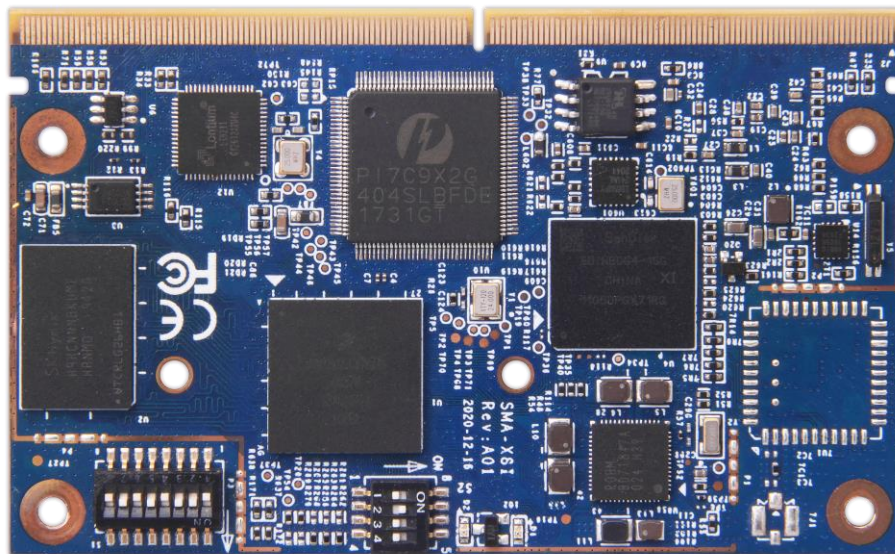


深圳金亚太科技有限公司

Shenzhen Geniatech Co.,Ltd.

SPECIFICATION

MODEL: SoM-N8MM-S



Confirmation

REVISION HISTORY					
VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.0	2020/4/17	RNC20407_V1.0	9	specification	
A02	2021/9/21	SMA-X8I			

APPROVED BY GENIATECH		
PREPARED BY 编写	CHECKED BY 审核	APPROVED BY 批准

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COMMENTS 确认意见	APPROVED BY 批准签字	COMPANY SEAL 盖章

Website: www.geniatech.com

Address: Room 02-04, 10/F, Block A, Building 8, Shenzhen International Innovation Valley,
Dashi Road, Nanshan District, Shenzhen, Guangdong, China.

