BLUETOOTH HC05

INTRODUCTION

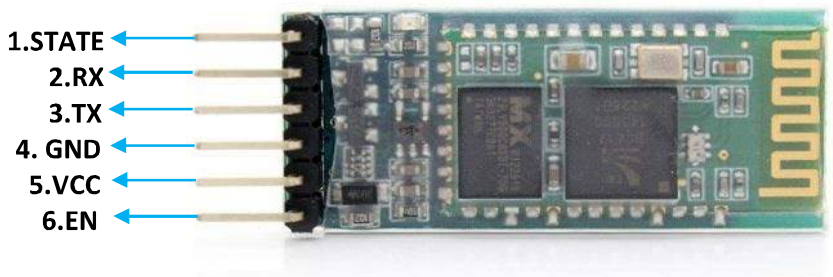
The HC05 Bluetooth Module can be used in a Master or Slave configuration, making it a great solution for wireless communication. You can use it simply for a serial port replacement to establish connection between MCU and GPS, PC to your embedded project. The HC05 Bluetooth Module has 6 pins Vcc, GND, TX, RX, Key, and LED. It comes preprogramed as a slave, so there is no need to connect the Key pin, unless you need it change it to Master Mode. The major difference between Master and Slave modes is that, in Slave mode the Bluetooth module cannot initiate a connection, it can however accept incoming connections.

After the connection is established the Bluetooth module can transmit and receive data regardless of the mode it is running in. If you are using a phone to connect to the Bluetooth module, you can simply use it in the Slave mode. The default data transmission rate is 9600kbps. The range for Bluetooth communication is usually 30m or less. The module has a factory set pin of "1234" which is used while pairing the module to a phone.

The HC-05 module can build a connection to other modules. E.g. a Robot being a master and connecting to slave Bluetooth module. Or in slave mode to make a wireless bridge to a notebook.

PIN CONFIGURATION

1. STATE: NC (No Connection).
2. RX : TX of Microcontroller.
3. TX : RX of Microcontroller.
4. GND : Ground.
5. VCC : +5V.
6. EN : NC (No Connection).



FEATURES

- Protocol: Bluetooth Specification v2.0+EDR
- Frequency: 2.4GHz ISM band
- Modulation: GFSK
- Emission power: ≤4dBm, Class 2
- Sensitivity: ≤84dBm at 0.1% BER
- Speed: Asynchronous: 2.1Mbps (Max) / 160 kbps,
- Synchronous: 1Mbps/1Mbps
- Security: Authentication and encryption
- Profiles: Bluetooth serial port profile (SPP)
- Power supply: +3.3VDC 50mA
- Working temperature: 20 ~ +75 Centigrade
- Range: Up to 10cm

ADVANTAGES:

- Good Range and High Data transfer speed.
- Compact Size.
- TTL Interface.
- It comes with integrated antenna.
- It operates at low power

APPLICATIONS:

- Computer and peripheral devices
- GPS receiver
- Industrial control
- Microcontroller unit projects
- Mouse, keyboard, joystick

SOME COMMONDS:

A FEW EXAMPLES:

- AT (AT Test command. Should respond with OK)
- AT+VERSION? (show the firmware version)
- AT+UART=9600,0,0 (Set baud rate to 9600, 1 stop bit, no parity)

BLUETOOTH MASTER MODE:

1. AT+RMAAD Clear any paired devices
2. AT+ROLE=1 Set mode to Master
3. AT+RESET After changing role, reset is required
4. AT+CMODE=0 Allow connection to any address
5. AT+INQM=0,5,5 Inquire mode - Standard, stop after 5 devices found or after 5 seconds
6. AT+PSWD=1234 Set PIN. Should be same as slave device
7. AT+INIT Start Serial Port Profile (SPP)
8. AT+INQ Start searching for devices

SLAVE MODE:

1. AT+ORGL Reset to defaults
2. AT+RMAAD Clear any paired devices
3. AT+ROLE=0 Set mode to SLAVE
4. AT+ADDR Display SLAVE address

- **For more details refer the given link below**
  http://arduino-ua.com/docs/DS_BluetoothHC05.pdf

DEVICE IMAGE: