# TriPad

## User Manual

### Version 1.1

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# INTRODUCTION

TriPad (Figure 1) is a simple user interface that consists of keys and LEDs, which can control and display the operation of the receiver.

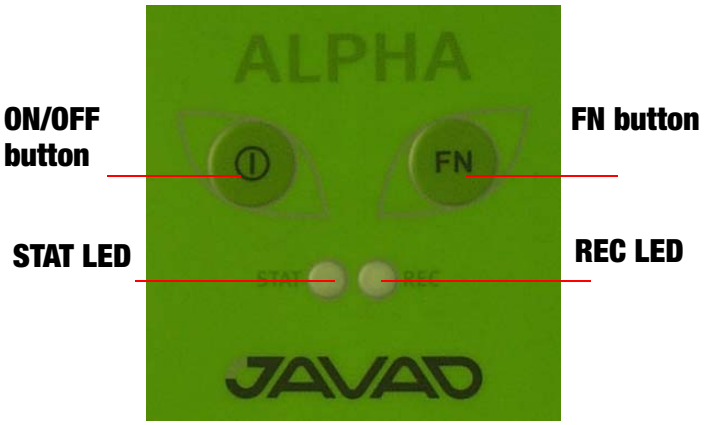


**Figure 1. TriPad**

TriPad brings a new level of automation to the GNSS field operation. Its function is similar to what is available on advanced photo cameras, where the camera takes several light and distance measurements, adjusts all the settings of the camera, and conveys the ready status of the camera (by a green light) for the photographer to push the button.

Behind the simple appearance of TriPad, there are sophisticated algorithms and tests that ensure reliable data collection and recording.

## 1. TriPad Functions

TriPad performs the following functions:

- Turns the receiver On or Off, or put it in the Sleep mode. When in Sleep mode, the receiver will turn on in response to any activity on the RS232 port.
- Turns data recording On or Off.
- Shows the number of GPS and GLONASS satellites that are being tracked.
- Shows data recording status.
- Shows each time data is recorded to internal memory.
- TriPad's LEDs and Keys

As usually TriPad has the following LEDs:

- Status LED;
- Recording LED;

Each LED has three colors: red, green, and orange.

TriPad as usually has the following keys:

- an ON/OFF key (PWR)
- Function/recording key (FN).

In addition, TriPad has protection against stuck keys (e.g. when a key is held down unintentionally for a long time by other objects in a backpack).

# KEYS AND LEDS

This chapter provides an overview of the TriPad's keys and LEDs. This information is split into the following sections:

## 1. PWR Key

To turn on the receiver, push the PWR key and release it.

To turn it off, press the PWR key for more than 1 and less then 4 seconds, during this period the STAT LED remains off to assist you.

If you press the PWR button for more than 8 seconds, it will be ignored. This is done to protect the receiver operation against stuck keys.

## 2. STAT LED

When the receiver is ON and no satellites are tracked, the STAT LED is red. Instead, this LED blinks as follows:

- Green for each GPS satellite being tracked;
- Pause, if at least one satellite has the energy potential more than 48 db*Hz, red blink instead;
- Orange for each GLONASS satellite being tracked;
- Pause, if the receiver can estimate its navigation position, red blink if it can't.

For example, if 8 GPS and 5 GLONASS satellites are being tracked, the STAT LED repeatedly blinks 8 greens and 5 oranges between successive pauses or reds.

## 3. FN Key and REC LED

Table 2-1 summarizes FN key functions and REC LED statuses. See TriVU Software Manual for information on setting FN key modes.

- Pressing the FN key for less than one second switches the receiver between different information modes (normal and extended information), or between static and dynamic post-processing modes, depending on the receiver's configuration.

  During the first second of pressing the FN key, the REC LED is orange.

- Pressing the FN key for more than one and less than five seconds will start/stop data recording.

  During data recording the REC LED is green or orange. If the REC LED is red, the receiver has run out of memory, has a hardware problem, or contains an improper OAF.
- The REC LED blinks green or orange each time data is written to the internal receiver's memory.

  You set the data recording time interval using TriVU Software. See TriVU Software Manual for information on setting this function.

  Each time you turn off or on data recording, either a new file opens or data appends to a particular file.
- Pressing the FN key for more than five and less than eight seconds will turn the baud rate of serial port A to 9600. After about five seconds of pressing the FN key, the REC LED becomes red. Release the FN key while the REC LED is red (during the next three seconds).
- Pressing the FN key for more than eight seconds has no impact.
- After loading new firmware or clearing the receiver's NVRAM, the receiver checks its internal file system.

  During this operation, the REC LED flashes orange, and the file system is not accessible for CDU (control display unit) applications or for data recording. This operation may require from fractions of a second to several minutes, depending on the circumstances and the amount of internal memory.

**Table 1. FN Key Functions and REC LED Status**

| FN Key | REC LED | Status |
|---|---|---|
| **When data recording is OFF, and the FN key is...** | | |
| Not pressed | No light | No data recording. |
| | Orange blink | Internal file system test in progress. |
| | Red | No free memory; hardware problem with data recording. |
| Pressed for < 1 second | If FN key mode is «LED blink mode switch» | |
| | Orange | Release to charge information mode. |
| | If FN key mode is «Occupation mode switch» | |
| | Orange | No function. |
| Pressed for 1–5 seconds | If FN key mode is «LED blink mode switch» | |
| | Green | Release to start data recording (post-processing occupation mode undefined). |
| | If FN key mode is «Occupation mode switch» | |
| | Green | Release to start recording (Kinematic or Static post-processing occupation mode). |
| Pressed for 5–8 seconds | Red | Release to turn serial port A baud rate to 9600 bps. |
| Pressed for > 8 seconds | No light | No function. |

| FN Key | REC LED | Status |
|---|---|---|
| **When data recording is ON, and the FN key is...** | | |
| Not pressed | Red | No free memory; hardware problem with data recording. |
| | If FN key mode is «LED blink mode switch» | |
| | Green | Data recording started (post-processing occupation mode undefined). |
| | If FN key mode is «Occupation mode switch» | |
| | Green | Data recording started (Kinematic post-processing occupation mode). |
| | Orange | Data recording started (Static post-processing occupation mode). |
| Pressed for < 1 second | If FN key mode is «LED blink mode switch» | |
| | Orange | Release to change information mode. |
| | If FN key mode is «Occupation mode switch» | |
| | Orange | Release to toggle between Static and Kinematic post-processing modes. |
| Pressed for 1–5 | No light | Release to stop data recording. |
| Pressed for 5–8 seconds | Red | Release to turn serial port A baud rate to 9600 bps. |
| Pressed for > 8 seconds | No light | No function (data recording still on). |

# 4. NVRAM clearing with TriPad

It is possible to clear NVRAM using only TriPad. To do that:

- Turn the receiver OFF.
- Press and hold FN button.
- Press and release PWR button to turn the receiver ON.
- Wait until both LEDs will light green.
- Wait around five seconds, until both LEDs will blink orange.
- Release FN button.

Note that LEDs will blink orange only during next five seconds, and to clear NVRAM it is essential to release FN button when they blink yellow.

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