RK3399Pro IO LIST For Reference Schematic

Version	Update time	Modify content	Author
V1.0	2018.11.21	The first version	rzf
V1.1	2018.12.03	Add cover page	rzf
V1.2	2019.05.20	Modified some of the project‘s "Description".	Linus.Lin
V1.3	2019.09.12	Modifiy "I/O pull" of GPIO1_A6/TSADC_INT. Modifiy "Pin Name" of NPU PMUIO1/PMUIO2/VCCIO5/VCCIO6. Add part-M of NPU VCCIO2.	Linus.Lin

GPIO POWER TYPE NOTE	
CPU GPIO Type	**Power Configuration**
1.8V only	1.8V mode: VDDPST=1.8V,VDDIO=1.8V
3.3V only	3.3V mode: VDDPST=1.8V,VDDIO=3.3V
1.8V/3.0V	3.0V mode: VDDPST=1.5V,VDDIO=3.0V 1.8V mode: VDDPST=1.8V,VDDIO=1.8V
1.8V/3.0V auto	3.0V mode: VDDPST=1.5V(internal auto),VDDIO=3.0V 1.8V mode: VDDPST=1.8V(internal auto),VDDIO=1.8V
NPU GPIO Type	**Power configuration**
1.8V only	1.8V mode: VDDIO=1.8V
1.8V/3.3V	3.3V mode: VDDIO=3.3V 1.8V mode: VDDIO=1.8V

RK3399Pro IO LIST V10 FOR REF SCHEMATIC

Pin No.	Pin Name	Pin Type	Default Type	I/O Pull	Pull Resistor	Typ Pull Resistor	Drive Current（mA）	Default Drive (mA)	Description	RK3399Pro Reference Schematic Pin Distribution
PART D	PMUIO1(1.8V only I/O)									
J40	NPOR	I	I	up					System reset input	NPOR
K40	XIN_OSC	I	I	N/A	N/A	N/A	N/A	N/A	Oscillator 24MHz clock input	24MXIN_OSC
J39	XOUT_OSC	O	O	N/A	N/A	N/A	N/A	N/A	Oscillator 24MHz clock output	24MXOUT_OSC
T24	EFUSE	P	N/A	N/A	N/A	N/A	N/A	N/A	EFUSE digital I/O supply,default connect to VSS	VCC1V8_EFUSE
F40	GPIO0_A0/TEST_CLKOUT0/CLK32K_IN	I/O	I	up	54k-120k	80k	5,10,15,20	5	32KHz clock input	CLKOUT_32K
L34	GPIO0_A1/DDRIO_PWROFF	I/O	I	up	54k-120k	80k	5,10,15,20	5	MIPI CAMERA RST	CAM_RST_L
W40	GPIO0_A2/REF_CLKO	I/O	I	down	55k-176k	95k	5,10,15,20	5	26MHz clock output	REFCLK_OUT
G39	GPIO0_A3/SDIO0_WRPT	I/O	I	down	55k-176k	95k	5,10,15,20	5	WIFI module wake up AP	WIFI_HOST_WAKE_L
L37	GPIO0_A4/SDIO0_INTN	I/O	I	down	55k-176k	95k	5,10,15,20	5	NPU power enable No.1	NPU_PWREN_1
J35	GPIO0_A5/EMMC_PWRON	I/O	I	up	54k-120k	80k	5,10,15,20	5	BT module wake up AP	BT_HOST_WAKE_L
H36	GPIO0_A6/PWM3A_IR	I/O	I	down	55k-176k	95k	5,10,15,20	5	IR receiver input	IR_RX
M35	GPIO0_A7/SDMMC0_DET	I/O	I	up	54k-120k	80k	5,10,15,20	5	SDMMC0 detect input	SDMMC0_DET_L
F39	GPIO0_B0/SDMMC0_WRPT/TEST_CLKOUT2	I/O	I	up	54k-120k	80k	5,10,15,20	5	N4 interrupt input	N4_INT_L
L36	GPIO0_B1/PMUIO2_VOLSEL	I/O	I	down	55k-176k	95k	5,10,15,20	5	N4 power enable	N4_PWREN
H38	GPIO0_B2	I/O	I	down	55k-176k	95k	5,10,15,20	5	NPU power enable No.2	NPU_PWREN_2
H37	GPIO0_B3	I/O	I	down	55k-176k	95k	5,10,15,20	5	NPU power enable No.3	NPU_PWREN_3
J37	GPIO0_B4	I/O	I	down	55k-176k	95k	5,10,15,20	5	N4 reset output	N4_RST
