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Note

NOTE 1:
Component parameter description

1. DNP stands for component not mounted temporarily
2. If Value or option is DNP, which means the area is reserved without being mounted
3. If Flash is compatible, please notice when eMMC is used, the option is that @eMMC is mounted, @Nand is not mounted when Nand is used, the option is that @Nand is mounted, @eMMC is not mounted

NOTE 2:
Please use our recommended components to avoid too many changes.For more informations about the second source,please refer to our AVL.

Note

Option

Description

Remind

Bill of Materials

Header:

Item\tPart\tDescription\tPCB Footprint\tReference\tQuantity\tOption

Combined property string:

{Item}\t{Value}\t{Description}\t{PCB Footprint}\t{Reference}\t{Quantity}\t{Option}

PINE64	PINE64		
Project:	SOEdge Schematic 20190919 ver 2.0		
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RK1808 USB AI STICK

Version	Date	Author	Change List	Approved
V1.0	*20181025*		*First edition for RK1808 ddr4*	*RZF*
V2.0	20190919		SOEdge Schematic Released	

RK1808 USB AI STICK

PINE64	PINE64		
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I2C MAP

Port	Pin name	Domain	Bus name	Pull-up voltage	Slave Device	Slave Addr (MS 7Bits)	Note	Slave Bus Capability
I2C0	I2C0_SCL/GPIO0_B0_u I2C0_SDA/GPIO0_B1_u	PMUIO2	I2C0_SCL_PMIC I2C0_SDA_PMIC	VCC_3V3	Rockchip RK809	0x20	PMIC	100kHz,400kHz
					SY837		BUCK	100kHz,400kHz
I2C1	I2C1_SCL/GPIO0_C0_u I2C1_SDA/GPIO0_C1_u	PMUIO2	I2C1_SCL I2C1_SDA	VCC_3V3	GSL1680		Touch IC	100kHz,400kHz
								100kHz,400kHz
I2C2	I2C1_SCL/GPIO1_B4_U I2C1_SDA/GPIO1_B5_U	VCCIO_3V3			NC			100kHz,400kHz
I2C3	GPIO2_D0/I2C3_SCL_U GPIO2_D1/I2C3_SDA_U	VCCA_1V8		VCCA_1V8	MIPI CAMERA			
					CIF CAMERA			
					BT1120			
I2C4	GPIO3_C2/I2C4_SCL_U GPIO3_C3/I2C4_SDA_U	VCCIO_3V3		VCCIO_3V3	DIGITAL MIC			
					RGB LCD			
					PCIEX4			
					SENSOR			

RK1808 USB AI STICK

PINE64

PINE64

Project:	SOEdge Schematic 20190919 ver 2.0		
File:	**04.I2C MAP**		
Date:	Thursday, September 19, 2019	Rev:	
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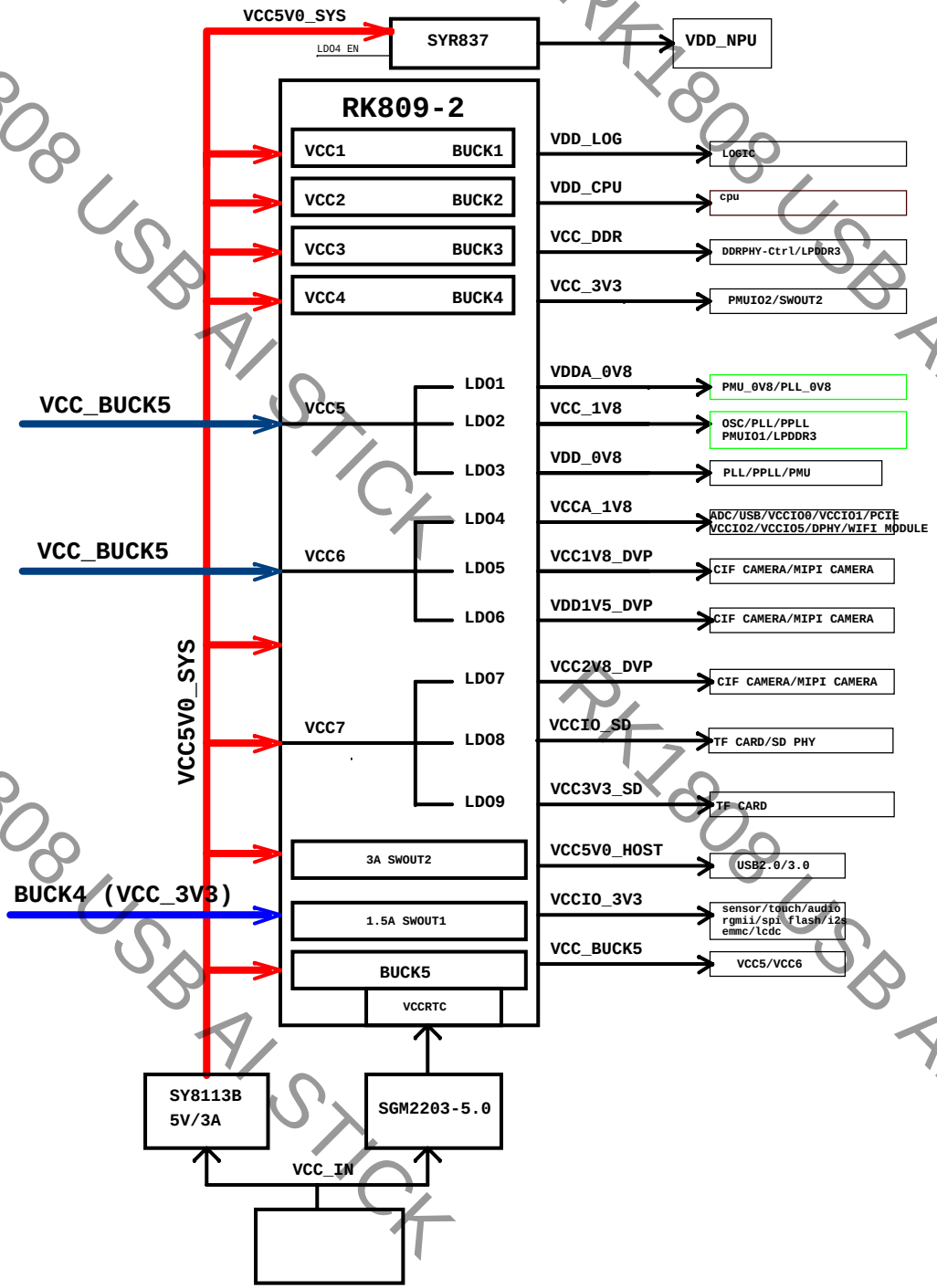
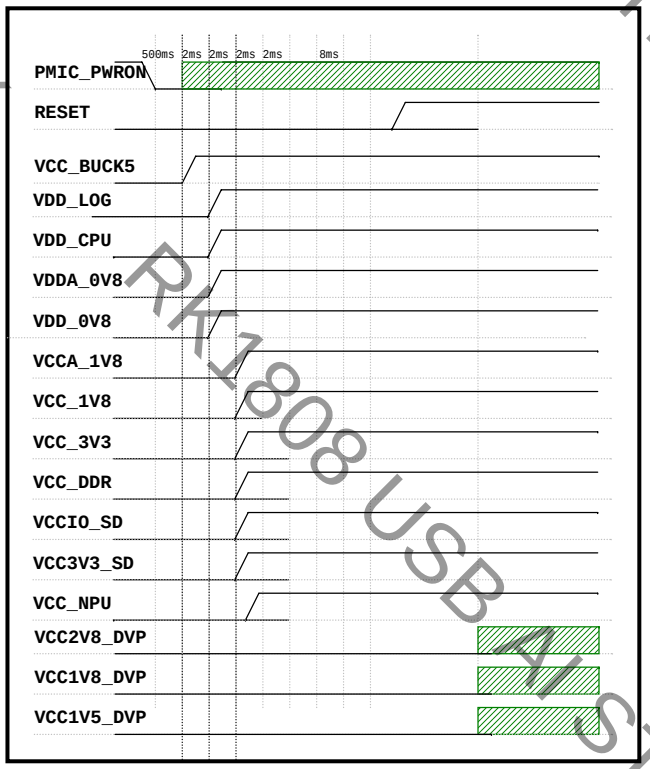
POWER DIAGRAM



RK809-2 Power-on Sequence

PowerName	PMIC Channel	Time Slot (step 2mS)	Default Voltage	Supply Limit	Default ON/OFF	Sleep ON/OFF	Peak Current
VDD_NPU	EXTERNAL(SY837)	Slot:3A	1V	6A	ON	OFF	4A
VDD_LOG	BUCK1	Slot:2	0.85V	2.5A	ON	OFF	1.25A
VDD_CPU	BUCK2	Slot:2	0.85V	2.5A	ON	OFF	750mA
VCC_DDR	BUCK3	Slot:3	FB=0.6V	1.5A	ON	ON	
VCC_3V3	BUCK4	Slot:4	3.3V	1.5A	ON	ON	
VCC_BUCK5	BUCK5	Slot:1	2.5V	2.5A	ON	ON	
VDDA_0V8	LDO1	Slot:2	0.8V	400mA	ON	OFF	
VCC_1V8	LDO2	Slot:3	1.8V	400mA	ON	ON	
VDD_0V8	LDO3	Slot:2	0.8V	100mA	ON	ON	
VCCA_1V8	LDO4	Slot:3	1.8V	400mA	ON	OFF	
VCC1V8_DVP	LDO5		1.8V	400mA	OFF	OFF	
VDD1V5_DVP	LDO6		1.5V	400mA	OFF	OFF	
VCC2V8_DVP	LDO7		2.8V	400mA	OFF	OFF	
VCCIO_SD	LDO8	Slot:4	3.3V	400mA	ON	OFF	
VCC3V3_SD	LDO9	Slot:4	3.3V	400mA	ON	OFF	
VCCIO_3V3	SWOUT2	Slot:4	3.3V	3A	ON	OFF	
VCC5V0_HOST	SWOUT1		5V	1.5A	OFF	OFF	
RESET	RESETB	Slot:10	OD				



