

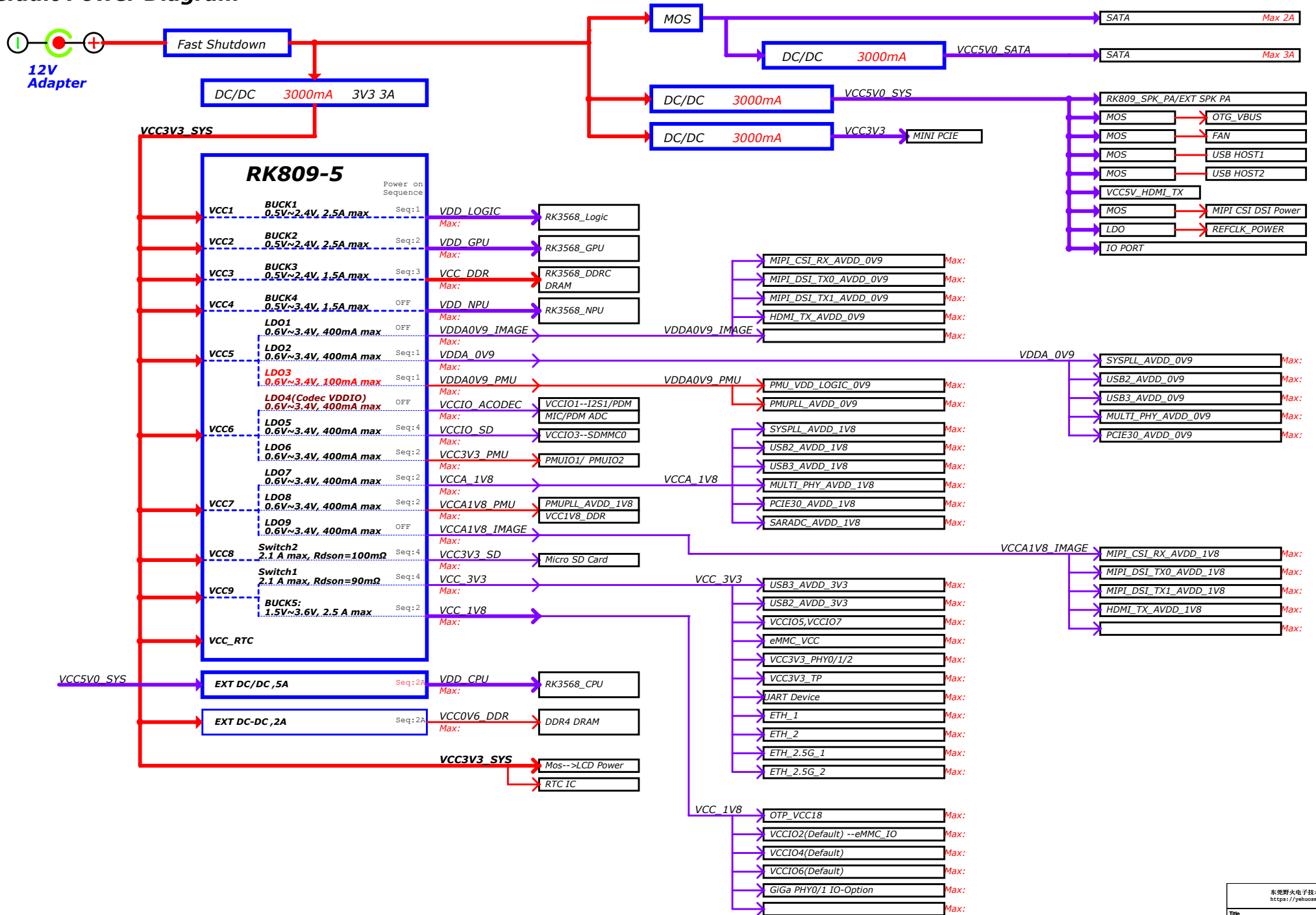
野火_RK3568 LubanCat 2 N_原理图_V1.3

目录

Page 1	Content	Page 27	ETH_2.5G_1
Page 2	Historic Version	Page 28	ETH_2.5G_2
Page 3	POWER DIAGRAM	Page 29	MINI_PCIE_PORT
Page 4	DC_IN/OTG_Download	Page 30	Earphone/DEBUG/IO_PORT/LED
Page 5	PMIC_DCDC/LDO	Page 31	
Page 6	PMIC_Management/CODE		
Page 7	Power_other		
Page 8	RK3568_Power/GND		
Page 9	DDR_PHY		
Page 10	LPDDR4/4x		
Page 11	RK3566_OSC/PLL/PMUIO		
Page 12	EMMC/SD Controller		
Page 13	USB/PCIE/SATA_PHY		
Page 14	SARADC/GPIO		
Page 15	VI Interface		
Page 16	VO Interface_1		
Page 17	VO Interface_2		
Page 18	Audio Interface		
Page 19	EMMC_FLASH		
Page 20	ETH_1		
Page 21	ETH_2		
Page 22	USB_PORT		
Page 23	HDMI_PORT/SATA_PORT		
Page 24	MIPI_DSI/MIPI_CSI_PORT_1		
Page 25	MIPI_DSI/MIPI_CSI_PORT_2		
Page 26	PCIE3.0_REFCLK		

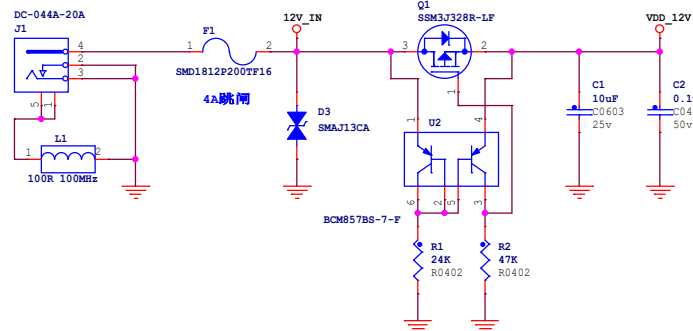
历史版本			
版本号	日期	设计	描述
V0.1	2022-05-05	ghs	初始版本
V1.0	2022-09-09	ghs	修正U27开启信号接反的问题，解决调试接口漏电的问题
V1.1	2022-09-09	ghs	修正BOARD ID的ID识别电阻的电源域，修正PHY芯片的复位引脚电压不匹配问题
V1.2	2022-12-13	ghs	增加网卡上拉电阻，更新mini pcie的固定螺丝柱
V1.3	2023-07-13	ghs	新增一个MIPI CSI，一个MIPI DSI
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Default Power Diagram

