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D-10

GNSS/ 2.5G GSM/GPRS Vehicle Tracker

Datasheet

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1. Introduction

Locosys's GNSS and cellular Machine-to-Machine(M2M) modules GGB-1916 will integrate D-10, bringing to market a half business card sized vehicle tracker with a cloud-based vehicle online admin system. D-10 already integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning. Beside multi-vehicle management, speed is a top concerns for employer of drivers. D-10 targets this market, uploading speed and location data to cloud-based database and pushing notation to website along with multiple vehicle security features to satisfied different type of users.

We provide rich set of Internet protocols, industry-standard interfaces and abundant functionalities extend the applicability of the module to a wide range of M2M and IoT applications such as smart meter, hand-held devices, environmental monitoring, asset tracking, fleet management, security and alarm systems, and so on.

2. Features

- LOCOSYS Technology GGB-1916 Module
- Real time GNSS/GSM positioning (update by SMS message in a given time interval)
- Vehicle online admin management system
- Built-in GNSS/GSM antenna
- High GNSS receiver sensitivity down to -165 dBm
- Support 99 channels GNSS receiver
- Update rate up to 10 Hz
- Support standard SIM card voltage both 1.8V and 3.0V
- Support JT/T 808-2011 and HQ20 protocol
- Remote petrol/power cut-off
- Geo-fencing (circular/ polygon zones)
- Power low/ lost alert
- Over speed alert
- Journey report
- Dead zone protection
- Remote configuration
- Intelligent power management (parking/ driving)
- Driver fatigue detection alert
- Easy to install

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3. Technique Details

3. 1. Appearance

Figure 1 D-10 Vehicle Tracker

D-10 Pin assignment

Name	Description	Note
Power +	Power	Input voltage is VDC 9V to 40V
Engine Control	Fuel pump cutoff relay	Maximum current up to 150mA
ACC	Ignition switch input	Input voltage is VDC 7V to 60V
Power -	Ground	

D-10 LED Description

Color	Name	Event	Status
Red	GPS Indicator	GPS Off	Dark
		GPS is in fixing	Solid
		GPS is fixed	Every 1 seconds on and 1seconds off
Green	GSM Indicator	Power off	Dark
		Power off and SIM card has been installed	Solid
		Network searching for service	2 seconds off and fast blink
		Cellular service has been registered	4 seconds off and slow blink

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3. 2. Accessories

Figure 2 Data cable

Data cable pin assignments

Color	Name	Description
Red	Power +	Connect to VDC 9V to 40V
Green	Engine Control	Connect to fuel pump cutoff relay
Yellow	ACC	Connect to ignition switch input
Black	Power -	Connect to ground

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3. 3. Hardware Specification

Hardware feature	Description	
Microprocessor	ARM 9 Lite	
Clock	208MHz	
SRAM	4MByte	
Flash Memory	8MByte	
Operating System	Nucleus	
Input Voltage	VDC 9V to 40V	
Input Current	Working: Average 40mA(12V) Standby Mode: < 3mA(12V)	
Peak Inverse Voltage	< 600V	
Operating Temperature	-30° C to 70° C	
Operating Humidity	5% to 95%	
Backup Battery	Build-in 190mAh/ 3.7V Li-bat	
Antennas	Build-in GNSS and GSM antenna	
Dimensions	56 mm × 44 mm × 20 mm	
Weight	85 g	
Interface	ACC/Ignition	VDC 7V to 60V
	Output/Relay	Maximum current up to 150mA

3. 4. GNSS Specification

GNSS feature	Description	
GNSS	GPS, QZSS	L1 1575.42MHz, C/A code
	BEIDOU	B1 1561.098MHz, C/A code.
	SBAS	WAAS, EGNOS, MSAS, SDCM, GAGAN
Channels	Support 99 channels	
Update rate	1 Hz default, up to 10 Hz	
Sensitivity	Tracking: up to -165 dBm	
	Acquisition: up to -148 dBm	
Acquisition Time	Hot start	< 1 sec
	Warm start	< 20 sec
	Cold start	< 40 sec
Positioning	Velocity	< 515 m/s
	Velocity Accuracy	0.1 m/s
	Maximum Acceleration	± 4g
	Maximum Vibration	20 m/s
	Position Accuracy	< 10 m (95%)

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3. 5. Cellular Specification