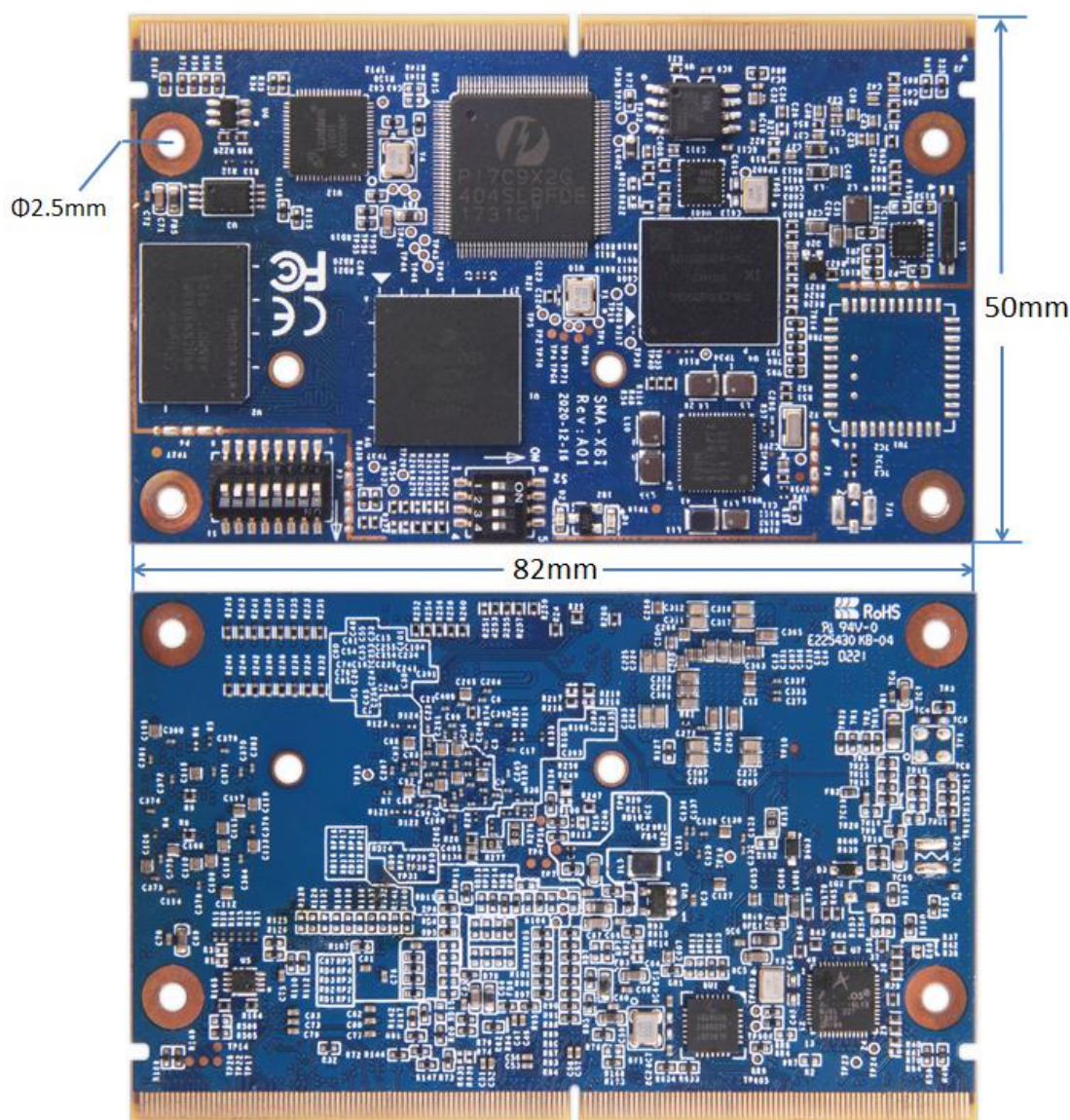
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1. GENERAL DESCRIPTION

SoM-N8MM-S is using NXP i.MX8Mmini processor, based on Quad Arm® Cortex®-A53 and Cortex-M4 cores, with industry-leading audio, voice and video processing functions, suitable for consumer audio to widely used in industrial building automation and mobile computers. The core board and development board developed by Geniatech are based on the i.MX8MMini series application processor design, and the core board is based on "SMARC Hardware Technical Specification 2.1" for compatible design, suitable for all development boards on the market with the same interface.