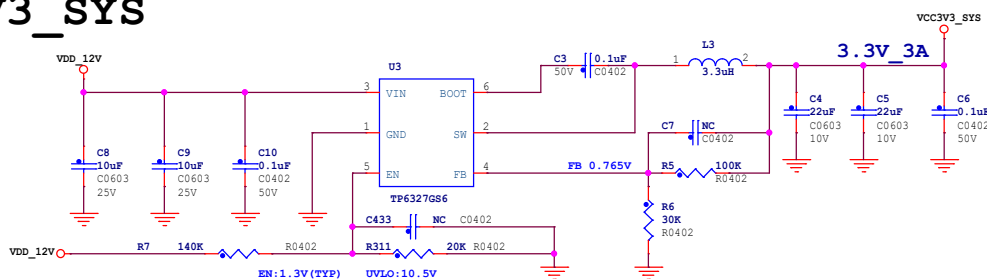


DC 12V 3A POWER IN

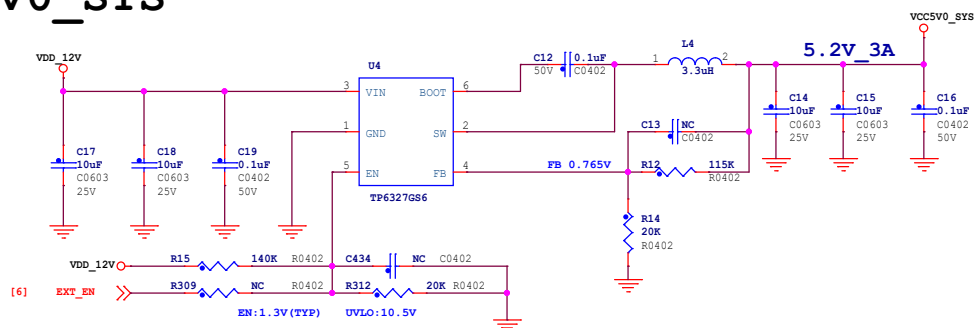
12V/3A



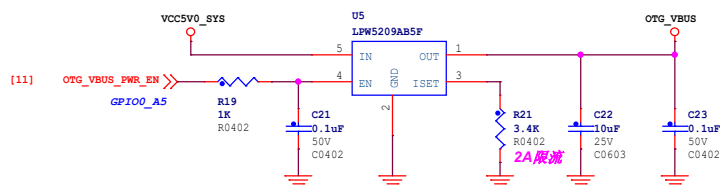
3V3_SYS



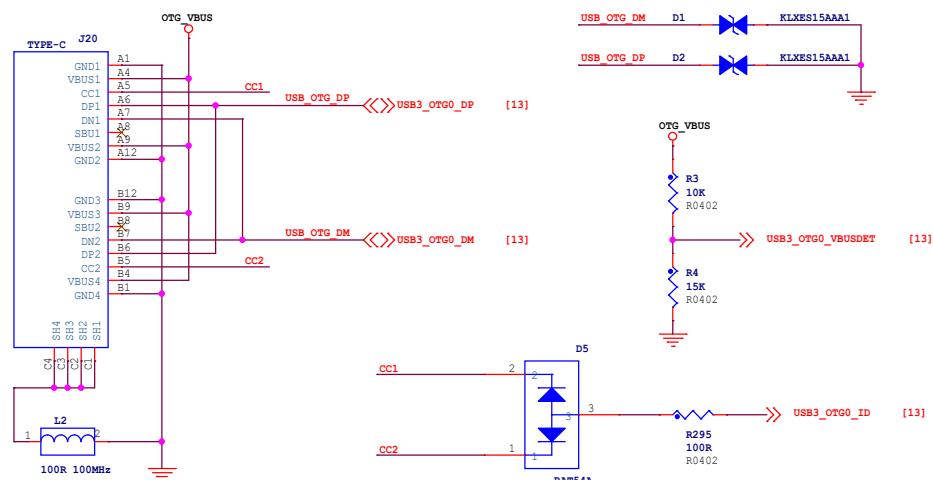
5V0_SYS



OTG POWER

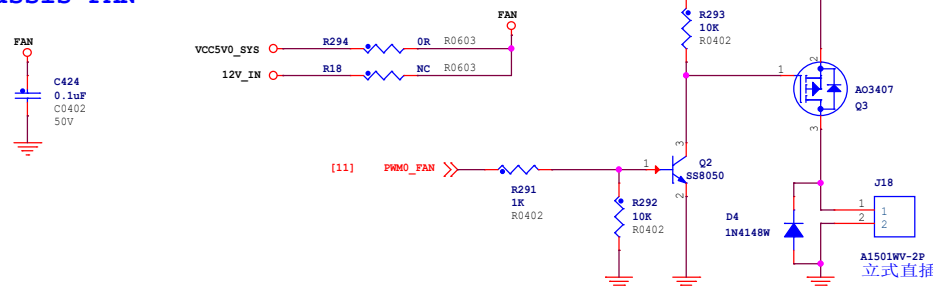


OTG/Download



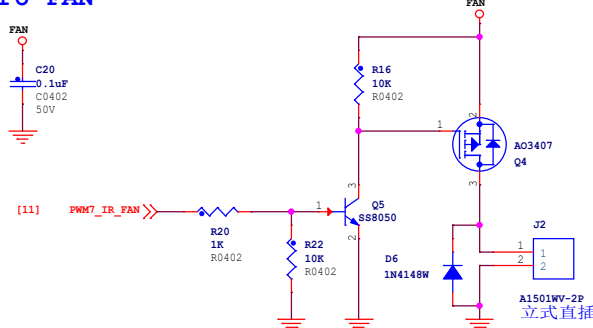
Active Cooling

Chassis FAN



Active Cooling

CPU FAN



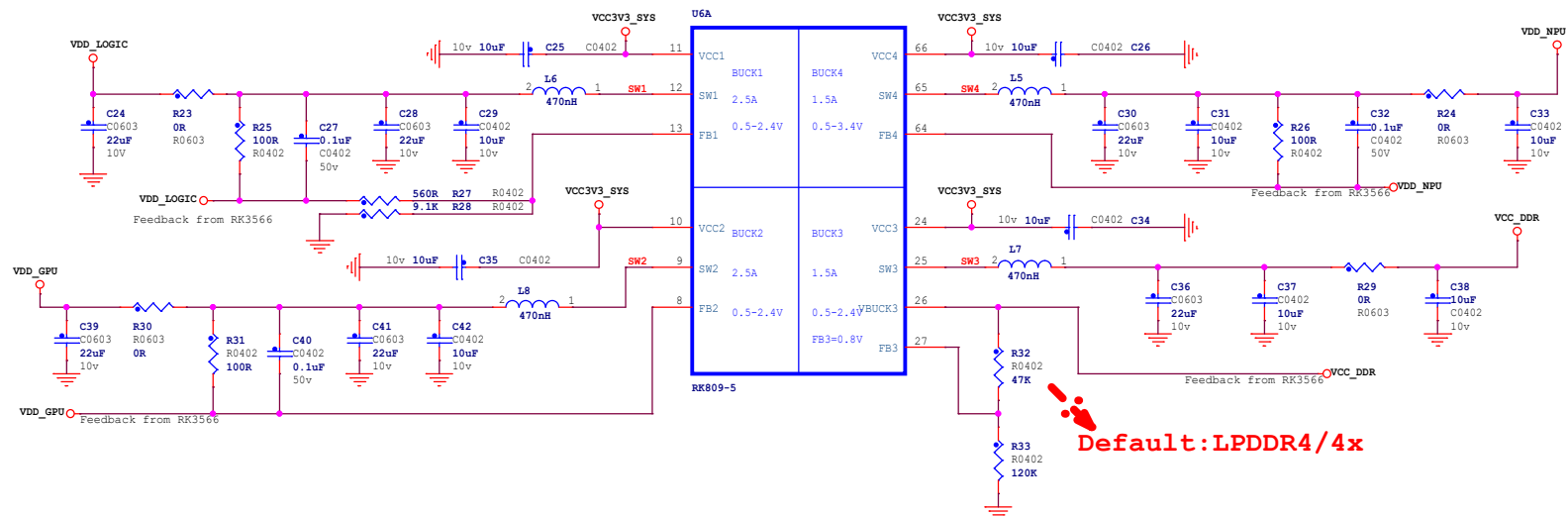
Fix Hole

4*M3



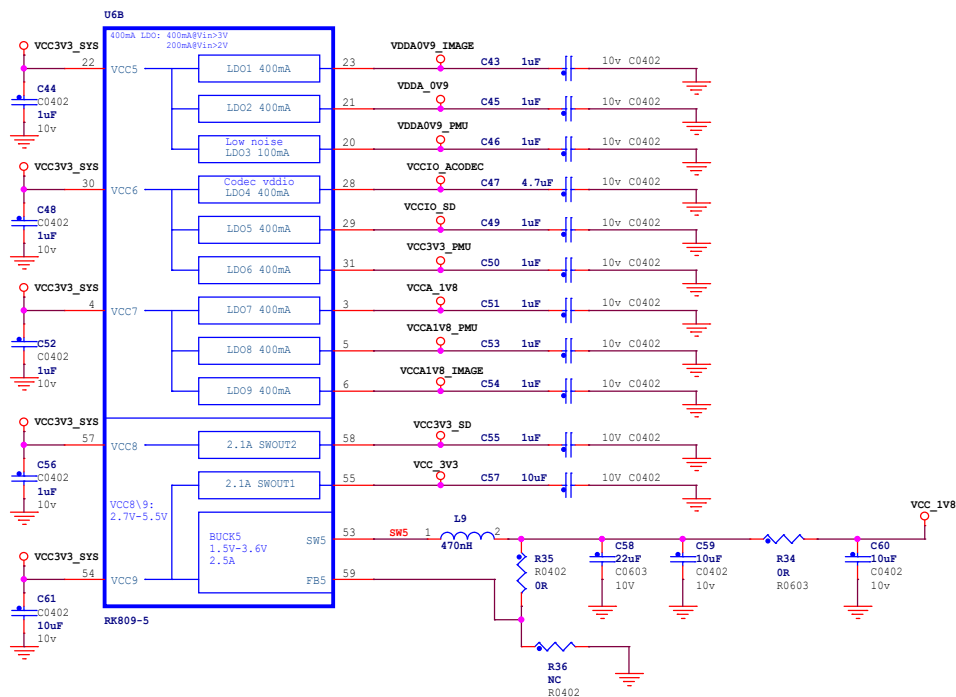
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Title	野火_RK3568 LubanCat 2 N_原理图_V1.3	
Size	Document Number	Rev
A3	DC_IN/OTG Download	V1.3
Date: Saturday, December 02, 2023 Sheet 4 of 29		

PMIC RK809 DCDC



RK3566 BUCK FB

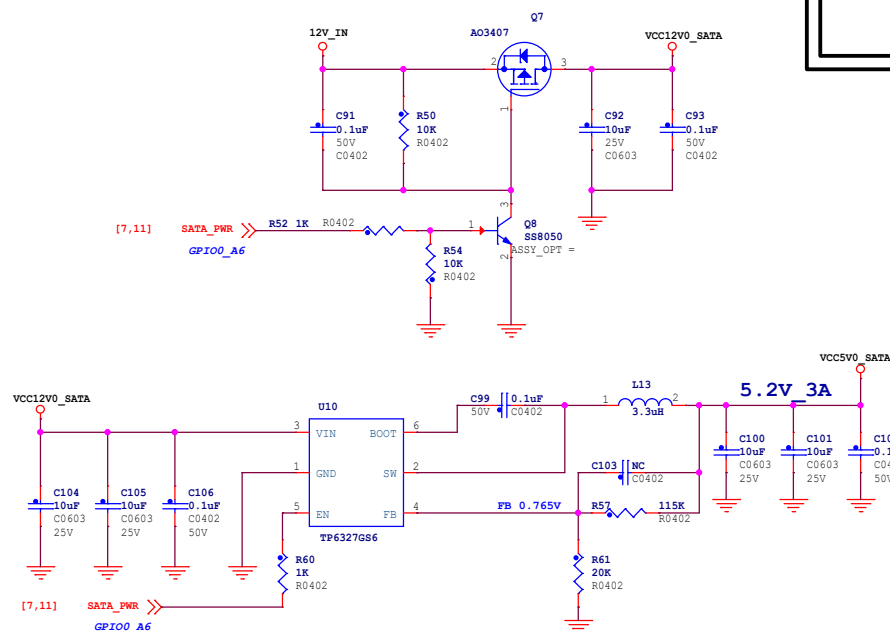
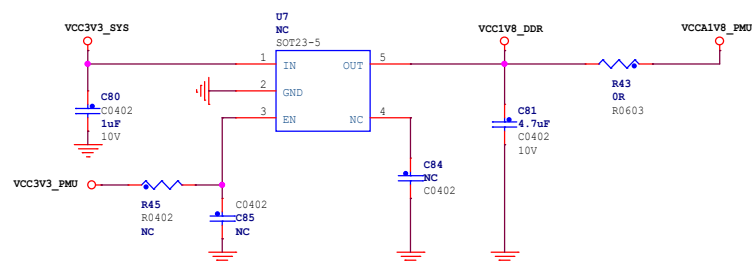
PMIC RK809 LDO



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Title		
野火_RK3568 LubanCat 2 H_原理图_V1.3		
Size	Document Number	Rev
A3	PMIC_DCDC/LDO	V1.3
Date:	Saturday, December 02, 2023	Sheet 5 of 29

LPDDR4_VCC1V8_DDR



VCC3V3_PMI

R44 R0402 51K

C90 C0402 0.1uF 50V

VCC5V0_SYS

C82 C0603 10uF 25V

C83 C0603 10uF 25V

U8

D1 VIN_1 SW_1 D3

D2 VIN_2 SW_2 D4

E1 VIN_3 SW_3 E3

E2 VIN_4 SW_4 E4

A2 VOUT A4

EN

GND1

B2

GND2

A1 VSEL B3

R0402 B1

R0402 A3 SDA C1

R0402 A3 SCL C2

B4 AGND GND5 C3

GND6 C4

L11 470nH

R46 R0402 100R

C86 C0402 0.1uF 50V

C87 C0603 22uF 10V

C88 C0603 22uF 10V

C89 C0603 22uF 10V

VDD_CPU

VDD_CPU_COM

[6, 11] PMIC_SLEEP_H

[6, 11] I2C0_SDA_PMIC

[6, 11] I2C0_SCL_PMIC

R47 22R

R48 22R

R49 22R

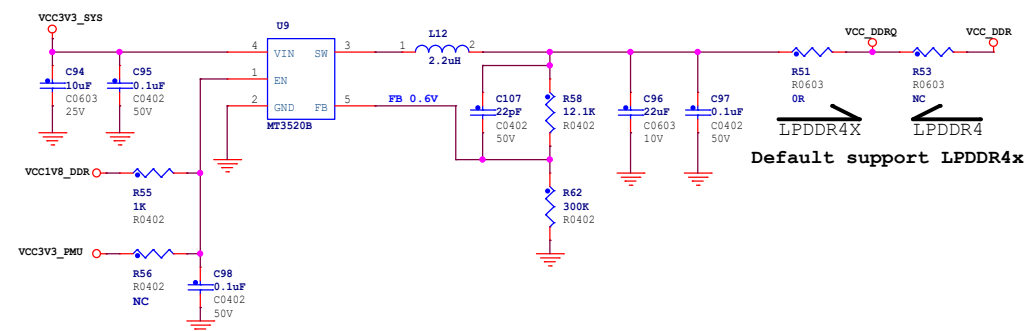
TC34525

cs20_1:2651:5600:56

Feedback from RK3568

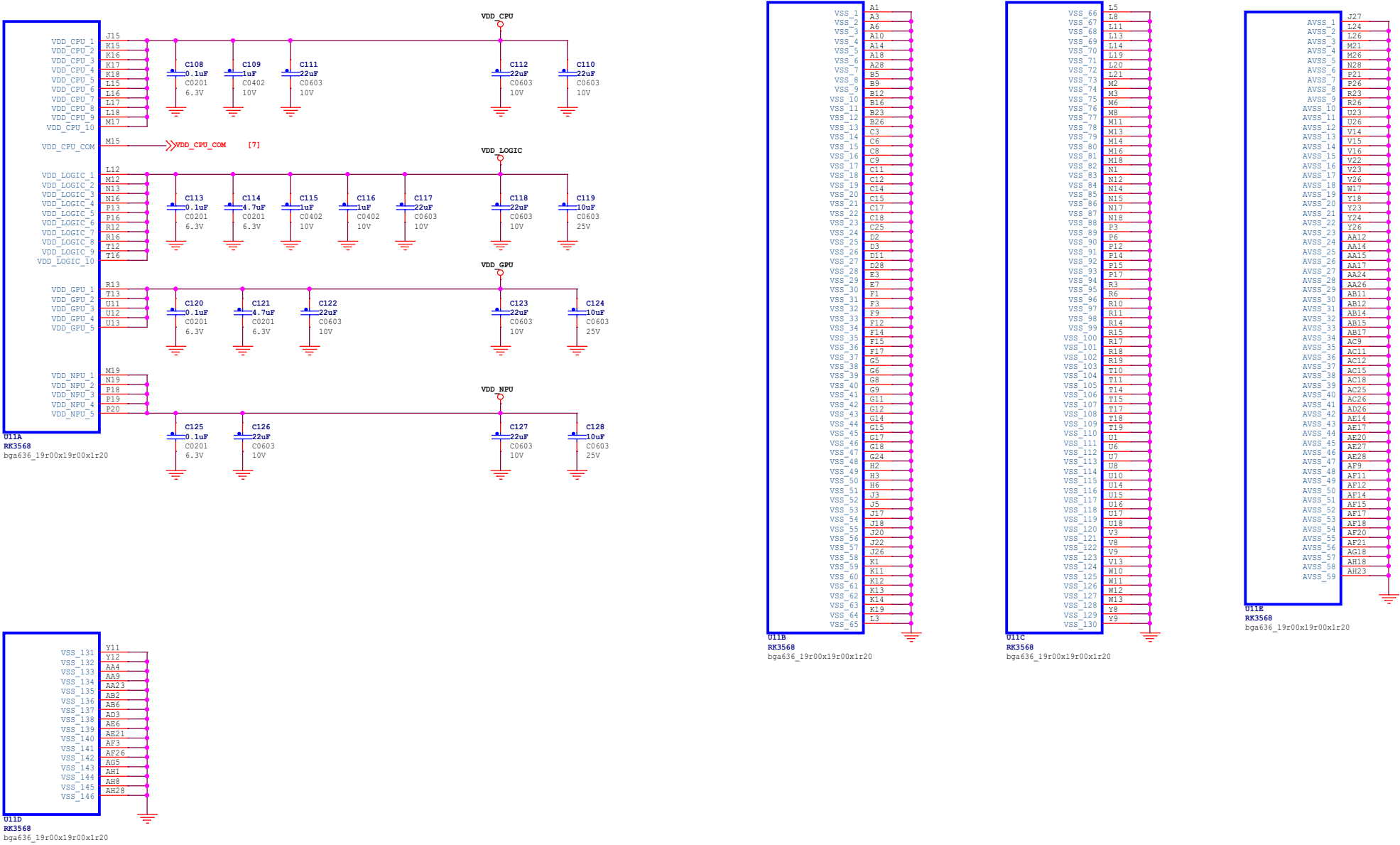
[8]

