

# Template:MSP500 System settings

System settings have the following configurable parameters:

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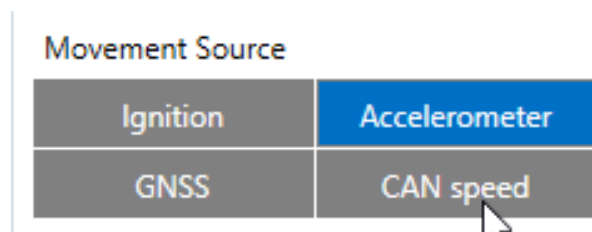
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## System Settings

### Movement Source

Movement source will be used to determine when a vehicle is on stop or moving.  
Possible movement sources:



- **Ignition** - if ignition (based on ignition source) is ON, Vehicle MOVING mode is used; if the ignition is OFF, Vehicle on STOP mode is used;
- **Accelerometer** (movement) - if accelerometer detects movement, Vehicle MOVING mode is used; if there is no movement detected, Vehicle on STOP mode is used;
- **GNSS** - if GPS fix is acquired and speed  $\geq 5$  km/h vehicle MOVING mode is used; if GPS speed  $< 5$  km/h, Vehicle on STOP mode is used;
- **CAN speed** - If speed from BT OBDII dongle is higher than 0 km/h, Vehicle MOVING mode is used; If speed from BT OBDII dongle is equal 0 km/h, Vehicle on STOP mode is used;

If there is no GNSS fix, the accelerometer determines profile change. If there is no OBDII dongle active (or speed reported by dongle == 0 km/h) accelerometer determines profile change.

## Records Saving/Sending Without TS

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This feature will be used to save and send records to server without time sinchronization.

### Records Saving/Sending Without TS

After Position Fix	Always
After Time Sync	

Possible options:

- **After Position Fix** - records will be saved and send only after position fix;
- **After Time Sync** - records will be saved and send only after time synchronization;
- **Always** - records will be always saved and send even if will not be time synchronization.

**Note:** If record is without valid coordinates - (there were no GPS fix in the moment of data acquisition) - Longitude, Latitude and Altitude values are last valid fix, and Angle, Satellites and Speed are 0. After a reboot, it will send zero coordinates.

## LED Indication

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### LED Indication

Disable	Enable
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This feature will be used to indicate device status and navigate them.

**Note:** If this feature is enabled, you can check LEDs behavior [here](#).

## GNSS Source

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In *GNSS Source* settings user can configure which GNSS system(s) to use.

User has a choice to use only one system GPS and it is possible to choose two or three systems together. One exception is that you cannot combine BeiDou and GLONASS systems together. Examples of non-configurable GNSS source combinations are:

### GNSS Source

BeiDou	GLONASS
Galileo	GPS

- GLONASS + BeiDou;
- Galileo + BeiDou;
- Galileo + GLONASS;
- Galileo + GLONASS + BeiDou;
- GLONASS + IRNSS;
- Galileo + IRNSS;
- BeiDou + IRNSS;
- GLONASS + BeiDou + IRNSS;
- Galileo + BeiDou + IRNSS;
- Galileo + GLONASS + IRNSS;
- Galileo + GLONASS + BeiDou + IRNSS;
- GPS + Galileo;
- GPS + GLONASS + BeiDou;
- GPS + Galileo + BeiDou;
- GPS + Galileo + GLONASS + BeiDou.

### List of configurable GNSS sources:

- GPS only
- GPS + BeiDou
- GPS + GLONASS
- GPS + Galileo + GLONASS
- GPS + Galileo;
- GPS + IRNSS;
- GPS + GLONASS + BeiDou;
- GPS + Galileo + BeiDou;
- GPS + Galileo + GLONASS + BeiDou;
- GPS + Galileo + GLONASS + IRNSS;
- GPS + GLONASS + BeiDou + IRNSS;
- GPS + Galileo + BeiDou + IRNSS;
- GPS + Galileo + GLONASS + BeiDou + IRNSS.

