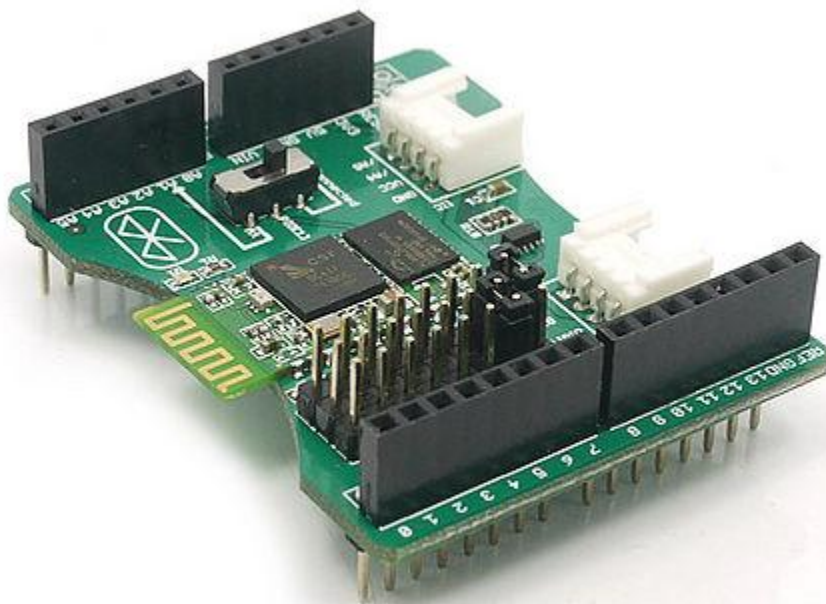


## Bluetooth Shield

### Introduction

The Bluetooth Shield integrates a Serial Bluetooth module. It can be easily used with Arduino/Seeedstudio for transparent wireless serial communication. You can choose two pins from Arduino D0 to D7 as Software Serial Ports to communicate with Bluetooth Shield (D0 and D1 is Hardware Serial Port). The shield also has two Grove connectors (one is Digital, the other is Analog) for you to install Grove modules.

Note: The Shield may not be compatible with some Bluetooth capable devices, like some HTC mobile phone (G7 with Android 2.33) and Apple devices with special profile on Bluetooth function.



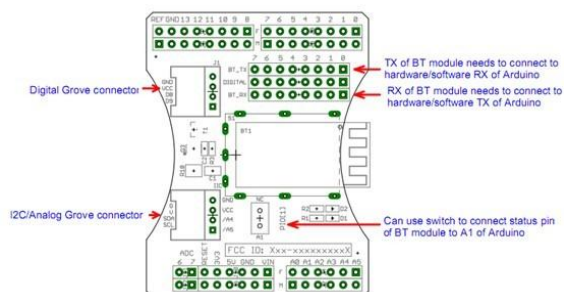
## Features:

- Seeeduino/Arduino compatible
- Up to 10m communication distance in house without obstacle
- UART interface (TTL) with programmable baud rate (SPP firmware installed)
- Default Baud rate: 38400, Data bits: 8, Stop bit: 1, Parity: No parity
- Default PINCODE: "0000"
- A full set of configuration commands
- On board PCB Antenna
- FCC Part 15 Certificated

## Specification

| Item                             | Min   | Typical | Max | Unit |
|----------------------------------|---|---------|-----|------|
| Voltage                          | 2.8   | 3.3     | 3.5 | VDC  |
| Current                          | 3   | /       | 100 | mA   |
| Communication Distance(in house) | /   | /       | 10  | M    |
| Protocol                         | Bluetooth V2.0 with SPP firmware                  |         |     | /    |
| Interface                        | Uart Serial Port(TTL)                             |         |     | /    |
| Supported Baudrate               | 9600, 19200, 38400, 57600, 115200, 230400, 460800 |         |     | Bps  |
| ESD contact discharge            | ±4  |         |     | KV   |
| ESD air discharge                | ±8  |         |     | /    |
| Dimension                        | 57.4x45.3x19.4                                    |         |     | Mm   |
| Net Weight                       | 10±2  |         |     | g    |