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Project:	SOEdge Schematic 20190919 ver 2.0
File:	05.Power diagram and Sequence
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RK1808 USB AI STICK

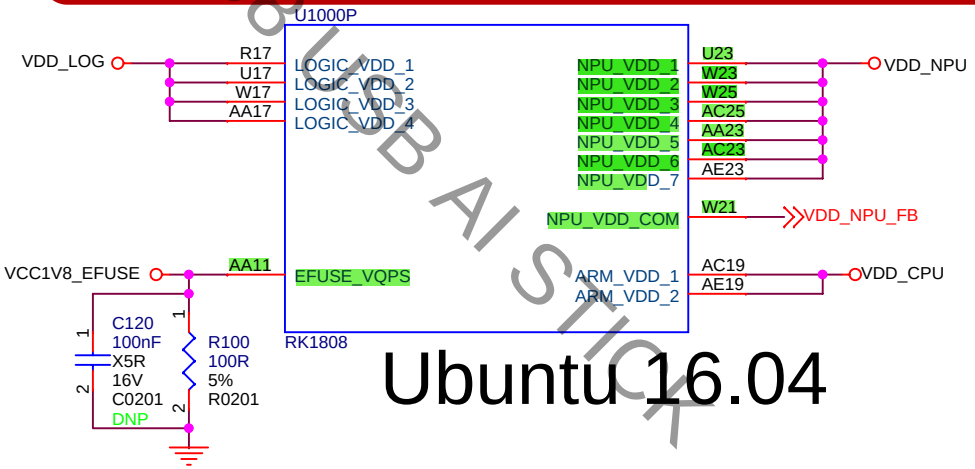
RK1808 Power

RK1808 YAPAY ZEKA STICK

02/22/2024 03:11 AM

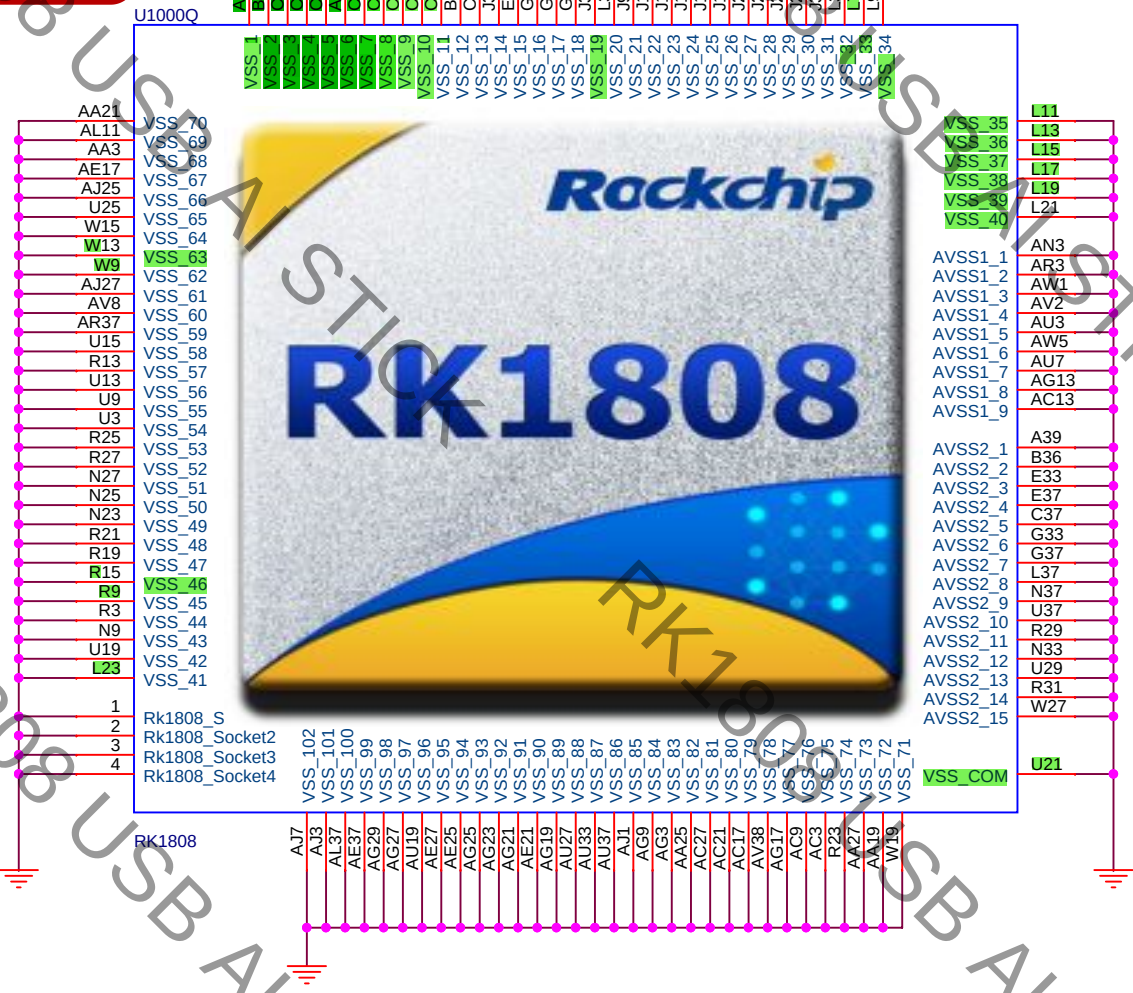
MURAT IRKAN 2024-03 KONTROL -1

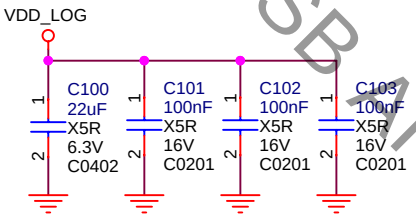
YAPAY ZEKA -USB STICK GÜÇ SİSTEMİ

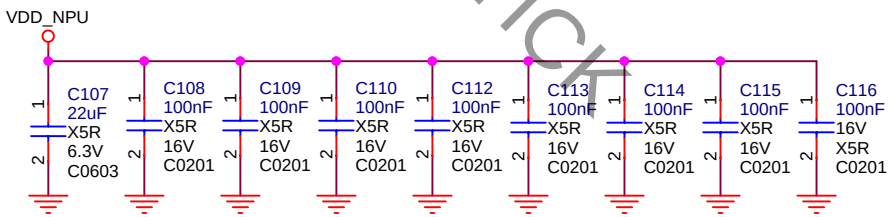


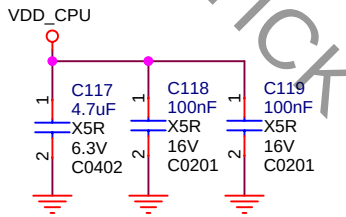
Ubuntu 16.04

LINUX









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Project:	SOEdge Schematic 20190919 ver 2.0		
File:	**10.RK1808 Power**		
Date:	Thursday, September 19, 2019	Rev:	
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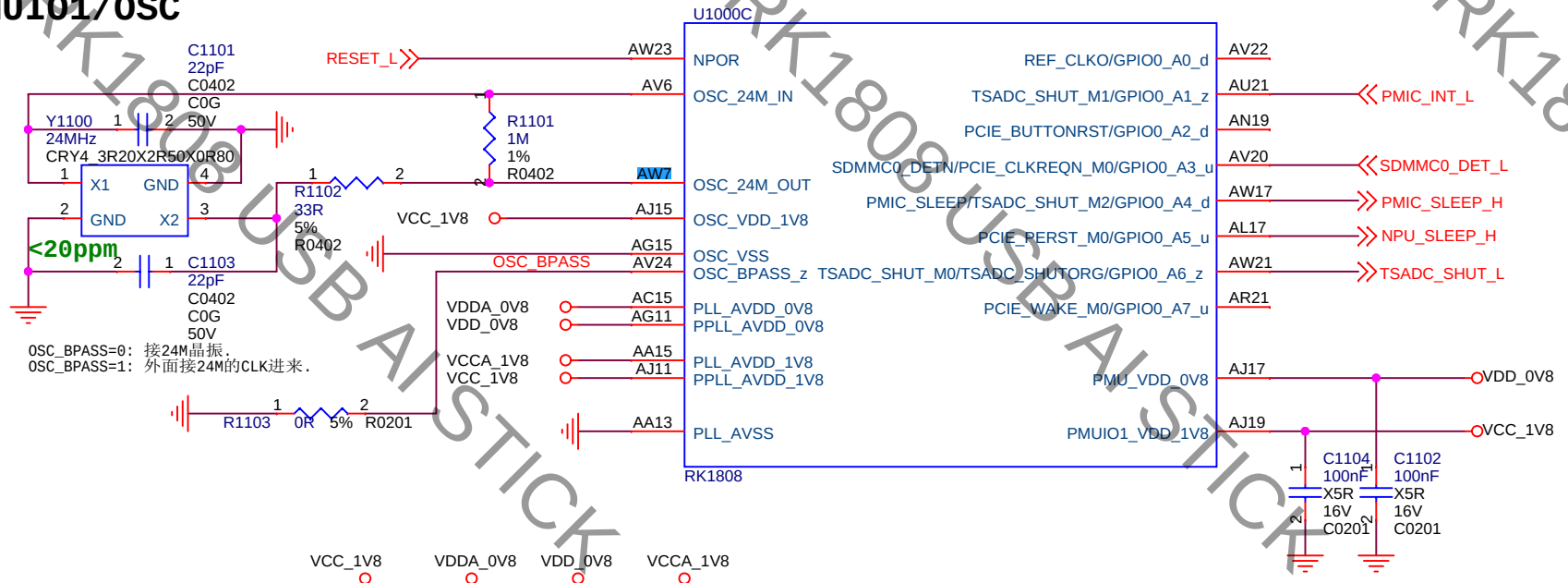
