规格书

BW18 802.11 b/g/n Wi-Fi Module

BW18

Version: V1.0

1. Overview

The BW18 module is a wifi/Bluetooth datacom module with Espressif ESP32 as the core, which is suitable for small homes

Electrical applications. This module does not need to be designed with a board, and 4 PIN wiring can realize the transmission of the MCU end through WIFI

Data interaction to the cloud. This relatively independent module does not affect the design of the motherboard circuit, just quote

The serial port line is very practical for designers with space structure requirements. It only takes the benefit of wiring,

Provides many conveniences for production installations or troubleshooting.

The BW18 supports 5V power supply, and designers do not have to consider whether to combine with the level of the 5V microcomputer

Appearance. The BW18 uses both on-board antennas and IPEX socket external antennas in complex application network farms

The scene switching is very flexible, and customers can choose a more suitable antenna scheme according to their actual needs.

Built-in 4M

FLASH and 4M PSRAM.

BW18 can be widely used in a variety of Internet of Things applications, suitable for home automation, industrial wireless control,

Baby monitors, wireless location-aware devices, wireless positioning system signals, and other IoT applications,

It is an ideal solution for IoT applications.

Software Features:

Set up the Bluetooth connection through the AT command, users can develop their own and can support Android/IOS control

System and WeChat Mini Program control;

By setting wifi MQTT on the cloud through the AT command, you can dock with Alibaba Cloud, Tencent Cloud, and Amazon Cloud ;

2. Characteristic parameters

Wireless

Items	Description
WIFI+BT	● 802.11b/g/n Wi-Fi + BT SoC module ● Uses a low-power dual-core 32-bit CPU to be used as an application processor ● Up to 240MHz clock and up to 600 DMIPS ● Built-in 520 KB SRAM ● Support UART interface ● Dual locator and single UART interface output ● Support OpenOCD debugging interface ● Support multiple sleep modes ● Embedded Lwip and FreeRTOS ● Support STA/AP/STA+AP working mode ● Support Smart Config/AirKiss one-click network configuration ● Universal AT commands are quick to get started ● Support serial port local upgrade and remote firmware upgrade (FOTA) ● By setting wifi MQTT cloud through the AT command, you can dock with Alibaba Cloud, Tencent Cloud, Amazon Cloud, etc.;

Safety

Items	Description
CPU	● ESP32
外设接口	● UART
安全机制	● WPA/WPA2
加密类型	● WEP/TKIP/AES
升级固件	● UART Download/OTA（通过网络）
软件开发	● 支持 SDK，用于快速片上编程
网络协议	● IPv4、TCP/UDP/HTTP/MQTT
用户配置	● AT+ 指令集，云端服务器

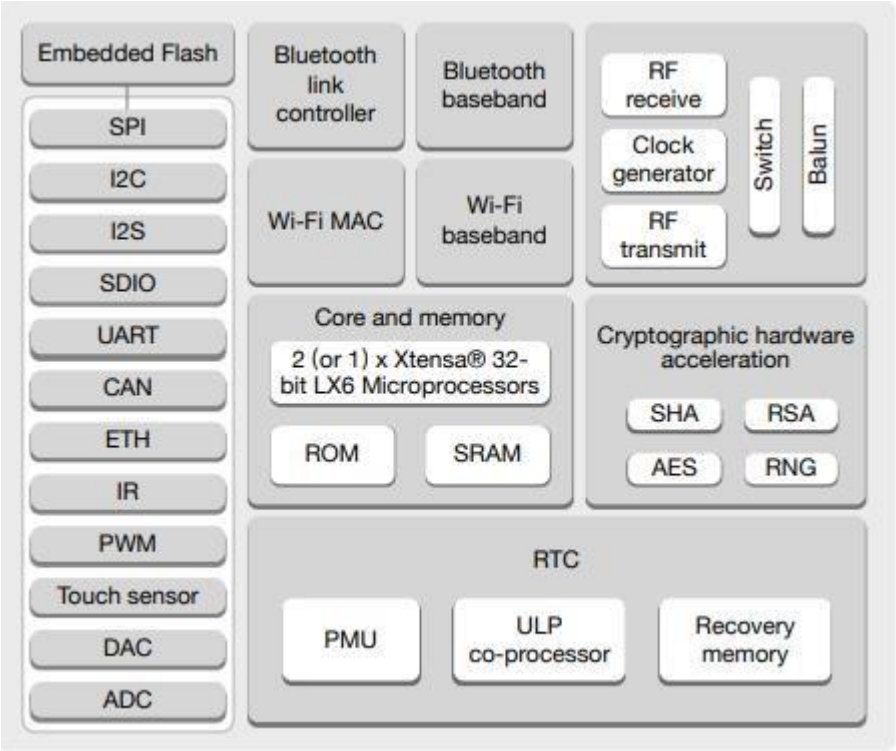
Application

- Household appliances
- Home automation
- Smart socket, smart light
- Industrial wireless control