output: 0.6V

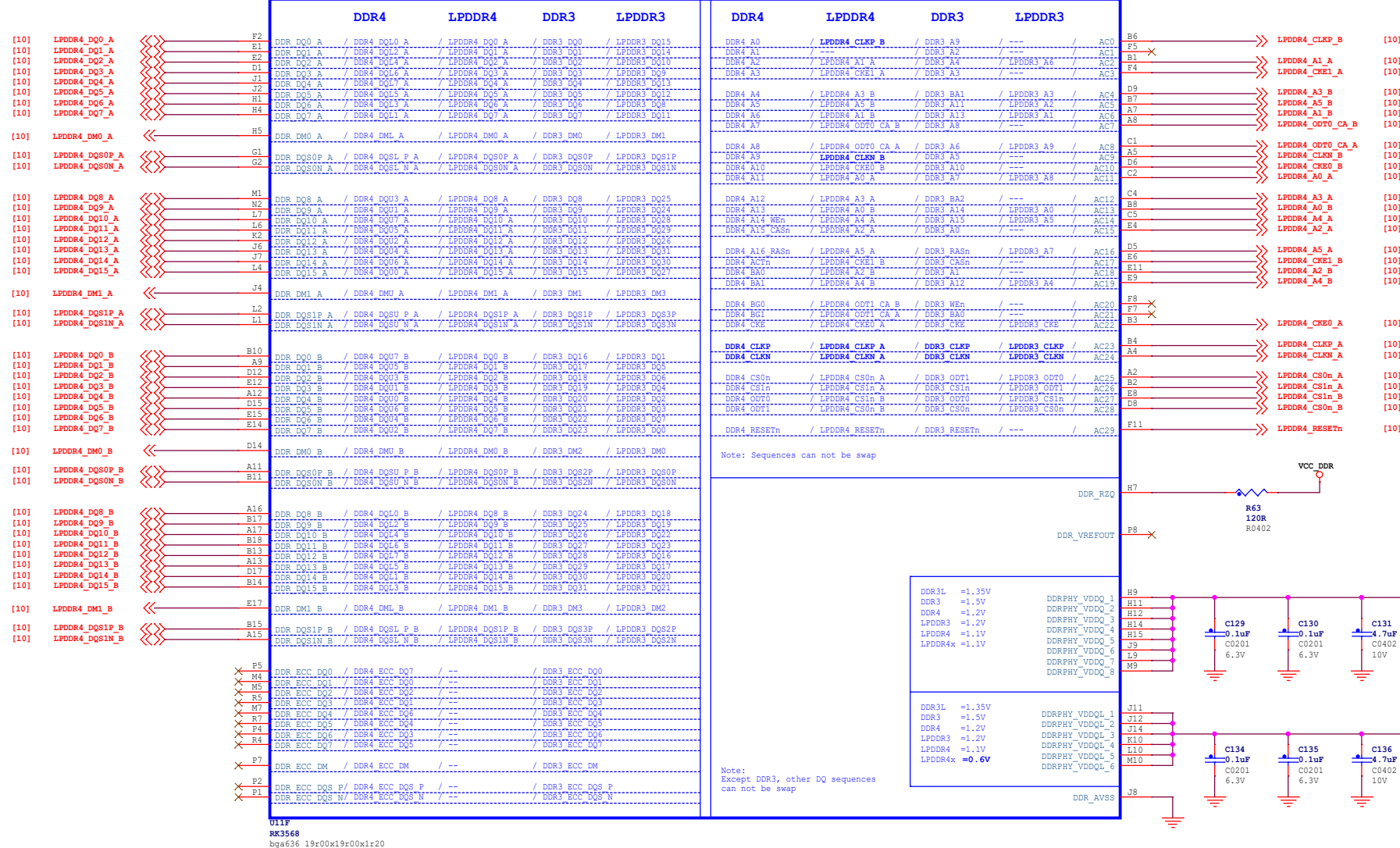


Title		
野火_RK3568 LubanCat 2 N_原理图_V1.3		
Size A3	Document Number Power_other	Rev V1.3
Date: Saturday, December 02, 2023		Sheet 7 of 29

RK3568 Power/GND

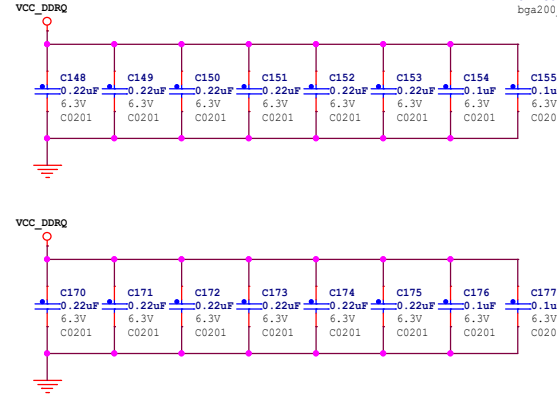
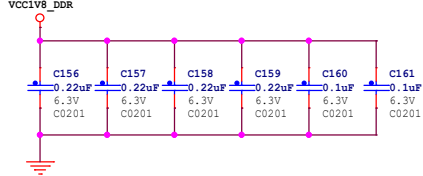
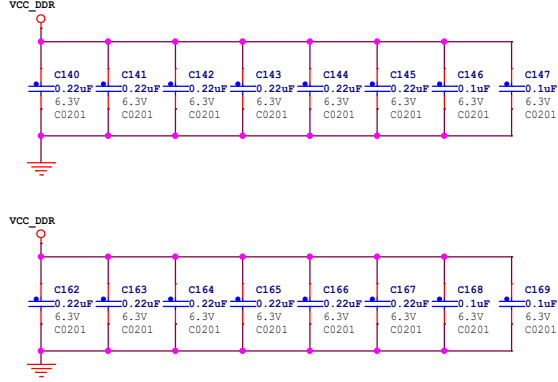
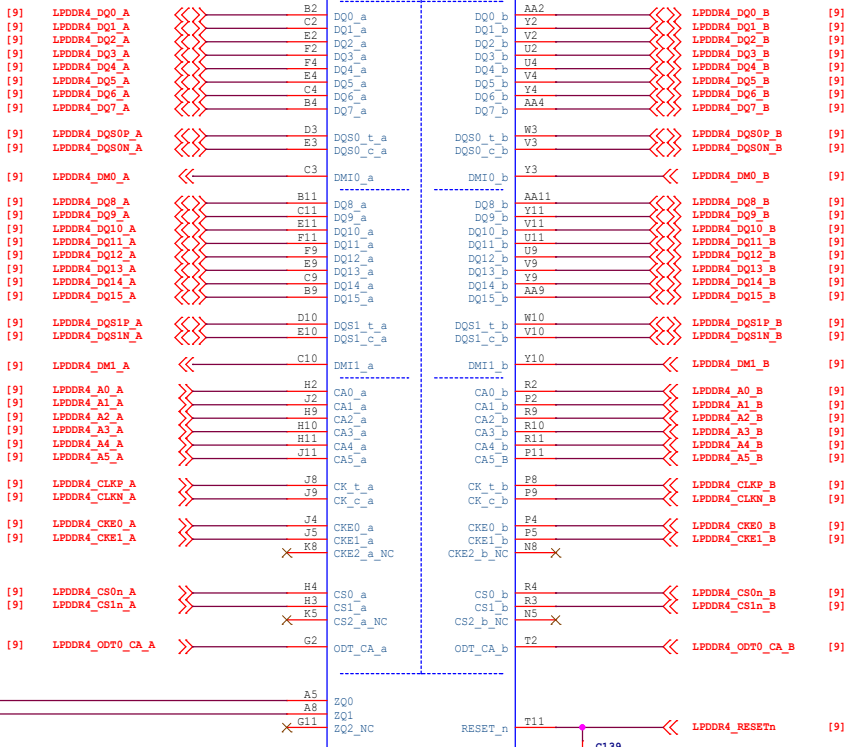


RK3568 DDR PHY

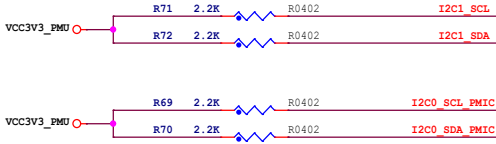
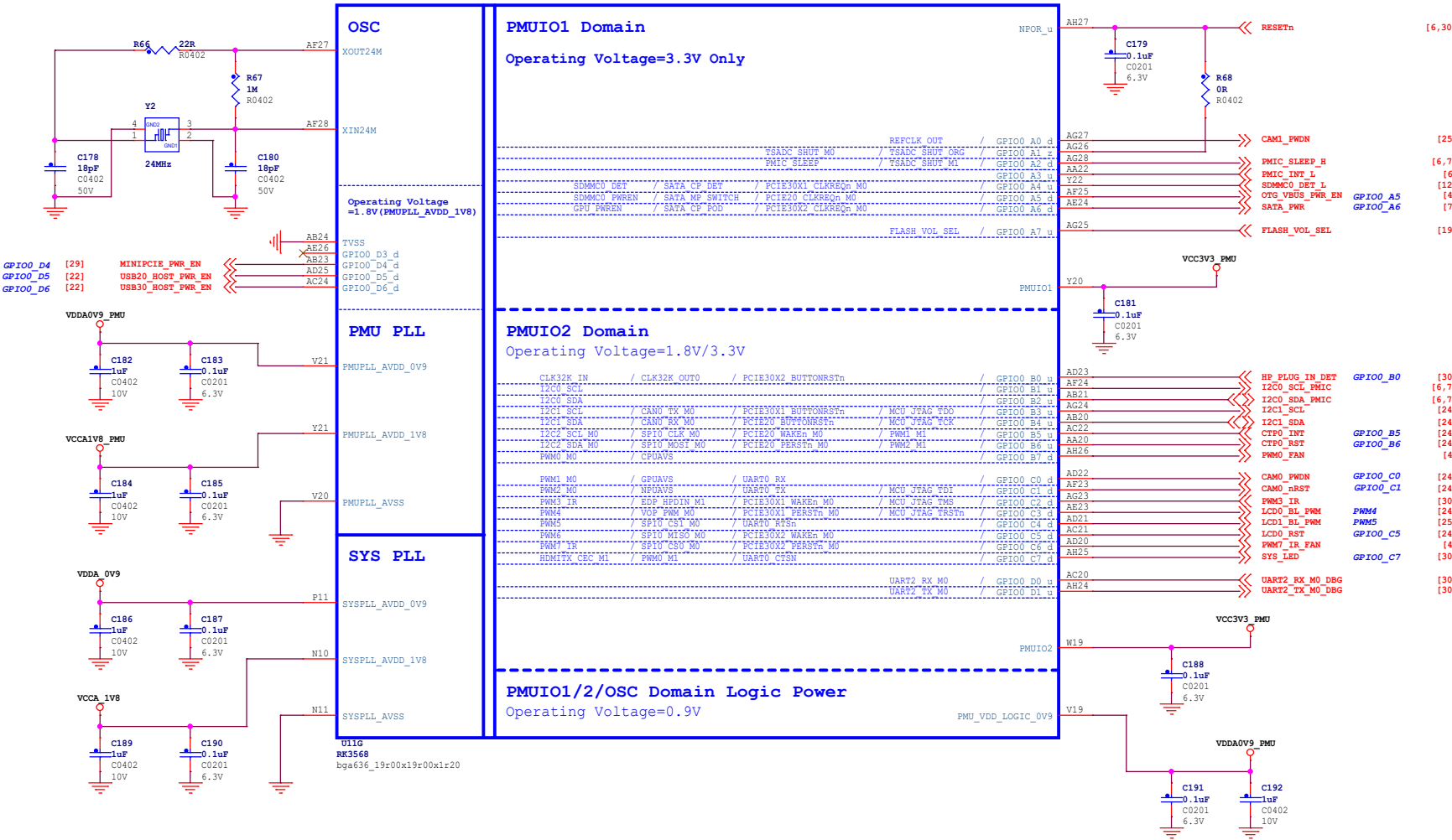


LPDDR4/4x

CH A CH B



RK3568 OSC/PLL/PMUIO



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Title 野火_RK3568 LubanCat 2 N_原理图_V1.3		
Size A3	Document Number OSC/PLL/PMUIO	Rev V1.3
Date: Saturday, December 02, 2023 Sheet 11 of 29		

RK3568 USB3.0/SATA/QSGMII/PCIe2.0 x1

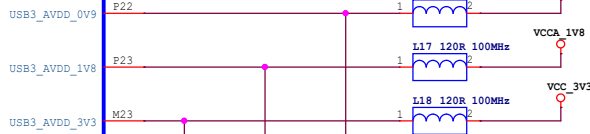
USB3.0 OTG0_HS/FS/LS (USB Download)



USB3.0 HOST1_HS/FS/LS



USB3.0 OTG0/HOST1_ HS/FS/LS Power

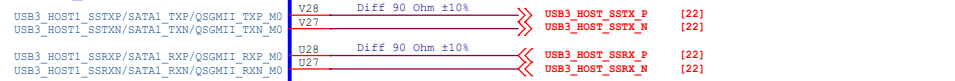


MULTI_PHY0/1/2

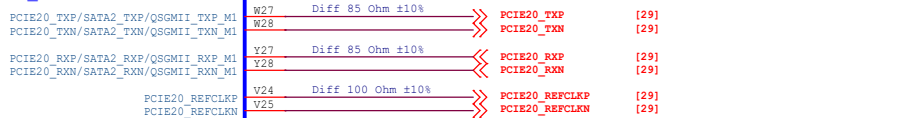
USB3.0 OTG0_SS and SATA0 Mux



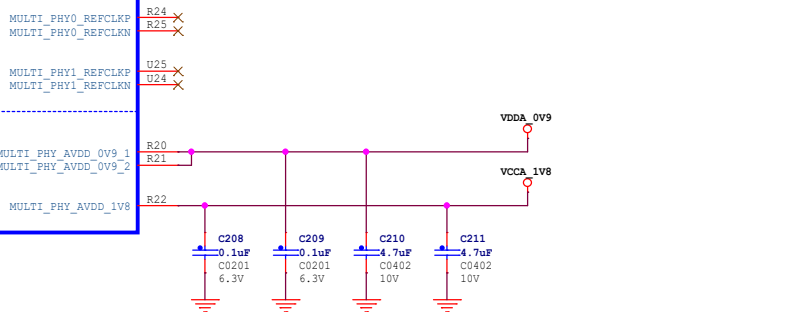
USB3.0 HOST1_SS and SATA1 and QSGMII_M0 Mux



