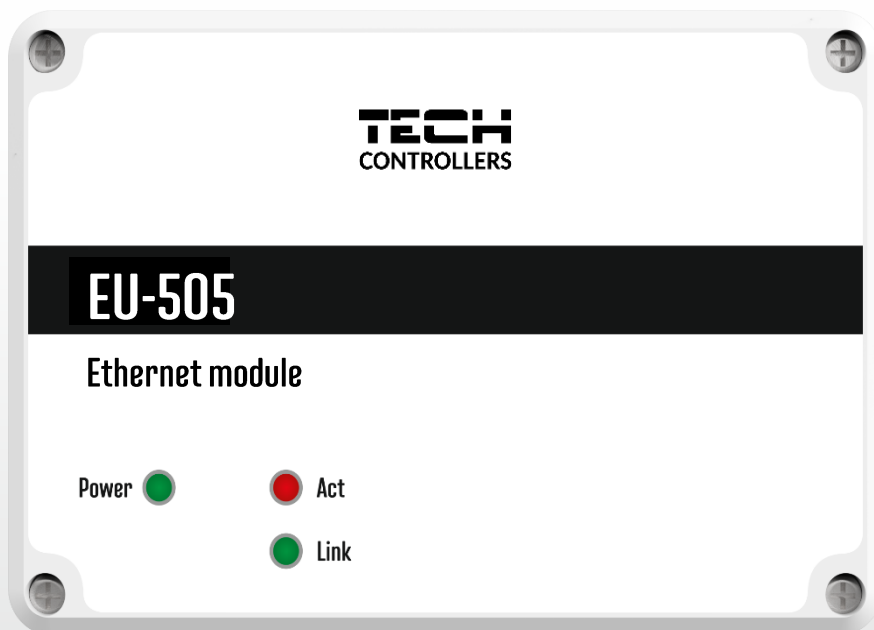


# TECH TECH CONTROLLERS

## USER MANUAL EU-505

EN





## EU DECLARATION OF CONFORMITY

Hereby, we declare under our sole responsibility that **EU-505** manufactured by TECH STEROWNIKI II Sp. z o.o., head-quartered in Wieprz Biała Droga 31, 34-122 Wieprz, is compliant with Directive **2014/35/EU** of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of Member States relating to **the making available on the market of electrical equipment designed for use within certain voltage limits** (EU OJ L 96, of 29.03.2014, p. 357), Directive **2014/30/EU** of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of Member States relating to **electromagnetic compatibility** (EU OJ L 96 of 29.03.2014, p.79), Directive **2009/125/EC** establishing a framework for the setting of ecodesign requirements for energy-related products as well as the regulation by the MINISTRY OF ENTREPRENEURSHIP AND TECHNOLOGY of 24 June 2019 amending the regulation concerning the essential requirements as regards the restriction of the use of certain hazardous substances in electrical and electronic equipment, implementing provisions of Directive (EU) 2017/2102 of the European Parliament and of the Council of 15 November 2017 amending Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (OJ L 305, 21.11.2017, p. 8).

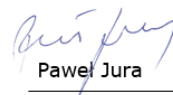
For compliance assessment, harmonized standards were used:

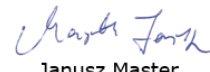
**PN-EN IEC 60730-2-9:2019-06,**

**PN-EN 60730-1:2016-10,**

**PN EN IEC 63000:2019-01 RoHS.**

**Wieprz, 11.08.2022**

  
Paweł Jura

  
Janusz Master

Prezesa firmy

## **I. Protections**

Before using the device for the first time, the user should read the following regulations carefully. Not obeying the rules included in this manual may lead to personal injuries or device damage. The user's manual should be stored in a safe place for further and future reference.

In order to avoid accidents and errors, it should be ensured that every person using the device has familiarized themselves with the principles of operation, as well as its security functions. If the device is to be sold or put in a different place, make sure that the user's manual is kept with the device so that any potential user has access to essential information about the device. The manufacturer does not accept responsibility for any injuries or damage resulting from negligence; therefore, users are obliged to take the necessary safety measures listed in this manual to protect their lives and property.

 **WARNING**

- **High voltage!** Make sure the regulator is disconnected from the mains before performing any activities involving the power supply (plugging cables, installing the device etc.).
- The device should be installed by a qualified electrician.
- The regulator should not be operated by children.

 **NOTE**

- The device may be damaged if struck by a lightning. Make sure the plug is disconnected from the mains during storm.
- Any use other than specified by the manufacturer is forbidden.
- Before and during the heating season, the device should be checked for condition of its cables. The user should also check if the controller is properly mounted and clean it if dusty or dirty.



Care for the natural environment is our priority. Being aware of the fact that we manufacture electronic devices obligates us to dispose of used elements and electronic equipment in a manner, which is safe for nature. As a result, the company has received a registry number assigned by the Main Inspector of Environmental Protection. The symbol of a crossed out rubbish bin on a product means that the product must not be thrown out to ordinary waste bins. By segregating waste intended for recycling, we help protect the natural environment. It is the user's responsibility to transfer waste electrical and electronic equipment to the selected collection point for recycling of waste generated from electronic and electrical equipment.

