Power supply device

UEP5-2 rev.B

User manual

Version 1.1.0

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1 INTRODUCTION

This manual is intended to introduce the principles of operation and operating rules of the UEP5-2 rev.B power supply unit (hereinafter referred to as UEP).

Checking the technical condition, setting up and maintaining UEP must be carried out by specialists authorized to work in electrical installations with a voltage of up to 1000 V.

When working with UEP, applicable safety regulations for the operation of electrical systems must be complied with.

NOTES AND WARNINGS

Notes contain important information, tips, or recommendations on device operation and configuration.

Warnings are used to inform the user about situations that could harm the device or the user, cause the device malfunction or lead to data loss.

2 PRODUCT DESCRIPTION

2.1 Purpose of UEP5-2 rev.B

The UEP5-2 rev.B device is designed to provide power to telecommunications equipment manufactured by Eltex or other manufacturers with a rated input voltage of 48 V DC and a power of up to 3 kW (60 A), as well as to charge a lead-acid battery (hereinafter referred to as the battery).

2.2 Specifications

Technical specifications of UEP5-2 rev.B are shown in the table below.

Table 1 — UEP5-2 rev.B technical specifications

Parameter	Value
Maximum input voltage range	176–265 V AC
Nominal input voltage range	200–240 V AC
Input frequency	47–63 Hz
Power factor	0.89
Nominal output voltage	-48 V DC
Output voltage range	-40..-58 V DC
Maximum output current (when powered by battery)	30 A
Maximum output current (when powered by AC)	60 A
Maximum output current via the "LOAD1" line	30 A
Maximum output current via the "LOAD2" line	30 A
Maximum input/output current via the "BAT" line	30 A
Efficiency	No less than 90 %
Form factor	19” 1U
Mounting type	Rack
Operating temperature	From -5 to +50 °C
Storage temperature	From -40 to +70 °C
Operating humidity at +25 °C	Up to 80%
Dimensions (W × H × D)	UEP5-2 rev.B power supply device — 440 × 44 × 280 mm MP54831 replaceable power module — 106 × 43 × 259 mm UEP5-MK2 replaceable control module — 106 × 43 × 212 mm
Weight	Device without modules — 3.4 kg MP54831 replaceable power module — 1.5 kg UEP5-MK2 replaceable control module — 0.7 kg Fully equipped device — 7.1 kg
Number of control modules in the device	1
Number of power modules in the device	2

UEP features:

- hot-swapping of the power module and the control module without disconnecting the load supply and de-energizing UEP5-2 rev.B;
- battery connection;
- connection of two load lines, power supply to consumers with any type of load;
- simultaneous power supply of the load and battery charging at constant buffer voltage;
- battery protection from deep discharge. Battery cut-off voltage 43.4±0.5 V;
- protection of the device outputs from short circuits at any of the rectifiers;
- control of parameters (UEP output voltage, battery voltage, load current, battery charge current, output current of each power module) and setting operating modes via CLI or web interface;
- definition of the MP54831 power module installation slot.

2.3 Product structure

UEP has a modular structure. The main element is a 19" 1U euro rack, which can be equipped with up to two MP54831 power modules rated for a maximum current of 30 A each.

2.4 Design

UEP is a power supply device in a standard 19” 1U form factor.

2.4.1 Front panel of the device

The front panel of the device is shown in the figure below.

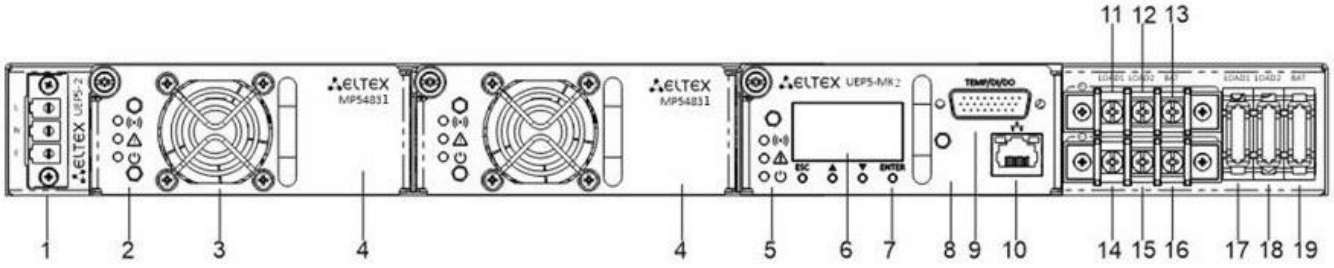


Figure 1 — UEP5-2 rev.B front panel

The following connectors, light indicators, and controls are located on the front panel of the device.

Table 2 — Description of the front panel connectors, indicators, and controls

#	Front panel element	Description
1	***L N E***	Connector for power supply
MP54831 module operation indication		
2		MP54831 module failure (deviations from the normal operation of the device) detection indicator (red)
		MP54831 module failure (deviations from the normal operation of the device) detection indicator (orange)
		MP54831 module normal operation indicator (green)
3	***No label***	Embedded cooling fan
4	***No label***	Position with the MP54831 module installed
UEP5-MK2 module operation indication		
5		UEP5-MK2 module failure (deviations from the normal operation of the device) detection indicator (red)
		UEP5-MK2 module failure (deviations from the normal operation of the device) detection indicator (orange)
		UEP5-MK2 module normal operation indicator (green)
6	***No label***	Display
7	***No label***	Controls of the "Display" menu (detailed description in the

		"Configuring the device via display" section)
8	***No label***	Position with the UEP5-MK2 module installed
9	***TEMP/DI/DO***	Connector for temperature sensor, DI and DO contacts
10		RJ-45 connector for Ethernet network
Connection terminals		
11	***LOAD1***	Connection terminal for the positive pole of the load (grounding)
12	***LOAD2***	Connection terminal for the positive pole of the load (grounding)
13	***BAT***	Connection terminal for the positive pole of the battery (grounding)
14	***LOAD1***	Connection terminal for the negative pole of the load
15	***LOAD2***	Connection terminal for the negative pole of the load
16	***BAT***	Connection terminal for the negative pole of the battery
Connectors for fuses		
17	***LOAD1***	Connector for a fuse in a load circuit (fuse rating 40 A)  **Fuses are replaced only when the UEP power is turned off.**
18	***LOAD2***	Connector for a fuse in a load circuit (fuse rating 40 A)  **Fuses are replaced only when the UEP power is turned off.**
19	***BAT***	Connector for a fuse in a load circuit (fuse rating 40 A)  **Fuses are replaced only when the UEP power is turned off.**

2.4.2 Connector pinout

Connector features:

- 6 isolated digital inputs
- 6 isolated digital outputs with maximum switching load of 1 A, 30 V DC, 0.3 A, 125 V AC
- Contacts for the battery temperature sensor

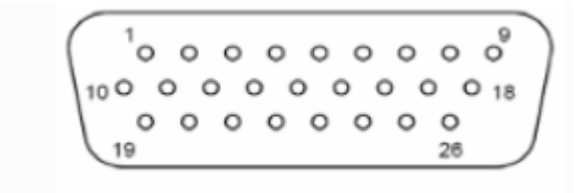


Figure 2 — Front panel connector pinout

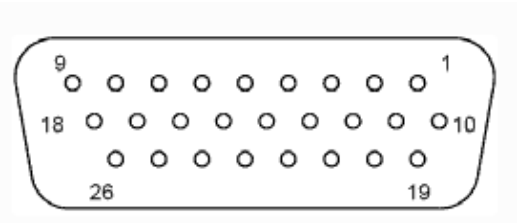


Figure 3 — Mating part connector pinout

Table 3 — Front panel and mating part connector pinout

DI	DI1		DI2		DI3		DI4		DI5		DI6	
PIN	1	2	3	4	5	6	7	8	9	18	16	17

DO	DO1		DO2		DO3		DO4		DO5		DO6	
PIN	15	14	13	12	11	10	19	20	21	22	23	24

TERM	TERM	
PIN	25	26

2.4.3 Rear panel of the device

The rear panel of the device is shown in the figure below.

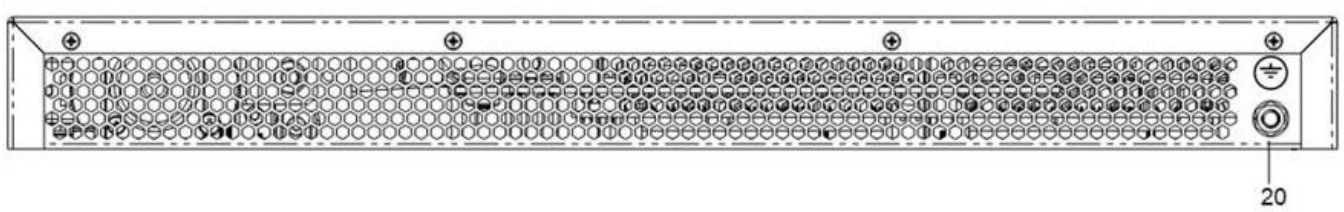


Figure 4 — UEP5-2 rev.B rear panel

Table 4 — Description of the rear panel connectors

#	Rear panel element	Description
20	⏚	Earth bonding point of the device

2.4.4 Side panels of the device

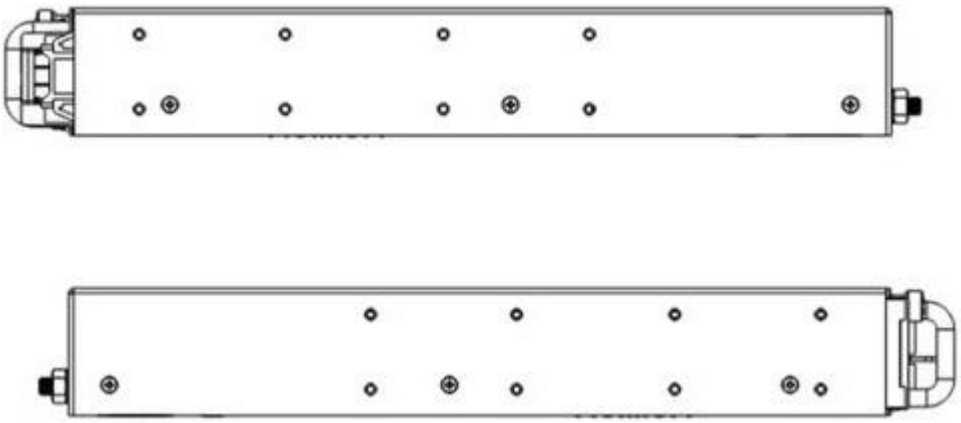


Figure 5 — UEP5-2 rev.B side panels

Holes for mounting brackets are located on the side panels of the device.

2.5 Light indication

The current status of the device is displayed using the LED indicators located on the front panel. The list of LED indicator states is given in the table below.

Table 5 — Light indication of the device status

LED indicator	LED state	Device Status
MP54831		
((•))	solid red	Critical failure: – External power supply voltage 220 V out of range (10 V < ACV < 180 V or ACV > 274 V); – MP is installed, but does not work; – The fan speed on MP is lower than the permissible value; – The voltage has exceeded the permissible limits (V < 40 V or V > 62 V); – The current has exceeded the permissible limits (I > 30 A).
	off	There are no failures.
⚠	solid orange	Warning: – External power supply voltage 220 V out of range (10 V < ACV < 180 V or ACV > 274 V); – MP is installed, but does not work; – The fan speed on MP is lower than the permissible value; – The voltage has exceeded the permissible limits (V < 40 V or V > 62 V); – The current has exceeded the permissible limits (I > 30 A).
	off	There are no failures.
⏻	solid green	Normal operation.
	off	MP is installed, but does not work.

UEP5-MK2			
	solid red		Critical failure: – Device initialization error; – No connection to MCU; – Configuration application error.
	blinking at a frequency of 1 Hz		Critical failure: – Battery power and battery are close to full discharge.
	off		There are no failures.
	solid orange		Warning: – Battery is missing; – High battery temperature (if the sensor is connected).
	blinking at a frequency of 1 Hz		Warning: – Battery powered.
	off		No warnings.
	solid green		Normal operation.
	blinking at a frequency of 1 Hz		Firmware upgrade is in progress.
	off		UEP5-MK2 is installed, but does not work.
	green LINK/ACT indicator	off	The connection has not been established.
		solid	10 Mbps connection is established.
		blinking	Data transfer is in progress.
	amber	off	10 Mbps connection is established.
		solid	100 Mbps connection is established.

2.6 Device and operation

2.6.1 The case with the UEP5-2 rev.B board installed is equipped with MP54831 power modules and the UEP5-MK2 control module.

2.6.2 Each power module is a converter from ~220 to 43—57 V with a maximum power of up to 1500 Watts with the ability to remotely control the output voltage. All power modules operate on a common output bus. The control of the output voltage and the parameters of UEP is carried out by a controller installed in the UEP5-MK2 control module.

2.6.3 The UEP5-MK2 control module is a microprocessor device capable of measuring the output voltage of the UEP, the battery voltage, the load current, the battery charge current, the output current of each power module, the input voltage, the temperature, the rotation speed of the cooling fans inside each power module and control the operation of the power modules. To provide UEP management and monitoring functions, the controller module can be connected to an IP network using a standard Ethernet connector located on the front panel of the module. At the same time, configuration and monitoring of UEP is possible using web interface, CLI, display or SNMP.

In the remote control mode, it is possible to obtain information about the battery voltage, load and charge currents, output currents of the power modules, temperature, and rotation speed of the cooling fans inside each power module. It is possible to remotely set the output voltage and maximum battery charge current.

2.6.4 The battery current release installed on the UEP5-2 rev.B board is a device for protecting the battery from deep discharge. It disconnects the battery from the load when the battery voltage is below 43.4±0.5 V.

2.7 Delivery package

UEP5-2 rev.B is supplied with:

- Power supply device UEP5-2 rev.B:
- Module cover;
- MP54831 replaceable power module (specified when ordering);
- UEP5-MK2 replaceable control module (specified when ordering);
- 19” rack mounting kit.

3 INSTALLATION AND CONNECTION

This section describes the procedures for installing equipment in a rack, replacing power modules and fuses.

3.1 Device rack mounting

The delivery package includes support brackets for rack installation and mounting screws to fix the device case on the brackets. There are six mounting holes on the brackets for different mounting options, which allow adjusting the distance between the front panel and the door of the server rack (figures 6–7). To install the brackets, select one of the mounting options:

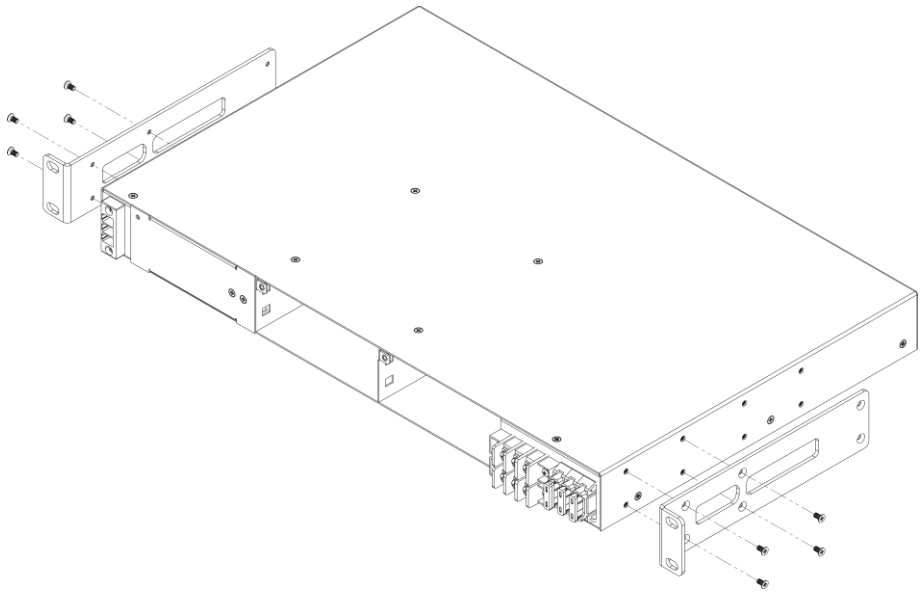


Figure 6 — Bracket mounting option 1

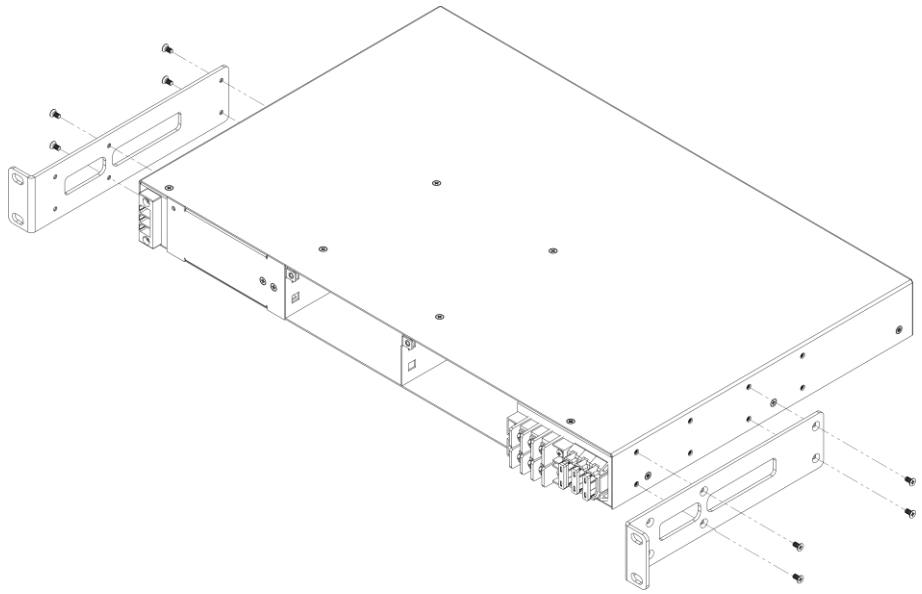


Figure 7 — Bracket mounting option 2

To install the device in a rack:

1. Select the desired bracket positions shown in the pictures above. Align four mounting holes in the support bracket with the corresponding holes in the side panel of the device. Use a screwdriver to screw the support bracket to the case.
2. Repeat step 1 for the second bracket.
3. Align the holes of the brackets with the holes on the front vertical rails of the rack (Figure 8). Use the holes of the same level on both sides of the guides to ensure horizontal installation of the device. Use a screwdriver to attach the device to the rack with screws.

