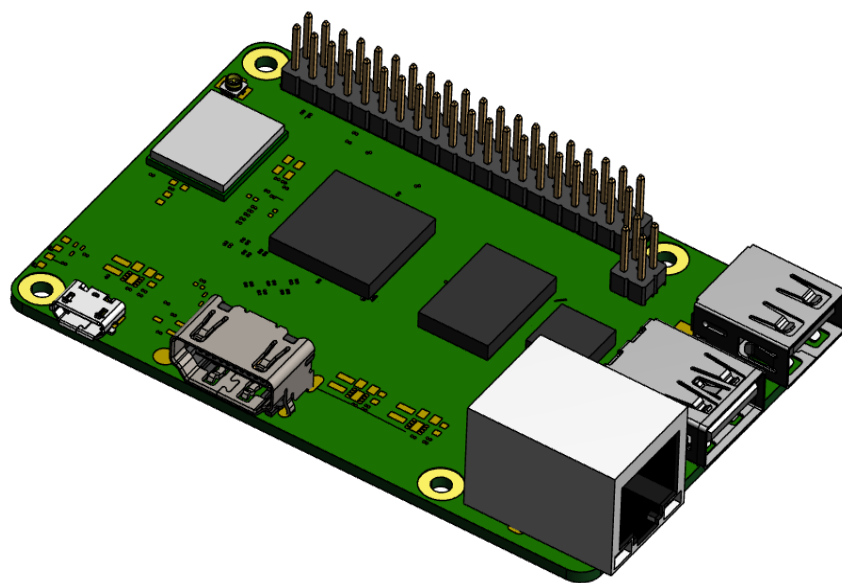




REIMEI1

AN EXCELLENT AND COST-EFFECTIVE SINGLE-BOARD COMPUTER

Shanghai EDA Technology Co.,Ltd
2023-04-10

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1 Product Overview

REIMEI1 is a single-board computer with excellent performance, compactness and high cost performance.

1.1 Target Application

- Multimedia creation
- AI Development
- Developer development
- Smart manufacturing

1.2 Specifications and Parameters

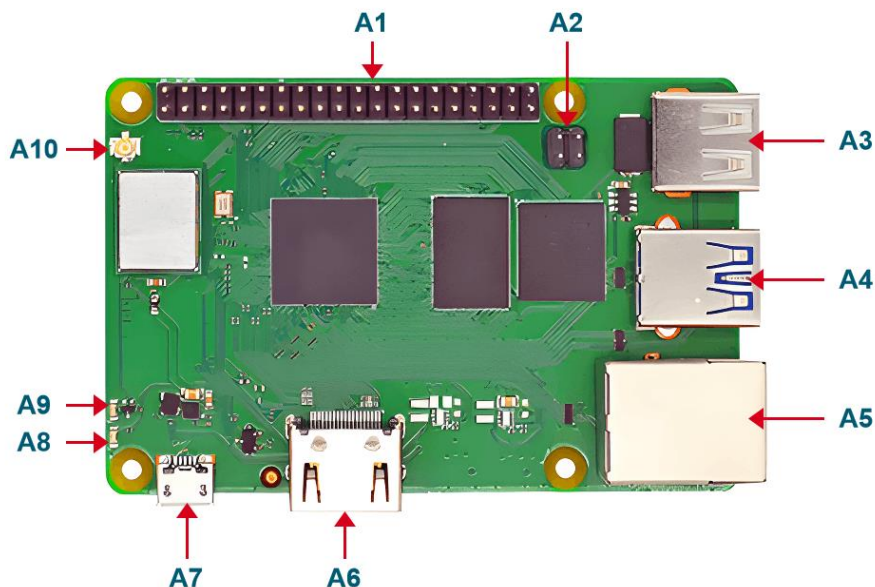
1.2.1 Hardware

Function	Parameters
CPU	Amlogic S905X4 4 core, Cortex-A55 (ARMv8-A), 64 bit, 2.0GHz
GPU	ARM Mail-G31MP2
Memory	1GB / 2GB / 4GB option
eMMC	8GB / 16GB / 32GB option
SD card	micro SD card
Ethernet	1x 10/100M Ethernet, support POE HAT
WiFi / Bluetooth	2.4G / 5.8G dual WiFi, bluetooth5.0
HDMI	1x standard HDMI
USB Host	1x USB 2.0 Type A, 1x USB 3.0 Type A
GPIO	28 channels of GPIO are available for users, and some GPIO can be reused as UART, I2C and SPI.
LED	Red (power indicator), green (system status indicator)
Power input	5V@2.5A
Dimensions	85(L) x 56(W) mm
Antenna accessory	Support option WiFi / BT external antenna
Working environment temperature	Option -25 ~ 70°C environment temperature

