



NAVIGATION CONTROLLER

DOT A4WIFI

USER MANUAL



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1. GENERAL INFORMATION

DOT A4Wifi (hereinafter the “tracker”) is the most compact navigation controller operating on 2G/4G and Wi-Fi networks for remote monitoring of mobile and stationary assets. The device supports simultaneous data transmission to four servers and is compatible with any software platform supporting one of the following protocols:

- ☐ INTERNAL (Wialon, Locavist, etc.) — the manufacturer’s open proprietary protocol, available for integration. The modem IMEI is used to identify the device on the server.
- ☐ EGTS_ID without authentication. The device ID (SN) is used for identification on the server.
- ☐ EGTS_IMEI with authentication. The modem IMEI is used for identification on the server.

Functions and key features:

For more comprehensive monitoring of the vehicle or its installed equipment, the device supports the connection of various sensors and monitoring systems, including digital, analogue, frequency/pulse, RS485 and Bluetooth sensors.

The backup battery ensures continuous operation if external power is disconnected. The device sends a notification when this occurs.

The built-in motion sensor is used to optimise power consumption and monitor driving behaviour.

Alternative positioning enables location tracking even when satellite navigation signals are unavailable.

Additional features, such as Telegram messages, user logic, universal BLE integration, GSM operator blocklists and allowlists, wireless identification and geofences, make the device versatile and convenient for monitoring applications.

Device highlights:

1. GSM 4G

Supports 2G and 4G networks.

2. Wi-Fi

Data transmission over Wi-Fi.

3. Bluetooth 5.0 (LE)

Connect wireless BLE sensors, including fuel level sensors, temperature sensors and others.

4. Wireless identification

Use iBeacon tags to identify drivers, trailers and other assets.

5. Universal BLE integration

Integrate BLE sensors yourself without waiting for developer support.

6. Two SIM cards or SIM chips

The device has two SIM card holders for operation with two mobile operators. A version with SIM chips instead of SIM card holders is available on request.

7. Data transmission to four monitoring servers

Transmit data to four monitoring servers simultaneously.

8. Telegram integration

Receive device information directly in the messenger without using a monitoring server.

9. User logic

Create custom scenarios by selecting events and actions from predefined lists.

10. Geofences

Configure zones and monitor entry and exit events.

11. RS485 digital interface

Connect fuel level sensors, CAN readers, RFID readers and other devices.

12. Intelligent backup battery charging

The battery charging controller protects against overcharging and deep discharge, with configurable charging modes.

The current list of supported digital and wireless sensors, together with connection and configuration instructions, is available in the tracker specifications table.

For further information on connecting external sensors, contact technical support.

2. TECHNICAL SPECIFICATIONS

The main technical specifications of the tracker are listed in Table 1.

Table 1 — Technical specifications

Specification	Notes	Value
Dimensions, mm		79 × 50 × 17
Weight, g	Excluding battery	51
Supply voltage, V	Excluding transient voltage spikes	9 - 40
Operating temperature range, °C	Excluding battery	-40 ... +85
Positive-triggered inputs, qty	Logic "1" level in digital mode: at least 6 V Measurement range: 1 to 40 V	1
Negative-triggered inputs, qty	Logic "1" level in digital mode: no more than 2.1 V	2*
Low-side outputs, qty	Switching current: up to 540 mA	2*
Motion sensor (accelerometer)	Built-in	Yes
SIM card slots, qty	nanoSIM format	2
SIM chips, qty	Optional	2
Backup battery, mA	Overcharge and deep-discharge protection; temperature-dependent charging control	100-350
Battery operating time, h	Specified for a 300 mAh battery	1.5–2
Charging time, h	Specified for a 300 mAh battery	2
Enclosure protection rating		IP54
Non-volatile memory, Mb	Up to 32,000 events	16
USB interface	Type-C. Diagnostics and configuration	Yes
RS485 interface	Connects fuel level sensors, readers and other devices	Yes
Bluetooth 5.0 (LE) interface	Wireless sensors: fuel level, temperature and other types	Yes
Wi-Fi interface	Data transmission	Yes
Cellular module		
Network type	2G/4G	
Frequency bands	FDD-LTE (Cat.1): B1 B3 B5 B7 B8 B20 GSM GPRS EDGE: 900 1800 MHz	
Antenna	Built-in	
GNSS module		
Positioning	GPS GLONASS BeiDou Galileo QZSS	
Antenna	Built-in	
Cold start, s	30	
Hot start, s	1	
Sensitivity, dBm	-166	
Wi-Fi and Bluetooth module		
Antenna	Built-in	
Transmitter power, dBm	20	
Sensitivity, dBm	-105	
Positioning methods		
Satellite	Using GPS GLONASS BeiDou Galileo QZSS signals	
LBS	Using GSM base stations	
Alternative	Using wireless tags	

