

## HC-05 Bluetooth Module V2.0



HC-05 Bluetooth Module is one of the most popular bluetooth module used in embedded projects. It can be easily interfaced with Arduino Board, Raspberry Pi, Microcontrollers through serial UART interface. This is a Class 2 Bluetooth Module which can be configured in Master or Slave Mode.

HC-05 module Bluetooth SPP (Serial Port Protocol) module, designed for wireless serial connection setup. It has EDR (Enhanced Data Rate) of 3Mbps Modulation with complete 2.4GHz radio transceiver and baseband.

It uses CSR Bluecore 04-External single chip Bluetooth system with CMOS technology and with AFH(Adaptive Frequency Hopping Feature).

## Specifications

- Frequency : 2.4GHz ISM Band
- Bluetooth Protocol : Bluetooth Specification v2.0 + EDR
- Emission Power :  $\leq 4\text{dBm}$ , Class 2
- Modulation : GFSK (Gaussian Frequency Shift Keying)
- Operating Voltage : 3.3V
- Input Power Supply : 3.6V ~ 6V
- Security : Authentication & Encryption
- Working Temperature :  $-20^{\circ}\text{C} \sim +75^{\circ}\text{C}$
- Dimensions : 35.7mm x 15.2mm x 5.6mm

## Features

- 3.3V TTL Compatible
- Wide Input Voltage Range : 3.3V ~ 6V
- Supported Baud Rates : 9600, 19200, 38400, 57600, 115200, 230400, 460800
- Auto Connect to Last Device on power as default
- Supports Master and Slave Modes
- On-board Research Button

## Default Settings

- Baud Rate : 9600
- Data Bits : 8

## Hardware Features:

- Typical -80dBm sensitivity
- Up to +4dBm RF transmit power
- Low Power 1.8V Operation ,1.8 to 3.6V I/O
- PIO control
- UART interface with programmable baud rate
- **Master-Slave** 6-Pin JY MCU anti-reverse
- Integrated Antenna

## Software Features:

- Default Baud rate: 38400, Data bits:8, Stop bit:1, Parity : No parity, Data control, Supported baud rate:600,19200,38400,57600,115200,230400,460800.
- Given a rising pulse in PIO0, device will be disconnected.
- Status instruction port PIO1: low-disconnected, high-connected;

- PIO10 and PIO11 can be connected to red and blue led separately. When master and slave are paired, red and blue led blinks 1time/2s in interval, while disconnected only blue led blinks 2times/s.
- Auto-connect to the last device on power as default.
- Permit pairing device to connect as default.
- Auto-pairing PINCODE:"0000" as default
- Auto-reconnect in 30 min when disconnected as a result of beyond the range of connection.
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## Additional Information

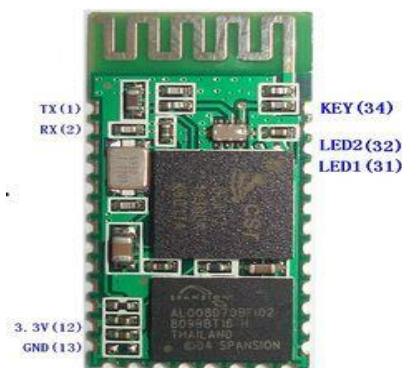
**Weight** 9 g

**Dimensions** 35.7 x 15.2 x 5.6 mm

I've just configured my new HC-05 Bluetooth module and i had a few issues tracking down the correct info to program it with AT commands.

Once i had worked out that i had a HC-05 it was fairly simple to get the board into AT mode. The method is:

1. Wire up VCC to 3.3-6v, GND to ground, TX on the module to RX on the FTDI and RX on the module to TX on the FTDI. Leave the board unpowered.
2. Use a jumper wire to apply VCC to KEY (34)



HC-05 Pin 34

3. Power on the module and you will see the led hold on for a bit then start a slow blink
4. You can disconnect VCC from KEY 34 and carry out your configuration
5. I connected with the Arduino Serial Monitor as i had it open at the time. I used 38400 and set BOTH NL and CR and away i went.

I tried all the commands in bold below. I set my module's name, pin, rate and reset it. After i set the baudrate it froze so i had to redo the AT command mode initialisation again and carry on. It did apply the setting though.