

Bluetooth HC-06 with serial port module

Easy guide

This manual consists of 3 parts:

PART 1. Overview of Bluetooth HC-06 module with serial port.

PART 2. Installing Bluetooth HC-06 module with Bolt 18F2550 system and PC.

PART 3. Testing the new Bluetooth device using Hyperterminal software.

PART 1: Overview of Bluetooth HC-06 module with serial port.

This module permits any microcontroller with a standard RS232 serial port to communicate with a PC or a Smartphone equipped with a Bluetooth Master module. Its main specifications are:

Bluetooth number: JY-MCU-HC-06, surface mount with integrated antenna.

Operating Voltage: 5 volt, reduced to 3.3 volts, @ 8 ma.

Default baud rate: 9600 bps.

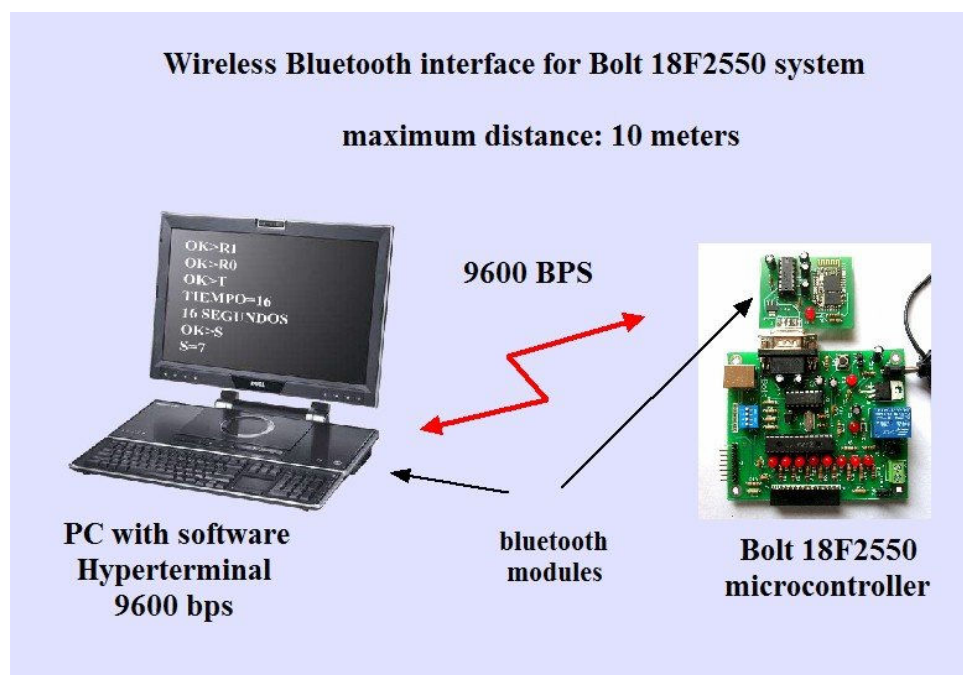
Default pin: 1234

Default name: BlueBolt.

Class: 2, with up to 10 meter coverage.

In this manual, instructions are given to do testing with Bolt 18F2550 system, but similar steps may be followed for any other microcontroller system with a standard DB9 serial RS232 port.

The red led in Bluetooth module (see photo in next page) indicates the status of the connection: when flashing, the module is in the phase of interconnection with other modules located in the same area. When the led is always on, indicates that the module is already synchronized or "paired" with another Bluetooth master module and therefore is ready to transmit and receive information.



In the particular case of Bolt 18F2550 board, a 5 volt power supply to the Bluetooth module is fed through pin 7 of DB9 connector (RTS signal). This voltage is reduced to 3.3 v. by means of a AMS1117-3.3 regulator, which in turn feeds the Bluetooth HC-06 module and the MAX3232 driver.

