RK1808 USB YAPAY ZEKA İŞLEME

Reference Schematic For RK1808

RK1808_Ref_Bref_V1.0

PMIC: RK809-2 (5BUCK + 9LDO + Codec)
RAM: DDR3 /LPDDR3/DDR4
ROM: eMMC + TF card
Interface: MIPI CSI/MIPI DSI/UART/I2S/RMII/LCDC/PCIE/USB3

Rockchip Confidential

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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}

SMTSO001
SMTSO3050CTJ

SMTSO002
SMTSO3050CTJ

SMTSO003
SMTSO3050CTJ

SMTSO004
SMTSO3050CTJ

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics
Project:	RK_EVB_1808_lp3_sch_V12
File:	01.Index
Date: Friday, February 15, 2019	Rev: V1.0
Designed by: Rzf	Sheet: 1 of 99

Version	Date	Author	Change List	Approved
V1.0	20180712		First edition for RK1808	RZF
V1.1	20181107			RZF
V1.2	20190215		1.PLL_AVDD_0V8(pin ac15)电源供电改成VDDA_0V8;PLL_AVDD_1V8(pin aa15)供电改成VCCA_1V8. 2.ADC_AVDD_1V8(pin N31)电源供电改成VCCA_1V8. 3.C6105电容22P改成18P. 4.C2001电容改成100nF,C2004电容改成100P.	RZF

I2C MAP
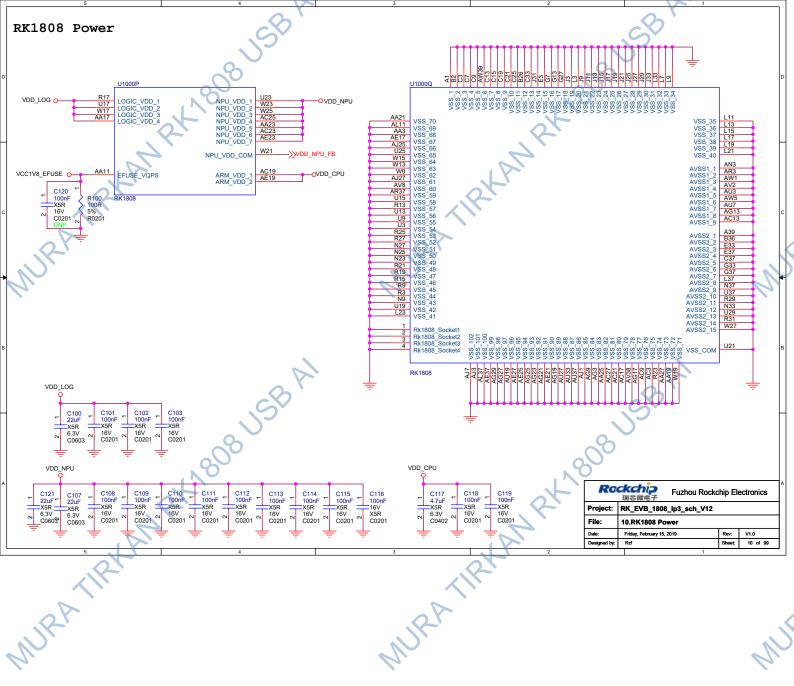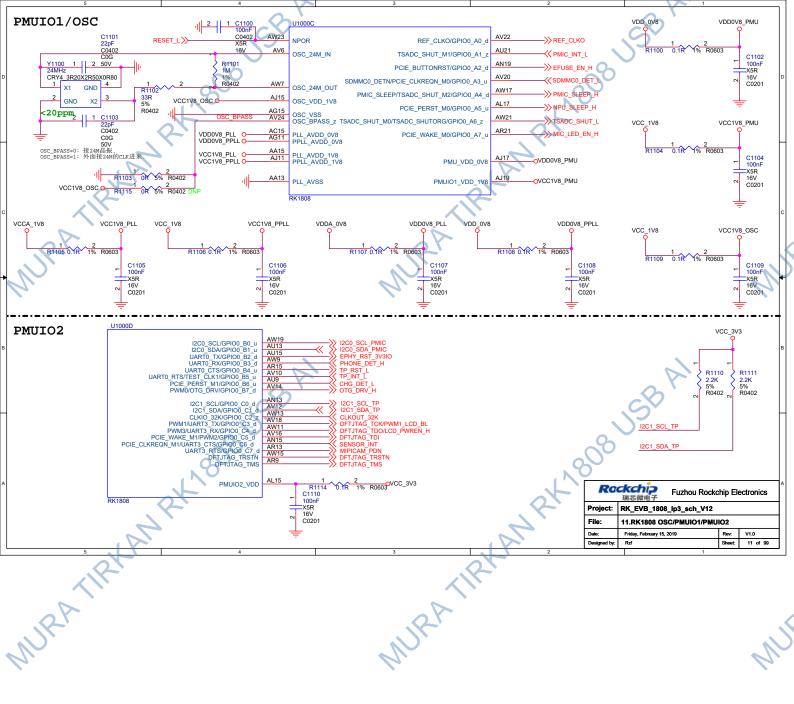
Port	Pin name	Domain	Bus name	Pull-up voltage	Slave Device	Slave Addr (MS 7Bits)	Note	Slave Bus Capability
I2C0	I2C0_SCL/GPIO0_B0_u I2C0_SDA/GPIO0_B1_u	PMUIO2	I2C0_SCL_PMIC I2C0_SDA_PMIC	VCC_3V3	Rockchip RK809	0x20	PMIC	100kHz,400kHz
I2C1	I2C1_SCL/GPIO0_C0_u I2C1_SDA/GPIO0_C1_u	PMUIO2	I2C1_SCL I2C1_SDA	VCC_3V3	SY837		BUCK	100kHz,400kHz
					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			

POWER DIAGRAM

VCC5V0_SYS

LDO4 EN

SYR837 → VDD_NPU

RK809-2

VCC1	BUCK1
VCC2	BUCK2
VCC3	BUCK3
VCC4	BUCK4

VDD_LOG → LOGIC

VDD_CPU → cpu

VCC_DDR → DDRPHY-Ctrl/LPDDR3

VCC_3V3 → PMUIO2/SWOUT2

VCC_BUCK5 → VCC5

LDO1	VDDA_0V8 → PMU_0V8/PLL_0V8
LDO2	VCC_1V8 → OSC/PLL/PPLL PMUIO1/LPDDR3
LDO3	VDD_0V8 → PLL/PPLL/PMU

VCC_BUCK5 → VCC6

LDO4	VCCA_1V8 → ADC/USB/VCCIO0/VCCIO1/PCIE VCCIO2/VCCIO5/DPHY/WIFI MODULE
LDO5	VCC1V8_DVP → CIF CAMERA/MIPI CAMERA
LDO6	VDD1V5_DVP → CIF CAMERA/MIPI CAMERA

VCC7

LDO7	VCC2V8_DVP → CIF CAMERA/MIPI CAMERA
LDO8	VCCIO_SD → TF CARD/SD PHY
LDO9	VCC3V3_SD → TF CARD

1.5A SWOUT1 → VCC5V0_HOST → USB2.0/3.0

3A SWOUT2 → VCCIO_3V3 → sensor/touch/audio rgmii/spi flash/i2s emmc/lcdc

BUCK4 (VCC_3V3)

BUCK5 → VCC_BUCK5 → VCC5/VCC6

VCCRTC

VCC5V0_SYS

SY8113B 5V/3A

SGM2203-5.0

VCC_IN

Battery ← → BQ24133 ← Input 12V/2A

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(SYR837)	Slot:3A	1V	6A	ON	OFF	4A
VDD_LOG	BUCK1	Slot:2	0.95V	2.5A	ON	OFF	1.25A
VDD_CPU	BUCK2	Slot:2	0.95V	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		3.3V	3A	ON	OFF	
VCC5V0_HOST	SWOUT1		5V	1.5A	OFF	OFF	
RESET	RESETB	Slot:10	OD				

PMIC_PWRON
RESET
VCC_BUCK5
VDD_LOG
VDD_CPU
VDDA_0V8
VDD_0V8
VCCA_1V8
VCC_1V8
VCC_3V3
VCC_DDR
VCCIO_SD
VCC3V3_SD
VCC_NPU
VCC2V8_DVP
VCC1V8_DVP
VCC1V5_DVP

500ns 2ms 2ms 2ms 2ms 8ms

RK1808 Power

U1000P — RK1808

Pin	Signal		Signal	Pin
R17 / U17 / W17 / AA17	LOGIC_VDD_1 / LOGIC_VDD_2 / LOGIC_VDD_3 / LOGIC_VDD_4	VDD_LOG	NPU_VDD_1 / NPU_VDD_2 / NPU_VDD_3 / NPU_VDD_4 / NPU_VDD_5 / NPU_VDD_6 / NPU_VDD_7	U23 / W23 / W25 / AC25 / AA23 / AC23 / AE23 → VDD_NPU
			NPU_VDD_COM	W21 → VDD_NPU_FB
AA11	EFUSE_VQPS	VCC1V8_EFUSE	ARM_VDD_1 / ARM_VDD_2	AC19 / AE19 → VDD_CPU

C120 100nF X5R 16V C0201 DNP

R100 100R 5% R0201

VDD_LOG

- C100 22uF X5R 6.3V C0603
- C101 100nF X5R 16V C0201
- C102 100nF X5R 16V C0201
- C103 100nF X5R 16V C0201

VDD_NPU

- C121 22uF X5R 6.3V C0603
- C107 22uF X5R 6.3V C0603
- C108 100nF X5R 16V C0201
- C109 100nF X5R 16V C0201
- C110 100nF X5R 16V C0201
- C111 100nF X5R 16V C0201
- C112 100nF X5R 16V C0201
- C113 100nF X5R 16V C0201
- C114 100nF X5R 16V C0201
- C115 100nF X5R 16V C0201
- C116 100nF X5R 16V C0201

VDD_CPU

- C117 4.7uF X5R 6.3V C0402
- C118 100nF X5R 16V C0201
- C119 100nF X5R 16V C0201

U1000Q — RK1808

VSS_1 (A1) / VSS_2 (B2) / VSS_3 (C3) / VSS_4 (C7) / VSS_5 (C9) / VSS_6 (AW39) / VSS_7 (C13) / VSS_8 (C15) / VSS_9 (C19) / VSS_10 (C21) / VSS_11 (C25) / VSS_12 (B26) / VSS_13 (C33) / VSS_14 (J31) / VSS_15 (E3) / VSS_16 (G7) / VSS_17 (G13) / VSS_18 (G27) / VSS_19 (J3) / VSS_20 (J9) / VSS_21 (J11) / VSS_22 (J13) / VSS_23 (J15) / VSS_24 (J17) / VSS_25 (J19) / VSS_26 (J21) / VSS_27 (J25) / VSS_28 (J29) / VSS_29 (J33) / VSS_30 (L33) / VSS_31 (L7) / VSS_32 (L9)

