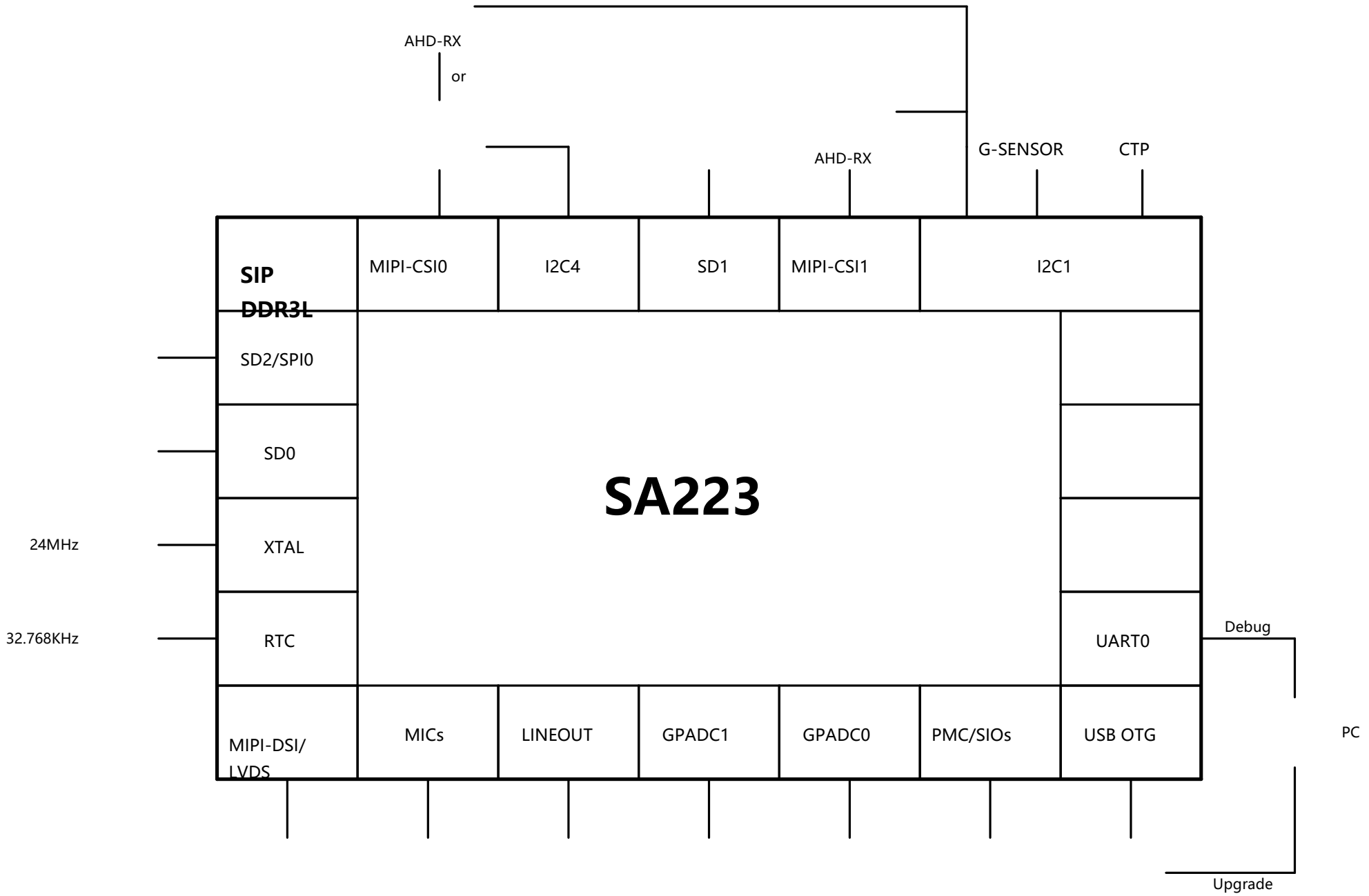
BLOCK DIAGRAM

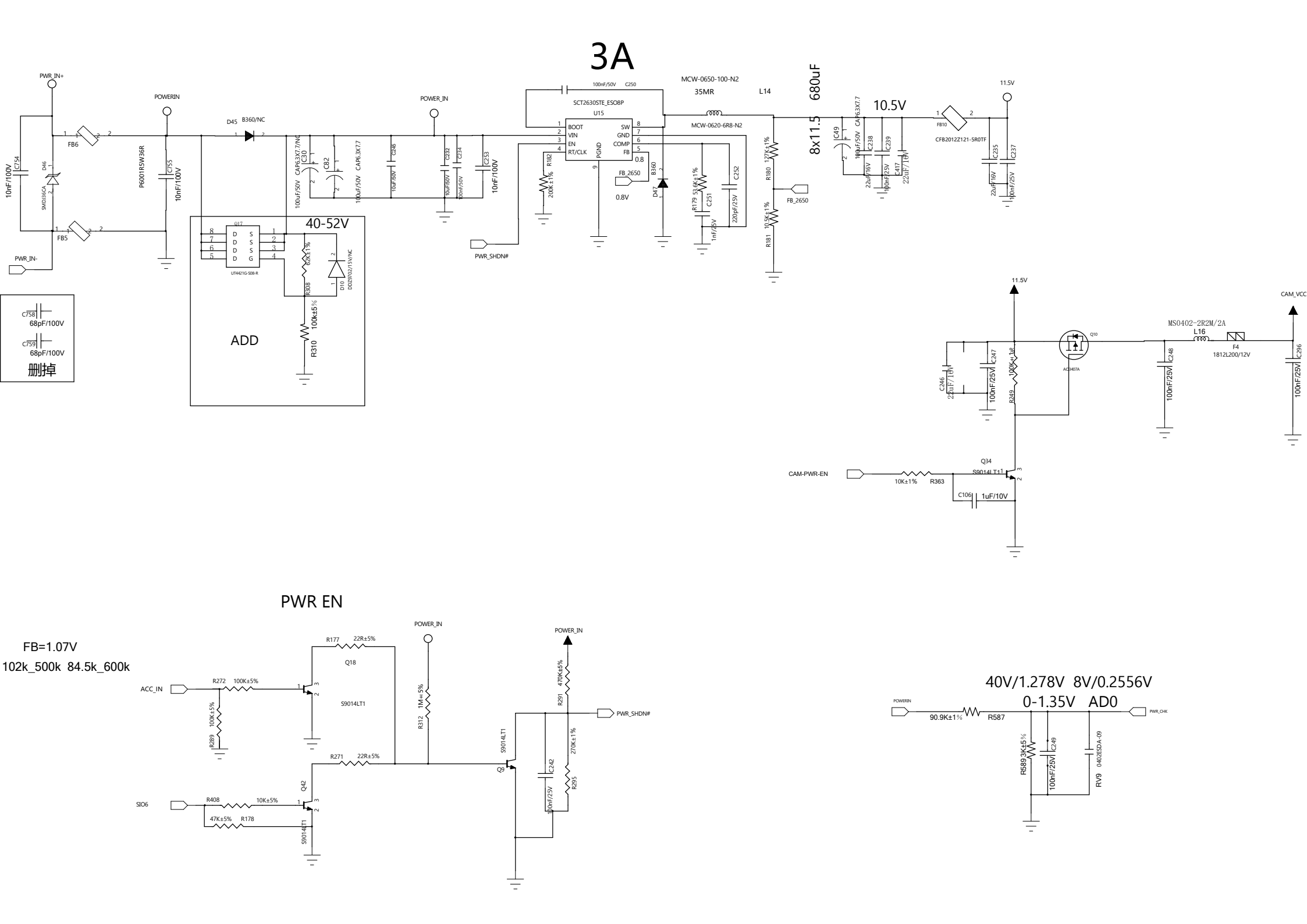


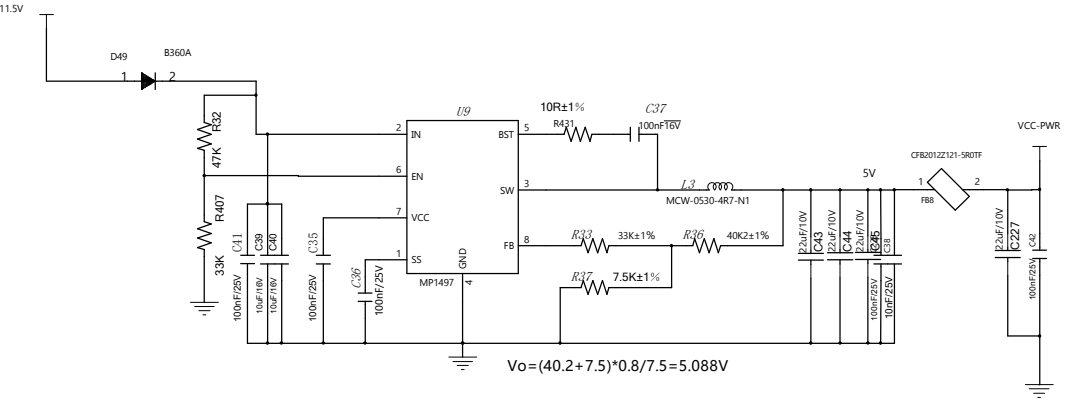
Change List

Version	Data	Description
V0.1	2021/6/8	Initial Release
V0.2	2021/7/21	Add Button Battery circiut
V0.3	2021/8/9	Upgrade description of Boot_sel and CTP Connector
V0.4	2021/9/7	Add PWM-SYS pin
V0.5	2021/11/19	

