

深圳金亚太科技有限公司
Shenzhen Geniatech Co.,Ltd.

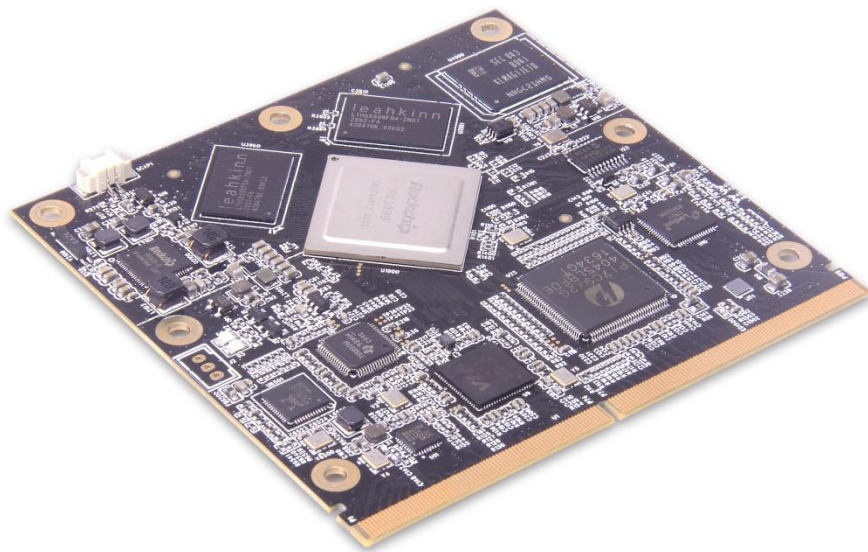
SOM3399-SMARC SPECIFICATION

深圳金亚太科技有限公司

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SPECIFICATION

MODEL: SOM3399-SMARC



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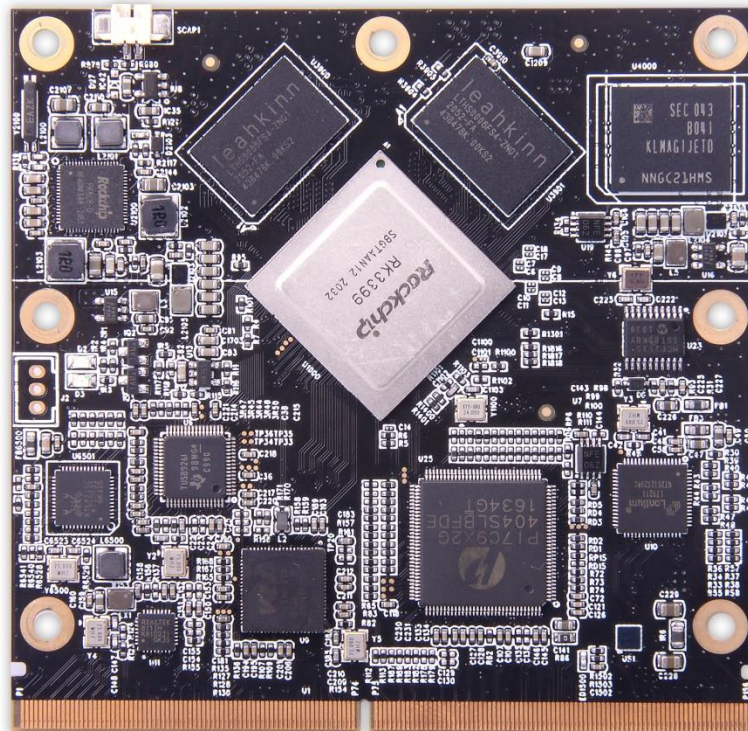
Revision History

