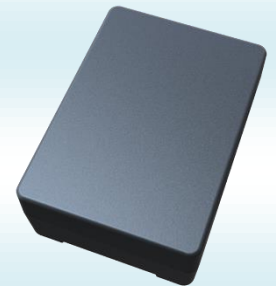


ES821

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 under one report per day mode with 7800mAh battery. Embedded with magnets, it can easily attach to vehicle, trailer, container for asset tracking. 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.
- **Moving Wakeup:** Device will automatically wakeup to report data to server when it senses moving of the asset and power down itself when it is stationary.
- **Storing Message:** The device stores up to 50 messages if out of coverage and send the stored messages once the device regains coverage.
- **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: 7800 or 10200 mAh.
- **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: 286g

Battery capacity: 7800/10200 mAh

Supply Voltage: 3.3V~4.5V

Power Consumption:

-Active mode:< 78 mA @3.8VDC

-Sleep mode:<4 mA @3.8VDC

-Deep Sleep Mode:< 60 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 Network;

USB2.0

Built-in Cellular and GPS antenna

Charging mode: USB charging

Module: BG96 from Quectel

Chipset Type: MDM9206 from Qualcomm

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: TCP/UDP/SMS