

SIT Sports
Safety Tracking System Manual
P2, P3 and NON PRIORITY

WRC 2017



1 SIT Sports Tracking Unit

The SIT Sports Tracking unit must be fitted and connected in all competitors' cars before arrival at scrutineering, where it will be checked by SIT Sports engineers.

The tracking unit must be used together with the tracker base; this allows the quick fitting and removal of the unit. The unit and the base must be firmly mounted to a solid surface to avoid extreme shock or vibration excessive. Please be sure that the base preserves its original shock absorbing link pad, it also helps reduce vibration

IMPORTANT! Any problems must be dealt with during the 10' service so the unit has to be easy to reach and remove.



Front view

Back view

Unit Dimensions

105mm x 169mm x 60.5mm (WxLxH)

Weight: 0.980 Kg

GSM – Fackra female (red)

GPS 1 – Fackra female (blue)

GPS 2 – SMA female

UHF – PL259 female

(NOTE: All antennas will be supplied with the Tracker)

Tracker Base Dimensions

115mm x 176mm x 29mm (WxLxH)

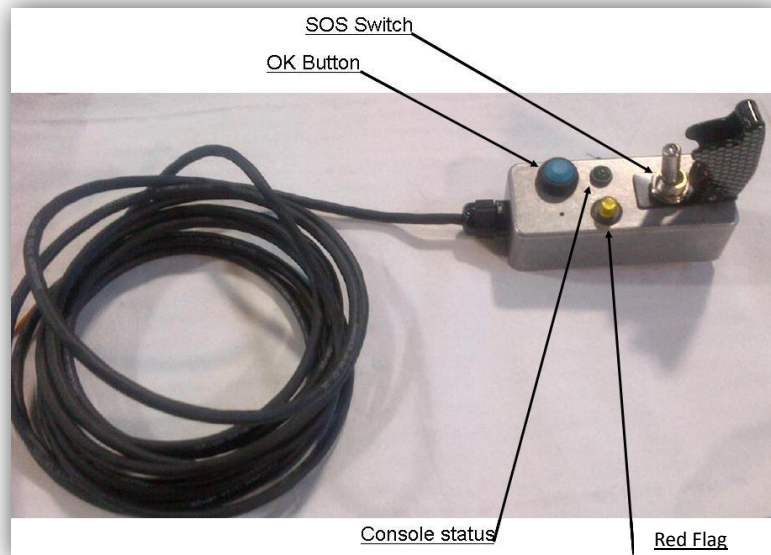
Weight: 0.097 Kg

The tracker box must be strongly attached to the base with two Velcro straps and secured with a full round Ty-rap.



2 FIA Safety Emergency console

The FIA Emergency Console must be easily accessible by both the driver and the co-driver and fitted in a place where the lights, especially the Red Flag LED, **can immediately be seen by the crew while driving on stage**. The driver and the co-driver must be able to access the console with the seatbelt fastened.



Safety Emergency console

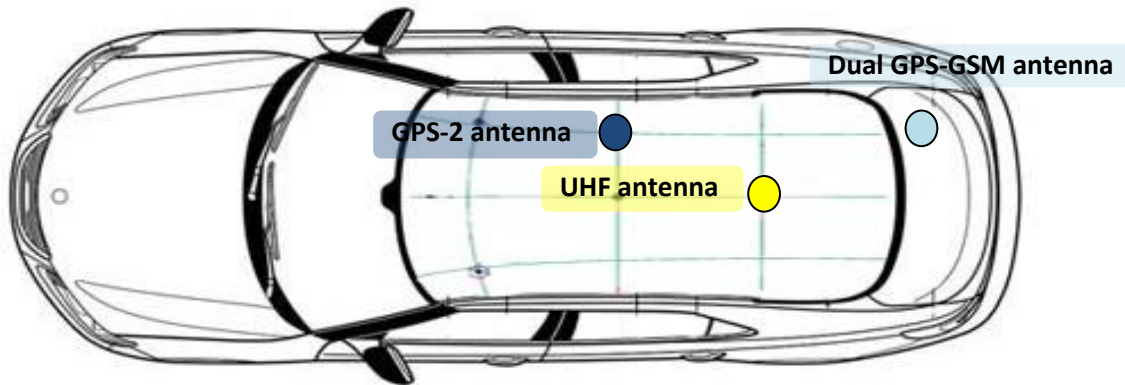
Buttons, lights and Interface Description

1. SOS switch: This switch (protected with a cover to avoid accidental use) must be activated in case of emergency in order to raise the alarm.
 - Deactivate the switch to cancel SOS if there is no emergency.
2. Red Flag LED: this light will flash if Clerk of the Course activates the Electronic Red Flag. There is also a continuous beep when the light is on.
3. Console status (green light)
 - Light blinking slow (100 ms ON/ 2sec OFF): System is up and running.
 - Light blinking quickly (300ms ON/ 300ms OFF) System is in emergency status (SOS switched on).
 - Fixed light: (8sec) has been pressed correctly the OK Button.
 - Light off: system is OFF.
4. OK button (red flag confirmation)
 - Press the button to confirm to the Clerk of the Course that you have seen the Red Flag.
 - **If stopped on stage and there is no emergency, press the button and check that status LED is fixed during 8sec.**