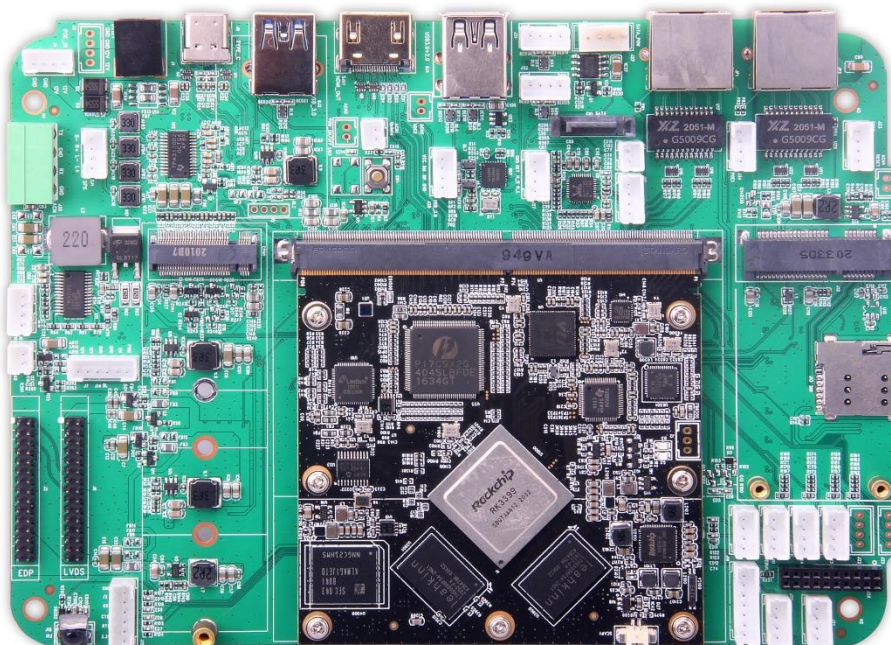
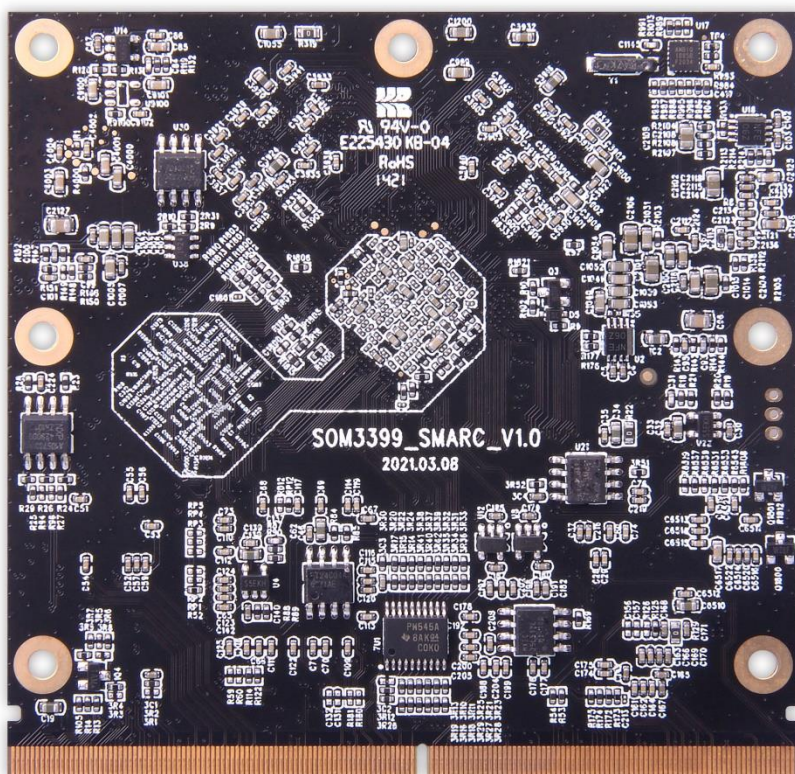
VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR

1. GENERAL DESCRIPTION

SOM3399-SMARC is using Rockchip 3399 processor, a high performance processor for computing, personal mobile internet devices and other applications, it integrates dual-core Cortex-A72 and quad-core Cortex-A53 with separate NEON coprocessor, Is a standard module designed entirely in accordance with the SMARC2.1 specification. It is widely used in industrial automation, Internet of Things application, commercial display and other fields.