L35	GPIO0_B5	I/O	I	down	55k-176k	95k	5,10,15,20	5	Headphone insert detect input	PHONE_DET_H
P24	PMUIO1_VDD_1V8	P	N/A	N/A	N/A	N/A	N/A	N/A	PMUIO1 Post-Driver and digital I/O power supply	VCC1V8_PMUPLL
R24	PMU_VDD_0V9	P	N/A	N/A	N/A	N/A	N/A	N/A	PMU Post-Driver power supply	VCC_0V9_S3
P25	PMU_VDD_1V8	P	N/A	N/A	N/A	N/A	N/A	N/A	PMU digital I/O power supply	VCC_1V8_S3
PART E	PMUIO2(1.8 or 3.0V I/O)									
E40	GPIO1_A0/ISP0_SHUTTER_EN/ISP1_SHUTTER_EN	I/O	I	down	34k-93k	60k	3,6,9,12	3	CPU reset output to NPU	CPU_RST_NPU_L
D39	GPIO1_A1/ISP0_SHUTTER_TRIG/ISP1_SHUTTER_TRIG	I/O	I	down	34k-93k	60k	3,6,9,12	3	LCD reset output	LCD_RST_L
D40	GPIO1_A2/ISP0_FLASHTRIGIN/ISP1_FLASHTRIGIN	I/O	I	down	34k-93k	60k	3,6,9,12	3	CC logic controler interrupt input	TYPEC_CC_INT_L
C40	GPIO1_A3/ISP0_FLASHTRIGOUT/ISP1_FLASHTRIGOUT	I/O	I	down	34k-93k	60k	3,6,9,12	3	NPU status detect output to CPU	NPU_SLEEP_STATUS_DET
C39	GPIO1_A4/ISP0_PRELIGHT_TRIG/ISP1_PRELIGHT_TRIG	I/O	I	down	34k-93k	60k	3,6,9,12	3	NPU interrupt input from CPU	CPU_INT_NPU
B40	GPIO1_A5/AP_PWROFF	I/O	I	down	34k-93k	60k	3,6,9,12	3	PMIC sleep control output	PMIC_SLEEP_H
E38	GPIO1_A6/TSADC_INT	I/O	I	high-z	34k-93k	60k	3,6,9,12	3	CPU Over-temperature protection reset output	TSADC_INT_H
F37	GPIO1_A7/SPI1_RXD/UART4_RX	I/O	I	up	33k-88k	58k	3,6,9,12	6	Reserve	Reserve

B39	GPIO1_B0/SPI1_TXD/UART4_TX	I/O	I	up	33k-88k	58k	3,6,9,12	6	Reserve	Reserve
G36	GPIO1_B1/SPI1_CLK/PMCU_JTAG_TCK	I/O	I	up	33k-88k	58k	3,6,9,12	6	Reserve	Reserve
H35	GPIO1_B2/SPI1_CSN0/PMCU_JTAG_TMS	I/O	I	up	33k-88k	58k	3,6,9,12	6	Reserve	Reserve
F36	GPIO1_B3/I2C4_SDA	I/O	I	up	33k-88k	58k	3,6,9,12	3	I2C serial port 4,need external pull-up	I2C4_SDA
G35	GPIO1_B4/I2C4_SCL	I/O	I	up	33k-88k	58k	3,6,9,12	3	I2C serial port 4,need external pull-up	I2C4_SCL
D38	GPIO1_B5	I/O	I	down	34k-93k	60k	3,6,9,12	3	USB HOST power enable	USB5V0_EN_H
B38	GPIO1_B6/PWM3B_IR	I/O	I	down	34k-93k	60k	3,6,9,12	3	GPU sleep control output	GPU_SLEEP_H
J34	GPIO1_B7/SPI3_RXD/I2C0_SDA	I/O	I	up	33k-88k	58k	3,6,9,12	3	I2C serial port 0,for PMU,need external pull-up	I2C0_SDA_PMIC
K33	GPIO1_C0/SPI3_TXD/I2C0_SCL	I/O	I	up	33k-88k	58k	3,6,9,12	3	I2C serial port 0,for PMU,need external pull-up	I2C0_SCL_PMIC
A39	GPIO1_C1/SPI3_CLK	I/O	I	down	34k-93k	60k	3,6,9,12	3	CPU sleep control output	CPU_B_SLEEP_H
A38	GPIO1_C2/SPI3_CSN0	I/O	I	up	33k-88k	58k	3,6,9,12	3	PMIC interrupt input	PMIC_INT_L
H33	GPIO1_C3/PWM2	I/O	I	down	34k-93k	60k	3,6,9,12	3	Reserve	GPIO1_C3_Reserve
J33	GPIO1_C4/I2C8_SDA	I/O	I	up	33k-88k	58k	3,6,9,12	3	I2C serial port 8,for CC,need external pull-up	I2C8_SDA_CC
