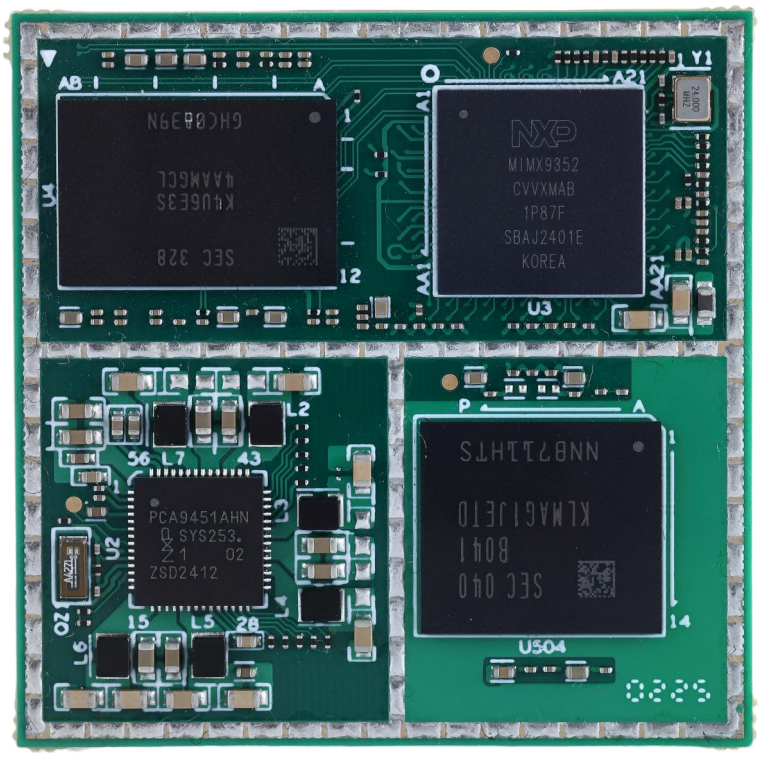
Bit-Brick SSOM-IMX9352
DATASHEET



Provisional version

V 1.0

Bit Brick Education Technology Corporation

Jun 3, 2025

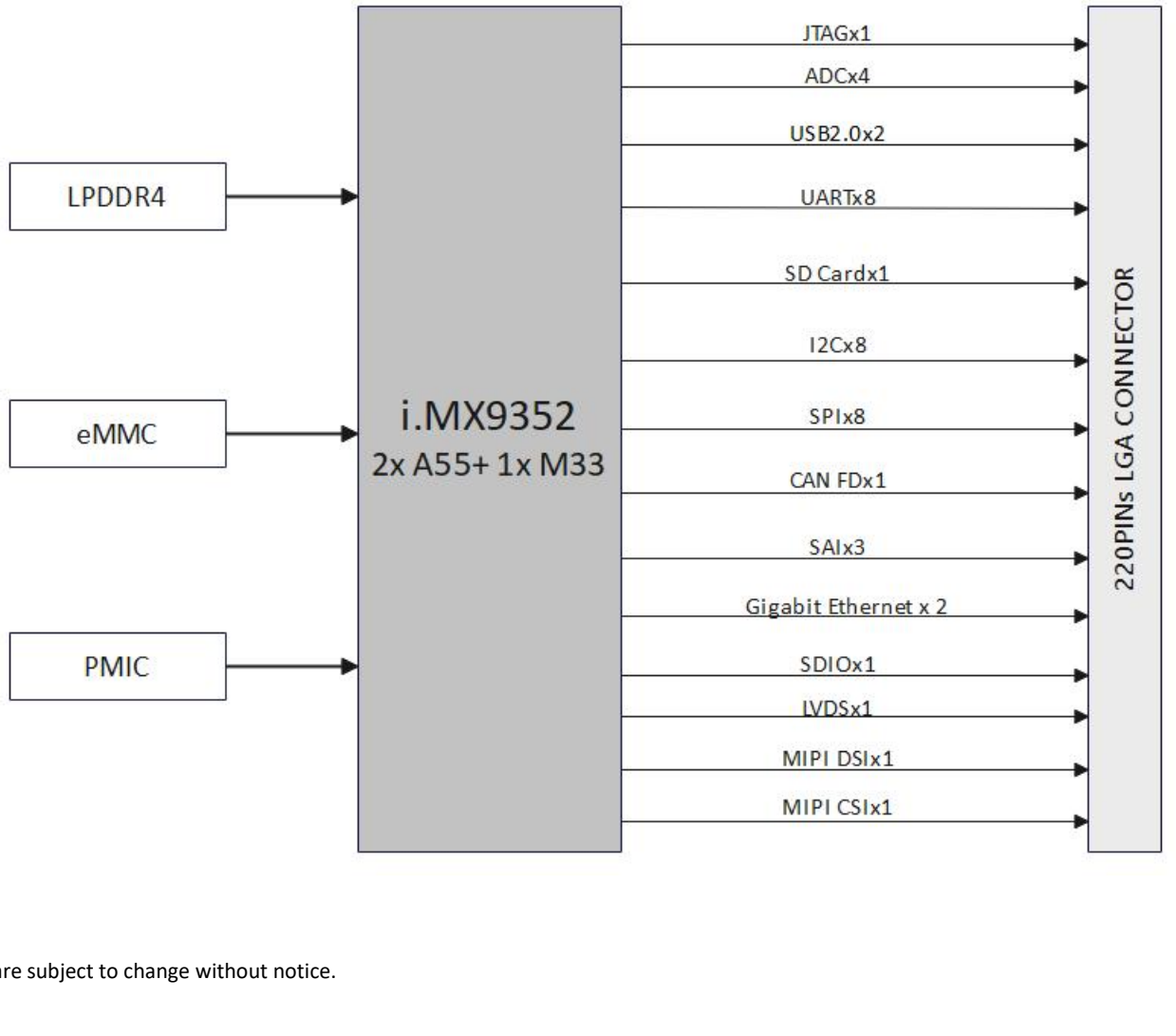
1. Product introduction

SSOM-IMX9352 is a high-performance and low-cost core module developed based on NXP's i.MX9352 processor. It integrates 2 Cortex-A55 cores and 1 Cortex-M33 real-time core, with a maximum main frequency of up to 1.7 GHz. Common interfaces such as UART, 2 Gigabit Ethernets (one of which supports TSN), USB 2.0, and CANFD are led out. A 0.5 TOPS NPU is integrated to accelerate edge machine learning applications.

SSOM-IMX9352 measures only 40x40mm, which is compact and easy to integrate into various products, providing customers with high-performance and low-cost solutions.

2. Processor Functional Block Diagram