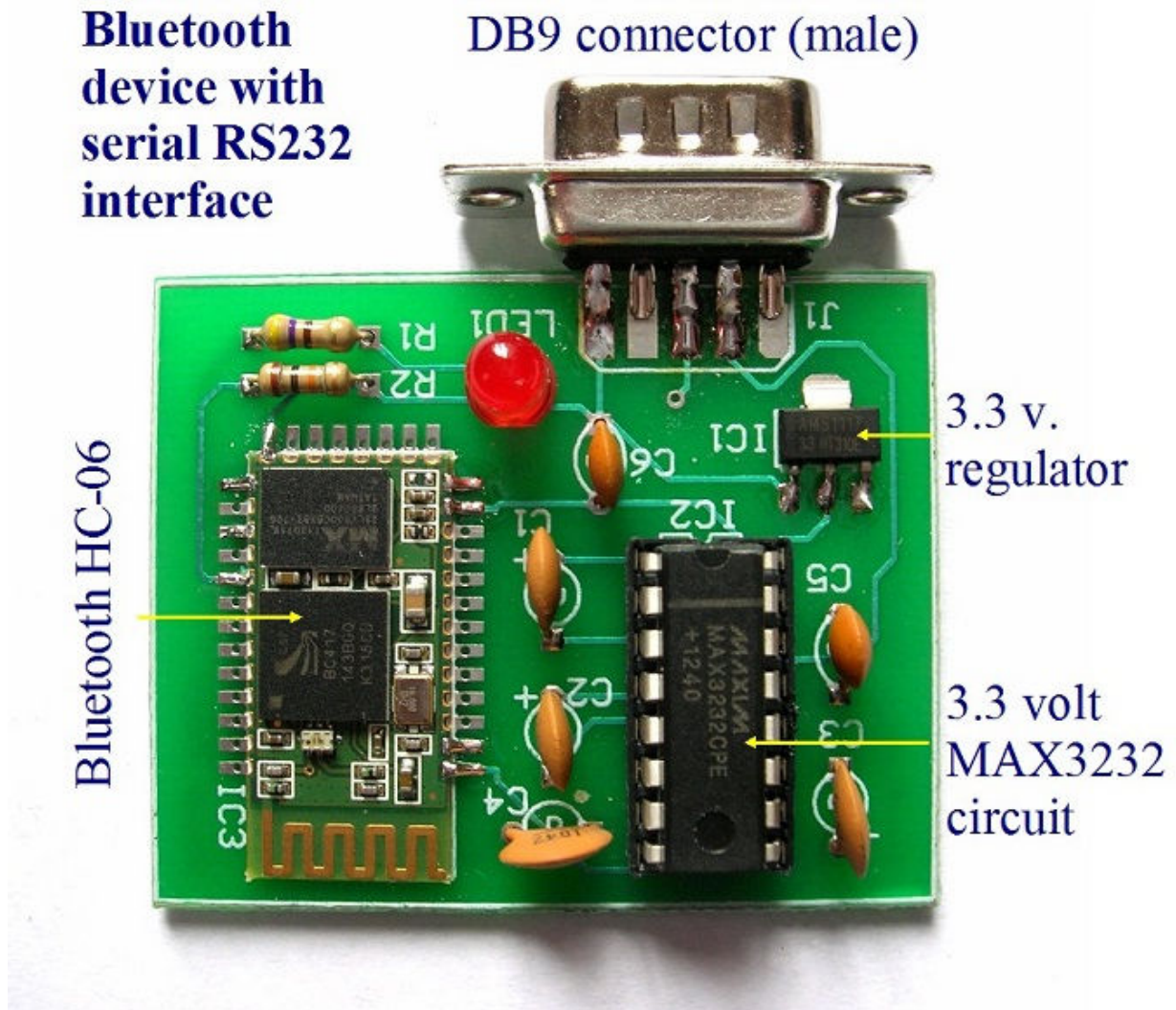
A test program was developed for the Bolt 18F2550 board and the Bluetooth module to communicate with a PC or Laptop. This program permits a user to transmit commands for remote control the relay of board and read its dip switches, using an standard terminal emulator program, such as Hyperterminal.

