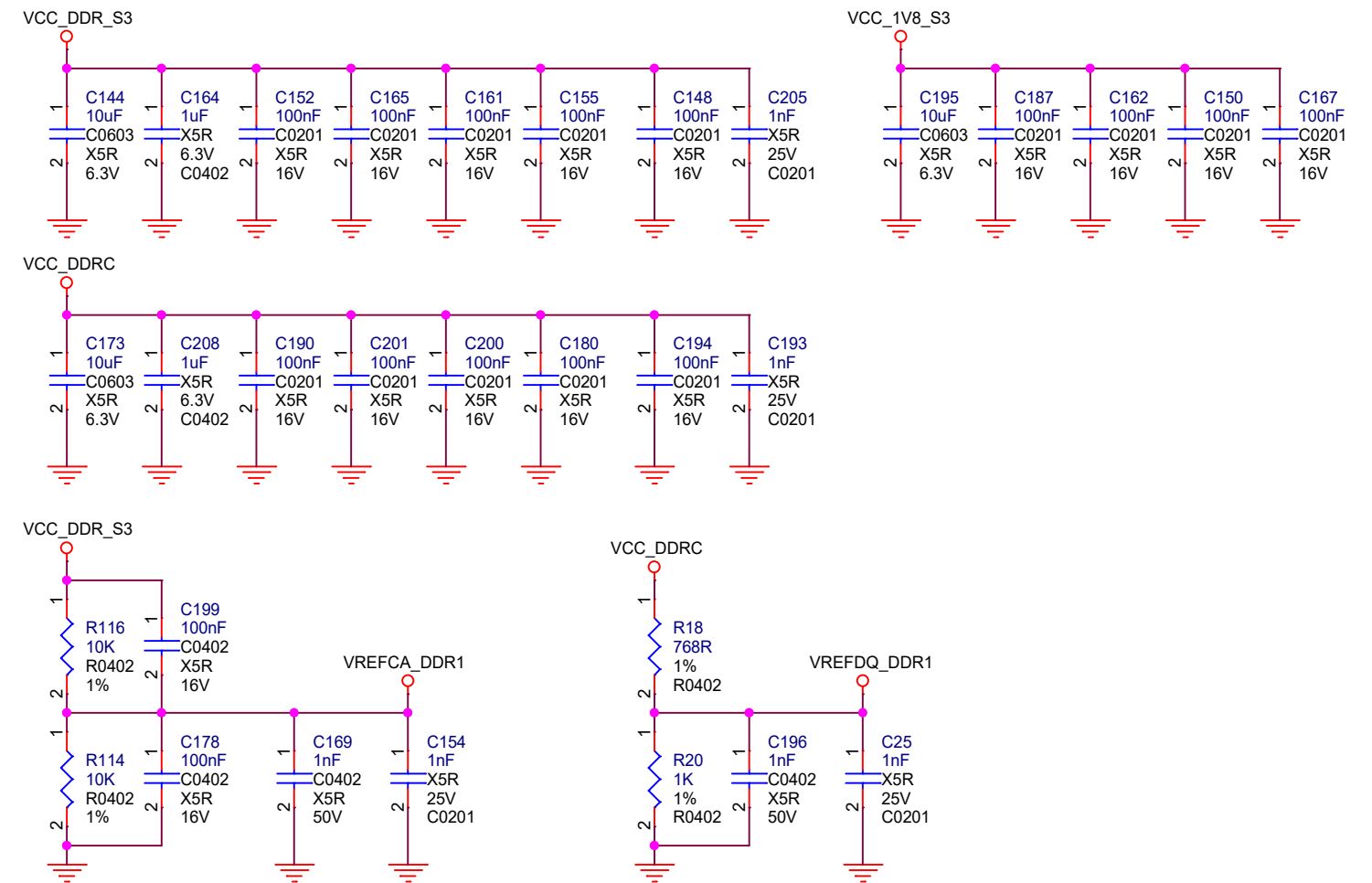
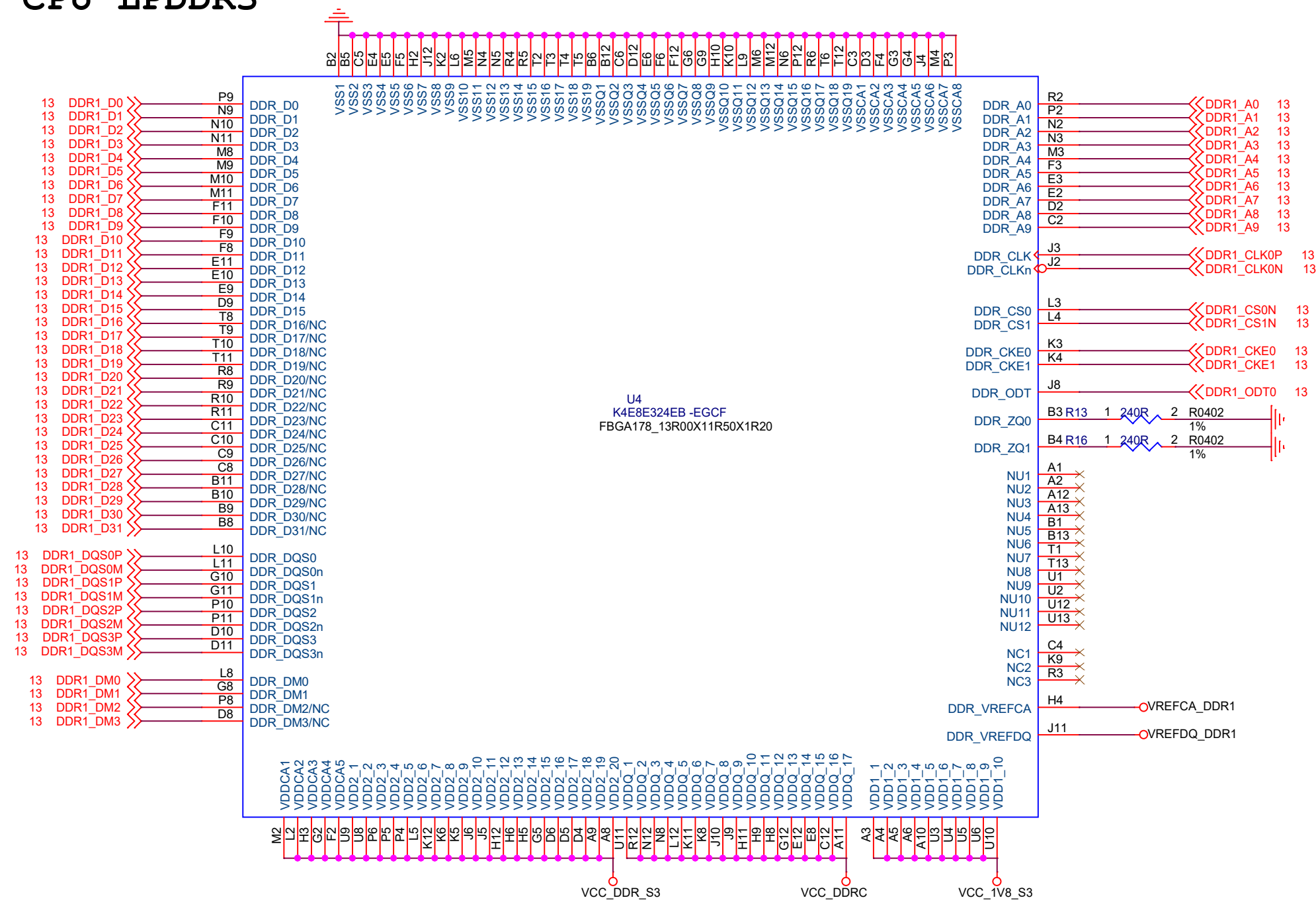


