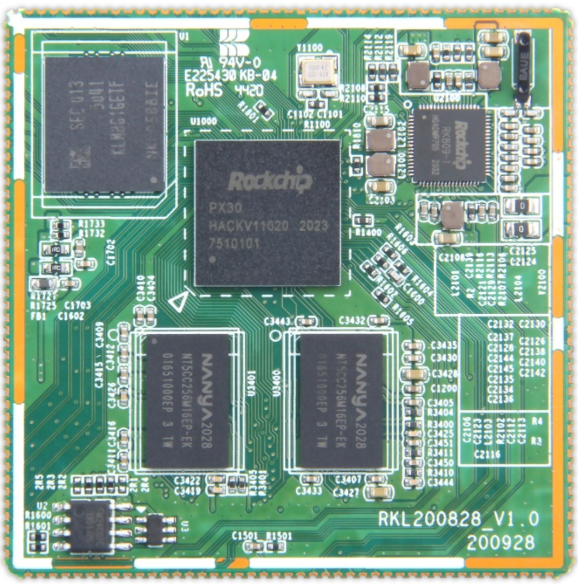
深 圳 金 亚 太 科 技 有 限 公 司

Shenzhen Geniatech Co.,Ltd.

SPECIFICATION

MODEL:SOM-PX30



Confirmation

REVISION HISTORY					
VERSION	**DATE**	**BOARD ID**	**PAGE**	**DESCRIPTION**	**AUTHOR**
V1.0	2020/11/17	RKL200828_V1.0	11	specification	

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CONTENT

1. GENERAL DESCRIPTION

SOM-PX30 is a stamp seal core board based on PX30 developed by Rockchip. PX30 industrial-grade 64-bit low-power processor, with powerful hard decoding capability and rich interfaces, can quickly realize project research and production only by expanding the functional baseplate, which can be applied to AIOT Internet of Things equipment, vehicle-mounted central control, entertainment/game equipment, commercial display equipment and other application fields. Below is the detailed specification：

(I) the size is only 55mm x 55mm, which can save more precious space

(II) Rockchip PX30 with Quad-core Cortex-A35 and dual-core Mali-G31 GPU

(III) 2GB RAM, 16GB eMMc flash

(IV) Supports LVDS/MIPI-DSI interface, dual VOP (dual screen display), and multi-format 1080P 60fps video decoding (H.265, H.264, VC-1, MPEG-1/2/4, VP8), 1080P (H.264, VP8 format) video encoding.

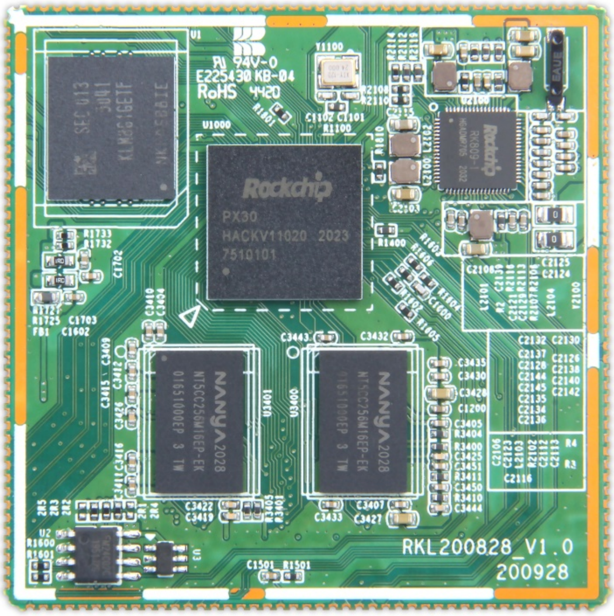
(VI) With rich interfaces such as I2C, UART, SPI, SDIO3.0, USB2.0, PWM, RMII, I2S(supports 8-way digital microphone array input), and others

(VII) Supports Android, Linux+QT, Ubuntu multiple operating system, the performance is stable and reliable

(VIII) With immersion gold process pin, corrosion resistant, 2 studs fixed, stable operation at 0 °C-80 °C working temperature for 7X24 hours

2.PRODUCT PICTURES

Below pictures are for reference only:


