
iNode Care

GSM

Bluetooth – GSM gateway

user manual

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1. Introduction

We would like to introduce you to the family of iNode devices operating in Bluetooth Low Energy ® technology. We will show you that BLE is not only tags for finding lost keys or location tags, but something more.

Our devices can do this and more:

- These are primarily battery devices.
- Operate without replacing it for up to 12 months depending on the application and method of use.
- They have memory for recording events, measurement readings etc.
- Precise temperature, humidity, acceleration or magnetic field sensors allow for precise control of home automation or care for the elderly.
- As remote control devices, despite their low power consumption, they have a large range and features inaccessible to other competing devices - own user password, AES encryption, control directly from a smartphone.
- BT4.0 - LAN or BT4.0 - GSM gateways connect **iNode** sensors with the Internet.

iNode can also help control the movement of people or goods, saving the time of appearance and disappearance from the range of the recorder (active RFID® with a long range). New functionalities related to product development are also not a problem - it enables remote firmware exchange from a PC or smartphone with Bluetooth 4.0® and Bluetooth Low Energy® (Bluetooth Smart®) support.

iNode Care GSM allows for existence of BLE devices (Bluetooth Smart, IoT-Internet of Things) in the IP protocol networks: GPRS and the Internet. Using the **iNode Care GSM** you can receive alert notifications from the **iNode Care Sensors** either directly on your mobile phone (SMS and/or CLIP) and/or to the HTTP server in the Internet. You can find here a sample of on-line charts powered by ThingSpeak.com.

The product is made with the use of the GSM module G510 Open CPU company Fibocom (authorized distributor Maritex). After the purchase, for registered users, we provide the full source code for the **iNode Care GSM** and **OpenCPU-Kit**.

Please read this manual carefully before starting the installation! We cannot take responsibility for damages resulting from improper use of the device.

Warning

This device is a class A device. In a residential environment it may cause radio interference. In such cases, the user may be required to take appropriate countermeasures.

2. SAFETY INFORMATION



Please read the safety information before switching on the device.

2.1 Power source

The device can be connected to the AC 230V 50Hz AC power network only with 230V AC / 5V DC stabilized power supply with double or reinforced insulation and output over-current protection. The nominal value of this current can not be greater than 2.1 A.

2.2 General conditions for safe use

- The device should be located in a safe and stable place.
- The external power supply should be placed in an easily accessible wall socket (e.g. not hidden behind furniture). Some power supplies of this type do not have their own power switch, so disconnecting them is only possible by removing them from the wall socket completely.
- Do not use external power supplies outside the building or in places with high humidity.
- When using a device with an external power supply, make sure that the cable is positioned so that it is not exposed to being trampled on, hooked or pulled out of the power supply by persons or animals moving around the room.
- Do not place the device or the adapter on a wet surface. Do not use in a humid environment. Do not allow wetting: e.g. rain through an open window. Never place containers with liquids on the device or power supply: vases, glasses, cans, glasses etc.
- Never place an open flame on the device or power supply: candles, oil lamps, etc.
- If you notice any damage to the power cord or plug, please contact a service center immediately to resolve the problem.

2.3 Cleaning

- Before cleaning, always unplug the machine by unplugging the power cord or adapter from the power outlet.
- Do not use liquid cleaners or aerosol cleaners.
- For cleaning only use a dry, soft, lint-free cloth.

2.4 Ventilation

- All openings and slots in the housing of the device or power supply are for ventilation. They must not be covered or covered, as it may overheat the internal components.
- Protect the device and power supply against access of small children able to throw small things into the ventilation holes

2.5 Service

- If necessary, take the device to a specialized service center. There are no user serviceable controls or useful components inside.

2.6 Before commissioning

- Before starting the installation, check the compliance of your mains voltage with the information on the device or power supply.
- Switching the power on and off from the power socket is always carried out by holding the plug or the power supply housing, not the power cord.
- If only the power cord plug or adapter is in the wall socket, the device is still powered. The DC power plug is the only element that disconnects power from the device.
- If anything falls or falls inside the machine or the power supply, immediately remove the plug from the wall socket. The device or power supply unit may not be used until an expert inspection has been performed.
- Do not disassemble the device or power supply. There may be dangerous voltage inside, threatening health and even life. Any repairs and adjustments inside should only be performed by qualified service personnel.

2.7 Location

- Place the device and power supply in a place with good ventilation - free air flow. This will prevent internal components from overheating.
- Never place the device or the power supply near heating devices or in sunny places.
- Never place heavy objects on it.

2.8 Steam condensation

Under certain circumstances (e.g. sudden change of location from a cold to a warm room) the device and / or the power supply may become covered with steam, preventing the device from being used temporarily. In this case, wait about 1 hour for the temperature of the device to stabilize and the moisture to evaporate.

2.9 Connecting iNode Care GSM

To launch **iNode LoRa GSM MQTT** in a GPRS/GSM network, follow these steps:

- Connect the GSM antenna to the device (Fig. 1). If it has a radiator, it should be placed vertically.
- Install the [iNode GSM Setup](#) application for configuration the **iNode Care GSM** using USB. For Windows 10 it is necessary to use [iNode Hub Server](#) application too.

ATTENTION !!! Do not tilt the antenna radiator if it is tightened to the device, otherwise it may be damaged. It should be remembered that the antenna radiator should be at a minimum distance of 20 cm from the human body.

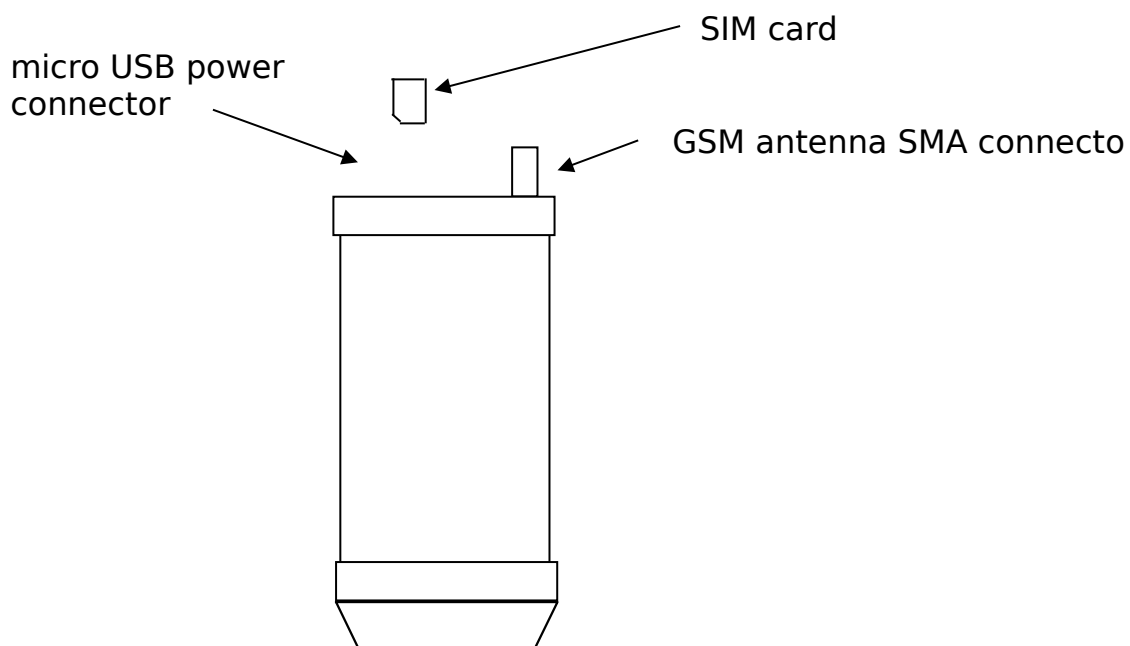


Fig. 1 Top view of the device

3. LEDs

The table below shows how the red LED states.

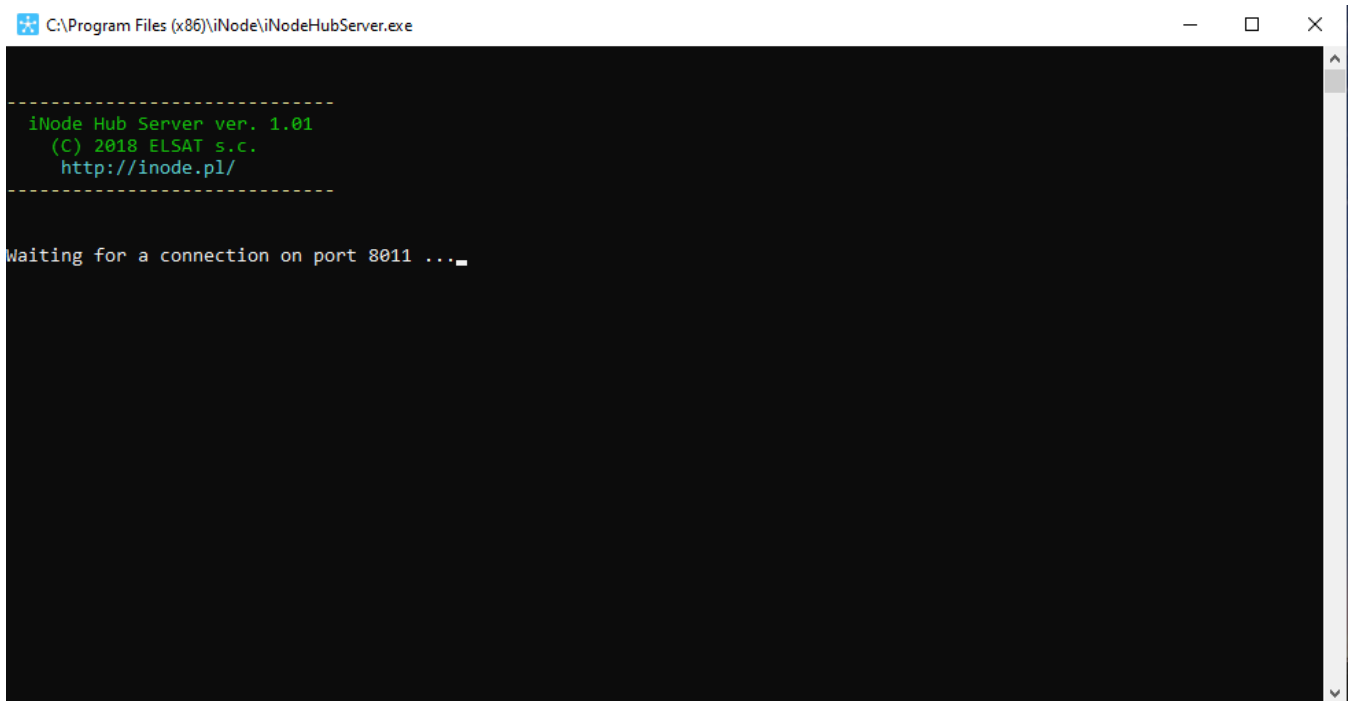
LED state	Operating status of the module
Permanently off	The module is in one of the following modes: <ul style="list-style-type: none"> • Power off mode • SLEEP mode
600 ms off / 600 ms on	The module is in one of the following status: <ul style="list-style-type: none"> • NO SIM card • SIM PIN • Register network (T<15S) • Register network failure (always)
3 s off / 75 ms on	The module is in one of the following status: <ul style="list-style-type: none"> • IDLE mode
75 ms off / 75 ms on	The module is in one of the following status: <ul style="list-style-type: none"> • One or more GPRS contexts activated.
Permanently on	The module is in one of the following status: <ul style="list-style-type: none"> • Voice call

Green LED shows BLE packet receiving.

4. Konfiguracja iNode Care GSM

Install the **iNode GSM Setup** application for configuration the **iNode Care GSM** using USB. For Windows 10 it is necessary to use **iNode Hub Server** application too.

Run the **iNode Hub Server** application:

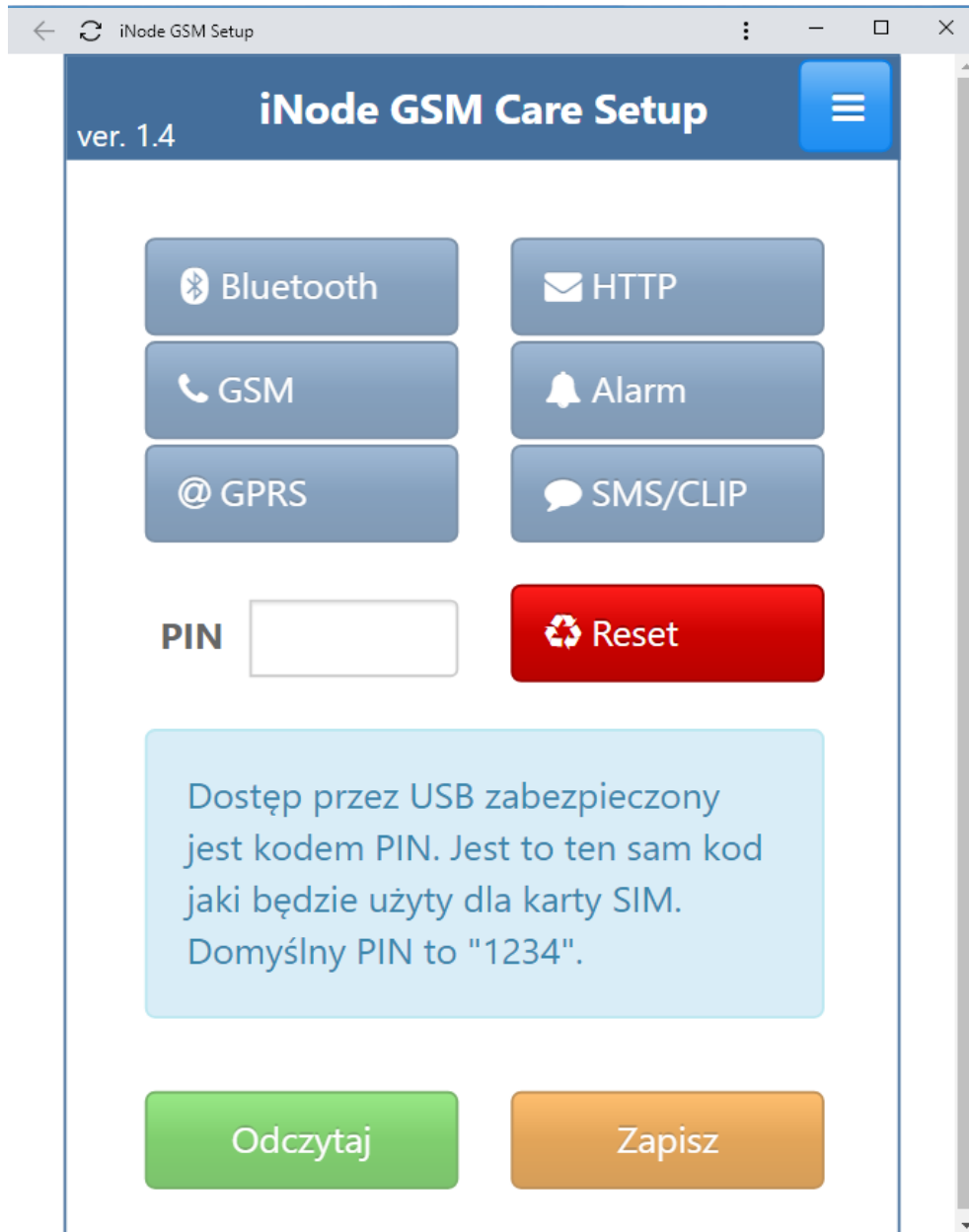


```
C:\Program Files (x86)\iNode\iNodeHubServer.exe

-----
iNode Hub Server ver. 1.01
(C) 2018 ELSAT s.c.
http://inode.pl/
-----

Waiting for a connection on port 8011 ..._
```

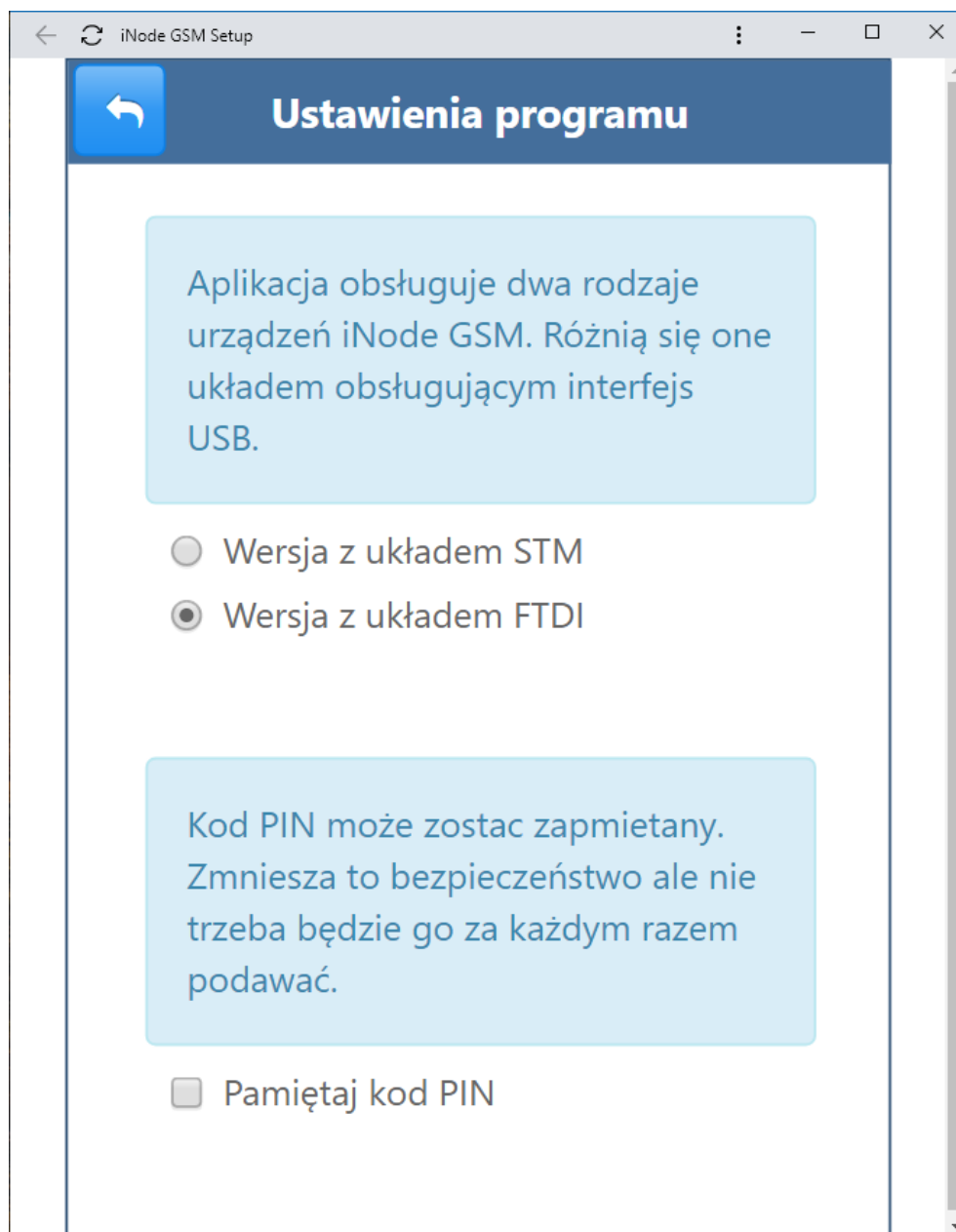
Run the **iNode GSM Setup** application:



After selecting the icon



, set with which device the program should work:



In the case of **iNode Care GSM** we choose: **Wersja z układem FTDI - Version with the FTDI chip**

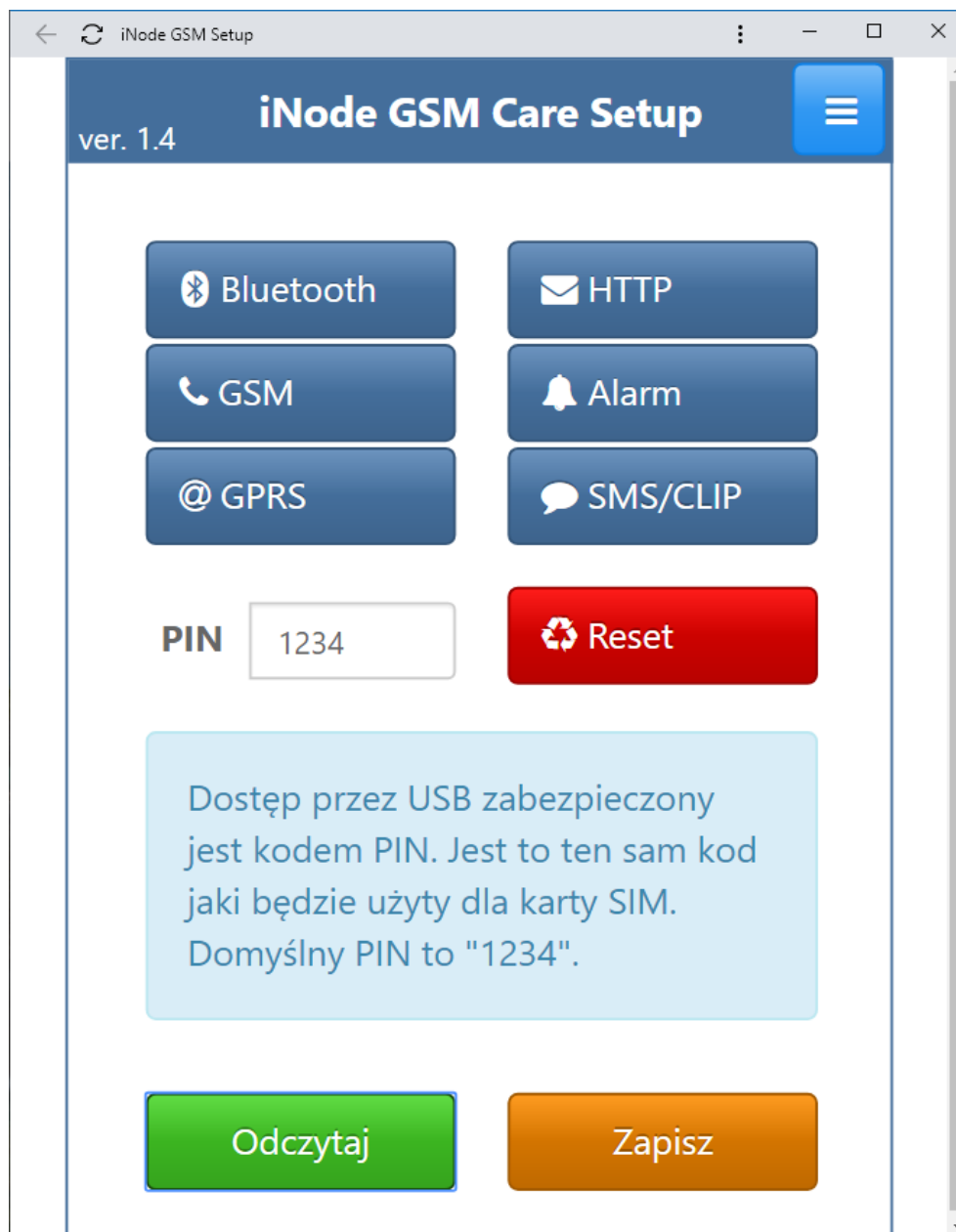
The **Pamiętaj kod PIN - Remember PIN** option allows you to save the entered PIN code in the browser database.

After selecting the button,



we return to the basic application screen.

Enter the default PIN code 1234 and press the **Odczytaj - Read** button. After proper reading of the configuration from **iNode Care GSM** all buttons will become active.