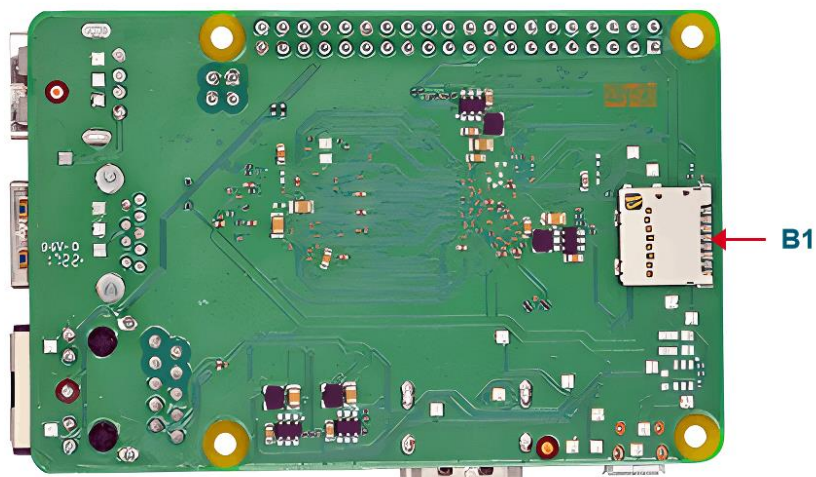
Software

Function	Parameters
OS	Debian 11, 64-bit
Kernel	Linux 5.4.180 64-bit
Video output	HDMI 2.1 to 4Kp75, support CEC、HDR and HDCP 2.2, CVBS
Video decoding	AV1 MP-10 L5.1 up to 4Kx2K @ 60fps
	VP9 Profile-2 up to 4Kx2K @ 60fps
	H.265 HEVC MP-10 @ L5.1 up to 4Kx2K @ 60fps
	AVS2-P2 Profile up to 4Kx2K @ 60fps
	H.264 AVC HP @ L5.1 up to 4Kx2K @ 30fps
	H.264 MVC up to 1080p60
	MPEG-4 ASP @ L5 up to 1080p60 (ISO-14496)
	WMV/VC-1 SP/MP/AP up to 1080p60
	AVS-P16(AVS+) /AVS-P2 JiZhun Profile up to 1080p60
	MPEG-2 MP/HL up to 1080p60 (ISO-13818)
	MPEG-1 MP/HL up to 1080p60 (ISO-11172)
	RealVideo 8/9/10 up to 1080p60
	HDR - HDR10/10+, HLG, Dolby Vision, TCH PRIME
SDK /lib/tool	Mesa Graphics Library with OpenGL ES 3.2, Vulkan 1.0/1.1, and OpenCL 2.0 support
	V4L2 M2M Video Decoder Interface
	QT5 with hardware accelerated Wayland backend
	Gstreamer with hardware decode support

1.3 Functional Layout



Item	Function Description	Item	Function Description
A1	2×20Pin Header	A6	HDMI Type A port
A2	POE header	A7	Micro USB port
A3	USB 2.0	A8	LED red
A4	USB 3.0	A9	LED green
A5	Ethernet RJ45 interface	A10	Antenna IPEX port