## Interface function

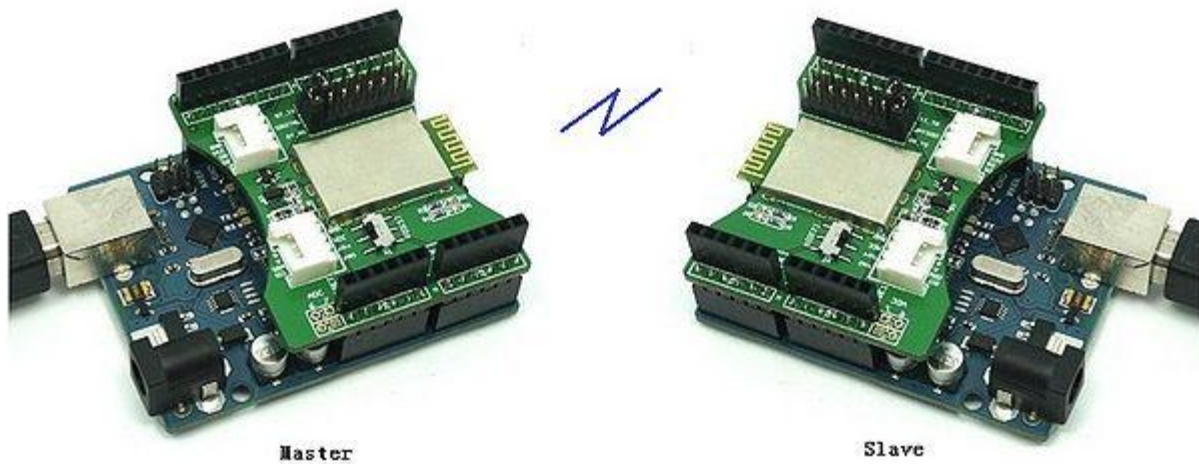


| Pad Type | Description   |
|----------|---|
| PIO1     | Status instruction port of Bluetooth module can be read by Arduino A1 port: low-disconnected, high-connected. |

|                      |  |
|----------------------|--|
| BT_RX                | UART Data input of Bluetooth module.                             |
| BT_TX                | UART Data output Bluetooth module.                               |
| Two Grove connectors | One is Digital (D8 and D9), the other is I2C/Analog (A4 and A5). |