* Maximum available quantity. Some inputs/outputs share a pin and are multifunctional.

3. CONNECTOR PINOUT AND DEVICE APPEARANCE

See Figure 1 and Table 2 for the connector pinout.

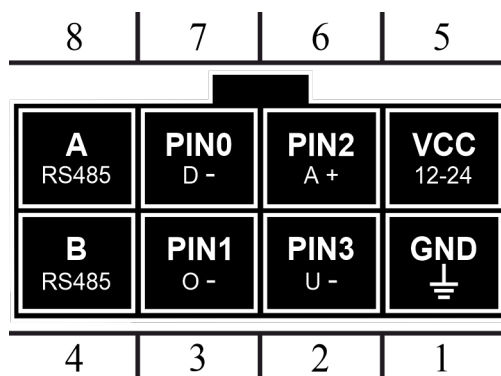


Figure 1 — Connector pinout

Table 2 — Connector pin assignments

N o.	Design ation	Function	Application / connection
1	GND	Power supply negative	Negative power supply terminal
2	PIN3	Negative-triggered input	Digital / frequency / pulse sensors
3	PIN1	Low-side output	Immobiliser relay / light and sound indicators
4	B	RS485 interface	RS485 sensors
5	VCC	Power supply positive	Positive power supply terminal
6	PIN2	Positive-triggered input	Digital / analogue sensors
7	PIN0	Negative-triggered input	Digital / frequency / pulse sensors
8	A	RS485 interface	RS485 sensors

The device appearance is shown in Figure 2.

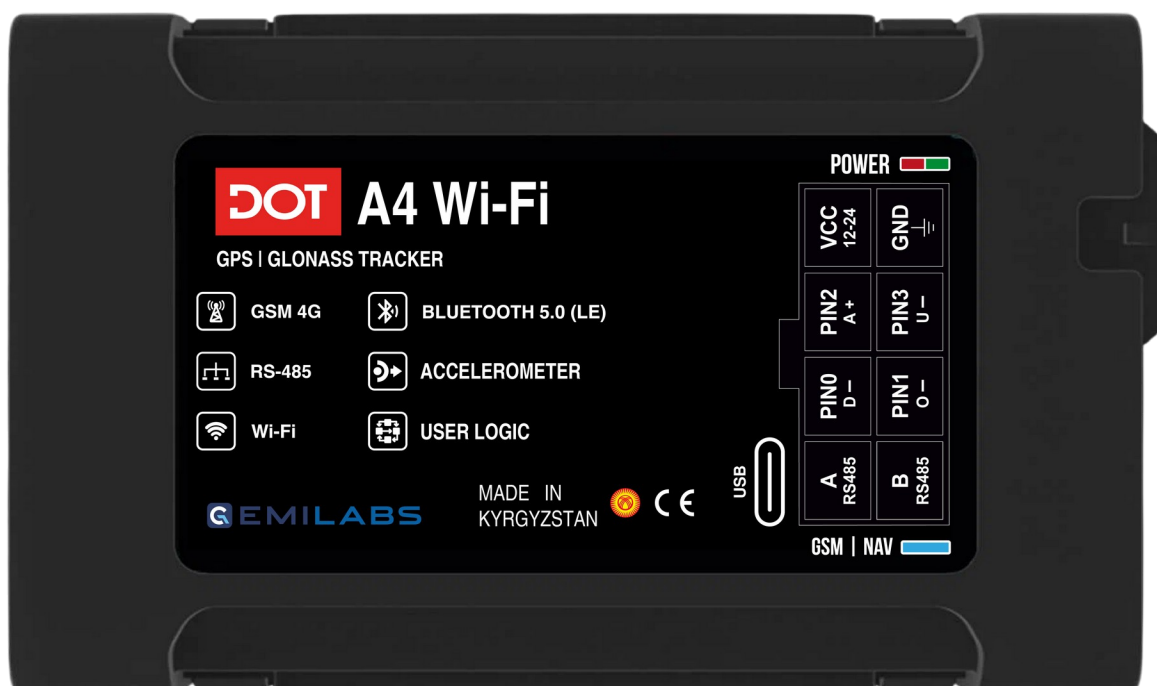


Figure 2 — Device appearance and labels

4. DEVICE INPUTS AND OUTPUTS

Each input or output has several operating modes. The available modes are listed below:

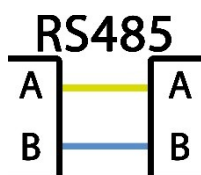
Table 3 — Input and output operating modes

Low-side outputs (PIN1 and PIN3)
0. Not used 1. Mode 1 (on/off) — manual output control using SMS or TCP control commands (see Section 10)
Positive input (PIN2)
0. Not used 4. Digital — indicates the circuit state 8. Voltage measurement (0.5–40 V) 15. Ignition connection (PIN2 only) — indicates the ignition state v_in when the virtual threshold is 0
Negative inputs (PIN0 and PIN3)
0. Not used 4. Digital — indicates the circuit state 6. Pulse counter with reset — counts pulses between consecutive data packet generation events 7. Frequency — for connecting a frequency-output fuel level sensor 21. Cumulative pulse counter (max. 65535) — counts pulses and transmits the count in every packet

Future improvements and new features will be described in separate instructions available on the manufacturer's official website.

5. RS485 DIGITAL INTERFACE

The device is equipped with an RS485 interface for connecting external sensors and equipment, significantly extending its functionality.



Available RS485 operating modes:

Table 4 — RS485 operating modes

RS485
0. Not used
5. Universal fuel level sensor + EXT_CAN mode — connects fuel level sensors (up to 8 sensors with network addresses 1–8), a DTA-CAN reader and a UMKa200 RFID reader (using its factory settings).
76. UMKa200 RFID reader — reads driver RFID tags/cards (see separate instructions)

The current list of supported digital and wireless sensors, together with connection and configuration instructions, is available in the tracker specifications table.

Additional RS485 settings:

- ☐ Baud rate;
- ☐ Polling interval, seconds.

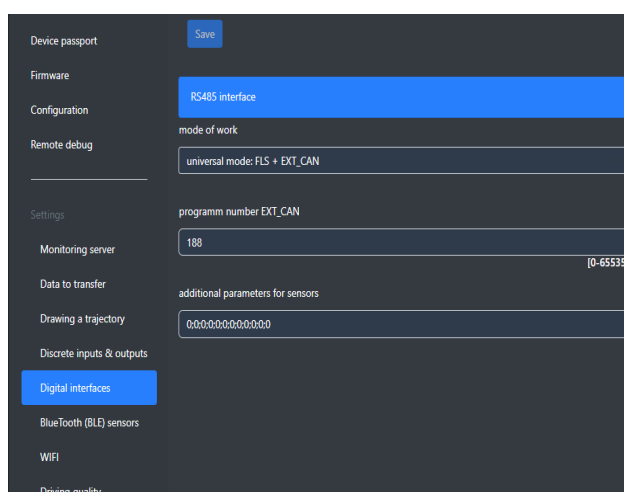


Figure 3 — RS485 settings

Future improvements and new features will be described in separate instructions available on the manufacturer's official website.