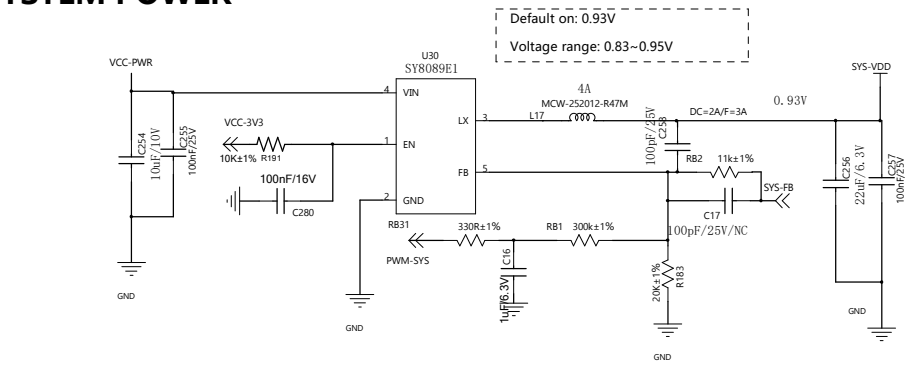
IO Distribution List 不带TFT

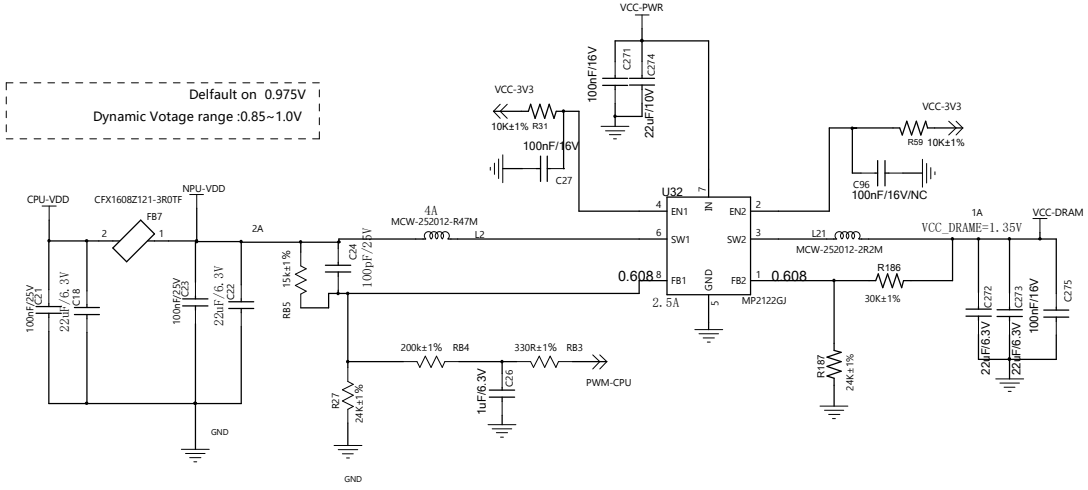
SIO 3V3	SIO0	PWR-ENOA		PD 1V8	PD0	MCSI0-D3P/MSI1_EN		PF 3V3	PF13	PWM-SYS	
					PD1	MCSI0-D3N/MSI1_PWDN			PF14	UART0-TX	
	SIO2	PWR-KEY			PD2	MCSI0-D1P/TP9930-D0			PF15	UART0-RX	
	SIO3	PWR-WAKE0/UART3TX			PD3	MCSI0-D1N/TP9930-D1		PC 3V3	PC2	SENSOR1	
	SIO4	GS-WAKE/UART3RX			PD4	MCSI0-CLKP/TP9930-D2			PC3	SENSOR2	
	SIO5	SIO5/ACC			PD5	MCSI0-CLKN/TP9930-D3			PC4	SENSOR3	
	SIO6	SIO6/POWER_EN			PD6	MCSI0-D0P/TP9930-D4			PC5	SENSOR4	
					PD7	MCSI0-D0N/TP9930-D5	MIPI CAMERA1		PC6	SENSOR5	
PA 3V3	PA0	SD0-D1	SD CARD		PD8	MCSI0-D2P/TP9930-D6			PC7	4G_EN	
	PA1	SD0-D0			PD9	MCSI0-D2N/TP9930-D7			PC10	GPS_EN	
	PA2	SD0-CLK			PD10	TP9930-PCLK			PC11	5VOUT_EN	
	PA3	SD0-CMD			PD11	MCSI0-REST/TP9930-RST			PC12	MDSI-D3P	
	PA4	SD0-D3			PD12	AC-SHUTDOWN			PC13	MDSI-D3N	
	PA5	SD0-D2			PD13	MCSI0-MCLK/TP9930-MCLK			PC24	0104-SCL	
PB 3V3	PB0	SD2-D1/SPI-CSN	SPI-NAND eMMC		PD14	I2C4-SCK			PC25	0104-SDA	
	PB1	SD2-D0/SPI-CLK			PD15	I2C4-SDA			PC26	SD0_CDIN	
	PB2	SD2-CLK/SPI-D0		GPADC 1V8	ADC0	BAT ADC	ADC		PC27	SD0_CDOUT	
	PB3	SD2-CMD/SPI-D1			ADC1	KEY ADC		PIO 3V3	POL	WEG	
	PB4	SD2-D3/SPI-D2			ADC2				32KOUT	WIFI-PWR-EN	
	PB5	SD2-D2/SPI-D3			ADC3	SENSOR_OUT			BOOT-SEL0	SYS_LED	
PE 3V3	PE0	MCSI1-D1P	MIPI CAMERA2	PF 3V3	PF0	IR-RX			BOOT-SEL1	MSI1-RST	
	PE1	MCSI1-D1N			PF1	PWM-CPU					
	PE2	MCSI1-CLKP			PF2	WIFI-D1					
	PE3	MCSI1-CLKN			PF3	WIFI-D0					
	PE4	MCSI1-D0P			PF4	WIFI-CLK					
	PE5	MCSI1-D0N			PF5	WIFI-CMF					
	PE6	MCSI1-MCLK			PF6	WIFI-D3					
	PE7	I2C1-SCK			PF7	WIFI-D2					
	PE8	I2C1-SDA			PF8	UART1-TX					
	PE9	GPS-RX			PF9	UART1-RX					
	PE10	SD0_CD			PF10	CAM-PWR-EN/TP9930-IRQ					
					PF11	TP-RESET					
					PF12	VO-PWM					

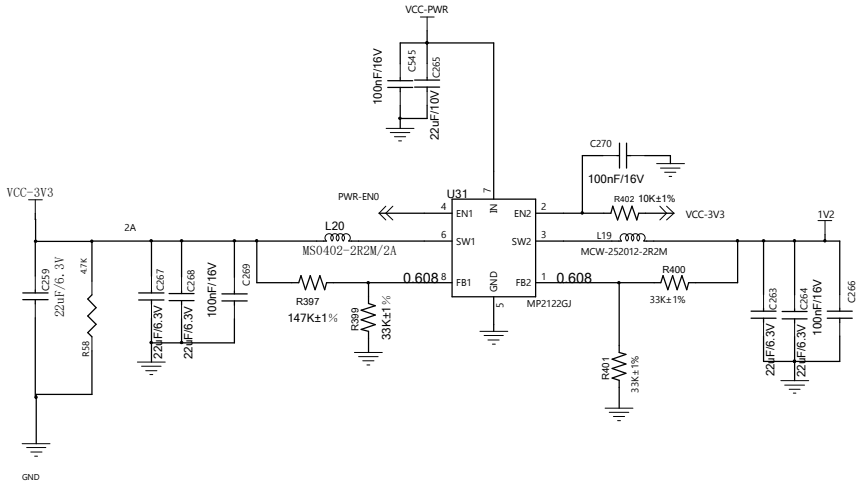

3A
PWR_IN+
PWR_IN-
POWERIN
POWER_IN
FB6
FB5
D45 B360/NC
P6001RSW36R
10nF/100V
SMDJ36CA
100nF/50V C250
SCT2630STE_ESO8P
U15
BOOT
VIN
EN
RT/CLK
SW
GND
COMP
FB
PGND
MCW-0650-100-N2
35MR
L14
MCW-0620-6R8-N2
680uF
8x11.5
10.5V
11.5V
CFB2012Z121-5R0TF
FB_2650
0.8V
PWR_SHDN#
40-52V
ADD
UT4421G-S08-R
D10
DD2570Z/15V/NC
R310 100k±5%
删掉
C758 68pF/100V
C759 68pF/100V
CAM_VCC
MS0402-2R2M/2A
L16
F4
1812L200/12V
Q10
AO3407A
Q34
S9014LT1
CAM-PWR-EN
10K±1% R363
C106 1uF/10V
PWR EN
FB=1.07V
102k_500k 84.5k_600k
ACC_IN
R272 100K±5%
R289 100K±5%
Q18
S9014LT1
R177 22R±5%
R271 22R±5%
R312 1M±5%
R291 470K±5%
R295 270K±1%
C242 100nF/25V
Q9
Q42
SIO6
R408 10K±5%
47K±5% R178
40V/1.278V 8V/0.2556V
0-1.35V AD0
90.9K±1% R587
R589 3K±5%
RV9 0402ESDA-09
PWR_CHK

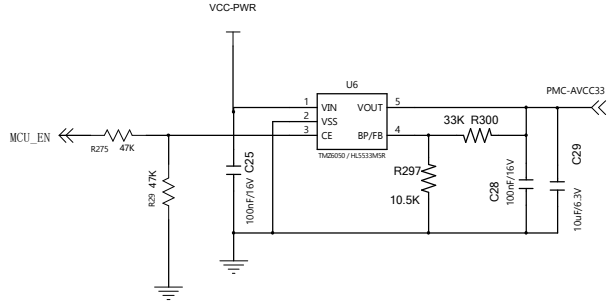


SYSTEM POWER









Notice: if eMMC is used,Mount A,NC B;
if SPI NAND is used ,Mount B ,NC A

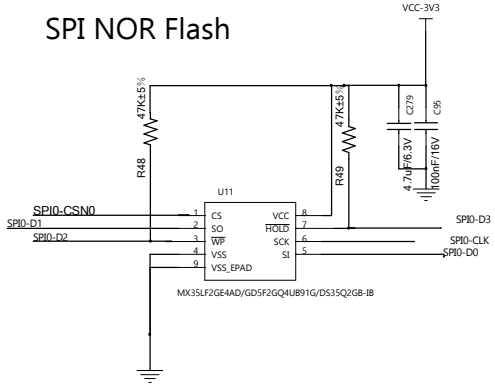
eMMC

A

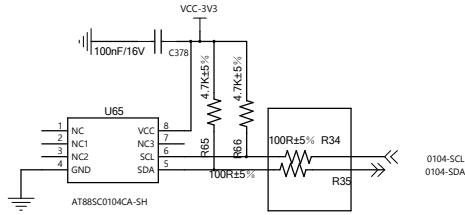
SPI-NAND FLASH

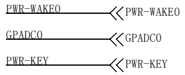
VCC-PB and the power supply voltage of SPI Flash should be the same, using 1V8 or 3V3 refer to the flash spec.

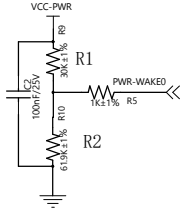
SPI NOR Flash



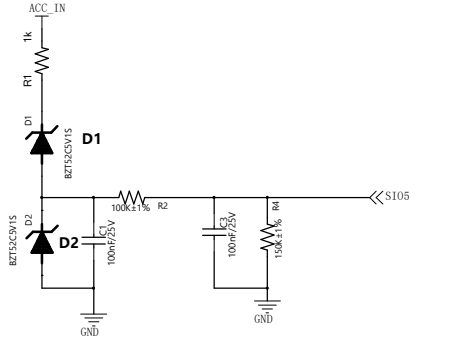
B



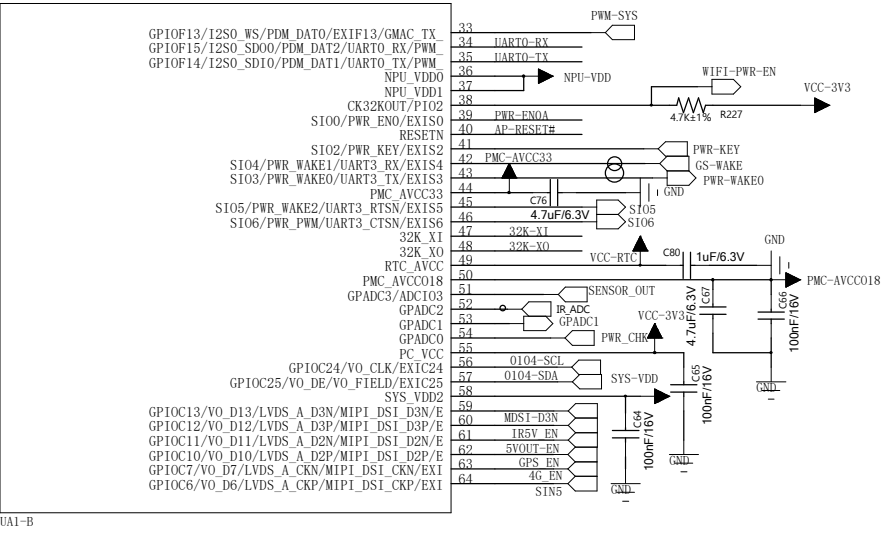


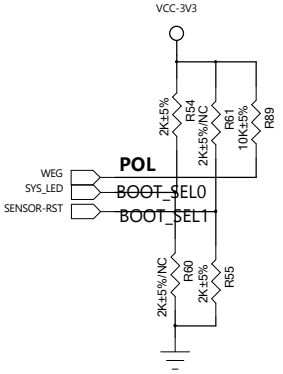


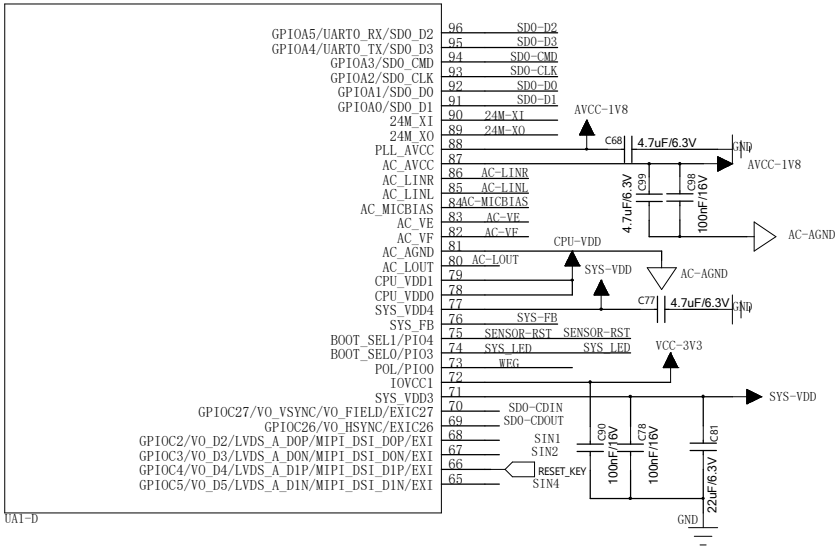
Notice:The value of R1 and R2 is fixed

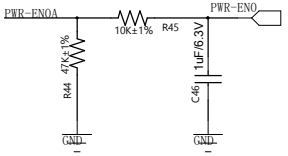


ACC	D1	D2
5V	0R	NC
12V/24V	5.1V Stabilivolt	5.1V Stabilivolt

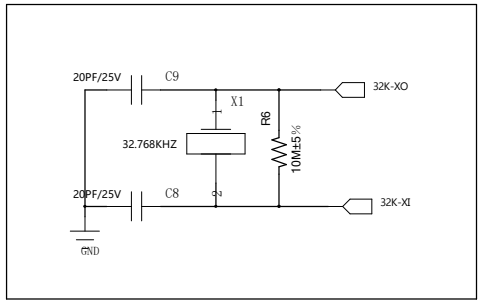


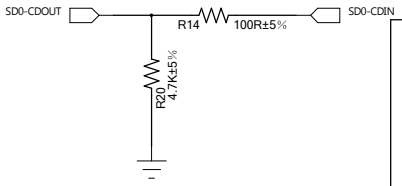


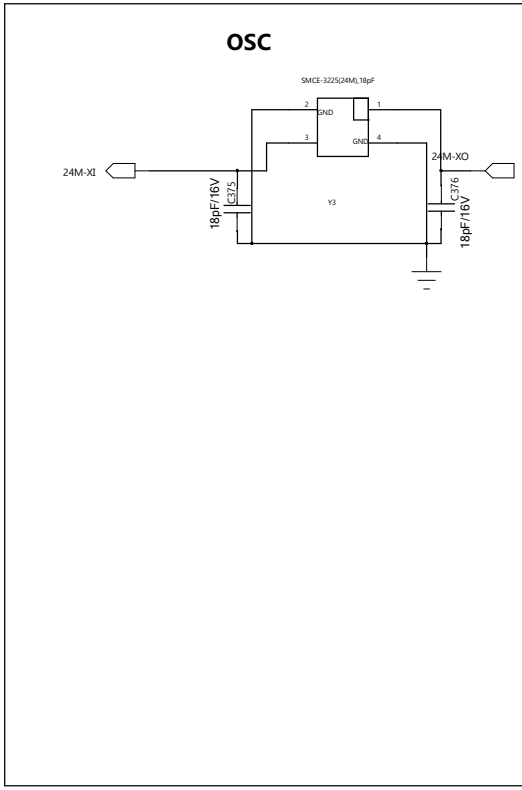


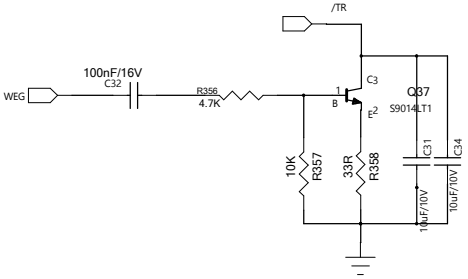


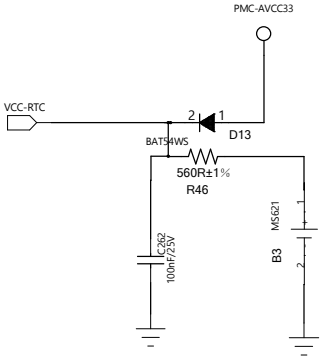
RC circuit is used to filter the pulse of IO when powered up.