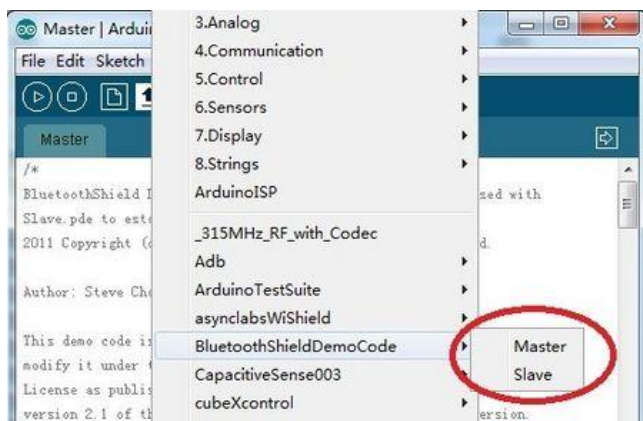
## Usage

### Communicating between two Bluetooth Shield

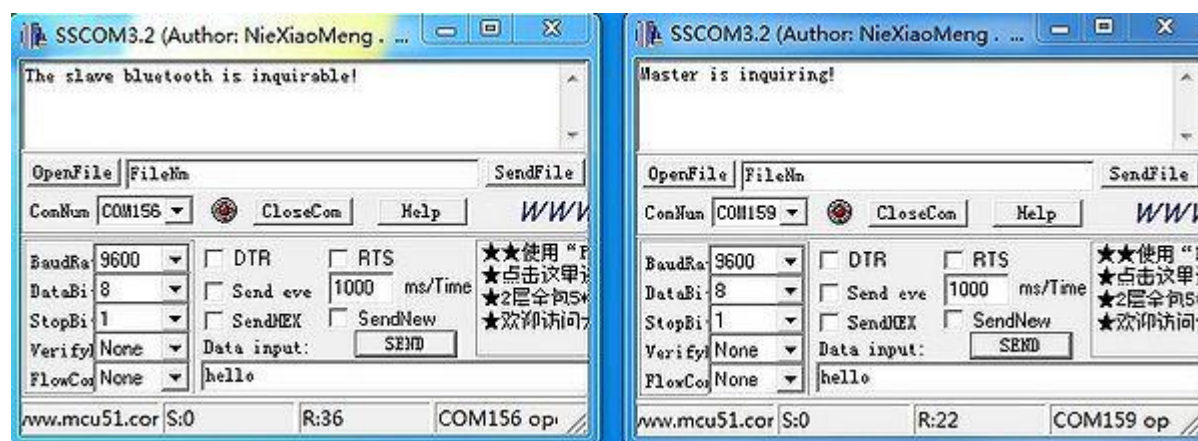


This demo will show you how to communicate between two Arduino/Seeeduino through Bluetooth Shield. For the special applications, you may need to write the code by yourself.

Download the Arduino Library for the shield, and unzip it into the path of Arduino Libraries. This library includes two sketch, one for Master and the other for Slave. Make sure Software Serial Library is included as well.



- Upload the sketch Master.pde and Slave.pde to two separate Arduino/Seeeduino.
- Open two Serial Terminals on your PC, with the setting of 9600, 8, 1, N. Open the two Com Port of Arduino/Seeeduino.



- Plug the Bluetooth Shields to the Master board and the Slave Board, and reset the two boards.

Then you will see the red and green LED on the board are flashing in interval indicting they are inquiring for each other. After a while only the green led is flashing one time per second indicating that they are connected. There's also some information printed on the two terminal as following.

```
Master is inquiring!
Connecting to slave:0,18,E4,C,68,5;SeeedBTSlave
Connected!
```

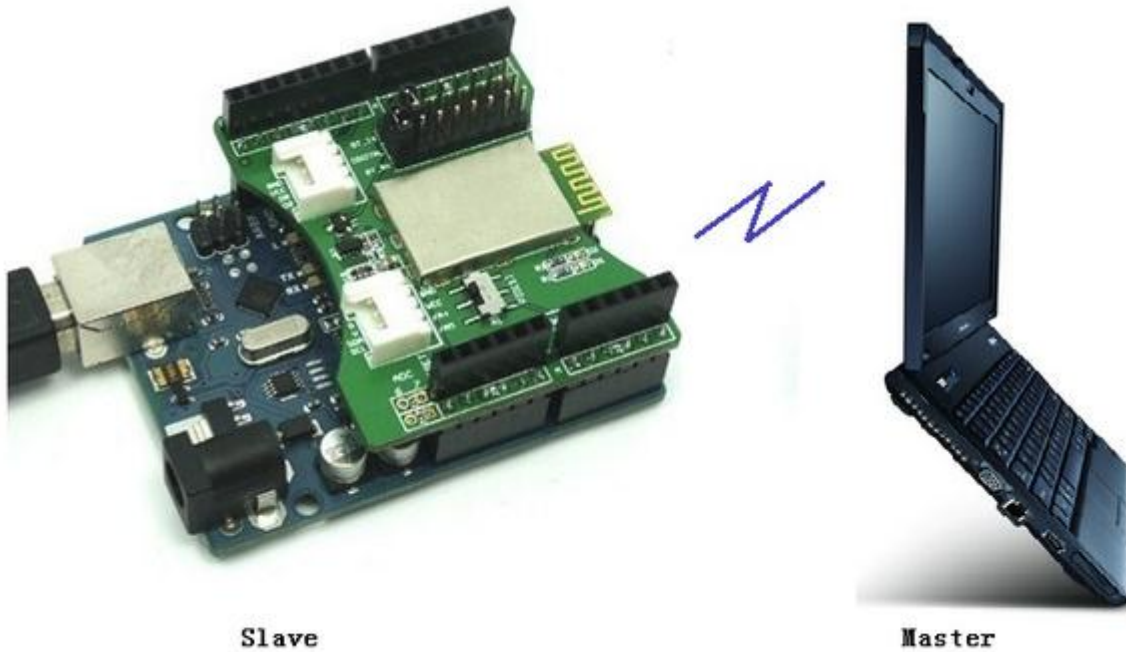
**Master**

```
The slave bluetooth is inquirable!
+BTSTATE:3
CONNECT:OK
+BTSTATE:4
Connected!
```

**Slave**

- The connection is successful now, and you can type any character on the Serial Terminal and send to each .