Rockchip
PX30
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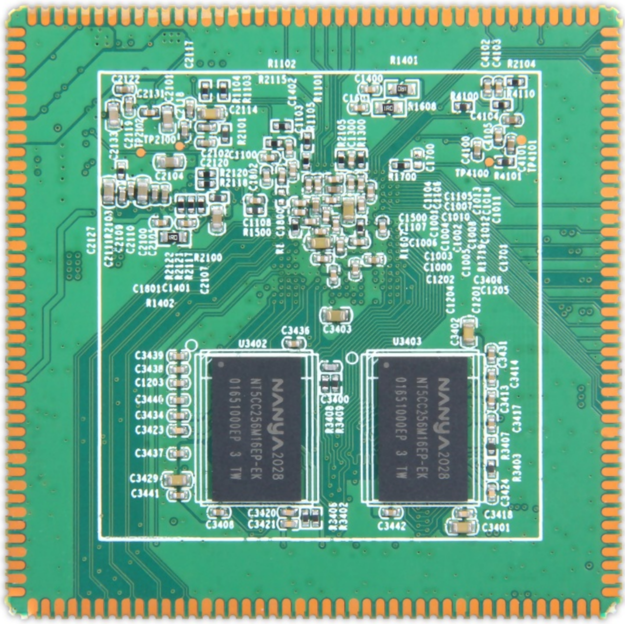
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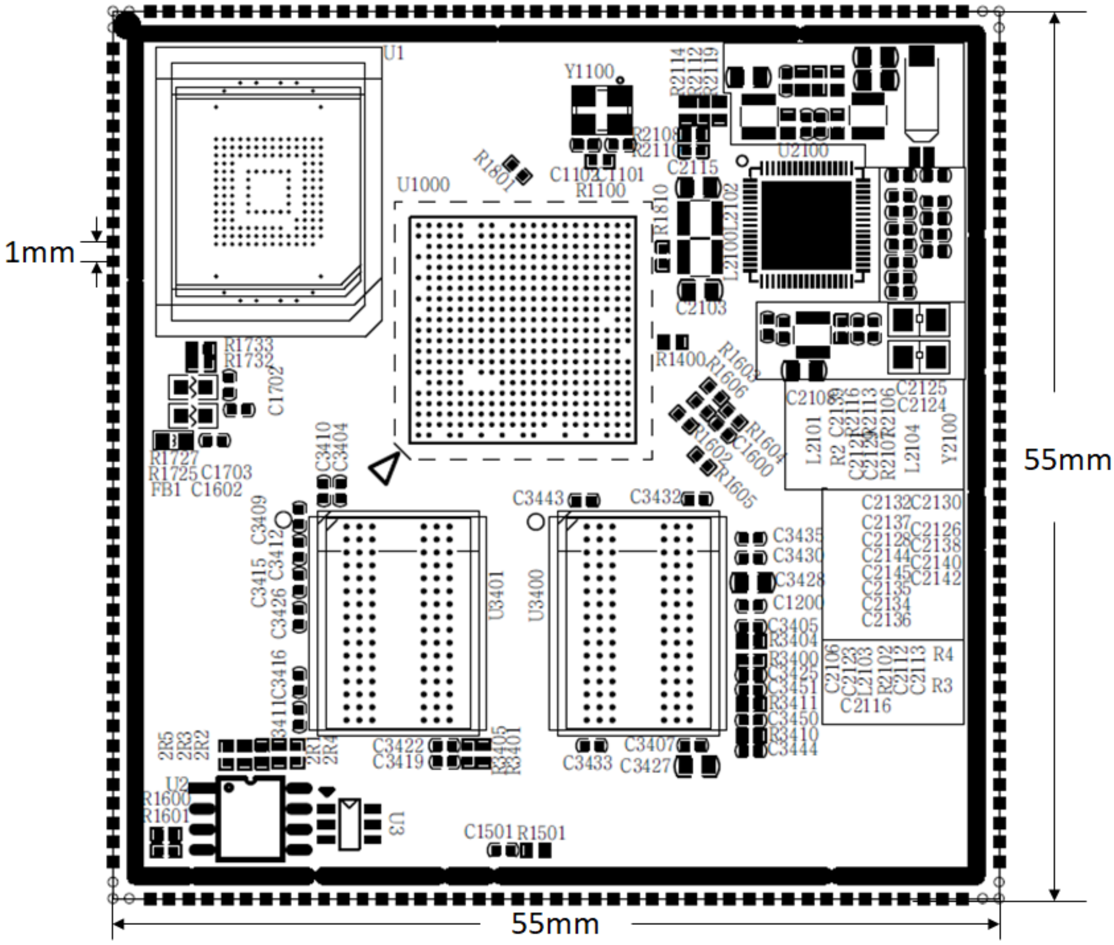
3.BOARD VIEW