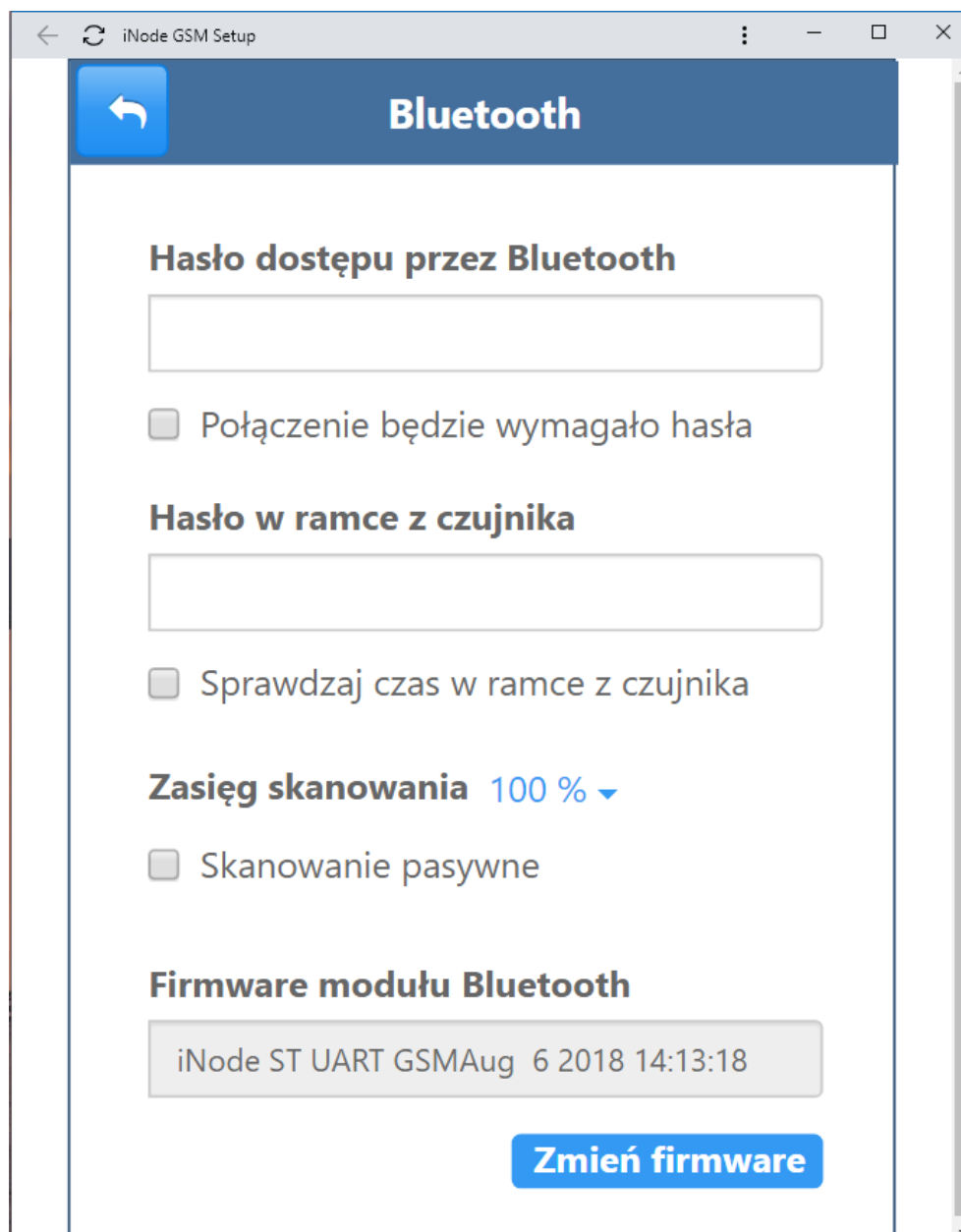


The **Reset** button restores the factory default settings of the device.

The **Zapisz - Save** button remembers the changes made in the **iNode Care GSM** settings.

4.1 Bluetooth

This tab allows you to configure the Bluetooth parameters of the device.



The screenshot shows a web browser window titled "iNode GSM Setup" with a "Bluetooth" configuration page. The page has a blue header with a back arrow and the title "Bluetooth". Below the header, there are several sections:

- Hasło dostępu przez Bluetooth**: A text input field for the Bluetooth access password.
- Połączenie będzie wymagało hasła**: A checkbox to require a password for connections.
- Hasło w ramce z czujnika**: A text input field for the sensor frame password.
- Sprawdzaj czas w ramce z czujnika**: A checkbox to check the time in the sensor frame.
- Zasięg skanowania 100 %**: A dropdown menu currently set to "100 %".
- Skanowanie pasywne**: A checkbox for passive scanning.
- Firmware modułu Bluetooth**: A text box showing "iNode ST UART GSM Aug 6 2018 14:13:18" and a blue button labeled "Zmień firmware".

- **Hasło dostępu przez Bluetooth - Bluetooth access password** - here we provide the password to connect to **iNode Care GSM** via Bluetooth. It will be checked only if the **Połączenie będzie wymagało hasła - Connection option requires a password** option is selected.
- **Hasło w ramce z czujnika - Password in the frame from the sensor** - here we provide the password for verifying the digital signature in the frames from the **iNode Care** sensors. An additional option that we can choose is time verification in the data frame from the **iNode Care** sensor - **Sprawdzaj czas w ramce z czujnika - Check the time in the frame from the sensor**.

- **Zasięg skanowania - Scan range** - here we set the sensitivity threshold for received Bluetooth data frames. An additional option that you can choose is - Passive scanning.
- **Firmware modułu Bluetooth - Firmware of the Bluetooth module** - information about the firmware version of the Bluetooth adapter embedded in the device is given here. The **Zmień firmware - Change firmware** button enables its replacement.

4.2 GSM

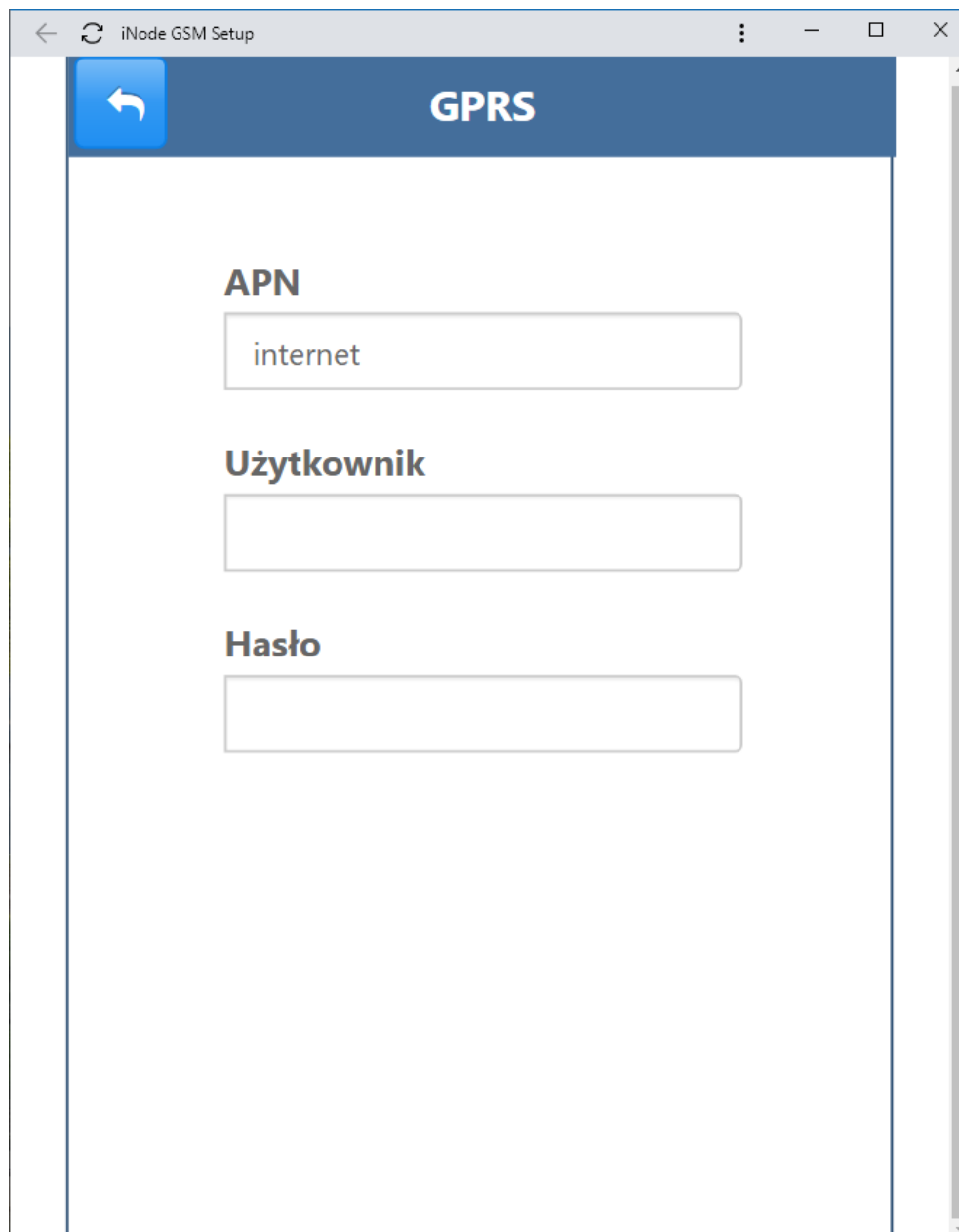
This tab allows configuration of the GSM interface parameters.

