

RK3588S核心板

用户手册

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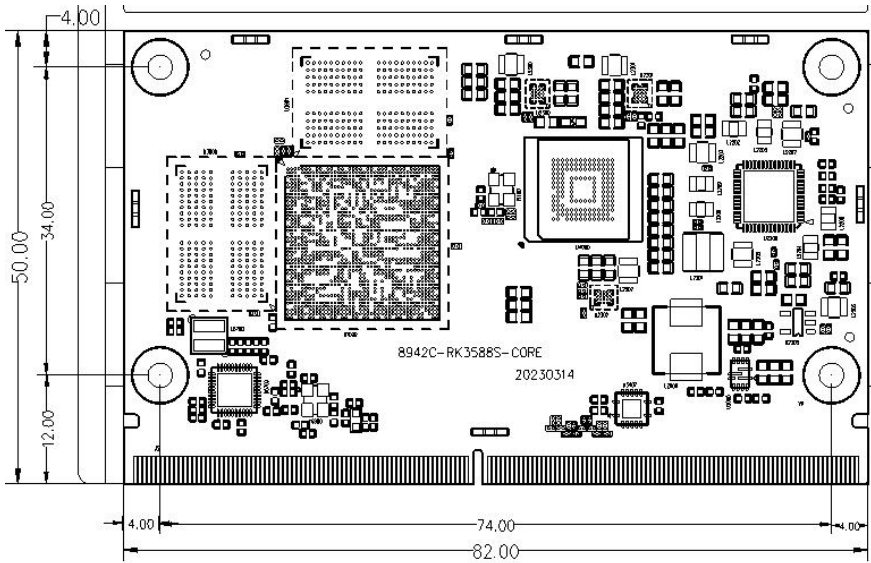
RK3588S 核心板 产品介绍

硬件规格

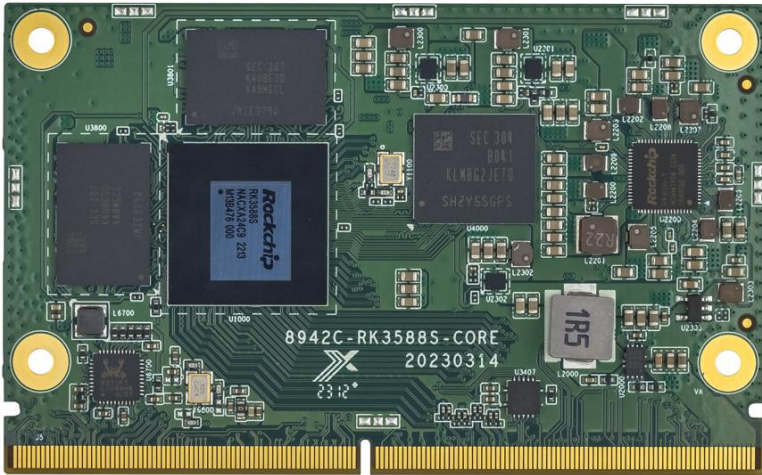
- 基于 Rockchip RK3588S 处理器
- 板载 4 ~8GB LPDDR4X 内存
- 集成 ARM G610 GPU ,支持 1x HDMI, 2x MIPI DSI, 1x MIPI CSI
- 支持 2x 千兆网口 ,1x PCIE 输出 ,1x I2S 输出 , 1xUSB2.0 HOST,1xUSB3.0 HOST ,1xUSB3.0 OTG ,3xSATA3.0(其中两组与 USB3.0 复用),1 x DEBUG TTL UART,4 x TTL UART
- 支持 2 x CAN BUS,2 x ADC,1 xSPI,1 xRTC,4x I2C,1x 4bit SDMMC
- 标准 SMARC2.1 标准金手指
- 尺寸 82*50mm
- 工作温度: 0°C ~ 40°C

RK3588S	
CPU	Rockchip RK3588S 处理器
Memory	板载 4 ~8GB LPDDR4X 内存
EMMC	32GB Flash (Optional)
HDMI	支持 1xHDMI 信号输出, 支持最大分辨率 8K@60HZ
MIPI	支持 2xMIPI DSI 信号输出, 支持最大分辨率 1920x1080@60HZ
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 1*I2S
USB	支持 1*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

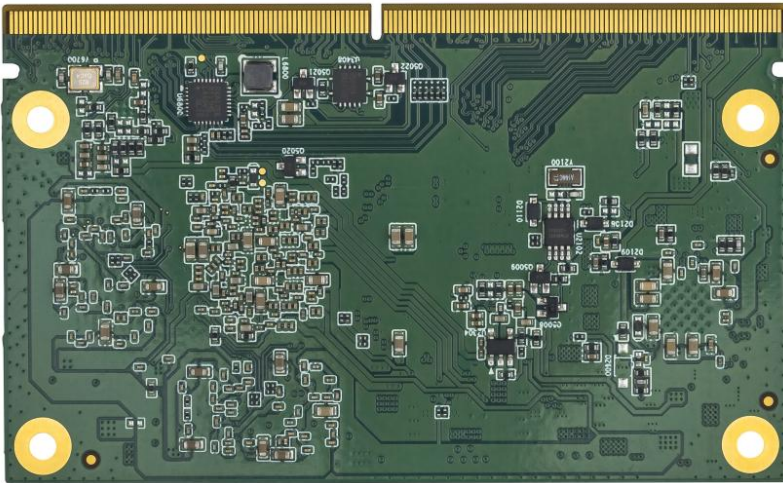
尺寸图:



