



GPS Vehicle Tracker EDW-310BB

USER MANUAL



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1. Introduction

EDW-310BB which come in a compact design is a powerful real time fleet management and vehicle tracking system using high sensitivity GPS and wireless GSM/GPRS communication. This self-contained and autonomous tracking device including GSM module, GPS receiver, Li-ion battery and Multi analog input is able to be used as observing the location of vehicle ,detecting temperature ,detecting fuel costing.

Figure 1. EDW-310BB appearance



2. EDW-310BB overview

2.1 EDW-310BB unit

EDW-310BB is designed in a compact and simple rugged Aluminum enclosure. At the end of the unit ,there are 2 LED indicators shows the status of the unit. And various ports for vehicle interface, USB interface, external GSM/GPRS antenna connector ,external GPS antenna connector are on both side of the device.



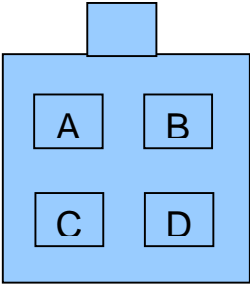
No.	Name
1	Connect 1
2	Connect 2
3	External GSM antenna connect port
4	External GPS antenna connect port
5	External Micro phone connect port
6	GSM status indicator
7	GPS status indicator

2.2 LED indicators

Logo	LED name	Description
M	GSM/GPRS status indicator	Green LED on: GSM/GPRS connection status Green LED blinking: Boot completion status Green LED off: Idle status
S	GPS status indicator	Orange LED on: GPS position fixed Orange LED blinking: During GPS signal reception

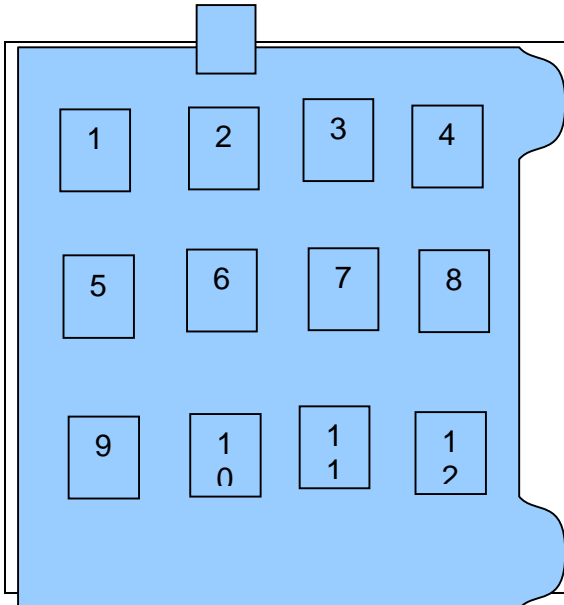
2.3 Connect 1

Please refer to the following table to understand the function of each pin at UART port.

	Pin Number	Description
	A	Configuration Serial port RXD1 (only for update)
	B	Digital input 3 IN3, which is negative trigger
	C	GND
	D	Configuration Serial port TXD1 (only for update)

2.5 Connect 2

Please refer to the following table to understand the function of each pin at Connect 3.



Pin Number	Description
1	Digital input 1 ,also used as SOS input *
2	Digital input2 *
3	Digital input 4**
4	Digital input 5**
5	GND
6	Analog input 1
7	Analog input 2
8	Power
9	Digital output1
10	Digital output2
11	Digital output3
12	Digital output4

Remark:

*: Digital input 1,Digital input2,Digital input 3 is negative trigger

** :Digital input 4,Digital input 5 is positive trigger

2.6 External GSM/GPRS antenna

EDW-310BB has the quad-band GSM/GPRS antenna according to the supported bandwidth in users' areas.

2.7 External GPS antenna

EDW-310BB has an external GPS antenna.

2.8 Package contents

The basic package is including EDW-310BB,GPS antenna,

GSM/GPRS antenna, cables. The optional accessory including :Hand-free kit, Mobile data terminal, CCD camera, RFID reader, temperature sensor, tank fuel level sensor. For more details about optional accessory ,please refer to " GPS AVL Accessory Guide V2[1].0"

3. Specification

3.1 Software Features

- SMS mode/GPRS mode/SMS+GPRS mode
- Position request via SMS or GPRS
- Data logging capacity: up to max 144,000 point
- Store in GSM blind area and forward when GSM signal re-establish
- Mileage report
- Upload/download settings, locations, and update firmware via GPRS
- Configurable GEO-fencing
- Configurable 2 analog input for status detection
- Configurable 5 digital input for status detection
- Configurable 5 digital output for remote control of vehicle