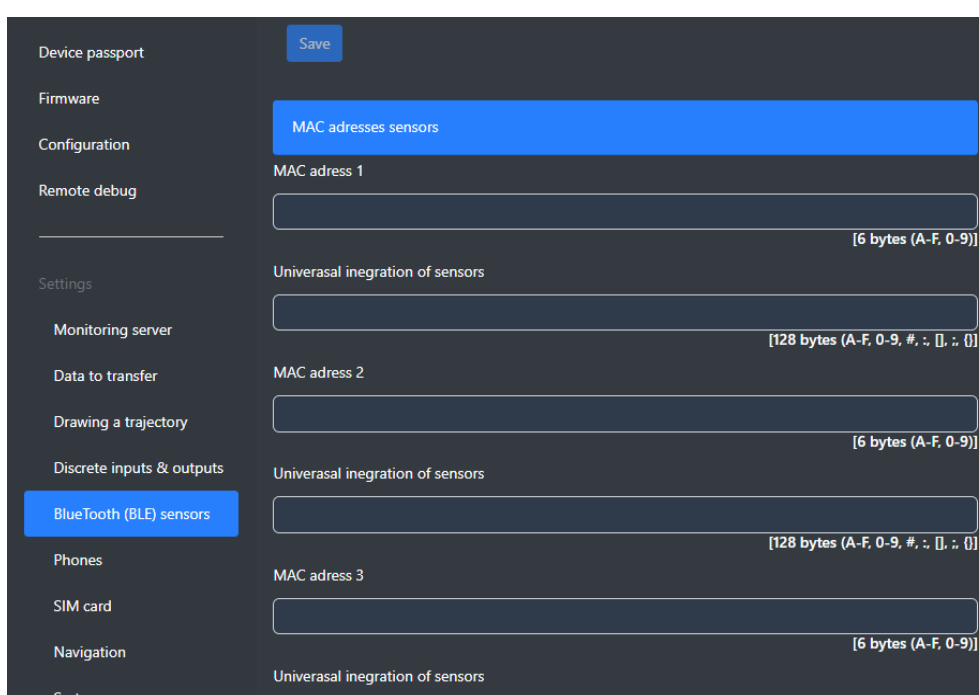
6. BLUETOOTH

The tracker supports the following external wireless sensors:

- ☐ Fuel level sensors;
- ☐ Temperature sensors with reed switch, magnetic sensor or button status monitoring;
- ☐ Other sensors that do not require pairing.

To connect a supported sensor, enter its MAC address in one of the wireless device slots in the tracker settings (see Figure 4).

The current list of supported digital and wireless sensors, together with connection and configuration instructions, is available in the tracker specifications table.



The screenshot shows the 'BlueTooth (BLE) sensors' section of the settings. On the left is a sidebar menu with options: Device passport, Firmware, Configuration, Remote debug, Settings, Monitoring server, Data to transfer, Drawing a trajectory, Discrete inputs & outputs, BlueTooth (BLE) sensors (highlighted), Phones, SIM card, Navigation, and System. The main area has a 'Save' button at the top. Below it is a blue header 'MAC addresses sensors'. There are three 'MAC address' slots, each with a text input field and a label '[6 bytes (A-F, 0-9)]'. Between the slots are 'Univerasal inegration of sensors' labels and text input fields with a label '[128 bytes (A-F, 0-9, #, :, [], :, {})]'.

Figure 4 — MAC address entry slots

If the required sensor is not listed as supported, use the “Universal BLE integration” function. Detailed instructions are available on the manufacturer’s official website.

The slot number corresponds to the network address under which the sensor data is transmitted to the server.

WARNING! Wired fuel level sensors and wireless sensors share the same addresses. When adding a wireless sensor’s MAC address, make sure the selected address is not already assigned to a connected wired sensor.

7. INSTALLATION AND CONNECTION GUIDELINES

Recommended connection sequence:

1. Install the SIM card(s).
2. Connect the device's internal battery.
3. Close the enclosure.
4. Connect the device power supply (the red and black wires of the main wiring harness).

WARNING! Connect the permanent positive power wire last, through a 1–2 A fuse installed as close as possible to the connection point on the vehicle's electrical system.

Connect the remaining harness wires as required for the functions being used.

For optimum satellite signal reception, install the device with the labelled side of the enclosure facing upwards. The device can also be installed at another angle. During installation, avoid obstructions on the labelled side, such as metal objects or coatings that may block the signal.

WARNING! Do not install the tracker near vehicle components that become very hot. Ambient temperatures above +80 °C may adversely affect stable device operation.

8. STATUS INDICATORS

POWER

Power and charging indicator.

