

# 野火 EBF RK3588S BTB核心板

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野火 EPE-EK2588C-PMP核心板

Size A4	Document Number Content	Rev V0R3
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# 历史版本

版本号	日期	设计	描述
V0R1	2023-10-12	ghs	初始版本, 开发阶段
V0R2	2024-08-14	ghs	更换支持更高速率的连接器
V0R3	2025-02-25	ghs	将GMAC1_TXCLK与GMAC1_TXEN调换线序 调整SDMMC引脚线序 更新SPI FLASH封装

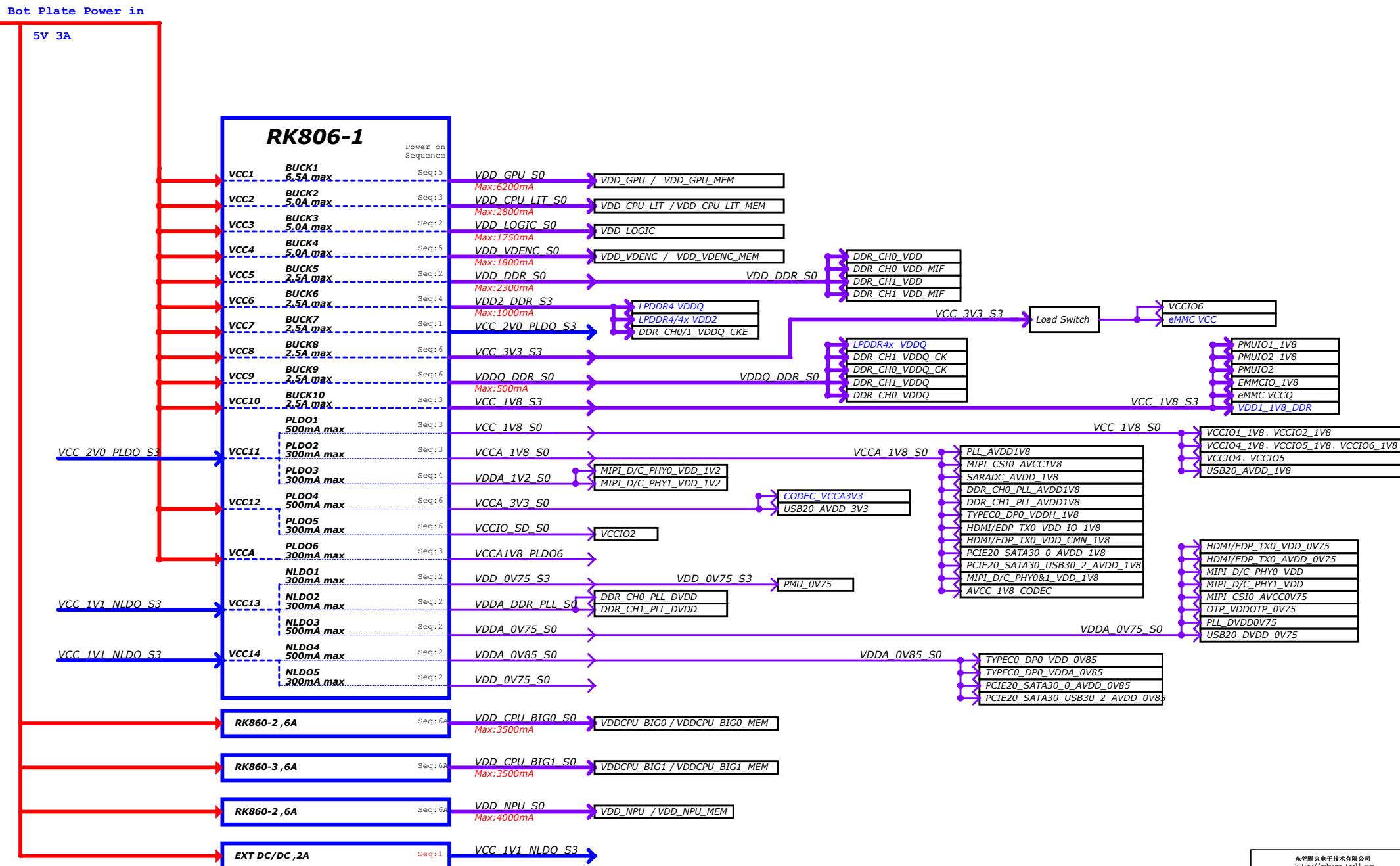
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Title  
野火\_EBF\_RK3588S\_BTB核心板

Size  
A4 Document Number  
Historic Version  
Rev  
V0R3

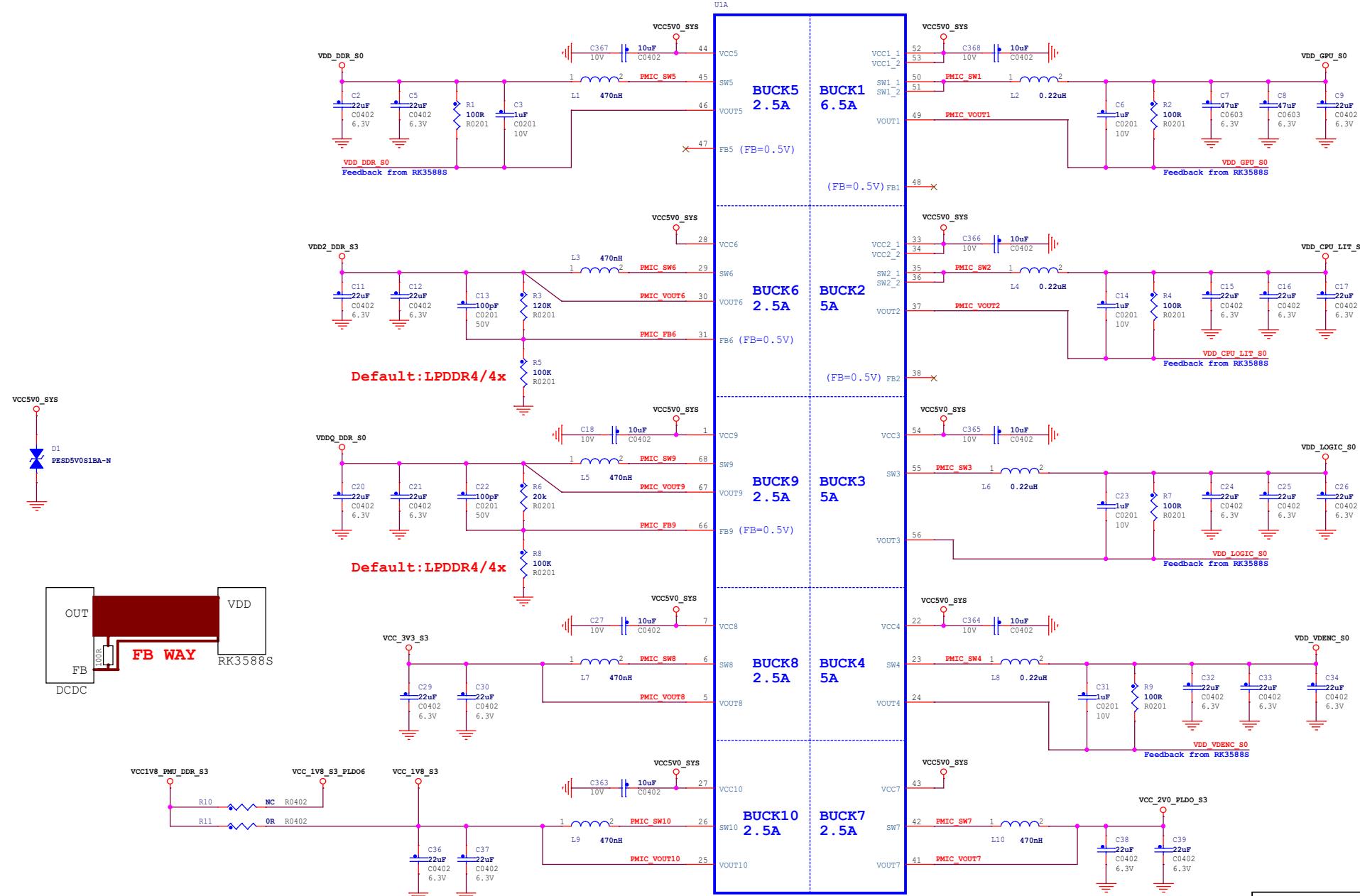
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# Power tree



东软微电子技术有限公司	https://yuhicom.163.com
Title	野火_xar_rx3588s stb核心板
Size	A2
Document Number	Power tree
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# PMIC DC-DC



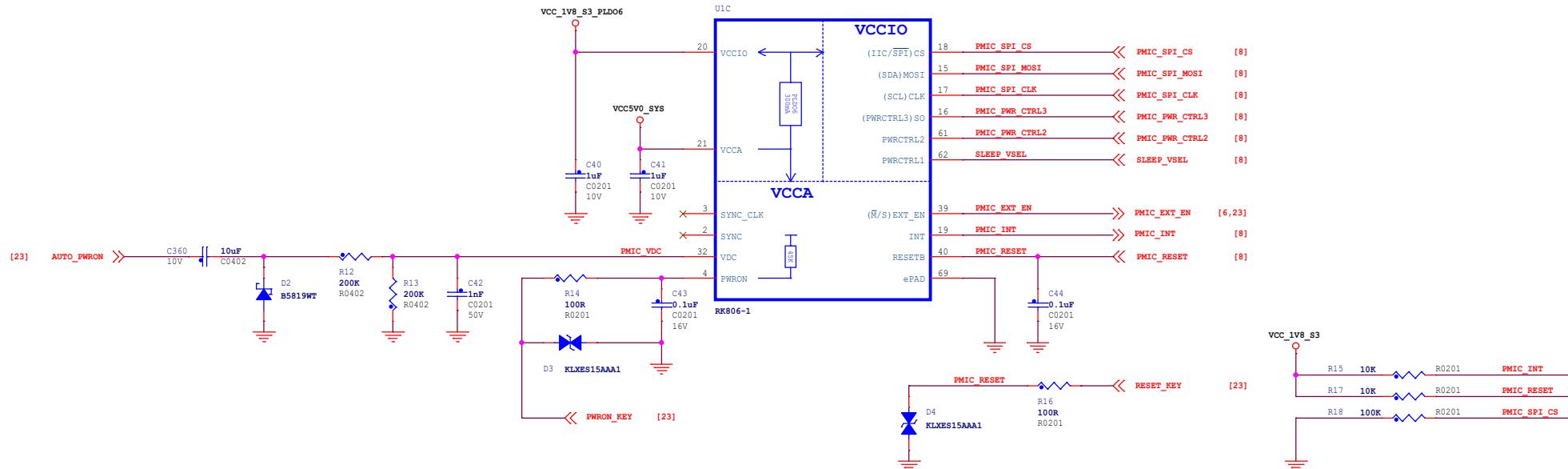
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<https://yehuosm.tmall.com>