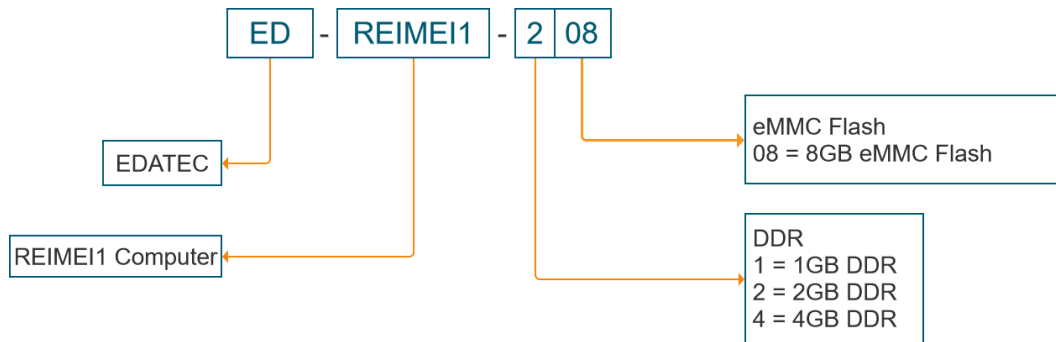


Item	Function Description
B1	Micro SD card slot

1.4 Packing List

- 1x REIMEI 1host
- [option]1x 2.4GHz/5GHz WiFi/BT antenna

1.5 Order Code



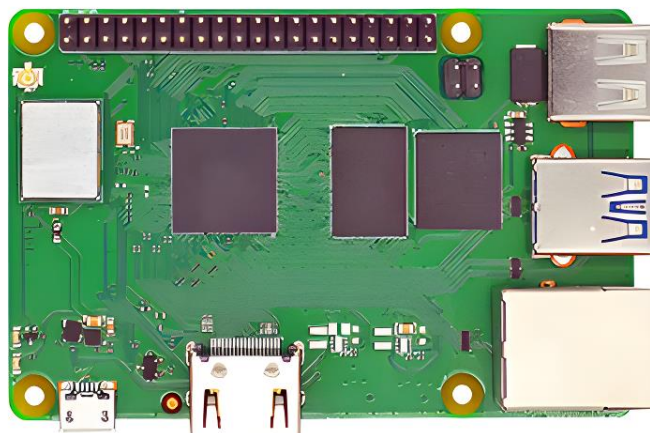
Example

Part# : ED-REIMEI1-208
Configuration : REIMEI1 Computer
 2GB DDR and 8GB eMMC Flash

