

iNode LAN

Instruction manual

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1. About iNode

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 LAN enables the existence of devices with BLE (Bluetooth Smart, IoT - Internet of Things) in networks with the Ethernet protocol: LAN, Wi-Fi or Internet. With the use of **iNode LAN**, you can, for example, extend the range of **iNode Care Sensor** in a building or track online how the **iNode Beacon** travels. Connecting to the network also **iNode LAN Central** will send to the MQTT or HTTP server data received from **iNode Care** sensors.

An **iNode LAN Central** firmware version is available that periodically sends JSON data to the MQTT or HTTP / POST server.

Using simple HTML page with **WebSocket** technology and JavaScript you can easily in real time sniff and display BLE advertising packets content. The same control features can be achieved using TCP/IP telnet.

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2. iNode LAN configuration

The device has DHCP enabled by default - in this way it obtains the 10 / 100Mbps LAN address. The device has a built-in UPnP protocol to the extent that it allows Windows to search for the device and show it in My Network Places. Thanks to this, by clicking on the device icon with the right mouse button, we can know its properties and address in the LAN. Double-clicking on the icon displays the HTML page in the browser.

| Device Name | MAC Address | Signal Strength | Temperature | Humidity | Pressure | Other Data |
|--------------------|-------------------|-----------------|-------------|----------|-----------|--|
| UNKNOWN BLE DEVICE | 3D:A7:CB:A3:E6:B4 | 13% | | | | |
| UNKNOWN BLE DEVICE | 28:5E:32:6F:2E:A0 | 5% | | | | |
| iNode-43E2C5 | D0:F0:18:43:E2:C5 | 23% | 20.92°C | 34.4% | 995.1 hPa | |
| iNode-43F3D8 | D0:F0:18:43:F3:D8 | 5% | | | | UUID: 694E6F64-6520-4265-6163-6F6E00000000 |
| iNode-43F2D9 | D0:F0:18:43:F2:D9 | 32% | 14.0°C | | | [0,1,7] |
| iNode-039918 | D0:CF:5E:03:99:18 | 17% | 20.88°C | 36.8% | | |
| iNode-43F3DB | D0:F0:18:43:F3:DB | 23% | 21.70°C | 31.3% | | |
| UNKNOWN BLE DEVICE | 0C:F3:EE:A3:55:A1 | 13% | | | | |
| iNode-43F150 | D0:F0:18:43:F1:50 | 17% | 14.38°C | 27.06°C | | |
| iNode-43F3DA | D0:F0:18:43:F3:DA | 23% | 21.99°C | | | |
| iNode-43F3DC | D0:F0:18:43:F3:DC | 17% | 11.2°C | | | [0,0,7] |
| iNode-43F3D5 | D0:F0:18:43:F3:D5 | 5% | | | | UUID: 694E6F64-6520-4265-6163-6F6E00000000 |
| iNode-03930E | D0:CF:5E:03:93:0E | 8% | | | | 0.2 kWh, 0.00 kW |



iNode Monitor HTML page is a JavaScript application which runs in a web browser. Clicking on the image in the upper left corner will load the administrative pages. The main page displays statistical information about **iNode LAN** device, its name, temperature, operating time since the last reset, PoE power supply voltage. You can choose further configuration pages (**SETUP**, **FIRMWARE**, **USER HTML**, **SYSTEM HTML**, **WHITE LIST**) or test it (**WEBSOCKET**, **MONITOR**).

[iNode LAN](#)

Device UPnP name: iNode-LAN:43D5BC

FW date: Aug 30 2019/13:00:22

MAC: D0F01843D5BC

PoE Vzz: 12.52 V

Temp: 41 °C

ETH: 100Mbps Full duplex

RTC: 03.02.20/10:20:51

SCAN: BLE AUTOSCAN MODE

SCAN mode: active

ETH RX -> BLE TX: 71/1354

BLE RX -> ETH TX: 15835/12056

RST counter: 174

Work time: 11 minutes, 56 seconds

BLE TX power: 8 dBm

WHITE LIST: DISABLED

[SETUP](#)

[FIRMWARE](#)

[USER HTML](#)

[SYSTEM HTML](#)

[WEBSOCKET](#)

[WHITE LIST](#)

[MONITOR](#)

LOG OUT

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After selecting the **SETUP** page, you can modify the way the device obtains its IP address.

iNode LAN - setup page

HOST Name:

DHCP: off on

IP address:

Netmask:

Gateway IP:

DNS IP:

UPnP: on off after minutes from reset

MAC: D0F01843D5BC

BT2.1:

BT2.1 scan interval: ms

BT2.1 scan window: ms

BT2.1 RSSI: dBm

BLE:

BLE SCAN:

BLE IP address:

BLE IP port:

BLE TX power level:

BLE RSSI: dBm

ETH TX / BLE RX ratio:

BLE TX / ETH RX ratio: 0%

NTP IP address:

GMT offset:

admin password:

user password:

OUT type:

LOCK:

LOCK pulse: ms

WHITE LIST:

setup OK

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If **DHCP off** is selected, the fields **IP address**, **Netmask**, **Gateway IP**, **DNS IP** are active and the addresses and values should be entered into them so that **iNode LAN** can work in the Ethernet network. By default, DHCP is enabled, which means that all these network parameters will be downloaded from the DHCP server, which is usually provided by e.g. an ADSL router.