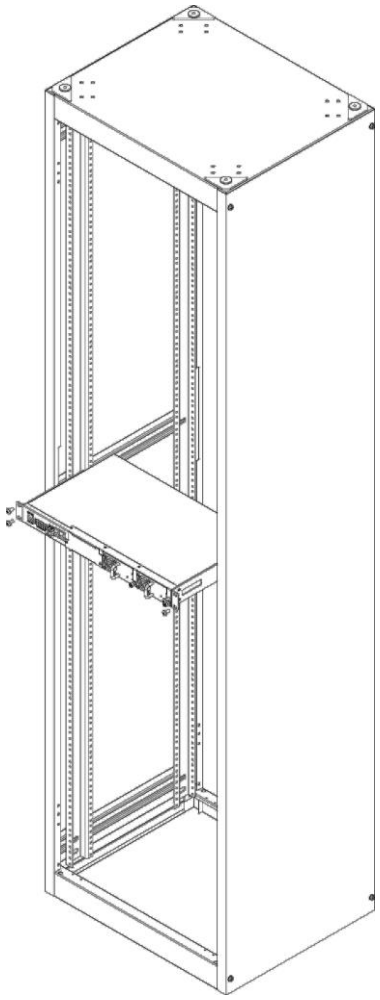


Figure 8 — Device rack mounting

Do not block air vents and fans located on the front panel to avoid components overheating and subsequent device malfunction.

3.2 Mounting of control and power modules

Mounting or replacement of power modules can be performed with the UEP power on.

To mount the module, remove the screws securing the cover panel on the housing (Figure 9), insert the module and secure it (Figure 10, Figure 11).

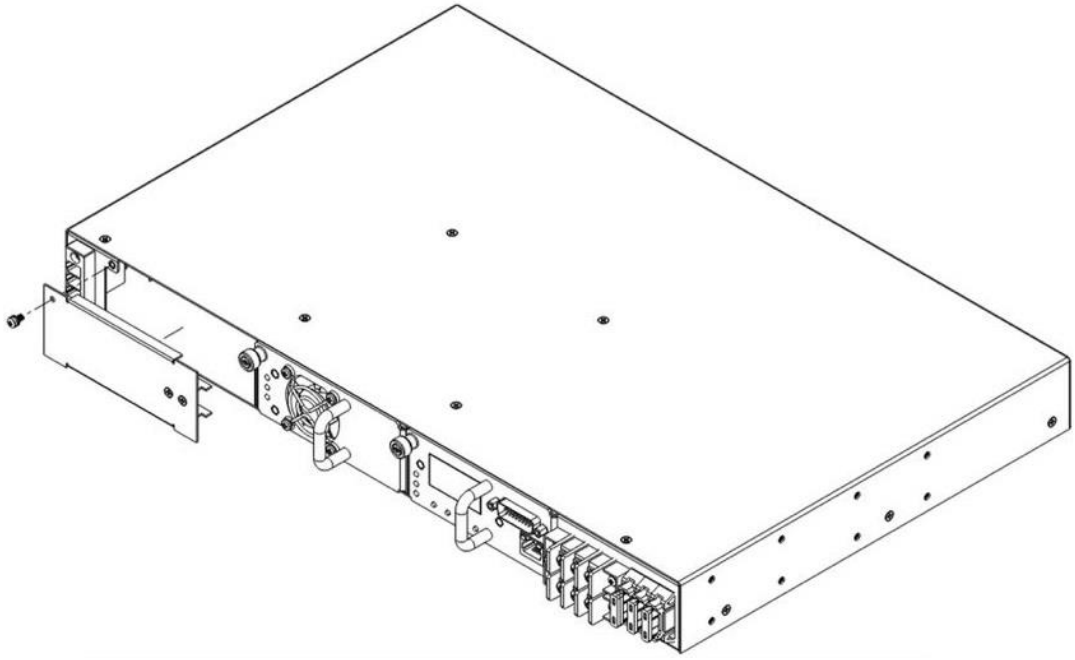


Figure 9 — Removing the cover

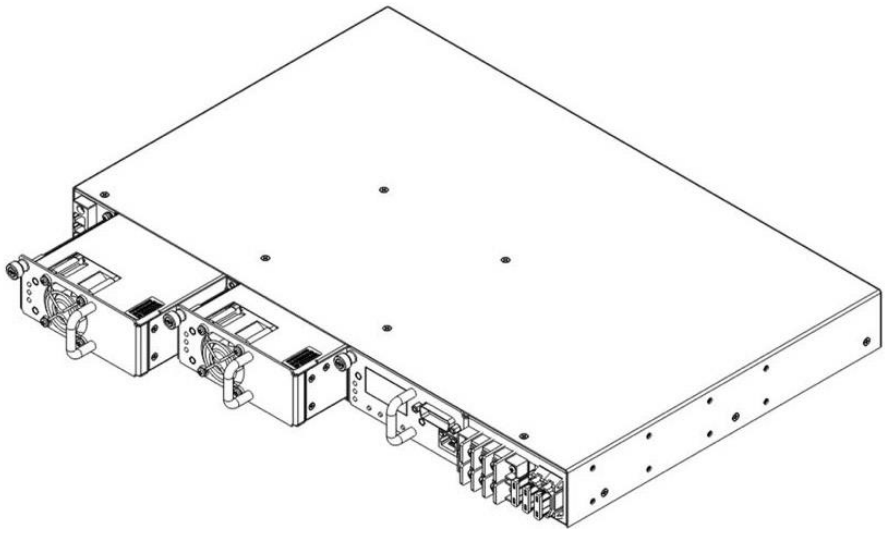


Figure 10 — Mounting power modules

The MP54831 state can be checked by LEDs on the front panel of the module (see section "Light indication") or by diagnostics available via the UEP control interfaces.

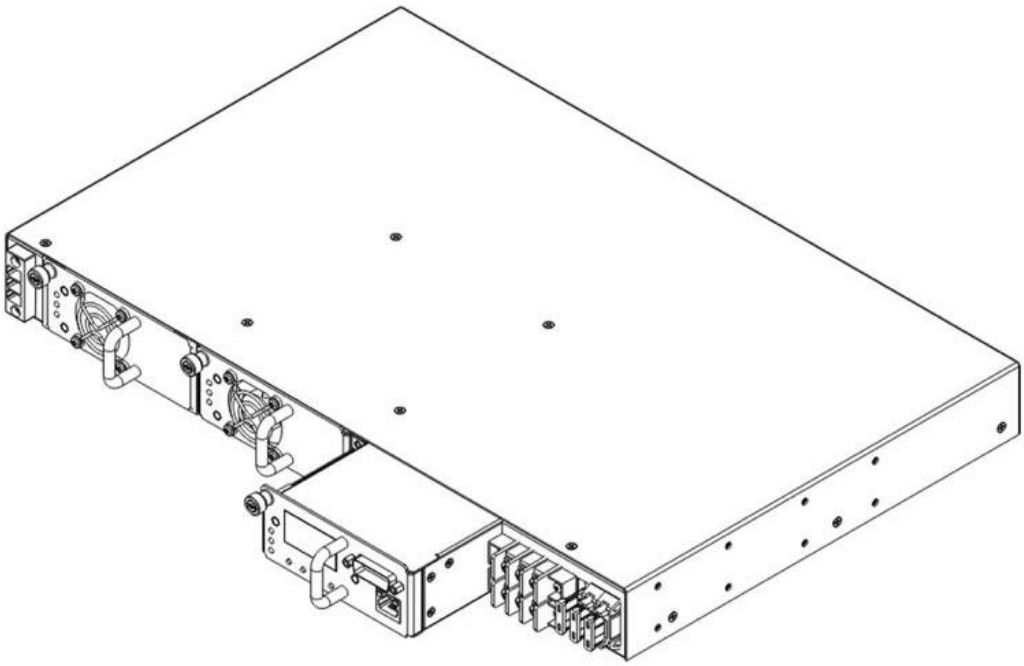


Figure 11 — Control module installation

3.3 Fuse replacement

Mounting or replacement of fuses can be performed only with the UEP power off.

To remove a fuse, it is necessary to pull it towards yourself with effort.

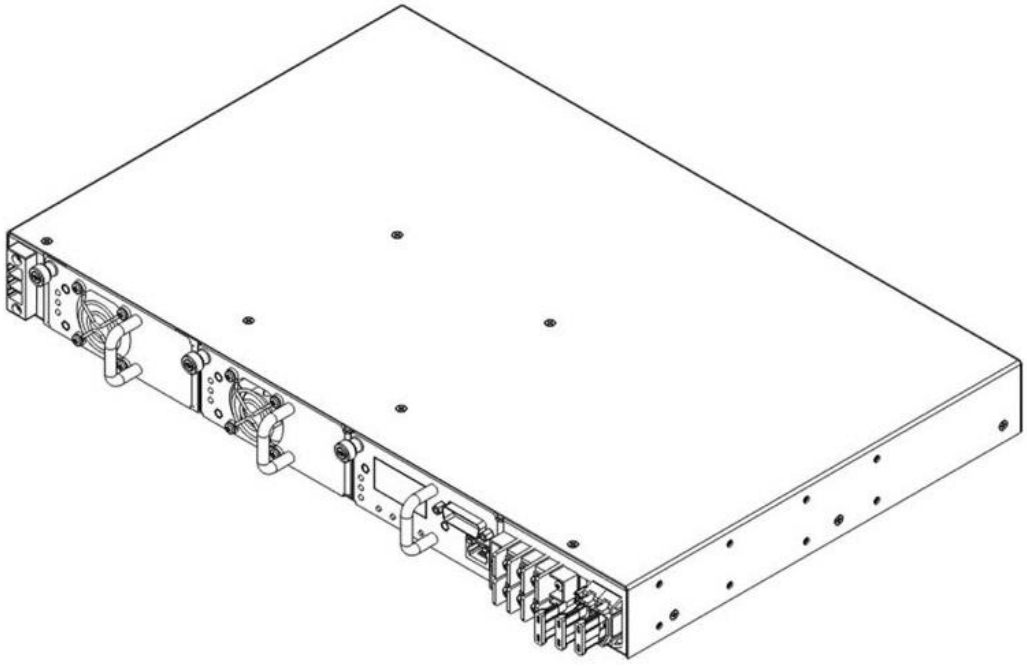


Figure 12 — Fuse replacement

4 PRODUCT USAGE

4.1 Safety regulations

4.1.1 When working with UEP, applicable safety regulations for the operation of electrical systems must be complied with.

4.1.2 UEP5-2 rev.B belongs to Appliance Class I according to IEC 61140.

4.1.3 Checking the technical condition, setting up and maintaining UEP must be carried out by specialists authorized to work in electrical installations with a voltage of up to 1000 V.

4.1.4 Persons operating the system must be trained in the techniques of releasing a person under voltage from electric current, resuscitation breathing techniques, first aid procedures and fire extinguishing methods.

4.1.5 Metal structures must be grounded.

4.1.6 To prevent accidents with maintenance personnel and accidents during the operation of the device, comply with the following safety requirements and precautions:

- replace module boards only when the power supplies are turned off.;
- ground all equipment and appliances operating under high voltage or powered by an alternating current network;
- determine the presence of voltage on power sources, as well as individual circuits of the device, only using measuring instruments.

4.2 Standard UEP5-2 rev.B connection scheme

The standard UEP connection scheme is shown in Figure 11.

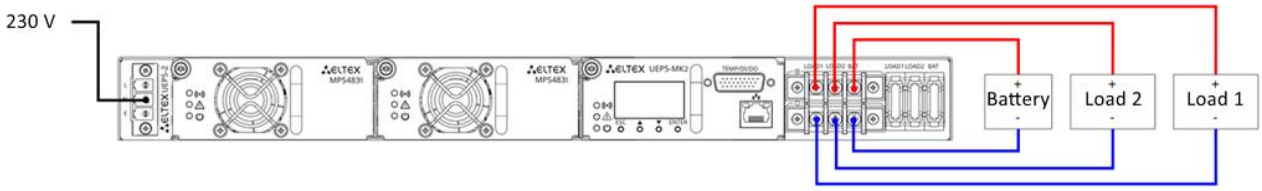


Figure 13 — UEP5-2 rev.B connection scheme

UEP5-2 rev.B is designed to power external loads and a battery with a capacity of up to 1000 watts. This power load is provided when two MP54831 units are installed in UEP.

When connecting equipment with large and medium capacitors on the power bus, it is strongly recommended to use an UEP operating in a buffer with a battery. Otherwise, it may lead to a voltage drop at the UEP output, which will lead to a reboot of the equipment connected to it.

UEP5-2 rev.B has a built-in protection system against external overvoltages in a power network.

The output voltage, the required number of modules and the methods of connecting loads are specified when ordering.

4.3 Connecting devices to UEP5-2 rev.B

To connect the loads and the battery to UEP:

1. Install UEP in the rack;
2. Ground the UEP case;
3. Connect the loads and the battery to the device (when connecting the battery, connect the negative pole of the battery first). It is recommended to use a flexible vinyl wire with a cross section of 2.5 sq. mm or similar for connection;
4. To monitor UEP, connect the device to an Ethernet network (for monitoring via SNMP or WEB) via the Ethernet connector located on the front panel of the device;
5. Connect the power cable;
6. Connect the device to AC power supply;
7. Turn on the device:
   - make sure that MP54831 is running, the green MP54831 indicator should light up;
   - wait for UEP5-MK2 to start (approximately 20-30 seconds), the green indicator should light up;
   - configure UEP.

5 CONFIGURING THE DEVICE VIA DISPLAY

UEP5-MK2 has a display to show device parameters and basic settings.

The display supports English and Russian languages. The default language is Russian. You can configure the language in the display settings menu, as well as in CLI or WEB interface.

The display turns off automatically after a while (5 minutes by default). The display is turned on by pressing any of the control buttons.

Table 6 — Purpose of the buttons

Enter	On the monitoring screen, go to the menu. On the "Menu" screen, go to the corresponding item. In the settings section, apply settings.
▲ ▼	On the monitoring screen, change the current screen. On the "Menu" screen, change the selected item. In the settings section, change the value.
Esc	Go back.

The display shows the device parameters. Use the Up and down buttons to move between the monitoring screens ▼, ▲.

