EVB For RV1126&RV1109

RV1126&RV1109_EVB_DDR3P216SD6_V10_20191217

Main Functions Introduction

01) Power: RK809-2
02) Charge: BQ24171
03) DRAM: LPDDR3/DDR3/DDR3L/LPDDR4/DDR4, default 2PCS DDR3 K4B4G1646E-BCNB
04) ROM: eMMC4.51/NAND FLASH/SPI FLASH,default EMMC and SPI nor Flash
05) Support Micro-SD Card3.0
06) Support USB2.0 x 2
07) Support CIF 16bit and MIPI CSI and LVDS Interface
08) Support MIPI DSI or LCDC Interface
09) Support SDIO WIFI 1T1R + UART BT,default AP6255
10) Support Gigabit Ethernet, RTL8211F-CG
11) Support Audio/MIC Array Interface, Default differential mic and one SPK
12) Support G-Sensor&Gyroscope,default MPU-6500
13) Support Key
14) Support Debug
15) Support Power test

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Project:	RV1126&RV1109 EVB				
File:	00.Cover Page				
Date:	Wednesday, March 04, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	1 of 41

Index and Notes

Table of Content

Page01	00.Cover Page
Page02	01.Index and Notes
Page03	02.Revision History
Page04	03.Block Diagram
Page05	04.Power Diagram and Sequence
Page06	05.I2C MAP
Page07	06.IO Power Domain Map
Page08	10.RV1126/1109 Power/GND
Page09	11.RV1126/1109 OSC/PLL/PMUIO
Page10	12.RV1126/1109 DRAM Controller
Page11	13.RV1126/1109 Flash/SD
Page12	14.RV1126/1109 USB Controller
Page13	15.RV1126/1109 SARADC
Page14	16.RV1126/1109 VideoInput
Page15	17.RV1126/1109 VideoOutput
Page16	18.RV1126/1109 Audio
Page17	20.Power DC IN
Page18	21.Power PMIC
Page19	22.Power other
Page20	25.USB OTG
Page21	26.USB Host
Page22	30.DRAM DDR3 96P 2X16bit
Page23	40.Flash eMMC Flash
Page24	41.Flash Nand Flash
Page25	42.Flash SPI Flash
Page26	45.Zoom/Iris Driver interface
Page27	46.VI-Camera CIF
Page28	47.VI-Camera MIPI-CSI
Page29	48.Reserve for Video In Power
Page30	54.VO-MIPI-DSI
Page31	60.WIFI/BT-SDIO 1T1R+UART
Page32	68.Ethernet-GEPHY_RGMII
Page33	70.Audio Port
Page34	72.MIC Array Interface
Page35	74.Gsensor/Gyroscope
Page36	92.Key
Page37	93.Debug
Page38	97.Power Test
Page39	98.Power Test INA226
Page40	99.MARK/HOLE

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

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

Generate 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}

Graphic Description

Note

Option

Description

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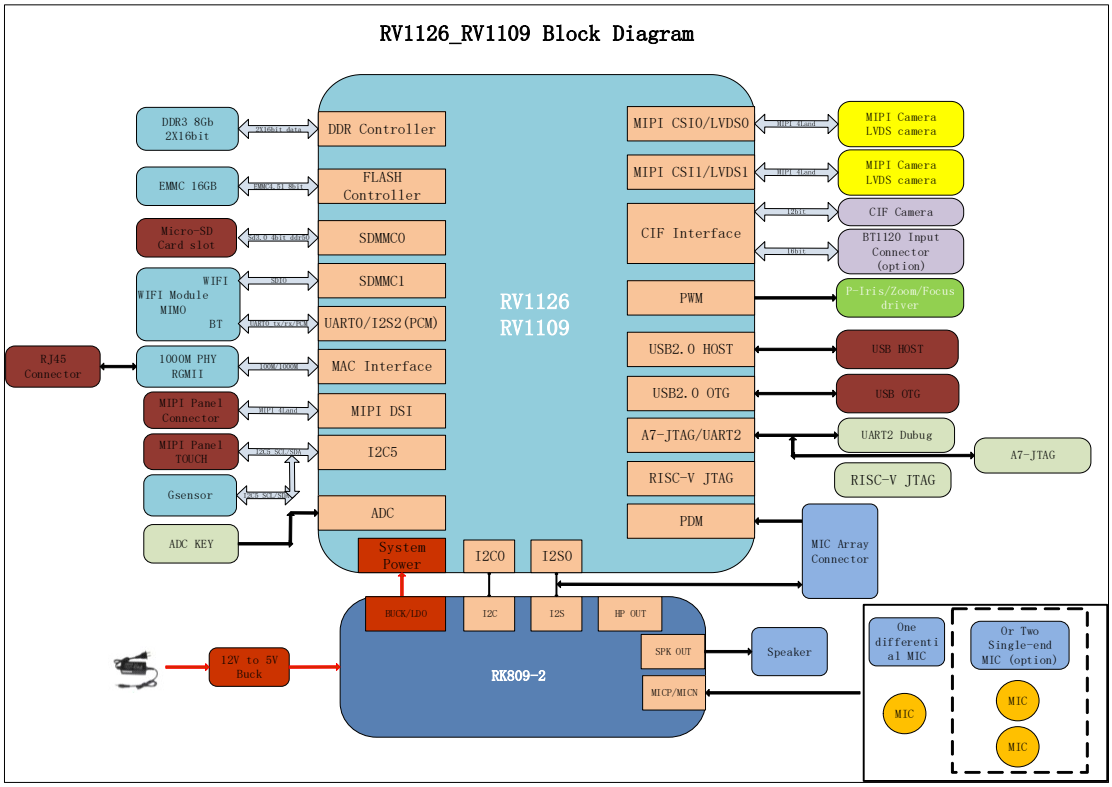
Project:	RV1126&RV1109 EVB				
File:	01.Index and Notes				
Date:	Wednesday, March 04, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	2 of 41

Revision History

Version	Date	Author	Change Note	Approved
V1.0	2019.12.27	Liyh	First edition EVB for RV1126&RV1109	

RV1126&RV1109 Block Diagram



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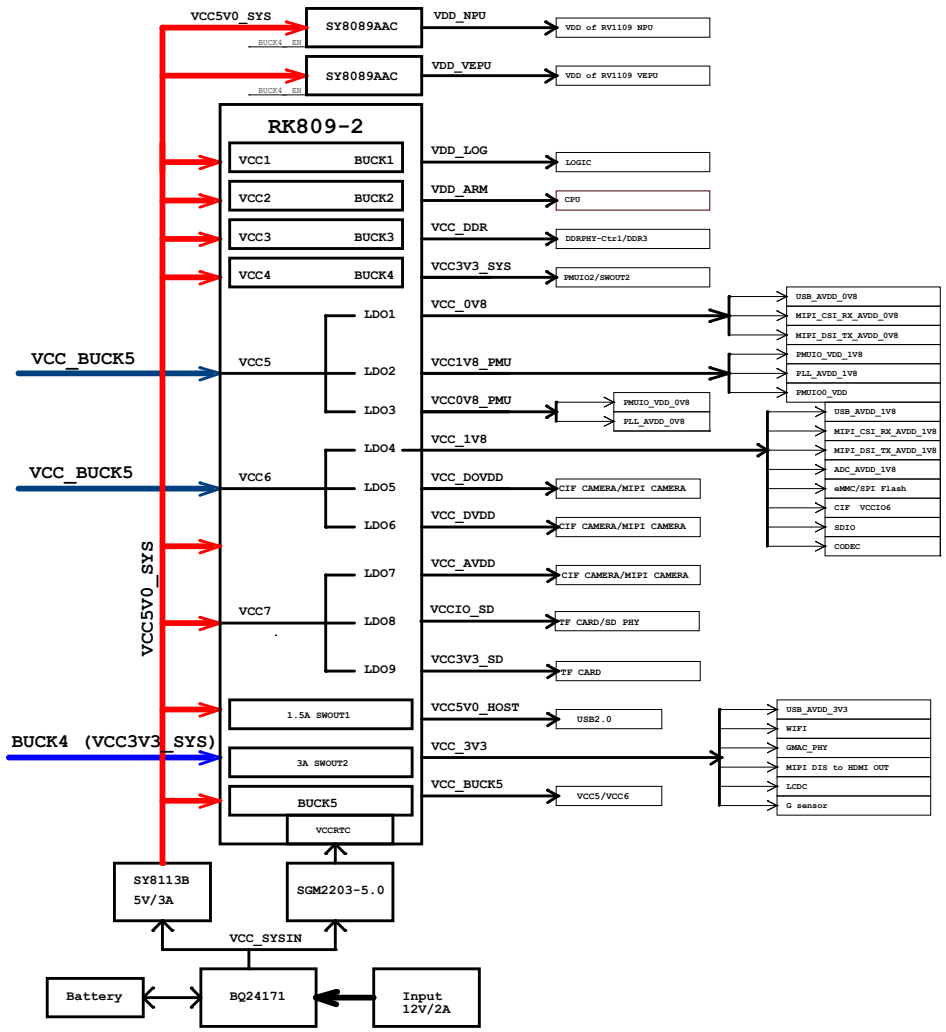
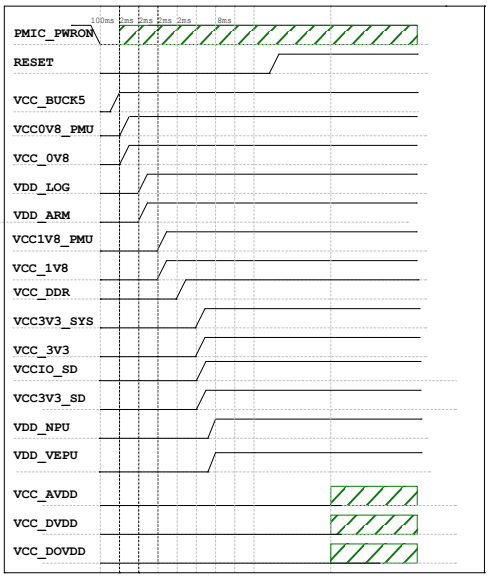
Project:	RV1126&RV1109 EVB		
File:	03.Block Diagram		
Date:	Wednesday, March 04, 2020	Rev:	V1.0
Designed by: Yanhong.Li	Reviewed by: <Checker>	Sheet:	4 of 41

Power Diagram



RV1126&RV1109 Power-on Sequence

Power Name	PMIC Channel	Time Slot (step 2ms)	Default voltage	Supply Limit	Default ON/OFF	Sleep ON/OFF	Peak Current	Sleep Current
VCC_BUCK5	RK809_BUCK5	Slot: 1	2.2V	2.5A	ON	ON		
VCC0V8_PMU	RK809_LDO3	Slot: 2	0.8V	0.1A	ON	ON		
VCC_0V8	RK809_LDO1	Slot: 2	0.8V	0.4A	ON	OFF		
VDD_LOGIC	RK809_BUCK1	Slot: 3	0.8V	2.5A	ON	OFF		
VDD_ARM	RK809_BUCK2	Slot: 3	0.8V	2.5A	ON	OFF		
VCC1V8_PMU	RK809_LDO2	Slot: 4	1.8V	0.4A	ON	ON		
VCC_1V8	RK809_LDO4	Slot: 4	1.8V	0.4A	ON	OFF		
VDD_NPU	Ext(SY8089AAC)	Slot: 7	0.8V	2.0A	ON	OFF		
VDD_VEPU	Ext(SY8089AAC)	Slot: 7	0.8V	2.0A	ON	OFF		
VCC_DDR	RK809_BUCK3	Slot: 2	1.5V	1.5A	ON	ON		
VCC3V3_SYS	RK809_BUCK4	Slot: 6	3.3V	1.5A	ON	ON		
VCC_3V3	RK809_SWOUT2	Slot: 6	3.3V	1.5A	ON	OFF		
VCCIO_SD	RK809_LDO8	Slot: 6A	3.3V	0.4A	ON	OFF		
VCC3V3_SD	RK809_LDO9	Slot: 6A	3.3V	0.4A	ON	OFF		
VCC_DOVDD	RK809_LDO5		1.8V	0.4A	OFF	OFF		
VCC_DVDD	RK809_LDO6		1.2V	0.4A	OFF	OFF		
VCC_AVDD	RK809_LDO7		2.8V	0.4A	OFF	OFF		
VCC5V0_HOST	RK809_SWOUT1		5V	2.1A	OFF	OFF		
RESET	RK809 sent out Reset signal for CPU timing:10							



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Project:	RV1126&RV1109 EVB			
File:	04.Power Diagram and Sequence			
Date:	Wednesday, March 25, 2020		Rev:	V1.0
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I2C MAP

Port	Pin Name	Domain	Bus Name	Pull-up voltage	Slave Device	Slave Addr (MS 7Bits)	Slave Bus Capability	Note
I2C0	I2C0_SCL/GPIO0_B4_u I2C0_SDA/GPIO0_B5_u	PMUIO1	I2C0_SCL_PMIC I2C0_SDA_PMIC	VCC3V3_PMU	RK809		100kHz,400kHz	Rockchip PMIC
I2C1	I2C1_SCL/GPIO1_D3_d I2C1_SDA/GPIO1_D2_d	VCCIO4	I2C1_SCL I2C1_SDA	VCCIO4	camera		100kHz,400kHz	
I2C5	I2C5_SCL/GPIO2_A5_d I2C5_SDA/GPIO2_B3_d	VCCIO5	I2C5_SCL I2C5_SDA	VCCIO5	TP/MIC Array/ G sensor		100kHz,400kHz	

Rockchip Fuzhou Rockchip Electronics

Project:	RV1126&RV1109 EVB				
File:	05.I2C MAP				
Date:	Wednesday, March 04, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	6 of 41

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IO Power Domain Map

IO Domain	IO Group	Support of IO Voltage		Default Actual assigned IO Domain Voltage			Notes
		1.8V	3.3V	Net Name of Power Supply	Power Source	Voltage	
PMUIO0	***GPIO0A***	✓	✓	*VCC1V8_PMU*	*RK809_LDO2*	*1.8V*	
PMUIO1	***GPIO0BC***	✓	✓	*VCC3V3_SYS*	*RK809_BUCK4*	*3.3V*	*GPIO0_B3/FLASH_VOL_SEL pin defined as a set pin for VCCIO1 voltage domain after power-on reset.It is pull-up for 1.8V*
VCCIO1	***GPIO0CD/GPIO1A***	✓	✓	*VCCIO_FLASH*	*RK809_LDO4/ SWOUT2*	*1.8/3.3V*	
VCCIO2	***GPIO1AB***	✓	✓	*VCCIO_SD*	*RK809_LDO8*	*1.8V/3.3V*	
VCCIO3	***GPIO1BCD***	✓	✓	*VCCIO3_VDD*	*RK809_LDO4*	*1.8V*	
VCCIO4	***GPIO1D/GPIO2A***	✓	✓	*VCCIO4_VDD*	*RK809_LDO4*	*1.8V*	
VCCIO5	***GPIO2ABCD/GPIO3A***	✓	✓	*VCCIO5_VDD*	*RK809_SWOUT2*	*3.3V*	
VCCIO6	***GPIO3ABC***	✓	✓	*VCCIO6_VDD*	*RK809_LDO4*	*1.8V*	
VCCIO7	***GPIO3D/GPIO4A***	✓	✓	*VCCIO7_VDD*	*RK809_SWOUT2*	*3.3V*	