Title 野火\_EBF RK3588 BTB核心板

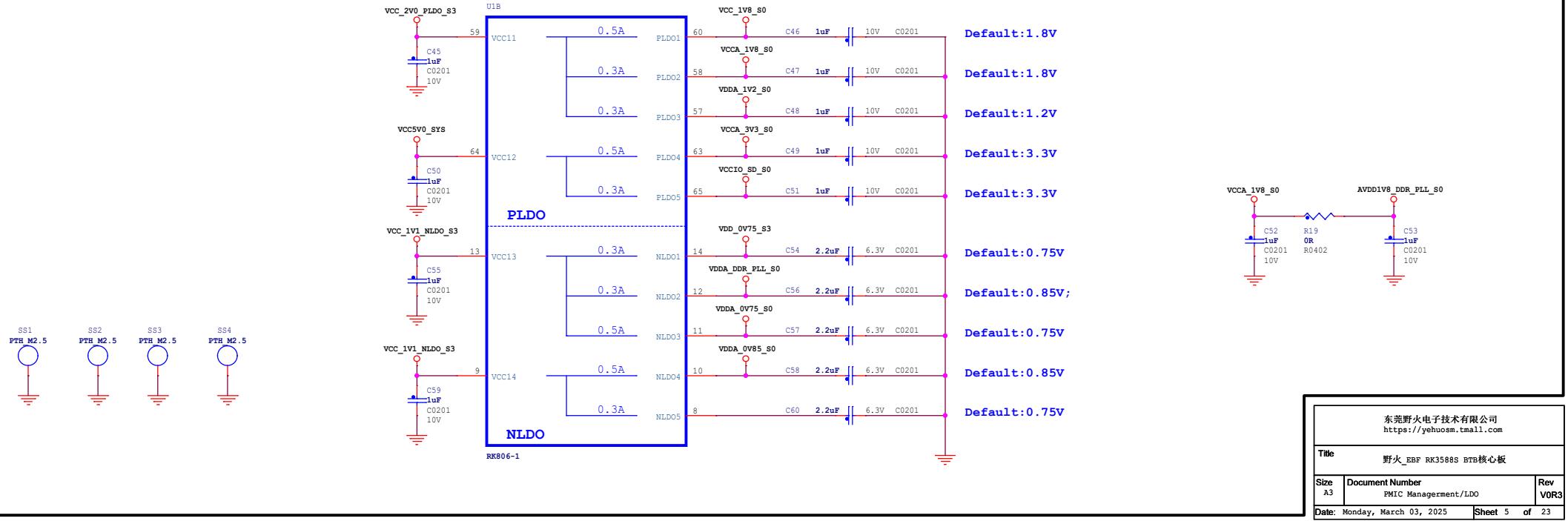
Size A3	Document Number PMIC DC-DC	Rev V0R3
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# PMIC Management



# PMIC LDO



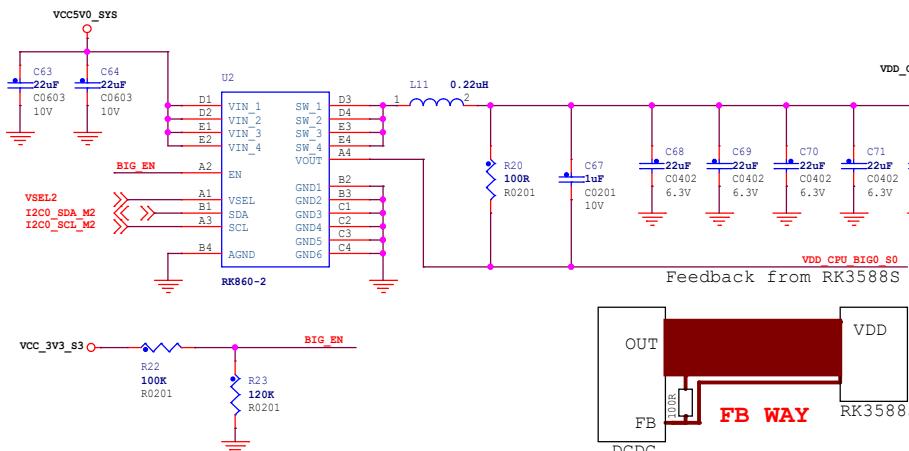
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Title: 野火\_EBF RK3588S BTB核心板

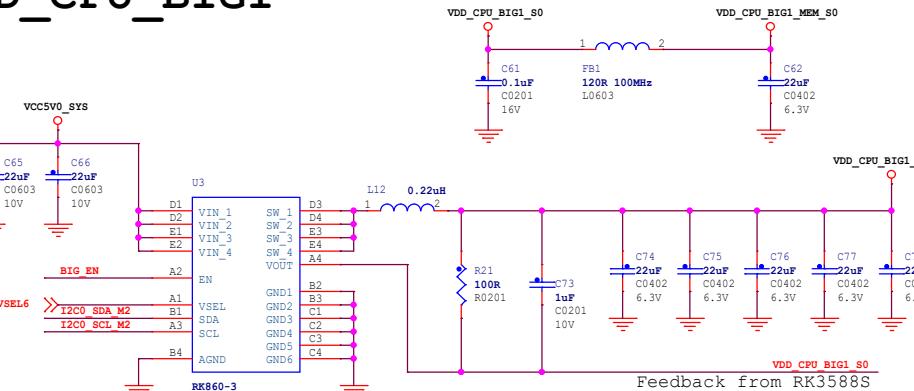
Size: A3 Document Number: PMIC Management/LDO Rev: V0R3

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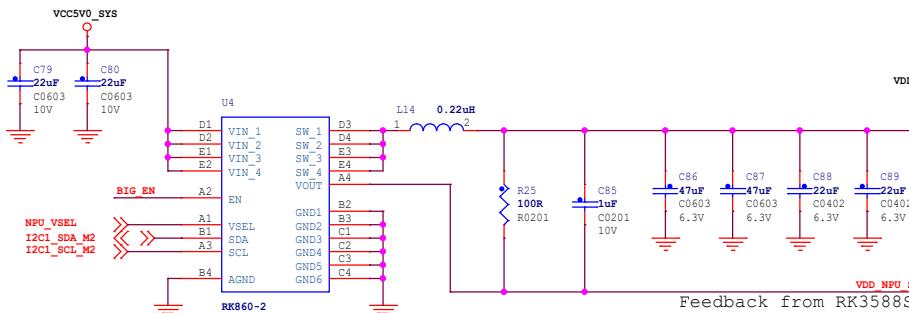
## VDD\_CPU\_BIG0



