



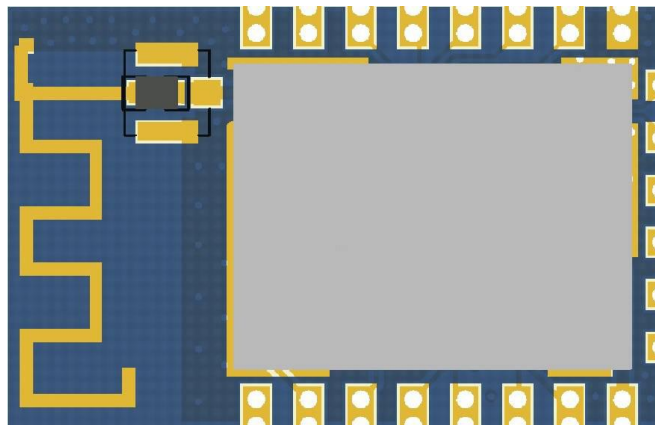
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**Shenzhen Hi-Link Electronic co.,Ltd**

**HLK-B10**

**Serial port Bluetooth transmission module**

**Datasheet**



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## 1. Brief Introduction

HLK-B10 is a single-mode ble5.0 Bluetooth transparent module developed and produced by Hailing electronics. It integrates Bluetooth radio frequency chip and a small number of peripheral devices. It is embedded with 32-bit MCU with low power consumption, 500kb flash memory, 64KB SRAM and rich peripheral resources.

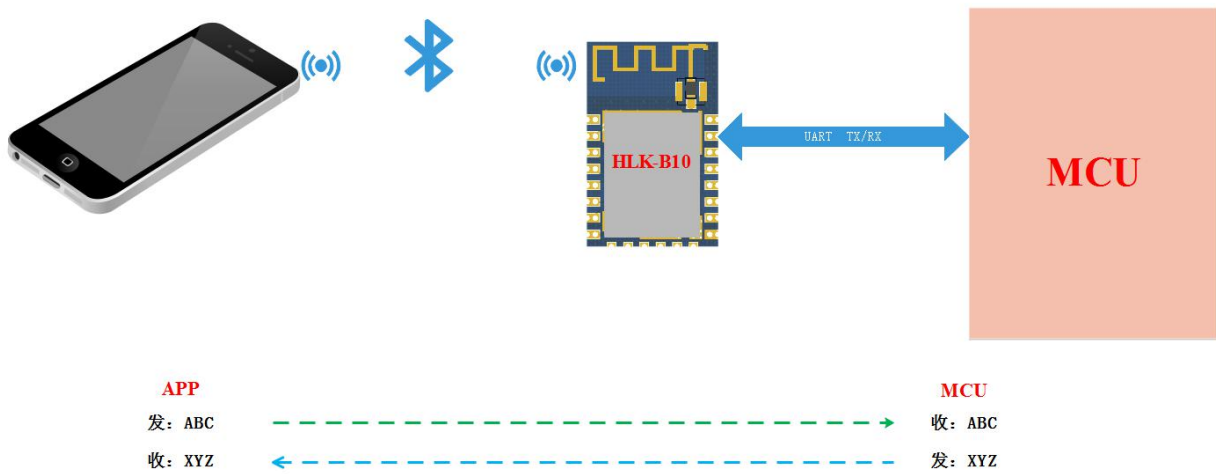
In accordance with Bluetooth 5.0 specification, it can be used as a Bluetooth slave device to be connected by various Bluetooth host devices

The module's serial port Bluetooth two-way transparent transmission function is very convenient to use. Users do not need to understand the complex Bluetooth protocol stack, just connect the customer's equipment or MCU's serial port to the module, and the module will automatically complete the two-way data forwarding between the serial port and Bluetooth, which is the bridge between the user's MCU serial port and Bluetooth equipment, so that users can quickly and simply use the serial port equipment. Realize Bluetooth wireless transmission function on.

