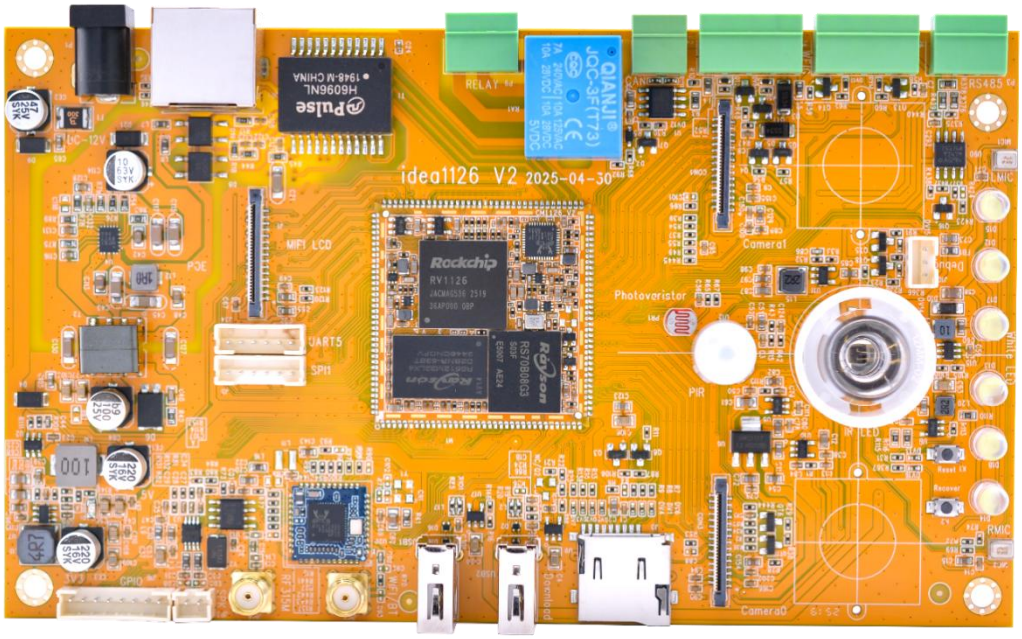
Idea1126B-P Hardware Manual

V1.202508



Boardcon Embedded Design

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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 Idea1126B-P Introduction

1.1 Summary

The Idea1126B-P adopts the Rockchip RV1126B-P AI SoC, which integrates a quad-core Cortex-A53 processor running at up to 1.6 GHz and a 3 TOPS NPU, specifically designed for edge AI computing, video analytics, and image recognition applications, enables efficient execution of complex deep learning algorithms directly on the device, facilitating effective AI processing across a variety of AI-driven scenarios. The RV1126B-P 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, supports multiple MIPI camera inputs and 1080P display output. Also offers powerful network communication functions, including support for Wi-Fi 2.4G, Bluetooth 4.2, and Gigabit Ethernet.

Idea1126B-P is implemented with a CM1126B-P computer-on-module providing most of the functions and interfaces, and Idea1126B-P carrier board providing connectors and several additional functions. The rich feature set of Idea1126B-P is customizable according to the price / performance needs of the target application. Idea1126B-P contains expansion connectors which accommodate a wide range of standard peripheral devices. Idea1126B-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 Cortex-A53 MPCore processor.

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

  -512kB unified L2 cache.

- **Memory Organization**

  -2GB LPDDR4(up to 4 GB).

- **PWM**

  -Supports 4 PWM interface, total 28 channels.

  -Support input capture mode.

  -Support continuous mode and one-shot output mode.

- **Watchdog**

  -Supports 3 non-secure watchdog and 1 secure watchdog.

-32-bit watchdog counter.

- **Interrupt Controller**

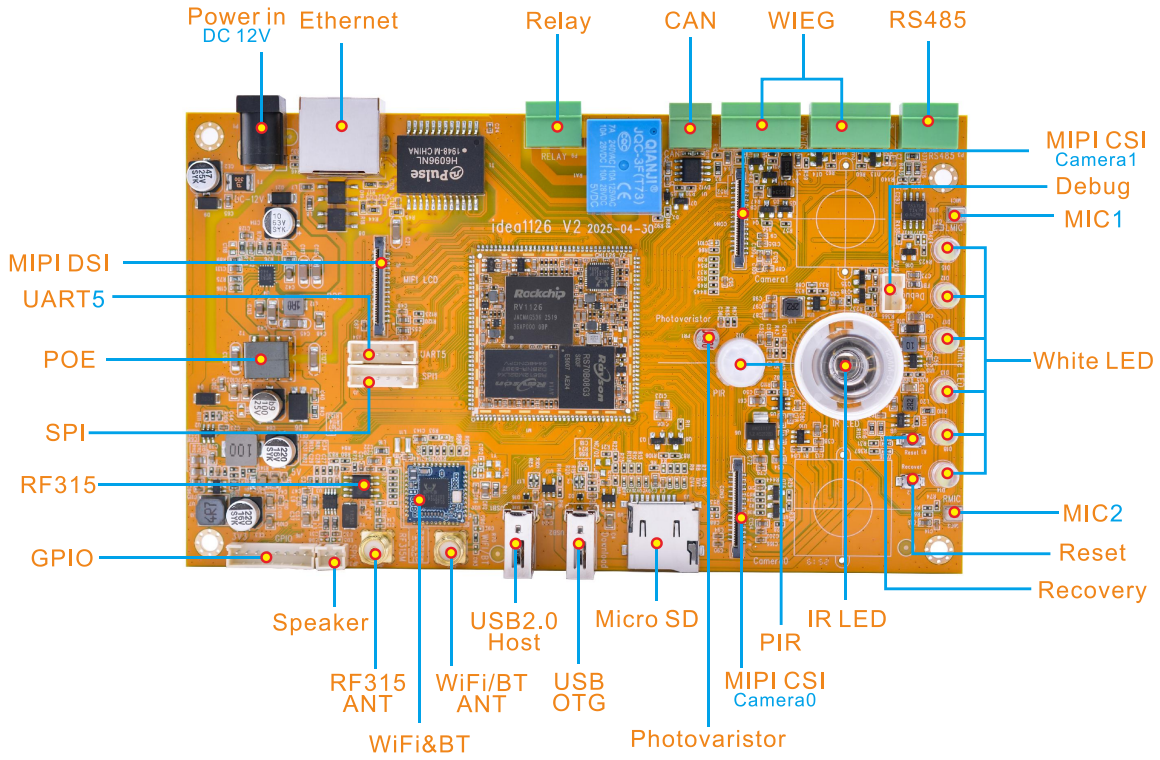
-Support 256 SPI interrupt sources input from different components inside SoC.