The user can change the default device name in the **HOST name** field to any other name. It can be up to 16 characters long. It is inadvisable, for example, to use different than English diacritical marks because they can be misinterpreted by other network devices.

UpnP is disabled by default. The user can set the time after which it will be turned off after turning on the power or reset, or turn it on permanently.

In BLE **iNode LAN** can work in one of the following modes:

1. **AUTO SCAN** – after powering, BLE environment is scanned in active mode and results are sent to LAN using IP/UDP as multicast/unicast or broadcast frames. You can easily receive them on any IP enabled device with any OS like Linux, Windows or Android. A data structure is something different from this given in **iNode Serial Transceiver USB/UART**. This mode is switched off when other client is connected to **iNode LAN**. It can be for example iNodeSetup.exe or iNode Thermo through TCP/IP or web browser websocket.

IP multicast is a technique for one-to-many communication over an IP infrastructure in a network – defined by multicast group and port. For iNode-LAN it is 232.0.1.1:20000. Unicast messaging is used for all network processes in which a private or unique resource is requested. In computer networking, broadcasting refers to transmitting a packet that will be received by every device on the network. In practice, the scope of the broadcast is limited to a broadcast domain. Broadcast a message is in contrast to unicast addressing in which a host sends datagrams to another single host identified by a unique IP address.

2. **REPEATER** – after powering, device starts receiving from LAN IP/UDP frames sent by other **iNode LAN** device or devices. If content of received UDP frame is correct then data from them is sent to BLE environment as ADV_NONCONN_IND frame. **iNode LAN** does not sent to BLE advertisement ADV_NONCONN_IND type.
3. **AUTO SCAN / REPEATER** – after powering, device starts to work in both above modes.
4. **OFF** – after powering, device is not active in any manner in BLE environment but still can work with iNodeSetup (in AUTO SCAN and REPEATER mode it is also possible). **iNode LAN** has to be connected to the same LAN as a computer running iNodeSetup.exe application. It should be automatically found and can be chosen by clicking at the picture Using any telnet application like Hyper Terminal you can connect to **iNode LAN** at port 5500. It can work like **iNode Serial Transceiver USB** through COM port.

BLE Scan chose type of the BLE scanning – active or passive. In active mode **iNode LAN** sends request to each scanned device so you should remember that this type of scanning can drain more the battery of the scanned device. **BLE IP address** and **BLE IP port** determine a receiving server IP address and port. **iNode LAN** will send to this server UDP datagrams with the received BLE data frames (in **AUTO SCAN** mode). **iNode LAN** in **REPEATER** mode if multicast addressing is used should have the same group and port settings like **iNode LAN** in **AUTO SCAN** mode. At **BLE RSSI** you can set in dBm the threshold level for received BLE frames which exceeding

activate the built-in output. The output is activated for the period of ms set in **OUT pulse** if received identifier is on the identifier list (edition through the LOCK page).

ETH TX / BLE RX ratio - you to chose here the time of the scan during which the received BLE packets are sent through the ethernet. This feature can limit the number of transmitted packets from BLE to LAN.

In **BLE TX power level** you can set the TX Power value in **REPEATER** or **AUTO SCAN / REPEATER** mode and during active scan. Relations between TX power level and TX Power in dBm is showed in a table below:

| BLE TX power level | TX Power [dBm] |
|---------------------------|-----------------------|
| 0 | -18 |
| 1 | -12 |
| 2 | -10 |
| 3 | -4 |
| 4 | -2 |
| 5 | +2 |
| 6 | +6 |
| 7 | +8 |

The user can choose whether all BLE packets will be sent to the LAN by selecting the appropriate option in the **ETH TX / BLE RX ratio** field. You can choose from 100%, 50% (2s / 4s), 25% (2s / 8s), 12.5% (2s / 16s), 6.7% (2s / 30s), 3.3% (2s / 60s), 1.6% (2s / 120s), 0.8% (2s / 240s). If the ratio is different from 100%, iNode LAN sends the received BLE packets to the LAN every 2 seconds.

In **NTP IP address** you can set the NTP server address. In case of wrong server address the time in device will not be set but the device still will be working. The **GMT offset** enable you the change the timezone.

You can set the **admin password** (system HTML pages) and **user password** (user HTML pages) for built-in HTTP server.

The output type (NC - normally closed or NO - normally open) is changed in the **OUT type** field. The output is switched on for as many ms as specified in the **OUT pulse** field, provided, of course, that the identifier received is on the list entered into the device (its editing is enabled by the **LOCK** page). This only applies to the old version of iNode LAN with potential-free output.

The **WHITE LIST** option is used to send BLE packets to the LAN only from specific devices. The **WHITE LIST** page allows you to manage the identifiers of these devices.

To save the changed settings in the device, press the **SAVE** button. Correct entry will be confirmed by a message done: OK. After about 3-5 seconds, the device will reset so that the new settings take effect. When changing Ethernet parameters, be careful not to enter addresses outside the LAN.

You can always restore default settings by powering device while the **RESET** button placed at the bottom of the device is pressed.

The **FIRMWARE** page allows changing the firmware in the device.



iNode LAN - firmware upload page

Wybierz plik Nie wybrano pliku SEND

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You can select a file with a new firmware after click on the **Choose File** button. Firmware uploading is done after click on the **SEND** button and a message **uploading ...** is showing. After successful termination is replaced by **done: OK** and after a while by **restarting ...**. If firmware is correct (proper for this type of device) and operation will be successful a message **done: OK** will be showed. After about 3-5 seconds the device will be restarted and the new firmware will be used.

