

# TICK

GPS tracker



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## DEVICE DESCRIPTION

The device communicates through GSM/GPRS networks and is intended to locate any object via GPS satellites.

Usages:

- Protection of children/the elderly/disabled, etc.
- Monitoring vehicles, heavy machinery, etc.
- Personal monitoring

The device can be supplied in two versions – with or without magnets. Devices with magnets are marked with a  sign on the product itself and on its packaging.

## TECHNICAL SPECIFICATIONS

GSM communication bandwidths	850 / 900 / 1800/ 1900 MHz, 2G, GPRS
Output performance	2 W @ 850 / 900 MHz, 1 W @ 1800 / 1 900 MHz
GPS position accuracy	< 2.5 m CEP
Antennas	Internal
Dimensions	82 mm × 50 mm × 30 mm
Weight (with battery)	139 g (no magnets), 165 g (with magnets)
Battery (internal)	Li-Ion, 3.7 V, 2000 mAh
Ingress protection	IP67
Wireless charging	Qi standard, max. 5 W, WPC 1.1
Range of operating temperatures	-25 to +55 °C
Range of temperatures for charging battery	0 to +55°C
Transmission protocols	UDP, SMS
Transmission of data	According to set mode of tracker
Low power alert	Low and critical internal battery level alarm
Seize detection <sup>1</sup>	Autonomous handling and manipulation detection
Motion detection	Triggers GPS tracking in active modes
Technical reports of tracker status	Sends the general GPS tracker status

<sup>1</sup> The seize (manipulation) detection is specific to devices which use a magnetic attachment system.

## BEFORE YOU START TO USE THE DEVICE

### 1. Downloading the TICK tracker application

For using the device, it is necessary to either use the TICK tracker mobile application or the NAM system web application. Through the TICK tracker application, it is possible to operate the device and to display information from it.

Download the **mobile application** "TICK tracker" here:

Android devices from Google Play



iOS devices from AppStore



TICK tracker application icon



The web application allows the display of information from the device. The **web application** is available at [www.namsystem.net](http://www.namsystem.net).

For all actions and processes described in the manual a stable internet connection is required. Make sure you have access to it before you start using the application and/or registering your new TICK devices.

## 2. Using the application for the first time

Prior to the use of your TICK GPS device, an account for the application must be created. In order to do this, please open the **REGISTER NEW ACCOUNT** link shown at the bottom of the login page inside the TICK tracker application.

A new browser tab with the registration form will open.

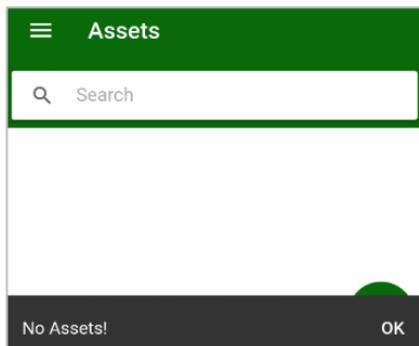
Please fill in all required account registration details. Make sure all the information is correct and confirm the registration by clicking on the **REGISTER** box.

After successful account registration, continue back to the TICK tracker application login screen.

At the login screen, write your account details in the corresponding boxes. Your registered **email address** and **password** will be required.

Use the same account details, as used in the registration form.

Once successfully logged in, your new account is empty. No GPS trackers will appear inside. A simple warning tab “**No Assets**” may appear.



To add a new tracker, tap the  icon. You can repeat this step until you add every tracker you have purchased.

After tapping the icon new window will appear. For successful tracker registration two details are required:

1. TICK device's serial number
2. Control check code

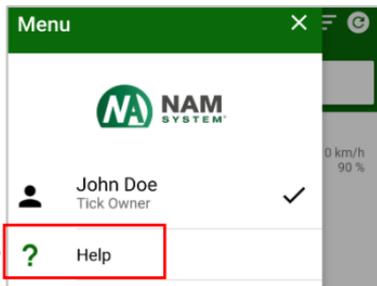
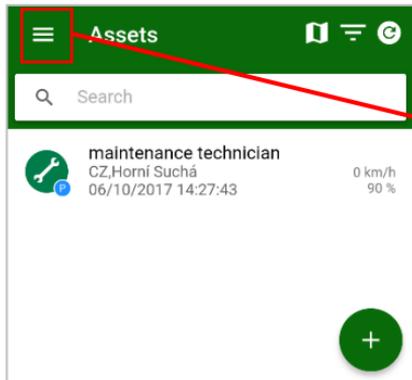
Both can be found easily – printed on the outer plastic housing of the TICK device.