## Connecting Bluetooth Shield to PC under Windows 7



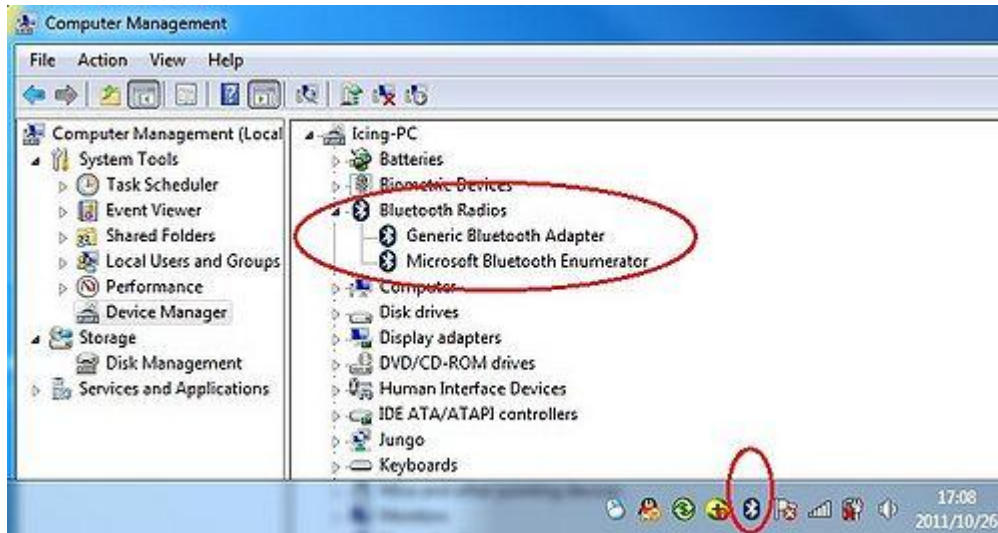
This demo will show you how to connect the Arduino/Seeeduino with Bluetooth Shield to PC. For the special applications, you may need to write the code by yourself.

- Download the Arduino Library for the shield, and unzip it into the path of Arduino Libraries. This library includes two sketch, one for Master and the other for Slave. Make sure Software Serial Library is included as well.
- Plug the Bluetooth Shield onto the Arduino/Seeeduino, and upload the Slave.pde to the board. Open the Serial Terminal with setting of 9600, 8, 1, N.

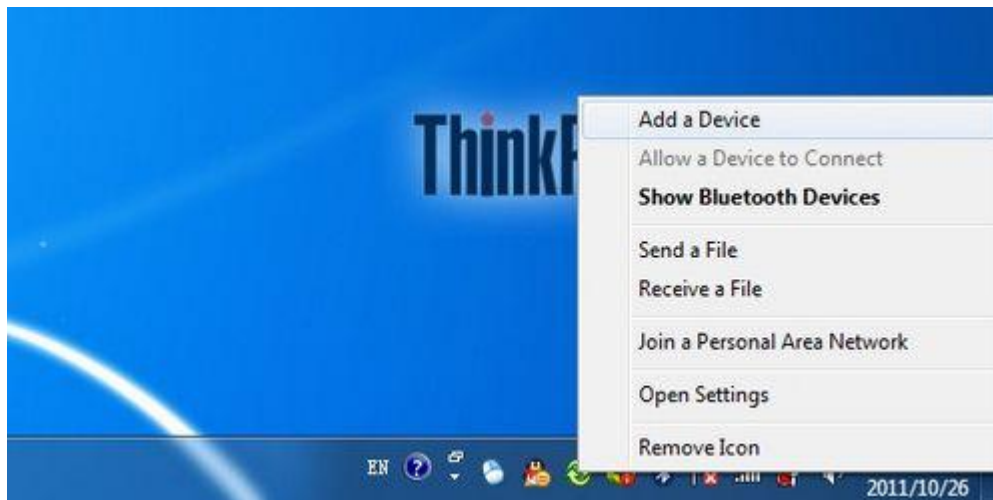




- Install the Microsoft Bluetooth default drivers(Skip this if your PC has integrated Bluetooth function).  
See the following picture after installed.



