# EWT73 Series User Manual

**Test suite**

Chengdu Ebyte Electronic Technology Co.,Ltd.

# contents

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# 1.Development Board Hardware Introduction

## 1.1.Overview

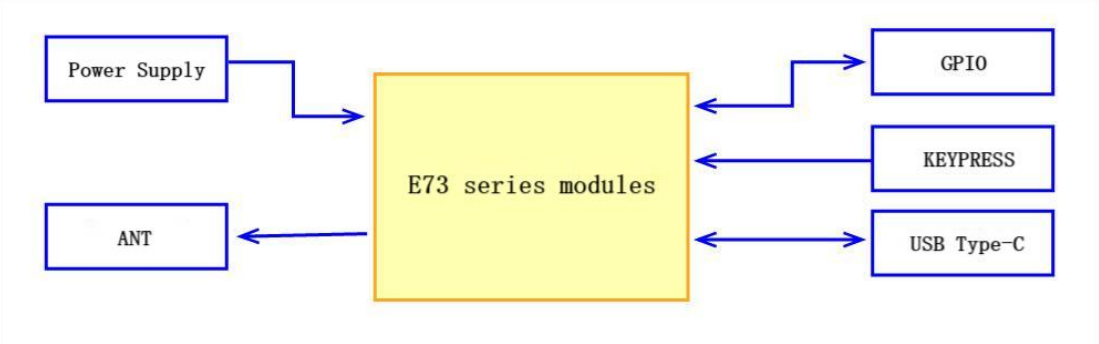
The EWT73 series development board is developed by Chengdu Yibite Electronic Technology Co., Ltd. based on the E73-M series modules. This series of modules is developed using the original imported chips from the Norwegian NORDIC company. The development board has complete module functions, and most of the module pins on the board have been led out to the pin headers on both sides. Developers can easily connect a variety of peripheral devices through jumpers according to actual needs, and the development board can also be plugged into a breadboard for use.

## 1.2.Parameter Introduction

| model / parameter | EWT73-2G4M04S1A | EWT73-2G4M04S1B | EWT73-2G4M04S1D | EWT73-2G4M08S1C | EWT73-2G4M08S1E |
|---|---|---|---|---|---|
| Physical product |  |  |  |  |  |
| Modules① | E73-2G4M04S1A | E73-2G4M04S1B | E73-2G4M04S1D | E73-2G4M08S1C | E73-2G4M08S1E |
| chip | Nrf52810 | Nrf52832 | Nrf52822 | Nrf52840 | Nrf52833 |
| Support Agreement | BLE4.2/5.0 | BLE4.2/5.0 | BLE4.2/5.0 | BLE4.2/5.0 | BLE5.1 |
| FLASH | 192KB | 512KB | 256KB | 1024KB | 512KB |
| RAM | 24KB | 64KB | 16KB | 256KB | 128KB |
| Kernel | ARM CORTEX-M4 | ARM CORTEX-M4 | ARM CORTEX M0 | ARM CORTEX-M4 | ARM CORTEX-M4 |
| size | 60*34mm | 60*34mm | 60*34mm | 60*34mm | 60*34mm |
| Operating temperature② | -40 ~ +85℃ | -40 ~ +85℃ | -40 ~ +85℃ | -40 ~ +85℃ | -40 ~ +85℃ |
| Operating humidity③ | 10% ~ 90%RH | 10% ~ 90%RH | 10% ~ 90%RH | 10% ~ 90%RH | 10% ~ 90%RH |
| Production process④ | Lead-free process, machine mounting | Lead-free process, machine mounting | Lead-free process, machine mounting | Lead-free process, machine mounting | Lead-free process, machine mounting |

**Note:①Bluetooth module;②Industrial grade;③Relative humidity, no condensation;④ Wireless products must be machine-mounted to ensure batch consistency and reliability.**