## II. Description

The Internet Module is a device permitting remote control of the boiler via the Internet, allowing the user to control the condition of all boiler system devices. It is possible to view the temperature history in the form of clear charts and to view the alert history of the controller.

The capabilities and the configuration of the Internet module depend on the type and the software of the main controller. Due to the continuous development of the software of our controllers, new improvements are constantly introduced. In the new type of controllers, the configuration process has been significantly simplified (in the submenu of the Internet module, in the installer's menu, the following option is located: *Registration* - if this option is not present, it means that the main controller is of the old type). The GSM module ST-505 is adapted to work both with the old main controllers, as well as with the new ones.

The functions, while working alongside the new controllers:

- remote control of the boiler's operation via the Internet
- monitoring of all devices of the system
- possibility of editing all parameters of the main controller (maintaining the structure and order of the menu)
- monitoring of the temperature history
- monitoring of the event history (alarms and changes in parameters)
- possibility of assigning any number of passwords (for various authorizations - of the menu, events, statistics) - optional
- edition of the temperature set on the house controller
- possibility of operating many modules from one administrative account
- e-mail notifications about alerts

The functions, while working alongside the old controllers:

- remote control of the boiler's operation via the Internet
- graphic interface with animation on the home computer screen
- possibility of changing the set temperatures for both the pumps, as well as the mixing valves
- monitoring of temperatures on the sensors
- monitoring of the temperature history
- monitoring of history and the alarm type

Equipment of the controller

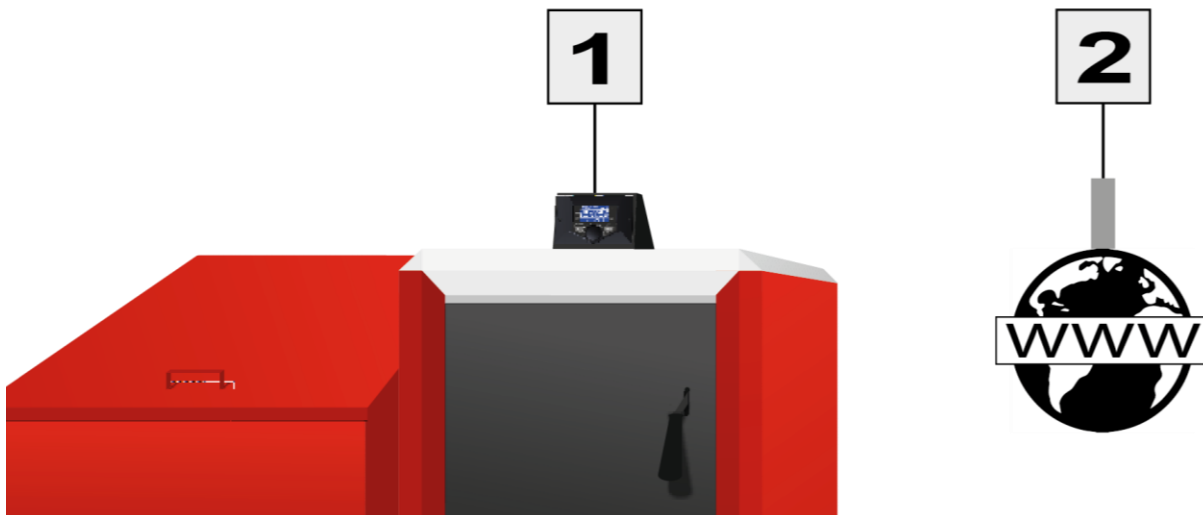
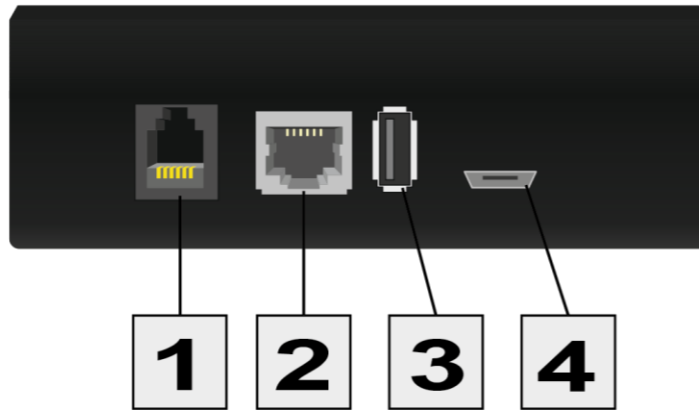
- power supply unit 12V DC
- RS T-connection
- RS communication cable for the boiler's controller

### **III. Installation**

The module should be installed by a qualified person.