-Support 16 software-triggered interrupts.

- **Temperature**

--40~125°C temperature range.

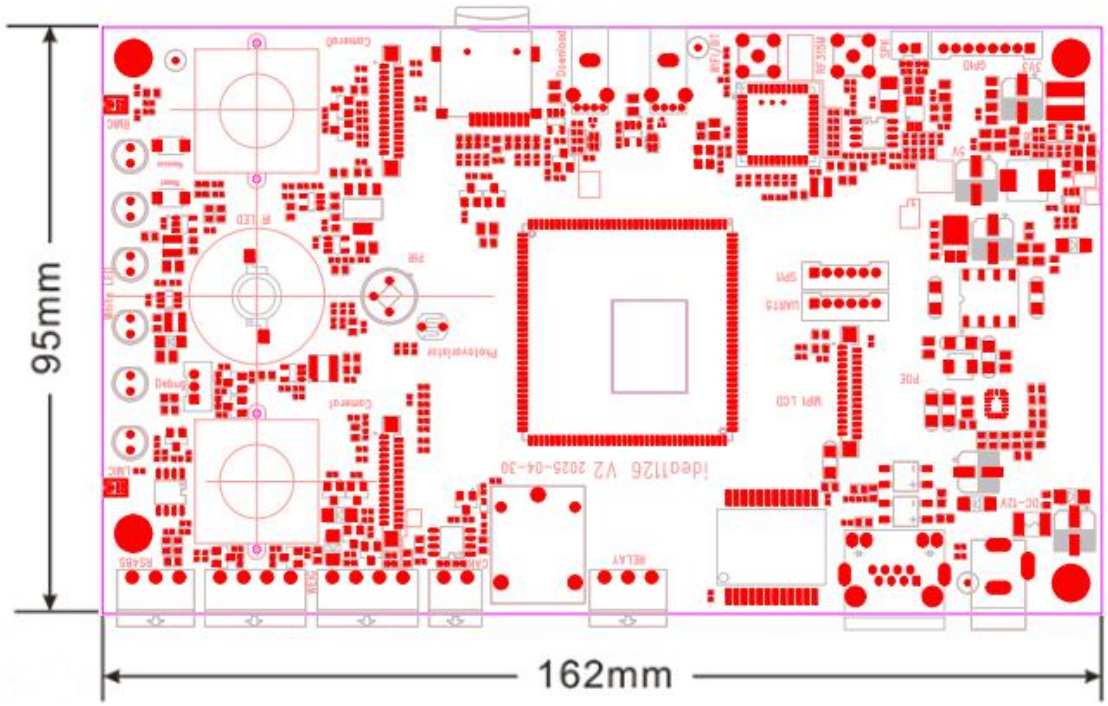
1.3 Idea1126B-P Specifications



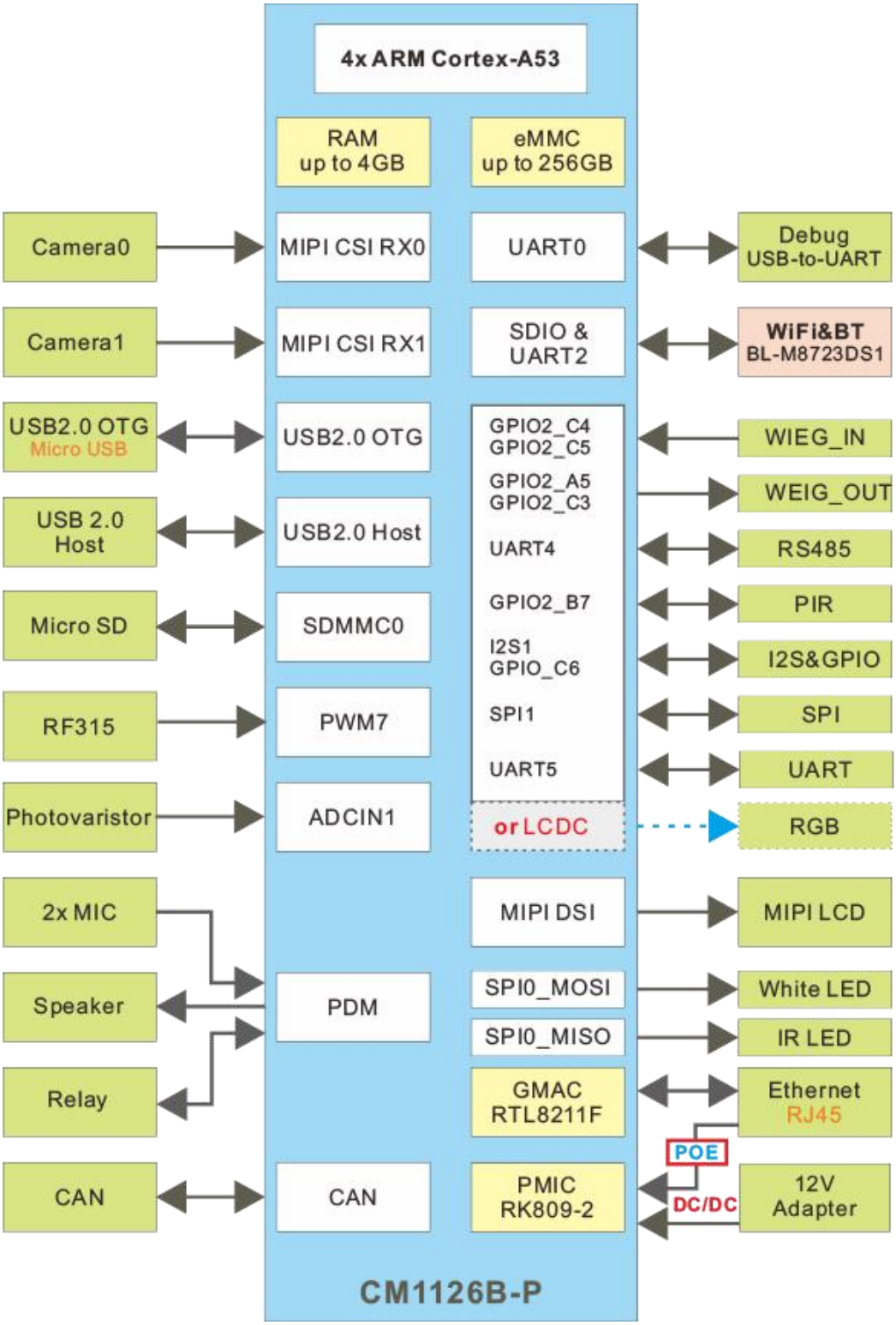
Feature	Specifications
CPU	• Quad-core ARM Cortex-A53 • 32KB I-Cache / 32KB D-Cache per core • 512KB shared L2 Cache
Memory	2GB LPDDR4
Power	12V/3A DC input jack
USB	1x USB2.0 OTG, 1x USB2.0 Host

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	MIPI DSI, 30-pin header
