



Tracking Solution User Guide

Competing crews – Cross Country Rally

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Technical Note 1/2024

To all competitors and Teams,

This technical note is introduced in order to reduce the cases of incorrect installation of the BR001 device.

Careful installation and appropriate use of the device is **essential** to ensure the effective and safe monitoring of vehicles during competitions, failure to comply with the indications of this technical note could compromise the operation of the system.

All the main cases relating to the problems most frequently encountered in the tenders carried out in the first half of 2024 will be analysed below.

1) Powering the Device

The tracking device **must always be powered by the vehicle** to ensure continuous and reliable operation, it is **mandatory** to provide the device with a stable power supply with a voltage equal to or greater than **11 volts**.

It can be connected to the battery disconnect as long as it does not undergo voltage variations. The yellow wire (which allows the device to be switched on automatically) must be connected to the positive of the battery switch.



Figure 1 - White power light: device powered correctly



Figure 2 - Red power indicator light: device not powered

2) Proper installation and management of antenna cables (LTE, GNSS, IRIDIUM)

To ensure optimal signal reception and minimize interference, it is **mandatory** to follow these guidelines when installing the antenna:

- Cables (including those of the power supply) **cannot absolutely** pass next to heat sources: for example on the central tunnel if it heats up;
- Antenna cables **must not** be **twisted** or run with other cables that are sources of electromagnetic interference, such as control units, other power or intercom cables;
- The cables must **never** pass between the body and the rollbar;
- Check that the cables have not been **damaged** by passing through the hole in the roof;
- Excess cables should be left in the **back** of the vehicle, where there is no other equipment to avoid interference;
- The connectors of the antennas that reach the device **must be absolutely comfortable** and not be pulled, if the device changes position in the event of an impact they must not tear and must not remain tense while driving;
- **Do not tighten** the antenna connectors with pliers, tighten the connectors by hand checking the correct color match (LTE COLOR RED, GPS (GNSS) BLUE, IRIDIUM GRAY) (Figure 3).



Figure 3 - Antenna connectors

Particular attention is also required to the management of cables, which must not be damaged in any way: do not pull the cables or make splices, if the cable is damaged it is mandatory to buy a new antenna. After an accident or rollover, all antenna wiring and connectors should be checked again.

3) Potential problems and mistakes to avoid

Once the installation has been completed following the above instructions and/or during the race, the following problems may occur:

RED INDICATOR LIGHT ON THE DEVICE	MEANING	SOLUTION
	Lack of power	- Check the wiring; - Make sure you have followed the instructions in the installation manual; - Check the correct functioning of the vehicle's electrical system; - Check that the cable is properly connected.

	Lack of GPS signal	- Check the antenna cables; - Unscrew and screw the GPS signal connector back on correctly; - If the problem persists, contact Be Traced staff.
	No communication with the Be Traced server	- Check the antenna cables; - Unscrew and retighten the LTE signal connector correctly; - If the problem persists, contact Be Traced staff.
The device keeps restarting	No external power and low battery	- Review the power wiring; - Make sure you haven't reversed the polarity.

All crews are reminded that the number of the contact person to be contacted in the race field is given during the sporting checks of the race, you must **refer ONLY** to the number on the ticket delivered.



Should the system suffer a malfunction during a special stage or in transfer, it will be necessary to immediately and directly contact the Be Traced staff who will arrange for the replacement of the device as required with the Race Director.

4) Technical checks and Tracking System WARNING!!

During the technical checks, the **correct installation** of the BR001 device by our staff or by the Technical Stewards, its operation and the positioning of cables and antenna as per this technical note will be verified.

Crews with **non-compliant installations** will not be admitted to the technical checks until correct installation and confirmed operation.

Your complete cooperation is essential in order to ensure the safety of the crews.

5) Battery

At each special test CO, a spare backup battery has been provided to be applied to the device that does not receive proper vehicle power.

6) Battery-powered device

A battery-powered device has also been set up for each special stage CO to be added to the race one in the event of a malfunction of the main device.



1. Be Traced

The Be Traced BR001 tracking device is designed to improve the safety and enjoyment of competitors. It is important to be able to manage the device and know its screens so that you can enjoy the best user experience.

Our team will be happy to help you with the installation and to clarify any doubts you may have about using our device.

Attention: To interact with the device's screen, you must press the icons on the display or the keys for at least 1 second and then move your finger away from the screen or stop pressing the corresponding key.

