

# DQT'S GENX 3 INSTALLATION GUIDE



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PRESENTED BY: DQ TECHNOLOGIES

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## Introduction

This installation manual covers the installation of the GenX Mobile 3P Device. This manual is for the professional installer and should be used to ensure a safe and functional install of the 3P Device.

This guide is provided as a reference and suggested method of installation only. GenX Mobile or DQ Technologies will not be liable for any damages arising from installation of units. Testing, operation and approval of installation/device will be sole responsibility of customer

## Antenna Options

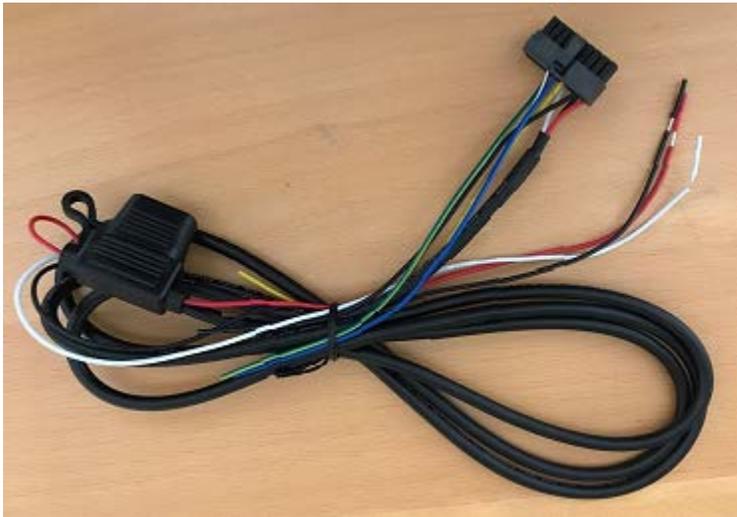
The GNX 3P currently comes with an internal antenna.



## Device Power Options

There are two power cable options for this device (standard 3 wire and OBDII) and they are programmed to utilize a specific cable type and are labeled as such, so take care not to mix them up and try to install a unit with the wrong cable type. The units can be typically be reprogrammed remotely if necessary (by DQ) but it will be simpler and faster if we don't need to do this. All cable options are outlined below, please contact DQ if you are unsure about what power cable you are using for any particular vehicle.

**3-Wire power cable**



**OBDII Power and ECM**



## Installing Power for your Device

### 3-Wire power cable (standard)



\*\*\* DQ Technologies install\*\*\* only the 3 bundled wires on the long black cord with the 3AMP in-line fuse (Red, Black, and White) need to be connected.

*\*\*Safety note \*\** Always disconnect the vehicle battery while installing this or any other automotive electronic product.

There are two acceptable methods of making a wire connections; soldering your connections of using scrapable connectors. Regardless of the method you choose, ensure the connection if mechanically sound and properly insulated.

The 3P device has an internal power management program that monitors the vehicle power at all times. The management program is continuously looking at the condition of the vehicle battery in order to detect the state of the vehicle operation. The module determines the state of the vehicle power by detecting changes in the battery voltage over time. It is critical in this installation that the vehicle power be taken from a source as close to the battery as possible. Possible sources besides the direct connection to the battery are the main fuse block panel or the point where the vehicle charging circuits are connected to the 12-volt system.

Connect the RED lead or fuse end of the power cable to +12-volt constant vehicle power. Connect the WHITE lead to +12 volt switched vehicle IGNITION. (Not accessory) Connect the BLACK lead to the vehicle chassis (GROUND).

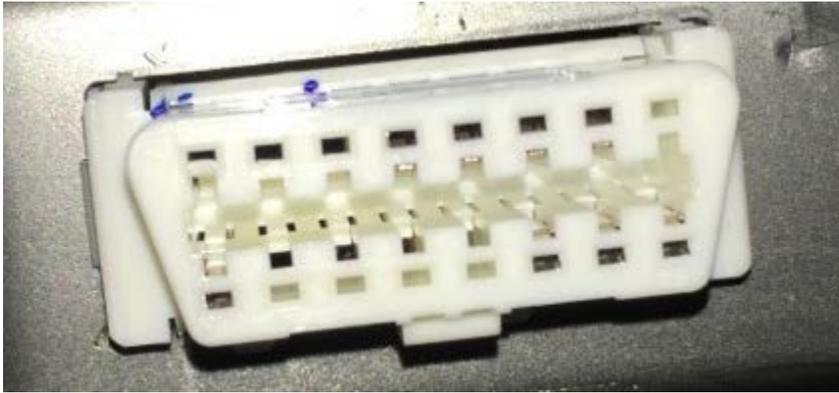
This product is connected directly to the vehicle's 12-volt system. There is no on-off switch on the unit. The installed unit operates 24 hours a day and should be energized to log vehicle events or send data as required by anyone using the service.