## 1.3.Principle

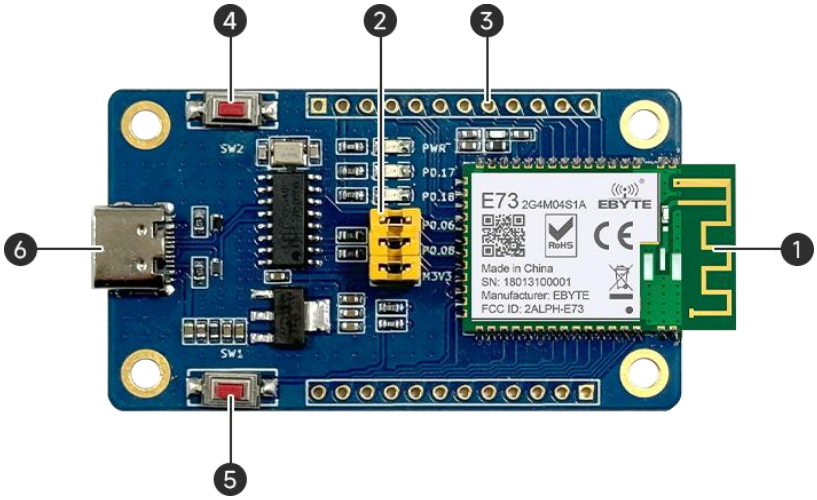



EWT73 series development board principle block diagram

# 2.Functional Description

## 2.1.Component Introduction

### 2.1.1 EWT73-2G4M04S1A&EWT73-2G4M04S1B



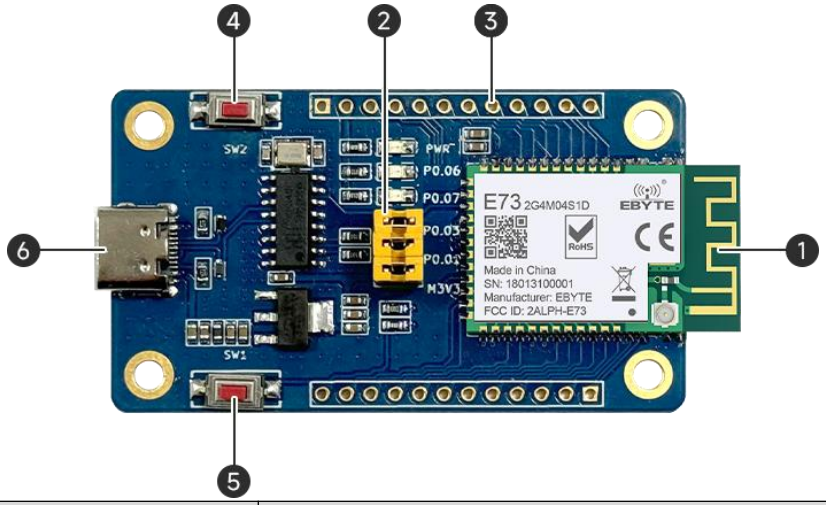

This development board takes E73-2G4M04S1A as an example. The two development boards only differ in the modules.

| Serial | Main firmware | introduce |
|---|---|---|

| number | | |
|---|---|---|
| 1 | E73-2G4M04S1A&E73-2G4M04S1B | E73-2G4M04S1AandE73-2G4M04S1B is a RF transceiver and protocol stack with a high-performance ARM CORTEX-M4F core and Bluetooth 4.2 and Bluetooth 5.0Bluetooth module,It has abundant peripheral interfaces. |
| 2 | 5 V to 3.3 V LDO | Module power supply jumper cap and TXD and RXD jumper caps |
| 3 | Pin Header | All available GPIO pins are broken out to the board's pin headers. See Pin Headers for more information. |
| 4 | SW2 button | Customer customized button development |
| 5 | SW1 button | Customer customized button development |
| 6 | USB to UART interface | Type-CThe USB interface can be used as the power supply interface of the development board, can be used to burn firmware to the chip, and can also be used as a communication interface to communicate with the chip through the onboard USB to UART bridge. |