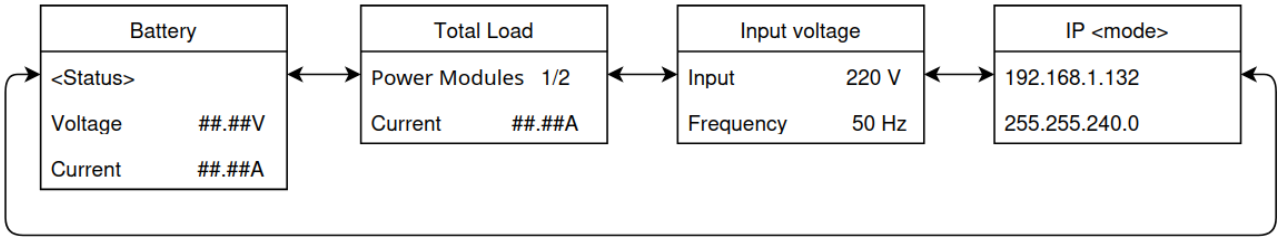


Table 7 — Monitoring

Screen	**Description**	
Battery	Displays the Status, Voltage, and Current of the battery	<Status> – None — missing – Charge – battery charge – Float — battery charged – Discharge — battery discharge – Low — battery discharge, low battery voltage – Testing — battery testing – Training — battery training
Total Load	Displays the number of active Power Modules and the total Current	
Input voltage	Displays the input voltage parameters	
IP DHCP IP static	Displays the current IP address settings	

To go to the "View Menu", press *Enter.*

Table 8 — View menu

Menu item		**Description**
Active Alarms	Active alarms	Displays active alarms on the device.
Input voltage	Input voltage	Displays the input voltage parameters.
Battery	Battery	Displays the Status, Voltage, and Current of the battery.
Power Modules	Power modules	Contains the Unit-1 and Unit-2 items. Displays the Status, Voltage, Current, Fan, Uptime, and S/N of the corresponding power module. Pressing the "Enter" button turns on the flashing of the power module indicator for 5 seconds.
IP	IP	Displays the current IP address settings.
Factory	Factory	Displays the serial number and hardware version of UEP-MK2, the serial number and hardware version of UEP5-2 rev.B.
Date/time	Date/time	Displays the current date and time.
Settings	Settings	Go to the "Settings Menu".

To access the "Settings Menu", you can set a PIN code (by default, **0001**).

Table 9 — Settings menu

Menu item		**Description**
IP Settings	IP settings	Contains settings: – DHCP; – Static IP settings; – Mask settings; – Gateway settings.
Quick Settings	Quick settings	Contains the battery settings: – Capacity;  **When the capacity changes, the battery charge current changes at the rate of 0.1 C (no more than 15 A).** – Voltage; – Current.
Bat Settings	Battery settings	Contains a point for disconnecting/connecting the battery contactor.
Display Settings	Display settings	Contains settings items: – Turn off the display (Sleep timeout); – Return to the main IP screen (Exit timeout); – Display language (Language); – Setting a PIN code request for access to the settings menu (PIN); – PIN setting.
Factory Reset	Settings reset	Allows resetting the device to factory settings.
Reboot	Reboot	Allows rebooting of UEP5-MK2.

6 CONFIGURING THE DEVICE VIA WEB INTERFACE

To get started, open a web browser. Enter the device's IP address set during initial configuration in the browser's address bar and click *Enter.*

Default IP address: 192.168.0.1.

Configuring static IP address, subnet mask, default gateway is described in the "Network" submenu. If the device is successfully detected, a login page will be displayed in the browser.

Enter your username and password.

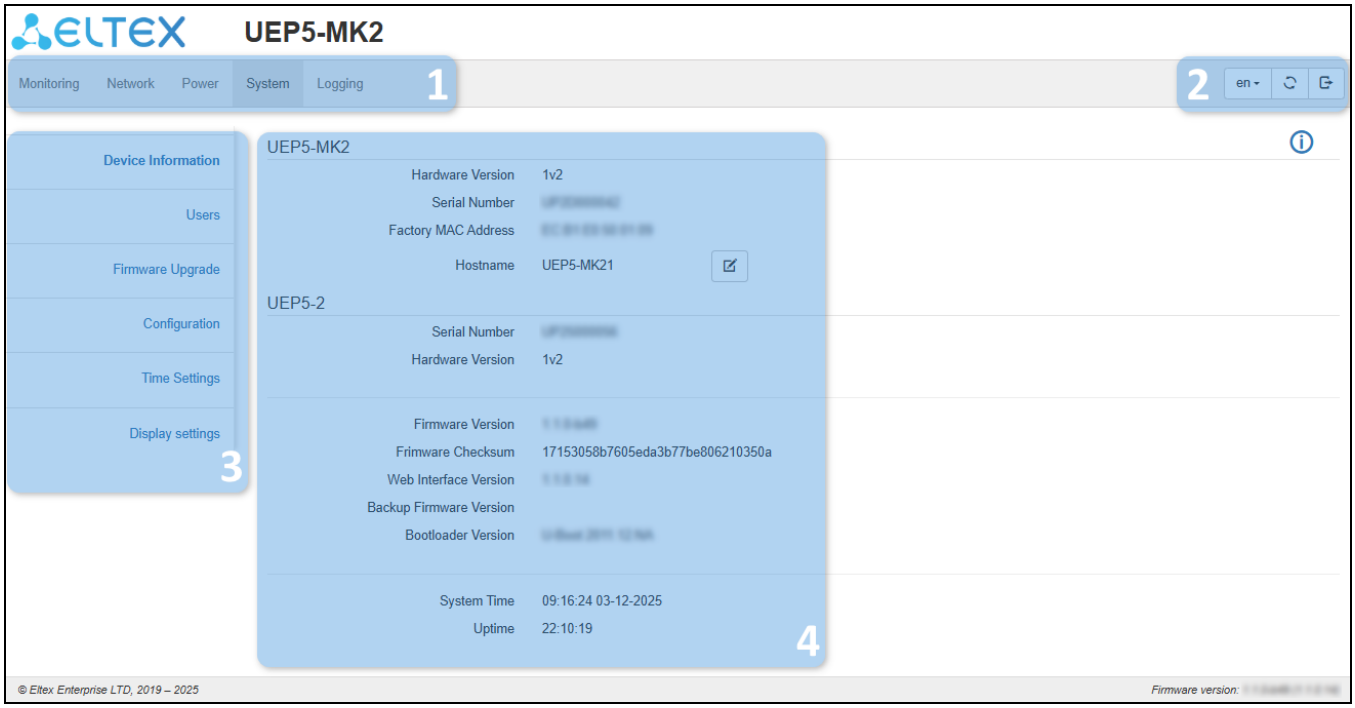
By default, username "admin" and the password "admin" are set.

Click *Log In.* A web interface page will be displayed in the browser window.

To avoid unauthorized access to the device, it is recommended to set a password for the "admin" user (see the "Users" submenu).

6.1 Basic elements of web interface

The figure below shows navigation elements of the web interface.

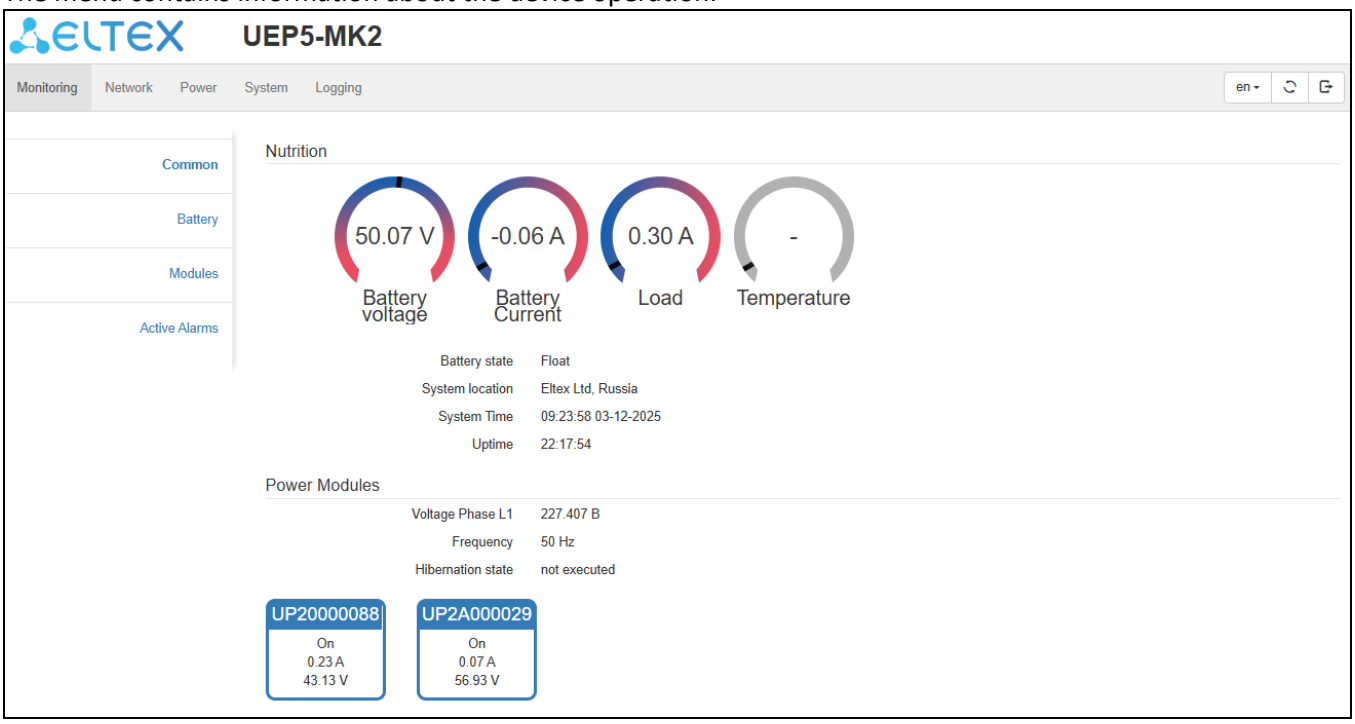


The web interface window is divided into four areas:

1. The upper horizontal menu.
2. A menu for changing the language of the web interface, rebooting, and logging out of the current account. The web interface is available in two languages: Russian "ru" or English "en". To change the language, click the corresponding button located in the upper-right corner.
3. The left vertical tab menu for settings.
4. The main pane of the device settings corresponding to the selected tab from the tab menu (3).

6.2 "Monitoring" menu

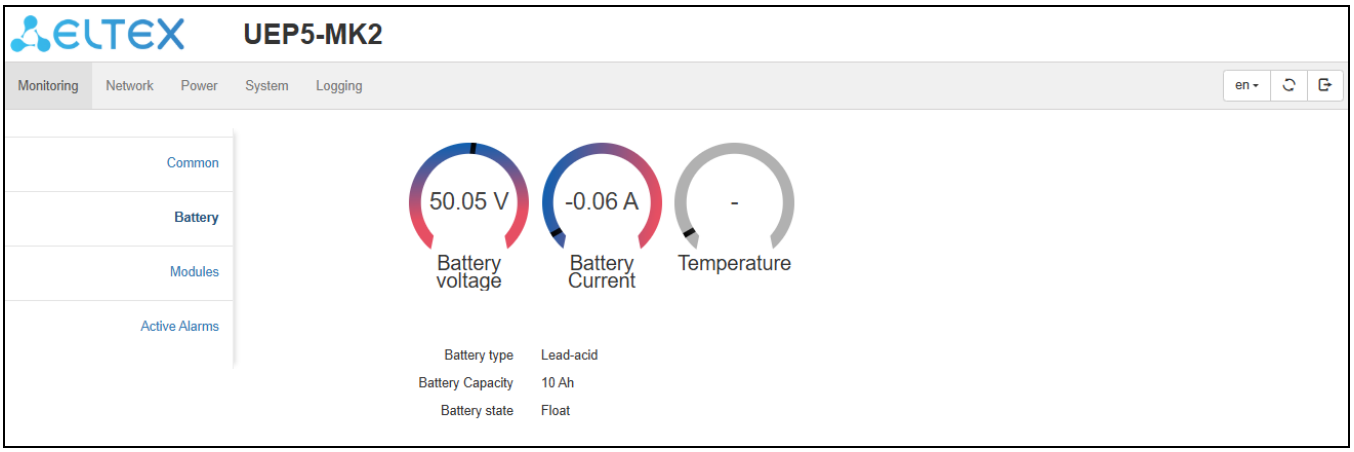
The menu contains information about the device operation.



The page displays the following general information about the device:

- Battery charge/discharge voltage and current;
- Output load;
- Temperature from an external sensor (if connected);
- Battery state;
- System information;
- General information about power modules (connected (On)/not connected (Off), load current, module voltage).

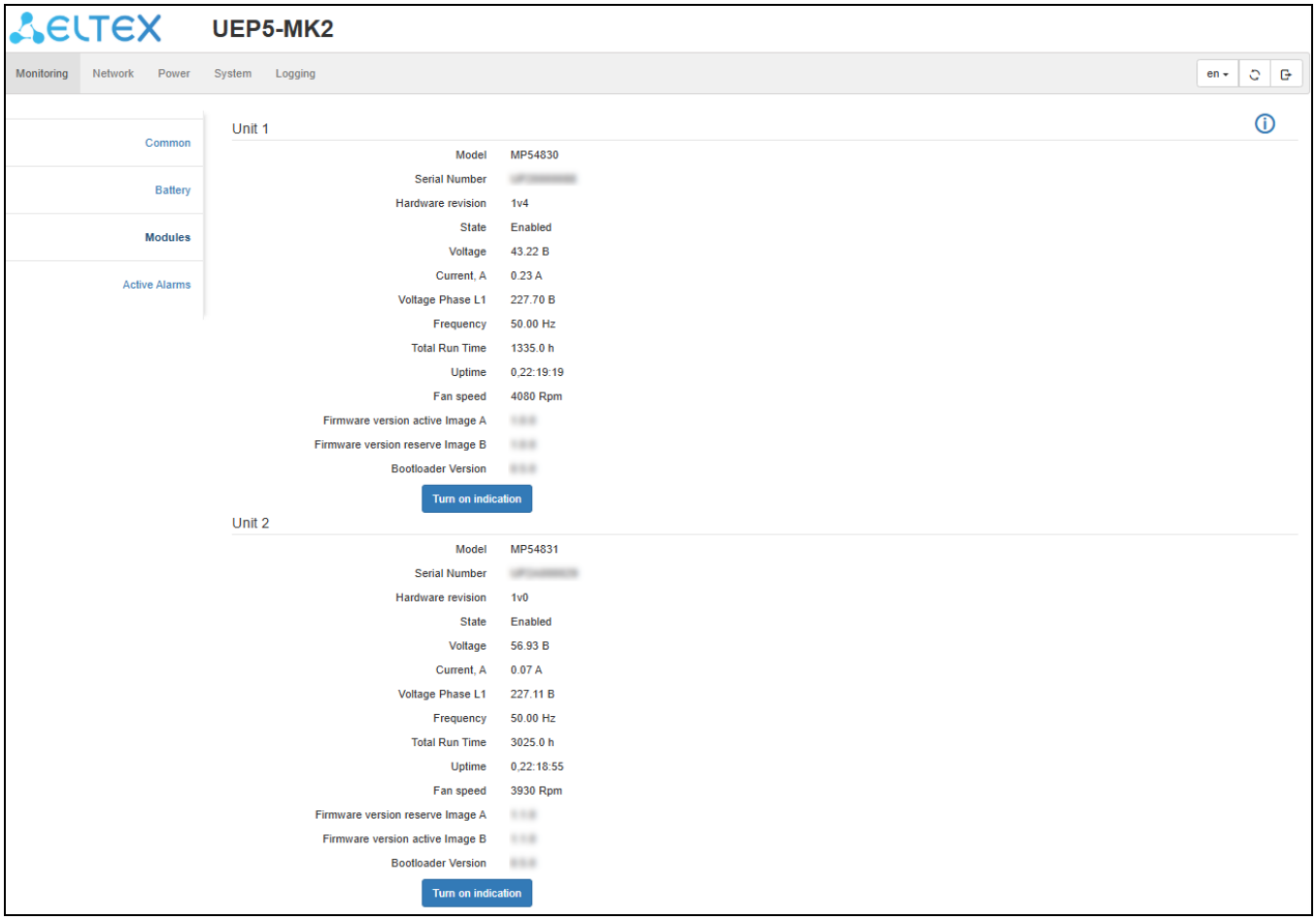
6.2.1 "Battery" submenu



The page displays extended information about the battery:

- Battery charge/discharge voltage and current;
- Temperature from an external sensor (if connected);
- Battery type;
- Battery capacity;
- Battery state.

