

BTM510/511 Development Kit – SPP

Quick Start Guide

v1.0

SERIAL PORT PROFILE (SPP) EXAMPLE

Introduction

This example will demonstrate using the BTM511 in serial port profile role to exchange serial data with a Windows XP computer equipped with a BRBLU03 USB Bluetooth Dongle.



Requirements

- BTM511 Development Board
- BRBLU030-010A0 USB Bluetooth Dongle
- USB Cable (A-B)
- Windows XP SP3 Computer
- Terminal Software such as Ezurio terminal
- FTDI Driver

The development board USB socket provides both power and serial communications with the module. We provide a terminal program called Ezurio terminal but you can use your preferred terminal program in its place. This example uses the Microsoft Bluetooth stack and software that comes with Windows XP SP and later. If your computer already has a different Bluetooth stack and software such as Widdcom or Toshiba installed on it you may need to disable or remove it before continuing. Alternative you can modify the computer aspect of the procedure below to match your existing stack and use the computers built in Bluetooth instead of the BRBLU0300-010A0.

Module Setup

- Install the FTDI VCP drivers if not already installed.
- Install your preferred terminal program if not already installed, we recommend using Ezurio terminal.
- Connect the USB cable to the computer and development board, ensuring the switch on the development board is set to USB. Windows should find and install the development board as new hardware.
- Identify the virtual com port used by the development board using device manager on a Windows computer.
- Open your terminal program and select the virtual com port (9600 8N1) identified in step 4.
- Check you can communicate by sending AT and then return, you should see OK.
- Send the commands as in [Figure 1](#) to configure the BTM511.

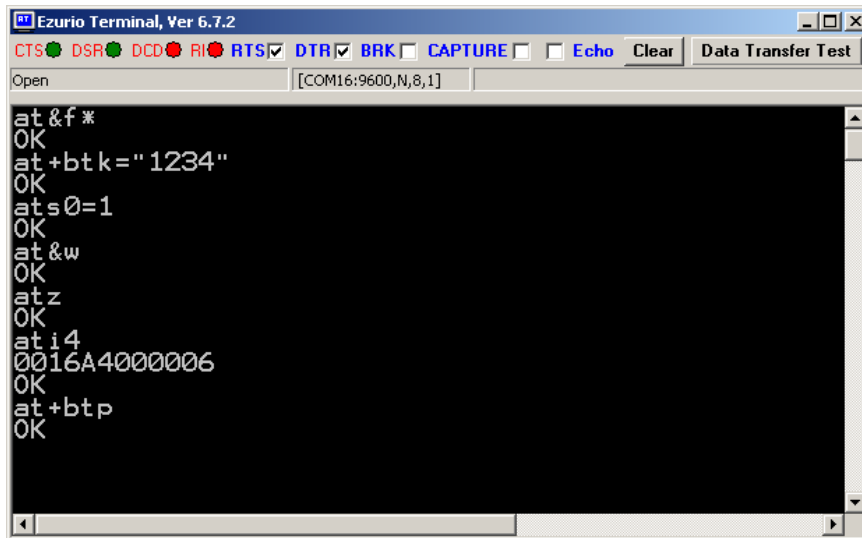


Figure 1: Module Setup

Please refer to the user manual for detailed explanations of the commands listed below. Note that if you power cycle the BTM511 then the “at+btp” will need to be sent again. All other settings are stored in non-volatile memory. Commands are shown in lower case, responses from the BTM511 in upper case.

Computer Setup

Plug the BRBLU into your computer. Windows XP will automatically detect the device and install the required drivers.

Make sure you have windows XP service pack 2 or later. Please refer to Microsoft knowledge base article 883259 for more information <http://support.microsoft.com/kb/883259>.

No driver downloads are required.

Once installed check in Windows device manager which should look as follows, note the presence of the Microsoft Bluetooth Enumerator and TDK Bluetooth USB Adaptor indicating a successful installation.