**! NOTE**

- Incorrect connection of wires may cause damage to the module!



	Communication socket with the controller	Communication socket with the Internet	USB socket	Power supply 5V DC
Number of connection	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

## IV. Configuration of the Module with the New Controller

### Installation of the Module with the Controller

In the case of installing the main controller (one equipped with the new software) the installation and operation processes are intuitive. After the module has been connected correctly, the Internet module should be turned on in the main controller installer menu (*Menu >> Installer menu >> Internet module >> Registration*) – a registration code will be generated, which should be entered on the website.

#### **NOTE**

The generated code is valid only for 60 minutes. If the registration on the website is not done during this time, the user should generate a new code.



We recommend using Mozilla FireFox or Google Chrome browsers.

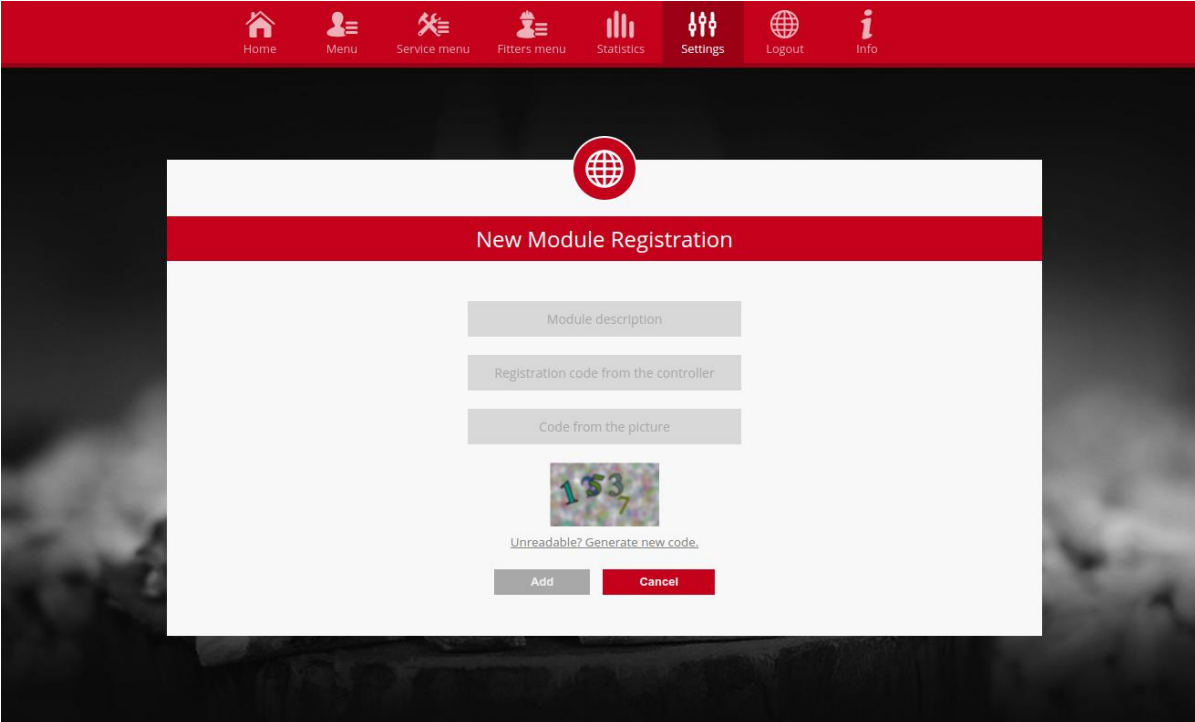
### IV.a) Logging in on the Website

Having generated the code on the controller, the user should visit the website [www.emodul.eu](http://www.emodul.eu). In the first place, the user should create an account:

New account registration panel on the website [www.emodul.eu](http://www.emodul.eu)

## EU-505

After logging in to the account, enter the code generated by the main controller in to the tab *Settings*. The user can assign any name to the module (in the field description of the module):



The screenshot shows a web application interface with a red navigation bar at the top containing icons for Home, Menu, Service menu, Fitters menu, Statistics, Settings, Logout, and Info. The main content area is dark, and a white modal window is displayed in the center. The modal has a red header with a globe icon and the text 'New Module Registration'. It contains three input fields: 'Module description', 'Registration code from the controller', and 'Code from the picture'. The 'Code from the picture' field shows a CAPTCHA image with the numbers '1537'. Below the CAPTCHA is a link that says 'Unreadable? Generate new code.' At the bottom of the modal are two buttons: 'Add' and 'Cancel'.

*Registration panel of the new module.*

**!** NOTE  
One account registered on the website [www.emodul.eu](http://www.emodul.eu) can operate several different TS-505 modules.

## IV.b) Homepage

The *Home* tab displays the homepage with tiles illustrating the current condition of particular devices in the system. By clicking on them, the user can change the operation settings.



