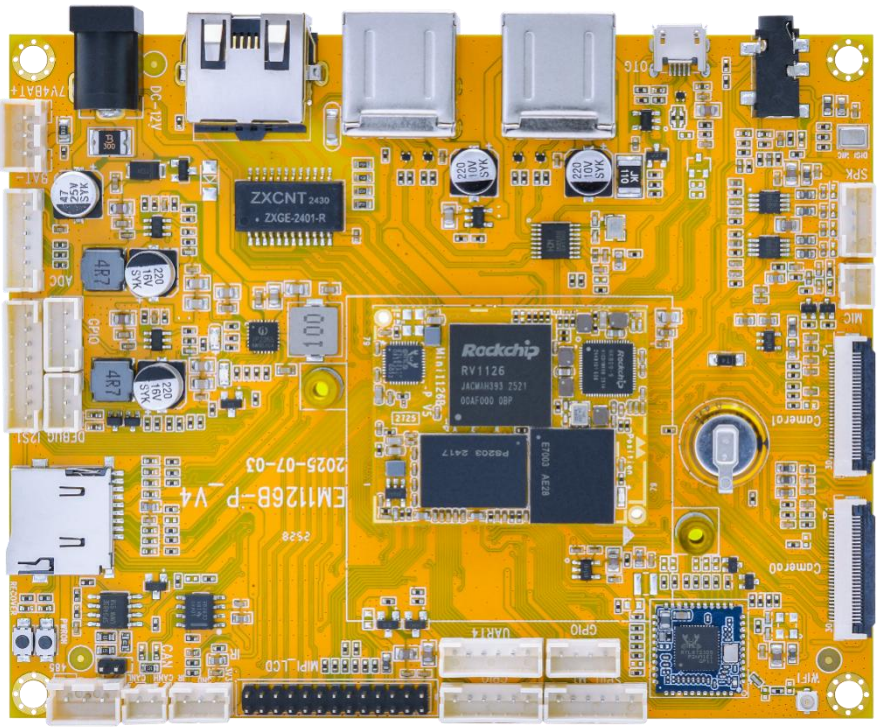
EM1126B-P Hardware Manual

V1.202508



Boardcon Embedded Design

www.boardcon.com

1.Introduction

1.1.About this Manual

This manual is intended to provide the user with an overview of the board and benefits, complete features specifications,and set up procedures. It contains important safety information as well.

1.2.Feedback and Update to this Manual

To help our customers make the most of our products, we are continually making additional and updated resources available on the Boardcon website(www.boardcon.com,www.armdesigner.com).

These include manuals, application notes, programming examples,and updated software and hardware. Check in periodically to see what's new!

When we are prioritizing work on these updated resources, feedback from customers is the number one influence, If you have questions, comments, or concerns about your product or project, please no hesitate to contact us at support@armdesigner.com.

1.3.Limited Warranty

Boardcon warrants this product to be free of defects in material and workmanship for a period of one year from date of buy. During this warranty period Boardcon will repair or replace the defective unit in accordance with the following process:

A copy of the original invoice must be included when returning the defective unit to Boardcon. This limited warranty does not cover damages resulting from lighting or other power surges, misuse, abuse, abnormal conditions of operation, or attempts to alter or modify the function of the product.

This warranty is limited to the repair or replacement of the defective unit. In no event shall Boardcon be liable or responsible for any loss or damages, including but not limited to any lost profits, incidental or consequential damages, loss of business, or anticipatory profits arising from the use or inability to use this product.

Repairs make after the expiration of the warranty period are subject to a repair charge and the cost of return shipping. Please contact Boardcon to arrange for any repair service and to obtain repair charge information.

Content

1 EM1126B-P Introduction

1.1 Summary

The EM1126B-P adopts the Rockchip RV1126B-P SoC, which integrates a quad-core Cortex-A53 processor. The SoC also features a dedicated NPU with computing power up to 3 TOPS, enabling efficient AI processing for various AI scenarios. With a built-in multi-channel AI-ISP image processing engine, H.264/H.265 codec, and a rich set of multimedia and peripheral interfaces, EM1126B-P supports MIPI camera inputs and 1080P display output. It is widely applicable to smart cameras, AI edge boxes, security surveillance, industrial vision, and more.

EM1126B-P is implemented with a MINI1126B-P computer-on-module providing most of the functions and interfaces, and EM1126B-P carrier board providing connectors and several additional functions. The rich feature set of EM1126B-P is customizable according to the price / performance needs of the target application. EM1126B-P contains expansion connectors which accommodate a wide range of standard peripheral devices. EM1126B-P is provided with full ready-to-run Buildroot SW packages and comprehensive user manual and designing guide.

1.2 Rockchip RV1126B-P Features

- **Microprocessor**

  -Quad core ARM Cortex-A53.

  -32KB L1 I-Cache and 32KB L1 D-Cache.

  -Unified 512KB L2 Cache for Cortex-A53.

- **Memory Organization**

  -2GB LPDDR4 (up to 4GB).

- **PWM**

  -Support input capture mode.

  -Supports 4 PWM interface(PWM0-PWM3), total 28 channels.

  -Support continuous mode and one-shot output mode.

  -Support two-stage frequency division of working clock.

- **Watchdog**

  -Three Watchdog for non-secure application.

  -One Watchdog for secure application.

-32-bit watchdog counter.