- ☐ Green — external power is connected.
- ☐ Green and red simultaneously (appearing yellow) — external power is connected and the internal battery is charging.

GSM | NAV

The device status indicator shows the states of the GSM modem and GNSS module through sequences of short and long LED flashes.

Long flashes — GSM modem status:

- ☐ No long flashes — the GSM modem is switched off.
- ☐ 1 long flash — searching for and registering on a cellular network.
- ☐ 2 long flashes — registered on the network; connecting to the server.
- ☐ 3 long flashes — connection to the server established.
- ☐ 4 long flashes — uploading buffered records from memory.

Short flashes — GNSS module status:

- ☐ No short flashes — the GNSS module is switched off.
- ☐ 1 short flash — the module is switched on and searching for satellites.
- ☐ 2 short flashes — satellites acquired; acceptable signal level (5 to 8 satellites in view).
- ☐ 3 short flashes — satellites acquired; excellent signal level (more than 8 satellites in view).
- ☐ 4 short flashes — alternative positioning mode is active.

Rapid flashing — synchronisation with the Web Configurator (firmware or settings update).

Within 1–3 minutes after power is applied, the GSM | NAV LED should begin repeating a sequence of 3 long flashes and 3 short flashes. This indicates normal operation.

If this does not occur, check the installation and configuration, or contact technical support.

9. CONFIGURATION AND FIRMWARE UPDATES

The following tools are available for working with the device:

9.1. WEB CONFIGURATOR

The Web Configurator is a web interface for changing device settings and updating firmware. After making changes, send a command to download them to the device and apply them. The command can be sent:

- ☐ By SMS or TCP (see “SMS and TCP Control Commands”);
- ☐ Using the local configurator.

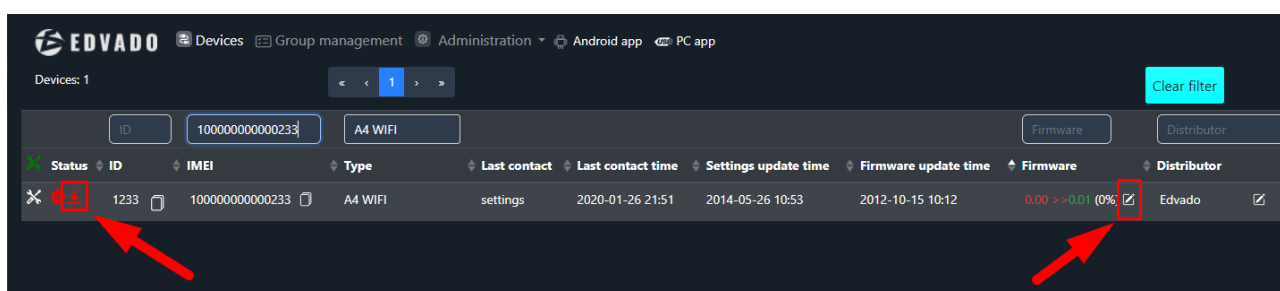


Figure 5 — Web Configurator

IMPORTANT! For initial setup of a factory-supplied tracker, simply sign in to your Web Configurator account and assign the required settings. The tracker will download them automatically; no additional command is required. This option applies only to initial setup.

9.2. PC CONFIGURATOR

The PC Configurator connects to the device via USB and supports diagnostics and configuration. All changes are automatically synchronised with the Web Configurator to keep the settings up to date. Follow the link for detailed information.

