

ST4345LB

Product Description

LTE CAT-M1 Tracking / Telematics

Suntech Device-

Custom Telematics for Your Business



Suntech International Ltd.

GENERAL DESCRIPTION



The Suntech ST4345LB is a derivative version of ST4300 model, the smallest watertight vehicle tracker in the world. It has internal antennas and a Li-ion Polymer backup battery. The Basic functions of GPS and LTE M1 technology remain same as in the ST4300. Up to 5 GPIO wires/ (event lines) may be connected to the vehicle. Its internal sensors also send vehicle information to a remote server, so that vehicle status may be remotely supervised.

The events may include automatic reports of accidents, door locking, panic button signal, temperature recording, etc., with many other options. Up to 2 event wire outputs may also drive a light, siren, immobilizer etc., after receiving a command from server.

Using these basic functions, Location Based Service providers can provide various services. Examples include alarm for vehicle theft, vehicle management, alarm for route deviation, distance calculation, panic alarm, immobilization etc.

EXTERNAL INTERFACE

Power & I/O Events	5pin wire connection
Serial communication	USB connection for setting parameters (with Mini USB)
Battery interface	3 pin connector(option)
LED Indicator	LTE CAT-M1/2G & GPS indicator
LTE-CAT-M1/2G & GPS Antenna	Internal Antenna

KEY Features

Network: LTE Cat. M1/NB-IoT, 2G

BLE 4.0

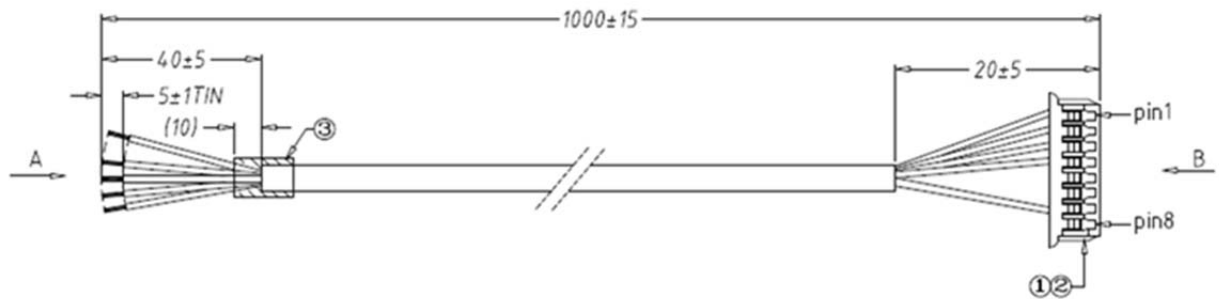
Jamming Detection (Optional)

DPA (Driving Pattern Analysis)/ CR (Crash Reconstruction) (Optional)

- Identify Virtual Ignition (Voltage/Motion)
- Circular/ Polygonal Geofence
- Maintenance Server Supported
- Configurable Report Format
- Easily Preconfigure for Report Mode
- Various Report based on driving mode and condition

EVENT CABLES

The Event cable interfaces the ST4345LB to the vehicle. It has 5 wires, among which 3 wires are for VCC, GND and Ignition, and the other 2 wires are input and output.



Color	No.	Function
RED	PIN1	Car battery (Main power 8V ~ 33V)
BLACK	PIN2	Ground
BLUE	PIN3	Ignition
WHITE	PIN4	Input 1
	PIN5	No use
	PIN6	No use
ORANGE	PIN7	Output 1
	PIN8	No use

GENERAL & LTE/GPRS SPECIFICATION

Power Supply	DC 8 ~ 33 V, * Main power +/- inversion protection.
Back-up Battery	Rechargeable 3.7V, 450mAh Li-ion Battery
Power Consumption	Active mode: 40~50 mA@12V Sleep mode less than 4mA @12V Deep sleep mode less than 2mA@12V
Power	Class 5 (21dBm+1.7/-3.0dBm) for LTE-FDD / LTE-TDD bands Class 4 (33dBm±2dB) for GSM850 / EGSM900 Class 1 (30dBm±2dB) for DCS1800 / PCS1900 BLE : 2.5 ~ 2mW
Packet Switched data rate	LTE Cat M1 DL : Max 588 kbps / UL : Max 1119 kbps GPRS DL : Max 107 kbps / UL : Max 85.6 kbps BLE : 24Mbps
Frequency	LTE Cat M1 : B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B85 LTE Cat NB2 : B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B28, B66, B71, B85 EGPRS : 850/900/1800/1900MHz
Temperature Range	-30°C ~ +85°C
Watertight	IP 67
Event Input & Outputs	<ul style="list-style-type: none"> - Ignition <ul style="list-style-type: none"> ■ Ignition : 6 ~ 33V [ON], 0 ~ 5V [OFF] - Output <ul style="list-style-type: none"> ■ Short-Circuit Protection, ■ Open drain output of up to 300mA ■ Available for Siren, Vehicle Blocking - Input <ul style="list-style-type: none"> ■ Input : 0.8 ~ 33V [High], 0 ~ 0.7V [Low] (protection ESD) <p style="margin-left: 20px;">Available for Panic button, Door sensor.</p>
Dimension	74 x 45 x 19.5 mm
Weight	102 g (with event cable)