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	UART8_TX_M0	
P14	UART8_RX_M0	
P15	GND	
P16	SARADC_VIN3	1.8V
P17	SARADC_VIN4	1.8V
P18	GND	
P19	PHY0_MDI3-	
P20	PHY0_MDI3+	
P21	NC	
P22	GBE0_LINK1000#	低有效，接常亮灯
P23	PHY0_MDI2-	
P24	PHY0_MDI2+	
P25	GBE0_LINK_ACT#	低有效，接闪烁灯
P26	PHY0_MDI1-	
P27	PHY0_MDI1+	
P28	NC	
P29	PHY0_MDI0-	
P30	PHY0_MDI0+	

P31	NC	
P32	GND	
P33	GPIO4-B3	1.8V
P34	SDMMC0_CMD	
P35	SDMMC0_DET_L/GPIO0_A4_u	
P36	SDMMC0_CLK	
P37	SDMMC0_PWR_H/GPIO4_A3_d	3.3V
P38	GND	
P39	SDMMC0_D0	
P40	SDMMC0_D1	
P41	SDMMC0_D2	
P42	SDMMC0_D3	
P43	NC	
P44	NC	
P45	NC	
P46	NC	
P47	GND	
P48	NC	
P49	NC	
P50	GND	
P51	NC	
P52	NC	
P53	GND	
P54	SPI4_CS0/GPIO1_A3_d	1.8V
P55	NC	
P56	SPI4_CLK/GPIO1_A2_d	
P57	SPI4_MISO/GPIO1_A0_d	
P58	SPI4_MOSI/TYPEC5V_PWREN_H	
P59	GND	
P60	NC	
P61	NC	

P62	TYPEC5V_PWREN_H	3.3V
P63	TYPEC0_OTG_VBUSDET	
P64	USB3_OTG0_ID	
P65	USB20_HOST1_DP	USB1
P66	USB20_HOST1_DM	
P67	USB_HOST_PWREN_H_GPIO4_A1	3.3V
P68	GND	
P69	USB20_HOST0_DP	USB0
P70	USB20_HOST0_DM	
P71	USB_RST_H_GPIO0_A0_d	3.3V
P72	PCIE20x1_2_CLKREQn	3.3V
P73	PCIE20x1_2_WAKEn	3.3V
P74	USB_HOST_PWREN_H_GPIO4_A2	3.3V
P75	NC	3.3V
P76	GPIO1_B4_u	1.8V
P77	NC	
P78	NC	
P79	GND	
P80	PCIE20_REFCLKP	
P81	PCIE20_REFCLKN	
P82	GND	
P83	NC	
P84	NC	
P85	GND	
P86	NC	
P87	NC	
P88	GND	
P89	NC	
P90	NC	
P91	GND	
P92	HDMI0_TX2P_PORT/eDP0_TX_D2P	

P93	HDMI0_TX2N_PORT/eDP0_TX_D2N	
P94	GND	
P95	HDMI0_TX1P_PORT/eDP0_TX_D1P	
P96	HDMI0_TX1N_PORT/eDP0_TX_D1N	
P97	GND	
P98	HDMI0_TX0P_PORT/eDP0_TX_D0P	
P99	HDMI0_TX0N_PORT/eDP0_TX_D0N	
P100	GND	
P101	HDMI0_TX3P_PORT/eDP0_TX_D3P	
P102	HDMI0_TX3N_PORT/eDP0_TX_D3N	
P103	GND	
P104	HDMI_TX - HPDIN	
P105	HDMITX0_SCL	1.8V
P106	HDMITX0_SDA	
P107	HDMITX0_CEC_M0	1.8V
P108	MIPI_CAM3_PDN_L	1.8V
P109	GPIO4-B4	
P110	MIPI_CAM3_RST_L	
P111	GPIO1_A4_d	
P112	GPIO4-B6	
P113	GPIO0_A0	
P114	GPIO4-B2	
P115	GPIO4-B5	
P116	GPIO1_A7_d	
P117	GPIO0_D3	
P118	GPIO1_B5_u	
P119	PWM11_IR	
P120	GND	
P121	NC	
P122	NC	
P123	NC	