PCIe2.0 and SATA2 and QSGMII_M1 Mux



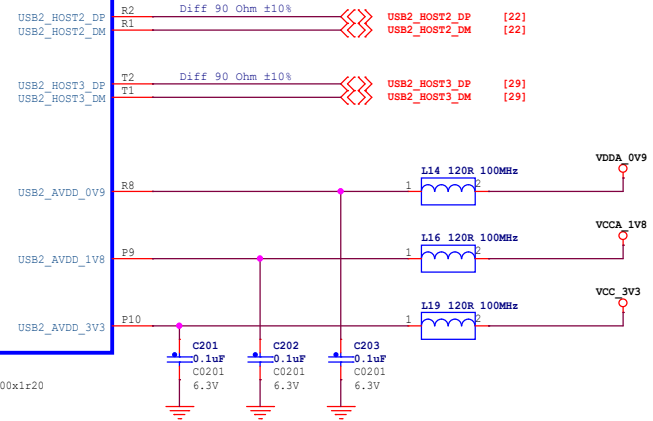
MULTI_PHY REFCLK



U110
RK3568
bga636_19r00x19r00x1r20

RK3568 USB2.0 HOST

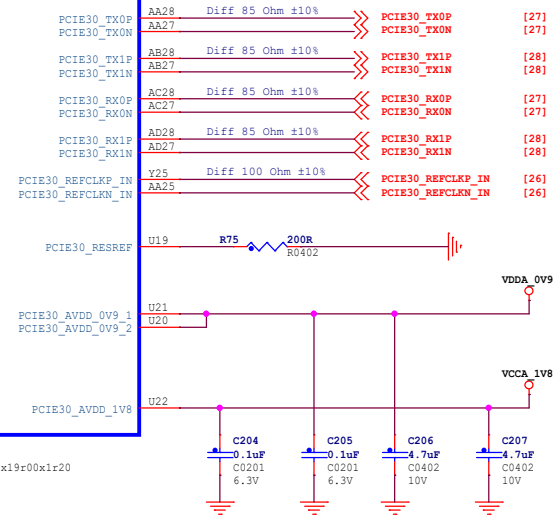
USB2.0 HOST



U11V
RK3568
bga636_19r00x19r00x1r20

RK3568 PCIe3.0 x2

PCIe3.0 x 2



U11W
RK3568
bga636_19r00x19r00x1r20

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Title
野火_RK3568 LubanCat 2 N_原理图_V1.3

Size
A3

Document Number
USB/PCIe/STAT_PHY

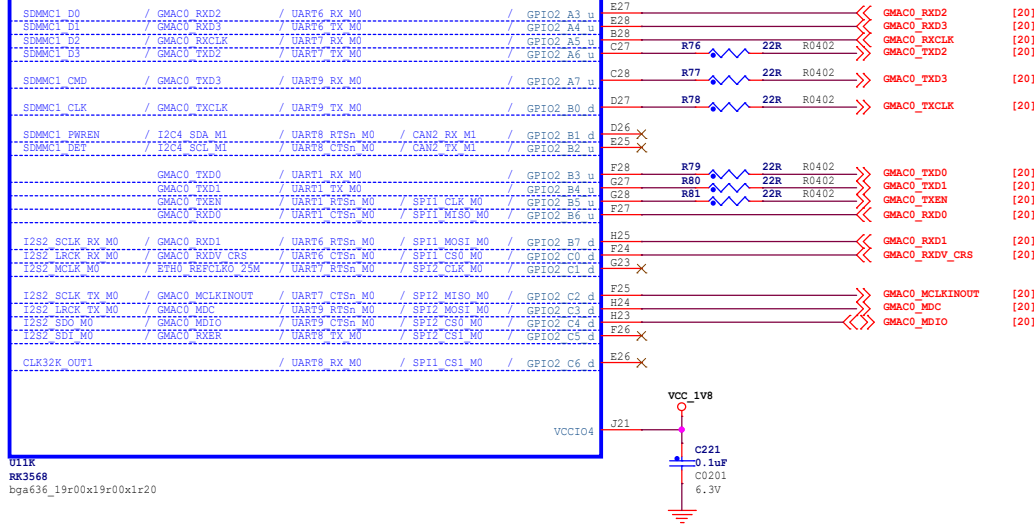
Rev
V1.3

Date: Saturday, December 02, 2023 Sheet 13 of 29

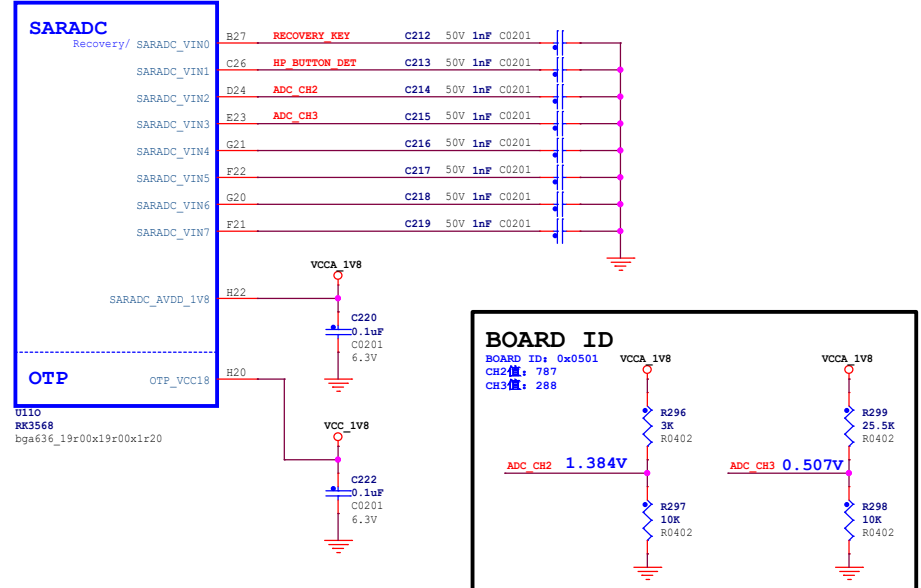
RK3568 VCCIO4 Domain

VCCIO4 Domain

Operating Voltage=1.8V/3.3V



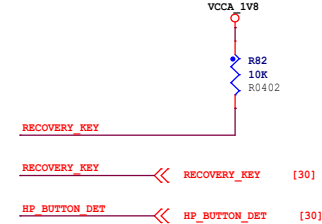
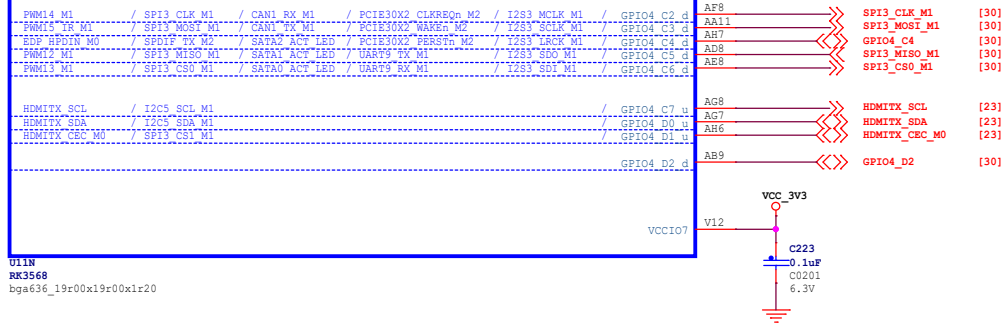
RK3568 SARADC/OTP



RK3568 VCCIO7 Domain

VCCIO7 Domain

Operating Voltage=1.8V/3.3V

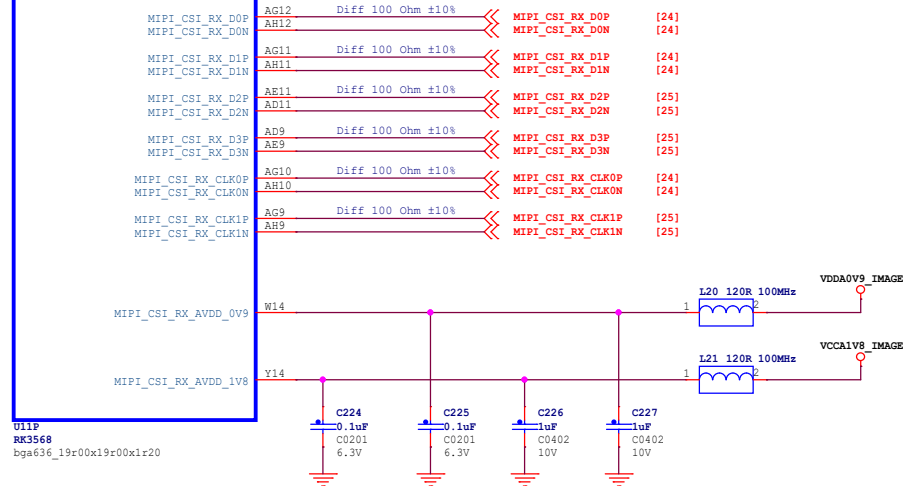


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Title		
野火_RK3568 LubanCat 2 N_原理图_V1.3		
Size	Document Number	Rev
A3	SARADC/GPIO	V1.3
Date: Saturday, December 02, 2023 Sheet 14 of 29		

RK3568 MIPI_CSI_RX

MIPI CSI RX

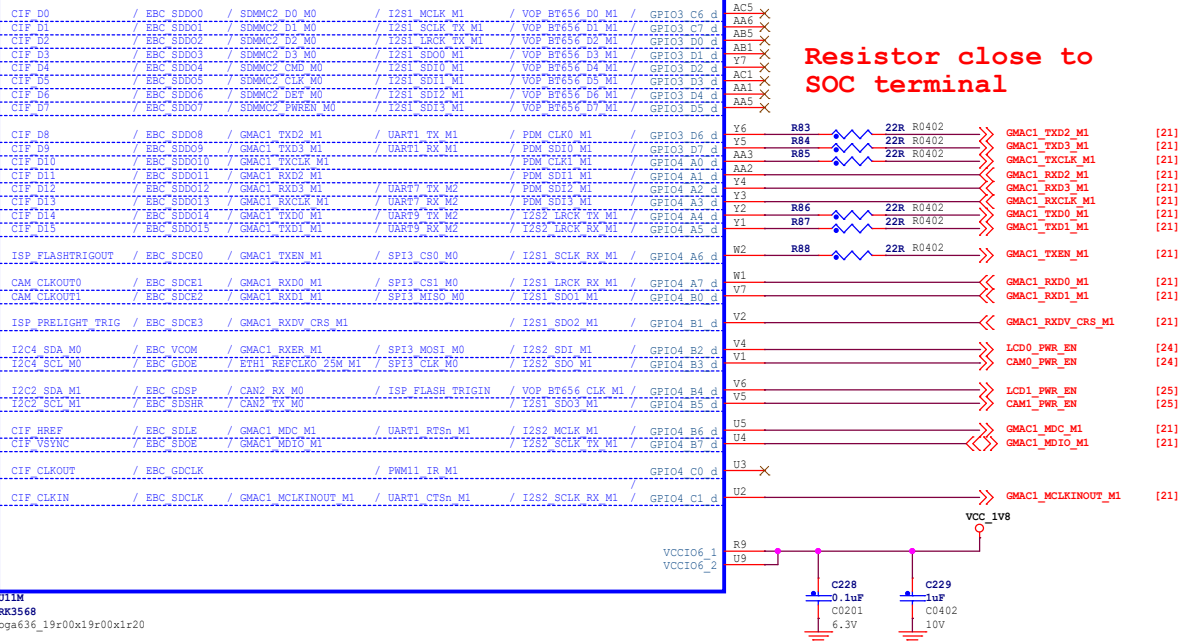


Option1	Sensor1 x4Lane	MIPI_CSI_RX_D0-3 MIPI_CSI_RX_CLK0
Option2	Sensor1 x2Lane	MIPI_CSI_RX_D0-1 MIPI_CSI_RX_CLK0
	+ Sensor2 x2Lane	MIPI_CSI_RX_D2-3 MIPI_CSI_RX_CLK1

RK3568 VCCIO6 Domain

VCCIO6 Domain

Operating Voltage=1.8V/3.3V



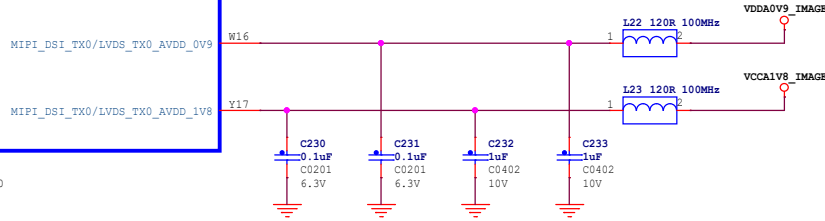
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Title 野火_RK3568 Iubancat 2 N_原理图_V1.3		
Size A3	Document Number VI Interface	Rev V1.3
Date: Saturday, December 02, 2023 Sheet 15 of 29		

RK3568 MIPI_DSI_TX0/LVDS_TX0

MIPI DSI TX0/LVDS TX0

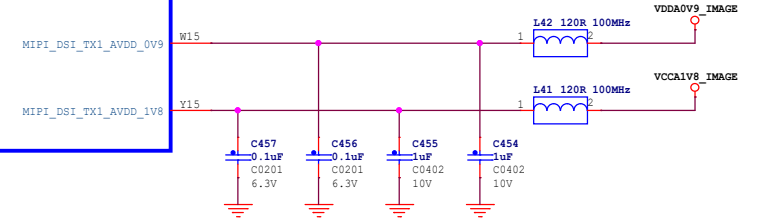
MIPI_DSI_TX0_D0P/LVDS_TX0_D0P AH17 Diff 100 Ohm ±10% MIPI_DSI_TX0_D0P [24]
MIPI_DSI_TX0_D0N/LVDS_TX0_D0N AG17 MIPI_DSI_TX0_D0N [24]
MIPI_DSI_TX0_D1P/LVDS_TX0_D1P AH16 Diff 100 Ohm ±10% MIPI_DSI_TX0_D1P [24]
MIPI_DSI_TX0_D1N/LVDS_TX0_D1N AG16 MIPI_DSI_TX0_D1N [24]
MIPI_DSI_TX0_D2P/LVDS_TX0_D2P AH14 Diff 100 Ohm ±10% MIPI_DSI_TX0_D2P [24]
MIPI_DSI_TX0_D2N/LVDS_TX0_D2N AG14 MIPI_DSI_TX0_D2N [24]
MIPI_DSI_TX0_D3P/LVDS_TX0_D3P AH13 Diff 100 Ohm ±10% MIPI_DSI_TX0_D3P [24]
MIPI_DSI_TX0_D3N/LVDS_TX0_D3N AG13 MIPI_DSI_TX0_D3N [24]
MIPI_DSI_TX0_CLKP/LVDS_TX0_CLKP AH15 Diff 100 Ohm ±10% MIPI_DSI_TX0_CLKP [24]
MIPI_DSI_TX0_CLKN/LVDS_TX0_CLKN AG15 MIPI_DSI_TX0_CLKN [24]