H32	GPIO1_C5/I2C8_SCL	I/O	I	up	33k-88k	58k	3,6,9,12	3	I2C serial port 8,for CC,need external pull-up	I2C8_SCL_CC
J32	GPIO1_C6	I/O	I	down	34k-93k	60k	3,6,9,12	6	NPU power enable No.4	NPU_PWREN_4
K32	GPIO1_C7	I/O	I	down	34k-93k	60k	3,6,9,12	6	NPU power enable No.5	NPU_PWREN_5
D36	GPIO1_D0	I/O	I	down	34k-93k	60k	3,6,9,12	6	NPU power enable No.6	NPU_PWREN_6
N24	PMUIO2_VDDPST	P	N/A	N/A	N/A	N/A	N/A	N/A	PMUIO2 Post-Driver power supply	VCC_1V8_S3
P23	PMUIO2_VDD	P	N/A	N/A	N/A	N/A	N/A	N/A	PMUIO2 digital I/O power supply	VCC_1V8_S3
PART P	**APIO2(1.8 or 3.0V I/O)**									
D33	GPIO2_A0/VOP_D0/CIF_D0/I2C2_SDA	I/O	I	up	33k-88k	58k	3,6,9,12	3	Camera data port	CIF_D0
J27	GPIO2_A1/VOP_D1/CIF_D1/I2C2_SCL	I/O	I	up	33k-88k	58k	3,6,9,12	3	Camera data port	CIF_D1
F33	GPIO2_A2/VOP_D2/CIF_D2	I/O	I	down	34k-93k	60k	3,6,9,12	3	Camera data port	CIF_D2
E33	GPIO2_A3/VOP_D3/CIF_D3	I/O	I	down	34k-93k	60k	3,6,9,12	3	Camera data port	CIF_D3
G33	GPIO2_A4/VOP_D4/CIF_D4	I/O	I	down	34k-93k	60k	3,6,9,12	3	Camera data port	CIF_D4
G29	GPIO2_A5/VOP_D5/CIF_D5	I/O	I	down	34k-93k	60k	3,6,9,12	3	Camera data port	CIF_D5
H29	GPIO2_A6/VOP_D6/CIF_D6	I/O	I	down	34k-93k	60k	3,6,9,12	3	Camera data port	CIF_D6
G32	GPIO2_A7/VOP_D7/CIF_D7/I2C7_SDA	I/O	I	up	33k-88k	58k	3,6,9,12	3	Camera data port	CIF_D7
H30	GPIO2_B0/VOP_CLK/CIF_VSYNC/I2C7_SCL	I/O	I	up	33k-88k	58k	3,6,9,12	3	Camera vsync input	CIF_VSYNC
G30	GPIO2_B1/SPI2_RXD/CIF_HREF/I2C6_SDA	I/O	I	up	33k-88k	58k	3,6,9,12	3	Camera href input	CIF_HREF
H26	GPIO2_B2/SPI2_TXD/CIF_CLKIN/I2C6_SCL	I/O	I	up	33k-88k	58k	3,6,9,12	3	Camera clock input	CIF_CLKI
E34	GPIO2_B3/SPI2_CLK/VOP_DEN/CIF_CLKOUTA	I/O	I	up	33k-88k	58k	3,6,9,12	3	Camera clock output	CIF_CLK_OUT
E32	GPIO2_B4/SPI2_CSN0	I/O	I	up	33k-88k	58k	3,6,9,12	3	Camera power down control output for front	DVP_PDN0_H
J24	APIO2_VDDPST	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO2 Post-Driver power supply	VCC_1V8_S0
K23	APIO2_VDD	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO2 digital I/O power supply	VCC_1V8_S0
PART R	**SDMMC0 (1.8V/3.0V auto)**									
P32	GPIO4_B0/SDMMC0_D0/UART2A_RX	I/O	I	up	33k-88k	58k	4,6,8,10,12,14,16,18	6	SDMMC0 data port	SDMMC0_D0/UART2_RX
P31	GPIO4_B1/SDMMC0_D1/UART2A_TX	I/O	I	up	33k-88k	58k	4,6,8,10,12,14,16,18	6	SDMMC0 data port	SDMMC0_D1/UART2_TX

M34	GPIO4_B2/SDMMC0_D2/APJTAG_TCK	I/O	I	up	33k-88k	58k	4,6,8,10,12,14,16,18	6	SDMMC0 data port JTAG TCK for AP	SDMMC0_D2/JTAG_TCK
H39	GPIO4_B3/SDMMC0_D3/APJTAG_TMS	I/O	I	up	33k-88k	58k	4,6,8,10,12,14,16,18	6	SDMMC0 data port JTAG TMS for AP	SDMMC0_D3/JTAG_TMS
