



SOLO 3 Technical Guide

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Specifications

The sections below give basic specifications of the SOLO Mark 3 and, where appropriate, of the mains charger and portable charger that are issued with this SOLO 3.

Model Numbers

The model numbers of the SOLO 3 and its accompanying charging devices are given in the table below.

Product	Model Number
SOLO 3	SOD-xxxx-x
SOLO 3 Mains Charger	FW8000USB/05
SOLO 3 Portable Charger	SPD-xxxx-x

The SOLO 3 can operate on different ISM and GSM frequency bands in order to satisfy the radio spectrum requirements of different countries, this is achieved by changing a configuration option.

Serial Number Formats

The serial number format for each of the three products (SOLO 3, SOLO 3 Mains Charger and SOLO 3 Portable Charger) are given in the table below.

Product	Serial Number Prefix
SOLO 3	SOD-xxxx-x
SOLO 3 Mains Charger	FW8000USB/05
SOLO 3 Portable Charger	SPD-xxxx-x

Approvals

The SOLO 3 has SAR approvals for the relevant country requirements for each of the three products:

- RED 2014/53/EU
- FCC 47 CFR Part 2 (2.1093)
- NZS 2772.1
- Radiocommunications Standard & ARPANSA RPS No.3

Safety Report

In the safety report for the SOLO Mark 3, the name specified for the SOLO 3 is:

Model	Name
	OM247 Solo3

Ratings

The ratings that apply to the SOLO 3 and SOLO 3 Mains Charger are given in the table below.

Facet	Details
Lithium ion rechargeable battery of SOLO 3	3.6V typ 1800mAh
Mains charger input rating	100-240Vac/50-60Hz,300mA
Mains charger output rating	5Vdc/2.2A

Ambient Details

The SOLO 3 operating temperature and other details that affect the performance of the SOLO 3, SOLO 3 Mains Charger and Portable charger are given in the table below.

Facet	Details
Maximum temperature of SOLO 3 + Portable charger	55 °C
Minimum temperature of SOLO 3 + Portable charger	-10 °C
Safe depth in water of SOLO 3	5 metres
Operating temperature of SOLO 3 Mains Charger + Portable charger	0 °C to 45 °C



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Connectivity

The SOLO 3 can operate with any of these cellular communications standards:

- 2G GSM/GPRS: 850, 900, 1800, 1900 MHz
- 3G UMTS/HSPA: 850, 900, 2100 MHz uplink data 5.76Mbps
- 4G LTE: 700, 800, 900, 1700, 1800, 1900, 2100, 2600 MHz uplink data 5 Mbps

The radio performance of the SOLO 3 modem is pre-approved by the manufacturer, and has gained the following approvals:

- EN 301 511, EN 301 908-1/2/13, EN 303 413, EN 62311, EN 301 489-1/19/52
- EN IEC 62368-1
- EN 55032:2015, EN 55032:2017
- FCC

The SOLO 3 makes regular calls to the monitoring centre to give the monitoring centre status details that indicate whether or not the SOLO 3 is functioning correctly and whether or not it has been tampered with.

It supports BLE, WiFi (2.4GHz), GNSS and sub GHz ISM bands to make SOLO 3 an ideal offender-tracking device with its practicalities of usage with each connectivity feature .

Further Specifications

The table below gives the dimensions of the SOLO 3 and its weight. It also gives the separating force required to break the strap — the strap locking clip is designed to break in a safe, controlled way with the application of this force.

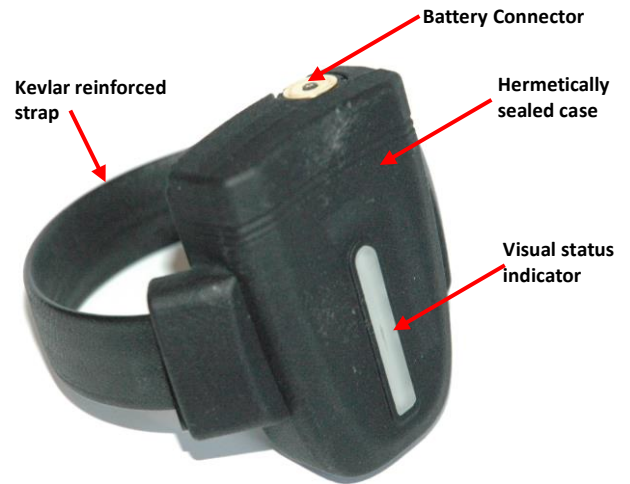
Facet	Details
Dimensions	75mm x 50mm x 26mm
Weight	125g
Strap break force	30kg

Warnings and Cautions

The offender should not attempt to recharge the SOLO 3 or the portable charger when bathing or showering.

What is a SOLO 3?

A SOLO 3 is an electronic tag that fits securely around one of the ankles of an offender whose position you want to track.



It acts as a receiver for GPS satellite signals, and calculates the current location of the offender wearing the SOLO 3 from these signals.

It can operate on its own or in conjunctions with other G4S monitoring devices, such as an MU (Monitoring Unit) or HB (Home Beacon) installed at the site where the offender resides. The SOLO 3 communicates through RF (Radio Frequency) signals with an MU or HB to indicate when the offender is at this site.

Why Choose the SOLO 3?

The SOLO 3 is easy to fit, requiring a simple installation tool for fitting the strap and once fitted is compact and lightweight around the offender's ankle.

The chip set inside the SOLO 3 operates with A-GPS (Assisted GPS) signals, making it extremely accurate in pin-pointing the position of the offender.

The internal battery of the SOLO 3, which can last up to 70 hours without charging, can be charged easily at the offender's home, with the mains charger. An alternative, for when the offender is away from home, is to charge the SOLO 3 with the portable charger.

Charging the SOLO 3 Battery

When at home, and for at least an hour each day, the offender should charge the SOLO 3 with the mains charger.



The mains charger plugs into a wall socket, and the charging clip attaches to the top of the SOLO 3 to deliver the charge to the SOLO 3 battery.

An alternative to charging with the mains charger is to charge with the portable charger.



The advantage of the portable charger is that it can be used anywhere, since it does not require a mains socket.

When not in use, the portable charger should be attached to the mains charger, so that the portable charger is always ready to charge the SOLO 3.

During mains or portable charger is connected to SOLO 3, a fixed Blue LED indicate it is fully charged and a flashing Blue LED indicates it is charging.

Anti-Tamper Features

The SOLO 3 has an array of physical and electronic features that help prevent tampering and detect it when it does occur.

Physical anti-tamper features

- Simple and secure strap locking mechanism.
- Hermetically sealed case.
- Matt grey finish to the SOLO 3 case is designed to make scratches or cracks made while attempting to tamper with the SOLO 3 clearly visible.
- Strap that secures the SOLO 3 to the offender's ankle has Kevlar® strips running through it, preventing the strap from being heated and stretched in order to remove it from the ankle.

Electronic anti-tamper features

- A regular light signal is pulsed through a fibre optic cable through the core of the strap from one arm of the SOLO to the other, any break in which signals a strap cut violation.
- Encryption in the optical light signal prevents spoofing (unauthorised interference).
- A light sensor within the SOLO's case detects if light is getting into the case as a result of the case being cracked.
- Foil detection is in place in case the unit is being tamper by intentional obstacles