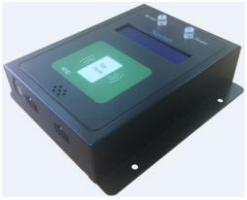
GT-1920, GNSS 4G/LTE School Bus Tracker - with RFID/LCM

RoHS Compliant



Overview

Equipped with RFID reader, LCM, GNSS receiver, and 4G/LTE cellular technology, GT-1920 is a real-time tracker that sends information of RFID tag, location, time, card status etc. to cloud server. It is especially useful for management of people transportation service such as school buses.

There are 20 geo-fences with real-time alerts to cloud server and smartphone APP when the tracker arrives and/or leaves a geo-fence.

Drivers define a new route by a Route RFID tag for each drive. The corresponding route name could be displayed on the LCD.

Each route could be defined in advance. There would be route violation notification in case the bus deviates from the specified route.

Management functions allow generation of various reports such as student-ride report etc.

Features

- Sensitive GNSS (GPS+GLONASS) receiver providing accurate position even in GNSS-difficult environment.
  - Chip of SiRFstarV with AGPS support
- High performance Gemalto ELS61 4G/LTE module and antenna providing real-time efficient communications.
- Mifare card reader
- LCM for route or student tag display
  - 144 x 32 dots or 18 characters by 2 rows
- Sound indication by buzzer for tag-reading result
- LEDs for operation status indication
- Power: 12/24 VDC input
  - Smart power saving,
  - Draws negligible current while engine is OFF
- Console port of Mini-USB for management
- End user inaccessible SIM card holder
- Route definition
  - Managers define a route on web by dragging paths on a map.
  - Drivers dynamically define a new active route by an RFID tag for each drive.
- RFID data (white-list) synchronization
  - From server when tracker power is on.
  - From tool on Windows PC via console port
- Report related data when a RFID-tag comes
  - Card ID, date, time, and position etc.
- Report position at a fixed interval (default 30-sec)
  - Device ID, date, time, and position etc.
- Precise GPS time with time zone awareness
- Position buffering as bus passing cellular dead zone
  - Automatic re-transmits as signal resumes
- Student on bus notification when engine is OFF[1]
  - To reduce misfortunes of hot/cold impact to a child left on bus by careless driver.
  - Alert as a check-in tag does not check-out.
- 20 circular geo-fences with IN/OUT alert options[2]
- Alerts[3]
  - SIM Insertion
  - Geo-Fence IN, OUT
  - Speeding

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- ACC ON, OFF
- Main power low
- Student on bus
- Deviates from assigned route

- OTA (Over The Air) firmware upgrade
- Working temperature
  - -20~60℃
- Driver's working hours
  - Check in and out by a driver tag
- APP for iOS and Android available.

Note

[1] This amenity function is served as an aid only. People should not solely rely on it to avoid such kind of misfortune.

[2] Function of notification to students' parents in next stop could be discussed.

[3] Additional function customization are welcome.

Technical Specifications

Cellular Module

LTE	Gemalto/Cinterion ELS modules
Model: Operator/Area, Band Frequency	Model **A**: Telstra/APAC 4G LTE: Band 3,5,8,28; 1800/850/900/700MHz 3G WCDMA: Band 1,5,8 2100/850/900MHz Model **E**: EMEA, APAC 4G LTE: Band 1,3,8,20,28; 2100/1800/900/800/700MHz 2G GPRS: Band 3,8 1800/900MHz Model **F**: EMEA, APAC 4G LTE: Band 1,3,8,20,28; 3G WCDMA: Band 1,8 2G GPRS: Band 3,8
	Model **U**: AT&T, T-Mobile/NA 4G LTE: Band 2,4,5,12; 1900/1700(AWS)/850/700MHz 3G WCDMA: Band 2,4,5 1900/1700(AWS) Model **V**: Verizon/USA 4G LTE: Band 4,13 1700/2100 (AWS), 700MHz Model **J**: Docomo/Japan 4G LTE: Band 1,18,19 2100, Japan lower, upper 800 MHz
LTE Features 3GPP Release 9	DL max. 10.2 Mbps, UL max. 5.2 Mbps UE CAT 1 supported

GNSS (GPS & GLONASS)

Receiver Type	SiRFstarV - 52 channels, L1 frequency, C/A code GPS & QZSS:1575.42MHz GLONASS: 1598.0625~1605.375MHz
Horizontal Position Accuracy	< 2.5m (Autonomous) (50% 24hr static, -130dBm)
Max. Altitude	<18,000 m
Max. Velocity	<1,852 km/hr.
Dynamics	<4g

General

Dimension (mm)	133 x 97 x 32 (mm)
I/O Interfaces	1. 4-pin Micro-fit connector x 1 2. Nano-SIM card holder x 1 3. Mini-USB connector x 1 4. LED (Red, Green) x 2 5. SMA connector (GNSS, LTE) x 2 6. LCM (144x32 dots) x 1 7. RFID reader x 1 8. Buzzer x 1

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Micro-Fit 4-pin connector 	1. VCC (Pin 1) 2. GND_VCC (Pin 3) 3. ACC (Pin 2) 4. GND_ACC (Pin 4)
External Power from VCC/GND_VCC	8V~30V, 35V tolerable
Positioning	GPS/GLONASS/QZSS w/ AGPS
Communication	4G LTE Cat 1
G-sensor	3-axis, ±2g~±16g
Power consumption	Normal working+: 150 mA
Capacity of Data Buffer (by internal Flash)	16,384 records – i.e. 273 hours or 11 days if data is continuously sent once per minute
Watertight	IPX5
Humidity	< 85%RH, non-condensing
Working Temperature	-20 °C ~ 60 °C
Storage Temperature	-20 °C ~ 35 °C

+ Depending on network environment and report interval

Major Functions

Power ON/OFF	Power on when VCC applies. Power off when VCC off
SIM Change	Eject SIM with a thin pin
LED	Red LED: power on indication Green LED: ON 3-sec as valid tag detected)
Major I/O Functions	ACC: Engine ON/OFF detection Mini-USB: Console RFID reader: Mifare card LCM: Route, driver, or student display Buzzer: Sound indication for tag
Geo-Fence	Circular x 20
Major alerts	SIM Insertion Engine ON/OFF (by ACC)+
	Main power loss Student on bus Geo-Fence IN, OUT, late Speeding Deviates from assigned route
Report interval	RFID tagging or configurable time
OTA (Over The Air)	Firmware upgrade Tracker setting/configuration
Position viewing	App, Web
Smart phone APP support	Android, iOS - Setup, live, history, event, I/O status
Login account	● 1 login account for each tracker ● QR-code scan login support ● Add your own login alias ● Add other trackers under your account with their permission ● No limit on number of trackers ● Organize trackers in groups ● No limit on number of groups
Language	English, Japanese, Chinese etc.
History	30-day server log

Order Information

GT-1920X, X=A,E,F,U,V,J.

*ODM is welcome.

Standard Accessory

Power & I/O cable - Two ends: 4-pin Micro-fit connector (to tracker) and open wires (to vehicle) Length: 3m	
GNSS antenna	

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4G/LTE antenna	
Fixing frame	

Optional Accessory

Data cable - Mini-USB to USB Type A Length: 1.8m	
RF ID tags – For driver, route, student	

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