6.2.2 "Modules" submenu

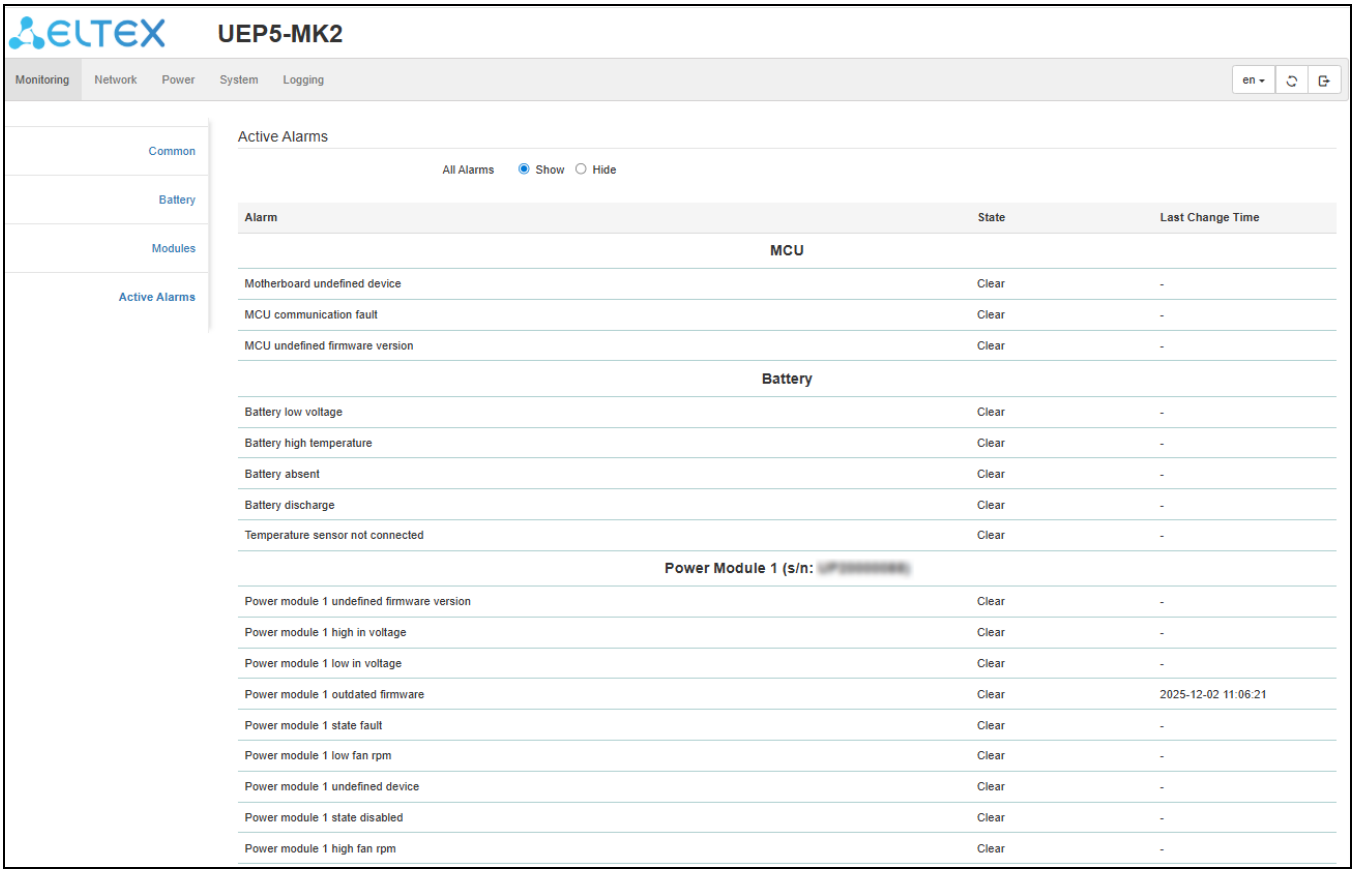


The page displays advanced information about the power modules:

- Model, Serial Number, Hardware revision;
- State of the power module;
- Voltage and Current;
- Total Run Time;
- Bootloader Version.

Pressing the *Turn on indication* button enables power module indication flashing for 5 seconds.

6.2.3 "Active Alarms" submenu

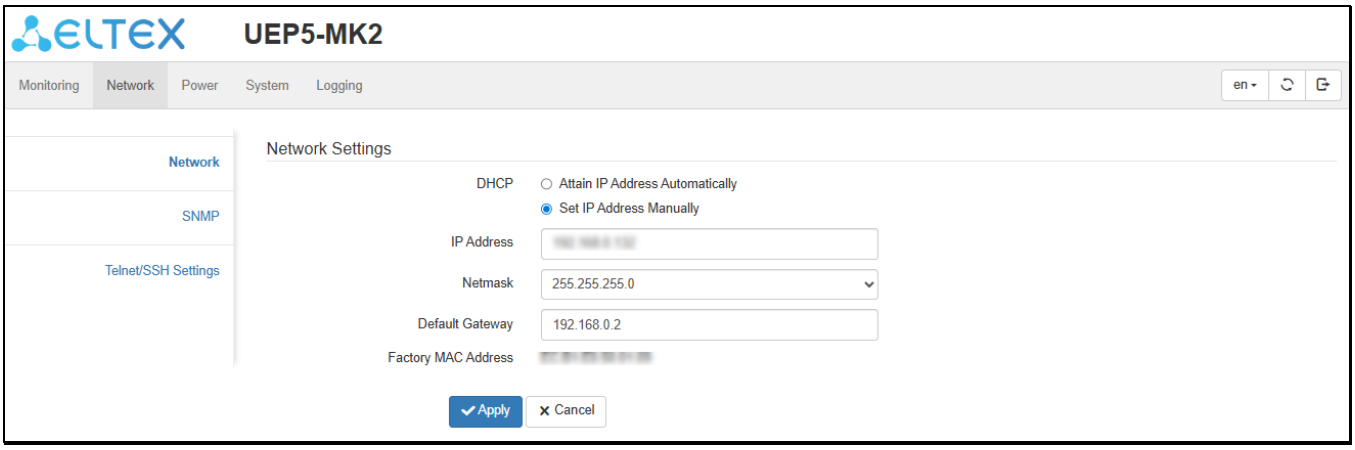


The page displays extended information about active alarms on the device.

6.3 "Network" menu

Network settings of the device are configured in the menu.

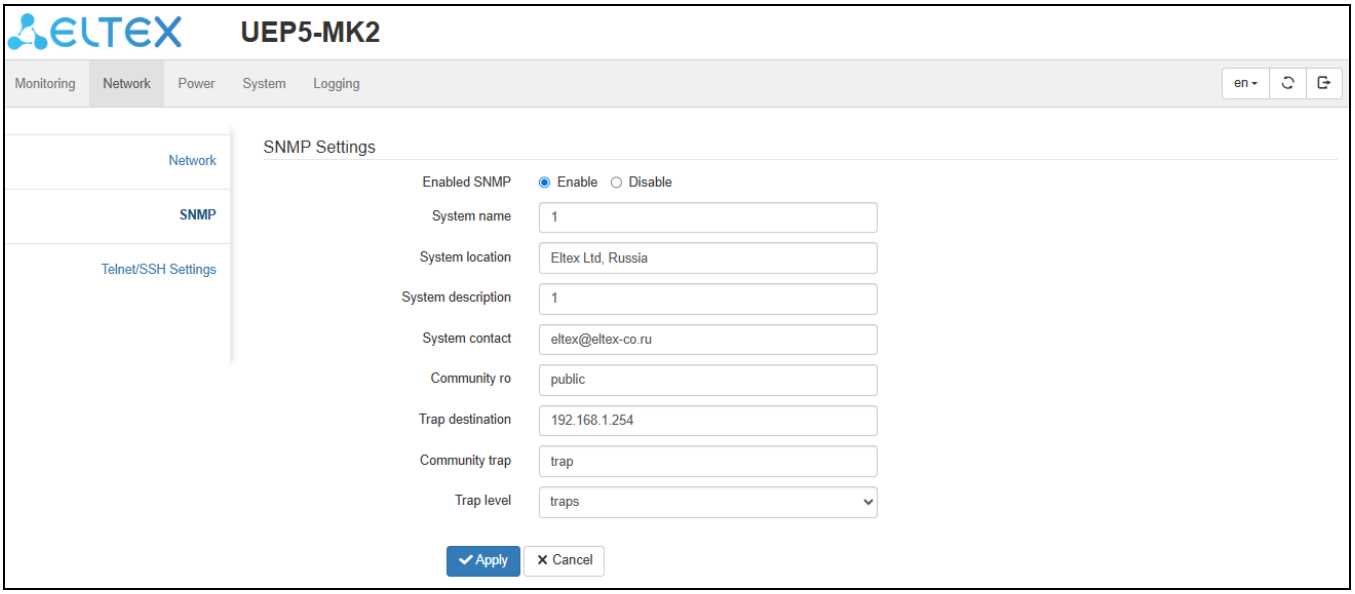
6.3.1 "Network" submenu



The following network parameters are configured in this submenu:

- Network interface operation mode:
  - Attain IP Address Automatically (DHCP). This mode is selected by default;
  - Set IP Address Manually (Static IP).
- IP address — static IP address of the device. The default IP address is 192.168.0.1;
- Netmask — subnet mask. The default mask is 255.255.255.0;
- Default Gateway — IP address of the gateway;
- Factory MAC Address.

6.3.2 "SNMP" submenu

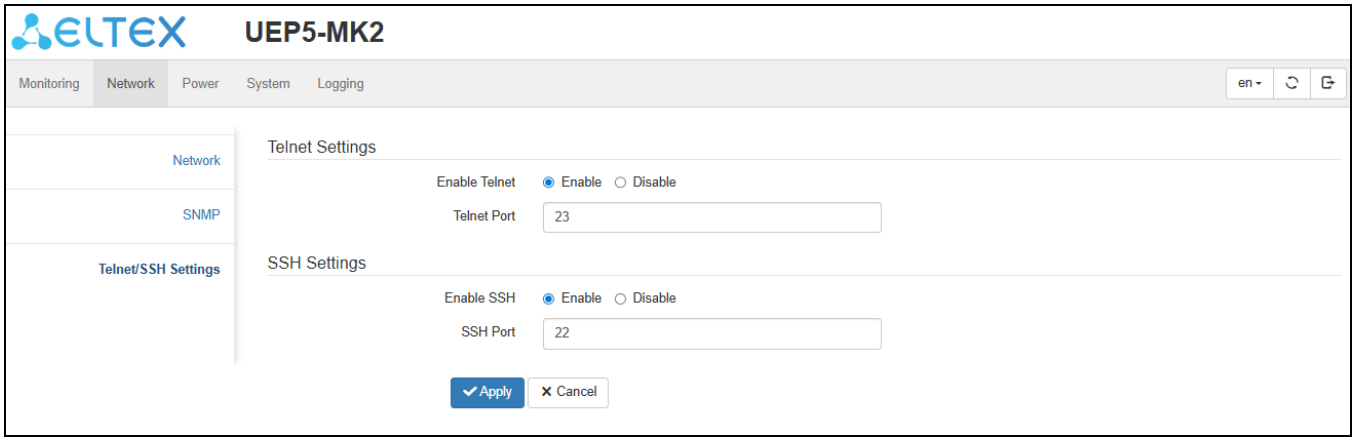


The following network parameters are configured in this submenu:

- Enabled SNMP. By default, set to 'Enable';
- System name, location, and description;
- System contact;
- Community ro (reading only);
- Trap destination;
- Community trap;
- Trap level.

To save the changes to the device's non-volatile memory, click *Apply*. The changes made take effect without restarting the device.

6.3.3 "Telnet/SSH Settings" submenu



The following network parameters are configured in this submenu:

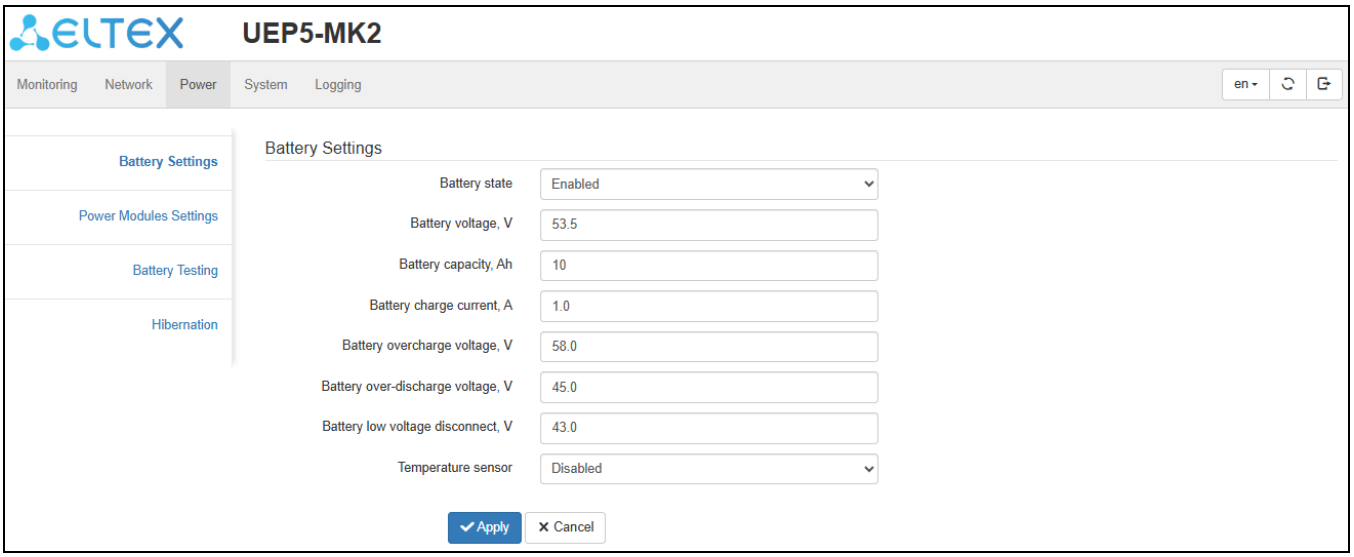
- Enable Telnet. By default, set to 'Enable';
- Telnet Port. The default value is 23;
- Enable SSH. By default, set to 'Enable';
- SSH Port. The default value is 22.

To save the changes to the device's non-volatile memory, click *Apply*. The changes made take effect without restarting the device.

6.4 "Power" menu

In this menu, the battery settings are configured.

6.4.1 "Battery Settings" submenu

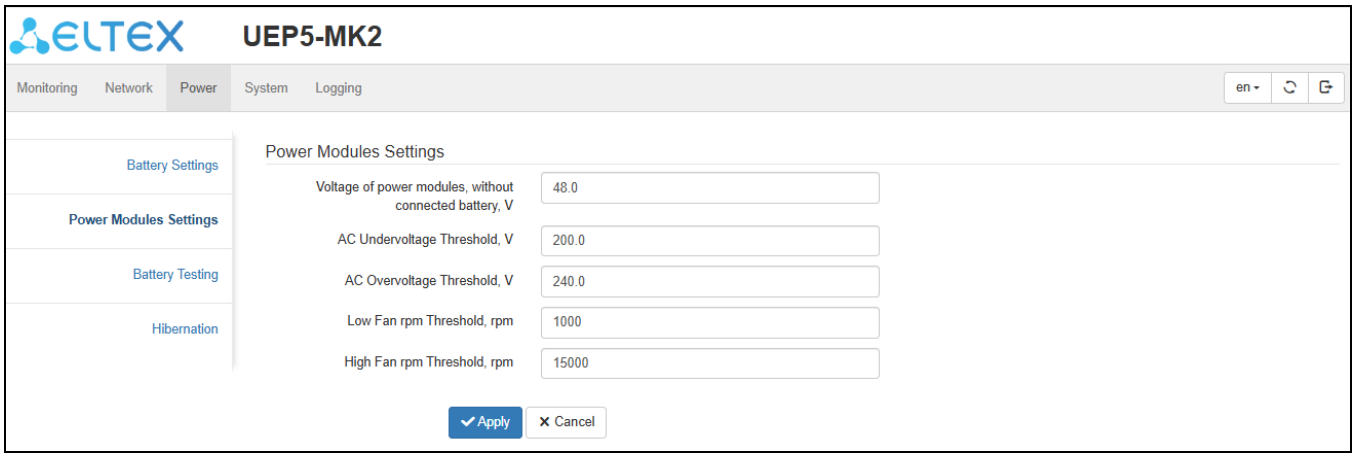


In this submenu, the power settings are configured:

- Battery state allows connecting/disconnecting the battery contactor. By default, set to 'Enabled';
- Battery voltage. The default value is 53.5;
- Battery capacity — required to calculate the maximum battery charge current. The default value is 65;
- Battery charge current, A — the possible range depends on the battery capacity (from 0.05 C to 0.25 C, where C is the battery capacity in Ah, maximum 15 A). The default value is 0.0;
- Battery overcharge voltage — battery cut-off voltage to protect it from overcharging;
- Battery over–discharge voltage — low battery charge notification voltage;
- Battery low voltage disconnect — battery cut-off voltage to protect it from over-discharging;
- Temperature sensor — enabling/disabling polling of an external temperature sensor:
  - Battery overheating temperature — setting the value at which a notification about a high battery temperature is sent;
  - Compensation of AB temperature sensor readings — adjustment of the temperature sensor readings.