4.FEATURES

Chipset	Rockchip PX30	
Market area	Global	
OSD Language	English/Chinese(multi language OSD)	
Processor	CPU	Quad-core Cortex-A35
	GPU	Mali-G31 GPU
	DDR	1GB
	EMMC FLASH	8GB（16G/32G Optional）

Network	Ethernet	RJ45, 10/100M
	WiFi	Extend WiFi & Bluetooth via SDIO3.0
Display	Support RGB/LVDS/MIPI-DSI interface, Support dual-VOP（Dual display）,Resolution up to 1920x1080	
USB	1 x OTG， 1 x USB2.0 Host	
Audio	1 x SPDIF, for audio output 1 x 8ch I²S /TDM, 1×8ch PDM, 1×2ch I²S/PCM	
Interface	I2C, UART, SPI, SDIO3.0, USB2.0, PWM, RMII, I2S（Support 8-way digital microphone array input）	
Dimensions	55 mm * 55 mm	
Adapter	DC input voltage 5V	

5.Support Formats

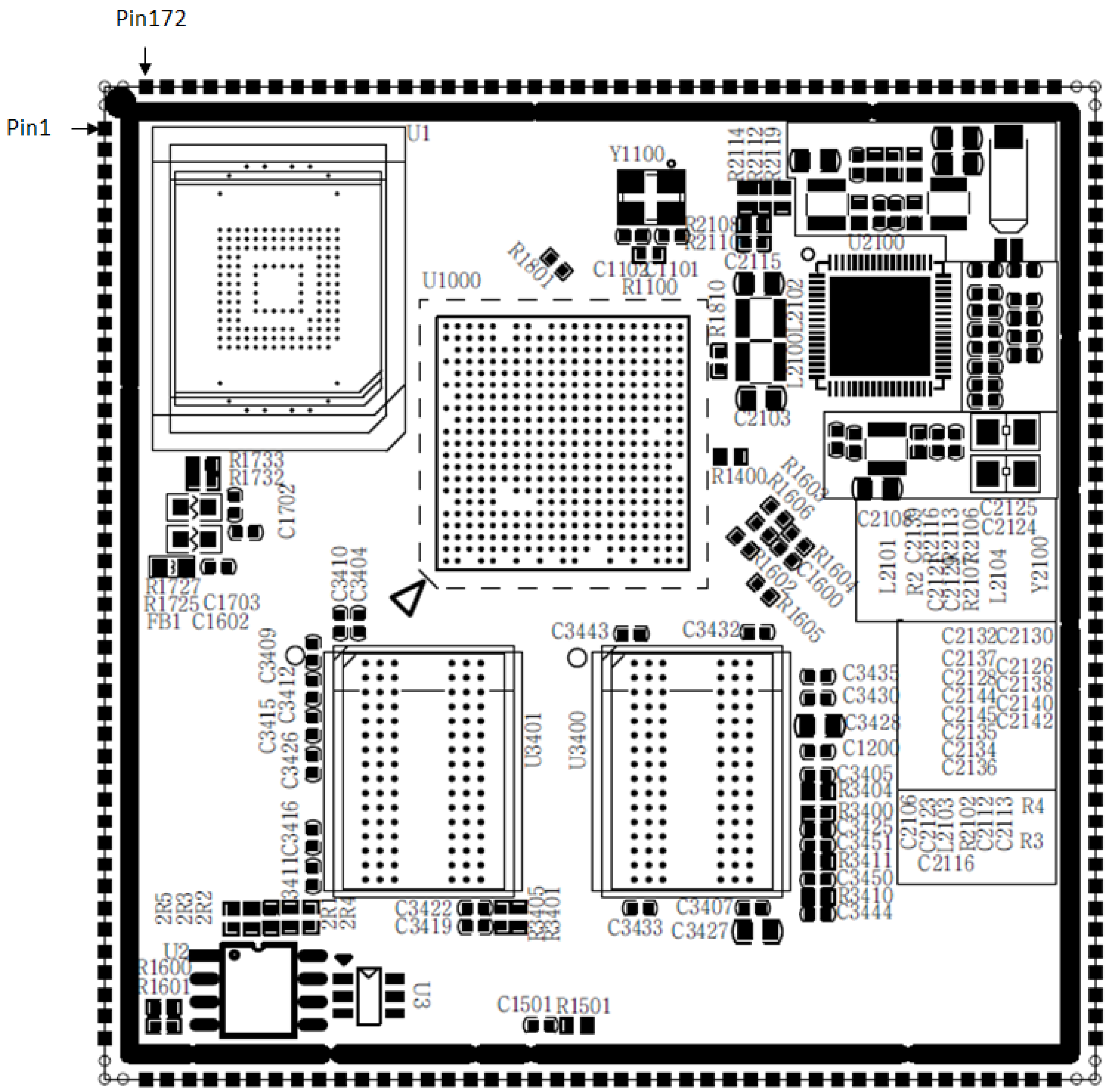
Video Decoder

- Real-time decoding of MPEG-4, H.264, H.265/HEVC, VP8, VC-1
- H.264/AVC Base/Main/High@level4.2; up to 1080P@60fps
- H.265/HEVC Main10 profile@level4.2; up to 1080P@60fps
- VP8, up to 1080P@60fps
- MPEG-4, ISO/IEC 14496-2, SP@L0-3, ASP@L0-5, up to 1080P@60fps
- VC-1, SP@ML, MP@HL, AP@L0-3, up to 1080P@60fps
- MVC is supported based on H.264 or H.265, up to 1080P@60fps

Video Encoder

- Support H.264 video encoder at BP/MP/HP@level4.1
- Resolution and frame rate are up to 1920x1080@30FPS
- 1x1080p@30fps or 2x720p@30fps encoding

6.Extension GPIO definition



Extension GPIO			
PIN	Default function	PIN	Default function
1	LCDC_D10_M0/I2S0_8CH_SDO3/CIF_D8_M1/SPI1_RXD/GPIO3_B6	87	I2S1_SCLK
2	LCDC_D11_M0/I2S0_8CH_SDO2/CIF_D9_M1/SPI1_CLK/GPIO3_B7	88	GND