3.2 Hardware Features

- GSM/GPRS core
 - Simcom:SIM300D:900/1800/1900MHz
 - Simcom:SIM340D:850/900/1800/1900MHz
- GSM/GPRS services: Data, SMS/GPRS class B,class 10,TCP UDP,IP
- Physical characteristics
 - Dimensions(L*W*H): 104*73*29.8mm
 - Weight:approx:160g(including build-in battery)
- Temperature range
 - Operation:-20 Celsius degree to +80 Celsius degree
- Power sources
 - Input voltage:10~32 Volt DC regulated/Max 2A
 - Rechargeable Li-ion battery 1800mAh
- Antenna

External GSM/GPRS antenna
 GPS antenna
 Indication: 2 LED indicator for GSM/GPRS and GPS status

3.3 Technical specification

GSM/GPRS specification

Frequency Bands	Simcom 300D: 900/1800/1900Mhz Simcom 340D: 850/900/1800/1900Mhz
GSM class	Small MS
Transmit power	Class 4(2w) at EGSM900 and GSM850 Class 1(1W) at DCS1800 and PCS 1900
GPRS connectivity	GPRS multi-slot class 10 GPRS mobile station class B
Data GPRS	Data up/downlink transfer: Max.85.6/42.8kbps Coding scheme:cs-1,cs-2,cs-3 and cs-4 Supports the protocols PAP and CHAP commonly used for PPP connections
Data CSD	CSD transmission rates:2.4,4.8,9.6,14.4 kbps
SMS	SMS,MT,MO,CB,Text and PDU mode Support transmission of SMS alternatively over CSD or GPRS User can choose preferred mode
TCP/IP stack	Internet services: TCP,UDP,HTTP,FTP,SMTP,POP3
FAX	Group 3:Class 1,Class 2
SIM	Supported SIM card: 3V

GPS module specification

General	Receive Frequency	1.57542Ghz +/-1.023Mhz
	GPS datum	WGS-84
SIRF star III chipset	Acquisition Rate	Conventional mode Cold/warm/hot start < 42/38/1 sec (95% typical)
	Accuracy	Position: 10 meters CEP without SA Velocity: 0.1meters/s, without SA Time: 1ms sync to GPS time
	Channel	24 channel GPS

4. Function

EDW-310BB is able to be powered from 10V to 32V DC. The VIN,GND and ignition line of the vehicle port should be connected with the vehicle to use car management. The VIN line should be connected to +12V or +24V DC of vehicle parts using 2A fuse, for example the vehicle battery. And also ,the SIM card capable of GSM/GPRS should be inserted before connect with power. After completing the connection, the user should change the configuration for its network operator and user's environment.

EDW-310BB receives GPS data via GPS antenna after fixing GPS signal. And then the device sends the location data to control center according to its configuration which is able to be set by control center or user's SIM.

4.1 Communication function

EDW-310BB is able to be communicated by GSM and GPRS network using SMS and GPRS packet. The device can support both GSM and GPRS network, but the control center software is able to be distinguished by the application of SMS and IP packet.

Following communication mode is supported:

- SMS only mode:

When the control center does not have internet connection, it can be communicated with the device via SMS. To conduct it, the control center should connect with GSM modem.

- GPRS only mode:

When the control center have internet connection, the device is communicated with the control center

via GPRS packet at time interval. The time interval can be preset by customer thru GPRS/SMS/UART configuration cable.

- SMS and GPRS mode

When the control center connect with GSM modem and internet ,the control center communicates with the device through both GPRS packet and SMS at time interval. The time interval can be preset by customer thru GPRS/SMS/UART config cable.

4.2 Alarm function

EDW-310BB send alarm SMS/GPRS package to the predefined SMS number/IP address. The alarm package is able to be activated for following functions:

- Journey start/end alarm
- Over speed alarm
- Panic alarm
- Towing alarm
- Geo-fence alarm

Alarm may also preset by customer, such as over temperature alarm and tank fuel change alarm.

For more info about how to use alarm, please refer to GPRS communication protocol.

4.3 Data logging and forward function

EDW-310BB can save data, including position data, the data from sensor such as temperature sensor when enter GPRS blind area and forward the data when GPRS re-establish.