It supports at command mode, and can query or set basic parameters of the module through serial at command, such as device name, serial port baud rate, etc.

Our company develops and provides rich testing tools and use documents, and provides app demo for testing, so that users can quickly start to be familiar with and apply this module. Our company can also provide flexible and rich customized development services according to the specific needs of customers.

The functional block diagram of HLK-B10 module is as follows:



## 2. Characteristics

- Support bluetooth 5.0
- Built in 32-bit MCU
- Main frequency supports 64mhz
- Built in 64KB RAM , 500KB FLASH
- Working voltage 2.5 ~ 3.6V
- Peripheral :
  - Up to 17 gpios
  - 2 x UART , Serial port baud rate up to 3.2 MHz
  - 5x PWM
  - Multiple 10bit ADC
  - High precision temperature sensor on chip

- On board PCB antenna or external antenna
- Working temperature : -40°C to 105°C

### 3. Main application fields

HLK-B10 provides a simple and flexible data channel, which can be widely used in a variety of devices that need Bluetooth wireless communication transmission.

Common application scenarios include but are not limited to the followings:

- **Smart home / household appliances**

Control smart sockets, smart lights, smart door locks, etc., through mobile phones

- **Internet of things**

- **Instruments and meters**

Connect wirelessly through Bluetooth and read instrument data, etc.

- **Industrial and agricultural control**

Connect various control or sensing devices wirelessly through Bluetooth, read and control, etc.

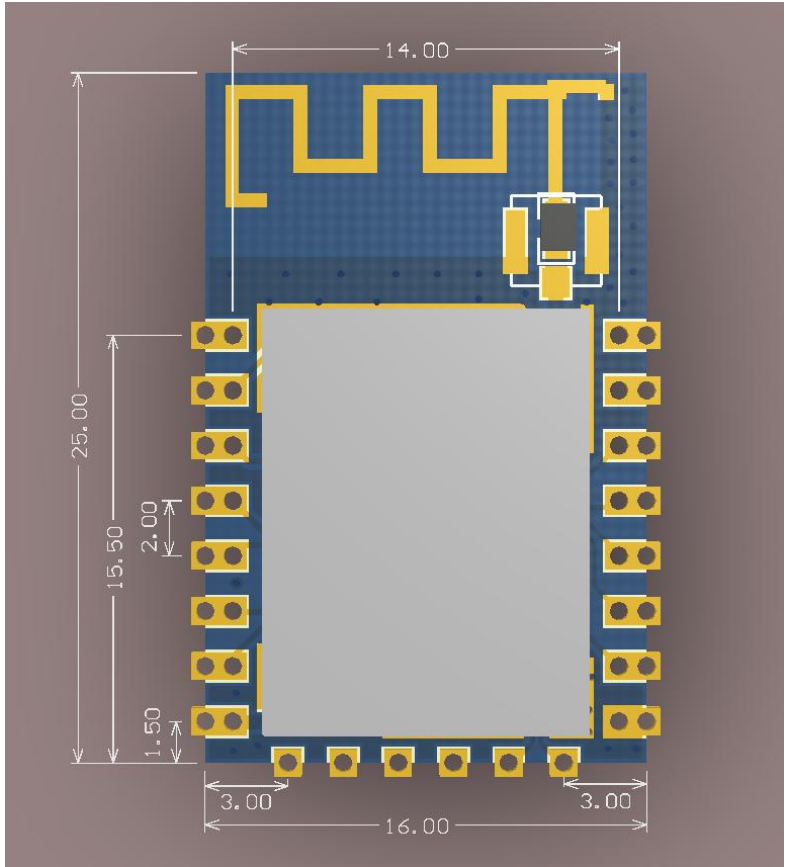
- **Medical health**

Health data monitoring, wireless care equipment, etc.