2. PRODUCT APPEARANCE





3.FEATURES

CHIPSET	Rockchip RK3399	
MARKET AREA	Global	
OSD LANGUAGE	English/Chinese (multi language OSD)	
Processor	OS	Android 10.0 and Linux(Buildroot/Debian/Yocto)
	CPU	Dual-core Cortex-A72 up to 1.8GHz Quad-core Cortex-A53 up to 1.4GHz
	GPU	Mali-T864 GPU
	LPDDR4	2GB(4G Optional)
	EMMC FLASH	16GB (32/64G Optional)
SMARC 2.1	Ethernet	1 x GIGABIT Ethernet or 2 x GIGABIT Ethernet
	PCIe	1 x PCIe 2.1(x4) or 2 x PCIe 2.1(x4 and x1)
	USB2.0	*4(3 x USB2.0,1 x USB2.0 OTG)
	USB3.0	*2
	MIPI CSI	*2
	LVDS	*1(1 x Single Channel 24-bits LVDS(Default) or 1 xDual Channel 24-bits LVDS(Shared with eDP))
	I2S	*2
	HDMI	*1(up to 4096 x 2160)
	CAN	*1
	GPIO	*12 (1 x PWM)
	SATA	*1
	SDIO	*1
	eDP	*1
	DP	*1
	RS-232	*3(1 x 4-wire UART, 1 x 2-wire UART, 1 x 2-wireUART/Debug)
	SPI	*1
	I2C	*5
	POWER	5V/3A
Dimensions	82 x 80 mm	

4.DECODE

Audio

Supports MP3, AAC, WMA, RM, FLAC, Ogg and programmable with 7.1/5.1 down-mixing

Video

Media Remark	Codec	Remark
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Video	MPEG-1	ISO/IEC 11172-2, up to 1080P @ 60fps
	MPEG-2	ISO/IEC 13818-2, SP@ML, MP@HL, up to 1080P @ 60fps
	MPEG-4	ISO/IEC 14496-2, SP@L0-3, ASP@L0-5, up to 1080P @ 60fps
	H.264/AVC	Base/Main/High/High10 profile @ level 5.1; up to 4Kx2K @ 30fps
	H.265/HEVC	Main/Main10 profile @ level 5.1 High-tier; up to 4Kx2K @ 60fps
	VC-1	SP@ML, MP@HL, AP@L0-3, up to 1080P @ 60fps
	VP9	SP@ML, MP@HL, AP@L0-3, up to 1080P @ 60fps

Supports *.mkv,*.wmv,*.mpg, *.mpeg, *.dat, *.avi, *.mov, *.iso, *.mp4, *.rm file formats

Picture

MJPEG and JPEG unlimited pixel resolution decoding (ISO/IEC-10918)