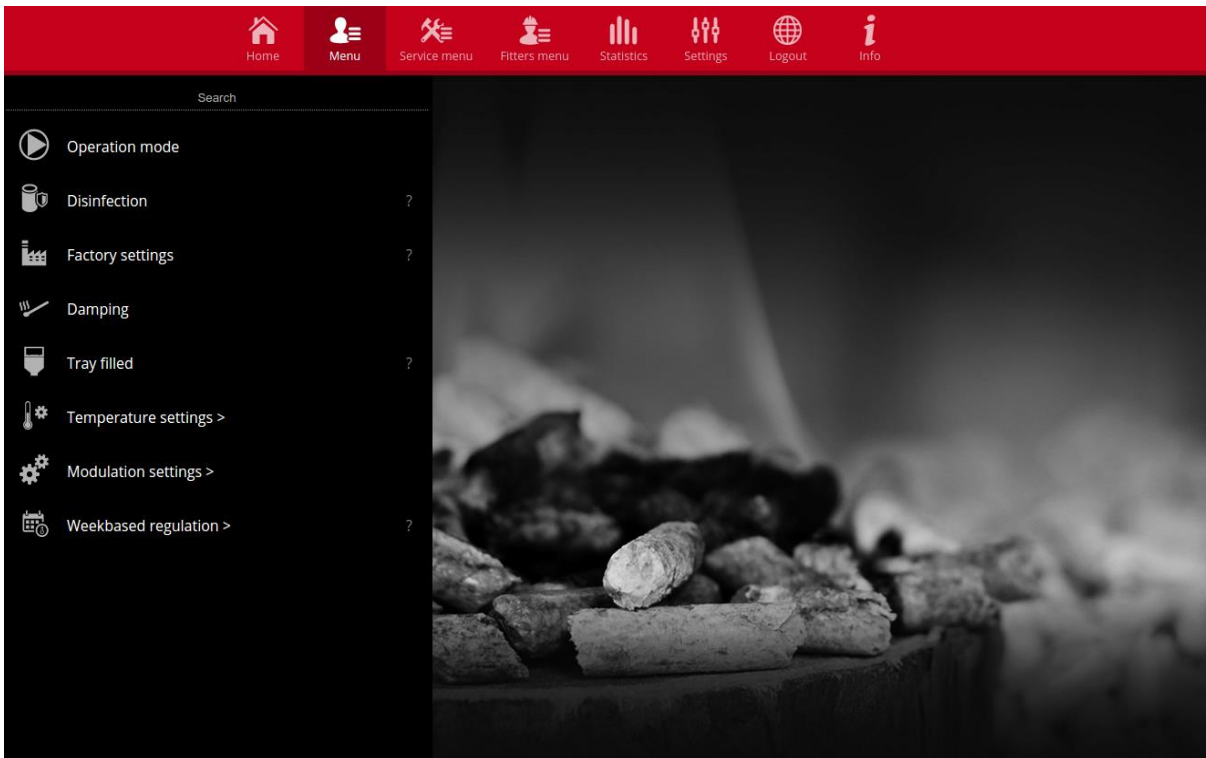
Screen print showing sample Home tab with tiles.

The user may adjust the visual appearance of the homepage to his needs, changing the layout and order of the tiles, or removing the ones which they do not need. These changes can be made in the tab *Settings*.

