RV1126_RV1109_USB_AI_Camera_DEMO_DDR3P216DD6_V12_20200820

01) Power: Discrete power supply
02) DRAM: DDR3 4Gb x 2
03) ROM: eMMC 8GB/SPI nand 512MB
04) Support USB2.0 OTG
05) Support MIPI CSI RX
06) Support Motor Dricer Control
07) Support Option MIC Array
08) Support Debug

Rockchip Confidential

Table of Content

·	de di 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 SYS
Page18	21. Power SYS
Page19	24.Encrytion Chip
Page20	25.USB OTG
Page21	30.DRAM DDR3 96P 2X16bit
Page22	40.Flash eMMC Flash
Page23	43.Flash SPI Flash(option)
Page24	47.VI-Camera MIPI-CSI
Page25	48.Motor driver 72.MIC Array Interface(option)
Page26 Page27	93. Debug
Page28	99.MARK/HOLE
raye20	99.MARK/HOLE

Index and Notes

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

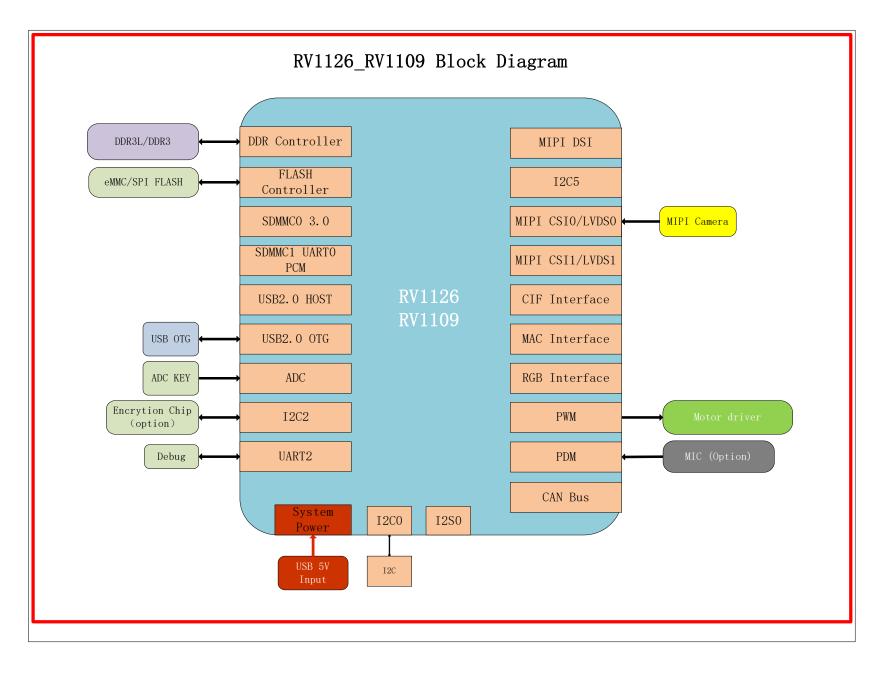
Note
Option
Description

Revision History

Version	Date	Author	Change Note	Approved
V1.0	2020.03.30	whb	First edition AI Camera for RV1126/1109	
V1.1	2020.07.22	whb	Modify the VCC_1V2 and VCC_3V3 power path	
V1.2	2020.08.20	whb	Add power sleep control signal and other	

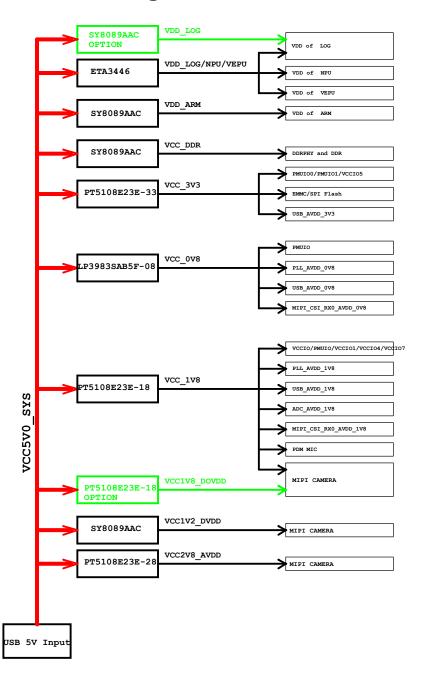
Ro	ckchi 瑞芯微电	? Ro	ckchip Elec	tronic	s Co., Ltd		
Project:	RV1126_	RV1109 A	I Camera				
File:	02.Revis	2.Revision History					
Date:	Tuesday, Se	eptember 08, 20	20	Rev:	V1.2		
Designed by:	whb	Reviewed by:		Sheet:	3 of 28		