Pin	Signal	Signal	Pin
AA21	VSS_70	VSS_35	L11
AL11	VSS_69	VSS_36	L13
AA3	VSS_68	VSS_37	L15
AE17	VSS_67	VSS_38	L17
AJ25	VSS_66	VSS_39	L19
U25	VSS_65	VSS_40	L21
W15	VSS_64	AVSS1_1	AN3
W13	VSS_63	AVSS1_2	AR3
W9	VSS_62	AVSS1_3	AW1
AJ27	VSS_61	AVSS1_4	AV2
AV8	VSS_60	AVSS1_5	AU3
AR37	VSS_59	AVSS1_6	AW5
U15	VSS_58	AVSS1_7	AU7
R13	VSS_57	AVSS1_8	AG13
U13	VSS_56	AVSS1_9	AC13
U9	VSS_55		
U3	VSS_54	AVSS2_1	A39
R25	VSS_53	AVSS2_2	B36
R27	VSS_52	AVSS2_3	E33
N27	VSS_51	AVSS2_4	E37
N25	VSS_50	AVSS2_5	C37
N23	VSS_49	AVSS2_6	G33
R21	VSS_48	AVSS2_7	G37
R19	VSS_47	AVSS2_8	L37
R15	VSS_46	AVSS2_9	N37
R9	VSS_45	AVSS2_10	U37
R3	VSS_44	AVSS2_11	R29
N9	VSS_43	AVSS2_12	N33
U19	VSS_42	AVSS2_13	U29
L23	VSS_41	AVSS2_14	R31
		AVSS2_15	W27
1	Rk1808_Socket1		
2	Rk1808_Socket2	VSS_COM	U21
3	Rk1808_Socket3		
4	Rk1808_Socket4		

VSS_102 (AJ7) / VSS_101 (AJ3) / VSS_100 (AL37) / VSS_99 (AE37) / VSS_98 (AG29) / VSS_97 (AG27) / VSS_96 (AU19) / VSS_95 (AE27) / VSS_94 (AE25) / VSS_93 (AG25) / VSS_92 (AG23) / VSS_91 (AG21) / VSS_90 (AE21) / VSS_89 (AG19) / VSS_88 (AU27) / VSS_87 (AU33) / VSS_86 (AU37) / VSS_85 (AJ1) / VSS_84 (AG3) / VSS_83 (AA25) / VSS_82 (AA29) / VSS_81 (AC27) / VSS_80 (AC21) / VSS_79 (AC17) / VSS_78 (AY38) / VSS_77 (AG17) / VSS_76 (AC9) / VSS_75 (AC3) / VSS_74 (R23) / VSS_73 (AA27) / VSS_72 (AA19) / VSS_71 (W19)

PMUIO1/OSC

U1000C

RK1808

Pin	Signal
AW23	NPOR
AV6	OSC_24M_IN
AW7	OSC_24M_OUT
AJ15	OSC_VDD_1V8
AG15	OSC_VSS
AV24	OSC_BPASS_z TSADC_SHUT_M0/TSADC_SHUTORG/GPIO0_A6_z
AC15	VDD0V8_PLL
AG11	VDD0V8_PPLL
AA15	VCC1V8_PLL
AJ11	VCC1V8_PPLL
AA13	PLL_AVSS

RESET_L

C1100 100nF C0402 X5R 16V

C1101 22pF C0402 C0G 50V

Y1100 24MHz CRY4_3R20X2R50X0R80
X1 GND
GND X2

<20ppm

C1103 22pF C0402 C0G 50V

R1101 1M 1% R0402

R1102 33R 5% R0402

VCC1V8_OSC

OSC_BPASS

PLL_AVDD_0V8
PPLL_AVDD_0V8
PLL_AVDD_1V8
PPLL_AVDD_1V8

R1103 0R 5% R0402
VCC1V8_OSC   R1115 0R 5% R0402 DNP

OSC_BPASS=0: 接24M晶振.
OSC_BPASS=1: 外面接24M的CLK进来.

Pin	Signal
AV22	REF_CLKO/GPIO0_A0_d
AU21	TSADC_SHUT_M1/GPIO0_A1_z
AN19	PCIE_BUTTONRST/GPIO0_A2_d
AV20	SDMMC0_DETN/PCIE_CLKREQN_M0/GPIO0_A3_u
AW17	PMIC_SLEEP/TSADC_SHUT_M2/GPIO0_A4_d
AL17	PCIE_PERST_M0/GPIO0_A5_u
AW21	PCIE_WAKE_M0/GPIO0_A7_u
AJ17	PMU_VDD_0V8
AJ19	PMUIO1_VDD_1V8

REF_CLKO
PMIC_INT_L
EFUSE_EN_H
SDMMC0_DET_L
PMIC_SLEEP_H
NPU_SLEEP_H
TSADC_SHUT_L
MIC_LED_EN_H
VDD0V8_PMU
VCC1V8_PMU

VDD_0V8   VDD0V8_PMU
R1100 0.1R 1% R0603
C1102 100nF X5R 16V C0201

VCC_1V8   VCC1V8_PMU
R1104 0.1R 1% R0603
C1104 100nF X5R 16V C0201

VCCA_1V8 VCC1V8_PLL
R1105 0.1R 1% R0603
C1105 100nF X5R 16V C0201

VCC_1V8 VCC1V8_PPLL
R1106 0.1R 1% R0603
C1106 100nF X5R 16V C0201

VDDA_0V8 VDD0V8_PLL
R1107 0.1R 1% R0603
C1107 100nF X5R 16V C0201

VDD_0V8 VDD0V8_PPLL
R1108 0.1R 1% R0603
C1108 100nF X5R 16V C0201

VCC_1V8 VCC1V8_OSC
R1109 0.1R 1% R0603
C1109 100nF X5R 16V C0201

PMUIO2

U1000D

RK1808

Pin	Signal
AW19	I2C0_SCL/GPIO0_B0_u
AU13	I2C0_SDA/GPIO0_B1_u
AU15	UART0_TX/GPIO0_B2_d
AW9	UART0_RX/GPIO0_B3_d
AR15	UART0_CTS/GPIO0_B4_u
AV10	UART0_RTS/TEST_CLK1/GPIO0_B5_u
AU9	PCIE_PERST_M1/GPIO0_B6_u
AV14	PWM0/OTG_DRV/GPIO0_B7_d
AN13	I2C1_SCL/GPIO0_C0_d
AV12	I2C1_SDA/GPIO0_C1_d
AW13	CLKIO_32K/GPIO0_C2_z
AV18	PWM1/UART3_TX/GPIO0_C3_d
AW11	PWM3/UART3_RX/GPIO0_C4_d
AV16	PCIE_WAKE_M1/PWM2/GPIO0_C5_d
AN15	PCIE_CLKREQN_M1/UART3_CTS/GPIO0_C6_d
AR13	UART3_RTS/GPIO0_C7_d
AW15	DFTJTAG_TRSTN
AR9	DFTJTAG_TMS
AL15	PMUIO2_VDD

I2C0_SCL_PMIC
I2C0_SDA_PMIC
EPHY_RST_3V3IO
PHONE_DET_H
TP_RST_L
TP_INT_L
CHG_DET_L
OTG_DRV_H
I2C1_SCL_TP
I2C1_SDA_TP
CLKOUT_32K
DFTJTAG_TCK/PWM1_LCD_BL
DFTJTAG_TDO/LCD_PWREN_H
DFTJTAG_TDI
SENSOR_INT
MIPICAM_PDN
DFTJTAG_TRSTN
DFTJTAG_TMS

VCC_3V3
R1110 2.2K 5% R0402
R1111 2.2K 5% R0402
I2C1_SCL_TP
I2C1_SDA_TP

R1114 0.1R 1% R0603   VCC_3V3
C1110 100nF X5R 16V C0201

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics	
Project:	RK_EVB_1808_lp3_sch_V12	
File:	11.RK1808 OSC/PMUIO1/PMUIO2	
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DDR Controller

U1000A — RK1808

Left signals (DDR_DQ):

Pin	Signal		Pin	Signal
A5	DDR_DQ0	DDR_D0	F6	DDR_DQ1	DDR_D1

DDR_D0 A5 DDR_DQ0
DDR_D1 F6 DDR_DQ1
DDR_D2 B6 DDR_DQ2
DDR_D3 E7 DDR_DQ3
DDR_D4 E8 DDR_DQ4
DDR_D5 A7 DDR_DQ5
DDR_D6 B10 DDR_DQ6
DDR_D7 A9 DDR_DQ7
DDR_D8 G1 DDR_DQ8
DDR_D9 L5 DDR_DQ9
DDR_D10 F2 DDR_DQ10
DDR_D11 E1 DDR_DQ11
DDR_D12 D2 DDR_DQ12
DDR_D13 C1 DDR_DQ13
DDR_D14 B4 DDR_DQ14
DDR_D15 A3 DDR_DQ15
DDR_D16 B12 DDR_DQ16
DDR_D17 A11 DDR_DQ17
DDR_D18 A13 DDR_DQ18
DDR_D19 G19 DDR_DQ19
DDR_D20 A15 DDR_DQ20
DDR_D21 B14 DDR_DQ21
DDR_D22 A17 DDR_DQ22
DDR_D23 B16 DDR_DQ23
DDR_D24 A19 DDR_DQ24
DDR_D25 B18 DDR_DQ25
DDR_D26 B20 DDR_DQ26
DDR_D27 A21 DDR_DQ27
DDR_D28 A23 DDR_DQ28
DDR_D29 B22 DDR_DQ29
DDR_D30 A25 DDR_DQ30
DDR_D31 B24 DDR_DQ31

DDR_DQS0P G9 DDR_DQS0P
DDR_DQS0N E9 DDR_DQS0N

DDR_DQS1P J7 DDR_DQS1P
DDR_DQS1N J5 DDR_DQS1N

DDR_DQS2P G15 DDR_DQS2P
DDR_DQS2N E15 DDR_DQS2N

DDR_DQS3P G21 DDR_DQS3P
DDR_DQS3N E21 DDR_DQS3N

DDR_DM0 E5 DDR_DM0
DDR_DM1 H2 DDR_DM1
DDR_DM2 E13 DDR_DM2
DDR_DM3 E19 DDR_DM3

Right signals:

LPDDR3_A0/DDR3_A9 R1 → LPDDR3_A0
LPDDR3_A1/DDR3_A14 U1 → LPDDR3_A1
LPDDR3_A2/DDR3_A13 U7 → LPDDR3_A2
LPDDR3_A3/DDR3_A11 V2 → LPDDR3_A3
LPDDR3_A4/DDR3_A2 AA5 → LPDDR3_A4
LPDDR3_A5/DDR3_A4 U5 → LPDDR3_A5
LPDDR3_A6/DDR3_A3 T2 → LPDDR3_A6
LPDDR3_A7/DDR3_A6 W1 → LPDDR3_A7
LPDDR3_A8/DDR3_A5 P2 → LPDDR3_A8
LPDDR3_A9/DDR3_A1 AC7 → LPDDR3_A9
DDR3_A0 AD2
DDR3_CASB R7
DDR3_A8 AB2
DDR3_ODT0 AH2
DDR3_BA1 AG5
DDR3_RASB AE1
NC AF2
AG7