3. Hardware Functional Block Diagram

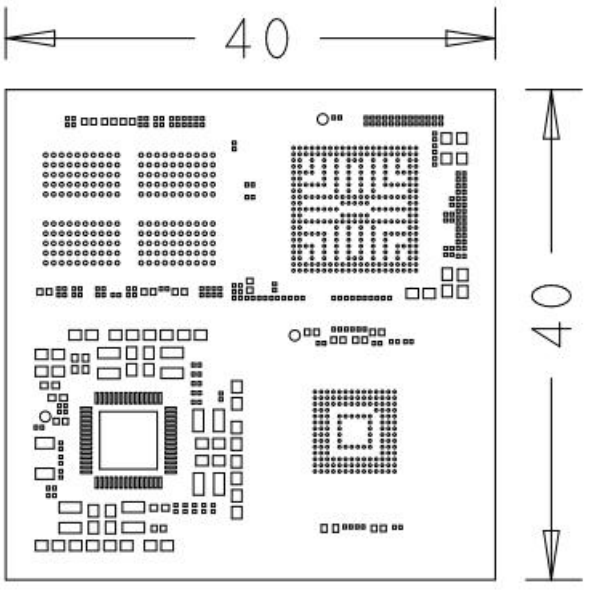


4. Specifications

Form factor	Specification	
Processor	CPU	NXP i.MX9352, 2x Cortex-A55@1.7GHz + 1x Cortex-M33@250MHz
	NPU	0.5 TOPS
	Vedio	Output: 1x MIPI-DSI(up to 1920x1200p60); 1x LVDS TX(up to 1366x768p60 or 1280x800p60); Input: 1x MIPI-CSI
	Audio	3x SAI; 1x SPDIF; 1x 24bit PDM
	Ethernet	2xGigabit Ethernet(1w/TSN)
Memory	RAM	1GB/2GB LPDDR4 SDRAM
	Flash	8GB/16GB eMMC
IO	USB	2xUSB2.0 OTG
	Gigabit Ethernet	2x
	ADC	4x
	CAN FD	1x
	MIPI DSI	1x
	MIPI CSI	1x
	LVDS	1x
	UART	8x
	I2C	8x
	SAI	3x
	SDIO	1x
	SPI	8x
	JTAG	1x
Power supply	Power Supply Voltage	DC 5V
Environment	Operating Temperature	-20 ~ +75 °C
	Operating Humidity	95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	40.0 x 40.0mm
Operation System		Linux
Certifications		CE/FCC Class B