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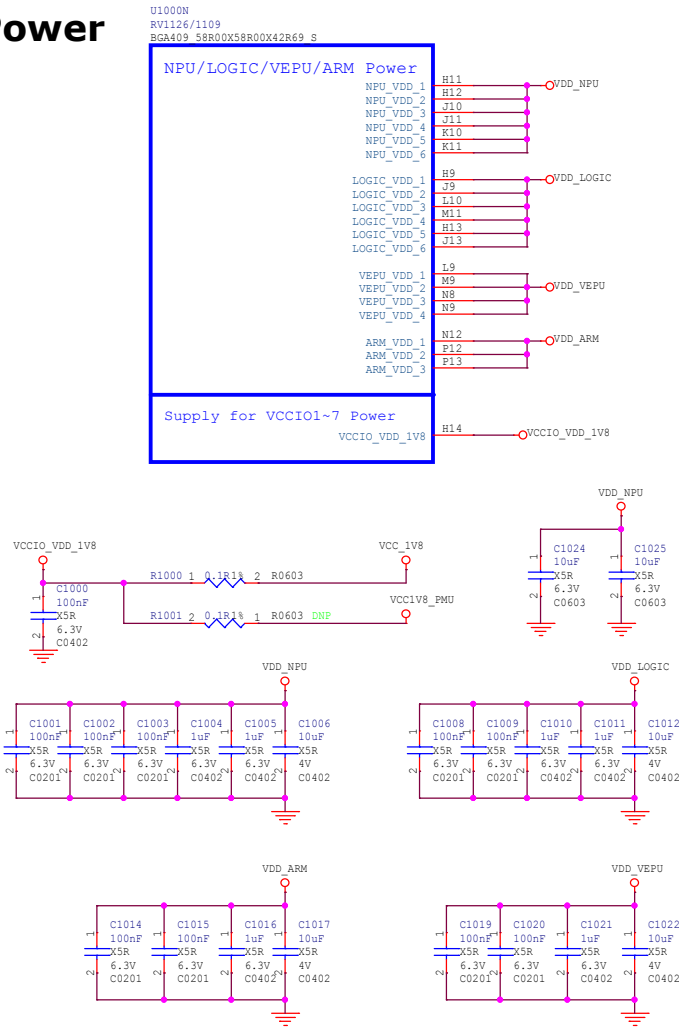
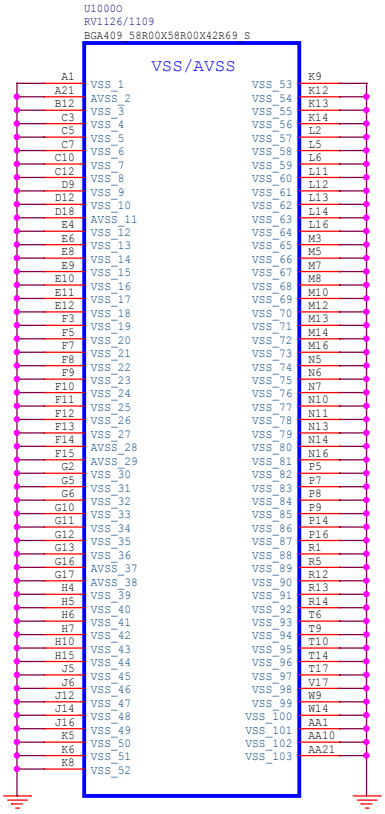
Project:	RV1126&RV1109 EVB			
File:	06.IO Power Domain Map			
Date:	Wednesday, March 04, 2020		Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by: <Checker>	Sheet:	7 of 41

Power

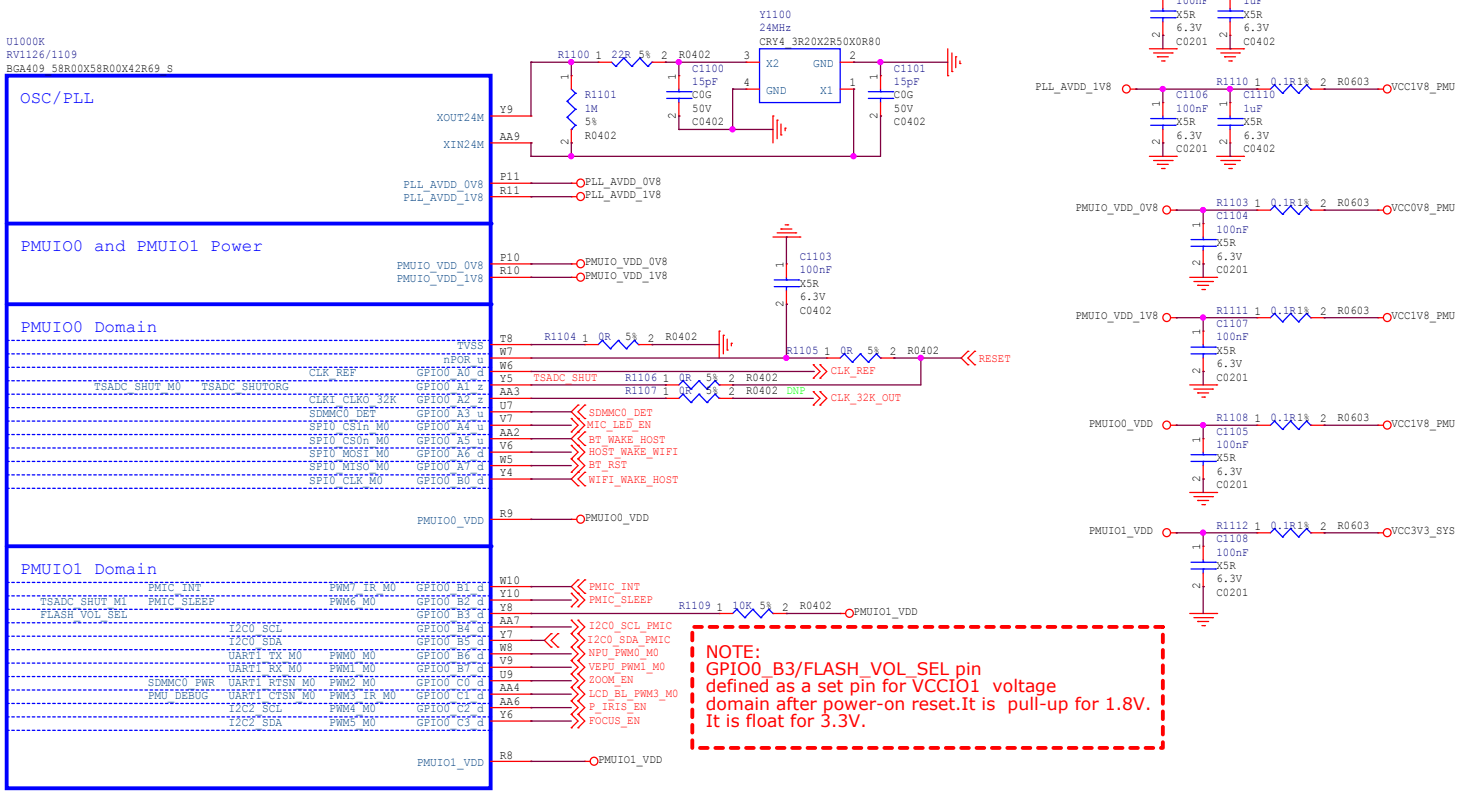


GND



Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	10.RV1126/1109_Power/GND				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	8 of 41

OSC/PLL/PMUIO



NOTE:
GPIO0_B3/FLASH_VOL_SEL pin defined as a set pin for VCCIO1 voltage domain after power-on reset.It is pull-up for 1.8V. It is float for 3.3V.

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Project:	RV1126&RV1109 EVB				
File:	11.RV1126/1109_OSC/PLL/PMUIO				
Date:	Monday, March 09, 2020			Rev:	V1.0
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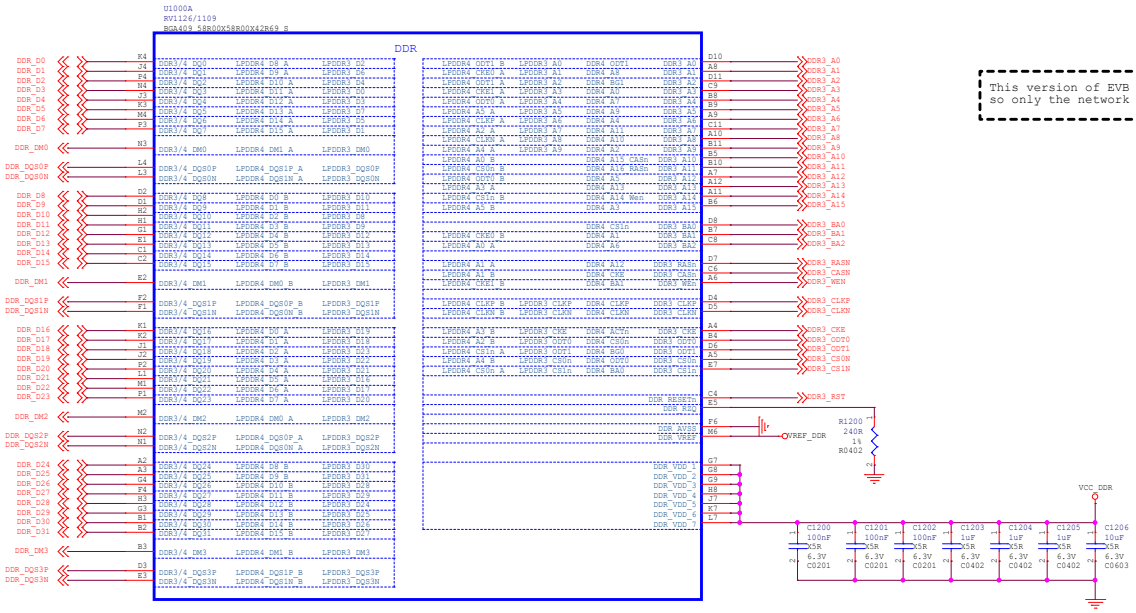
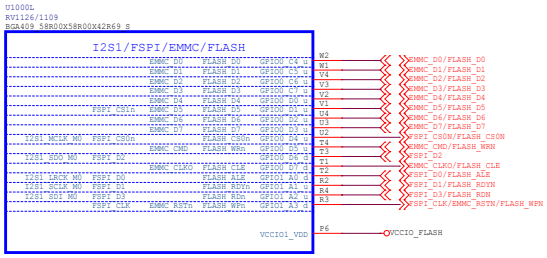
DDR Controller

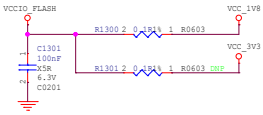


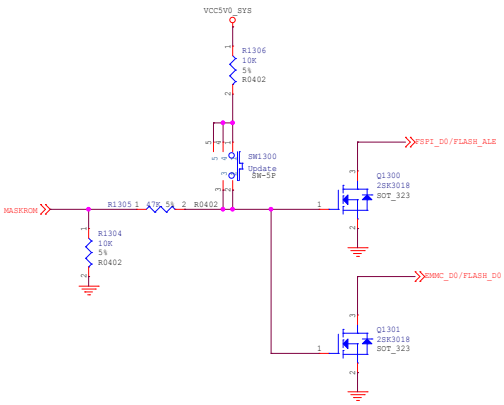
This version of EVB only uses DDR3,
so only the network name of DDR3 is given.

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	12.RV1126/1109_DRAM Controller				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	10 of 41

EMMC/FLASH

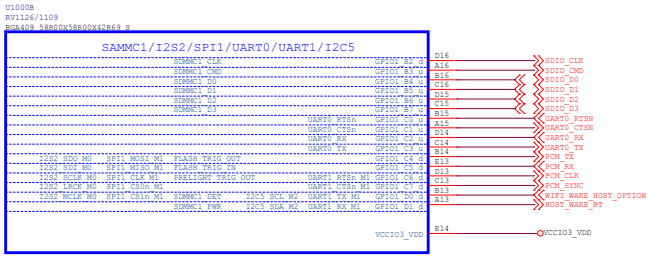






SDMMC0/JTAG

SDMMC1/UART/I2S2



WiFi can be divided into two situations:
1. When WiFi is powered off in standby mode
and SDIO is powered off,
then VCC_1V8 is used for power supply.
2. If WiFi is not powered off, SDIO is powered on,
WiFi enters standby mode,
then VCC1V8_PMU is used for power supply.