The 3P Device is shipped with in-line 3-amp fuse(s) attached to the power cable. This fuse must be installed as close as possible to the primary 12-volt source connection. The fuse protects the power cable should there be a short in the cable between the fuse and the module. **This fuse must be installed properly.** If the fuse is replaced, it should be of the same type as originally supplied from the factory. The original fuse supplied is a 3 amp 125-volt type 3AG.

Failure to use the proper fuse or to install the fuse in the recommended location could cause a vehicle fire hazard. The fuse provides overload protection for the power cable and GenX 3P Device. The wiring installed between the fuse and primary vehicle power is not protected from overheating if a short should occur. Use care when routing the power cable and fuse. Route the cables where they will be protected and uses commonly accepted install practices for aftermarket automotive electronic devices.

### **OBDII Power**

If your vehicle has an ECM that looks like this (it may be a different color but will be 16 Pins) then it requires an OBDII cable.



This cable has an 18-pin outlet on one end that plugs directly into the GenX and a 16 pin OBDII outlet on the other end that plugs directly into your vehicle ECM.



## Powering the Device for the First Time

### Selecting a Location for the Device

The 3P Device should be mounted so it will not be exposed to damage from people or objects. The cables that connect to the 3P should also be routed to protect them from possible damage. The 3P device does not have a mounting base or flange but it must be secured in some way via heavy duty adhesive tape, heavy duty Velcro or zip ties, etc. The unit must be mounted where it will not be exposed to direct sunlight or excessive heat generated by the vehicle operation and it **MUST BE POSITIONED WITH THE LABEL SIDE FACING UP TO THE SKY** and it should not be placed under a heavy metal dash as that impedes the communications signal. In addition, the headliner of the vehicle is typically **NOT** a good place for the device as they are usually metal.

### Internal Antenna

For units with an internal antenna it is important that the device be placed in a position where the top of the unit has a line of sight to the sky with **NO METALLIC OBSTRUCTIONS**. Refer to the LED lights in the troubleshooting section to determine if the unit is having issues gaining GPS satellite or cellular connectivity.

## System Testing & Troubleshooting

The GenX devices has LEDs that can indicate if the GenX is having issues communicated, getting GPS fixes, and more.

When using any of the possibly power connections, it makes sense to install the power cable first and then once that is in place plug in the GPS unit so it has power and make sure the correct lights come on (before securing the unit in place). See Section 6.1 Green LED below.

After this is accomplished, please move the vehicle outside of any building or out from under any structure so it has a “clear view of the sky”. After a few minutes (typically 2 - 5) the unit should be functioning so please contact DQ and we will confirm that the unit is communicating properly.

Once that is confirmed you can secure the unit in place and if desired, we will double check that it is still working with a good signal. Be sure to record the UNIT ID and vehicle ID so you can provide that to DQ as well.

### Green & Red LED reference

The green and red LEDs are intended to troubleshoot installations. Below is a summary of their behavior.

#### 6.1 Green LED

When the ignition is first turned on the GNX will power-up. The Green LED will show solid for approximately 30 seconds. At no other time should the green LED remain on solid for such a long period.

After 30 seconds the green LED will start to flash at the following rates:

- 25 times on-off every 10 seconds when the ignition is on (this is quite rapid)
- 8 times on-off every 10 seconds when the ignition is off (this is quite slow)
- Very short blip once every 3 seconds when in sleep mode

The green LED will also show if there is a PTO (a.k.a. input) active by flashing a number of times corresponding to the PTO (1,2,3,4). For example if PTO 4 is active then there will be 4 short flashes every 3 seconds. (This feature is not currently available when the unit is being powered via an ECM cable – OBDII or 9 Pin Black or Green).