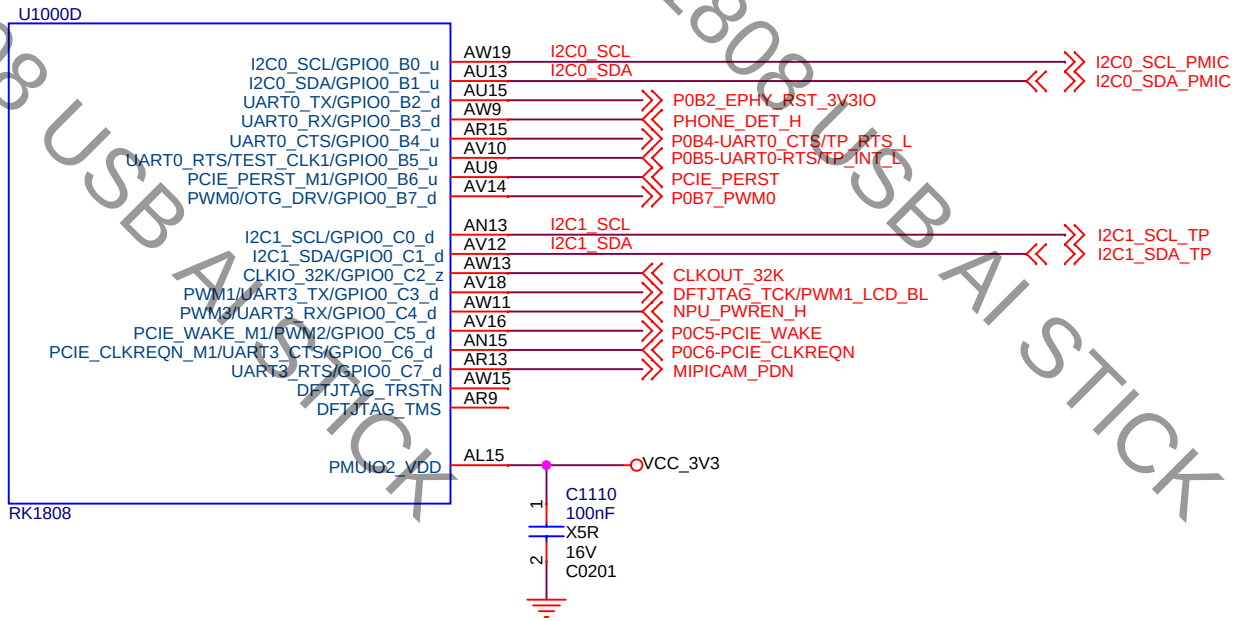
PMUIO1/OSC



PMUIO2



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File:	11.RK1808 OSC/PMUIO1/PMUIO2
Date:	Thursday, September 19, 2019
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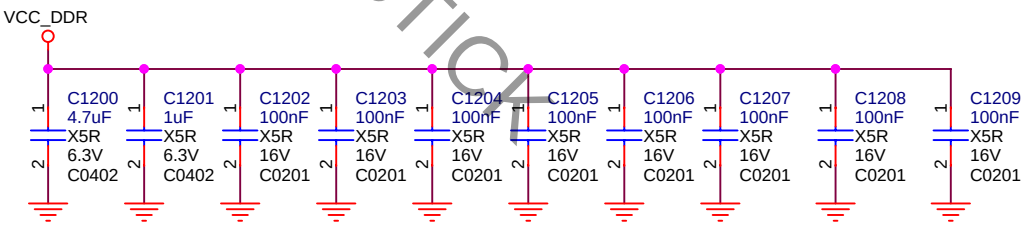
DDR Controller



LPDDR3/LPDDR2	DDR3
A0	A9
A1	A14
A2	A13
A3	A11
A4	A2
A5	A4
A6	A3
A7	A6
A8	A5
A9	A1
	A0
	A7
	CASB
	A8
	ODT0
	BA1
	RASB
	CSB0
	BA2
	A12
	BA0
	WEB
CK	CK
CKB	CKB
CKE	CKE
CSB0	A10
CSB1	CSB1
ODT0	A15
ODT1	ODT1
	RESETN

PINE64	PINE64		
Project:	SOEdge Schematic 20190919 ver 2.0		
File:	12.RK1808 DDR Controller		
Date:	Thursday, September 19, 2019	Rev:	
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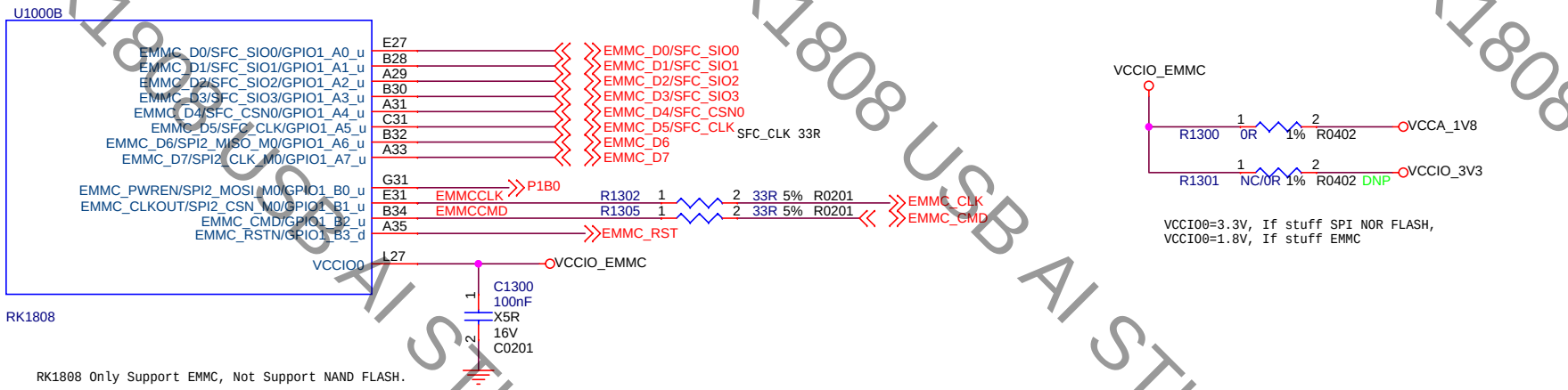
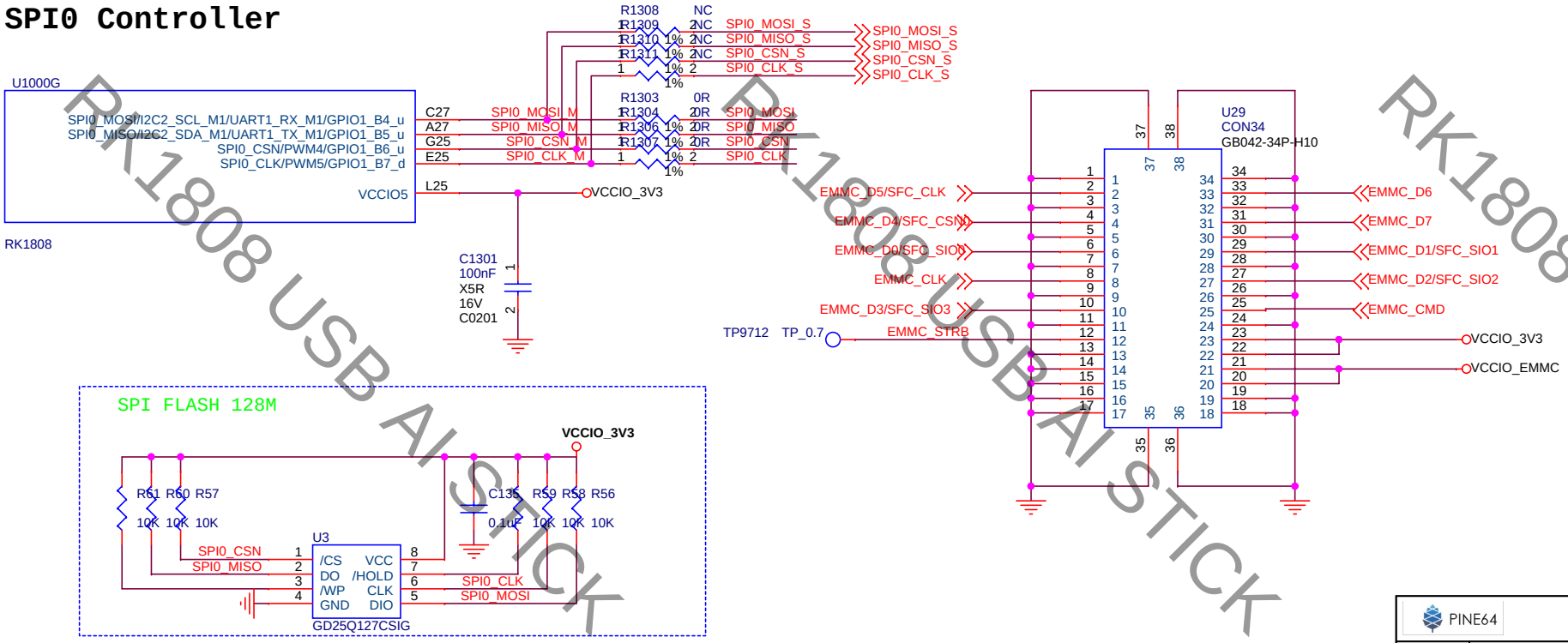
EMMC/SFC Controller