To save the changes to the device's non-volatile memory, click *Apply.* The changes made take effect without restarting the device.

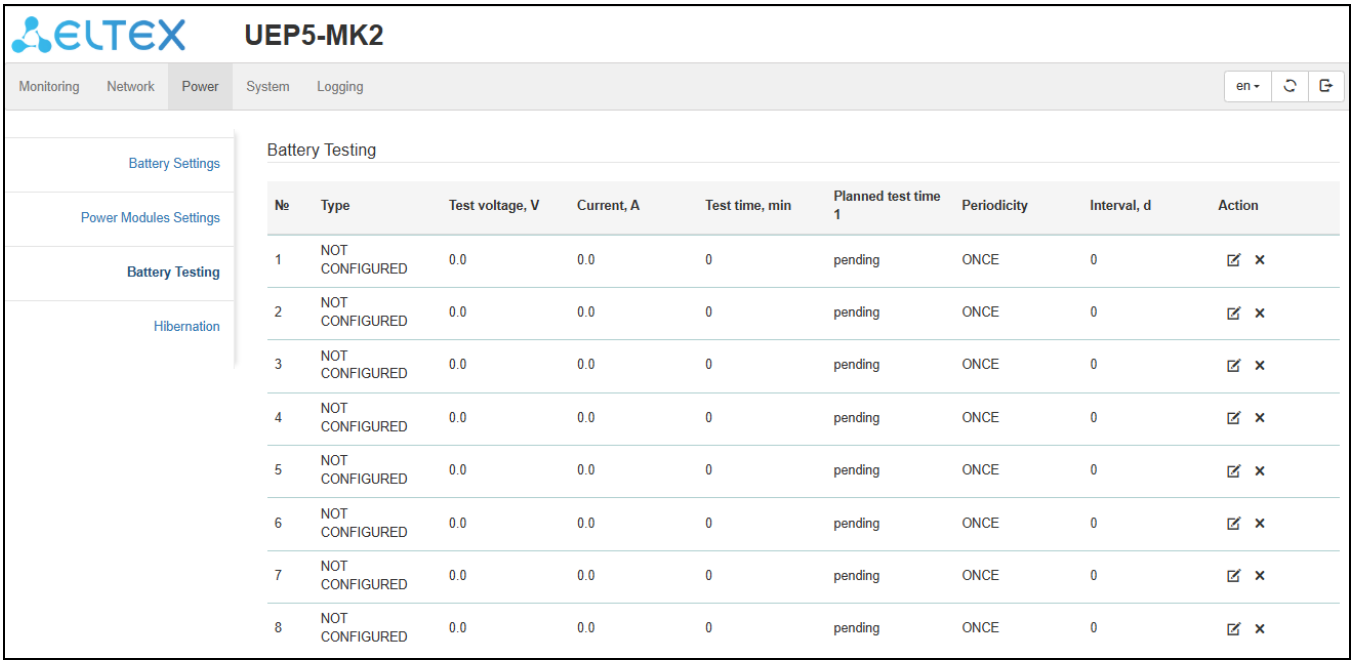
6.4.2 "Power Modules Settings" submenu



The following parameters are set in the "Power Module Settings" submenu:

- Voltage of power modules, without connected battery, V — when operating without the battery, the bus voltage will drop to the set value.
- AC Undervoltage/Overvoltage Threshold, V" — when exceeded, notifications of mains voltage exceeding the permissible limits are generated.
- "Low/High Fan rpm Threshold, rpm" — notification thresholds for the fan speed of the modules.

6.4.3 "Battery Testing" submenu

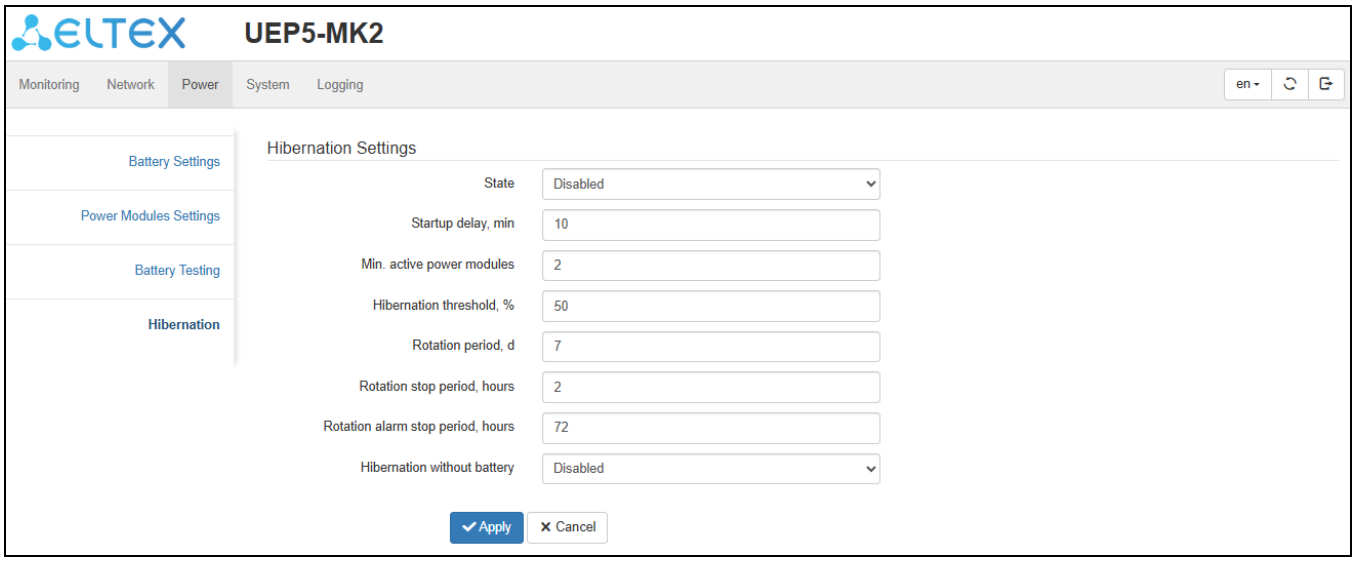


The submenu contains a table of Battery testing/Battery training tasks:

- The ordinal number of the testing/training task;
- Type — testing or training. Training will discharge the battery with the maximum load current. Testing will discharge the battery with the specified load current;
- Test voltage — the minimum voltage to which the battery will be discharged;
- Current — the battery discharge current displayed if the task type is "Testing";
- Test time — the time during which the battery will be discharged to the test voltage;
- Planned test time 1 — the task start time;
- Periodicity — defines whether a task is performed once or periodically;
- Interval — defines the frequency interval if the task should be performed periodically;
- Action — 2 buttons for editing and clearing task parameters.

To save the changes to the device's non-volatile memory, click *Apply.* The changes made take effect without restarting the device.

6.4.4 "Hibernation" submenu



This submenu contains the following information:

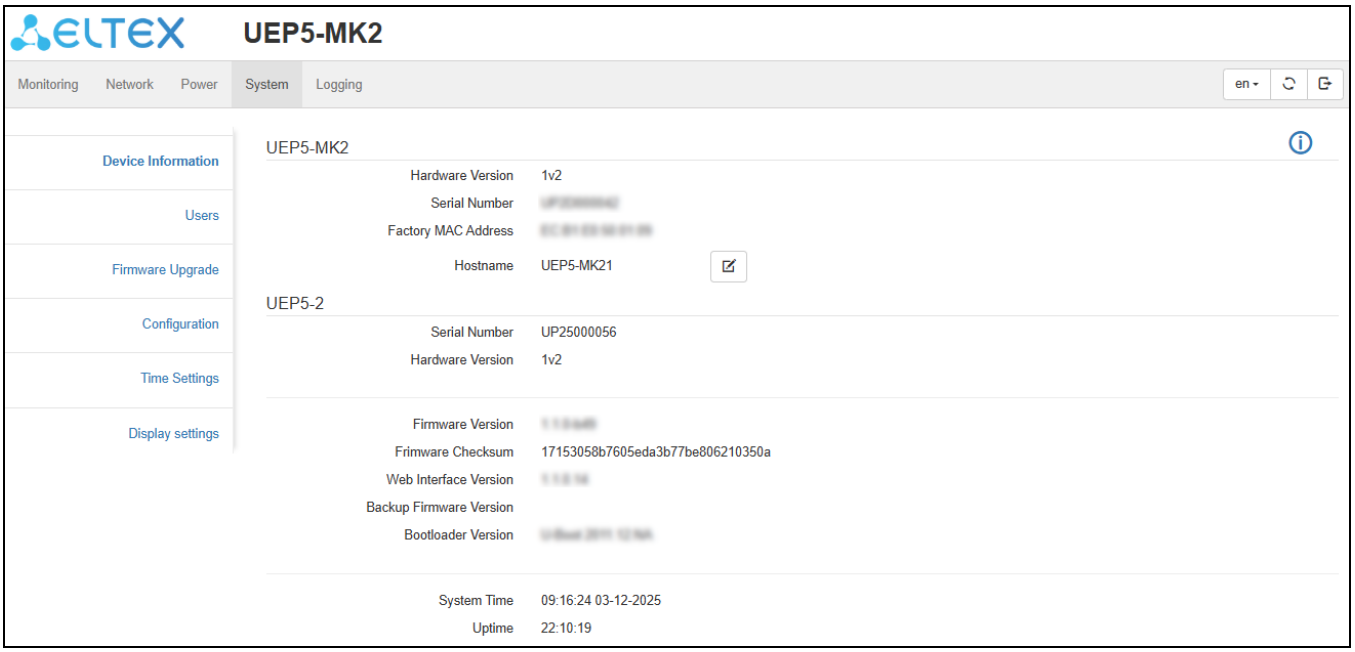
- State — enables/disables the hibernation mode of the power modules. When enabled, changing the other parameters becomes unavailable.
- Startup delay, min — pause after booting the device before starting the hibernation operation.
- Min. active power modules — the minimum number of modules that always remain in operation (2 by default). For hibernation to work, specify a value less than the number of installed modules.
- Hibernation threshold, % — the load level at which it is allowed to switch some modules to hibernation.
- Rotation period, d — the number of days between "active/in hibernation" module roles.
- Rotation stop period, hours — the time during which the module remains in the hibernation mode after rotation.
- Rotation alarm stop period, hours — the time during which the hibernation mode is suspended after an event.
- Hibernation without battery — permit hibernation when there are no batteries (disabled by default).

Enabling this option may result in a critical failure — the module in hibernation may not have time to activate in the event of a power failure.

6.5 "System" menu

This menu contains the system settings and information about the device.

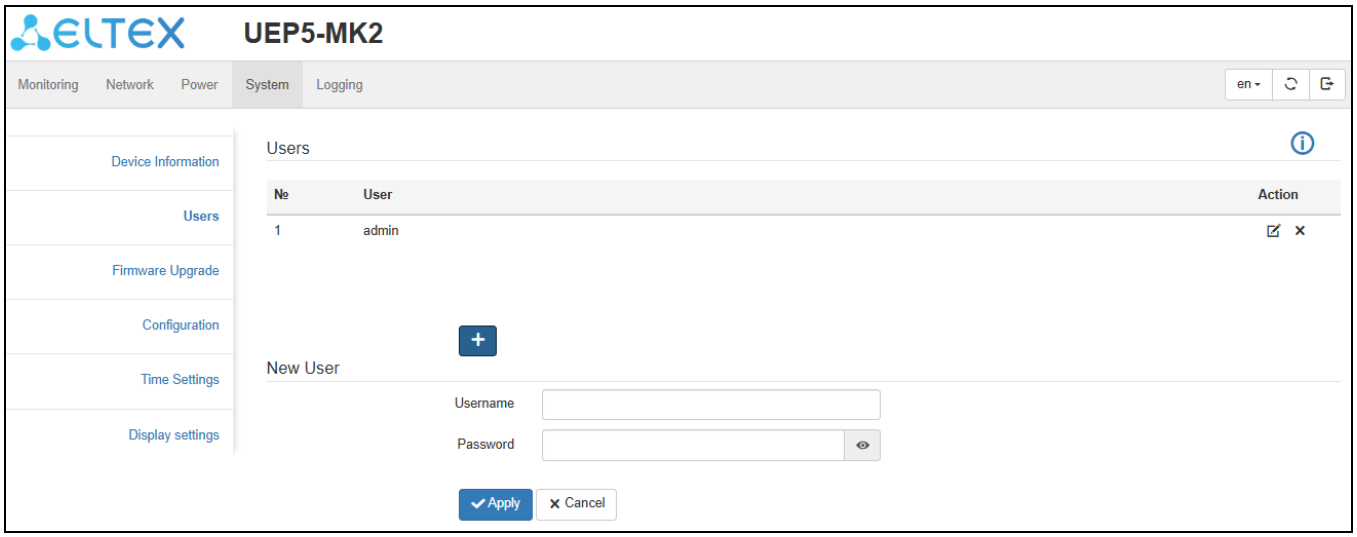
6.5.1 "Device information" submenu



The page contains the following information:

- Model, Serial Number, Hardware Version of the control module;
- Model, Serial Number, Hardware Version of the device;
- Firmware version of the control module;
- System Time;
- Uptime of the device.

6.5.2 "Users" submenu



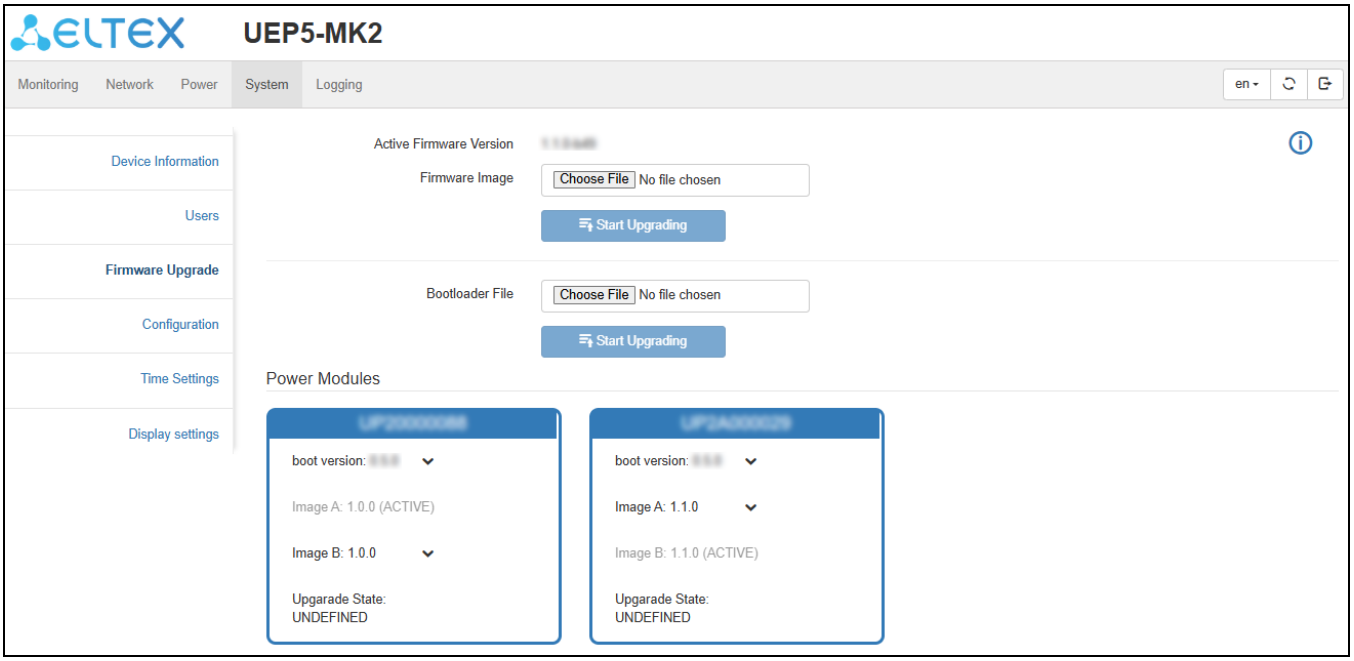
The submenu contains a table of users. The following actions are possible in the submenu:

- Creating a new user;
- Changing the username and password;
- Deleting a user.

Up to 10 users are supported.

For security reasons, change the default password of the admin user. The default password is admin.

