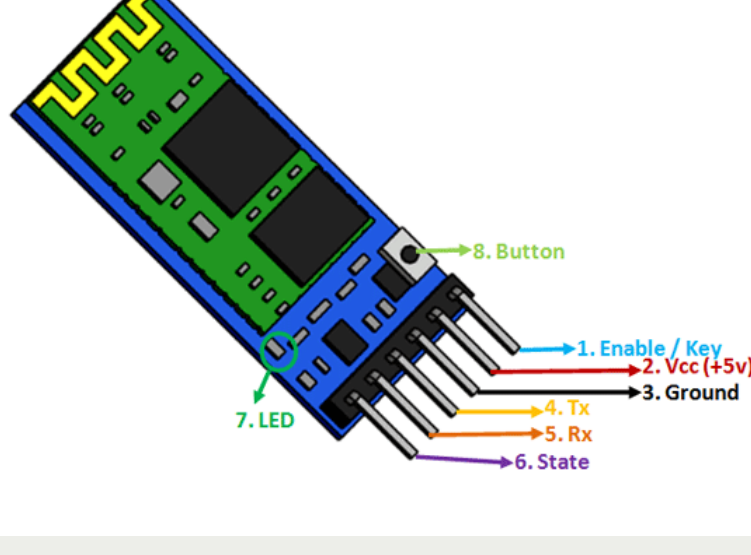
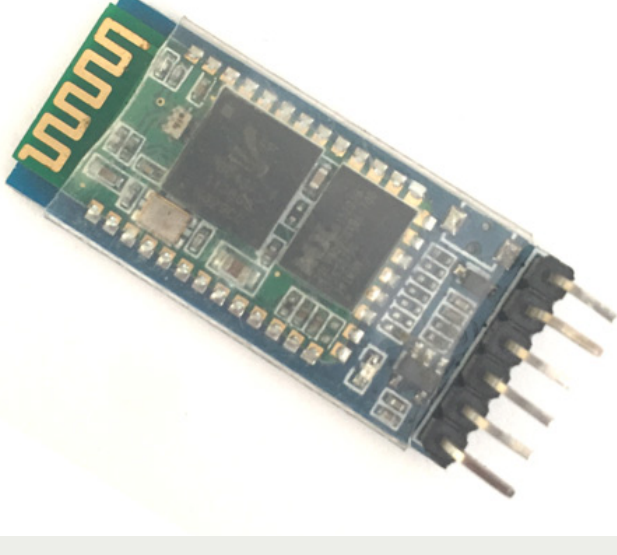


HC-05 - Bluetooth Module

16 July 2021 - 0 Comments



HC-05 Bluetooth Module

HC-05 Bluetooth Module Pin

The **HC-05** is a popular bluetooth module which can add two-way (full-duplex) wireless functionality to your projects.

HC-05 Pinout Configuration

Pin Number	Pin Name	Description
1	Enable / Key	This pin is used to toggle between Data Mode (set low) and AT command mode (set high). By default it is in Data mode
2	Vcc	Powers the module. Connect to +5V Supply voltage
3	Ground	Ground pin of module, connect to system ground.
4	TX Transmitter	Transmits Serial Data. Everything received via Bluetooth will be given out by this pin as serial data.
5	RX Receiver	Receive Serial Data. Every serial data given to this pin will be broadcasted via Bluetooth
6	State	The state pin is connected to on board LED, it can be used as a feedback to check if Bluetooth is working properly.
7	LED	Indicates the status of Module <ul style="list-style-type: none">Blink once in 2 sec: Module has entered Command ModeRepeated Blinking: Waiting for connection in Data ModeBlink twice in 1 sec: Connection successful in Data Mode
8	Button	Used to control the Key/Enable pin to toggle between Data and command Mode

HC-05 Default Settings

Default Bluetooth Name: "HC-05"