VOP/CIF

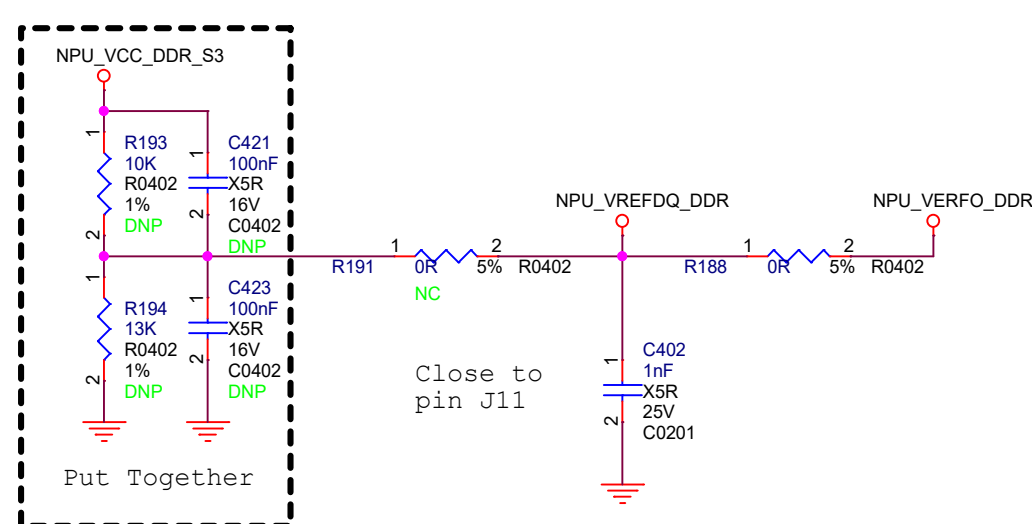
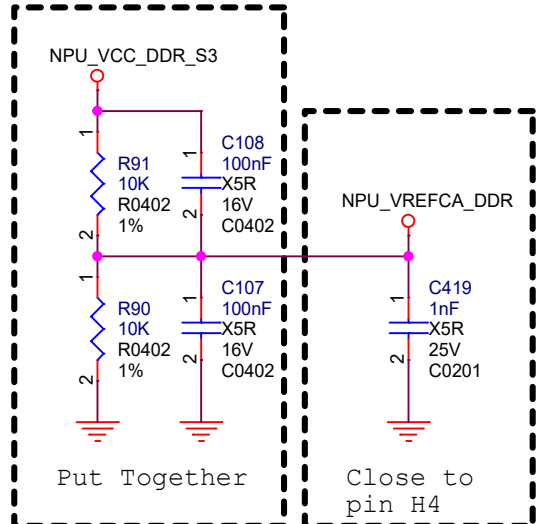
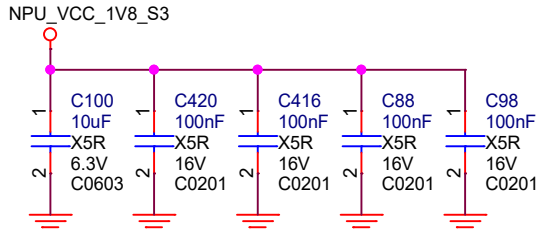
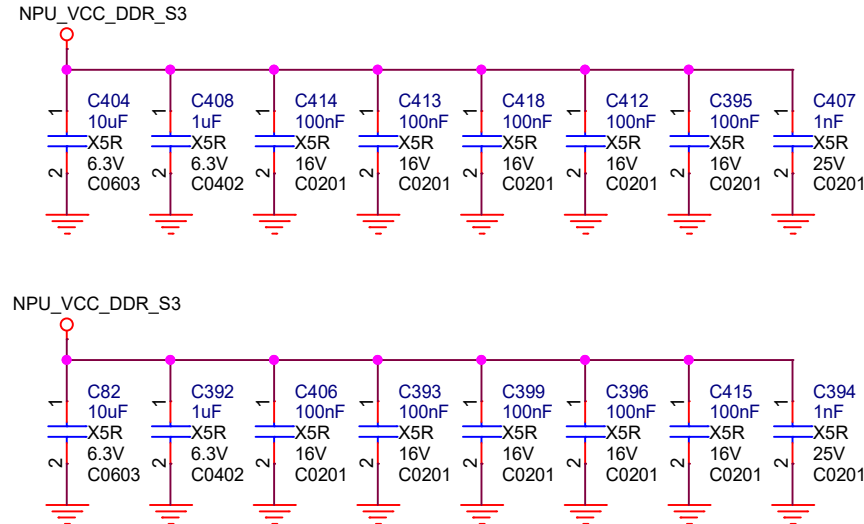
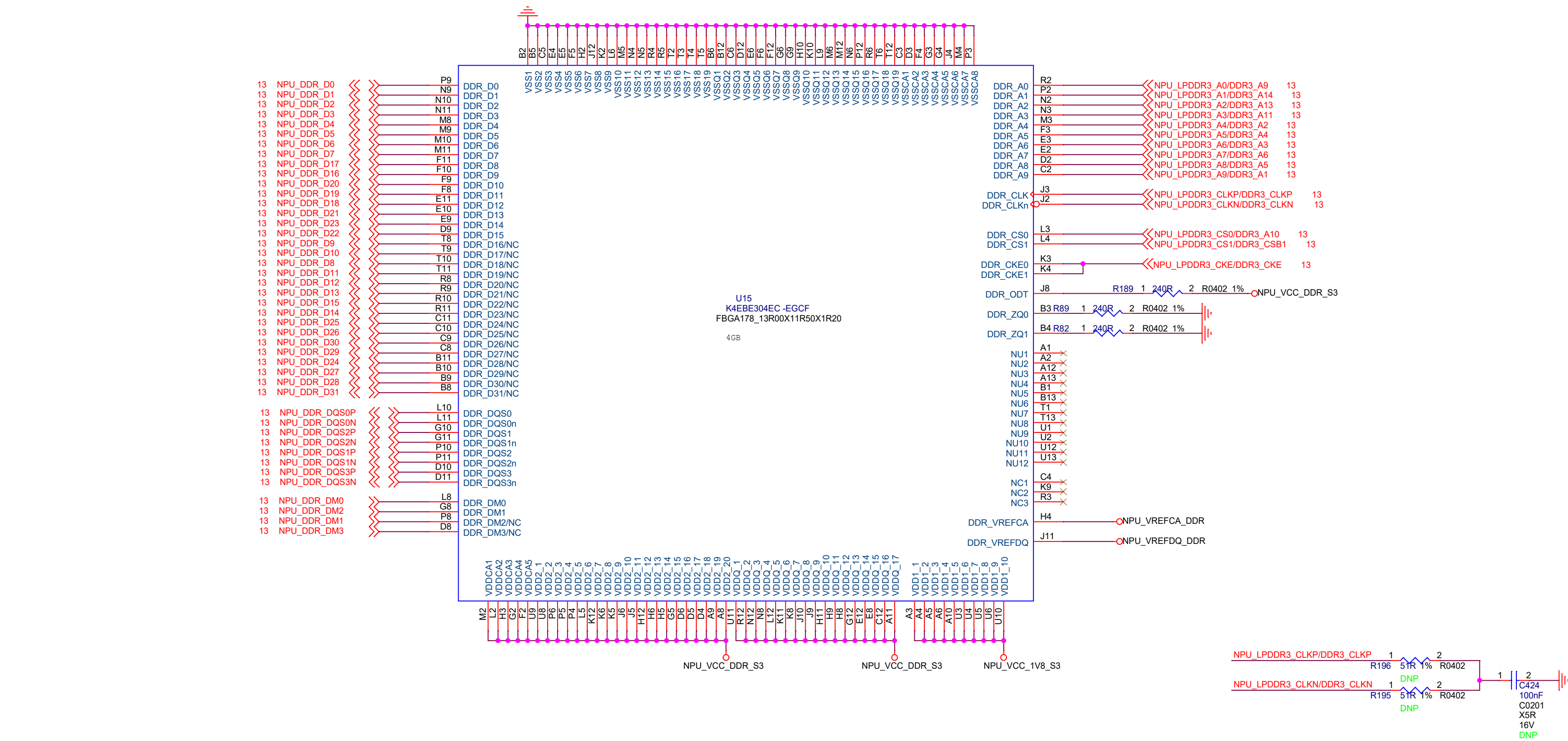