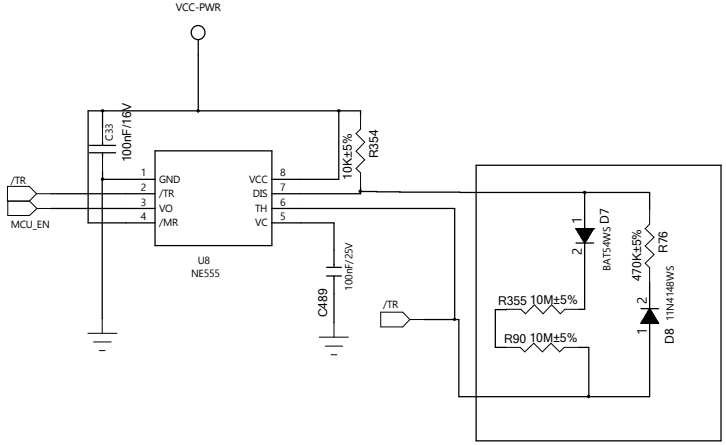


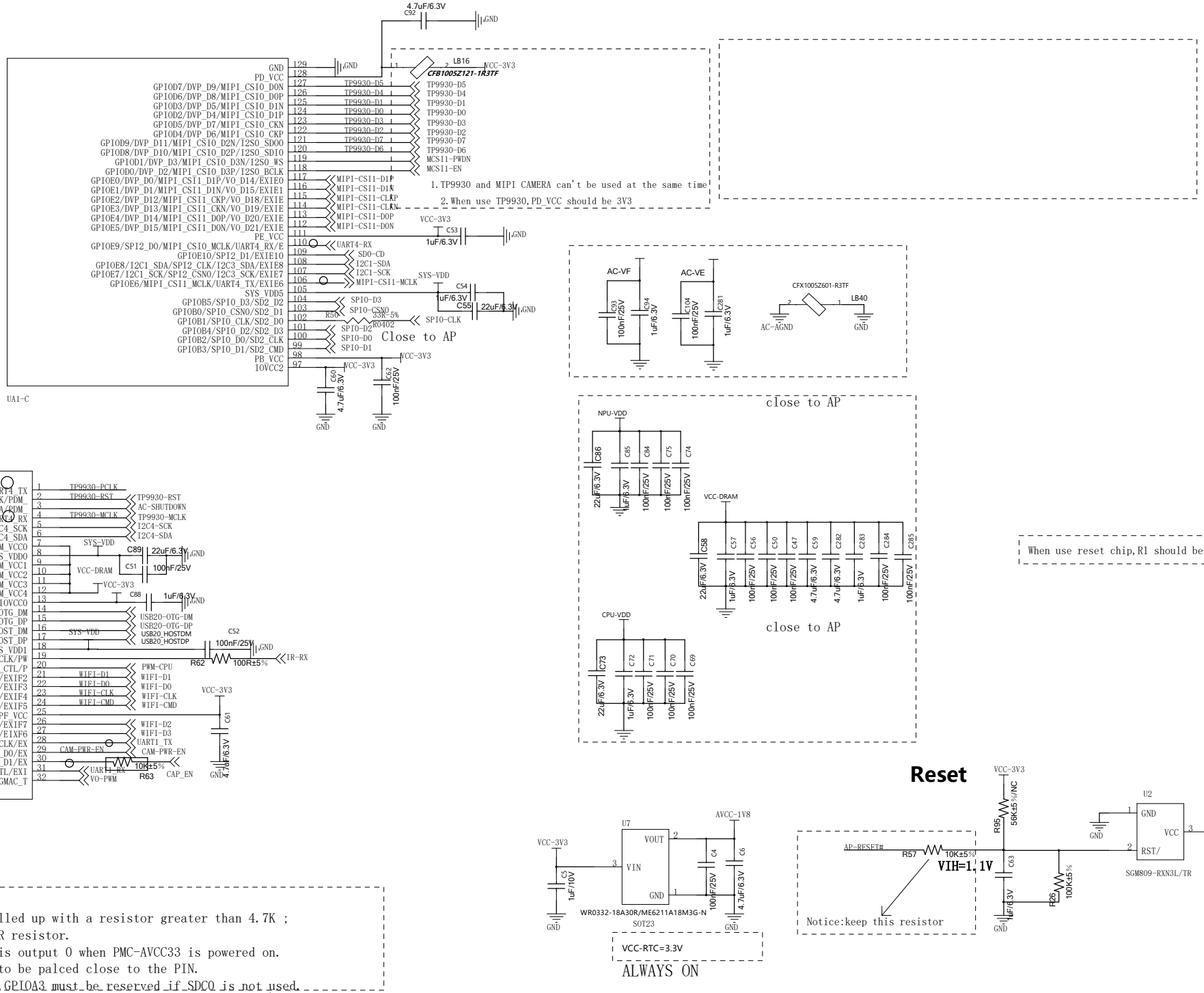


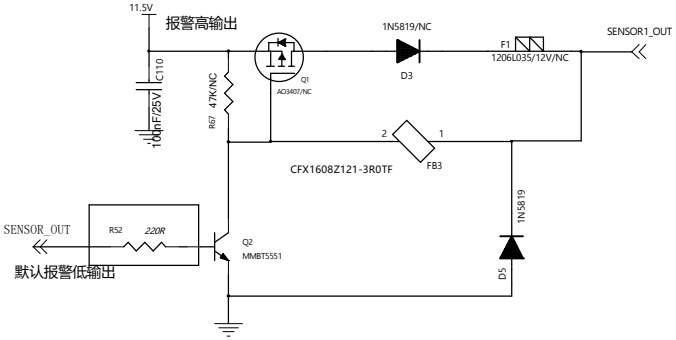


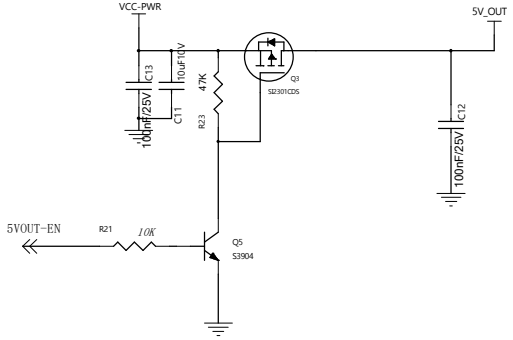






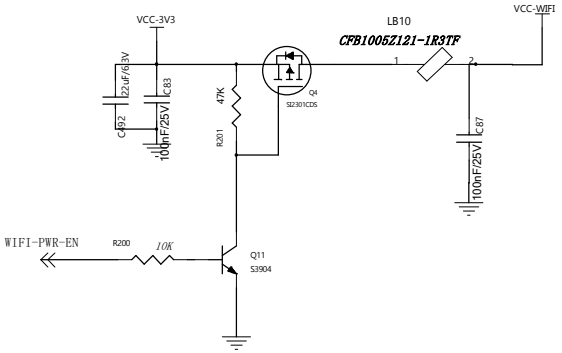

4.7uF/6.3V
C92
GND
LB16
CFB1005Z121-1R3TF
VCC-3V3
UA1-C
GPIOD7/DVP_D9/MIPI_CSI0_DON
GPIOD6/DVP_D8/MIPI_CSI0_DOP
GPIOD3/DVP_D5/MIPI_CSI0_D1N
GPIOD2/DVP_D4/MIPI_CSI0_D1P
GPIOD5/DVP_D7/MIPI_CSI0_CKN
GPIOD4/DVP_D6/MIPI_CSI0_CKP
GPIOD9/DVP_D11/MIPI_CSI0_D2N/I2S0_SDO0
GPIOD8/DVP_D10/MIPI_CSI0_D2P/I2S0_SDI0
GPIOD1/DVP_D3/MIPI_CSI0_D3N/I2S0_WS
GPIOD0/DVP_D2/MIPI_CSI0_D3P/I2S0_BCLK
GPIOE0/DVP_D0/MIPI_CSI1_D1P/VO_D14/EXIE0
GPIOE1/DVP_D1/MIPI_CSI1_D1N/VO_D15/EXIE1
GPIOE2/DVP_D12/MIPI_CSI1_CKP/VO_D18/EXIE
GPIOE3/DVP_D13/MIPI_CSI1_CKN/VO_D19/EXIE
GPIOE4/DVP_D14/MIPI_CSI1_D0P/VO_D20/EXIE
GPIOE5/DVP_D15/MIPI_CSI1_D0N/VO_D21/EXIE
GPIOE9/SPI2_D0/MIPI_CSI0_MCLK/UART4_RX/E
GPIOE10/SPI2_D1/EXIE10
GPIOE8/I2C1_SDA/SPI2_CLK/I2C3_SDA/EXIE8
GPIOE7/I2C1_SCK/SPI2_CSN0/I2C3_SCK/EXIE7
GPIOE6/MIPI_CSI1_MCLK/UART4_TX/EXIE6
GPIOB5/SPIO_D3/SD2_D2
GPIOB0/SPIO_CSN0/SD2_D1
GPIOB1/SPIO_CLK/SD2_D0
GPIOB4/SPIO_D2/SD2_D3
GPIOB2/SPIO_D0/SD2_CLK
GPIOB3/SPIO_D1/SD2_CMD
PB_VCC
IOVCC2
PE_VCC
TP9930-D5
TP9930-D4
TP9930-D1
TP9930-D0
TP9930-D3
TP9930-D2
TP9930-D7
TP9930-D6
MCS11-PWDN
MCS11-EN
MIPI-CSI1-D1P
MIPI-CSI1-D1N
MIPI-CSI1-CLKP
MIPI-CSI1-CLKN
MIPI-CSI1-D0P
MIPI-CSI1-D0N
UART4-RX
SDO-CD
I2C1-SDA
I2C1-SCK
MIPI-CSI1-MCLK
SPIO-D3
SPIO-CSN0
SPIO-CLK
SPIO-D2
SPIO-D0
SPIO-D1
R50
33R-5%
R0402
C53
1uF/6.3V
C54
C55
22uF/6.3V
C60
4.7uF/6.3V
C59
100nF/25V
SYS-VDD
Close to AP
1. TP9930 and MIPI CAMERA can't be used at the same time
2. When use TP9930, PD_VCC should be 3V3
AC-VF
AC-VE
C93
C94
C104
C281
100nF/25V
1uF/6.3V
CFX1005Z601-R3TF
LB40
AC-AGND
GND
close to AP
NPU-VDD
C86
C85
C84
C75
C74
22uF/6.3V
1uF/6.3V
100nF/25V
VCC-DRAM
C58
C57
C56
C50
C47
C59
C282
C283
C284
C285
4.7uF/6.3V
CPU-VDD
C73
C72
C71
C70
C69
close to AP
When use reset chip, R1 should be NC
UA1-A SA223
GPIOD10/DVP_PCLK/MIPI_CSI1_MCLK/UART4_TX
GPIOD11/DVP_HSYNC/SPI1_CSN/I2C1_SCK/PDM_
GPIOD12/DVP_VSYNC/SPI1_CLK/I2C1_SDA/PDM_
GPIOD13/DVP_MCLK/MIPI_CSI0_MCLK/UART4_RX
GPIOD14/I2C0_SCK/SPI1_D0/I2C4_SCK