Default Password: 1234 or 0000

Default Communication: Slave

Default Mode: Data Mode

Data Mode Baud Rate: 9600, 8, N, 1

Command Mode Baud Rate: 38400, 8, N, 1

Default firmware: LINVOR

HC-05 Technical Specifications

- Serial Bluetooth module for [Arduino](#) and other microcontrollers
- Operating Voltage: 4V to 6V (Typically +5V)
- Operating Current: 30mA
- Range: <100m
- Works with Serial communication (USART) and TTL compatible
- Follows IEEE 802.15.1 standardized protocol
- Uses Frequency-Hopping Spread spectrum (FHSS)
- Can operate in Master, Slave or Master/Slave mode
- Can be easily interfaced with Laptop or Mobile phones with Bluetooth
- Supported baud rate: 9600,19200,38400,57600,115200,230400,460800.

HC-05 Equivalent Bluetooth Module

HC-02

Other Bluetooth Modules

HC-04, [HC-06](#), HM-11, ESP32, CSR8645

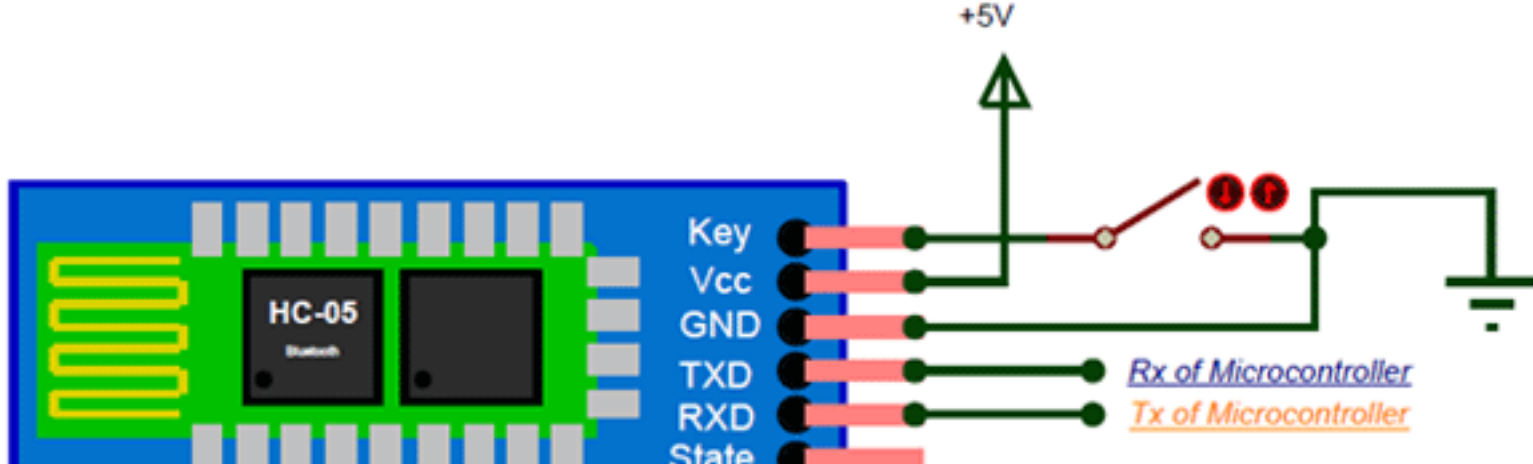
Where to use HC-05 Bluetooth module

The **HC-05** is a popular module which can add two-way (full-duplex) wireless functionality to your projects. You can use this module to communicate between two microcontrollers like Arduino or communicate with any device with Bluetooth functionality like a Phone or Laptop. There are many android applications that are already available which makes this process a lot easier. The module communicates with the help of USART at 9600 baud rate hence it is easy to interface with any microcontroller that supports USART. We can also configure the default values of the module by using the command mode. So if you looking for a Wireless module that could transfer data from your computer or mobile phone to microcontroller or vice versa then this module might be the right choice for you. However do not expect this module to transfer multimedia like photos or songs; you might have to look into the CSR8645 module for that.