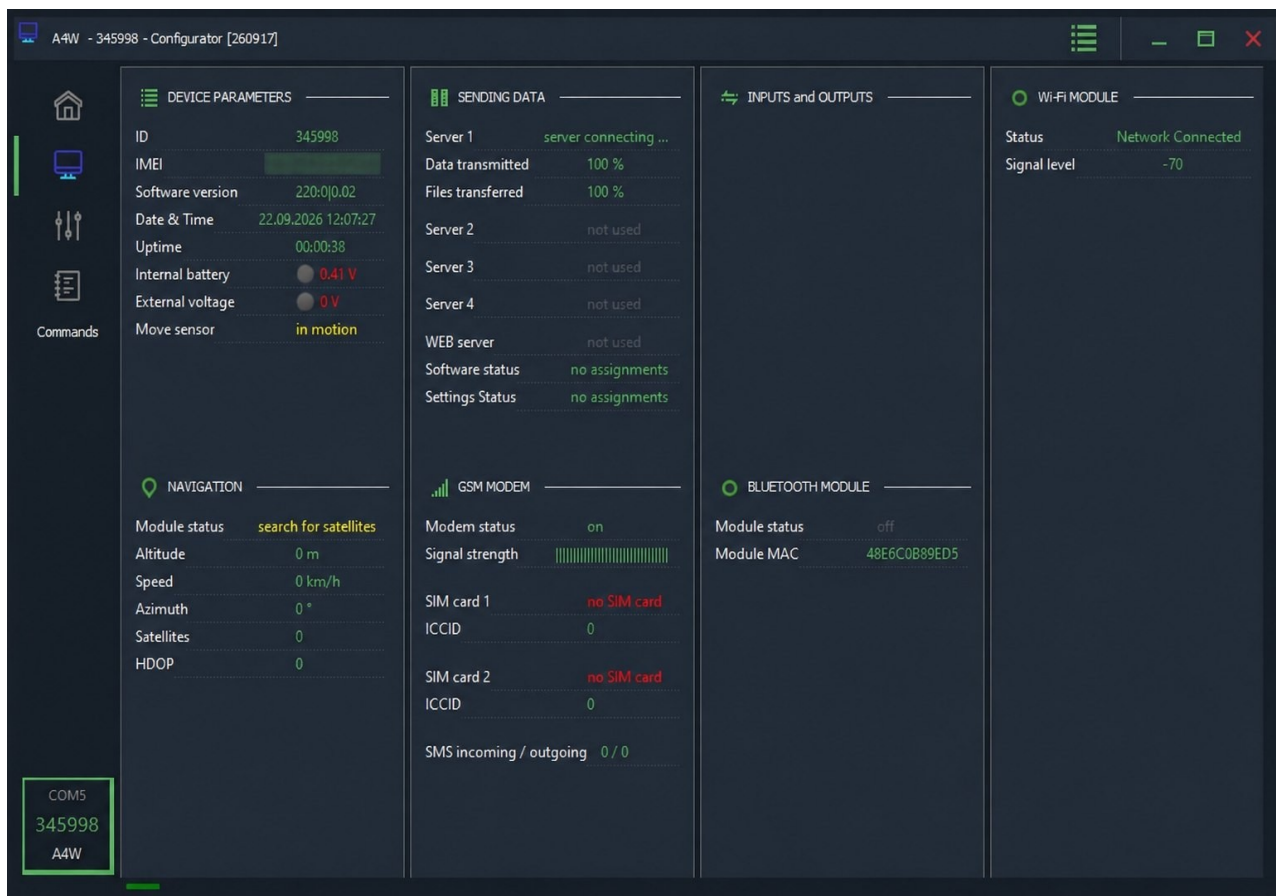


Figure 6 — PC Configurator

9.3. SMS CONFIGURATION COMMANDS

SMS configuration commands are used to change device parameters. The command format is:

<access_password>*SETN*<parameter_list>

- ☐ **<access_password>** — the default password is 123456.
- ☐ **<parameter_list>** — one or more parameters to be changed.

Specify each parameter in the following format:

#<parameter_number>=<value>

- ☐ **<parameter_number>** — the numeric parameter index.
- ☐ **<value>** — the new value for the specified parameter.

List parameters consecutively without separators. The start of the next parameter (the # character) marks the end of the previous one.

Important: the message must not exceed 160 characters; only Latin characters are permitted.

If the command is accepted, the device replies with a message containing the current settings as confirmation. All changes are automatically synchronised with the Web Configurator, allowing the current device settings to be viewed online.

Table 5 — Main configuration parameters

Monitoring server parameters				Description
1	2	3	4	
#1	#3	#111	#113	IP address or DNS name
#2	#4	#112	#114	Port
#9	#8	#7	#6	Data transmission protocol number 0 — INTERNAL 4 — EGTS without authentication 6 — EGTS with authentication
#73	#76	#96	#98	Server ID
SIM parameters				Description
1		2		
#67		#89		Operator APN
#68		#90		Operator APN username
#69		#91		Operator APN password

For additional information on configuration by SMS, contact technical support.

