

## ***APEX LIVEGPS IP60 for DriveRight Installation***



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## **1 Introduction**

The Apex LiveGPS IP60 has a special easy to install design. These installation instructions should provide enough information for a professional automotive mechanic to quickly and successfully mount the equipment.

Installation by an authorized mechanic is recommended. As with any accessory the mechanic must make crucial choices, such as the location and installation method for the Apex LiveGPS IP60 module, where to drill holes, and how to place cables, etc. Only experienced and professional mechanics are trained to make the right choices. Wrong choices may cause damage to your asset or injuries.

Note! It is recommended to take sufficient safety precautions. Improper installation of any accessory may damage your assets and/or cause injuries. Both the manufacturer and the importer specifically disclaim any liability for injury or loss resulting from the installation of the Apex LiveGPS IP60.

The installation may also require the software setup of the Apex LiveGPS IP60 DR module. Only authorized distributors and their installers are allowed to setup the Apex LiveGPS IP60 DR modules, as wrong settings may lead to unpredictable datatransfer and module behavior.



## **2 Installing the SIM card**

This installation procedure describes how to install the SIM card. Please note that it is recommended to first install the SIM card, before making the cable connections.

### **2.1 Which type of SIM card can be used?**

It is recommended to purchase a SIM-card with subscription at your local provider. Although you can use a prepaid card as well, it is not recommended to do so.

Also, when selecting a SIM-card, consider the area operation of the module. Selecting a SIM-card which causes the least roaming costs are preferred.

### **2.2 SIM Card Settings**

The Apex LiveGPS IP60 unit you received requires the use of a GPRS enabled SIM card, that is able to connect to the internet. WAP enabled SIM cards cannot be used with Apex LiveGPS IP60. The PIN code on this card must be disabled, or set to '0000'. When a PIN code is active, this can be removed by inserting your SIM card in a phone and remove the PIN code from there.

### **2.3 Inserting the SIM card**

The Apex LiveGPS IP60 unit can be opened by loosening the two screws located at the front of the unit [picture 1]. Make sure that there are no cables connected to the main unit. The front with circuit board can now be easily removed from the rest of the unit. Locate the SIM area and gently push the SIM card into its place [picture 2]. Close the unit with the screws that were removed earlier.

CAUTION: there's only one way to fit the printed circuit board into the housing. Don't use excessive force!



Picture 1 - Apex LiveGPS IP60 front side



Picture 2 - SIM card location

### **2.4 APN**

For a GPRS connection, the APN is needed. Please contact the sim card provider for the APN details. You will need Access Point Name, Username and Password. This information must be entered in the transmission section of the Apex LiveGPS IP60 Settings Software.

Also, you can set the APN by sending a SMS to the Apex LiveGPS IP60 for DriveRight.

SMS command: 000000SALP=APN,Username,Password

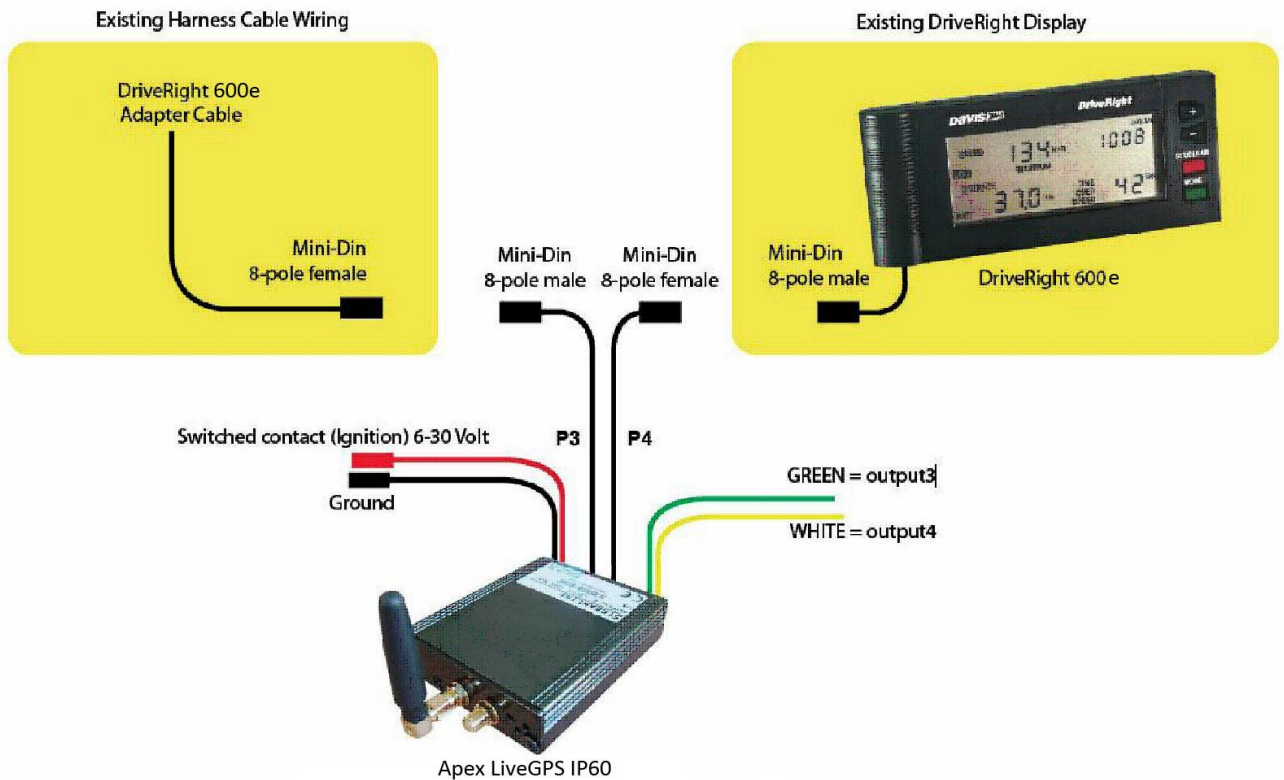
Eg. Etisalat UAE      000000SALP=mnet,mnet,mnet