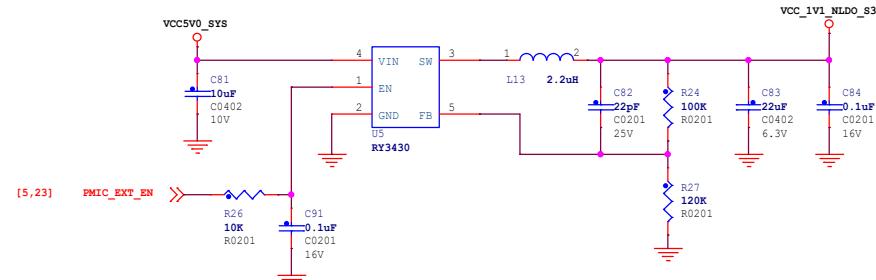
## VDD\_CPU\_BIG1



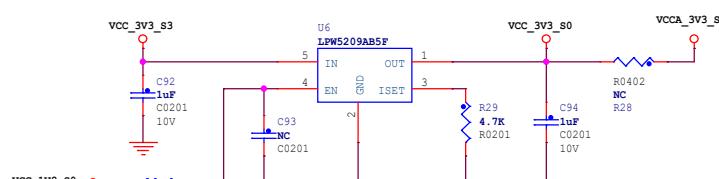
## VDD\_NPU



## VCC\_1V1\_NLDO

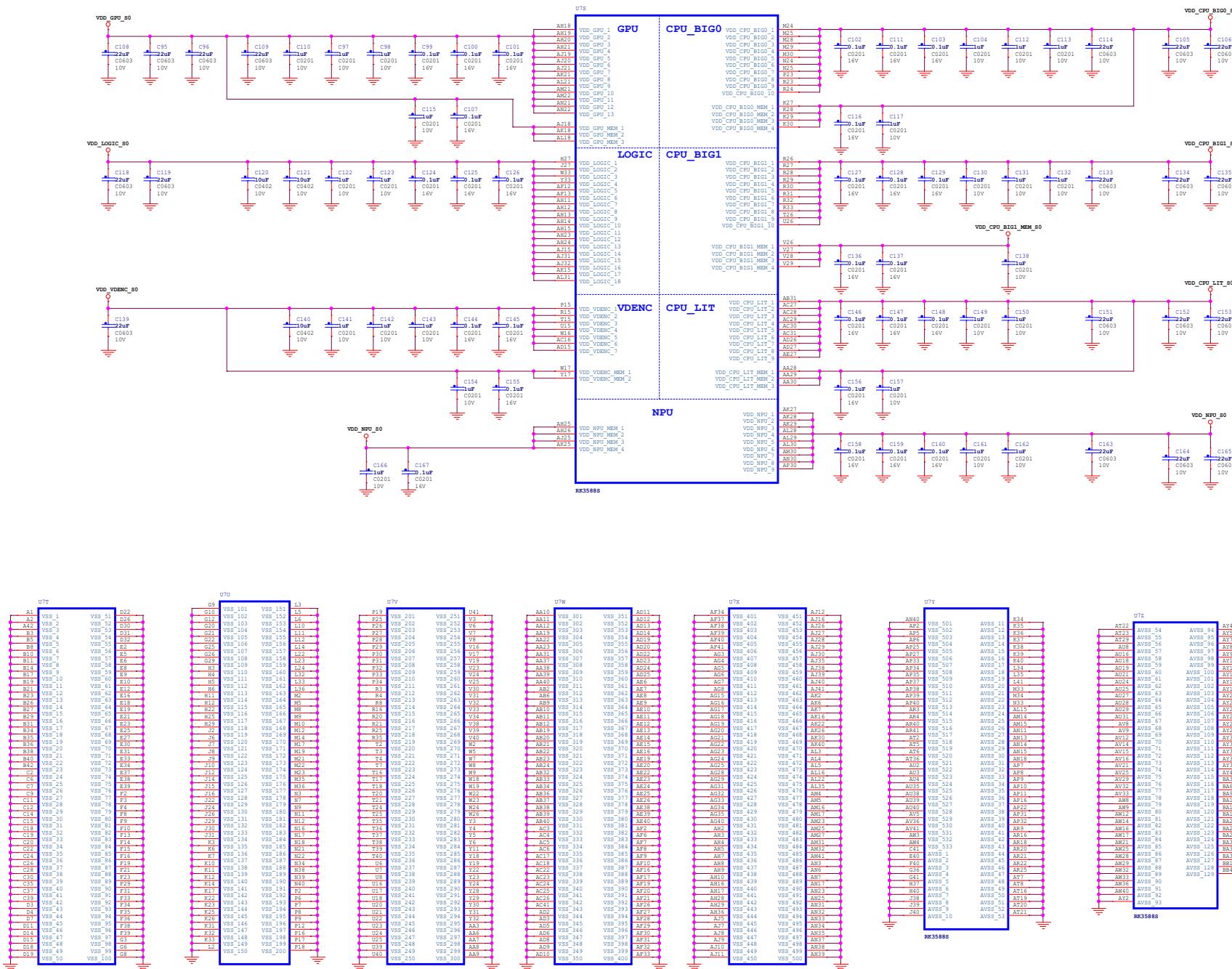


## VCC\_3V3\_S0

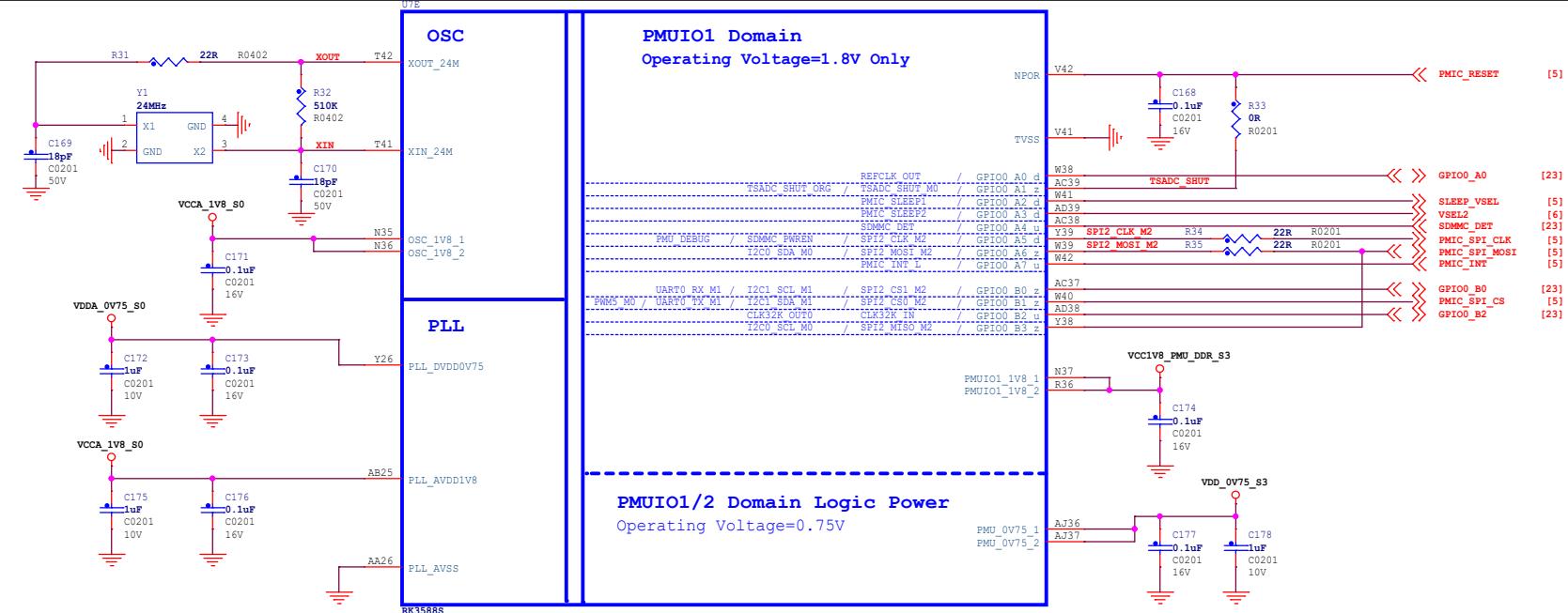


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Title: 野火_EBF RK3588S BTB核心板			
Size: A3	Document Number: Power Other	Rev: V0R3	
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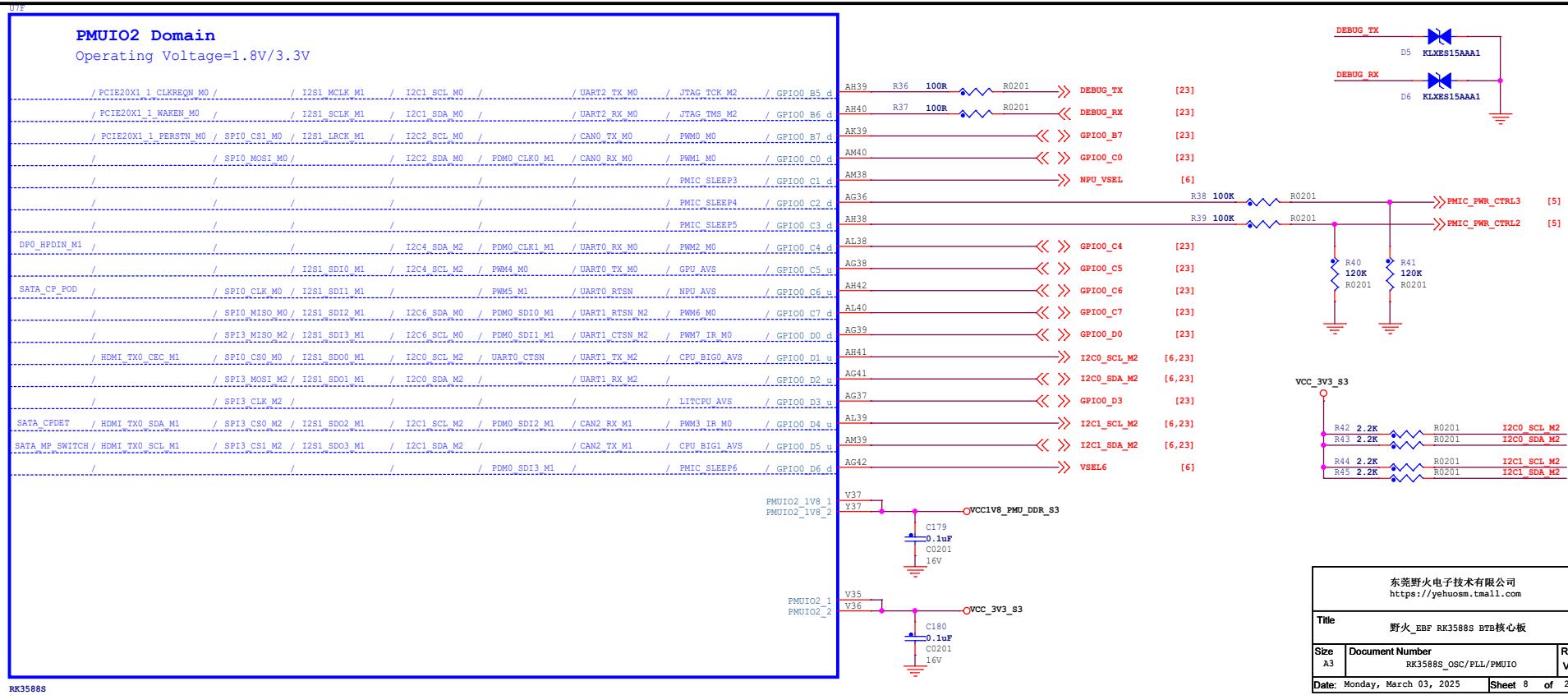
# RK3588S (Power & Gnd)



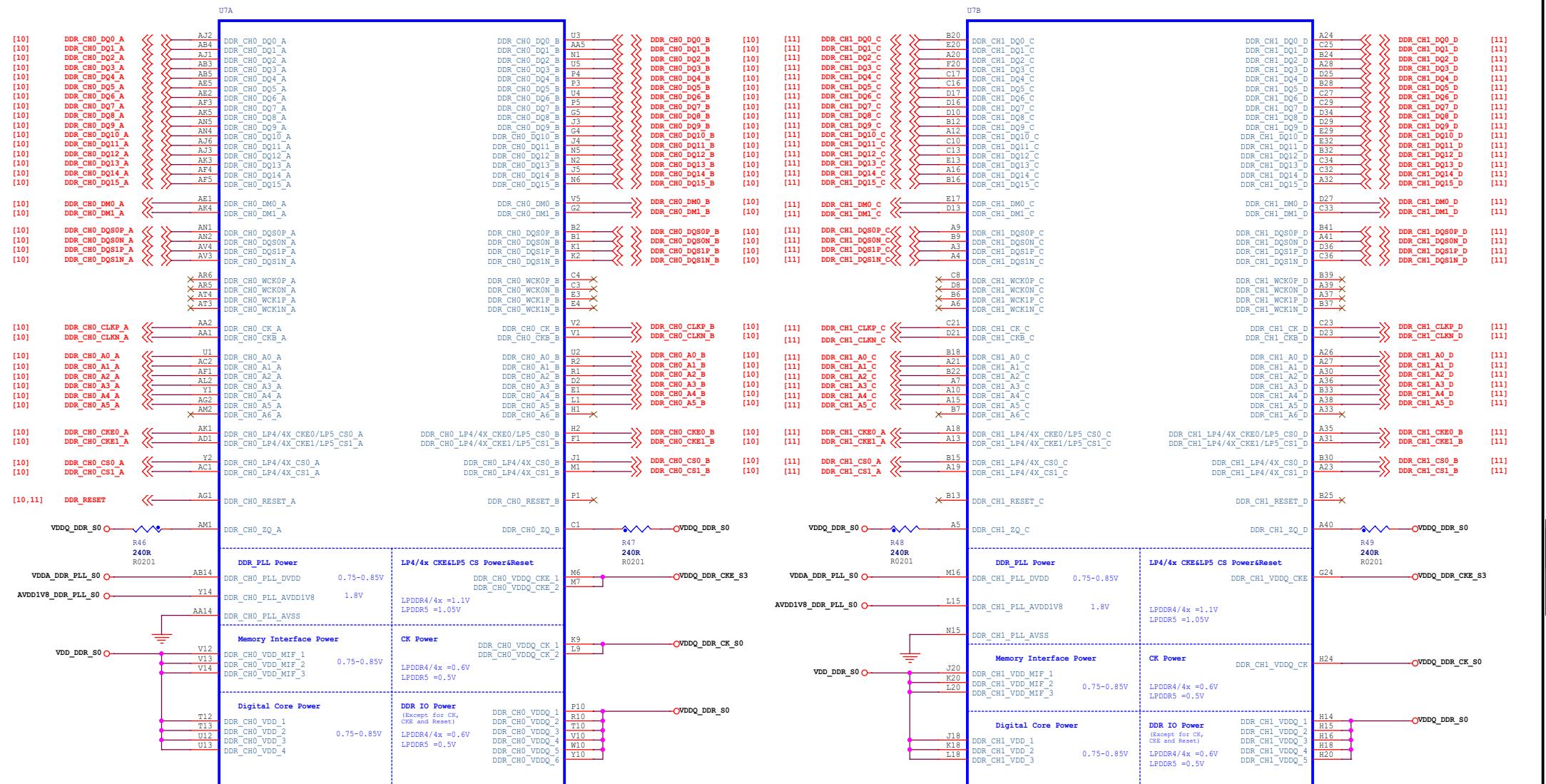
# (OSC/PLL/PMUIO1)



# (PMUIO2)



## RK3588S (DDR PHY)



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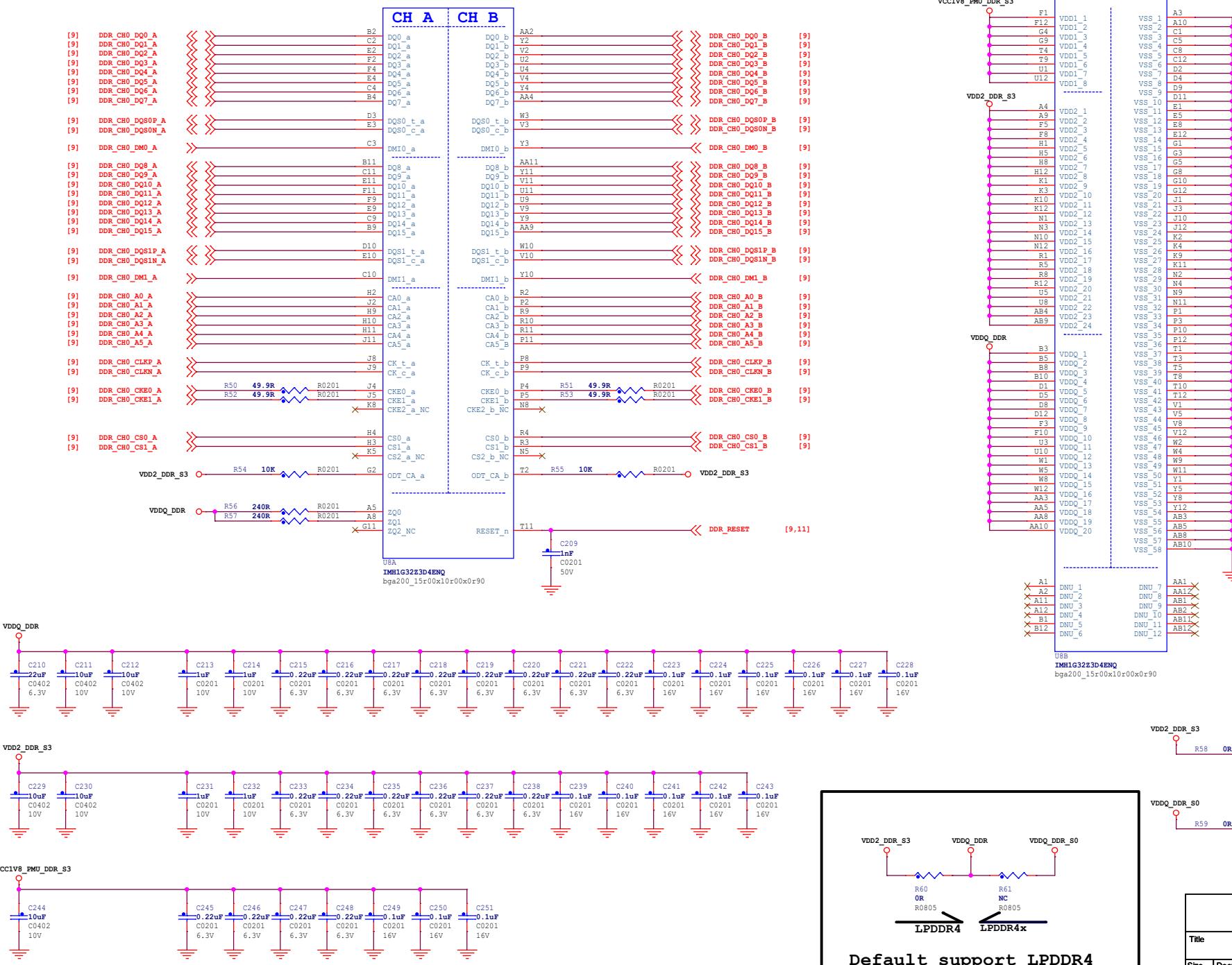
野火 PPP PK35000 PPP 核心板