6.5.3 "Firmware Upgrade" submenu



The following actions are possible in the submenu:

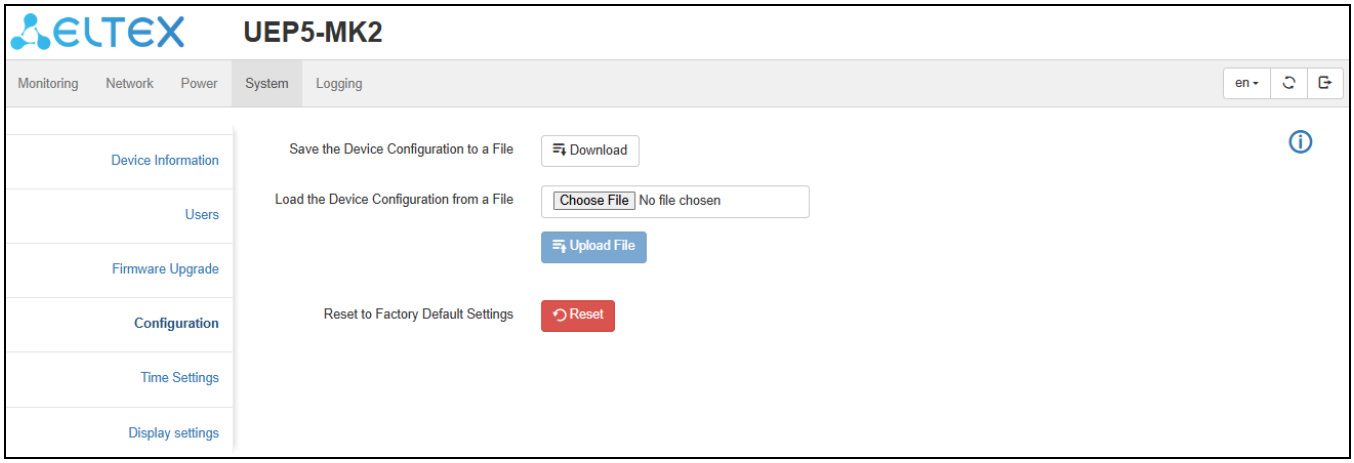
- Upgrade the control module firmware version;
- Upgrade the control module bootloader file;
- Upgrade the power modules' firmware version;
- Upgrade the power modules' boot version.

Firmware upgrade is performed only for versions developed for this device. When you run the upgrade for another device's firmware, an error message will be displayed.

Do not turn off the device's power while upgrading the firmware.

The firmware of the power modules is integrated into the main firmware of the control module. Therefore, upgrades can be performed without using a remote server.

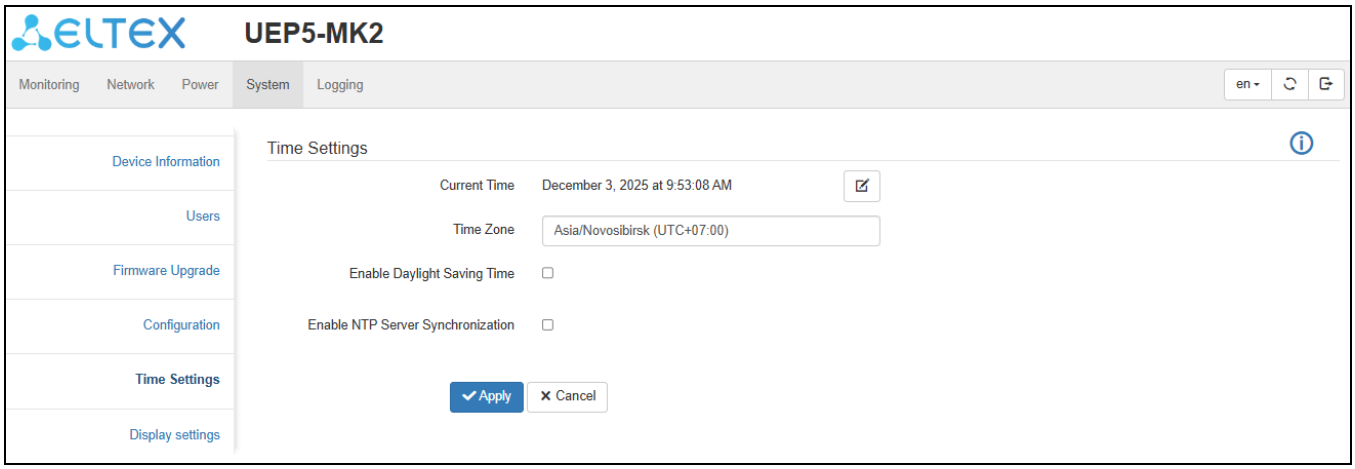
6.5.4 "Configuration" submenu



The following actions are possible in the submenu:

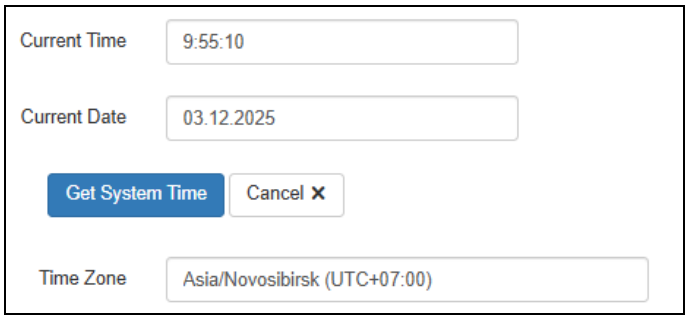
- Save the Device Configuration to a File — download the configuration file;
- Load the Device Configuration from a file — upload the configuration file;
- Reset to Factory Default Settings — configuration reset and/or clearing the database of saved keys.

6.5.5 "Time Settings" submenu



This submenu displays the current date and time on the device, and also sets the following parameters:

- Current Time — shows the time on the device. Clicking on the button opens an interface for changing the date and time on the device manually.



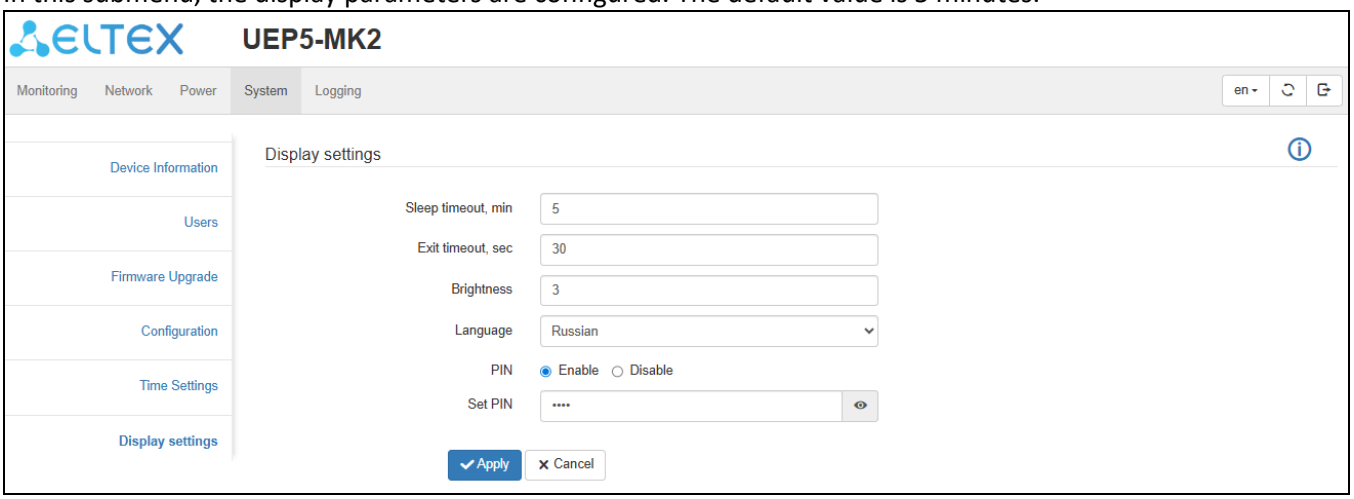
- *Get System Time* button — read the date and time from the PC and enter them into the "Current time" and "Current Date" fields for editing and application.
- *Cancel* button — set the date and time from the device in the "Current time" and "Current date" fields;

- Time Zone — select the time zone of the device. The default is "Asia/Novosibirsk (UTC+07:00)";
- "Enable Daylight Saving Time" flag — automatic time conversion based on the year. Disabled by default;
- "Enable NTP Server Synchronization" flag — getting the time from the NTP server. When enabled, fields with additional settings are available. Disabled by default;
- Polling NTP interval — frequency of date and time requests from the NTP server, the value is specified in seconds;
- NTP Server 1 — address of the main NTP server for receiving data on the current date and time;
- NTP Server 2 — backup address of the NTP server for receiving data on the current date and time. A request to this server will be sent if there is no response from the primary NTP server.

These changes take effect when you click *Apply* without restarting the device.

6.5.6 "Display settings" submenu

In this submenu, the display parameters are configured. The default value is 5 minutes.

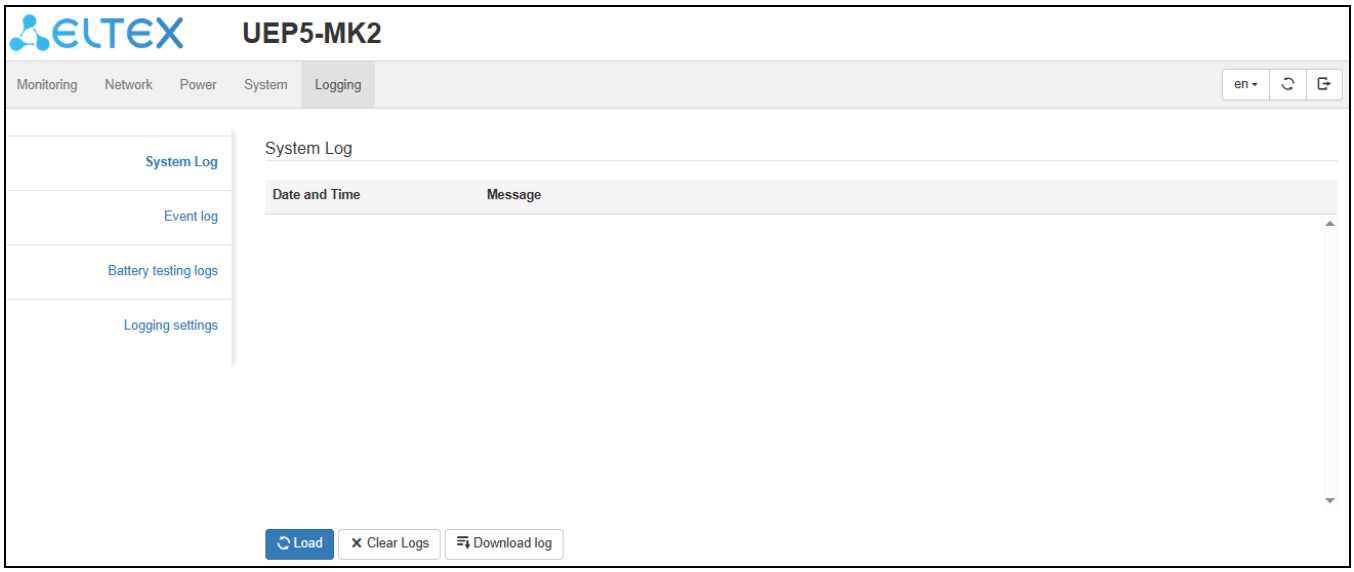


The following actions are possible in the submenu:

- Change the display Sleep timeout. The default value is 5 minutes;
- Change the Exit (exit from menu) timeout. The default value is 30 seconds;
- Change the Brightness of the display;
- Change the Language;
- Set the PIN entry request to access the settings menu;
- Change PIN.

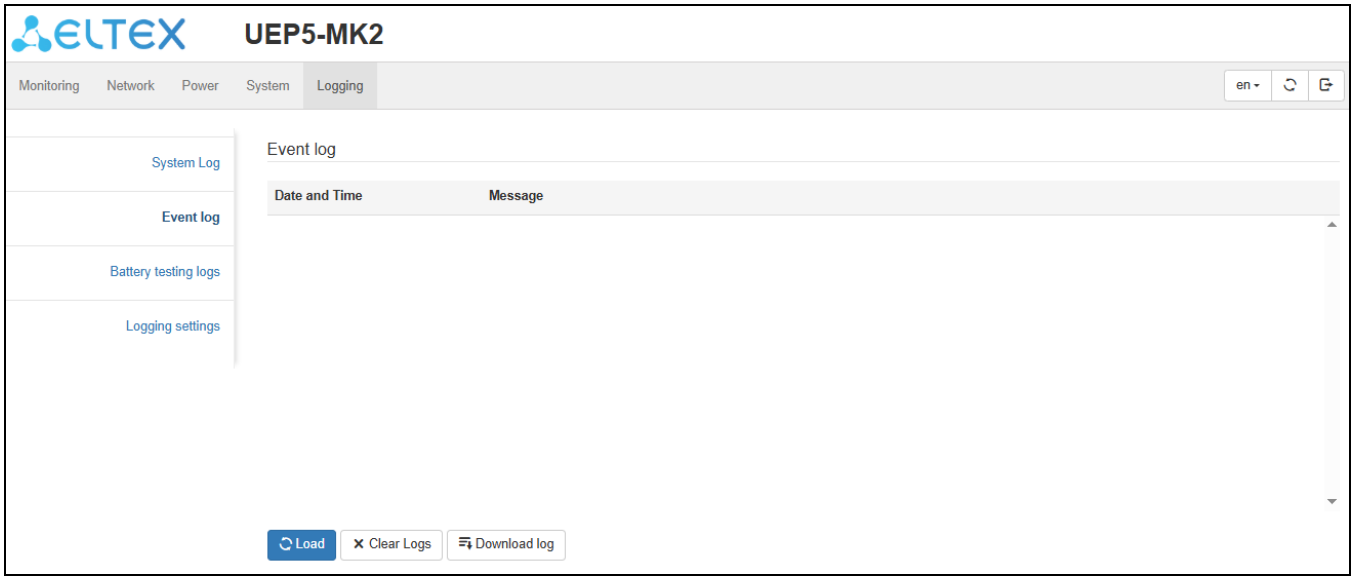
6.6 "Logging" menu

6.6.1 "System log" submenu



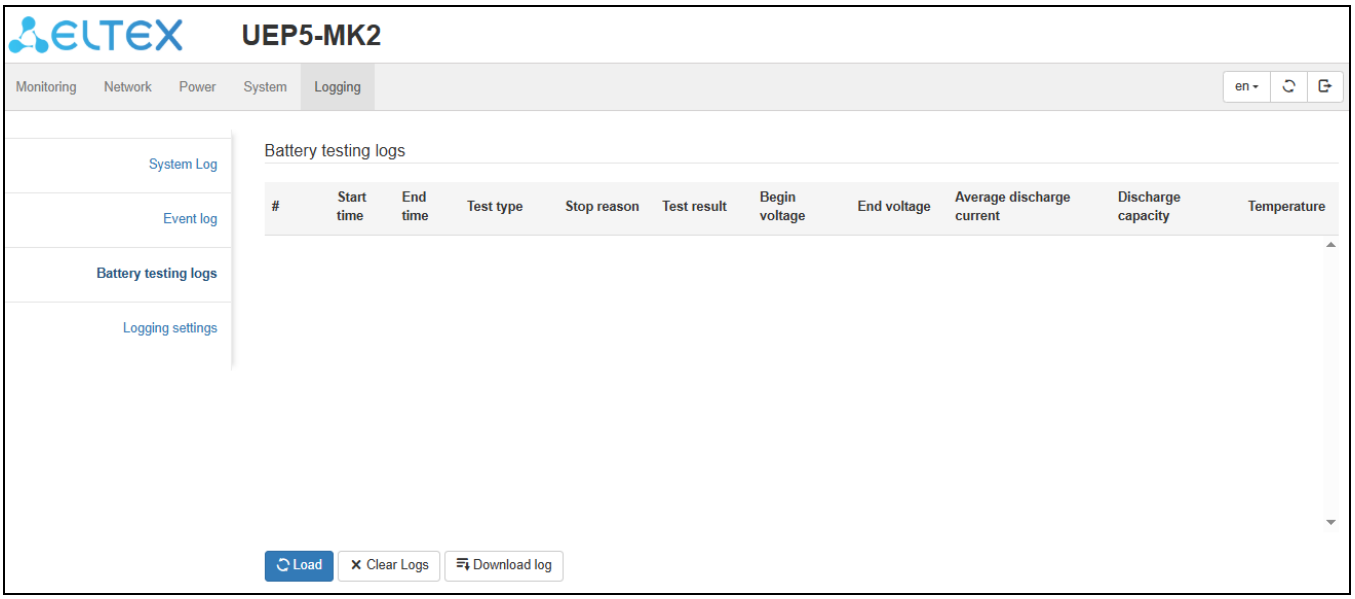
- Load — get the system log and view the current log content in a web browser;
- Clear Logs — clear the system log;
- Download log — download the system log file.