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CPU LPDDR3

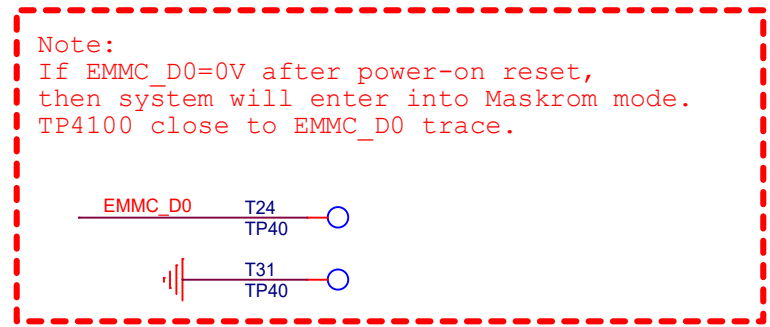
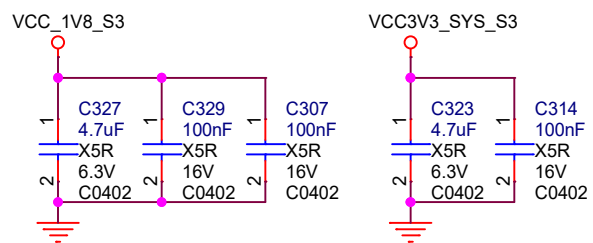
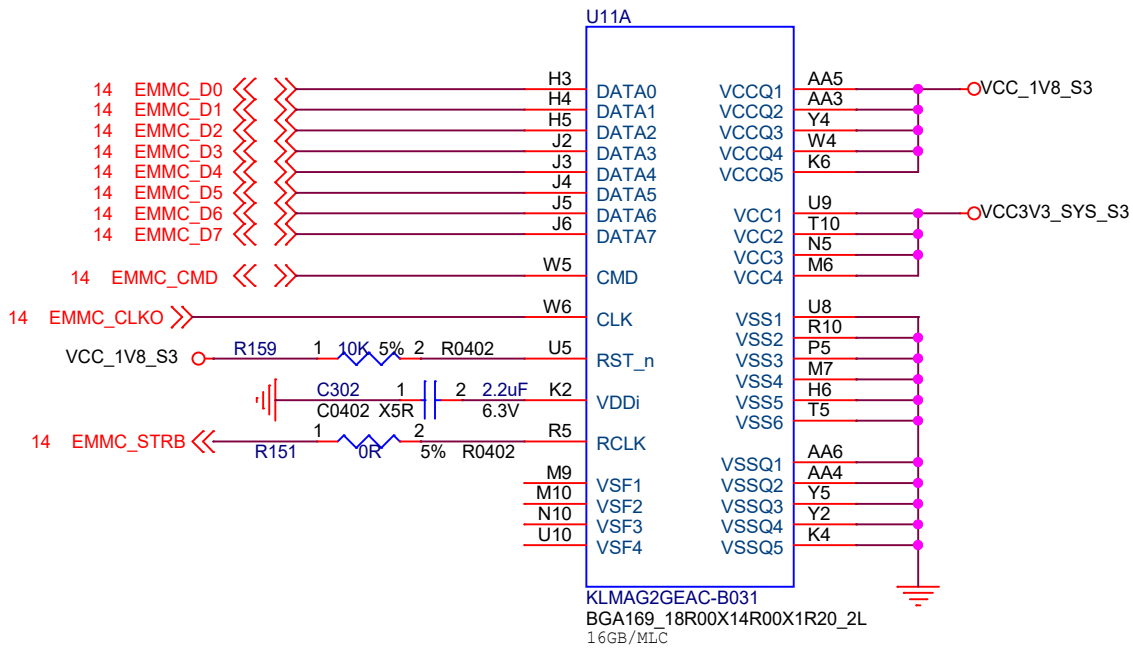
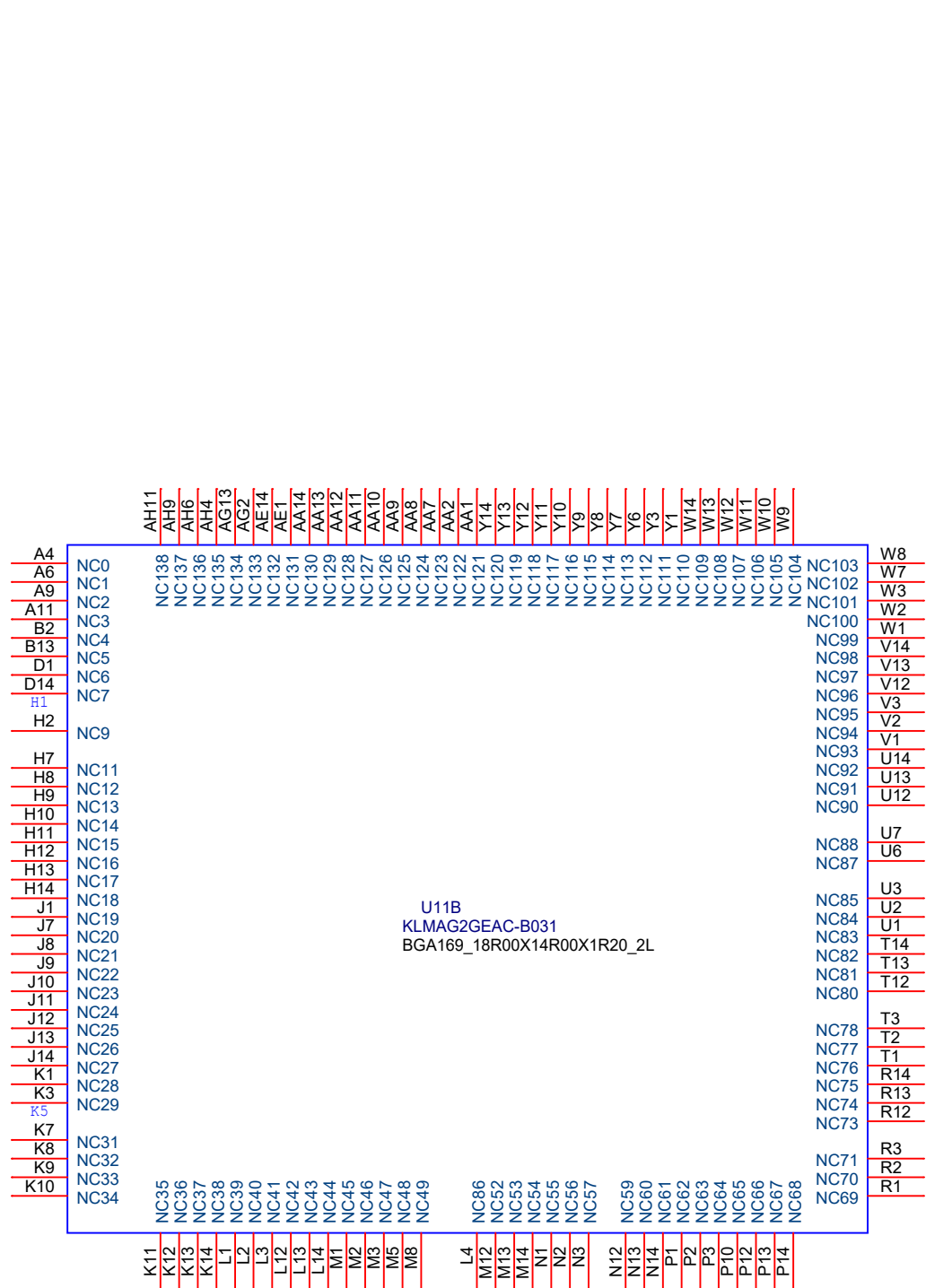