**Document Number**

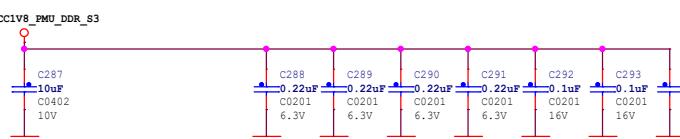
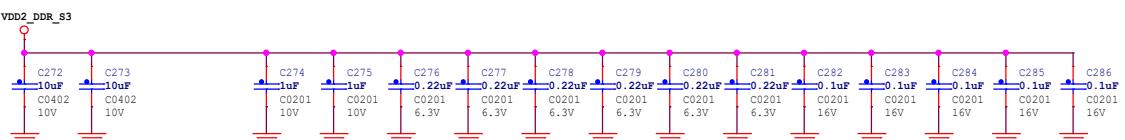
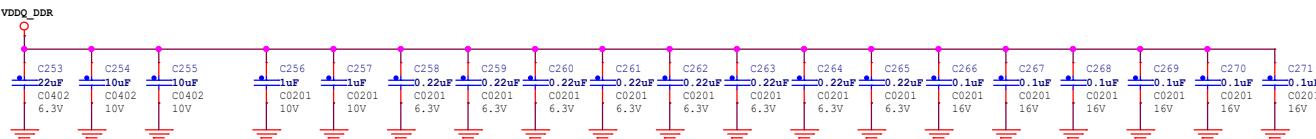
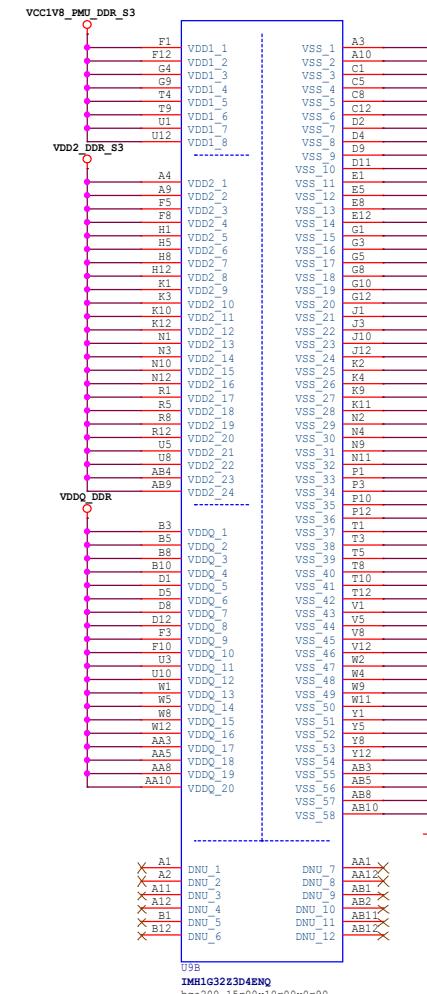
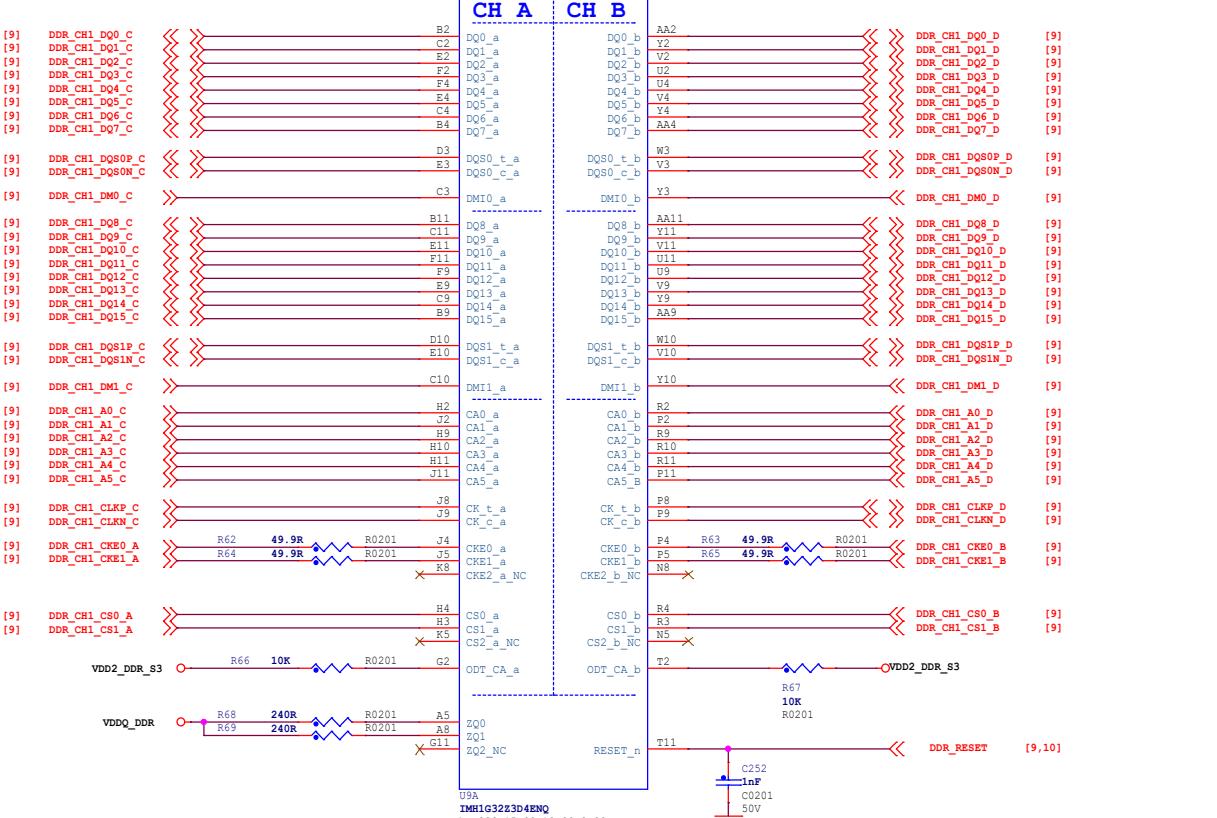
RK3588S DDR Controller