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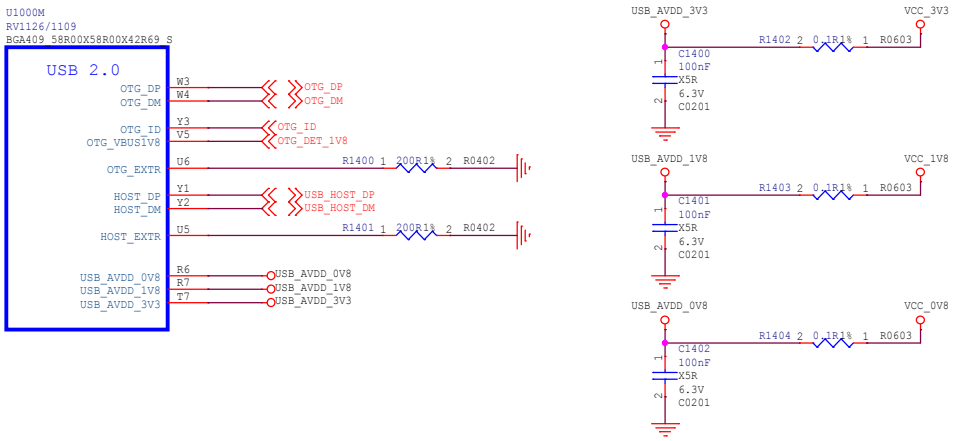
Project:	RV1126&RV1109 EVB		
File:	13.RV1126/1109_Flash/SD Controller		
Date:	Wednesday, March 25, 2020	Rev:	V1.0
Designed by: Yanhong.Li	Reviewed by: <Checker>	Sheet:	11 of 41

USB Controller



Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	14.RV1126/1109_USB Controller				
Date:	Monday, March 09, 2020			Rev:	V1.0
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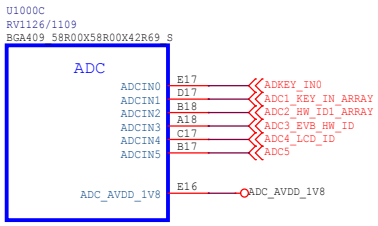
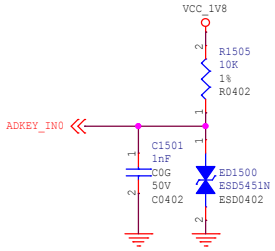
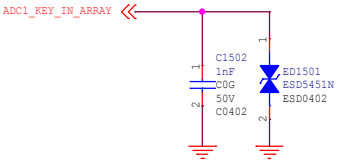
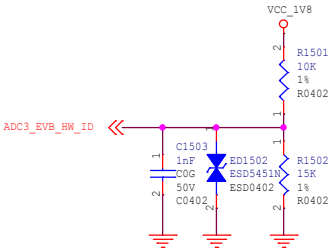
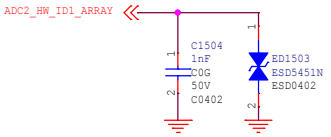
SARADC



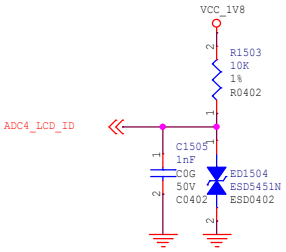


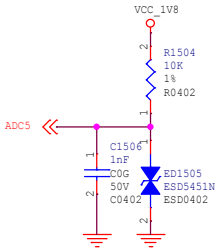






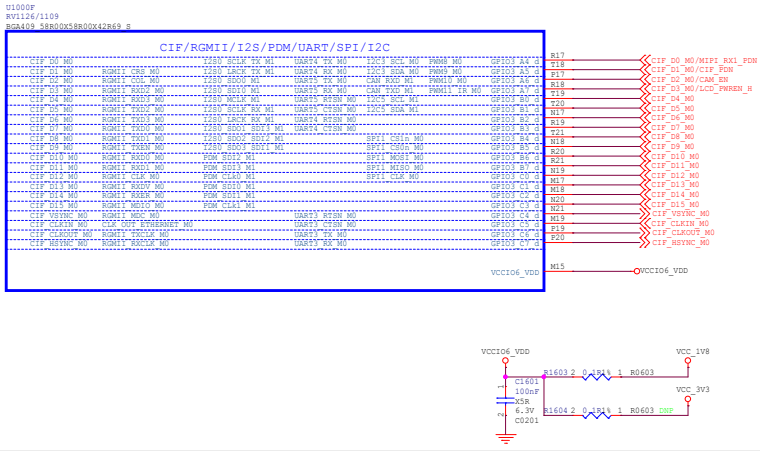
DDR3 EVB ADC3=1.08V



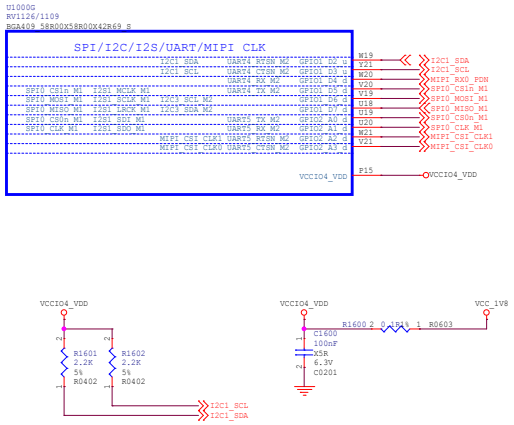


Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	15.RV1126/1109_SARADC				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	13 of 41

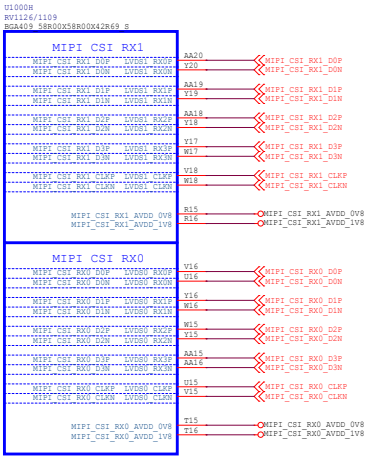
CIF Interface

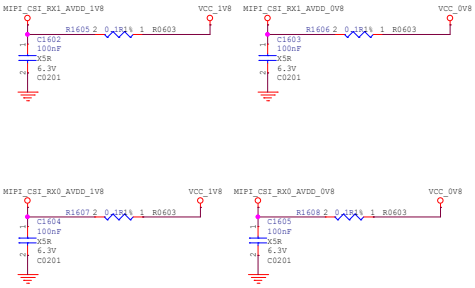


I2C/SPI/MIPI-CLK



MIPI-CSI Interface





Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics		
Project:	RV1126&RV1109 EVB		
File:	16.RV1126/1109_VideoInput		
Date:	Monday, March 09, 2020	Rev:	V1.0
Designed by: Yanhong.Li	Reviewed by: <Checker>	Sheet:	14 of 41

LCDC/RGMII/PWM

U1000E
RV1126/1109
BGA409_58R00X58R00X42R69_S

LCDC/RGMII/CIF/UART/JTAG/I2S/SPI/I2C

			UART4_RTSN_M1		RGMII_TXD3_M1	CIF_D0_M1	LCDC_D0	GPIO2_A4_d	J18
	I2C5_SCL_M0		UART4_CTSN_M1		RGMII_CRS_M1	CIF_D1_M1	LCDC_D1	GPIO2_A5_d	L17
			UART4_TX_M1	PWM5_M1	RGMII_COL_M1	CIF_D2_M1	LCDC_D2	GPIO2_A6_d	M21
		I2S2_SDO_M1	UART4_RX_M1	PWM4_M1	SPI0_CSn0_M2		LCDC_D3	GPIO2_A7_d	M20
		I2S2_SDI_M1	UART5_TX_M1	PWM3_IR_M1	SPI0_MOSI_M2		LCDC_D4	GPIO2_B0_d	L19
		I2S2_SCLK_M1	UART5_RX_M1	PWM2_M1	SPI0_MISO_M2		LCDC_D5	GPIO2_B1_d	L20
		I2S2_LRCK_M1	UART5_RTSN_M1	PWM1_M1	SPI0_CLK_M2		LCDC_D6	GPIO2_B2_d	K16
	I2C5_SDA_M0	I2S2_MCLK_M1	UART5_CTSN_M1	PWM0_M1	SPI0_CS1n_M2	CIF_D3_M1	LCDC_D7	GPIO2_B3_d	K17
					RGMII_RXDV_M1	CIF_D4_M1	LCDC_D8	GPIO2_B4_d	K18
					RGMII_RXD0_M1	CIF_D5_M1	LCDC_D9	GPIO2_B5_d	K19
					RGMII_RXD1_M1	CIF_D6_M1	LCDC_D10	GPIO2_B6_d	K20
					RGMII_CLK_M1	CIF_D7_M1	LCDC_D11	GPIO2_B7_d	K21
					RGMII_RXER_M1	CIF_D8_M1	LCDC_D12	GPIO2_C0_d	J19
					RGMII_MDIO_M1	CIF_D9_M1	LCDC_D13	GPIO2_C1_d	J21
					RGMII_MDC_M1	CIF_D10_M1	LCDC_D14	GPIO2_C2_d	J20
					RGMII_TXD0_M1	CIF_D11_M1	LCDC_D15	GPIO2_C3_d	H20
					RGMII_TXD1_M1	CIF_D12_M1	LCDC_D16	GPIO2_C4_d	H19
					CLK_OUT_ETHERNET_M1	CIF_D13_M1	LCDC_D17	GPIO2_C5_d	G21
					RGMII_TXEN_M1	CIF_D14_M1	LCDC_D18	GPIO2_C6_d	G20
		I2S1_MCLK_M2			RGMII_RXD2_M1	CIF_D15_M1	LCDC_D19	GPIO2_C7_d	G19
		I2S1_SDO_M2			RGMII_RXD3_M1	CIF_VSYNC_M1	LCDC_D20	GPIO2_D0_d	H18
		I2S1_SCLK_M2			RGMII_TXD2_M1	CIF_CLKOUT_M1	LCDC_D21	GPIO2_D1_d	F21
		I2S1_LRCK_M2			RGMII_TXCLK_M1	CIF_CLKIN_M1	LCDC_D22	GPIO2_D2_d	F20
		I2S1_SDI_M2			RGMII_RXCLK_M1	CIF_HSYNC_M1	LCDC_D23	GPIO2_D3_d	F19
	I2C3_SCL_M1			PWM6_M1	SPI1_CSn_M2		LCDC_DEN	GPIO2_D4_d	J17
	I2C3_SDA_M1			PWM10_M1	SPI1_CLK_M2		LCDC_HSYNC	GPIO2_D5_d	H17
			UART3_RTSN_M2	PWM9_M1	SPI1_MOSI_M2		LCDC_VSYNC	GPIO2_D6_d	C21
			UART3_CTSN_M2	PWM8_M1	SPI1_MISO_M2		LCDC_CLK	GPIO2_D7_d	D21
	I2C4_SCL_M0	CAN_RXD_M0	UART3_TX_M2	PWM7_IR_M1	SPI1_CS1n_M2			GPIO3_A0_u	E20
	I2C4_SDA_M0	CAN_TXD_M0	UART3_RX_M2	PWM11_IR_M1				GPIO3_A1_u	E19
	A7_JTAG_TCK_M1		UART2_TX_M1					GPIO3_A2_u	G18
	A7_JTAG_TMS_M1		UART2_RX_M1					GPIO3_A3_u	H16

J18
L17
M21
M20
L19
L20
K16
K17
K18
K19
K20
K21
J19
J21
J20
H20
H19
G21
G20
G19
H18
F21
F20
F19
J17
H17
C21
D21
E20
E19
G18
H16

GMAC_TXD3_M1
I2C5_SCL_M0
PWM5_M1/ICR_AIN/CIF_PDN
PWM4_M1/ICR_BIN/MIPI_RX1_PDN
TP_RST_L
GSENSOR_INT_H/IR_PWM2_M1
TP_INT_L
I2C5_SDA_M0
GMAC_RXDV_M1
GMAC_RXD0_M1
GMAC_RXD1_M1
GMAC_CLK_M1
EPHY_RST_3V3IO
GMAC_MDIO_M1
GMAC_MDC_M1
GMAC_TXD0_M1
GMAC_TXD1_M1
CLK_OUT_ETHERNET_M1
GMAC_TXEN_M1
GMAC_RXD2_M1
GMAC_RXD3_M1
GMAC_TXD2_M1
GMAC_TXCLK_M1
GMAC_RXCLK_M1
PWM6_M1/SPI1_CS0n_M2
PWM10_M1/SPI1_CLK_M2
PWM9_M1/SPI1_MOSI_M2
PWM8_M1/SPI1_MISO_M2
PWM7_M1/PHY_INT
PWM11_M1/LCD_PWREN_H/LED_EN
JTAG_TCK/UART2_TX
JTAG_TMS/UART2_RX

VCCIO5_VDD
R1703 2.2K 5% R0402
R1704 2.2K 5% R0402
I2C5_SCL_M0
I2C5_SDA_M0

VCCIO5_VDD
C1702 100nF X5R 6.3V C0201
R1702 0_1R1% R0603
VCC_3V3
R1705 0_1R1% R0603 DNP
VCC_1V8

J15
K15
VCCIO5_VDD1
VCCIO5_VDD2
VCCIO5_VDD

MIPI-DSI Interface

U1000D
RV1126/1109
BGA409_58R00X58R00X42R69_S

MIPI DSI TX0

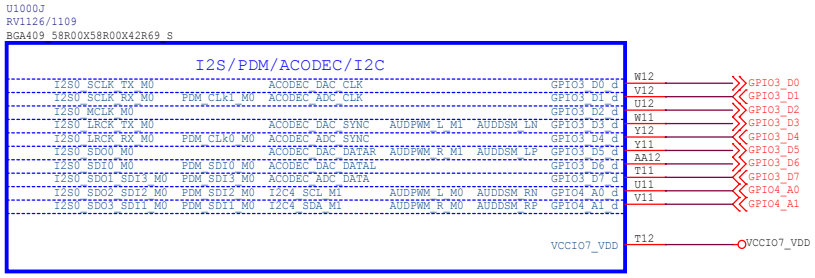
MIPI_DSI_TX0_D0P	A19	MIPI_DSI_D0P
MIPI_DSI_TX0_D0N	B19	MIPI_DSI_D0N
MIPI_DSI_TX0_D1P	A20	MIPI_DSI_D1P
MIPI_DSI_TX0_D1N	B20	MIPI_DSI_D1N
MIPI_DSI_TX0_D2P	B21	MIPI_DSI_D2P
MIPI_DSI_TX0_D2N	C20	MIPI_DSI_D2N
MIPI_DSI_TX0_D3P	D20	MIPI_DSI_D3P
MIPI_DSI_TX0_D3N	D19	MIPI_DSI_D3N
MIPI_DSI_TX0_CLKP	C19	MIPI_DSI_CLKP
MIPI_DSI_TX0_CLKN	C18	MIPI_DSI_CLKN
MIPI_DSI_TX0_AVDD_0V8	E18	MIPI_DSI_TX_AVDD_0V8
MIPI_DSI_TX0_AVDD_1V8	G15	MIPI_DSI_TX_AVDD_1V8

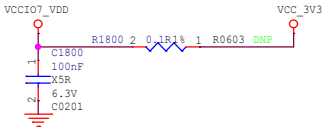
MIPI_DSI_TX_AVDD_0V8
VCC_0V8
R1700 0_1R1% R0603
C1700 100nF X5R 6.3V C0201

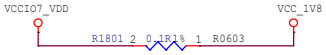
MIPI_DSI_TX_AVDD_1V8
VCC_1V8
R1701 0_1R1% R0603
C1701 100nF X5R 6.3V C0201

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics			
Project:	RV1126&RV1109 EVB			
File:	17.RV1126/1109_VideoOutput			
Date:	Monday, March 09, 2020		Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by: <Checker>	Sheet:	15 of 41

Audio Interface

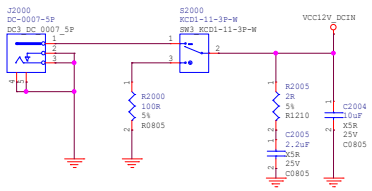




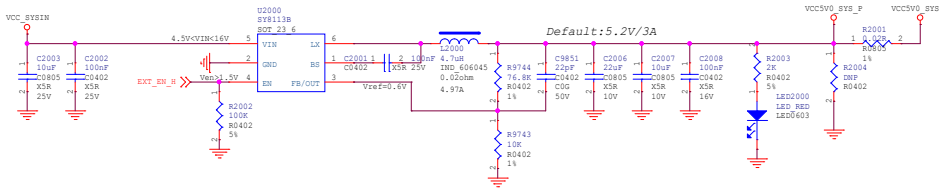


Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	18.RV1126/1109_Audio				
Date:	Wednesday, March 25, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	16 of 41

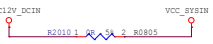
12V/2A DCIN



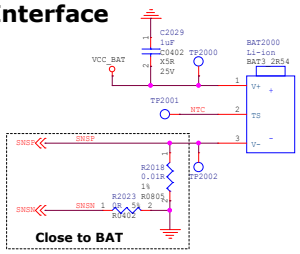
VCC5V0_SYS



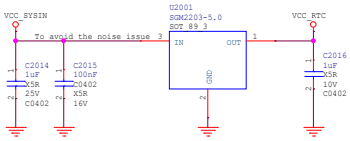
Option: Design for DC IN without Charge, please delete it if not used.