The screenshot shows a web browser window titled "iNode GSM Setup". The main heading is "GSM". Below it, there is a section "Nazwa urządzenia" (Device name) with a text input field containing "iNode GSM". Underneath is a checkbox labeled "Zezwalaj na roaming" (Allow roaming). A light blue box contains the text: "Komunikaty wysyłane przez USB pozwalają monitorować pracę urządzenia. Zawierają one jednak informacje uznawane za poufne." (Messages sent via USB allow monitoring of device operation. They contain information considered confidential). Below this is another checkbox labeled "Monitoring wymaga kodu PIN" (Monitoring requires PIN code). The next section is "Firmware w części GSM" (Firmware in the GSM part) with a text input field showing "iNode GSM Care Jun 20 2019/20:15:27". At the bottom right of this section is a blue button labeled "Zmień firmware" (Change firmware).

- In the **Nazwa urządzenia - Device name** field, you can enter a name that is sent to the HTTP / POST server along with the data. An additional option is Allow roaming. This option should also be selected for domestic roaming.
- **Monitoring wymaga kodu PIN - Monitoring requires a PIN code** - after selecting this option, it will not be possible to view the messages sent by the device through the COM port on the PC.
- **Firmware w części GSM - Firmware in the GSM part** - information about the application version on the device is given here. The **Zmień firmware - Change firmware** button enables its replacement.

4.3 GPRS

This tab allows you to configure the device's GPRS parameters.

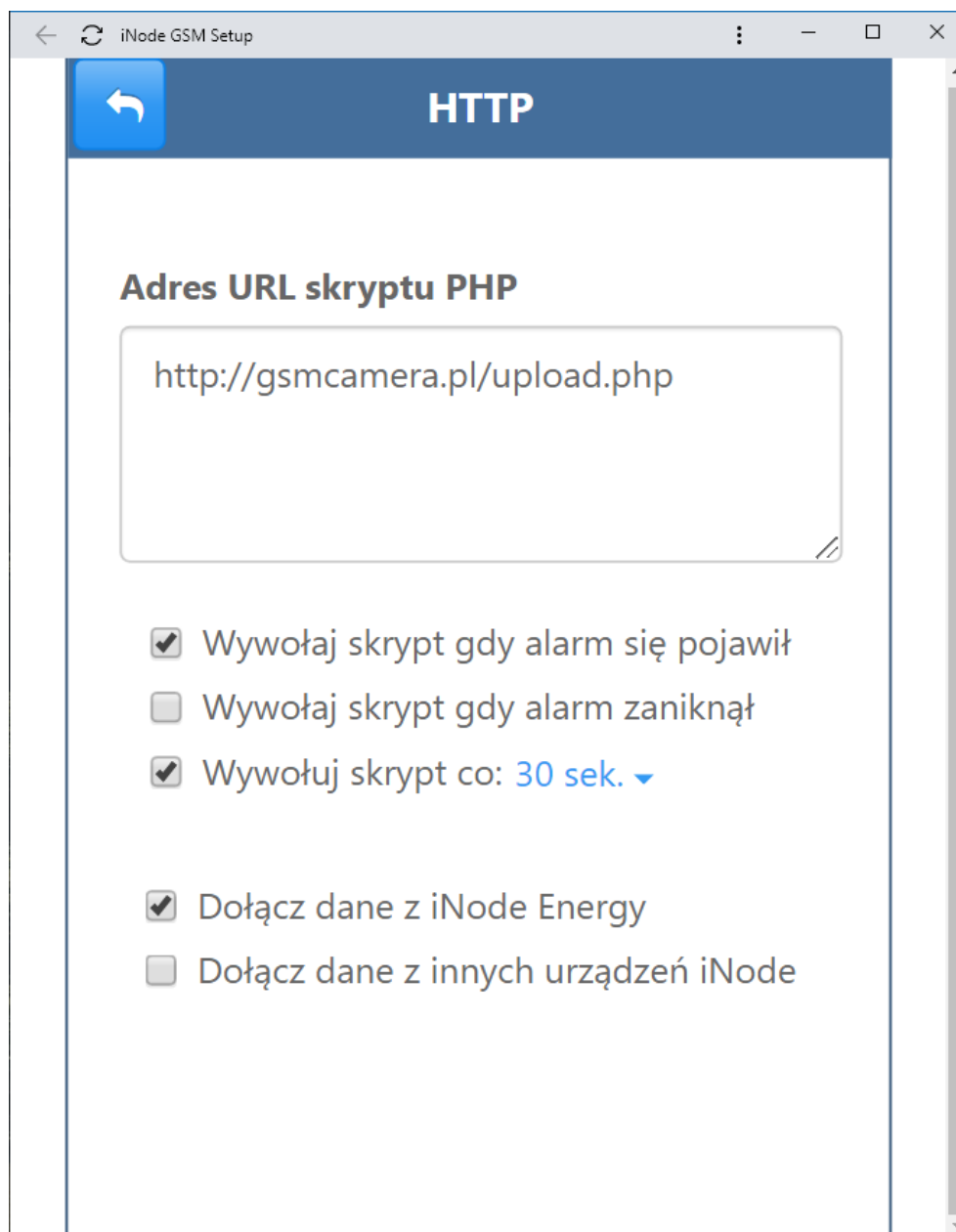


The screenshot shows a web browser window titled "iNode GSM Setup" with a "GPRS" tab selected. The page has a blue header with a back arrow and the word "GPRS". Below the header, there are three input fields: "APN" with the value "internet", "Użytkownik" (User), and "Hasło" (Password).

- **APN** - APN name in GPRS
- **Użytkownik - User** - user name in APN
- **Hasło - Password** - user password in APN

4.4 HTTP

This tab allows you to configure the device's HTTP parameters.



