TELECOMMUNICATIONS

2N® Helios IP

Door Intercom

Configuration Manual

Version 2.5.0
Firmware 2.5

www.2n.cz

The 2N TELEKOMUNIKACE a.s. joint-stock company is a Czech manufacturer and supplier of telecommunications equipment.

The product family developed by 2N TELEKOMUNIKACE a.s. includes GSM gateways, private branch exchanges (PBX), and door and lift communicators.
2N TELEKOMUNIKACE a.s. has been ranked among the Czech top companies for years and represented a symbol of stability and prosperity on the telecommunications market for almost two decades. At present, we export our products into over 120 countries worldwide and have exclusive distributors on all continents.

2N TELEKOMUNIKACE administers the FAQ database to help you quickly find information and to answer your questions about 2N products and services. On faq.2n.cz you can find information regarding products adjustment and instructions for optimum use and procedures „What to do if...".

CE

Declaration of Conformity

2N TELEKOMUNIKACE a.s. hereby declares that the 2N® Helios product complies with all basic requirements and other relevant provisions of the 1999/5/EC directive. For the full wording of the Declaration of Conformity see www.2n.cz.

The 2N TELEKOMUNIKACE company is a holder of the ISO 9001:2008 certificate. All development, production and distribution processes of the company are managed by this standard and guarantee a high quality and advanced technical level of and a professional approach to all of our products.

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1 Product Overview

In this section, we introduce the **2N® Helios IP** product, outline its application options and highlight the advantages following from its use.

Here is what you can find in this section:

- Product Description
- Terms and Symbols Used

1.1 Product Description

Basic Features

The **2N® Helios IP door intercoms** are capable of replacing the traditional doorbell button panel with a speakerphone and the entire system of wiring, bells and intercom installations in buildings where structured cabling is installed. Their installation is very easy, all you need is connect it to the other LAN elements using a twisted UTP cable.

By pressing any of the quick dial buttons, 2N® Helios IP will set up a call to the number that had been stored in the respective memory. The number of buttons (in some models) can be extended up to 54 using 8-button or 16-button extending modules.

Thanks to an integrated scheduler it is possible to configure each of the buttons in such a way that the called party is always available.

It is possible to define up to three telephone numbers for each of the buttons, between which 2N® Helios IP switches at absence.

Beside the buttons, you can also use the numeric keypad, which also serves as a code lock. With the use of this keypad you can also use the system as a button telephone. The keypad can be combined with the quick dialling buttons.

2N® Helios IP supports video streaming. This function allows the user to scan the area in front of the 2N® Helios IP camera. Thus, 2N® Helios IP provides better and broader services than a standard house intercom systems. Thanks to the integrated SIP protocol it can make use of all VoIP services, call forwarding at absence (to another office, to the VoiceMail system or a cellular phone) or call switching (from the secretary's office to a specific person, e.g.).

In addition, 2N® Helios IP includes a switch that helps you control the electric lock from any VoIP telephone (by entering the code using tone dialling).

Advantages of Use

- Works in the Ethernet network
- Power supply over Ethernet – PoE
- SIP communication protocol
- Integrated web server for configuration
- Up to 54 quick dialling buttons
- Up to 999 users / user groups
- Video (camera-equipped models) streaming
- Display of information (display-equipped models)
- Integrated scheduler with day/night/weekend modes
- Can be used as a standard VoIP telephone and a code lock (keypad-equipped models)

- Modular system – up to 54 buttons + keypad
- DTMF according to RFC2833, in-band

1.2 Terms and Symbols

Symbols Used in Manual

Safety

- **Always** abide by this information to prevent injury of persons.

Warning

- **Always** abide by this information to prevent damage to the device.

Caution

- **Important information** for system functionality.

Tip

- Useful advice for quick and efficient functionality.

Note

- Routines or advice for efficient use of the device.

2

2N® Helios IP Configuration

This section describes the **2N® Helios IP** configuration.

Here is what you can find in the section:

- Quick Configuration for Calling
- Configuration

2.1 Model and Licence Overview

This manual is valid for all 2N® Helios IP intercoms. Therefore, please note that several features described in this document are only available in selected models or need to be activated with a licence key. The differences between the models and licences are stated in this article. This short list only includes the features that affect configuration. If a feature is not available in all models, it is noted in the respective article and there is a link to this article.

The table below includes the properties and functions of the available 2N® Helios IP models.