Rock	kch	in (Cont	fid	enti	al
AUCI	\CII	$oldsymbol{p}$,		Iu	CIILI	aı



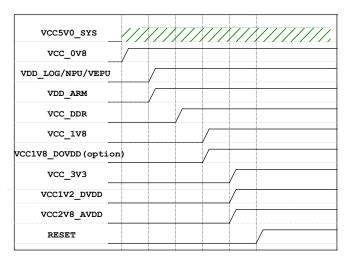
Ra	ckchi 瑞芯微电		ckchip Elect	tronics	Co., Ltd		
Project:	RV1126_	RV1126_RV1109 Al Camera					
File:	03.Block	03.Block Diagram					
Date:	Tuesday, Se	ptember 08, 202	0	Rev:	V1.2		
Designed by:	whb	Reviewed by:		Sheet:	4 of 28		

Power Diagram

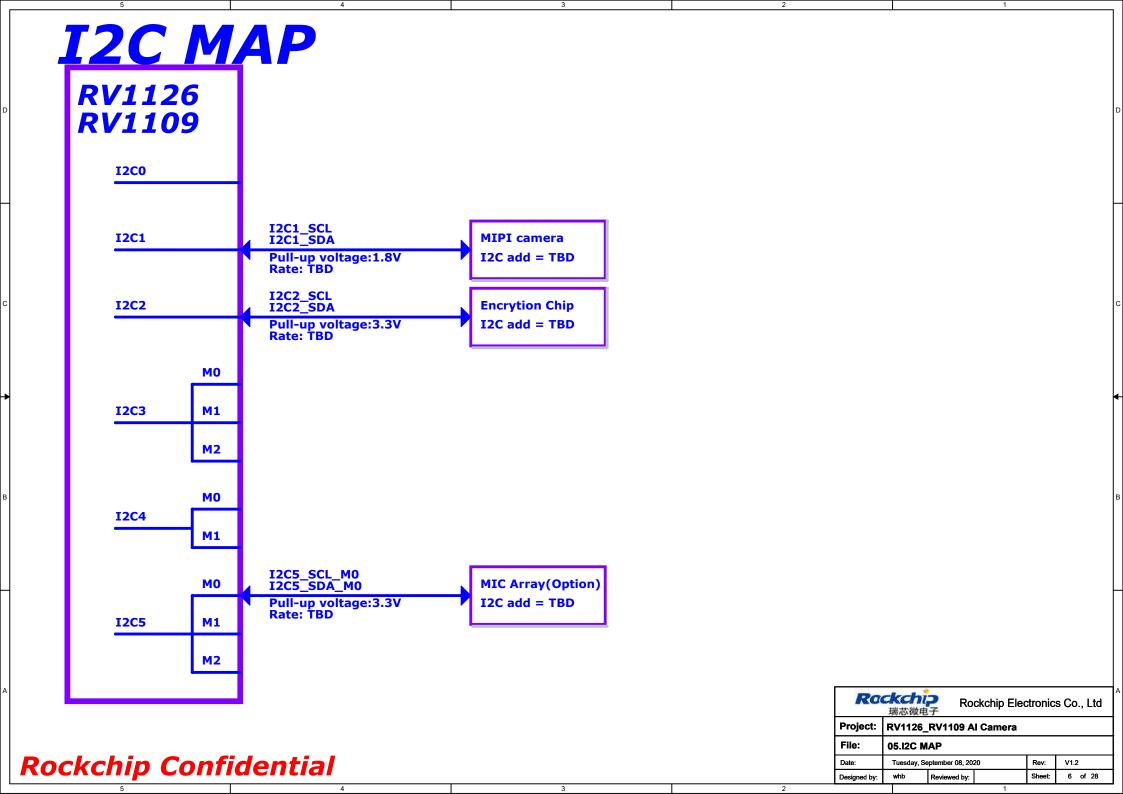


Power-on Sequence

Power Name	PMIC Channel	Time Slot (step 6ms)	Default voltage	Supply Limit	Default ON/OFF	Sleep ON/OFF	Peak Current	Sleep Current
VCC_0V8	LDO	Slot: 1	0.8V	0.4A	ON	ON		
VDD_LOG/NPU/VEPU	BUCK	Slot: 2	0.825V	3.0A	ON	ON		
VDD_ARM	BUCK	Slot: 2	0.824V	2.0A	ON	ON		
VCC_DDR	BUCK	Slot: 3	1.35V	1.0A	ON	ON		
VCC_1V8	LDO	Slot: 4	1.8V	0.5A	ON	ON		
VCC1V8_DOVDD(option) LDO	Slot: 4	1.8V	0.5A	ON	ON		
VCC_3V3	LDO	Slot: 5	3.3V	0.5A	ON	ON		
VCC1V2_DVDD	BUCK	Slot: 5	1.2V	1.0A	ON	ON		
VCC2V8_AVDD	LDO	Slot: 5	2.8V	0.5A	ON	ON		



Ra	ckchi 瑞芯微电		ckchip Elect	tronics	Co., Ltd		
Project:	RV1126_	RV1109 AI	Camera				
File:	04.Power	04.Power Diagram and Sequence					
Date:	Tuesday, Se	ptember 08, 202	Rev:	V1.2			
Designed by:	whb	Reviewed by:		Sheet:	5 of 28		