www.IBM.com

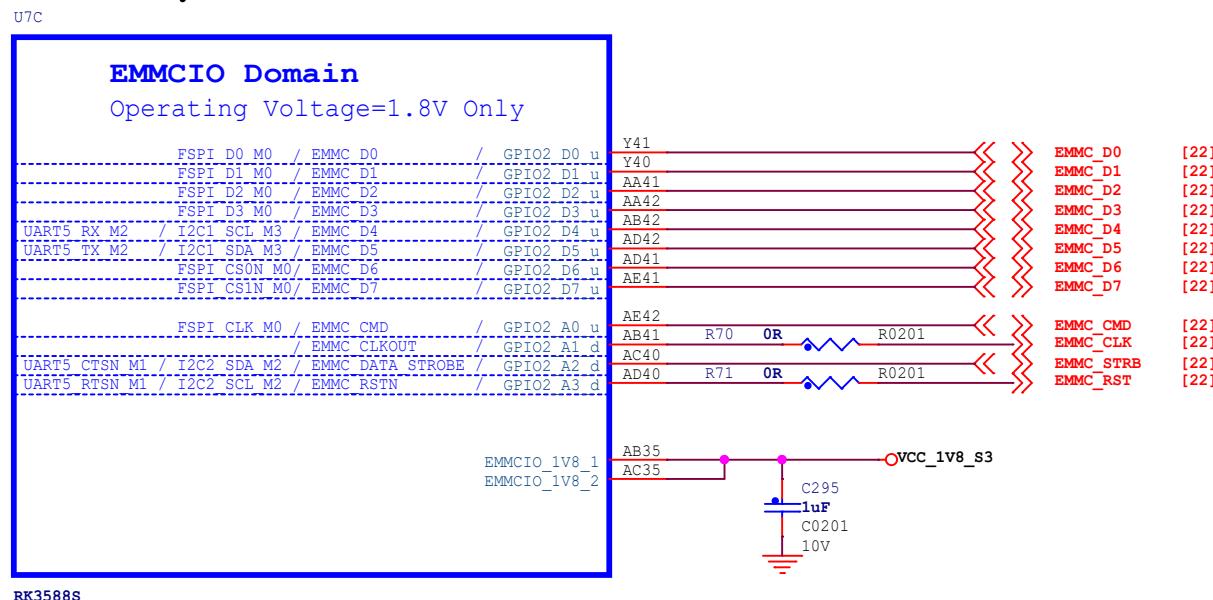
# LPDDR4/4x\_01



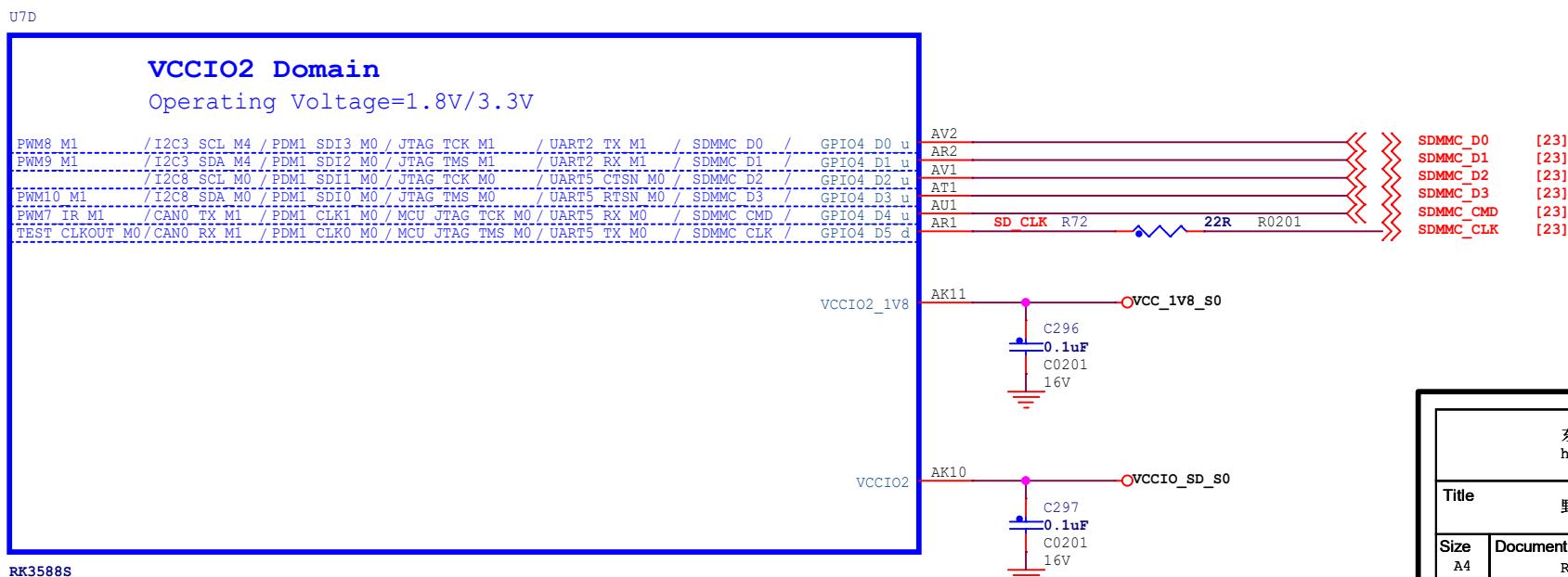
LPDDR4 / 4x\_02



# RK3588S (EMMCIO Domain)



# RK3588S (VCCIO2 Domain)



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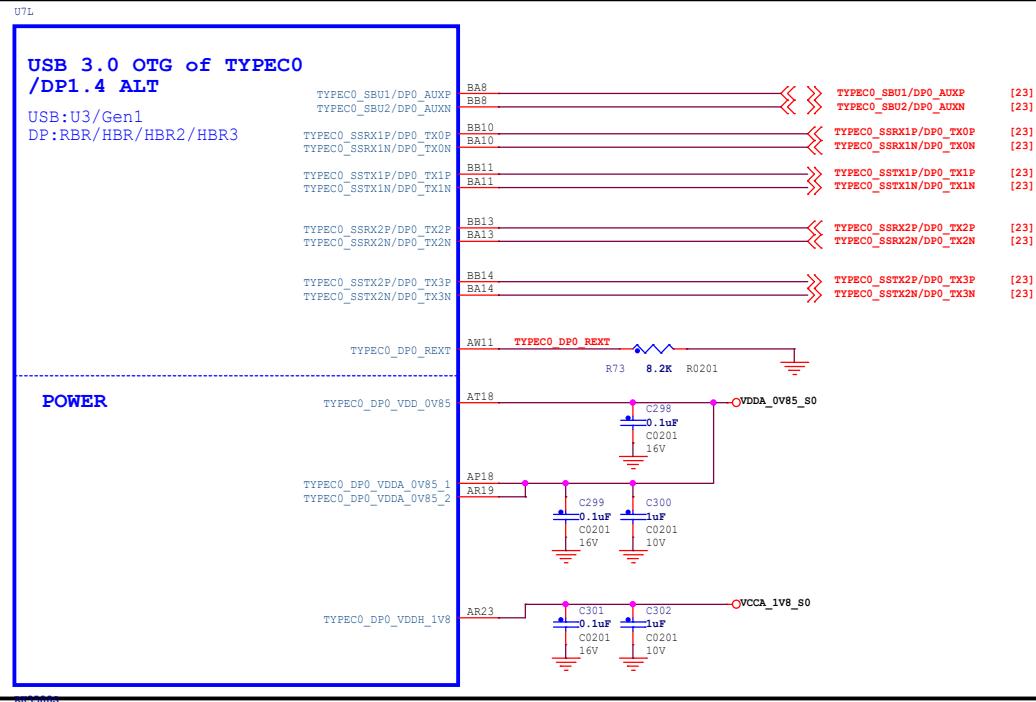
Title 野火\_EBB RK3588S BTB核心板

Size	Document Number	Rev
A4	RK3588S EMMC/SD Controller	V0R3
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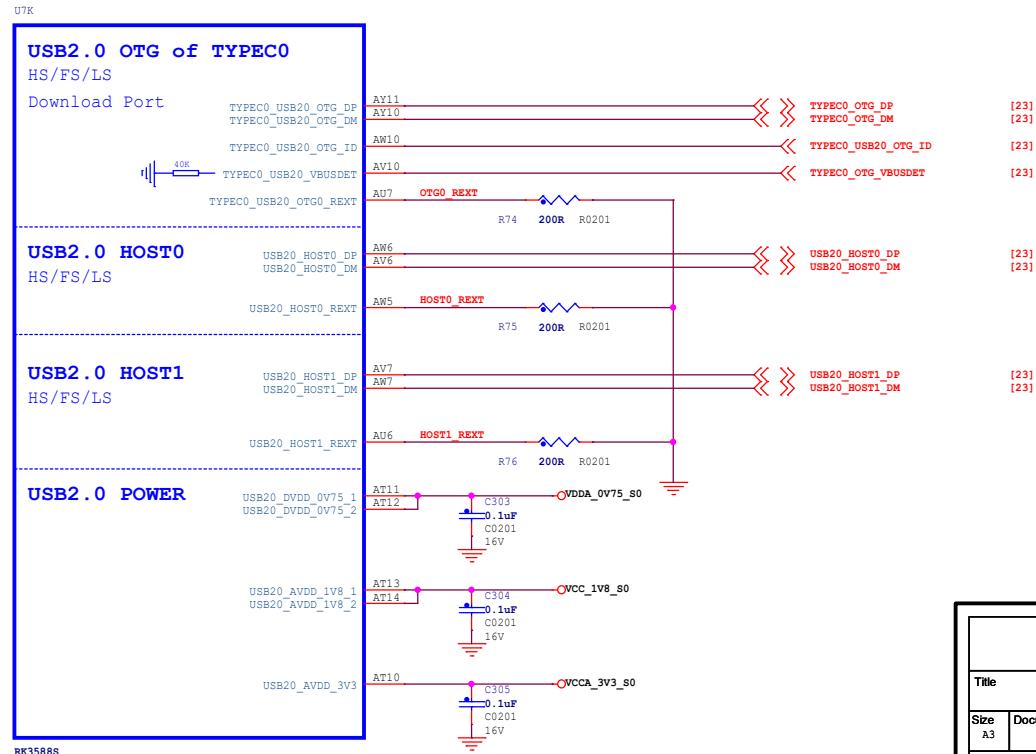
# RK3588S (USB3.0/DP1.4)

## USB3.0/DP1.4 Alt Mode Configuration

Option1	DP x4Lane	DP_TX_Lane0-3
Option2	TYPEC x4Lane	SSTX 1P/1N SSTX 2P/2N SSRX 1P/1N SSRX 2P/2N
Option3	USB30X2Lane+DPX2Lane	USB30:SSTX 1P/1N SSRX 1P/1N DP:Lane2 Lane3
Option4	USB30X2Lane+DPX2Lane	USB30:SSTX 2P/2N SSRX 2P/2N DP:Lane0 Lane1

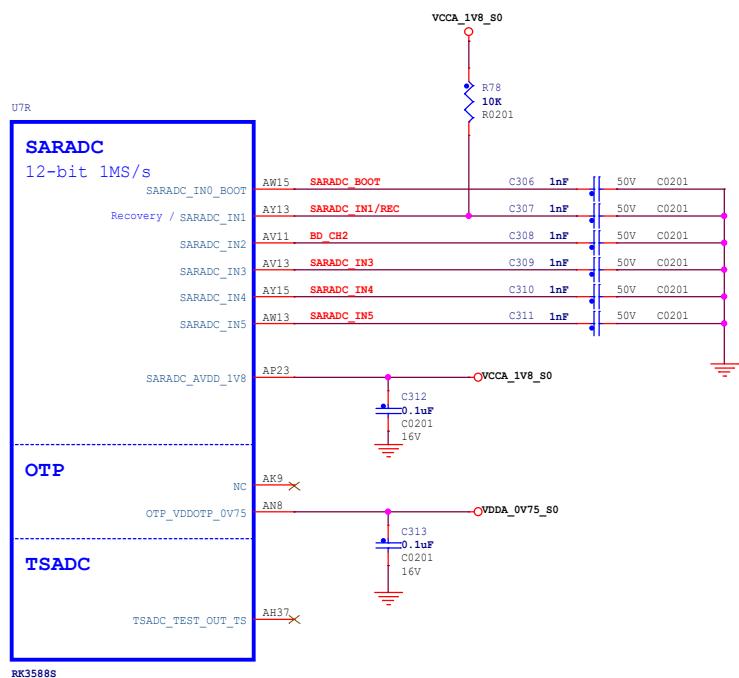


# RK3588S (USB2.0)

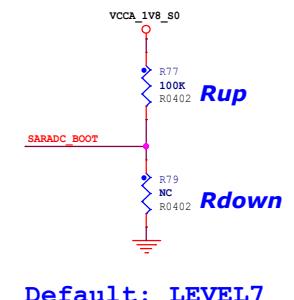


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Size A3	Document Number USB20/USB30/DP PHY	Rev V0R3
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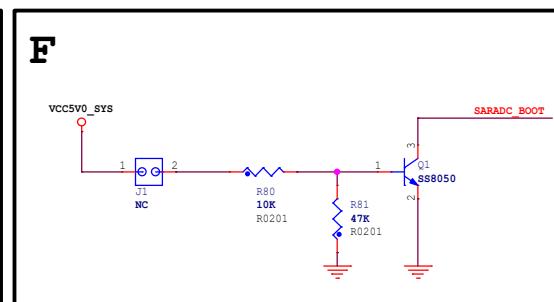
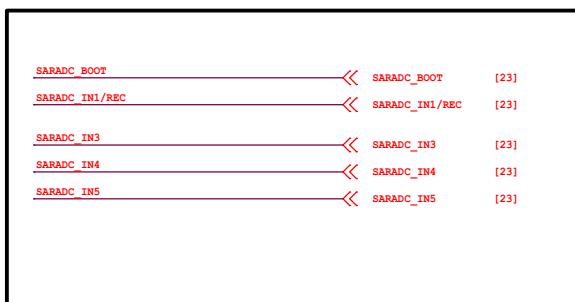
## RK3588S (SARADC/OTP/TSADC)



BOOT MODE CONFIG



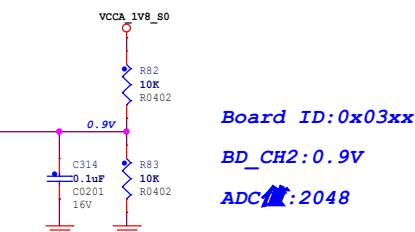
<b>Item</b>	<b>Rup</b>	<b>Rdown</b>	<b>ADC</b>	<b>BOOT MODE(saradc_in0)</b>
<b>LEVEL1</b>	<b>DNP</b>	<b>100K</b>	<b>0</b>	<b>USB (Maskrom mode)</b>
<b>LEVEL2</b>	<b>100K</b>	<b>20K</b>	<b>682</b>	<b>SD Card-USB</b>
<b>LEVEL3</b>	<b>100K</b>	<b>51K</b>	<b>1365</b>	<b>EMMC-USB</b>
<b>LEVEL4</b>	<b>100K</b>	<b>100K</b>	<b>2047</b>	<b>FSPI M0-USB</b>
<b>LEVEL5</b>	<b>100K</b>	<b>200K</b>	<b>2730</b>	<b>FSPI M1-USB</b>
<b>LEVEL6</b>	<b>100K</b>	<b>499K</b>	<b>3412</b>	<b>FSPI M2-USB</b>
<b>LEVEL7</b>	<b>100K</b>	<b>DNP</b>	<b>4095</b>	<b>FSPI_M2&gt;FSPI_M0&gt;EMMC&gt;SD Card&gt;USB</b>