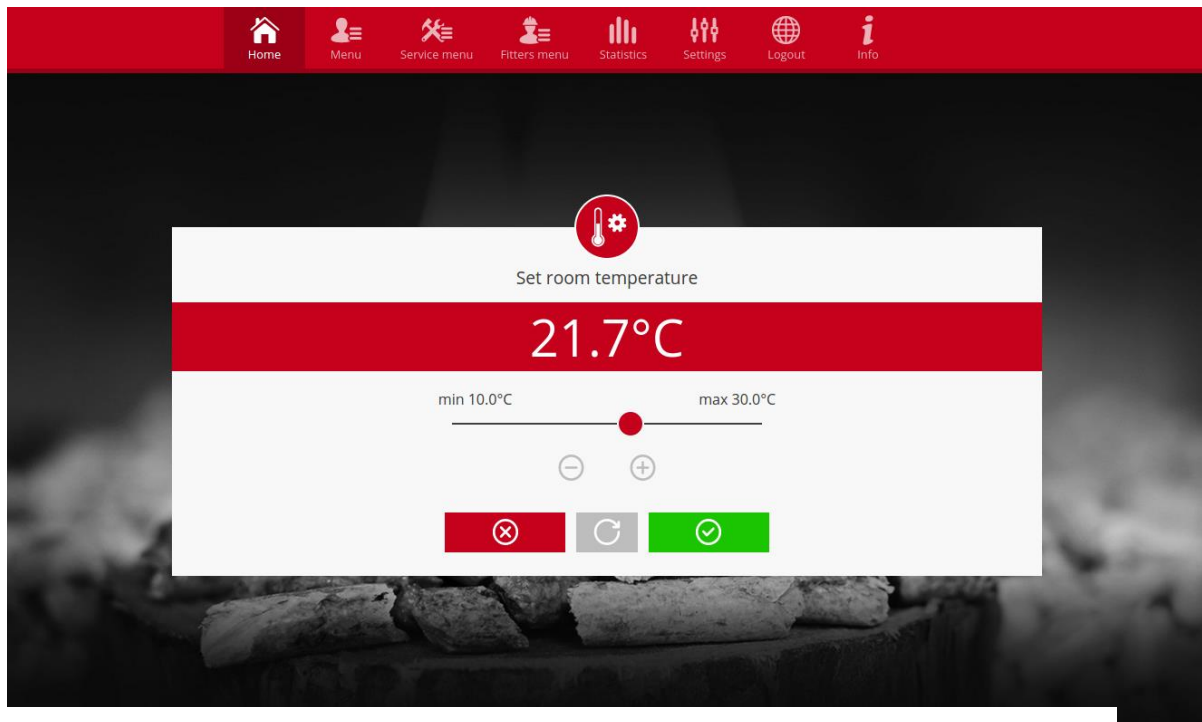


## IV c) Changing the Working Parameters of the Main Controller

The subsequent tabs on the website contain the parameters of the main controller. The menu structure is consistent with the structure of the main controller menu.



Screen print showing sample tab containing the main menu parameters.



Screen print showing sample setting changes.

## IV.d) Statistics

In the Statistics tab, the user can view the temperature chart for different time frames: day, week or month. He can also view statistics from the previous months:



Screen print showing sample temperature chart.

## V. Configuration of the Module with the old Controller

### Installation of the Module with the Controller

The EU-505 module cooperates with controllers from TECH company, equipped with RS communication and appropriate software. After the module has been connected correctly, the Internet module should be turned on in the main controller installer menu (*Menu >> Installer menu >> Internet module >> Activate*), and then >> *the IP address* should be confirmed. After a moment, the IP address of the module will appear, which will be needed in the subsequent installation, therefore it should be written down on a piece of paper. (e.g. **192.168.1.192**)

### V.a) Logging in to the Module (LAN)

1. Open a web browser window,

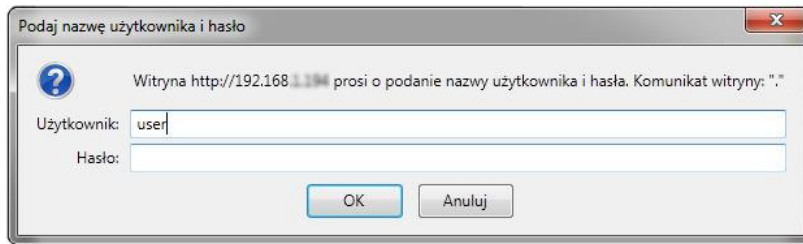


enter the IP address written down before (e.g. **http://192.168.1.192** ) and accept it by clicking **ENTER**.

2. The login window will open. Enter a default name (username: **user**),

## EU-505

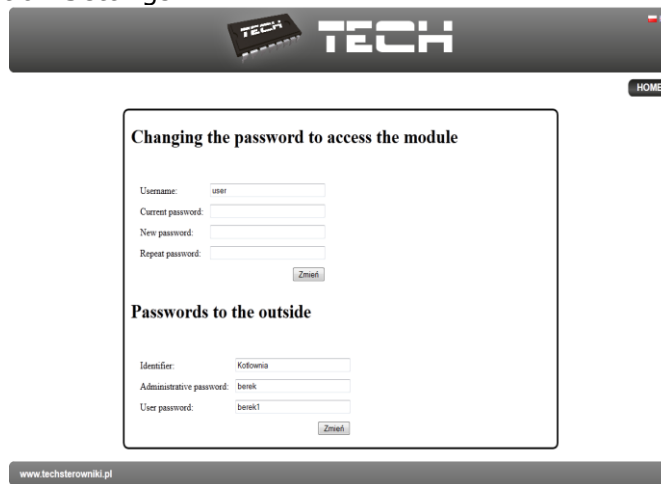
leave the password field empty and click **OK**.



After these steps are completed, the user will be logged in to the module through local area network.

### V.b) Protection Settings

#### 1. Module Protection Settings in LAN.



Set the new user name and password.



After accepting by clicking on **change**, the following message will appear:

#### 2. External Website Registering.

In order to use the module, access to an external website needs to be configured. For this purpose, fill in the following fields: ID and passwords.

### Passwords to the outside

Identifier:	<input type="text" value="Kotłownia"/>
Administrative password:	<input type="text" value="berek"/>
User password:	<input type="text" value="berek1"/>
	<input type="button" value="Register"/>

Setting the **Administrative Password** allows free change of the set temperatures (edit), while **User Password** entitles to inspect the temperature without the ability to make changes.