Cellular features	Description
Frequency band	GSM 900/DSC 1800 Dual band
Output power	Class 4 (2 W) for EGSM 900 Class 1 (1 W) for DCS 1800
GSM Sensitivity	≦ -107 dBm (typ.) @ 900 MHz ≦ -108 dBm (typ.) @ 1800 MHz
SIM interface	Support Mini SIM card: 1.8V, 3.0V
Power Consumption	GPRS: 200mA(4V)
	Sleep: 1mA(4V)
Operating Temperature	-30° C to 70° C
Operating Voltage	VDC 3.3V to 4.8V
UART Baud Rate	115.2kbps
Protocol	TCP/IP GPRS multi-slot class8~class 10 GPRS mobile station class B
Downlink/Uplink	Maximum 85.6Kbps/42.8Kbps

4. Getting Started

You can positioning and remoting your vehicle, and assets through D-10 by connecting it with a data cable and SIM card. You'll need to make sure that your vehicle has ACC, Power, Engine control inputs, connect the cable, and configure D-10 to cellular mode.

4. 1. SIM Card Installation

Make sure the SIM card is the right size (Mini-SIM, 25mm x 15mm) for your device. Then, pull the rubber cover and insert your SIM card with the gold contacts facing down into the slot and push the cover back into the D-10.

Figure 3 SIM Card Installation

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4. 2. Data Cable Connection

The step to connect a data cable, is to find the input port (Refer to Fig. 2) on your vehicle. For the only purpose of tracking the Power and ACC lines are required. But the engine control line is optional.

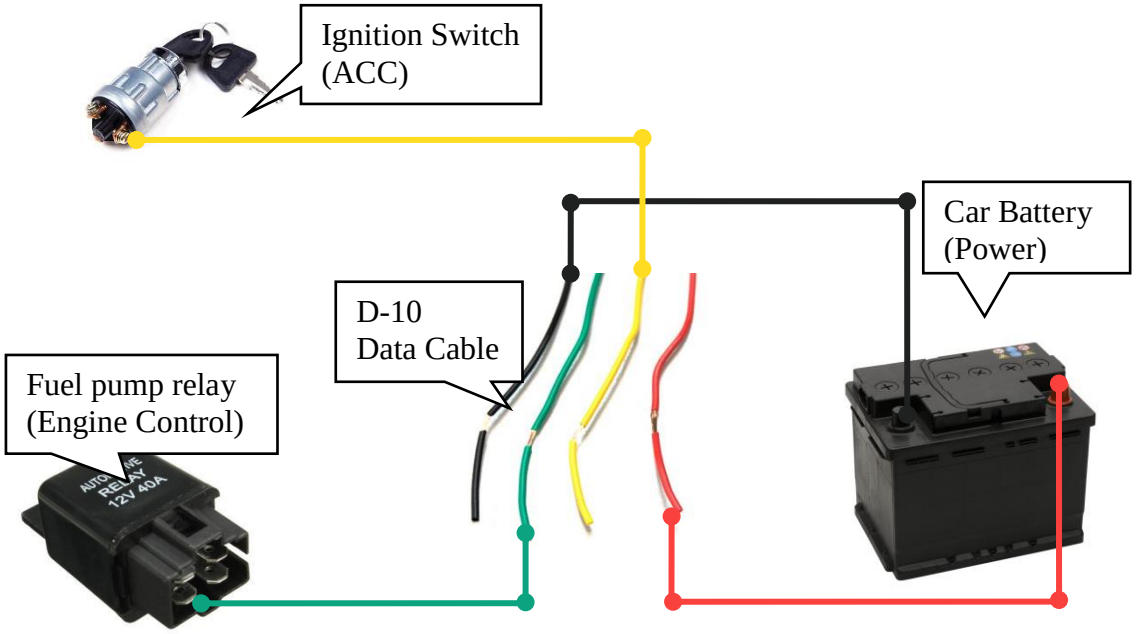

Figure 4 Data Cable Connection

4. 3. D-10 Connection

The step to connect a D-10 tracker, is to find the plug on the other side of cable. Then, insert the plug into D-10's jack. Once D-10 has power, the LEDs will begin to blink. It is means your components are correctly connected.

Note. Select a location with a direct line of sight in the direction of the satellite.

