Compact GNSS Tracker

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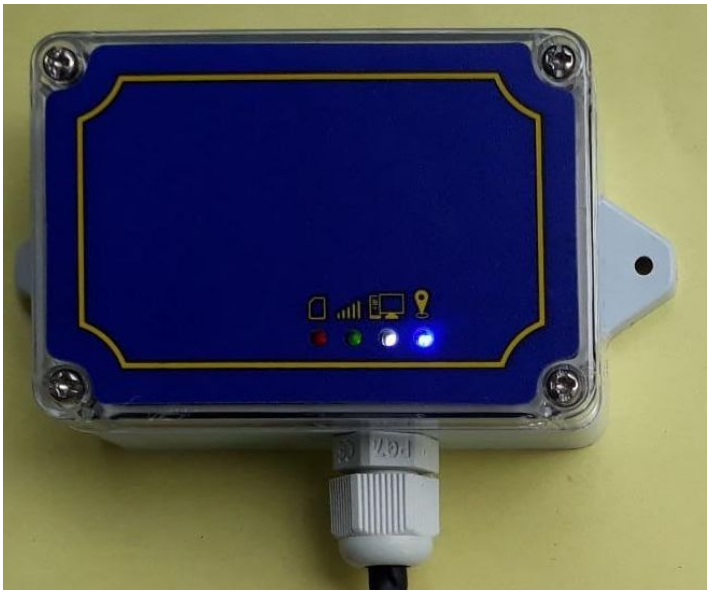
C2GT 2.0

Product Overview

The SIFA Compact 2G GNSS Tracker is suited for tracking vehicles under challenging environments.

The Tracker has Quadband GSM/GPRS to communicate the location and other events. The location is measured by an accurate GPS with internal patch antenna with 2.5 metre accuracy.

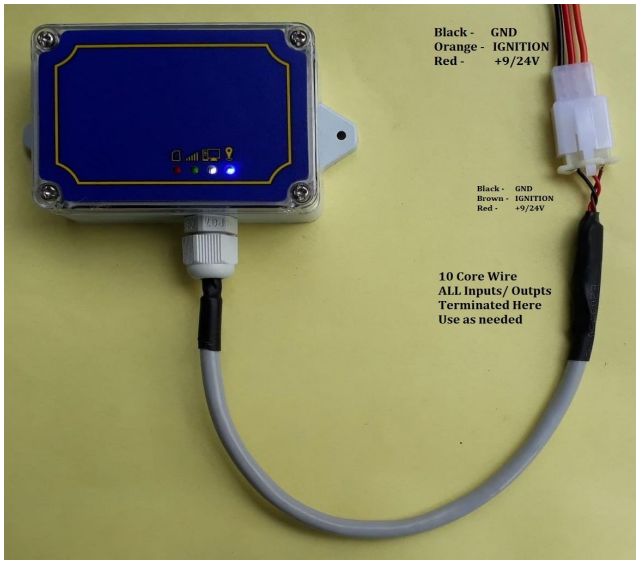


Features

- Data interval based on speed
- Ignition input to detect idling time
- GNSS Odometer
- Works also only with external power
- Internal/ External power switchable
- Low voltage Alarm of external power
- Internal Battery Voltage monitoring
- Multiple Digital/Analog/Serial IO
- Tamper detection
- SIM Change detection
- Stores & transmits if no Connectivity
- Primary/ Secondary Server
- Protocols TCP/IP, HTTP, MQTT
- OTA settings via SMS

Installation

The Tracker has terminated all the IO lines and the power lines (10 connections) through a cable gland. The user can use any suitable connector to interface it to the vehicle wiring harness.

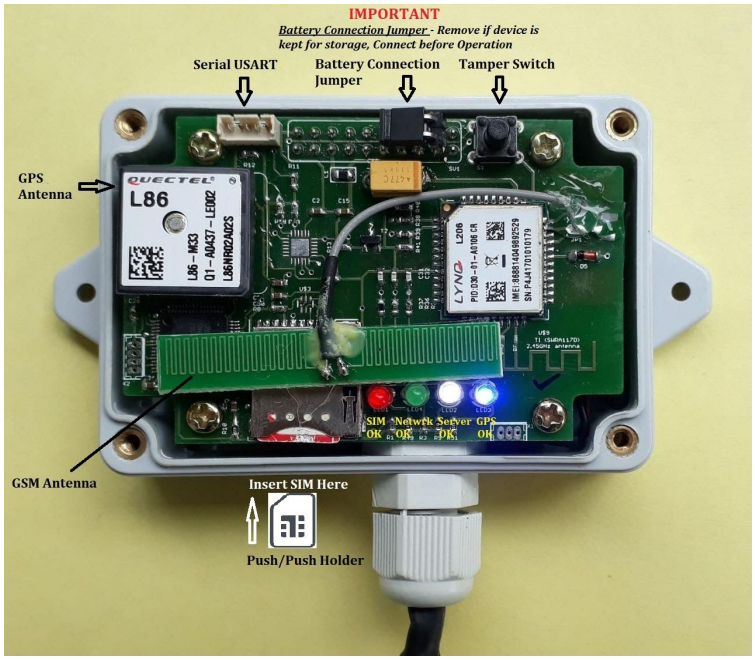


Wiring

This image shows an example with only 3 of the 10 terminations being used. The RED color is connected to Vehicle Battery Positive terminal, the BLACK is connected to the Negative terminal. The central wire ORANGE, is conne cted to the Ignition signal of vehicle harness.