RK3568 MIPI_DSI_TX1

MIPI DSI TX1

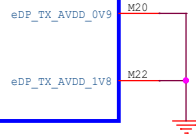
MIPI_DSI_TX1_D0P AD18 Diff 100 Ohm ±10% MIPI_DSI_TX1_D0P [25]
MIPI_DSI_TX1_D0N AE18 MIPI_DSI_TX1_D0N [25]
MIPI_DSI_TX1_D1P AD17 Diff 100 Ohm ±10% MIPI_DSI_TX1_D1P [25]
MIPI_DSI_TX1_D1N AC17 MIPI_DSI_TX1_D1N [25]
MIPI_DSI_TX1_D2P AD14 Diff 100 Ohm ±10% MIPI_DSI_TX1_D2P [25]
MIPI_DSI_TX1_D2N AC14 MIPI_DSI_TX1_D2N [25]
MIPI_DSI_TX1_D3P AD12 Diff 100 Ohm ±10% MIPI_DSI_TX1_D3P [25]
MIPI_DSI_TX1_D3N AE12 MIPI_DSI_TX1_D3N [25]
MIPI_DSI_TX1_CLKP AD15 Diff 100 Ohm ±10% MIPI_DSI_TX1_CLKP [25]
MIPI_DSI_TX1_CLKN AE15 MIPI_DSI_TX1_CLKN [25]



RK3568 eDP TX

eDP_TX

eDP_TX_D0P J28
eDP_TX_D0N K27
eDP_TX_D1P K28
eDP_TX_D1N L27
eDP_TX_D2P L28
eDP_TX_D2N M27
eDP_TX_D3P M28
eDP_TX_D3N N27
eDP_TX_AUXP L25
eDP_TX_AUXN M25

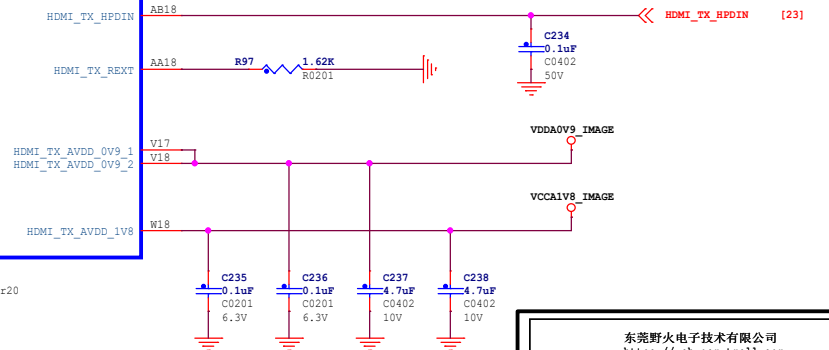


RK3568 HDMI2.0 TX

Resistor close to SOC terminal

HDMI2.0 TX

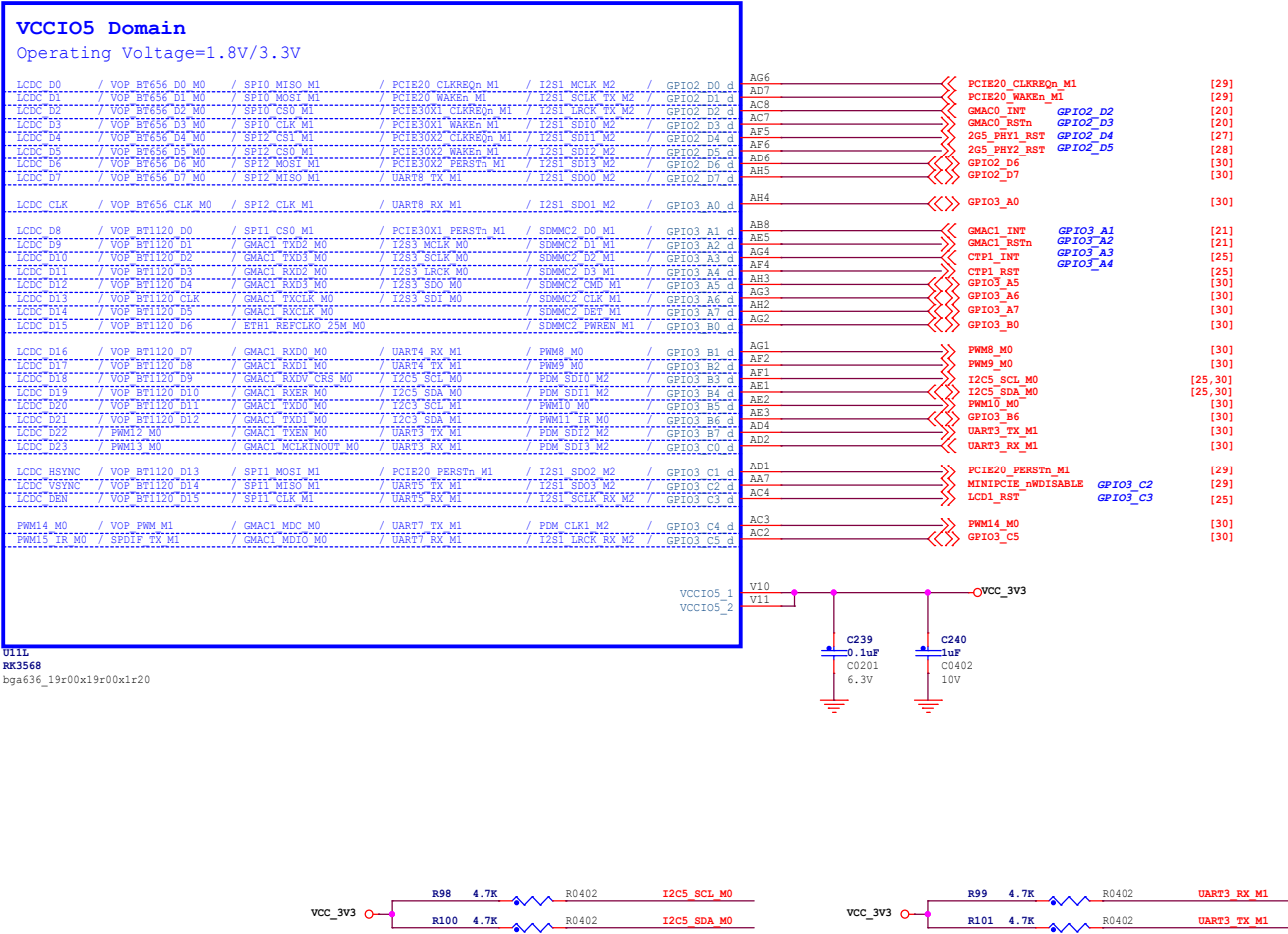
HDMI_TX_D2P AG22 2.2R R0402 Diff 100 Ohm ±10% HDMI_TX_D2P [23]
HDMI_TX_D2N AH22 2.2R R0402 HDMI_TX_D2N [23]
HDMI_TX_D1P AG21 2.2R R0402 Diff 100 Ohm ±10% HDMI_TX_D1P [23]
HDMI_TX_D1N AH21 2.2R R0402 HDMI_TX_D1N [23]
HDMI_TX_D0P AG20 2.2R R0402 Diff 100 Ohm ±10% HDMI_TX_D0P [23]
HDMI_TX_D0N AH20 2.2R R0402 HDMI_TX_D0N [23]
HDMI_TX_CLKP AH19 2.2R R0402 Diff 100 Ohm ±10% HDMI_TX_CLKP [23]
HDMI_TX_CLKN AG19 2.2R R0402 HDMI_TX_CLKN [23]



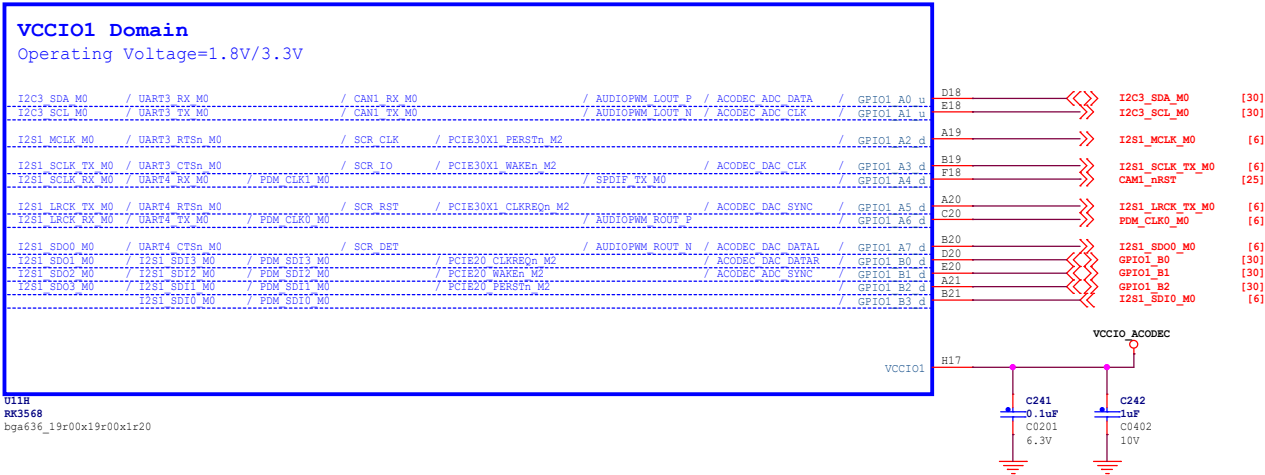
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Title 野火_RK3568 LubanCat 2 N_原理图_V1.3		
Size A3	Document Number VO Interface_1	Rev V1.3
Date: Saturday, December 02, 2023 Sheet 16 of 29		

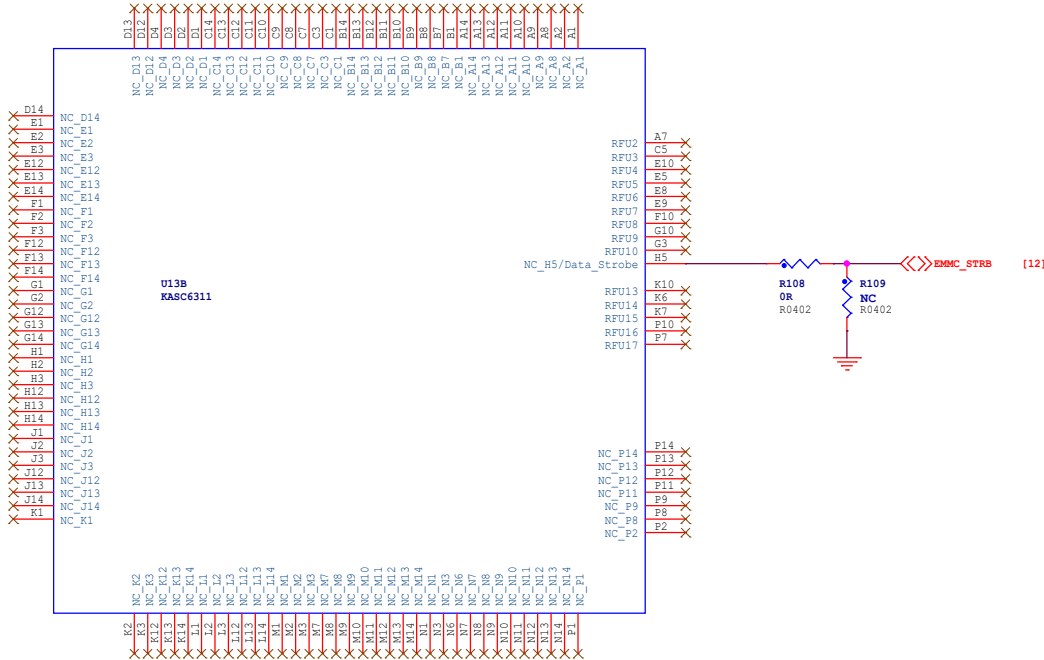
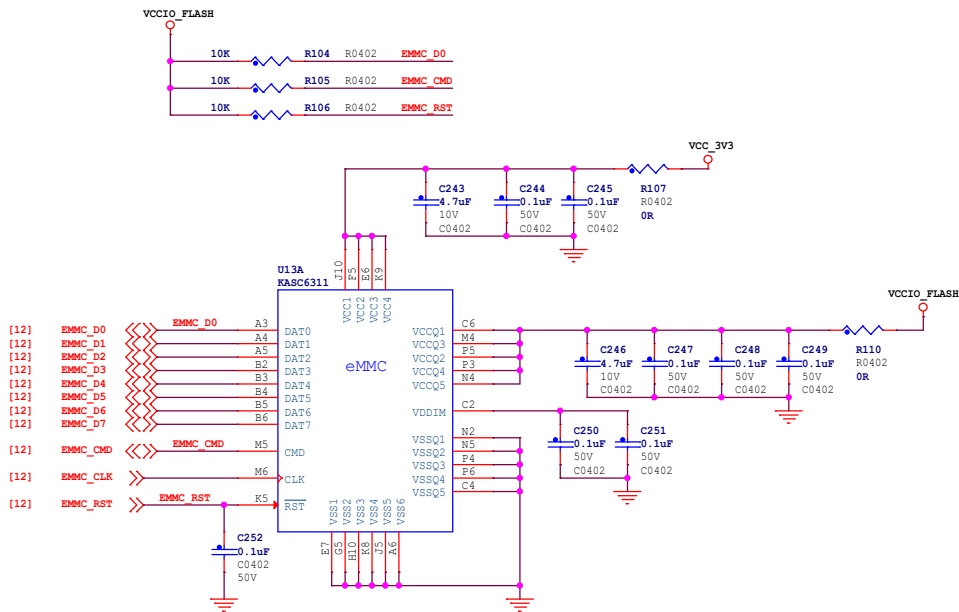
RK3568 VCCIO5 Domain