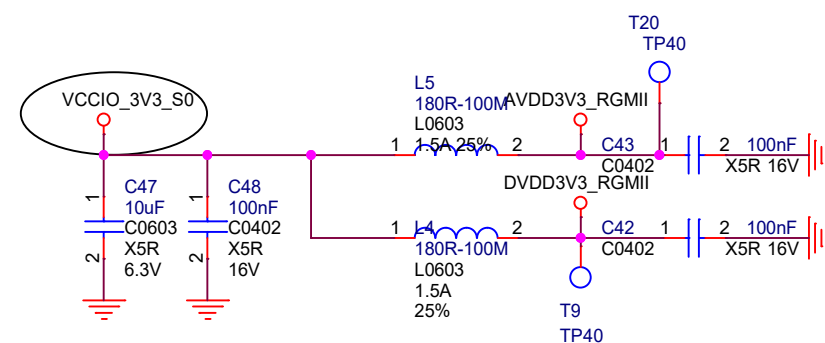
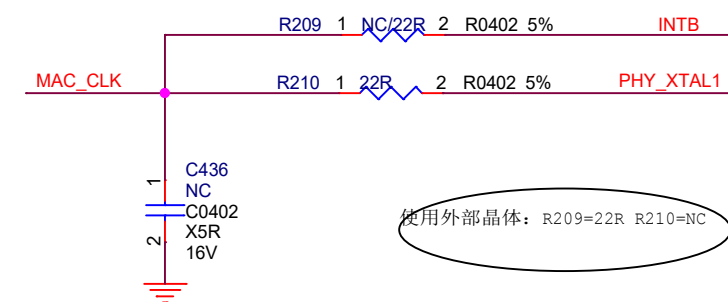
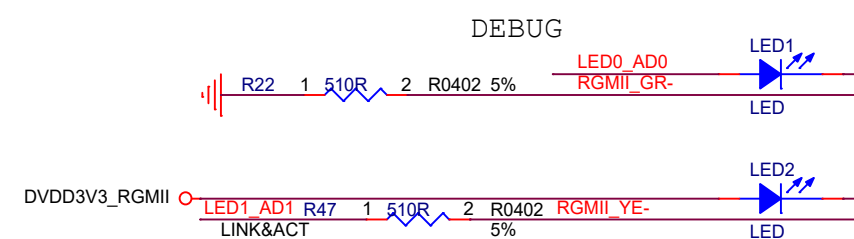
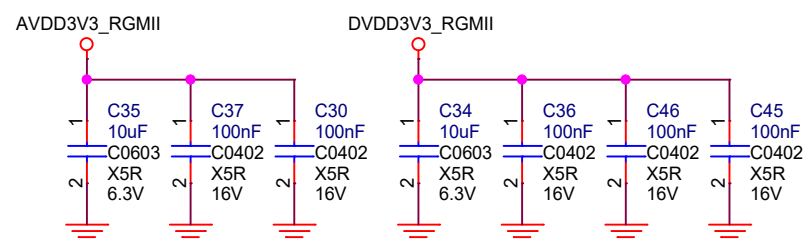
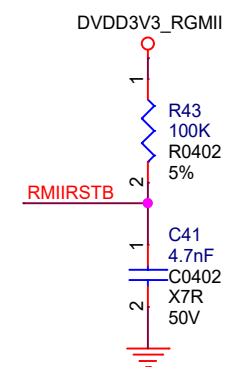
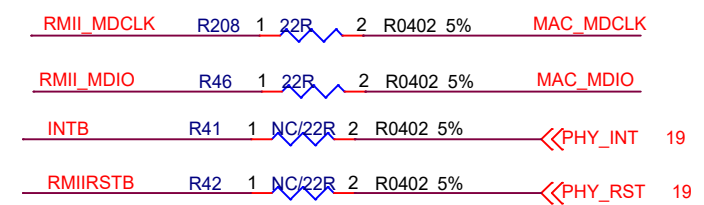
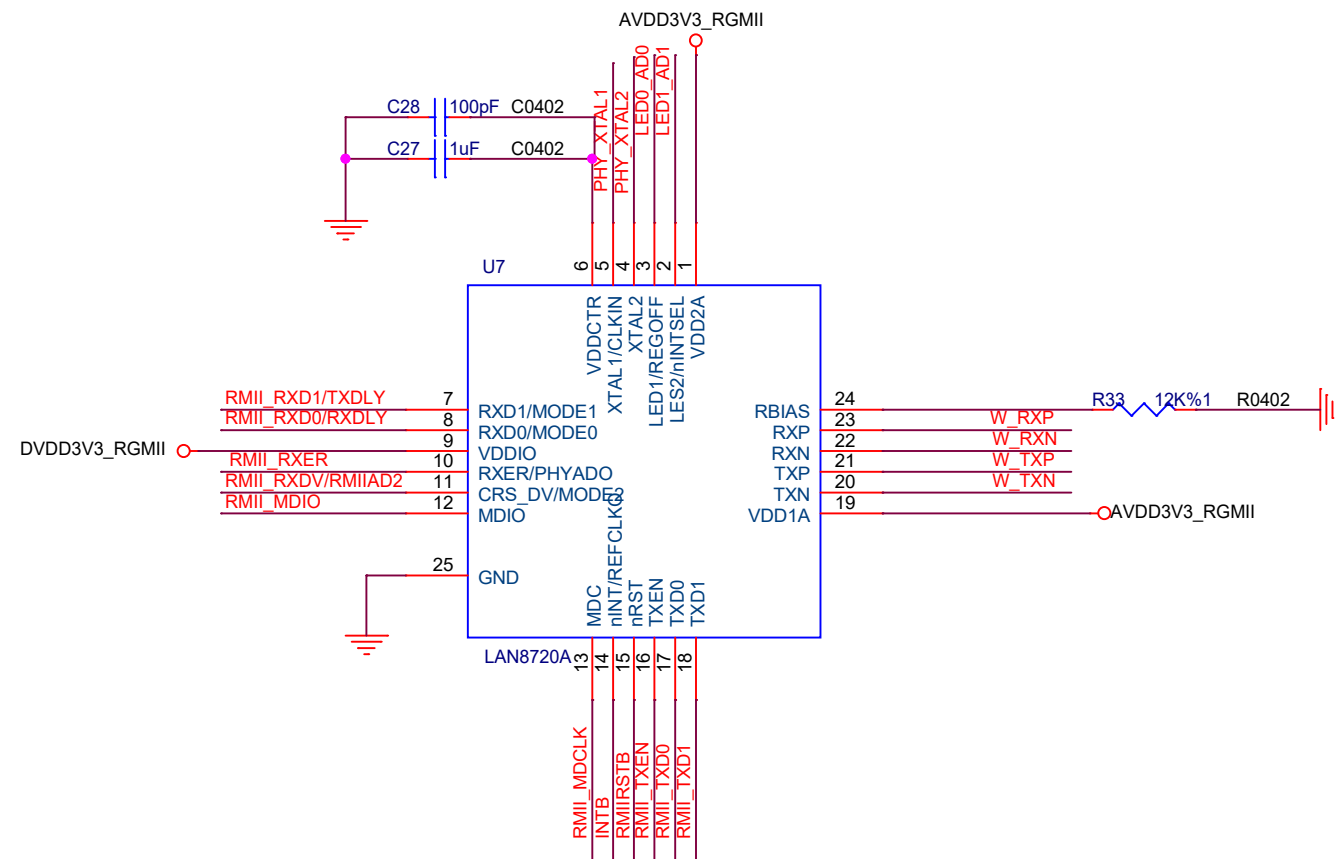