GPIOD15/I2C0_SDA/SPI1_D1/I2C4_SDA
SDRAM_VCC0
SYS_VDD0
SDRAM_VCC1
SDRAM_VCC2
SDRAM_VCC3
SDRAM_VCC4
IOVCC0
USB20_OTG_DM
USB20_OTG_DP
USB20_HOST_DM
USB20_HOST_DP
SYS_VDD1
GPIOF0/I2S0_SDI1/EPHY_CLK/GMAC_RX_CLK/PW
GPIOF1/I2S0_SDO1/SPI0_CSN1/GMAC_RX_CTL/P
GPIOF2/SD1_D1/GMAC_RX_D0/EXIF2
GPIOF3/SD1_D0/GMAC_RX_D1/EXIF3
GPIOF4/SD1_CLK/GMAC_RX_D2/PWM_IO5/EXIF4
GPIOF5/SD1_CMD/GMAC_RX_D3/PWM_IO4/EXIF5
PF_VCC
GPIOF7/SD1_D2/UART0_RX/GMAC_MDIO/EXIF7
GPIOF6/SD1_D3/UART0_TX/GMAC_MDC/E1XF6
GPIOF8/UART1_TX/SPI2_CSN0/GMAC_TX_CLK/EX
GPIOF10/UART1_RTSN/SPI2_D0/GMAC_TX_D0/EX
GPIOF11/UART1_CTSN/SPI2_D1/GMAC_TX_D1/EX
GPIOF9/UART1_RX/SPI2_CLK/GMAC_TX_CTL/EXI
GPIOF12/I2S0_BCLK/PDM_CLK//EXIF12/GMAC_T
TP9930-PCLK
TP9930-RST
TP9930-MCLK
AC-SHUTDOWN
I2C4-SCK
I2C4-SDA
SYS-VDD
C89
22uF/6.3V
C51
100nF/25V
VCC-DRAM
C88
1uF/6.3V
USB20-OTG-DM
USB20-OTG-DP
USB20_HOSTDM
USB20_HOSTDP
C52
100nF/25V
R62
100R±5%
IR-RX
PWM-CPU
WIFI-D1
WIFI-D0
WIFI-CLK
WIFI-CMD
WIFI-D2
WIFI-D3
UART1_TX
CAM-PWR-EN
UART1_RX
VO-PWM
R63
10K±5%
CAP_EN
C61
4.7uF/6.3V
Notice:
1. PIO2 is open-drain, if it's used, pulled up with a resistor greater than 4.7K ; if it's not used, pulled down with a 0R resistor.
2. The default state of SIO0/PWER_EN0 is output 0 when PMC-AVCC33 is powered on.
3. All capacitors around the AP need to be palced close to the PIN.
4. Test point for GPIOA0, GPIOA1, GPIOA2, GPIOA3 must be reserved if SDC0 is not used.
U7
AVCC-1V8
VOUT
VIN
GND
C5
1uF/10V
C4
C6
100nF/25V
4.7uF/6.3V
WR0332-18A30R/ME6211A18M3G-N
SOT23
VCC-RTC=3.3V
ALWAYS ON
Reset
R95
56K±5%/NC
U2
SGM809-RXN3L/TR
AP-RESET#
R57
10K±5%
VIH=1.1V
C63
R26
100K±5%
Notice:keep this resistor
R25
0R±1%
C111
1uF/6.3V

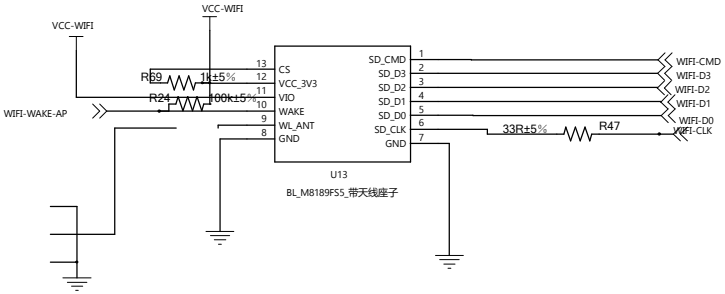




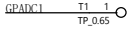
Notice:
1. IOVDD=1.8V as default;
2. Suggest to place a 1nF capacitor close to the sensor reset pin on the sensor board;
3. GND Solder mask area is suggested to reserved for ESD rectification.

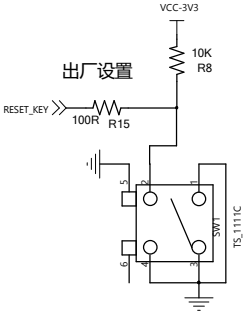
WIFI



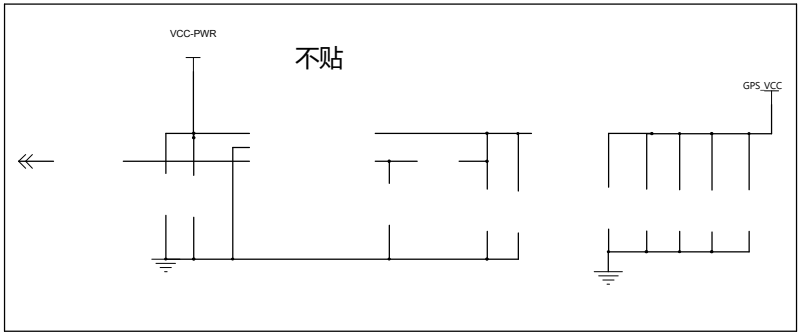


KEY



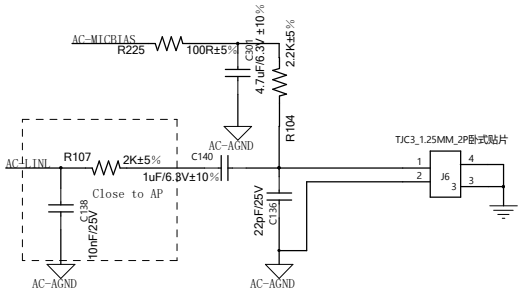


GPS_EN



AUDIO

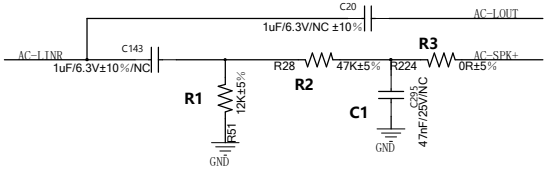
AMIC



NOTICE: A and B can not be used at the same time.