**! Note!**

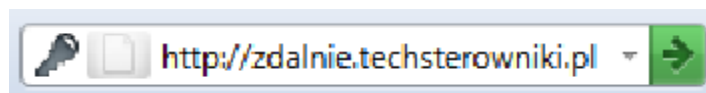
Subsequent changes of the external website ID will not be possible.

After accepting by clicking on **Register**, the following message will appear:



### V c) Logging in to the Module (external website)

Logging in to the EU-500 module from an external website is conducted by entering **http://zdalnie.techsterowniki.pl** in to the window browser.



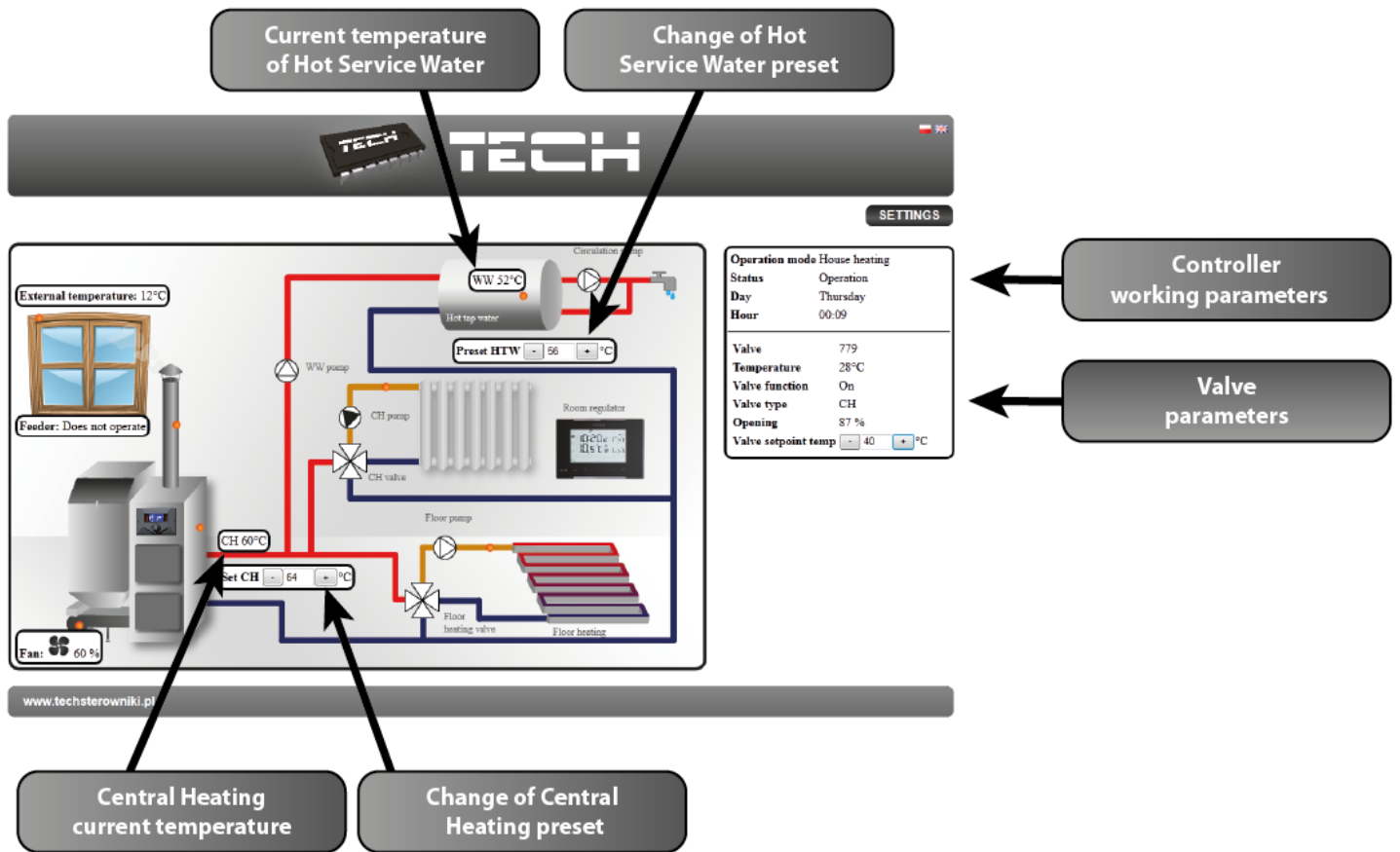
Accept and after a moment a welcome window will appear.

Enter the previously set login and password in this window and click **log in**.



# EU-505

After a moment, the module screen will appear.



## ⚠ Note!

In some cases, Internet Explorer limits the possibility of starting **ActivX** scripts and formats, which are necessary to display the data downloaded from the module. Therefore, it is recommended to start-up this option in the web browser by right-clicking a notification bar on "allow blocked content".