2. PRODUCT APPEARANCE



3. FEATURES

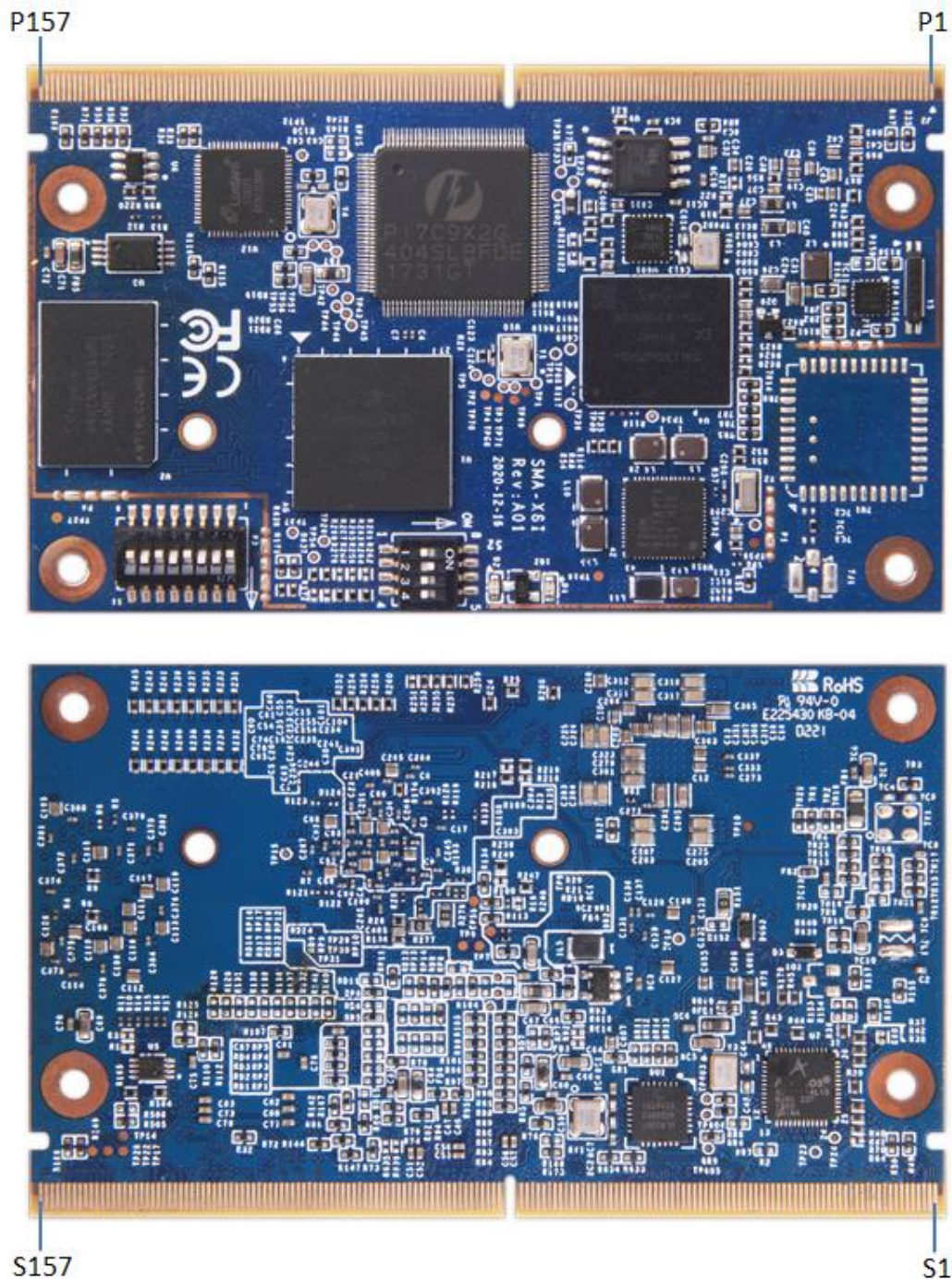
CHIPSET	NXP i.MX8M mini	
MARKET AREA	Global	
OSD LANGUAGE	English/Chinese (multi language OSD)	
Processor	OS	Android 9.0 and Linux(Yocto)
	CPU	Quad ARM Cortex-A53 up to 1.8GHz & Cortex M4 up to 400MHz
	GPU	GC2000
	LPDDR4	2GB(1-4G Optional)
	EMMC FLASH	8GB (16-128G Optional)
SMARC 2.1	Ethernet	1 xRGMII
	PCIe	3 x PCIe (PCIe Switch)
	USB2.0	*4
	USB OTG	*1
	MIPI CSI	*1(4 lane)
	LVDS	*1(Dual Channel LVDS)
	LVDS Backlight	*1
	I2S	*2
	MIPI DSI	*1(multiplex with LVDS)
	GPIO	*12
	SDIO	*1
	UART	*3
	SPI	*2
	I2C	*3
	Vin	5V/3A
Dimensions	82 x 50 mm	

4. SOM Module Specs

4.1 SMARC2.1 specification

Connector MXM 314Pin 0.5mm H7.8 SMD AS0B821-S78B-7H Foxconn

4.2 Interface definition



No.	Functional Description	No.	Functional Description	No.	Functional Description
P1	NC	P53	GND	P105	NC
P2	GND	P54	QSPIA_nSS0	P106	NC
P3	CSI_CKP	P55	GPIO1_IO13	P107	NC
P4	CSI_CKN	P56	QSPIA_SCLK	P108	C_GPIO0
P5	NC	P57	QSPIA_DATA0	P109	CSI0_PWDN
P6	NC	P58	QSPIA_DATA1	P110	C_GPIO2
P7	CSI_DP0	P59	GND	P111	CSI0_nRST
P8	CSI_DN0	P60	USB0_OTG_DP	P112	C_GPIO4

