

# ES821

## 1. General Description

ES821 is a 4G (Cat.M1&NB-IOT) waterproof GPS asset tracker. Carefully designed for long battery life, it can last 5 years (one report per day) with 7800mAh battery. Embedded with magnets, it can easily attach to vehicle, trailer, container for asset tracking. It will wake up for reporting location information when it senses moving of the asset and power down itself when it is stationary. It supports TCP/UDP and HTTP for reporting location information. ES821 will automatically switch to cell-ID based location reporting whenever GPS is not available.



## 2. Main Functions

- **Tracking:** It sends GPS (Location, speed) information to server with configurable report interval.
- **3-Axis Accelerometer:** Using embedded accelerometer and carefully designed algorithm to detect the vehicle/asset trip start/stop with accuracy.
- **Storing Message:** The device stores up to 300 messages if out of coverage and send the stored messages once the device regains coverage.
- **Moving Wakeup:** Device will automatically wakeup when it senses moving of the asset and power down itself when it is stationary.
- **Power Saving Mode:** By optimizing GPS acquisition timer and using super low-power CPU to achieve super-low power consumption and super-long battery life.
- **Battery Low Warning:** When battery level is low, it will send low-battery alarm message.
- **Flexible Battery Selection:** Two kinds of choices: 7800mAh or 6000mAh.
- **Drop Alarm:** Using embedded light sensor to detect the drop/detach from the tracking object.
- **Cell-ID Based Location:** Device reports cell-ID based location information where GPS is not positioned.
- **OTA (Over the Air):** The device's configuration, setting and firmware can be remotely upgraded.
- **Waterproof Case:** IP65 waterproof.

## 3. Specification

### Physical and Electrical

Dimensions: 86mm\*62mm\*33mm

Weight: \*g

Battery capacity: 7800/6000mAh

Supply Voltage: 3.3V~4.5V

Power Consumption:

-Active mode:< \*mA @3.8VDC

-Sleep mode:< \*mA @3.8VDC

-Deep Sleep Mode:< \*uA @3.8VDC

Operation temperature: -20°C to 65°C

Storage temperature(Without battery):

-40°C to 85°C

3 LEDs for charging, GPS and Cellular status; USB2.0

Built-in Cellular and GPS antenna

### GPS Specification

-162dBm Tracking Sensitivity

Accuracy (Open Sky): <2m (CEP50)

### Cellular Communication

Cat.M1 & NB1:

LTE-FDD: B1/B2/B3/B4/B5/B8/

B12/B13/B18/B19/B20/B26/B28

LTE-TDD: B39 (for Cat.M1 only)

Output Power: 23dBm ± 2.7dBm

GSM:

GSM850/GSM900/DCS1800/PCS1900

Output Power:

GSM850/900: 33dBm ± 2dBm

DCS1800/PCS1900: 30dBm ± 2dBm

Protocol: HTTP/TCP/UDP/SMS