- **Interrupt Controller**

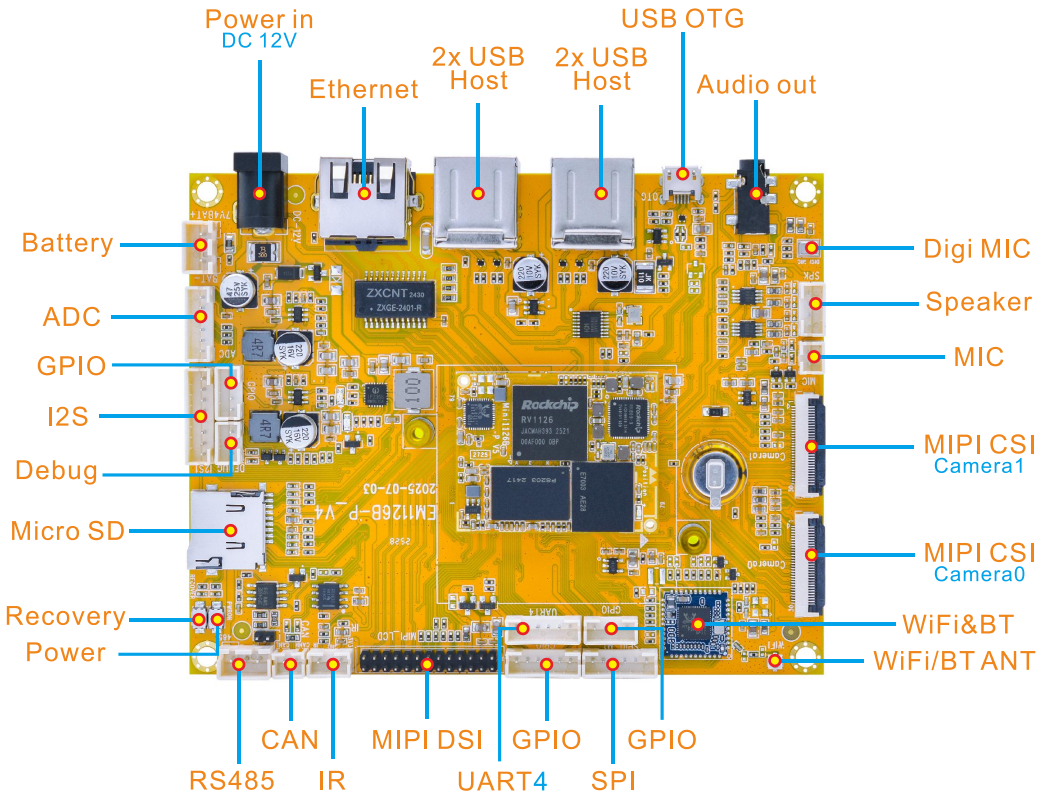
-Support 256 SPI interrupt sources input from different components inside RV1126B-P.

-Support 16 software-triggered interrupts.

- **Temperature**

--40~125°C temperature range.