DDR3_BA2 R5
DDR3_A12 Y2

LPDDR3_CSB0/DDR3_A10 AC1 → LPDDR3_CS0
LPDDR3_CSB1/DDR3_CSB1 AJ5 → LPDDR3_CS1

LPDDR3_CK/DDR3_CK L1 → LPDDR3_CLKP
LPDDR3_CKB/DDR3_CKB M2 → LPDDR3_CLKN

LPDDR3_ODT0/DDR3_A15 AA1 → TP1200 TP_0.5
LPDDR3_ODT1/DDR3_ODT1 AG1

DDR3_RESETN J1

DDR3_BA0 K2
DDR3_WEB AA7

DDR3_CSB0 N1

LPDDR3_CKE/DDR3_CKE AC5 → LPDDR3_CKE

DDR_VERFO J23 PHY out VCC_DDR/2 → VERFO_DDR

DDR_RZQ AA9 — R1200 240R 1% R0201 → VCC_DDR

DDR_VDD_1 W11
DDR_VDD_2 R11
DDR_VDD_3 U11
DDR_VDD_4 N13
DDR_VDD_5 N15
DDR_VDD_6 N17
DDR_VDD_7 N19
DDR_VDD_8 N21

DDR_AVSS N11

LPDDR3/LPDDR2 ↔ DDR3 mapping

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

Decoupling capacitors (VCC_DDR)

Ref	Value			
C1200	4.7uF	X5R	6.3V	C0402
C1201	1uF	X5R	6.3V	C0402
C1202	100nF	X5R	16V	C0201
C1203	100nF	X5R	16V	C0201
C1204	100nF	X5R	16V	C0201
C1205	100nF	X5R	16V	C0201
C1206	100nF	X5R	16V	C0201
C1207	100nF	X5R	16V	C0201
C1208	100nF	X5R	16V	C0201
C1209	100nF	X5R	16V	C0201

EMMC/SFC Controller

U1000B

Pin	Signal
E27	EMMC_D0/SFC_SIO0/GPIO1_A0_u
B28	EMMC_D1/SFC_SIO1/GPIO1_A1_u
A29	EMMC_D2/SFC_SIO2/GPIO1_A2_u
B30	EMMC_D3/SFC_SIO3/GPIO1_A3_u
A31	EMMC_D4/SFC_CSN0/GPIO1_A4_u
C31	EMMC_D5/SFC_CLK/GPIO1_A5_u
B32	EMMC_D6/SPI2_MISO_M0/GPIO1_A6_u
A33	EMMC_D7/SPI2_CLK_M0/GPIO1_A7_u
G31	EMMC_PWREN/SPI2_MOSI_M0/GPIO1_B0_u
E31	EMMC_CLKOUT/SPI2_CSN_M0/GPIO1_B1_u
B34	EMMC_CMD/GPIO1_B2_u
A35	EMMC_RSTN/GPIO1_B3_d
L27	VCCIO0

RK1808

EMMC_D0/SFC_SIO0
EMMC_D1/SFC_SIO1
EMMC_D2/SFC_SIO2
EMMC_D3/SFC_SIO3
EMMC_D4/SFC_CSN0
EMMC_D5/SFC_CLK
EMMC_D6
EMMC_D7

TP_0.5
TP1300
R1302 0R 5% R0402
EMMC_CLK
EMMC_CMD
EMMC_RST

VCCIO_EMMC

VCCIO_EMMC

R1300 0.1R 1% R0603 VCCA_1V8
R1301 0.1R 1% R0603 DNP VCCIO_3V3

VCCIO0=3.3V, If stuff SPI NOR FLASH,
VCCIO0=1.8V, If stuff EMMC

C1300
100nF
X5R
16V
C0201

RK1808 Only Support EMMC, Not Support NAND FLASH.

SPI0 Controller

U1000G

Pin	Signal
C27	SPI0_MOSI/I2C2_SCL_M1/UART1_RX_M1/GPIO1_B4_u
A27	SPI0_MISO/I2C2_SDA_M1/UART1_TX_M1/GPIO1_B5_u
G25	SPI0_CSN/PWM4/GPIO1_B6_u
E25	SPI0_CLK/PWM5/GPIO1_B7_d
L25	VCCIO5

RK1808

SPI0_MOSI
SPI0_MISO
SPI0_CSN
SPI0_CLK

R1303 0.1R 1% R0603 VCCIO_3V3
R1304 0.1R 1% R0603 DNP VCCA_1V8

C1301
100nF
X5R
16V
C0201

USB Controller

U1000E
RK1808

Pin	Signal		
AL1	USB_OTG_DP	→	OTG_DP
AK2	USB_OTG_DM	→	OTG_DM
AJ9	USB_OTG_ID	→	OTG_ID_L
AL9	USB_OTG_VBUS	→	OTG_DET_H
AN1	USB_HOST_DP	→	USB_HOST_DP
AM2	USB_HOST_DM	→	USB_HOST_DM

USB_AVDD_0V8 AE11 R1400 0.1R 1% R0603 VDDA_0V8
USB_AVDD_1V8 AC11 R1401 0.1R 1% R0603 VCCA_1V8
USB_AVDD_3V3 AE9 R1402 0.1R 1% R0603 VCCIO_3V3

C1400 100nF X5R 16V C0201
C1401 100nF X5R 16V C0201
C1402 100nF X5R 16V C0201

PCIE Controller

U1000M
RK1808

Pin	Signal		
AR1	PCIE_RX0P/USB3_SSRXP	→	USB3_SSRXP
AP2	PCIE_RX0N/USB3_SSRXN	→	USB3_SSRXN
AW3	PCIE_RX1P		
AV4	PCIE_RX1N		
AU1	PCIE_TX0P/USB3_SSTXP	→	USB3_SSTXP
AT2	PCIE_TX0N/USB3_SSTXN	→	USB3_SSTXN
AR5	PCIE_TX1P		
AR7	PCIE_TX1N		
AN5	PCIE_REFCLKP	TP1400	TP_0.5
AN7	PCIE_REFCLKN	TP1401	TP_0.5
AN9	PCIE_RBIAS	R1403 2K 0.5% R0402	
AE15	PICE_VCCA_0V8		
AE13	PICE_VCCD_0V8	R1404 0.1R 1% R0603	VDDA_0V8
AJ13	PICE_VDDREF_0V8		
AL13	PICE_VCCA_1V8	R1405 0.1R 1% R0603	VCCA_1V8

C1403 100nF X5R 16V C0201
C1404 4.7uF X5R 6.3V C0402
C1405 100nF X5R 16V C0201
C1406 1uF X5R 6.3V C0402

SARADC/KEY

Key Name	SARADC
VOL+/RECOVERY	10
VOL-	170

U1000F
RK1808

ADC_IN0 W31 ADC2_HW_ID1
ADC_IN1 U31
ADC_IN2 W33 ADC0_KEY_IN
ADC_IN3 U33 ADC3_HP_HOOK
ADC_AVDD_1V8 N31

R1501 0.1R 1% R0603 VCCA_1V8
C1501 100nF X5R 16V C0201

VCCA_1V8
R1505 10K 1% R0402
ADC2_HW_ID1
R1508 DNP <Tolerance> R0402

ADC0_KEY_IN
C1500 1nF X7R 50V C0402
ED1500 ESD5451N ESD0402
R1500 10K 1% R0402 VCCA_1V8

VOL+
SW1500 VOL+/Recovery SW4_6R50X7R00X7R10
R1502 100R R0402 1%

SW1501 VOL- SW4_6R50X7R00X7R10
R1503 2K R0402 1%

SDMMC0 Controller

U1000H

RK1808

Pin	Signal	Net
AJ39	SDMMC0_CMD/TEST_CLK0/GPIO4_A0_u	SDMMC0_CMD
AH38	SDMMC0_CLK/GPIO4_A1_d	SDMMC0_CLK
AG39	SDMMC0_D0/UART2_TX_M0/GPIO4_A2_u	SDMMC0_D0/UART2_TX
AE35	SDMMC0_D1/UART2_RX_M0/GPIO4_A3_u	SDMMC0_D1/UART2_RX
AF38	SDMMC0_D2/JTAG_TCK/GPIO4_A4_u	SDMMC0_D2/JTAG_TCK
AE33	SDMMC0_D3/JTAG_TMS/GPIO4_A5_u	SDMMC0_D3/JTAG_TMS

VCCIO6 AE31 VCCIO_SD

C1600
100nF
X5R
16V
C0201

SDMMC1 Controller

U1000R

RK1808

Pin	Signal	Net
AR31	SDMMC1_CMD/GPIO4_A6_u	SDMMC1_CMD
AR35	SDMMC1_CLK/GPIO4_A7_d	SDMMC1_CLK
AN31	SDMMC1_D0/UART1_RX_M0/GPIO4_B0_u	SDMMC1_D0
AP34	SDMMC1_D1/UART1_TX_M0/GPIO4_B1_u	SDMMC1_D1
AT38	SDMMC1_D2/UART1_CTS/GPIO4_B2_u	SDMMC1_D2
AP38	SDMMC1_D3/UART1_RTS/GPIO4_B3_u	SDMMC1_D3
AN33	UART4_RX/SPI1_CLK_M0/GPIO4_B4_u	UART4_RX
AJ29	UART4_TX/SPI1_MOSI_M0/GPIO4_B5_u	UART4_TX
AU39	UART4_CTS/SPI1_CSN0_M0/GPIO4_B6_u	UART4_CTS
AR33	UART4_RTS/SPI1_MISO_M0/GPIO4_B7_u	UART4_RTS
AL33	SPI1_CSN1_M0/GPIO4_C0_u	WIFI_REG_ON
AR39	I2C5_SCL/GPIO4_C1_u	WIFI_WAKE_HOST
AL29	I2C5_SDA/GPIO4_C2_u	BT_WAKE_HOST
AL27	GPIO4_C3_u	BT_REG_ON
AL31	GPIO4_C4_u	HOST_WAKE_BT

VCCIO1 AJ31

For WIFI/BT

R1600 0.1R 1% R0603 VCCA_1V8

C1601
100nF
X5R
16V
C0201

MIPI CSI Controller

U1000N

Pin	Signal		Net
N35	DPHY_RX_D0P		MIPI_CSI_D0P
L35	DPHY_RX_D0N		MIPI_CSI_D0N
K38	DPHY_RX_D1P		MIPI_CSI_D1P
J39	DPHY_RX_D1N		MIPI_CSI_D1N
P38	DPHY_RX_D2P		MIPI_CSI_D2P
N39	DPHY_RX_D2N		MIPI_CSI_D2N
T38	DPHY_RX_D3P		MIPI_CSI_D3P
R39	DPHY_RX_D3N		MIPI_CSI_D3N
M38	DPHY_RX_CLKP		MIPI_CSI_CLKP
L39	DPHY_RX_CLKN		MIPI_CSI_CLKN
U27	DPHY_RX_AVDD_0V8		
L29	DPHY_RX_AVDD_1V8		

