

BlueSnap -- Command Line Interface

Please read this guide carefully before installing the BlueSnap module. This document covers basic functionality and configurability of the BlueSnapUSB Bluetooth dongle.

BlueSnap modules are intelligent and run firmware-based onboard Bluetooth connection software. For our RS232 based modules, no additional driver software is required to use this device. For our USB adaptor, driver software is required for providing a virtual COM port for the BlueSnapUSB on Windows (available at <http://www.serialio.com/downloads>). Note: For Vista users, there are different drivers available on our website.

Driver Installation (Windows XP/2000/Vista)

To install the drivers, simply plug your BlueSnap into an available USB port. Windows will prompt you to search for drivers for an "Unknown" device. You should choose not to search for drivers, but instead Browse to the location where you have downloaded and extracted the driver files. You will be prompted twice to install these drivers. Please follow the same procedure each time. (It may look like it is installing the same driver twice, but it is installing 2 separate drivers for the BlueSnap to function properly.)

To determine the COM port assigned the BlueSnap after installation (in Windows), you can go to the Device Manager and check Ports for the "USB Serial Port (Com#)". (Device Manager is available on WinXP via START > SETTINGS > CONTROL PANEL > SYSTEM and then the Hardware Tab > Device Manager button.) If you do NOT see the option a USB Serial Port, then either the BlueSnapUSB has been removed or the drivers were not installed. Please follow the steps necessary to install the BlueSnapUSB properly.

LED Display (External)

Each module has two LEDs (three on the BlueSnapXP)**. GREEN LED for status and a YELLOW LED to designate data Tx/Rx. The various states of the LEDs are described as follows:

LEDs

| MODE | GREEN LED BLINK |
|------------------------------|-----------------------|
| Configuring | Fast, 10 x per second |
| Boot up, Remote Configurable | 2 times per second |
| Discoverable/Idle | 1 time per second |
| Connected | On Solid |

The YELLOW Led blinks when data is TRANSMITTED or RECEIVED.

**The RED LED is only on the BlueSnapXP module. This is a battery/charge indicator. When OFF (and POWER is on), the unit is operating on BATTERY power. When ON-solid (and POWER is on), the unit is plugged in and charging (it can be used while charging.) If FLASHING, then the BlueSnapXP's battery is critically low, and needs to be charged.

BlueSnap Modes of Operation

Master Modes: There are 5 different master modes which can be enabled:

1. Manual Mode. In this mode, the BlueSnap makes connections when a Connect Command "C", is received. This command can also contain the Bluetooth address of the remote device. If no device is specified, then the store remote address is used. The connection can be broken if the special break character or string is sent (use the SO command to set the break character) **This is a low speed connect mode**.
2. Trigger Mode. In this mode, the BlueSnap makes connections automatically when a character is received on the serial port. The connection will continue as long as characters are received on either end. There is a configurable timeout (which is set using the ST command) which will cause a disconnect after XX (from 1 to 254) seconds of inactivity. **This is a low speed connect mode**.
3. Auto Mode, 4 DTR, 5 ANY modes. (Mode #4 and #5 are for BlueSnapUSB M4 only) In these modes, the BlueSnap makes connections automatically on powerup, and re-connects when

Application Note

connection is lost. This is the high speed connect mode, and cannot be broken by software break characters. In DTR and ANY modes it can be broken by setting the DTR line inactive.

** Note: The BlueSnap (Standard and XP) ship standard in mode 1. BlueSnapUSB ships from SerialIO.com in mode 4 (DTR).

Configuring the BlueSnap

This module has numerous configuration options that are available by accessing the firmware. For the RS232-based modules, there are external dip switch and internal jumper settings that can be changed, depending on your requirements. Please refer to the associated configuration document for your BlueSnap for details on configuration options. The BlueSnapUSB, however, does not have any additional external settings (DIP/Jumpers) that can be modified. To access the firmware on all BlueSnaps, you will need the following items, information and software.