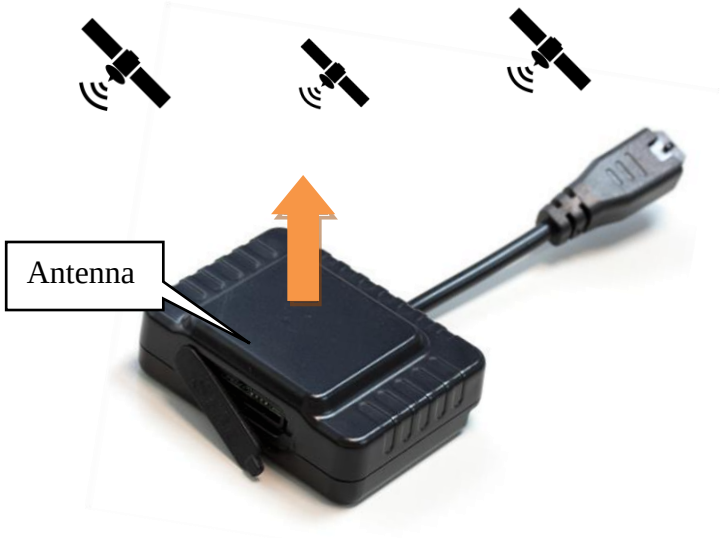

Figure 5 Device Connection

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4. 4. Setting cellular services provider number

Send a text “*1002*30*(APN),,#” from your mobile phone to the D-10 tracker. APN stands for Access Point Name. It is the connection between your cellular service provider and D-10 tracker. Activating APN settings on your device, allows data services to work.

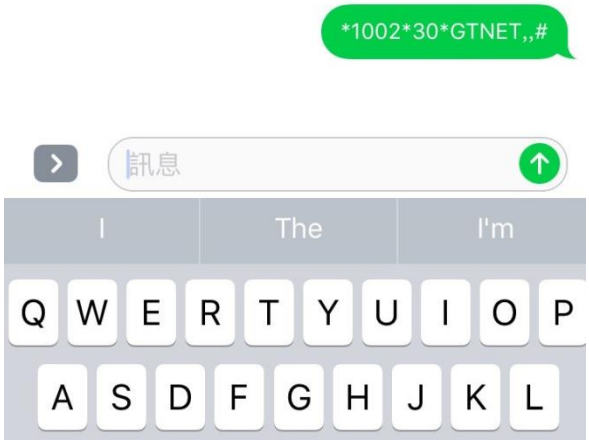

Figure 6 APN Message (Provider:Taiwan, Asia-Pacific Telecom Co. APN:gtnet)

4. 5. Logging into D-10 vehicle online admin system

Visit LOCOSYS cloud http://console.wisegps.cn/, filling the user name and password.

Note. Get the login account from your provider.

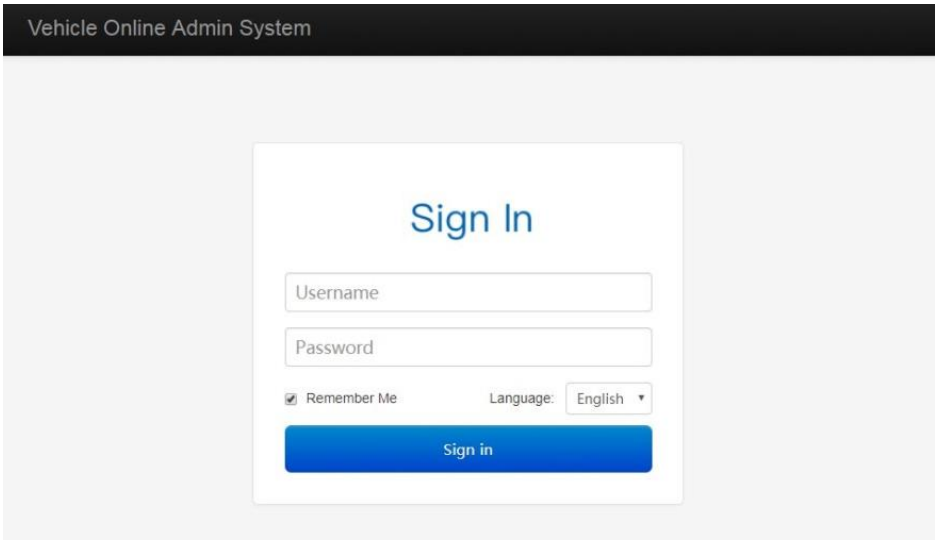

Figure 7 Vehicle online admin system

For more information about how to setting and operating a new tracker, please refer to the user manual.