3. Main parameters

Hardware Features	
Model	BW18
Package	Dual position holes（OD 1.6mm）
Antenna Type	PCB Antenna/IPEX端子
Major Chipset	ESP32
Power Supply	Supply voltage4.5V ~ 16V
Power consumption	350mA@5V
Dimension	41*28*8.9（±0.2）mm
WIFI Wireless Features	
Wireless Standards	IEEE 802.11 b/g/n/e/i
Frequency Range	2400 ~ 2483.5MHz
Work Mode	AP, Station, AP/Client
Transmit power	802.11b: 17±2 dBm (@11Mbps)
	802.11g: 14±2 dBm (@54Mbps)
	802.11n: 13±2 dBm (@MCS7)
Receive sensitivity	CCK, 1 Mbps : -90dBm
	CCK, 11 Mbps: -85dBm
	6 Mbps (1/2 BPSK): -88dBm
	54 Mbps (3/4 64-QAM): -70dBm
	MCS7 (65 Mbps, 72.2 Mbps): -67dBm
Bluetooth Wireless Features	
Wireless Standards	Bluetooth BR/EDR and BLE 4.2 Standard
Others	
Environment（环境）	Operating Temperature: -20℃~70℃
	Storage Temperature: -40℃~125℃
	Operating Humidity: 10%~90% (non-condensing)
	Storage Humidity: 5%~90% (non-condensing)

4. Block Diagram



5. Electrical parameters

1) DC Characteristics

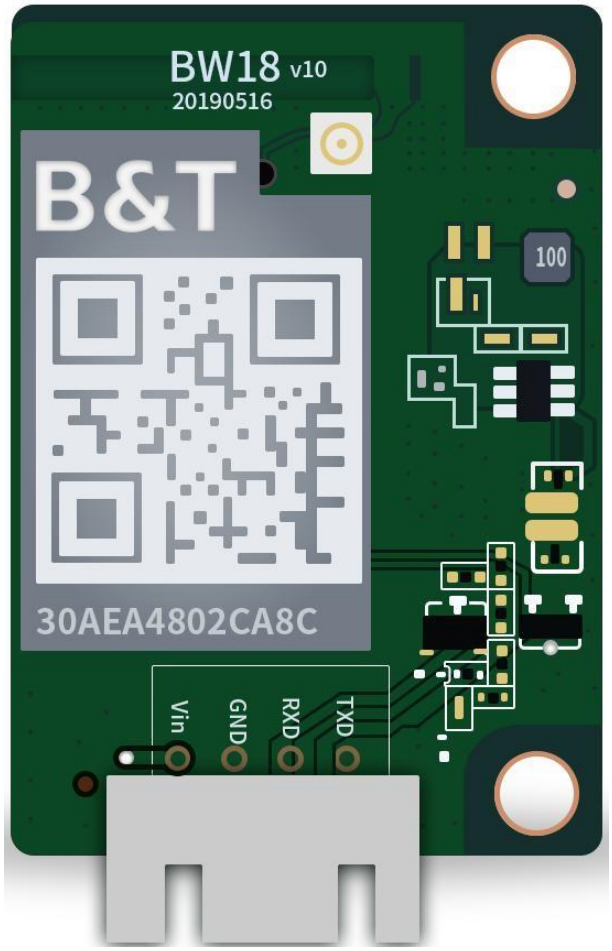
功耗（典型值）	5V供电：350mA	
ESD Protection (静电防护)	2000	V