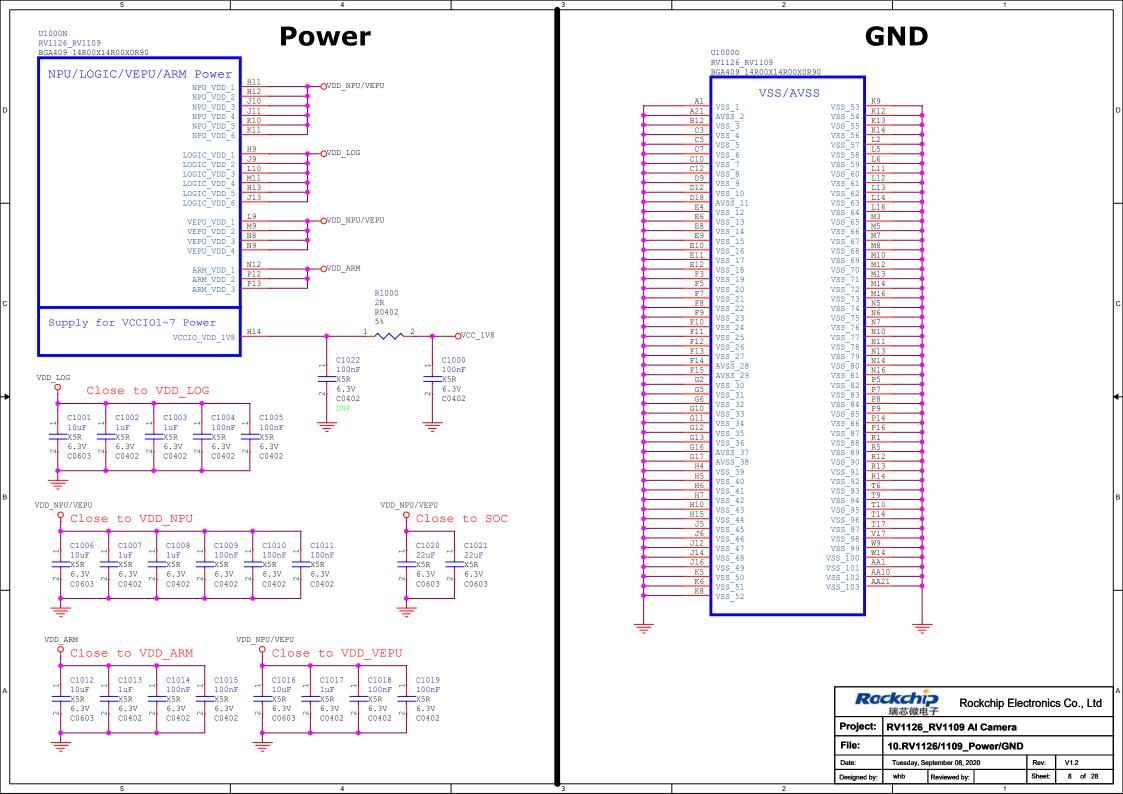


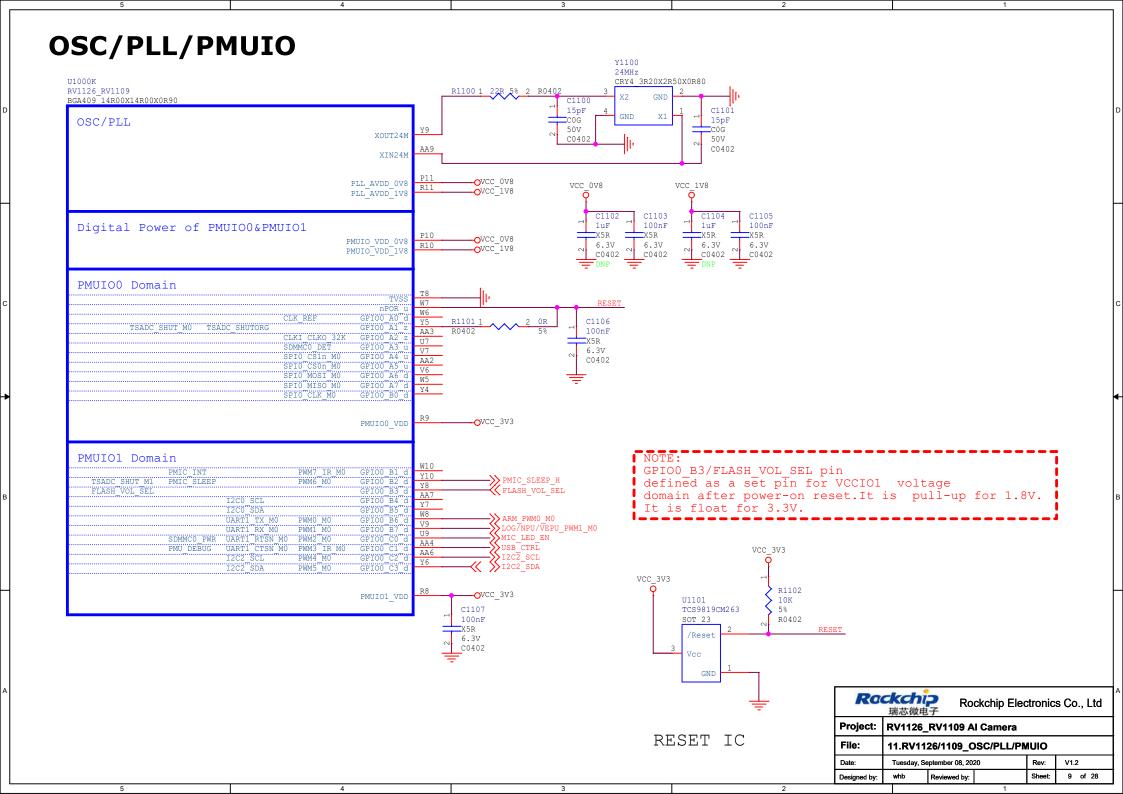
IO Power Domain Map

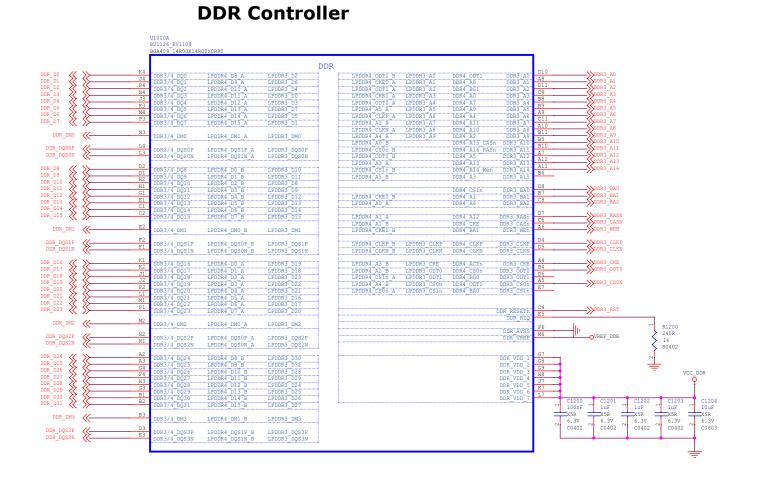
		<u> </u>					
10		Support of IO Voltage		Defau IO Do	ılt Actual assig omain Voltage	Notes	
Domain	IO Group	1.8V	3.3V	Net Name of Power Supply	Power Source	Voltage	Notes
PMUIO0	GPIO0A	~	~	VCC_3V3		3.3V	
PMUIO1	GPIO0BC	~	~	VCC_3V3		3.3V	
VCCIO1	GPIO0CD/GPIO1A	~	~	VCCIO_FLASH		1.8/3.3V	GPIOO_B3/FLASH_VOL_SEL pin