For more info about how to use the data logging and forward function, please refer to GPRS communication protocol

4.4 Status detection function

The multi analog/digital input of EDW-310BB make device easily connect with various sensor ,such as temperature sensor, RFID reader, tank fuel sensor and CCD camera. The info from sensor can be stored or send thru GPRS according to customer's preset.

For more info about how to use the logging and forward function, please refer to GPRS communication protocol .

4.5 Vehicle control function

The multi analog/digital output of EDW-310BB make the device can control the vehicle, such as shutdown engine, close window and close door. Please don't use that function when the vehicle is in high speed .

For more info about how to use the Vehicle control function , please refer to GPRS communication protocol .

4.6 Tank fuel detector function

Connected with tank fuel level sensor,EDW-310BB can detect the fuel level of tank and send it to control center via GPRS. For more info about this function, please refer to document "how to use tank fuel level sensor "

4.7 Temperature detector function

Connected with temperature sensor,EDW-310BB can detect the temperature and send it to control center via GPRS. For more info about this function, please refer to document "how to use temperature sensor "

4.8 Mileage report function

EDW-310BB can calculate the mileage and send it to server. For more about this function, please refer to document "how to use mileage report function".

User can also reset the mileage function by SMS. For more info about how to reset the mileage report, please refer to sms command list part of this document.

5. Get start

EDW-310BB will only accept commands from a user with the correct password. Commands with wrong password are ignored. The default password is 000000.

5.1 Basic SMS Commands

5.1.1 Position Report

To know the location of your EDW-310BB, send an SMS or make a telephone call directly to EDW-310BB and it will report its location by SMS. Command: W<password>,<000>

Notes: The default password is 000000.

Example:

SMS sent: W000000,000

SMS received:

Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50

To get EDW310BB's position by another easier way:

- (a) Call EDW-310BB using your mobile phone.
- (b) After listening to the ring for 10 - 20 seconds, hang up the phone.
- (c) Then after 20 second, your mobile phone will receive a position SMS.

5.1.2 Set Interval for Automatic Timed Report

Description: Automatic timed reports will be sent to your mobile phone according to the time interval you set.

Command: W<password>,002,XXX

Notes: XXX is the interval in **minute**. If XXX=000 it will stop tracking

Example:

SMS sent: W000000,002,005

SMS received: Set Timer Ok/005

EDW-310BB will then report its location by SMS every 5 minutes.

5.1.3 Stop Automatic Timed Report

Description: Automatic timed reports will stop once EDW-310BB receives stop command.

Command: W<password>,002,000

Example:

SMS sent: W000000,002,000

SMS received: Set Timer Ok/000

EDW-310BB will stop automatic timed report

For more detailed SMS commands please go to Chapter 8 - SMS Command List

5.2 GPRS Settings by SMS

Tracking via GPRS, you should set IP, Port and APN for EDW-310BB. Ensure that your SIM card in EDW-310BB supports GPRS connection prior to setting.

5.2.1 Set ID for EDW-310BB

Command: W<password>,010,ID

Note: Tracker ID must not over 14 digits.

Example: W000000,010,123456789

EDW-310BB will then reply with an SMS ('Set SIM Ok/123456789') to confirm this setting.

5.2.2 Set APN

Command: W<password>,011,APN,APN Name,APN Password

Note: If no APN name and password required, input APN only.

Example: W000000,011,CMNET

EDW-310BB will reply with an SMS (like 'Set APN Ok/CMNET') to confirm this setting.

5.2.3 Set IP Address and Port

Command: W<password>,012,IP,PORT

Example: W000000,012,202.116.11.12,8000

EDW-310BB will then reply an SMS ('Set IP Ok /202.116.11.12,8000') to confirm this setting.

5.2.4 Set Time Interval for Sending GPRS Packet

Command: W<password>,014,time interval(in unit of 10 seconds)
(Move Mode: vibration)

Example: W000000,014,00003

EDW-310BB will send GPRS packet every 30 seconds in Move mode(vibration)

Command: W<password>,114,time interval(in unit of 10 seconds)
(Move Mode: vibration)

Example: W000000,114,00012

EDW-310BB will send GPRS packet every 120 seconds in Park mode(no vibration)

5.2.5 Set Commutation Protocol

Command: W<password>,013,0

For more information regarding of bulk configuration by USB cable please refer to < GPS Tracker Parameter Editor>.

If you are using GpsGate Software, please contact us for writing GpsGate protocol before delivery.



