

## XBee AT Commands

SparkFun Electronics Summer Semester

# XBee AT Commands

With the exception of the first command (+++) all the following commands should be used while in AT Command mode and the user should press enter after typing the command. It is important to remember that the user should never press the enter key after typing the Enter AT Command (+++). If you wait three seconds while inside the AT Command mode the terminal will automatically exit AT Command mode and enter back into Chat mode. All other typed AT Commands must be followed by hitting the enter key. All Commands, unless otherwise noted, are for Series 2 XBee units.

| AT Command | What Command stands for                                 | What Command does                                                                                                                                                                                                                      | How to use the Command                                                                                                                                |
|------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| +++        | Enter AT Command mode                                   |                                                                                                                                                                                                                                        | Type Command and wait 3 seconds, do not hit the enter key. If you wait 10 seconds without typing anything the terminal will drop out of Command mode. |
| AT         | Attention                                               | XBee should reply with OK                                                                                                                                                                                                              | Type Command, if there is no OK response try reentering AT Command Mode.                                                                              |
| ATID       | Personal Area Network ID                                | Returns PAN ID # or sets PAN ID #                                                                                                                                                                                                      | To check XBee's PAN ID # type the Command. To set XBee's PAN ID # type the command. PAN IDs are represented in hexadecimal.                           |
| ATSH/ATSL  | 64-Bit Address (or Serial #) distinct to each XBee unit | Type ATSH to return the upper half of your XBee's Address. Type ATDL to return the lower half of your XBee's Address. The Address is split into two sections because it will not fit in one. Addresses are represented in hexadecimal. |                                                                                                                                                       |

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| AT Command  | What Command stands for                | What Command does                                                                                                                                                                                                                                                                                                                                             | How to use the Command                                                                                                                                                                                                                                                                                                                          |
|-------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATDH/ATDL   | XBee Destination Address (or Serial #) | Similar to command above the Address is split into two sections and represented in hexadecimal. Type just the command to read the Address of the other XBee the unit is trying to communicate with. To set the destination Address of an XBee type the command followed by the corresponding section of the destination Address you are setting for the XBee. |                                                                                                                                                                                                                                                                                                                                                 |
| ATCN        | Command Null                           | Use this Command to drop out of Command mode.                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                 |
| ATWR        | Write                                  | Use this Command to write the configuration you have created in the AT Command mode to the firmware. This effectively saves the configuration you have created to the XBee. If you do not use this AT Command the XBee will revert to previous settings when it is disconnected,                                                                              |                                                                                                                                                                                                                                                                                                                                                 |
| ATMY        | My ID                                  | Use this Command to display the XBee's 16 bit Address in non-hexadecimal form.                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |
| ATD0...ATD7 | I/O Pin configuration                  | Sets the configuration of I/O pins 0 through 7.                                                                                                                                                                                                                                                                                                               | These two Commands have a variety of settings; follow the Command with the numbers below for the purposes listed beside them.<br>0 : Disables I/O on that pin<br>1: Built in function, if available on pin<br>2: Analog input, only pins D0 – D3<br>3: Digital Input<br>4: Digital Output, LOW (0 volts)<br>5: Digital Output, HIGH (3.3 volts) |
| ATP0...ATP1 | I/O Pin configuration                  | Sets the configuration of I/O pins 10 and 11.                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                 |

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| AT Command      | What Command stands for | What Command does                                                                                                   | How to use the Command                                                                                                                                                                                                                                                |
|-----------------|-------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATIR            | I/O Rate                | Sets the sample rate of the I/O pins, designating how often the pins are read and values transmitted to other XBees | This rate is set in milliseconds using hexadecimal notation. To set the rate type the Command followed by the sample value in milli-hex. To turn off periodic sampling type this Command and enter 0 for the value.                                                   |
| ATIT (Series 1) | Iteration Tailor        | Use this Command to set the number of samples taken from D I/O pins before the XBee transmits them                  | Type the Command followed by the number of samples you wish the XBee to send per transmission. Samples are stored in a buffer, they are 2 bytes in size and the buffer can store up to 90 bytes, or 22 samples, so the highest value you can pass this command is 44. |
| ATIA (Series 1) | Input Address           | Enables pin output modes to be updated from another XBee                                                            | Type the Command followed by the address of the XBee that will be sending the output mode changing commands.                                                                                                                                                          |
| AT%V            | Percent Voltage         | Use this Command to display the current supply voltage for the XBee. Useful for keeping track of battery status.    |                                                                                                                                                                                                                                                                       |
| ATPR            | Pull-Up Resistor        | Configures internal 30K Ohm pull-up resistor on pins that have been configured as input pins                        | Type this Command followed by a 1 to turn the internal pull-up resistor on, replace the 1 with a 0 to turn the pull-up resistor off. Internal pull-ups are available on all input pins and are come preset on.                                                        |
| ATRE            | Reset                   | Reset configuration to factory presets                                                                              | Simply type this command to reset all configurations.                                                                                                                                                                                                                 |