To help ensure safety, Internet Explorer restricted the possibility of starting ActiveX scripts and formats for this website that could obtain access to this computer. Click here to enter more options... **X**

Allow blocked content
What is the hazard?
Information bar help

## V.d) Manual Configuration of the Module

One of the methods of configuring the controller with a local network is setting the access parameters manually.

In this case, the user needs to check the settings of the local network.  
The user will need the following parameters:

**IP Address**

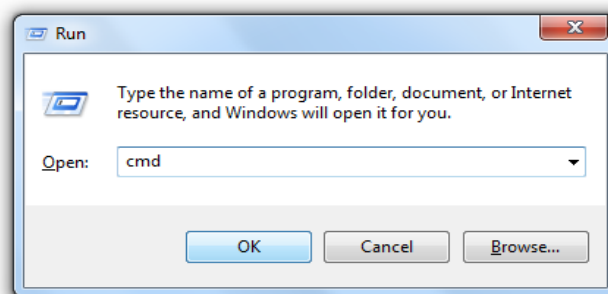
**IP Mask**

**Gate Address**

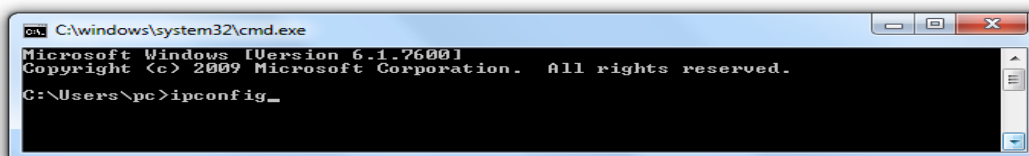
**DNS Address**

### Downloading Data

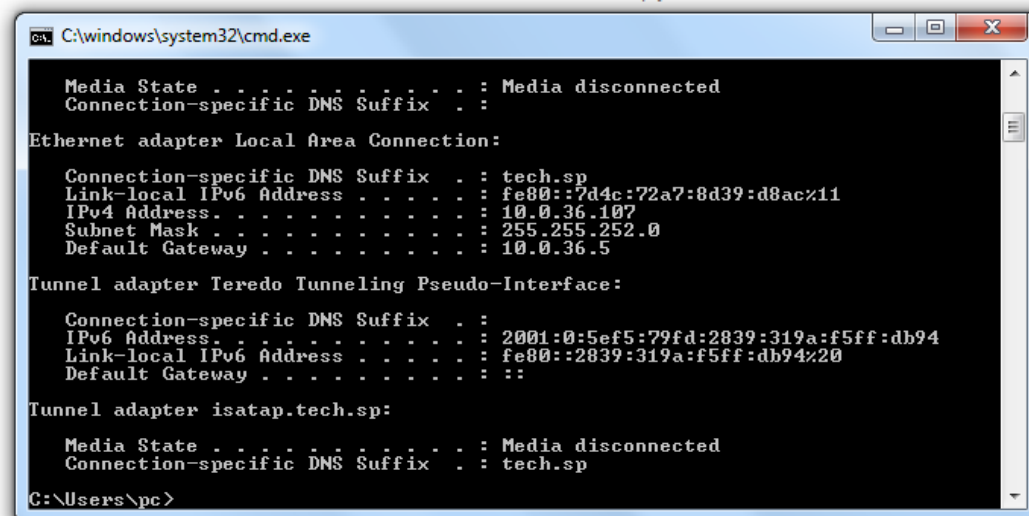
1. Click Start on the menu, then Open (or combination **WIN+R**)  
**c:\Windows\system32\cmd.exe**



2. Enter **cmd** and click **OK**
3. A console window will open.



4. Enter **ipconfig** and press **Enter**.



- In most cases, **the DNS Address** is the same as **the Gate Address**. To be sure, check by entering the command **ipconfig/all**

```

C:\windows\system32\cmd.exe
Connection-specific DNS Suffix . : 
Description . . . . . : Atheros AR9285 Wireless Network Adapter
Physical Address. . . . . : B4-82-FE-3F-A8-F9
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix . : tech.sp
    Description . . . . . : Realtek PCIe FE Family Controller
    Physical Address. . . . . : 00-24-54-5E-42-AA
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::7d4c:72a7:8d39:d8ac%11(Preferred)
    IPv4 Address. . . . . : 10.0.36.107(Preferred)
    Subnet Mask . . . . . : 255.255.252.0
    Lease Obtained. . . . . : 09 March 2012 08:34:03
    Lease Expires . . . . . : 09 March 2012 13:34:03
    Default Gateway . . . . . : 10.0.36.5
    DHCP Server . . . . . : 10.0.36.5
    DHCPv6 IAID . . . . . : 234886007
    DHCPv6 Client DUID. . . . . : 00-01-00-01-12-A7-0C-77-00-13-77-BB-8E-EA

    DNS Servers . . . . . : 10.0.36.5
    Primary WINS Server . . . . . : 10.0.36.5
    NetBIOS over Tcpip. . . . . : Enabled

Tunnel adapter Teredo Tunneling Pseudo-Interface:
  
```

## Controller Configuration

After writing down all necessary data, proceed to controller settings.