SPI0 Controller



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Project:	SOEdge Schematic 20190919 ver 2.0		
File:	**13.RK1808 EMMC /SPI Controller**		
Date:	Thursday, September 19, 2019	Rev:	
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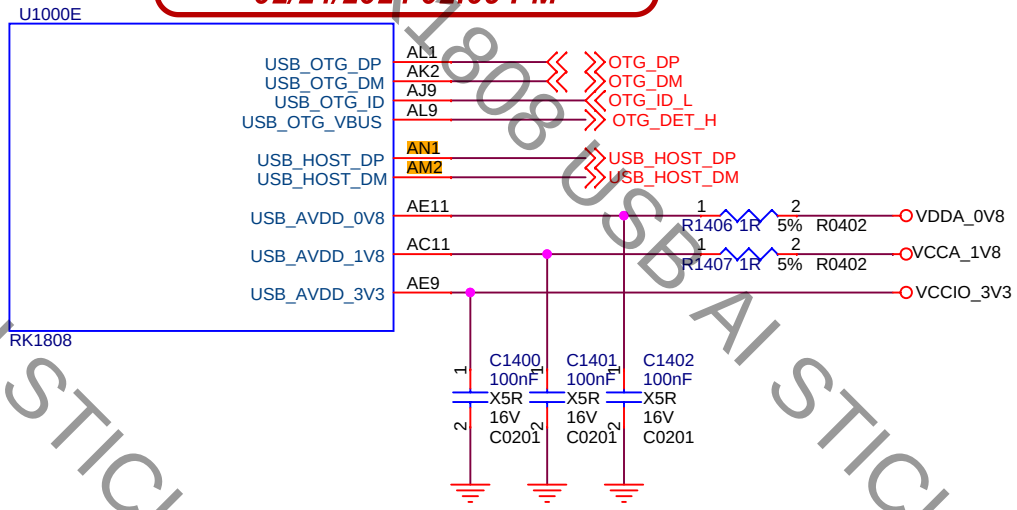
RK1808 USB AI STICK

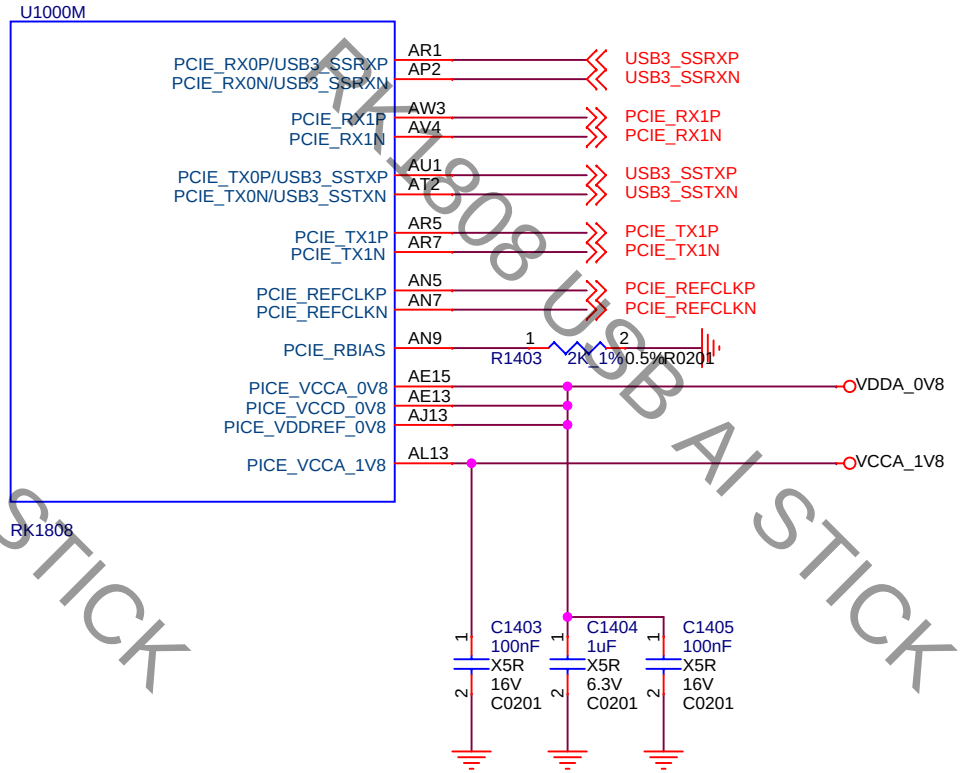
USB Controller

TOYBRICK YAPAZ ZEKA İŞLEME MODULU USB SİSTEM

02/24/2024 02:09 PM



PCIE Controller



PINE64	**PINE64**		
Project:	SOEdge Schematic 20190919 ver 2.0		
File:	**14.RK1808 USB/PCIE Controller**		
Date:	Thursday, September 19, 2019	Rev:	
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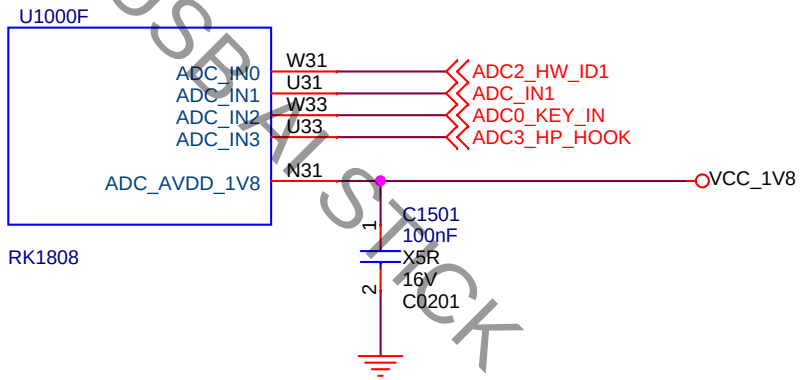
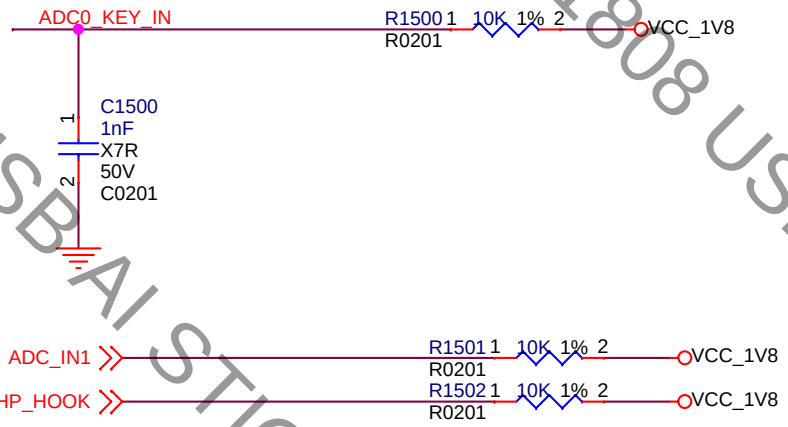
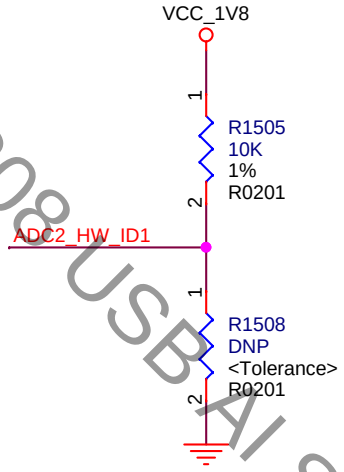
RK1808 USB AI STICK