## RK3588S (VCCIO1 Domain)



BD ID



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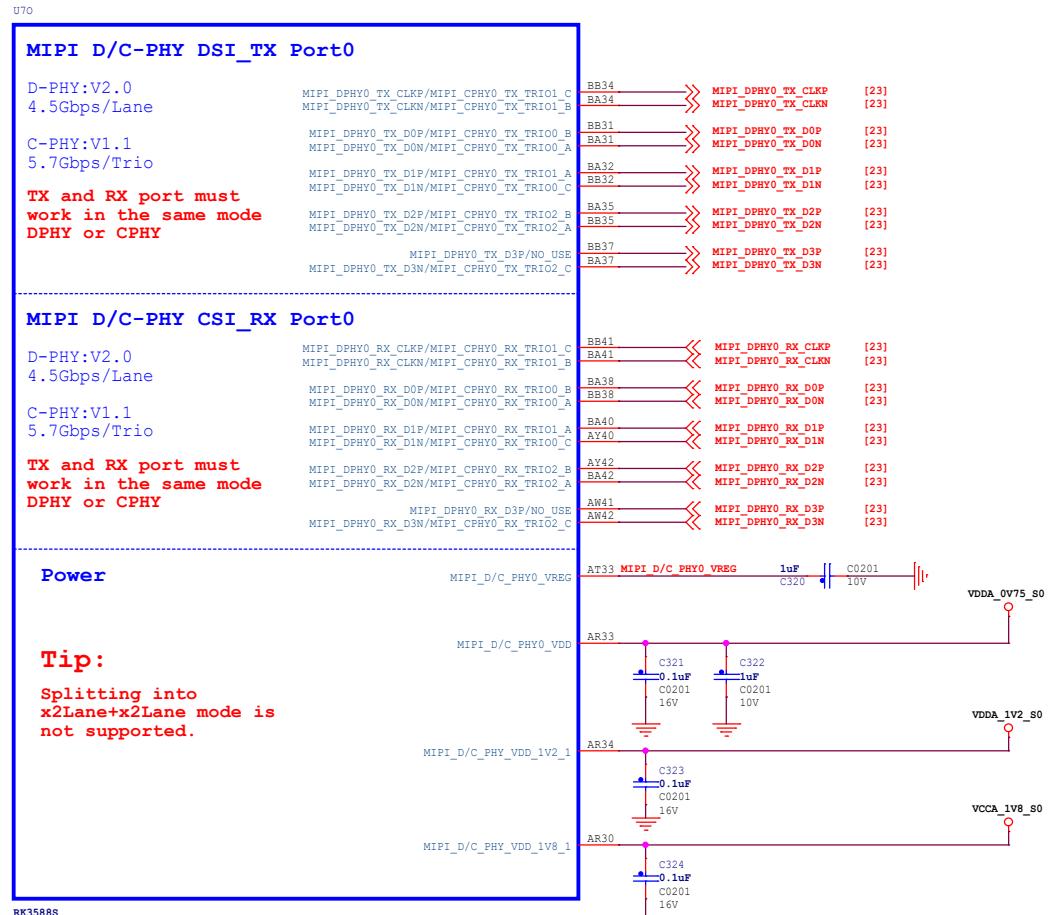
**Title** \_\_\_\_\_ **Page** \_\_\_\_\_ **Date** \_\_\_\_\_

封火\_EBF RR35885 B1B核心板

**Size** Document Number **Rev**  
**A3** SARADC/1.8V GPIO **V0R3**

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# RK3588S (MIPI\_D/C PHY0)

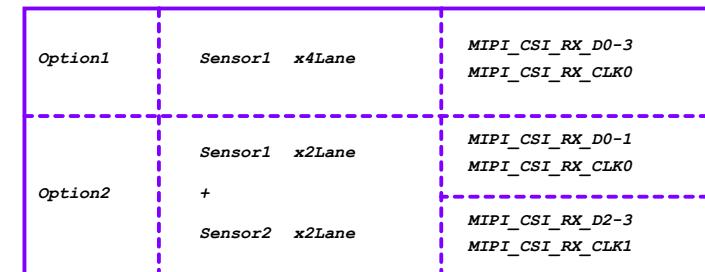
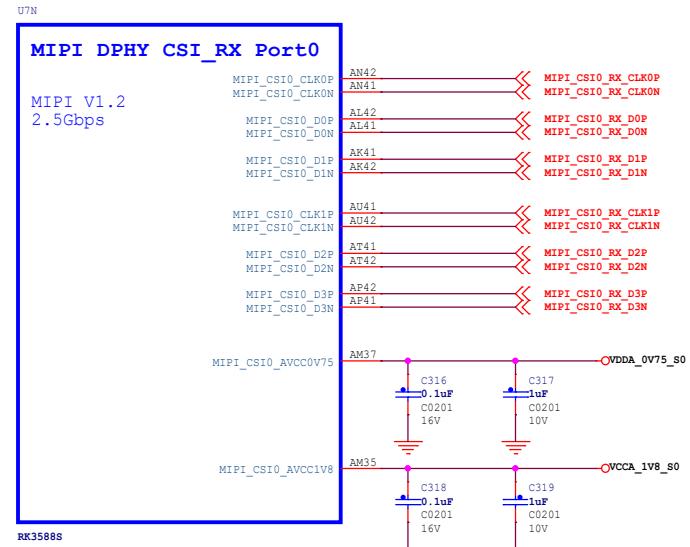


## About MIPI\_D/C\_PHY0\_VDD Pin:

D-PHY 4.5Gbps & C-PHY 2.5Gsp/s 0.85V  
D-PHY 2.5Gbps & C-PHY 1.5Gsp/s 0.75V

Default: 0.75V

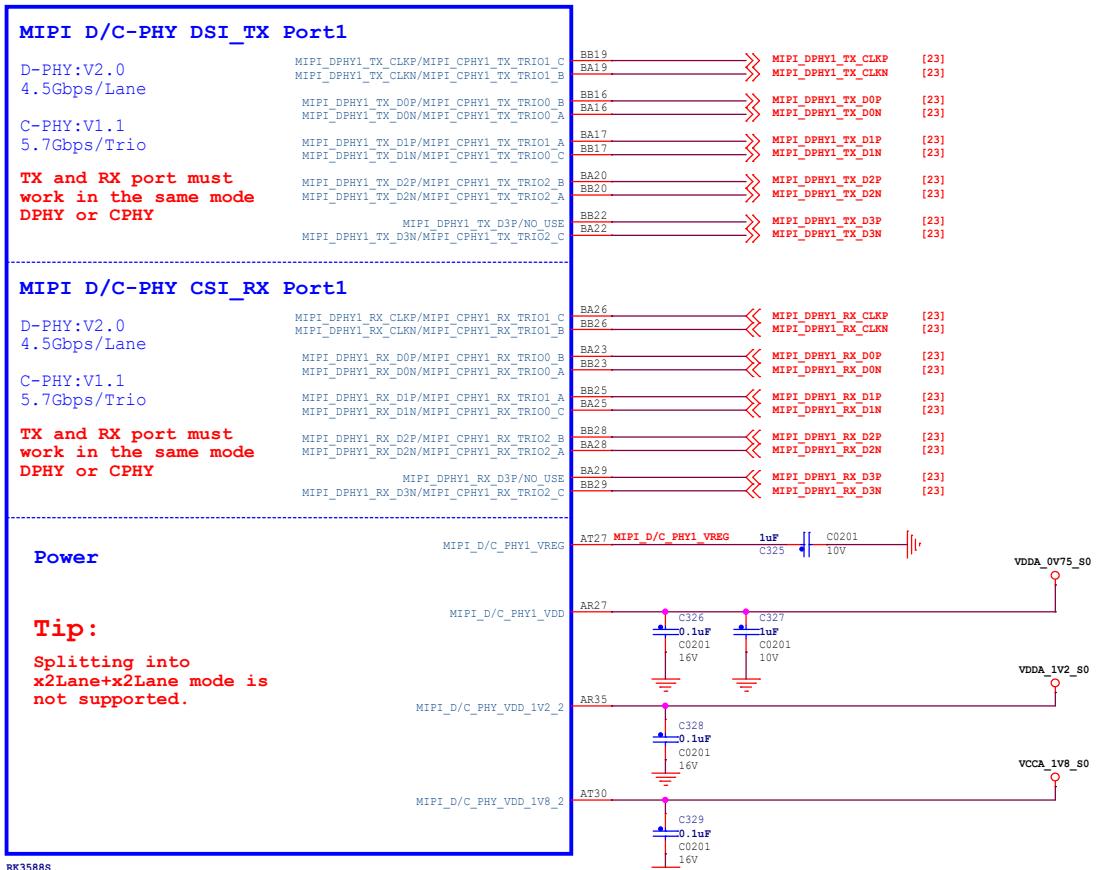
# RK3588S (MIPI\_DPHY CSI0 RX)



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Size A3	Document Number MIPI_CSIO Interface	Rev V0R3
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# RK3588S (MIPI\_D/C PHY1)

U7P



## About MIPI\_D/C\_PHY0\_VDD Pin:

D-PHY 4.5Gbps & C-PHY 2.5Gsp 0.85V

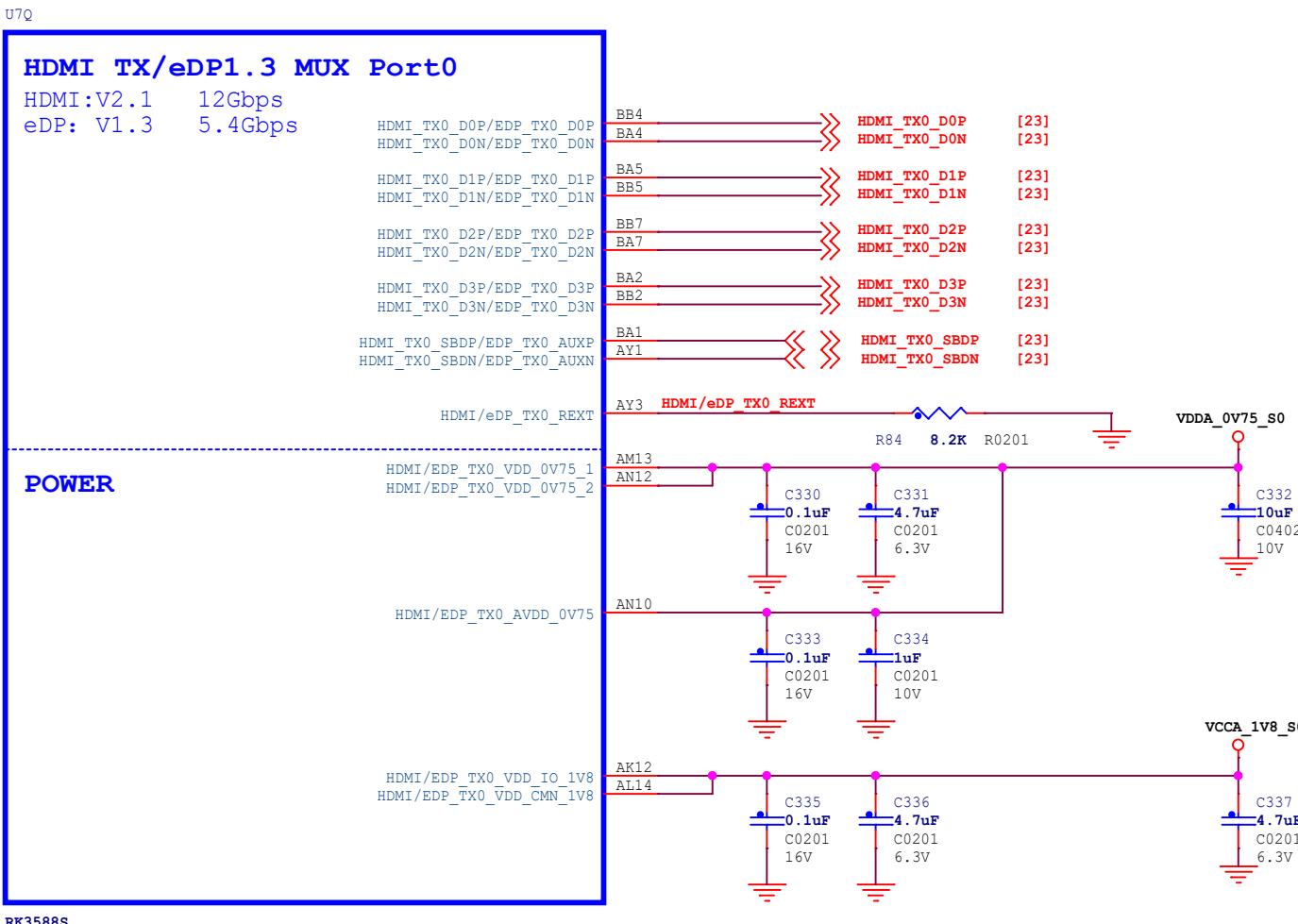
D-PHY 2.5Gbps & C-PHY 1.5Gsp 0.75V

Default: 0.75V

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Title		
野火_EBF RK3588S BTB核心板		
Size	Document Number	Rev
A3	MIPI_D/C Interface	V0R3
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# RK3588S (HDMI2.1 TX/eDP1.3 TX)