BAT Interface

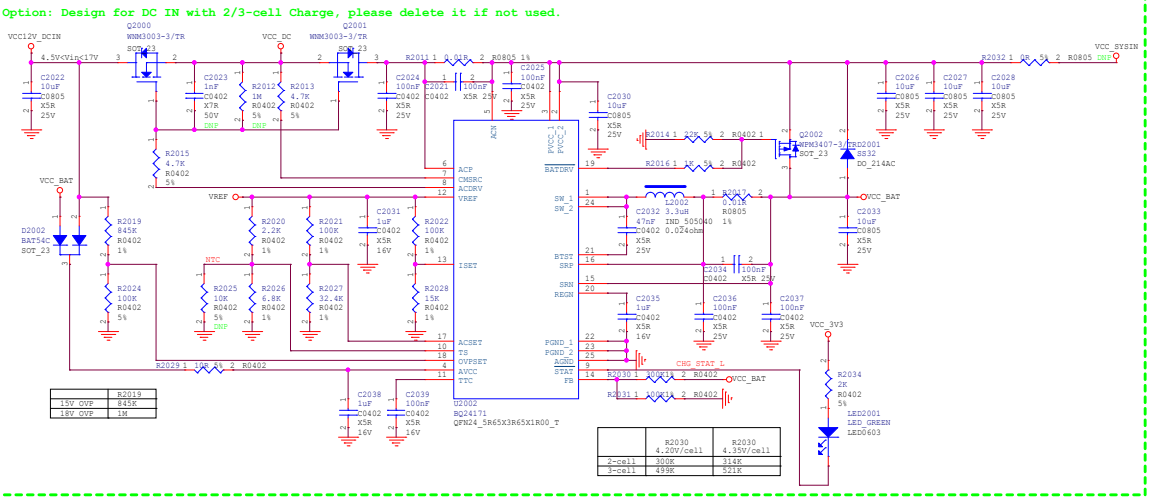


LDO-VCCRTC



BAT Charge

Option: Design for DC IN with 2/3-cell Charge, please delete it if not used.



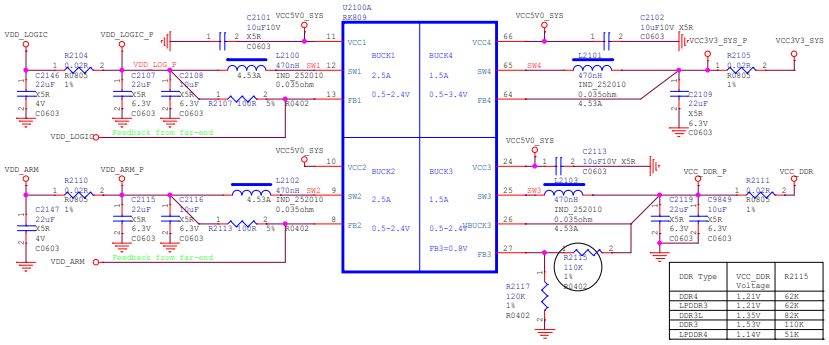
	R2019
15V OVP	845K
18V OVP	1M

	R2030 4.20V/cell	R2030 4.35V/cell
2-cell	300K	316K
3-cell	499K	523K

Default:
12V input, 2 cell battery 8.4V,
2A charge current,
0.2A pre-charge/termination current,
4A DPM current,
15V input OVP
0-60℃ TS

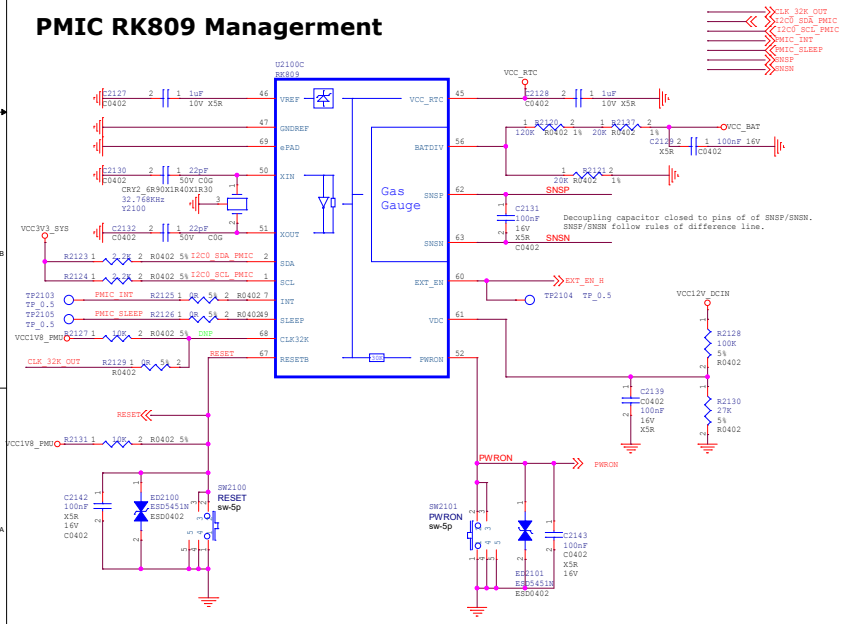
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics
Project:	RV1126&RV1109 EVB
File:	20.Power_DC IN
Date:	Tuesday, March 17, 2020
Rev:	V1.0
Designed by:	Yanhong.Li
Reviewed by:	<Checker>
Sheet:	17 of 41

PMIC RK809 DCDC

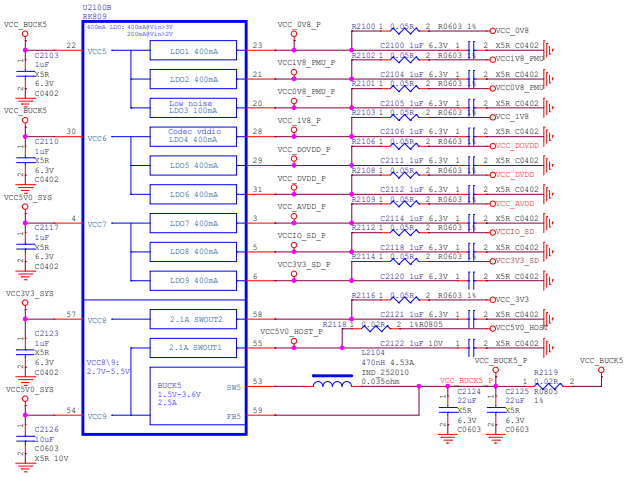


DDR Type	VCC_DDR Voltage	R2115
DDR4	1.21V	62K
LPDDR3	1.21V	62K
DDR3L	1.35V	82K
DDR3	1.5V	110K
LPDDR4	1.14V	51K

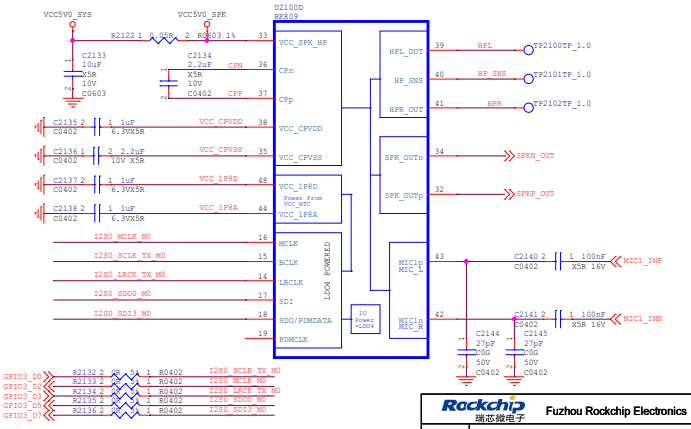
PMIC RK809 Managerment



PMIC RK809 LDO

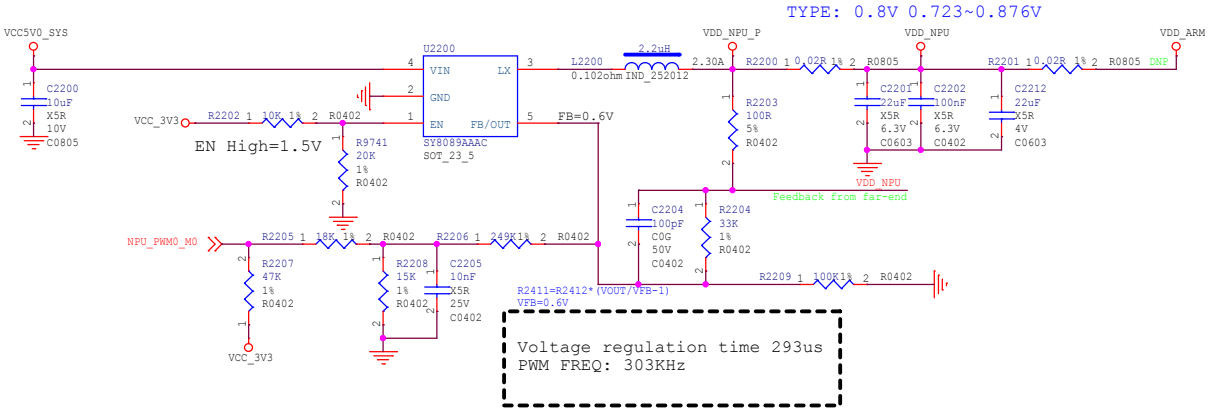


PMIC RK809 CODEC

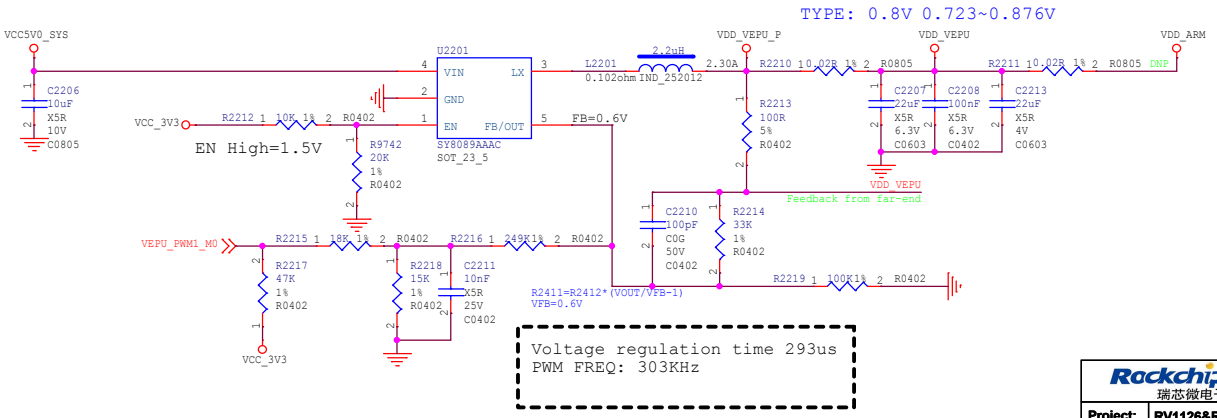


Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics
Project:	RV1126&RV1109 EVB
File:	21.Power_PMIC
Date:	Monday, March 09, 2020
Rev:	V1.0
Designed by:	Yanhong.Li
Reviewed by:	<Checker>
Sheet:	18 of 41

VDD_NPU

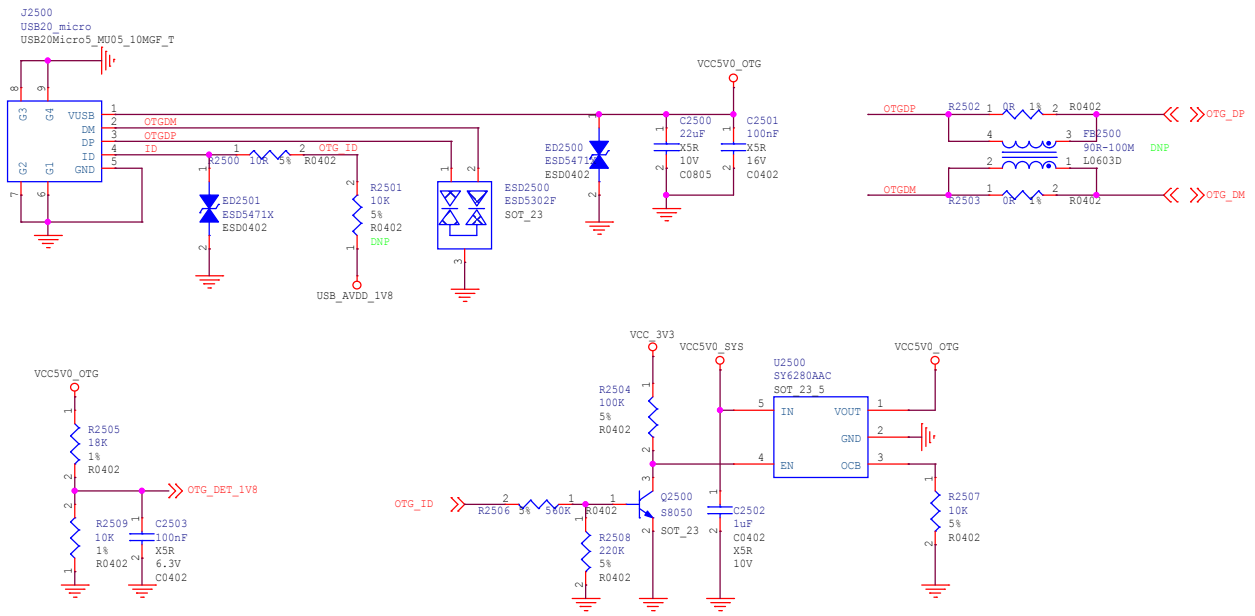


VDD_VEPU



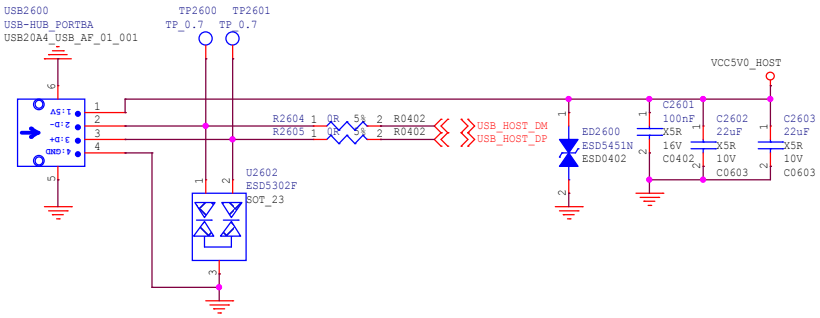
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	22.Power_other				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	19 of 41