If no username or password is needed..

Eg. Unicef UAE      000000SALP= apn.unicef.com,,

### 3 Apex LiveGPS IP60 installation

With the Apex LiveGPS IP60 for DriveRight Wiring Loom, the connections are made to the DriveRight.



#### 3.1 General

With reference to your application, follow the next steps:

- Make sure there is no power during the installation.
- The Apex LiveGPS IP60 must be installed inside. If installation outside is needed, use of a water proof housing (IP65) is needed.
- Mount the GPS antenna, so that it has a clear view of the sky. Any metal obstructions may interfere with satellite reception.
- The antenna must be at least three (3) feet away from any cellular or CB antenna. Close proximity to a transmitting antenna may degrade or disrupt GPS reception.
- Secure double-sided tape, velcro, or magnetic mounting.
- To use the GPS magnetic mount you must remove the aluminium base plate to expose the antenna's neodymium magnets.
- Route the GPS antenna cable to the Apex LiveGPS IP60 Module.
- Connect the GPS Antenna to the Apex LiveGPS IP60 Module.
- Route the GSM antenna cable to the Apex LiveGPS IP60 Module.
- Connect the GSM Antenna to the Apex LiveGPS IP60 Module.
- Install the DriveRight as described by the DriveRight installation manual (12 Volt)
- Replace the DriveRight fuse with the fuse from the Installation package.
- Connect the Harness cable to P3 and the DriveRight display to P4
- Connect switched power (Contact) to the red wire.
- Connect Ground to the black wire
- Green and White are extra outputs. These can handle 12 and 24 Volt devices and are GROUND switched.
- Note: A SmartCard reader can be connected between the DriveRight Display and Apex LiveGPS IP60 module.

## **4 Programming the Apex LiveGPS IP60 for DriveRight**

To program the Apex LiveGPS IP60 there are 2 possibilities:

- Use of the Apex LiveGPS IP60 DR Desktop Kit. This kit includes a power supply and a Apex LiveGPS IP60 DR Serial Setup Cable.
- Use of the Internet Portal Software

With the first possibility, a setting file is created on the pc which can be send to the Apex LiveGPS IP60

using the Apex LiveGPS IP60 DR Serial Setup Cable.

### **4.1 Setting up the Apex LiveGPS IP60 using the Apex LiveGPS IP60DR Desktop Kit**

It is recommended to program the Apex LiveGPS IP60 before installation. The programming is required, to

be able to use the extra functions Apex LiveGPS IP60 delivers. This can be an interval for live tracking, remote control of engine start or a camera. Please refer to the Apex LiveGPS IP60 manual for detailed setup possibilities.

To be able to setup the Apex LiveGPS IP60 please contact [sshannon@apexvalue.com](mailto:sshannon@apexvalue.com) to get the latest version of the Apex LiveGPS IP60 Settings Software.

After downloading the software, connect the Apex LiveGPS IP60 power cord. Then connect the Apex LiveGPS IP60 Serial Cable and the other side to the serial port of the pc. Now, you are able to change the settings of the Apex LiveGPS IP60.

Note: The module has been preset for correct operation. Most important is to set the APN in the transmission section of the settings software. Before setting the APN, click on read settings from Module, then change the APN and then click on write settings to module. Also, you might want to save the settings to disk for later reference.

In the settings program, it is possible to setup the download, which is possible in several ways:

- On a daily basis at a certain time
- By calling to the Apex LiveGPS IP60 from a known phone number. When the Apex LiveGPS IP60 recognizes the number, the send the Apex LiveGPS IP60 data to the server. (Can also be used for emergency download of the data)
- When the vehicle enters a certain area
- and many more

### **4.2 Setting up the Apex IP/ DR using the Apex IP/ DR Portal**

Also, the Apex LiveGPS IP60 can be setup using the Apex LiveGPS IP60 Portal Software. Please refer to the Apex LiveGPS IP60 Portal User Manual for further information.

Note: For this, the GPRS communication must be active (APN must be set).