In the case of enabled DHCP, wait for a while until the device receives the network parameters from the DHCP server again - the LED next to the RJ45 connector flashes quickly. Slow blinking of the LED indicates that the network parameters have been downloaded via DHCP.

Firmware **fep** files or applications can be downloaded from our technical support: <http://support.inode.pl/> user **inode**, without a password.

The **USER HTML** page allows you to enter your own user pages into the device. 2.9MB of memory is allocated for these pages. All files associated with the pages (images, scripts, etc.) should be placed in one directory. There can be a maximum of 512, and their names can be up to 40 characters.

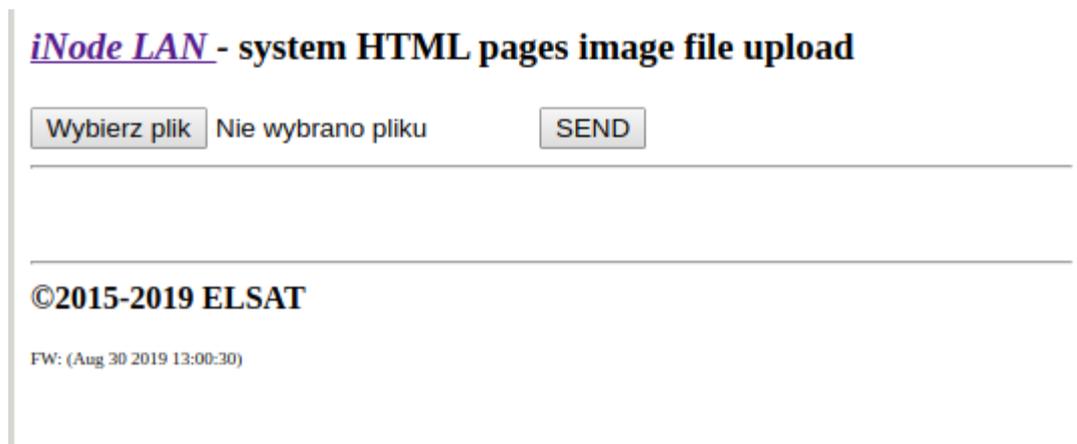
iNode LAN - user HTML pages upload

Nie wybrano pliku

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You can select a HTML page files and other files (pictures, scripts etc.) or one binary image file after click on the **Choose Files** button. Uploading is done after click on the **SEND** button and a message **reading files: done, uploading file of xxx kbytes** is showing. After successful termination is replaced by **done: OK**. You can save on local disk drive binary image of the user HTML pages after click on the **Save Data** button. Such a file can also be uploaded to the device like for example iNode Monitor application.

The **SYSTEM HTML** page allows you to exchange system pages. The file with pages in the same format as those of the user is uploaded to the system pages area using the `flash.cgi` page (it is always available directly). It can also be one file with bin pages.

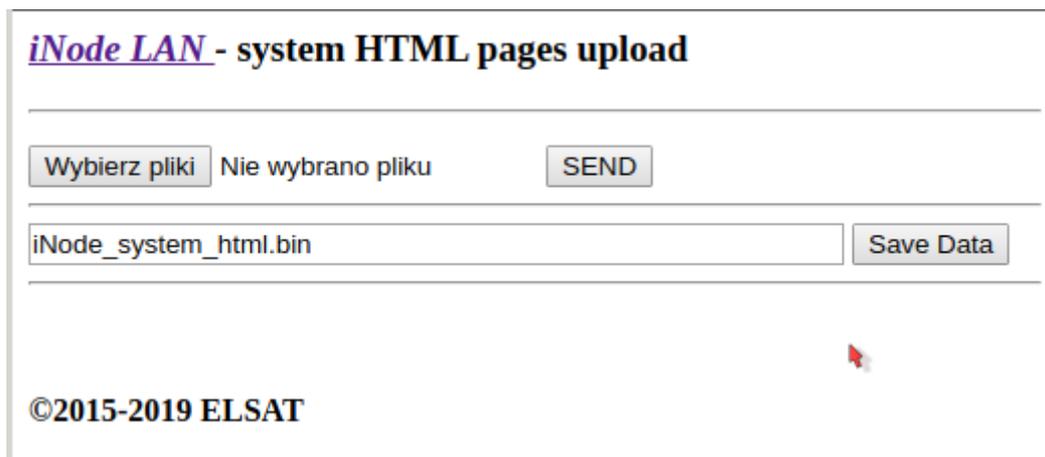


The screenshot shows a web interface titled "iNode LAN - system HTML pages image file upload". It features a file selection area with a button labeled "Wybierz plik" and the text "Nie wybrano pliku". To the right is a "SEND" button. Below this is a horizontal line, followed by the copyright notice "©2015-2019 ELSAT" and the firmware version "FW: (Aug 30 2019 13:00:30)".

You can select a HTML page files and other files (pictures, scripts etc.) or one binary image file after click on the **Choose File** button. Uploading is done after click on the **SEND** button and a message **reading files: done, uploading file of xxx kbytes** is showing. After successful termination is replaced by **done: OK**. At the bottom of page there is an information about creation date of the current firmware in a device: FW: (.....)

If there are no HTML system pages on your device, your browser may prompt you for a password or other errors. This usually happens when you upload a bin file with the user's HTML pages as system ones. Then, re-enter the system HTML pages into the device using `flash.cgi` page.