The high level multilayer Bluetooth protocol is completely transparent to user, so that system communications functions in a similar way as using a DB9-DB9 serial cable from the PC to the Bolt 18F2550 board.

PART 2. Installing Bluetooth HC-06 module with Bolt 18F2550 system and PC.

For these tests you will need the Bolt 18F2550 module, a PC or Laptop computer with Windows 7 or Windows 8, a 300 ma. wall transformer, the Bluetooth HC-06 module, and a USB PC Bluetooth master module. Please follow step by step the next instructions:

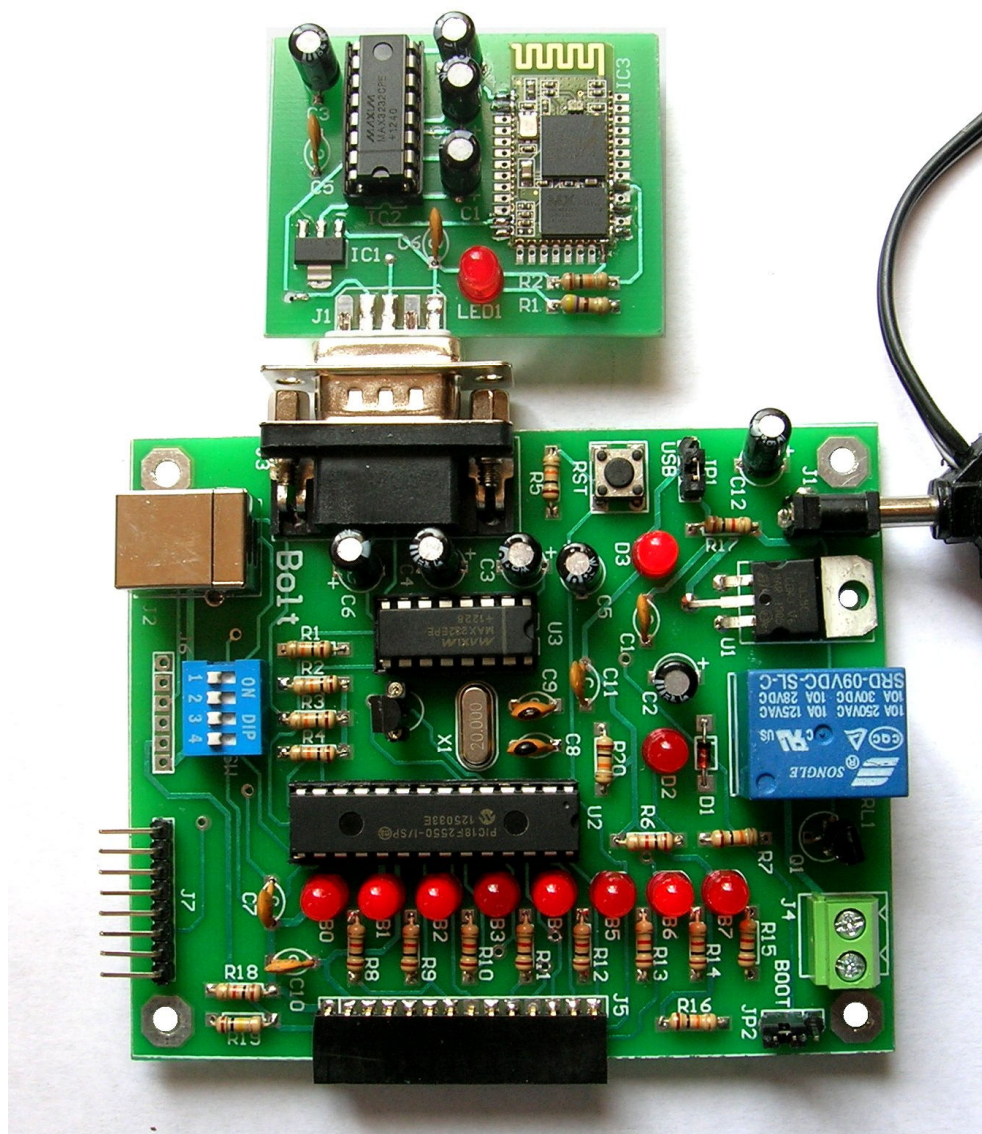
1. Identify the components in the Bluetooth module, based on the picture shown below.