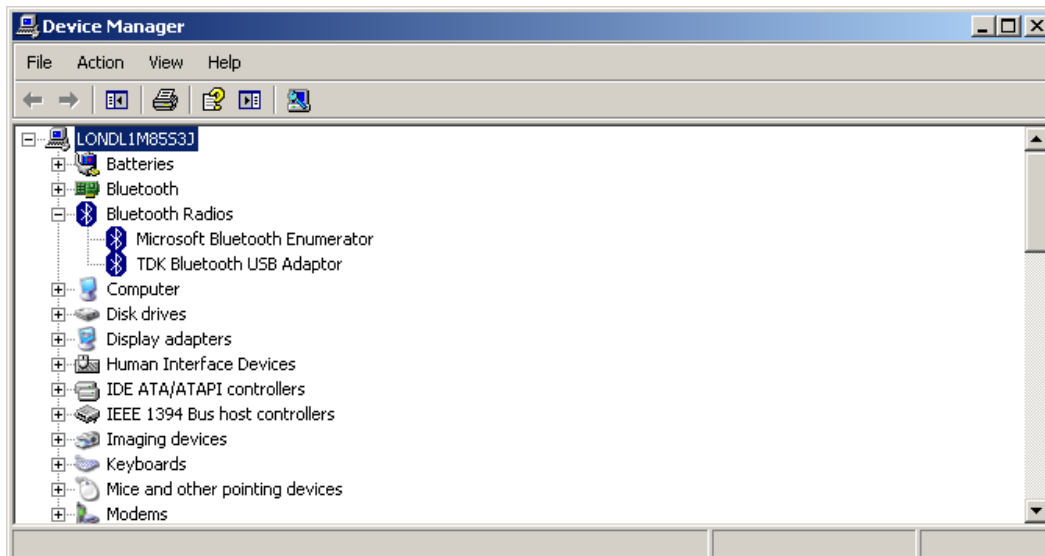


Figure 2: Bluetooth devices in Windows device manager

Discovery and pairing

The BTM511 is now ready to be discovered by your computer. Right click on the Bluetooth icon in the tool tray in the bottom right of the screen and select add a Bluetooth Device.

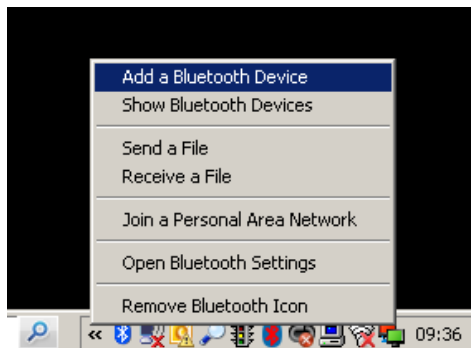


Figure 3: Bluetooth tray icon

The BTM511 should now appear, in this case as Laird BTM 000006, refer to the ati4 command from the module setup in case you cannot identify the correct device. Select the device and continue to the pairing screen and choose the “Let me choose my own passkey” option, refer to the at+btk=“1234” command from the module setup.