Approval	FCC, PTCRB
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GPS RECEIVER SPECIFICATION

Receiver Type	GPS & Glonass GPS L1 band(1575.42MHz), Glonass L1 band (1601.71MHz) SBAS : WAAS, EGNOS, MASA,
Update Rate	1Hz
Horizontal Position Accuracy	Autonomous <2.5m CEP
Velocity Accuracy	Without Aid <0.1m/s
Acceleration Accuracy	Without Aid 0.1m/s
Acquisition ¹⁾	Cold starts <35s 15s (with EASYTM) Warm start <30s 5s (with EASYTM) Hot start <1s
Sensitivity ²⁾	Tracking -167dBm Reacquisition -161dBm Acquisition -149dBm
EASYTM	available for quicker TTFF
Power Consumption	37Mw [Acquisition], 27mW [Tracking], 3.0mW [AlwaysLocateTM]
Antenna type	Patch Antenna

* 1) depending on data assist connection speed and latency.

AVAILABLE OPERATION / FEATURES

Configuration	either by LTE CAT-M1, GPRS, SMS or PC
Parameter Change	either by LTE CAT-M1, GPRS, SMS or PC
Command /Control	either by LTE CAT-M1, GPRS, SMS or PC
Reporting	either by LTE CAT-M1, GPRS or SMS
LTE-CAT-M1/GPRS Communication	TCP / UDP
Security Alarm	Alert for Geo-fencing, Low main battery, backup battery's defect, GPS defect, Route deviation, Over speed, Specific sensors triggered and Vehicle crash. Emergency for Panic button, Parking lock and Cut off main power.
Basic Data reported	NMEA location, Speed, Course, GPS signal status, Events, LTE CAT-M1/GSM Cell ID Cell ID, Message No. Accumulated moving distance, Main battery value
Data Storage	up to 10,000 locations, in the event of a transmission failure, minimizing data plan expense.
Reports	Reporting with adjustable intervals, either by a pre-set (time interval or distance interval) or by Speed threshold. Reports may also be requested any time from the remote server.
Report Back up	possible (dual IP reporting or Backup SMS reporting)
Voltage check	main battery
Power down	sleep or deep sleep (stopping communication)
Geo-fencing	Circular up to 255 points / Polygon up to 30 points
Firmware Upgrade	by OTA (Over The Air)
SIM Management	by IMSI No or Phone No
SIM/Device Locking	SIM Lock, Set Device's validity term
Driver's pattern inform	Triggered by harsh braking, sudden acceleration or frequent lane change
Log to PC	Log All Reports to PC by USB

INSTALLATION, CONFIGURATION AND PROTOCOL

It is important to install the unit horizontally in order to have the top cover point to the sky (You can see the words, "THIS SIDE UP" on the top cover) or in such place that top cover is not blocked by any metal objects.

For the details of product handlings / installations, please refer to the attached pictures.

Note 1: *Do not take out SIM card when the power line is connected.*

Before taking out SIM card, disconnect power line first.

Note 2: *Configuration or Parameter setting should be done before installation.*

Configuration: Refer to separate document and software tool for configuration.

Protocol: Refer to separate document for the standard protocol, event lines and LED description.

Caution

Battery Use Information

● Storage

- 1) The device with a battery should not be left a long time with discharged status before delivered to the customer. If you need to store our device for a long time, It is strongly recommended that
 - checking the battery voltage level every 3 Months to avoid efficiency reduction.
 - the battery voltage level is maintained above 3.0V by regular charging. (Please keep the voltage level range 3.7V~3.95V, not a full level)
- 2) All batteries should be avoided to store with corrosive material, fire, heat, and please keep clean and dry environment.
- 3) Please keep temperature range -20°C~45°C and humidity less than 75%.

● Handling and Use

- 1) Please do not place or use batteries on hot surfaces, or near conductive/flammable material, water, strong oxidizers and acids.
- 2) If you aware that batteries are deformed, please take off from devices and never use it. (Such as swelling, odor by heating)
- 3) Please do not charge for much longer time than the normal charging time. It can cause heating, fuming, deformation.
- 4) If batteries are leaking or smell, It may present a fire risk.

● Disposal

- 1) Please dispose damaged or worn-out batteries into a battery recycle bin.
- 2) To check the general condition of you batteries, charge them, let them rest for an hour, then measure the voltage. If you batteries are close to 3.9V, batteries are in good condition.