2. The Device

The device needs a connection to the vehicle's electrical circuit and is equipped with its own internal battery. The device must be turned on at all times. The device already has all the data of the Special Stages and the Traits in Transfer pre-installed. Once turned on, the device will show the Transfer screen where the real-time speed will be shown. Details on the "Transfer" mode can be found in section 2.2 of this manual. Interaction with the device is possible thanks to the touch screen, but also with the buttons on the right side of the device. Each key is associated with the icons that will appear on the right of the screen, in each icon there will be the number corresponding to the key to be pressed. The device is set to English mode by default, but you can translate all the information. To translate all the information contained in the device, press the icon highlighted in **Fig. 1**, after pressing you will enter the screen in **Fig. 2**, press on the highlighted bar and choose Italian (**Fig. 3**).



Fig. 1



Fig. 2



Fig.3

2.1. Device Mode

The unit has two main modes. When the device detects that it is in a stage it will go into "On Stage" mode, while in all other cases it will be in "Transit" mode:

1. "Transit": Outside of a stage, the system goes into Transit. (Section 2.2).
2. "On Stage": During a Special Stage, the system automatically enters "On Stage" mode (Section 2.3).

2.2. Transit Mode

Under "Transit" the device will show the following information:

- current time and date (green box in **Fig 4**);
- real-time speed (red box in **Fig. 4**);
- signal quality and power supply to the device (no GPS; no connection to the Be Traced server).

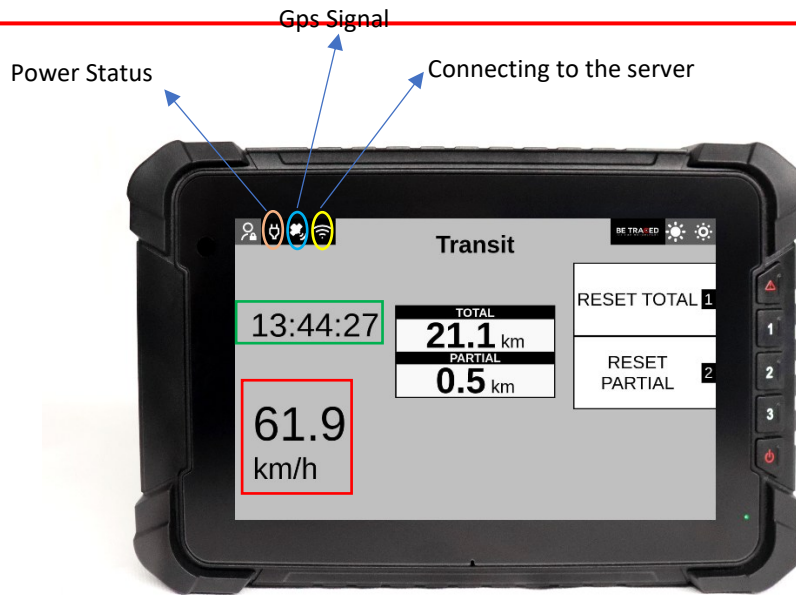


Fig.4

The device also displays the distance traveled since it was turned on and provides the option to reset the distance counter.

2.2.1 Tripmaster and distance reset

While in transit, the device displays the tripmaster with both the total distance and the partial distance traveled.

To reset only the partial distance, press "PARTIAL RESET" (**Fig. 4**). The device will ask for confirmation before proceeding; once confirmed, the partial distance is reset to zero (**Fig. 5**).



Fig. 5

To reset the total distance, press "TOTAL RESET" (**Fig. 4**) and follow the same procedure. A total reset sets both the total distance and the partial distance back to zero.

2.3 On Stage Mode

Before entering Stage mode, the device shows the "Prepare for Stage" mode. In this mode, the device signals to the crew when a special stage is approaching. Once you have passed the start of the test, you will enter the "On Stage" mode. In this mode, the device shows:

- real-time speed (red box in **Fig. 6**)
- name of the special stage (blue box in **Fig. 6**)
- distance traveled since the start of the test (yellow box in **Fig. 6**)
- current time (green box in **Fig 6**).

In "On Stage" mode, the "Incident Signal" button will always be present to send any distress requests.

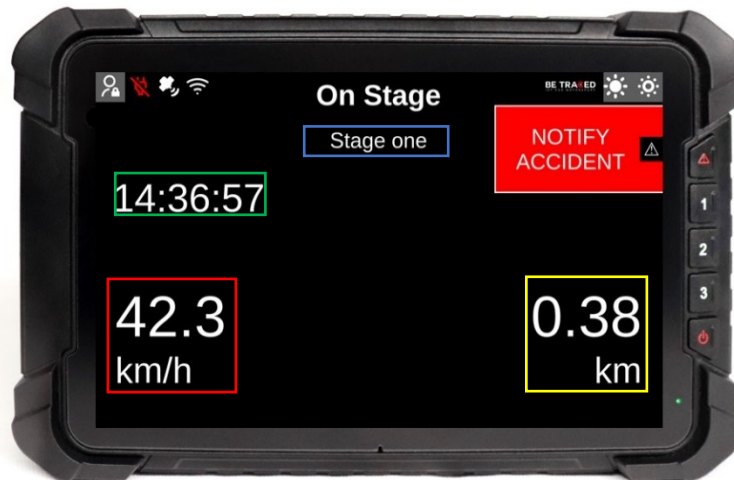


Fig. 6

At the end of the Special Stage, the "Flying Finish" screen will be shown (**Fig. 7**), which indicates the end of the Special Stage and the approach of the Stop, in this phase all safety systems remain active.