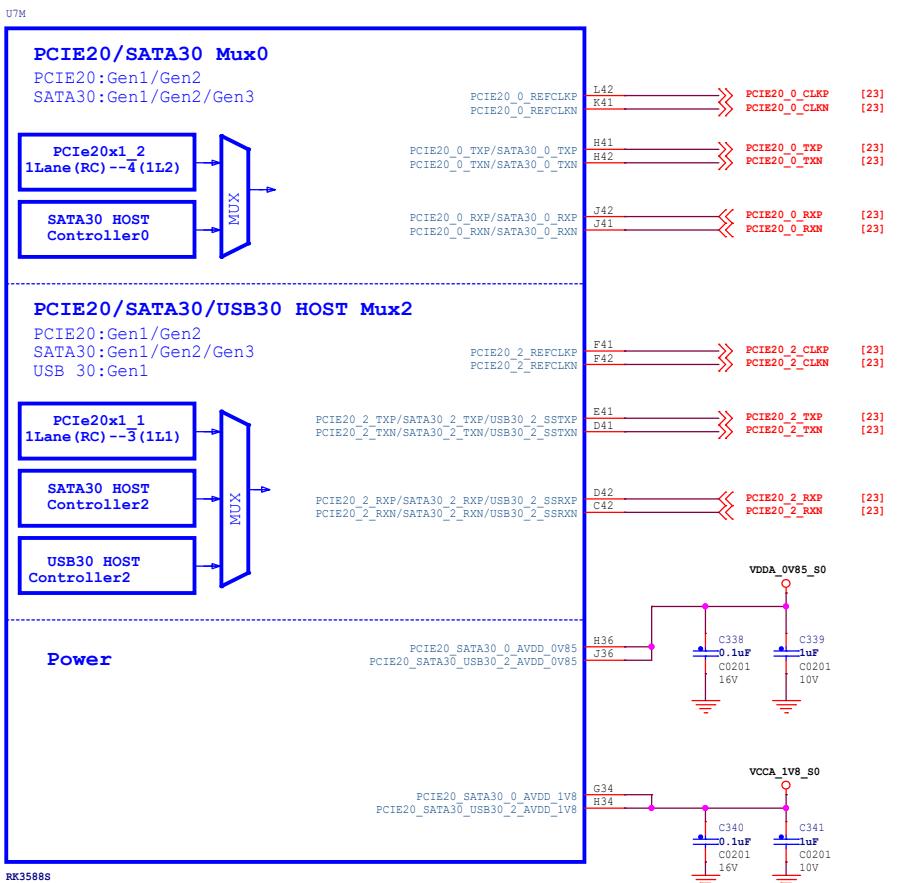


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Title  
野火\_EFB RK3588S BTB核心板

Size	Document Number	Rev
A4	HDMI/eDP Interface	V0R3
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## RK3588S (PCIE20/SATA30/USB30)



## **PCIe2.0 PHY**

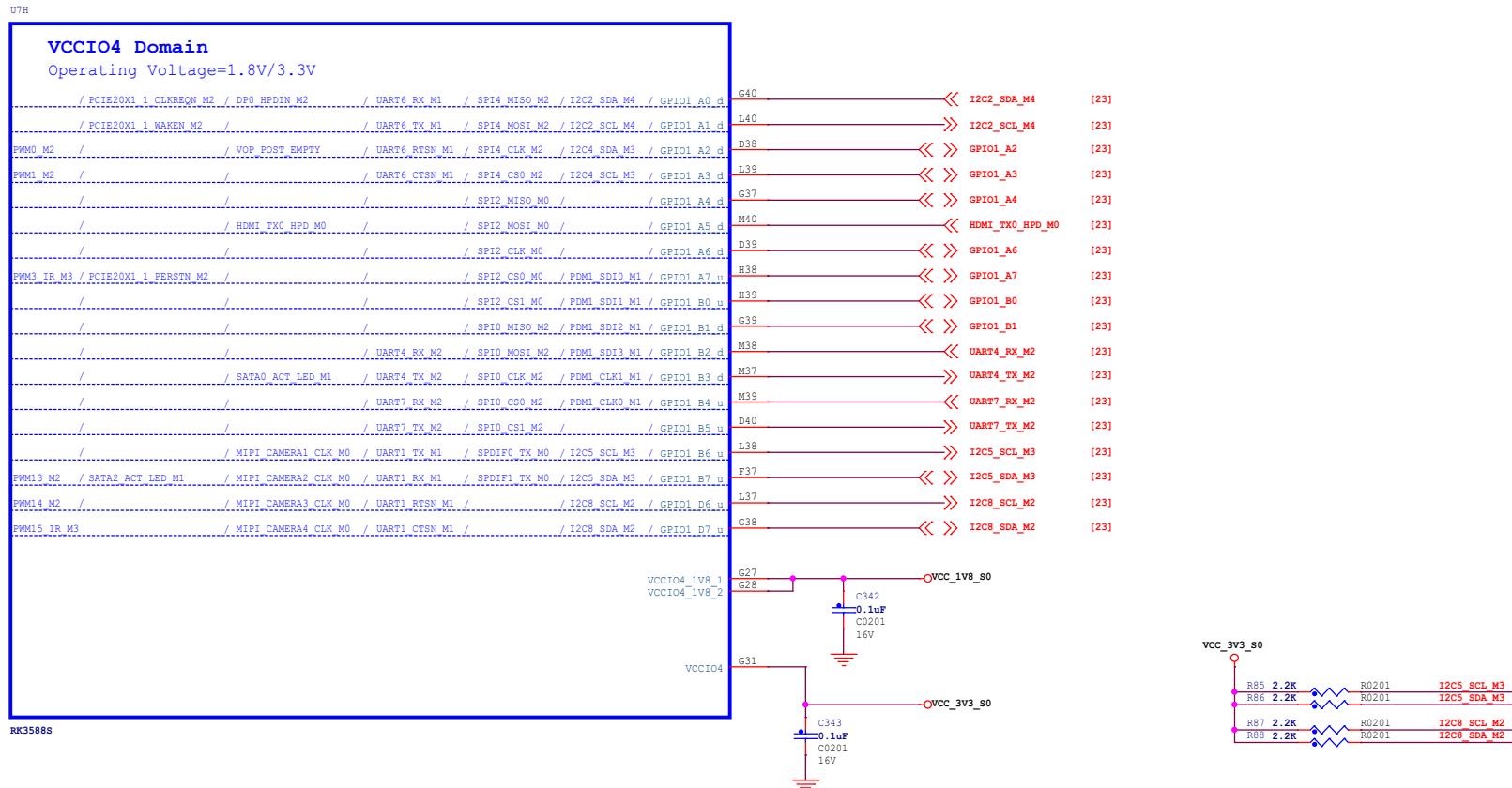
Controller Name	Data & Clk Lane Configure		Control GPIO
	CLK LANE	DATA LANE	
PCIE20X1_1 RC	PCIE20_2_REFCLKP PCIE20_2_REFCLKN	PCIE20_2_TX PCIE20_2_RX	PCIE20X1_1_CLKREQ_M* PCIE20X1_1_WAKEN_M* PCIE20X1_1_PERSTN_M* PCIE20X1_1_BUTTON_RSTN
PCIE20X1_2 RC	PCIE20_0_REFCLKP PCIE20_0_REFCLKN	PCIE20_0_TX PCIE20_0_RX	PCIE20X1_2_CLKREQ_M* PCIE20X1_2_WAKEN_M* PCIE20X1_2_PERSTN_M* PCIE20X1_2_BUTTON_RSTN

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Title      题名      題名      标题

Size A3	Document Number PCIE2/SATA3/USB3 PHY	Rev V0R3
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# RK3588S (VCCIO4 Domain)



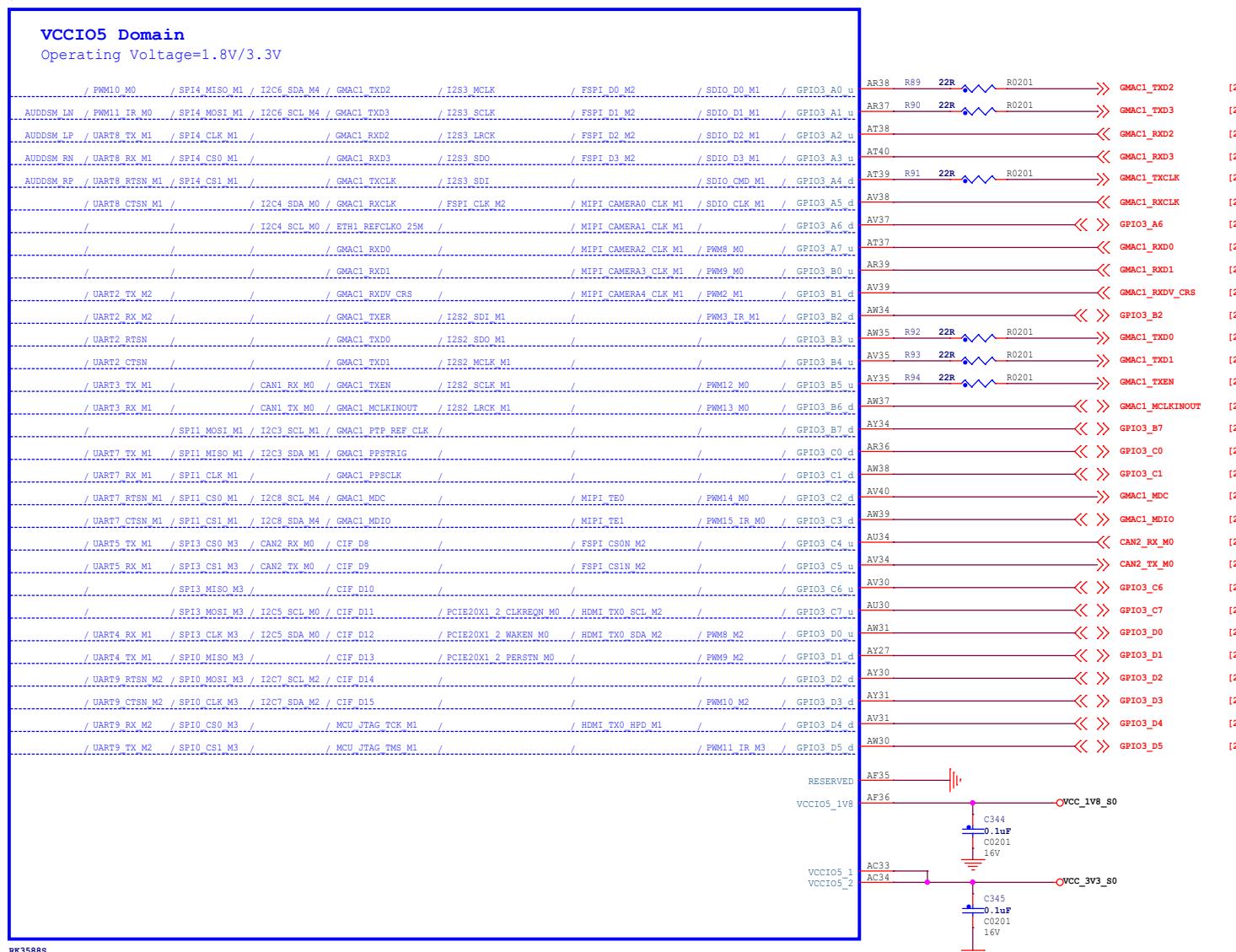
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Title 野火_EBF RK3588S BTB核心板		
Size A3	Document Number VCCIO4 GPIO	Rev V0R3
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## RK3588S (VCCIO5 Domain)