Examples: changing several parameters in one message
123456*SETN*#1=10.77.60.254#2=30197#6=6
123456*SETN*#1=178.208.130.54#2=4444#6=4#73=54957352

To request the current settings, use the GETN command and specify the required parameter numbers.

Example: 123456*GETN*#1#2

10. SMS AND TCP CONTROL COMMANDS

Table 6 — Control commands

Binary TCP command ("custom_msg" in Wialon)	SMS format or text TCP command ("driver_msg" in Wialon)	Action
0101	<access_password>*SERV*1.1	Send a data packet to the monitoring server.
0102	<access_password>*SERV*1.2	Receive an SMS containing the IMEI, ID and address of monitoring server 1.
0103	<access_password>*SERV*1.3	Receive an SMS with the coordinates and a map link.
0104	<access_password>*SERV*1.4	Force a firmware update.
0105	<access_password>*SERV*1.5	Update the firmware via the Web Configurator.
0106	<access_password>*SERV*1.6	Clear device memory.
0107	<access_password>*SERV*1.7	Restart the device.
0108	<access_password>*SERV*1.8	Update settings via the Web Configurator.
0109	<access_password>*SERV*1.9	Upload settings to the Web Configurator (synchronise).
080X0Y	<access_password>*SERV*8.X.Y	Set output X: 0 — PIN1 1 — PIN3 to state Y: 1 — on 0 — off
01800X	<access_password>*SERV*1.128.X	Re-upload data from memory to the monitoring server, where X is: 0 — first server ... 3 — fourth server

11. INTEGRATION WITH A MONITORING PLATFORM

The device is supported by a range of monitoring systems, including Wialon, Locavist and other popular platforms. To integrate the device with a monitoring platform:

- Manufacturer — **Edvado**.
- Device type — select “**DOT A-series (22400)**”.
- Unique ID — enter the device IMEI printed on its label.

The exact procedure for adding a device may differ between monitoring platforms.

New object

Basic

Additionally

Counters

Trip detector

Fuel consumption

Name: *

Example

?

Unit type: *

Vehicle

?

Imei: *

866123123123123123

?

Manufacturer: *

Edvado

?

Model: *

DOT A/L Series (22400)

?

IP address:

hw.locavist.com:22400

IP

Owner: *

testuser

?

Figure 7 — Unit properties in Locavist

12. WARRANTY TERMS

The service life of the equipment, excluding the built-in battery, is 10 years.

The manufacturer does not guarantee software or hardware compatibility with software or equipment not included in the package, unless explicitly stated in the operating manual.

This warranty does not cover device upgrades.

Warranty coverage is void in the following cases:

- ☐ Failure to comply with the product operating instructions.
- ☐ Mechanical damage, whether external or internal.
- ☐ Faults caused by foreign objects, insects or liquids entering the device.
- ☐ Chemical, electrochemical, electrostatic or extreme thermal damage.
- ☐ Damage caused by power supply, communication or cable networks that do not comply with applicable national standards.
- ☐ Damage caused by the installation of components that do not meet the manufacturer's technical requirements.
- ☐ Repairs or preventive maintenance carried out during the warranty period by persons not authorised by the manufacturer.
- ☐ Damage to or removal of the manufacturer's seals on the equipment.
- ☐ Malfunctions resulting from external influences on the equipment or on the electrical circuit to which it is connected.
- ☐ Faults caused by third-party actions or other unforeseen circumstances unrelated to the equipment manufacturer's obligations.

13. PACKAGE CONTENTS

The tracker is supplied with the items listed in Table 7.

Table 7 — Package contents¹

No	Item	Qty	Notes
1	Navigation controller	1	Monitoring device
2	Main wiring harness	1	
3	Battery	*	Capacity: 100–350 mA
4	Product passport	*	On request

Up-to-date technical information and software are available on the manufacturer's official website.

Note: the manufacturer reserves the right to change the package contents without reducing the product's performance or functionality.