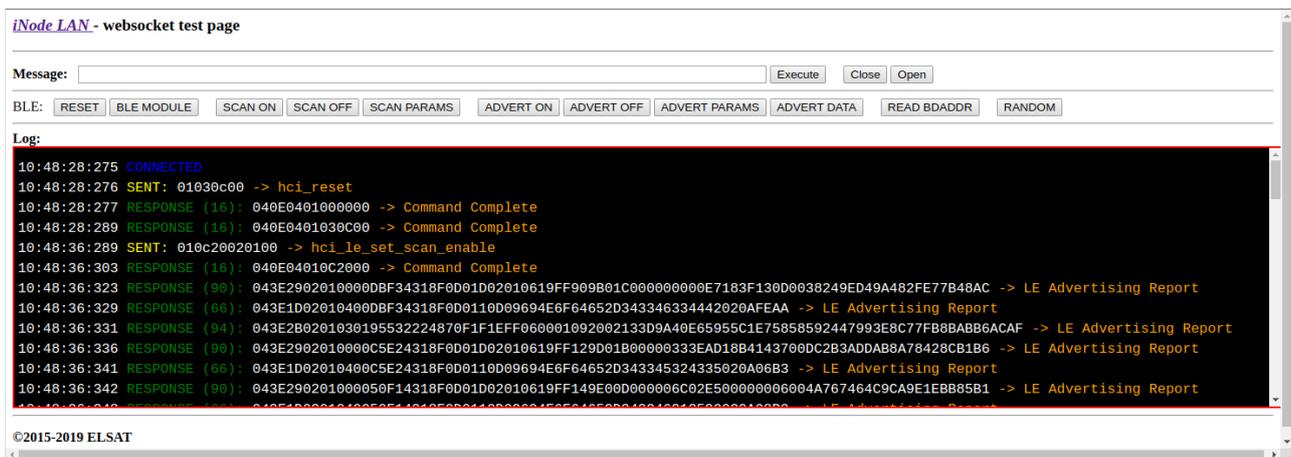
The user can create his own system pages image using the `system_flash_html.shtml` page. This is done in the same way as for the user's HTML pages.



The screenshot shows a web interface titled "iNode LAN - system HTML pages upload". It features a file selection area with a button labeled "Wybierz pliki" and the text "Nie wybrano pliku". To the right is a "SEND" button. Below this is a text input field containing "iNode_system_html.bin" and a "Save Data" button. At the bottom, there is a copyright notice "©2015-2019 ELSAT".

The **WEBSOCKET** website allows you to test communication between the browser and the BLE environment. Commands can be entered into the **Message** field. They are sent after pressing the **Execute** button. The **Close** button closes the WebSocket connection, while **Open** opens it. A condition of communication using WebSocket is browser support for this technology. Thanks to it, you can, for example, write the equivalent of iNodeSetup.exe in JavaScript on your browser. Strings sent via WebSocket are the same as via COM (**iNode Transceiver USB**) or TCP / IP (**iNode LAN**). There can be only one connection of this type to **iNode LAN** at a time. Either via WebSocket or via TCP / IP (e.g. from the iNodeSetup program) or via telnet.

There are some predefined HCI commands at buttons: **RESET**, **SCAN ON**, **SCAN OFF**, **SCAN PARAMS**, **ADVERT ON**, **ADVERT OFF**, **ADVERT PARAMS**, **ADVERT DATA**, **READ BDADDR**, **RANDOM**.



All **iNode** devices use to communication the Bluetooth 4.0/4.1 standard. More information about it you can find at <https://www.bluetooth.org/en-us/specification/adopted-specifications>

The data structure is described in Core_V4.0.pdf: Volume 2 Part E, Section 5.4.

When connection with remote BLE device is established, communication with them is performed using the Attribute Protocol encapsulated in HCI ACL DATA packets. The followings PDUs (Core_V4.0.pdf: Volume 3 Part F) can be used – see table below. Asterisk in Imp column means that that attribute is implemented in **iNode LAN**.

More information about WebSocket you can find at <https://www.websocket.org/aboutwebsocket.html>

| Attribute PDU Name | Attribute Opcode | Imp | Parameters |
|--|------------------|-----|--|
| Exchange MTU Request | 0x02 | | Client Rx MTU |
| Exchange MTU Response | 0x03 | | Server Rx MTU |
| Find Information Request | 0x04 | | Starting Handle, Ending Handle, UUID |
| Find Information Response | 0x05 | | Format, Information Data |
| Find By Type Value Request | 0x06 | | Starting Handle, Ending Handle, Attribute Type, Attribute Value |
| Find By Type Value Response | 0x07 | | Handles Information List |
| Read By Type Request Section 3.4.4.1 | 0x08 | * | Starting Handle, Ending Handle, UUID |
| Read By Type Response Section 3.4.4.2 | 0x09 | * | Length, Attribute Data List |
| Read Request Section 3.4.4.3 | 0x0A | * | Attribute Handle |
| Read Response Section 3.4.4.4 | 0x0B | * | Attribute Value |
| Read Blob Request Section 3.4.4.5 | 0x0C | * | Attribute Handle, Value Offset |
| Read Blob Response Section 3.4.4.6 | 0x0D | | Part Attribute Value |
| Read Multiple Request | 0x0E | | Handle Set |
| Read Multiple Response | 0x0F | | Value Set |
| Read by Group Type Request | 0x10 | | Start Handle, Ending Handle, UUID |
| Read by Group Type Response | 0x11 | | Length, Attribute Data List |
| Write Request Section 3.4.5.1 | 0x12 | * | Attribute Handle, Attribute Value |
| Write Response Section 3.4.5.2 | 0x13 | * | - |
| Write Command Section 3.4.5.3 | 0x52 | * | Attribute Handle, Attribute Value |
| Prepare Write Request | 0x16 | | Attribute Handle, Value Offset, Part Attribute Value |
| Prepare Write Response | 0x17 | | Attribute Handle, Value Offset Part Attribute Value |
| Execute Write Request | 0x18 | | Flags |
| Execute Write Response | 0x19 | | - |
| Handle Value Notification Section 3.4.7.1 | 0x1B | * | Attribute Handle, Attribute Value |
| Handle Value Indication Section 3.4.7.2 | 0x1D | * | Attribute Handle, Attribute Value |
| Handle Value Confirmation | 0x1E | * | |