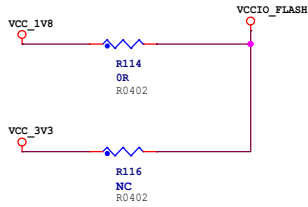
RK3568 VCCIO1 Domain



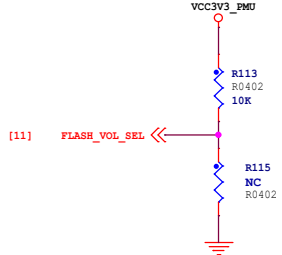
EMMC FLASH



EMMC_IO_Toggle



FLASH_VOL_SEL

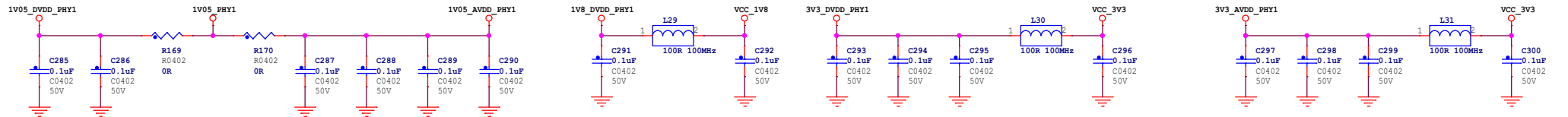


Note:
FLASH_VOL_SEL state decided
to VCCIO2 domain IO driven by default
Logic=L: 3.3V IO driven
Logic=H: 1.8V IO driven

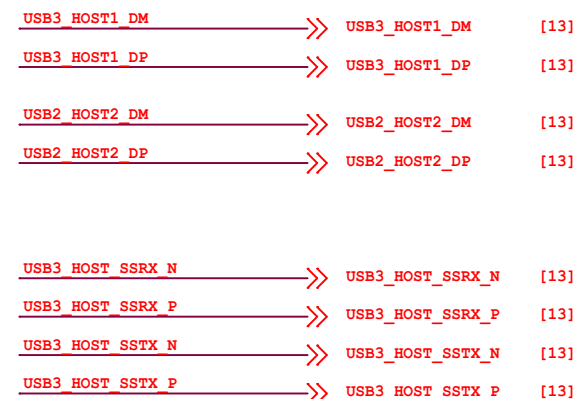
野火_RK3568 IubanCat 2 N_原理图_V1.3		
Title	野火_RK3568 IubanCat 2 N_原理图_V1.3	
Size	Document Number	Rev
A3	EMMC_FLASH	V1.3
Date:	Saturday, December 02, 2023	Sheet 19 of 29

Date: Saturday, December 02, 2023 Sheet 20 of 29

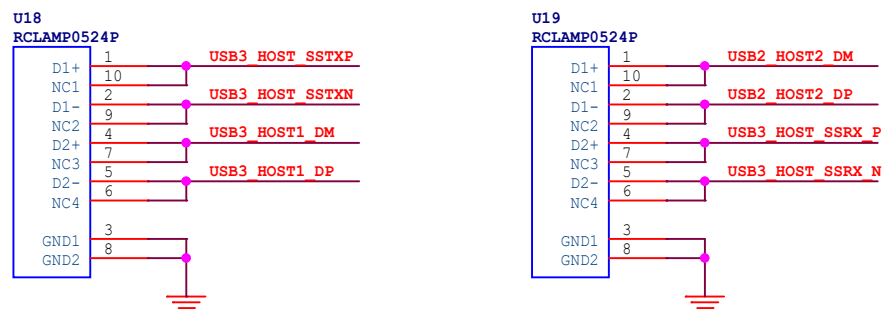
PHY Address : 010



USB 2.0 HOST x1

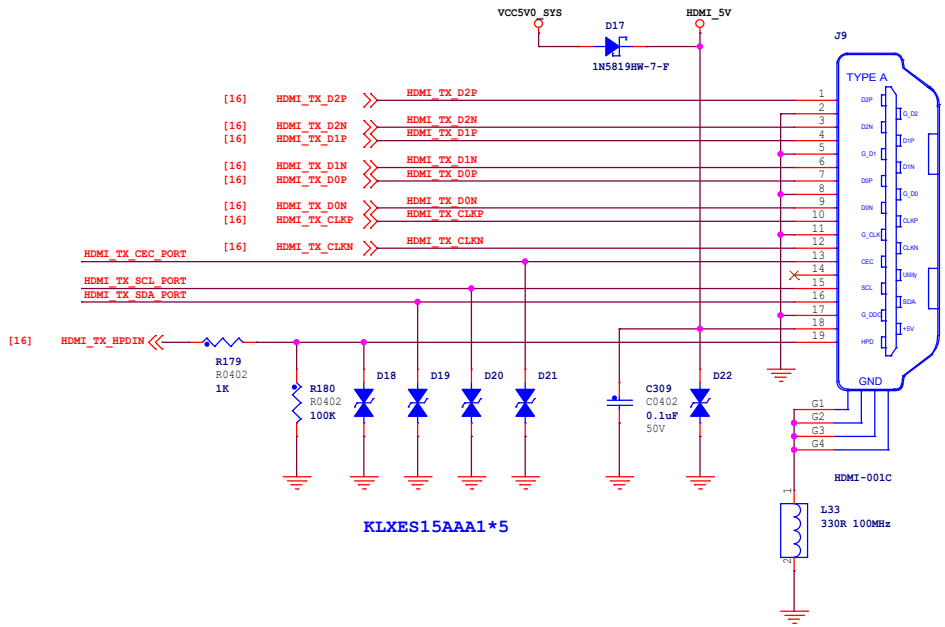
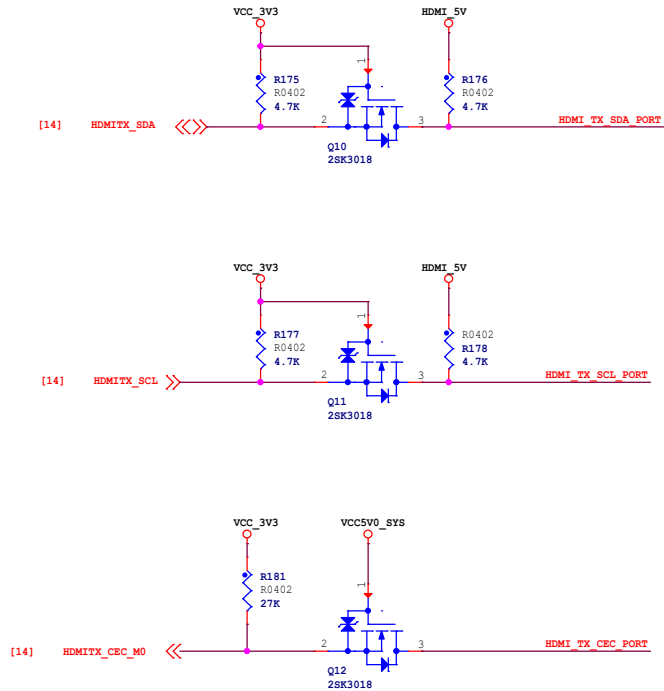


ESD

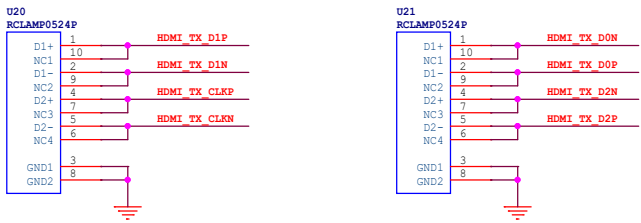


Date: Saturday, December 02, 2023 Sheet 22 of 29

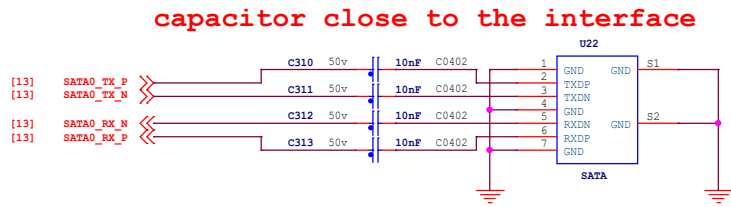
HDMI_PORT



HDMI_ESD

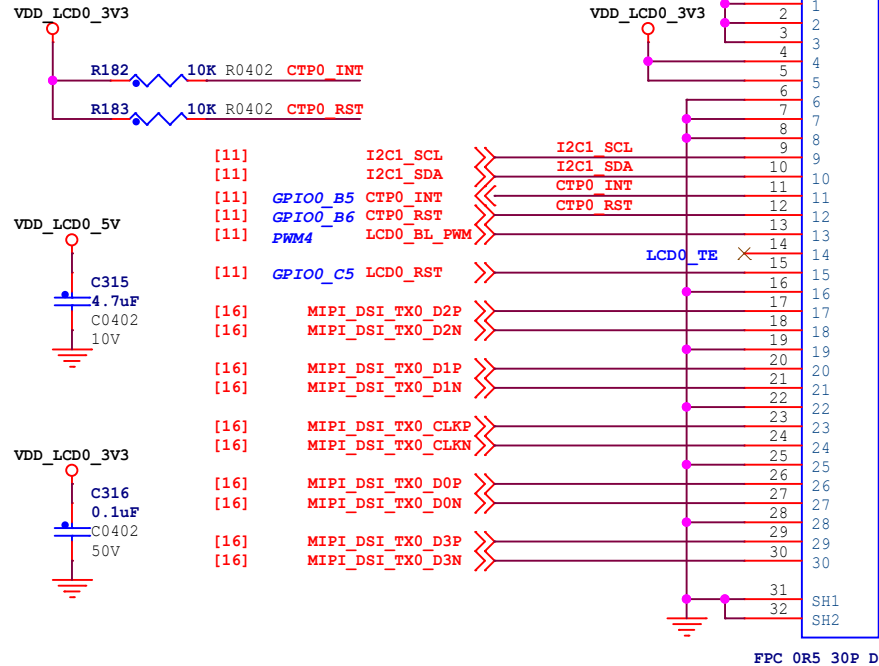


SATA_PORT

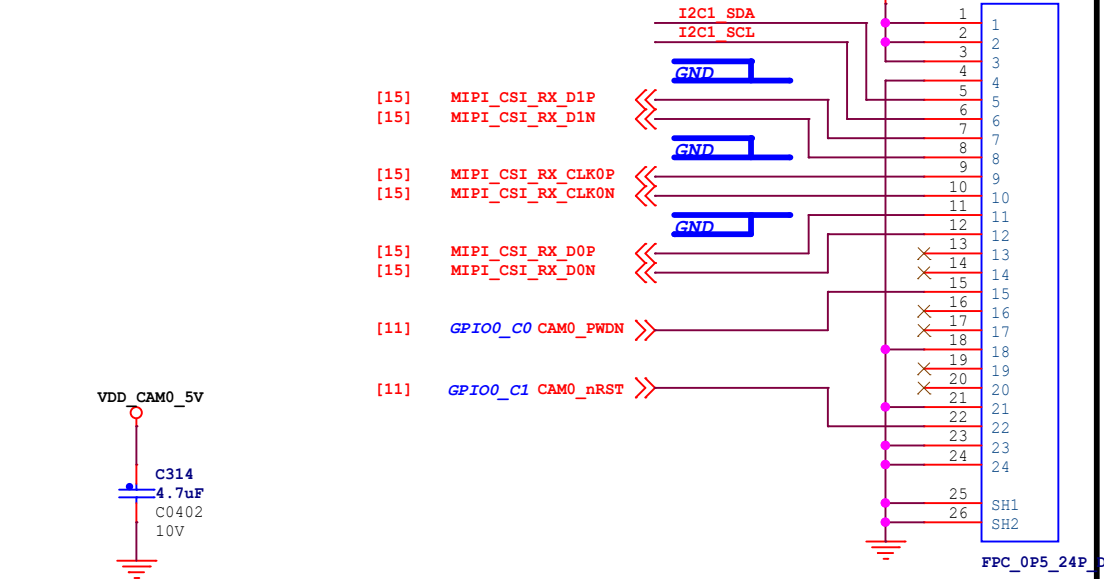


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野火_RK3568 LubanCat 2 N_原理图_V1.3		
Size	Document Number	Rev
A3	HDMI_PORT/SATA_PORT	V1.3
Date:	Saturday, December 02, 2023	Sheet 23 of 29