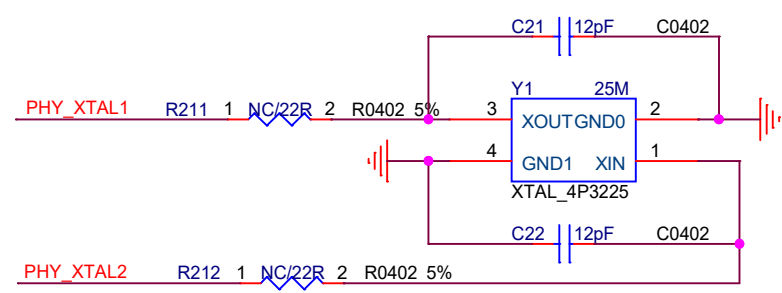
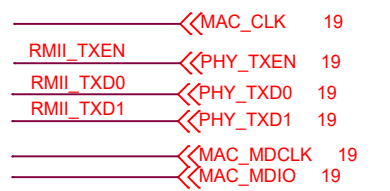
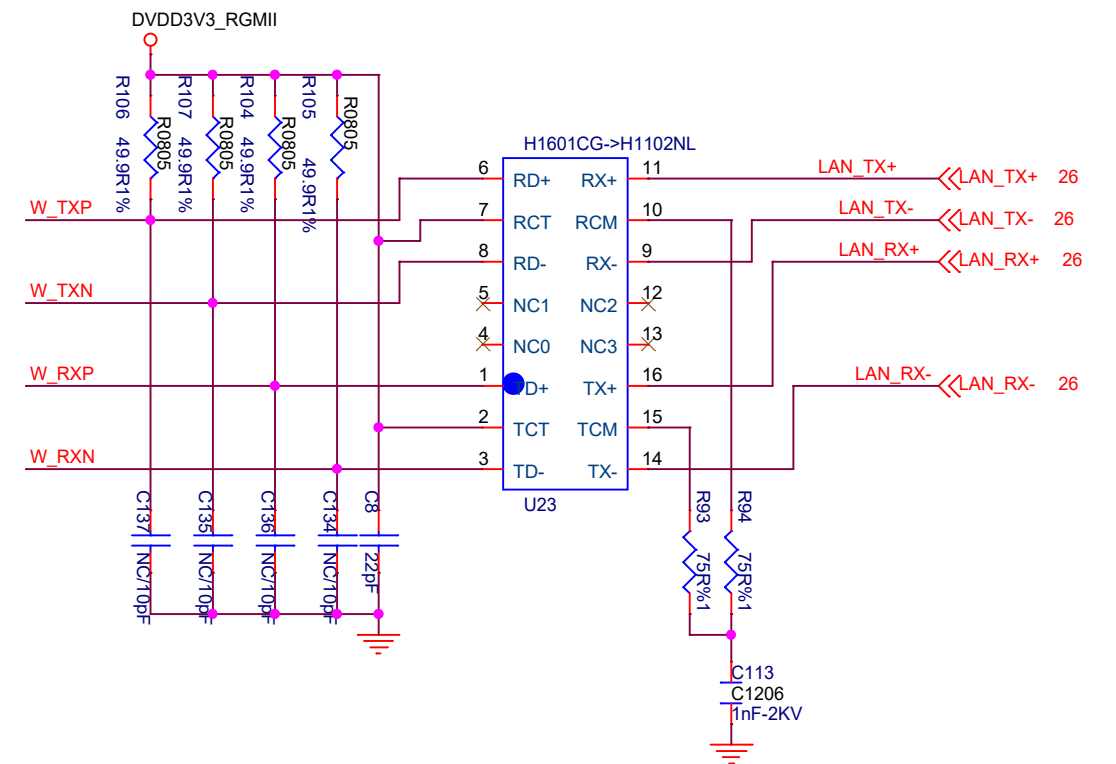
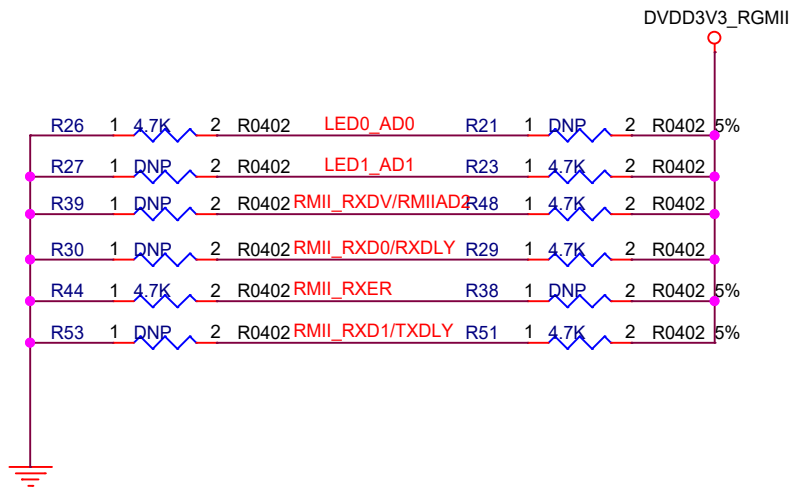
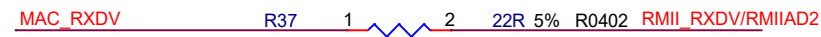
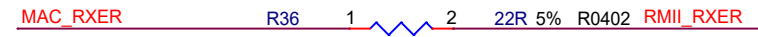
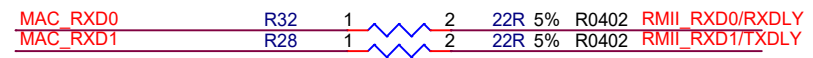
NPU LPDDR3 1x32bit