Enter the settings of the Internet module in the boiler controller (menu>>installer menu>>Internet module).

- The parameter **DHCP** (*Dynamic Host Configuration Protocol*) must be turned off.
- The IP address** should be set as unique for the network, changing the numbers of the IP address to any other numbers, e.g. 192.168.1.200. When necessary, it is possible to check whether the IP address is available by entering in to cmd.exe the command **ping 192.168.1.200**.

```

C:\windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

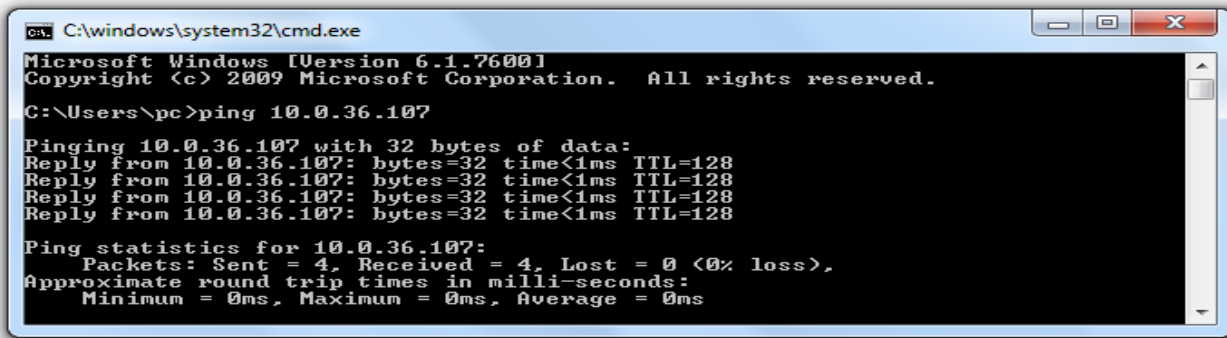
C:\Users\pc>ping 192.168.1.200

Pinging 192.168.1.200 with 32 bytes of data:
Reply from 109.95.144.91: Destination host unreachable.
Reply from 109.95.144.91: Destination host unreachable.
Reply from 109.95.144.91: Destination host unreachable.
Reply from 109.95.144.91: Destination host unreachable.

Ping statistics for 192.168.1.200:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
  
```

If a "Target host is unavailable" message will appear, the address is available and can be used.

If feedback is returned, another **IP address** has to be used.



```

C:\windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\pc>ping 10.0.36.107

Pinging 10.0.36.107 with 32 bytes of data:
Reply from 10.0.36.107: bytes=32 time<1ms TTL=128
Reply from 10.0.36.107: bytes=32 time<1ms TTL=128
Reply from 10.0.36.107: bytes=32 time<1ms TTL=128
Reply from 10.0.36.107: bytes=32 time<1ms TTL=128

Ping statistics for 10.0.36.107:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
  
```

3. **MAC Address is default:** **12:12:12:12:12:18** and must be unique.
4. **Set IP mask, Gate address and DNS address** as in the downloaded data.
5. After correctly configuring the controller, the user may proceed to the beginning of instruction IV. Logging in to the module (LAN), entering the previously obtained **IP address** in the web browser.

## VI. Required network settings

For the Internet module to work properly, it is necessary to connect the module to the network with a DHCP server and an open port 2000.

After connecting the Internet module to the network, go to the module settings menu (in the master controller).

If the network does not have a DHCP server, the Internet module should be configured by its administrator by entering appropriate parameters (DHCP, IP address, Gateway address, Subnet mask, DNS address).

1. Go to the Ethernet module settings menu.
2. Select "ON".
3. Check if the "DHCP" option is selected.
4. Wait for a while (approx. 1 min) and check if an IP address has been assigned. Go to the "IP address" tab and check if the value is different from 0.0.0.0 / -.-.-.-.
  - a) If the value is still 0.0.0.0 / -.-.-.-, check the network settings or the Ethernet connection between the Internet module and the device.
5. After the IP address has been assigned, start the module registration in order to generate a code which must be assigned to the account in the application.



**VII. TECHNICAL DATA**

<b>No.</b>	<b>Specification ver. 10Mb/s</b>	
1	Power supply	5V DC
2	Maximum Power Consumption	200 mA
3	Transmission	IEEE 802.3 10 Mb/s
4	Network Connection	RJ 45 Connector
5	Controller Connection	RJ12 Connector

<b>No.</b>	<b>Specification ver.100Mb/s</b>	
1	Power Supply	5V DC
2	Maximum Power Consumption	200 mA
3	Transmission	IEEE 802.3 100 Mb/s
4	Network Connection	RJ 45 Connector
5	Controller Connection	RJ12 Connector

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