

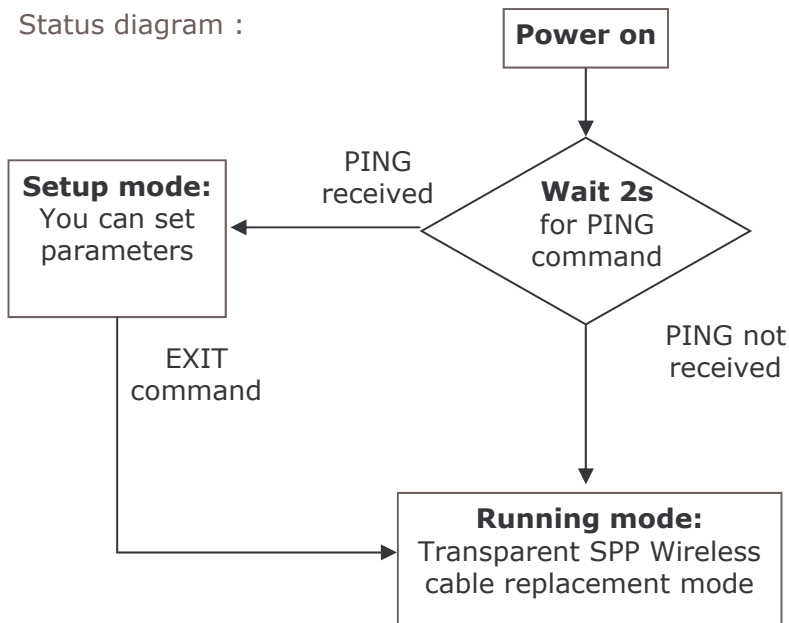
Introduction

EikonAT SPP is our Serial port profile firmware fully configurable by AT commands at startup.

You can setup module's Bluetooth parameters simply connecting the device to a PC serial port and then you can choose to use CLI (command line interface) or RS232BT configuration utility (designed for Windows).

In embedded systems the external microcontroller can setup the module by commands on Serial port.

Status diagram :



Facts

Bluetooth parameters :

- Role : Master or Slave
- Name : you can set the name that you'd like to see during discovery phase
- Pincode : settable security pincode (works even without it, but strongly suggested to be used for compatibility)

Serial port parameters :

- Baudrate from 1200 to 230400
- Stop bits :1 or 2
- Parity : Even, Odd or None
- Wireless PTT signal transfer
- Hardware flowcontrol by default (if not used please short circuit the RTS/CTS hardware signals)

Benefits

- Add Bluetooth Serial port
- No software development needed
- No external host controller needed
- Real Plug and Play

Applications

- Rs232 embedded devices
- Automotive devices
- GPS
- RFID
- Industrial automation
- Telemetry

