

ARD 2 **Arduino Compatibles**

Controllers, Shields, Modules & Sensors

Arduino Bluetooth 4.0 Module HM-10 *ARD2-2048*

- **Communicate with computers, mobile phones, etc.**
- **Use AT commands to set various settings**
- **Based on TI CC2541 BLE SoC**
- **Master/slave unit in one module**

Description

This board is an HM-10 Bluetooth 4.0 master/slave module. It can use AT commands to set baud rate, pairing password & module name. It's capable of connecting to computers, other Bluetooth modules, mobile phones etc.

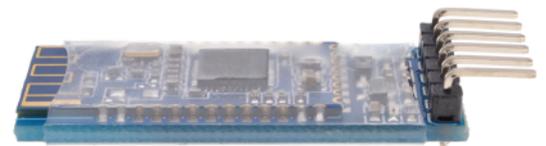
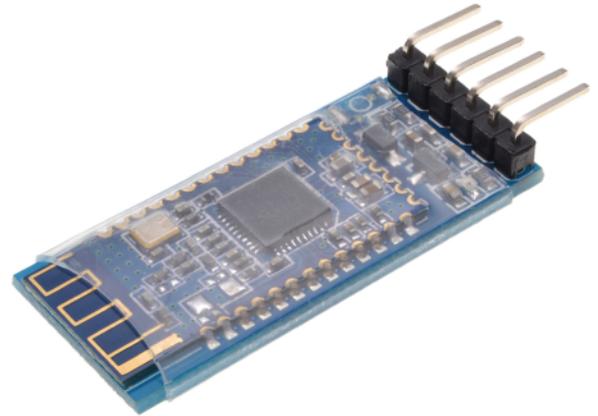
The module is based on the Texas Instruments CC2541 Bluetooth Low Energy (BLE) System on Chip (SoC). It's perfect for adding Bluetooth 4.0 connectivity to your next DIY project.

Specifications

| | |
|---------------------------------|--|
| Input Voltage | 3.6V - 6.0V |
| Default Baud Rate | 9600 |
| Default Pairing Password | 000000 |
| Dimensions | 16mm (W) x 37mm (L) x 6mm (H) (including pin header) |
| Weight | 4g |
| Operating Frequency | 2.4GHz ISM band |
| Modulation Method | GFSK (Gaussian Frequency Shift Keying) |
| Speed (Asynchronous) | 6 kbps |
| Speed (Synchronous) | 6 kbps |
| Security | Authentication and encryption |
| RF Power | -23dbm, -6dbm, 0dbm, 6dbm (can be modified using AT Command AT+POWE) |
| Operating Temperature | -5°C ~ +65°C |

Pinout

| Module | Arduino | Function |
|---------------|----------------|-------------------|
| VCC | 3.6V - 6.0V | Power Supply |
| GND | GND | Ground Connection |
| TXD | D7 | Serial Output |
| RXD | D8 | Serial Input |



Test Code

```
#include <SoftwareSerial.h>

SoftwareSerial mySerial(7, 8); // RX, TX
// Connect HM10      Arduino Uno
//   Pin 1/TXD      Pin 7
//   Pin 2/RXD      Pin 8

void setup() {
  Serial.begin(9600);
  // If the baudrate of the HM-10 module has been
  // updated, you may need to change 9600 to another
  // value. Once you have found the correct baudrate,
  // you can update it using AT+BAUDx command
  // e.g. AT+BAUD0 for 9600 baud
  mySerial.begin(9600);
}

void loop() {
  char c;
  if (Serial.available()) {
    c = Serial.read();
    mySerial.print(c);
  }
  if (mySerial.available()) {
    c = mySerial.read();
    Serial.print(c);
  }
}
```

Requirements:

- Arduino Bluetooth Module
- Android Smartphone/Tablet
- MSMBLE Android App

You can use MSMBLE Android app (available in Google Play) to test this example. It requires Android 4.4 and BLE support by the smartphone or tablet.

In this example we use an Arduino Uno and the console of the IDE to establish a communication between the Arduino and an Android mobile app.

The Arduino sketch connects the console serial port (Arduino pins 0 and 1) with the software serial port where we connect the BLE module (pins 7 and 8 in Arduino; pins TXD and RXD in HM-10 module).

Any data received by the HM-10 over BLE (from the mobile app) is passed to the Arduino Serial port and displayed on the IDE console. Similarly, any data input in the IDE console is passed through the software serial port to the HM-10 and is then transmitted over BLE to the Android app. If the HM10 is not connected to any central device (Android smartphone), the data input in the console is simply discarded.

Source: <http://blog.blecentral.com/2015/05/05/hm-10-peripheral/>