**Note: For specific function instructions, please refer to the user manual of E73-2G4M04S1A&E73-2G4M04S1B.**

## 2.1.2 EWT73-2G4M04S1D

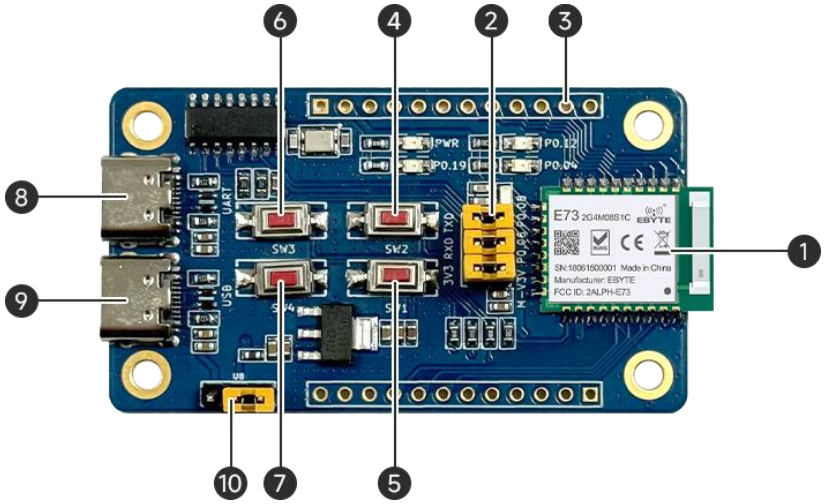



| Serial number | Main firmware | introduce |
|---|---|---|
| 1 | EWT73-2G4M04S1D | E73-2G4M04S1D is a small-sized, low-power Bluetooth module developed by Ebyte, comes with high-performance PCB onboard antenna and IPEX antenna base,It has abundant peripheral interfaces. |
| 2 | 5 V to 3.3 V LDO | Module power supply jumper cap and TXD and RXD jumper caps |

| | | |
|---|---|---|
| 3 | Pin Header | All available GPIO pins are broken out to the board's pin headers. See Pin Headers for more information. |
| 4 | SW2 button | Customer customized button development |
| 5 | SW1 button | Customer customized button development |
| 6 | USB to UART interface | Type-CThe USB interface can be used as the power supply interface of the development board, can be used to burn firmware to the chip, and can also be used as a communication interface to communicate with the chip through the onboard USB to UART bridge. |

**Note: For specific function instructions, please refer to the user manual of EWT73-2G4M04S1D.**

## 2.1.3 EWT73-2G4M08S1C&EWT73-2G4M08S1E




This development board takes EWT73-2G4M08S1C as an example. The two development boards only differ in the modules.

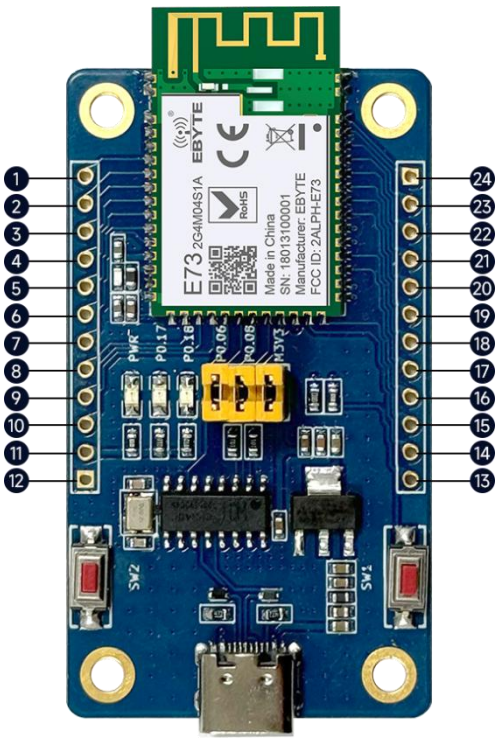
| Serial number | Main firmware | introduce |
|---|---|---|
| 1 | EWT73-2G4M08S1C&EWT73-2G4M08S1E | EWT73-2G4M08S1CandEWT73-2G4M08S1E isBoth are small-sized, low-power, multi-protocol Bluetooth modules developed by Ebyte, using 32M industrial-grade crystal oscillators and having rich peripheral resources such as UART, I2C, SPI, ADC, DMA, PWM, etc. |
| 2 | 5 V to 3.3 V LDO | Module power supply jumper cap and TXD and RXD jumper caps |
| 3 | Pin Header | All available GPIO pins are broken out to the board's pin headers. See Pin Headers for more information. |
| 4 | SW2 button | Customer customized button development |
| 5 | SW1 button | Customer customized button development |
| 6 | SW3 button | Customer customized button development |