R1700 0.1R 1% R0603 VDDA_0V8

R1701 0.1R 1% R0603 VCCA_1V8

C1700 100nF X5R 16V C0201

C1701 100nF X5R 16V C0201

RK1808

MIPI DSI Controller

U1000O

Pin	Signal		Net
A37	DPHY_TX_D0P		MIPI_DSI_D0P
B38	DPHY_TX_D0N		MIPI_DSI_D0N
D38	DPHY_TX_D1P		MIPI_DSI_D1P
C39	DPHY_TX_D1N		MIPI_DSI_D1N
F38	DPHY_TX_D2P		MIPI_DSI_D2P
E39	DPHY_TX_D2N		MIPI_DSI_D2N
H38	DPHY_TX_D3P		MIPI_DSI_D3P
G39	DPHY_TX_D3N		MIPI_DSI_D3N
G35	DPHY_TX_CLKP		MIPI_DSI_CLKP
E35	DPHY_TX_CLKN		MIPI_DSI_CLKN
N29	DPHY_TX_AVDD_0V8		
L31	DPHY_TX_AVDD_1V8		

R1702 0.1R 1% R0603 VDDA_0V8

R1703 0.1R 1% R0603 VCCA_1V8

C1702 100nF X5R 16V C0201

C1703 100nF X5R 16V C0201

RK1808

I2S0 Controller

U1000K

RK1808

Pin	Signal
I2S0_SDI3/PDM_SDI3/GPIO3_A5_d	AA31 — I2S0_SDI3/PDM_SDI3
I2S0_SDI2/PDM_SDI2/GPIO3_A6_d	W35 — I2S0_SDI2/PDM_SDI2
I2S0_SDI1/PDM_SDI1/GPIO3_A7_d	AC29 — I2S0_SDI1/PDM_SDI1
I2S0_SCLK_RX/PDM_CLK0/GPIO3_B0_d	Y38 — I2S0_SCLK_RX/PDM_CLK0
I2S0_LRCK_RX/PDM_CLK1/GPIO3_B1_d	AB38 — I2S0_LRCK_RX/PDM_CLK1
I2S0_SDO3/ISP_FLASHTRIGIN/LCDC_HSYNC_M1/GPIO3_B2_d	AC33 — I2S0_SDO3
I2S0_SDO2/I2C2_SCL_M0/LCDC_VSYNC_M1/GPIO3_B3_d	AC31 — I2S0_SDO2
I2S0_SDO1/I2C2_SDA_M0/GPIO3_B4_d	AC35 — I2S0_SDO1
I2S0_MCLK/ISP_SHUTTEREN/GPIO3_B5_d	AE39 — I2S0_MCLK
I2S0_LRCK_TX/ISP_FLASHTRIGOUT/GPIO3_B6_d	AD38 — I2S0_LRCK_TX
I2S0_SCLK_TX/ISP_PRELIGHTTRIG/GPIO3_B7_d	— I2S0_SCLK_TX
I2S0_SDO0/ISP_SHUTTERTRIG/GPIO3_C0_d	AC37 — I2S0_SDO0
I2S0_SDI0/PDM_SDI0/GPIO3_C1_d	AA39 — I2S0_SDI0/PDM_SDI0
VCCIO4	AA29

R1800 0.1R 1% R0603 DNP — VCCIO_3V3
R1801 0.1R 1% R0603 — VCCA_1V8
C1800 100nF X5R 16V C0201

I2S1 Controller

U1000L

RK1808

Pin	Signal
I2S1_LRCK/GPIO3_A0_d	U39 — I2S1_LRCK
I2S1_SCLK/PWM6/GPIO3_A1_d	V38 — I2S1_SCLK
I2S1_MCLK/PWM7/GPIO3_A2_d	U35 — I2S1_MCLK
I2S1_SDO/UART2_TX_M2/GPIO3_A3_d	W37 — I2S1_SDO
I2S1_SDI/UART2_RX_M2/GPIO3_A4_d	W39 — I2S1_SDI
VCCIO3	W29

For Codec

C1801 100nF X5R 16V C0201
R1802 0.1R 1% R0603 DNP — VCCIO_3V3
R1803 0.1R 1% R0603 — VCCA_1V8

CIF/RGMII/LCDC Controller

U1000I

RK1808

Pin	Signal
AW25	CIF_D12/RGMII_CRS/LCDC_D6/GPIO2_A0_d
AR19	CIF_D13/RGMII_TXEN/LCDC_D7/GPIO2_A1_d
AL19	CIF_D14/RGMII_TXD1/LCDC_D0/GPIO2_A2_d
AJ21	CIF_D15/RGMII_TXD0/LCDC_D1/GPIO2_A3_d
AN21	CIF_D2/RGMII_RXD0/SPI2_MISO_M1/GPIO2_A4_d
AL21	CIF_D3/RGMII_RXD1/SPI2_CLK_M1/GPIO2_A5_d
AV26	CIF_D4/RGMII_RXER/SPI2_MOSI_M1/GPIO2_A6_d
AU25	CIF_D5/RGMII_RXDV/SPI2_CSN_M1/GPIO2_A7_d
AW29	CIF_D6/RGMII_MDIO/GPIO2_B0_d
AW27	CIF_D7/RGMII_COL/GPIO2_B1_d
AW31	CIF_D8/RGMII_MDC/LCDC_HSYNC_M0/GPIO2_B2_d
AV28	CIF_D9/RGMII_TXD3/LCDC_VSYNC_M0/GPIO2_B3_d
AV30	CIF_VSYNC/RGMII_TXD2/GPIO2_B4_d
AV32	CIF_HREF/RGMII_RXD2/GPIO2_B5_d
AU31	CIF_CLKIN/RGMII_RXD3/GPIO2_B6_d
AR27	CIF_CLKOUT/RGMII_CLK/GPIO2_B7_d
AR25	CIF_D0/CLKOUT_ETHERNET/GPIO2_C0_d
AN27	CIF_D1/RGMII_TXCLK/GPIO2_C1_d
AN25	CIF_D10/RGMII_RXCLK/LCDC_D2/GPIO2_C2_d
AL23	CIF_D11/LCDC_D3/GPIO2_C3_d
AL25	LCDC_D4/GPIO2_C4_d
AW35	LCDC_D5/GPIO2_C5_d
AW33	LCDC_CLK/GPIO2_C6_d
AV34	LCDC_DEN/GPIO2_C7_d
AW37	I2C3_SCL/UART2_TX_M1/GPIO2_D0_u
AV36	I2C3_SDA/UART2_RX_M1/GPIO2_D1_u
AJ23	VCCIO2

GPIO2_A0/CIF_D12/RGMII_CRS/LCDC_D6
GPIO2_A1/CIF_D13/RGMII_TXEN/LCDC_D7
GPIO2_A2/CIF_D14/RGMII_TXD1/LCDC_D0
GPIO2_A3/CIF_D15/RGMII_TXD0/LCDC_D1
GPIO2_A4/CIF_D2/RGMII_RXD0/SPI2_MISO_M1
GPIO2_A5/CIF_D3/RGMII_RXD1/SPI2_CLK_M1
GPIO2_A6/CIF_D4/RGMII_RXER/SPI2_MOSI_M1
GPIO2_A7/CIF_D5/RGMII_RXDV/SPI2_CSN_M1

GPIO2_B0/CIF_D6/RGMII_MDIO
GPIO2_B1/CIF_D7/RGMII_COL
GPIO2_B2/CIF_D8/RGMII_MDC/LCDC_HSYNC
GPIO2_B3/CIF_D9/RGMII_TXD3/LCDC_VSYNC
GPIO2_B4/CIF_VSYNC/RGMII_TXD2
GPIO2_B5/CIF_HREF/RGMII_RXD2
GPIO2_B6/CIF_CLKIN/RGMII_RXD3
GPIO2_B7/CIF_CLKOUT/RGMII_CLK

GPIO2_C0/CIF_D0/CLKOUT_ETHERNET
GPIO2_C1/CIF_D1/RGMII_TXCLK
GPIO2_C2/CIF_D10/RGMII_RXCLK/LCDC_D2
GPIO2_C3/CIF_D11/LCDC_D3
GPIO2_C4/LCDC_D4
GPIO2_C5/LCDC_D5
GPIO2_C6/LCDC_CLK
GPIO2_C7/LCDC_DEN

GPIO2_D0/I2C3_SCL/UART2_TX_M1
GPIO2_D1/I2C3_SDA/UART2_RX_M1

VCC_IO2
R1900 2.2K 5% R0402
R1901 2.2K 5% R0402
GPIO2_D0/I2C3_SCL/UART2_TX_M1
GPIO2_D1/I2C3_SDA/UART2_RX_M1

VCC_IO2
R1902 0.1R 1% R0603 — VCCA_1V8
R1903 0.1R 1% R0603 DNP — VCCIO_3V3
3.3V for lcdc
C1900 100nF X5R 16V C0201

LCDC Controller

U1000J

RK1808

Pin	Signal
AN37	LCDC_D8/UART5_TX/I2C4_SCL/GPIO3_C2_d
AM38	LCDC_D9/UART5_RX/I2C4_SDA/GPIO3_C3_d
AL39	LCDC_D10/UART6_TX/GPIO3_C4_d
AJ33	LCDC_D11/UART6_RX/GPIO3_C5_d
AN39	LCDC_D12/UART7_TX/GPIO3_C6_d
AL35	LCDC_D13/UART7_RX/SPI1_CLK_M1/GPIO3_C7_d
AJ35	LCDC_D14/PWM8/SPI1_MOSI_M1/GPIO3_D0_d
AG31	LCDC_D15/PWM9/SPI1_CSN0_M1/GPIO3_D1_d
AK38	LCDC_D16/PWM10/SPI1_MISO_M1/GPIO3_D2_d
AJ37	LCDC_D17/PWM11/SPI1_CSN1_M1/GPIO3_D3_d
AE29	VCCIO7

GPIO3_C2/LCDC_D8/UART5_TX/I2C4_SCL
GPIO3_C3/LCDC_D9/UART5_RX/I2C4_SDA
GPIO3_C4/LCDC_D10/UART6_TX
GPIO3_C5/LCDC_D11/UART6_RX
GPIO3_C6/LCDC_D12/UART7_TX
GPIO3_C7/LCDC_D13/UART7_RX/SPI1_CLK_M1

GPIO3_D0/LCDC_D14/PWM8/SPI1_MOSI_M1
GPIO3_D1/LCDC_D15/PWM9/SPI1_CSN0_M1
GPIO3_D2/LCDC_D16/PWM10/SPI1_MISO_M1
GPIO3_D3/LCDC_D17/PWM11/SPI1_CSN1_M1

