

RK3568核心板

用户手册

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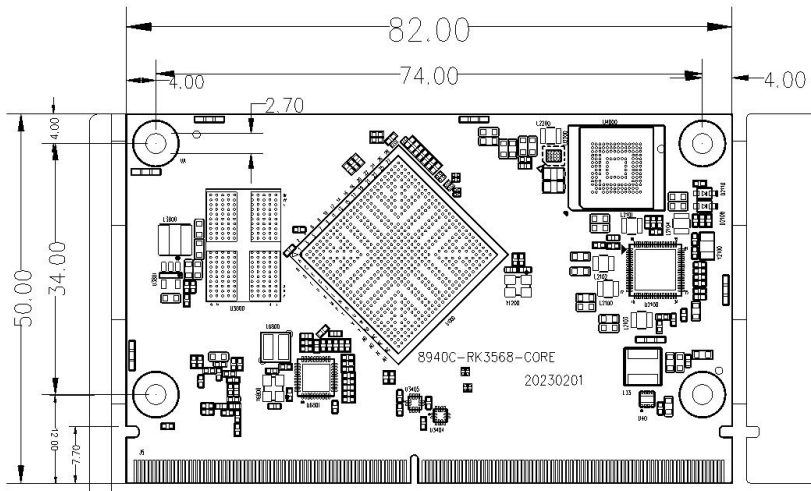
RK3568 核心板 产品介绍

硬件规格

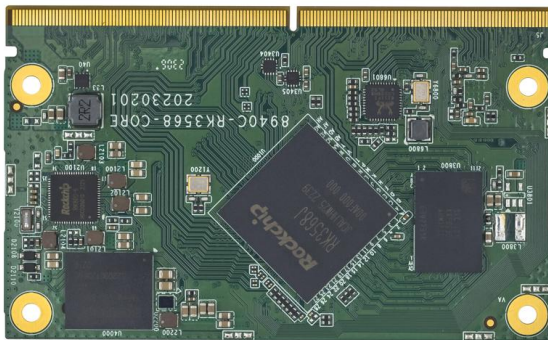
- 基于 Rockchip RK3568 处理器
- 板载 2 ~8GB LPDDR4X 内存
- 集成 ARM G52 GPU ,支持 1x HDMI, 1xEDP,1x LVDS,1x MIPI DSI, 1x MIPI CSI
- 支持 2x 千兆网口 ,1x PCIE 输出 ,2x I2S 输出 , 2xUSB2.0 HOST,1xUSB3.0 HOST ,1xUSB3.0 OTG ,3xSATA3.0(其中两组与 USB3.0 复用),1 x DEBUG TTL UART,4 x TTL UART
- 支持 2 x CAN BUS,2 x ADC,1 xSPI,1 xRTC,4x I2C,2x 4bit SDMMC
- 标准 SMARC2.1 标准金手指
- 尺寸 82*50mm
- 工作温度: -40°C ~ 85°C

RK3568	
CPU	Rockchip RK3568J 处理器
Memory	板载 2 ~8GB LPDDR4X 内存
EMMC	16GB Flash (Optional)
HDMI	支持 1xHDMI 信号输出, 支持最大分辨率 4K@60HZ
LVDS	支持 1x 双通道 LVDS 信号输出, 支持最大分辨率 1080x800@60HZ
MIPI	支持 1xMIPI DSI 信号输出, 支持最大分辨率 1920x1080@60HZ
EDP	支持 1xEDP 信号输出, 支持 2560x1600@60fps 输出
MIPI CSI	支持 1xMIPI CSI 信号输入
LAN	支持 2x 10/100/1000M LAN
PCIE	支持 1x PCIE3.0 X2; (可拆分两个 X1)
Audio-	支持 2*I2S
USB	支持 2*USB2.0, 1*USB3.0 HOST , 1*USB3.0 OTG
COM	支持 1 * DEBUG TTL UART,4 * TTL UART
ADC	支持 2* ADC
RTC	支持 1* RTC
I2C	支持 4*I2C
Input Voltage	5V/2A
SIZE	82*50mm

