

## 1. INTRODUCTION

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The G60 is a compact 2G or 3G (NextG) GPS tracking device with a variety of inputs and outputs to cater for the most demanding applications. Its rugged housing is IP67 rated to withstand the harshest environments, without sacrificing tracking and communications performance. With the internal GPS and cellular antennae installation is a breeze. The internal backup battery provides alerts and tracking operations even when external power is removed. See the product page on [www.digitalmatter.com](http://www.digitalmatter.com) for more specifications.

This guide will help you get up and running with the G60.

## 2. CONTACT INFORMATION

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For the latest version of this document and other product information please visit our website at [www.digitalmatter.com/support](http://www.digitalmatter.com/support)

## 3. IN THE PACKET

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The G60 is normally shipped in a packet. The board is screwed to the housing base. The housing lid and screws are provided. There will be an 800mAh battery inside the housing. The G60 harness comes in a variety of forms labelled H1 to H4.

## 4. SIM, BATTERY AND SEALING

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The G60 may be damaged by electrostatic discharge if not handled correctly. Ensure adequate static precautions are taken. Consider wearing an anti-static wrist guard. Avoid touching the antennae and any of the electronic components on the PCB. Take special care not to touch the ceramic GPS antenna as static can damage the sensitive GPS circuitry.

### 4.1. Insert the SIM

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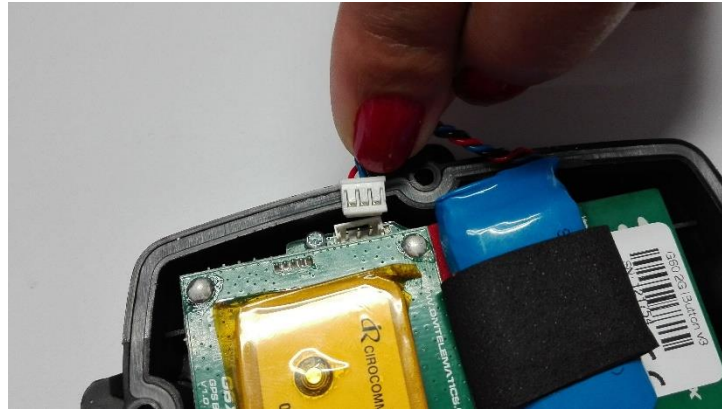
1. The SIM holder is located on the top side of the main PCB.
2. Unplug the battery and remove any external power connections.
3. Slide the locking mechanism on the SIM holder to the “unlock” position, and lift the hinged portion of the SIM holder.
4. Insert the SIM into the holder with the keyed corner orientated away from the hinge and the SIM contacts orientated down to the PCB.
5. Close the SIM holder, and slide the locking mechanism to the “lock” position.

To easily get up and running:

1. The SIM should not have a PIN on it, unless you use the device specific PIN.
2. The SIM should have credit or airtime
3. The SIM should use one of the APN's built into the firmware. Otherwise contact DM about APN setup. It is possible to set APN's by SMS

### 4.2. Insert the battery

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The battery should be provided disconnected inside the housing. The battery plug is a three-way connector on the top side of the PCB.

1. Insert the battery plug into the connector. It should only be possible in one orientation.
2. The LED on the board will light up and flash if the battery has sufficient charge. Batteries are supplied fully charged.
3. Position the battery over the SIM holder.
4. Route the battery wires into the space between the GPS board and the housing. Take care to avoid trapping the wires when sealing the device.

### 4.3. Online

The battery should come pre-charged. Once you insert it, the internal LED will come on and flash. If the SIM card works and there is sufficient charge in the battery, the device will connect to the OEM Server. Go to [www.oemserver.com/installer](http://www.oemserver.com/installer) and search for the serial number. Confirm that it has connected recently.

The LED will flash slowly at first. When it opens a connection to the server, it will flash fast. Once data is sent, it will go solid briefly, and revert to flashing fast. When the device goes to sleep, the LED will switch off.

If the battery is too low, use the harness to provide external power.

If the LED flashes but the G60 does not connect, check the SIM is in the holder correctly and check that the SIM is working.

### 4.4. Housing Assembly



Ensure that the main PCB is secured to the housing with the 4 small PCB screws and that the SIM is inserted as above. Ensure that the device is online before sealing it.

1. The seal should be the latest Digital Matter clear silicon seal to ensure the IP rating of the housing.
2. Ensure that the seal is in the base and lying flat, and that there is not dust or dirt on the seal.
3. Locate the battery on the main PCB against the GPS board and on top of the SIM holder
4. Ensure the battery cable will not be pinched by the lid.
5. Place the lid onto the base. The battery locating tab in the lid should sit against the battery.
6. Insert the 4 x 20mm housing screws. Note that G52S screws look similar but are 25mm in length. DO NOT use G52S screws as they will crack the plastic housing when tightened.
7. Hand tighten the screws to a uniform tightness.
8. Ensure that the cable gland is tightened around the cable.