Note: All the power filter capacitors should be placed close to the power pins of LPDDR3

Note:
 $V_{ih} = VCC$
 $V_{il} = VCC * Ron / (Ron + Rodt)$
 $VREFDQ_DDR = (V_{ih} + V_{il}) / 2$
eg: $VCC = 1.2V$, $Ron = 34ohm$, $Rodt = 240ohm$
so, $V_{ih} = 1.2V$, $V_{il} = 0.149V$, $VREFDQ_DDR = 0.674V$

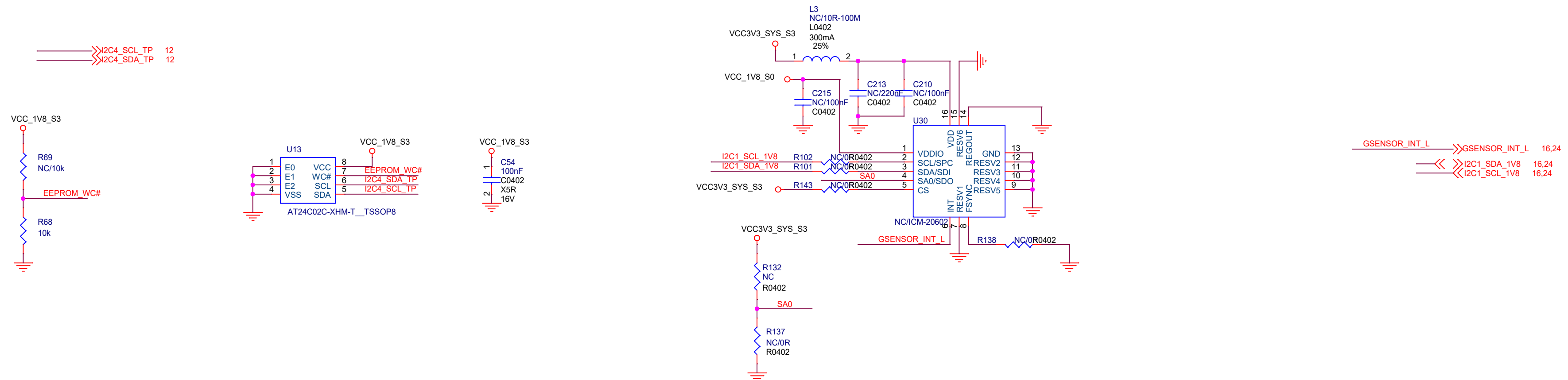