G40	GPIO4_B4/SDMMC0_CLKOUT/MCUJTAG_TCK	I/O	I	down	34k-93k	60k	4,6,8,10,12,14,16,18	6	SDMMC0 clock output JTAG TCK for MCU	SDMMC0_CLK
H40	GPIO4_B5/SDMMC0_CMD/MCUJTAG_TMS	I/O	I	up	33k-88k	58k	4,6,8,10,12,14,16,18	6	SDMMC0 command output JTAG TMS for MCU	SDMMC0_CMD
R26	SDMMC0_VDDPST	P	N/A	N/A	N/A	N/A	N/A	N/A	SDMMC0 Post-Driver power supply	SDMMC0_VDDPST
T23	SDMMC0_VDD	P	N/A	N/A	N/A	N/A	N/A	N/A	SDMMC0 digital I/O power supply	VCCIO_SD_S0
PART R	**APIO3 (1.8V only I/O)**									
AE9	GPIO2_C0/UART0_RX	I/O	I	up	54k-120k	80k	5,10,15,20	5	UART0 serial port, for BT module	UART0_RXD_BT
AJ6	GPIO2_C1/UART0_TX	I/O	I	up	54k-121k	81k	5,10,15,20	5	UART0 serial port, for BT module	UART0_TXD_BT
AK7	GPIO2_C2/UART0_CTSN	I/O	I	up	54k-122k	82k	5,10,15,20	5	UART0 serial port, for BT module	UART0_CTS_BT
AM6	GPIO2_C3/UART0_RTSN	I/O	I	up	54k-123k	83k	5,10,15,20	5	UART0 serial port, for BT module	UART0_RTS_BT
AD8	GPIO2_C4/SDIO0_D0/SPI5_RXD	I/O	I	up	54k-124k	84k	5,10,15,20	5	SDIO0 data port ,for WIFI module	SDIO0_D0
AK6	GPIO2_C5/SDIO0_D1/SPI5_TXD	I/O	I	up	54k-125k	85k	5,10,15,20	5	SDIO0 data port ,for WIFI module	SDIO0_D1
AG8	GPIO2_C6/SDIO0_D2/SPI5_CLK	I/O	I	up	54k-126k	86k	5,10,15,20	5	SDIO0 data port ,for WIFI module	SDIO0_D2
AE8	GPIO2_C7/SDIO0_D3/SPI5_CSN0	I/O	I	up	54k-127k	87k	5,10,15,20	5	SDIO0 data port ,for WIFI module	SDIO0_D3
AF7	GPIO2_D0/SDIO0_CMD	I/O	I	up	54k-128k	88k	5,10,15,20	5	SDIO0 command output,for WIFI module	SDIO0_CMD
AG7	GPIO2_D1/SDIO0_CLKOUT/TEST_CLKOUT1	I/O	I	up	54k-129k	89k	5,10,15,20	5	SDIO0 clock output,for WIFI module	SDIO0_CLK
AJ5	GPIO2_D2/SDIO0_DETN/PCIE_CLKREQN	I/O	I	up	54k-130k	90k	5,10,15,20	5	AP wake up BT module	BT_WAKE_L
AD9	GPIO2_D3/SDIO0_PWREN	I/O	I	down	55k-176k	95k	5,10,15,20	5	WIFI module power enable	WIFI_REG_ON_H
AF8	GPIO2_D4/SDIO0_BKPWR	I/O	I	down	55k-176k	95k	5,10,15,20	5	BT module power enable	BT_REG_ON_H
AB8	APIO3_VDD_1V8	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO3 Post-Driver power supply	VCC_1V8_S3
PART I	**APIO1(3.3V only I/O)**									
F24	GPIO3_A0/MAC_TXD2/SPI4_RXD	I/O	I	down	27k-102k	48k	4,7,10,13,16,19,22,26	4	MAC transmit data	PHY_TXD2
H24	GPIO3_A1/MAC_TXD3/SPI4_TXD	I/O	I	down	27k-102k	48k	4,7,10,13,16,19,22,26	4	MAC transmit data	PHY_TXD3
F29	GPIO3_A2/MAC_RXD2/SPI4_CLK	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC receive data	MAC_RXD2
E26	GPIO3_A3/MAC_RXD3/SPI4_CSN0	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC receive data	MAC_RXD3
D26	GPIO3_A4/MAC_TXD0/SPI0_RXD	I/O	I	down	27k-102k	48k	4,7,10,13,16,19,22,26	4	MAC transmit data	PHY_TXD0
G23	GPIO3_A5/MAC_TXD1/SPI0_TXD	I/O	I	down	27k-102k	48k	4,7,10,13,16,19,22,26	4	MAC transmit data	PHY_TXD1