VCC3V3_IO7
R1904 2.2K 5% R0402
R1905 2.2K 5% R0402
GPIO3_C2/LCDC_D8/UART5_TX/I2C4_SCL
GPIO3_C3/LCDC_D9/UART5_RX/I2C4_SDA

VCC3V3_IO7
C1901 100nF X5R 16V C0201
R1906 0.1R 1% R0603 — VCCIO_3V3

DC IN&SYSTEM Power

12V/2A DCIN
J2000
DC-0007-5P
DC9_DC_0007_5P

VCC12V_DCIN

R2000 2R R1210 5%
C2000 10uF X5R 25V
C2008 2.2uF C0805 X5R 25V

VCC_IN
To avoid the noise issue 4.5V<VIN<18V
EXT_EN_H

U2000 SY8113B SOT_23_6
VIN LX
GND BS
EN FB/OUT

C2002 10uF C0805 X5R 25V
C2003 100nF C0402 X5R 16V

C20011 100nF C0402 X5R 26V

L2000 3.3uH IND_404030 3.3A 0.04ohm

5.1V/3A

R2004 75K R0402 1%
C2004 100pF C0G 50V
C2005 10uF C0805 X5R 10V
C2006 10uF C0805 X5R 10V
C2007 100nF C0402 X5R 16V
R2003 2K R0402
LED2000 LED_RED LED0603

VCC5V0_SYS_P

R2001 0.02R 1% R0805
R2005 DNP R0402

VCC5V0_SYS

VCC5V0_SYS_P

R2006 10K R0402 1%

LDO-VCCRTC

VCC_IN
To avoid the noise issue
U2001 SGM2203-5.0 SOT_89_3
IN OUT
GND
VCC_RTC

C2011 1uF X5R 25V C0402
C2012 100nF C0402 X5R 16V
C2009 1uF X5R 10V C0402

VCC12V_DCIN

R2007 1M R0402 5%
Q2002 WNM2024/TR SOT_23
Q2000 WNM3003-3/TR SOT_23
VDC
Q2001 WNM2024-3/TR SOT_23

C2013 22uF C0805 X5R 25V
C2010 10pF C0402 50V C0G
C2014 47nF C0402 X5R 25V
R2010 510K R0603 5%
R2011 4.02K R0402 1%
R2013 4.02K R0402 1%

R2008 0.01R R1206 1%

C2016 100nF C0402 X5R 16V

C2015.1 100nF C0402
C2017 22uF C0805 X5R 25V

R2012 22K R0402
C2018 22uF C0805 X5R 25V

R2009 0.01R R0805 1%
VCC_IN

D2000 SS32 DO_214AC
Q2003 WPM3407-3/TR SOT_23
VCC_BAT

U2002 BQ24133
ACP
CMSRC
ACDRV
VREF
BATDRV 19
PVCC_1 PVCC_2
SW_1 SW_2 24
BTST 21
REGN 20
PGND_1 PGND_2 22 23
SRP SRN CELL 16 15 14
ISET1 13
ACSET AVCC
OVPSET TTC TS STAT 18 11 10 9
PWRPAD 25
QFN24_5R65X3R65X1R00_T

R2014.1 1K
R2015.1 1R
C2019 47nF C0402 X5R 25V
C2020 22uF C0805 X5R 25V
L2001 3.3uH IND_404020 3.2A 0.07ohm

R2015 1M R0402 5%
R2018 220K R0402 5%
R2017 100K R0402 5%
C2021 1uF C0603 X7R 25V

R2019 100K R0402 5%
R2020 22K R0402 5%
R2021 22K R0402 5%

R2023.2 47R R0402 5%
C2027 100nF C0402 X5R 16V
C2028 100nF C0402 X5R 16V

VREF
R2027 5.1K R0402 1%
NTC

VCC_3V3
R2029 10K R0402 5%
CHG_DET_L

R2028 30K R0402 1%

R2016 0.01R R1206 1%
C2022 10uF C0603 X5R 10V
C2023 100nF C0402 X5R 16V

R2026 DNP R0402

VCC_BAT
C2032 10uF C0805 X5R 25V

BT2000
V+
TS
V-
BAT3_2R54
NTC

R2030 0.01R R0805 1%
R2031 0R R0402 5%
SNSP
SNSN

Close to BAT

0ohm resister closed to pin2 of 0.01R resister , and both of them closed to Battery.

NTC
R2032 10K R0402 DNP

VREF=3.3V
Idpm=Vacset/(20*Rac)
Icharge=Viset/(20*Rsr)
Iprecharge=Viset/(200*Rsr)
Iterm=Viset/(200*Rsr)
Tttc=Cttc*Kttc(Kttc=5.6min/nF)
If Vovpset above 1.6V or below 0.5V,charge is disabled.

1.6-MHz Synchronous Switched-Mode Li-Ion and Li-Polymer Stand-Alone Battery Charger

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VDD_NPU

C2026 47uF C0805 X5R
R2022 0.01R 1% R1206

VCCA_1V8 VCC5V0_SYS
R2024 10K R0402 5%
C2024 10uF C0805 10V
C2029 100nF C0402 X5R 16V

U2003 TCS4525 wlcsp20_2r00x1r60x0r66
D1 VIN_1 SW_1 D3
D2 VIN_2 SW_2 D4
E1 VIN_3 SW_3 E3
E2 VIN_4 SW_4 E4
A2 EN VOUT A4
A1 VSEL GND1 B2
B1 SDA GND2 B3
A3 SCL GND3 C1
GND4 C2
B4 AGND GND5 C3
GND6 C4
1.1V

L2002 0.24uH/6A IND_252012
VDD_NPU_P
R2025 100R 5% R0402
VDD_NPU_FB

C2025 47uF X5R 6.3V C0805
C2030 47uF X5R 6.3V C0805
C2031 47uF X5R 6.3V C0805

R9812 10K 5% R0402
DNP
I2C0_SCL_PMIC
I2C0_SDA_PMIC

NPU_SLEEP_H

Feedback from RK1808

FB
OUT
DCDC
NPU
RK1808

NPU_SLEEP_H
VDD_NPU_P

PMIC RK809-1 DCDC

U2100A RK809-2

Signals: VDD_LOG, VDD_CPU, VCC5V0_SYS, VCC_3V3, VCC_DDR

Pins: VCC1, SW1, FB1, VCC2, SW2, FB2, VCC4, SW4, FB4, VCC3, SW3, VBUCK3, FB3
BUCK1 2.5A, BUCK4 1.5A, BUCK2 2.5A, BUCK3 1.5A (FB=0.8V)

VDD_LOG_P, VDD_CPU_P, VCC_DDR_P, VCC_3V3_P

DDR Type	VCC_DDR Voltage	R2115
DDR4	1.25V	68K
LPDDR3	1.25V	68K
DDR3L	1.35V	82K
DDR3	1.53V	110K

Default: lpddr3

PMIC RK809-1 LDO

U2100B RK809-2

LDO1 400mA, LDO2 400mA, LDO3 100mA (Low noise), LDO4 400mA (Codec vddio), LDO5 400mA, LDO6 400mA, LDO7 400mA, LDO8 400mA, LDO9 400mA
3A SWOUT2, 1.5A SWOUT1
BUCK5 1.5V-3.6V 2.5A

VCC5, VCC6, VCC7, VCC8, VCC9, SW5, FB5

VDDA_0V8_P, VCC_1V8_P, VDD_0V8_P, VCCA_1V8_P, VCC1V8_DVP_P, VDD1V5_DVP_P, VCC2V8_DVP_P, VCCIO_SD_P, VCC3V3_SD_P, VCC_BUCK5_P

Default:3.3V VCC_BUCK5

PMIC RK809-1 Managerment

U2100C RK809-2

Pins: VREF 46, GNDREF 47, ePAD 69, XIN 70, XOUT 51, SDA, SCL, INT 7, SLEEP, CLK32K, RESETB 67, VCC_RTC 45, BATDIV 56, SNSP 62, SNSN 63, EXT_EN 60, VDC 61, PWRON 52

Gas Gauge

CRY2 6R90X1R40X1R30 32.768KHz Y2100

Signals: CLKOUT_32K, I2C0_SDA_PMIC, I2C0_SCL_PMIC, PMIC_INT_L, PMIC_SLEEP_H, RESET_L, SNSP, SNSN, VCC_BAT, EXT_EN_H, PWRON, TSADC_SHUT_L, VCC1V8_PMU, VCC12V_DCIN

Decoupling capacitor closed to pins of of SNSP/SNSN. SNSP/SNSN follow rules of difference line.

SW2100 RESET SW2_6R00X3R70X2R50
SW2101 PWRON SW4_6R50X7R00X7R10

PMIC RK809-1 CODEC

U2100D RK809-2

Pins: VCC_SPK_HP 33, CPN 36, CPP 37, VCC_CPVDD 38, VCC_CPVSS 35, VCC_1P8D 48, VCC_1P8A 44, HPL_OUT 39, HP_SNS 40, HPR_OUT 41, SPKN_OUT 34, SPKP_OUT 32, MIC1P 43, MIC1N 42, MCLK 16, BCLK 15, LRCLK 14, SDI 17, SDO/PDMDATA 18, PDMCLK 19

VCC_RTC PowerDomain PORT_POWERED

Signals: HPL, HP_SNS, HPR, SPKN_OUT, SPKP_OUT, MIC1_IN, MIC2_IN
I2S1_MCLK, I2S1_SCLK, I2S1_LRCK, I2S1_SDI, I2S1_SDO

USB3.0

USB HOST

LPDDR3 1x32bit

U3100
K4E6E304EC-EGCF
FBGA178_13R00X11R50X1R20

2Gb

Note:
Vih=VCC
Vil=VCC*Ron/(Ron+Rodt)
VREFDQ_DDR=(Vih+Vil)/2

eg:VCC=1.2V,Ron=34ohm,Rodt=240ohm
so,Vih=1.2V,Vil=0.149V,VREFDQ_DDR=0.674V

Put Together

Close to pin H4

Put Together

Close to pin J11

Note:All the power filter capacitors should be placed close to the power pins of LPDDR3

eMMC

U4100A
KLMAG2GEAC-B031
BGA169_18R00X14R00X1R20_2L

Signal	Pin	Pin	Signal
EMMC_D0/SFC_SIO0	H3	DATA0	VCCQ1 AA5	VCCIO_EMMC
EMMC_D1/SFC_SIO1	H4	DATA1	VCCQ2 AA3	
EMMC_D2/SFC_SIO2	H5	DATA2	VCCQ3 Y4	
EMMC_D3/SFC_SIO3	J2	DATA3	VCCQ4 W4	
EMMC_D4/SFC_CSN0	J3	DATA4	VCCQ5 K6	
EMMC_D5/SFC_CLK	J4	DATA5		
EMMC_D6	J5	DATA6	VCC1 U9	VCCIO_3V3
EMMC_D7	J6	DATA7	VCC2 T10	
			VCC3 N5	
EMMC_CMD	W5	CMD	VCC4 M6	
EMMC_CLK	W6	CLK	VSS1 U8	
EMMC_RST	U5	RST_n	VSS2 R10	
			VSS3 P5	
	K2	VDDi	VSS4 M7	
	R5	RCLK	VSS5 H6	
			VSS6 T5	
	M9	VSF1	VSSQ1 AA6	
	N10	VSF2	VSSQ2 AA4	
	U10	VSF3	VSSQ3 Y5	
		VSF4	VSSQ4 Y2	
			VSSQ5 K4	

C4100 1uF C0402 X5R 6.3V

16GB/MLC

U4100B
KLMAG2GEAC-B031
BGA169_18R00X14R00X1R20_2L

VCCIO_EMMC

C4101 4.7uF X5R 6.3V C0402
C4102 100nF X5R 16V C0402
C4103 100nF X5R 16V C0402

VCCIO_3V3

C4104 4.7uF X5R 6.3V C0402
C4105 100nF X5R 16V C0402

Note:
Reserve TestPoint for firmware update.
If FLASH_CLE=0V at power-on reset,
then system will enter into Maskrom mode.

