

ARDUINO BLUETOOTH MODULE HC06

The HC-06 is a popular Bluetooth module used with Arduino for wireless communication. It is a slave-only module, meaning it can only receive connections from a master device (like a smartphone or another Bluetooth module configured as a master). Here's a guide to help you set up and use the HC-06 with an Arduino:

Components Needed

1. Arduino (e.g., Arduino Uno)
 2. HC-06 Bluetooth Module
 3. Jumper wires
 4. Breadboard (optional)
 5. Resistors (for voltage division, if needed)
-

HC-06 Pinout

The HC-06 module typically has 4 pins:

1. **VCC** - Connect to 3.3V or 5V (depending on the module's voltage tolerance).
 2. **GND** - Connect to ground.
 3. **TXD** - Transmit Data (connects to the RX pin on the Arduino).
 4. **RXD** - Receive Data (connects to the TX pin on the Arduino).
-

Wiring the HC-06 to Arduino

1. **VCC** → 5V on Arduino (or 3.3V if the module supports it).
2. **GND** → GND on Arduino.
3. **TXD** → RX on Arduino (pin 0).
4. **RXD** → TX on Arduino (pin 1).

Note: The HC-06 operates at 3.3V logic levels, but it can typically tolerate 5V on the RX pin. If you're concerned about voltage levels, use a voltage divider (e.g.,

ARDUINO BLUETOOTH MODULE HC06

two resistors) to step down the 5V TX signal from the Arduino to 3.3V for the HC-06's RX pin.

Setting Up the Arduino Code

Here's a basic example to send and receive data via the HC-06:

```
cpp
Copy
void setup() {
  // Start serial communication with the HC-06 module
  Serial.begin(9600); // Default baud rate for HC-06 is 9600
  Serial.println("Arduino is ready!");
}

void loop() {
  // Check if data is available from the Bluetooth module
  if (Serial.available()) {
    char data = Serial.read(); // Read the incoming data
    Serial.print("Received: ");
    Serial.println(data);

    // Echo the data back to the sender
    Serial.print("Echo: ");
    Serial.println(data);
  }
}
```

Pairing with a Smartphone

1. Power up the Arduino with the HC-06 connected.
 2. On your smartphone, go to Bluetooth settings and search for devices.
 3. Look for a device named **HC-06** (default name) and pair with it. The default PIN is usually **1234** or **0000**.
 4. Use a Bluetooth terminal app (e.g., Serial Bluetooth Terminal for Android) to send and receive data.
-

Configuring the HC-06

ARDUINO BLUETOOTH MODULE HC06

You can change the HC-06's settings (e.g., baud rate, name, PIN) by sending AT commands. To do this:

1. Disconnect the Arduino's TX pin from the HC-06's RX pin.
2. Connect the HC-06's RX pin to the Arduino's TX pin (pin 1).
3. Upload the following code to send AT commands:

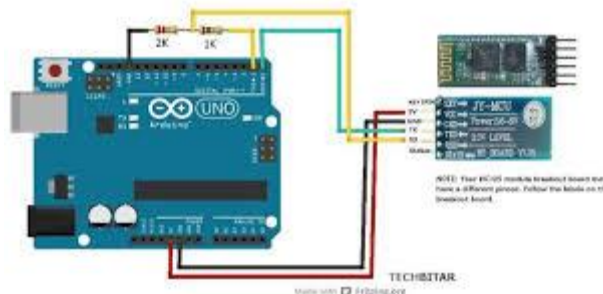
```
cpp
Copy
void setup() {
  Serial.begin(9600); // Default baud rate for HC-06
  Serial.println("Enter AT commands:");
}

void loop() {
  if (Serial.available()) {
    Serial.write(Serial.read());
  }
}
```

4. Open the Serial Monitor and send AT commands. For example:
 - **AT** - Check if the module is responding.
 - **AT+NAME<new_name>** - Change the module's name.
 - **AT+BAUD<1-9>** - Change the baud rate (e.g., 1 = 1200, 4 = 9600, 8 = 115200).
 - **AT+PIN<new_pin>** - Change the pairing PIN.

Troubleshooting

1. **No response from HC-06:** Double-check wiring and ensure the module is powered correctly.
2. **Baud rate mismatch:** Ensure the baud rate in your code matches the HC-06's configured baud rate.
3. **Voltage**
voltage module is due to 5V



issues: Use a divider if the not responding logic levels.