FF1293011000001700AB18951F485435BE5B809D6F571E40E8 -> data (25 bytes)

FF -> 0xFF -> EIR Data Type = 0xFF «Manufacturer Specific Data»

1293011000001700AB18951F485435BE5B809D6F571E40E8->

1293 -> 0x9312 -> 0x93XX iNodeCareSensor #3 identifier; 0xXX1X version 1; 0xXXX2 since last memory readout lasts 24 hours;

0110 -> 0x1001 type -> bit 15 to bit 12 -> reserved, bit 11 to bit 0 -> sensor group address

0000 -> 0x0000 flags ->

SENSOR_ALARM_MOVE_ACCELEROMETER=1,
 SENSOR_ALARM_LEVEL_ACCELEROMETER=2,
 SENSOR_ALARM_LEVEL_TEMPERATURE=4,
 SENSOR_ALARM_LEVEL_HUMIDITY=8,
 SENSOR_ALARM_CONTACT_CHANGE=16,
 SENSOR_ALARM_MOVE_STOPPED=32,
 SENSOR_ALARM_MOVE_TIMER=64,
 SENSOR_ALARM_LEVEL_ACCELEROMETER_CHANGED=128,
 SENSOR_ALARM_LEVEL_MAGNET_CHANGE=256,
 SENSOR_ALARM_LEVEL_MAGNET_TIMER=512

1700 -> 0x0017 value1

/* motion sensor */

0x8000 sensor is in move (bit 15 =1)

bit 14 to 10:

X-axis (5 bit value as 2's complement number) -> 0x00= 0

bit 9 to 5:

Y-axis (5 bit value as 2's complement number) -> 0x00= 0

bit 4 to 0:

Z-axis (5 bit value as 2's complement number) -> 0x17= -9

AB18 -> 0x18AB value2

/* temperature sensor */

Temperature= ((175.72 * Temp_Code)/65536)-46.85 [°C]

Temp_Code = 0x18AB *4 = 0x62AC = 25260

Temperature = 20,879 °C

951F -> 0x1F95 value3

/* humidity sensor */

%RH= ((125*RH_Code)/65536)-6 [%]

RH_Code = 0x1f95 *4 = 0x7e54 = 32340

%RH= 55,68 %

485435BE -> 0x5448BE35 time (time stamp; number of seconds since 01.01.1970)

5B80 9D6F 571E 40E8 -> an AES128 digital signature of all data

response for an active scan:

0D09694E6F64652D333536313441020A02000000000000000000000000000000

0D09694E6F64652D333536313441

0D -> length of the data field: 13 bytes

09694E6F64652D333536313441 -> data

09 -> 0x09 -> EIR Data Type = 0x09 -> «Complete Local Name»

694E6F64652D333536313441 -> iNode-35614A

020A02

02 -> length of the data field: 2 bytes

0A02 -> data

0A-> 0x0A -> EIR Data Type = 0x0A -> «Tx Power Level»

02 -> 0x02 -> Tx Power Level = +2dBm

The **WHITE LIST** page allows you to edit the list of iNode tag identifiers, phones or smartphones entered into the device. The **Read White List file** and **Write White List file** buttons are used to read from the disk or save on it a modified list of identifiers previously loaded from the device (the list is downloaded automatically when the **WHITE LIST** page is loaded; if it can be read at the bottom of the page, the message **WHITE LIST: OK** appears). The new identifier is added by pressing the **NEW** button after entering it into the left window (convention is as follows **D0: F0: 18: 43: F2: A1**). Deleting an already entered identifier is possible after selecting it in the list and pressing the **DELETE** button.

iNode LAN - white list setup page

Wybierz plik Nie wybrano pliku Read White List file

white_list.bin Write White List file

D0:F0:18:43:F2:A1 NEW

D0:F0:18:43:F2:A1 DELETE

SAVE

WHITE LIST: OK

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To store changed identifiers list into the device you should press the **SAVE** button. Correct result of operation will be confirmed by a message done: OK. The new identifiers list is used directly after storing it for autonomous access control. The distance from which all identifiers from the list activate the output is set at the **SETUP** page at **BLE RSSI** area.