F27	GPIO3_A6/MAC_RXD0/SPI0_CLK	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC receive data	MAC_RXD0
H27	GPIO3_A7/MAC_RXD1/SPI0_CSN0	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC receive data	MAC_RXD1
F30	GPIO3_B0/MAC_MDC/SPI0_CSN1	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC management clock	MAC_MDC
E27	GPIO3_B1/MAC_RXDV	I/O	I	down	27k-102k	48k	4,7,10,13,16,19,22,26	4	MAC receive data valid	MAC_RXDV
F23	GPIO3_B2/MAC_RXER/I2C5_SDA	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC receive error	No used for RGMII
G24	GPIO3_B3/MAC_CLK/I2C5_SCL	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC reference clock output	MAC_CLK
H23	GPIO3_B4/MAC_TXEN/UART1_RX	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC transmit enable	PHY_TXEN
G26	GPIO3_B5/MAC_MDIO/UART1_TX	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC management command and data	MAC_MDIO
F26	GPIO3_B6/MAC_RXCLK/UART3_RX	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC receive clock	MAC_RXCLK
E30	GPIO3_B7/MAC_CRS/UART3_TX/CIF_CLKOUTB	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC carrier sense detect	PHY_RST

E29	GPIO3_C0/MAC_COL/UART3_CTSN/SPDIF_TX	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC collision detect	PHY_INT
G27	GPIO3_C1/MAC_TXCLK/UART3_RTSN	I/O	I	up	26k-71k	46k	4,7,10,13,16,19,22,26	4	MAC transmit clock	PHY_TXCLK
J22	APIO1_VDDPST	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO1 Post-Driver power supply	VCC_1V8_S0
J23	APIO1_VDD	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO1 digital I/O power supply	VCCIO_3V3_S0
PART N	APIO5(1.8 or 3.0V I/O)									
AG3	GPIO3_D0/I2S0_SCLK	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 0 port, for MIC Array	Reserve for MIC Array
AK1	GPIO3_D1/I2S0_LRCK_RX	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 0 port, for MIC Array	Reserve for MIC Array
AJ2	GPIO3_D2/I2S0_LRCK_TX	I/O	I	down	34k-93k	60k	3,6,9,12	3	G-sensor interrupt input	GSENSOR_INT_L
Y7	GPIO3_D3/I2S0_SDI0	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 0 port, for MIC Array	Reserve for MIC Array
AL1	GPIO3_D4/I2S0_SDI1SDO3	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 0 port, for MIC Array	Reserve for MIC Array
AA6	GPIO3_D5/I2S0_SDI2SDO2	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 0 port, for MIC Array	Reserve for MIC Array
AH2	GPIO3_D6/I2S0_SDI3SDO1	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 0 port, for MIC Array	Reserve for MIC Array
AJ1	GPIO3_D7/I2S0_SDO0	I/O	I	down	34k-93k	60k	3,6,9,12	3	Compass interrupt input	COMP_INT_H