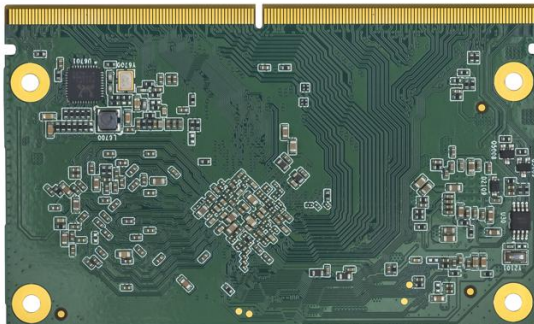
尺寸图:



TOP:



Bottom:



引脚定义：

PIN	Primary (Top) Side	备注
P1	SARADC_VIN2_HP_HOOK	1.8V
P2	GND	
P3	MIPI_CSI_RX_CLK1P	
P4	MIPI_CSI_RX_CLK1N	
P5	NC	
P6	NC	
P7	MIPI_CSI_RX_D2P	
P8	MIPI_CSI_RX_D2N	
P9	GND	
P10	MIPI_CSI_RX_D3P	
P11	MIPI_CSI_RX_D3N	
P12	GND	
P13	UART4_TX_M1	
P14	UART4_RX_M1	
P15	GND	
P16	SARADC_VIN3	1.8V
P17	SARADC_VIN4	1.8V
P18	GND	
P19	MDI3-	
P20	MDI3+	
P21	NC	
P22	GBE0_LINK1000#	低有效，接常量灯
P23	MDI2-	
P24	MDI2+	
P25	GBE0_LINK_ACT#	低有效，接闪烁灯
P26	MDI1-	
P27	MDI1+	
P28	NC	
P29	MDI0-	
P30	MDI0+	

P31	NC	
P32	GND	
P33	HP_DET_L_GPIO3_C2	1.8V
P34	SDMMC0_CMD	
P35	SDMMC0_DET_L	
P36	SDMMC0_CLK	
P37	SDMMC0_PWR_H	
P38	GND	
P39	SDMMC0_D0	
P40	SDMMC0_D1	
P41	SDMMC0_D2	
P42	SDMMC0_D3	
P43	SDMMC2_D0_M0	
P44	SDMMC2_D1_M0	
P45	SDMMC2_D2_M0	
P46	SDMMC2_D3_M0	
P47	GND	
P48	SATA_TX+	
P49	SATA_TX-	
P50	GND	
P51	SATA_RX+	
P52	SATA_RX-	
P53	GND	
P54	FSPI_CS0n	1.8V
P55	NC	
P56	FSPI_CLK	
P57	FSPI_D0	
P58	FSPI_D1	
P59	GND	
P60	USB2_HOST2_DP	USB1
P61	USB2_HOST2_DM	

P62	USB_OTG_PWREN_H_GPIO0_A5	3.3V
P63	USB3_OTG0_VBUSDET	
P64	USB3_OTG0_ID	
P65	USB2_HOST3_DP	USB2
P66	USB2_HOST3_DM	
P67	USB_HOST_PWREN_H_GPIO0_A6	3.3V
P68	GND	
P69	USB3_HOST1_DP	USB3
P70	USB3_HOST1_DM	
P71	USB_RST_H_GPIO0_A0_d	3.3V
P72	PCIE20_CLKREQn	3.3V
P73	PCIE20_WAKEn	3.3V
P74	USB_HOST_PWREN_H_GPIO1_A1	3.3V
P75	PCIE_A_RST#	3.3V
P76	GPIO1_D4_u	1.8V
P77	NC	
P78	PCIE30X2_CLKREQn	3.3V
P79	GND	
P80	PCIE20_0_REFCLKP	
P81	PCIE20_0_REFCLKN	
P82	GND	
P83	PCIE30_REFCLKP_IN	PCIE3.0 时钟，外部产生给 CPU
P84	PCIE30_REFCLKN_IN	
P85	GND	
P86	PCIE30_RX0P	
P87	PCIE30_RX0N	
P88	GND	
P89	PCIE30_TX0P	
P90	PCIE30_TX0N	
P91	GND	
P92	HDMI_TX2P	