5.3 Device installation

5.3.1 Connect the external GSM antenna and GPS antenna

5.3.2 Open the rear cover and then insert SIM card

5.3.3 Connect the analog port & cables with the device and the vehicle. The VIN ,GND and ignition signals of the analog port should be connected to the vehicle. If these signals are not connected to the vehicle, please use power supply or 12/24V battery.

5.4 How to use external sensor

5.4.1 Connect external sensor with EDW-310BB

5.4.2 Control center send related command to tracker unit to set the parameter of using external sensor, such as time interval of taking photo of CCD camera.

5.4.3 Receiving GPRS package which include detection data.

For more info about how to use external sensor, Please refer to " GTP GPRS communication Protocol for GPS Tracker "

6 Troubleshooting

Problem: Unit will not turn on	
Possible Cause:	Resolution:
Wiring was not connected properly	Check and make sure wiring connection is in order.
Battery needs charging	Recharge battery
Problem: Unit will not respond to SMS	
Possible Cause:	Resolution:
GSM antenna was not installed properly	Make EDW-310BB connected to GSM network.
GSM Network is slow	Wait for SMS. Some GSM networks slow down during peak time or when they have equipment problems.
Unit is sleeping	Cancel sleeping mode
Wrong password in your SMS or wrong	Write correct password or SMS

SMS format	format
The SIM in EDW-310BB has run out of credit	Replace or top up the SIM card
No SIM card	Insert working SIM card. Check in phone that the SIM can send SMS message.
SIM card has expired	Check in phone that the SIM can send SMS message. Replace SIM card if needed.
SIM has PIN code set	Remove PIN code by inserting SIM in you phone and deleting the code.
SIM is warped or damaged	Inspect SIM, clean the contacts. If re-inserting does not help try another to see if it will work.
Roaming not enabled	If you are in a different country your SIM account must have roaming enabled.
Problem: SMS received starts with 'Last...'	
Possible Cause:	Resolution:
Unit does not have clear view of the sky	Move the antenna of the unit to a location where the sky is visible.
EDW-310BB is in an inner place	Wait for the target to come out
Battery is low	Recharge the unit and the GPS will start working.
Problem :Cannot receive /send GPRS package	
Possible cause	
APN is not setting correctly	Check local telecommunication provider and set the correct APN
APN is longer than 14 characters	Use SMS command to setting APN ,instead of configuration tool
Local firewall block GPRS package	Check with IT and close firewall
SIM card cannot support GPRS function	Check with local telecommunication provider
Problem: Continuous sending logon info	
Possible cause:	
Power isnot enough that the tracker continuous reset	Charge the tracker at least 3 hours
GSM signal is too weak	Check if the blue led is light for 0.1s and dark for 2.9s.If yes, it proves the GSM signal is too weak. Please put the GSM and GPS antenna to outdoor.
Problem: Preset number for SOS button cannot work	
Possible cause	
SMS format is unique ,adding country ,city info	Check local telecommunication provider to get local SMS format

7 SMS Command List

(Remarks: ***** is user's password, and the default password is 000000)

Command	Format	Remark
Get current location	W***** ,000	Get current location of unit
Get current location	W***** ,001 ,*****	***** is old password ##### is new password
Set interval for automatic timed report	W***** ,002 ,XXX	XXX is the interval in minute. If XXX=000 it will stop tracking
Set preset phone number for SOS button	W***** ,003 ,F,P,T1 (W***** ,003 ,F,P,T1,T2)	F=0, to turn off this function; F=1, only sending SMS; F=2, only calling preset phone number; F=3, both SMS and calling (default) P=1, set a authorized number for SOS button P=2, set a authorized number for B P=3, set a authorized number for C T1: Preset phone number. Max. 16 digits When there is T1 only, then it can be set as SMS No, and the calling No., if there is also T2, then T1 is the preset SMS no., and T2 will be the calling No.
Set low power alert	W***** ,004 ,X	X (voltage preset value) =0 , to turn off this function =1 , <3.3V send SMS alert =2 , <3.4V send SMS alert =3 , <3.5V send SMS alert (default) =4 , <3.6V send SMS alert =5 , <3.7V send SMS