A

Return pass for echo cancellation

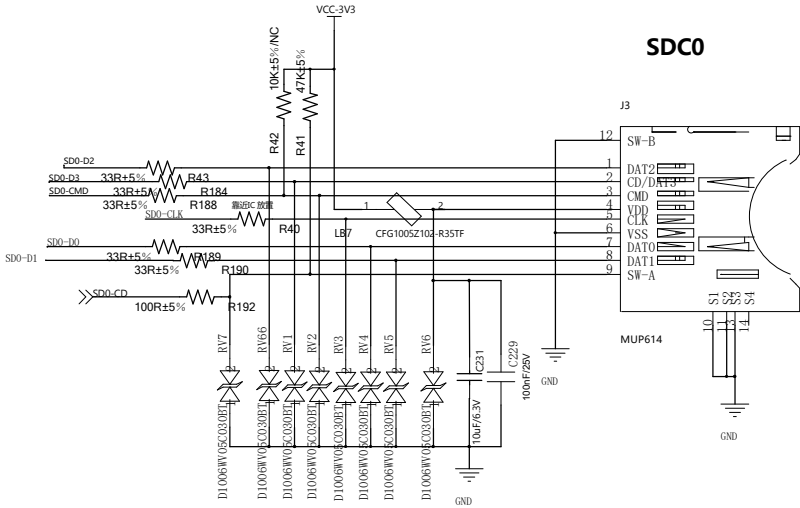


AP	R1	R2	R3	C1
Analog	12K	47K	0R	NC
Digital	12K	47K	100R	47nF

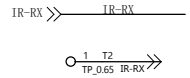
B

SD CARD

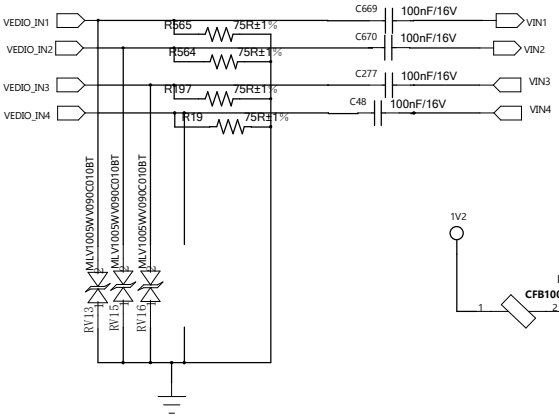
SDC0

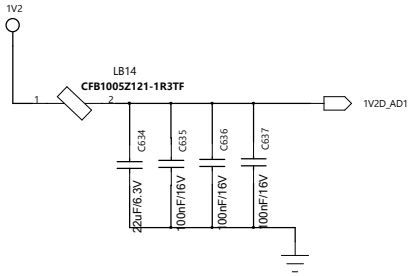


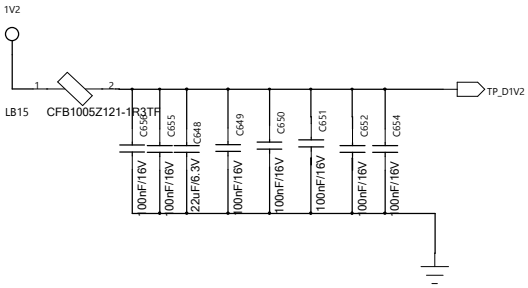
IR RX

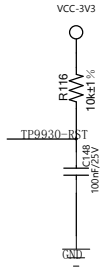


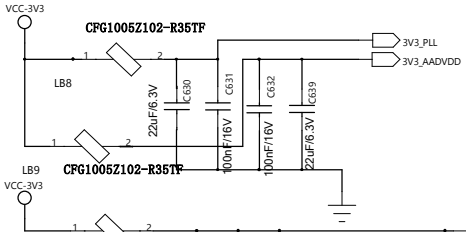
AD1

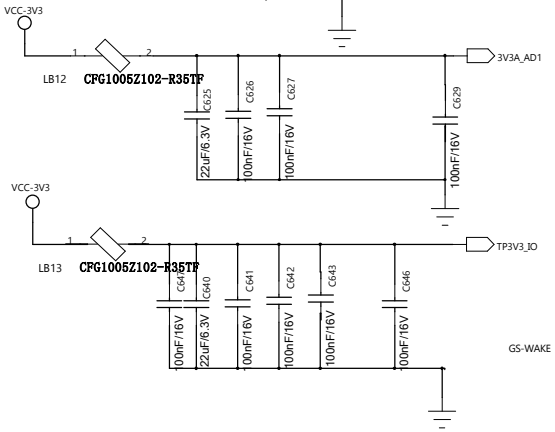




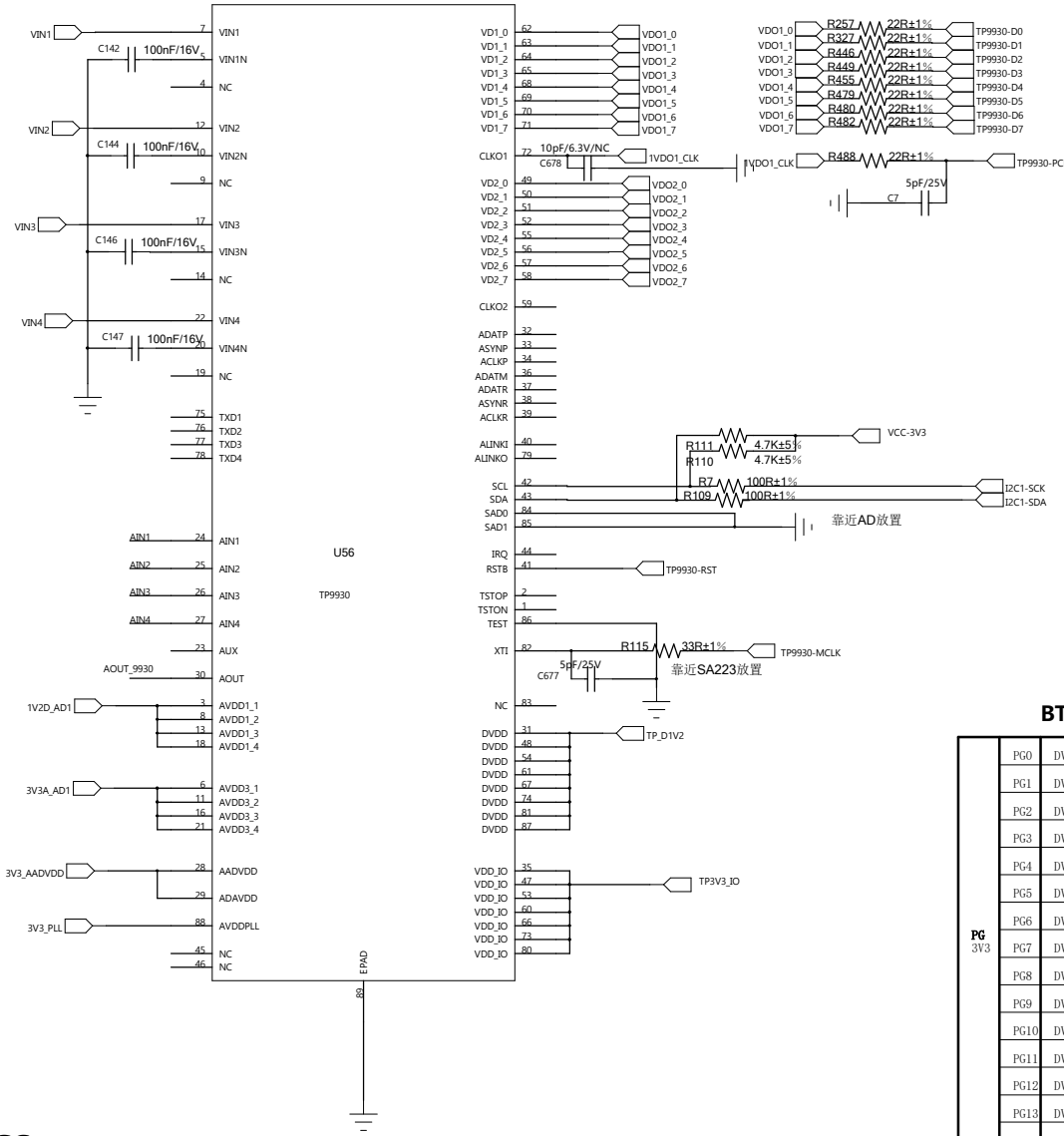




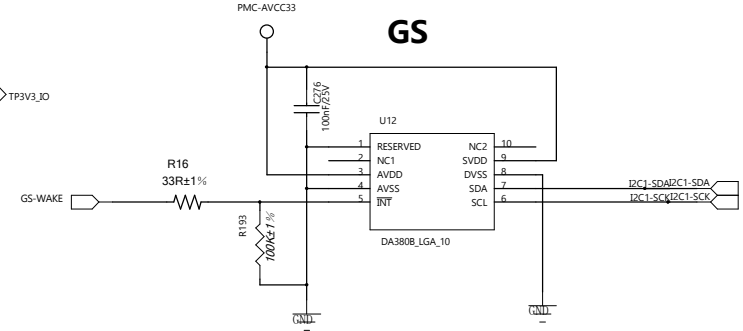




TP9930



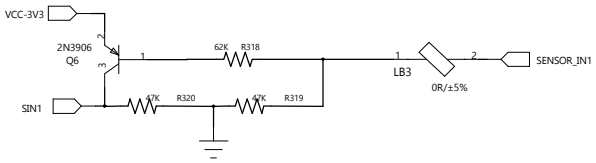
GS

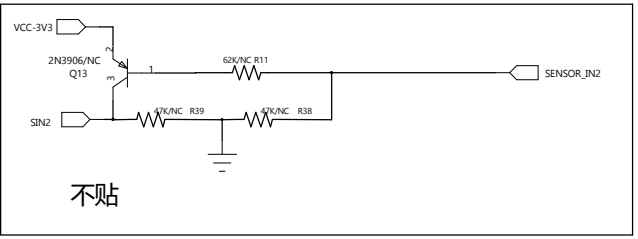


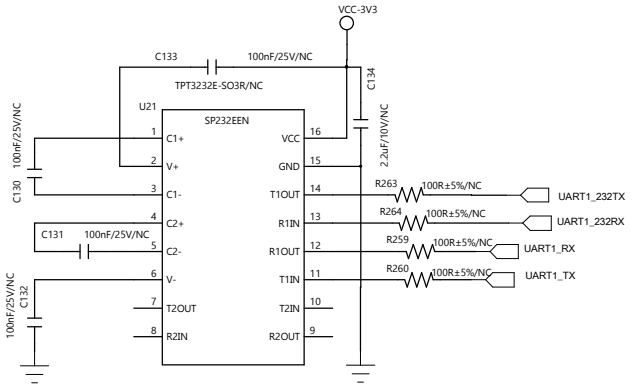
BT1120 **BT656**

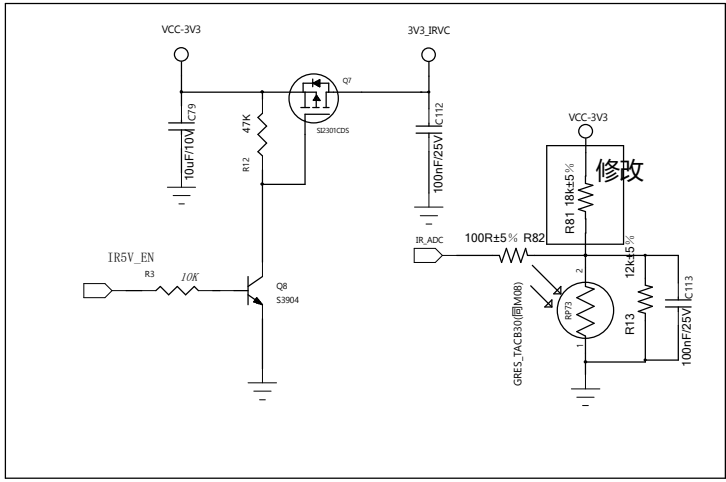
PG 3V3	PG0	DVP-D0	0	/	
	PG1	DVP-D1	1	/	
	PG2	DVP-D2	2	/	
	PG3	DVP-D3	3	/	
	PG4	DVP-D4	4	DVP-D4	0
	PG5	DVP-D5	5	DVP-D5	1
	PG6	DVP-D6	6	DVP-D6	2
	PG7	DVP-D7	7	DVP-D7	3
	PG8	DVP-D8	8	DVP-D8	4
	PG9	DVP-D9	9	DVP-D9	5
	PG10	DVP-D10	10	DVP-D10	6