SARADC/KEY





Key Name	SARADC
VOL+/RECOVERY	10
VOL-	170



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File:	**15.RK1808 SARADC/KEY**
Date:	Thursday, September 19, 2019
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Designed by:	Rzf
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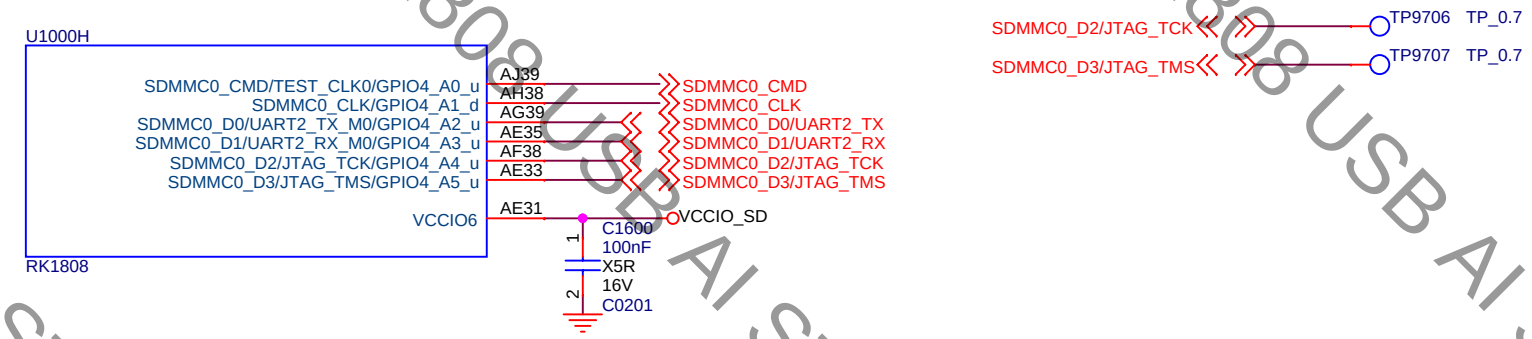
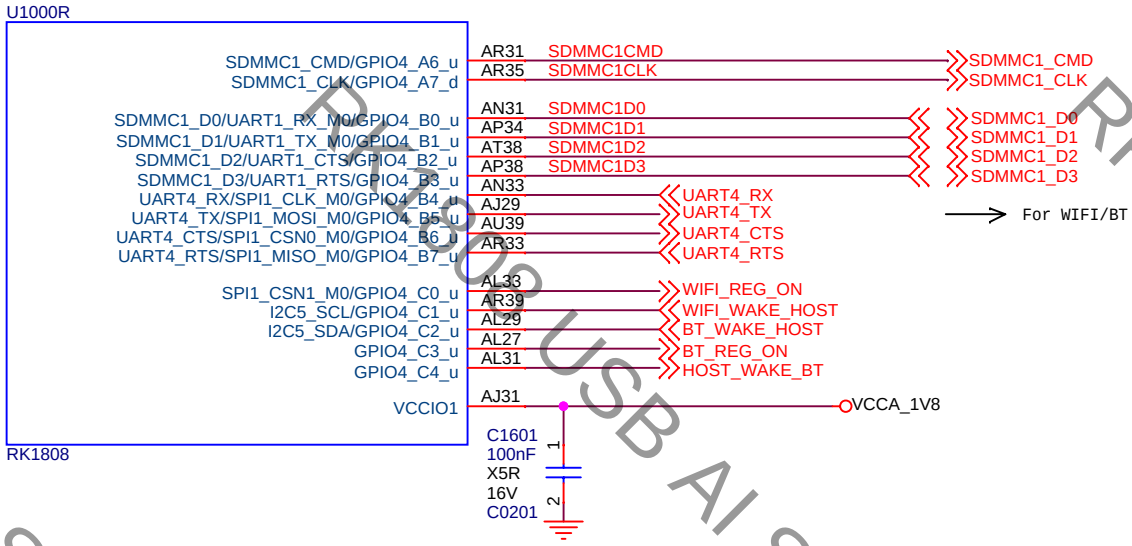
SDMMC0 Controller



SDMMC1 Controller



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File:	**16.RK1808 SDMMC0/SDMMC1**		
Date:	Thursday, September 19, 2019	Rev:	
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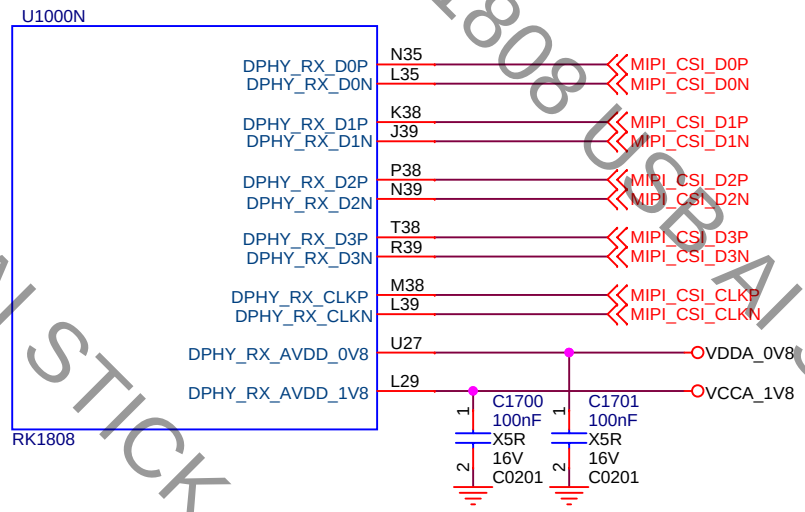
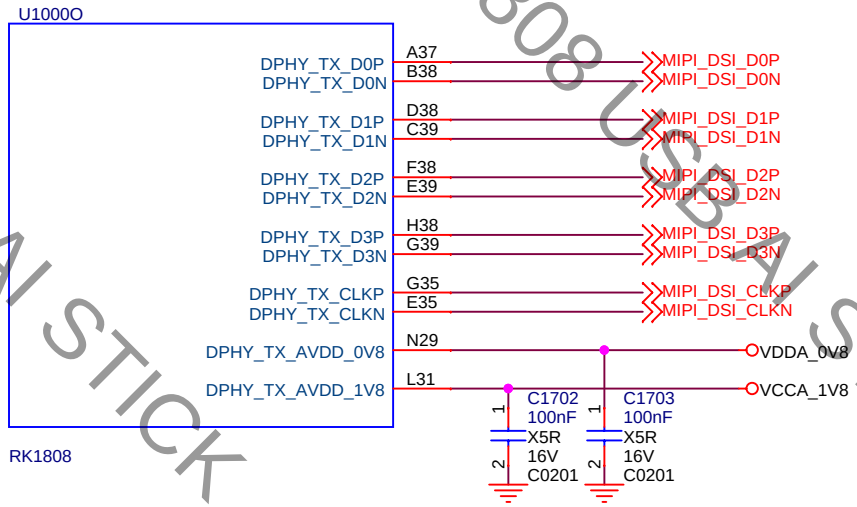
RK1808 USB AI STICK

MIPI CSI Controller



MIPI DSI Controller



RK1808 USB AI STICK

PINE64

PINE64

Project:	SOEdge Schematic 20190919 ver 2.0		
File:	**17.RK1808 MIPI DSI/CSI**		
Date:	Thursday, September 19, 2019	Rev:	
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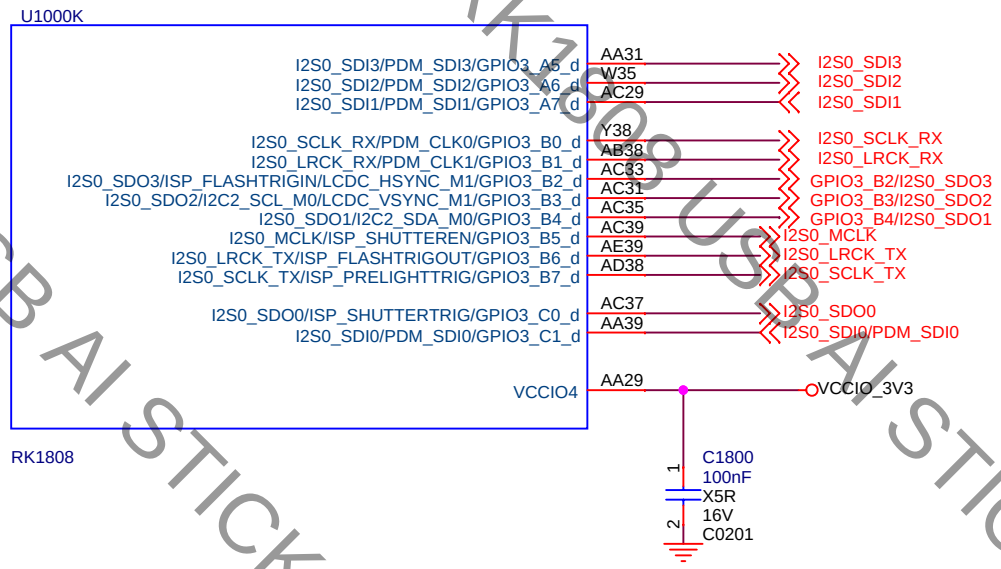
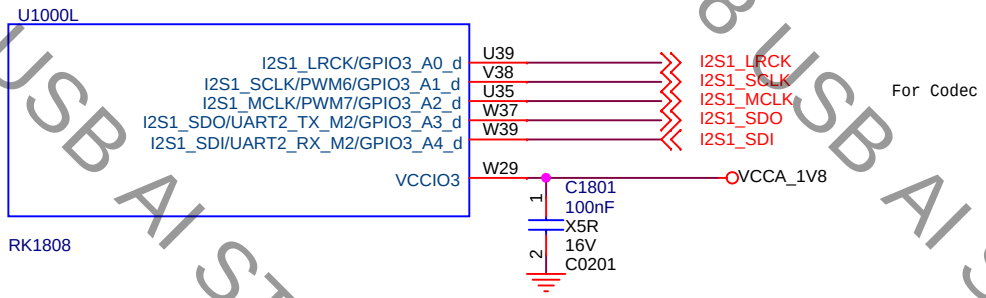
I2S0 Controller



I2S1 Controller



PINE64	**PINE64**
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File:	**18.RK1808 I2S0/I2S1**
Date:	Thursday, September 19, 2019
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RK1808 USB AI STICK

CIF/RGMII/LCDC Controller

10/100M原理和接法与1000M类似，唯一不同的RGMII_CLK=50M；需要注意的是10/100M的PHY_CRS_DV是接MAC_RXDV，而不是MAC_CRS管脚

