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Weightless-P Starter Kit

AT Command Reference Guide

Weightless-P AT Command Reference Guide

Models: Weightless-P Starter Kit 868MHz/915MHz

Part Number:

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Syntax

User-originated AT commands are strings of characters transmitted over UART:

Baud rate: 115,200

Data bits: 8

Stop bits: 2

Parity: None

Flow control: None

User-originated AT commands

The command ends with a character code S3 (default is ASCII 13, '\r').

A valid AT command begins with either “AT” or “at”, optionally followed by a plus sign and a command name:

AT+ atCmd

There are 4 types of user-originated AT commands:

- QUERY
 - “**AT+ atCmd?**”: checks for availability of AT command **atCmd**. Responds OK if it exists, ERROR otherwise
- GET
 - “**AT+ atCmd =?**”: performs a GET operation on the AT command **atCmd**
- SET
 - “**AT+ atCmd =param1,param2, ...**”: performs a SET operation on the AT command **atCmd**. Number of mandatory and optional parameters is command-specific.
- EXECUTE
 - “**AT+ atCmd**”: executes the AT command **atCmd**. This does not accept any parameter.

Unsolicited AT commands

Unsolicited AT commands are generated by Weightless-P communication module and sent to the host. They start with a plus “+” sign.

List of user-originated AT commands

AT: No operation

Command type:

EXECUTE

Response:

OK

AT+S3: Get or set S3, the end-of-command character code

Command type:

GET / SET

Parameter(s) for SET:

[M] S3 character ASCII code, decimal (default is 13 for '\r')

Response:

[SET] OK

[GET] S3 as decimal ASCII code

AT+S4: Get or set S4, the end-of-line character

Command type:

GET / SET

Description:

Get or set S4, the end-of-line character

Parameter(s) for SET:

[M] S4 character ASCII code, decimal

Response:

[SET] OK

[GET] S4 as decimal ASCII code

AT+E: Get or set E flag to enable/disable AT command echoing

Command type:

GET / SET

Parameter(s) for SET:

[M] E flag value (1/0, default is 1)

Response:

[SET] OK

[GET] E flag value (1 or 0)

AT+RFINIT: Initializes RF

Command type:

EXECUTE

Response:

OK

AT+WARFCN: Get or set the current WARFCN

Command type:

GET / SET

Parameter(s) for SET:

[M] WARFCN value (decimal)

Response:

[SET] OK

[GET] WARFCN value (decimal)

AT+STATS: Displays statistics on memory usage and task CPU usage

Command type:

EXECUTE

Response:

Silent

AT+MEM: Displays list of currently allocated memory blocks

Command type:

EXECUTE

Response:

Silent

AT+CREG: Request registration to or deregistration from the Base Station

Command type:

GET / SET / EXECUTE

Parameter(s) for SET:

[O] Registration request (1: register 0: deregister)

[O] registration timeout in ms (default is infinite: 0)

Response:

[SET / EXECUTE] OK

[GET] Current registration status

AT+TX: Send data to the Network (uplink)

Command type:

SET

Parameter(s) for SET:

[M] Payload as hexadecimal string

[O] ACK mode (1:acknowledged 0:unacknowledged, default is 0)

Response:

[SET] OK / BUSY / ERROR

AT+RESET: Reset the device

Command type:

EXECUTE

Response:

Silent

AT+VERSION: Displays the firmware version

Command type:

EXECUTE

Response:

Firmware version

AT+UUEID: Get the UUEID of the device

Command type:

GET

Response:

UUEID as a string of 16 hexadecimal digits

AT+MCS: Get or set the default Modulation and Coding Scheme (MCS)

Command type:

GET / SET

Parameter(s) for SET:

[M] MCS for Network Search (decimal 0-11)

Response:

[SET] OK

[GET] Current MCS (decimal)

AT+TXPWR: Get or set the current transmit power

Command type:

GET / SET

Parameter(s) for SET:

[M] Transmit power (dBm, maximum is 15)

Response:

[SET] OK

[GET] Current transmit power in dBm

AT+AS: Get or set auto-start mode

Command type:

GET / SET

Parameter(s) for SET:

[M] Auto-start mode (0: disable 1:enable).

When enabled, the device will start searching for a Network when powered up or reset.

Response:

[SET] OK

[GET] 1 or 0

AT+PERIOD: Get or set the application reporting period in milliseconds

Command type:

GET / SET

Parameter(s) for SET:

[M] period (default is 1000 ms = 10s)

Response:

[SET] OK

[GET] Reporting period

AT+TT: Set the min/max temperature Alert thresholds

Command type:

SET

Parameter(s) for SET:

[M] LOW temperature threshold in 1/100th of Celsius

[M] HIGH temperature threshold in 1/100th of Celsius

Response:

[SET] OK

AT+RHT; Set the LOW/HIGH Relative Humidity Alert thresholds

Command type:

SET

Parameter(s) for SET:

[M] LOW RH threshold in percent

[M] HIGH RH threshold in percent

Response:

[SET] OK

AT+APPTYPE: Get/set the Application Type

Command type:

GET / SET

Parameter(s) for SET:

[M] Application Type (0; reports RSSI, 1: reports Temperature/RH)

Response:

[SET] OK

[GET] Current Application Type

List of unsolicited AT commands

+RX[*channel*]:*n,data*: Indicates a received payload

Description:

- ***channel*** is the logical channel (LCH_UUD for unacknowledged data, LCH_UAD for acknowledged data).
- ***n*** is the length in bytes,

- **data** is a hexadecimal string representing the data.

+CREG:*n*: Indicates a change of registration state

Description:

n is one of the following:

- 5: Security Failure
- 4: Registration timeout
- 3: Registration rejected
- 2: Network Search failed
- 1: Radio Link Timeout
- 0: Unregistered
- 1: Registered
- 2: Cipher Verify state
- 3: Network Nonce received, proceeding to sending End Device Nonce
- 4: Network found, starting registration procedure

After power up or reset registration state is 0. Once triggered with AT+CREG or AT+CREG=1 the End Device will start searching for a suitable Network. A successful registration will go through states 4 to 1.

Any negative value indicates the End Device returns to Unregistered state 0.

Successful registration:

AT+CREG=?

0

AT+CREG

OK

...waiting a few seconds

+CREG: 4

...Network found, start security association

+CREG: 3

...security association 1/2

+CREG: 2

...security association 2/2

+CREG: 1

...fully registered, can start sending data with AT+TX

AT+TX=123456789A

OK

...

+RX:4,12345678
...trigger deregistration procedure
AT+CREG=0
OK
...wait a few seconds
+CREG:0

Failed registration:

AT+CREG=?
0
AT+CREG
OK
...waiting a few seconds
+CREG:0
...failed to find a suitable network

Contact

General
info@ubiik.com

Sales:
jay@ubiik.com

END