Camera	2x MIPI Cameras, 30-pin FPC connector
Audio	1x Speaker, 2x MIC
SD card	1x T-Flash card slot
Keys&Switch	1x Reset key, 1x Recovery key
WIFI&BT	WIFI&Bluetooth module, support 2.4G WiFi (802.11b/g/n) with Bluetooth 4.2
Other features	GPIO, SPI, CAN, PIR, IR LED, White LED, Relay, Wiegand, Photovaristor,RF315
Dimension	162 x 95 mm

1.4 PCB Dimension



1.5 Block Diagram



1.6 CPU Introduction

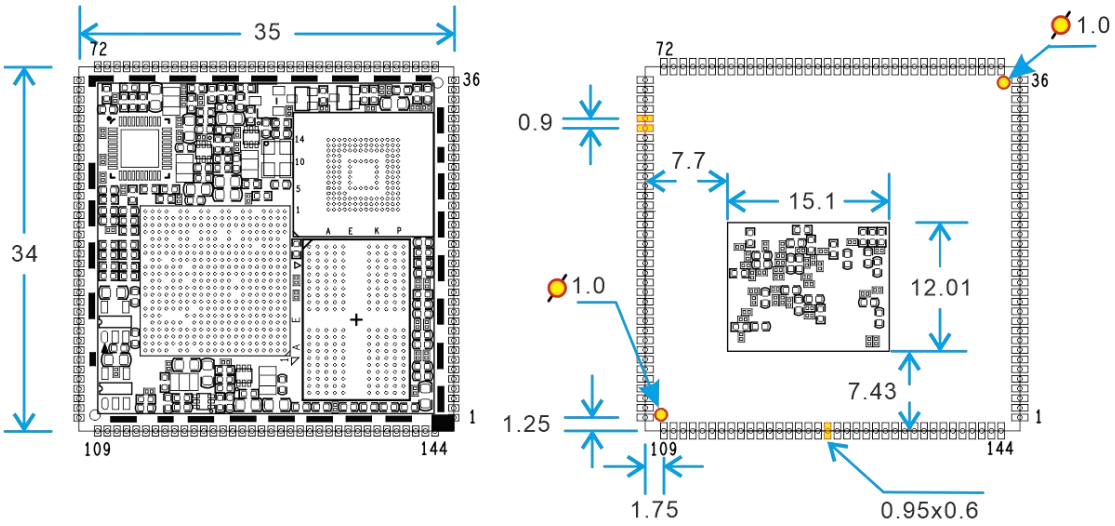
The CPU module RV1126B-P is equipped with up to 8GB storage.