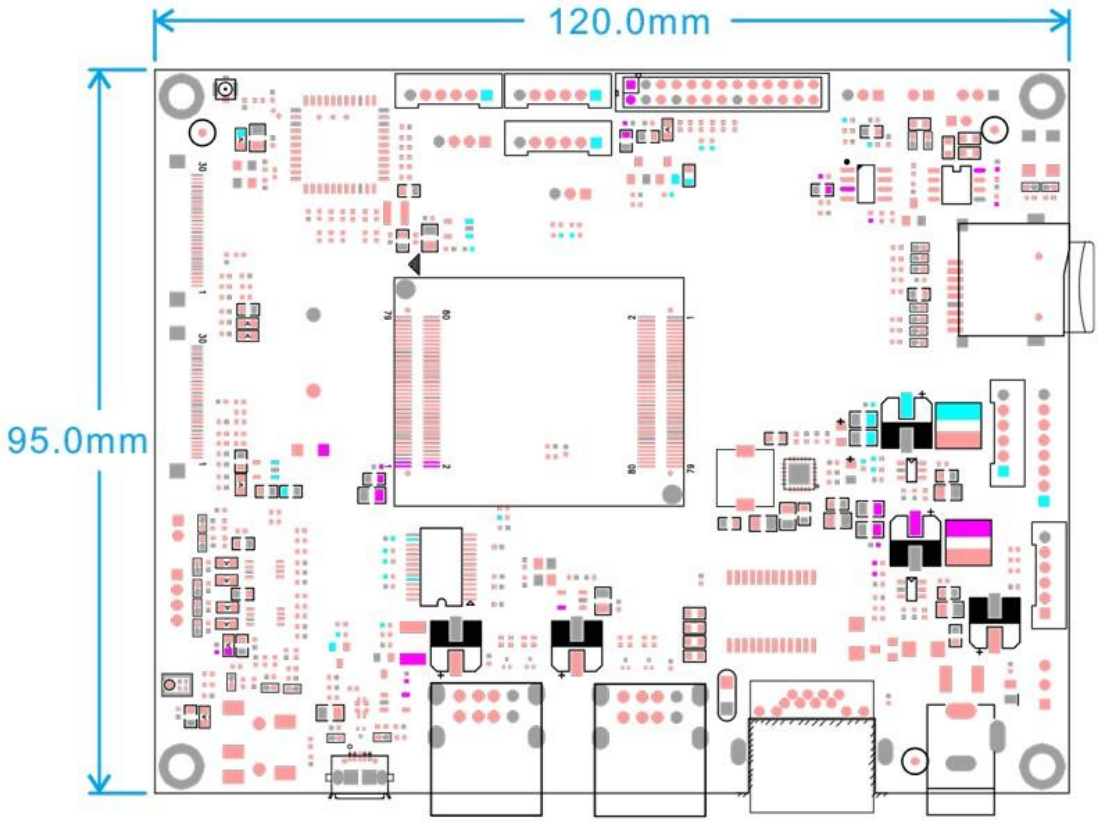
1.3 EM1126B-P Specifications



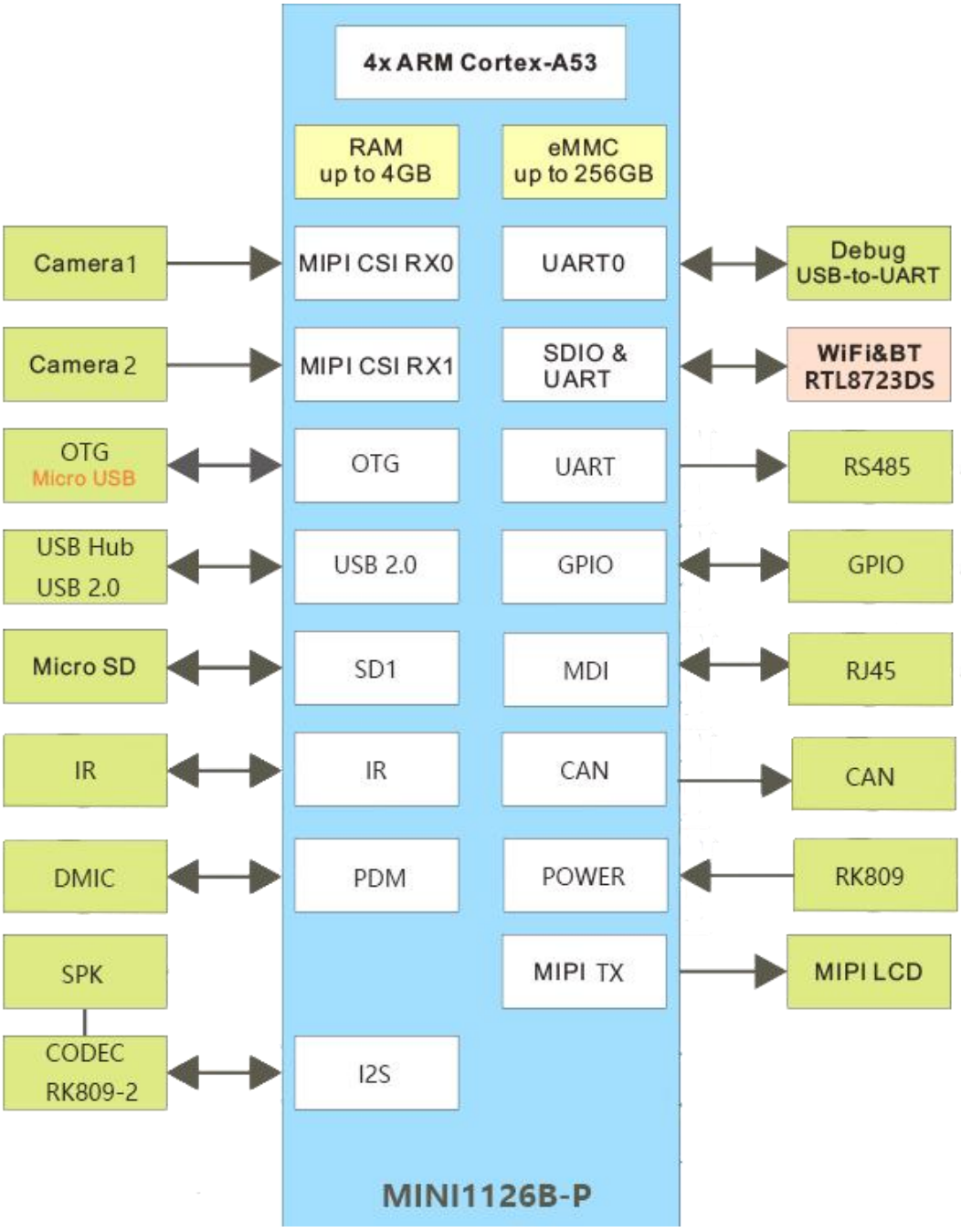
Feature	Specifications
CPU	Quad-core Cortex-A53 @ 1.6GHz
Memory	2GB LPDDR4 (up to 4GB)
Power	12V/3A DC input jack 7.4V Lion Battery connector
USB	1x USB OTG 2.0 4x USB Host 2.0

SD card	MicroSD card slot
Serial Port	• 1x Serial port for debug, 3-pin connector • 1x UART, 6-pin connector • 1x RS485, 3-pin connector
Ethernet	Gigabit Ethernet RJ45 port via Realtek RTL8211F-CG controller
Display	800×1280 @60Hz MIPI DSI, 26-pin header
Camera	2x MIPI Cameras, 24-pin FPC connector.
Audio	• Rockchip RK809-2 audio codec. 3.5mm Audio out jack • 2-channel Speaker (4-pin connector) • 1x digital MEMS MIC, 1x differential MIC
Keys&Switch	1x Recovery key, 1x Power key
WIFI&BT	2.4G WiFi (802.11b/g/n) with Bluetooth 4.2
Other features	RTC battery, GPIO, SPI, I2S, ADC, CAN, IR
Dimension	120 x 95 mm

1.4 PCB Dimension



1.5 Block Diagram



1.6 CPU Introduction

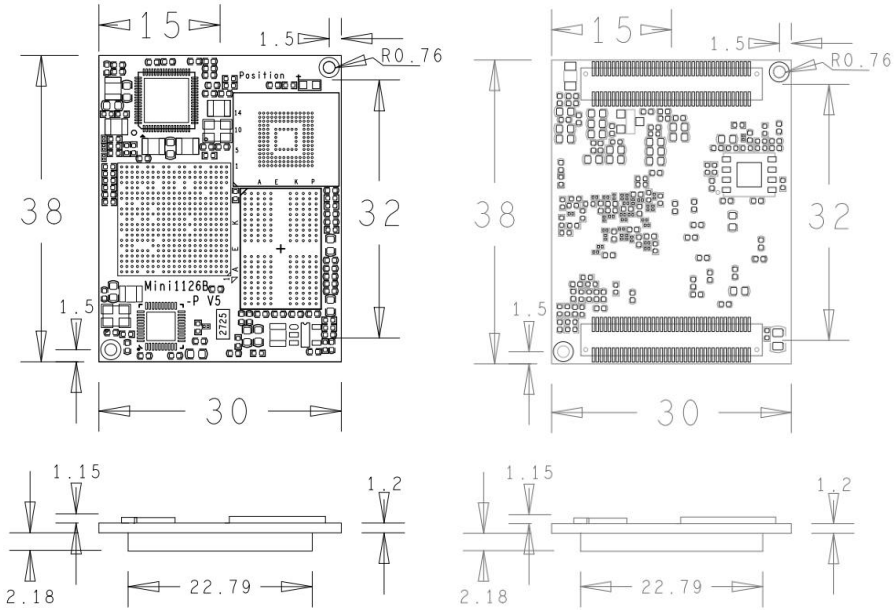
The CPU module RV1126B-P is equipped with 2GB (up to 4GB) of LPDDR4X RAM and offers 8GB (up to 32GB) of eMMC Flash storage.