defined as a set pin for VCCIO1 voltage domain after power-on reset.It is pull-up for 1.8V
VCCIO2	GPIO1AB	~	~	NC			
VCCIO3	GPIO1BCD	~	~	NC			
VCCIO4	GPIO1D/GPIO2A	~	~	VCC_1V8		1.8V	
VCCIO5	GPIO2ABCD/GPIO3A	~	~	VCC_3V3		3.3V	
VCCIO6	<i>GPIO3ABC</i>	~	~	NC			
VCCIO7	GPIO3D/GPIO4A	~	~	VCC_1V8		1.8V	

Ro	ckchi 瑞芯微电		ckchip Elec	ctronic	s Co., Ltd		
Project:	RV1126_	RV1126_RV1109 AI Camera					
File:	06.IO Po	06.IO Power Domain Map					
Date:	Tuesday, S	eptember 08, 20	Rev:	V1.2			
Designed by:	whb	Reviewed by:		Sheet:	7 of 28		

Roc	kch	ip	Con	fide	ntial

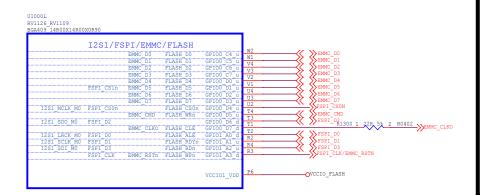


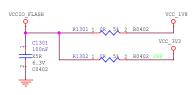


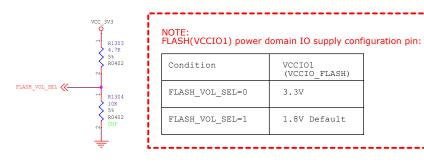


Ro	ckchi 瑞芯微电		ckchip Elect	tronics	Co., Ltd			
Project:	RV1126_	RV1109 AI	Camera					
File:	12.RV11	12.RV1126/1109_DRAM Controller						
Date:	Tuesday, Se	eptember 08, 202	Rev:	V1.2				
Designed by:	whb	Reviewed by:		Sheet:	10 of 28			

