BN 2268248

Bluetooth wireless module HC-05 for Arduino™

GB Operating instructions

Latest operating instructions

Download the latest operating instructions at www.conrad.com/downloads or scan the QR code shown. Follow the instructions on the website.

Delivery contents

- Bluetooth® wireless module HC-05 for Arduino™

Description

The Bluetooth® wireless module HC-05 equips your Arduino™ with a Bluetooth® 2.0 interface.

This makes it possible to communicate with other Arduino™ boards and transmit telemetric data, or communicate with a Bluetooth® stick connected to your computer.

Bluetooth® is a registered trademark of Bluetooth SIG, Inc.

Product features

- Bluetooth® V2.0+EDR
- 3 MBit data throughput
- Serial interface (UART)
- CSR BC417143 chipset (BlueCore4External)
- 8 MBit flash
- SPP firmware
- XBee compatible connector
- Arduino™ compatible
- Can also be used for other microcontrollers

Requirements

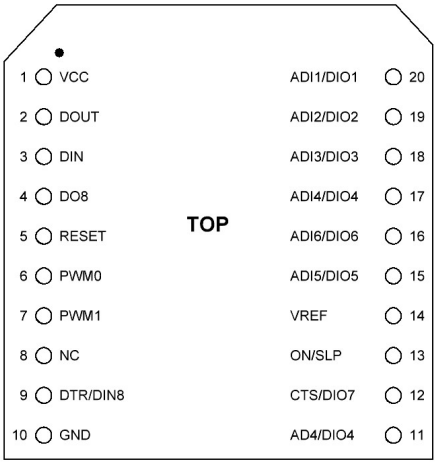
The following components are required to use the board:

- 1 Arduino™ UNO or similar
- 1 Bluetooth® module HC-05
- XBee adapter or jumper (jump wire) pin to socket (max. length 20 cm)
- Bluetooth® USB stick for your computer (for communication between Arduino™ and computer)

Hardware

The Bluetooth® module HC-05 features pin contacts with a spacing of 2 mm, which are used to establish the connection to the Arduino™.

Alternatively, you can use an XBee Shield. The Bluetooth® module can be plugged directly onto the XBee Shield.



XBEE

The following overview shows the required contacts for serial communication between the Arduino™ and the wireless module:

VCC	Power supply (3.3 V/DC)
GND	Ground connection for power supply
DOUT	TxD
DIN	RxD

Operation

Connect the module to an Arduino™ UNO as follows:

Bluetooth® module	Arduino™
VCC	Power supply (3.3 V/DC)
GND	Ground connection for power supply
DOUT	D0 (RX)
DIN	D1 (TX)

Test program

The following short test program configures the Bluetooth® module. The serial connection to the Bluetooth® module is established via UART software. This makes it possible to make debug outputs via the serial hardware UART.

```
#include <SoftwareSerial.h>

#define RxD 2
#define TxD 3

SoftwareSerial
blueToothSerial(RxD,TxD);

void setup()
{
    Serial.begin(9600);
    pinMode(RxD, INPUT);
    pinMode(TxD, OUTPUT);
    setupBlueToothConnection();
}

void loop()
{
    if(blueToothSerial.read() == ‚a‘)
    {
        blueToothSerial.println(„You
are connected to Bluetooth Bee“);
        //You can write you BT
communication logic here
    }
}

void setupBlueToothConnection()
{
    Serial.print(„Setting up Bluetooth
link“); /*For debugging, Comment this
line if not required*/
    blueToothSerial.begin(38400); /*Set
BluetoothBee BaudRate to default baud
rate 38400*/
    delay(1000);
    sendBlueToothCommand(„\r\
n+STWMOD=0\r\n“);
    sendBlueToothCommand(„\r\
n+STNA=modem\r\n“);
    sendBlueToothCommand(„\r\
n+STAUTO=0\r\n“);
    sendBlueToothCommand(„\r\
n+STOAUT=1\r\n“);
    sendBlueToothCommand(„\r\
n+STPIN=0000\r\n“);
    delay(2000); // This delay is
required.
    blueToothSerial.print(„\r\n+INQ=1\
r\n“);
    delay(2000); // This delay is
required.
    Serial.print(„Setup complete“);
}

void sendBlueToothCommand(char
command[])
{
    char a;
    blueToothSerial.print(command);
    Serial.print(command);
    delay(3000);
    while(blueToothSerial.available())
    {
        Serial.
print(char(blueToothSerial.read()));
    }
}
```

Note:

There are now several libraries on the Internet for the Bluetooth® module that you can use with this module. In the examples, you only need to adjust the connection pins.

Disposal

Electronic devices are recyclable waste and must not be placed in household waste. At the end of its service life, dispose of the product in accordance with the applicable regulatory guidelines.

You thus fulfil your statutory obligations and contribute to protection of the environment.

Declaration of Conformity (DOC)

Conrad Electronic SE, Klaus-Conrad-Straße 1, D-92240 Hirschau, hereby declares that this product conforms to Directive 2014/53/EU.

Click on the following link to read the full text of the EU declaration of conformity:

» www.conrad.com/downloads

Select a language by clicking on the corresponding flag symbol, and then enter the product order number in the search box. The EU Declaration of Conformity is available for download in PDF format.

Specifications

Operating voltage	3.3 V/DC
Standard	Bluetooth® V2.0+EDR (Class 2)
Transmission frequency	2.4 GHz, ISM band
Frequency range	2402 - 2480 MHz
Transmission power	max. 10 dbm
Wireless module	CSR BC417143 (HC-05)
Interface	I2C, UART, PCM, USB
Memory	8 MBit Flash
Protocol	Supports 802.11
Supported baud rates	9600, 19200, 38400, 57600, 115200, 230400, 46080
Standard baud rate	38400, data bits:8, Stop Bit:1,Parity:No parity
Standard pin code	1234
Firmware	SPP (Serial Port Protocol)
Number of modules in the network	max. 7 slaves
Re-establishment of connection	Automatic, after 30 minutes
Pin strip spacing (width)	2 mm (XBee compatible)
Dimensions (W x H x D)	26 x 8 x 29 mm
Weight	4 g