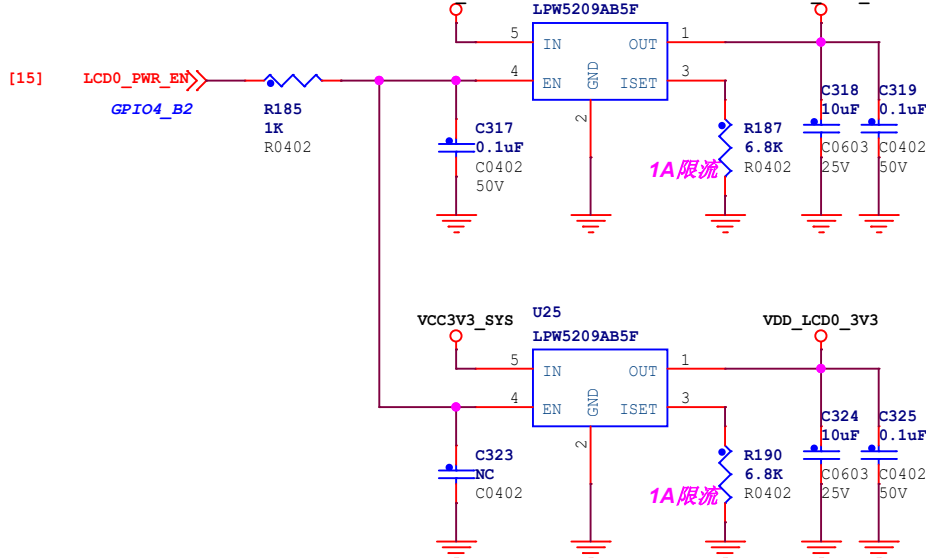
MIPI DSI LCD PORT 0



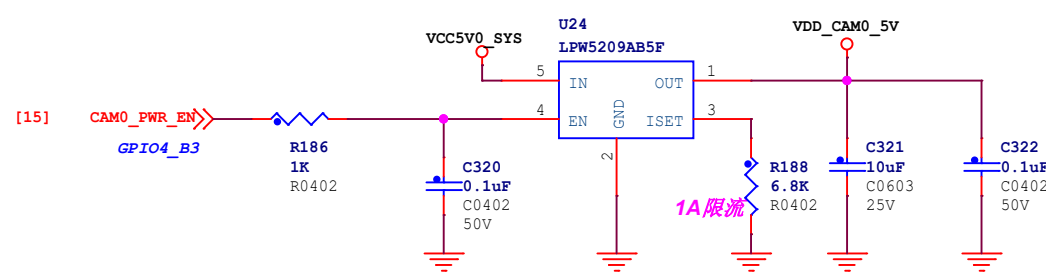
MIPI CSI PORT 0



LCD Power



MIPI CSI Power



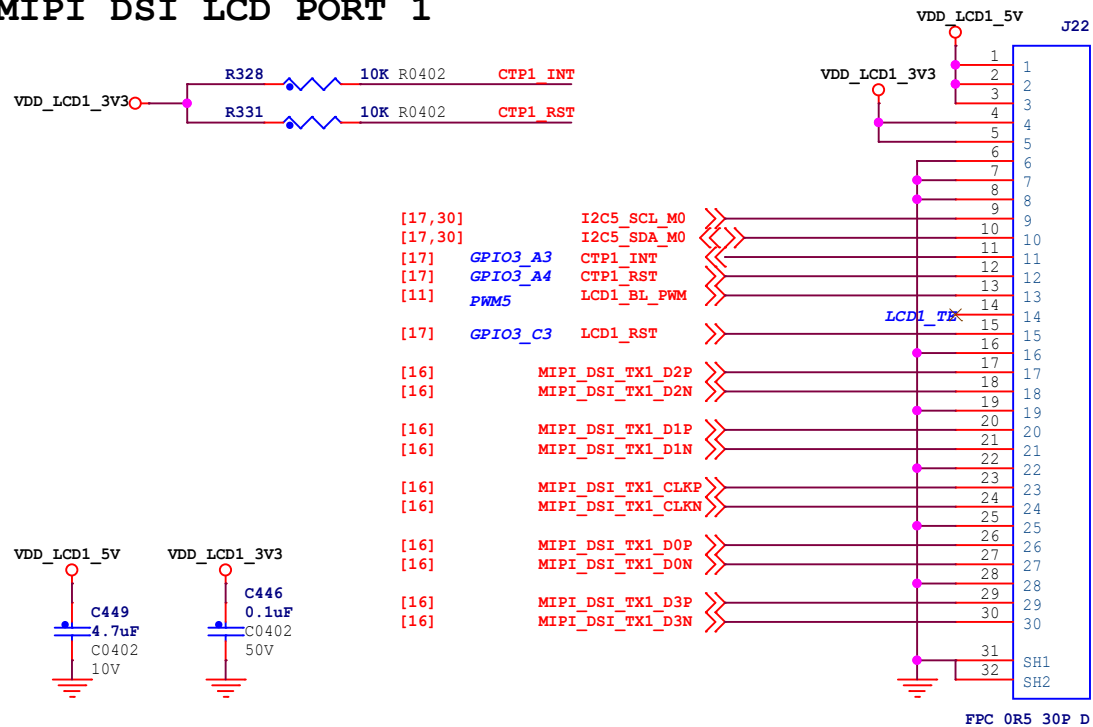
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Title 野火_RK3568 LubanCat 2 N_原理图_V1.3

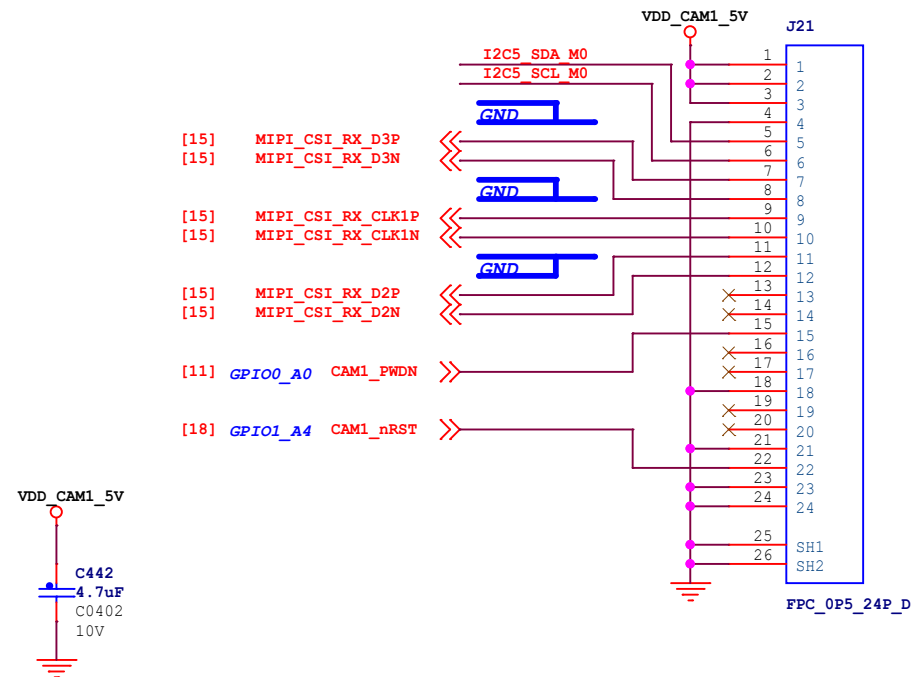
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Date: Saturday, December 02, 2023 Sheet 24 of 29

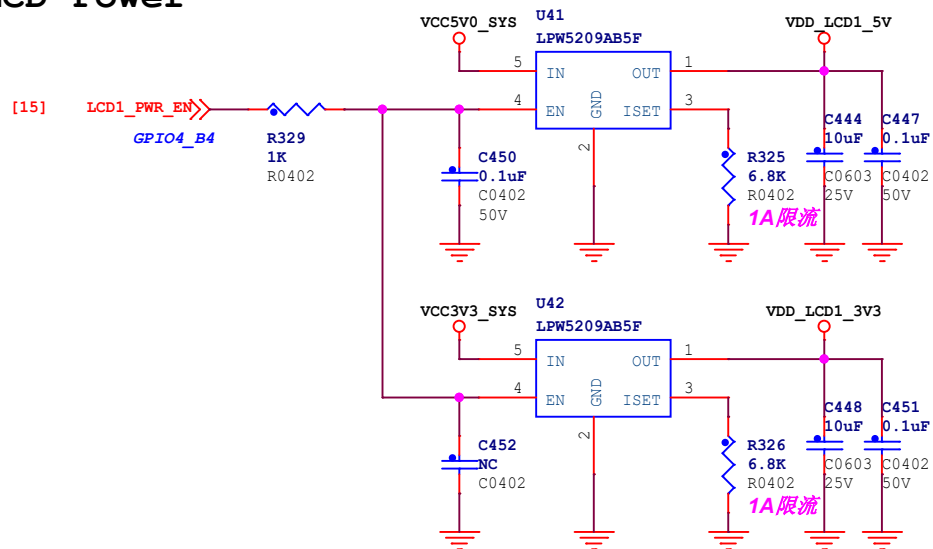
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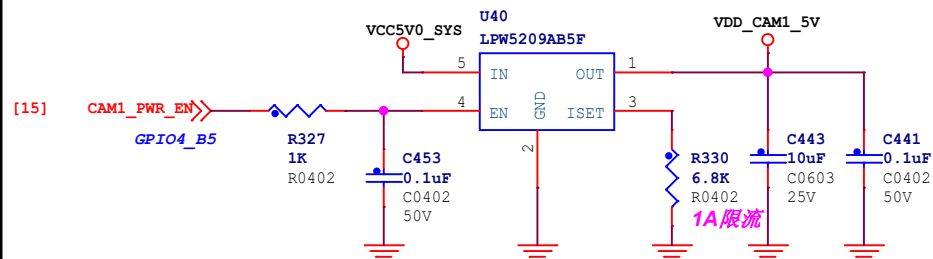
MIPI CSI PORT 1



LCD Power



MIPI CSI Power



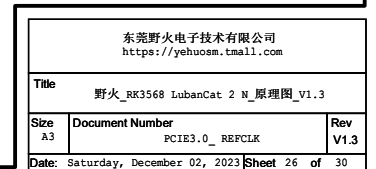
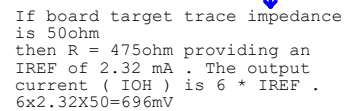
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Title: 野火_RK3568 LubanCat 2 N_原理图_v1.3

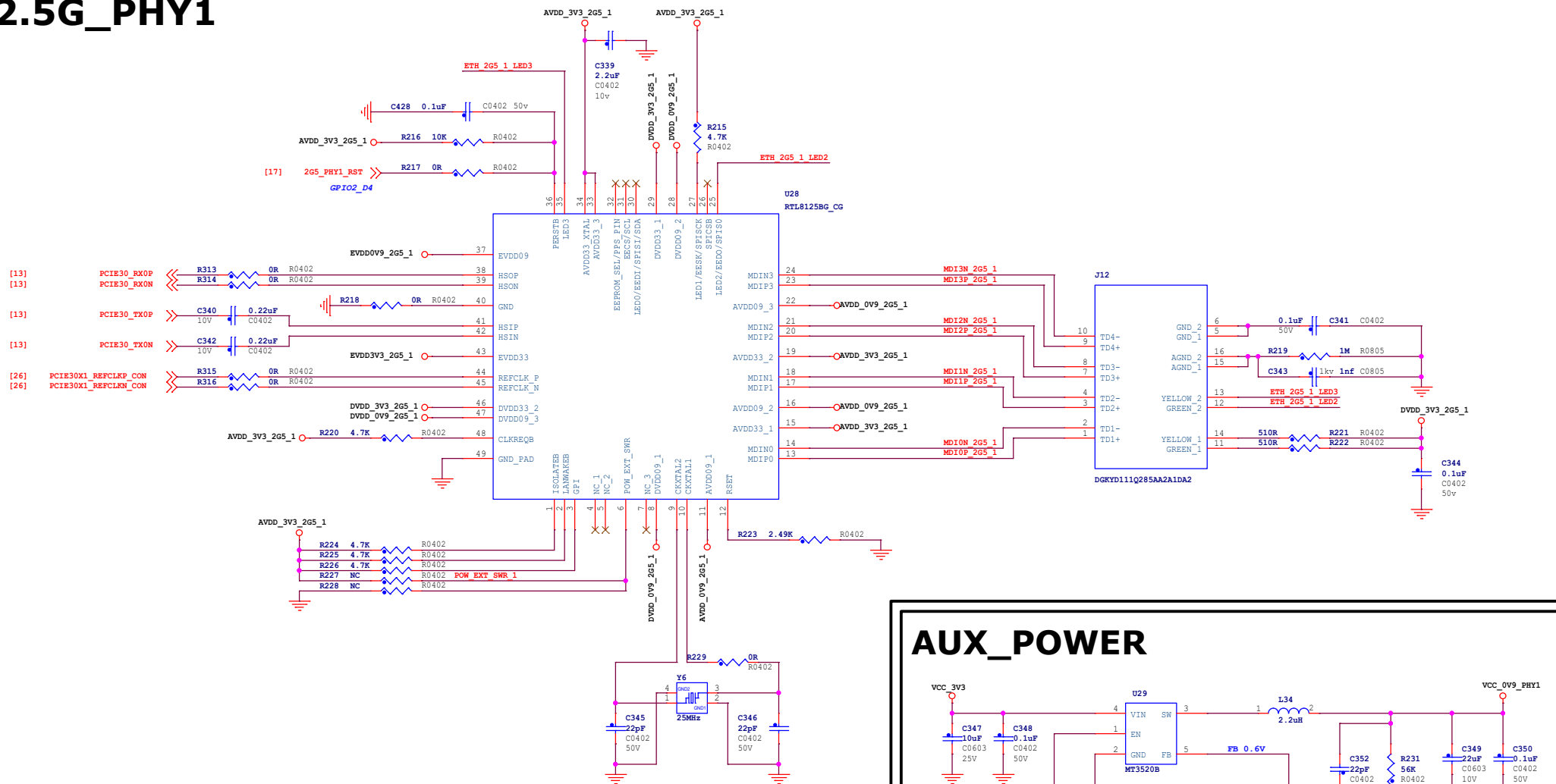
Size: A4	Document Number: MIPI DSI/MIPI CSI_PORT	Rev: V1.3
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Date: Saturday, December 02, 2023 Sheet 25 of 30