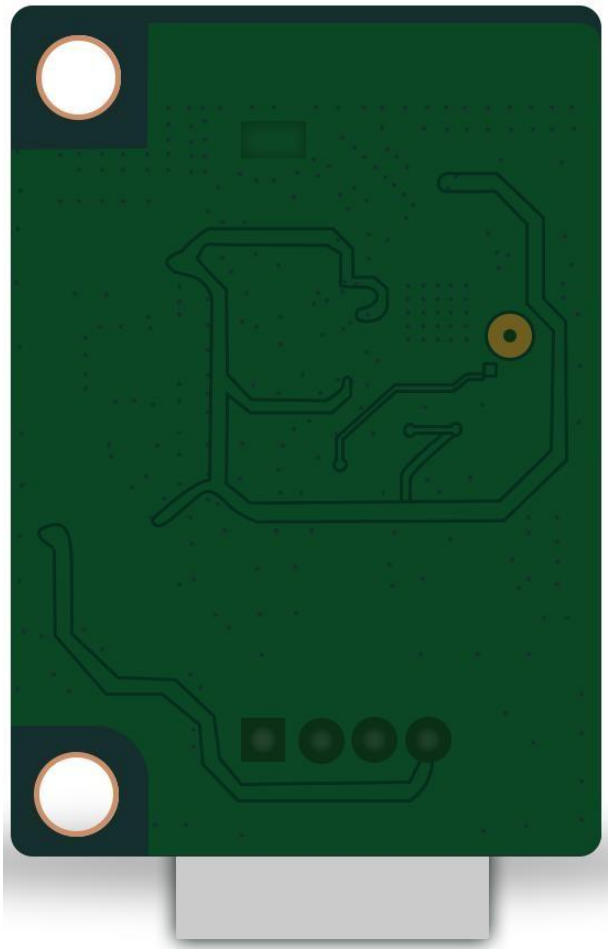
BW18 series modules are Electrostatic Sensitive Devices and require special precautions while handling.

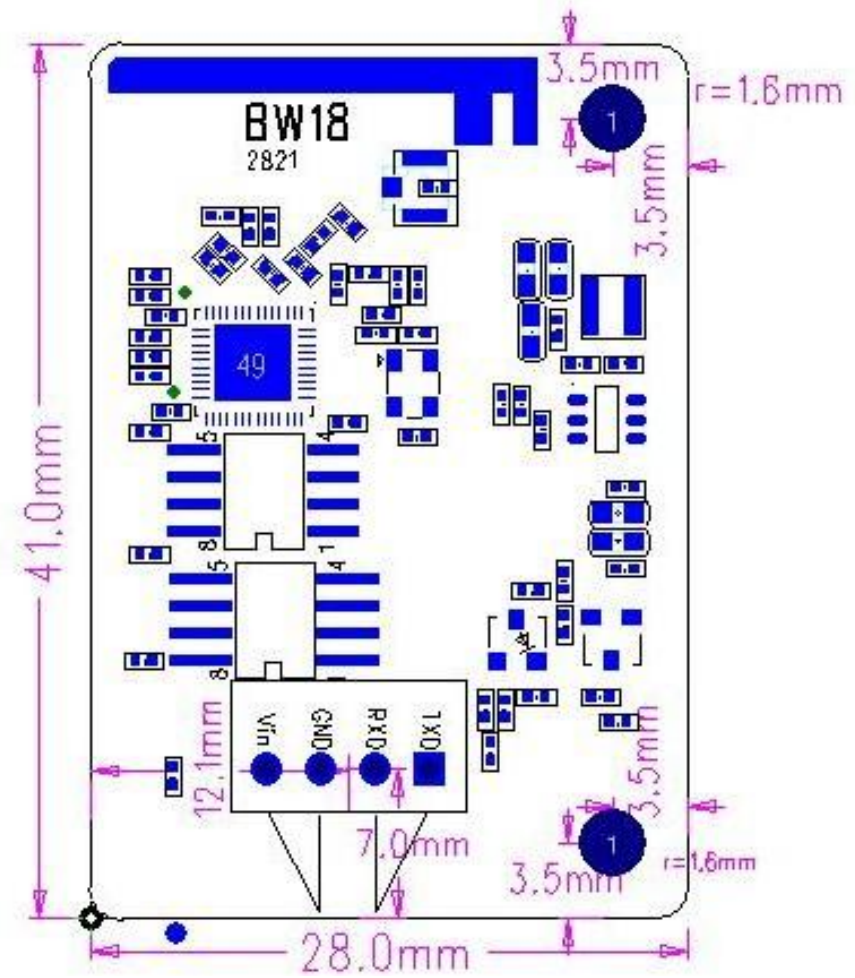
ESD precautions:

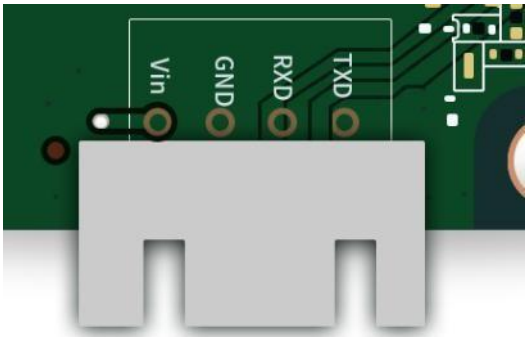
The BW18 module are electrostatic sensitive devices (ESD) and require special ESD precautions typically applied to ESD sensitive components. Proper ESD handling and packaging procedures must be applied throughout the processing, handling, transportation and operation of any application that incorporates the BW18 module. Don't touch the module by hand or solder with non-anti-static soldering iron to avoid damage to the module.

