深 圳 金 亚 太 科 技 有 限 公 司

Shenzhen Geniatech Co.,Ltd.

SPECIFICATION

MODEL:SOM-3568-Q7

APPROVED BY GENIATECH		
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Website: www.geniatech.com
Address: Room 1002-1004, Block A, Building 8, Shenzhen International Innovation Valley, Dashi Road, Nanshan District, Shenzhen, Guangdong, China

CONTENT

Revision History

VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.0	2022/12/28				

1. GENERAL DESCRIPTION

SOM-3568-Q7 is is a core board of Q7 standard. It is based on Rockchip RK3568 solution. It is suitable for various application scenarios, and is the best choice for advertising machines, industrial PCs, media playback and control and other fields.It is fully functional and convenient:

(I) Quad core ARM Cortex-A55 CPU @ 2.0GHz, ARM G52 GPU, 1TOPS NPU

(II) support Android 11.0 /Debian 10

(III) 512MB RAM(up to 8GB), 32GB eMMc (up to 128GB)

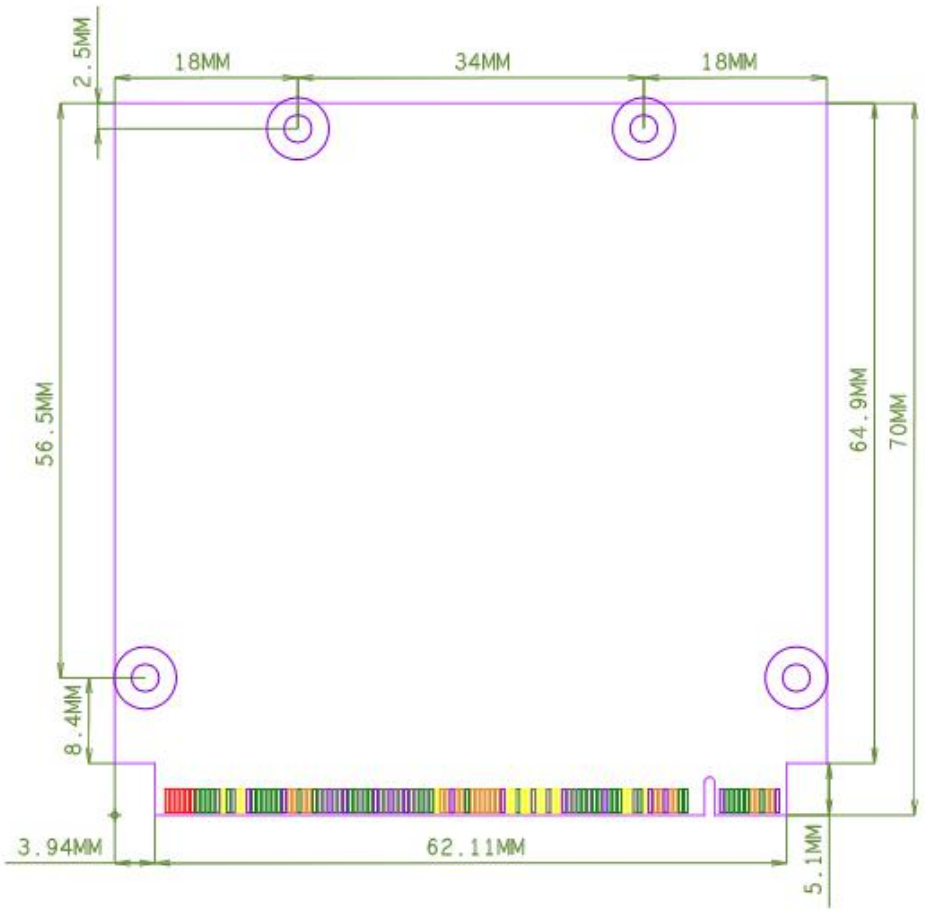
(IV) Suitable for Q Seven Standard

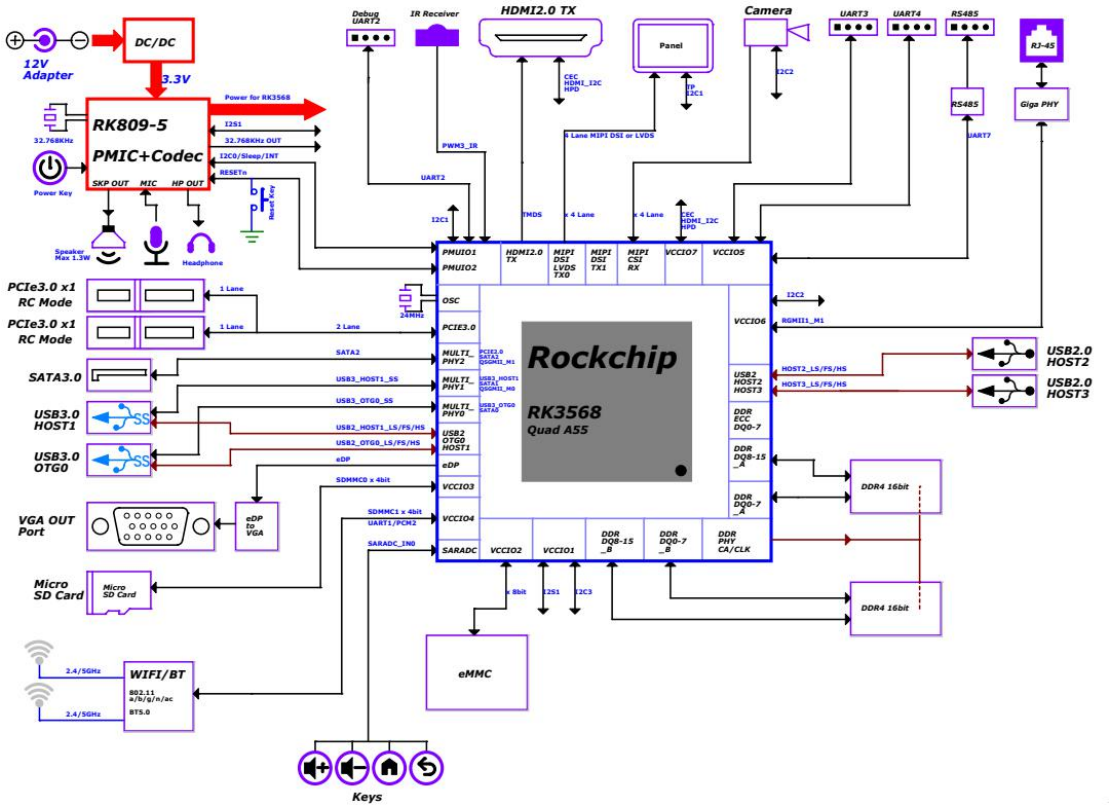
(V) Not less than 8 years supply period

(VI) Applicable to - 40 ° ~85 ° working environment

2. PRODUCT PICTURE

Below pictures are for reference only, please prevail in kind.