U1000I

CIF_D12/RGMII_CRS/LCDC_D6/GPIO2_A0_d	AW25	GPIO2_A0/CIF_D12/RGMII_CRS/LCDC_D6
CIF_D13/RGMII_TXEN/LCDC_D7/GPIO2_A1_d	AR19	GPIO2_A1/CIF_D13/RGMII_TXEN/LCDC_D7
CIF_D14/RGMII_TXD1/LCDC_D0/GPIO2_A2_d	AL19	GPIO2_A2/CIF_D14/RGMII_TXD1/LCDC_D0
CIF_D15/RGMII_TXD0/LCDC_D1/GPIO2_A3_d	AJ21	GPIO2_A3/CIF_D15/RGMII_TXD0/LCDC_D1
CIF_D2/RGMII_RXD0/SPI2_MISO_M1/GPIO2_A4_d	AN21	GPIO2_A4/CIF_D2/RGMII_RXD0/SPI2_MISO_M1
CIF_D3/RGMII_RXD1/SPI2_CLK_M1/GPIO2_A5_d	AL21	GPIO2_A5/CIF_D3/RGMII_RXD1/SPI2_CLK_M1
CIF_D4/RGMII_RXER/SPI2_MOSI_M1/GPIO2_A6_d	AV26	GPIO2_A6/CIF_D4/RGMII_RXER/SPI2_MOSI_M1
CIF_D5/RGMII_RXDV/SPI2_CSN_M1/GPIO2_A7_d	AU25	GPIO2_A7/CIF_D5/RGMII_RXDV/SPI2_CSN_M1
CIF_D6/RGMII_MDIO/GPIO2_B0_d	AW29	GPIO2_B0/CIF_D6/RGMII_MDIO
CIF_D7/RGMII_COL/GPIO2_B1_d	AW27	GPIO2_B1/CIF_D7/RGMII_COL
CIF_D8/RGMII_MDC/LCDC_HSYNC_M0/GPIO2_B2_d	AW31	GPIO2_B2/CIF_D8/RGMII_MDC/LCDC_HSYNC
CIF_D9/RGMII_TXD3/LCDC_VSYNC_M0/GPIO2_B3_d	AV28	GPIO2_B3/CIF_D9/RGMII_TXD3/LCDC_VSYNC
CIF_VSYNC/RGMII_TXD2/GPIO2_B4_d	AV30	GPIO2_B4/CIF_VSYNC/RGMII_TXD2
CIF_HREF/RGMII_RXD2/GPIO2_B5_d	AV32	GPIO2_B5/CIF_HREF/RGMII_RXD2
CIF_CLKIN/RGMII_RXD3/GPIO2_B6_d	AU31	GPIO2_B6/CIF_CLKIN/RGMII_RXD3
CIF_CLKOUT/RGMII_CLK/GPIO2_B7_d	AR27	GPIO2_B7/CIF_CLKOUT/RGMII_CLK
CIF_D0/CLKOUT_ETHERNET/GPIO2_C0_d	AR25	GPIO2_C0/CIF_D0/CLKOUT_ETHERNET
CIF_D1/RGMII_TXCLK/GPIO2_C1_d	AN27	GPIO2_C1/CIF_D1/RGMII_TXCLK
CIF_D10/RGMII_RXCLK/LCDC_D2/GPIO2_C2_d	AN25	GPIO2_C2/CIF_D10/RGMII_RXCLK/LCDC_D2
CIF_D11/LCDC_D3/GPIO2_C3_d	AL23	GPIO2_C3/CIF_D11/LCDC_D3
LCDC_D4/GPIO2_C4_d	AL25	GPIO2_C4/LCDC_D4
LCDC_D5/GPIO2_C5_d	AW35	GPIO2_C5/LCDC_D5
LCDC_CLK/GPIO2_C6_d	AW33	GPIO2_C6/LCDC_CLK
LCDC_DEN/GPIO2_C7_d	AV34	GPIO2_C7/LCDC_DEN
I2C3_SCL/UART2_TX_M1/GPIO2_D0_u	AW37	I2C3_SCL / GPIO2_D0/I2C3_SCL/UART2_TX_M1
I2C3_SDA/UART2_RX_M1/GPIO2_D1_u	AV36	I2C3_SDA / GPIO2_D1/I2C3_SDA/UART2_RX_M1
VCCIO2	AJ23	VCCIO_3V3

RK1808

C1900 100nF X5R 16V C0201

3.3V for lcdc

VCCIO_3V3

R1900 2.2K 5% R0402

R1901 2.2K 5% R0402

I2C3_SCL

I2C3_SDA

LCDC Controller

U1000J

LCDC_D8/UART5_TX/I2C4_SCL/GPIO3_C2_d	AN37	GPIO3_C2/LCDC_D8/UART5_TX/I2C4_SCL
LCDC_D9/UART5_RX/I2C4_SDA/GPIO3_C3_d	AM38	GPIO3_C3/LCDC_D9/UART5_RX/I2C4_SDA
LCDC_D10/UART6_TX/GPIO3_C4_d	AL39	GPIO3_C4/LCDC_D10/UART6_TX
LCDC_D11/UART6_RX/GPIO3_C5_d	AJ33	GPIO3_C5/LCDC_D11/UART6_RX
LCDC_D12/UART7_TX/GPIO3_C6_d	AN39	GPIO3_C6/LCDC_D12/UART7_TX
LCDC_D13/UART7_RX/SPI1_CLK_M1/GPIO3_C7_d	AL35	GPIO3_C7/LCDC_D13/UART7_RX/SPI1_CLK_M1
LCDC_D14/PWM8/SPI1_MOSI_M1/GPIO3_D0_d	AJ35	GPIO3_D0/LCDC_D14/PWM8/SPI1_MOSI_M1
LCDC_D15/PWM9/SPI1_CSN0_M1/GPIO3_D1_d	AG31	GPIO3_D1/LCDC_D15/PWM9/SPI1_CSN0_M1
LCDC_D16/PWM10/SPI1_MISO_M1/GPIO3_D2_d	AK38	GPIO3_D2/LCDC_D16/PWM10/SPI1_MISO_M1
LCDC_D17/PWM11/SPI1_CSN1_M1/GPIO3_D3_d	AJ37	GPIO3_D3/LCDC_D17/PWM11/SPI1_CSN1_M1
VCCIO7	AE29	VCCIO_3V3

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C1901 100nF X5R 16V C0201

VCCIO_3V3

R1904 2.2K 5% R0201

R1905 2.2K 5% R0201

GPIO3_C2/LCDC_D8/UART5_TX/I2C4_SCL

GPIO3_C3/LCDC_D9/UART5_RX/I2C4_SDA

PINE64	PINE64		
Project:	SOEdge Schematic 20190919 ver 2.0		
File:	19.RK1808 RGMII/LCDC/CIF		
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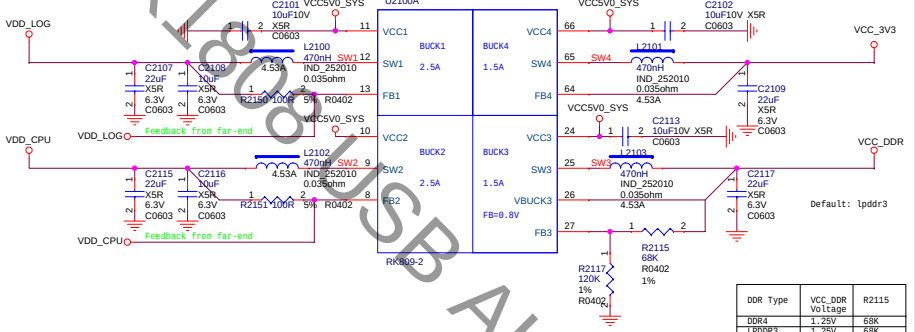
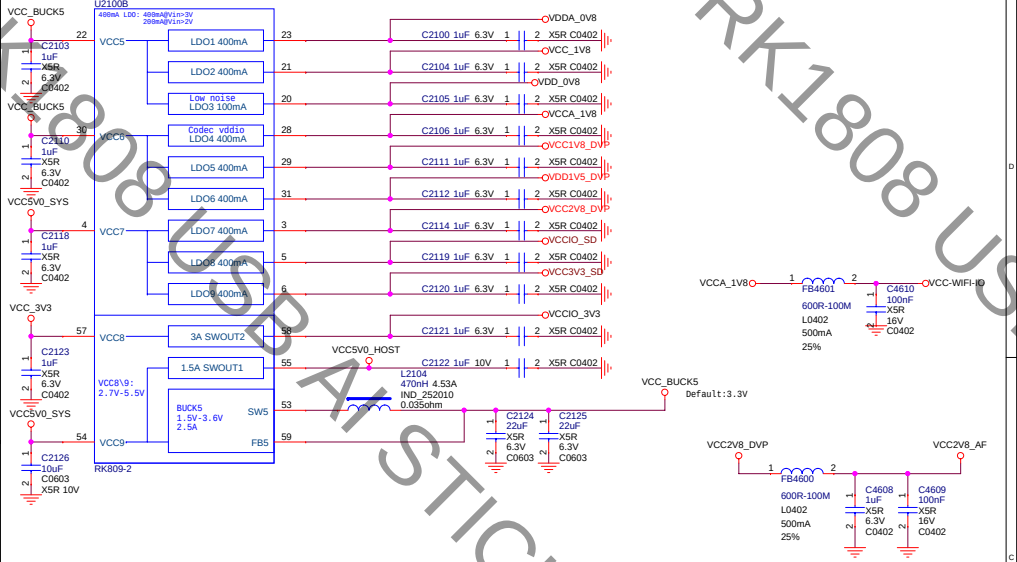
PMIC RK809-1 DCDC