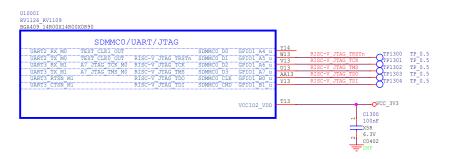
EMMC/FLASH



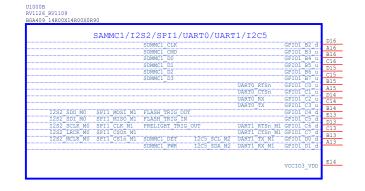




SDMMCO/JTAG

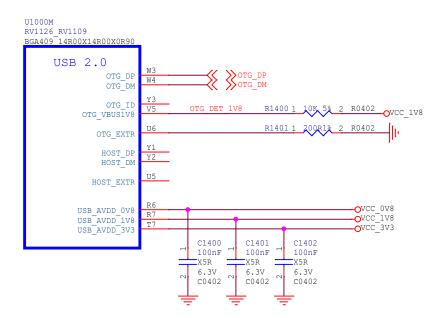


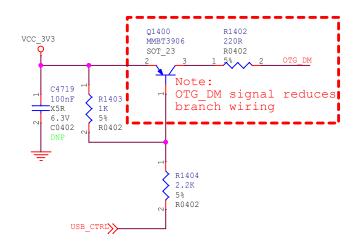
SDMMC1/UART/I2S2



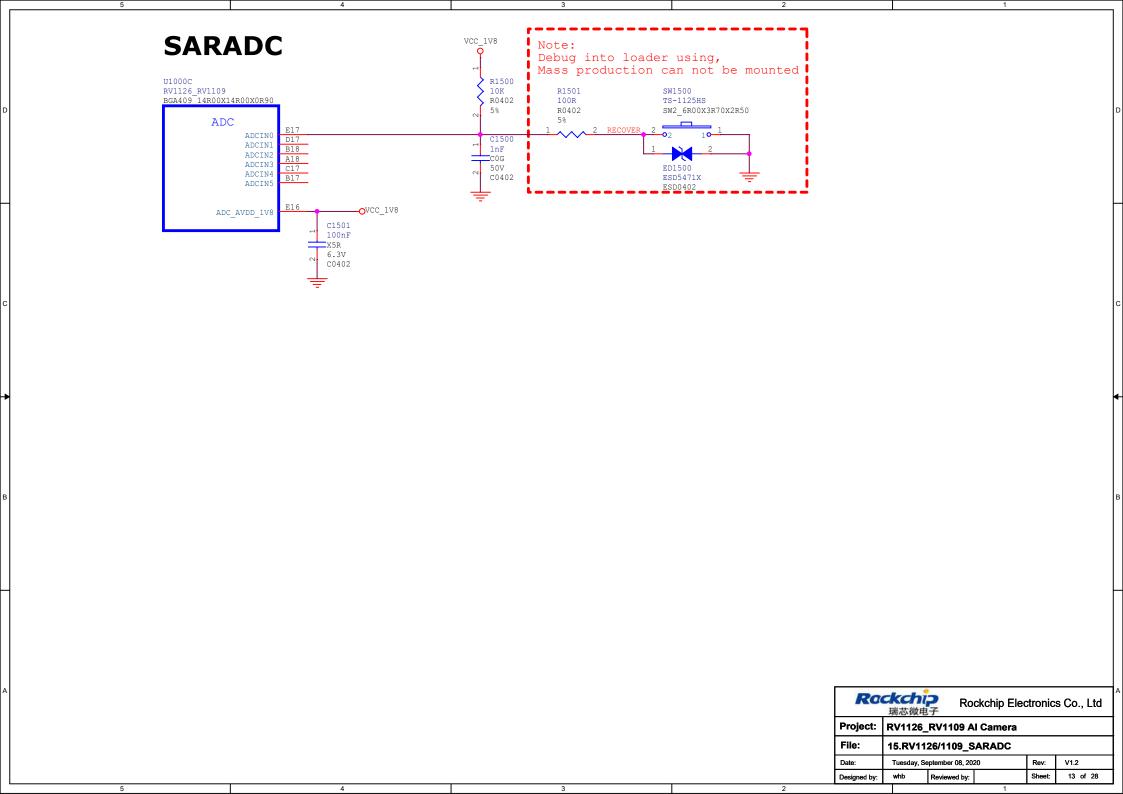
Ra	Rockchip Electronics Co., Ltd 瑞志徳电子						
Project:	RV1126_	RV1109 AI	Camera				
File:	13.RV112	26/1109_Fl	9_Flash/SD				
Date:	Tuesday, September 08, 2020		Rev:	V1.2			
Designed by:	whb	Reviewed by:		Sheet:	11 of 28		