P9	GND	P61	USB0_OTG_DM	P113	C_GPIO5
P10	CSI_DP1	P62	SAI_RXC	P114	C_GPIO6
P11	CSI_DN1	P63	USB1_VBUS	P115	C_GPIO7
P12	GND	P64	USB0_OTG_ID	P116	C_GPIO8
P13	CSI_DP2	P65	USB1_HUB_DP	P117	C_GPIO9
P14	CSI_DN2	P66	USB1_HUB_DN	P118	C_GPIO10
P15	GND	P67	NC	P119	C_GPIO11
P16	CSI_DP3	P68	GND	P120	GND
P17	CSI_DN3	P69	USB2_HUB_DP	P121	I2C1_SCL
P18	GND	P70	USB2_HUB_DN	P122	I2C1_SDA
P19	GBE0_MDI3-	P71	NC	P123	BOOT_MODE0
P20	GBE0_MDI3+	P72	NC	P124	BOOT_MODE1
P21	GBE0_LINK100	P73	NC	P125	NC
P22	GBE0_LINK1000	P74	NC	P126	RESET_OUT
P23	GBE0_MDI2-	P75	PCIE_A_RST	P127	RESET_IN
P24	GBE0_MDI2+	P76	NC	P128	POWER_BTN
P25	GBE0_LINK_ACT	P77	PCIE_B_CKREQ	P129	UART3_TXD
P26	GBE0_MDI1-	P78	PCIE_A_CKREQ	P130	UART3_RD
P27	GBE0_MDI1+	P79	GND	P131	UART3_RTS
P28	NC	P80	PCIE_C_REFCK+	P132	UART3_CTS
P29	GBE0_MDI0-	P81	PCIE_C_REFCK-	P133	GND
P30	GBE0_MDI0+	P82	GND	P134	UART4_TXD
P31	NC	P83	PCIE_A_REFCK+	P135	UART4_RXD
P32	GND	P84	PCIE_A_REFCK-	P136	NC
P33	SD1_STROBE	P85	GND	P137	NC
P34	SD2_CMD	P86	PCIE_A_RX+	P138	NC
P35	SD2_DET	P87	PCIE_A_RX-	P139	NC
P36	SD2_CLK	P88	GND	P140	UART2_TXD
P37	SD2_PWR_EN	P89	PCIE_A_TX+	P141	UART2_RXD
P38	GND	P90	PCIE_A_TX-	P142	GND
P39	SD2_DATA0	P91	GND	P143	NC
P40	SD2_DATA1	P92	NC	P144	NC
P41	SD2_DATA2	P93	NC	P145	NC
P42	SD2_DATA3	P94	GND	P146	NC
P43	ECSPI2_SS0	P95	NC	P147	VSYS_5V
P44	ECSPI2_SCLK	P96	NC	P148	VSYS_5V
P45	ECSPI2_MISO	P97	GND	P149	VSYS_5V
P46	ECSPI2_MOSI	P98	NC	P150	VSYS_5V
P47	NC	P99	NC	P151	VSYS_5V
P48	NC	P100	GND	P152	VSYS_5V
P49	NC	P101	NC	P153	VSYS_5V
P50	GND	P102	NC	P154	VSYS_5V
P51	NC	P103	GND	P155	VSYS_5V