2.5MM
18MM
34MM
18MM
56.5MM
64.9MM
70MM
8.4MM
3.94MM
62.11MM
5.1MM


DC/DC
12V Adapter
3.3V
RK809-5
PMIC+Codec
Power Key
Speaker
Headphone
Debug UART2
IR Receiver
HDMI2.0 TX
Panel
Camera
UART3
UART4
RS485
RJ-45
Giga PHY
PCIe3.0 x1 RC Mode
PCIe3.0 x1 RC Mode
SATA3.0
USB3.0 HOST1
USB3.0 OTG0
VGA OUT Port
Micro SD Card
WIFI/BT
Rockchip
RK3568
Quad A55
USB2.0 HOST2
USB2.0 HOST3
DDR4 16bit
DDR4 16bit
eMMC
Keys

3.FEATURES

CPU	Rockchip RK3568, 64 Bit Quad Core ARM Cortex-A55
GPU	ARM G52
RAM	512MB LPDDR4
ROM	32GB EMMC
I/O	Refer to the table below
OS	Android 11.0 / Debian 10
Appearance	80mm x 70mm
Environment	Operation temperature:-40~ +85°C, 10%≤Relative humidity≤90%

Q7 interface PIN Definition

PIN	Function	PIN	Function
1	GND	2	GND
3	PHY0_MDI3-	4	PHY0_MDI2-
5	PHY0_MDI3+	6	PHY0_MDI2+
7	PHY0_LED0/CFG_EXT	8	PHY0_LED1/CFG_LDO0
9	PHY0_MDI1-	10	PHY0_MDI0-
11	PHY0_MDI1+	12	PHY0_MDI0+
13	GPIO1_B2	14	PHY0_LED2/CFG_LDO1
15	NC	16	GPIO4_D2
17	SATA1_ACT_LED	18	GPIO3_A4
19	TP_RST_L_GPIO0_B6	20	RK809_PWRON
21	PMIC_SLEEP_H	22	MIPI_CAM0_RST_L_GPIO3_D4
23	GND	24	GND
25	GND	26	GPIO2_D1
27	TP_INT_L_GPIO0_B5	28	RESETn
29	SATA0-TXP	30	SATA2-TXP
31	SATA0-TXN	32	SATA2-TXN
33	SATA0_ACT_LED	34	GND

