

ES446S

1. General Description

ES446S is a 4G&D2C (LTE Cat.1) OBDII GPS Tracker based on Starlink Direct-to-Cell (D2C) satellite technology, which allows the device to connect directly to the satellite in remote areas where terrestrial networks are unavailable or unreliable. Yet, in areas with terrestrial network coverage, the device can still communicate via ground-based cell towers. It supports following communication protocols: SAE J1850 PWM, SAE J1850 VPW, ISO9141-2, ISO14230-4 (KWP2000), and ISO 15765-4. ES446S can read BLE sensors (tire pressure sensor) via its embedded BLE module. It can also read vehicle information such as VIN, RPM, odometer, fuel level, engine oil and coolant temperatures etc.



2. Main Functions

- **D2C Real-time Tracking:** High-speed, low-latency, track and report vehicle data in remote areas devoid of terrestrial network coverage
- **Bluetooth-positioning:** It can broadcast BLE ID and/or scan BLE tags for positioning purpose
- **Report BLE sensor:** Read and report data from BLE sensors (e.g. tire pressure sensor)
- **Driving Behavior Detection:** Report harsh braking, harsh acceleration and impact
- **Intelligent Engine On/Off Detection:** Detect engine on/off via OBD or proprietary detecting method by vibration
- **Trip Start and Trip End Detection:** Report trip start and trip end
- **Mileage Report:** Report mileage for reimbursement purpose
- **Tamper Alert:** Send messages if the power supply is disconnected
- **Over Speed Limit Alert:** Report over speed limit
- **CAN, K-Line, J-Line communication:** Read VIN, RPM and many other standard vehicle parameters
- **Power Saving Mode:** Automatically switch to low-power mode when it detects engine is OFF
- **Storing Message:** Stores up to 100 messages if out of cellular coverage
- **Geofence:** Supports circle and polygon setting
- **OTA (Over the Air):** Firmware can be remotely upgraded

3. Specification

Physical and Electrical

Dimensions: 50.6mm *49mm *26mm

Weight: 47g

Battery Capacity: 110mAh

Supply Voltage: 6VDC ~ 42VDC

Power Consumption:

-Active mode:< 45mA @12VDC

-Sleep mode:< 10mA @12VDC

Operation temperature: -20°C to +65°C

Storage temperature: -40°C to +85°C

Antenna: Built-in Cellular, BLE and GPS

Sim Card: Micro SIM(3FF)

LED Indicators: 3 for GPS, cellular
and charging status

Comprehensive IOs

J Line: J1850 PWM VPW

K Line: ISO9141, ISO14230 (KWP2000)

CAN-BUS: ISO15765 (11/29Bit 250/500K)

GPS specification

Sensitivity Tracking: -162dBm

Position Accuracy (CEP 50): <2.5m

Cellular Communication

CAT.1

LTE TDD: B1/B2/B3/B4/B5/B7/B8/B12/
B13/B18/B19/B20/B25/B26/B28/B66

LTE TDD: B34/B38/B39/B40/B41

Protocol

HTTP/TCP/UDP/SMS//MQTT