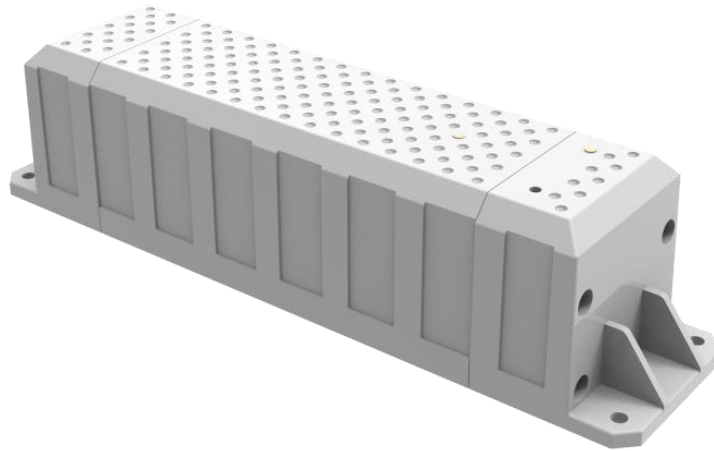


ST4910 USER MANUAL

4G Asset Tracking Device



Asset Tracker with longer battery lifetime

The ST4910 is a multi-purpose tracking device useful for varied applications such as trailer or container management, vehicle/motorcycle tracking or any kind of valuable asset tracking. The ST4910 supports 4G networks and has a water resistant (IP67/IP65 compliant) rugged, hard-case. Designed to minimize power consumption efficiently, the device incorporates a large battery suitable for longer-term usage.

Key Features

- Network: LTE Cat. M1/NB-IoT
- Extremely Low Power Consumption
- Low Battery Alert
- Built-in 3-axis accelerometer, Temperature, humidity, Light and motion detector and Barometric pressure sensors(Optional)
- Maintenance Server Supported (Optional)
- Firmware upgradeable remotely (OTA)
- Waterproof compliant: IP67 (with humidity sensor), IP65 (without humidity sensor)

GENERAL SPECIFICATION

Network Frequency	LTE Cat M1/ NB-IoT 4G : B2, B4, B5, B12, B13
Power	Power Class 3 (23 dBm) for LTE category M1
Battery	Battery: 3.6V, 57Ah Primary Battery
Motion Detection	Built-in 3-axis Acceleration sensor
Power Consumption	Active mode : 40~60mA Sleep mode : less than 3.5mA Deep sleep mode : less than 15uA
Dust and water Resistant	IP67 (with humidity sensor), IP65 (without humidity sensor)
Temperature Range	-10°C ~ +60°C
AT Command	GSM 07.07 , 07.05
LED Indicator	4G, POWER
Packet Switched data rate	LTE Category M1 Up to 375 kb/s UL Up to 375 kb/s DL
PC Sync Track	USB cable
Dimension	125(W) × 90(L) × 50(T) mm
Weight	197g
Approval	FCC, IC, PTCRB

GPS RECEIVER SPECIFICATION

Receiver Type	GPS & Glonass GPS L1 band(1575.42MHz), Glonass L1 band (1601.71MHz) SBAS : WAAS, EGNOS, MASA,
Update Rate	1Hz

Accuracy ¹⁾	Position 2.5m CEP SBAS 2.0m CEP
Acquisition ²⁾	Cold starts <35s Aided start <1s Hot start <1s
Sensitivity ³⁾	Tracking -167dBm Reacquisition -161dBm Acquisition -149dBm
Antenna type	Patch Antenna

*1) All SV @ -130 dBm

*2) It depends on aiding data connection speed and latency

*3) The 3 figures were measured with a good active antenna.

AVAILABLE OPERATION / FEATURES

Configuration	either by SMS or PC
Parameter Change	either by SMS or GPRS
Command /Control	either by SMS or GPRS
Reporting	either by GPRS or SMS (as a back up)
Transmission Protocol	TCP/UDP
GPRS Connection	either always connected or upon needed
Basic Data reported	NMEA location, Speed, Course, GPS signal status, Message No, Accumulated moving distance
Data Storage	up to 2,000 locations, in case of transmission failure or cost issue
Reports	Possible to make a cyclic location report at an adjustable interval only when command comes
Report Back up	possible (dual IP reporting or Backup SMS reporting)
Power down	Deep sleep on no network (less than 15uA):
Firmware Upgrade	by OTA (Over The Air) or pc tool.

INSTALLATION, CONFIGURATION AND PROTOCOL

Most important point is to install the unit horizontally in order to have the top cover to see the sky
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

Caution:

FCC Part 15.19

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Part 15.21

Any changes or modifications (including the antennas) to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

FCC and IC RF Radiation Exposure Statement: This equipment complies with FCC RF Radiation exposure limits set forth for an uncontrolled environment.

This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

RF du FCC et IC d'exposition aux radiations: Cet équipement est conforme à l'exposition de FCC et IC rayonnements RF limites établies pour un environnement non contrôlé.

L'antenne pour ce transmetteur ne doit pas être même endroit avec d'autres émetteur sauf conformément à FCC et IC procédures de produits Multi-émetteur.

Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.