Write both information in the corresponding boxes and click the **REGISTER** box. The system will automatically check the registration of the TICK device.

Both successful or unsuccessful registration attempts are displayed to you immediately.

If an error during the TICK registration occurs, repeat the process. Check both information for correct input order, character order and total length.

After successfully registering at least one TICK GPS device, the Asset screen (default display page of the TICK tracker application) changes slightly.



Each TICK device in your account has its own tile. It shows:

- Icon of the tracker
- Custom name (default is the serial number)
- Geographical location
- Date and time of the last activity
- Actual speed
- Battery charge

Further information on how to operate the TICK tracker application can be found directly in the application. You can load it anytime as an online PDF from the application menu by selecting the ? **HELP** option.

## DATA LOGGING

The tracker device uses an internal memory for data logging that can store up to 20,000 records. When the device loses the GSM/GPRS signal, GPS reception continues and all positions are logged into the memory depending on the present mode of the tracker. Once reconnected to a GSM/GPRS network with a satisfactory signal, stored GPS positions are automatically sent.

If the device is used without a sufficient GSM/GPRS signal for a long time, it may automatically overwrite the memory, starting from the oldest recorded item to the newest.

If the device is not in the direct view of the sky, acquiring a GPS position may take longer or might not be acquired at all (e.g. inside a building, deep in luggage, in cargo spaces, etc.).

In order to preserve the battery life and attain the correct information through the applications as fast as possible, we recommend waking up the TICK device in places where conditions of the GPS signal reception are favourable.

### Please note:

When using your TICK device for very first time, we strongly recommend following these simple steps:

- Recharge it fully (see page 10)
- Send the command for Activated by motion mode to it (see page 8)
- Carry it outside for at least 5 minutes to record the GPS position
- Check the overall status of the TICK device from the TICK tracker application

A correct GPS location fix may take up to 10 minutes. The TICK will only start to behave

according to the set operating mode once an accurate GPS position has been fixed.

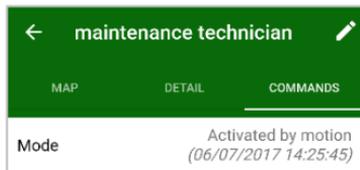
## SIM card

The device is already equipped with a SIM card. Data transmission services are not included in the price of the device. The price for services is charged separately according to the NAM system services contract and according to chosen invoice period.

## OPERATING MODES

The device allows you to choose between 6 modes of operation. The maximum time that the device can operate in the field without the need to recharge it is influenced by the specific modes used.

Any TICK device operating mode can be switched by commands which are only available within the TICK tracker application.



### Activated by motion

Vibrations trigger GPS position locating. Positions are logged at fixed 10 sec intervals

and sent to the application every minute. The TICK's manipulation info is sent immediately.

1 min



### Pursuit

The tracker GPS position is sent non-stop every 5 sec, whether it is stationary or in motion. This setup significantly shortens the tracker's battery life.



#### Please note:

The Pursuit mode stays active for 60 minutes only, starting from the time setting the command. When this time passes, the TICK device automatically switches to Activated by motion mode. The Pursuit mode can be set repeatedly after this.

When the GSM signal reception of the TICK device is lost, or switching the TICK device from a mode set with longer communication periods, the Pursuit mode might not be performed for whole 60 minutes period or might not be set at all.

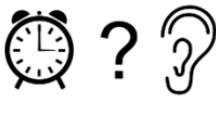
### Standby

GPS position locating is inactive. The tracker is logged in the network non-stop and awaits a command to switch to another setup.



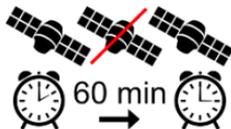
### Asleep

GPS position locating is inactive. The tracker logs in to the network once in a given period and searches for a command to switch to another setup.



### Periodic wake up

The tracker wakes up regularly in a given period, locates GPS position and goes to sleep again. This setup improves the tracker's operating time.



### Power OFF

All functions are switched off. The tracker can be only switched on again by charging it on the wireless charging pad.



#### Please note:

When the TICK device is placed on the active charging pad, it is always ready to receive any command (presuming there is a sufficient GSM signal available). Any periodic communication settings and subsequent GSM offline statuses of certain modes will not apply.

Legend key for fast icon orientation:



The device reads GPS locations during modes marked with this icon.



The device is constantly registered into the GSM network and not in GPRS.



The device does not read GPS locations in modes marked with this icon. The tracker waits for instruction to change the operation mode and therefore saves battery life



Certain modes may request to set times for how long the tracker should remain in the mode. In these cases, the mode alternates between short periods of normal usage (“wake up”) and varying longer periods of economical usage (sleep). When the tracker is in the “asleep” phase it is only possible to reset the mode during the next wake up period.