MINI1126B-P specifications

Pin number– 2× 80-pin, 0.5mm pitch

Dimension–38 x 30 mm

Application–IPC/CVR devices, AI Camera devices, intelligent interactive devices, and mini robots



Pin Definition

Pin (J1)	Signal	Pin (J1)	Signal
1	VCC5V0_SYS	41	MIPI_CSI_RX1_D2P
2	VCC5V0_SYS	42	MIPI_CSI_RX1_CLKP
3	VCC5V0_SYS	43	MIPI_CSI_RX1_D3N
4	VCC5V0_SYS	44	UART1_RX_M0_3V3
5	GND	45	MIPI_CSI_RX1_D3P
6	SNSP	46	UART1_TX_M0_3V3
7	GND	47	WIFI_REG_ON_3V3
8	SNSN	48	SDMMC0_DET_3V3
9	CLKO_32K_3V3	49	BT_RST_3V3
10	GND	50	BT_WAKE_3V3
11	PWRON	51	WIFI_WAKE_HOST_3V3
12	BATDIV	52	BT_WAKE_HOST_3V3
13	MIC_L	53	MIPI_CSI_RX0_D0N
14	VCC_RTC	54	MIPI_CSI_RX0_D2N

Pin (J1)	Signal	Pin (J1)	Signal
15	MIC_R	55	MIPI_CSI_RX0_D0P
16	SDMMC0_CLK	56	MIPI_CSI_RX0_D2P
17	GND	57	MIPI_CSI_RX0_D1N
18	SDMMC0_CMD	58	MIPI_CSI_RX0_D3N
19	HPR_OUT	59	MIPI_CSI_RX0_D1P
20	SDMMC0_D0	60	MIPI_CSI_RX0_D3P
21	HP_SNS	61	GND
22	SDMMC0_D1	62	MIPI_CSI_RX0_CLKN
23	HPL_OUT	63	PDM_CLK0_M0
24	SDMMC0_D2	64	MIPI_CSI_RX0_CLKP
25	I2C1_SDA_M2	65	SPI0_CLK_M1
26	SDMMC0_D3	66	SPI0_CS0n_M1
27	I2C1_SCL_M2	67	SPI0_MISO_M1
28	I2C2_SDA_M0_3V3	68	SPI0_CS1n_M1
29	MIPI_CSI_CLK0	69	SPI0_MOSI_M1
30	I2C2_SCL_M0_3V3	70	PDM_SDI0_M0
31	GND	71	PDM_SDI1_M0
32	MIPI_CSI_PWDN0	72	PDM_SDI2_M0
33	MIPI_CSI_CLK1	73	PDM_CLK1_M0
34	MIPI_CSI_RX1_D0N	74	OTG_ID
35	MIPI_CSI_RX1_D1N	75	OTG_DET_3V3
36	MIPI_CSI_RX1_D0P	76	GPIO0_C7_d_3V3
37	MIPI_CSI_RX1_D1P	77	OTG_DM
38	GND	78	USB_HOST_DM
39	MIPI_CSI_RX1_D2N	79	OTG_DP
40	MIPI_CSI_RX1_CLKN	80	USB_HOST_DP

Pin (J2)	Signal	Pin (J2)	Signal
1	GND	41	MIPI_DSI_D0N
2	LCDC_D0_3V3	42	UART0_RX_M1_3V3
3	LCDC_D16_3V3	43	MIPI_DSI_D0P
4	LCDC_D1_3V3	44	UART0_TX_M1_3V3
5	LCDC_D17_3V3	45	MIPI_DSI_D1N
6	LCDC_D2_3V3	46	LCDC_CLK_3V3
7	LCDC_D18_3V3	47	MIPI_DSI_D1P
8	LCDC_D3_3V3	48	GND
9	LCDC_D19_3V3	49	MIPI_DSI_CLKN
10	LCDC_D4_3V3	50	PCM_RX
11	LCDC_D20_3V3	51	MIPI_DSI_CLKP
12	LCDC_D5_3V3	52	PCM_CLK
13	LCDC_D21_3V3	53	MIPI_DSI_D3N
14	LCDC_D6_3V3	54	PCM_SYNC
15	LCDC_D22_3V3	55	MIPI_DSI_D3P
16	LCDC_D7_3V3	56	PCM_TX
17	LCDC_D23_3V3	57	MIPI_DSI_D2N
18	LCDC_D8_3V3	58	GPIO3_B6_d
19	UART2_TX_M0	59	MIPI_DSI_D2P
20	LCDC_D9_3V3	60	SDIO1_D2
21	UART2_RX_M0	61	GND
22	LCDC_D10_3V3	62	SDIO1_D3
23	UART2_RTSN_M0	63	MDI3-
24	LCDC_D11_3V3	64	SDIO1_CMD
25	UART2_CTSN_M0	65	MDI3+
26	LCDC_D12_3V3	66	GND
27	CAN0_RX_M0_3V3	67	MDI2-
28	LCDC_D13_3V3	68	SDIO1_CLK

Pin (J2)	Signal	Pin (J2)	Signal
29	CAN0_TX_M0_3V3	69	MDI2+
30	LCDC_D14_3V3	70	SDIO1_D0
31	ADKEY/RECOVER_IN0	71	MDI1-
32	LCDC_D15_3V3	72	SDIO1_D1
33	ADCIN1	73	MDI1+
34	GPIO3_B7_d	74	LED2/CFG_LDO1
35	ADCIN2	75	MDI0-
36	LCDC_DEN_3V3	76	LED1/CFG_LDO0
37	ADCIN3	77	MDI0+
38	LCDC_VSYNC_3V3	78	VCC1V2_DVDD
39	GND	79	VCC2V8_AVDD
40	LCDC_HSYNC_3V3	80	VCC3V3_SD

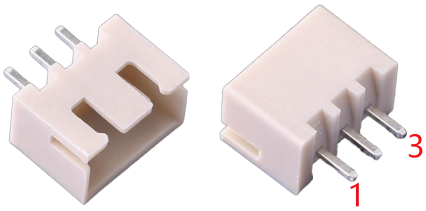
2 Peripherals Introduction

2.1 Power in(P1)

The DC JACK is black enclosure full package, 3-pin plug Type 12V/3A DC adapter.

Pin	Signal	Description	Pin	Signal	Description
1	VCC12V_DCIN	+12V DC Input Power	2	GND	Ground
3	GND	Ground			

2.2 Battery(BAT1)



The Battery is 3-pin connector, connect the 7.4V Li-ion battery.

Pin	Signal	Description	Pin	Signal	Description
1	VBAT	Battery Voltage	2	NC	Not connect
3	GND	Ground			

2.3 Headset(J6)

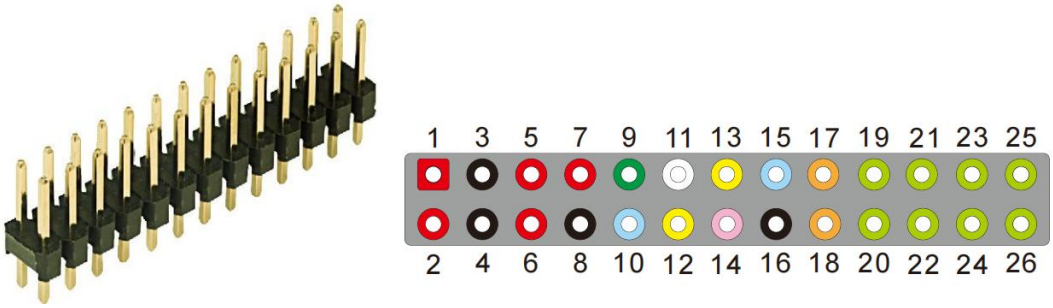
The EM1126B-P adopts audio codec RK809-2, provides stereo audio output / input.

Feature

- Low power.
- IIS transfer audio data.
- Stereo output, support recording.

Pin	Signal	Description	Pin	Signal	Description
1	GND	Ground	2	HPR_OUT	Right Headphone Output
3	HPL_OUT	Left Headphone Output	4	HP_DET	Headphone Detect
5	NC	Not Connect			

2.4 MIPI DSI(CON1)



EM1126B-P MIPI supports up to 800×1280 @60Hz output. It is a 26-pin connector.

CON3					
Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_SYS	System 5V Power Supply	2	VCC5V0_SYS	System 5V Power Supply
3	GND	Ground	4	GND	Ground
5	VCC_LCD	LCD Power Supply	6	VCC_LCD	LCD Power Supply
7	VDDIO_18	1.8V I/O Power Supply	8	GND	Ground
9	LCD_PWM	LCD Backlight PWM Control	10	LCD_BLEN	LCD Backlight Enable
11	NC	Not Connect	12	TOUCH_SCL	Touch Screen I2C Clock Line
13	TOUCH_SDA	Touch Screen I2C Data Line	14	TOUCH_RST	Touch Screen Reset
15	TOUCH_INT	Touch Screen Interrupt	16	GND	Ground
17	MIPI_DSI_D0N	MIPI DSI Data Lane 0 Negative	18	MIPI_DSI_D0P	MIPI DSI Data Lane 0 Positive
19	MIPI_DSI_D1N	MIPI DSI Data Lane 1 Negative	20	MIPI_DSI_D1P	MIPI DSI Data Lane 1 Positive
21	MIPI_DSI_CLKN	MIPI DSI Clock Lane Negative	22	MIPI_DSI_CLKP	MIPI DSI Clock Lane Positive
23	MIPI_DSI_D2N	MIPI DSI Data Lane 2 Negative	24	MIPI_DSI_D2P	MIPI DSI Data Lane 2 Positive
25	MIPI_DSI_D3N	MIPI DSI Data Lane 3 Negative	26	MIPI_DSI_D3P	MIPI DSI Data Lane 3 Positive

2.5 USB OTG(J1)

EM1126B-P OTG is a Micro USB2.0 port, it is used to download image and ADB transfer file.

Feature

- Compatible with USB OTG2.0 specification
- Supports USB 2.0 High Speed (480Mbps), Full Speed (12Mbps) and Low Speed (1.5Mbps) operation in host mode
- Hardware support for OTG signaling, session request protocol, and host negotiation protocol.

Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_OTG	5V power supply for OTG function	2	OTGDM	OTG data line negative (D-)
3	OTGDP	OTG data line positive (D+)	4	NC	Not Connect
5	GND	Ground	6	GND	Ground
7	GND	Ground	8	GND	Ground
9	GND	Ground			

2.6 USB HOST(P3, P6)

EM1126B-P provides two dual-USB (P3, P6). It is used to connect USB mouse, U disk, USB camera, and other USB devices. Support hot-plug.

Feature

- Supports high-speed (480Mbps), full-speed (12Mbps) and low-speed (1.5Mbps) mode
- Supports automatic switching between bus- and self-powered modes

- Support periodic out channel in host mode

P3					
Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_SYS	5V system power supply	2	USB_DM4	USB data line negative (D-) for port 4
3	USB_DP4	USB data line positive (D+) for port 4	4	GND	Ground
5	VCC5V0_SYS	5V system power supply	6	USB_DM3	USB data line negative (D-) for port 3
7	USB_DP3	USB data line positive (D+) for port 3	8	GND	Ground

P6					
Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_HOST	5V power supply for USB host	2	USB_DM2	USB data line negative (D-) for port 2
3	USB_DP2	USB data line positive (D+) for port 2	4	GND	Ground
5	VCC5V0_HOST	5V power supply for USB host	6	USB_DM1	USB data line negative (D-) for port 1
7	USB_DP1	USB data line positive (D+) for port 1	8	GND	Ground

2.7 Ethernet(JP1)

EM1126B-P adopts an RJ45 connector as its Ethernet interface.