3 Antennas

The SIT Sports Tracking unit needs three antennas: UHF, dual GPS-GSM and GPS2 Antennas. UHF and dual GPS-GSM antennas must be installed on the roof of the car and the GPS2 antenna inside the car with a clear view to the sky, i.e. attached to the rear window. Please check the following drawing and install the antennas according to the recommended set-up:

Antenna Set-up



IMPORTANT! All the antennas should be separated at least 700 mm from any other antenna (live TV patch, live TV UHF antenna, voice radio VHF antennas, etc.).

The antenna cables should be routed away from the vehicle wiring when possible.

UHF Antenna. Should be installed centered in the middle of the roof.



A hole should be made to fix the antenna on the roof.

IMPORTANT! Carefully match the PL259 antenna connector antenna to the radio and do not use any adaptor or connector.

If there is any excess coax cable do not coil the cable. Coiling coax cable will cause transmit problems and limit radio range.

Dual GPS-GSM Antenna and GPS-2 Antenna



Dual GPS – GSM Antenna

- Cable length: 2500 mm
- Connector: Fackra x 2 (Blue GPS / Red GSM)

GPS 2 Antenna

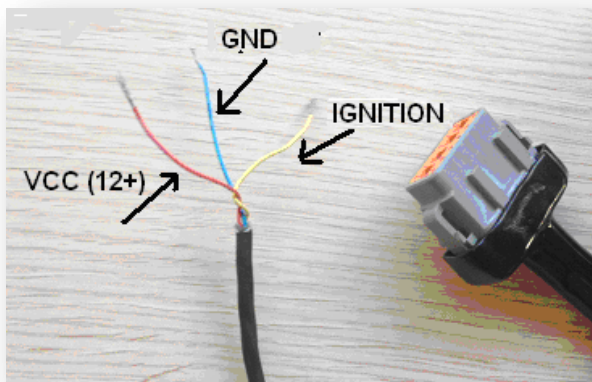
- Cable length: 3000 mm
- Connector: SMA male

4 Installation

SIT Sports will provide with only one 'Y' power splitter cable, the main end of this cable should be connected to the tracking box and the two other ends to the safety console and power supply (+VCC, Ground and Ignition).

Please ensure direct connection to power (+12VDC) with a 5A fuse protection. The ignition line must supply +12VDC too (it can be connect to the same terminal that +VCC).

Do not cut, shorten or bend the cable especially near the connector.



Signal	Cable
VCC (+12V)	Red
GROUND	Blue
IGNITION	Yellow

Wiring and power supply

- The red and blue wires should be directly connected to power (+12VDC) with a 5A fuse protection.
- The yellow wire must be connected to 12 volts (it can be connect to the same terminal that VCC – red wire -).

During installation, try to route the DC battery leads, the antenna lead or any accessory wires away from the engine compartment, ignition or alternator wiring.

Higher frequency electrical interference caused by electric motors can be suppressed directly at the motor terminals.

Please **pay special attention to the grounding**. It is important to guarantee a good ground in the UHF antenna. This grounding practice is especially important when there are other sensitive electronic components (e.g. MCUs, analog circuits) as the noise induced in the ground loop by the ground current can be significant if not taken care of properly

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IMPORTANT REMARKS

In order to reduce the level of RF interference, please observe the following precautions when you install.

- Place the tracking unit as far away from the motor as physically possible.
- Keep the antenna cable separated from the engine compartment and power cables.
- Place all antennas away from the motor.
- Install the UHF antenna as far as possible away from the ECU and sensors of the vehicles electronic system.
- Install the antenna feeder at least 200 mm (7.87in.) away from the ECU and sensors of the vehicles electronic systems.
- Avoid winding the antenna feeder together with the other wiring as much as possible, and also avoid running the antenna feeder parallel with other wire harnesses.
- Check that the UHF antennas is correctly adjusted and recheck the RF ground system, the RF grounding system is highly recommended to be separately from the DC or electrical ground.
- Please inform about any other mobile communications system installed that may be affecting the UHF communication.
- Check the grounding you are using.

Please also remember:

The SIT Sports tracking unit and base must be fitted and connected before arrival at scrutineering where it will be checked by SIT Sports engineers.

If you retire from the rally you must return all tracking equipment to SIT Sports at the Service Park as it was given to you, as soon as possible.

Any damage to the system will have to be paid for by the competitor. A complete price list is available from SIT Sports.

The SIT Sports Tracking unit, base, transponders and any other loaned equipment must be removed during the final service and returned to SIT Sports within 30 minutes of the closing of the final Time Control.