6.6.2 "Event log" submenu



- Load — get the event log and view the current log content in a web browser;
- Clear Logs — clear the event log;
- Download log — download the event log file.

6.6.3 "Battery testing logs" submenu

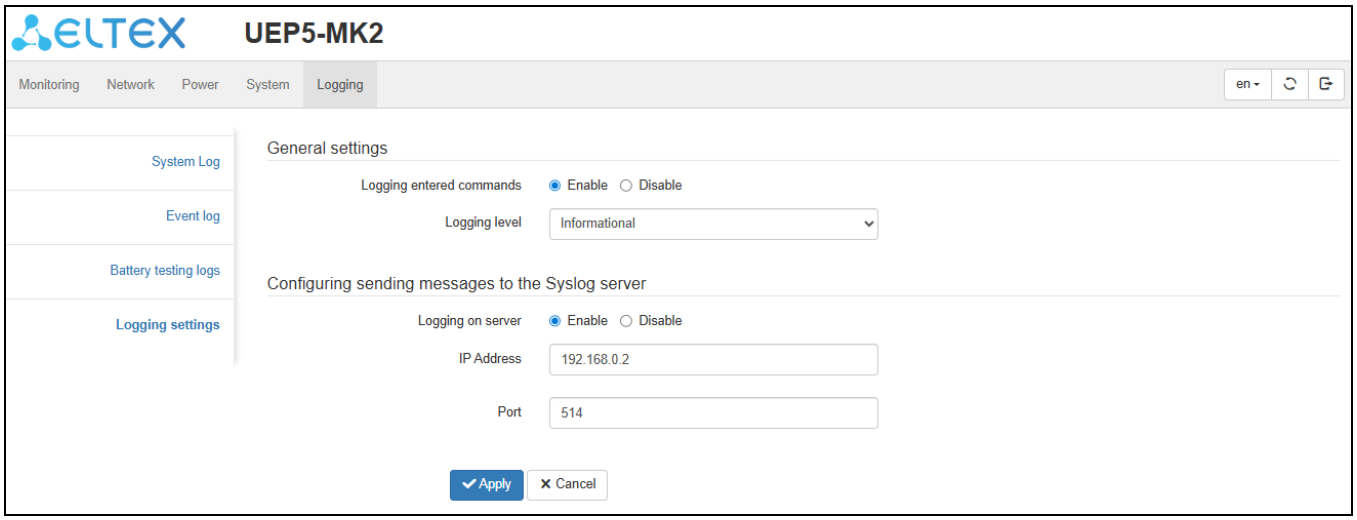


This submenu displays brief information on the battery tests/trainings performed:

- Start time — the time of the test/training start;
- End time — the time of the test/training completion;
- Test type — training or testing;
- Stop reason — the reason why the task stopped running;
- Test result — test completion status;
- Begin voltage — the initial voltage at the moment when the battery starts to discharge;
- End voltage — the voltage to which the battery was discharged;
- Average discharge current — the average current under which the battery was discharged during the test;
- Discharge capacity — the capacity of the discharge current;
- Temperature — the temperature value from the temperature sensor on the battery.

- *Load* — get brief information on the conducted tests/trainings;
- *Clear Logs* — delete data from the log;
- *Download log* — download detailed results in the .csv format.

6.6.4 "Logging settings" submenu



The following parameters are configured in this submenu:

- Enabling/disabling logging of entered commands;
- Changing the Logging level;
- Enabling/disabling logging on the server;
- Server IP address;
- Port.

7 CONFIGURING THE DEVICE VIA CLI

Several modes are used to configure the device. Each mode has its own specific set of commands. Enter the «?» character to view the set of commands available for each mode.

Switching between modes is performed by using special commands. The list of existing modes and commands for mode switching:

Privileged EXEC mode is available immediately after successfully booting the device and entering the system. The system prompt in this mode consists of the device name (host name) and the # sign.

```
UEP5-MK2#
```

Global configuration mode is designed to specify the general device settings. Global configuration mode commands are available in any configuration submode. The mode is entered using the *configure* command.

```
UEP5-MK2# configure
UEP5-MK2(config)#
```

7.1 Basic commands

Privileged EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 10 — Basic commands available in privileged EXEC mode

Command	Value/Default value	Action
configure	—	Enter the configuration mode.
exit	—	Exit the configuration mode to the upper level in the CLI command hierarchy.
help	—	Get help on command line interface operations.
show history	—	Show the history of commands entered in the current terminal session.

The commands available in all configuration modes

Command line prompt is as follows:

```
UEP5-MK2#
UEP5-MK2(config)#
```

Table 11 — Basic commands available in all configuration modes

Command	Value/Default value	Action
exit	—	Exit any configuration mode to the upper level in the CLI command hierarchy.
end	—	Exit any configuration mode to the command mode (Privileged EXEC).
do	—	Execute a command of the command level (EXEC) from any configuration mode.
help	—	Show help on available commands.

7.2 Basic configuration of the power supply device

The basic configuration includes the following:

1. Connecting to the device.
2. Configuring users.
3. Configuring static IP address, subnet mask, default gateway.
4. Obtaining an IP address from the DHCP server.
5. Configuring the parameters of the SNMP protocol.
6. Setting the battery parameters.

7.2.1 Connecting to the device

To start configuring the device, you need to connect the device to a computer via an Ethernet cable and configure the IP Address on the display of the power supply device. The connection takes place via Telnet/SSH protocols.

Under Linux OS:

- Use the keyboard shortcut Ctrl+Alt+T
- Run the telnet <ip_address> command
- Enter your username and password

Under Windows OS:

- Run the key combination Win+R and enter appwiz.cpl
- In the window that opens, click on "Enable or disable Windows components" in the left panel.
- Select the "Telnet Client" from the list of components and click OK
- Run the key combination Win+R and enter cmd
- Run the telnet <ip_address> command
- Enter your username and password

Default IP address: 192.168.0.1
By default, username "admin" and the password "admin" are set.

7.2.2 Configuring users

User configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)# users
UEP5-MK2(config-users)#
```

Table 12 — User configuration mode commands

Command	Value/Default value	Action
username *name* **password** *password* [**level** *privilege_level*]	username: (1..29) characters; password: (1..29) characters privilege level: (user, manager, admin)/admin	Creating a user account. – privilege_level — the user's privilege level.
username *name* **level** *privilege_level*	username: (1..29) characters; privilege level: (user, manager, admin)/admin	Changing the privilege level of an existing user.
delete *name*	name: (1..29) characters	Deleting a user account.

Table 13 — User privilege levels

Level	Restrictions
admin	There are no restrictions.
manager	Critical operations are prohibited: – Configuring user settings; – Changing the PIN code of the display; – Configuring SSH/Telnet/Web settings; – Uploading the configuration to the device; – Clearing the device configuration; – Working with macros.
user	Commands allowed: – View system information (show); – Ping.

Example of executing commands to assign the "eltex" password to the "admin" user and create the "operator" user with the "pass" password and the "manager" privilege level:

```
UEP5-MK2# configure
UEP5-MK2(config)# users
UEP5-MK2(config-users)# username admin password eltex
UEP5-MK2(config-users)# username operator password pass level manager
```

Allowed characters: 0-9, A-z, ./@|$*?+!#$%,-()<=>^_:;&`'{}

To avoid unauthorized access to the device, it is recommended to set a username and password other than the factory ones.

7.2.3 Obtaining an IP address

To be able to control the device from the network, assign the device an IP address, a subnet mask, and, in the case of control from another network, a default gateway.

Network configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)# network
UEP5-MK2(config-network)#
```

Table 14 — Network configuration mode commands

Command	Value/Default value	Action
ip address *ip_address/prefix_length*	prefix_lenght: (8..32) characters	Set a static IP address on the device.
ip address dhcp	–/enabled	Enable address assigning via the DHCP protocol.
ip default-gateway *ip_address*	ip_address: A.B.C.D	Set the default gateway.

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 15 — EXEC mode commands

Command	Value/Default value	Action
show networks	—	Display the current network settings.
show ip-route	—	View the routing table.

Example of executing commands:

Assign a static IP address and a default gateway:

```
UEP5-MK2# configure
UEP5-MK2(config)# network
UEP5-MK2(config-network)# ip address 192.168.1.10/24
UEP5-MK2(config-network)# ip default-gateway 192.168.1.1
```

View current network interface settings:

```
UEP5-MK2# show networks
Mode: static
IP address: 192.168.1.11
Mask: 255.255.255.0
Gateway: 192.168.1.1
```

Assign an IP address using the DHCP protocol:

```
UEP5-MK2# configure
UEP5-MK2(config)# network
UEP5-MK2(config-network)# ip address dhcp
```

The DHCP client is enabled by default.

7.2.4 Configuring the SNMP protocol

The device contains a built-in SNMP agent and supports v1/v2c protocol versions. The SNMP agent supports a set of standard MIB variables.

SNMP configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)# snmp
UEP5-MK2(config-snmp)#
```

This mode is available from the global configuration mode and is intended for setting the parameters of the SNMP protocol.

Table 16 — SNMP configuration mode commands

Command	Value/Default value	Action
state enable	–/enable	Enabling the SNMP protocol.
state disable		Disabling the SNMP protocol.
rocomm *community*	community: (1…63) symbol/public	Set the value of the community string for data exchange over the SNMP protocol: – *community* — the community string (password) for access via the SNMP protocol.
trapsink *ip_address*	ip_address: A.B.C.D;/ 192.168.1.254	Configuring the server address for sending SNMP Trap/Inform messages.
traptype *type*	type : (1, 2c)/2c	Configuring the version of the SNMP protocol for Trap/Inform messages.
trapcomm *community*	community: (1…63) symbol/trap	Set the value of the community string for Trap/Inform messages.
traplevel *level*	level: (traps, informs)/traps	Set the notification type.

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 17 — EXEC mode commands

Command	Value/Default value	Action
show snmp	—	Display the current settings of the SNMP protocol.

Example of executing commands:

Enable the SNMP protocol, assign an snmp community, and assign a server address for sending Trap messages:

```
UEP5-MK2#
UEP5-MK2# configure
UEP5-MK2(config)# snmp
UEP5-MK2(config-snmp)# rocomm public
UEP5-MK2(config-snmp)# trapsink 192.168.1.100
UEP5-MK2(config-snmp)# state enable
```

View current settings:

```
UEP5-MK2(config-snmp)# do show snmp
state enable
traptype 2
rocomm public
trapsink 192.168.1.100:162
trapcomm trap
traplevel traps
```

7.2.5 Configuring battery parameters

Battery parameter configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)#battery
UEP5-MK2(config-battery)#
```

Table 18 — Battery parameter configuration mode commands

Command	Value/Default value	Action
state enable	–/enable	Close the battery contactor.
state disable		Open the battery contactor.
voltage *value*	value: (40.5…57.0)/53.5	Setting the battery voltage.
capacity *value*	value: (10…200)/65	Setting the battery capacity. When changing the capacity, a new value of the battery charge current is applied, equal to 0.1 * Battery capacity, but not more than 15 A.
current *value*	value: (0.5…15.0)/0	Setting the battery charge current. The minimum and maximum values depend on the Battery capacity and are equal to: Min = 0.05*Battery capacity Max = 0.25*Battery capacity (no more than 15 A)
over-voltage *value*	value: (58.0…60.0)/58.0	Setting the battery deflection voltage to protect against overcharging.
under-voltage *value*	value: (43.1…51.5)/45.5	Setting the low battery notification voltage.
low-voltage-disconnect *value*	value: (40.5…57.0)/44.0	Setting the battery shutdown voltage to protect against over-discharge.

temperature-sensor-status enable	–/disabled	Enabling the polling of an external temperature sensor.
temperature-sensor-status disable		Disabling the polling of the external temperature sensor.
temperature-offset *value*	value: (-10…10)/0	Allows adjusting the temperature sensor readings.
temperature-off *value*	value: (50…85)/70	Setting the value at which the notification about the high temperature of the battery is sent.
service task *task_number* **parameters Training** *minutes min_volt*	task_number: (1..8); minutes: (1..240); min_volt: (44..53)	Add a task for battery training: – *task_number* — the task number; – *minutes* — the time of the training execution; – *volt* — the minimum voltage to which the battery will be discharged.
service task *task_number* **parameters Testing** *minutes dg_current min_volt*	task_number: (1..8); minutes: (1..6000); dg_current: (-30..-0.1); min_volt: (44..53)	Add a task for battery testing: – *task_number* — the task number; – *minutes* — the time of the test execution; – *dg_current* — the current under which the battery will be discharged; – *volt* — the minimum voltage to which the battery will be discharged.
service-task delete *task_number*	task_number: (1..8)	Delete a task for battery testing/training: – *task_number* — the task number.
service-task schedule *task_number* **datetime** *hh:mm:ss date month* **[recurring** *interval* **| once]**	task_number: (1..8); hh: (0..23); mm: (0..59); ss: (0..59); day: (1..31); month: (Jan..Dec); interval: (1..360)	Start battery testing/training at the appointed time: – *task_number* — the task number; – *hh* — hours; – *mm* — minutes; – *ss* — seconds; – *day* — day; – *month* — month; – *interval* — the interval for repeating the task; – ***recurring*** — repeat the task at the specified interval; – ***once*** — run the task once.
service-task schedule	task_number: (1..8); interval: (1..360)	Start battery testing/training now: – *task_number* — the task number; – *interval* — the interval for repeating the task; – ***recurring*** — repeat the task at the specified interval; – ***once*** — run the task once.
service-task schedule *task_number* **pending**	task_number: (1..8)	Suspend a scheduled task: – *task_number* — the task number.

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 19 — EXEC mode commands

Command	Value/Default value	Action
show battery	—	Display the current battery status.
show battery service-task	—	View the list of scheduled/current tasks.
show battery service-task reports	—	View reports on the battery tests/trainings performed.
copy battery-service-task-reports <tftp_url>	—	Upload the report to a remote tftp server. Syntax: tftp://host/[directory/] filename. – *host* — the IPv4 address or network name of the device; – *directory* — the directory; – *filename* — the file name.

Example of executing commands:

Configure the minimum parameters required for battery operation:

```
UEP5-MK2(config-battery)# voltage 53.5
UEP5-MK2 (config-battery)# capacity 65
Success! Current = 6.50
UEP5-MK2(config-battery)# current 8.0
```

View battery status:

```
UEP5-MK2# show battery
Battery Type          : Lead-acid
Battery Voltage (V)   : 48.093
Battery Current (A)   : 0.200
Battery Status:       : ABSENT
```

View current battery settings:

```
UEP5-MK2# show config
battery
                      state enable
                      voltage 53500
                      capacity 65
                      current 8000
                      over-voltage 58000
under-voltage 45500
low-voltage-disconnect 44000
temperature-off 70
temperature-offset 0
temperature_sensor_status disble
```

The parameters required for effective battery operation are available in the specifications of the battery.

7.2.6 Configuring battery settings

MP54831 parameter configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)#power
UEP5-MK2(config-power)#
```

Table 20 — Battery parameter configuration mode commands

Command	Value/Default value	Action
blink *number*	number: 1…2	Turn on the flashing lights of the power module for 5 seconds.
fan-rpm lower-threshold *value*	value: 1000…4000	Set the threshold for the fan speed sensor.
fan-rpm upper-threshold *value*	value: 14000…15000	
input-voltage lower-threshold *value*	value: 180…200	Set a threshold for the input network voltage.
input-voltage upper-threshold *value*	value: 240…260	

7.3 System management commands

Privileged EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 21 — System management commands in the privileged EXEC mode

Command	Value/Default value	Action
show alarms	—	Display information about alarms on the device.
show alarms active	—	Display information about active alarms on the device.
show battery	—	Display information about the battery.
show bootvar	—	Display the active system firmware file that the device loads at startup.
show config	—	Display information about the device configuration.
show display	—	Display information about the display.
show journal-file	—	Display the event log.
show logging	—	Display the system log.
show networks	—	Display information about network settings.
show power	—	Display information about the status of power supplies.
show power operating-time	—	Display information about the total operating time of the power supplies.
show power upgrade	—	Display information about the upgrade status of the power supplies.
show snmp	—	Display information about the SNMP settings.
show sntp	—	Display information about the SNTP settings.
show system	—	Display the system information.
show users	—	Display user information.
show version	—	Display the current version of the device's system firmware.
show interface	—	Display the status of the Ethernet interface.
reboot	—	Restart the control module.

System parameter configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)# system
```

Table 22 — System management commands in the privileged EXEC mode

Command	Value/Default value	Action
contact *string*	string: (1...63) characters/–	Specify the contact information of the device.
description	string: (1...96) characters/–	Set the description of the device.
history *value*	value: 1…128/10	Set the size of the history list.
hostname *string*	string: (1...29) characters/–	Set the network name of the device.
location *string*	string: (1...20) characters/–	Specify the device location information.