	PG11	DVP-D11	11	DVP-D11	7
	PG12	DVP-D12	12	/	
	PG13	DVP-D13	13	/	
	PG14	DVP-D14	14	/	
	PG15	DVP-D15	15	/	

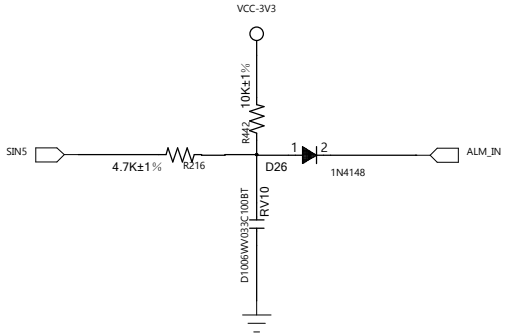
SAD0	SAD1	I2c address
0	0	0x44
0	1	0x45
1	0	0x46
1	1	0x47

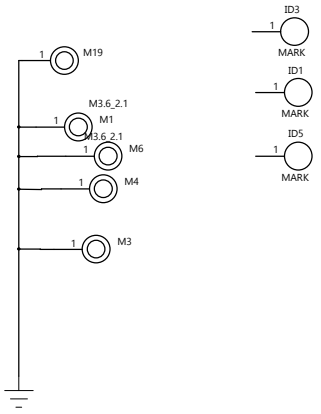

VCC-3V3
2N3906
Q6
62K
R318
LB3
0R/±5%
SENSOR_IN1
SIN1
47K
R320
47K
R319

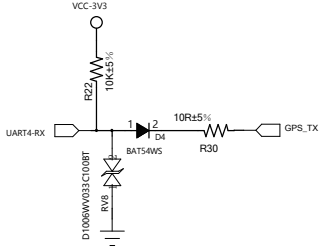

VCC-3V3
2N3906/NC
Q13
62K/NC
R11
SENSOR_IN2
SIN2
47K/NC
R39
47K/NC
R38
不贴

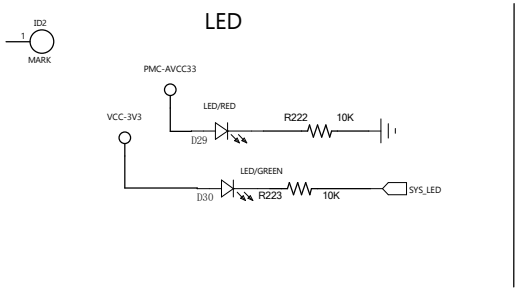

VCC-3V3
C133
100nF/25V/NC
TPT3232E-SO3R/NC
C134
2.2uF/10V/NC
U21
SP232EEN
C130
100nF/25V/NC
C131
100nF/25V/NC
C132
100nF/25V/NC
C1+
V+
C1-
C2+
C2-
V-
T2OUT
R2IN
VCC
GND
T1OUT
R1IN
R1OUT
T1IN
T2IN
R2OUT
R263
100R±5%/NC
UART1_232TX
R264
100R±5%/NC
UART1_232RX
R259
100R±5%/NC
UART1_RX
R260
100R±5%/NC
UART1_TX

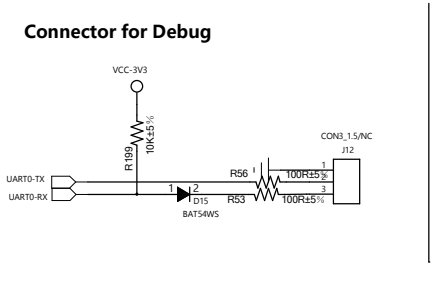

VCC-3V3
3V3_IRVC
Q7
SI2301CDS
C79
10uF/10V
47K
R12
C112
100nF/25V
IR5V_EN
R3
10K
Q8
S3904
VCC-3V3
修改
R81
18k±5%
IR_ADC
100R±5%
R82
12k±5%
RP3
GRES_TAC830(田M08)
R13
C113
100nF/25V