USB2.0 OTG

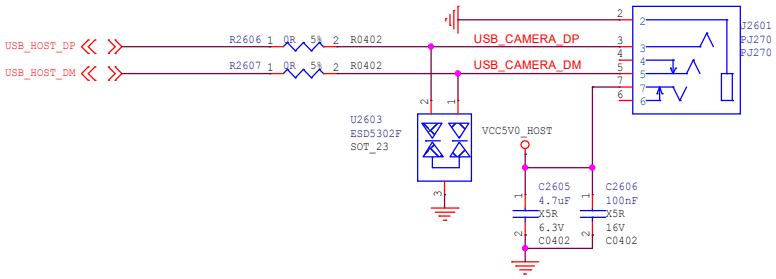


Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	25.USB OTG				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	20 of 41

USB A

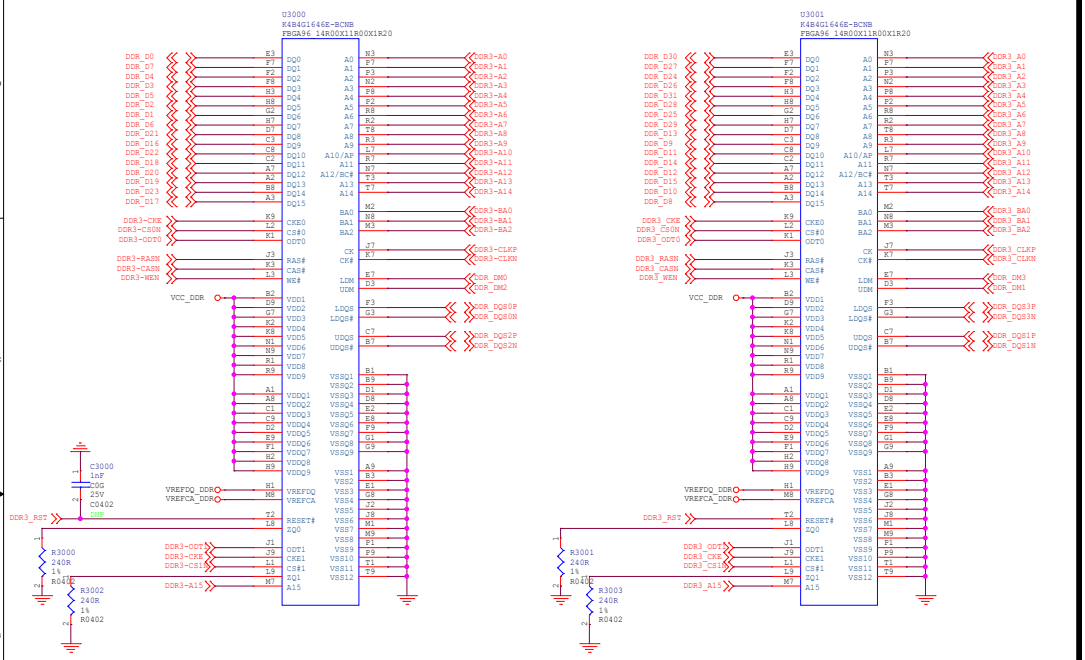


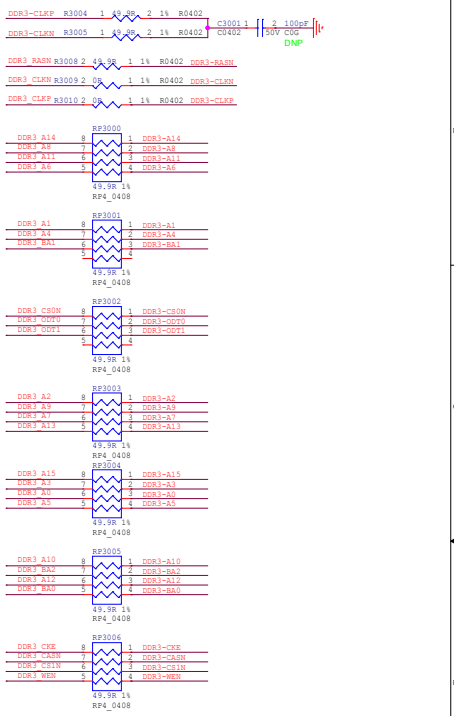
USB camera



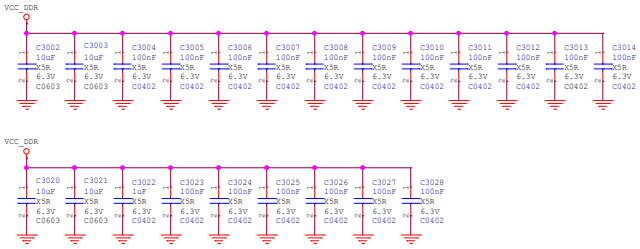
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	26.USB Host				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	21 of 41

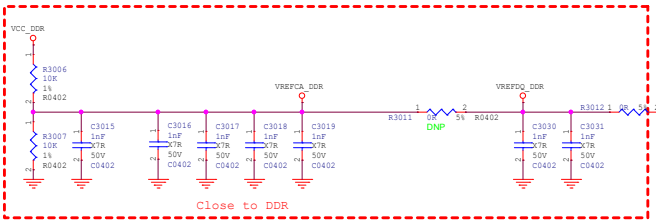
DDR3/DDR3L 2x16bit





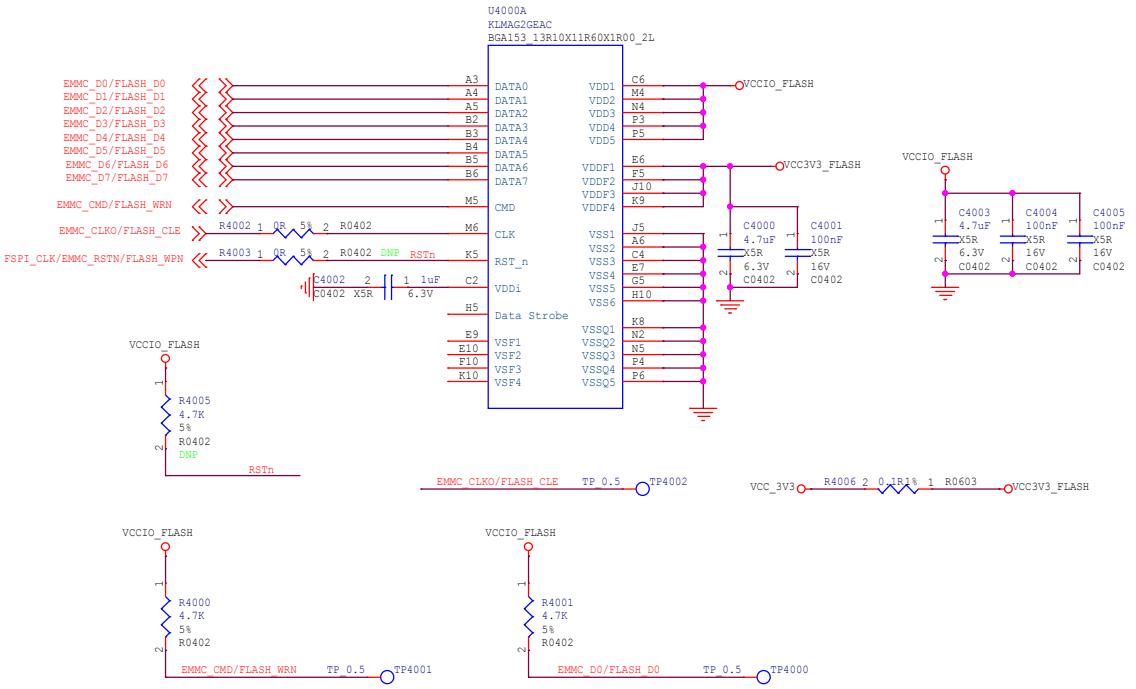
Note:All the Power filter capacitors should be placed close to the power pins of DDR3





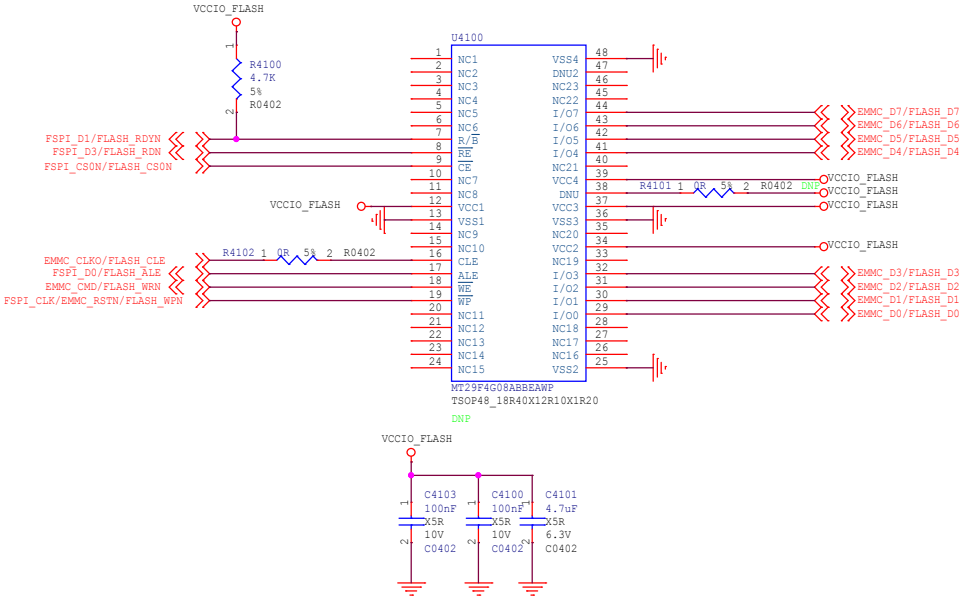
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics		
Project:	RV1126&RV1109 EVB		
File:	30.DRAM_DDR3_96P_2X16bit		
Date:	Tuesday, March 17, 2020	Rev:	V1.0
Designed by: Yanhong.Li	Reviewed by: <Checker>	Sheet:	22 of 41

eMMC



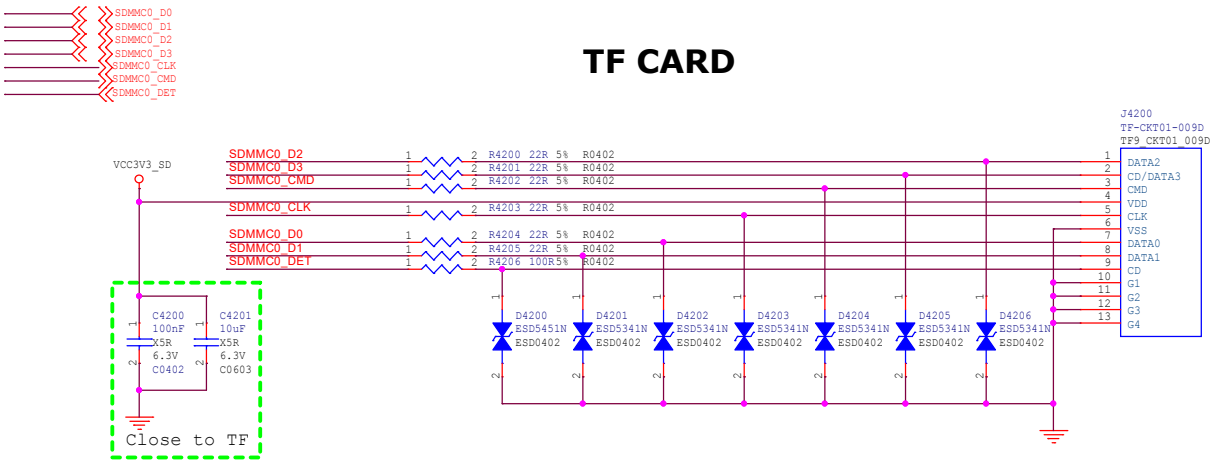
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	40.Flash-eMMC Flash				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	23 of 41

NAND FLASH



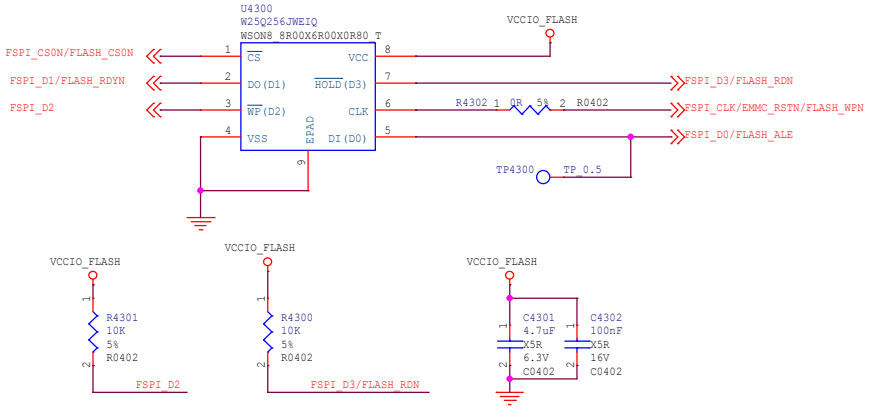
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	41.Flash-Nand Flash				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	24 of 41

TF CARD



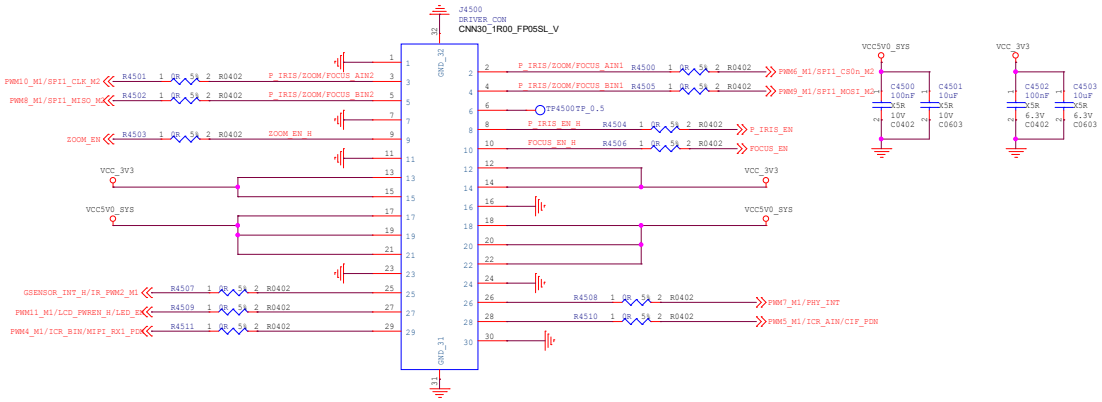
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	42.Flash-Micro-SD Card				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	25 of 41

