



TRANSPORT GLONASS-MONITORING EQUIPMENT

**SMART
S-2433 and S-2435**

PASSPORT



Moscow, Russian Federation
2019

Application

SMART S-2433 and S-2435 devices (hereinafter referred to as SMART), manufactured by Navtelem LLC, are wireless (based on the GSM communication standard) warning and monitoring system of cars with integrated GLONASS/GPS- and GSM-antennas. The SMART device is destined for:

- monitoring the state of a transport vehicle (TV), monitoring its location and movements, controlling the car mileage and fuel consumption, counting the operating hours;
- determination of the driving style (EcoDriving);
- fixing the car accident according to GOST or ASI severity index of the car accident (ASI - Acceleration Severity Index);
- emergency information about unauthorized entry into the car;
- emergency notification of robbery attacks on the driver or passengers and other contingency situations;
- processing and transferring data to the server from devices such as: tachographs, tire pressure monitoring systems, CAN bus adapters, refrigeration controllers, RFID tags reader;
- temperature control by means of temperature sensors;
- remote control of connected devices and transport vehicle systems, for example, siren, system blocking of engine, doors, etc.

More detailed information on the functional characteristics of the equipment can be obtained at www.navtelem.ru in the "Equipment" section.

Complete equipment

№	Name	Number of pieces	Complete equipment options	
			A	B
1	System unit of the SMART product	1	+	+
2	14-pin connector of Microfit-14 type with a set of wires	1	+	+
3	14-pin connector of Microfit-14 type with two power leads	1	+	+
4	Set of 5 mounting cables	1	+	+
5	Fuse 1A (only for s-2435)	1	+	+
6	Interface cable with MiniUSB connector	1	+	-
7	Passport	1	+	+
8	Package	1	+	-

Specifications

	S-2433	S-2435
GSM/GPRS/Bluetooth		
GSM frequency bands	GSM 850, EGSM 900, DCS 1800, PCS 1900	
GPRS class	B, multislots class 12	
Transmitter power	Class 4 (2W) in GSM 850 and EGSM 900 Class 1 (1W) in DCS 1800 and PCS 1900	
Maximum speed of data transfer/reception, kbit/s	85,6	
Holder of SIM card 1	external with ejector, miniSIM	external with ejector, miniSIM
Holder of SIM card 2	no	internal, nanoSIM
SIM chip ¹	1	2
GSM jammer detector	yes	yes
Bluetooth	yes, v4.0	yes, v4.0
GNSS		
Supported navigation systems	GLONASS/GPS/Galileo/QZSS	
Number of channels	tracking: 22; acquisition: 66	
Sensitivity (in laboratory conditions)	tracking: -166 dBm cold start: -148 dBm	
Time of coordinates first determination (for GPS and GLONASS systems with a signal of -130 dBm)	cold start: 29 seconds warm start: 22 seconds hot start: <1 sec	
Coordinates error, (50% CEP, 24 hours in static mode, with signal levels -130 dBm), m	2.5 (in plan), 5 (in height)	
Coordinates update rate, Hz	1	
GNSS jammer detector	yes	
Power supply		
Operating supply voltage, V ²	9,5...47	9,5...47
Current consumption at 12 V voltage in operating mode on average ³ , mA	80	80
Current consumption at 12 V voltage with switched off GLONASS and GSM modules is no more than, mA	25	25
Maximum current consumption at 12 V voltage in the operating	200	200

mode with the charge of the built-in Accumulator battery is not more than, mA		
Protection against polarity reversal	yes	yes
Protection against prolonged overvoltage up to 500 V	yes	yes
Built-in Accumulator battery ⁴	Li-Po 3,7 V, at least 1100 mAh	Li-Po 3,7 V, at least 800 mAh
Presence of protection of the built-in Accumulator battery from recharge, full discharge, short circuit ⁵	yes	yes
Maximum operating time of the device from the fully charged built-in Accumulator battery (without external power) is at least, h	6	6
Time of full charge of the built-in Accumulator battery is not more than, h	5	5
Presence of the backup battery of the RTC clock and the navigation module	yes	yes
Time of keeping of the RTC clock rate and ephemeris in a navigation module (with the power off and discharging of the built-in Accumulator battery) is at least, days	5	5
Integrated accumulator charging from USB	yes	yes
Interfaces/sensors		
Inputs line protection against power surges, V	up to 350	up to 350
Total number of generic (analog, discrete, pulse-frequency) input lines	3	3
Availability of built-in tightening (PULL UP) for lines, set up as discrete or pulse-frequency inputs	yes	yes
Measuring range by input lines, set up as analog, V	0 – 31	0 – 31
Working range with frequency Fuel Level Sensors, Hz	1 – 3000	1 – 3000
USB interface for making settings, management, data transfer and diagnostics	yes	yes
RS-485 digital interface	yes	yes
RS-232 digital interface	yes	yes
CAN digital interface	no	yes
1-Wire interface	yes	yes
Number of output lines of the "open collector" type for the external devices control	2	2