2. Application firmware program for Bolt 18F2550: Bolt board should be loaded with .hex file of the following test program (click to download):

<http://puntoflotante.net/C18-BOLT-BLUETOOTH-REMOTE-CONTROL.zip>

3. Connect Bolt 18F2550 board to a wall transformer, and the Bluetooth HC-06 module to its serial port. Do not forget to move jumper JP1 of Bolt board to its lower position to feed power from the wall transformer. Please see photo.



As soon as board is powered up, the red led of Bluetooth HC-06 module will begin to flash.

4. Install PC master USB Bluetooth module:



To test the system, a standard PC USB-Bluetooth master module (see photo) must be also installed. When installing the Bluetooth drivers, the PC creates a virtual COM port. Both the PC and Bolt 18F2550 system will communicate as if using a simple DB9 cable connexion.

Important: Watch this video for an overview on how to install a PC master Bluetooth in Windows 7, and a remote slave Bluetooth HC-06 module:

<http://www.youtube.com/watch?v=qLthDJCFUAU>

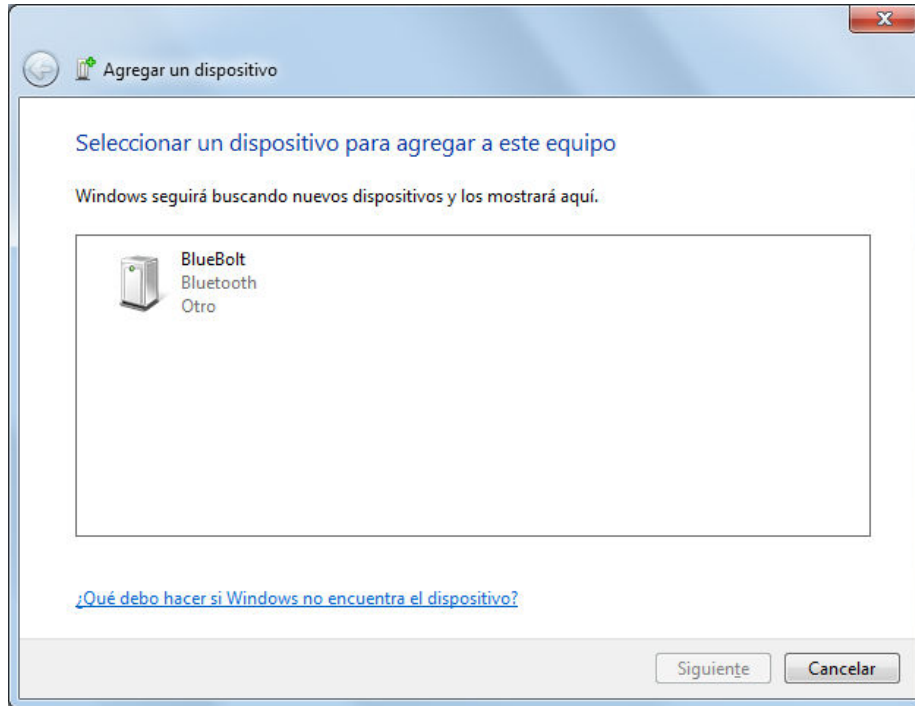


Video: Bolt 18F2550 system with Bluetooth interface

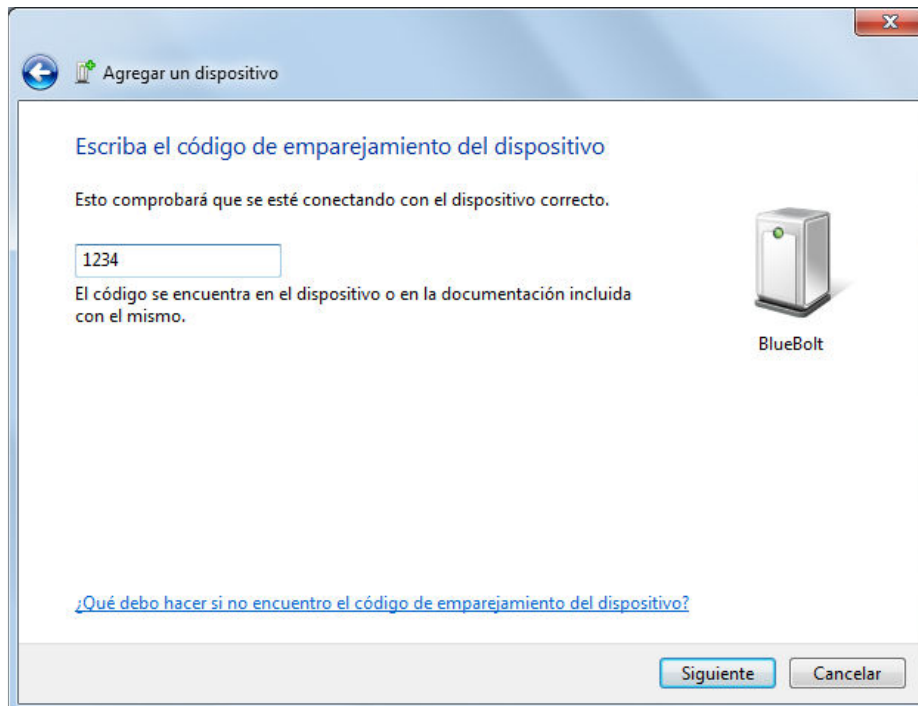
IMPORTANT NOTE:

You may use either Windows 7 or Windows 8 OS to work with this module. In both cases, the OS automatically will install drivers on detecting the Bluetooth USB master device. User may then operate distinct options to detect and add the new slave Bluetooth device.

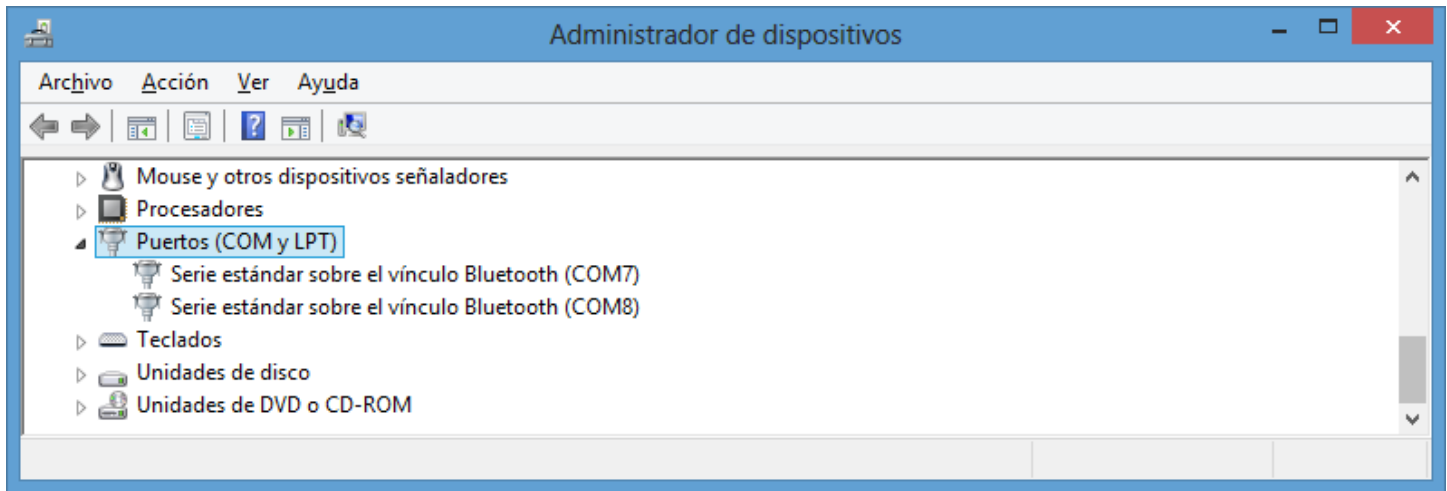
When you add the new Bluetooth device, the PC (Windows 7) will recognize it with the name “**BlueBolt**”, as shown below. You must select this BlueBolt icon and continue with installation:



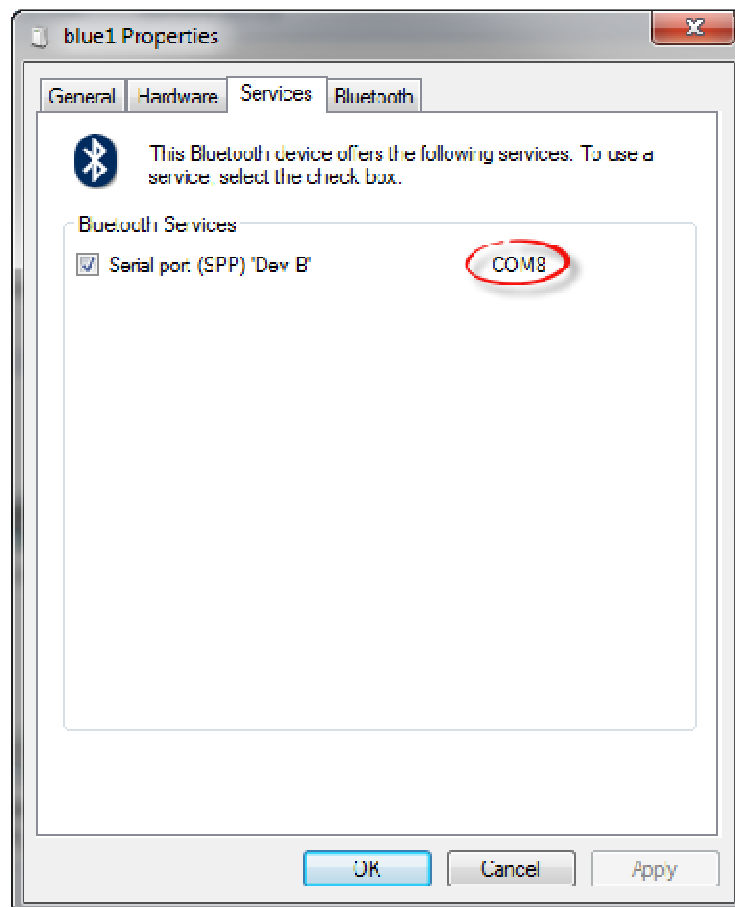
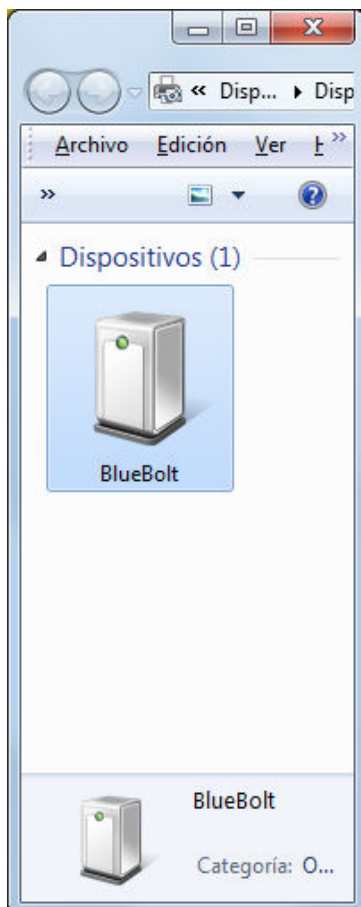
To add the new Bluetooth device, use default pin **1234**, as shown below:



If you check your system: Control Panel> Device Manager, you will find 2 new COM ports installed for this Bluetooth new device. **Only one of them however will be used for communication purposes.**