- **Adres URL skryptu PHP - PHP script URL** - here we provide the URL of the PHP script that is to receive data from the device sent via HTTP / POST. We have the following options for additional data sending to the server:
- **Wywołaj skrypt gdy alarm się pojawił - Invoke the script when the alarm occurred**
- **Wywołaj skrypt gdy alarm zaniknął - Invoke the script when the alarm is gone**
- **Wywołuj skrypt co - Call the script every:** - here we provide the time of sending the data to the server

- ***Dołącz dane z iNode Energy - Include data from iNode Energy***
- ***Dołącz dane z innych urządzeń iNode - Include data from other iNode devices***

4.5 Alarm

This tab allows you to configure the device's ALARM parameters.

The screenshot shows the 'Alarm' configuration screen in the iNode GSM Setup application. The screen has a blue header with a back arrow and the title 'Alarm'. Below the header, there are two radio buttons: 'Alarm z czujnika oraz' (selected) and 'grupy' (selected), and 'portu' (unselected). A list of alarm triggers follows, each with a checkbox and a corresponding letter (A-K). A 'Wpisz' button is located to the right of the list. At the bottom, there are two more checkboxes for alarm conditions.

Alarm z czujnika oraz	grupy	portu
<input checked="" type="checkbox"/> ruchu	<input checked="" type="checkbox"/> A	
<input checked="" type="checkbox"/> położenia	<input checked="" type="checkbox"/> B	
<input checked="" type="checkbox"/> temperatury	<input checked="" type="checkbox"/> C	
<input checked="" type="checkbox"/> wilgotności	<input checked="" type="checkbox"/> D	
<input type="checkbox"/> Halla	<input checked="" type="checkbox"/> E	
<input type="checkbox"/> zewn. wejścia	<input checked="" type="checkbox"/> F	
<input type="checkbox"/> spoczynku	<input checked="" type="checkbox"/> G	
<input type="checkbox"/> timera	<input checked="" type="checkbox"/> H	
<input type="checkbox"/> zmiany położenia	<input checked="" type="checkbox"/> I	
<input type="checkbox"/> magnetometru	<input checked="" type="checkbox"/> J	
	<input checked="" type="checkbox"/> K	

Alarm gdy urządzenie się pojawiło
 Alarm gdy urządzenie zniknęło

Alarm z czujnika oraz - Sensor alarm and: grupy - group, portu-port

ruchu - motion

położenia - location

temperatury - temperature

wilgotności - humidity

Halla - Hall

zewn. wejścia - ext. entry

spoczynku - rest

timera - timer

zmiany położenia - position changes

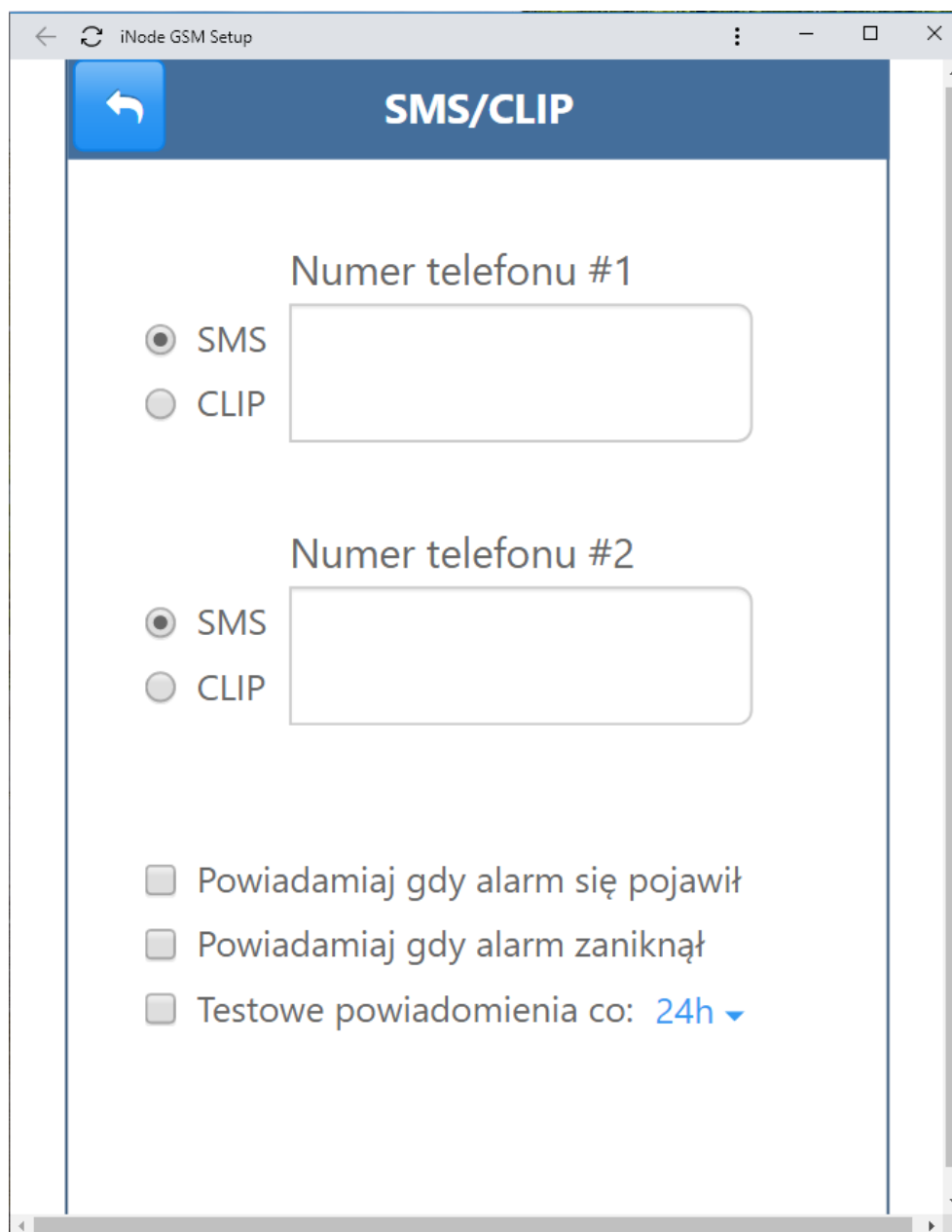
magnetometru - magnetometer

Alarm gdy urządzenie się pojawiło - Alarm when the device appeared

Alarm gdy urządzenie zniknęło - Alarm when the device has disappeared

4.6 SMS/CLIP

This tab allows you to configure the device's SMS/CLIP parameters.