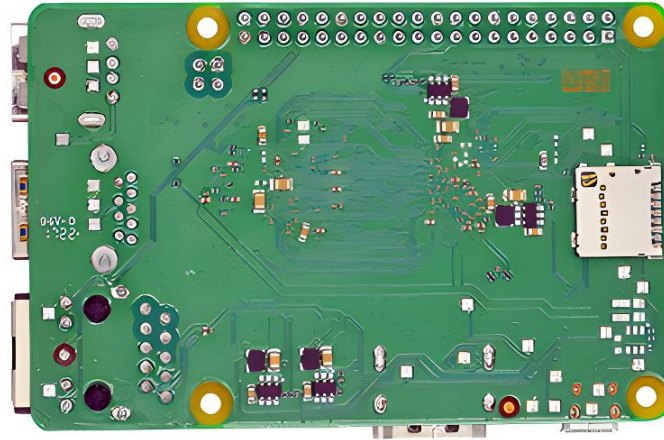
2 Product Appearance and Structure

2.1 Product Appearance

Top View

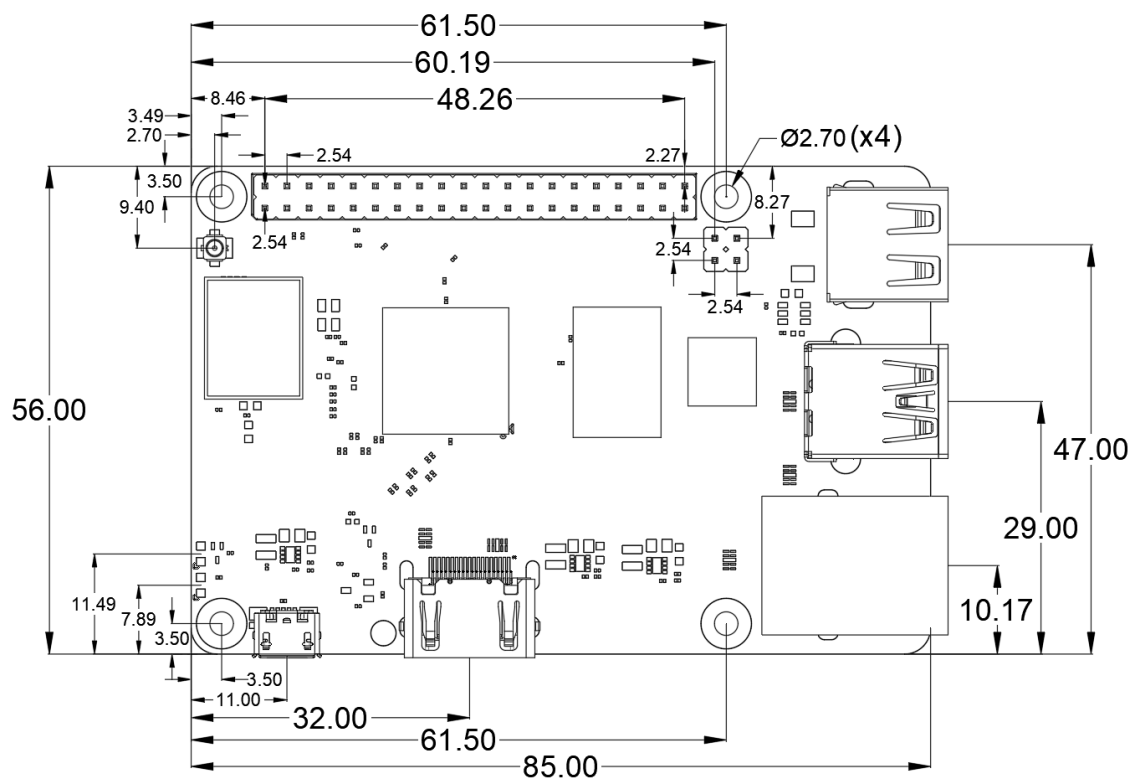


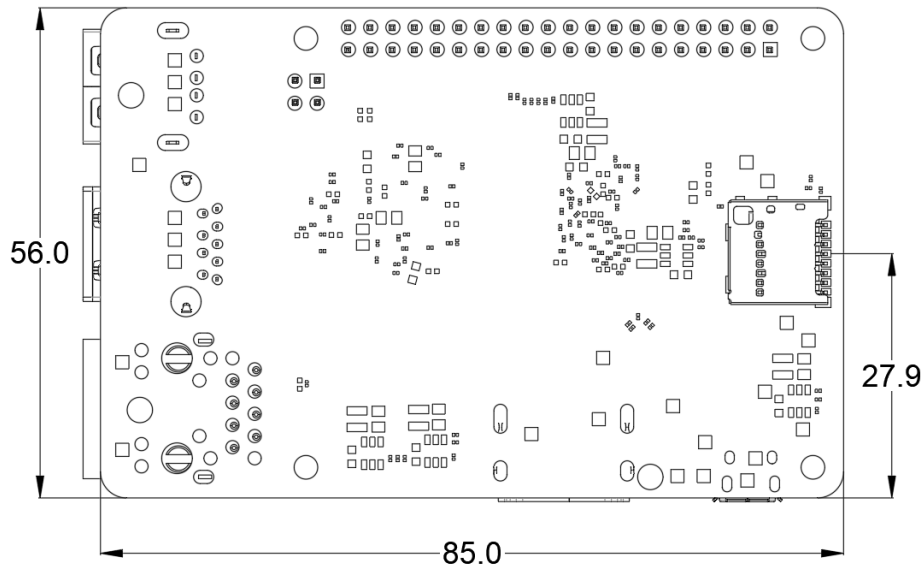
Bottom View



2.2 Dimensions

unit: mm, tolerance: $\pm 0.1\text{mm}$





3 Interfaces and Connectors

3.1 Power Input

REIMEI 1 has a micro-USB connector, which is only used as the input interface for power supply of the whole board system and does not provide data transmission function. In order to ensure the reliable operation of the whole board, please make sure that the adapter or external power supply providing power supply has at least 5V 2A output capacity.