SPI Nor Flash

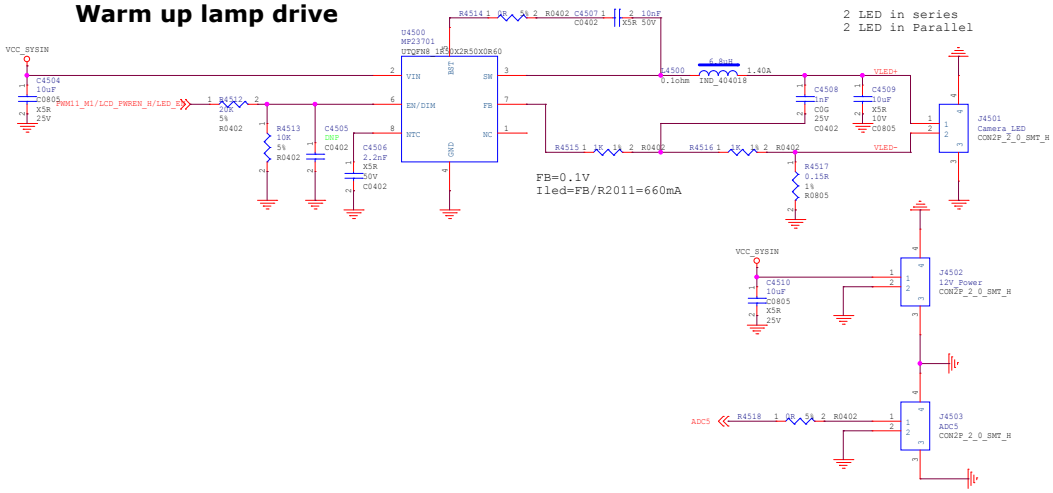


Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	43.Flash-SPI Flash				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	26 of 41

Zoom/Focus/Iris Driver Interface

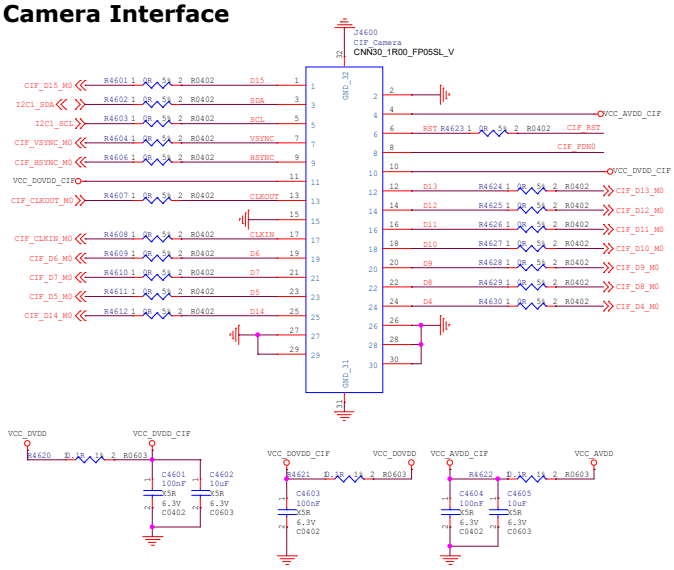


Warm up lamp drive

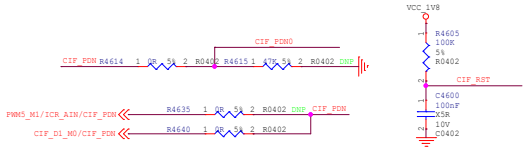


Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	45.Zoom/ Iris Driver Interface				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	27 of 41

CIF Camera Interface

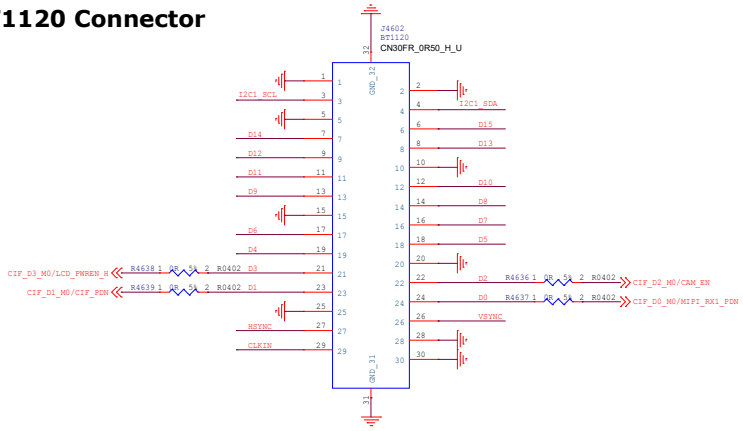


RV1109 16 bit CIF	12bit camera module	10bit camera module	8bit camera module
D0			
D1			
D2			
D3			
D4	D0		
D5	D1		
D6	D2	D0	
D7	D3	D1	
D8	D4	D2	D0
D9	D5	D3	D1
D10	D6	D4	D2
D11	D7	D5	D3
D12	D8	D6	D4
D13	D9	D7	D5
D14	D10	D8	D6
D15	D11	D9	D7



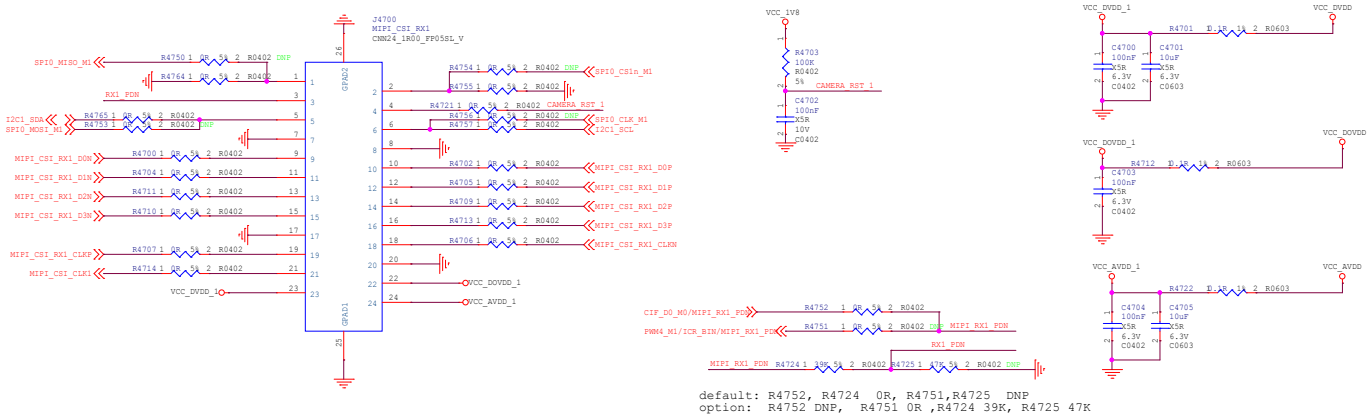
default: R4640, R4614 0R, R4615,R4635 DNP
option: R4640 DNP, R4635 0R ,R4614 39K, R4615 47K

BT1120 Connector



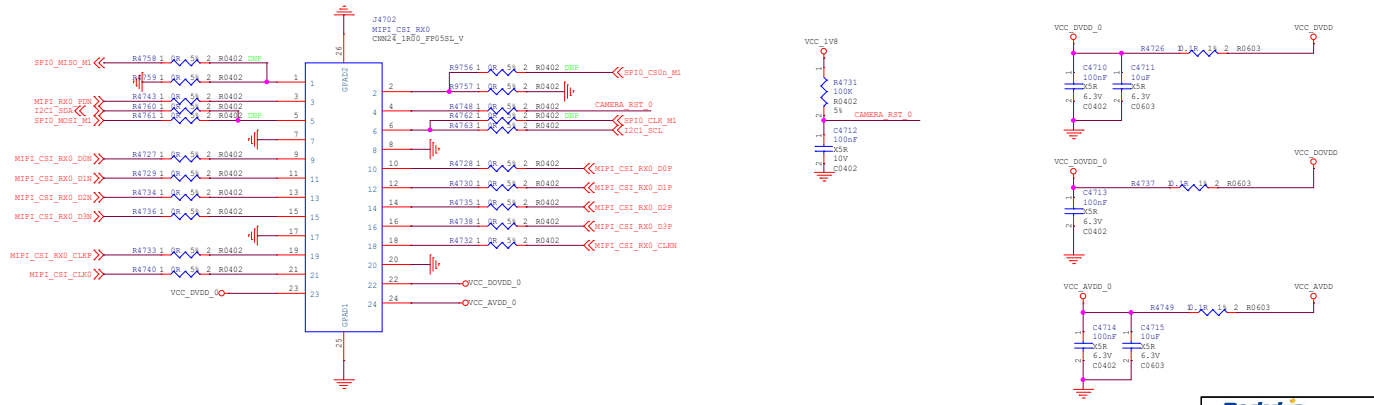
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics			
Project:	RV1126&RV1109 EVB			
File:	46.VI-Camera_CIF			
Date:	Monday, March 09, 2020		Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by: <Checker>	Sheet:	28 of 41

MIPI-CSI_RX1 Interface



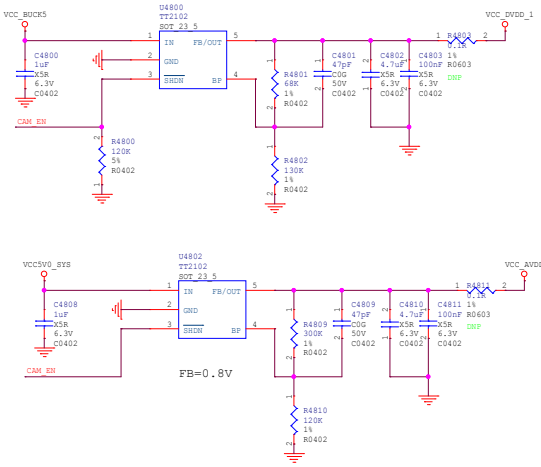
default: R4752, R4724 0R, R4751,R4725 DNP
option: R4752 DNP, R4751 0R ,R4724 39K, R4725 47K

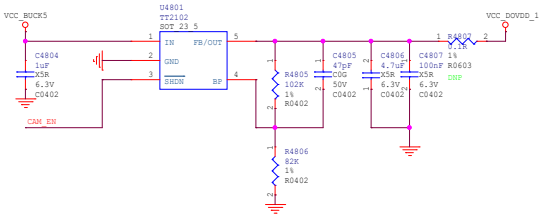
MIPI-CSI_RX0 Interface

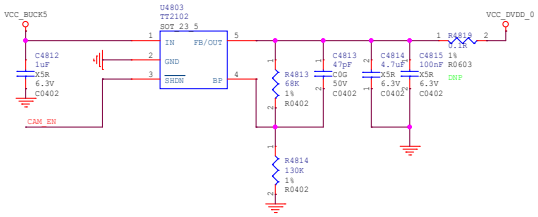


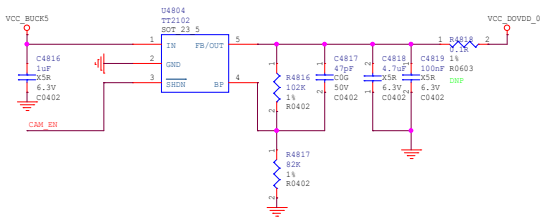
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	47.VI-Camera_MIPI-CSI				
Date:	Monday, March 09, 2020		Rev:	V1.0	
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	29 of 41

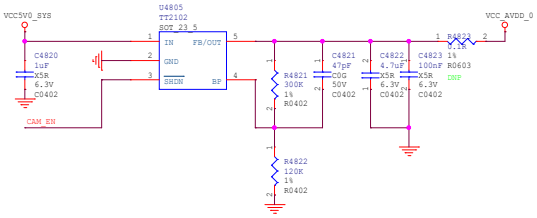
Reserve for Video In Power





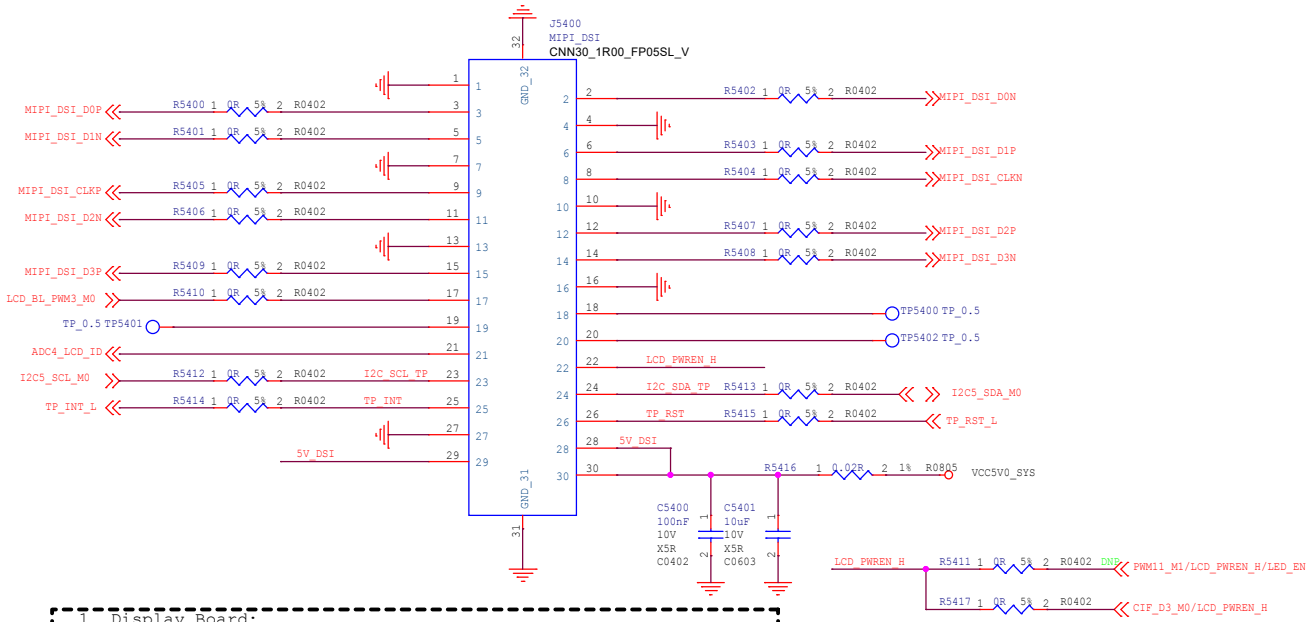






Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	48.Reserve for Video In Power				
Date:	Tuesday, March 17, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	30 of 41

MIPI-DSI Interface

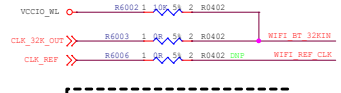


1. Display Board:
Gemini_EVB_DisplayBoard_V10_20171222_CW
2. RT9611 MIPI DSI to HDMI OUT Board

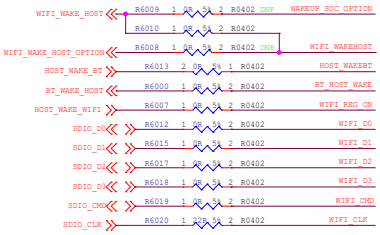
TP level is 1.8V, but there is level shift on the LCD board.