Maskrom

EMMC_D0/SFC R4100 1 10R 5% 2 R0402 2 1
SW4100
TS-1125HS
SW2_6R00X3R70X2R50

EMMC_D0/SFC_SIO0

TP_1.0 TP4100 EMMC_D0/SFC_SIO0
TP_1.0 TP4101

Rockchip 瑞芯微电子   Fuzhou Rockchip Electronics

Project:	RK_EVB_1808_lp3_sch_V12	
File:	41.EMMC	
Date:	Friday, February 15, 2019	Rev: V1.0
Designed by:	Rzf	Sheet: 41 of 99

Remind: Refer to the latest AVL for parts selection.

SPI NOR Flash

Reserved for minimal system:

VCCIO_3V3

R4201 R4202
10K 10K
R0402 R0402
5% 5%
DNP DNP

EMMC_D3/SFC_SIO3
EMMC_D2/SFC_SIO2

VCCIO_3V3

C4200   C4201
4.7uF   100nF
X5R   X5R
6.3V   16V
C0402   C0402
DNP   DNP

When using 1bit SPI,
it needs to be welded

VCCIO_3V3   VCCIO_3V3

R4200
DNP
R0402

**Option1
SOIC16**

U4200
N25Q256A13ESF40G
SOIC16_10R6X10R3X2R5

Pin	Signal		Signal	Pin
EMMC_D3/SFC_SIO3	1	HOLD/DQ3	CLK	16	EMMC_D5/SFC_CLK
	2	VCC	DQ0	15	EMMC_D0/SFC_SIO0
	3	RESET/DNU	DNU8	14	
	4	DNU2	DNU7	13	
	5	DNU3	DNU6	12	
	6	DNU4	DNU5	11	
EMMC_D4/SFC_CSN0	7	SEL	VSS	10	
EMMC_D1/SFC_SIO1	8	DQ1	W/VPP/DQ2	9	EMMC_D2/SFC_SIO2

DNP

256Mb

EMMC_D0/SFC_SIO0
EMMC_D1/SFC_SIO1
EMMC_D2/SFC_SIO2
EMMC_D3/SFC_SIO3
EMMC_D4/SFC_CSN0
EMMC_D5/SFC_CLK

Remind: Refer to the latest AVL for parts selection.

SPI0 Interface

VCCIO_3V3   R4203 0R 5% R0402   VCC_SPIFLASH
VCCA_1V8   R4206 0R 5% R0402
             DNP

C4202
100nF
X5R
16V
C0402

SPI0_MOSI   R4204 1 22R 2% R0402
SPI0_MISO   R4205 1 22R 2% R0402
SPI0_CSN   R4207 1 22R 2% R0402
SPI0_CLK   R4208   22R 5% R0402

J4200
1
2
3
4
5
6
CON6M_1X6_2R54_V
CON6M_1X6_2R54_V_DIP

SPI0预留测试点,做为级联用。

MIPI Camera

CIF_CLKOUT

R4600 51R 5% R0402

MIPI_MCLK

R4601 680R R0402 5% DNP

Adjusting parameters according to different types of camera

MIPI_CSI_D0N
MIPI_CSI_D0P
MIPI_CSI_D1N
MIPI_CSI_D1P
MIPI_CSI_D2P
MIPI_CSI_D2N
MIPI_CSI_D3P
MIPI_CSI_D3N
MIPI_CSI_CLKP
MIPI_CSI_CLKN

MIPICAM_PDN

R4602 39K 5% R0402

MIPI_PDN

R4603 47K R0402 5%

GPIO2_B7/CIF_CLKOUT/RGMII_CLK   CIF_CLKOUT
GPIO2_D0/I2C3_SCL/UART2_TX_M1
GPIO2_D1/I2C3_SDA/UART2_RX_M1
MIPICAM_PDN

J4600
AXT530124
CON30M_2x15_0R40_V_SMT

Pin	Signal	Signal	Pin
1	GND_1	RCN	30
2	RDP0	RCP	29
3	RDN0	GND_28	28
4	GND_4	RDP1	27
5	RDP2	RDN1	26
6	RDN2	GND_25	25
7	GND_7	DOVDD1.8V	24
8	RDP3	GND_23	23
9	RDN3	DVDD1.5V	22
10	GND_10	SIO_D	21
11	MCLK	SIO_C	20
12	RESET	GND_19	19
13	GND_13	AF	18
14	PWDN	AVDD2.8V	17
15	GND_15	GND_16	16

MIPI_CSI_D0P
MIPI_CSI_D0N
MIPI_CSI_D2P
MIPI_CSI_D2N
MIPI_CSI_D3P
MIPI_CSI_D3N
MIPI_MCLK
MIPI_RST
MIPI_PDN

MIPI_CSI_CLKN
MIPI_CSI_CLKP
MIPI_CSI_D1P
MIPI_CSI_D1N
VCC1V8_DVP
VDD1V5_DVP
GPIO2_D1/I2C3_SDA/UART2_RX_M1
GPIO2_D0/I2C3_SCL/UART2_TX_M1
VCC2V8_AF
VCC2V8_DVP

G_31 31
G_32 32
G_33 33
G_34 34

TP4612 TP_0.5

VCCIO_3V3

C4600 100nF X5R 16V C0402

VCC2V8_DVP

U4600
PT5108E23E-28
SOT_23_5

1	IN	OUT	5
2	GND		
3	EN	BP	4

DNP

TP4610 TP_0.5   VCC2V8_AF

C4601 1uF X5R 6.3V C0402

C4602 DNP C0402

VCC1V8_DVP

C4603 100nF X5R 16V C0402

VCC2V8_DVP

C4604 100nF X5R 16V C0402

C4605 10uF X5R 6.3V C0603

TP4613 TP_0.5
VCC1V8_DVP

R4604 10K R0402 5%

MIPI_RST

C4610 100nF X5R 16V C0402

TP4611 TP_0.5
VDD1V5_DVP

C4606 4.7uF X5R 6.3V C0402

C4607 100nF X5R 16V C0402

VCC2V8_DVP

FB4600 1 2
600R-100M
L0603
500mA
25%

C4608 10uF X5R 6.3V C0603

VCC2V8_AF

C4609 100nF X5R 16V C0402

MIPI Panel

MIPI_DSI_D0P
MIPI_DSI_D0N

MIPI_DSI_D1P
MIPI_DSI_D1N

MIPI_DSI_D2P
MIPI_DSI_D2N

MIPI_DSI_D3P
MIPI_DSI_D3N

MIPI_DSI_CLKP
MIPI_DSI_CLKN

I2C1_SDA_TP
I2C1_SCL_TP
DFTJTAG_TDO/LCD_PWREN_H

TP_RST_L
TP_INT_L

DFTJTAG_TCK/PWM1_LCD_BL   1 R5200 2
                              0R   5%   R0402

MIPI_DSI_D0N
MIPI_DSI_D0P
MIPI_DSI_D1N
MIPI_DSI_D1P
MIPI_DSI_CLKN
MIPI_DSI_CLKP
MIPI_DSI_D2N
MIPI_DSI_D2P
MIPI_DSI_D3N
MIPI_DSI_D3P

PWM1_LCD_BL
TP5211

DFTJTAG_TDO/LCD_PWREN_H
I2C1_SCL_TP
I2C1_SDA_TP
TP_INT_L
TP_RST_L

VCC5V0_SYS

C5200   C5201
C0603   100nF
10uF   C0402
10V   X5R
X5R   16V

J5200
30PIN FPC CON
1   GND_0
2   D0_N
3   D0_P
4   GND_1
5   D1_N
6   D1_P
7   GND_2
8   CLK_N
9   CLK_P
10 GND_3
11 D2_N
12 D2_P
13 GND_4
14 D3_N
15 D3_P
16 GND_5
17 LCD_PWM_IN
18 RESERVE
19 LCD_VCCIO
20 LCD_RST
21 HW_ID
22 LED_EN
23 TP_SCL
24 TP_SDA
25 TP_INT
26 TP_RST
27 GND_6
28 VSYS_0
29 VSYS_1
30 VSYS_2
31 GND_7
32 GND_8

WIFI/BT MODULE

50 Ohm RF trace

26MHz: +-10ppm

up to 700mA

SMTSO8500
SMTSO2050CTJ
SMTSO8501
SMTSO2050CTJ

LOCKED DAUGHTER BOARD

U8500

H2

Left signal	Pin	Pin	Right signal
GPIO2_C0/CIF_D0/CLKOUT_ETHERNET	1	2	GPIO2_C1/CIF_D1/RGMII_TXCLK
GPIO2_A4/CIF_D2/RGMII_RXD0/SPI2_MISO_M1	3	4	GPIO2_A5/CIF_D3/RGMII_RXD1/SPI2_CLK_M1
GPIO2_A6/CIF_D4/RGMII_RXER/SPI2_MOSI_M1	5	6	GPIO2_A7/CIF_D5/RGMII_RXDV/SPI2_CSN_M1
GPIO2_B0/RGMII_MDIO	7	8	GPIO2_B1/CIF_D7/RGMII_COL
GPIO2_B2/CIF_D8/RGMII_MDC/LCDC_HSYNC	9	10	GPIO2_B3/CIF_D9/RGMII_TXD3/LCDC_VSYNC
GPIO2_C2/CIF_D10/RGMII_RXCLK/LCDC_D2	11	12	GPIO2_C3/CIF_D11/LCDC_D3
GPIO2_A0/CIF_D12/RGMII_CRS/LCDC_D6	13	14	GPIO2_A1/CIF_D13/RGMII_TXEN/LCDC_D7
GPIO2_A2/CIF_D14/RGMII_TXD1/LCDC_D0	15	16	GPIO2_A3/CIF_D15/RGMII_TXD0/LCDC_D1
GPIO2_B5/CIF_HREF/RGMII_RXD2	17	18	GPIO2_B4/CIF_VSYNC/RGMII_TXD2
GPIO2_B6/CIF_CLKIN/RGMII_RXD3	19	20	GPIO2_B7/CIF_CLKOUT/RGMII_CLK
GPIO2_C4/LCDC_D4	21	22	GPIO2_C5/LCDC_D5
GPIO2_C6/LCDC_CLK	23	24	GPIO2_C7/LCDC_DEN
GPIO3_C2/LCDC_D8/UART5_TX/I2C4_SCL	25	26	GPIO3_C3/LCDC_D9/UART5_RX/I2C4_SDA
GPIO3_C4/LCDC_D10/UART6_TX	27	28	GPIO3_C5/LCDC_D11/UART6_RX
GPIO3_C6/LCDC_D12/UART7_TX	29	30	GPIO3_C7/LCDC_D13/UART7_RX/SPI1_CLK_M1
GPIO3_D0/LCDC_D14/PWM8/SPI1_MOSI_M1	31	32	GPIO3_D1/LCDC_D15/PWM9/SPI1_CSN0_M1
GPIO3_D2/LCDC_D16/PWM10/SPI1_MISO_M1	33	34	GPIO3_D3/LCDC_D17/PWM11/SPI1_CSN1_M1
DFTJTAG_TCK/PWM1_LCD_BL	35	36	GPIO2_D1/I2C3_SDA/UART2_RX_M1