5. Dimension Specifications

Size：40.0mm X 40.0mm



6. Pin definations

Outer Ring Pads		Inner Ring Pads	
Pin Number	Pin Defination	Pin Number	Pin Defination
1	GND1	97	PDM_CLK
2	LVDS_CLK_P	98	PDM_DATAO
3	LVDS_CLK_N	99	PDM_DATA1
4	GND2	100	GPIO_IO01
5	LVDS_TX0_P	101	GPIO_IO00
6	LVDS_TX0_N	102	GPIO_IO03
7	GND3	103	GPIO_IO02
8	LVDS_TX1_P	104	GPI0_IO04
9	LVDS_TX1_N	105	GPIO IO05
10	GND4	106	GPIO_IO06
11	LVDS_TX2_P	107	GPIO_IO07
12	LVDS_TX2_N	108	GPIO_IO12
13	GND5	109	GPI0_IO13
14	LVDS_TX3_P	110	GPI0_IO14
15	LVDS_TX3_N	111	GPIO_IO15
16	GND6	112	GPIO_IO29
17	PMIC_32K_OUT	113	PMIC_nINT
18	SYS_nRST	114	NC1
19	PMIC_SCLL	115	NC2
20	PMIC_SDAL	116	NC3
21	JTAG_TDO	117	NC4
22	JTAG_TDI	118	NC5
23	JTAG_TMS	119	VDD1V8_2
24	JTAG_TCK	120	VDD5V_4
25	GND7	121	VDD5V_5
26	VDD1V8_1	122	VDD5V_6
27	VDD5V_1	123	VDD3V3_2
28	VDD5V_2	124	GND14
29	VDD5V_3	125	GND15
30	VDD3V3_1	126	GND16
31	GND8	127	CLKO04
32	GND9	128	CLKO03
33	GPIO_IO22	129	CLKO02
34	GPIO_IO23	130	CLKO01
35	GPIO_IO24	131	GND17
36	GPIO_IO28	132	ENET2_MDC
37	ENET2_TDO	133	ENET2_MDIO
38	ENET2_TD1	134	GND18
39	ENET2_TD2	135	SD3_CLK
40	ENET2_TD3	136	SD3_CMD
41	ENET2_TXC	137	SD3_DATAO
42	ENET2_TX_CTL	138	SD3_DATA1
43	ENET2_RDO	139	SD3_DATA2
44	ENET2_RD1	140	SD3_DATA3
45	ENET2_RD2	141	ENET1_MDC
46	ENET2_RD3	142	ENET1_MDIO
47	ENET2_RXC	143	GPIO_IO25
48	ENET2_RX_CTL	144	GPI0_IO27
49	ENET1_RX_CTL	145	GPIO_IO16
50	ENET1_RXC	146	GPIO_IO19
51	ENET1_RD3	147	GPIO_IO20
52	ENET1 RD2	148	GPIO_IO26
53	ENET1_RD1	149	GPIO_IO17
54	ENET1 RDO	150	GPIO_IO08
55	ENET1_TX_CTL	151	GPIO_IO09
56	ENET1_TXC	152	GPIO_IO10
57	ENET1 TD3	153	GPIO_IO11

58	ENET1 TD2	154	SAI1_RXDO
59	ENET1 TD1	155	SAI1_TXDO
60	ENET1_TDO	156	SAI1_TXC
61	SD2_DATA3	157	SAI1_TXFS
62	SD2_DATA2	158	WDOG_B
63	SD2_DATA1	159	UART2_TXD
64	SD2_DATA0	160	UART2_RXD
65	SD2_nRST	161	UART1_RXD
66	SD2_CLK	162	UART1_TXD
67	SD2 CMD	163	ADC_IN3
68	SD2_nCD	164	ADC_IN1
69	SD2_VSEL	165	ADC_IN2
70	NVCC_SD	166	ADC_INO
71	ONOFF	167	PMIC_STBY_REQ
72	POR_B	168	PMIC_ON_REQ
73	GND10	169	CLKIN1
74	USB2_DN	170	CLKIN2
75	USB2_DP	171	USB1_ID
76	GND11	172	USB2_ID
77	USB1_DN	173	I2C1_SCL
78	USB1_DP	174	I2C1_SDA
79	GND12	175	12C2_SCL
80	CSI_CLK_P	176	12C2_SDA
81	CSI_CLK_N	177	USB_PWRON
82	CSI_DO_P	178	GND19
83	CSI_DO_N	179	TAMPERO
84	CSI_D1_P	180	TAMPER1
85	CSI_D1_N	181	NVCC_BBSM_1V8
86	GND13	182	GPIO_IO21
87	DSI_D3_N	183	GPIO_IO18
88	DSI_D3_P	184	GND20
89	DSI_D2_N		
90	DSI_D2_P		
91	DSI_D1_N		
92	DSI_D1_P		
93	DSI_DO_N		
94	DSI_DO_P		
95	DSI_CLK_N		
96	DSI_CLK_P		

Central Pads	
Pin Number	**Pin Defination**
185	GND23
186	GND24
187	GND25
188	GND26
189	GND27
190	GND38
191	GND39
192	GND40
193	GND41
194	GND42
195	GND43
196	GND44
197	GND45
198	GND46
199	GND47
200	GND48
201	GND49
202	GND50

203	GND51
204	GND52
205	GND53
206	GND54
207	GND55
208	GND56
209	GND57
210	GND58
211	GND59
212	GND60
213	GND61
214	GND62
215	GND63
216	GND64
217	GND65
218	GND66
219	GND67
220	GND68

7. Ordering Information

Part No.	CPU	Memory	Flash	Operating Temperature
SSOM-IMX9352-0108	i.MX9352	1GB	8GB	-20~75°C
SSOM-IMX9352-0216	i.MX9352	2GB	16GB	-20~75°C

8. Update History

Version Revision	Update Date	Content
Provisional V 1.0	2025-6-3	Initial the first version