

E303 RS-485 Wi-Fi/BLE Gateway

Product Specification

Version	Issue date	Changes	Remark
1.0	2022/09/16	Initial Version	

IMPORTANT

This document contains important information and
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1 Introduction

E303 is a gateway integrating WIFI, BLE, Ethernet and RS-485 interfaces. The Wi-Fi /BLE module adopt ESP32 as module core chipset. There is a SD slot could be used for storing data from connected sensors.

2 Features

- Operating system : FreeRTOS
- RS-485 interface : with isolation and TX/RX auto switch
- Ethernet : 10/100M
- SD card slot for data storage
- DC Supply voltage : 5~12V DC

3 Product Outlook



Figure 1 E303 front view

4 Specifications

4.1 Block diagram

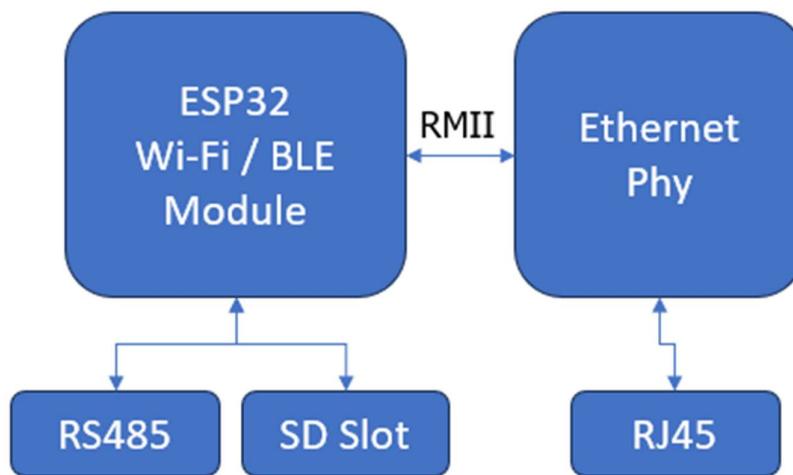


Figure 2 E303 block diagram

4.2 Major specifications

Items	Parameters
Wi-Fi	802.11 b/g/n; Soft-AP and Station mode
BT/BLE	V4.2BR/EDR BLE 5.0
RS-485	One optical isolated RS-485 port, Support Modbus Master/Slave Baud Rate: 1200bps – 57600bps
Power Input	DC +5V ~ 12 V
Power Consumption	< 1W
Dimension	104mm * 72mm * 26mm
Mounting	Standard DIN Rail

Table 1 Major specifications

4.3 IO interfaces

Name	Description	
RS-485 port	A	485 A/+ signal
	B	485 B/- signal
	EXTG	Isolated ground of RS485/DI)
DIP switch	485.TR	Terminal resister switch for RS-485, ON: effective, OFF : not effective

Table 2 IO interfaces

4.4 Buttons and Slots

Name	Function

RESET Button	Defined by WIFI module firmware, refer to Table 6
WPS Button	Defined by WIFI module firmware, refer to Table 6
Micro SD slot	Micro SD connected to WIFI module

Table 3 Buttons and slots

4.5 LED indicators

Name	Function
POWER LED	Power On/Off indication
TX LED	Blink when RS-485 transmitting data
RX LED	Blink when RS-485 receiving data
WIFI LED	Defined by WIFI module firmware, refer to Table 6

Table 3 Description of LED indicators

5 Firmware features

5.1 Device configuration

There is WebUI for configuring the parameters of BLE gateway such as the Wi-Fi connection, LAN and MQTT.

IoMBTC BLE Gateway

Logout

WiFi LAN MQTT OTA Advanced

Setting Ethernet static IP in Network Mode

Static IP address: 0.0.0.0
0.0.0.0 means Gateway gets dynamic IP via DHCP, else set static IP.

Static Netmask address: 0.0.0.0

Static Gateway address: 0.0.0.0

Static Main DNS address: 0.0.0.0

Static Other DNS address: 0.0.0.0

Setting Internal Ethernet

Ethernet PHY Model: IP101

SMI MDC GPIO number: 23

SMI MDIO GPIO number: 18

PHY Reset GPIO number: 5

Ethernet PHY Address: 1

Apply

5.2 Firmware OTA

User could update firmware via OTA page of WebUI



5.3 Server communication protocol

E303 support MQTT for connection to IoT server. Figure 3 is a typical E303 application examples.

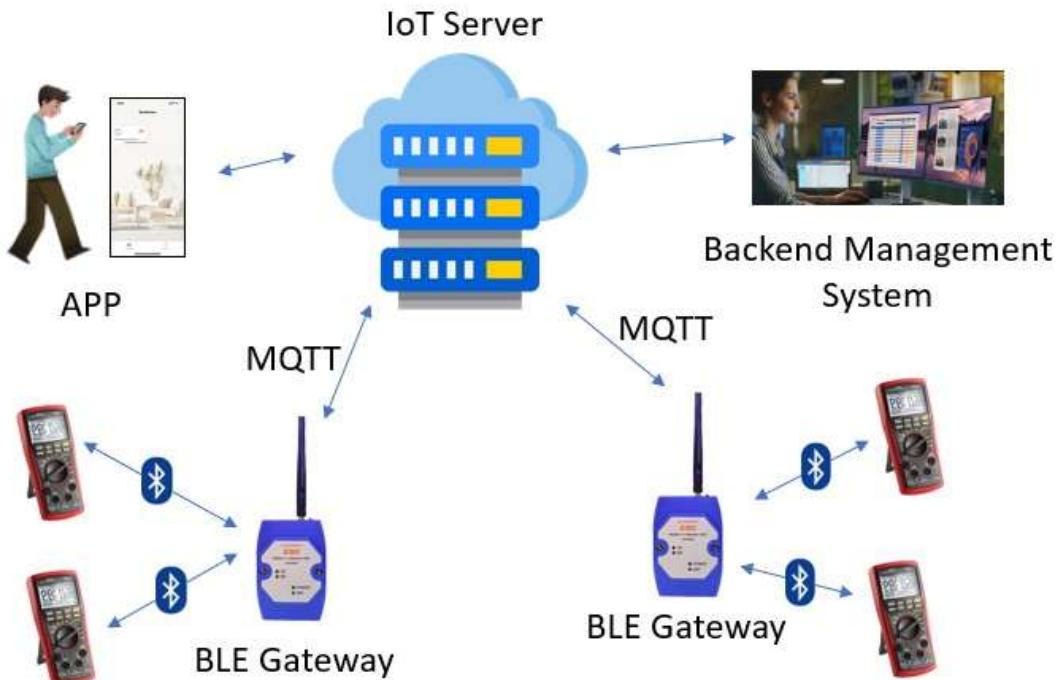


Figure 3 E303 typical application example