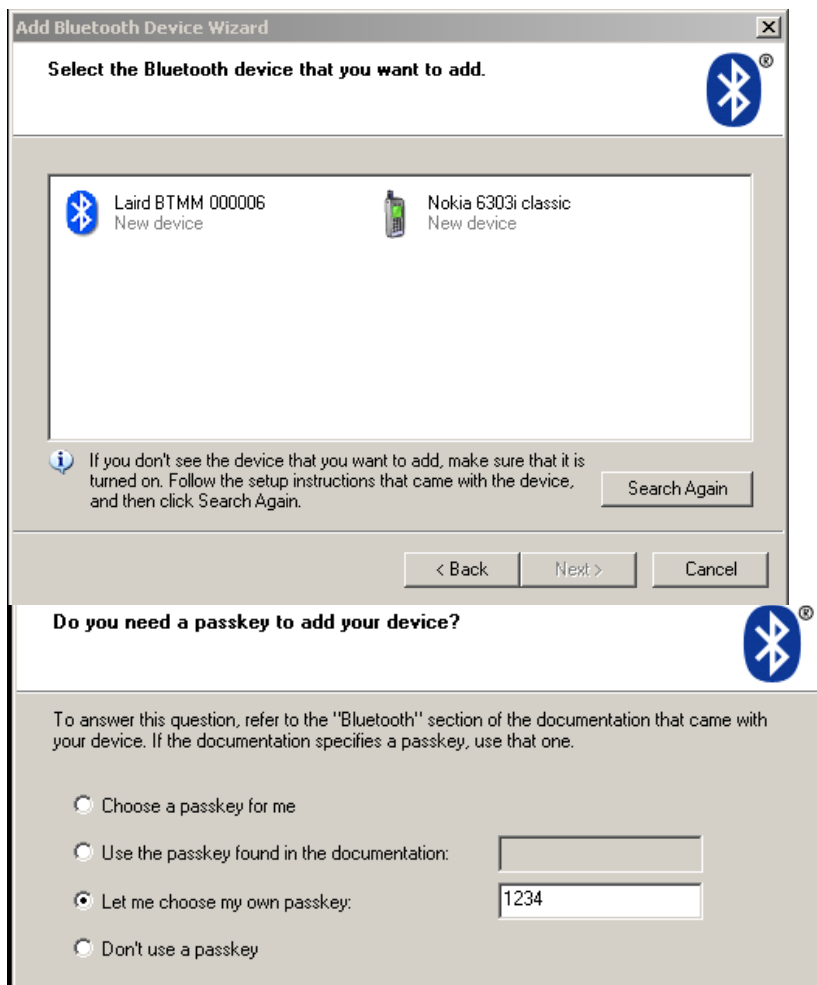


Figure 4: Adding a Bluetooth device

A successful pairing is indicated by a “PAIR 0 <remote device address>” message in the terminal program connected to the module. Windows will now display the COM ports assigned for use with the BTM511.

```

Ezurio Terminal, Ver 6.7.2
CTS DSR DCD RI RTS DTR BRK CAPTURE Echo Clear Data Transfer Test
Open [COM16:9600,N,8,1]
at&f*
OK
at+bt+k="1234"
OK
ats0=1
OK
at&w
OK
atz
OK
ati4
0016A4000006
OK
at+bt+p
OK
PAIR 0 008098EB9852 00
    
```



Connecting

To connect to the BTM511 from the PC open a second instance of Ezurio terminal using the outgoing computer COM port noted in the previous step. In the example below the left hand Ezurio Terminal is connected to the module and the right hand Ezurio Terminal is connected to Com 18 on the PC. As soon as the second Ezurio terminal is opened the connection will be made and you should see a “RING” message followed by a “CONNECT” message from the module. The 12 characters following the “RING” and “CONNECT” messages is the Bluetooth address of the remote device. The 4 characters following that indicate the UUID, where “1101” is serial port profile. The “<” indicates an incoming connection.

A transparent data connection is now present, any text entered into one Ezurio Terminal will appear in the other having been transmitted over the Bluetooth link between the BTM511 module. Note the status of the DCD during a connection.



Figure 5: Transparent data connection

The connection can be dropped by typing “^^^” into the module terminal window (left), which appears in the computer terminal window but is interpreted as a command to enter local command mode. Once in local command mode “OK” is displayed and the command “ath” can be sent to drop the connection at which point a “NO CARRIER 1101” will be displayed.

Resources

FTDI Driver: <http://www.ftdichip.com/Drivers/VCP.htm>

Ezurio terminal: (Software Downloads tab of [BTM51x product page](#))

Support: <http://laird-ews-support.desk.com>

BTM511 User Manual: (Documentation tab of [BTM51x product page](#))

Microsoft Windows XP Bluetooth <http://support.microsoft.com/kb/883259> .

REVISION HISTORY

Revision	Date	Description	Approved By
1.0	20 June 2013	Initial Release	Jonathan Kaye