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	54.VO-MIPI-DSI				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	31 of 41

WIFI/BT Module



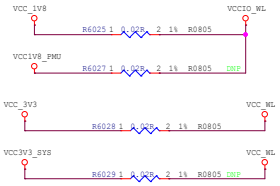
32K clock signal provided by 809 is used by default



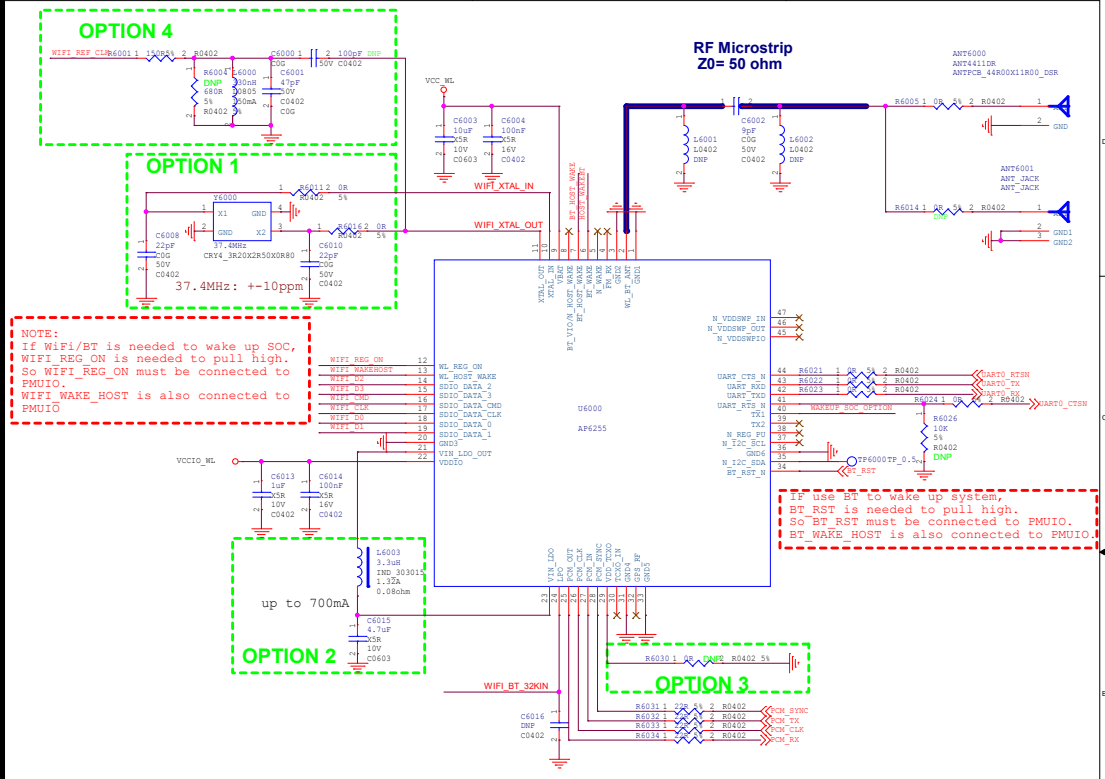
When standby, SDIO of SOC is powered on continuously, r6009 and r6008 are not connected, r6010 is connected, WIFI_WAKEHOST is used to wake up SOC by default.

When standby, SDIO of SOC is powered off, r6009 and r6008 are connected, r6010 is not connected and wake up SOC by WAKEUP_SOC_OPTION

Module Power



WiFi can be divided into two situations:
1. When WiFi is powered off in standby mode and SDIO is powered off, then VCC_1V8 and VCC_3V3 are used for power supply.
2. If WiFi is not powered off, SDIO is powered on, WiFi enters standby mode, then VCC1V8_PMU and VCC3V3_SYS are used for power supply.



OPTION	WIFI				BT	Crystals	VCCIO_SDIO
	a	b/g/n	ac	5GHz			
AP6255 (Default)	Yes	Yes	Yes	Yes	Yes	37.4MHz	1.71-3.6V
AP6236	**No**	Yes	**No**	**No**	Yes	26MHz	1.62-3.6V

OPTION	1	2	3
AP6255 (Default)	Yes	Yes	**No**
AP6236	Yes	Yes	**No**

Note:
Yes: option circuit be mounted
No: option circuit not be mounted

If ap6236 is applied, SDIO power of SOC can be cut off when WiFi is in standby mode

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics
Project:	RV1126&RV1109 EVB
File:	60.WIFI/BT-SDIO_1T1R+UART
Date:	Monday, March 09, 2020
Rev:	V1.0
Designed by:	Yanhong.Li
Reviewed by:	<Checker>
Sheet:	32 of 41

GPHY

Close to CPU

Close to PHY

PHYRSTB is 3.3V IO

OPTION:
External crystal oscillator is used by default, here NC.

3.3Vpp

MAC <----- PHY

RGMII=3.3V IO,R6818=22R,R6820=DNP
RGMII=1.8V IO,R6818=100R,R6820=120R

LINK&ACT

LINK&ACT

HR911130C
RJ45_HR911130C

VCCIO_PHY Voltage Config

RGMII Power Source	CFG_EXT	CFG_LDO[1:0]
External 3.3V(default)	1'b1	2'b00
External 1.8V	1'b1	2'b10
Internal 1.8V	1'b0	2'b10

PHY Address Config

PHY_Address	PHYAD[2:0]
1 (default)	3'b001

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

close to PIN11 ,40

close to PIN29

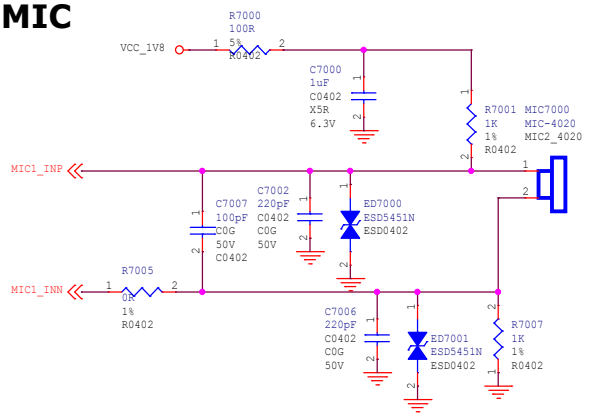
close to PIN28

close to PIN30

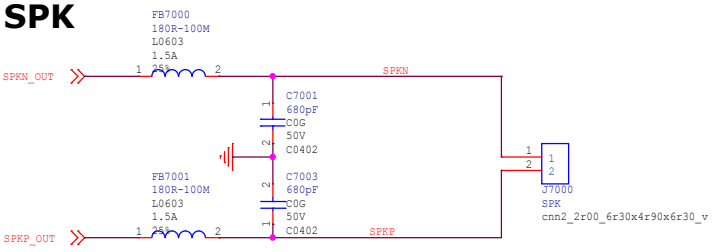
close to PIN3,8,21,38

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics
Project:	RV1126&RV1109 EVB
File:	68.Ethernet-GEPHY_RGMII
Date:	Monday, March 09, 2020
Rev:	V1.0
Designed by:	Yanhong.Li
Reviewed by:	<Checker>
Sheet:	33 of 41

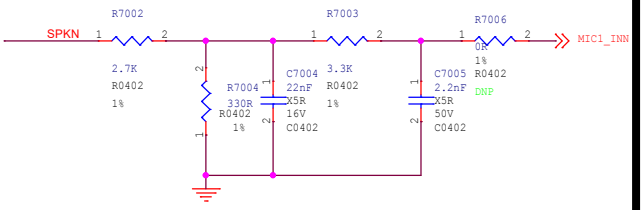
MIC



SPK



LOOP BACK

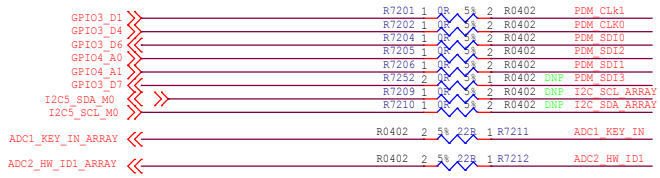


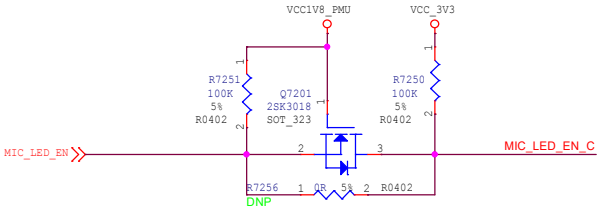
Default differential mic:R7006 DNP
Single ended MIC:C7007,C7006,ED7001,R7005 DNP,R7007 0R.

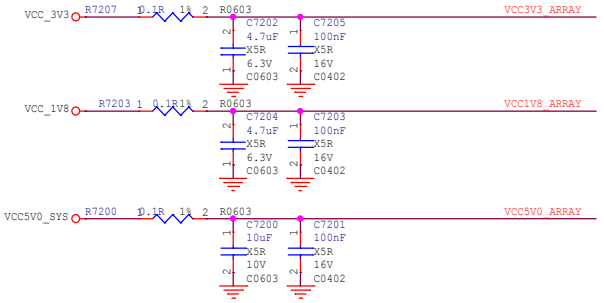
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	70.Audio Port				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	34 of 41

SPEAKER MIC

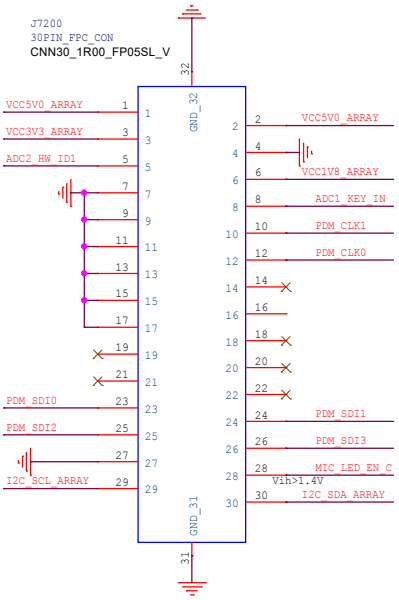
MIC_ARRAY Interface







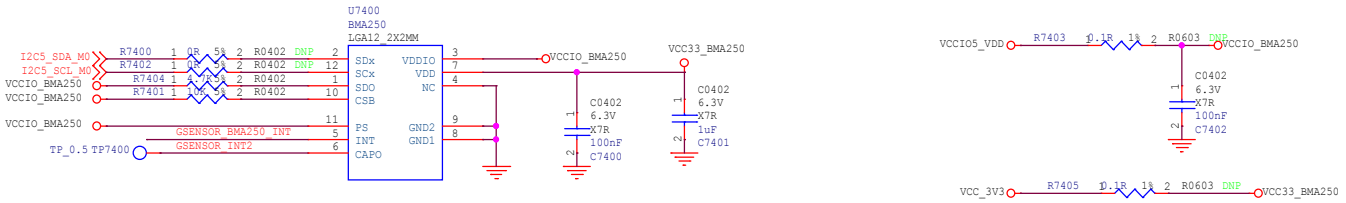
RK3308_AI-VA_MIC_REF_V12_20180914



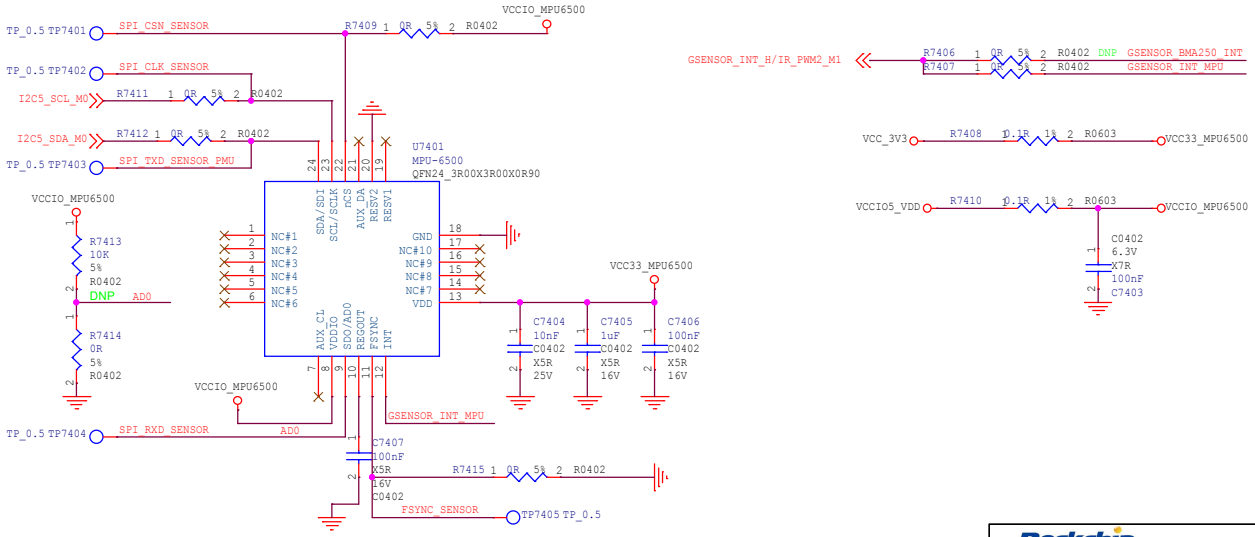
Checked

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	72.MIC Array Interface				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	35 of 41