R8500 0R 5% R0402
VCCIO_3V3
VCC2V8_DVP
VDD1V5_DVP
EPHY_RST_3V3IO
VCC5V0_SYS
VCC1V8_DVP

61082-06

H1

C8500
100nF
X5R
16V
C0402

C8501
10uF
X5R
C0805
10V

C8502
100nF
X5R
16V
C0402

C8503
10uF
C0805
X5R
10V

VCC1V8_DVP
C8504
100nF
X5R
16V
C0402

VCC2V8_DVP
C8505
100nF
X5R
16V
C0402

VDD1V5_DVP
C8506
100nF
X5R
16V
C0402

Rockchip
Fuzhou Rockchip Electronics

Project:	RK_EVB_1808_lp3_sch_V12		
File:	85.INTERFACE		
Date:	Friday, February 15, 2019	Rev:	V1.0
Designed by:	Rzf	Sheet:	85 of 99

HEADPHONE

CTIA

SPEAKER

MIC

HP_DET_H为高，表示耳机接入：

MIC Array-Digital Interface

VCC5V0_SYS

C7500 10uF X5R 10V C0603
C7501 100nF X5R 16V C0402

VCCIO_3V3

C7503 4.7uF X5R 6.3V C0603
C7505 100nF X5R 16V C0402

ADC2_HW_ID1

C7504 100nF X5R 16V C0402
C7502 4.7uF X5R 6.3V C0603
VCC_1V8

J7500

Pin	Signal
1	1 GND_32
3	2
5	4
7	6
9	8 ADC0_KEY_IN
11	10 I2S0_MCLK
13	12 I2S0_SCLK_RX/PDM_CLK0
15	14 I2S0_SCLK_TX
17	16 I2S0_LRCK_RX/PDM_CLK1
19	18 I2S0_LRCK_TX
21	20 I2S0_SDO1
23	22 I2S0_SDO3
25	24 I2S0_SDI1/PDM_SDI1
27	26 I2S0_SDI3/PDM_SDI3
29	28 MIC_LED_EN_H Vih>1.4V
	30 GPIO3_C2/LCDC_D8/UART5_TX/I2C4_SCL

30PIN_FPC_CON
CNN30_1R00_FP05SL_V
GND_31

R7500 22R 5% R0402
R7501 22R 5% R0402
R7502 22R 5% R0402
R7503 22R 5% R0402
R7504 22R 5% R0402
R7506 22R 5% R0402
R7508 22R 5% R0402
R7510 22R 5% R0402
R7512 22R 5% R0402

I2S0_SDO0
R7505 22R 5% R0402
I2S0_SDO2
R7507 22R 5% R0402
I2S0_SDI0/PDM_SDI0
R7509 22R 5% R0402
I2S0_SDI2/PDM_SDI2
R7511 22R 5% R0402

GPIO3_C3/LCDC_D9/UART5_RX/I2C4_SDA

I2S0_SDO0
I2S0_SDO1
I2S0_SDO2
I2S0_SDO3

I2S0_SDI0/PDM_SDI0
I2S0_SDI1/PDM_SDI1
I2S0_SDI2/PDM_SDI2
I2S0_SDI3/PDM_SDI3

I2S0_SCLK_RX/PDM_CLK0
I2S0_LRCK_RX/PDM_CLK1

I2S0_MCLK
I2S0_LRCK_TX
I2S0_SCLK_TX

MIC_LED_EN_H

ADC0_KEY_IN
ADC2_HW_ID1

C7506 100nF X5R 16V C0402
C7507 100nF X5R 16V C0402

Project:	RK_EVB_1808_lp3_sch_V12
File:	75.AUDIO2-MIC Array Connector
Date:	Friday, February 15, 2019
Designed by:	Rzf
Rev:	V1.0
Sheet:	75 of 99

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I2C4_SDA
I2C4_SCL
GPIO3_C3/LCDC_D9/UART5_RX/I2C4_SDA
GPIO3_C2/LCDC_D8/UART5_TX/I2C4_SCL

SENSOR_INT

Compass

Note:
The first pin of AK8963C must be
place on the lower left corner of
PCB.

VCCIO_3V3

C9000
100nF
X5R
16V
C0402

G-sensor

VCCIO_3V3

C9001
100nF
X5R
16V
C0402

U9001
MMA7660FCT
DFN10_3R00X3R00X0R90

1	RESERVED	NC_10	10
2	NC_2	DVDD	9
3	AVDD	DVSS	8
4	AVSS	SDA	7	I2C4_SDA
5	INT	SCL	6	I2C4_SCL

NC_11 11
NC_12 12

SENSOR_INT

U9000
AK8963C
BGA14_1R59X1R59X0R57

A1			C4
A2	DRDY	VID	C3
A3	CSB	TRG	C2
A4	SCL/SK	TST1	C1
	SDA/SI	VSS	

SENSOR_INT A1
I2C4_SCL A3
I2C4_SDA A4

D4 D2 D1
RST CAD1 CAD0
VDD RSV SO
B1 B3 B4

VCCIO_3V3

C9002
100nF
X5R
16V
C0402

Rockchip
瑞芯微电子   Fuzhou Rockchip Electronics

Project:	RK_EVB_1808_lp3_sch_V12		
File:	90.Sensor		
Date:	Friday, February 15, 2019	Rev:	V1.0
Designed by:	Rzf	Sheet:	90 of 99

TF Card

SDMMC0_D2
SDMMC0_D3
SDMMC0_CMD

R9100 1 0R 5% 2 R0402
R9101 1 0R 5% 2 R0402
R9102 0R 5% R0402

SDMMC0_CLK

R9103 1 0R 5% 2 R0402

SDMMC0_D0
SDMMC0_D1
SDMMC0_DET_L

R9104 1 0R 5% 2 R0402
R9105 1 0R 5% 2 R0402
R9106 0R 5% R0402

VCC3V3_SD

J9100
TF-CKT01-009D
TF9_CKT01_009D

Pin	Signal
1	DATA2
2	CD/DATA3
3	CMD
4	VDD
5	CLK
6	VSS
7	DATA0
8	DATA1
9	CD
10	G1
11	G2
12	G3
13	G4

TP9100 TP_0.7
TP9101 TP_0.7
TP9102 TP_0.7
TP9103 TP_0.7
TP9104 TP_0.7

TP9105 TP_0.7
TP9106 TP_0.7

Used for UART debug, please place together

TP9107 TP_0.7

TP9108 TP_0.7

ED9106 ESD5341N ESD0402
ED9105 ESD5341N ESD0402
ED9104 ESD5341N ESD0402
ED9103 ESD5341N ESD0402
ED9102 ESD5341N ESD0402
ED9101 ESD5341N ESD0402
ED9100 ESD5471X ESD0402

VCC3V3_SD

C9100 100nF X5R 16V C0402
C9101 10uF X5R 6.3V C0603
D9100 ESD5451N ESD0402

Close to TF

OPTION

VCC_3V3

VCC1V8_EFUSE

U9600

1	IN	OUT	5
2	GND		
3	EN	BP	4

PT5108E23E-18
SOT_23_5

EFUSE_EN_H

R9600
10K
R0402
5%
DNP

C9601
100nF
X5R
16V
C0402

C9602
DNP
C0402

C9600
1uF
X5R
6.3V
C0402

If you don't need efuse,
the Option can be removed

Debug UART2
(USB To UART)

JTAG

SWD

UART2_RX_M0 R9700 R0402 5%
UART2_TX_M0 R9701 R0402 5%
VCCIO_SD R9702 0.1R R0603

U9700 FT232RL SSOP28_10R20X5R30X2R00

C9700 1uF X5R 6.3V C0402
C9701 100nF X5R 16V C0402

TXD OSCO
DTR_n OSCI
RTS_n TEST
VDD-232 AGND
RXD NC3
RI-N CBUS0
NC1 CBUS1
DSR_n GND3
DCD_n VDD-5V
CTS_n RESET#
CBUS4 GND2
CBUS2 VO-3V3
CBUS3 DM
DP

VCC5V0_FT232
VCC3V3_FT232

C9702 10uF X5R 10V C0603
C9703 100nF X5R 16V C0402
C9704 100nF X5R 16V C0402

R9703 22R 5% R0402 DM
R9704 22R 5% R0402 DP
U_DM1
U_DP1

U9701 ESD5302F SOT_23

J9701 USB20_micro USB20Micro5_MU05_10MGF_T
VUSB DM DP ID GND

TP9700 DFTJTAG_TRSTN
TP9701 DFTJTAG_TMS
TP9702 DFTJTAG_TCK
TP9703 DFTJTAG_TDO/LCD_PWREN_H
TP9704 DFTJTAG_TDI
TP9705

DFTJTAG_TCK R9720 0R 5% R0402 DFTJTAG_TCK/PWM1_LCD_BL

VCC5V0_FT232
U9704 OUT IN SGM2203-5.0 SOT_89
C9710 10uF X5R 10V C0805

VBUS_TYPEC

Q9700 WPM3401-3/TR SOT_23
Q9701 WPM3401-3/TR SOT_23
VCC12V_DCIN
R9705 100K 5% R0402
C9711 1uF X5R 25V C0402
R9717 10K 5% R0402

