E101-C6MN4 Series Development Board User Manual



Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Contents

E101-C6MN4 Series Development Board UserManual 1
Disclaimer 1
1. Module introduction 2
1.1 Feature introduction 2
1.2 Parameter introduction 2
2. Brief description of functions 3
2.1 Component introduction 3
2.2 Pin definition 4
2.3 Function introduction 6
3 . Things to note when developing applications 6
4 . Version Information 6
5 . About Us 7

Copyright © 2012–20 25 , Chengdu Ebyte Electronic Technology Co., Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Disclaimer

EBYTE reserves all rights to this document and the information contained herein. Products, names, logos and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification or disclosure to third parties of this document or any part thereof without the express permission of EBYTE is strictly prohibited.

The information contained herein is provided “as is” and EBYTE assumes no liability for the use of the information. No warranty, either express or implied, is given, including but not limited, with respect to the accuracy, correctness, reliability and fitness for a particular purpose of the information. This document may be revised by EBYTE at any time. For most recent documents, visit www.cdebyte.com.

Copyright © 2012–20 25 , Chengdu Ebyte Electronic Technology Co., Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1. Module introduction

1.1 Feature introduction

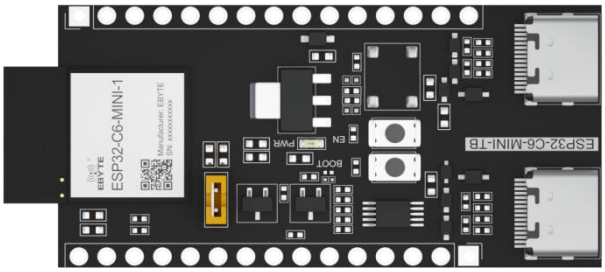


Figure 1 Actual picture of the module

The E101-C6MN4-PS and E101-C6MN4-XS-TB are two entry-level development boards featuring the compactly designed E101-C6MN4-PS and E101-C6MN4-XS modules. These boards come equipped with full Wi-Fi and Bluetooth Low Energy (BLE) functionality, with most pins of the onboard modules routed to side pin headers. Developers can easily connect various peripherals through jumper cables according to their needs, while also supporting breadboard mounting for practical use.

1.2 Parameter introduction

SN	parameter name	Parameter value	Comment
1	Support module	E101-C6MN4-PS E101-C6MN4-XS	WiFi serial port module
2	Module size	48.81 * 25.5mm	Including USB connector , excluding module antenna size
3	Production Process	Lead-free process, machine-mounted	Wireless products must be machine-mounted to ensure batch consistency and reliability.
4	Power supply interface	USB	-
5	Communication Interface	TTL	-
6	Operating temperature	-40 ~ +85℃	Industrial grade
7	Working humidity	10%~90%	Relative humidity, no condensation
8	Storage temperature	-40 ~ +125℃	Industrial grade

Copyright © 2012–20 25 , Chengdu Ebyte Electronic Technology Co., Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2. Brief description of functions