P93	HDMI_TX2N	
P94	GND	
P95	HDMI_TX1P	
P96	HDMI_TX1N	
P97	GND	
P98	HDMI_TX0P	
P99	HDMI_TX0N	
P100	GND	
P101	HDMI_TXCP	
P102	HDMI_TXCN	
P103	GND	
P104	HDMI_HPD	
P105	HDMITX_SCL	1.8V
P106	HDMITX_SDA	
P107	HDMITX_CEC_M0	1.8V
P108	MIPI_CAM_PDN	1.8V
P109	GPIO3_B6_d	
P110	MIPI_CAM_RST_GPIO0_D6	
P111	LVDS_EN	
P112	GPIO0_B7	
P113	GPIO3_A2_d	
P114	GPIO2_D7_d	
P115	GPIO3_D4	
P116	GPIO3_D5	
P117	GPIO4_C5_d	
P118	GPIO4_C6_d	
P119	PWM3_IR	
P120	GND	
P121	I2C5_SCL_M0	1.8V
P122	I2C5_SDA_M0	1.8V
P123	NC	

P124	NC	
P125	NC	
P126	GPIO2_C1	
P127	RESET_IN#	Driven by OD on Carrier.
P128	POWER_BTN#	短按拉低有效
P129	UART0_TX	1.8V
P130	UART0_RX	
P131	UART0_RTSn	
P132	UART0_CTSn	
P133	GND	
P134	UART7_TX	
P135	UART7_RX	
P136	UART8_TX	
P137	UART8_RX	
P138	UART8_RTSh	
P139	UART8_CTS#	
P140	UART2_TX_M0_DEBUG	DBG_TX 1.8V
P141	UART2_RX_M0_DEBUG	DBG_RX
P142	GND	
P143	CAN1_TX_M1	1.8
P144	CAN1_RX_M1	
P145	CAN2_TX_M0	
P146	CAN2_RX_M0	
P147	VCC5V0_SYS	
P148	VCC5V0_SYS	
P149	VCC5V0_SYS	
P150	VCC5V0_SYS	
P151	VCC5V0_SYS	
P152	VCC5V0_SYS	
P153	VCC5V0_SYS	
P154	VCC5V0_SYS	

P155	VCC5V0_SYS	
P156	VCC5V0_SYS	
S1	I2C2_SCL_M0	1.8V
S2	I2C2_SDA_M0	
S3	GND	
S4	NC	
S5	NC	
S6	CIF_CLKOUT	
S7	NC	
S8	MIPI_CSI_RX_CLK0P	
S9	MIPI_CSI_RX_CLK0N	
S10	GND	
S11	MIPI_CSI_RX_D0P	
S12	MIPI_CSI_RX_D0N	
S13	GND	
S14	MIPI_CSI_RX_D1P	
S15	MIPI_CSI_RX_D1N	
S16	GND	
S17	PHY1_MDI0+	
S18	PHY1_MDI0-	
S19	NC	
S20	PHY1_MDI1+	
S21	PHY1_MDI1-	
S22	GBE1_LINK1000#	低有效
S23	PHY1_MDI2+	
S24	PHY1_MDI2-	
S25	GND	
S26	PHY1_MDI3+	
S27	PHY1_MDI3-	
S28	NC	

S29	NC	
S30	NC	
S31	GBE1_LINK_ACT#	低有效，接闪烁灯
S32	NC	
S33	NC	
S34	GND	
S35	NC	
S36	NC	
S37	NC	
S38	I2S1_MCLK_M0_RK809	
S39	I2S1_LRCK_TX_M0_RK809	
S40	I2S1_SDO0_M0_RK809	
S41	I2S1_SDI0_M0/PDM_SDI0_M0_RK809	
S42	I2S1_SCLK_TX_M0_RK809	
S43	SDMMC2_CMD_M0	
S44	SDMMC2_CLK_M0	
S45	NC	
S46	NC	
S47	GND	
S48	I2C4_SCL_M0	1.8V
S49	I2C4_SDA_M0	
S50	I2S3_LRCK_M0	1.8V
S51	I2S3_SDO_M0	
S52	I2S3_SDI_M0	
S53	I2S3_SCLK_M0	
S54	SATA2_ACTLED	低有效
S55	GPIO1_A6_d	1.8V
S56	SPK_CTL_H_GPIO3_C3	
S57	GPIO3_B5_d	
S58	GND	
S59	NC	