Note: If other USB devices are connected through the USB2.0 and USB3.0 interfaces on the board, the adapter or power supply that supplies power to this system may need 5V 3A output capability.

3.2 HDMI

REIMEI 1 has a standard HDMI A interface, which supports CEC function and supports HDMI2.1 video output with a maximum resolution of 4Kp75.

3.3 Ethernet

REIMEI1 has a standard RJ-45 interface, which not only supports the Ethernet with 10M/100M communication rate, but also supports the PoE input. A 2.54mm spacing 2X2P pin arrangement is reserved on the board, and a PoE HAT can be connected to the pin arrangement to realize the PoE power supply function.

3.4 USB2.0 and USB3.0

REIMEI1 has a USB2.0 A interface and a USB3.0 A interface, and the whole board can provide a total output capacity of 5V 1.1A for the peripherals of these two interfaces at the same time.

The USB2.0 interface can provide a data transmission rate of up to 480Mbps, and the USB3.0 interface can provide a data transmission rate of up to 5Gbps.

3.5 2x20Pin Header

REIMEI1 has a pin arrangement with a distance of 2X20P of 2.54mm, which leads out 28 GPIO of the main control chip. Users can control these GPIO through software, or reuse some GPIO into other functions, such as I2C, UART or SPI.

The following is a list of pin definitions and functional reuse of pin arrangement:

Pin	Name	I/O	Function
1	3V3	O	
2	5V	I/O	
3	PIN3	I/O	I2C1_SDA
4	5V	I/O	
5	PIN5	I/O	I2C1_SCL
6	GND		
7	PIN7	I/O	GPIO83
8	PIN8	I/O	TXD
9	GND		
10	PIN10	I/O	RXD
11	PIN11	I/O	GPIO79
12	PIN12	I/O	GPIO33
13	PIN13	I/O	GPIO75
14	GND		
15	PIN15	I/O	GPIO76
16	PIN16	I/O	GPIO77
17	3V3	O	
18	PIN18	I/O	GPIO72
19	PIN19	I/O	SPI_MOSI
20	GND		
21	PIN21	I/O	SPI_MISO
22	PIN22	I/O	GPIO73
23	PIN23	I/O	SPI_CLK
24	PIN24	I/O	SPI_CE0_N
25	GND		
26	PIN26	I/O	SPI_CE1_N
27	PIN27	I/O	I2C0_SDA

Pin	Name	I/O	Function
28	PIN28	I/O	I2C0_SCL
29	PIN29	I/O	GPIO36
30	GND		
31	PIN31	I/O	GPIO32
32	PIN32	I/O	GPIO35
33	PIN33	I/O	GPIO82
34	GND		
35	PIN35	I/O	GPIO40
36	PIN36	I/O	GPIO80
37	PIN37	I/O	GPIO74
38	PIN38	I/O	GPIO81
39	GND		
40	PIN40	I/O	GPIO31

1): Pins 2 and 4 can be used as 5V input or output, so be sure to pay attention to:

- If it is a 5V output, it is recommended that the working current of the external equipment be less than 500mA to ensure the stable operation of the motherboard system;
- If it is a 5V input, it is recommended that the external power supply should have at least 5V 2A output capability, and the Micro-USB interface on the board has no power input.

3.6 IPEX-1 Connector

The onboard IPEX-1 connector is used for external connection of 2.4GHz/5GHz antenna. The specifications of the connector are as follows:

Recommended P/N		20279-001E-03
PART NO.	PACKING REEL	QUANTITY IN 1 REEL
20279-001E-01	PLASTIC REEL	2,500
20279-001E-03	CORRUGATED PAPER REEL	2,500
20279-001E-05	PLASTIC REEL	5,000
20279-001E-05	PLASTIC REEL	10,000

NOTES

- APPLICABLE CONNECTOR PART NO.
MHF I PLUG
20278-11*R-**-
20351-***R-37
20631-***R-**-
20670-001R-**-
20767-001R-20
MHF II PLUG
20311-011R-**-
20686-001R-08
- COPLANARITY: 0.1mm MAX.
- THIS IS "Pb-FREE" CONNECTOR.