6. Package size and pin definition





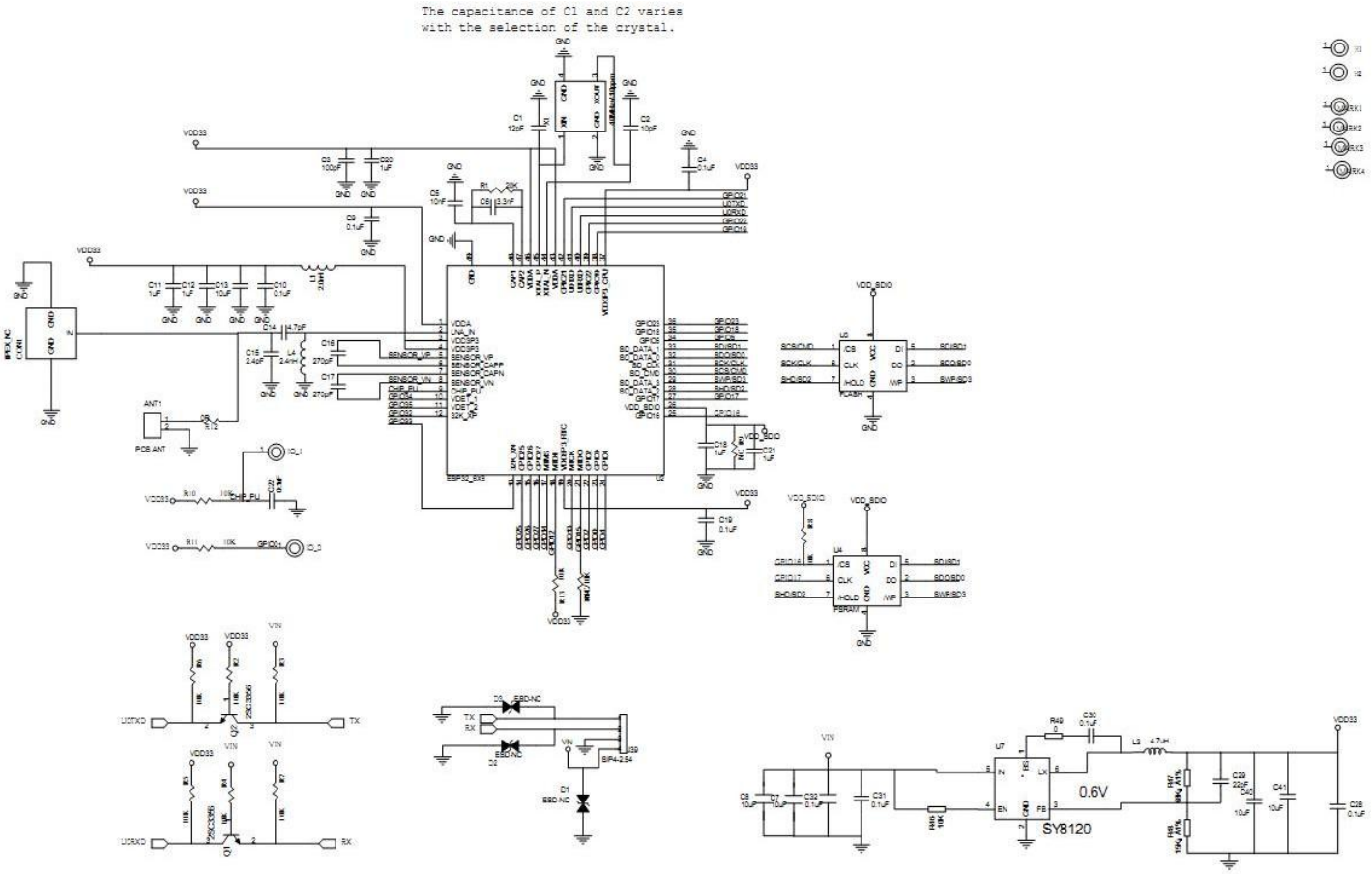


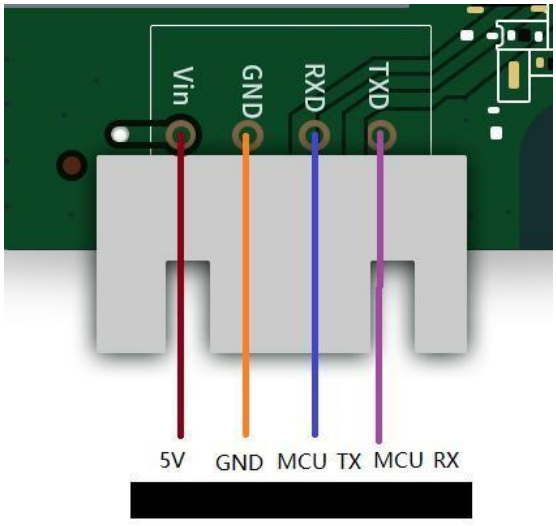


Pin No.	Definition	Description
1	TXD	UART TX
2	RXD	UART RX
3	GND	earthing
4	Vin	Power supply