Feature

- Supports 10/100/1000 Mbps data transfer rates with the MII/RGMII interfaces
- Supports both full-duplex and half-duplex operation
- Implements the full 802.3 specification

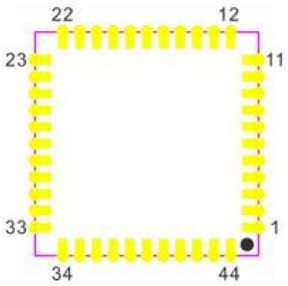
Pin	Signal	Description	Pin	Signal	Description
1	DA+	Bi-directional	2	DA-	Bi-directional

		transmit/receive pair A			transmit/receive pair A
3	DB+	Bi-directional transmit/receive pair B	4	DC+	Bi-directional transmit/receive pair C
5	DC-	Bi-directional transmit/receive pair C	6	DB-	Bi-directional transmit/receive pair B
7	DD+	Bi-directional transmit/receive pair D	8	DD-	Bi-directional transmit/receive pair D
11	LED2/CFG_ LDO1	LED indicator or configuration for LDO1	12	GND	Ground
13	LED1/CFG_ LDO0	LED indicator or configuration for LDO0	14	GND	Ground

2.8 User Buttons (K1, K3)

Key	Signal	Description	Key	Signal	Description
K1	PWRON	Power On key	K3	RECOVER	Recover key

2.9 WiFi&Bluetooth(U20)



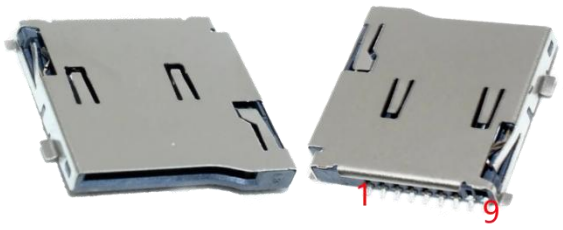
BL-M8723DS1 is a highly integrated WiFi+BT combo module, it contains a WLAN and a BT MAC, a 1T1R capable base band. It supports IEEE 802.11b/g/n standard and provides the highest PHY rate up to 150Mbps, and Bluetooth can support BT2.1+EDR/BT3.0 and BT4.2. This module can offering feature-rich wireless connectivity and reliable throughput from an extended distance.

Features

- Operating Frequencies: 2.4~2.4835GHz.
- Host Interface is SDIO 2.0 and UART.
- Wireless data rate can reach up to 150Mbps.

Pin	Signal	Description	Pin	Signal	Description
1	GND	Ground	2	WL_BT_ANT	Bluetooth/Wi-Fi antenna
3	GND	Ground	4	NC	Not Connect
5	NC	Not Connect	6	BT_WAKE	Wake signal for Bluetooth
7	BT_WAKE_HOST	Wake signal for Bluetooth from host	8	NC	Not Connect
9	VBAT_WL	Battery voltage for Wi-Fi/Bluetooth module	10	XTAL_IN	Crystal oscillator input
11	XTAL_OUT	Crystal oscillator output	12	WIFI_REG_ON	Wi-Fi regulator enable
13	WIFI_WAKE_HOST	Wake signal for Wi-Fi from host	14	WIFI_D2	Wi-Fi data line 2
15	WIFI_D3	Wi-Fi data line 3	16	WIFI_CMD	Wi-Fi command line
17	WIFI_CLK	Wi-Fi clock line	18	WIFI_D0	Wi-Fi data line 0
19	WIFI_D1	Wi-Fi data line 1	20	GND	Ground
21	VIN_LDO_OUT	LDO output voltage	22	VCCIO_WL	I/O voltage for Wi-Fi/Bluetooth module
23	VIN_LDO	Input voltage for LDO	24	CLKO_32K_3V3	32 kHz clock output (3.3V)
25	PCM_RX	PCM (Pulse Code Modulation) receive line	26	PCM_CLK	PCM clock line
27	PCM_TX	PCM transmit line	28	PCM_SYNC	PCM synchronization line
29	NC	Not Connect	30	GND	Ground
31	GND	Ground	32	NC	Not Connect
33	GND	Ground	34	BT_RST	Bluetooth reset line
35	NC	Not Connect	36	GND	Ground
37	NC	Not Connect	38	NC	Not Connect
39	NC	Not Connect	40	NC	Not Connect
41	UART2_CTSN_M0	UART2 Clear To Send (CTS) line for M0	42	UART2_RX_M0	UART2 receive line for M0
43	UART2_TX_M0	UART2 transmit line for M0	44	UART2_RTSN_M0	UART2 Request To Send (RTS) line for M0

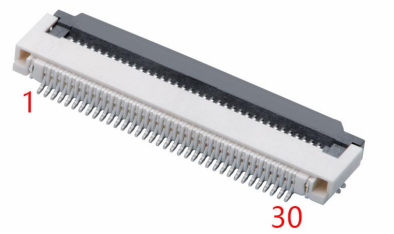
2.10 Micro SD(J3)



The Micro SD card is used as an external storage device. The MMC controller interface supports up to 4-bit transfer modes. MMC is always accessible through the carrier board interface.

Pin	Signal	Description	Pin	Signal	Description
1	SDMMC0_D2	SD/MMC data2	2	SDMMC0_D3	SD/MMC data3
3	SDMMC0_CMD	SD/MMC command signal	4	VCC3V3_SD	3.3V Power Supply
5	SDMMC0_CLK	SD/MMC clock	6	GND	Ground
7	SDMMC0_D0	SD/MMC data0	8	SDMMC0_D1	SD/MMC data1
9	SDMMC0_DET _3V3	SD/MMC detect signal (3V3)			

2.11 Camera(CON3, CON4)



EM1126B-P features two 24-pin MIPI connectors for camera (IMX415).

Features

- Support 1080p@60fps output
- Lane operation ranging from 80 Mbps to 1.5Gbps in forward direction.