1177

VCCIO5 Domain

Operating Voltage=1.8V/3.3V



BK35889

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<b>Title</b> 野火_EBB RK3588S BTB核心板		
<b>Size</b> A3	<b>Document Number</b> VCCI05 GPIO	<b>Rev</b> V0R3
<b>Date:</b> Monday, March 03, 2025	<b>Sheet</b> 20	<b>of</b> 23

# RK3588S (VCCIO6 Domain)

U7J

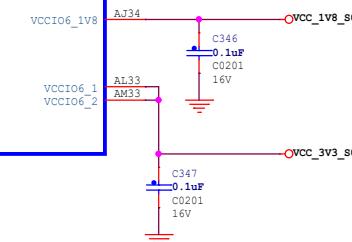
## VCCIO6 Domain

Operating Voltage=1.8V/3.3V

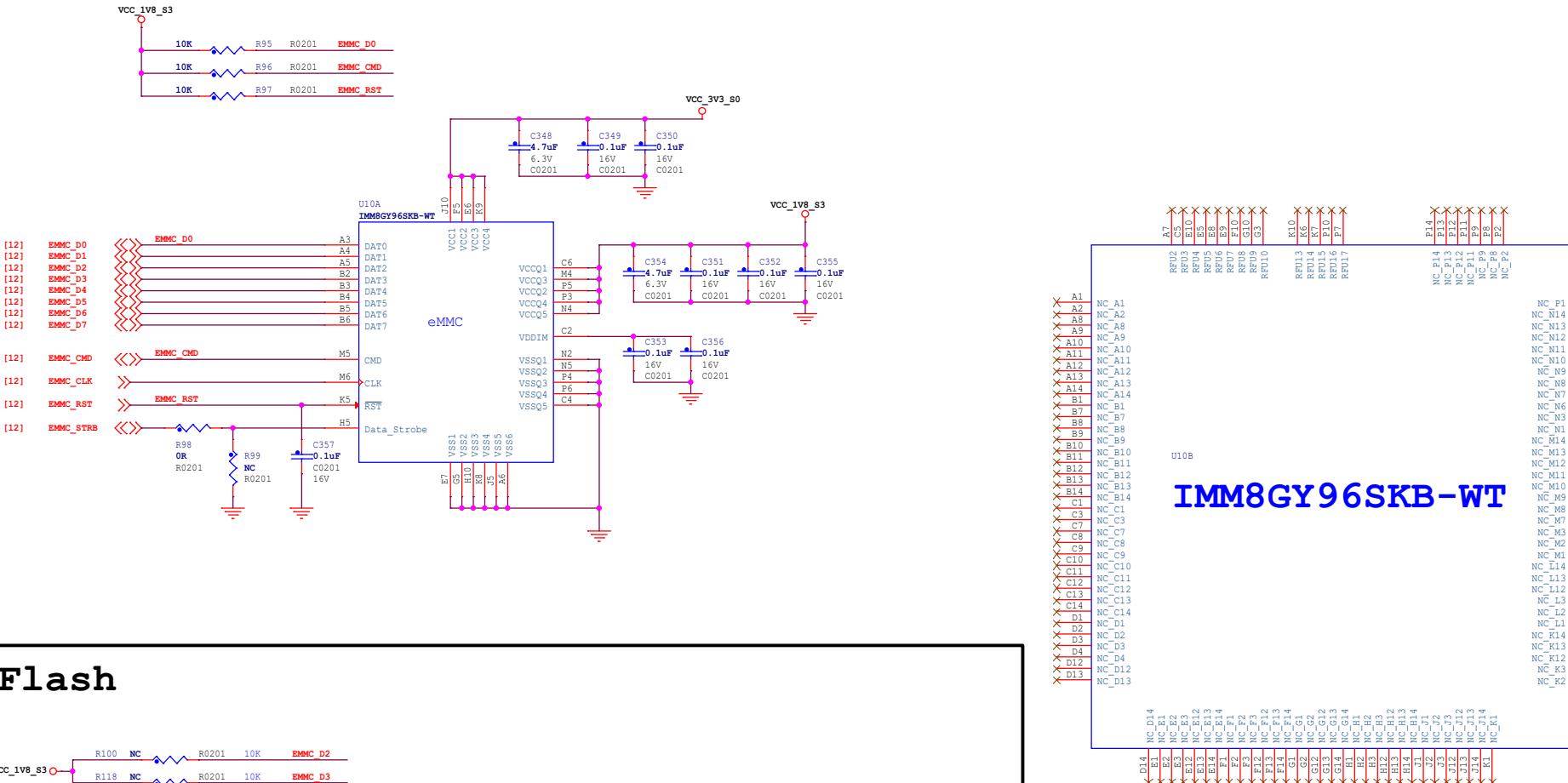
BT1120_D0 / CIF_D0	/	/ I2S1_MCLK_M0	/ UART3_RTSN_M1	/ SPI0_MISO_M1	/ PCIE20X1_1_CLREEN_M1	/ GPIO4_A0_d	[23]	
BT1120_D1 / CIF_D1	/	/ I2S1_SCLK_M0	/ UART3_CTSN_M1	/ SPI0_MOSI_M1	/ PCIE20X1_1_WAREN_M1	/ GPIO4_A1_d	[23]	
BT1120_D2 / CIF_D2	/	/ I2S1_LRCK_M0	/	/ SPI0_CLK_M1	/ PCIE20X1_1_PERSTN_M1	/ GPIO4_A2_d	[23]	
BT1120_D3 / CIF_D3	/	/	/ UART0_TX_M2	/	/	/ GPIO4_A3_d	[23]	
BT1120_D4 / CIF_D4	/	/	/ UART0_RX_M2	/ SPI2_MISO_M1	/ I2C1_SCL_M2	/	/ GPIO4_A4_d	[23]
BT1120_D5 / CIF_D5	/	/ I2S1_SDIO_M0	/ UART3_TX_M2	/ SPI2_MOSI_M1	/ I2C1_SDA_M2	/	/ GPIO4_A5_d	[23]
BT1120_D6 / CIF_D6	/	/ I2S1_SDII_M0	/ UART3_RX_M2	/ SPI2_CLK_M1	/ I2C2_SCL_M2	/	/ GPIO4_A6_d	[23]
BT1120_D7 / CIF_D7	/	/ I2S1_SDII_M0	/	/ SPI2_CS0_M1	/ I2C2_SDA_M2	/	/ GPIO4_A7_d	[23]
BT1120_CLKOUT / CIF_CLKIN	/	/ I2S1_SDID_M0	/ UART8_TX_M0	/ SPI2_CS1_M1	/ I2C6_SDA_M3	/	/ GPIO4_B0_d	[23]
SPDIF1_TX_M1 / MIPI_CAMERA0_CLK_M0	/ SATA0_ACT_LED_M0	/ I2S1_SD00_M0	/ UART8_RX_M0	/ SPI0_CS1_M1	/ I2C6_SCL_M3	/	/ GPIO4_B1_u	[23]
CAN1_RX_M1 / BT1120_D8 / CIF_HREF	/ PWM14_M1	/ I2S1_SD01_M0	/ UART8_RTSN_M0	/ SPI0_CS0_M1	/ I2C7_SCL_M3	/ PCIE20X1_1_BUTTON_RSTN	/ GPIO4_B2_u	[23]
CAN1_TX_M1 / BT1120_D9 / CIF_VSYNC	/ PWM15_IR_M1	/ I2S1_SD02_M0	/ UART8_CTSN_M0	/	/ I2C7_SDA_M3	/ PCIE20X1_2_BUTTON_RSTN	/ GPIO4_B3_u	[23]
BT1120_D10 / CIF_CLKOUT / PWM11_IR_M1	/ I2S1_SD03_M0	/ UART9_TX_M1	/	/ DPO_HPDIN_M0	/ SPDIF0_TX_M1	/	/ GPIO4_B4_u	[23]
BT1120_D11 /	/ PWM12_M1	/	/ UART9_RX_M1	/ SPI3_MISO_M1	/	/	/ GPIO4_B5_d	[23]
BT1120_D12 /	/ PWM13_M1	/	/	/ SPI3_MOSI_M1	/ I2C5_SCL_M1	/ SATA0_ACT_LED_M0	/ GPIO4_B6_d	[23]
BT1120_D13 /	/	/ HDMI_TX0_SCL_M0	/	/ SPI3_CLK_M1	/ I2C5_SDA_M1	/ PCIE20X1_2_CLREEN_M1	/ GPIO4_B7_d	[23]
BT1120_D14 /	/	/ HDMI_TX0_SDA_M0	/	/ SPI3_CS0_M1	/ I2C9_SCL_M3	/ PCIE20X1_2_WAREN_M1	/ GPIO4_C0_d	[23]
BT1120_D15 / SPDIF1_TX_M2	/ PWM6_M1	/ HDMI_TX0_CEC_M0	/	/ SPI3_CS1_M1	/ I2C9_SDA_M3	/ PCIE20X1_2_PERSTN_M1	/ GPIO4_C1_d	[23]

Note:  
BT1120 Only Support Output

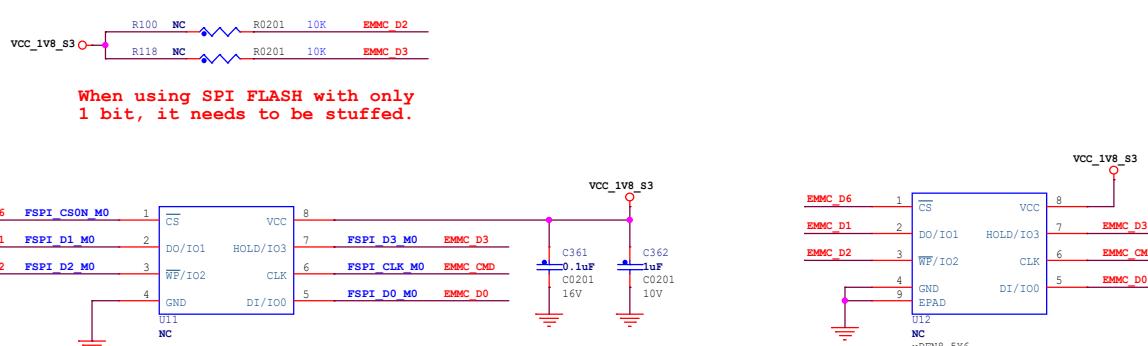
RK3588



# EMMC FLASH



## SPI Flash



东莞野火电子技术有限公司 <a href="https://yehuozi.tmall.com">https://yehuozi.tmall.com</a>		
Title 野火_EFB RK3588S BTB核心板		
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## BTB OP5 100P\*4 Connector