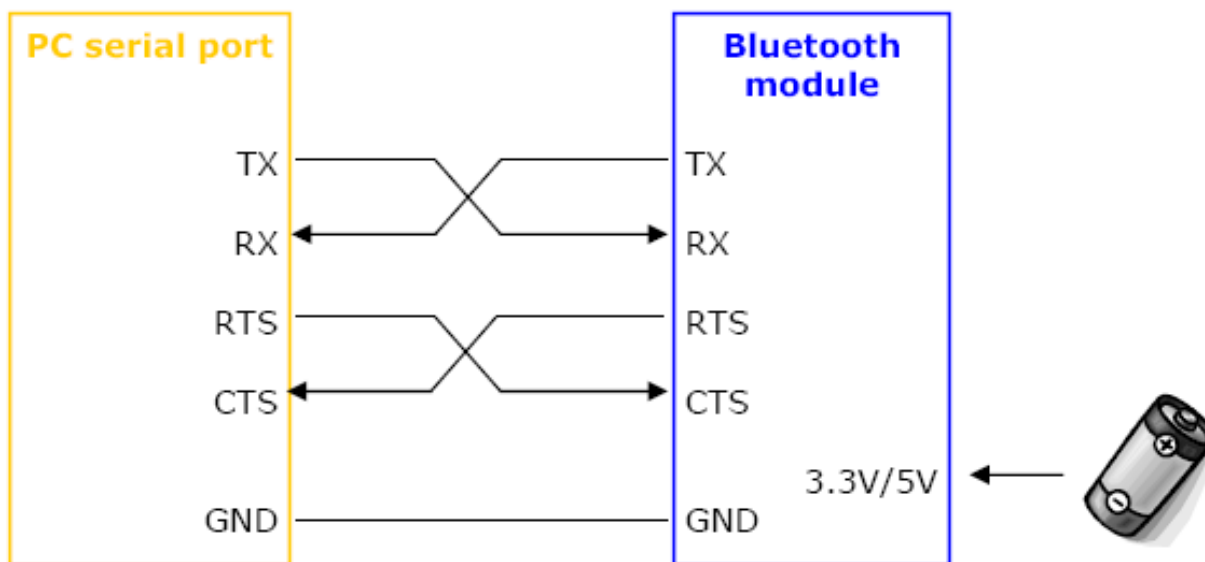
Features

- Serial Port Profile
- Bluetooth 1.2 standard
- Compatible with :
 - Bluesmall SMT
 - Bluemore Dongles
- Unified firmware for Class1 and Class2
- Parameter settings by :
 - RS232-SETUP on PC
 - AT commands
- Easy to use in embedded systems
- Real Wireless RS232 Cable replacement

Required connections

The following picture explains required connection between Bluetooth module and PC/microprocessor serial port (RS232_RX,RS232_TX, RS232_RTS₍₁₎, RS232_CTS₍₁₎ and GND pins).

Of course, module needs its own power supply too.



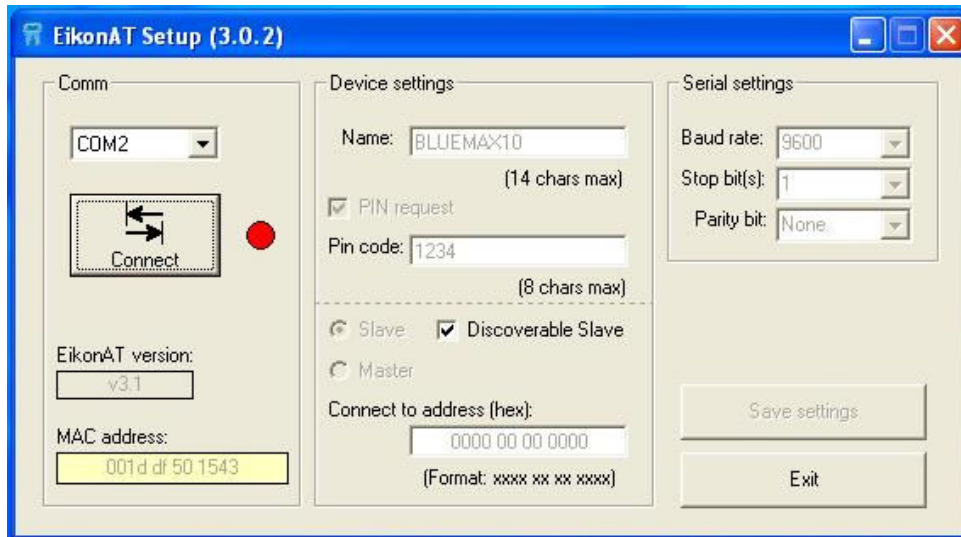
(1) Setup requires RTS and CTS signals. If you want to avoid to use Hardware flowcontrol you must short them together on both side (module and PC)

If you don't use hardware handshake these pins must be connected together otherwise you'll be not able to enter in setup mode.

RS232-Setup Software

Download and install the latest version of RS232-Setup (it's available from our website into Download section)

- Connect the module to the Serial port (Com6 for example) and keep the module Turned OFF.
- Run RS232 Setup software and choose the COM where the module is connected (Com 2 in this example) Push CONNECT and turn on the module within 2 seconds. If everything is ok the RED circle near Connect has to become Green.



