**Software Version:**

Returns version of currently running firmware.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+VERSION | AT+VERSION=<version> | NULL |

**UF2 Bootloader:**

Activates UF2 Bootloader for updating firmware.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+UF2 | AT+OK  AT+RESETTING | NULL |

**Reset Device:**

Performs software reset.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+RESET | AT+OK  AT+RESETTING | NULL |

**Reset Parameters:**

Reset all parameters to default values.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+DEFAULT=1 | AT+OK  AT+RESETTING | NULL |

**LED Settings:**

Enable/Disable LEDs.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+LED | AT+LED=<parameter> | NULL |
| AT+LED=<parameter> | AT+OK  AT+RESETTING | 0: NONE  1: BLE Connection  2: BLE Connection & LoRa (DEFAULT)  3: LoRa |

**Bluetooth Interface:**

Enable/Disable BLE interface.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+BTEN | AT+BTEN=<parameter> | NULL |
| AT+BTEN=<parameter> | AT+OK  AT+RESETTING | 0: Disabled  1: Enabled (DEFAULT) |

**Bluetooth Name:**

Advertised BLE name.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+NAME | AT+NAME=<parameter> | NULL |
| AT+NAME=<parameter> | AT+OK  AT+RESETTING | Max 32 character string  (DEFAULT=LoRaBlue) |

**Bluetooth Pairing PIN:**

BLE pairing pin for secure connections.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+PIN | AT+PIN=<parameter> | NULL |
| AT+PIN=<parameter> | AT+OK  AT+RESETTING | 6 digit pin  (DEFAULT=123456) |

**UART Baud:**

Data rate for UART interface.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+UART | AT+UART=<parameter> | NULL |
| AT+UART=<parameter> | AT+OK | 0: 1200  1: 2400  2: 4800  3: 9600 (DEFAULT)  4: 14400  5: 19200  6: 28800  7: 31250  8: 38400  9: 56000  10: 57600  11: 76800  12: 115200  13: 230400  14: 460800  15: 921600  16: 1000000 |

**LoRa Debug Information:**

Prints additional information about LoRa communications such as Signal Strength (RSSI).

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+DEBUG | AT+DEBUG=<parameter> | NULL |
| AT+DEBUG=<parameter> | AT+OK | 0: Disabled (DEFAULT)  1: Enabled |

**LoRa Optimized Range Settings:**

Sets LoRa parameters to optimal values for specified range. Higher range settings result in longer transmission times.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+ SETRANGE=<parameter> | AT+OK  AT+RESETTING | 0: 41%  1: 58% (DEFAULT)  2: 69%  3: 82%  4: 100% |

**LoRa FHSS:**

Enable/Disable Frequency Hopping Spread Spectrum.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+FHSS | AT+FHSS=<parameter> | NULL |
| AT+FHSS=<parameter> | AT+OK | 0: Disabled  1: Enabled (DEFAULT) |

**LoRa Home Channel:**

Home Channel for FHSS.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+HC | AT+HC=<parameter> | NULL |
| AT+HC=<parameter> | AT+OK | **VALID OPTIONS**  0-128  (DEFAULT=64) |

**LoRa Frequency:**

LoRa Frequency (Not available when using FHSS).

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+FREQ | AT+FREQ=<parameter> | NULL |
| AT+FREQ=<parameter> | AT+OK | **VALID OPTIONS**  902.0-928.0MHz  (DEFAULT=915.0MHz) |

**LoRa Hopping Period:**

Symbol period between frequency hops.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+HP | AT+HP=<parameter> | NULL |
| AT+HP=<parameter> | AT+OK | **VALID OPTIONS**  10-255  (DEFAULT=125) |

**LoRa Bandwidth:**

LoRa Link Bandwidth in KHz.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+BW | AT+BW=<parameter> | NULL |
| AT+BW=<parameter> | AT+OK | **VALID OPTIONS**  10.4  15.6  20.8  31.25  41.7  62.5  125  250 (DEFAULT)  500 |

**LoRa Spreading Factor:**

LoRa Link Spreading Factor.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+SF | AT+SF=<parameter> | NULL |
| AT+SF=<parameter> | AT+OK | **VALID OPTIONS**  6-12  (DEFAULT=10) |

**LoRa CRC:**

Enables/Disables CRC check of received packets.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+CRC | AT+CRC=<parameter> | NULL |
| AT+CRC=<parameter> | AT+OK | 0: Disabled (DEFAULT)  1: Enabled |

**LoRa Coding Rate:**

LoRa link coding rate denominator.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+CR | AT+CR=<parameter> | NULL |
| AT+CR=<parameter> | AT+OK | **VALID OPTIONS**  5-8  (DEFAULT=8) |

**LoRa Sync Word:**

Typically used to distinguish different networks (52 is reserved for LoRaWAN networks).

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+SW | AT+SW=<parameter> | NULL |
| AT+SW=<parameter> | AT+OK | **VALID OPTIONS**  0-255  *[ 52 RESTRICTED ]*  (DEFAULT=221) |

**LoRa Preamble:**

Length of LoRa transmission preamble in symbols.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+PRE | AT+PRE=<parameter> | NULL |
| AT+PRE=<parameter> | AT+OK | **VALID OPTIONS**  6-65535  (DEFAULT=6) |

**LoRa Power:**

Transmission output power in dBm.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+PWR | AT+PWR=<parameter> | NULL |
| AT+PWR=<parameter> | AT+OK | **VALID OPTIONS**  2-17 & 20  (DEFAULT=20) |

**LoRa Gain:**

Gain of receiver LNA (low-noise amplifier). Can be set to any integer in range 1 to 6 where 1 is the highest gain. Set to 0 to enable automatic gain control (recommended).

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+GAIN | AT+GAIN=<parameter> | NULL |
| AT+GAIN=<parameter> | AT+OK | **VALID OPTIONS**  0-6  (DEFAULT=0) |

**Enable/Disable LoRaChat:**

Enables/Disables Defiance Digital’s LoRaChat Protocol.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+CHAT | AT+CHAT=<parameter> | NULL |
| AT+CHAT=<parameter> | AT+OK | 0: Disabled (DEFAULT)  1: Enabled |

**LoRaChat Username:**

Your username for use with LoRaChat

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+USER | AT+USER=<parameter> | NULL |
| AT+USER=<parameter> | AT+OK |  |

**LoRaChat ED25519 Public Key:**

ED25519 Public Key for LoRaChat

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+EDPUB | AT+EDPUB=<parameter> | NULL |
| AT+EDPUB=<parameter> | AT+OK |  |

**LoRaChat ED25519 Private Key:**

ED25519 Private Key for LoRaChat

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+EDPRI | AT+EDPRI=<parameter> | NULL |
| AT+EDPRI=<parameter> | AT+OK |  |

**LoRaChat Bonded User:**

LoRaChat user in which we are to encrypt communications.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+BONDUSER | AT+BONDUSER=<parameter> | NULL |
| AT+BONDUSER=<parameter> | AT+OK |  |

**LoRaChat Bonded Key:**

LoRaChat key to use with encrypt communications.

|  |  |  |
| --- | --- | --- |
| **Command** | **Response** | **Parameter** |
| AT+BONDKEY | AT+BONDKEY=<parameter> | NULL |
| AT+BONDKEY=<parameter> | AT+OK |  |