35	SATA0-RXP	36	SATA2-RXP
37	SATA0-RXN	38	SATA2-RXN
39	GND	40	GND
41	SARADC_VIN0_KEY/RECOVERY	42	SDMMC0_CLK
43	SDMMC0_DET_L	44	EXT_EN
45	SDMMC0_CMD	46	NC
47	SDIO_PWR_EN	48	SDMMC0_D1
49	SDMMC0_D0	50	SDMMC0_D3/ARMJTAG_TMS
51	SDMMC0_D2/ARMJTAG_TCK	52	UART5_TX_M1
53	REFCLK_OUT	54	UART5_RX_M1
55	PWM10_M0	56	USB_OTG_PWREN_H_GPIO0_A7
57	GND	58	GND
59	I2S1_LRCK_TX_M0_RK809	60	I2C3_SCL_M0
61	GPIO3_A5	62	I2C3_SDA_M0
63	I2S1_SCLK_TX_M0_RK809	64	NC
65	I2S1_SDI0_M0/PDM_SDI0_M0_RK809	66	I2C1_SCL_TP
67	I2S1_SDO0_M0_RK809	68	I2C1_SDA_TP
69	GPIO3_A6	70	NC
71	GPIO3_B6	72	NC
73	GND	74	GND
75	USB3_HOST1_SSTXN	76	USB3_HOST1_SSRXN
77	USB3_HOST1_SSTXP	78	USB3_HOST1_SSRXP
79	NC	80	NC
81	USB2_HUB_DM3	82	USB2_HUB_DM2
83	USB2_HUB_DP3	84	USB2_HUB_DP2
85	NC	86	NC
87	USB2_HOST3_DM	88	USB2_HUB_DM1
89	USB2_HOST3_DP	90	USB2_HUB_DP1
91	USB3_OTG0_VBUSDET	92	USB3_OTG0_ID
93	USB3_OTG0_DM	94	USB3_HOST1_DM
95	USB3_OTG0_DP	96	USB3_HOST1_DP
97	GND	98	GND
99	MIPI_DSI_TX1_D0P/EDP_TX_D0P	100	MIPI_DSI_TX0_D0P/LVDS_TX0_D0P
101	MIPI_DSI_TX1_D0N/EDP_TX_D0N	102	MIPI_DSI_TX0_D0N/LVDS_TX0_D0N
103	MIPI_DSI_TX1_D1P/EDP_TX_D1P	104	MIPI_DSI_TX0_D1P/LVDS_TX0_D1P
105	MIPI_DSI_TX1_D1N/EDP_TX_D1N	106	MIPI_DSI_TX0_D1N/LVDS_TX0_D1N
107	MIPI_DSI_TX1_D2P/EDP_TX_D2P	108	MIPI_DSI_TX0_D2P/LVDS_TX0_D2P
109	MIPI_DSI_TX1_D2N/EDP_TX_D2N	110	MIPI_DSI_TX0_D2N/LVDS_TX0_D2N
111	GPIO3_C4	112	LCD_EN_H_GPIO3_C6
113	MIPI_DSI_TX1_D3P/EDP_TX_D3P	114	MIPI_DSI_TX0_D3P/LVDS_TX0_D3P
115	MIPI_DSI_TX1_D3N/EDP_TX_D3N	116	MIPI_DSI_TX0_D3N/LVDS_TX0_D3N

