

## AT500 Quick Start Guide



### 1. Mobile Phone Application

If you don't already have the astra IoT mobile phone app, please go to the apple app store or google play store and download / install our app, its an invaluable diagnostic and configuration tool for use with all our BLE-enabled devices, but especially for the AT500, since there is no debug port.

### 2. Request Astra IoT Login

Again, if you don't already have one, please email [support@astratelematics.com](mailto:support@astratelematics.com) and request login credentials for our app, this is essential to enable access to your devices. Without the necessary credentials, you wont be allowed to connect to any astra devices.

### 3. Charge your AT500

Place your AT500 on a Qi wireless charger, this will wake the device and it will remain awake during charging, so that you can check configuration etc.

### 4. Connect to your AT500

Open the astra IoT app and enter your login credentials

Once logged-in, a list of visible devices will be displayed. The default BLE name will be the device name followed by the last 7 digits of the device IMEI, for example "AT500-1234567". Select the desired device to connect via BLE.

Once connected, you will see device status, and you will be able to see errors and change configuration where necessary.

NOTE: The AT500 is shipped (by default) with an astra chip-SIM, please do not dismantle the device or change the APN configuration.

Also, we recommend that you don't change the BLE configuration, or else you risk losing the BLE connection and it wont be easy to restore!

For further information regarding the use of the astra IoT app, please refer to the Application Note - Astra Diagnostics Mobile Phone App.

## AT500 POWER SAVING STRATEGY

To conserve battery life, the AT500 will be in power-down (sleep) mode the vast majority of the time. Wake criteria are:

- Timed report due (STIM minutes elapsed since the last report)
- Motion detected
- Qi wireless charging is active
- BLE device is connected

The AT500 device will remain ‘awake’ whilst charging, or whilst there is a Bluetooth (BLE) device connected. Leaving the device on a Qi wireless charger is a convenient way to keep the device awake for testing, configuration and diagnostics etc.

### Motion Detection

Motion is detected, according to the sensitivity criteria defined by \$MEMS

When motion is detected, the AT500 will wake and immediately report a MOTION event (reason bit 31 set). The device will stay awake to try and get an updated location via GNSS, which if successful within the defined timeout, will result in a GPS-REACQUIRED event being reported (reason bit 22 set) with latest GNSS data. After reporting GPS Reacquired, the device will power down for STIM minutes. Further wakes on motion will be inhibited for JSEC seconds, to conserve battery. Wake on motion can be disabled completely by setting \$JSEC,0 leaving only timed wake events.

### Timed Wake

The AT500 will wake every STIM minutes to send a TIMED report (reason bit 0 set). Where motion detection is enabled (JSEC non-zero), we can assume that the device is in the same location for a timed wake, and hence battery life can be improved by disabling GNSS fix on a timed wake. Waiting for a GNSS fix can take up to 3 minutes, whereas a timed wake without GNSS is typically completed within 20s, hence battery life can be extended quite significantly, particularly in applications where sky visibility is often limited or completely masked (i.e. underground parking).

### Fastrack Mode

FastTrack mode is used when detailed and near-live reporting is required for a short period of time. The legacy version, without arguments, triggers a 1 minute period of reporting at 5 second intervals. From version 7.0.59, the extended version of FastTrack mode allows specific reporting criteria and duration to be defined, as described below.

\$FTRK,<duration-min>,<metres>,<seconds>,<degrees>

<duration-min>	FastTrack mode duration, in minutes
<metres>	FastTrack mode distance reporting interval, in metres (max. 65535)
<seconds>	FastTrack mode timed reporting interval, in seconds (max. 65535)
<degrees>	FastTrack mode heading change threshold, in degrees (max. 180)

### Device Configuration

\$STIM,<timed-wake-mins>,<no-gnss-on-timed-wake>

<timed-wake-mins> // minutes between timed reports (since last report)  
<no-gnss-on-timed-wake> // 0: enable GNSS on timed wake, 1: disable GNSS on timed wake

\$JSEC,<motion-wake-inhibit\_sec>

<motion-wake-inhibit\_sec> // minimum seconds between motion wake events and reports

example:

\$STIM,1440,1 // timed wake every 24 hours, with GNSS disabled  
\$JSEC,600 // power-down for a minimum of 10 minutes between wake on motion events