Fig. 7

The device, in "On Stage" mode, can automatically detect an incident using two parameters:

- acceleration/deceleration (calculated in force G) above the alert threshold;
- the device detects a stop in a special stage (**Attention:** if you restart in less than 50 seconds, the accident status is automatically cancelled).

If the device remains stationary for 15 seconds, it will ask the crew whether they have been involved in an accident by displaying the screen shown below (**Fig. 8**). If the device detects a deceleration greater than 15G, it will automatically send an emergency signal to Race Control.



Fig. 8

The crew must provide one of the options shown in **Fig. 8**. Tapping the OK icon will bring up the following options:

- OK ROAD CLEAR: the road is clear and the crew is fine;
- OK ROAD BLOCKED: the crew is fine, but the road is ENTIRELY blocked by the stationary car.

WARNING: It is mandatory to provide a response to this notice within 60 (sixty) seconds, otherwise as set out in NG Rally section 6.5.1 published by ACI Sport, you will incur a financial penalty established by ACI Sport in the aforementioned section.



Fig. 9



Fig. 10

Once you have selected one of the options on the screen, you can return to the main screen by pressing "Remove Status".

When an SOS is sent, the SOS icon and a message corresponding to the request sent appear on the device.

2.4 Sending a manual SOS request

Crew members have the option to send manual distress calls at any time. To send the request, simply press the "Notify Accident" icon shown on the right side of the device, or press the button corresponding to the icon or the button with the danger signal.





Fig. 11

Once pressed, the device will show the screen in Fig. 12 and pressing **SOS** will show the screen in Fig. 12 with the following options:

- "SOS FIRE" to request help for a fire on board the vehicle;
- "SOS MEDICAL" to request the intervention of the medical staff;
- "CANCEL" to cancel the request.



Fig. 12

You can always cancel your SOS request at any time, and it is important to do so if your request was submitted in error or is no longer needed. To delete the request click "BACK".



Fig. 13



Fig. 14

Pressing "Remove State" will cancel the SOS request.



2.5. Vehicle to Vehicle – Status messages

The device is capable of displaying assistance requests received from the devices of other competitors whose vehicles are stopped during a Special Stage.

These messages are displayed when approaching within approximately 300 meters of the vehicle transmitting the status message. The BR001 will also show the progressive distance to the obstacle within the stage.

If the vehicle stopped on the stage has not yet selected its status, the device will display the following screen (Fig. 15).



Fig. 15

When the vehicle stopped on the stage selects “OK – ROAD CLEAR,” the device in the approaching vehicle will display the following screen (Fig. 16).



Fig. 16

Unlike the previous situations, when a device on the stage reports either “OK – ROAD BLOCKED” or an **SOS** alert (whether medical or fire-related), the device in the approaching vehicle will not only display the specific warning but will **also** emit an **audible alarm**.

As these warnings are **critical** for crew safety, it is required to acknowledge receipt of the message. It should be noted that these messages are not **Red Flags**, but warning alerts indicating an **imminent hazard**.

The following screens will be displayed for the respective alerts: Road Blocked (**Fig. 17**), SOS Medical (**Fig. 18**), and SOS Fire (**Fig. 19**).



Fig. 17



Fig. 18





Fig. 19

2.6 Red Flag

If a serious accident or any impediment compromises the safety of the competitors on a stage, the Race Director may issue the red flag. As stated by the regulations, when the red flag is activated, all competitors who are before the involved coordinates, must immediately reduce their speed, because there is a serious accident or in any case impediments on a specific section of the special stage.

When the red flag is placed by the Race Director, the device located in the area affected by the red flag will immediately emit an acoustic signal, accompanied by a completely red screen showing the words "RED FLAG" (Fig. 20).



Fig. 20

It is necessary to press the "ACK" icon (**Fig. 20**) to send the confirmation of having received the red flag to the Race Direction, then the following screen will be shown (**Fig. 21**).



Fig. 21

ATTENTION: even if the screen of the device changes after the confirmation of the red flag, the test is still **SUSPENDED**, it is therefore necessary to continue to follow the red flag procedure until the end of the Special Stage.

2.7 Waypoint Validation

During Special Stage mode, the BR001 device is able to display the successful validation of all types of waypoints. The notification is both displayed on the screen through a dedicated message and indicated by an audible signal.