Please make sure that you take extra precautions to ensure that the device has been sealed adequately when it will be installed in environments where it is exposed to the weather or water or liquid spraying. The Digital Matter manufacturer's warranty does not cover damage due to water ingress as the final installation is not performed by Digital Matter.

## 5. DEVICE INSTALLATION

The housing has mounting holes for screws, bolts or cable ties.

There are a few considerations for the final mounting position of the G60.

The G60 has been engineered to have the best possible GPS reception. It will work from inside engine bays, body panels, under dashboards and other places where other GPS devices simply fail to operate reliably. Although the G60 will work in these locations it is always advisable to install the G60 where it is able to get signals from the GPS satellites, with the optimum position being a location with a clear 180-degree view of the sky.

## 6. HARNESS DESCRIPTIONS

### G60 Harness Option 1 (H1) - RS232

Colour	Function	Notes
Red	Power	8-45V DC external power
Black	Ground	Main Ground
White	Ignition	0 – 50V DC, permanent internal pull down
Orange	Expansion Bus 1	SGND
Yellow	Expansion Bus 2	CAN N
Violet	Expansion Bus 3	5V Out
Green	Expansion Bus 4	CAN P
Blue	Digital Input 1	0 – 50V DC, configurable pull down
Grey	Digital Input 2	0 – 50V DC, configurable pull down
White + Black	Switched Ground Output 1	Low side switch. Use with a relay, LED, or buzzer.
Brown	RS232 RX	RS232 receive
White + Brown	RS232 TX	RS232 transmit

### G60 Harness Option 2 (H2) - iButton

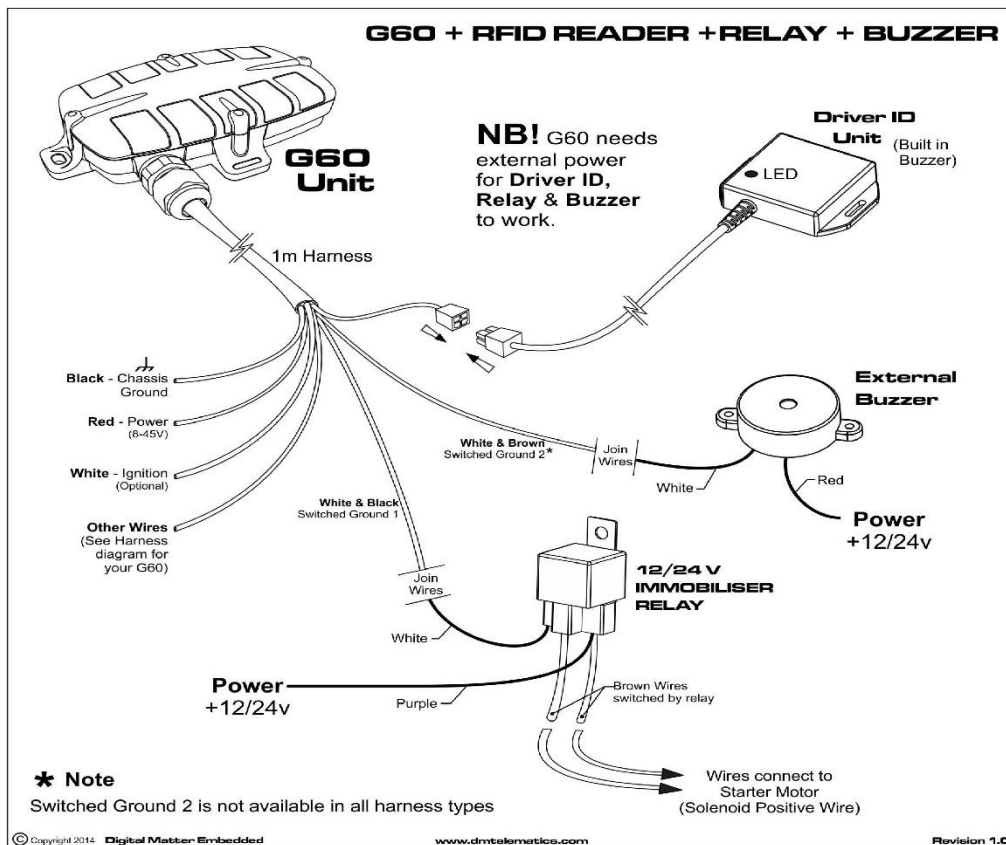
Colour	Function	Notes
Red	Power	8-45V DC external power
Black	Ground	Main Ground
White	Ignition	0 – 50V DC, permanent internal pull down
Orange	Expansion Bus 1	SGND
Yellow	Expansion Bus 2	CAN N
Violet	Expansion Bus 3	5V Out
Green	Expansion Bus 4	CAN P
Blue	Digital Input 1	0 – 50V DC, configurable pull down
Grey	Digital Input 2	0 – 50V DC, configurable pull down