The screenshot shows a web browser window titled "iNode GSM Setup" with a tab labeled "SMS/CLIP". The page has a blue header with a back arrow and the text "SMS/CLIP". Below the header, there are two sections for configuring phone numbers:

- Numer telefonu #1**: Includes radio buttons for "SMS" (selected) and "CLIP", and a text input field.
- Numer telefonu #2**: Includes radio buttons for "SMS" (selected) and "CLIP", and a text input field.

At the bottom of the page, there are three checkboxes and a dropdown menu:

- Powiadamiaj gdy alarm się pojawił
- Powiadamiaj gdy alarm zaniknął
- Testowe powiadomienia co: 24h ▼

Numer telefonu #1 - Phone number # 1

Numer telefonu #2 - Phone number # 2

Powiadamiaj gdy alarm się pojawił - Notify when an alarm has occurred

Powiadamiaj gdy alarm zaniknął - Notify when the alarm is gone

Testowe powiadomienia co - Test notifications every:

5. TECHNICAL SPECIFICATIONS

Radio parameters:

- RX/TX:
 - BLE: 2402-2480 MHz
- output power (maximum):
 - BLE: +8dBm
- modulation:
 - BLE: GFSK
- antenna:
 - PCB internal MIFA type, 1,6dBi

Bluetooth/GSM/GPRS:

- configurable from PC:
 - device access password;
 - GPRS network parameters – APN name, user and password;
 - device name in the GSM/GPRS network;
 - password for verifying messages received from sensors;
 - group (logical network) from which alarms are received;
 - type of alarms received;
 - HTTP server name, port and PHP script name for data receiving;

GSM/GPRS :

- Fibocom G510 GPRS meeting the essential requirements of Article 3 of the R&TTE Directive 1999/5/EEC, which is used in accordance with the manufacturer's intended use and recommendations and has the CE0700 marking:
 - Quad Band 900/1800MHz 850/1900MHz;
 - Multi-slot class 10 (4 Down; 2 Up; 5 Total) Max BR Downlink 85.6 Kbps Coding Scheme CS1-CS4;

GSM antenna connector:

- SMA type – female;
- recommended antenna parameters:
 - frequency: Quad Band: 850/900/1800/1900 MHz
 - gain: 0 dBi, but no more than 2,5dBi
 - impedance: 50 Ω
 - VSWR: 1,5:1; in the worst case 2,5:1

Power supply:

- micro USB socket for connecting external power supply stabilized 230V 50Hz AC / DC 5V 1000mA with double or reinforced insulation;
- maximum connection cable length: 3 m;

Housing:

- metal;
- dimensions: 60 mm x 38 mm x 22 mm (LxWxH);

Others:

- firmware upload and configuration option via USB;
- nano SIM connector;
- dual color LED: red / green;
- operating temperature: from -30 to 65°C;
- humidity: 35-90% RHG;
- weight: 50 g ;

Equipment:

- external antenna, GSM, dual band, 900/1800 MHz, 2dBi gain, with SMA male plug connector;

Software:

- Google CHROME: Android OS, Linux, Windows 10;

Chipset:

- CSR1010;
- Fibocom G510;

The manufacturer reserves the right to change device and software parameters as well as introduce other construction solutions.

6. CORRECT PRODUCT REMOVAL (WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT)



The packaging materials are 100% suitable for use as a secondary raw material. The packaging should be disposed of in accordance with local regulations. Keep packaging materials out of the reach of children as they pose a source of danger. The marking on the product or in related texts indicates that the product should not be disposed of with other household waste after it has expired. To avoid harmful effects on the environment and human health due to uncontrolled waste disposal, please separate the product from other types of waste and recycle responsibly to promote the reuse of material resources as a permanent practice.

Correct disposal of the device:



- Pursuant to the WEEE Directive 2012/19 / EU, the symbol of the crossed wheeled waste container means all electrical and electronic devices subject to selective collection.
- After the end of its useful life, this product must not be disposed of as normal household waste, but should be sent to a collection point for the recycling of electrical and electronic equipment. This is indicated by the symbol of the crossed-out wheeled waste container, placed on the product or in the operating instructions or packaging.
- The materials used in the device are reusable according to their designation. Thanks to the reuse, use of materials or other forms of use of used devices, you make a significant contribution to the protection of our natural environment.
- For information on the appropriate disposal point for used electrical and electronic equipment, please contact your local municipality administration or the device seller.
- Used, fully discharged batteries and accumulators must be disposed of in specially marked containers, taken to special waste collection points or sellers of electrical equipment.
- Users in companies should contact their supplier and check the terms of the purchase contract. The product should not be disposed of with other household waste.

Numer Deklaracji 5/02/2018
Number of declaration of Conformity

Data wystawienia Deklaracji 03.02.2018 r.
Date of issue of declaration

DEKLARACJA ZGODNOŚCI UE RED
UE RED DECLARATION OF CONFORMITY

Producent / *Manufacturer:*

ELSAT s.c.

(nazwa producenta / producer's name)

ul. Warszawska 32E/1, 05-500 Piaseczno k/Warszawy

(adres producenta / producer's address)

niniejszym deklaruje, że następujący wyrób:

declare, under our responsibility, that the electrical product:

iNode Care GSM

(nazwa wyrobu / product's name)

0x0B10

(model / model)

spełnia wymagania następujących norm zharmonizowanych:

to which this declaration relates is in conformity with the following harmonized norm:

Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz):

PN-EN 62479:2011

EMC (Article 3.1.b of the RED directive):

ETSI EN 301 489-1 V2.1.1:2016-11

ETSI EN 301 489-3 V2.1.1:2016-11

ETSI EN 301 489-17 V3.1.1:2016-11

Safety (Article 3.1.a of the RED directive):

PN-EN 62368-1:2015-03

Health (Article 3.1.a of the RED directive):

PN-EN 62311:2008

RoHS:

PN-EN IEC 63000:2019-01

jest zgodny z postanowieniami następujących dyrektyw Unii Europejskiej:

is compatible with the following European Union directives:

Dyrektywa RED 2014/53/UE

Dyrektywa EMC 2014/30/UE

Dyrektywa LVD 2014/35/UE

Dyrektywa RoHS 2011/65/UE

Procedura oceny zgodności: wewnętrzna kontrola produkcji zgodnie z załącznikiem II RED

Acceptance procedure: internal production control in accordance with Annex II of the RED Directive

03.02.2018 r.

Piaseczno k/Warszawy

(data i miejscowość / date and place)

Paweł Rzepecki
P. Rzepecki
Współwłaściciel

(podpis i stanowisko / signature and function)

