

## Introduction Of Hc-05 Master-slave Integrated Bluetooth

### Transparent Transmission Module:



The Bluetooth transparent transmission module can help you use serial port device to get rid of the cable and realize wireless serial communication within a range of 10 meters. You don't need to understand the complicated Bluetooth low-level protocol to use this module, you can enjoy the convenience of wireless communication in a few simple steps. There are only 4 AT commands which are test communication, name change, baud rate change, pairing password change on the Bluetooth transparent transmission module. The AT command must be set via the TXD and RXD signal pins, not through the Bluetooth channel. The device that sends AT commands can be various types of MCUs (such as 51, avr, pic, msp430, arm, etc.), or it

can be sent by a computer through a serial port (after the PC serial port is connected to MAX232 or USB to serial port).

**Pay attention:**

1. Neither the master module nor the slave module can switch the working mode, only a single working mode (master or slave)

2. The master module can only be paired with the HC06 slave module, not with another master module, Bluetooth-enabled computer or mobile phone and other Bluetooth devices either.

3. The slave module can be paired with a computer with Bluetooth or some mobile phones with Bluetooth, it can't be connected to another slave module. If there is no Bluetooth adapter in your computer, you could purchase our Bluetooth adapter.

(Website: <http://item.taobao.com/item.htm?id=13724276178&>)

4. The AT command of the master module lacks the AT + NAME instructions than the slave module. The rest of commands are same.

5. The interface of the master and the slave modules are both 3.3V level, which can be directly connected to various TTL levels with a serial port MCU (5V MCU, please connect a 1K resistor in series). The parameter can be set by MCU or USB Serial port, or computer serial port after adding MAX232 conversion circuit.

1. Key common sense:

TXD: The transmitting end, generally expressed as its own transmitting end. Normal communication must be connected to the RXD of another device.

RXD: the receiving end, generally expressed as its own receiving end, normal communication must be connected to the TXD of another device.

TXD is always connected to RXD of the device during normal communication!

Self-receiving and self-transmitting: RXD is connected to TXD of other devices during normal communication, so if you want to receive the data you send, that is, you receive the data you sent yourself. TXD is directly connected to RXD, which is used to test whether its own sending and receiving is normal, which is the fastest and easiest test method-Loopback test. When a problem occurs, firstly perform the test to determine whether the product is faulty.

## 2. Level logic:

TTL level: Usually the data is expressed in binary, stipulating that +5V is equivalent to logic "1", 0V is equivalent to logic "0", which is called TTL signal system and is positive logic

RS232 level: -12V to -3V, which is equivalent to logic "0", +3V to +12V logic level is equivalent to logic "1" and called negative logic.

## Product characteristics:

1. The core module uses the HC-05 slave module. The lead-out interfaces include VCC, GND, TXD, RXD, KEY pins, and the Bluetooth connection status lead-out pin (STATE). The output is low when disconnected, and output is high when connected.

2. led indicates the Bluetooth connection status, fast flashing means no Bluetooth connection, slow flashing means entering AT mode, double flashing means Bluetooth is connected and the port is open

3. The backplane is equipped with anti-reverse diode, with 3.3V LDO, input voltage 3.6 ~ 6V, current is about 30mA when unpaired, and about 10mA after pairing, input voltage is prohibited to exceed 7V!

4. The interface level is 3.3V, which can be directly connected to a variety of microcontrollers (51, AVR, PIC, ARM, MSP430, etc.), 5V microcontrollers can also be directly connected without MAX232 or MAX232!

5. The effective distance in the open field is 10 meters (power level is CLASS 2). It is also possible to exceed 10 meters, but the quality of the connection at this distance is not guaranteed.

6. When used as a full-duplex serial port after pairing, there is no need to know any Bluetooth protocol. It supports 8-bit data bits, 1-bit stop bit, and it can be set to communication format for parity which is also the most commonly used communication format. Other formats are not supported.

7. You can enter AT command mode by setting pin 34 to high to set parameters and query information.

8. small size (3.57cm \* 1.52cm), factory patch production ensures the quality of the patch. The transparent heat-shrinkable tube is set to be dust-proof and beautiful, and has a certain anti-static ability.

9. Can switch to master or slave mode and connect to designated device by AT command.

10. Support standard baud rate from 4800bps to 1382400bps

#### Product Application:

After pairing, it can be used as a serial port with a fixed baud rate, so as long as the serial port device with the communication format of "fixed baud rate, 8 data bits, no parity" can directly replace the original wired serial port without modifying program, such as data acquisition, smart car, serial printer, outdoor dot matrix bar screen control, etc.

Pairing with computer: suitable for communication between computer and device through Bluetooth serial port, the usage method is the same as serial port.

Pairing with a mobile phone: suitable for communication between a mobile phone and a device through a Bluetooth serial port. The use method is the same as the serial port.

Pairing with a Bluetooth host: suitable for two devices to communicate directly through a Bluetooth serial port, such as between a microcontroller and a microcontroller, a wired serial port and a microcontroller, etc., the use method is the same as the serial port

#### Flexible use:

Baud rate conversion: because the receiver and sender can choose their own baud rate, which can be used as a device for baud rate conversion when the amount of data is small

5. How to connect the Bluetooth module to the computer (valid from slave mode)

Take an example of pairing with a computer with Bluetooth:

Firstly power on the Bluetooth pass-through module. At this time, the LED

blinks, open "My bluetooth location", and click "Search for devices located in the valid range"

The system will search for Bluetooth devices. The default device name is "linvor" (if the name has been modified, it will be the modified name, such as "jiayuanelectron"). Double-click or right-click and select "Add Bluetooth Device". Enter the pairing password (default is "1234"). Click "Next step". If the password is correct, the connection between the computer and the transparent transmission module will be established. If the Bluetooth serial device has not been installed before, the system will automatically install the driver and generate a virtual serial port. Click on configuration, select the appropriate COM port.

Here, we can only choose com5 . This port is the serial port operated by the computer after connection. For example, we choose com5, when this port is opened, the LED of the Bluetooth module will change from fast flash to double flash. At this time, the Bluetooth module is used to be a computer's fixed baud rate serial port, but it is wireless.