How to Use the HC-05 Bluetooth module

The **HC-05** has two operating modes, one is the Data mode in which it can send and receive data from other Bluetooth devices and the other is the AT Command mode where the default device settings can be changed. We can operate the device in either of these two modes by using the key pin as explained in the pin description.

It is very easy to pair the HC-05 module with microcontrollers because it operates using the Serial Port Protocol (SPP). Simply power the module with +5V and connect the Rx pin of the module to the Tx of MCU and Tx pin of module to Rx of MCU as shown in the figure below

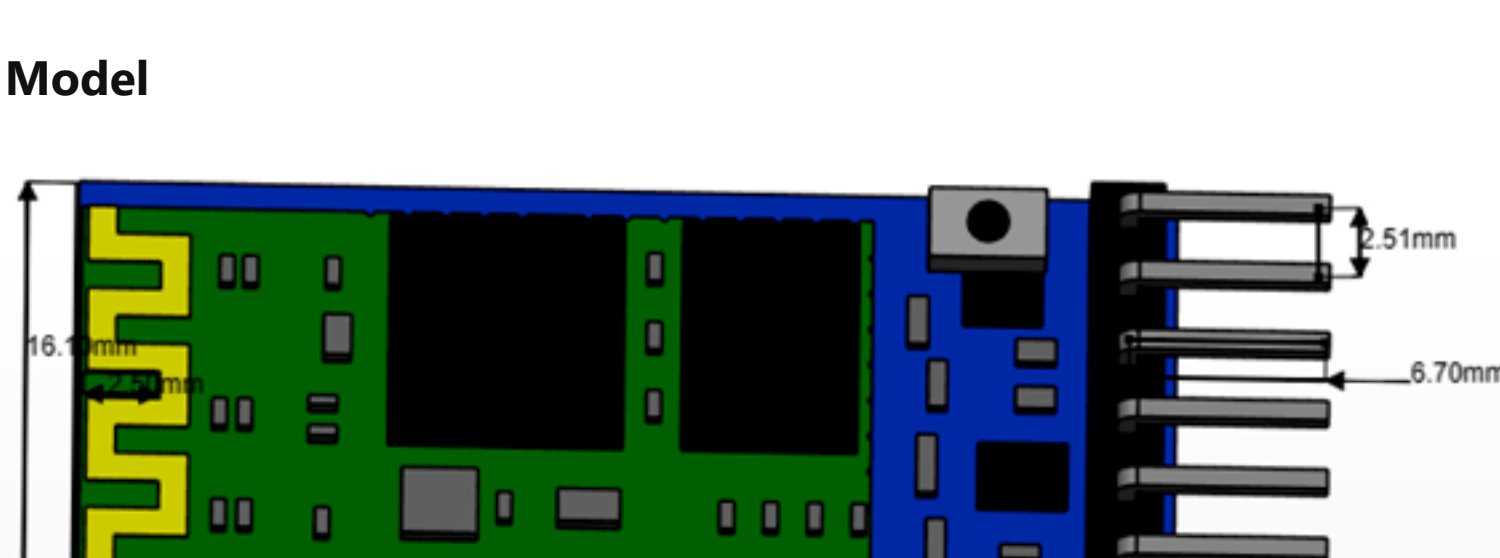


During power up the key pin can be grounded to enter into Command mode, if left free it will by default enter into the data mode. As soon as the module is powered you should be able to discover the Bluetooth device as "HC-05" then connect with it using the default password 1234 and start communicating with it. The name password and other default parameters can be changed by entering into the

Applications

- Wireless communication between two microcontrollers
- Communicate with Laptop, Desktops and mobile phones
- Data Logging application
- Consumer applications
- Wireless Robots
- Home Automation

2D Model



Component Datasheet

[HC-05 Bluetooth Module Datasheet](#)

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