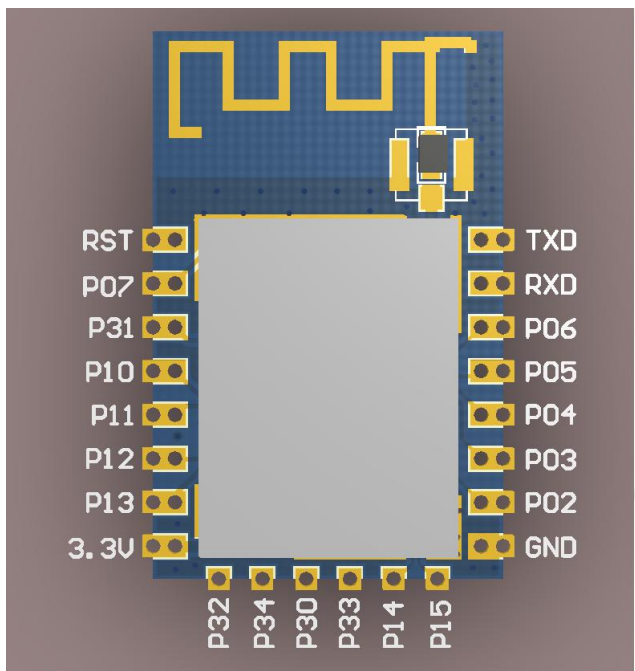
- **Automobile electronics**

- **Toy entertainment**

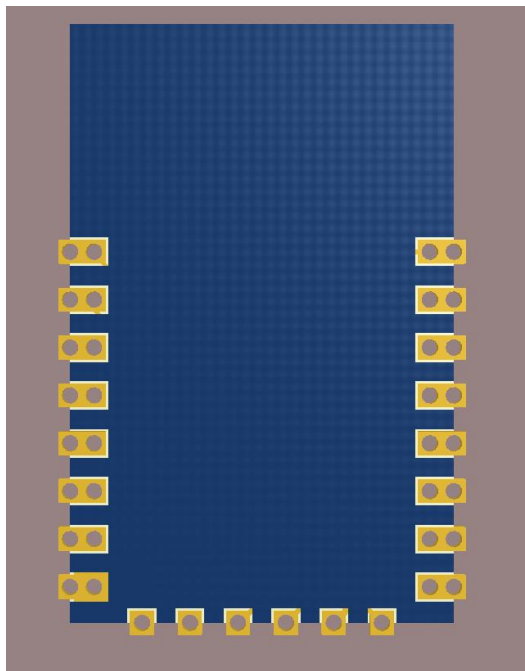
### 4. Dimension package



**Front view :**



**Rear view :**

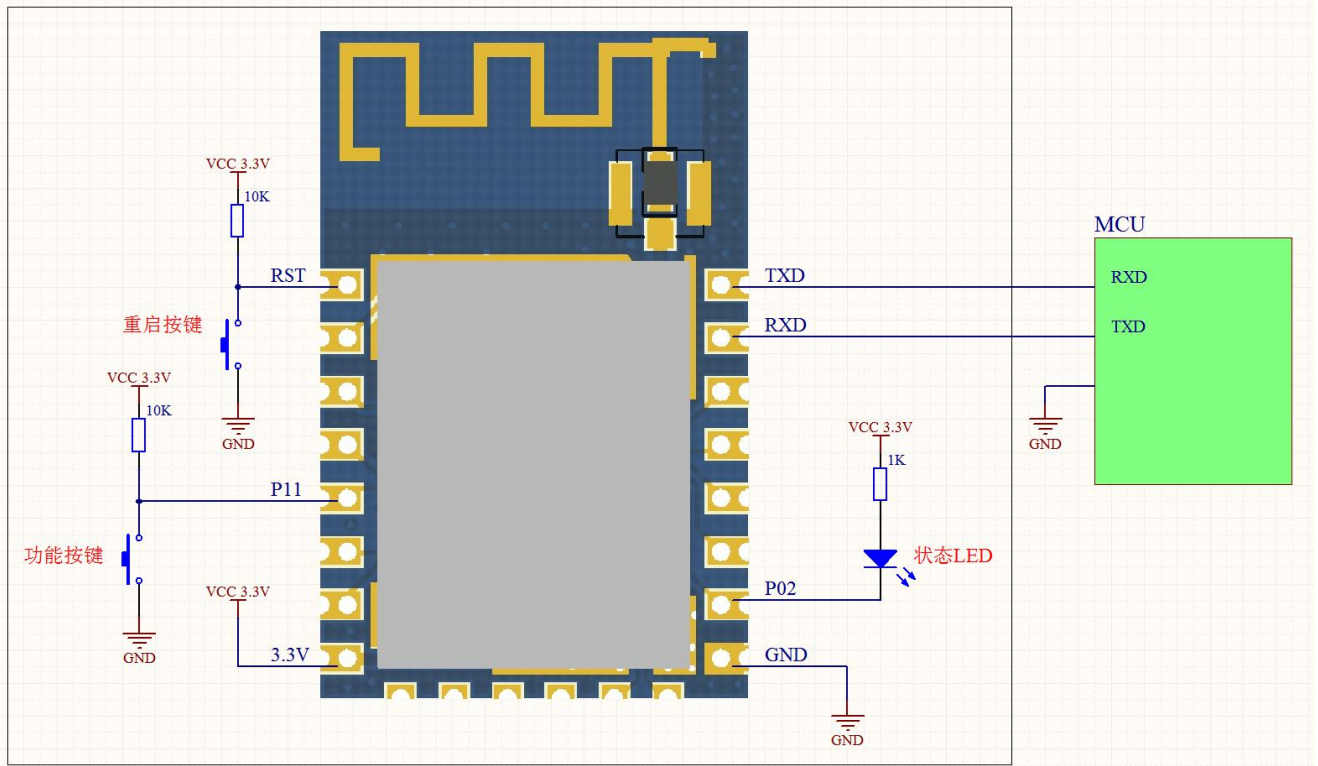


## 5. Pin definition

PIN	Symbol	IO type	Function
1	RST	AO	Module reset input pin, low level effective.
2	P07	I/O	GPIO7
3	P31	I/O	ADC/CH1
4	P10	I/O	PWM[0](20mA)
5	P11	I/O	Keystroke input pin, low level valid
6	P12	I/O	PWM[2]
7	P13	I/O	PWM[3]
8	3.3V	P	Power supply 3.3V
9	P32	ADC	Ch2
10	P34	ADC	Ch4
11	P30	ADC	Ch0
12	P33	ADC	Ch3
13	P14	I/O	PWM[4]
14	P15	I/O	PWM[5]
15	GND	P	Power reference
16	P02	I/O	Status indicates LED output, low level
17	P03	I/O	GPIO3
18	P04	I/O	GPIO4
19	P05	I/O	GPIO5
20	P06	I/O	GPIO6
21	RXD	I/O	UART Input
22	TXD	I/O	UART Output

**Note : P represents power supply pin, I / O represents I / O pin, Ao represents analog I / O pin**

## 6. Typical application circuit



## 7. Electrical parameters

parameters	description	Min value	Max value	Unit
Ts	Storage temperature temperature	-40	105	°C
VDD	Power supply	-2.5	3.6	V
Electrostatic discharge voltage (mannequin)	TAMB-25°C	-	2	KV