S60	NC	
S61	GND	
S62	USB3_OTG0_SSTXP	
S63	USB3_OTG0_SSTXN	
S64	GND	
S65	USB3_OTG0_SSRXP	
S66	USB3_OTG0_SSRXN	
S67	GND	
S68	USB3_OTG0_DP	USB3 OTG
S69	USB3_OTG0_DM	USB3 OTG
S70	GND	
S71	USB3_HOST1_SSTXP	
S72	USB3_HOST1_SSTXN	
S73	GND	
S74	USB3_HOST1_SSRXP	
S75	USB3_HOST1_SSRXN	
S76	NC	
S77	PCIE20_PEPSTn	3.3V
S78	PCIE20_RXP	与 P48-P52 复用，默认 NC， 若不要 SATA 信号，可在系统 配置成此处的 PCIE2.0
S79	PCIE20_RXN	
S80	GND	
S81	PCIE20_TXP	
S82	PCIE20_TXN	
S83	GND	
S84	NC	
S85	NC	
S86	GND	
S87	PCIE30_RX1P	结合 P86-P90，PCIE30 可配 成 2 个 X1,或者 1 个 X2
S88	PCIE30_RX1N	
S89	GND	
S90	PCIE30_TX1P	

S91	PCIE30_TX1N	
S92	GND	
S93	EDP_TX_D0P	
S94	EDP_TX_D0N	
S95	NC	
S96	EDP_TX_D1P	
S97	EDP_TX_D1N	
S98	EDP_HPDP	
S99	EDP_TX_D2P	
S100	EDP_TX_D2N	
S101	GND	
S102	EDP_TX_D3P	
S103	EDP_TX_D3N	
S104	NC	
S105	EDP_TX_AUXP	
S106	EDP_TX_AUXN	
S107	LCD1_BK1_EN_GPIO4_D2_d	
S108	MIPI_DSI_TX1_CLKP	
S109	MIPI_DSI_TX1_CLKN	
S110	GND	
S111	MIPI_DSI_TX1_D0P	
S112	MIPI_DSI_TX1_D0N	
S113	NC	
S114	MIPI_DSI_TX1_D1P	
S115	MIPI_DSI_TX1_D1N	
S116	LCD1_PWREN_H	
S117	MIPI_DSI_TX1_D2P	
S118	MIPI_DSI_TX1_D2N	
S119	GND	
S120	MIPI_DSI_TX1_D3P	
S121	MIPI_DSI_TX1_D3N	

S122	LCD1_PWM4_GPIO0_C3_d	1.8V
S123	GPIO3_B7_d	1.8V
S124	GND	
S125	MIPI_DSI_TX0_D0P/LVDS_TX0_D0 P	可以配成 MIPI DSI 信号或者 LVDS 信号
S126	MIPI_DSI_TX0_D0N/LVDS_TX0_D 0N	
S127	LCD_EN_H_GPIO3_A7_d	
S128	MIPI_DSI_TX0_D1P/LVDS_TX0_D1 P	
S129	MIPI_DSI_TX0_D1N/LVDS_TX0_D 1N	
S130	GND	
S131	MIPI_DSI_TX0_D2P/LVDS_TX0_D2 P	
S132	MIPI_DSI_TX0_D2N/LVDS_TX0_D 2N	
S133	GPIO3_A0_d	
S134	MIPI_DSI_TX0_CLKP/LVDS_TX0_ CLKP	
S135	MIPI_DSI_TX0_CLKN/LVDS_TX0_ CLKN	
S136	GND	
S137	MIPI_DSI_TX0_D3P/LVDS_TX0_D3 P	
S138	MIPI_DSI_TX0_D3N/LVDS_TX0_D 3N	
S139	I2C1_SCL	1.8V
S140	I2C1_SDA	1.8V
S141	LCD_BL_PWM6	1.8V
S142	PWM7_GPIO0_C6	1.8V
S143	GND	

S144	NC	
S145	GPIO3_A1_d	
S146	PCIE30X2_WAKEn	3.3V
S147	VCC_RTC_BAT	
S148	NC	
S149	GPIO0_D4	1.8V
S150	NC	
S151	NC	
S152	NC	
S153	GPIO0_D5	1.8V
S154	CARRIER_PWR_ON	核心板控制底板上电引脚，高有效
S155	FORCE_RECOV_N	烧录时需与 GND 短接
S156	NC	
S157	NC	
S158	GND	