- RS232 Null modem cable (to connect from PC to BlueSnap XP or Standard, more than likely DB9F to DB9F)
- For BlueSnapUSB you should have the COM port setting. (The procedure for getting this information is explained above.)
- Async Terminal Program**
- A PC/Notebook to connect both BlueSnapUSB
- The communication settings needed to communicate with your BlueSnap are:
- BitRate: 115200, Parity: N, Data: 8, Stop: 1, and NO FLOW CONTROL (115200,n,8,1,None)

** We recommend downloading a freely available terminal such as TeraTerm/Pro terminal emulator (Google search for TeraTerm), as the Windows application HyperTerminal has a number of "features" in WinXP (such as auto-baud detection which does not work) which render it effectively inoperable for a local serial port connection.

Making a Connection

BlueSnap shows up under Service discovery as "BlueSnap-#####" where the ##### is the last 2 bytes (4 chars) of the Bluetooth address. To connect to BlueSnap, browse for services, you should see: "SPP on BlueSnap-#####". BlueSnap uses Bluetooth Serial Port Profile (SPP) and can be connected to as a Virtual COM port on PCs, Palms, PocketPCs, MACs, Smart Phones, Serial Adapters, Access Points, and other clients.

NOTE: Only one client can connect to BlueSnap at a time, and there is a limit of 7 total devices in a Bluetooth Piconet network.

If authentication is not required, generally you can simply connect to the BlueSnap by clicking on the service shown by your client. If authentication is required, the default passkey of "1234", or the passkey that has been configured should be entered.

An example of connecting a BlueSnapUSB to a BlueSnapXP (or Standard) is available at our website at <http://www.serialio.com/support>.

COMMAND SUMMARY

SET COMMANDSstored in flash, and only take effect AFTER reboot

Example: SU,9600 sets Uart Baudrate to 9600
 SN,myname sets Bluetooth name to "myname"
 SA,1 enables secure authentication
 SP,secret sets security pincode to "secret"
 SF,1 restores all values to factory defaults

| CMD | VALUE | TYPE | DEFAULT | DESCRIPTION |
|-----|-------------|----------|------------|---|
| SA | 0,1 | dec | 0 | Enable Authentication |
| SE | 0,1 | dec | 0 | Enable encryption |
| SF | 1 | dec | | Reset to Factory Defaults |
| SL | E,O,N | char | N | Parity, Even, Odd, or None |
| SM | 0,1,2,3,4,5 | dec | 0 | Mode (0=slav, 1=mstr, 2=trigr,3=auto, 4=DTR, 5=ANY) |
| SN | string | 1-16 chr | BlueSnap-x | Bluetooth Name |
| SO | string | 1-8 chr | NOT SET | Status string or break character(s) |
| SP | string | 1-16 chr | 1234 | Security Pin Code |
| SR | string | 12 chrs | NOT SET | Remote Address (123456789ABCDEF) |
| ST | word | seconds | 60 | Config Timer(0=no config, 255=always on) |
| SU | string | 2-4 char | 115K | Baudrate:1200,2400,4800,9600,384k,576k 115k,230k,460k) |
| SX | 0,1 | dec | 0x1F00 | Bonding (locks to a single remote address) |

*** DISPLAY COMMANDS ***

| CMD | DESCRIPTION |
|------|--|
| D | Basic Settings |
| E | Extended Settings |
| G<X> | A single setting matching the commands above |
| GB | Bluetooth Address of this device |
| & | I/O Ports (shows the value of the switches) |
| V | Firmware Revision |

*** OTHER COMMANDS ***

| CMD | VAL1 | VAL2 | DESCRIPTION |
|-----|--------|---------|---|
| C | <addr> | | Connect to Remote Address(in Master Mode only) |
| H | | | Help, Show list of commands |
| I | <time> | <COD> | Inquiry Scan, time= xx seconds ,optional COD filter |
| R | 1 | | Reboot device immediate |
| U | <rate> | <E,O,N> | Temporary UART Change, immediate, not stored |