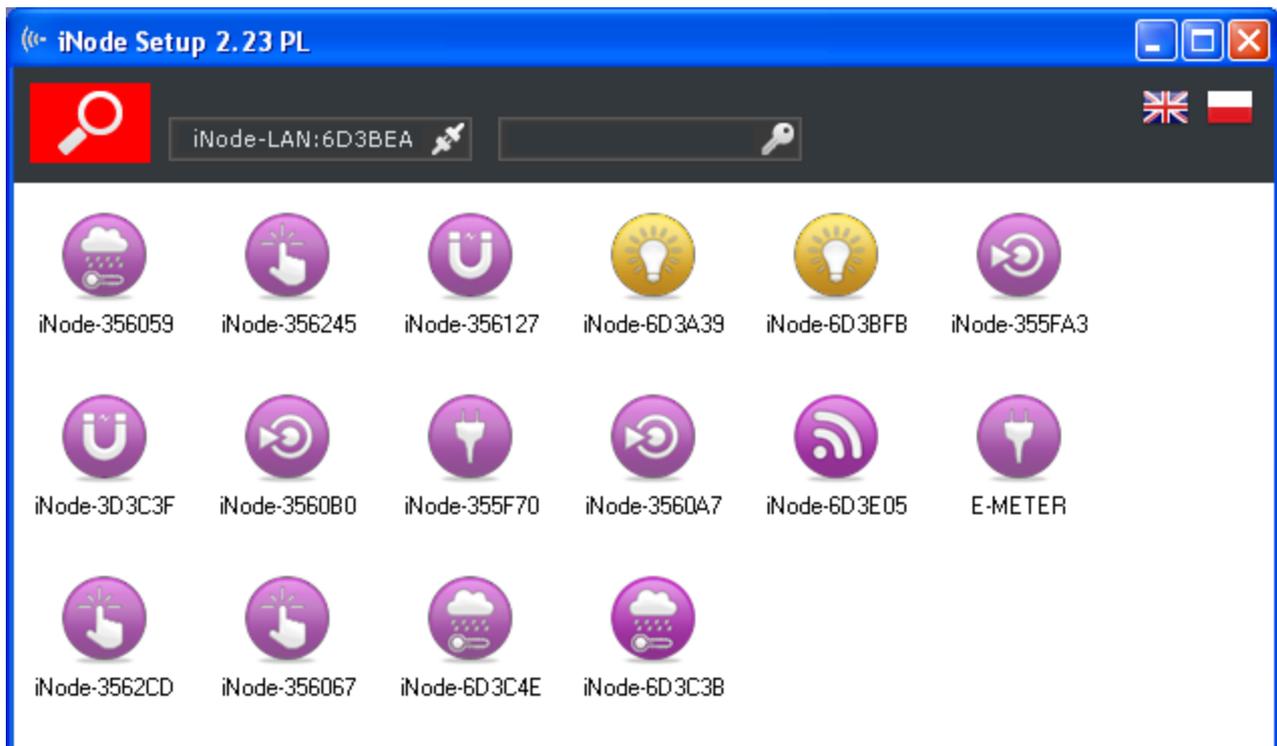
3. iNode LAN and iNode Setup application

3.1 Using iNode LAN with iNode Setup.exe

Install application **iNode Setup** and BT4.0 drivers on PC. Next run **iNode Setup** application (on Windows 7 to 10 with administrative rights), and press the red button with magnifying glass picture.

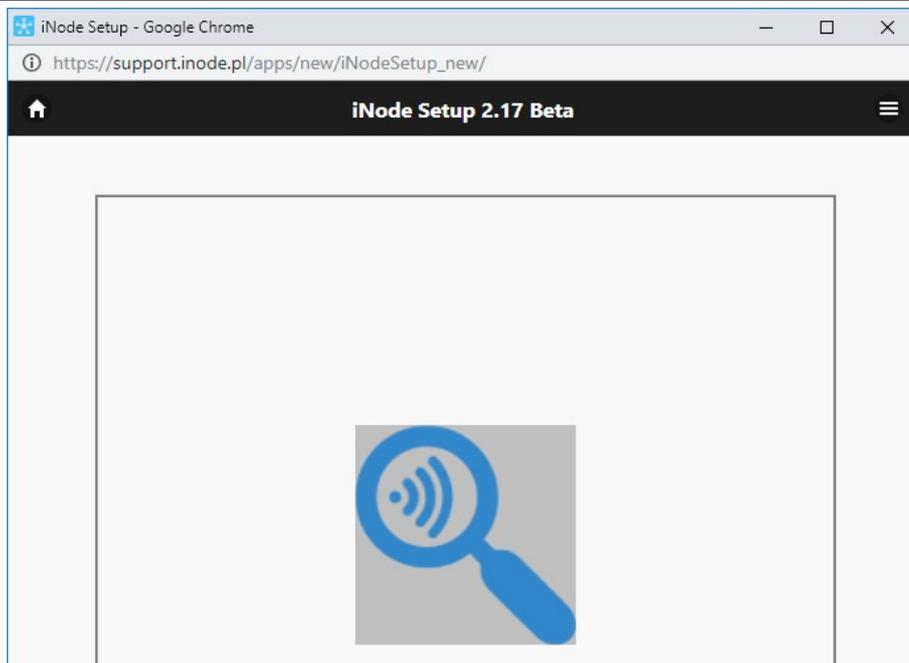
If a BLE device you want connect to has password enabled you should type it text box with a key . If you press the button  you can change the type of adapter USB BT4.0 which will be used to communication – standard BT4.0 (signed CSR ...), **iNode Serial Transceiver** (signed COM ...) or **iNode LAN** (signed the name of the device).