| | | |
|---|---|---|
| 7 | SW4 button | Customer customized button development |
| 8 | USB to UART interface | Type-CThe USB interface can be used as the power supply interface of the development board, can be used to burn firmware to the chip, and can also be used as a communication interface to communicate with the chip through the onboard USB to UART bridge. |
| 9 | USB interface | Type-CThe USB interface can be used as the power supply interface of the development board, can be used to burn firmware to the chip, and can also be used as a communication interface. |
| 10 | USB and UARTJumper cap | Used to switch the transmission mode between USB and UART |

**Note: For specific function instructions, please refer to the user manual of EWT73-2G4M08S1C&EWT73-2G4M08S1E.**

## 2.2.Pin Definition

### 2.2.1 EWT73-2G4M04S1A&EWT73-2G4M04S1B

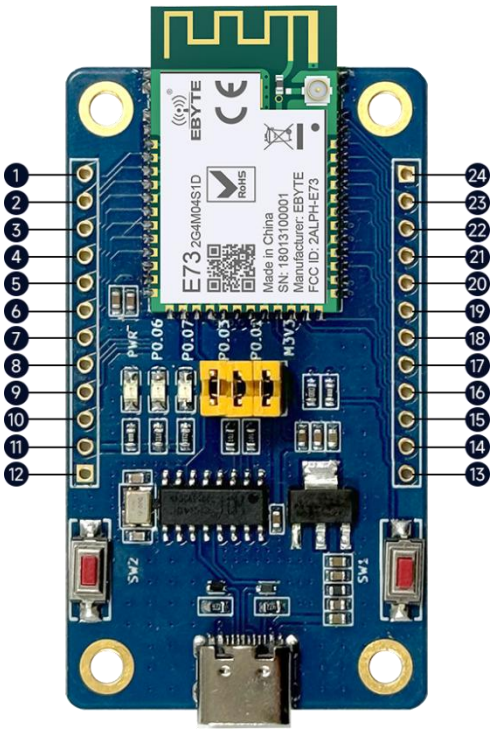



This development board takes E73-2G4M04S1A as an example. The two development boards only differ in the modules.

| Pin number | Pin Name | Pin Type | Pin Purpose |
|---|---|---|---|
| 1 | P0.25 | I/O | MCU GPIO |

| | | | |
|---|---|---|---|
| 2 | P0.26 | I/O | MCU GPIO |
| 3 | P0.27 | I/O | MCU GPIO |
| 4 | P0.28 | I/O | MCU GPIO |
| 5 | P0.29 | I/O | MCU GPIO |
| 6 | P0.30 | I/O | MCU GPIO |
| 7 | P0.31 | I/O | MCU GPIO |
| 8 | P0.02 | I/O | MCU GPIO |
| 9 | P0.03 | I/O | MCU GPIO |
| 10 | P0.04 | I/O | MCU GPIO |
| 11 | 3.3V | - | Power supply, 1.8 ~ 3.6V DC (Note: voltage higher than 3.6V will cause permanent damage to the module) |
| 12 | GND | - | Ground wire, connected to the power reference ground |
| 13 | P0.11 | I/O | MCU GPIO |
| 14 | P0.12 | I/O | MCU GPIO |
| 15 | P0.15 | I/O | MCU GPIO |
| 16 | P0.16 | I/O | MCU GPIO |
| 17 | P0.19 | I/O | MCU GPIO |
| 18 | P0.20 | I/O | MCU GPIO |
| 19 | P0.21 | I/O | MCU GPIO |
| 20 | SWCLK | I/O | Serial Wire Debug clock input for debugging and programming |
| twenty one | SWDIO | I/O | Serial Wire Debug and Programming Debug |
| twenty two | P0.22 | I/O | MCU GPIO |
| twenty three | P0.23 | I/O | MCU GPIO |
| twenty four | P0.24 | I/O | MCU GPIO |