P124	NC	
P125	NC	
P126	GPIO1_A6_d	
P127	PMIC_RESET_L	Driven by OD on Carrier.
P128	PWRON_L	短接拉低有效
P129	UART7_TX_M1	1.8V
P130	UART7_RX_M1	
P131	NC	
P132	NC	
P133	GND	
P134	UART3_TX_M0	
P135	UART3_RX_M0	
P136	UART9_TX_M2_BT	
P137	UART9_RX_M2_BT	
P138	UART9_RTSN_M2_BT	
P139	UART9_CTSN_M2_BT	
P140	UART2_TX_M0_DEBUG	DBG_TX 1.8V
P141	UART2_RX_M0_DEBUG	DBG_RX 1.8V
P142	GND	
P143	CAN0_TX_M0	1.8V
P144	CAN0_RX_M0	
P145	CAN2_TX_M1	
P146	CAN2_RX_M1	
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	I2C8_SCL_M2_CAM	1.8V
S2	I2C8_SDA_M2_CAM	
S3	GND	
S4	NC	
S5	NC	
S6	MIPI_CAM1_CLKOUT/GPIO3_A6_d	
S7	NC	
S8	MIPI_CSI0_RX_CLK0P	
S9	MIPI_CSI0_RX_CLK0N	
S10	GND	
S11	MIPI_CSI0_RX_D0P	
S12	MIPI_CSI0_RX_D0N	
S13	GND	
S14	MIPI_CSI0_RX_D1P	
S15	MIPI_CSI0_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	I2S0_MCLK	
S39	I2S0_LRCK_TX	
S40	I2S0_SDO0	
S41	I2S0_SDI0	
S42	I2S0_SCLK_TX	
S43	NC	
S44	NC	
S45	NC	
S46	NC	
S47	GND	
S48	I2C5_SCL_M3_TP/GPIO1_B6_u	1.8V
S49	I2C5_SDA_M3_TP/GPIO1_B7_u	
S50	NC	1.8V
S51	NC	
S52	NC	
S53	NC	
S54	NC	
S55	GPIO1_B1_d	
S56	SPK_CTL_H_GPIO3_B2	1.8V
S57	NC	
S58	NC	
S59	NC	

S60	NC	
S61	GND	
S62	TYPEC0_SSTX1P	
S63	TYPEC0_SSTX1N	
S64	GND	
S65	TYPEC0_SSRX1P	
S66	TYPEC0_SSRX1N	
S67	GND	
S68	TYPEC0_OTG_DP	
S69	TYPEC0_OTG_DM	
S70	GND	
S71	USB30_2_SSTXP	
S72	USB30_2_SSTXN	
S73	GND	
S74	USB30_2_SSRXP	
S75	USB30_2_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	NC	
S84	NC	
S85	NC	
S86	GND	
S87	NC	
S88	NC	
S89	GND	
S90	NC	

S91	NC	
S92	GND	
S93	TYPEC0_SSRX2P	
S94	TYPEC0_SSRX2N	
S95	NC	
S96	TYPEC0_SSTX2P	
S97	TYPEC0_SSTX2N	
S98	GPIO1_B2_d	
S99	NC	
S100	NC	
S101	GND	
S102	NC	
S103	NC	
S104	NC	
S105	TYPEC0_SBU1	
S106	TYPEC0_SBU2	
S107	LCD1_BK1_EN_GPIO1_D5_d	
S108	MIPI_DPHY1_TX_CLKP	
S109	MIPI_DPHY1_TX_CLKN	
S110	GND	
S111	MIPI_DPHY1_TX_D0P	
S112	MIPI_DPHY1_TX_D0N	
S113	NC	
S114	MIPI_DPHY1_TX_D1P	
S115	MIPI_DPHY1_TX_D1N	
S116	LCD_PWREN_H/GPIO1_C6_d	
S117	MIPI_DPHY1_TX_D2P	
S118	MIPI_DPHY1_TX_D2N	
S119	GND	
S120	MIPI_DPHY1_TX_D3P	
S121	MIPI_DPHY1_TX_D3N	

S122	LCD_BL_PWM5_M1	1.8V
S123	GPIO3_C5	1.8V
S124	GND	
S125	MIPI_DPHY0_TX_D0P	可以配成 MIPI DSI 信号 或者 LVDS 信号
S126	MIPI_DPHY0_TX_D0N	
S127	LCD_EN_H_GPIO1_D2_d	
S128	MIPI_DPHY0_TX_D1P	
S129	MIPI_DPHY0_TX_D1N	
S130	GND	
S131	MIPI_DPHY0_TX_D2P	
S132	MIPI_DPHY0_TX_D2N	
S133	GPIO1_D3_d	
S134	MIPI_DPHY0_TX_CLKP	
S135	MIPI_DPHY0_TX_CLKN	
S136	GND	
S137	MIPI_DPHY0_TX_D3P	
S138	MIPI_DPHY0_TX_D3N	
S139	I2C7_SCL_M0_CODEC/GPIO1_D0_d	1.8V
S140	I2C7_SDA_M0_CODEC/GPIO1_D1_d	1.8V
S141	LCD_BL_PWM4/GPIO0_C5_u	1.8V
S142	GPIO1_B0_u	1.8V
S143	GND	

S144	NC	
S145	GPIO0_C2	
S146	NC	3.3V
S147	VCC_RTC_BAT	
S148	NC	
S149	GPIO0_D4	1.8V
S150	NC	
S151	NC	
S152	NC	
S153	GPIO1_B3_d	1.8V
S154	PMIC_EXT_EN_OUT	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	