AC7	GPIO4_A0/I2S_CLK	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S MCLK, for both I2S0 and I2S1	I2S_CLK
AG1	GPIO4_A1/I2C1_SDA	I/O	I	up	33k-88k	58k	3,6,9,12	3	I2C serial port 1,for Audio,need external pull-up	I2C1_SDA_1V8
Y6	GPIO4_A2/I2C1_SCL	I/O	I	up	33k-88k	58k	3,6,9,12	3	I2C serial port 1,for Audio,need external pull-up	I2C1_SCL_1V8
AF3	GPIO4_A3/I2S1_SCLK	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 1 port, for RK809 codec	I2S1_SCLK
AA7	GPIO4_A4/I2S1_LRCK_RX	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 1 port, for RK809 codec	I2S1_LRCK
AH1	GPIO4_A5/I2S1_LRCK_TX	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 1 port, for RK809 codec	I2S1_LRCK
AD6	GPIO4_A6/I2S1_SDI0	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 1 port, for RK809 codec	I2S1_SDI
AC6	GPIO4_A7/I2S1_SDO0	I/O	I	down	34k-93k	60k	3,6,9,12	3	I2S 1 port, for RK809 codec	I2S1_SDO
AA8	APIO5_VDDPST	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO5 Post-Driver power supply	VCC_1V8_S0
Y8	APIO5_VDD	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO5 digital I/O power supply	VCC_1V8_S0
PART N	APIO4(1.8 or 3.0V IO)									
AF6	GPIO4_C0/I2C3_SDA/UART2B_RX	I/O	I	up	33k-89k	59k	3,6,9,12	3	I2C serial port 3,for HDMI,need external pull-up	I2C3_SDA_HDMI
AK2	GPIO4_C1/I2C3_SCL/UART2B_TX	I/O	I	up	33k-89k	59k	3,6,9,12	3	I2C serial port 3,for HDMI,need external pull-up	I2C3_SCL_HDMI
AF5	GPIO4_C2/PWM0/VOP0_PWM/VOP1_PWM	I/O	I	down	34k-95k	61k	3,6,9,12	3	LCD panel backlight brightness control output	LCD_BL_PWM
AK3	GPIO4_C3/UART2C_RX	I/O	I	up	33k-89k	59k	3,6,9,12	3	TOUCH interrupt input	TOUCH_INT_L
AJ4	GPIO4_C4/UART2C_TX	I/O	I	up	33k-89k	59k	3,6,9,12	3	TOUCH power control output	TOUCH_PWR_EN_H
AM1	GPIO4_C5/SPDIF_TX	I/O	I	down	34k-95k	61k	3,6,9,12	3	USB Type-C0 power control output	VCC5V0_TYPEC0_EN
AG6	GPIO4_C6/PWM1	I/O	I	down	34k-95k	61k	3,6,9,12	3	Touch panel reset output	TOUCH_RST_L
AD7	GPIO4_C7/HDMI_CECINOUT/EDP_HOTPLUG	I/O	I	up	33k-89k	59k	3,6,9,12	3	HDMI CEC communication	HDMI_CEC
AJ3	GPIO4_D0/PCIE_CLKREQNB	I/O	I	up	33k-89k	59k	3,6,9,12	3	Reserve	Reserve
AK4	GPIO4_D1/DP_HOTPLUG	I/O	I	down	34k-95k	61k	3,6,9,12	3	USB2.0 HUB reset output	USB20_HUB_RESET
AG4	GPIO4_D2	I/O	I	down	34k-95k	61k	3,6,9,12	3	Reserve	Reserve
AM4	GPIO4_D3/EFUSE_VQPS	I/O	I	down	34k-95k	61k	3,6,9,12	3	EFUSE VPQS power control output	EFUSE_VQPS_EN_H
AM5	GPIO4_D4	I/O	I	down	34k-95k	61k	3,6,9,12	3	Camera power down control output for rear	DVP_PDN1_3V3
AL2	GPIO4_D5	I/O	I	down	34k-95k	61k	3,6,9,12	3	Reserve	Reserve