### Canceling unwanted switching off

After the setting of the “Power OFF” mode the device is switched off. The device will not react to any changes in mode made through the application during the Power OFF mode.

If a command to switch off the device is sent accidentally it is possible to cancel this request within 10 minutes after sending it by requesting a switch to a different mode. Do not forget to check (using the TICK tracker application) that you have made the mode change correctly.

### Display of data

Before it is possible to display the GPS locations of the device in the TICK tracker application (or in other monitoring applications) it is essential that the device has sent these GPS locations.

For sending GPS locations it is necessary to have a GPRS signal and sufficient battery capacity (i.e. charged battery).

## CHARGING THE DEVICE

The tracker is recharged by using a wireless charging pad that is compatible with the Qi

standard. We strongly recommend only usage of the original recharging pad and adapter supplied.



The recharging pad must be plugged in and switched on.

The charger has two coloured lights – 1 blue LED and 1 green LED. After being plugged in, the green LED on the recharging pad lights up. The pad will start recharging the device immediately as long as the device has been correctly placed on the pad. Correct recharging is indicated by blue a LED light shining. If the batteries in the tracker are completely flat, it will take around 4 hours to completely recharge them.

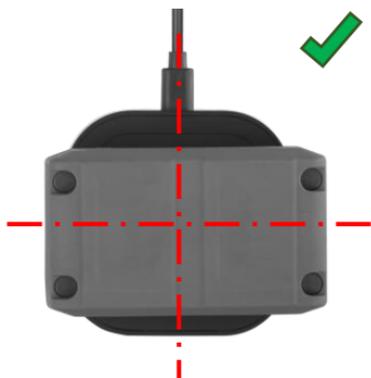
### Correct placement of the device on the recharging pad

Place the TICK device on the pad so that the recharging sign on the housing lies in the centre of the pad.

#### Please note:

Charging of the TICK device will only start if the position on the charging pad is correct. The tolerance of the correct positioning is high enough, but the bigger is the difference from the ideal centre

of the pad, the longer is the charging time needed for full recharge.



If you can see the TICK device name, charging won't start until you turn the device over to the correct position.



### Behaviour of the LED indicators

Possible LED signals given by the recharging pad:

- Green LED is lit – the charger is ready



- Blue LED is lit – the TICK is charging



- Both lights turned off – the TICK is fully charged
- Any LED flashes at regular one second intervals – there is an error in recharging

### Resolving recharging problems

If any LED flashes regularly, there is an error in recharging. Possible causes and remedies include the following:

- There is a conductive object that causes power diversion near to the recharger. Remove any conductive (metal) objects from the surface or close vicinity of the recharger.
- The tracker has moved from its ideal position during charging and power diversion has occurred. Remove the tracker from the charger and then place it there again at the centre.
- The tracker is cold or overheated (the permitted temperature range for charging is 0 to 55 °C). Let the tracker warm up or cool down.
- The electronics of the recharger are not correctly calibrated. Unplug the recharger for 5 seconds and then plug it in again.

If none of the remedies above help you, your TICK's battery has probably short-circuited (e.g. due to sudden impacts). In this case please contact the NAM system Helpdesk for further assistance.

The tracker, recharging pad and adapter heat up during recharging. Do not place any objects on them or close to them that might stop them from cooling down. Do not place any objects that could catch fire due to heat, close to the charging tracker.

## MANIPULATION DETECTION

It is possible to use this function on trackers that have got magnets . The surface of the device, on the side with magnets, operates as a sensitive electronic sensor. If conditions change due to the device being attached / removed from an electrically conductive surface (e.g. sheet metal, living tissue, electrolyte), this information is recorded and transmitted.

This is shown on the application under Manipulation/mounting – Yes/No.

← maintenance technician 		
MAP	DETAIL	COMMANDS
Last update	06/10/2017 14:27:43	
Ignition	Off	
Speed	0 km/h	
Place	CZ,Horní Suchá	
GPS	49.8029916, 18.4486282 (06/10/2017 14:27:43)	
Battery	90 % (06/10/2017 14:27:43)	
Manipulation/mounting	No	
Temperature	25 °C	

Condition changes cannot be registered on electrically non-conductive materials (wood, plastic, etc.) or on other sides of the device except from the side with magnets.