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## Analog Input Value Range

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### Analog Input Value Range



In *Analog Input Value Range* settings user can choose an analog input range of 10 V or 30 V.

## Data Protocol

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### Data Protocol



In *Data Protocol* settings user can choose which protocol version ([Codec 8](#) or [Codec 8 Extended](#)) will use for data sending to the server.

## Input Mode

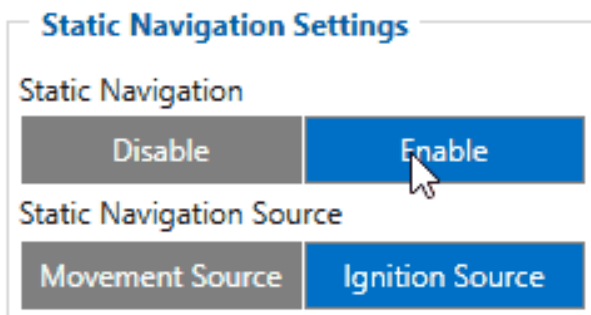
### Input Mode



In *Input Mode* settings user can choose which configurable input will be use: *DIN2/AIN1* or [Ground Sense](#).

If *Ground Sense* is selected, the input will act as an inverse Digital Input, where a low voltage level will output "1" using the *Ground Sense* I/O element, and a high voltage level will output "0".

## Static Navigation Settings



*Static Navigation Mode* is a filter, which filters out track jumps when the object is stationary.

If the Static navigation filter is disabled, it will apply no changes to GPS data. If the Static navigation filter is enabled, it will filter changes in GPS position if no movement (configured movement source) or ignition (configured ignition source) is detected (depends on what static navigation settings are selected: movement, ignition or both sources). It allows filtering GPS jumps when an object is parked (is not moving) and GPS position is still traced.

## Sleep Mode

**Sleep Mode**

Sleep Settings

Disable	GPS Sleep
Deep Sleep	Online Deep Sleep
Ultra Sleep	

Timeout (min)

This feature will be used to save power consumption of external battery (power supply). It let the user choose one of four power saving modes which he would prefer: [GPS Sleep](#), [Deep Sleep](#), [Online Deep Sleep](#) and [Ultra Deep Sleep](#). Also, after the mentioned options you can find the Timeout (min) parameter which starts counting when the device is in STOP mode. After timeout is reached and all conditions for sleep mode are met, the device goes to sleep mode.

**Note:** Detail description and conditions about every mode you can find [here](#).

## Ignition Source

Ignition source will be used to determine ignition of vehicle. If voltage is between High Voltage Lever and Low Voltage Level (below *Ignition Settings* options) - ignition is ON. If voltage is higher than High Voltage Lever or lower than Low Voltage Level - ignition is OFF.

**Ignition Source**

Ignition Settings

DIN 1	Accelerometer
Power Voltage	Engine RPM
DIN 3	

High Voltage (mV)

Low Voltage (mV)

Possible ignition sources:

- **DIN 1** (Digital Input 1) - if *DIN1* is 1 - ignition is ON; if *DIN1* value is 0 - ignition is OFF;
- **Power Voltage** - if voltage is between High Voltage Lever and Low Voltage Level (below *Ignition Settings* options) - ignition is ON; if voltage is higher than High Voltage Lever or lower than Low Voltage Level - ignition is OFF.
- **Engine RPM** - if *RPM* from OBD II or CAN is higher than 0 - ignition is ON; if *RPM* from OBD II or CAN is equal to 0 - ignition is OFF;
- **Accelerometer** - if movement sensor detects movement - ignition is ON; if movement is not

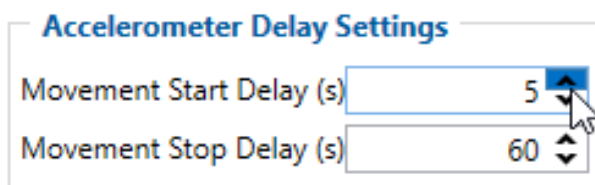
detected - ignition is OFF;

More than one ignition source can be selected at the same moment. When there are 2 or more sources selected, at least one condition has to be met to change Ignition status.