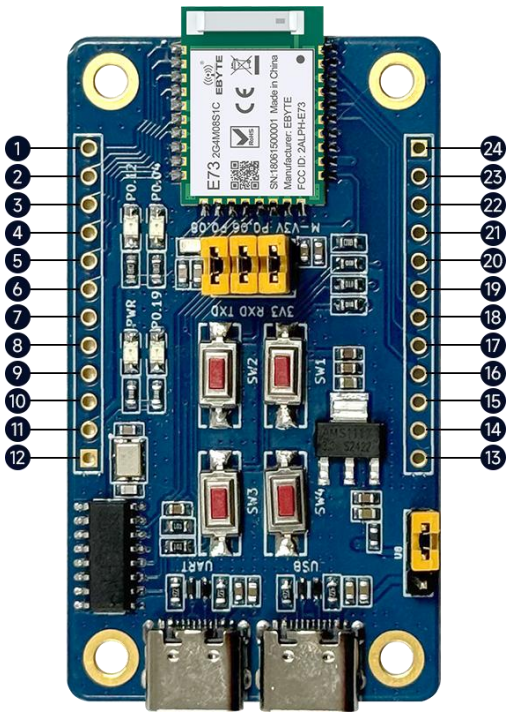
## 2.2.2 EWT73-2G4M04S1D




| Pin number | Pin Name | Pin Type | Pin Purpose |
|---|---|---|---|
| 1 | P0.21 | I/O | MCU GPIO |
| 2 | P0.22 | I/O | MCU GPIO |
| 3 | P0.23 | I/O | MCU GPIO |
| 4 | P0.24 | I/O | MCU GPIO |
| 5 | P0.25 | I/O | MCU GPIO |
| 6 | P0.28 | I/O | MCU GPIO |
| 7 | P0.29 | I/O | MCU GPIO |
| 8 | P0.30 | I/O | MCU GPIO |
| 9 | P0.04 | I/O | MCU GPIO |
| 10 | P0.05 | I/O | MCU GPIO |
| 11 | GND | - | Ground wire, connected to the power reference ground |
| 12 | 3.3V | - | Power supply, 2.1 ~ 3.6V DC (Note: voltage higher than 3.6V will cause permanent damage to the module) |
| 13 | GND | - | Ground wire, connected to the power reference ground |
| 14 | P0.10 | I/O | MCU GPIO |
| 15 | P0.11 | I/O | MCU GPIO |
| 16 | P0.12 | I/O | MCU GPIO |
| 17 | P0.13 | I/O | MCU GPIO |
| 18 | P0.14 | I/O | MCU GPIO |
| 19 | P0.15 | I/O | MCU GPIO |
| 20 | P0.16 | I/O | MCU GPIO |

| | | | |
|---|---|---|---|
| twenty one | SWDIO | I/O | Serial Wire Debug and Programming Debug |
| twenty two | SWCLK | I/O | Serial Wire Debug clock input for debugging and programming |
| twenty three | P0.17 | I/O | MCU GPIO |
| twenty four | P0.18 | I/O | MCU GPIO |
| 25 | P0.19 | I/O | MCU GPIO |
| 26 | P0.20 | I/O | MCU GPIO |

## 2.2.3 EWT73-2G4M08S1C&EWT73-2G4M08S1E




This development board takes EWT73-2G4M08S1C as an example. The two development boards only have different modules and the same pin definitions.

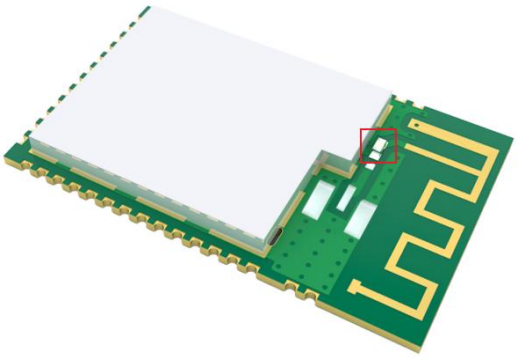
| Pin number | Pin Name | Pin Type | Pin Purpose |
|---|---|---|---|
| 1 | P1.11 | I/O | MCU GPIO |
| 2 | P1.10 | I/O | MCU GPIO |
| 3 | AIN1 | I/O | MCU GPIO |
| 4 | AIN4 | I/O | MCU GPIO |
| 5 | P1.13 | I/O | MCU GPIO |
| 6 | AIN0 | I/O | MCU GPIO |
| 7 | AIN5 | I/O | MCU GPIO |
| 8 | AIN7 | I/O | MCU GPIO |
| 9 | AIN6 | I/O | MCU GPIO |
| 10 | P0.26 | I/O | MCU GPIO |
| 11 | 3.3V | - | Power supply, 3.3V DC (Note: voltage higher than 3.6V |