RGMII-10/100M

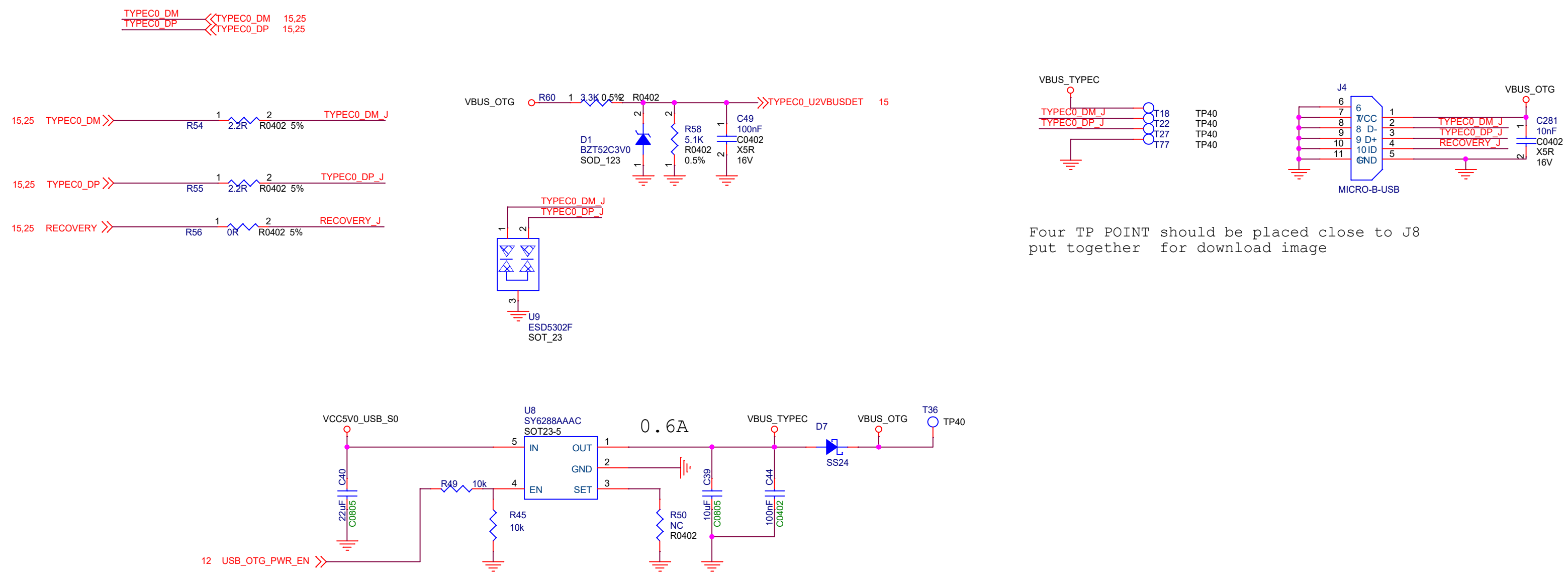
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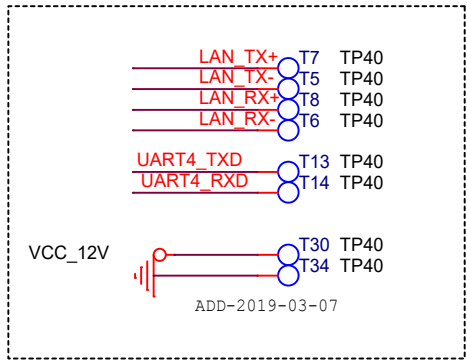
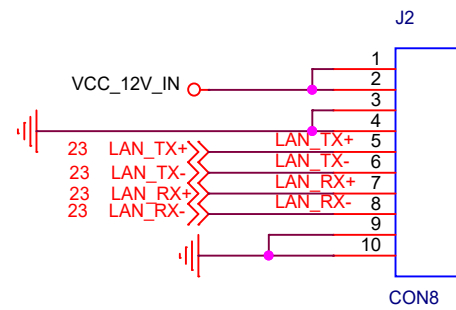
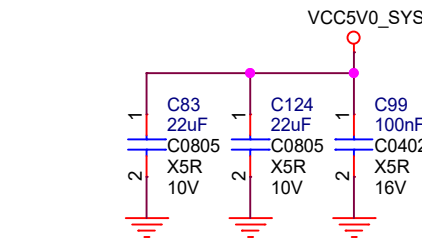
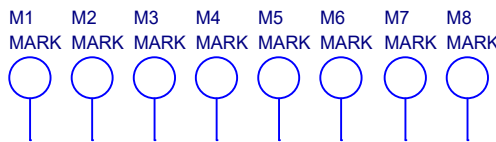
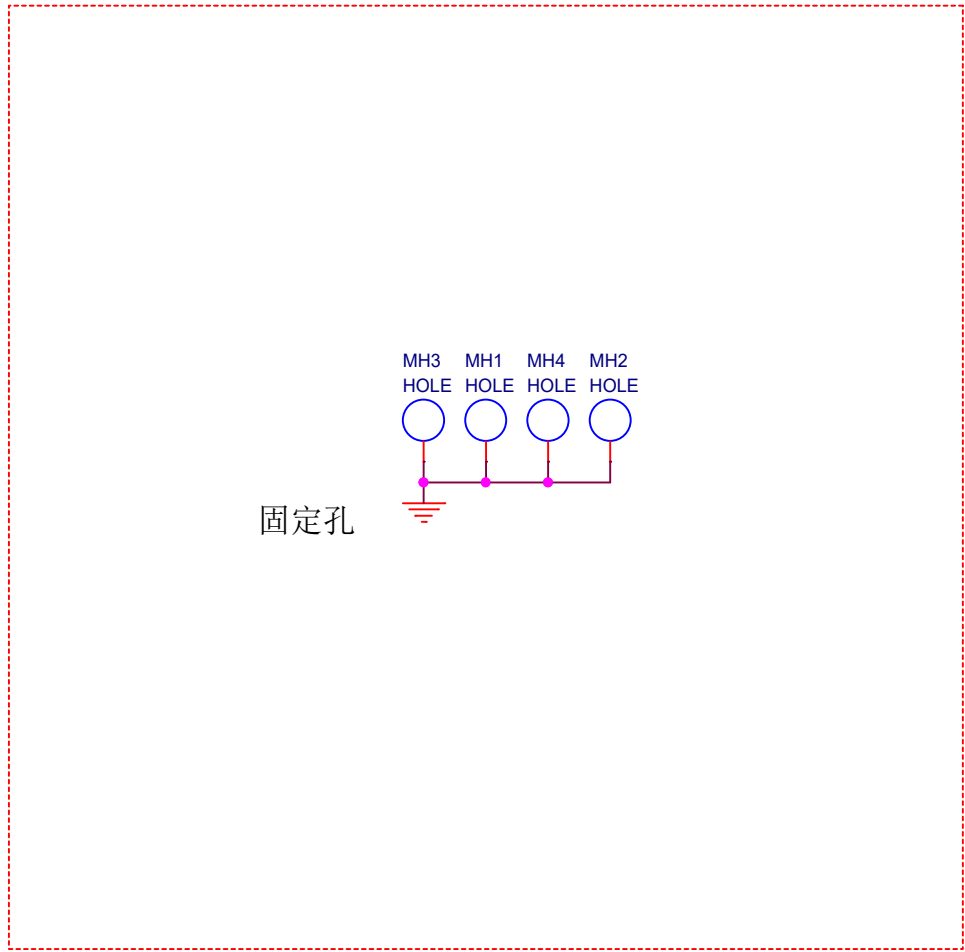
G-sensor