		alert
Set over speed alert	W***** ,005,XX	XX (the preset value of speed) =00 , to turn off this function =[01, 20] (unit: 10Km/h) For example, W000000,005,08, it will sent alert when it is over 80Km/h
Set Geo-fence alert	W***** ,006,XX	XX (preset distance to original place) =00, close =01, 30m =02, 50m =03, 100m =04, 200m =05, 300m =06, 500m =07, 1000m =08, 2000m
Extend Settings	W***** ,008,ABCDEFGHIJ###	A=0, turn off the function of sending an SMS location report to the authorized phone number when it makes a call to unit. A=1, turn on the function of sending an SMS location report to the authorized phone number when it makes a call to unit. B=0, location data of NMEA 0183 GPRMC will be interpreted into normal text for easy reading. For example: <i>Longitude = 114 degree - 04 cent -57.74 second</i> <i>Latitude = 22 degree -32 cent -40.05 second</i> B=1, location data complies with NMEA 0183 GPRMC protocol. For example: <i>\$GPRMC,072414.000,V,3114.3763,N,12131.3255,E,0.00,0.00,050805,*0</i>

		<p>0</p> <p>C=0, turn off the function to automatically hang up an incoming call.</p> <p>C=1, turn on the function to automatically hang up an incoming call after 4 - 5 rings.</p> <p>D=0, Turn off the function of sending an SMS when unit is turned on.</p> <p>D=1, Turn on the function of sending an SMS to SOS number when unit is turned on.</p> <p>E=0, reserved</p> <p>E=1,unit shuts down automatically when the power voltage lower than 3V.</p> <p>F=0, Turn off the alert when unit enters GPS blind area.</p> <p>F=1, Turn on the alert when unit enters GPS blind area. SMS is to be sent to SOS number</p> <p>G=0, LED light works normally</p> <p>G=1, LED light stops flashing when unit working.</p> <p>H must be 0</p> <p>I=0 , close power cut alert</p> <p>I=1 , open power cut alert</p> <p>J=0 , close the beep sound when calling</p> <p>J=1 , open beep sound when calling</p> <p>### is the ending character</p> <p>(default value is: ABCDEFG=1000100001)</p>
Set ID (14 digits at most) W	***** ,010,tel	14 digits at most
APN Setting	W***** ,011,APN, APN User name,APN Password	If no APN name and password required, just insert APN only;

		APN defaulted as 'CMNET'; APN+APN name + password not over 39 characters.(default: CMNET)
Set IP Address and Port	W*****,012,IP,PORT	IP: xxx.xxx.xxx.xxx PORT: [1,65534]
Enable GPRS Tracking Function	W*****,013,X	X=0 closeGPRS (default) X=1 open TCP X=2 open UDP
Set Time Interval for Sending GPRS Packet	W*****,014,TTTTT	XXXXX should be in five digitals and in unit of 10 seconds. XXXXX=00000, to turn off this function; XXXXX=00001~65535, time interval for sending GPRS packet and in unit of 10 seconds.
Set Logo for GPRS (special)	W*****,016,Logo	Logo gets 16 bytes at most
Output Control	W*****,020,P,F	P =1, Out1 =2, Out2 =3, Out3 =4, Out4 =5, Out5 F =0, to close the output =1, to open the output
Output Control (Safe mode)	W*****,120/220,DATA	(GPS tracking speed is lower than 10Km/h or lower than 20Km/h) ABCDE represents Out1, Out2, Out3, Out4, and Out5 respectively. If A or B or C or D or E, =0, to close the output =1, to open the output =2, to remain previous status
Set sleep mode for saving power	W*****,021,XX###	XX=00 turn off sleep mode XX=01 sleep mode XX=02 deep sleep mode ### is the ending character
Set power saving mode when unit(GT60 & EDW-310BB) is inactive	W*****,026,XX	XX=00, to turn off this function XX=01~99, to set this function. It is in unit of

		minute. Example: If XX=10, EDW-310BB will enter power saving mode after it is immobile for 10 minutes.
Set phone number for wiretapping(OPTIONAL)	W*****,030,T	T is the telephone number for wiretapping and max. 16 digits
Set interval for logging(EDW-310BB) (Note: this interval is not relevant to the interval of continuous tracking)	W*****,031,T	X=0, to turn off this function X=[1, 65535] to set interval in second. For example, W000000,031,60, EDW-310BB will store location data every 60 seconds.
Set time zone difference	W*****,032,T	T=0, to turn off this function T=[1, 65535] to set time difference in minute to GMT. Default value is GMT For those ahead of GMT, just input the time difference in minute directly. For example, W000000,032,120 '-' is required for those behind GMT. For example, W000000,032,-120.
Set character for SOS alert message	W*****,033,P,char	Char is the character in SOS message and max 32 characters
Reset mileage report The mileage report can be cleared by SMS command	W*****,991,199##	