

## 1. INTRODUCTION

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The Sting is an ultra-compact, rechargeable GPS tracking device. The light, temperature and humidity sensors set it apart from other battery powered trackers. It has been designed to track high value parcels, cargo, cash in transit, personnel, and other assets where super-long battery life is required without sacrificing the frequency of updates and performance. Please see the datasheet and brochure for more information.

This document will help you get started with the Sting.



## 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 BOX

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You'll get a compact box containing:

1. The Sting, with its housing unclipped.
2. Micro USB cable for charging.

## 4. SIM, BATTERY AND SEALING

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### 4.1. Insert the SIM

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The Sting uses a **Micro SIM card** – form factor 3FF.

The SIM holder is on the top of the PCB.

**When handling the Sting be careful not to touch the GPS antenna, to minimise the risk of damaging the sensitive GPS amplifiers with static discharge.**

Slide the SIM into the holder with the **keyed corner first** and the SIM contacts orientated down to the main board.

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 – this is the AutoAPN feature. If the APN is not included in AutoAPN, set it by SMS. See section 10.

## 4.2. Connect the Battery

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The Sting uses a 2500mAh 3.7V Lithium Polymer battery pack.

When you receive the Sting the battery will be disconnected.



1. Plug the battery into the socket shown in the image
2. The LED should start to flash.

## 4.3. Online

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Once the battery is connected, the internal LED will come on and flash blue. The device will do the following:

1. **Connect to the server:** If the SIM card works, the device will connect to the OEM Server. It will attempt to download any firmware and parameter updates. It will fetch fresh GPS aiding data.
2. **Get a GPS Fix:** the device will attempt to get a GPS fix. Speed this up by moving to an area with good GPS signal.
3. **Reconnect to the server:** The device will attempt to connect again to upload the result of the GPS Fix.
4. **Stop flashing:** once complete, the LED will stop flashing.

If the device does not complete these steps in 10 minutes, it will go to sleep and try again on the next heartbeat or the next trip start.

Go to [www.oemserver.com/installer](http://www.oemserver.com/installer) and search for the serial number. Confirm that it has connected recently.

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

## 4.4. Closing and opening the housing

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The housing clips together and does not need screws

To close the housing, line up the top and bottom parts. Push the housing together firmly.

To open the housing, insert a flat screw driver into the opening highlighted above. Carefully lever the two halves apart. A wider screw driver works better.

## 5. DEFAULT TRACKING SETTINGS

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By default, the Sting is setup for trip tracking. The following default settings apply:

1. Out of Trip:
  - a. 12 hour heartbeats. This is a GPS point and upload every 12 hours.
2. In Trip:
  - a. Start trip threshold of 250m
  - b. Upload on trip start.
  - c. GPS points every 2 minutes
  - d. Upload every 30 minutes.
  - e. End a trip after 5 minutes of no movement.
  - f. Upload on trip end.

These are configurable in the OEM Admin Interface.

The defaults provide a good starting point. It is important to monitor and tweak your settings to ensure the battery life is acceptable. Incorrect settings can flatten the batteries quickly. Contact Support for help with this.

## 6. LIGHT TAMPER

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Light is channelled to the light sensor through the clear light pipe in the housing. The device uses two lux levels to determine tamper ON and tamper OFF. When the light level is above the high level, tamper is ON. When the light level drops below the low level, the tamper switches off. The difference between the high and low level provides some hysteresis.

**The default settings for the tamper detection are disabled**, to avoid excessive uploads. Please use the OEM Admin Interface to enable the tamper detection and set the trigger levels.

## 7. TEMPERATURE, RELATIVE HUMIDITY AND LIGHT

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The Sting has an on-PCB temperature, light and humidity sensor. The module can be configured to read those 3 metrics periodically. It can log periodically, log on change, upload periodically, and set high and low alarms.

The default settings for temperature, humidity and light sensing are OFF. To enable and change the module parameters, please use the OEM Server Admin Interface.

## 8. DEVICE INSTALLATION

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The Sting is an ultra-compact GPS tracking device and can be placed anywhere. When placing the Sting, consider the following:

1. Protect the device from water ingress – the device is not IP rated.
2. Minimise the chances of the device being accidentally crushed or dislodged.
3. Maximise the GPS and mobile reception, and provide adequate ventilation.
4. Position the light pipe for adequate exposure to tamper indications.
5. Allow the device to sense required temperature and humidity changes in its environment.
6. Minimise temperature exposure outside of the battery's specifications.

Since the Sting is a battery powered device, reception is critical to its performance. While other members of the DM product family rely on their high-quality GPS receivers for enhanced accuracy and the ability to operate in very low signal, the primary concern for the Sting is the battery used during each GPS fix.

If possible, choose a mounting point that will not result in elevated temperatures. For instance, mounting the Sting in direct sunlight on the dash of an unventilated cabin may cook the battery, leading to abnormally short service life.

## 9. CHARGING THE BATTERY

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The Sting is a rechargeable GPS tracking device. To charge the Sting, plug the USB cable into any 5V 500mA USB charger. Plug the Micro-USB plug into the Sting. The red LED will come on while the Sting is charging. The LED will switch off when charging is complete.

**Warning:** The Sting will prevent charging outside of the charging temperature specifications (0-40°). It is recommended that charging is done at room temperature or around 25°C.



## 10. APN SETUP VIA SMS

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If the APN for the SIM is not in the AutoAPN list, it must be set by SMS. To do this:

1. Send an SMS from any phone to the cell phone number (MSISDN) of the SIM card.
2. Use the following format for the APN text message:  
`#*,APN,<apn_name>,<username>,<password>`
3. If the <username> and <password> are blank or not required then you can leave them off.
4. You can also reset a device to use auto-APN by sending a blank APN: `#*,APN`

Example with username and password: `#*,APN,myAPN,joebloggs,secret123`

Example without username and password: `#*,APN,myAPN`