G_SENSOR

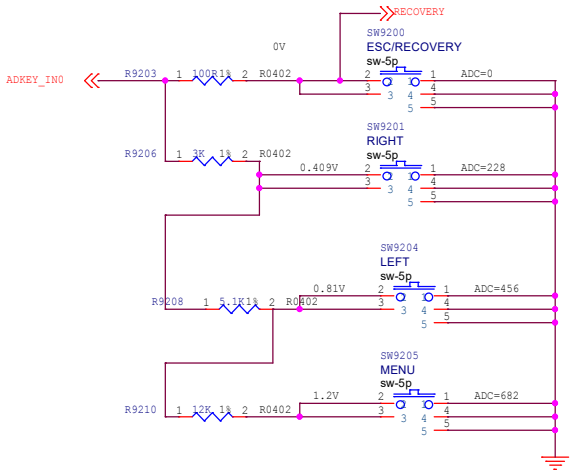


G-Sensor&Gyroscope



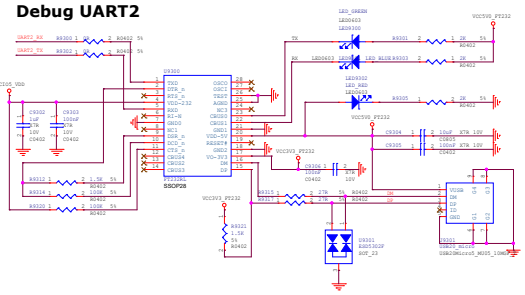
Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	74.G-Sensor/Gyroscope				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	36 of 41

Key

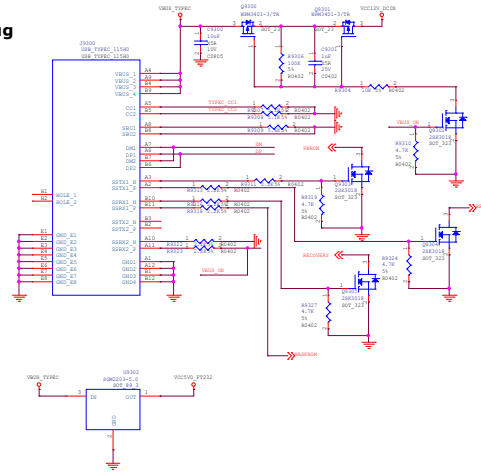


Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	92.Key				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	37 of 41

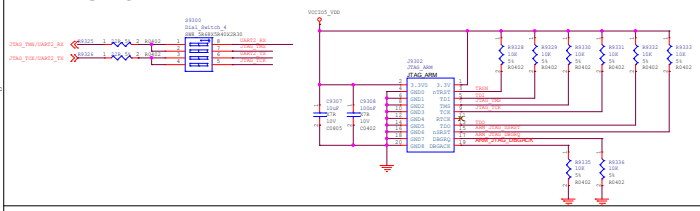
Debug UART2



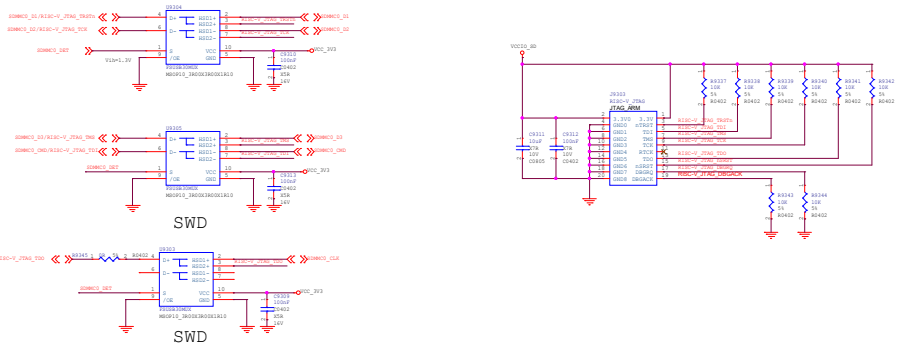
Type C Debug



ARM JTAG



RISC-V_JTAG



SWD

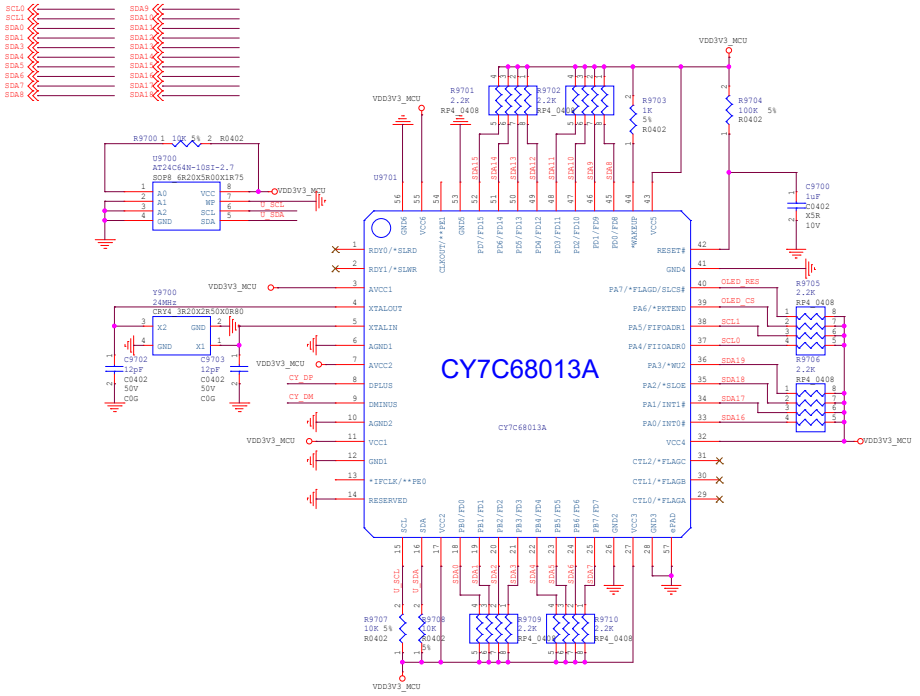
SWD

Truth Table

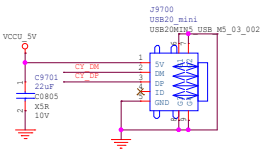
S	OE	Function
X	H	Disconnect
L	L	D+, D- = HSD1$_n$
H	L	D+, D- = HSD2$_n$

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics		
Project:	RV1126&RV1109 EVB		
File:	B3.Debug		
Date:	Monday, March 09, 2020	Rev:	V1.0
Designed by:	Yanhong Li	Reviewed by:	<Checker>
Sheet:	38 of 41		

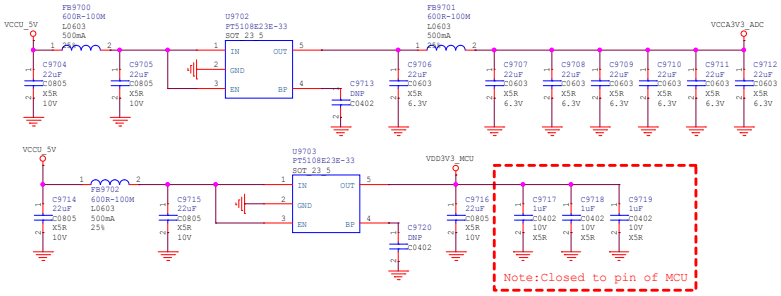
Current Detection MCU



Power Test Port

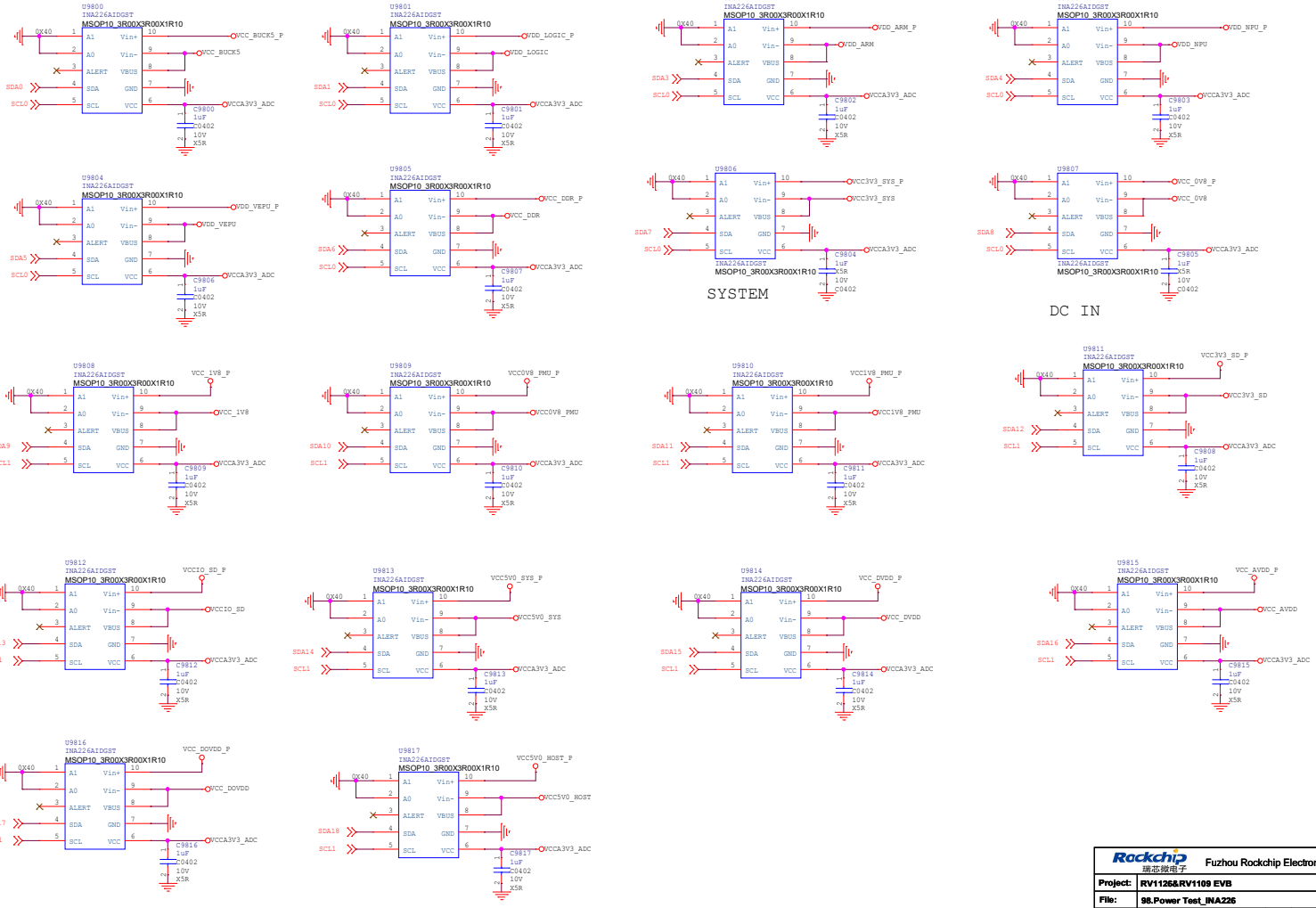


Power

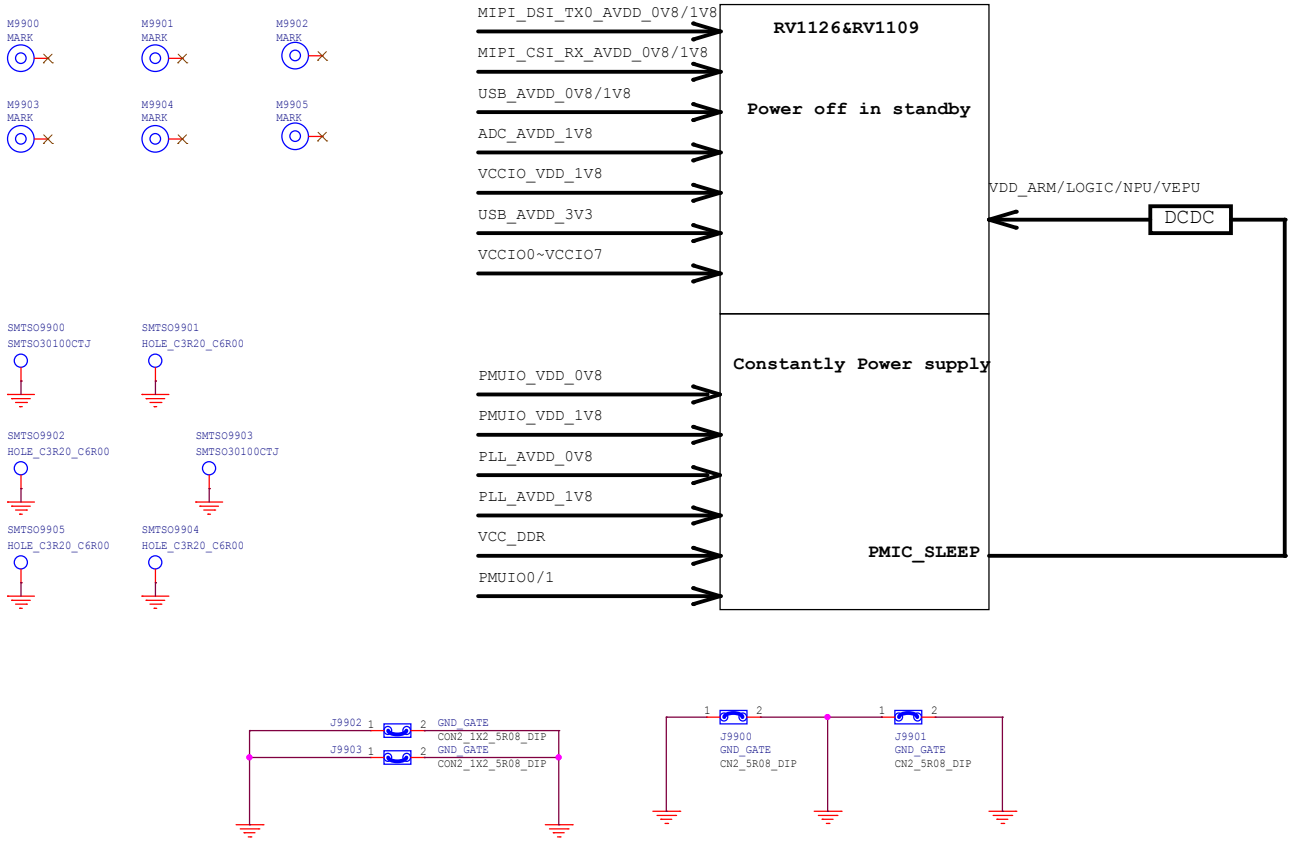


Fuzhou Rockchip Electronics	
Project:	RV1126&RV1109 EVB
File:	97.PowerTest
Date:	Monday, March 09, 2020
Rev:	V1.0
Designed by:	Yanhong.Li
Reviewed by:	<Checker>
Sheet:	39 of 41

ADC Array



Fuzhou Rockchip Electronics	
Project:	RV1126&RV1109 EVB
File:	98.Power Test_INA226
Date:	Monday, March 09, 2020
Rev:	V1.0
Designed by:	Yanhong.Li
Reviewed by:	<Checker>
Sheet:	40 of 41



Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics				
Project:	RV1126&RV1109 EVB				
File:	99.MARK/HOLE				
Date:	Monday, March 09, 2020			Rev:	V1.0
Designed by:	Yanhong.Li	Reviewed by:	<Checker>	Sheet:	41 of 41