CM1126B-P specifications

Pin number– 144-pin, 0.9mm pitch

Dimension–35 x 34 mm

Application–SmartScreen, intelligent AI camera, Smart Video Doorlock, Smart Sweeping Robot, etc.



Pin Definition

Pin	Signal	Pin	Signal
1	LCDC_D19_3V3	73	MDI0+
2	LCDC_D20_3V3	74	MDI0-
3	LCDC_D21_3V3	75	MDI1+
4	LCDC_D22_3V3	76	MDI1-
5	LCDC_D23_3V3	77	MDI2+
6	GND	78	MDI2-
7	GPIO3_B7_d_3V3	79	MDI3+
8	BT_WAKE_3V3	80	MDI3-
9	WIFI_REG_ON_3V3	81	I2C1_SCL
10	BT_RST_3V3	82	I2C1_SDA
11	WIFI_WAKE_HOST_3V3	83	MIPI_CSI_PWDN0
12	BT_WAKE_HOST_3V3	84	SPI0_CLK_M1
13	PWM7_IR_M0_3V3	85	SPI0_MOSI_M1

14	PWM6_M0_3V3	86	SPI0_CS0n_M1
15	UART0_TX_M1_3V3	87	SPI0_MISO_M1
16	UART0_RX_M1_3V3	88	MIPI_CSI_CLK1
17	I2S0_MCLK_M0_3V3	89	MIPI_CSI_CLK0
18	I2S0_SCLK_TX_M0_3V3	90	GND
19	I2S0_SDI3_M0_3V3	91	LCDC_D0_3V3
20	I2S0_SDO0_M0_3V3	92	LCDC_D1_3V3
21	I2S0_LRCK_TX_M0_3V3	93	LCDC_D2_3V3
22	PDM_SDI1_3V3	94	LCDC_D3_3V3
23	PDM_CLK1_3V3	95	LCDC_D4_3V3
24	PDM_SDI2_3V3	96	LCDC_D5_3V3
25	PDM_SDI0_3V3	97	LCDC_D6_3V3
26	PDM_CLK_3V3	98	LCDC_D7_3V3
27	I2C2_SCL_3V3	99	CAN_RX_3V3
28	I2C2_SDA_3V3	100	CAN_TX_3V3
29	USB_HOST_DP	101	LCDC_CLK_3V3
30	USB_HOST_DM	102	LCDC_VSYNC_3V3
31	GND	103	MIPI_DSI_D2P
32	OTG_DP	104	MIPI_DSI_D2N
33	OTG_DM	105	MIPI_DSI_D1P
34	OTG_DET_3V3	106	MIPI_DSI_D1N
35	OTG_ID	107	MIPI_DSI_D0P
36	SPI0_CS1n_M1	108	MIPI_DSI_D0N
37	VCC3V3_SYS	109	MIPI_DSI_D3P
38	VCC3V3_SYS	110	MIPI_DSI_D3N
39	USB_CTRL	111	MIPI_DSI_CLKP
40	SDMMC0_DET	112	MIPI_DSI_CLKN
41	CLKO_32K_3V3	113	ADCIN3
42	nRESET	114	ADCIN2

43	MIPI_CSI_RX0_CLKP	115	ADCIN1
44	MIPI_CSI_RX0_CLKN	116	ADKEY_IN0
45	MIPI_CSI_RX0_D2P	117	GND
46	MIPI_CSI_RX0_D2N	118	SDIO_CLK_3V3
47	MIPI_CSI_RX0_D3P	119	SDIO_CMD_3V3
48	MIPI_CSI_RX0_D3N	120	SDIO_D0_3V3
49	MIPI_CSI_RX0_D1P	121	SDIO_D1_3V3
50	MIPI_CSI_RX0_D1N	122	SDIO_D2_3V3
51	MIPI_CSI_RX0_D0P	123	SDIO_D3_3V3
52	MIPI_CSI_RX0_D0N	124	UART2_RX_M0_3V3
53	GND	125	UART2_TX_M0_3V3
54	MIPI_CSI_RX1_D3P	126	UART2_CTSN_M0_3V3
55	MIPI_CSI_RX1_D3N	127	UART2_RTSN_M0_3V3
56	MIPI_CSI_RX1_CLKP	128	PCM_TX_3V3
57	MIPI_CSI_RX1_CLKN	129	PCM_SYNC_3V3
58	MIPI_CSI_RX1_D2P	130	PCM_CLK_3V3
59	MIPI_CSI_RX1_D2N	131	PCM_RX_3V3
60	MIPI_CSI_RX1_D1P	132	LCDC_D15_3V3
61	MIPI_CSI_RX1_D1N	133	LCDC_D14_3V3
62	MIPI_CSI_RX1_D0P	134	LCDC_D13_3V3
63	MIPI_CSI_RX1_D0N	135	LCDC_D12_3V3
64	SDMMC0_D3_3V3	136	LCDC_DEN_3V3
65	SDMMC0_D2_3V3	137	LCDC_D10_3V3
66	SDMMC0_D1_3V3	138	LCDC_D9_3V3
67	SDMMC0_D0_3V3	139	LCDC_D8_3V3
68	SDMMC0_CMD_3V3	140	LCDC_D11_3V3
69	SDMMC0_CLK_3V3	141	LCDC_HSYNC_3V3
70	GND	142	LCDC_D16_3V3
71	LED1/CFG_LDO0	143	LCDC_D17_3V3

72	LED2/CFG_LDO1	144	LCDC_D18_3

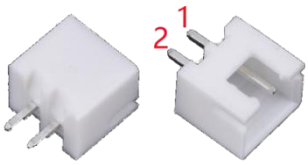
2 Peripherals Introduction

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			

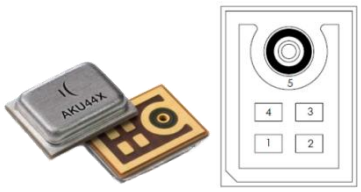
2.2 Speaker (JP3)



Using a 2-pin connector to connect an external speaker, can effectively amplify the audio signal.