2.1 Component introduction

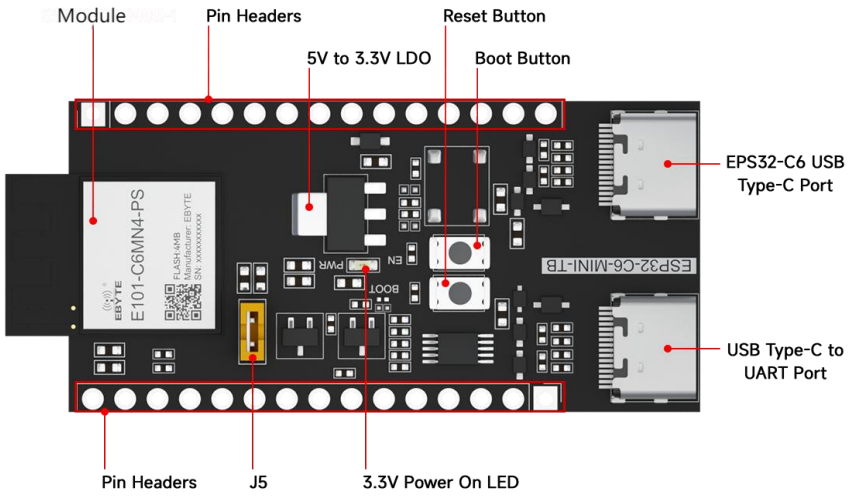


Figure 2 Main component diagram

SN	Main firmware	introduce
1	E101-C6MN4-PS & E101-C6MN4-XS	E101-C6MN4-PS and E101-C6MN4-XS are universal modules that support 2.4 GHz Wi-Fi 6, Bluetooth 5 and IEEE 802.15.4 (Zigbee 3.0 and Thread 1.3). E101-C6MN4-PS uses an on-board PCB antenna, and E101-C6MN4-XS uses an external antenna connector. The module has an ESP32-C6FH4 chip with 4 MB flash inside the package. For more information, please refer to the E101-C6MN4-PS technical specification sheet.
2	Pin Header	All available GPIO pins (except the SPI bus of the flash) have been led out to the pin headers of the development board.
3	5 V to 3.3 V LDO (5 V to 3.3 V LDO)	Power converter, input 5 V, output 3.3 V.
4	3.3 V Power On LED	After the development board is connected to the USB power supply, the indicator light turns on.
5	USB-to-UART Bridge (USB to UART Bridge)	Single-chip USB to UART bridge providing transfer rates up to 1 Mbps.
6	ESP32-C6 USB Type-C Port （ESP32-C6 USB Type-C interface）	The USB Type-C interface of the ESP32-C6 chip supports USB 2.0 full-speed mode, with a data transmission rate of up to 12 Mbps (note that this interface does not support the high-speed transmission mode of 480 Mbps). This interface can be used as the power supply interface of the development board, can burn firmware to the chip, can

Copyright © 2012–20 25 , Chengdu Ebyte Electronic Technology Co., Ltd.

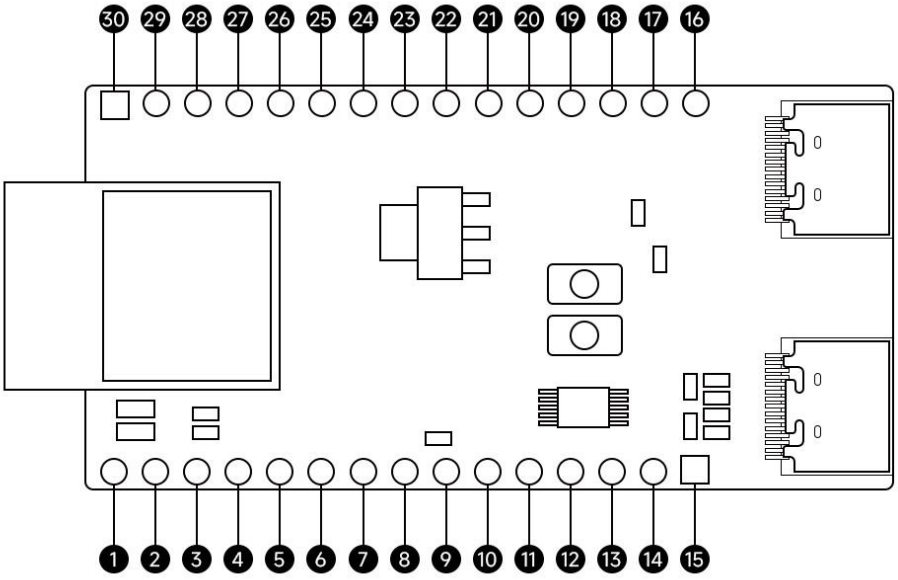
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

		communicate with the chip through the USB protocol, and can also be used for JTAG debugging.
7	Boot Button	Download button. Press and hold the Boot button and press the Reset button to enter the "firmware download" mode and download the firmware through the serial port.
8	Reset Button	Reset button.
9	USB Type-C to UART Port (USB Type-C to UART interface)	It can be used as the power supply interface of the development board, which can be used to burn firmware to the chip. It can also be used as a communication interface to communicate with the ESP32-C6 chip through the onboard USB to UART bridge.
10	RGB LED	Addressable RGB LED driven by GPIO8.
11	J5	for measuring current

Note: 1. The J5 pin header on the development board (as shown in the functional component diagram above) can be used to measure the current of the E101-C6MN4-PSmodule: remove the J5 jumper: at this time the development board Disconnect the power supply of the peripherals and module, and connect the J5 pin header to the ammeter to measure the module current. Install J5 jumper cap (factory default): the development board returns to normal functions.
2. For specific function instructions, please refer to the user manual of E101-C6MN4-PS & E101-C6MN4-XS.

2.2 Pin definition

The picture below shows the front view of E101-C6MN4-PS-TB&E101-C6MN4-XS-TB:



Copyright © 2012–20 25 , Chengdu Ebyte Electronic Technology Co., Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Figure 3 Current test interface diagram