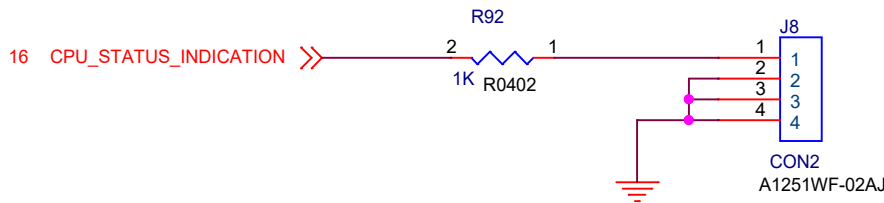
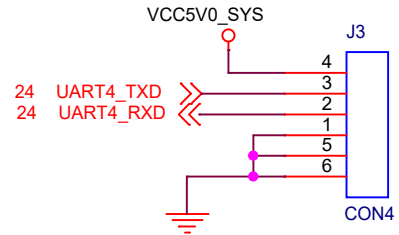
OTG PROGRAM



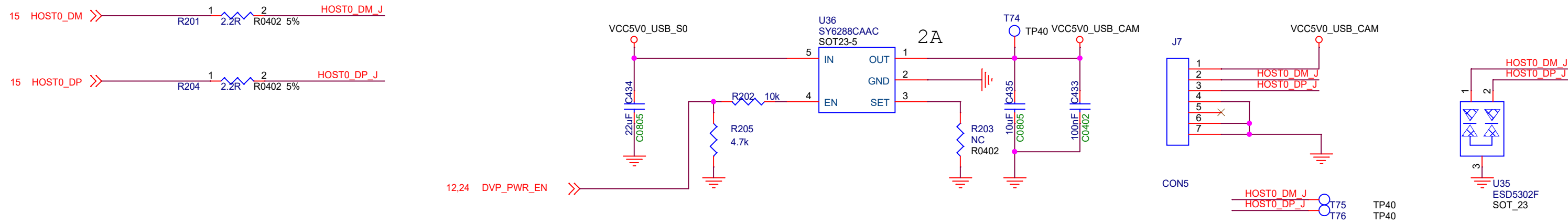
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The points should be placed close to J16

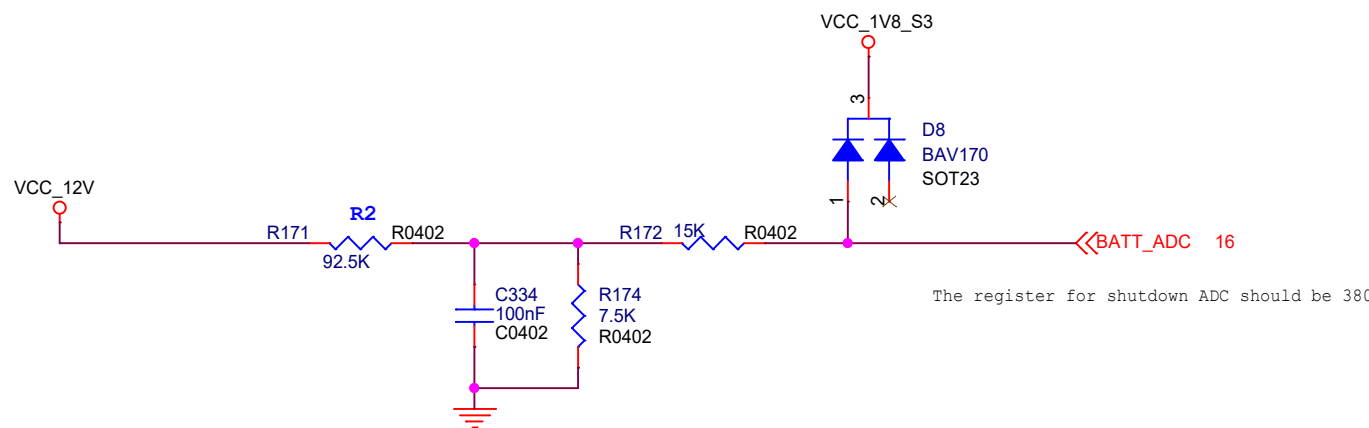


USB Camera



ADD-2019-03-07

Shutdown Det



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