3	LCDC_D8_M0/I2S0_8CH_SCLKRX/CIF_D7_M1/SPI1_TXD/GPIO3_B4	89	I2S1_MCLK
4	LCDC_D5_M0/I2S0_8CH_SDI2/CIF_D6_M1/SPI1_CSN/GPIO3_B1	90	GND
5	LCDC_D13/I2S0_8CH_MCLK/GPIO3_C1	91	I2S1_SDO
6	LCDC_D12/I2S0_8CH_SDO1/GPIO3_C0	92	I2S1_SDI

7	LCDC_D14/I2S0_8CH_LRCKTX/PWM4/TDM_LRCK/TDM_FSYNC/GPIO3_C2	93	GND
8	LCDC_D15/I2S0_8CH_SCLKTX/PWM5/TDM_SCLK/TDM_SCLK/GPIO3_C3	94	PDM_CLK0
9	LCDC_D16/I2S0_8CH_SDO0/PWM6/TDM_SDO/TDM_SDO/GPIO3_C4	95	GND
10	LCDC_D6/SPI1_CSN1/GPIO3_B2	96	SDMMC0_CLK
11	LCDC_D17/I2S0_8CH_SDI0/PWM7/TDM_SDI/TDM_SDI/GPIO3_C5	97	GND
12	LCDC_D7/I2S0_8CH_SDI1/GPIO3_B3	98	SDMMC0_CMD
13	GND	99	SDMMC0_D3
14	LCDC_CLK/GPIO3_A0	100	SDMMC0_D0
15	GND	101	SDMMC0_D1
16	LCDC_D4_M0/I2S0_8CH_SDI3/CIF_D5_M1/GPIO3_B0	102	SDMMC0_D2
17	LCDC_D22/PDM_SDI3/CIF_HREF_M1/ISP_FLASH_TRIG/GPIO3_D2	103	VCC_SD
18	LCDC_D3_M0/I2S2_2CH_SDO/CIF_D4_M1/GPIO3_A7	104	SPKP_OUT
19	LCDC_D21/PDM_SDI2/CIF_VSYNC_M1/ISP_PRELIGHT_TRIG/GPIO3_D1	105	SPKN_OUT
20	LCDC_D9_M0/I2S0_8CH_LRCKRX/GPIO3_B5	106	HP_SNS
21	LCDC_D20/PDM_SDI1/CIF_CLKOUT_M1/GPIO3_D0	107	HPL
22	LCDC_D0/GPIO3_A4	108	HPR
23	LCDC_D1_M0/I2S2_2CH_SDI/CIF_D3_M1/UART5_RTS/GPIO3_A5	109	MIC2_IN
24	LCDC_D2/GPIO3_A6	110	MIC1_IN
25	LCDC_D19/PDM_CLK1/CIF_D11_M1/GPIO3_C7	111	VCC_1V8
26	LCDC_DEN_M0/I2S2_2CH_LRCK/CIF_D2_M1/UART5_CTS/GPIO3_A3	112	VCC3V0_PMU
27	LCDC_D18/PDM_CLK0_M0/CIF_D10_M1/GPIO3_C6	113	GND
28	LCDC_VSYNC_M0/I2S2_2CH_SCLK/CIF_D1_M1/UART5_TX/GPIO3_A2	114	VCC5V0_IN
29	LCDC_HSYNC_M0/I2S2_2CH_MCLK/CIF_D0_M1/UART5_RX/GPIO3_A1	115	VCC5V0_IN
30	LCDC_D4_M0/I2S0_8CH_SDI3/CIF_D5_M1/GPIO3_B0	116	VCC5V0_IN