Pin number	Pin name	Type	Pin usage
1	3V3	P	3.3 V power supply
2	RST	I	High level: chip enabled; low level: chip turned off.
3	2	I/O/T	GPIO2, LP_GPIO2, LP_UART_RTSN, ADC1_CH2, FSPIQ
4	3	I/O/T	GPIO3, LP_GPIO3, LP_UART_CTSN, ADC1_CH3
5	4	I/O/T	MTMS, GPIO4, LP_GPIO4, LP_UART_RXD, ADC1_CH4, FSPIHD
6	5	I/O/T	MTDI, GPIO5, LP_GPIO5, LP_UART_TXD, ADC1_CH5, FSPIWP
7	O/N	I/O/T	GPIO0, XTAL_32K_P, LP_GPIO0, LP_UART_DTRN, ADC1_CH0
8	1/N	I/O/T	GPIO1, XTAL_32K_N, LP_GPIO1, LP_UART_DSRN, ADC1_CH1
9	8	I/O/T	GPIO8
10	6	I/O/T	MTCK, GPIO6, LP_GPIO6, LP_I2C_SDA, ADC1_CH6, FSPICLK
11	7	I/O/T	MTDO, GPIO7, LP_GPIO7, LP_I2C_SCL, FSPID
12	1 4	I/O/T	GPIO14
13	G	G	ground
14	5V	P	5V power supply
15	G	G	ground
16	G	G	ground
17	Tx	I/O/T	U0TXD, GPIO16, FSPICS0
18	RX	I/O/T	U0RXD, GPIO17, FSPICS1
19	23	I/O/T	GPIO23, SDIO_DATA3
20	22	I/O/T	GPIO22, SDIO_DATA2
21	21	I/O/T	GPIO21, SDIO_DATA1, FSPICS5
22	20	I/O/T	GPIO20, SDIO_DATA0, FSPICS4
23	19	I/O/T	GPIO19, SDIO_CLK, FSPICS3
24	18	I/O/T	GPIO18, SDIO_CMD, FSPICS2
25	15	I/O/T	GPIO15
26	9	I/O/T	GPIO 9
27	G	G	ground
28	13	I/O/T	GPIO13, USB_D+
29	12	I/O/T	GPIO12, USB_D-
30	G	G	ground

Note:

1. P : power supply; I: input; O: output; T: can be set to high impedance.

Copyright © 2012–20 25 , Chengdu Ebyte Electronic Technology Co., Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2. The E101-C6 Series Module AT features two UART ports: UART0 handles firmware updates and log output, while UART1 manages AT command transmission and response reception. Both ports operate at a default baud rate of 115200.

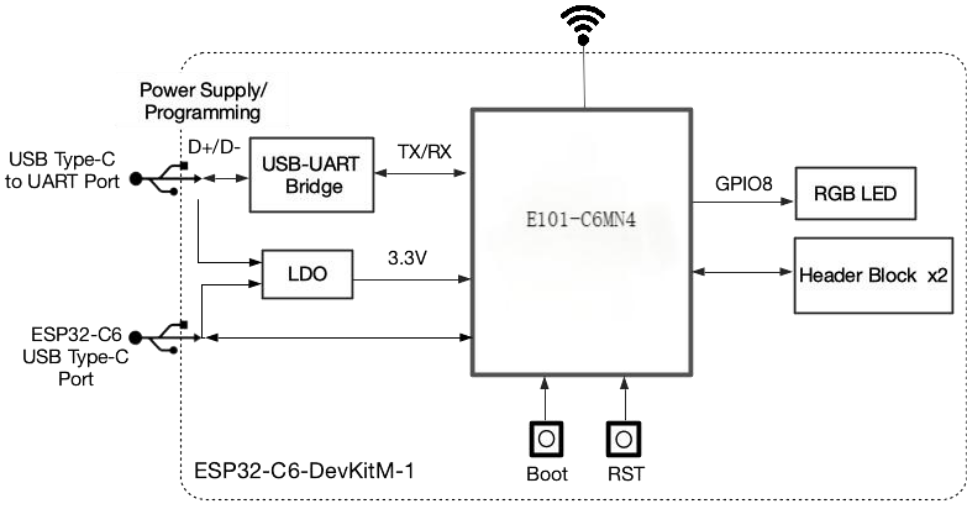
Function	Development board pins/Module	Other device pins
Download firmware/output log	UART0 • GPIO17 (RX) • GPIO16 (TX)	PC：TX、RX
AT command/response	UART1： • GPIO6 (RX) • GPIO7 (TX) • GPIO5 (CTS) • GPIO4 (RTS)	USB to UART module：TX，RX，RTS，CTS

For details, please download the AT Instruction Set from the website.

2.3 Function introduction

E101-C6MN4-PS-TB&E101-C6MN4-XS-TB

The main components and connections are shown in the figure below:



3 . Things to note when developing applications

- There are three power supply methods available: 1. USB Type-C to UART interface or ESP32-C6 USB Type-C interface power supply (select one or both), default power supply method (recommended); 2.5V and GND pin header power supply; 3.3V3 and GND pin header for power supply.

4 . Version Information

Copyright © 2012–20 25 , Chengdu Ebyte Electronic Technology Co., Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Version	Revision date	Revision Notes	Maintained by
1.0	2024-4-8	Initial version	Hao
1.1	2025-9-24	Add pin description	Hao

5 . About Us

Technical support: support@cdebyte.com
Documents and RF Setting download link: https://www.cdebyte.com
Thank you for using Ebyte products! Please contact us with any questions or suggestions: info@cdebyte.com
Address: , Building B5, Mould Industrial Park, 199# Xiqu Ave, High-tech Zone, Chengdu, 611731, Sichuan, China

Chengdu Ebyte Electronic Technology Co.,Ltd.

Copyright © 2012–20 25 , Chengdu Ebyte Electronic Technology Co., Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000