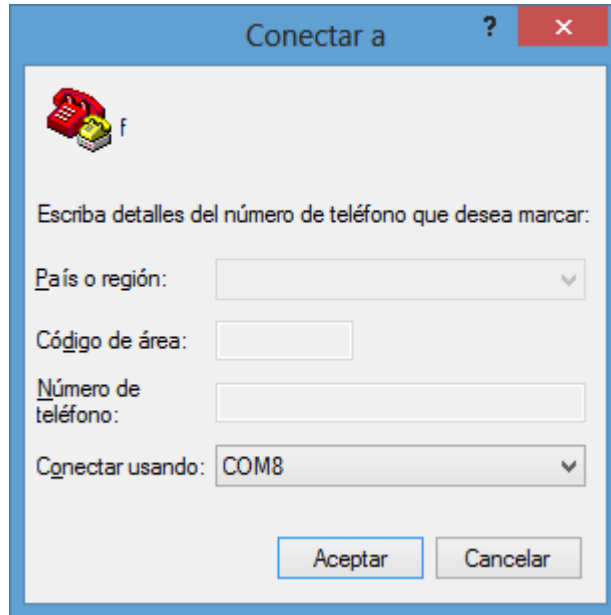


To check which of the two COM ports installed for this device will be used, check properties of device with a right click over the icon, observing “Services” option (only in Windows 7). **In this example, you will use COM8 port:**

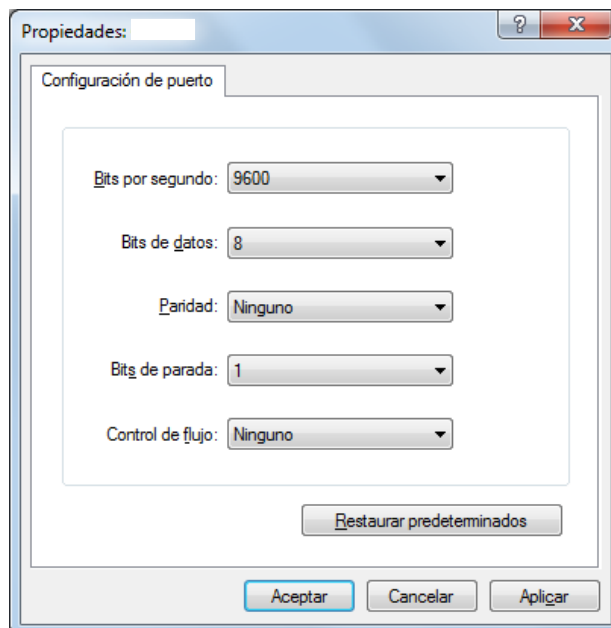


PART 2. Testing the new Bluetooth device using Hyperterminal.

8. Open the terminal emulator application software called “Hyperterminal”. This will work in both Windows 7 or Windows 8. Select the same port as mentioned in above paragraph. In this example, COM8.



The serial port parameters are the following:



Last step!

When this window appear in your screen, you will see the “disconnected” status for a few seconds, until both Bluetooth (master and slave modules) pair. Then you will see a “connected” status and, at the same time, the led in the Bluetooth HC-06 slave module will remain permanently in the ON state (see page 2 photo).

In this moment, push the reset button in Bolt 18F2550 system to initiate the communications protocol. You will see an “OK” prompt as shown below.

Continue to test the system: type “R1” to activate the relay and “R0” to deactivate. Then type “T” to program a fixed period of time with relay activated, in this example 3 seconds.

And last, but not least, type “S” to observe the decimal value (0...15) of the dip switches of Bolt 18F2550 board.

```

OK>
OK>R1
OK>R0
OK>T
TIEMPO=3
3 SEGUNDOS
OK>
OK>S
S=15
OK>

```

00:00:25 conectado Autodetect. 9600 8-N-1 DESPLAZAR MAY NUM Capturar Imprimir

Should you have any questions, please contact:

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