AF4	GPIO4_D6	I/O	I	down	34k-95k	61k	3,6,9,12	3	LCD power enable	LCD_EN
AC8	APIO4_VDDPST	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO4 Post-Driver power supply	VCC_1V5_S0
AC9	APIO4_VDD	P	N/A	N/A	N/A	N/A	N/A	N/A	APIO4 digital I/O power supply	VCCIO_3V0_S0
PART Q	**SAR ADC(1.8V only)**									
W27	ADC_IN0	A	N/A	N/A	N/A	N/A	N/A	N/A	SAR-ADC input channel0	Reserve
Y29	ADC_IN1	A	N/A	N/A	N/A	N/A	N/A	N/A	SAR-ADC input channel1	Reserve
Y28	ADC_IN2	A	N/A	N/A	N/A	N/A	N/A	N/A	AD Key Array input	ADC2_KEY_IN
Y27	ADC_IN3	A	N/A	N/A	N/A	N/A	N/A	N/A	Headphone MIC input	ADC3_HP_HOOK
AA28	ADC_IN4	A	N/A	N/A	N/A	N/A	N/A	N/A	SAR-ADC input channel4	Reserve
AA27	ADC_IN5	A	N/A	N/A	N/A	N/A	N/A	N/A	Hardware board ID	ADC5_BOARD_ID
AA24	ADC_AVDD	AP	N/A	N/A	N/A	N/A	N/A	N/A	SAR-ADC analog power supply	VCC_1V8_S0
PART W	**NPU PMUIO1(1.8V only)**									
P30	NPU_NPOR	I	I	fix up	56k-89k	71k	N/A	2	NPU reset input	NPU_RESET_L
Y31	NPU_OSC_BPASS	P	I	Z	N/A	N/A	N/A	N/A	NPU OSC input select	NPU_OSC_BPASS
U30	NPU_GPIO0_A2	I/O	I	down	56k-88k	70.9	2,4,8,12	2	Reserve	Reserve
U32	NPU_SLEEP_STATUS	I/O	I	down	56k-88k	70.9	2,4,8,12	2	NPU status detect output to CPU	NPU_SLEEP_STATUS
AA31	NPU_TSADC_SHUT	I/O	I	Z	N/A	N/A	2,4,8,12	2	NPU Over-temperature protection reset output	NPU_TSADC_SHUT_H
AF30	NPU_PMU_VDD_0V8	P	N/A	N/A	N/A	N/A	N/A	N/A	NPU PMUIO1/PMUIO2 Post-Driver power supply	NPU_VDD_0V8_S3
AF29	NPU_PMUIO1_VDD_1V8	P	N/A	N/A	N/A	N/A	N/A	N/A	NPU PMUIO1 digital I/O power supply	NPU_VCC_1V8_S3
PART W	**NPU PMUIO2(1.8V or 3.3V)**									
V32	NPU_GPIO0_B0	I/O	I	up	39k-65k	51k	2,4,8,12	2	NPU interrupt input from CPU	CPU_INT_NPU_DET
AD33	NPU_I2C1_SCL	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU I2C serial port 1,for DC-DC,need external pull-up	NPU_I2C1_SCL
P33	NPU_I2C1_SDA	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU I2C serial port 1,for DC-DC,need external pull-up	NPU_I2C1_SDA
AC32	NPU_CLKIO_32K	I/O	I	Z	39k-65k	51k	2,4,8,12	2	NPU 32KHz real time clock input or output	CLKOUT_32K
U33	NPU_GPIO0_C6	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU DC-DC sleep control output	NPU_VDD_SLEEP_H
AA33	NPU_GPIO0_C7	I/O	I	down	39k-65k	51k	2,4,8,12	2	Reserve	Reserve
AG29	NPU_PMUIO2_VDD	P	N/A	N/A	N/A	N/A	N/A	N/A	NPU PMUIO2 digital I/O power supply	NPU_VCC_1V8_S3
PART M	**NPU VCCIO2(1.8V or 3.3V)**									
R28	NPU_CIF_D0	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_PDN0
AC28	NPU_CIF_D1	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_PDN1
W30	NPU_CIF_D2	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_D2
V30	NPU_CIF_D3	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_D3