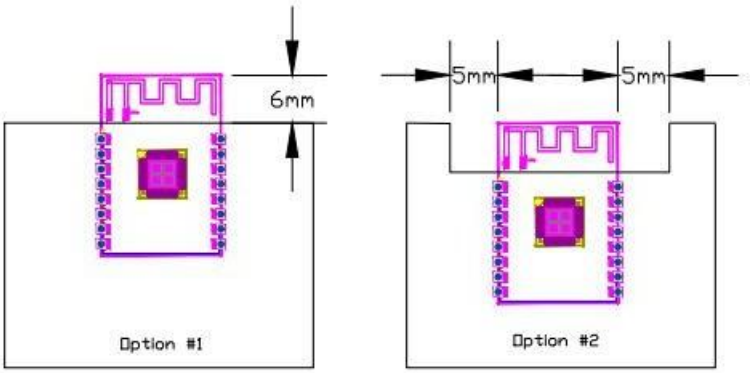
7. Reference design

1) Power supply reference design: current greater than 4.5V, less than 16V

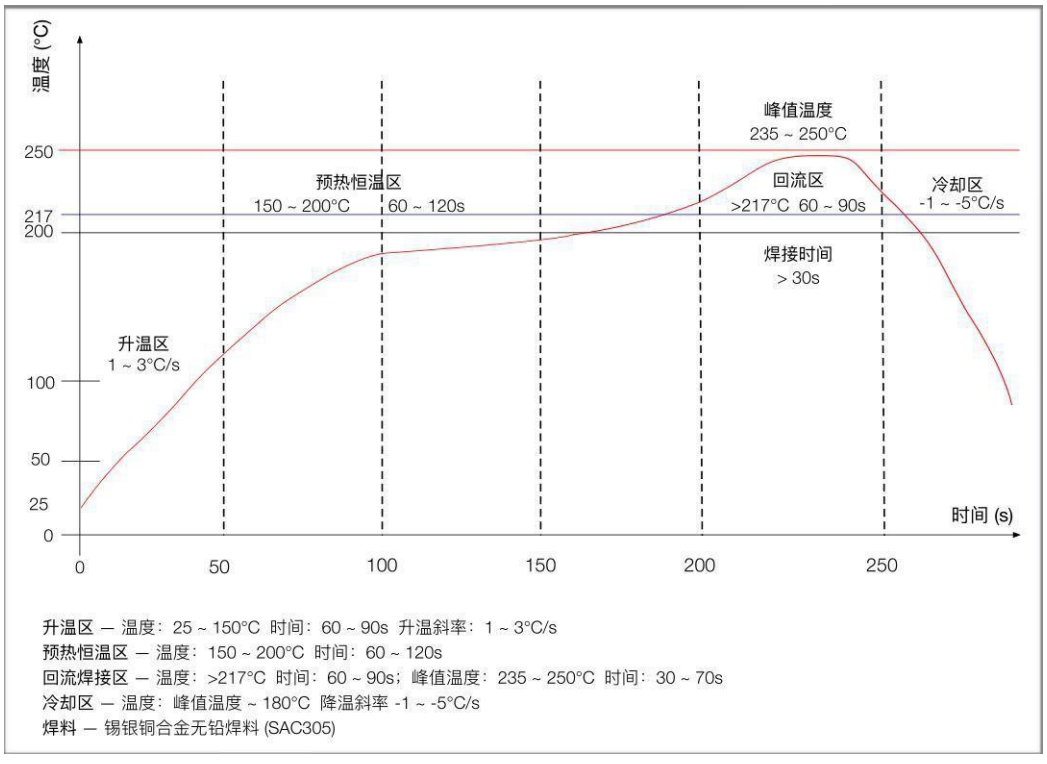




2) The placement of the module on the motherboard (refer to the following figure): 1, the recommended antenna part exceeds the edge of the motherboard; 2. The antenna part of the PCB is hollowed out;



8. Reflow curve diagram



推荐回流焊曲线图