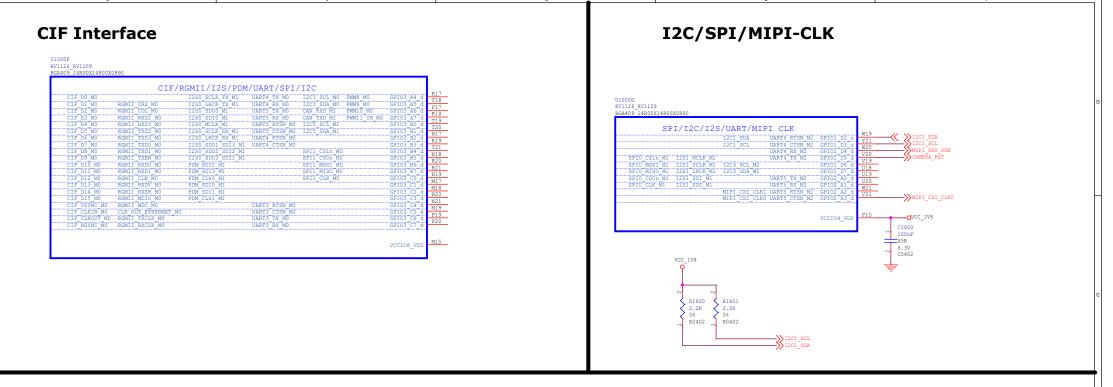
USB Controller



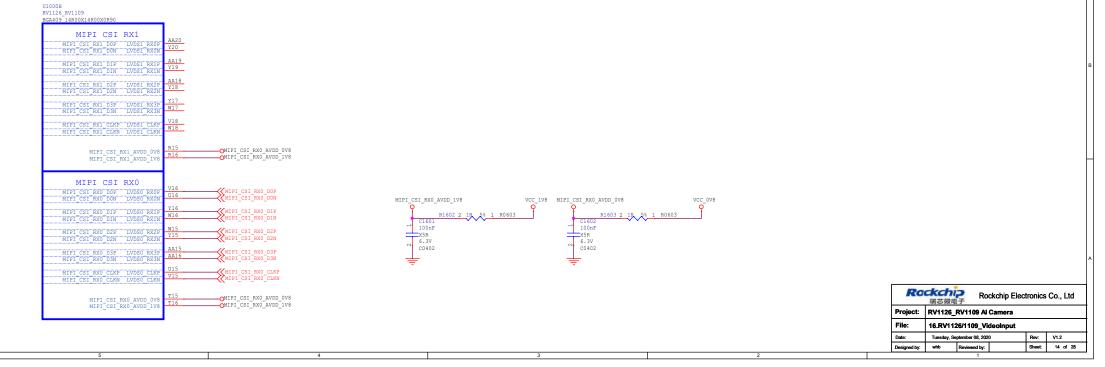


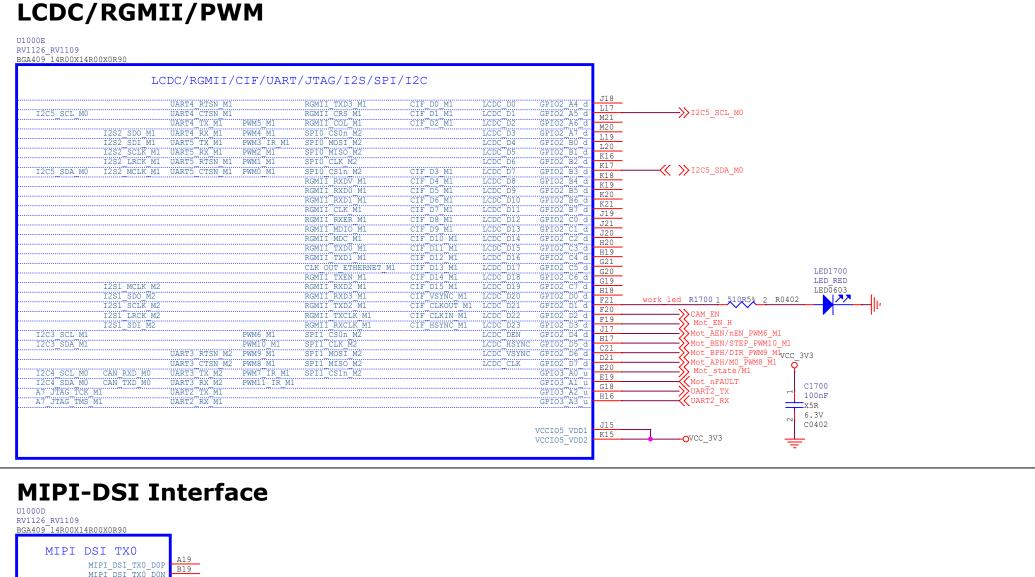
Ro	は 端芯微目		ckchip Elec	tronic	s Co., Ltd	
Project:	RV1126_RV1109 AI Camera					
File:	14.RV1126/1109_USB Controller					
Date:	Tuesday, September 08, 2020			Rev:	V1.2	
Designed by:	whb	Reviewed by:		Sheet:	12 of 28	





MIPI-CSI Interface





Rockchip Electronics Co., Ltd 瑞芯微电子						
Project:	RV1126_RV1109 AI Camera 17.RV1126/1109_VideoOutput					
File:						
Date:	Tuesday, September 08, 2020			Rev:	V1.2	
Designed by:	whb	Reviewed by:		Sheet:	15 of 28	