Pin	Signal	Description	Pin	Signal	Description
1	SPK1_N	Speaker 1 Negative	2	SPK1_P	Speaker 1 Positive

2.3 MIC(MIC1, MIC2)

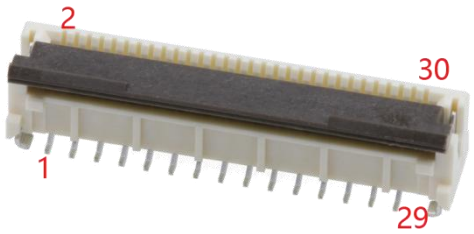


The Idea1126B-P provide two microphone inputs (MIC1 and MIC2), It is used for recording.

MIC1					
Pin	Signal	Description	Pin	Signal	Description
1	PDM_CLK_1	Pulse Density Modulation Clock	2	PDM_SDI0_1	Pulse Density Modulation Data In 0
3	VCC3V3_SYS	3.3V Power Supply Input	4	GND	Ground
5	GND	Ground			

MIC2					
Pin	Signal	Description	Pin	Signal	Description
1	PDM_CLK_1	Pulse Density Modulation Clock	2	PDM_SDI0_1	Pulse Density Modulation Data In 0
3	VCC_MIC	Microphone Power Supply Input	4	VCC_MIC	Microphone Power Supply Input
5	GND	Ground			

2.4 MIPI(J1)

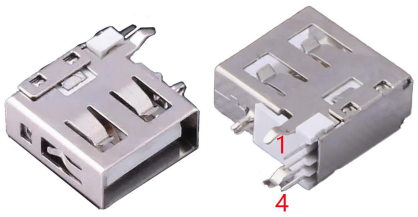


Idea1126B-P MIPI supports up to 1920x1080@60fps output. It is a 30-pin connector.

Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_SYS	+5V Power Supply for System	2	VCC5V0_SYS	+5V Power Supply for System
3	VCC5V0_SYS	+5V Power Supply for System	4	GND	Ground
5	VCC3V3_SYS	+3.3V Power Supply for System	6	PWM0_CH6_M0_3V3	PWM Channel 6 Signal (3.3V Level)
7	LCDC_D10_3V3	LCD Data Line 10 (3.3V Level)	8	GND	Ground
9	I2C2_SCL_M0_3V3	I2C2 Clock Line (3.3V Level)	10	I2C2_SDA_M0_3V3	I2C2 Data Line (3.3V Level)
11	LCDC_D9_3V3	LCD Data Line 9 (3.3V Level)	12	LCDC_D8_3V3	LCD Data Line 8 (3.3V Level)
13	GND	Ground	14	MIPI_DSI_D0P	MIPI DSI Data Lane 0 Positive
15	MIPI_DSI_D0N	MIPI DSI Data Lane 0 Negative	16	GND	Ground
17	MIPI_DSI_D1P	MIPI DSI Data Lane 1 Positive	18	MIPI_DSI_D1N	MIPI DSI Data Lane 1 Negative
19	GND	Ground	20	GND	Ground
21	MIPI_DSI_CLKP	MIPI DSI Clock Lane Positive	22	MIPI_DSI_CLKN	MIPI DSI Clock Lane Negative
23	GND	Ground	24	GND	Ground

25	MIPI_DSI_D2P	MIPI DSI Data Lane 2 Positive	26	MIPI_DSI_D2N	MIPI DSI Data Lane 2 Negative
27	GND	Ground	28	MIPI_DSI_D3P	MIPI DSI Data Lane 3 Positive
29	MIPI_DSI_D3N	MIPI DSI Data Lane 3 Negative	30	GND	Ground

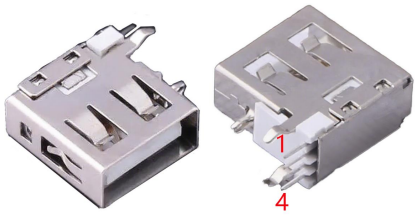
2.5 USB 2.0(USB1)



Idea1126B-P USB2.0 port, it is 4-pin, used to docking station to connect USB device.

Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_HOST	+5V Power Supply for USB Host	2	HOST_DM	USB Host Data Minus (D-)
3	HOST_DP	USB Host Data Plus (D+)	4	GND	Ground

2.6 USB OTG(USB2)



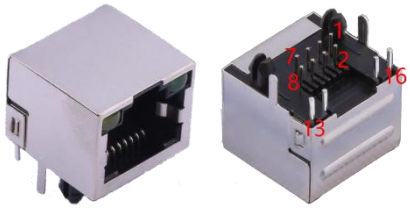
Idea1126B-P USB OTG port, it is used to download image and ADB transfer file, or use a docking station to connect USB device. Regular 4-pin, with width 5.72mm and high 16.75mm.

Feature

- Support hot plugging.
- Providing high-speed data transfer capabilities.
- Supports USB OTG function, allowing the device to switch between host and device modes.

Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_OTG	+5V Power Supply for USB OTG	2	OTGDM	USB OTG Data Minus (D-)
3	OTGDP	USB OTG Data Plus (D+)	4	GND	Ground

2.7 Ethernet(JP1)



Idea1126B-P adopts an RJ45 connector as its Ethernet interface.

Feature

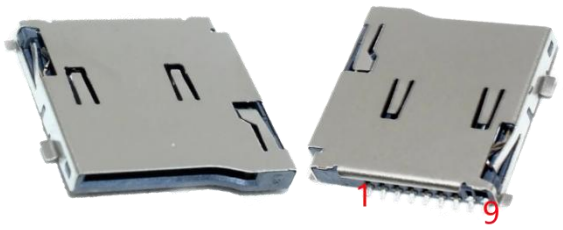
- Supports 10/100/1000 Mbps data transfer rates with the MII/RGMII interfaces.
- Supports both full-duplex and half-duplex operation.
- Implements the full 802.3 specification.

Pin	Signal	Description	Pin	Signal	Description
1	DA+	Bi-directional transmit/receive pair A	2	DA-	Bi-directional 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
13	LED1/CFG _LDO0	LED 1 or Configuration LDO 0	14	GND	Ground
15	VCC3V3_S YS	+3.3V System Power Supply	16	LED2/CF G_LDO1	LED 2 or Configuration LDO 1

2.8 User Buttons (K1,K2)

Key	Signal	Description	Key	Signal	Description
K1	Reset	Reset key	K2	RECOVER	Recover key

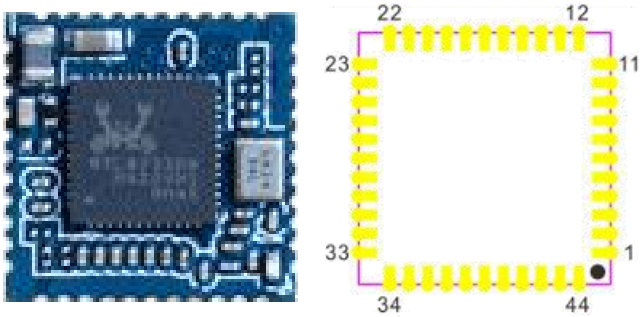
2.9 Micro SD(J3)



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_3V3	SD/MMC data2 (3.3V)	2	SDMMC0_D3_3V3	SD/MMC data3 (3.3V)
3	SDMMC0_CMD_3V3	SD/MMC command signal (3.3V)	4	VCC3V3_SYS	3.3V Power Supply
5	SDMMC0_CLK_3V3	SD/MMC clock (3.3V)	6	GND	Ground
7	SDMMC0_D0_3V3	SD/MMC data0 (3.3V)	8	SDMMC0_D1_3V3	SD/MMC data1 (3.3V)
9	SDMMC0_DET	SD/MMC detect signal			

2.10 WiFi&Bluetooth(U20)



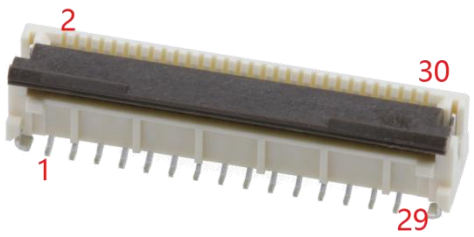
BL-M8723DS1 is a highly integrated WiFi+BT combo module, it contains a WLAN and a BT MAC, a 1T1R capable base band. It supports IEEE 802.11b/g/n standard and provides the highest PHY rate up to 150Mbps, and Bluetooth can support BT2.1+EDR/BT3.0 and BT4.2. This module can offering feature-rich wireless 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_ANT0	Wi-Fi / BT RF antenna port
3	GND	Ground	4	NC	Not connect
5	NC	Not connect	6	BT_WAKE_3V3	BT wake signal at 3.3V
7	BT_WAKE_HOST_3V3	BT wake host signal at 3.3V	8	NC	Not connect
9	VBAT_WL	Wi-Fi battery voltage	10	XTAL_IN	External crystal oscillator input
11	XTAL_OUT	External crystal oscillator output	12	WIFI_REG_ON_3V3	Wi-Fi regulator on signal at 3.3V
13	WIFI_WAKE_HOST_3V3	Wi-Fi wake host signal at 3.3V	14	WIFI_D2	Wi-Fi data line 2
15	WIFI_D3	Wi-Fi data line 3	16	WIFI_CMD	Wi-Fi command signal
17	WIFI_CLK	Wi-Fi clock signal	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	Wi-Fi I/O voltage
23	VIN_LDO	LDO input voltage	24	CLKO_32K_3V3	32KHz clock output at 3.3V
25	PCM_RX_3V3	PCM receive signal at 3.3V	26	PCM_CLK_3V3	PCM clock signal at 3.3V
27	PCM_TX_3V3	PCM transmit signal at 3.3V	28	PCM_SYNC_3V3	PCM sync signal at 3.3V
29	NC	Not connect	30	GND	Ground
31	GND	Ground	32	NC	Not connect
33	GND	Ground	34	BT_RST_3V3	BT reset signal at 3.3V
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_3V3	UART2 CTS signal at 3.3V	42	UART2_RX_M0_3V3	UART2 receive signal at 3.3V
43	UART2_TX_M0_3V3	UART2 transmit signal at 3.3V	44	UART2_RTSN_M0_3V3	UART2 RTS signal at 3.3V

2.11 Camera(CON3,CON4)



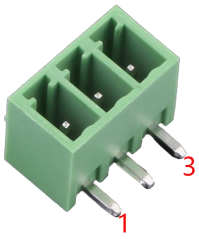
Idea1126 features two 30-pin FFC/FPC Connector for camera (IMX415).