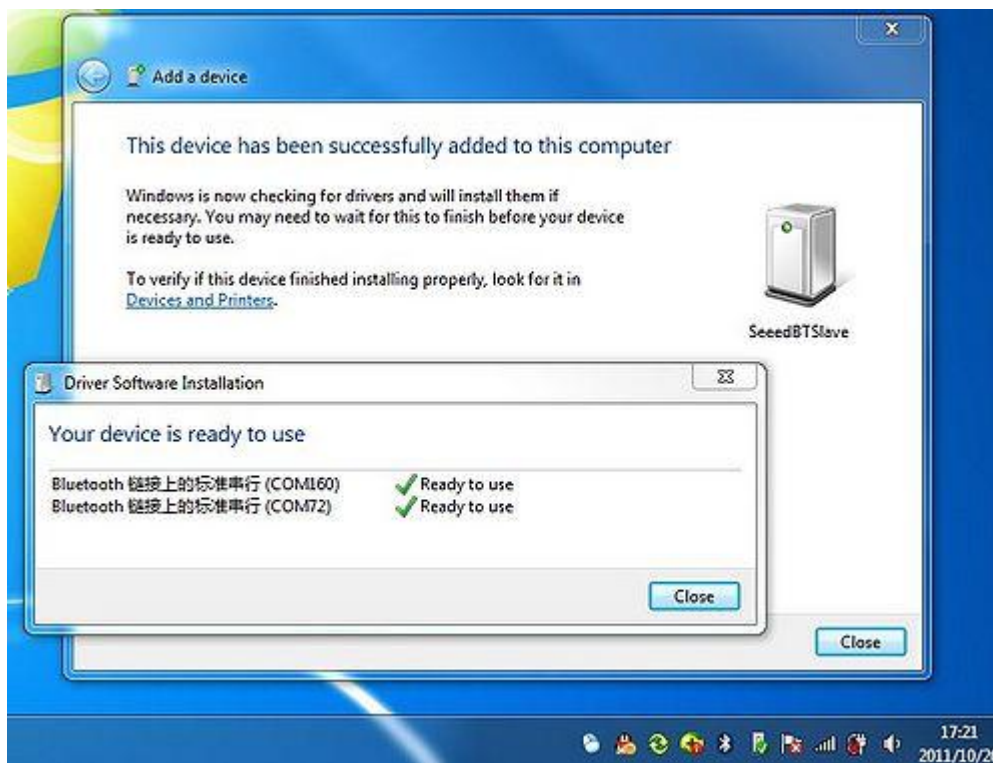
- Click Add a Device button.



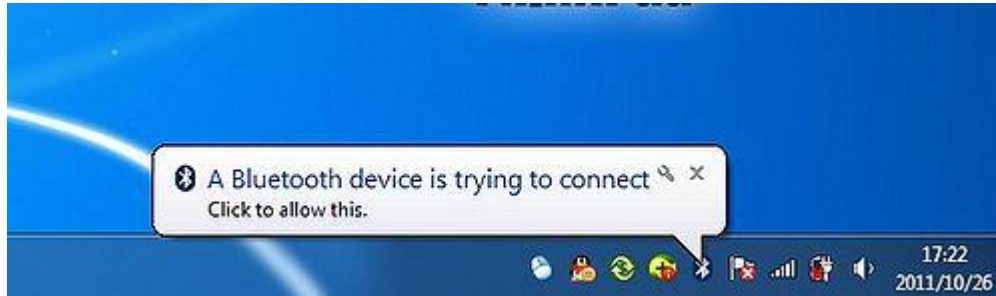
- Select the "SeeedBTSlave" device and click Next.