Supports JPEG thumbnail, scaling, rotation and transition effects

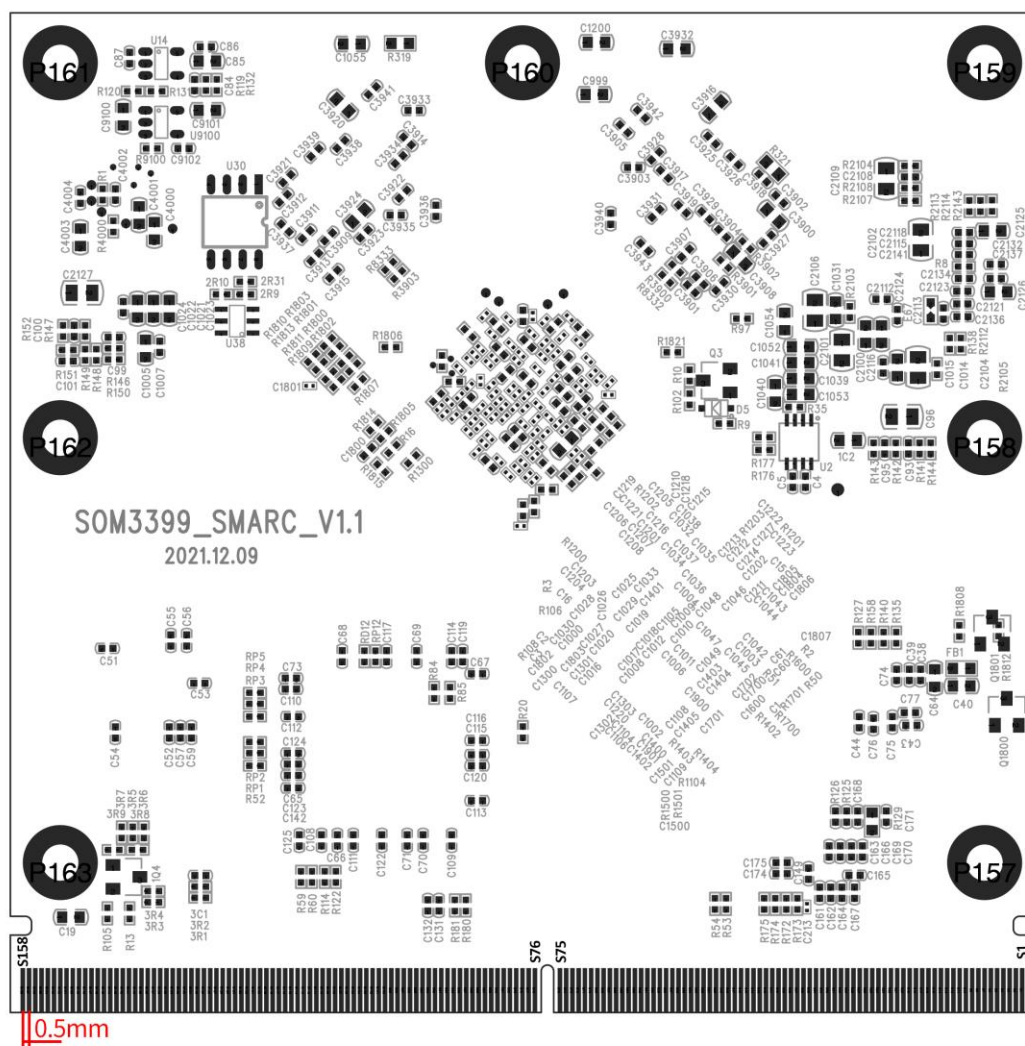
Support *.jpg file formats

5.Extension GPIO definition



No.	Functional Description	No.	Functional Description	No.	Functional Description
P1	RESET	P53	GND	P105	DDC_SCL
P2	GND	P54	NC	P106	DDC_SDA
P3	MIPI_RX1_CLKP	P55	SPI2_CSn0	P107	PORT_CEC
P4	MIPI_RX1_CLKN	P56	SPI2_CLK	P108	GPIO0_A2
P5	NC	P57	SPI2_RTD	P109	GPIO0_B5
P6	NC	P58	SPI2_TXD	P110	GPIO3_C0
P7	MIPI_RX1_D0P	P59	GND	P111	GPIO2_D2
P8	MIPI_RX1_D0N	P60	TYPEC0_DP	P112	GPIO2_D4
P9	GND	P61	TYPEC0_DM	P113	GPIO3_D4
P10	MIPI_RX1_D1P	P62	VCC5V0_TYPEC0_EN	P114	GPIO3_D5
P11	MIPI_RX1_D1N	P63	TYPEC0_U2VBUSDET	P115	GPIO3_D6
P12	GND	P64	TYPEC0_ID	P116	HDMIIN_STBY
P13	MIPI_RX1_D2P	P65	NC	P117	SPK_MUTE
P14	MIPI_RX1_D2N	P66	NC	P118	TYPEC0_INT#