| | | | |
|---|---|---|---|
| | | | will cause permanent damage to the module) |
| 12 | GND | - | Ground wire, connected to the power reference ground |
| 13 | GND | - | Ground wire, connected to the power reference ground |
| 14 | GND | - | Ground wire, connected to the power reference ground |
| 15 | GND | - | Ground wire, connected to the power reference ground |
| 16 | P0.13 | I/O | MCU GPIO |
| 17 | P0.24 | I/O | MCU GPIO |
| 18 | SWDIO | I/O | Serial Wire Debug clock input for debugging and programming |
| 19 | SWCLK | I/O | Serial Wire Debug and Programming Debug |
| 20 | P0.22 | I/O | MCU GPIO |
| twenty one | P1.00 | I/O | MCU GPIO |
| twenty two | P1.02 | I/O | MCU GPIO |
| twenty three | P1.04 | I/O | MCU GPIO |
| twenty four | P1.06 | I/O | MCU GPIO |

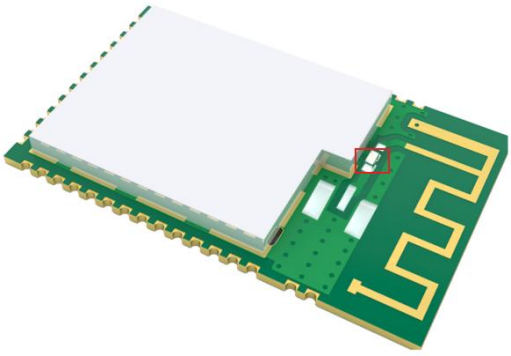
## 2.3Development Board Interface Description

### 2.3.1How to connect an external antenna

(1) EWT73-2G4M04S1A&EWT73-2G4M04S1BIPEX antenna base is reserved on thePad interfaceIf the user needs an external antenna, pleaseSolder the last matching capacitor of the module to the position in the circle in the figure below, and then solder an IPEX antenna socket. For details, see the antenna selection section in the corresponding module manual..

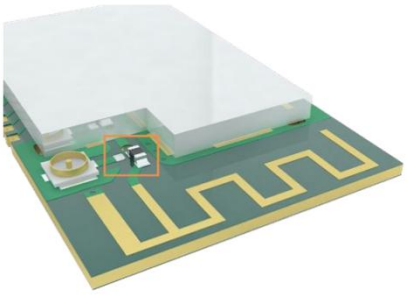


**PCB Antenna(Default)**

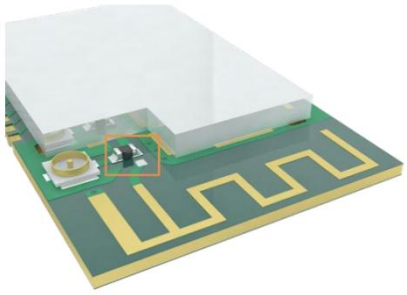


**IPEX Antenna**

(2) EWT73-2G4M04S1DIPEX antenna base is reserved on thePad interfaceIf the user needs an external antenna, pleaseSolder the last matching capacitor of the module to the position in the circle in the figure below, and then solder an IPEX antenna socket. For details, see the antenna selection section in the corresponding module manual..



**PCB Antenna(Default)**



**IPEX Antenna**

# Revision History

| Version | Revision Date | Revision Notes | Maintainer |
|---|---|---|---|
| 1.0 | 2025-3-27 | Initial release | All |
| | | | |
| | | | |

# About us

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