## The correct setting of the tracker for manipulation detection

The tracker must be correctly set for the manipulation detection to work. This setting is activated automatically during every switching on of the device from the total power off. This happens in the following ways:

- During the first usage of the device (after buying it),
- During recharging when the battery was completely flat,
- During switching on of the device whilst on the charging pad (after "Power OFF" mode was previously activated).

## Recommendations

Never switch the device on in situations when it is touching an electrically conductive object or if it is magnetically fixed (to a surface). Not complying with this recommendation will lead to the manipulation detection not operating.

Therefore, if manipulation detection is required and the TICK device cannot be removed from its location, it is preferable to use other power saving modes with longer periods between communication, instead of turning the device off.

When frequently switching the device off and on we recommend that you place it on the active recharging pad and start recharging. Let the device lay freely on the pad so that its top surface (with magnets) remains clear. Calibration is done automatically.

Recharging is covered in the section Charging the TICK device (see page 10).

## Resolving faults of manipulation detection

Calibration is always reset by completely switching the device off and then switching it on again using the correct method.

Successful calibration of manipulation detection can be checked by placing the palm of your hand on the magnetic surface of the device and waiting for a change to the status of Manipulation/mounting (from No to Yes).

Battery	90 % (06/10/2017 14:27:43)
Manipulation/mounting	No
Temperature	25 °C

## SAFETY INFORMATION

### Battery

The device is equipped with an internal Li-Ion battery. The battery is not accessible to the user and should not be repaired / changed by anyone other than an authorized service centre.

- Only use the recharger and adaptor supplied with the device or a charger / adaptor with the same specifications. Using other accessories may lead to device malfunction or cause damage / danger.
- Do not use the recharger in damp conditions.
- The surface of the recharger and/or device may become very hot during recharging. This is not a fault. Do not cover the recharger or device with any objects that may affect cooling.
- Never use a visibly damaged recharger or adaptor. Do not try to repair them yourselves.
- Do not disassemble or try to repair the device yourself. This could lead to the device being destroyed or to physical injury. In this case, all guarantees become void.
- Incorrect handling of the device may lead to battery damage. This could result in a chemical reaction that could cause physical injury, including burns or cause a fire.
- Never expose the tracker to temperatures above 70 °C or put close to hot surfaces or sources of heat where this temperature could be reached (e.g. exhaust pipes, boilers, car interiors during hot summer days, etc.). Devices with magnets may also lose magnetic force.

- Recycling of the device and internal battery must be done accordingly to your local legal regulations.
- When the battery goes flat, try to recharge it as soon as possible. If the battery is left flat for even just a short time its capacity and maximum operating time will be permanently shortened.

### Magnets

- Devices with the marking  are equipped with strong neodymium magnets. The magnetic force may be up to 10 kg (depending on device type).
- Careless handling may lead to fingers, skin or other parts of the body being jammed by the device or caught between the device and a magnetic surface/object.
- Keep the magnets at a safe distance from heart pacemakers, hearing aids, data recording mediums sensitive to magnetic fields (e.g. mechanical HDD), mechanical watches, displays, credit cards with magnetic strips and sensitive electronic devices.
- Car keys, USB key-fobs and portable data recording devices (SSD, memory cards) that are not sensitive to magnetic fields are not affected by the magnets in the device. Deletion of data, damage or other influences on their functioning do not occur.
- Comply with the safety instructions for using the device and do not expose it to high temperatures. This would lower the strength of the magnets permanently.

### Long-term storage

For long-term storage, we recommend that when the battery is at around 70 % capacity it should be switched onto the "Power OFF" mode through the TICK tracker application. The storage space



maintenance technician  
CZ,Horní Suchá  
06/10/2017 14:27:43

0 km/h  
90 %

temperature should not exceed recommended levels (see the Technical specifications table on page 3).

## GUARANTEES AND EXERCISING THEM

The guarantee period for the TICK tracker is 24 months unless otherwise agreed in writing. The guarantee also covers accessories (recharging pad, adapter) that were supplied with the device. The guarantee begins on the date on the invoice for the device. If it is necessary to exercise the guarantee, contact the distribution partner from whom you bought the device.

### Exceptions that invalidate the guarantee

In cases where analysis of the device/accessories proves that damage has been caused by physical or external factors, conditions for non-guarantee services will apply.

### Non-guarantee services

All repairs to devices and accessories including replacements that are not covered by the guarantee must be paid for.



[www.namsystem.com](http://www.namsystem.com)

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PRODUCER:

**NAM system, a.s.**

U Pošty 1163/13

735 64 Havířov – Prostřední Suchá

Czech republic

Tel.: (+420) 596 531 140

E-mail: [helpdesk@namsystem.net](mailto:helpdesk@namsystem.net)