P29	NPU_CIF_D4	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_D4
Y30	NPU_CIF_D5	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_D5
AB29	NPU_CIF_D6	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_D6
P28	NPU_CIF_D7	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_D7
R29	NPU_CIF_D8	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_D8
AD29	NPU_CIF_D9	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_D9

V28	NPU_CIF_D10	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_RST
AD28	NPU_CIF_D11	I/O	I	down	39k-65k	51k	2,4,8,12	2	NPU Camera data port	NPU_CIF_PWREN_H
AC29	NPU_CIF_VSYNC	I/O	I	down	39k-65k	51k	2,4,8,12	2	Camera vsync input	NPU_CIF_VSYNC
U29	NPU_CIF_HREF	I/O	I	down	39k-65k	51k	2,4,8,12	2	Camera href input	NPU_CIF_HREF
W29	NPU_CIF_CLKIN	I/O	I	down	39k-65k	51k	2,4,8,12	2	Camera clock input	NPU_CIF_CLKIN
U28	NPU_CIF_CLKOUT	I/O	I	down	39k-65k	51k	2,4,8,12	2	Camera clock output	NPU_CIF_CLKOUT
AF27	NPU_I2C3_SCL	I/O	I	up	39k-65k	51k	2,4,8,12	2	NPU I2C serial port 3,for Camera,need external pull-up	NPU_I2C3_SCL
AE27	NPU_I2C3_SDA	I/O	I	up	39k-65k	51k	2,4,8,12	2	NPU I2C serial port 3,for Camera,need external pull-up	NPU_I2C3_SDA
AG27	NPU_VCCIO2	P	N/A	N/A	N/A	N/A	N/A	N/A	NPU VCCIO2 digital I/O power supply, need supplied	NPU_VCC_1V8_S3
PART W	**NPU VCCIO5(1.8V or 3.3V)**									
AN22	NPU_SPI0_MOSI	I/O	I	up	39k-65k	51k	2,4,8,12	4	NPU SPI bus port 0	No used
AP20	NPU_SPI0_MISO	I/O	I	up	39k-65k	51k	2,4,8,12	4	NPU SPI bus port 0	No used
AN23	NPU_SPI0_CSN	I/O	I	up	39k-65k	51k	2,4,8,12	4	NPU SPI bus port 0	No used
AN21	NPU_SPI0_CLK	I/O	I	down	39k-65k	51k	2,4,8,12	4	NPU SPI bus port 0	No used
AP27	NPU_VCCIO5	P	N/A	N/A	N/A	N/A	N/A	N/A	NPU VCCIO5 digital I/O power supply, need supplied	NPU_VCC_1V8_S3
PART W	**NPU VCCIO6(1.8V or 3.3V)**									
AJ22	NPU_UART2_TX	I/O	I	up	39k-65k	51k	2,4,8,12	8	NPU UART2 serial port, for NPU debug	Test Point
AK22	NPU_UART2_RX	I/O	I	up	39k-65k	51k	2,4,8,12	8	NPU UART2 serial port, for NPU debug	Test Point
AK21	NPU_JTAG_TCK	I/O	I	up	39k-65k	51k	2,4,8,12	8	JTAG TCK for NPU	Test Point
AK23	NPU_JTAG_TMS	I/O	I	up	39k-65k	51k	2,4,8,12	8	JTAG TMS for NPU	Test Point
AJ25	NPU_VCCIO6	P	N/A	N/A	N/A	N/A	N/A	N/A	NPU_VCCIO6 digital I/O power supply	NPU_VCCIO_3V3_S3

Notes1:
①:Pin Type: I = input, O = output, I/O = input/output (bidirectional), P=power supply, A = Analog input
②:I/O Pull: u=default pull-up, d=default pull-down, Z=default high-Z, fix up=default pull-up and can't be configured to pull-down
③:Output Drive Unit is mA, only Digital IO has driver strength value;