3	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. CONTACT PART Au 0.05 μm MIN. SOLDERING PART Au 0.05 μm MIN.		
2	CONTACT	BRASS	ALL OVER Ni 1.00 μm MIN. CONTACT PART Au 0.10 μm MIN. SOLDERING PART Au 0.03 μm MIN.		
1	HOUSING	LCP	UL94V-0, WHITE		
NO.		DISCRIPTION	MATERIAL	FINISH	REMARKS

*LENGTH: 4.0±0.4 AT PLUG PART NO. 20670-001R-08, 20670-001R-13, 20670-001R-32
4.7±0.4 AT PLUG PART NO. 20670-001R-18, 20670-001R-37
5.6 AT PLUG PART NO. 20767-001R-20 (REFERENCE DIMENSION)
3.8±0.3 AT PLUG PART NO. 20686-001R-08, 20311-011R-**-
*MATING HEIGHT: 2.5 MAX. AT PLUG PART NO. 20670-001R-**-
3.0 MAX. AT PLUG PART NO. 20767-001R-20
2.0±0.1 AT PLUG PART NO. 20686-001R-08, 20311-011R-**-
MATING CONDITION

REV	EDN	BY	DATE	APP	REVISION RECORD
27	Z210232	S.T.	2021/03/08	M.T	ANGLE ±2° 6 OVER 30 MAX. ±0.3
26	Z200434	TOI	2020/04/20	Y.H	6 MAX. ±0.2 30 OVER 120 MAX. ±0.5
25	Z200262	TOI	2020/03/05	Y.H	GENERAL TOLERANCE
24	Z191405	Y.F	2019/10/23	Y.S	DATE
23	Z181523	M.N	2018/11/20	Ken	DRG. K.Oobayashi 2001/06/07
22	Z180765	M.N	2018/10/30	Ken	DRG. E.Kawabe 2001/06/07
REV	EDN	BY	DATE	APP	2001/06/07

PROJECTION		SERIES No.	CUSTOMER COPY	
R9				
TITLE		SCALE		
MHF® I/I RECEPTACLE		10:1	I-PEX	
DWG No.		SIZE	SHEET	
20279		mm	1/1	

3.7 micro-SD Card Slot

REIMEI1 has a micro-sd card, and the slot can be used for starting the burning system or for data storage expansion.

WARN: REIMEI 1 has two way to start up system:

- 1) start by micro SD card (default)
- 2) Start by onboard eMMC.

4 Wireless Communication

4.1 WiFi

REIMEI1 support 2.4G / 5G dual WiFi。

2.4G frequency band

Parameter	Feature
Frequency range	802.11b/g/n(HT20): 2412-2472MHz 802.11n(HT40): 2422-2462MHz
Modulation system	802.11b:DSSS 802.11g/n:OFDM
Frequency Step	5M

5G frequency band

Parameter	Feature
Frequency range	802.11a/n/ac: 5150-5350MHz 5470-5725MHz 5725-5850MHz
Modulation system	BPSK
Frequency Step	5M

4.2 Bluetooth

REIMEI 1 support bluetooth5.0。

Parameter	Feature
Frequency range	2402-2480MHz
Modulation system	GFSK,DPSK
Frequency Step	2M

4.3 Antennas

4.3.1 WiFi / BT Antenna

Parameter	Feature
Antenna type	External antenna
Frequency band	2400-2500MHz, 5150-5850 MHz
Antenna gain	2 dBi
Impedance	50 OHM

5 Electrical Characteristics

5.1 Electrical Parameters

Name	Parameters	Minimum	Typical	Max	Unit
V _{IN}	System power input	4.5	5	6	V
	Working temperature	-25	25	70	°C
	Storage temperature	-30	25	70	°C
	Working environment humidity	20		90	%

6 About Us

6.1 About EDATEC

EDATEC, located in Shanghai, is one of Raspberry Pi's global design partners. Our vision is to provide hardware solutions for Internet of Things, industrial control, automation, green energy and artificial intelligence based on Raspberry Pi technology platform.

We provide standard hardware solutions, customized design and manufacturing services to speed up the development and time to market of electronic products.

6.2 Contact Us



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