P15	GND	P67	GPIO1_C2	P119	LCD_PWR_EN
P16	MIPI_RX1_D3P	P68	GND	P120	GND
P17	MIPI_RX1_D3N	P69	NC	P121	NC
P18	GND	P70	NC	P122	NC
P19	MDI3-	P71	NC	P123	ADC_IN0
P20	MDI3+	P72	NC	P124	ADKEY_IN
P21	NC	P73	NC	P125	ADC_IN2
P22	LED0	P74	NC	P126	ADC_IN4
P23	MDI2-	P75	PCIE1_RST	P127	NC
P24	MDI2+	P76	NC	P128	NC
P25	LED1	P77	PCIE_B_CKREQ#/GPIO0_B4	P129	UART0_TXD
P26	MDI1-	P78	PCIE_A_CKREQ#/PCIE_C_KREQ#	P130	UART0_RXD
P27	MDI1+	P79	GND	P131	UART0_RTS
P28	NC	P80	PCIE_C_CLKP	P132	UART0_CTS
P29	MDI0-	P81	PCIE_C_CLKN	P133	GND
P30	MDI0+	P82	GND	P134	BT_HOST_WAKE_L
P31	NC	P83	PCIE1_CLKP	P135	BT_WAKE_L
P32	GND	P84	PCIE1_CLKN	P136	BT_REG_ON_H
P33	RTC_CLK0_WIFI_2	P85	GND	P137	I2C_SCL_MEMS
P34	SDIO0_CMD	P86	PCIE1_RX_P	P138	I3C_SDA_MEMS
P35	WIFI_HOST_WAKE_L	P87	PCIE1_RX_N	P139	NC
P36	SDIO0_CLK	P88	GND	P140	UART2DBG_TX
P37	WIFI_REG_ON_H	P89	PCIE1_TX_P	P141	UART2DBG_RX
P38	GND	P90	PCIE1_TX_N	P142	GND
P39	SDIO0_D0	P91	GND	P143	NC
P40	SDIO0_D1	P92	HDMI_TX2P	P144	NC
P41	SDIO0_D2	P93	HDMI_TX2N	P145	NC
P42	SDIO0_D3	P94	GND	P146	NC
P43	SPI1_CS	P95	HDMI_TX1P	P147	PMU_RTC5V0
P44	SPI1_CLK	P96	HDMI_TX1N	P148	PMU_RTC5V0
P45	SPI1_RXD	P97	GND	P149	VCC_5V0
P46	SPI1_TXD	P98	HDMI_TX0P	P150	VCC_5V0
P47	GND	P99	HDMI_TX0N	P151	VCC_5V0
P48	NC	P100	GND	P152	VCC_5V0
P49	NC	P101	HDMI_TXCP	P153	VCC_5V0
P50	GND	P102	HDMI_TXCN	P154	VCC_5V0
P51	NC	P103	GND	P155	VCC_5V0
P52	NC	P104	PORT_HPD	P156	VCC_5V0



Back view

No.	Functional Description	No.	Functional Description	No.	Functional Description
S1	I2C1_SCL	S53	I2S1_SCLK	S105	TYPEC0_SBU1
S2	I2C1_SDA	S54	NC	S106	TYPEC0_SBU2
S3	GND	S55	GPIO1_A6	S107	NC
S4	I2C1_CS	S56	NC	S108	LVDS_LACP
S5	I2C7_SCL	S57	NC	S109	LVDS_LACN
S6	I2C7_CS	S58	NC	S110	GND
S7	I2C7_SDA	S59	HOST1_DP	S111	LVDS_LA0P
S8	MIPI_RX0_CLKP	S60	HOST1_DM	S112	LVDS_LA0N
S9	MIPI_RX0_CLKN	S61	GND	S113	NC
S10	GND	S62	HOST3_USB3_SS_TX_P	S114	LVDS_LA1P
S11	MIPI_RX0_D0P	S63	HOST3_USB3_SS_TX_M	S115	LVDS_LA1N
S12	MIPI_RX0_D0N	S64	GND	S116	GPIO4_C5