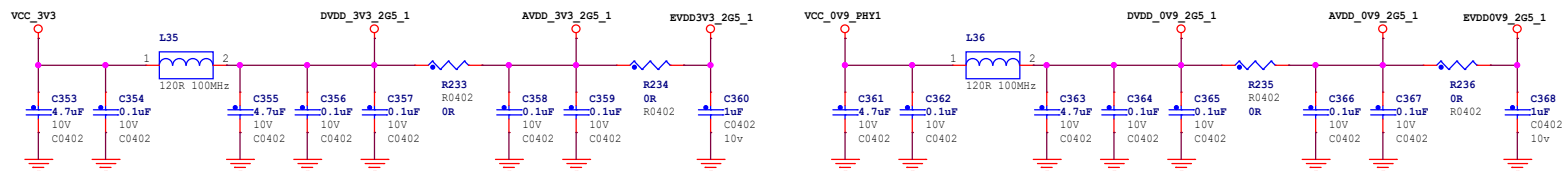
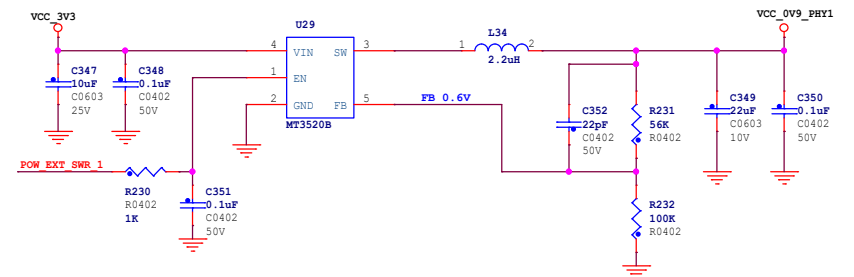
CLK*3 @100MHz



2.5G_PHY1



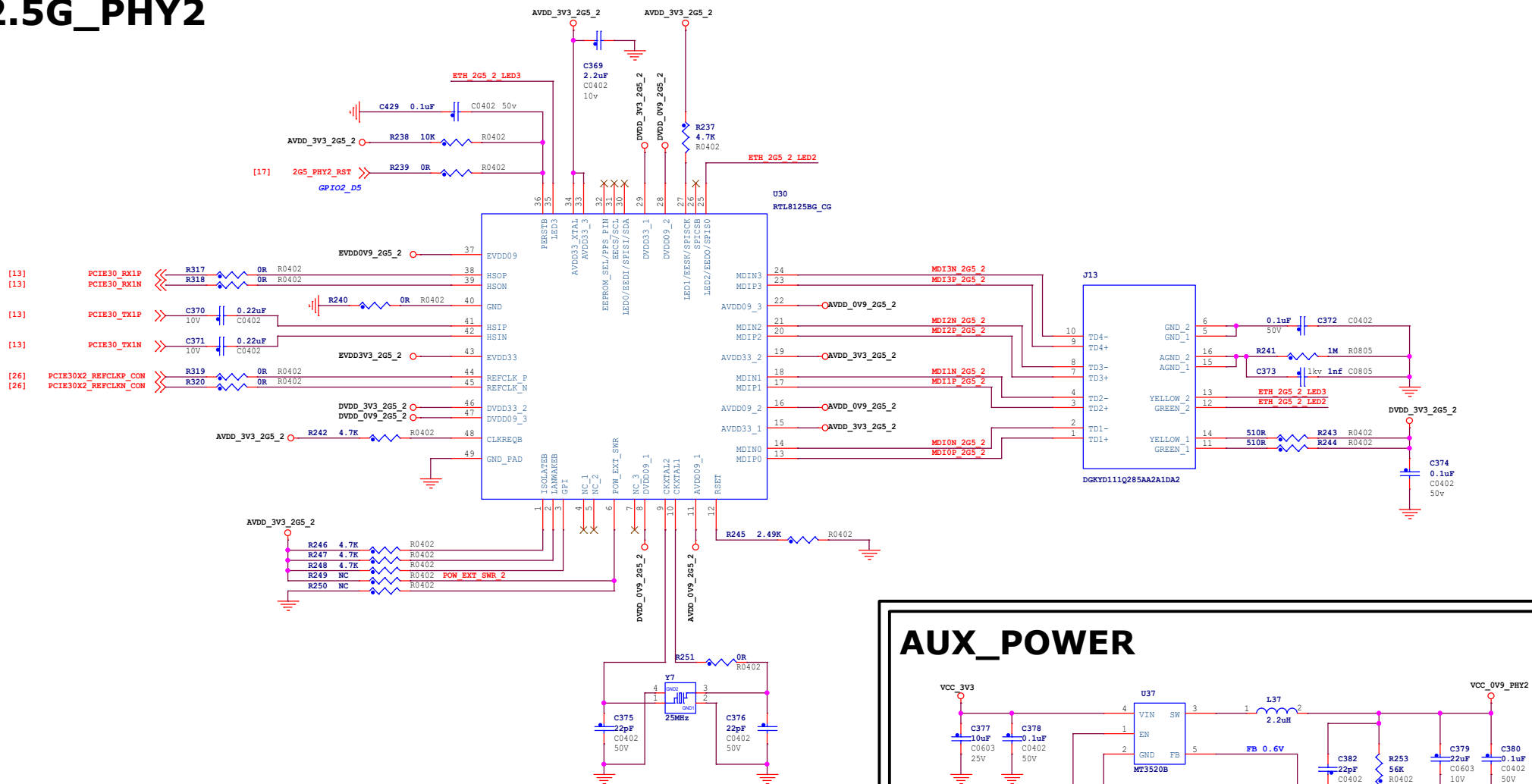
AUX_POWER



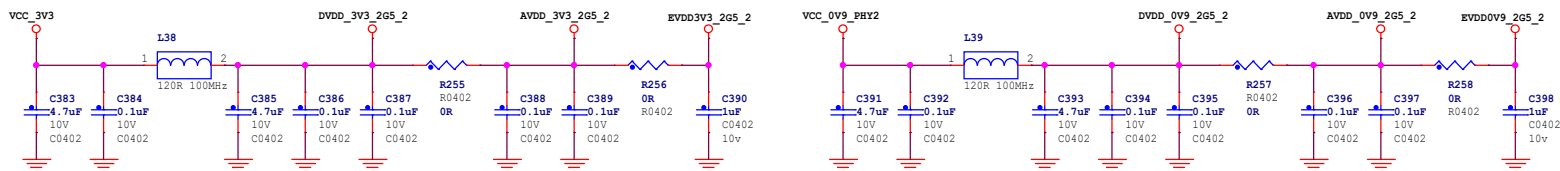
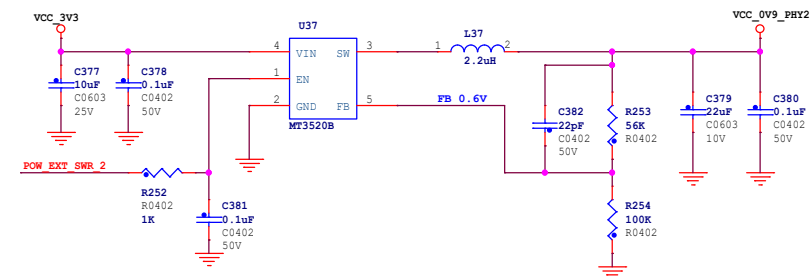
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Title		
野火_RK3568 LubanCat 2 N_原理图_V1.3		
Size A3	Document Number 2.5G_PHY1	Rev V1.3
Date: Saturday, December 02, 2023	Sheet 27 of 30	

2.5G_PHY2



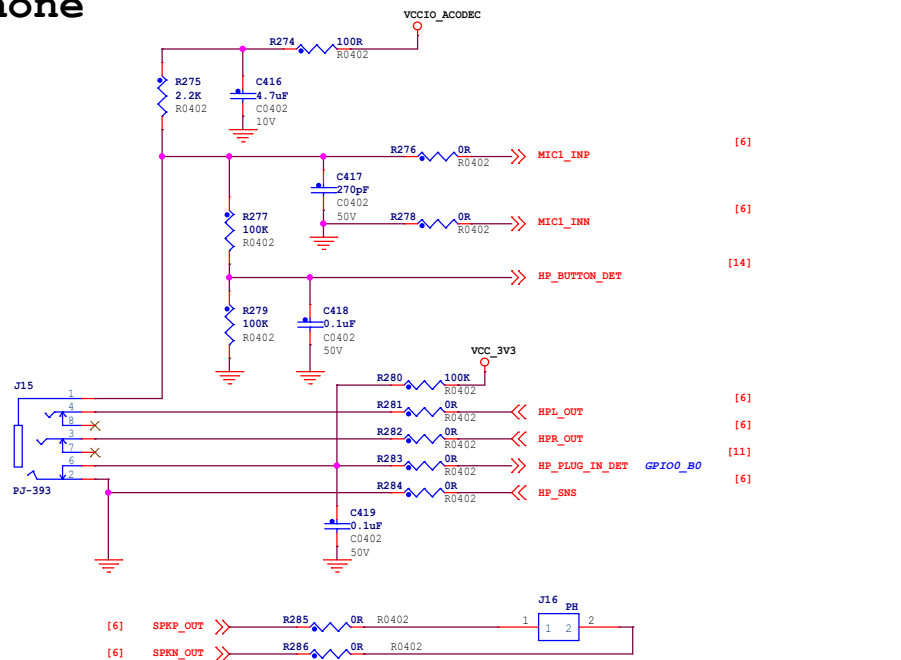
AUX_POWER



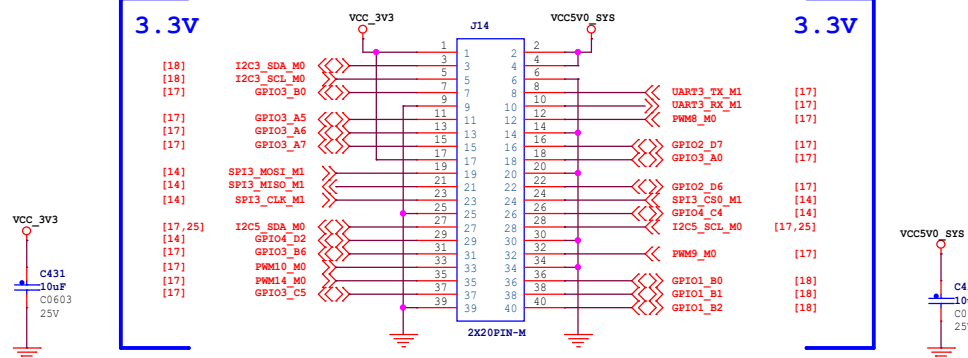
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野火_RK3568 LubanCat 2 N_原理图_V1.3		
Size A3	Document Number 2.5G_PHY2	Rev V1.3
Date: Saturday, December 02, 2023		Sheet 28 of 30

Earphone

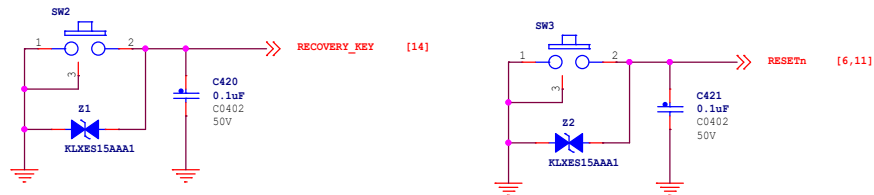


IO PORT

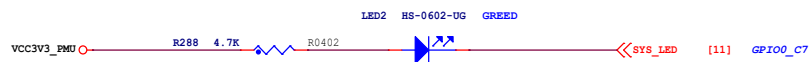


RECOVERY KEY

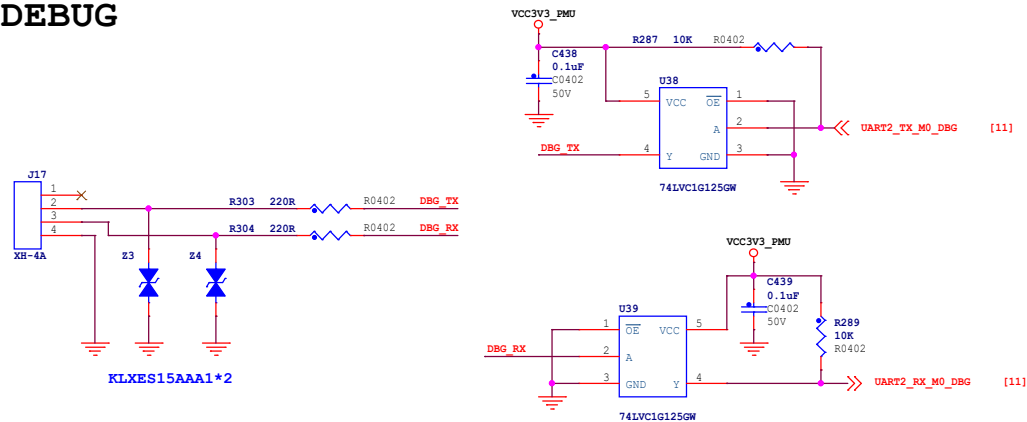
RESET KEY



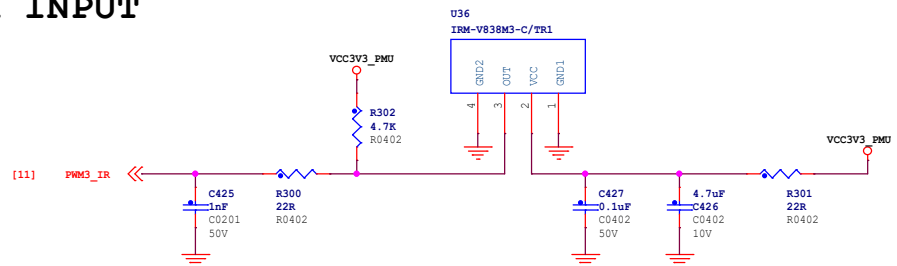
LED



DEBUG



IR INPUT



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Title			
野火_RK3568 LubanCat 2 N_原理图_V1.3			
Size	Document Number		Rev
A3	Earphone/DEBUG/IO_PORT/LED		V1.3
Date:	Saturday, December 02, 2023		Sheet 30 of 30