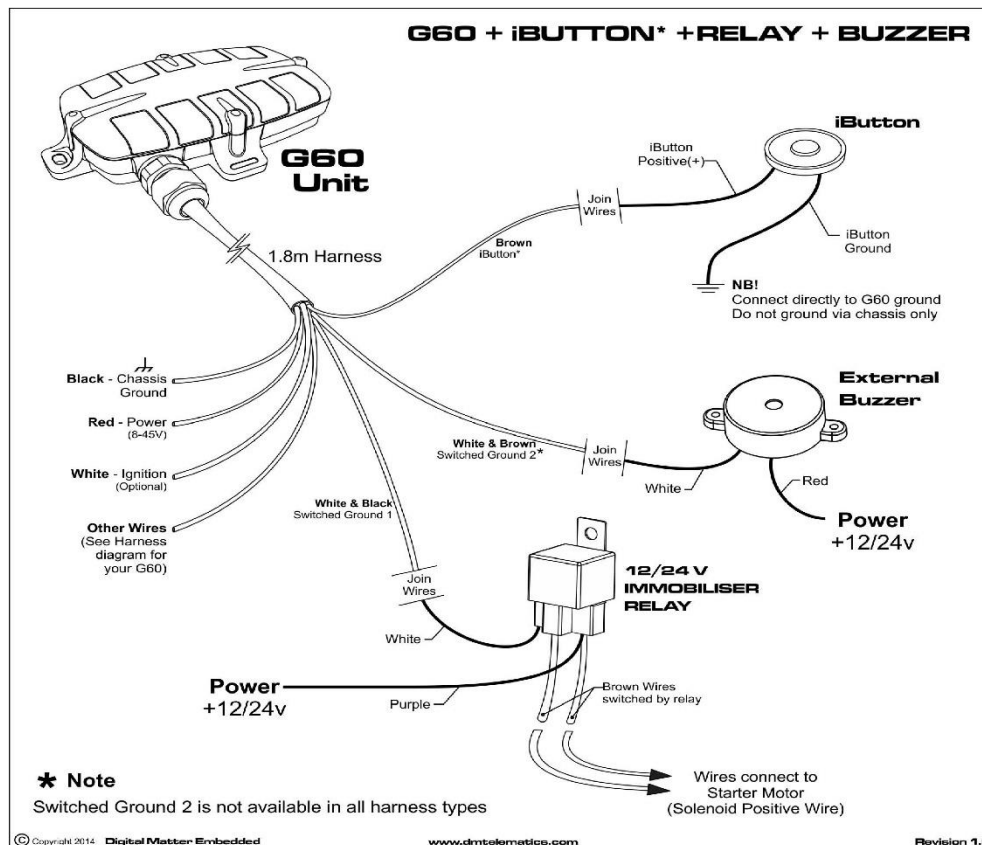
White + Black	Switched Ground Output 1	Low side switch. Use with a relay, LED, or buzzer.
Brown	iButton	iButton input
White + Brown	Switched Ground Output 2	Low side switch. Use with a relay, LED, or buzzer.

### G60 Harness Option 4 (H4) – 3 In 2 Out

Colour	Function	Notes
Red	Power	8-45V DC external power
Black	Ground	Main Ground
White	Ignition	0 – 50V DC, permanent internal pull down
Orange	Expansion Bus 1	SGND
Yellow	Expansion Bus 2	CAN N
Violet	Expansion Bus 3	5V Out
Green	Expansion Bus 4	CAN P
Blue	Digital Input 1	0 – 50V DC, configurable pull down
Grey	Digital Input 2	0 – 50V DC, configurable pull down
White + Black	Switched Ground Output 1	Low side switch. Use with a relay, LED, or buzzer.
Brown	Digital Input 3	0 – 50V DC, configurable pull down
White + Brown	Switched Ground Output 2	Low side switch. Use with a relay, LED, or buzzer.

## 7. CONNECTION EXAMPLES





## 8. DEFAULT SETTINGS

The G60 will operate with default settings out of the box. These can be changed using the OEM Admin interface. The defaults include:

- Hourly Heartbeats: the device will log a heartbeat record, connect to the server, and refresh its GPS data every 60 minutes.
- Wired AND Emulated Ignition: by default, the G60 will track a trip if either the ignition wire is pulled high or movement is detected. The setting can be changed to do one or the other, or continue to use both.
- Inputs: inputs are pulled up internally and are active low. This means you can connect pull to ground switches or contacts. The bias can be set to pull up, down or neither. They can be set too active high or low and the debounce can be changed.
- Outputs: the outputs are not used by default

## 9. DRIVER ID OPTIONS

The G60 can read Driver ID tags from the following readers.:

1. DM RFID reader: 125kHz RFID tags or cards
2. iButton reader: Dallas iButton tags.
3. DM 5 Digit Keypad: accept 4 or 5 digit PINs from the Keypad.
4. CAN Console: read 125kHz RFID tags or cards from the Console.