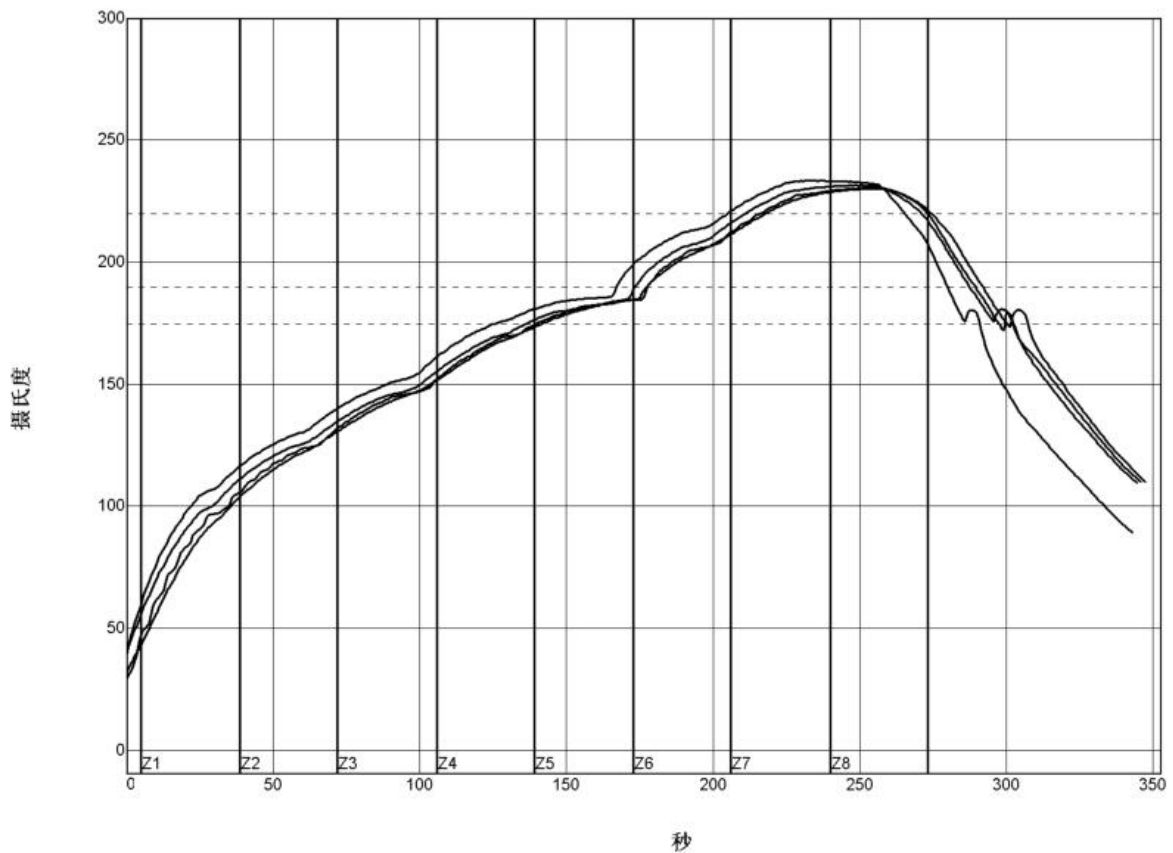


parameters	description	Min value	Max value	Unit
Electrostatic discharge voltage (machine model)	TAMB-25°C	-	0.5	KV

## 8. Recommended reflow temperature

When the module passes through the furnace for the second time, please strictly follow the temperature curve. **Too much temperature deviation of reflow soldering will cause module damage.**

Temperature setting (° C)									
Temperature region	1	2	3	4	5	6	7	8	
Upper region	125	135	155	185	195	225	240	230	
Lower region	125	135	155	185	195	225	240	230	
Conveyor belt speed: 70.0 cm / min									



PWI= 94%	恒温时间175至190C		回流时间 /Z20C		最高温度	
<TC2>	35.53	-82%	55.58	-72%	230.28	-94%
<TC3>	37.66	-74%	58.66	-57%	230.56	-89%
<TC4>	41.52	-62%	60.63	-47%	233.62	-28%
<TC5>	37.07	-76%	60.44	-48%	231.67	-67%
温差	5.99		5.05		3.34	

制程界限:

锡膏: System Default for Reflow			
统计数名称	最低界限	最高界限	单位
恒温时间175-190摄氏度	30	90	秒
回流以上时间 - 220摄氏度	50	90	秒
最高温度	230	240	度 摄氏度

## 9. Revised record

Date	Version	Modify content
2019.8.12	1.0	Initial version

## 10. Technical support and contact information



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