SIM and Internal Battery

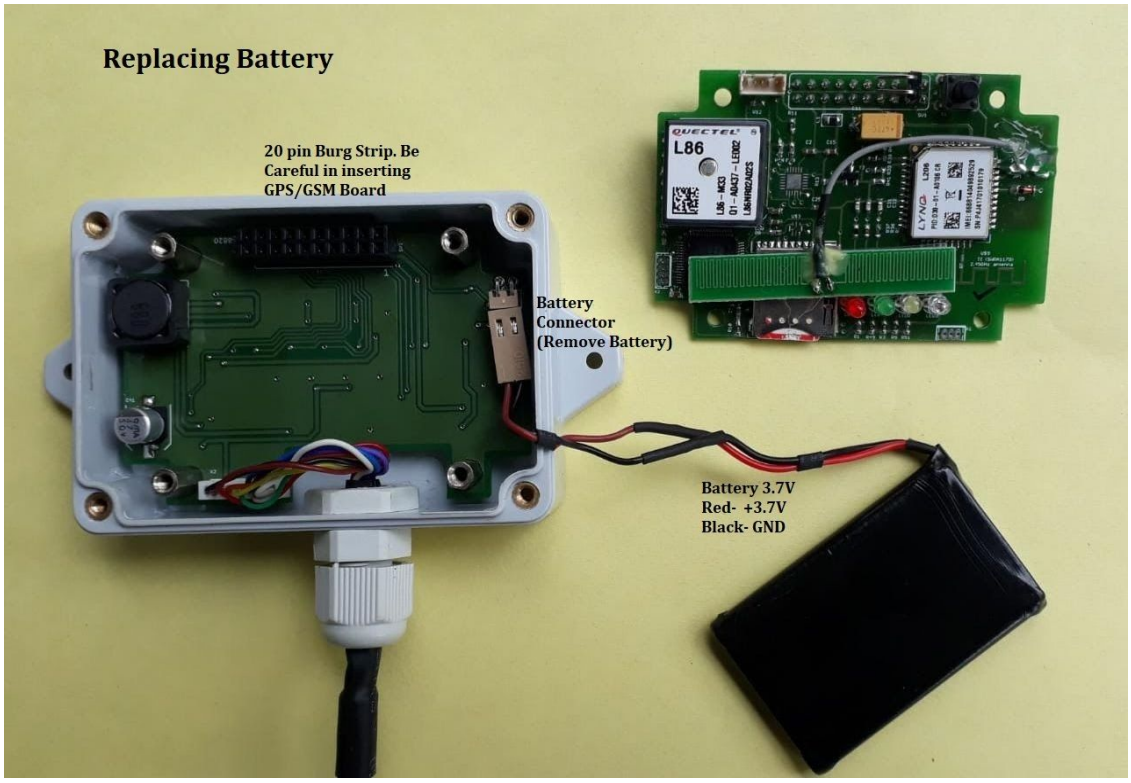
The internal battery is disconnected while shipping. Please see the Jumper used to connect the internal Battery (Battery Connection Jumper).



It is recommended that you connect the jumper only before closing the lid and ready to fit the device after inserting the SIM Card. The SIM Card holder is easily accessible (push push type connector). Please check the direction of insertion and the CUT on the SIM card. It is recommended that you turn off both external power as well remove the internal -Battery Connection Jumper- while changing the SIM card.

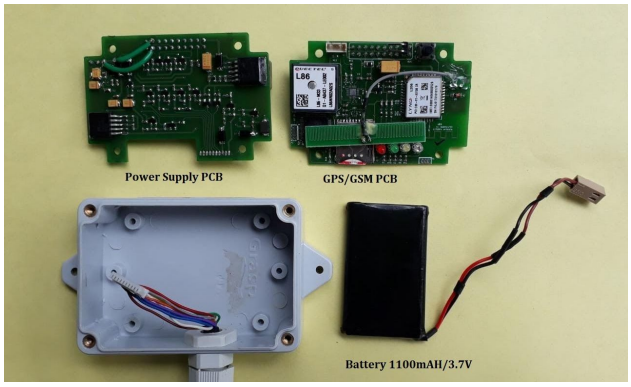
Whenever the tracker will be kept idle without external power connection, it is recommended to remove the - Battery Connection Jumper- to ensure long life of Battery.

Changing the Battery



The internal battery has a capacity of 1100mAH or 2200mAH - 3.7Volts Lithium Ion Battery. The Battery can be changed by removing the GPS/GSM board.

The tracker switches its operation from external supply to internal battery only when the external power is disconnected. The tracker can function independently only with external power if you remove battery or remove -Battery Connection Jumper-.