7.3.1 Setting the date and time

Time configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)# clock
UEP5-MK2(config-clock)#
```

Table 23 — Time configuration mode commands

Command	Value/Default value	Action
set *hh:mm:ss day month year*	hh: (0..23); mm: (0..59); ss: (0..59); day: (1..31); month: (Jan..Dec); year: (2000..2037)	Manual setting of the system time: – *hh* — hours; – *mm* — minutes; – *ss* — seconds; – *day* — day; – *month* — month; – *year* — year.
summer-time state enable	–/disable	Enable daylight saving time.
summer-time state disable		Turn off daylight saving time.
timezone zone *hours-offset*	zone: (1…4); hours_offset: (-12…+12)	Setting the time zone value. – *zone* — a word formed from the first letters of the phrase it replaces (description of the zone); – *hours-offset* — offset relative to the UTC.

SNTP protocol configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)# sntp
UEP5-MK2(config-sntp)#
```

Table 24 — SNTP configuration mode commands

Command	Value/Default value	Action
state enable	–/disable	Enable the SNTP protocol.
state disable		Disable the SNTP protocol.
polling-interval *seconds*	seconds: (30..86400) / 86400 seconds	Set the polling interval for the SNTP server.
remote-peer {ipv4_address | hostname}	ip_address: A.B.C.D/-; hostname: (1…158) characters/–	Set the address of the SNTP server: – *ipv4_address* — network node IPv4 address;

		– *hostname* — network node domain name.

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 25 — EXEC mode commands

Command	Value/Default value	Action
show clock	—	Show the system time and date.
show clock summer-time	—	Display the daylight saving time settings.
show clock timezone	—	Display the time zone settings.
show sntp	—	Show the current SNTP protocol settings.

7.3.2 Setting up the display

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)# display
UEP5-MK2(config-display)#
```

Table 26 — Display configuration mode commands

Command	Value/Default value	Action
brightness *level*	level: (1…6)/3	Set the brightness of the display.
language *value*	value: (ru, en)/ru	Set the display language.
pincode state enable	–/disable	Enable PIN code request to access the settings menu.
pincode state disable		Disable the PIN code request for access to the settings menu.
pincode set *pin*	pin: (0000…9999)/0001	Set a PIN code.
sleep-timeout *minutes*	minutes: (1..999)/5	Set the time to turn off the display: – *minutes* — minutes.
exit-timeout *seconds*	seconds: (30..300)/30	Set the timer to exit the menu on the display.

7.3.3 Configuring management protocols

Global configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2#
UEP5-MK2(config)#
```

Table 27 — Global configuration mode commands

Command	Value/Default value	Action
telnet server state enable	–/enable	Enable the telnet server.
telnet server state disable		Disable the telnet server.
telnet server port *port*	port: (1..65535)/23	Assign a port for the operation of the telnet server.
ssh server state enable	–/enable	Enable the ssh server.
ssh server state disable		Disable the ssh server.
ssh server port *port*	port: (1..65535)/22	Assign a port for the ssh server.
web server state enable	–/enable	Enable the web server.
web server state		Disable the web server.

disable		

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 28 — EXEC mode commands

Command	Value/Default value	Action
show telnet server	—	View the current telnet server settings.
show ssh server	—	View the current ssh server settings.
show web server	—	View the current status of the web server.

7.3.4 Configuring Hibernation

Global configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2# configure
UEP5-MK2(config)# hibernation
UEP5-MK2(config-hibernation)#
```

Table 29 — Global configuration mode commands

Command	Value/Default value	Action
state *enable*	–/disable	Enable power module hibernation. **The hibernation settings are not available when hibernation is enabled.**
state *disable*		Disable power module hibernation.
alarm-stop-period *hours*	*hours:* (1..168)/72	Set the period for stopping the hibernation mode in case of an accident.
minimum-enabled-module-number *number*	*number:* (1..2)/2	Set the minimum number of active power modules. **The maximum number of power modules is specified by default. For hibernation to work, specify a value other than the maximum.**
optimum-load-level *percent*	*percent:* (10..90)/50	Set the load level of the power modules to go into hibernation.
rotation-period *days*	*days:* (1..365)/7	Set the period of alternation of power modules that are in hibernation with working power modules. At the end of the period, all power modules are started. When the power modules have completed the *rotation-stop period,* some of them will switch back to the hibernation mode.
rotation-stop-period *hours*	*hours:* (1..168)/2	Set the period for which all power modules switch to active mode during rotation.
start-delay-time *minutes*	*minutes:* (1..720)/10	Set a delay when loading the device before the start of hibernation.
without-battery-state *value*	*value:* (enable, disable)/disable	Allow hibernation mode when there is no battery. **Using this setting can lead to a critical failure, as the module in hibernation will not have time to activate in case of a power failure.**

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 30 — EXEC mode commands

Command	Value/Default value	Action
show hibernation parameters	–	Display information about the hibernation settings.
show hibernation state	–	Display information about the hibernation status.

Table 31 — Hibernation statuses

State of	Description
Init	Initialization of hibernation. The system waits for the start-delay-time to expire before switching to the load tracking mode.
track load	The main mode of operation. The system continuously monitors the load: – When the preset level (optimum-load-level) is exceeded, the modules are brought out of hibernation; – When the load drops below the threshold, the modules return to hibernation.
rotation	Temporary suspension of hibernation for the rotation-stop-period (2 hours by default). All modules switch to active mode for rotation.
alarm	Emergency condition. Hibernation is automatically disabled when: – Disconnecting the input network; – No BATTERY (if without-battery-state = disable); – Removing the power module.

7.3.5 Configuring logging

Global configuration mode commands

Command line prompt is as follows:

```
UEP5-MK2#
UEP5-MK2(config)#
```

Table 32 — Global configuration mode commands

Command	Value/Default value	Action
logging syslog enable	–/disable	Enables sending syslog messages to a remote server.
logging syslog disable		Disables sending syslog messages to the remote server.
logging add host *ip_address* **port** *port*	ip_address: A.B.C.D/– port: (1..65535)	Add the IP address and network port of the syslog server to which the messages will be sent.
logging delete host *ip_address* **port** *port*		Delete the IP address and network port of the syslog server.
logging cli-command enable	–/disable	Enables logging commands from the CLI.
logging cli-command disable		Disables logging commands from the CLI.
logging-severity severity	—	Changing the message level.

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 33 — EXEC mode commands

Command	Value/Default value	Action
show logging	—	Display the current logging settings.
show logging host	—	Display the currently configured syslog servers.
show logging file	—	Display the system log.
show journal-file	—	Display the event log.
copy logs tftp_url	—	Uploading the system log to the TFTP server. Syntax: tftp://host/[directory/] filename. – *host* — the IPv4 address or network name of the device; – *directory* — the directory; – *filename* — the file name.
copy journal-file tftp_url	—	Uploading the event log to the TFTP server. Syntax: tftp://host/[directory/] filename. – *host* — the IPv4 address or network name of the device; – *directory* — the directory; – *filename* — the file name.
clear logs	—	Clear the system log.
clear journal-file	—	Clear the event log.

7.3.6 Downloading and uploading the configuration

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 34 — EXEC mode commands

Command	Value/Default value	Action
show config	—	Display information about the device configuration.
copy config <tftp_url>	—	Syntax: tftp://host/[directory/] filename. – *host* — the IPv4 address or network name of the device; – *directory* — a directory; – *filename* — the file name.
copy <tftp_url> config	—	Syntax: tftp://host/[directory/] filename. – *host* — the IPv4 address or network name of the device; – *directory* — a directory; – filename— the file name.
clear config	—	Reset the device to factory settings.

7.3.7 Upgrading the system firmware

The device is loaded from the system firmware file, which is stored in flash memory. When upgrading, a new system firmware file is saved in a specially allocated memory area. When booting, the device launches the active system firmware file.

To view the current version of the system firmware running on the device, enter the **show bootvar** command:

```
UEP5-MK2# show bootvar
Boot :
                      Version : 01.01.250825.111650

Active image :
                      Version : 1.1.0-b149
                      MD5 : a414a37820db2f82f018594e9f342de3
Inactive image :
                      Version : 1.1.0-b149
                      MD5 : a414a37820db2f82f018594e9f342de3
```

EXEC mode commands

Command line prompt is as follows:

```
UEP5-MK2#
```

Table 35 — EXEC mode commands

Command	Value/Default value	Action
upgrade boot <tftp_url>	—	Upgrading the loader. Syntax: tftp://host/[directory/] filename. – *host* — the IPv4 address or network name of the device; – *directory* — *the* directory; – *filename* — the file name.
upgrade image <tftp_url>	—	Upgrading the firmware image. Syntax: tftp://host/[directory/] filename. – *host* — the IPv4 address or network name of the device; – *directory* — the directory; – *filename* — the file name.
upgrade mp_firmware {imageA | imageB} {1|2}{internal|external <tftp_url>}	—	Upgrading the image of the power supply firmware. – *imageA/imageB* — selection of the memory location to which the firmware will be loaded; – *1/2* — selecting the power module number; – *internal* — download the power supply firmware from the control module; – *external* — download the firmware from a remote tftp server.
show power upgrade	—	View the status of the latest upgrade.
show version	—	View the firmware version on the power modules.
show bootvar	—	View the firmware version on the control module.

Example of executing commands:

Upgrade the MK control module:

```
UEP5-MK2#
UEP5-MK2#upgrade image tftp://192.168.1.1/directory/filename
```

Upgrade imageB of power supply unit 1 from a remote server:

```
UEP5-MK2 # upgrade mp_firmware imageB 1 external
tftp://192.168.1.1/directory/imageB
```

When upgrading the power modules, the imageA cell cannot be loaded with firmware named imageB. The firmware images are strictly linked to their memory locations.

8 MONITORING OF UEP5-2 REV.B PARAMETERS VIA SNMP

8.1 Configuring the SNMP server

Configuring the SNMP server using CLI is described in "Configuring the SNMP protocol". Configuring the SNMP server using web is described in the "SNMP" submenu.

8.2 Viewing parameters

Example of the command for viewing parameters via snmp:

```
snmpwalk -v2c -c {community} {ip-address} 1.3.6.1.4.1.35265.1.384
```

- community – the community string (password) for access via the SNMP protocol
- ip address - The IP address for device management.

MIB: *uep5.mib*

OID	Description	The format of the received values
1.3.6.1.4.1.35265.1.384.1.1.0	Battery contactor status	1 — enabled 0 — disabled
1.3.6.1.4.1.35265.1.384.1.2.0	Battery type	0 — Lead-acid
1.3.6.1.4.1.35265.1.384.1.3.0	Battery content voltage	value in mV
1.3.6.1.4.1.35265.1.384.1.6.0	BATTERY recharge voltage	value in mV
1.3.6.1.4.1.35265.1.384.1.7.0	Low battery charge voltage	value in mV
1.3.6.1.4.1.35265.1.384.1.8.0	Battery shutdown voltage	value in mV
1.3.6.1.4.1.35265.1.384.1.9.0	Battery charge current	value in mA
1.3.6.1.4.1.35265.1.384.1.10.0	Battery Capacity	value in Ah
1.3.6.1.4.1.35265.1.384.1.12.0	The presence of a thermal sensor	1 — connected 0 — not connected
1.3.6.1.4.1.35265.1.384.1.13.0	Battery overheating temperature	value in °C

8.3 Monitoring of battery parameters

MIB: *uep5.mib*

OID	Description	The format of the received values
1.3.6.1.4.1.35265.1.384.2.1.0	Battery condition	0 — Missing 1 — Charge 2 — Discharge 3 — Overcharge 4 — Discharge, low voltage
1.3.6.1.4.1.35265.1.384.2.2.0	Battery voltage	value in mV
1.3.6.1.4.1.35265.1.384.2.3.0	BATTERY charge/discharge current	value in mA
1.3.6.1.4.1.35265.1.384.2.4.0	The value from the temperature sensor	value in °C
1.3.6.1.4.1.35265.1.384.2.5.0	MCU version	string of characters "0.0.0.0"
1.3.6.1.4.1.35265.1.384.2.6.0	Total load	value in mA

8.4 Monitoring of power module parameters

MIB: *uep5.mib*

OID	Description	The format of the received values
[id]	Power module number	Possible id values: 1, 2
1.3.6.1.4.1.35265.1.384.3.[id].1.0	Status of the power module	0 — disabled 1 — enabled
1.3.6.1.4.1.35265.1.384.3.[id].2.0	Voltage of the power supply module	value in mV
1.3.6.1.4.1.35265.1.384.3.[id].3.0	Current of the power module	value in mA
1.3.6.1.4.1.35265.1.384.3.[id].4.0	Name of the power supply module	string of characters
1.3.6.1.4.1.35265.1.384.3.[id].5.0	Serial number of the power supply module	string of characters
1.3.6.1.4.1.35265.1.384.3.[id].6.0	Power Module board version	string of characters
1.3.6.1.4.1.35265.1.384.3.[id].7.0	Manufacturer of the power module	string of characters
1.3.6.1.4.1.35265.1.384.3.[id].8.0	Fan speed of the power module	rpm value
1.3.6.1.4.1.35265.1.384.3.[id].9.0	Uptime of the power module	string of characters "0, 0:00:00"
1.3.6.1.4.1.35265.1.384.3.[id].10.0	Firmware version of the power module	string of characters

1.3.6.1.4.4.35265.1.384.2.6.0	Total load	value in mA
1.3.6.1.4.1.35265.1.384.3.[id].11.0	Input voltage	value in mV
1.3.6.1.4.1.35265.1.384.3.[id].12.0	Input network frequency	value in Hz
1.3.6.1.4.1.35265.1.384.3.[id].13.0	Total working time	value in hours

8.5 Device information

MIB: *uep5.mib*

OID	Description	The format of the received values
1.3.6.1.4.1.35265.1.384.5.1.0	Name of the control module	string of characters
1.3.6.1.4.1.35265.1.384.5.2.0	Serial number of the control module	string of characters
1.3.6.1.4.1.35265.1.384.5.3.0	Version of the control module board	string of characters
1.3.6.1.4.1.35265.1.384.5.4.0	Manufacturer of the control module	string of characters
1.3.6.1.4.1.35265.1.384.5.5.0	MAC address of the control module	string of characters «ff:ff:ff:ff:ff:ff»
1.3.6.1.4.1.35265.1.384.5.6.0	Firmware version of the control module	string of characters «1.1.0-b150»
1.3.6.1.4.1.35265.1.384.6.1.0	Device name	string of characters
1.3.6.1.4.1.35265.1.384.6.2.0	Serial number of the device	string of characters
1.3.6.1.4.1.35265.1.384.6.3.0	Device board version	string of characters
1.3.6.1.4.1.35265.1.384.6.4.0	Device manufacturer	string of characters

8.6 Battery testing

MIB: *uep5.mib*

OID	Description	The format of the received values
[id]	Test number	Possible id values: 1...8
1.3.6.1.4.1.35265.1.384.7.[id].1.0	Test type	0 — not assigned 1 — testing 2 — training
1.3.6.1.4.1.35265.1.384.7.[id].2.0	Test voltage	value in mV
1.3.6.1.4.1.35265.1.384.7.[id].3.0	Battery discharge current	value in mA
1.3.6.1.4.1.35265.1.384.7.[id].4.0	Test duration	value in min
1.3.6.1.4.1.35265.1.384.7.[id].5.0	Launch date and time	"hh:mm:ss dd-mm" character string
1.3.6.1.4.1.35265.1.384.7.[id].6.0	Periodicity	0 — once 1 — periodic launch
1.3.6.1.4.1.35265.1.384.7.[id].7.0	Frequency of repetition	value in days

TECHNICAL SUPPORT

For technical assistance in issues related to operation of ELTEX Enterprise Ltd. equipment, please contact the Service Center:

The feedback form on the website: **https://eltex-co.com/support/**

Visit ELTEX official website to get the relevant technical documentation and software, benefit from our knowledge base, send us an online request or consult a Service Center Specialist:

The official website of the company: **https://eltex-co.com/**
Download Center: **https://eltex-co.ru/support/downloads**