CON3					
Pin	Signal	Description	Pin	Signal	Description
1	NC	Not Connect	2	AF_2V8	Analog Front-End 2.8V Power Supply
3	DVDD1V2	Digital Voltage Drain 1.2V	4	VCC1V8_DVP	Digital Voltage Power 1.8V for DVP
5	NC	Not Connect	6	GND	Ground
7	AVDD2V8_DVP	Analog Voltage Drain 2.8V for DVP	8	GND	Ground
9	I2C5-SDA-M2_1V8	I2C5 Data Line M2 1.8V	10	I2C5-SCL-M2_1V8	I2C5 Clock Line M2 1.8V
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 RX0 Data Line 3 Positive
17	MIPI_CSI_RX0_D3N	MIPI CSI RX0 Data Line 3 Negative	18	GND	Ground
19	MIPI_CSI_RX0_D2P	MIPI CSI RX0 Data Line 2 Positive	20	MIPI_CSI_RX0_D2N	MIPI CSI RX0 Data Line 2 Negative
21	GND	Ground	22	MIPI_CSI_RX0_D1P	MIPI CSI RX0 Data Line 1 Positive
23	MIPI_CSI_RX0_D1N	MIPI CSI RX0 Data Line 1 Negative	24	GND	Ground
25	MIPI_CSI_RX0_CLKP	MIPI CSI RX0 Clock Line Positive	26	MIPI_CSI_RX0_CLKN	MIPI CSI RX0 Clock Line Negative
27	GND	Ground	28	MIPI_CSI_RX0_D	MIPI CSI RX0 Data

				0P	Line 0 Positive
29	MIPI_CSI_RX0_D0N	MIPI CSI RX0 Data Line 0 Negative	30	GND	Ground

CON4					
Pin	Signal	Description	Pin	Signal	Description
1	NC	Not Connect	2	AF_2V8	Analog Front-End 2.8V Power Supply
3	DVDD1V2	Digital Voltage Drain 1.2V	4	VCC1V8_DVP	Digital Voltage Power 1.8V for DVP
5	NC	Not Connect	6	GND	Ground
7	AVDD2V8_DVP	Analog Voltage Drain 2.8V for DVP	8	GND	Ground
9	I2C1_SDA_M2	I2C1 Data Line M2	10	I2C1_SCL_M2	I2C1 Clock Line M2
11	CAMERA_RST_1	Camera Reset Signal 1	12	SPI0_CS1n_M1	SPI0 Chip Select 1 Signal M1
13	GND	Ground	14	MIPI_CSI_CLK1	MIPI CSI Clock Signal 1
15	GND	Ground	16	MIPI_CSI_RX1_D3P	MIPI CSI RX1 Data Line 3 Positive
17	MIPI_CSI_RX1_D3N	MIPI CSI RX1 Data Line 3 Negative	18	GND	Ground
19	MIPI_CSI_RX1_D2P	MIPI CSI RX1 Data Line 2 Positive	20	MIPI_CSI_RX1_D2N	MIPI CSI RX1 Data Line 2 Negative
21	GND	Ground	22	MIPI_CSI_RX1_D1P	MIPI CSI RX1 Data Line 1 Positive
23	MIPI_CSI_RX1_D1N	MIPI CSI RX1 Data Line 1 Negative	24	GND	Ground
25	MIPI_CSI_RX1_CLKP	MIPI CSI RX1 Clock Line Positive	26	MIPI_CSI_RX1_CLKN	MIPI CSI RX1 Clock Line Negative
27	GND	Ground	28	MIPI_CSI_RX1_D0P	MIPI CSI RX1 Data Line 0 Positive
29	MIPI_CSI_RX1_D0N	MIPI CSI RX1 Data Line 0 Negative	30	GND	Ground

2.12 Relay(P9)



Relay achieve control of the load by regulating the on-off state of the circuit.

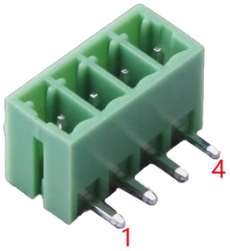
Pin	Signal	Description	Pin	Signal	Description
1	R1_ON	Relay 1 On Signal	2	R1_NC	Relay 1 Not Connect
3	R1_COM	Relay 1 Common Terminal			

2.13 CAN(P2)

Use a 2-pin connector, with a green plastic base and metal pins structure.

Pin	Signal	Description	Pin	Signal	Description
1	CANL	CAN Low Signal	2	CANH	CAN High Signal

2.14 WIEG(P4,P6)



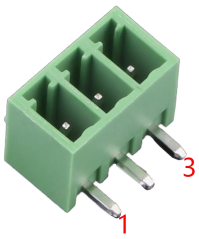
Idea1126B-P employs 4-pin plug-and-play terminals and supports input/output for the Wiegand communication protocol.

P4					
Pin	Signal	Description	Pin	Signal	Description
1	VCC12V_Port	12V Power Supply for	2	Wieg_IN_Data0	Wiegand Input Data

		Port			Line 0
3	Wieg_IN_Data1	Wiegand Input Data Line 1	4	GND	Ground

P6					
Pin	Signal	Description	Pin	Signal	Description
1	VCC12V_Port	12V Power Supply for Port	2	Wieg_OUT_Data0	Wiegand Output Data Line 0
3	Wieg_OUT_Data1	Wiegand Output Data Line 1	4	GND	Ground

2.15 RS485(P3)



Idea1126B-P uses a 3-pin connector and features a green plastic base with metal pins.

Pin	Signal	Description	Pin	Signal	Description
1	GND	Ground	2	RS485_B	RS485 Data Signal B
3	RS485_A	RS485 Data Signal A			

2.16 White LED(D12,D13,D14,D15,D17,D18)

Idea1126B-P uses 6 white LED lights connected in parallel.

Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_SYS	+5V Power Supply for System	2	GND	Ground

2.17 IR LED(D11)

The IR LED lamp uses a wavelength of 850nm.

Pin	Signal	Description	Pin	Signal	Description
1	VCC5V0_SYS	+5V Power Supply for System	2	GND	Ground

2.18 PIR(U12)

PIR can sense the infrared signals generated by human body movements in the environment, and the processed signals are directly output.

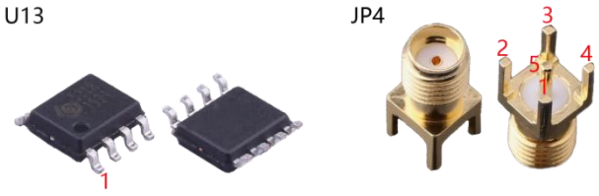
Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V Power Supply	2	LCDC_D12_3V3	LCD Data Line 12(3.3V)
3	GND	Ground			

2.19 Photovaristor(PR1)

The resistance value range of the photoresistor is from 1.5MΩ to 1kΩ.The higher the light intensity, the lower the resistance value.

Pin	Signal	Description	Pin	Signal	Description
1	VDDIO_18	1.8V I/O Power Supply Input	2	GND	Ground

2.20 RF315 ANT(U13,JP4)



RF315 is combined with the SYN531R chip and RF antenna socket, and is suitable for various wireless communication applications.

U13					
Pin	Signal	Description	Pin	Signal	Description
1	ANT	Antenna Input	2	GND	Ground
3	VCC3V3_SYS	3.3V Power Supply Input	4	GND	Ground
5	PWM0_CH7_M0_3V3	PWM Channel 7 Input (3.3V Level)	6	GND	Ground
7	GND	Ground	8	RO	Receiver Output

JP4					
Pin	Signal	Description	Pin	Signal	Description
1	GND	Ground	2	GND	Ground
3	GND	Ground	4	GND	Ground
5	ANT	Antenna Input			

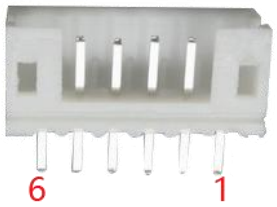
2.21 GPIO(J16)

The GPIO (General Purpose Input/Output) utilizes an 8-pin configuration.

Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V Power Supply Input	2	LCDC_D19_3V3	LCD Data Line 19, 3.3V Level
3	LCDC_D20_3V3	LCD Data Line 20, 3.3V Level	4	LCDC_D21_3V3	LCD Data Line 21, 3.3V Level
5	LCDC_D22_3V3	LCD Data Line 22,	6	LCDC_D23_3V3	LCD Data Line 23,

		3.3V Level			3.3V Level
7	NC	Not Connect	8	GND	Ground

2.22 SPI(J5)



The SPI0 is a 6-pin header connector.

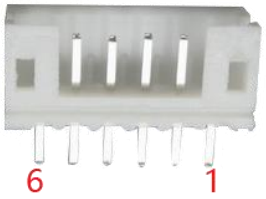
Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V Power Supply Input	2	LCDC_DEN_3V3	LCD Data Enable, 3.3V Level
3	LCDC_HSYNC_3V3	LCD Horizontal Sync, 3.3V Level	4	LCDC_VSYNC_3V3	LCD Vertical Sync, 3.3V Level
5	LCDC_CLK_3V3	LCD Clock Signal, 3.3V Level	6	GND	Ground

2.23 UART(J10,J34)

- UART0 is usually used as a debug tool.
- Embedded two 64byte FIFO.
- Support auto flow control mode for UART5.

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

Pin	Signal	Description	Pin	Signal	Description
1	UART0_RX_M1_3V3	UART0 Receive Data, 3.3V	2	UART0_TX_M1_3V3	UART0 Transmit Data, 3.3V
3	GND	Ground			



The J34 is 6-pin, used for RS232.

Pin	Signal	Description	Pin	Signal	Description
1	VCC3V3_SYS	3.3V Power Supply	2	LCDC_D4_3V3	LCD Data Line 4, 3.3V
3	LCDC_D5_3V3	LCD Data Line 5, 3.3V	4	LCDC_D6_3V3	LCD Data Line 6, 3.3V
5	NC	Not Connect	6	GND	Ground

3 Product Configurations

3.1 Standard Contents

NO.	Item	Qty.(PCS)	Description
1	Idea1126B-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	USB OTG
6	Power adaptor	1	12V/3A DC
7	Antenna	1	WIFI antenna, RF315 antenna

3.2 Optional Parts

- MIPI camera Module (IMX415)
- LCD Module (10.1-inch MIPI panel)
- RF315 Remote Control
- Exterior speaker