- **DIN 3** (Digital Input 3) - if *DIN3* is 1 - ignition is ON; if *DIN3* value is 0 - ignition is OFF;

**Example:** DIN1 and Accelerometer are selected as the Ignition source. When the device detects movement, Ignition status will change to 1, regardless that DIN1 value is 0. Users can select movement start and movement stop delay time - those parameters are used when the accelerometer is selected as an ignition source. Ignition status is used in power management and the following functionalities: [Eco/Green Driving](#), [Excessive Idling](#), Fuel Consumption, [Over Speeding](#), [Towing Detection](#) and [Trip](#).

## Accelerometer Delay Settings



The image shows a software interface titled "Accelerometer Delay Settings". It contains two input fields. The first field is labeled "Movement Start Delay (s)" and has a value of "5" with a spinner control to its right. The second field is labeled "Movement Stop Delay (s)" and has a value of "60" with a spinner control to its right. A mouse cursor is pointing at the spinner for the first field.

*Accelerometer Delay Settings* will be use to set timeout of delay when will be detected accelerometer status changes.

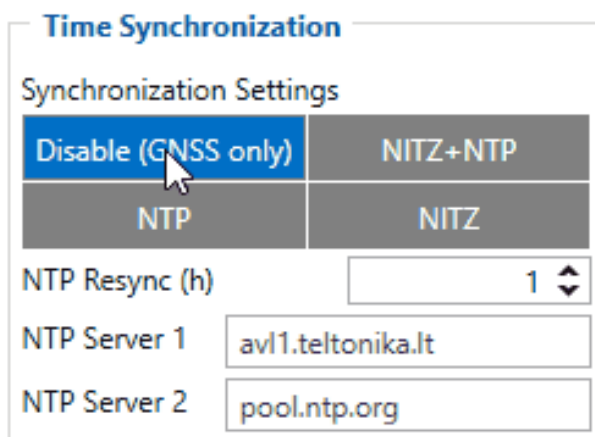
**Note:** these settings impact ignition/movement sources.  
The user can set:

- **Movement Start Delay (s)** - movement start delay in seconds;
- **Movement Stop Delay (s)** - movement stop delay in seconds;

## Time Synchronization

*Time Synchronization settings* will be use to set how device time will be re-synchronize.

### Time Synchronization Settings\*



The image shows a software interface titled "Time Synchronization". Under the heading "Synchronization Settings", there is a 2x2 grid of buttons. The top-left button is "Disable (GNSS only)" and is highlighted in blue with a mouse cursor pointing at it. The top-right button is "NITZ+NTP", the bottom-left is "NTP", and the bottom-right is "NITZ". Below this grid, there are three more settings: "NTP Resync (h)" with a value of "1" and a spinner; "NTP Server 1" with the value "avl1.teltonika.it"; and "NTP Server 2" with the value "pool.ntp.org".

*Synchronization settings* is used for choosing the device's internal time synchronization source. Possible options are:

- **GPS Only** - time synchronization by GPS;
- **NITZ and NTP** - time synchronization from GSM operators (NITZ) and/or web server (NTP);
- **NTP** - time synchronization from NTP server only;
- **NITZ** - time synchronization from GSM operators (NITZ).

*NTP Resync* parameter determines how often a device should resynchronize its time. If the set value is not equal to zero, time resynchronization will occur periodically at time intervals to which this parameter is set.

*NTP server 1* and *NTP Server 2* let the user select which NTP server (s) will be used to re-synchronize time.

\* using 03.25.13 or older firmware