117	GND	118	GND
119	MIPI_DSI_TX1_CLKP/EDP_TX_AUXP	120	MIPI_DSI_TX0_CLKP/LVDS_TX0_CLKP
121	MIPI_DSI_TX1_CLKN/EDP_TX_AUXN	122	MIPI_DSI_TX0_CLKN/LVDS_TX0_CLK
123	PWM9_M0	124	HDMITX_CEC_M0
125	I2C5_SDA_M0	126	GPIO1_B0
127	I2C5_SCL_M0	128	NC
129	CAN1_TX_M1	130	CAN1_RX_M1
131	HDMI_TXCLKP_PORT	132	NC
133	HDMI_TXCLKN_PORT	134	NC
135	GND	136	GND
137	HDMI_TX1P_PORT	138	NC
139	HDMI_TX1N_PORT	140	NC
141	GND	142	GND
143	HDMI_TX0P_PORT	144	NC
145	HDMI_TX0N_PORT	146	NC
147	GND	148	GND
149	HDMI_TX2P_PORT	150	HDMITX_SDA
151	HDMI_TX2N_PORT	152	HDMITX_SCL
153	HDMI_TX_HPDIN	154	NC
155	PCIE30_REFCLKP_CON	156	PCIE30X1_WAKEn_M1
157	PCIE30_REFCLKN_CON	158	PCIE30X1_PERSTn_M1
159	GND	160	GND
161	NC	162	NC
163	NC	164	NC
165	GND	166	GND
167	NC	168	NC
169	NC	170	NC
171	UART0_TX	172	UART0_RTSn
173	PCIE30_TX1P	174	PCIE30_RX1P
175	PCIE30_TX1N	176	PCIE30_RX1N
177	UART0_RX	178	UART0_CTSn
179	PCIE30_TX0P	180	PCIE30_RX0P
181	PCIE30_TX0N	182	PCIE30_RX0N
183	GND	184	GND
185	USB_HOST_PWREN_H_GPIO0_A6	186	PCIE30X1_CLKREQn_M1
187	MIPI_CAM1_RST_L_GPIO3_D2	188	PCIE30X2_WAKEn_M0
189	GPIO1_B1	190	PCIE30X2_PERSTn_M0
191	MIPI_CAM1_PDN_L_GPIO3_D3	192	PCIE30X2_CLKREQn_M0
193	VCC_RTC_Backup	194	PWM3_IR
195	HDMIRX_DET_L_GPIO3_D0	196	PWM8_M0
197	GND	198	GND
199	SPI2_MOSI_M1	200	SPI2_CS0_M1

201	SPI2_MISO_M1	202	SPI2_CS1_M1
203	SPI2_CLK_M1	204	NC
205	VCC5V0_SYS	206	VCC5V0_SYS_Q7
207	NC	208	UART2_RX_M0_DEBUG
209	UART2_TX_M0_DEBUG	210	NC
211	NC	212	PDM_CLK0_M1
213	I2S1_MCLK_M0_RK809	214	PDM_SDI0_M1
215	PDM_SDI2_M1	216	PDM_CLK1_M1
217	PDM_SDI3_M1	218	PDM_SDI1_M1
219	VCC5V0_SYS	220	VCC5V0_SYS
221	VCC5V0_SYS	222	VCC5V0_SYS
223	VCC5V0_SYS	224	VCC5V0_SYS
225	VCC5V0_SYS	226	VCC5V0_SYS
227	VCC5V0_SYS	228	VCC5V0_SYS
229	VCC5V0_SYS	239	VCC5V0_SYS

4.Support Formats

Audio

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

Video Decoder

- H.265 HEVC/MVC Main10 Profile yuv420@L5.1 up to 4096x2304@60fps
- H.264 AVC/MVC Main10 Profile yuv400/yuv420/yuv422/@L5.1 up to 4096x2304@60fps
- VP9 Profile0/2 yuv420@L5.1 up to 4096x2304@60fps
- VP8 verision2,up to 1920x1088@60fps
- VC1 Simple Profile@low, medium, high levels, Main Profile@low, medium, high levels, Advanced Profile@level0~3,up to 1920x1088@60fps
- MPEG-4 Simple Profile@L0~6,Advanced Simple Profile@L0~5,up to 1920x1088@60fps
- MPEG-2 Main Profile, low, medium and high levels, up to 1920x1088@60fps
- MPEG-1 Main Profile, low, medium and high levels, up to 1920x1088@60fps

- H.263 Profile0,levels 10-70,up to 720x576@60fps

Video Encoder

- H.264/AVC BP/MP/HP@level4.2，up to 1920x1080@100fps
- H.265/HEVC MP@level4.1, up to 1920x1080@100fps (4096x4096@10fps with TILE)
- Support YUV/RGB video source with rotation

Picture

- MJPEG and JPEG unlimited pixel resolution decoding (ISO/IEC-10918)
    - Supports JPEG thumbnail, scaling, rotation and transition effects
- Support *.jpg file formats

5.Precautions for use

1.Storage temperature:-40 ~ +100℃

2.Do not squeeze、distort or disassemble the PC.

3.Keep the Board away from static electricity .

4.Keep the Board away from water and other liquid.

5.Don’t use long connect wires which may affect performance and image quality.