- When connecting is successful, we will get the following information.



- Open another Serial Terminal with the setting of 9600, 8, 1, N. Open the first COM(COM160) shown on the last picture. There will be showing the information as in the following picture.



- Click it, and enter 0000 in the shown diagram. Click Next to wait the establish.





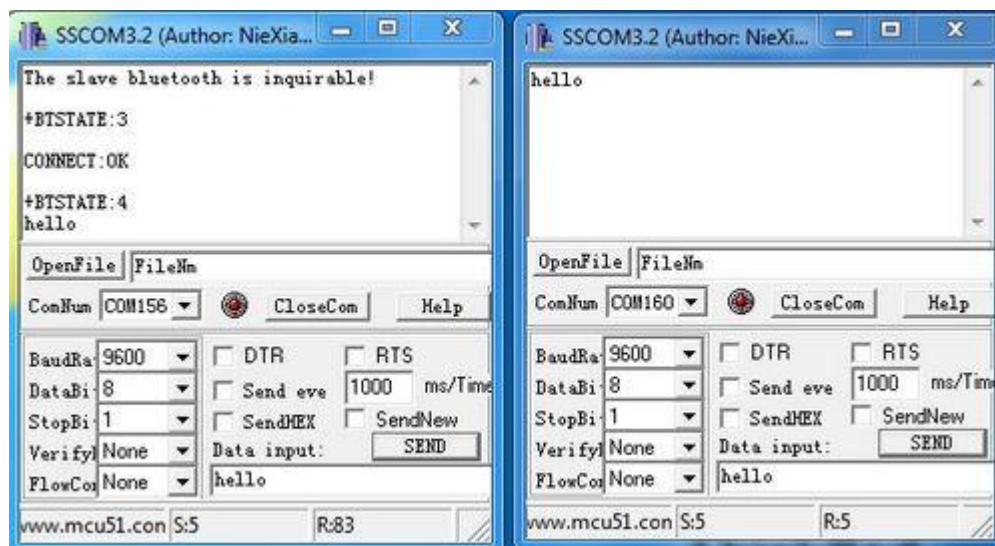
- The connection may be failed as shown in the following picture.



- Click Close, and open the COM160 again, try the previous step till it is successful as following.



- Now you can send any character between each other.

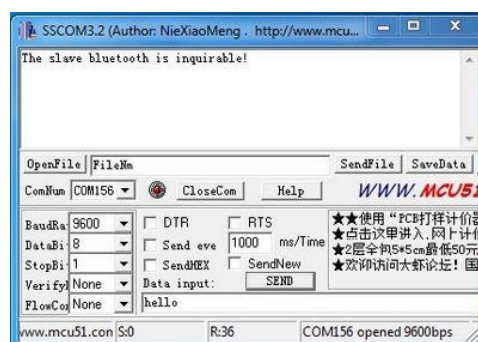


## Connecting Bluetooth Shield to Android Phone



This demo will show you how to connect Bluetooth Shield to Android Phone. Here we test on HTC Legend with Android 2.2. For the special applications, you may need to write the code by yourself.

- Download the Arduino Library for the shield, and unzip it into the path of Arduino Libraries. This library includes two sketch, one for Master and the other for Slave. Make sure Software Serial Library is included as well.
- Plug the Bluetooth Shield onto the Arduino/Seeeduino, and upload the Slave.pde to the board. Open the Serial Terminal with setting of 9600, 8, 1, N.



- Download an Serial Terminal for Android to the phone. Here we find an apk (Bluetooth SPP) in Chinese. Install the apk.



- Enable the bluetooth function and scan for devices. "SeeedBTSlave" will be shown as in the following picture.



- Select and pair with the "SeeedBTSlave", input the PIN code 0000, choose OK.



- Now let's open the Bluetooth SPP on Android. It illustrates Press [MENU] key to create Bluetooth-enabled device. Tip: set up before the first connection and the Bluetooth pairing phone.





- Press MENU key, and there will be a list of devices found shown the phone.



- Select "SeeedBTSlave", and wait a second, the connection will be established. And you can receive and send any character through this terminal.