When a waypoint is successfully validated, the following notification is displayed (**Fig. 22**).





Fig. 22

The notification remains displayed for 5 seconds and then automatically disappears.

2.8 Wrong Direction warning

In Special Stage mode, the BR001 device is able to detect the direction of travel of the crew.

If a vehicle proceeds in the opposite direction to that of the stage, the device will display the following screen (**Fig. 23**).



Fig. 23

Once the correct direction of travel has been resumed, the device will return to displaying the Special Stage screen.



2.9 Slowzone

The device is able to show the presence of a Slowzone and its speed limit. As the crew approaches a Slowzone, the following warning will be displayed (**Fig. 24**).



Fig. 24

Once you enter a Slowzone, the following screen will be shown (**Fig. 25**), with the maximum speed limit.



Fig. 25

When the crew is approaching the end of the Slowzone (about 250 meters from the end of the slowzone) the screen displays the information in Fig. 18 with the progressive distance from the position of the vehicle to the end of the Slowzone.





Fig. 26

2.10 Virtual Chicane

The BR001 device is able to show a Virtual Chicane and guide the crew to face it in the correct way.

As you approach the Virtual Chicane, the screen shows the following screen (Fig. 27)



Fig. 27

During a Virtual Chicane, the speed limit is shown (Fig. 28)





Fig. 28

When the set speed is reached and the Virtual Chicane is finished, the screen shows the following screen signaling the crew to resume normal speed (Fig. 29)

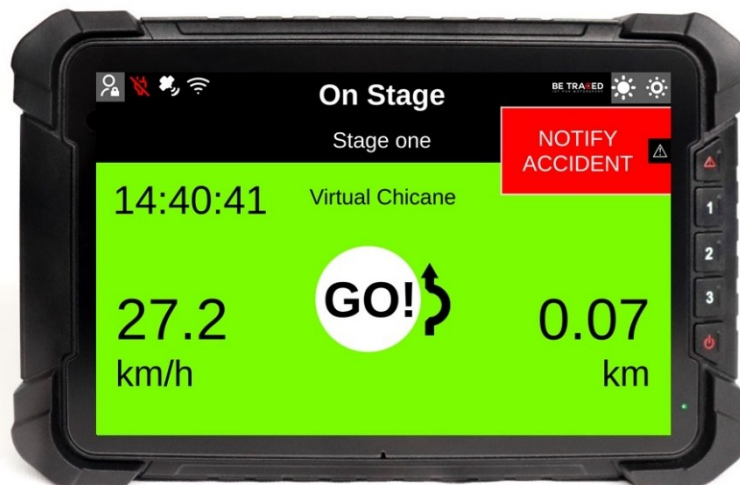


Fig. 29

2.11 Vehicle to Vehicle – Push to pass

The BR001 device has the capability to request an overtaking maneuver for a slow-moving vehicle that is preceding another.

When the BR001 device detects the presence of another vehicle, two different screens will appear depending on the vehicle's position (the vehicle to be overtaken and the vehicle performing the overtaking), as shown in the figures below.

Specifically, **Fig. 30** will be displayed to the vehicle performing the overtaking, while **Fig. 31** will be shown to the vehicle being overtaken.



Fig. 30



Fig. 31

To send the request, press the "Request to overtake" icon, and the device will display a confirmation message indicating that the request has been sent (**Fig. 32**)





Fig. 32

On the device of the vehicle to be overtaken, the following screen will appear, accompanied by an audible signal and a flashing display (**Fig. 33**).



Fig. 33

Once the overtaking request is accepted, two screens will be displayed: one for the vehicle being overtaken (**Fig. 34**) and the other for the vehicle performing the overtaking (**Fig. 35**).





Fig. 34



Fig. 35

2.12 Neutralization

The BR001 device is capable of managing Neutralization and indicating the exact moment of entry into the next Special Stage section.

The device signals the approach to a Neutralization section when it is near the entry point (**Fig. 36**).





Fig. 36

Once in the Neutralization section, the device will display the following screen (**Fig. 37**)



Fig. 37

The BR001 device displays the current time (yellow arrow), the remaining time until exit from the Neutralization (green arrow), and the remaining kilometers (blue arrow).

As the end of the Neutralization approaches, the following screen will be displayed (**Fig. 38**).





Fig. 38

At the end of the Neutralization, the device will directly enter Special Stage mode.

Attention: During Neutralization, automatic alarms are disabled, but it is always possible to request assistance using the "Report Incident" icon

2.13 Adjusting the brightness

To change the brightness of the device's screen, use the icons at the top right (Fig. 39).

Press on the icon circled in red to increase the brightness, while to decrease it, press on the icon highlighted by the green circle.



Fig. 39



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