In case the application cannot start or system error you should try to install **Microsoft Visual C++ 2005 Service Pack 1 Redistributable Package MFC Security Update** from that page: <http://www.microsoft.com/en-us/download/confirmation.aspx?id=26347>.

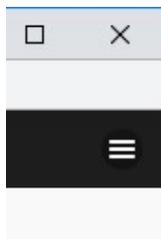


3.2 Using iNode LAN with the iNode Setup browser application

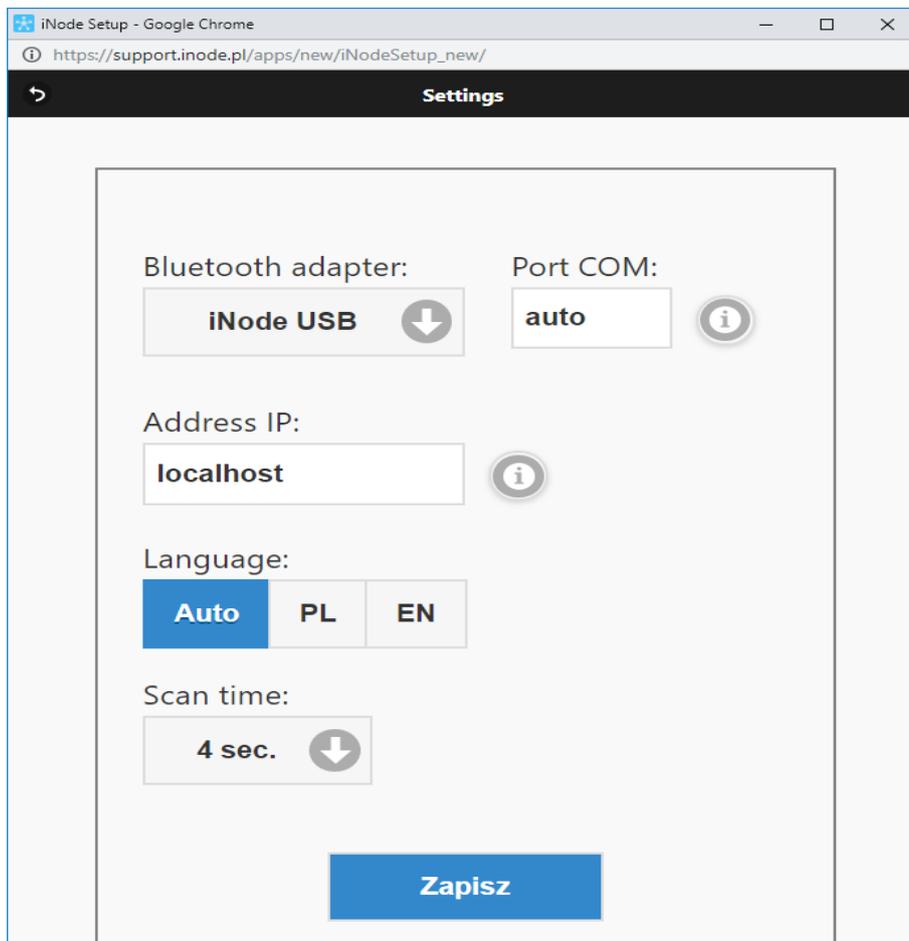
Run the **iNode Setup** application in your browser (preferably Chrome). Depending on the system, it may be necessary to install an additional program that allows the application to communicate with the USB adapter. On Windows 10 it is **iNode Hub Server** while on Android OS it is **iNode Service**. To search for BLE devices, press the blue button with the magnifying glass.



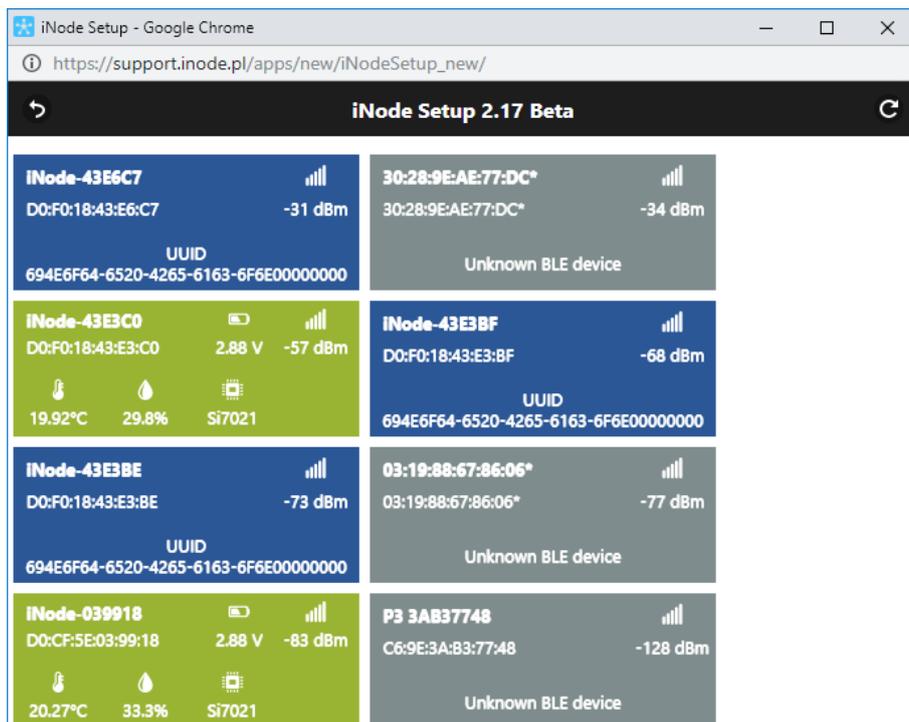
By clicking on the image



you can also choose the type of adapter with which the program works. It is also possible to use the **iNode LAN** series devices for communication, for which you must enter the IP address at which they are visible in the local network.