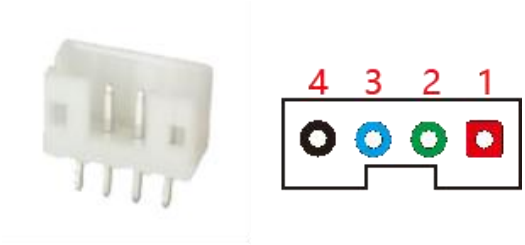
CON3					
Pin	Signal	Description	Pin	Signal	Description
1	NC	Not connect	2	AF_2V8	AF 2.8V power supply
3	DVDD1V2	Digital supply voltage 1.2V	4	VCC1V8_DVP	Digital supply voltage 1.8V for DVP
5	NC	Not Connect	6	GND	Ground

7	AVDD2V8_DVP	Analog supply voltage 2.8V for DVP	8	GND	Ground
9	I2C1_SDA_M2	I2C data line for M2	10	I2C1_SCL_M2	I2C clock line for M2
11	CAMERA_RST_0	Camera reset signal	12	MIPI_CSI_PWDN0	MIPI CSI power down signal
13	GND	Ground	14	MIPI_CLK0	MIPI clock signal
15	GND	Ground	16	MIPI_CSI_RX0_D3P	MIPI CSI data lane 3 positive
17	MIPI_CSI_RX0_D3N	MIPI CSI data lane 3 negative	18	GND	Ground
19	MIPI_CSI_RX0_D2P	MIPI CSI data lane 2 positive	20	MIPI_CSI_RX0_D2N	MIPI CSI data lane 2 negative
21	GND	Ground	22	MIPI_CSI_RX0_D1P	MIPI CSI data lane 1 positive
23	MIPI_CSI_RX0_D1N	MIPI CSI data lane 1 negative	24	GND	Ground
25	MIPI_CSI_RX0_CLKP	MIPI CSI clock lane positive	26	MIPI_CSI_RX0_CLKN	MIPI CSI clock lane negative
27	GND	Ground	28	MIPI_CSI_RX0_D0P	MIPI CSI data lane 0 positive
29	MIPI_CSI_RX0_D0N	MIPI CSI data lane 0 negative	30	GND	Ground

CON4					
Pin	Signal	Description	Pin	Signal	Description
1	NC	Not connect	2	AF_2V8	AF 2.8V power supply
3	DVDD1V2	Digital supply voltage 1.2V	4	VCC1V8_DVP	Digital supply voltage 1.8V for DVP
5	NC	Not Connect	6	GND	Ground
7	AVDD2V8_DVP	Analog supply voltage 2.8V for DVP	8	GND	Ground
9	I2C3_SDA_M1_1V8	I2C data line for M1 at 1.8V	10	I2C3_SCL_M1_1V8	I2C clock line for M1 at 1.8V
11	CAMERA_RST_1	Camera reset signal	12	SPI0_CS1n_M1	SPI chip select 1 signal for M1
13	GND	Ground	14	MIPI_CLK1	MIPI clock signal
15	GND	Ground	16	MIPI_CSI_RX1_D3P	MIPI CSI data lane 3 positive
17	MIPI_CSI_RX1_D3N	MIPI CSI data lane 3 negative	18	GND	Ground
19	MIPI_CSI_RX1_	MIPI CSI data lane 2	20	MIPI_CSI_RX1	MIPI CSI data lane 2

	D2P	positive		_D2N	negative
21	GND	Ground	22	MIPI_CSI_RX1 _D1P	MIPI CSI data lane 1 positive
23	MIPI_CSI_RX1_ D1N	MIPI CSI data lane 1 negative	24	GND	Ground
25	MIPI_CSI_RX1_ CLKP	MIPI CSI clock lane positive	26	MIPI_CSI_RX1 _CLKN	MIPI CSI clock lane negative
27	GND	Ground	28	MIPI_CSI_RX1 _D0P	MIPI CSI data lane 0 positive
29	MIPI_CSI_RX1_ D0N	MIPI CSI data lane 0 negative	30	GND	Ground

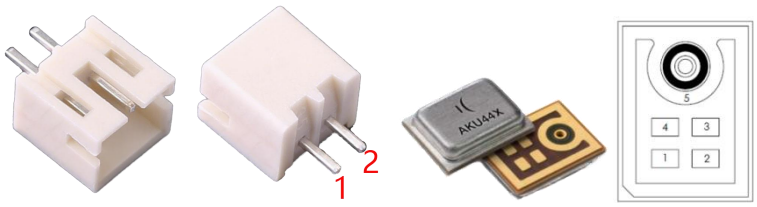
2.12 SPK(J7)



Using a 4-pin connector to connect an external speaker, can be equipped with two speakers, effectively amplify the audio signal.

Pin	Signal	Description	Pin	Signal	Description
1	SPK2_P	Positive terminal for Speaker 2	2	SPK2_N	Negative terminal for Speaker 2
3	SPK1_P	Positive terminal for Speaker 1	4	SPK1_N	Negative terminal for Speaker 1

2.13 MIC(J8, MIC1)



The EM1126B-P provide two microphone inputs (J8 and MIC1), One is an external 2-pin microphone(J8), and the other is a patch chip silica(MIC1). It is used for recording.

J8					
Pin	Signal	Description	Pin	Signal	Description
1	MIC1_INN	Negative input for	2	MIC1_INP	Positive input for

		Microphone 1			Microphone 1

MIC1					
Pin	Signal	Description	Pin	Signal	Description
1	PDM_CLK_1	PDM Clock Input	2	PDM_SDI0_1	PDM Data Input
3	VDDIO_18	Supply Voltage for I/O (1.8V)	4	GND	Ground
5	GND	Ground			

2.14 GPIO(J5, J18, J16, J36)

The GPIO uses two 4-pin connectors(J5, J18), one 8-pin connector(J16) and two 6-pin connector(J36, J36). The pins can be defined as data input / output.