The tracker consists of a power supply PCB, GPS/GSM PCB and internal Battery.

The power supply pcb handles all signal conditioning functions too besides battery charging and input power management.

Technical Specifications

CPU:	LPC845 Arm-Cortex 32 bit
Data Flash:	4 Mbytes, 16000 records
Internal Battery:	1100mAH, upgradable to 2200mAH
GSM/GPRS:	Quad-band GSM/GPRS 850/900/1800/1900 MHz GSM 2/2+ standard Class 4 (2W @850/900 MHZ) Class 1 (1W @1800/1900 MHZ) GPRS Class12, Voice, SMS, TCP-IP,MQTT,HTTP
GNSS:	GPS L1 Band Receiver (1575.42MHz) GLONASS L1 Band Receiver (1601.71MHz)
Sensitivity:	-165dBm @Tracking, -148dBm @Acquisition, -160dBm@Reacquisition
Horizontal Accuracy:	<2.5 m CEP
Cold Start:	<15s
Warm Start:	<5s
Hot start:	<1s
Channels:	99 acquisition channels, 33 tracking channels
Support:	DGPS, SBAS (WAAS/EGNOS/MSAS/GAGAN)
Temperature:	Operating range -40 ~ +85℃
Enclosure:	IP65, Size: 85x 58x 34 mm
Antenna:	GSM and GPS both internal
PowerSupply:	+9 to +40V DC / 750mA
Inputs/ Triggers	Ignition Detection Box Open Tamper Switch Alarm for Internal / External Power levels Sim Change Detection Digital Inputs (0-24V) x4 Nos Digital Outputs (Open Collector) x 2 Nos Analog Input (0-24V0 x`1 No. (12 bit Resolution) Serial USART (TTL) x 1 No.
Indication:	SIMOK, Registered, GPS, Server Connection
Optional:	Tri-Axis Accelerometer Integration

SMS Commands

*GETCONF1# *GETCONF2#	Gets All the configuration Parameters
*SETCONF#	To set One or many Parameters. requires a password.

*GET#	Gets the Current Status. Returns the data that will be sent to server
*RESETFxxxxxx	Resets the Flash back up storage
*RESETPxxxxxx	Resets all Parameters to Default

xxxxxx-> Contact us for getting the string

List of Parameters

SOS-	Telephone number 16 chars
PORT1	Primary Server Port Number 5 chars
IP1-	Primary Server IP Number 16 chars
PORT2-	Secondary Server Port Number 5 chars
IP2-	Secondary Server IP Number 16 chars
AT-	Active Time in Sec 4 chars
AD-	Active Distance in Metres. 4 chars
ST-	Standby Time in sec 4 chars
STP-	Stoppage Time in Minutes 4 chars
BL-	Battery Low Level 4 chars
AA-	Active Angle 4 chars
SMT-	Sleep mode Time 4 chars

SL-	Speed Limit in Km/h 4 chars
MS-	Minimum Speed in Km/h 4 chars
EBL-	External Battery Low 4 chars
IBL-	Internal Battery Low 4 chars
APN-	APN of the Network 32 chars
PASS#	Password 3 chars to Authorize Setting
*PASS#	New Password 3 chars

- Number of chars of each field Maximum is shown. You can enter less chars.

Logic for Transmission of data

1. If the ignition is on, then the interval is fixed by AT-active time. However if the distance travelled in between is greater than AD- active distance, then data will be transmitted.

2. If ignition is off then the interval is fixed by ST-standby time

3. The data will be attempted to send to the Primary server and if failed it will be stored in flash. If secondary server gets connected the data will be sent after sending to primary server.

Data Preamble

$loc	Normal Live Transmission
$bak	Stored Data Transmission

$pfa	Park Fense Transmission
$tmp	Tamper Switch – Box open
$bte	External Battery Low voltage
$btl	Internal Battery Low voltage
$ion	Ignition just turned on
$iof	Ignition just turned off
$ovs	Travels faster than the Speed Limit
$stp	Stoppage alert
$rmv	External power removed

Transmitted Data Fields

IMEI	15 char	IMEI number of Network Module
Date	6	GPS Data
Time	6	GPS time
GPSFIX	1	1=Fix, 0= No fix
Latitude	9	Latitude
Lat Direction	1	N=north S=South

Longitude	10	Longitude
Long Direction	1	E=East W=West
Speed	4	Travel Speed in km/h
Heading	10(max)	Course of travel
Cell ID	4	Cell Tower ID number
Signal Strength	2	GSM Signal Strength
No of Satellites	2	No of Satellites in view
Battery Level	3	Battery Level in %
Ignition Status	1	1= Ignition on, 0= Ignition off
Digital Inputs	4	HLLL
Tamper Status	4	PSTB – Power, Sim Card, Box Tamper, Battery Tamper
Status	7 max	ACTIVE / NORMAL / STANDBY
Analog Input	4	Shows Internal Battery Voltage
SW Version	4	Software version
Odometer	4	Odometer in Km

- All parameters transmitted end with comma (,) -delimited text