S13	GND	S65	HOST3_USB3_SS_RX_P	S117	LVDS_LA2P
S14	MIPI_RX0_D1P	S66	HOST3_USB3_SS_RX_M	S118	LVDS_LA2N
S15	MIPI_RX0_D1N	S67	GND	S119	GND
S16	GND	S68	HOST3_USB3_HS_DP	S120	LVDS_LA3P
S17	PCIE_MDI0+	S69	HOST3_USB3_HS_DM	S121	LVDS_LA3N
S18	PCIE_MDI0-	S70	GND	S122	LED_CTL
S19	LED0	S71	NC	S123	NC
S20	PCIE_MDI1+	S72	NC	S124	GND
S21	PCIE_MDI1-	S73	GND	S125	EDP&LVDS_D0P
S22	LED1	S74	NC	S126	EDP&LVDS_D0N
S23	PCIE_MDI2+	S75	NC	S127	LCD_BL_EN
S24	PCIE_MDI2-	S76	PCIE2_RST	S128	EDP&LVDS_D1P
S25	GND	S77	NC	S129	EDP&LVDS_D1N
S26	PCIE_MDI3+	S78	PCIE_RX2_P	S130	GND
S27	PCIE_MDI3-	S79	PCIE_RX2_N	S131	EDP&LVDS_D2P
S28	NC	S80	GND	S132	EDP&LVDS_D2N
S29	PCIE_TX3_P	S81	PCIE_TX2_P	S133	LCD_EN
S30	PCIE_TX3_N	S82	PCIE_TX2_N	S134	EDP&LVDS_CLKP
S31	LED2	S83	GND	S135	EDP&LVDS_CLKN
S32	PCIE_RX3_P	S84	PCIE2_CLKP	S136	GND
S33	PCIE_RX3_N	S85	PCIE2_CLKN	S137	EDP&LVDS_D3P
S34	GND	S86	NC	S138	EDP&LVDS_D3N
S35	TYPEC1_DP	S87	PCIE2_RX_P	S139	TCA9545_SCL3
S36	TYPEC1_DM	S88	PCIE2_RX2_N	S140	TCA9545_SDA3
S37	TYPEC1_U2VBUSDET	S89	GND	S141	LCD_BL_PWM
S38	I2S_MCLK	S90	PCIE2_TX_P	S142	IR_INT
S39	I2S0_LRCK/I2S0_LRCK_RX/ I2S0_LRCK_TX	S91	PCIE2_TX_N	S143	GND
S40	I2S0_SDO0	S92	GND	S144	SDMMC0_PWR_H
S41	I2S0_SDI0	S93	TYPEC0_TX1P	S145	CPU_RST
S42	I2S0_SCLK	S94	TYPEC0_TX1N	S146	NC
S43	NC	S95	TYPEC0_SBU1_DC	S147	POWER_ON_SW_RTC
S44	NC	S96	TYPEC0_RX1P	S148	PMIC_PWRON/OFF
S45	I2C_SCL_PMIC	S97	TYPEC0_RX1N	S149	SDMMC0_PWR_EN
S46	I2C_SDA_PMIC	S98	DP_H_PD	S150	SDMMC0_D0
S47	GND	S99	TYPEC0_TX2P	S151	SDMMC0_D1
S48	I2C2_SCL	S100	TYPEC0_TX2N	S152	SDMMC0_D2
S49	I2C2_SDA2	S101	GND	S153	SDMMC0_D3

S50	I2S1_LRCK/I2S1_LRCK_ RX/ I2S1_LRCK_TX	S102	TYPEC0_RX2P	S154	SDMMC0_CMD
S51	I2S1_SDO0	S103	TYPEC0_RX2N	S155	SDMMC0_CLK
S52	I2S1_SDI0	S104	TYPEC0_SBU2_DC	S156	SDMMC0_DET_L
				S157	SDMMC0_WRPRT
				S158	GND

6.PRECAUTIONS FOR USE

- 1.Relative humidity: 5~95 % .
- 2.CPU Operation temperature: commercial (0 °C - 60 °C)/Extended commercial (-20 °C - 85 °C)
- 3.Do not squeeze、distort or disassemble the PC.
- 4.Keep the Board away from static electricity .
- 5.Keep the Board away from water and other liquid.
- 6.Don't use long connect wires which may affect performance and image quality.