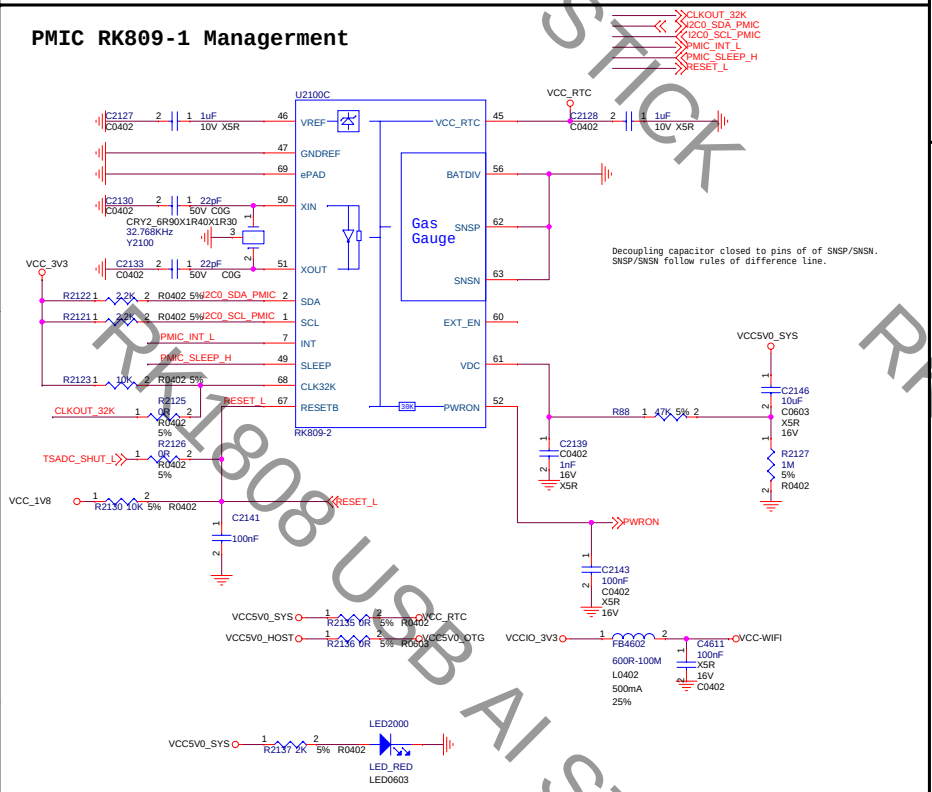


DDR Type	VCC_DDR Voltage	R2115
DDR4	1.25V	68K
LPDDR3	1.25V	68K
DDR3L	1.35V	82K
DDR3	1.53V	118K

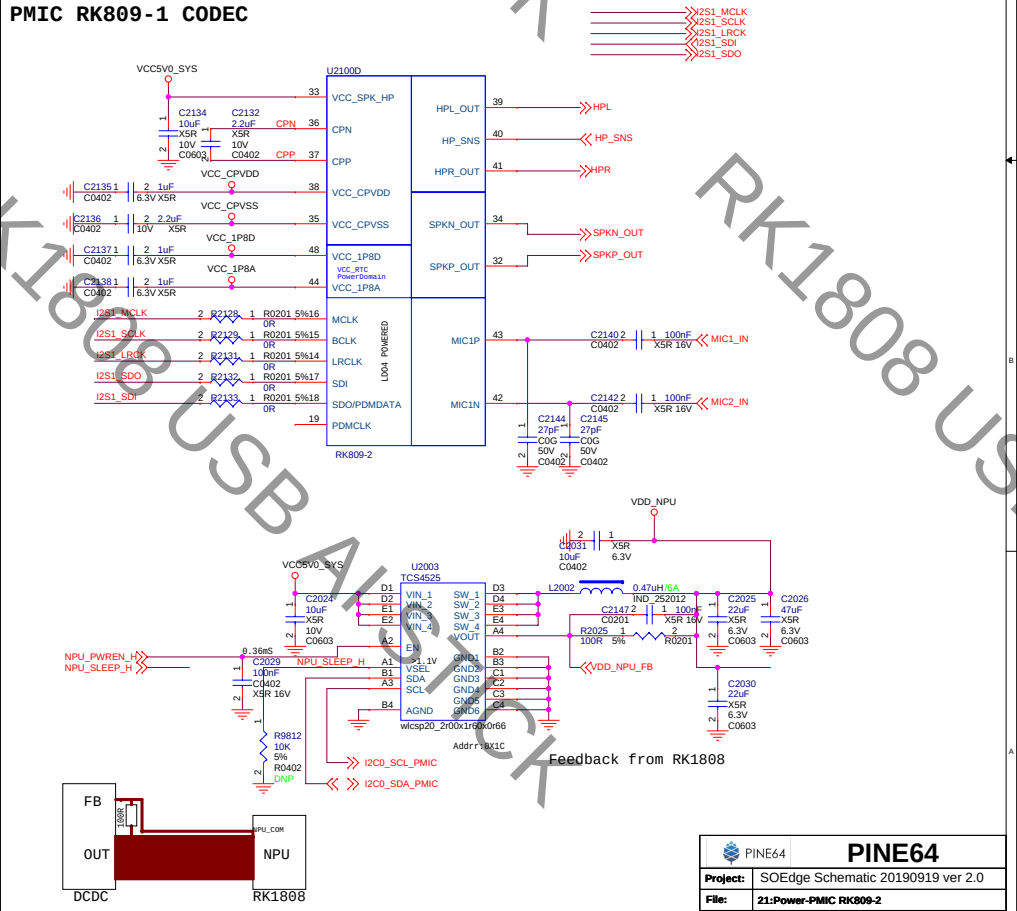
PMIC RK809-1 LDO



PMIC RK809-1 Managerment



PMIC RK809-1 CODEC



PINE64	PINE64
Project:	SOEdge Schematic 20190919 ver 2.0
File:	21:Power-PMIC RK809-2
Date:	Thursday, September 19, 2019
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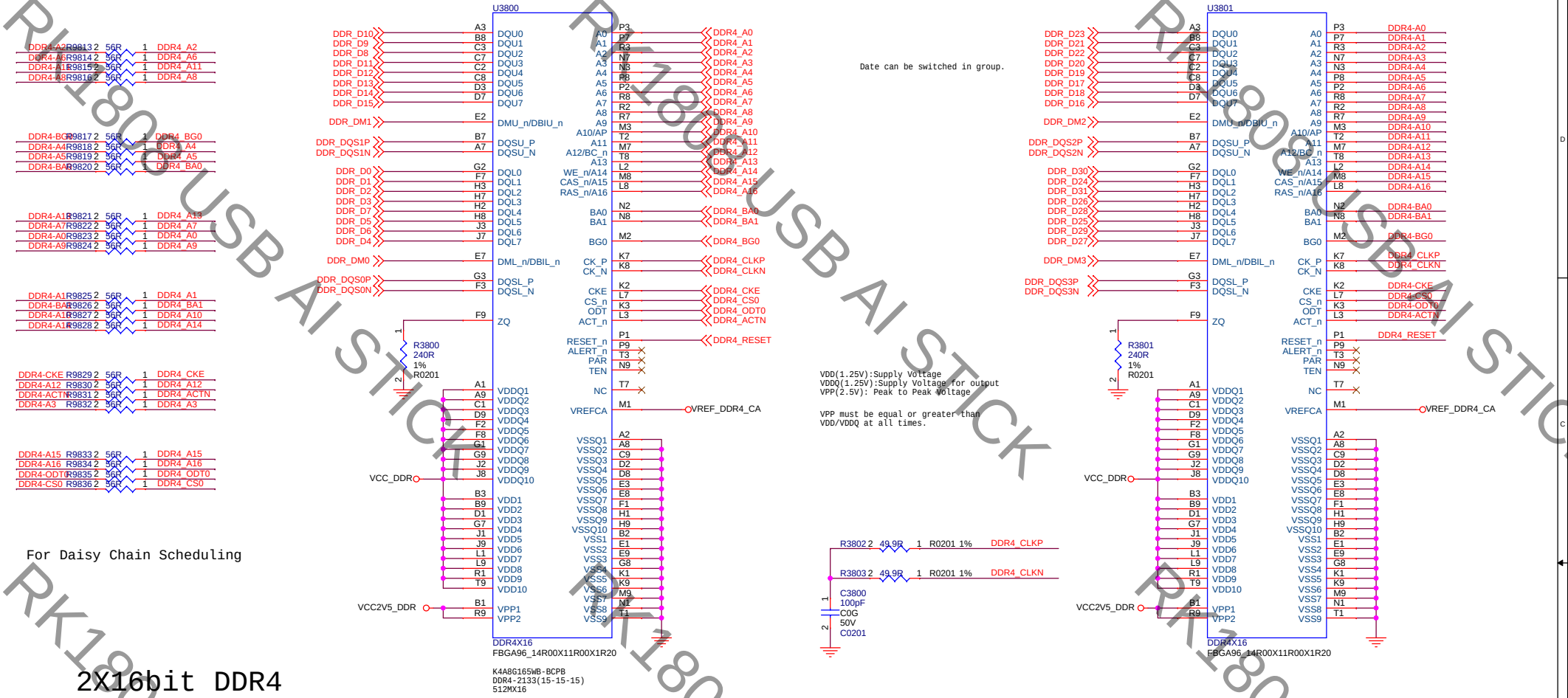