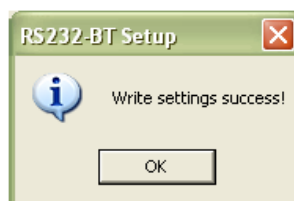
You can set all the module parameters :

- MAC address: this is the unique address that identifies the module and cannot be changed.
- Firmware version: EikonAT version that's loaded into your module.
- Name: it's the name that will be shown when the module will be discovered by another Bluetooth device.
- PIN request: if enabled, module will establish a connection protected by password (please note: for best compatibility you should use PIN code).
- Pin code: the password required by module to connect with.

Slave: if checked the module will work as slave device, ready to be connected from a remote master like PDA, Notebook, Mobile phone...

- Discoverable Slave: if checked your module (setted as slave) will be visible (and connectable) to every Bluetooth device; if unchecked only a master that knows slave address can connect it.
- Master: if unchecked, module runs as slave serial port profile; if checked, module will become a master and you have to specify the remote device address you want you master device will establish a connection with.
- Baud rate: the serial port speed (only for the Running mode, the setup will be always at 9600 Baud)
- Stop bit(s): the number of stop bits your serial communication uses.
- Parity bit: the parity your serial communication uses.

When you finished configuration you have to store new settings into the module by "WRITE settings to module" and if it's successful you will see this message window :



You can EXIT Setup or simply turn OFF and ON the module to start enjoy your wireless Virtual COM port.

Cli Command line interface

Setting up Bluetooth module parameters by CLI (AT commands) is very useful in such applications running on embedded systems or if you want to do it manually by Hyperterminal
The microcontroller may control the Power on of the module and in the first 2 seconds it can send to the module the setup commands.

Serial port configuration (For entering in Setup Mode)

Baurate : 9600 Bits : 8 Parity : NONE Stopbit : 1 Flowcontrol : Hardware RTS/CTS

How to enter in SETUP mode

During the first 2 seconds after power you can send a **<PING>** command by serial interface (don't forget to use the starting **<** and the ending **>**).

If it enters successfully in Setup mode you'll have back a **[READY]** answer.

Otherwise turn off and on again and repeat the procedure. (If it fails probably you didn't setted correctly the Serial port communication or you have to check RX-TX signals or RTS-CTS)

Once in Setup mode you can send the following commands to set all the parameters (**<EXIT>** is the command to leave the Setup mode and enter automatically in Running mode).

COMMAND	DESCRIPTION	ANSWER
<PING>	This command must be sent to the module just after power on, within 2 seconds. It's used to enter in Setup mode. If repeated, can be useful to verify connection	[READY]
<NAME=abc>	Sets device name (max 14 chars, Upper/Lower case is allowed)	[OK]
<PKEY=1234>	Sets device PinCode (max 8 chars)	[OK]
<PIN_ON> or <PIN_OFF>	Sets on/off Pin Code request. Please note: when OFF the compatibility is not guaranteed with every Bluetooth stack	[OK]
<BAUD=38400>	Sets the serial baurate. The parameter must be a standard value between 1200 and 230400 baud. It doesn't affect the baurate for the Setup mode that will remain fixed to 9600 Baud	[OK]
<SBIT=n>	Sets the serial stop bit(s): valid values are 1 and 2.	[OK]
<PRTY=x>	Sets the serial parity bit: valid values are N (none), E (even) and O (odd). NB: Upper case only!	[OK]
<SLAVE>	Module will run as a slave device.	[OK]
<MASTER>	Module will run as a master device and will connect the remote SLAVE. You must specify the slave address (see next command).	[OK]
<ADDR=hhhh hh hh hhhh>	When the module runs as master, it will try to connect to the device with specified hexadecimal MAC address (PINCODE must be the same)	[OK]
<BTADD>	Returns the module own MAC address	[MAC ADD]
<DISCOVERABLE> / <INVISIBLE>	Slave can be visible to every Bluetooth device or invisible; if invisible, only a master that knows slave address can be connected.	[OK]
<VERS>	Returns firmware version.	[VER]
<EXIT>	Exit from Setup mode, goes into Running mode	

All commands, except <PING> and <EXIT> are confirmed with "[OK]" as module reply (stored permanently). Please be careful to upper and lower case for commands and arguments.