31	GND	117	VCC5V0_IN
32	LCDC_D8_M1/LVDS_TX0P/MIPI_TX_D0P	118	GND
33	LCDC_D11_M1/LVDS_TX0N/MIPI_TX_D0N	119	GND
34	LCDC_D10_M1/LVDS_TX1P/MIPI_TX_D1P	120	VCC_RTC
35	LCDC_D1_M1/LVDS_TX1N/MIPI_TX_D1N	121	VCC_3V0
36	LCDC_D4_M1/LVDS_CLKN/MIPI_TX_CLKN	122	VCC_3V0
37	LCDC_D3_M1/LVDS_CLKP/MIPI_TX_CLKP	123	VCC3V3_SYS
38	LCDC_VSYNC_M1/LVDS_TX2N/MIPI_TX_D2N	124	VCC3V3_SYS
39	LCDC_D5_M1/LVDS_TX2P/MIPI_TX_D2P	125	VCC3V3_SYS
40	LCDC_HSYNC_M1/LVDS_TX3N/MIPI_TX_D3N	126	PWRON
41	LCDC_DEN_M1/LVDS_TX3P/MIPI_TX_D3P	127	VCC5V0_HOST
42	GND	128	VCC5V0_HOST
43	BT_REG_ON	129	VCC3V3_LCD
44	MAC_MDC	130	VCC3V3_LCD
45	VCC_RMII	131	EXT_EN
46	CIF_PDN0	132	SNSP
47	RMII_MDIO	133	SNSN
48	RMII_RST	134	VCC_BAT
49	I2C2_SCL	135	VCC12V_DCIN
50	I2C2_SDA	136	VDD1V5_DVP
51	GPIO2_B4	137	VCC1V8_DVP
52	MIPI_CLKO	138	VCC2V8_DVP
53	RMII_CLK	139	GND
54	GND	140	RESET
55	RMII_RXDV	141	CLKOUT_32K
56	RMII_RXD0	142	SDMMC0_DET
57	RMII_RXER	143	GND
58	RMII_RXD1	144	REF_CLKO/GOIO_A0
59	RMII_TXEN	145	GND
60	RMII_TXD1	146	HOST_WAKE_BT

61	RMII_TXD0	147	WIFI_REG_ON
62	GND	148	TP_INT
63	ADC0_HW_ID	149	TP_RST
64	ADC2_KEY_IN	150	GND
65	OTG_DP	151	IR_IN
66	GND	152	BT_WAKE_HOST
67	ADC1_HP_HOOK	153	CHG_DET
68	OTG_DM	154	SENSOR_INT
69	USB_HOST_DM	155	I2C1_SCL
70	USB_HOST_DP	156	I2C1_SDA
71	USB_DET	157	I2C0_SCL_PMIC
72	USB_ID	158	I2C0_SDA_PMIC
73	GND	159	WIFI_WAKE_HOST
74	MIPI_CSI_D2N	160	LCDC_BL_PWM
75	MIPI_CSI_D2P	161	GND
76	MIPI_CSI_D3P	162	SDIO_CLK
77	MIPI_CSI_D3N	163	GND
78	MIPI_CSI_D1N	164	SDIO_D3
79	MIPI_CSI_D1P	165	SDIO_D2
80	MIPI_CSI_D0N	166	SDIO_D1
81	MIPI_CSI_D0P	167	SDIO_D0
82	MIPI_CSI_CLKN	168	SDIO_CMD
83	MIPI_CSI_CLKP	169	UART1_RTS
84	GND	170	UART1_CTS
85	I2S1_LRCK_TXRX	171	UART1_TXD
86	GND	172	UART1_RXD

7.Precautions for use

1. Relative humidity: 10% ~ 90% .
2. Storage temperature: -10 ~ 125℃
3. Operation temperature: 0 ~ 80℃
4. Do not squeeze、distort or disassemble the board.
5. Keep the board away from static electricity .
6. Keep the board away from water and other liquid.
7. Clean the board with soft and clean dry cloth when it’s dirty.
8. Don’t use long connect wires which may affect performance and image quality.