J9702 USB_TYPEC_115H0

A4 VBUS_1
A9 VBUS_2
B4 VBUS_3
B9 VBUS_4
A5 CC1 TYPEC_CC1 R9706 5.1K 5% R0402
B5 CC2 TYPEC_CC2 R9707 5.1K 5% R0402
A8 SBU1 R9708 5K 5% R0402
B8 SBU2
A7 DM1 DM
A6 DP1 DP
B7 DM2
B6 DP2
A3 SSTX1_N
A2 SSTX1_P R9709 2.2K 5% R0402
B10 SSRX1_N
B11 SSRX1_P R9710 2.2K 5% R0402
B3 SSTX2_N JTAG_TCK R9711 2.2K 5% R0402
B2 SSTX2_P JTAG_TMS R9712 2.2K 5% R0402
A10 SSRX2_N R9718 2.2K 5% R0402
A11 SSRX2_P R9711 2R0402
A12 GND1
B1 GND2
B12 GND3
GND4
H1 HOLE_1
H2 HOLE_2
E1 GND_E1
E2 GND_E2
E3 GND_E3
E4 GND_E4
E5 GND_E5
E6 GND_E6
E7 GND_E7
E8 GND_E8

PWRON
Q9702 2SK3018 SOT_323
R9716 4.7K 5% R0402

VBUS_ON
Q9706 2SK3018 SOT_323
R9732 4.7K 5% R0402
VBUS_ON

RESET_L
Q9703 2SK3018 SOT_323
VOL+
Q9704 2SK3018 SOT_323
R9713 4.7K 5% R0402
R9714 4.7K 5% R0402

Maskrom
Q9705 2SK3018 SOT_323
R9715 4.7K 5% R0402

just for debug

SDMMC0_D0/UART2_TX U9702 FSUSB30MUX MSOP10_3R00X3R00X1R10
SDMMC0_D1/UART2_RX
SDMMC0_DET_L Vih=1.3V
D+ HSD1+
D- HSD2+
HSD1-
HSD2-
S /OE VCC GND
UART2_TX_M0 SDMMC0_D0
UART2_RX_M0 SDMMC0_D1
VCC_3V3
C9705 100nF C0402 X5R 16V

SDMMC0_D2/JTAG_TCK U9703 FSUSB30MUX MSOP10_3R00X3R00X1R10
SDMMC0_D3/JTAG_TMS
SDMMC0_DET_L
D+ HSD1+
D- HSD2+
HSD1-
HSD2-
S /OE VCC GND
R9731 0R 5% R0402 JTAG_TCK SDMMC0_D2 TP9706
R9730 0R 5% R0402 JTAG_TMS SDMMC0_D3 TP9707
VCC_3V3
C9706 100nF C0402 X5R 16V

Truth Table

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

Current Detection MCU

CY7C68013A

U9800 AT24C64N-10SI-2.7 SOP8 6R20X5R00X1R75

R9800 1 10K 5% 2 R0402

A0 VCC
A1 WP
A2 SCL
GND SDA

U_SCL
U_SDA

VDD3V3_MCU

Y9800 24MHz CRY4 3R20X2R50X0R80

C9806 12pF C0402 50V C0G
C9807 12pF C0402 50V C0G

RDY0/*SLRD
RDY1/*SLWR
AVCC1
XTALOUT
XTALIN
AGND1
AVCC2
DPLUS
DMINUS
AGND2
VCC1
GND1
*IFCLK/**PE0
RESERVED

CY7C68013A

GND6 VCC6 *PE1 CLKOUT/ PD7/FD15 PD6/FD14 PD5/FD13 PD4/FD12 PD3/FD11 PD2/FD10 PD1/FD9 PD0/FD8 *WAKEUP VCC5 RESET# GND4

PA7/*FLAGD/SLCS# OLED_RES
PA6/*PKTEND OLED_CS
PA5/FIFOADR1 SCL1
PA4/FIFOADR0 SCL0
PA3/*WU2 SDA19
PA2/*SLOE SDA18
PA1/INT1# SDA17
PA0/INT0# SDA16
VCC4
CTL2/*FLAGC
CTL1/*FLAGB
CTL0/*FLAGA

SCL SDA VCC2 PB0/FD0 PB1/FD1 PB2/FD2 PB3/FD3 PB4/FD4 PB5/FD5 PB6/FD6 PB7/FD7 GND2 GND3 ePAD

U_SCL U_SDA

R9801 2.2K RP4_0402
R9802 2.2K RP4_0402
R9803 1K 5% R0402
R9804 100K 5% R0402
R9805

R9806 2.2K RP4_0408
R9807 2.2K RP4_0408
R9808 10K 5% R0402
R9809 10K 5% R0402
R9810 2.2K RP4_0402
R9811 2.2K RP4_0408

C9800 1uF X5R C0402

CY_DP
CY_DM

VDD3V3_MCU

SDA15 SDA14 SDA13 SDA12 SDA11 SDA10 SDA9 SDA8

SDA15 SDA14 SDA13 SDA12 SDA11 SDA10 SDA9 SDA8 SCL1 SCL0
SDA19 SDA18 SDA17 SDA16

J9800 USB20_mini USB20MINS_USB_M5_03_002

5V DM DP ID GND

CY_DM
CY_DP

VCCU_5V

C9814 22uF C0805 X5R 10V
C9815 100nF C0402 X5R 16V

Power

VCCU_5V

C9808 22uF C0805 X5R 10V

FB9800 600R-100M L0603 500mA 25%

C9809 22uF C0805 X5R 10V

U9802 PT5108E23E-33 SOT_23_5

IN OUT
GND
EN BP

VDD3V3_MCU

C9816 100nF C0402 X5R 16V

C9810 22uF C0805 X5R 10V
C9811 1uF X5R 6.3V C0402
C9812 1uF X5R 6.3V C0402
C9813 1uF X5R 6.3V C0402

Note:Closed to pin of MCU

ADC Array

U9900
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCC_DDR_P
A0 Vin- 9 VCC_DDR
ALERT VBUS
SDA2 SDA GND 7
SCL0 SCL VCC 6 VCCA3V3_ADC
C9900
1uF
X5R
6.3V
C0402

U9901
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCCA_1V8_P
A0 Vin- 9 VCCA_1V8
ALERT VBUS
SDA3 SDA GND 7
SCL0 SCL VCC 6 VCCA3V3_ADC
C9901
1uF
X5R
6.3V
C0402

U9902
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCC_1V8_P
A0 Vin- 9 VCC_1V8
ALERT VBUS
SDA4 SDA GND 7
SCL0 SCL VCC 6 VCCA3V3_ADC
C9902
1uF
X5R
6.3V
C0402

U9903
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VDD_0V8_P
A0 Vin- 9 VDD_0V8
ALERT VBUS
SDA5 SDA GND 7
SCL0 SCL VCC 6 VCCA3V3_ADC
C9903
1uF
X5R
6.3V
C0402

U9904
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCC_BUCK5_P
A0 Vin- 9 VCC_BUCK5
ALERT VBUS
SDA6 SDA GND 7
SCL0 SCL VCC 6 VCCA3V3_ADC
C9904
1uF
X5R
6.3V
C0402

U9905
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCCIO_SD_P
A0 Vin- 9 VCCIO_SD
ALERT VBUS
SDA7 SDA GND 7
SCL0 SCL VCC 6 VCCA3V3_ADC
C9905
1uF
X5R
6.3V
C0402

U9906
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCC3V3_SD_P
A0 Vin- 9 VCC3V3_SD
ALERT VBUS
SDA8 SDA GND 7
SCL1 SCL VCC 6 VCCA3V3_ADC
C9906
1uF
X5R
6.3V
C0402

U9907
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCC2V8_DVP_P
A0 Vin- 9 VCC2V8_DVP
ALERT VBUS
SDA9 SDA GND 7
SCL1 SCL VCC 6 VCCA3V3_ADC
C9907
1uF
X5R
6.3V
C0402

U9908
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCC1V8_DVP_P
A0 Vin- 9 VCC1V8_DVP
ALERT VBUS
SDA10 SDA GND 7
SCL1 SCL VCC 6 VCCA3V3_ADC
C9908
1uF
X5R
6.3V
C0402

U9909
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VDD1V5_DVP_P
A0 Vin- 9 VDD1V5_DVP
ALERT VBUS
SDA11 SDA GND 7
SCL1 SCL VCC 6 VCCA3V3_ADC
C9909
1uF
X5R
6.3V
C0402

U9910
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VDD_LOG_P
A0 Vin- 9 VDD_LOG
ALERT VBUS
SDA12 SDA GND 7
SCL1 SCL VCC 6 VCCA3V3_ADC
C9910
1uF
X5R
6.3V
C0402

U9911
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VDD_CPU_P
A0 Vin- 9 VDD_CPU
ALERT VBUS
SDA13 SDA GND 7
SCL1 SCL VCC 6 VCCA3V3_ADC
C9911
1uF
X5R
6.3V
C0402

U9912
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCC5V0_SYS_P
A0 Vin- 9 VCC5V0_SYS
ALERT VBUS
SDA14 SDA GND 7
SCL1 SCL VCC 6 VCCA3V3_ADC
C9912
1uF
X5R
6.3V
C0402

U9913
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VDD_NPU_P
A0 Vin- 9 VDD_NPU
ALERT VBUS
SDA15 SDA GND 7
SCL0 SCL VCC 6 VCCA3V3_ADC
C9913
1uF
X5R
6.3V
C0402

U9914
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VDDA_0V8_P
A0 Vin- 9 VDDA_0V8
ALERT VBUS
SDA16 SDA GND 7
SCL1 SCL VCC 6 VCCA3V3_ADC
C9914
1uF
X5R
6.3V
C0402

U9915
INA226AIDGST
MSOP10_3R00X3R00X1R10

A1 Vin+ VCC_3V3_P
A0 Vin- 9 VCC_3V3
ALERT VBUS
SDA19 SDA GND 7
SCL0 SCL VCC 6 VCCA3V3_ADC
C9915
1uF
X5R
6.3V
C0402

ADC Power

VCCU_5V
FB9900
600R-100M
L0603
500mA

C9916
22uF
C0805
X5R
10V

C9917
22uF
C0805
X5R
10V

U9916
PT510BE23E-33
SOT_23_5
IN OUT 5
GND
EN BP 4

C9925
100nF
C0402
X5R
16V

FB9901
600R-100M
L0603
500mA

C9918
22uF
C0603
X5R
6.3V

C9919
22uF
C0603
X5R
6.3V

C9920
22uF
C0603
X5R
6.3V

C9921
22uF
C0603
X5R
6.3V

C9922
22uF
C0603
X5R
6.3V

C9923
22uF
C0603
X5R
6.3V

C9924
22uF
C0603
X5R
6.3V

VCCA3V3_ADC

VDD_LOG_P
VDD_DDR_P
VDD_CPU_P
VDD_NPU_P
VDDA_0V8_P
VDD_0V8_P
VCC_1V8_P
VCCA_1V8_P
VCC1V8_DVP_P
VDD1V5_DVP_P
VCC2V8_DVP_P
VCCIO_SD_P
VCC3V3_SD_P
VCC_BUCK5_P
VCC_3V3_P

VCC5V0_SYS_P

Rockchip 瑞芯微电子	Fuzhou Rockchip Electronics		
Project:	RK_EVB_1808_lp3_sch_V12		
File:	99.Power Test_INA226		
Date:	Friday, February 15, 2019	Rev:	V1.0
Designed by:	Rzf	Sheet:	99 of 99