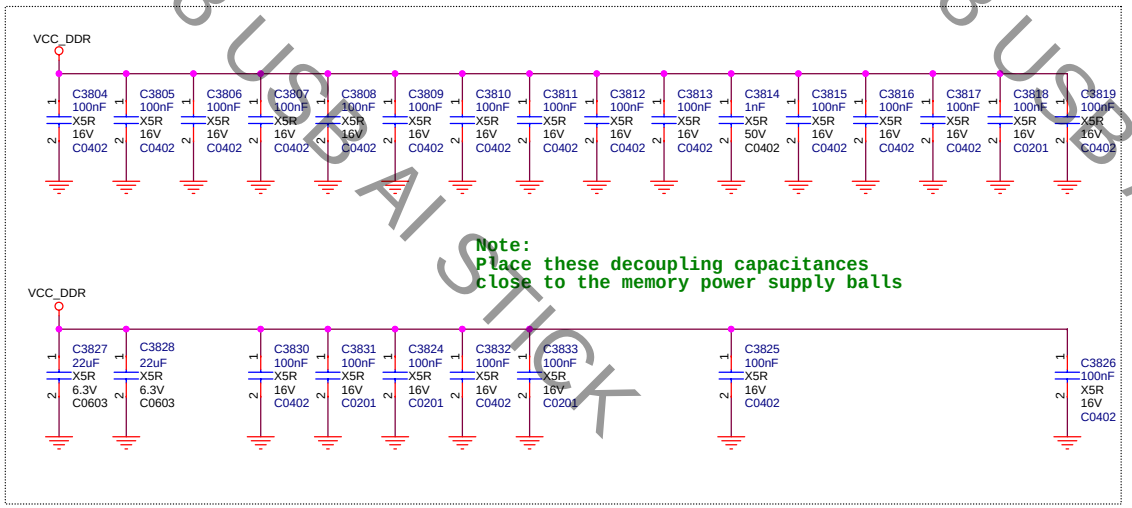

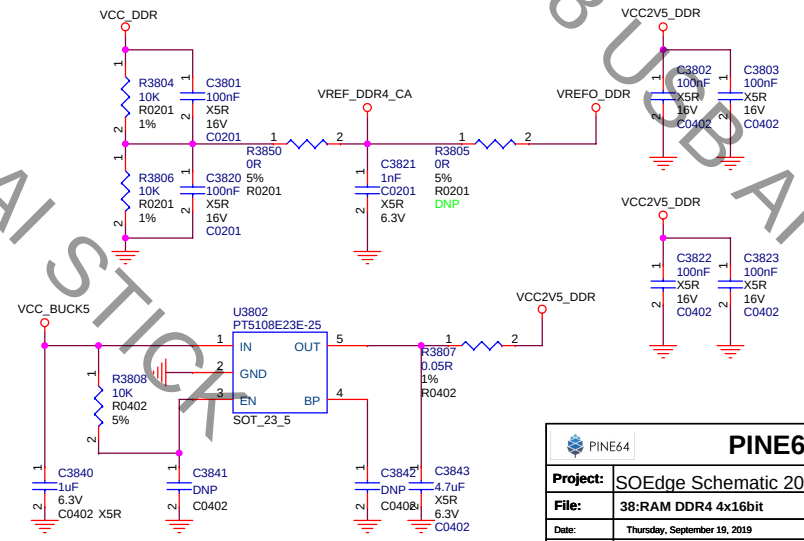

Remind: Refer to the latest AVL for parts selection.

PINE64	PINE64
Project:	SOEdge Schematic 20190919 ver 2.0
File:	38:RAM DDR4 4x16bit
Date:	Thursday, September 19, 2019
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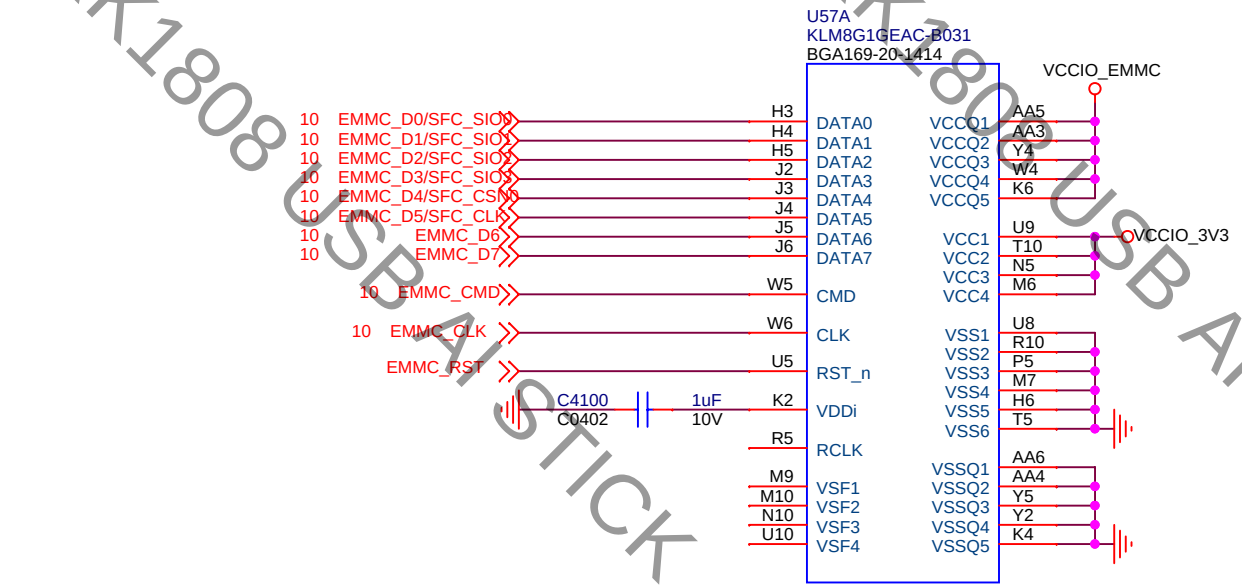
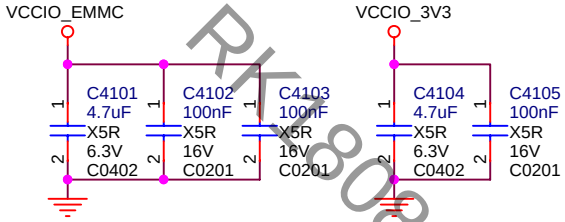
eMMC





Remind: Refer to the latest AVL for parts selection.

PINE64	PINE64		
Project:	SOEdge Schematic 20190919 ver 2.0		
File:	**41.EMMC**		
Date:	Thursday, September 19, 2019	Rev:	
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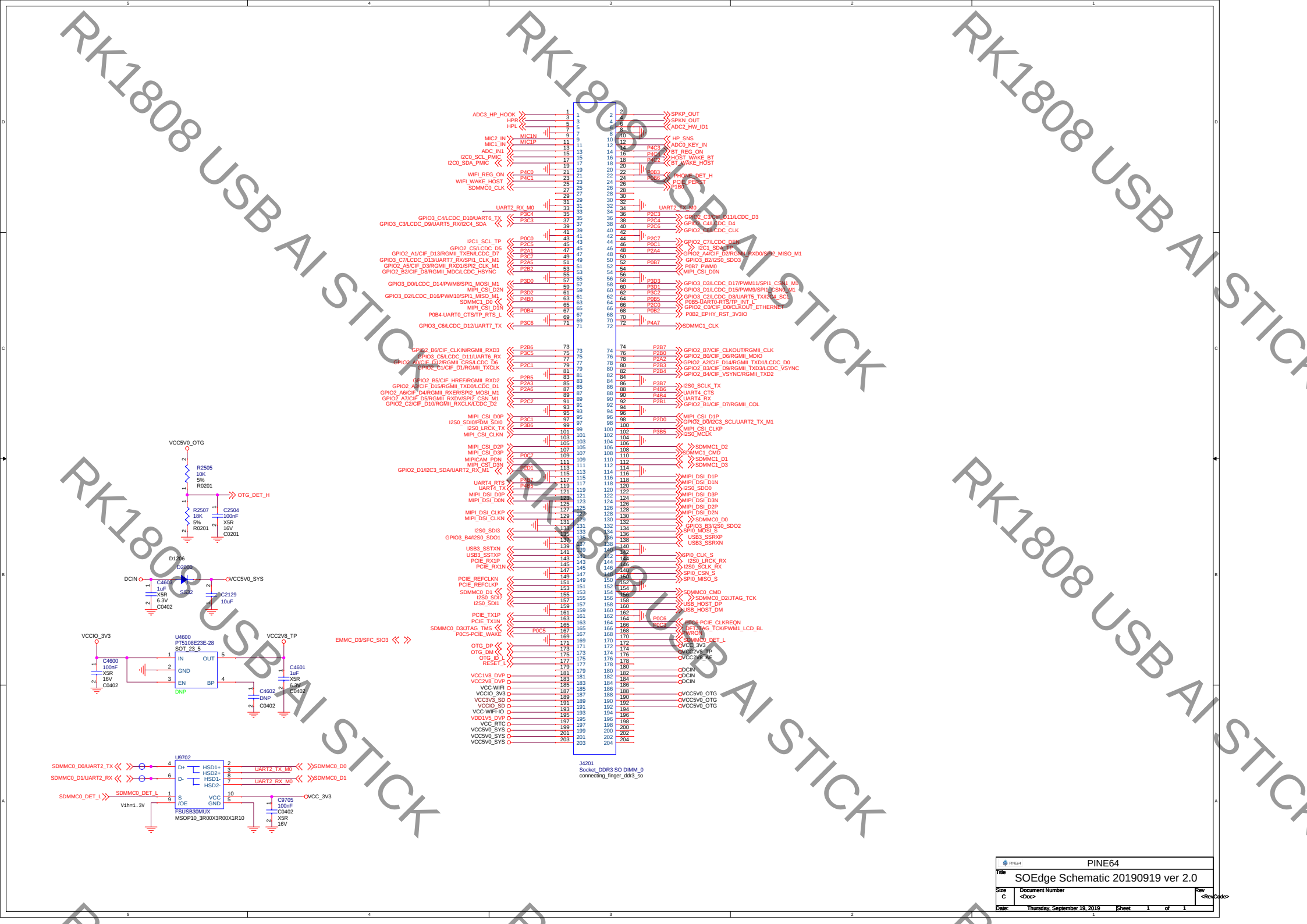

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PINE64		
Title	SOEdge Schematic 20190919 ver 2.0	
Size C	Document Number <Doc>	Rev <RevCode>
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