HM-10 BLE Bluetooth 4.0 Module

Bluetooth Low Energy 4.0 Communication Module



The HM-10 is a compact Bluetooth Low Energy 4.0 module designed to add wireless communication to microcontroller projects. It can exchange data with smartphones, computers and other BLE devices, making it useful for remote control, sensor monitoring and embedded communication projects.

TOP USES

- Wireless Control
- Sensor Monitoring
- Smartphone Communication
- IoT Projects

KEY FEATURES

- Bluetooth 4.0 BLE
- Low Power
- UART Interface
- Compact Size
- AT Command Support
- 3.3 V Logic

Technical Specifications

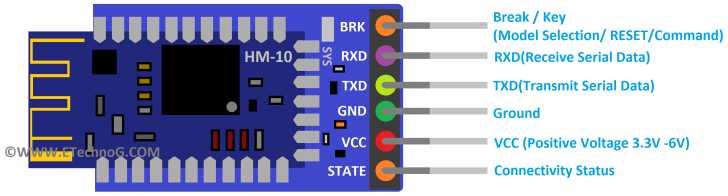
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Parameter	Value
Module	HM-10
Bluetooth	BLE 4.0
Interface	UART
Logic	3.3 V
Mode	BLE Peripheral
Communication	Serial
Control	AT Commands

Pinout

HM-10 BLE Bluetooth 4.0 Module

Figure.03: Bluetooth Module HM-10 Pinout Diagram



PIN FUNCTIONS

Pin	Function	Notes
VCC	Power	
GND	Ground	
TXD	UART TX	
RXD	UART RX	
STATE	Connection Status	
EN	Enable / Control	

WIRING NOTES

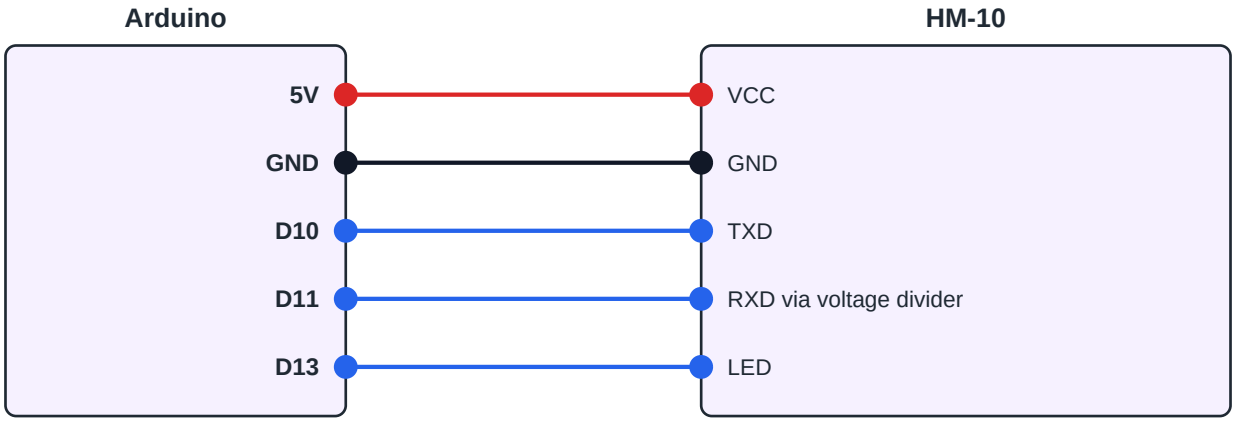
- Use 3.3 V logic for UART signals.
- Connect TX to the controller RX and RX to the controller TX.
- Check the module supply requirements before powering it.

Example Project

Arduino Wireless LED Control

Control an Arduino LED wirelessly from a smartphone using the HM-10 BLE module.

CIRCUIT



EXAMPLE CODE

```
#include <SoftwareSerial.h>

SoftwareSerial ble(10, 11);

void setup() {
  pinMode(13, OUTPUT);
  ble.begin(9600);
}

void loop() {
  if (ble.available()) {
    char c = ble.read();

    if (c == '1') {
      digitalWrite(13, HIGH);
      ble.println("LED ON");
    }

    if (c == '0') {
      digitalWrite(13, LOW);
      ble.println("LED OFF");
    }
  }
}
```

EXPECTED RESULT

- Send 1 to turn the LED ON.
- Send 0 to turn the LED OFF.
- The HM-10 provides wireless serial communication.

Useful Links

HM-10 BLE Bluetooth 4.0 Module

Resource	Link
HM-10 Product Page	https://techzoneegypt.com/ar/p/hm-10-ble-bluetooth-4-0-module
Arduino IDE	https://www.arduino.cc/en/software
Arduino Language Reference	https://www.arduino.cc/reference/en/

COMPATIBLE COMPONENTS

- Arduino Uno
- Arduino Mega
- Arduino Nano
- ESP32
- STM32

Need this component?

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https://techzoneegypt.com/ar/p/hm-10-ble-bluetooth-4-0-module