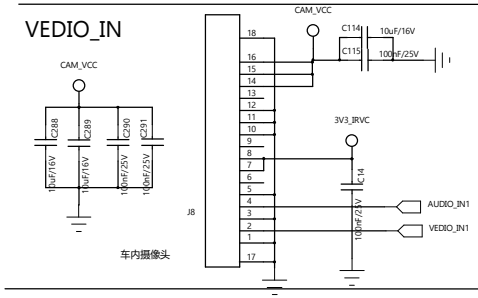

VCC-3V3
SIN5
4.7K±1%
R216
R442
10K±1%
D26
1N4148
ALM_IN
RV10
D1006WV033C100BT

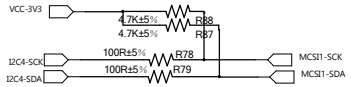

M19
M3.6_2.1
M1
M3.6_2.1
M6
M4
M3
ID3
MARK
ID1
MARK
ID5
MARK



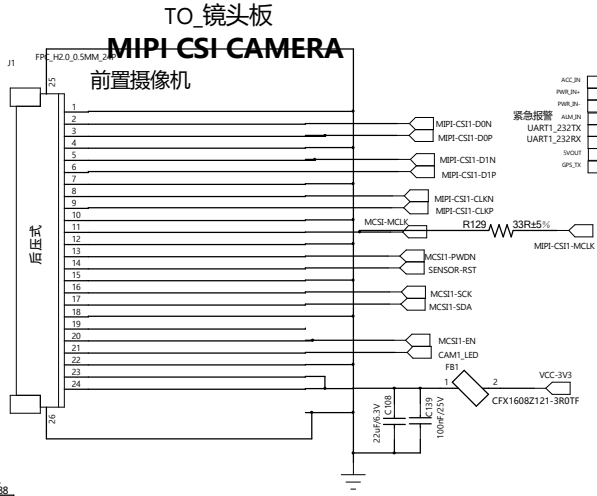


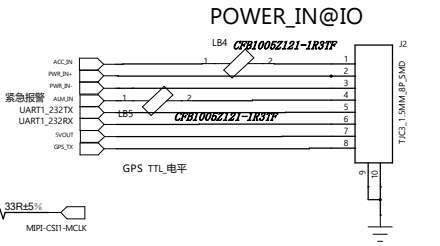


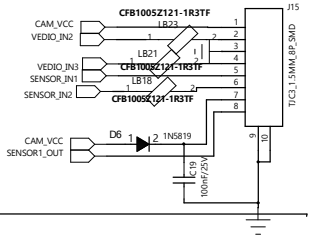




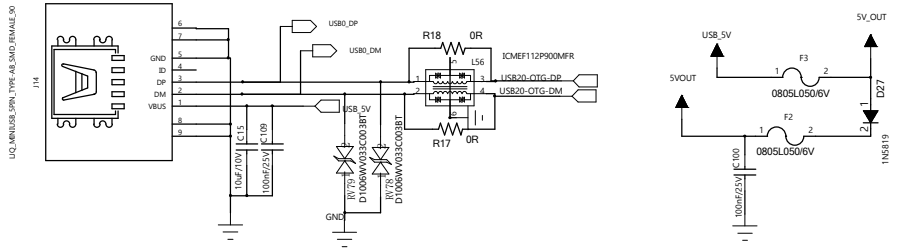
GC2053
TO_镜头板



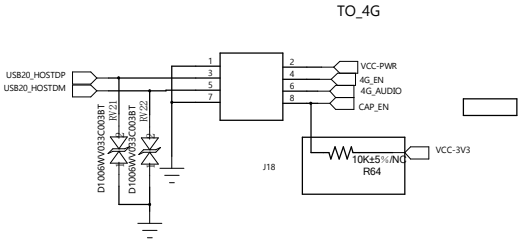




USB



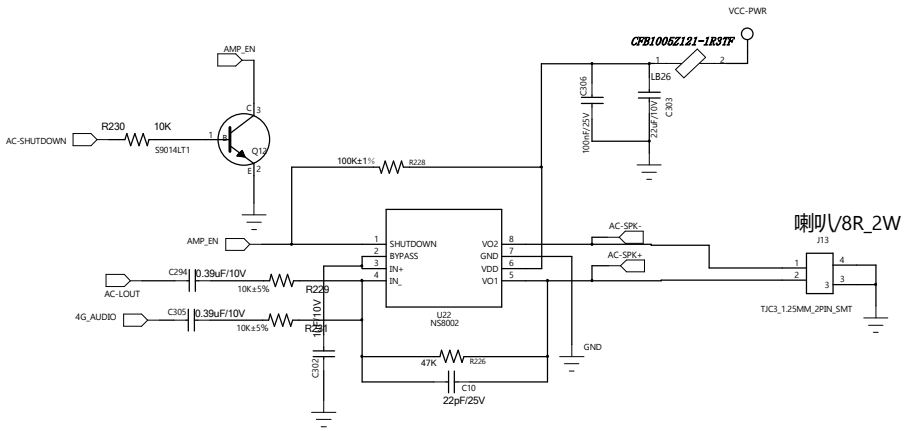
4G



SPEAKER

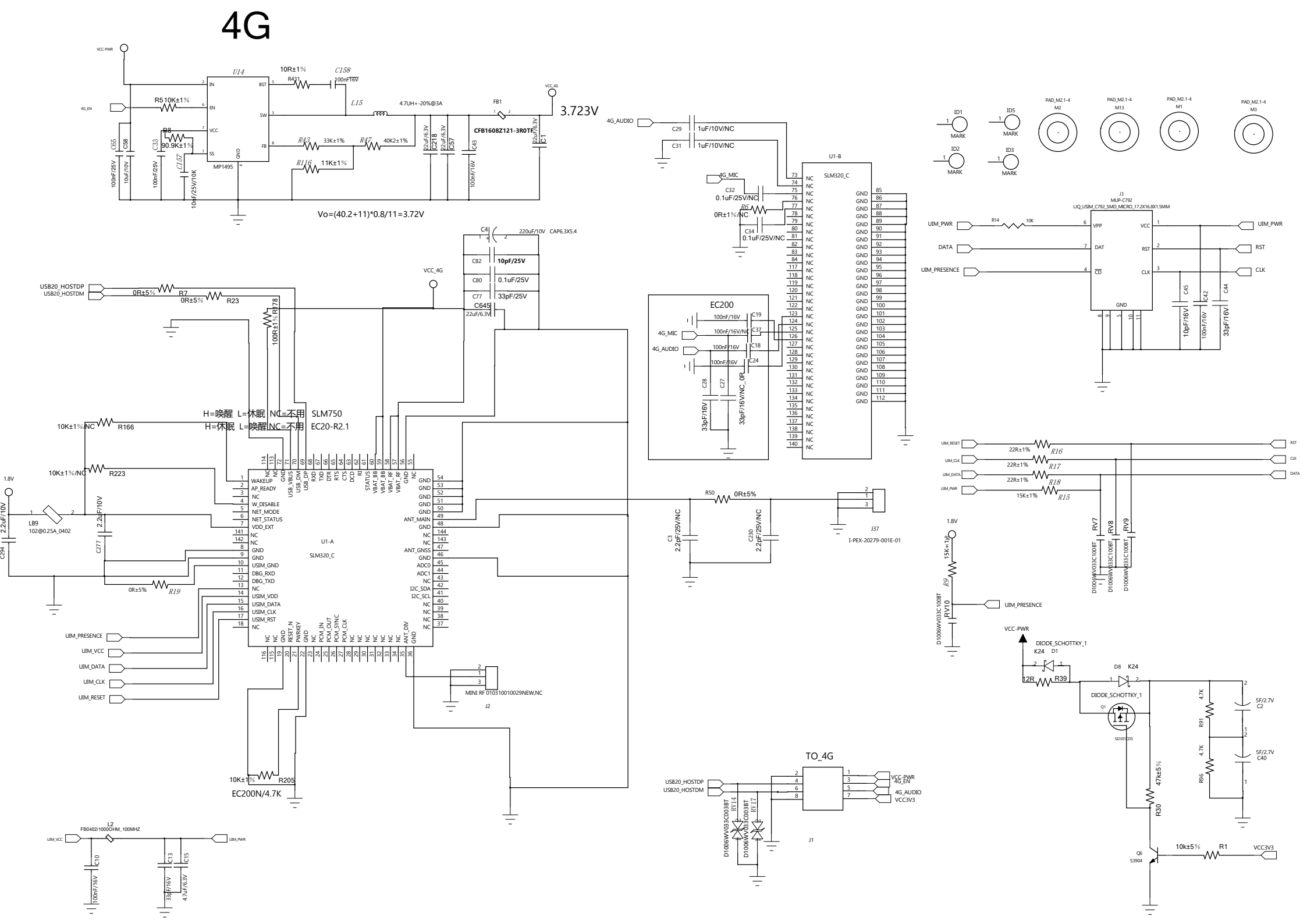
Notice:

LPA4871:8Ω 1W Load typically



Notice:
1. 0dB Peak-to-Peak output amplitude of lineout is 1.4V.
2. Gain of PA powered with 5V is setted to 5 by R1 and R2,then the output waveform will not distorted when playing audio files with a volume lower than -3dB.

4G


VCC-PWR
U14
MP1495
10R±1%
R431
C158
100nF16V
L15
4.7UH+-20%@3A
FB1
CFB1608Z121-3R0T
VCC_4G
3.723V
R5 10K±1%
R8 90.9K±1%
R43 33K±1%
R47 40K2±1%
R116 11K±1%
Vo=(40.2+11)*0.8/11=3.72V
4G_AUDIO
C29 1uF/10V/NC
C31 1uF/10V/NC
U1-B
SLM320_C
4G_MIC
C32 0.1uF/25V/NC
R6 0R±1%/NC
C34 0.1uF/25V/NC
C4 220uF/10V CAP6.3X5.4
C82 10pF/25V
C80 0.1uF/25V
C77 33pF/25V
C645 22uF/6.3V
USB20_HOSTDP
USB20_HOSTDM
R7 0R±5%
R23 0R±5%
R178 100R±1%
EC200
C19 100nF/16V
C37 100nF/16V/NC
C18 100nF/16V
C24 100nF/16V
C28 33pF/16V
C27 33pF/16V/NC_0R
H=唤醒 L=休眠 NC=不用 SLM750
H=休眠 L=唤醒 NC=不用 EC20-R2.1
R166 10K±1%/NC
R223 10K±1%/NC
U1-A
SLM320_C
R50 0R±5%
C3 2.2pF/25V/NC
C230 2.2pF/25V/NC
J37
I-PEX-20279-001E-01
LB9 102@0.25A_0402
C277 2.2uF/10V
C284 2.2uF/10V
R19 0R±5%
UIM_PRESENCE
UIM_VCC
UIM_DATA
UIM_CLK
UIM_RESET
MINI RF 010310010029NEW,NC
J2
R205 10K±1%
EC200N/4.7K
TO_4G
USB20_HOSTDP
USB20_HOSTDM
VCC-PWR
4G_EN
4G_AUDIO
VCC3V3
D1006WV033C003BT
RV14
RV17
J1
L2
FB0402/1000OHM_100MHZ
UIM_VCC
UIM_PWR
C10 100nF/16V
C13 33pF/16V
C15 4.7uF/6.3V
ID1 MARK
ID5 MARK
ID2 MARK
ID3 MARK
PAD_M2.1-4 M2
PAD_M2.1-4 M13
PAD_M2.1-4 M1
PAD_M2.1-4 M3
J3
MUP-C792
LIQ_USIM_C792_SMD_MICRO_17.2X16.8X1.5MM
UIM_PWR
DATA
UIM_PRESENCE
R14 10K
VPP
DAT
CD
VCC
RST
CLK
GND
C45 10pF/16V
C42 100nF/16V
C44 33pF/16V
UIM_RESET
UIM_CLK
UIM_DATA
UIM_PWR
R16 22R±1%
R17 22R±1%
R18 22R±1%
R15 15K±1%
RST
CLK
DATA
RV7
RV8
RV9
D1006WV033C100BT
R9 15K±1%
RV10 D1006WV033C100BT
UIM_PRESENCE
VCC-PWR
DIODE_SCHOTTKY_1
K24 D1
D8 K24
12R R39
Q1
SI2301CDS
R91 4.7K
R86 4.7K
5F/2.7V C2
5F/2.7V C40
R30 47K±5%
Q6 S3904
10k±5% R1
VCC3V3