J5					
Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V system power supply	2	SPI1_MOSI_M2	SPI Master Out Slave In for Module 2
3	SPI1_MISO_M2	SPI Master In Slave Out for Module 2	4	GND	Ground

J18					
Pin	Signal	Description	Pin	Signal	Description
1	VDDIO_18	1.8V I/O power supply	2	PDM_CLK1_M0	Pulse Density Modulation (PDM) clock signal for M0
3	PDM_SDI1_M0	PDM serial data input for M0	4	GND	Ground

J16					
Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V system power supply	2	I2S1_MLCK_M2	I2S Master Clock for Module 2
3	I2S1_SDO_M2	I2S Serial Data Out	4	I2S1_SCLK_M2	I2S Serial Clock for

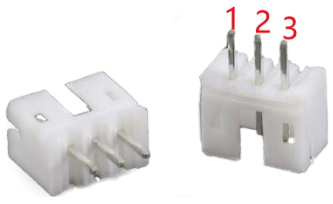
		for Module 2			Module 2
5	I2S1_LRCK_M2	I2S Left/Right Clock for Module 2	6	I2S1_SDI_M2	I2S Serial Data In for Module 2
7	NC	Not Connect	8	GND	Ground

J33					
Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V system power supply	2	GPIO1_D6	General Purpose Input/Output pin
3	GPIO1_D7	General Purpose Input/Output pin	4	GPIO2_A0	General Purpose Input/Output pin
5	GPIO2_A1	General Purpose Input/Output pin	6	GND	Ground

J36					
Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V system power supply	2	GPIO2_C4	General Purpose Input/Output pin
3	GPIO2_C5	General Purpose Input/Output pin	4	GPIO2_B1	General Purpose Input/Output pin
5	GPIO2_B2	General Purpose Input/Output pin	6	GND	Ground

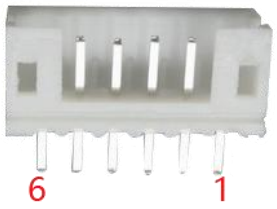
2.15 UART(J10, J34)

- UART0 with 2 wires for debug tools
- Embedded two 64byte FIFO
- Support auto flow control mode for UART4



The J10 is 3-pin connector. The debug serial port baud rate is 1500000.

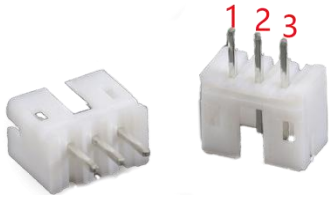
J10					
Pin	Signal	Description	Pin	Signal	Description
1	UART0DBG_RX	Serial data input	2	UART0DBG_TX	Serial data output
3	GND	Ground			



The J34 used for RS232.

J34					
Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V power supply	2	UART4_RTSN_M1	UART4 Request To Send (RTS) signal for Module 1
3	UART4_CTSN_M1	UART4 Clear To Send (CTS) signal for Module 1	4	UART4_TX_M1	UART4 Transmit (TX) signal for Module 1
5	UART4_RX_M1	UART4 Receive (RX) signal for Module 1	6	GND	Ground

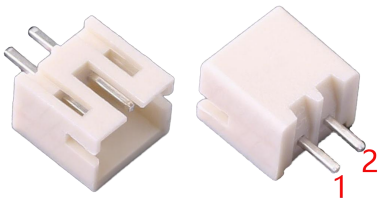
2.16 IR(J24)



3-pin connector. It is used to connect the IR receiver.

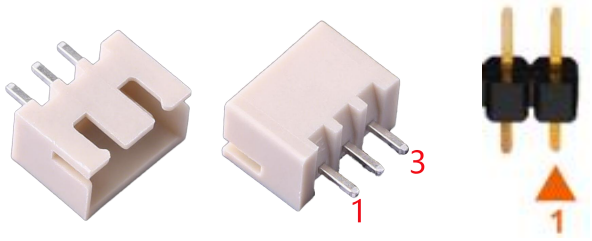
Pin	Signal	Description	Pin	Signal	Description
1	PWM3_IR	IR signal	2	GND	Ground
3	VCC3V3_SYS	3.3V system power supply			

2.17 CAN(P2)



Pin	Signal	Description	Pin	Signal	Description
1	CANL	CAN bus low signal line	2	CANH	CAN bus high signal line

2.18 RS485(J32, JP2)

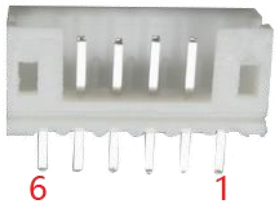


RS485 uses 3-pin (J32) connectors and 2-pin (JP2) connectors, both using the SP3485EEN transceiver for bidirectional transmission and reception.

J32					
Pin	Signal	Description	Pin	Signal	Description
1	GND	Ground	2	RS485_B	RS-485 signal line B
3	RS485_A	RS-485 signal line A			

JP2					
Pin	Signal	Description	Pin	Signal	Description
1	RS485_A	RS-485 signal line A	2	RS485_B	RS-485 signal line B

2.19 ADC(J11)



6-pin connector. It is used to connect the ADC device.

Pin	Signal	Description	Pin	Signal	Description
1	VDDIO_18	1.8V I/O power supply	2	ADCIN1	Analog-to-Digital Converter (ADC) input 1
3	ADCIN2	Analog-to-Digital Converter (ADC) input 2	4	ADCIN3	Analog-to-Digital Converter (ADC) input 3
5	NC	Not Connect	6	GND	Ground

3 Product Configurations

3.1 Standard Contents

NO.	Item	Qty.(PCS)	Description
1	EM1126B-P board	1	Standard Content(2GB RAM, 8GB eMMC)
2	U-disk/CD-ROM	1	Buildroot SDK, Documents, tools, Schematic Drawing, datasheets, etc.
3	Ethernet cable	1	1.5m Crossover cable
4	Serial Cable	1	CH9102X
5	USB Cable	1	Micro USB
6	Power adaptor	1	12V/3A DC
7	Antenna	1	WIFI antenna

3.2 Optional Parts

- LCD Module (10.1-inch MIPI panel)
- Camera(IMX415)