## 5 Testing proper functioning

When all connections are made, you are ready for testing. Login to your account on the Apex LiveGPS IP60 Portal and check if data is received as expected. When this is not the case, this can be a settings problem, a SIM-Card problem, a connection problem or a installation problem.

The Apex LiveGPS IP60 shows 3 leds, providing status information.

LED	FLASHING	CONTINUOUS
RED	<ul style="list-style-type: none"><li>* <i>2 flashes per second:</i> PIN problem or no SIM present</li><li>* <i>1 flash per second:</i> PIN code ok, trying to connect to GSM</li><li>* <i>1 flash per 2 seconds:</i> GSM OK</li><li>IP problem (e.g. not GPRS enabled)</li><li>* <i>1 flash per 8 seconds:</i> GPRS OK</li></ul>	Connected to server
YELLOW	<ul style="list-style-type: none"><li>* <i>1 flash per second:</i> No satellites found</li><li>* <i>2 flashes per second:</i> at least 1 satellite found, no fix</li><li>* <i>5 flashes per second:</i> fix achieved, but trying to get a better fix</li></ul>	GPS fix successful
GREEN	N/A	N/A

### 5.1 Troubleshooting

For GPRS problems, check if:

- the GSM antenna is connected to the correct connector
- the SIM card is inserted
- the PIN code is disabled or set to '0000'
- the SIM card is GPRS enabled and is allowed to connect to the internet (not WAP). Please contact your provider to double check the SIM card setup. Some providers need to change the setup, which can take several hours before activation.

For GPS problems, check if:

- the GPS antenna is connected to the correct connector
- Start by placing the GPS antenna at a location where it has an unobstructed view at the sky, preferably outdoors
- Observe the yellow LED: when it flashes once or two times per second, Apex LiveGPS IP60 is scanning for satellites

When no GPS is received, it may be the case that the antenna is not installed correctly, or that it is the first time to get a fix. Note: The first time to fix for GPS will take some time (max. 10 minutes).

## 6 Specifications

### 6.1 Specifications Apex LiveGPS IP60

#### 6.1.1 Data communication

GPRS/GSM Modem		Quad band (SL4)		
Frequency		900 / 1800 MHz		
RF Power		2W @ 900 MHz Class 4 1W @ 1800 MHz Class 1		
Data	GPRS	Class 8 max. 85.6 kbps	Class 10 max. 85.6 kbps	
	CSD	Max. 14.4 kbps		
	Coding Schemes	CS1 to CS4		
SMS		Mobile Originated & Mobile Terminated		
		Cell Broadcast (CB – DRX)		
		EMS (Concatenated Messages)		

#### 6.1.2 Navigation (depends on ordered model)

GPS Receiver		12 channel parallel	
Frequency		L1 1574.42 MHz	
Acquisition Time	Autonomous	TTFB	< 6 sec (valid almanac, position, time and phemeris) < 30 sec (valid almanac, position, time) < 40 sec (no valid data)
	Assisted	TTFB	< 6 sec @ -137 dBm < 30 sec @ -150 dBm
Position Accuracy	Autonomous	5 meter (50% probable) 10 meter (95% probable)	
	Assisted	20 meter (50% probable) 50 meter (95% probable)	
Signal Detection		-152 dBm	
Acquisition And Tracking Sensitivity		-142 dBm	
Antenna		Passive or active with short-circuit detection	

#### 6.1.3 Electrical

Operating Voltage		12 V Power Supply.	
Power Consumption		<50 mW average, Approx. 9 W peak during data transmission Consumption depends on amount of GPRS traffic and navigation parameters	
External Connections	Serial Communication	2 x RS232 DriveRight	
	IO	2 x digital out, Open Collector, 500 mA Max. (O3,O4)	
		• DR cables	

#### 6.1.4 Physical

Outside Dimensions	Size	80.0 x 67 (3.15 x 2.64 inch)
	Height	20.0 mm (0.79 inch)
	Weight	150gr
Connections	GPRS/GSM	SMA
	GPS	SMA
	Power/IO	Molex 43045-2412 , 43045-0412

### 6.1.5 Environmental

Enclosure	Aluminium with black anodised finish
Operating Temperature	-20 Celcius to +70 Celcius (-4F to + 158F) non-condensing
Storage Temperature	-40 Celcius to +80 Celcius (-40F to + 185F) non-condensing

## 7 Warranty and repair information

One year limited warranty.

We warrant our products to be free of defect in material and workmanship for the period of one year from the date of original purchase. While we make every effort to carefully manufacture our products to the highest standards of quality, occasionally parts may be found to be missing, defective or damaged.

If you have a defective part, return the product to us, shipping charges pre-paid. Include proof of purchase and a written explanation of the trouble. During the warranty period, we will, at our option, either repair or replace the product free of charge.

This warranty does not cover damage due to improper installation or use, negligence, accident, or unauthorized service, or to incidental or consequential damages beyond the products themselves. Implied warranties are limited in duration to the life of this limited warranty.

Changes or modification not expressly approved in writing by the producer may void the user's authority to operate this equipment.