### Red LED

The RED LED flashes 2-digit codes. Roughly speaking the first digit tells you what general area is having a problem (hardware, modem, GPS, end-end service). The second digit gives specific error information. Since there can be more than one error condition the GNX rotates through the error codes (for example if GPS is tracking no satellites and the modem is not registered).

Flash Code	Problem Description	Solutions
1-2	Low supply voltage	Check power cable installation, use volt meter
1-3	Allocated data usage exhausted	Contact DQ Tech to have device resynced
2-1	Modem module fault	Contact DQ Tech for RMA
2-2	No SIM inserted	Open black box and re-seat SIM
2-3	No signal	Check antenna placement, try a known working antenna
2-4	Network not found	Check the SIM to make sure it is firmly in place
2-5	Last data session failed	Contact DQ Tech to set APN
3-1	GPS module fault	Contact DQ Tech for RMA
3-2	GPS antenna fault	Check antenna placement, try a known working antenna
3-3	GPS not tracking any satellites	Check that the GPS antenna has a clear, unobstructed view of the sky, and has been operating for at least 5 minutes
3-4	GPS no fix	If antenna has only partial view of sky due to the position of the vehicle (under a cover, close proximity to a building) then try to move the vehicle to ensure that it will be able to make fixes when standing in the open. If the vehicle has a full view of the sky try to reposition the GPS antenna
4-2	Data transfer failed	Indicates a failure to resync with the e server, or a failure to upload position data.. If the condition persists then contact DQ Tech. Note that since mobile data communication is inherently unreliable this code can appear from time to time even on a perfectly healthy GNX, and is not necessarily indicative of a hardware, firmware, or installation problem

### Power Cycling the Device

Sometimes when troubleshooting it may be necessary to power cycle the device. There are a couple of steps.

## GPS – GenX Installation Guide

First you will need to open the black box case and lift up the circuit panel



Then you need to disconnect the red and black wires from the circuit board.



Keep the wires disconnected for 15-30 seconds. Then plug it back in and install your unit back into the power cable.

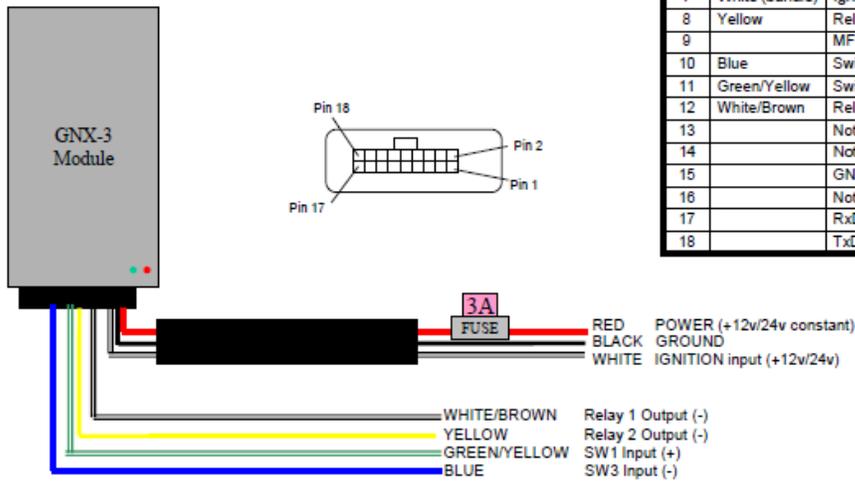
GPS – GenX Installation Guide



## Wiring Schematic Diagram

### GNX-3 Wiring Schematic

Applies to HW 303Axx/303Gxx only



#### POWER / IO CONNECTOR

Pin	Harness Wire Color	Description
1	Red (bundle)	Power input (+8 to +30v constant)
2		Not used
3	Black (bundle)	GND
4	Black	GND
5		LED Output (+20mA max)
6		Not used
7	White (bundle)	Ignition Input (+)
8	Yellow	Relay 2 output (-)
9		MFG Test /Prog (do not connect)
10	Blue	Switch 3 Input (-)
11	Green/Yellow	Switch 1 Input (+) / Analog Input (0-16v)
12	White/Brown	Relay 1 output (-)
13		Not used
14		Not used
15		GND
16		Not used
17		RxD (RS-232 input)
18		TxD (RS-232 output)