P52	NC	P104	NC	P156	VSYS_5V
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No.	Functional Description	No.	Functional Description	No.	Functional Description
S1	I2C3_SCL	S53	SAI2_TXC	S105	NC
S2	I2C3_SDA	S54	NC	S106	NC
S3	GND	S55	NC	S107	NC
S4	NC	S56	QSPIA_DATA2	S108	LB0P_D7
S5	I2C3_SCL	S57	QSPIA_DATA3	S109	LBCN_D8
S6	SAI2_MCLK	S58	NC	S110	GND
S7	I2C3_SDA	S59	NC	S111	LB0P_D12
S8	NC	S60	NC	S112	LB0N_D13
S9	NC	S61	GND	S113	NC
S10	GND	S62	NC	S114	LB1P_D10
S11	NC	S63	NC	S115	LB1N_D11
S12	NC	S64	GND	S116	NC
S13	GND	S65	NC	S117	LB2P_DCK
S14	NC	S66	NC	S118	LB2N_D9
S15	NC	S67	GND	S119	GND
S16	GND	S68	USB3_HUB_DP	S120	LB3P_D5
S17	NC	S69	USB3_HUB_DM	S121	LB3N_D6
S18	NC	S70	GND	S122	NC
S19	NC	S71	NC	S123	NC
S20	NC	S72	NC	S124	GND
S21	NC	S73	GND	S125	LA0P_D22
S22	NC	S74	NC	S126	LA0N_D23
S23	NC	S75	NC	S127	LCD0_BL_EN
S24	NC	S76	PCIE_B_RST	S128	LA1P_D20
S25	NC	S77	PCIE_C_RST	S129	LA1N_D21
S26	NC	S78	PCIE_C_RX+	S130	GND
S27	NC	S79	PCIE_C_RX-	S131	LA2P_D18
S28	NC	S80	GND	S132	LA2N_D19
S29	NC	S81	PCIE_C_TX+	S133	LCD0_VDD_EN
S30	NC	S82	PCIE_C_TX-	S134	LACP_D16
S31	NC	S83	GND	S135	LACN_D17
S32	NC	S84	PCIE_B_REFCK+	S136	GND
S33	NC	S85	PCIE_B_REFCK-	S137	LA3P_D14
S34	NC	S86	GND	S138	LA3N_D15
S35	USB4_HUB_DP	S87	PCIE_B_RX+	S139	I2C2_SCL
S36	USB4_HUB_DM	S88	PCIE_B_RX-	S140	I2C2_SDA
S37	NC	S89	GND	S141	LCD0_BL_PWM
S38	SAI3_MCLK	S90	PCIE_B_TX+	S142	NC
S39	SAI3_TXFS	S91	PCIE_B_TX-	S143	GND
S40	SAI3_TXD	S92	GND	S144	NC

S41	SAI3_RXD	S93	NC	S145	Wdt_time_out
S42	SAI3_TXC	S94	NC	S146	PCIe_nWAKE
S43	GPIO1_IO12	S95	NC	S147	VDD_RTC
S44	NC	S96	NC	S148	LID
S45	NC	S97	NC	S149	PMIC_STBY_REQ
S46	NC	S98	NC	S150	NC
S47	GND	S99	NC	S151	NC
S48	I2C2_SCL	S100	NC	S152	NC
S49	I2C2_SDA	S101	GND	S153	CARRIER_STBY
S50	SAI2_TXFS	S102	NC	S154	PMIC_ON_REQ
S51	SAI2_TXD	S103	NC	S155	NC
S52	SAI2_RXD	S104	NC	S156	NC
				S157	NC
				S158	GND

5. DECODE

Audio

- S/PDIF input and output, including a new Raw Capture input mode
- Five synchronous audio interface (SAI) modules supporting I2S, AC97, TDM, codec/DSP, and DSD interfaces, including one SAI with 8 Tx and 8 Rx lanes, one SAI with 4 Tx and 4 Rx lanes, two SAI with 2 Tx and 2 Rx lanes, and one SAI with 1 Tx and 1Rx lane. Support over 20 channels of audio subject to I/O limitations.
- 8-Channel Pulse Density Modulation (PDM) input

Video

- 1080p60 VP9 Profile 0, 2 (10-bit)
- 1080p60 HEVC/H.265 Decoder
- 1080p60 AVC/H.264 Baseline, Main, High decoder
- 1080p60 VP8
- 1080p60 AVC/H.264 Encoder
- 1080p60 VP8
- Trust Zone support

6. PRECAUTIONS FOR USE

1. Relative humidity: 5~95 % .
2. Operation temperature: Commercial field: 0~ 75℃; Industrial field: -20~85℃
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.