The program will search for the selected BT4.0 adapter and nearby **iNode** devices. For **iNode Beacon** this is the first image from the left in the first row in the window below.



4. Technical information

Radio parameters:

- RX / TX:
 - BLE: 2402-2480 MHz
- output power (maximum):
 - BLE: + 8dBm or + 20dBm
- modulation:
 - BLE: GFSK
- antenna:
 - PCB internal MIFA type, 1,6dBi (version micro USB or POE 802.3af)
 - SMA external RP SMA MALE type, 3dBi (version micro USB SMA lub POE 802.3af SMA)

Software parameters:

- configurable from your PC:
 - BLE mode: AUTO SCAN or REPEATER;
 - the BLE power with which the device operates from -18dBm to + 8dBm (maximum range up to 200 m in open space);
 - LAN settings: IP address (static or dynamic - DHCP), network mask, gateway, DNS, NTP server;
 - the name of the device in LAN & BLE;
 - IP address & port for UDP broadcasting received BLE packets; multicast, unicast or broadcast for UDP is configured automatically depend on IP address;
 - user password;
 - admin password;

Power supply:

- micro USB or micro USB SMA version:
 - 5V micro USB; 85mA @ 10Mbps; 130mA @ 100Mbps
 - passive POE 6-48V DC; 40mA @ 100 Mbps 24V; 60mA @ 100 Mbps 12V; 120mA @ 100Mbps 6V
- POE 802.3af or POE 802.3af SMA version:
 - active POE IEEE 802.3af 48V DC ~1W;

Housing:

- metal case;
- dimensions: 81 mm x 38 mm x 22 mm;

Others:

- ratio scan window/scan interval = 1 -> receiving from BLE all the time;
- remote firmware update using web browser;
- remote control using TCP/IP telnet connection at port 5500 (the same control features like using WebSocket);
- LEDs: ethernet LINK i STATUS;
- HTTP server:
 - 2,9MB for user HTML pages (www) and 1MB for HTTP system pages (www);
 - WebSocket;
- max. 2 sockets simultaneously;
- RJ-45 connector 10Mbps/100Mbps Ethernet, 10BaseT; protocols: ARP, SSDP, UDP, TCP/IP, DHCP, SNTP, HTTP;
- reset button (restore factory settings);
- temperature sensor with a resolution of 1 °C;
- operating temperature: from -20 to 45 °C;
- humidity: 35-80 % RHG.
- weight: 45 g;

Equipment:

- SMA antenna typu RP SMA MALE, 3dBi (wersja micro USB SMA lub POE SMA);

Software:

- any web browser;
- embedded application JavaScript / WebSocket / HTML5 - iNode Monitor;

Chipset:

- CSR1010;
- W5500;

THE MANUFACTURER RESERVES THE RIGHT TO MAKE CHANGES AND/OR IMPROVEMENTS IN DESIGNS, FEATURES & DIMENSIONS WITHOUT NOTICE AND WITHOUT INCURRING OBLIGATION

5. Correct disposal of the product (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:



- In accordance with WEEE Directive 2012/19 / EU, the symbol of a crossed-out wheeled waste container means all electrical and electronic equipment subject to separate collection. At the end of its useful life, this product may not be disposed of together with normal municipal waste, but should be taken to a collection point and recycling of electrical and electronic devices. 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 plastics used in the device can be reused in accordance with their markings. 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 devices, please contact your local municipality administration or the seller of the device.
- Used, completely 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 1/10/2019
Number of declaration of Conformity

Data wystawienia Deklaracji 08.10.2019 r.
Date of issue of declaration

DEKLARACJA ZGODNOŚCI WE
EC DECLARATION OF CONFORMITY

My/We: **ELSAT s.c.**
(nazwa producenta / producer's name)
ul. Warszawska 32E/1, 05-500 Piaseczno k/Warszawy
(adres producenta / producer's address)

niniejszym deklarujemy, że następujący wyrób:
declare, under our responsibility, that the electrical product:

iNode LAN

(nazwa wyrobu / product's name)

0x0C00

micro USB; micro USB SMA; POE; POE SMA;
(model / model)

spełnia wymagania następujących norm zharmonizowanych:
to which this declaration relates is in conformity with the following harmonized norm:

Radio Spectrum ISM (Article 3.2 of the RED directive):

PN-ETSI EN 300 328 V2.1.1:2016-11

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

PN-ETSI EN 301 489-1 V2.2.0:2017-03

PN-ETSI EN 301 489-17 V3.2.0:2017-03

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

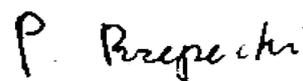
Procedura oceny zgodności: wewnętrzna kontrola produkcji zgodnie z załącznikiem II RED

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

08.10.2019 r.

Piaseczno k/Warszawy
(data i miejscowość / date and place)

Paweł Rzepecki



Współwłaściciel
(podpis i stanowisko / signature and function)



ELSAT s.c. ul. Warszawska 32E/1 05-500 Piaseczno k/Warszawy
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