Maximum switching current by the output control lines, mA	500	500
Maximum switching voltage by the output control lines, V	48	48
Built-in 3-axis accelerometer	yes	yes
Maximum overload in case of an impact, measured by the device, g	8	8
Performance		
Enclosure protection level	IP54	IP54
Maximum allowable overload during impacts, g	24	24
Storage temperature with the built-in Accumulator battery ⁶ , °C	-10 ... +60	-10 ... +60
Storage temperature without the built-in Accumulator battery, °C	-50 ... +125	-50 ... +125
Operating temperature with the built-in Accumulator battery, °C	-20 ... +60	-20 ... +60
Operating temperature without the built-in Accumulator battery, °C	-40 ... +85	-40 ... +85
Temperature at which the built-in Accumulator battery is possible to charge, °C	0 ... +50	0 ... +50
Maximum allowable humidity level at 35 °C, %	95	95
Device overall dimensions with connectors, mm	102x57x22	102x57x22
Mass of the device, kg	0,097	0,097

¹ *Optional.*

² *When the maximum operating voltage is exceeded, the power protection is activated. The device continues to work, but the power is carried out from the built-in Accumulator battery when it is available.*

³ *When using GPRS in poor communication conditions, the peak (~ 1ms) device consumption may exceed 500 mA.*

⁴ *Attention! The Li-Po accumulator battery is used in the device. The following rules must be observed during its operation: do not heat, keep away from sources of warmth, do not throw the accumulator into the fire and do not expose to direct sunlight. A device that is powered by lithium-polymer (Li-Po) accumulator must not be exploited under the high-humidity conditions, at high and low ambient temperatures. It is permitted to operate the device under conditions set by the manufacturing company. Do not expose to impacts, do not deform, do not disassemble and do not close contacts.*

⁵ *Protection from the accumulator charge in case of its supercooling and overheat.*

⁶ *When storing and operating the device outside the specified temperatures, it is recommended to disconnect and remove the built-in Accumulator battery from the device in order to avoid damaging the Accumulator battery and the device.*

Warranty

The manufacturing company shall ensure that the SMART products meet the requirements of the technical conditions TY 4372-002-82520404-2010 subject to the customer complies with the rules for storage, transportation, installation and operation, established by the existing set of the operational documentation. The device enclosure has a dustproof and a dropproof execution of IP54 type according to the system of classification of the enclosure protection levels of electrical equipment from the penetration of solid objects and water.

The warranty period for the product is 3 years. The warranty for the built-in accumulator and the battery is provided separately and amounted to 1 year.

The warranty start is the date of sale.

During the warranty period, the manufacturing company undertakes to carry out a free repair of the SMART product, subject to the customer complies with the rules of transportation, storage, installation and operation.

The present guarantee is valid only upon presentation of complete, correct and legibly filled passport (showing serial number, name, date of sale of the SMART product, presence of the trade organization seal, signature of the buyer about the familiarity with the warranty terms and the operating rules) with the SMART product itself.

The manufacturing company shall not guarantee the software and the hardware compatibility of the SMART product with software and equipment not included in the delivery set, except as specified in the Operating manual.

The manufacturing company shall not be liable for the possible material, moral and other damage, suffered by the owner of the SMART product and/or the third-party as a result of the violation of requirements of the Operating manual during use, storage or transportation of the product.

Rubbing marks and other minor damages to the SMART product surfaces that do not affect its technical characteristics and that were appeared as a result of its normal use do not result in loss of the right to warranty services.

The life of the equipment with the exception of the built-in accumulator and batteries is 10 years.

The present guarantee does not apply to:

- documentation and packaging materials supplied with the SMART product;
- modernization of the SMART product.

The right to the warranty service is lost in the following cases:

- if the defects of the SMART product are caused by the violation of rules for its operation, storage or transportation;
- if the defects of the SMART product are caused by the direct or indirect effects of mechanical forces, chemical, thermal or physical effects, radiation, aggressive or neutral liquids, gases or other factors, toxic or biological environments and any other effects of artificial or natural origin of a destructive nature;
- if the repairs, maintenance or upgrading of the SMART product are made by persons, who are not authorized to do so by the manufacturing company;
- if the defects of the SMART product are caused by the force majeure circumstances which the manufacturing company could not foresee, control and prevent;
- if there are no or damaged warranty seals or stickers set up in the SMART product by the manufacturing company or the service centre authorized by the manufacturing company;
- if the defects of the SMART product are caused by its joint use with an equipment or a software that are not included in the delivery set, unless otherwise specified in the Operating manual;
- if the defects of the SMART product are caused by its operation as part of a set of defective equipment.

Sales information

Manufacturing company: LLC "Navtelecom", Moscow City

Web: www.navtelecom.ru,

E-mail: info@navtelecom.ru, support@navtelecom.ru

Product: SMART S-24 _____

Head of Technical Control Department _____

Signature

Name

Stamp here

Trading enterprise

Product serial number

Seller

(signature or stamp)

I have read the terms of the guarantee and the operating procedures.

Buyer

Signature

Name

« _____ » _____ 20_____

Repair records