Property/Model	**Helios IP Vario**	**Helios IP Force**	**Helios IP Safety**	**Helios IP Uni**	**Helios IP Audio Kit**	**Helios IP Video Kit**
Part No.	9137….	9151…	9152…	9153…	9154...	9154...C
Integrated camera	optional		no			
External analogue camera support	no					yes
External IP camera support	yes			no		yes
Count of basic unit buttons	1, 3 or 6	1, 2 or 4	1	1 or 2	up to 16 external user defined buttons	
Extended count of buttons (extenders)	up to 48	no				
Numerical keypad	optional		no			
Internal RFID card reader	optional		no			
Display	optional	no				
Additional switch	optional			no		
Digital input	optional			no	2	
Adaptive volume control	no	yes				
Standard amplifier output	150mW	1W			10W	
Extended amplifier output (10W)	no	yes			no	
Tamper switch	no	optional		yes	no	
Count of telephone directory entries	999			2	16	
Substitute if inaccessible	yes			no	yes	
User activation/deactivation	yes			no	yes	
Count of controlled switches	4			1	4	
Count of universal switch codes	10			2	10	
Count of user profiles	20			2	20	
JPEG HTTP video	yes		no			yes
2N Helios IP Eye support	yes		no			yes
Telephone mode	yes		no		yes	

Table 2.1 Model Overview

Some 2N® Helios IP features are licensed; see the Licence subsection. The following licences are available:

- Enhanced Audio (Part No. 9137905)
- Enhanced Video (part No. 9137906)
- Enhanced Integration (Part No. 9137907)
- Enhanced Security (Part No. 9137908)
- Gold (Part No. 9137909)
- G.729 (Part No. 9137902)

The Gold licence replaces the previously offered Professional licence.

The G.729 licence includes only the G.729 audio codec.

The following list includes the licensed features. There is no limit in licence combinations. The features marked grey will only be available in the coming firmware releases.

Feature/Licence	**Enhanced Audio**	**Enhanced Video**	**Enhanced Integration**	**Enhanced Security**	**Gold (Profi)**
User defined sounds	•				•
Automatic audio loop test	•				•
Audio/video streaming (RTSP Server)		•			•
External IP camera support		•			•
ONVIF support		•			•
Extended switch setting options			•		•
HTTP switch control option			•		
New HTTP API			•		•
Automation features (Helios IP Automation)			•		•
E-mail sending (SMTP Client)			•		•
Auto provisioning (TFTP Client)			•		•
802.1x support				•	•

Table 2.2 Licensed Functions

2.2 Quick Configuration for Calling

This subsection describes the most common and convenient way of configuration. For details on the configuration parameters refer to the subsections below.

Language Selection

Before you start configuring, select the administration web server language using the folder menu in the right-hand upper corner of the screen.

Network Settings

If you have not set the IP address obtaining from the DHCP server, change the default IP address of your 2N® Helios IP. To set the IP address, use the *Other settings –> Network menu* as shown in the Network subsection.

Static Parameter Setting

For Windows OS users: to know your network parameters, enter in the command line: `ipconfig –all`.

Static IP address

Set the IP address assigned by your LAN administrator.

Network mask

Set the network mask.

Default gateway

Set the default network gateway.

Primary DNS

Set the primary Domain Name Server IP address for your LAN.

Secondary DNS

Set the secondary Domain Name Server IP address for your LAN.

SIP Parameter Setting

Set your VoIP network parameters to make calls from your 2N® Helios IP. To do this, use the *Other settings –> SIP setting* menu.

Display name
Set the name to be displayed to the called subscriber. The name will also be displayed in the right-hand upper corner of the web interface and used for 2N® Helios IP identification in the 2N® Helios IP Network Scanner application.

User ID
Set the user name to be used for registration.

Domain
Set the domain name or IP address of the server to be used for calling.

Use authorisation ID
Define whether the authorisation ID or user ID shall be used for authorisation.

Authorisation ID
Set the authorisation ID to be used for authorisation if the Use authorisation ID is set to Yes.

Password
Define the authorisation password for registration and calling.

Local SP port
Set the port to be used by 2N® Helios IP for SIP signalling.

Proxy address
Set the SIP proxy address to be used by 2N® Helios IP for calling.

Proxy port
Set the SIP proxy communication port for SIP signalling.

2N® Helios IP registration
Define whether 2N® Helios IP should register at the SIP proxy.

Registration restricted to:
Set the time for 2N® Helios IP registration.

Registrar address:
Set the registrar address.

Registrar port:
Set the registrar communication port.

Telephone Directory Setting

The telephone directory menu is used for configuring the quick dialling buttons (*Basic settings –> Telephone directory*). The telephone directory contains up to 999 positions (depending on the model type; refer to the Model and Licence Overview above). The first 54 positions correspond to the quick dialling buttons of 2N® Helios IP and the buttons of the extending modules attached. To retrieve the remaining positions, use the numeric keypad if available. To select a telephone directory position, use the upper navigation bar with button numbers. To move between the positions, either use the arrow keys or enter the position number and push the **Move to** button (see Figure 3.10).

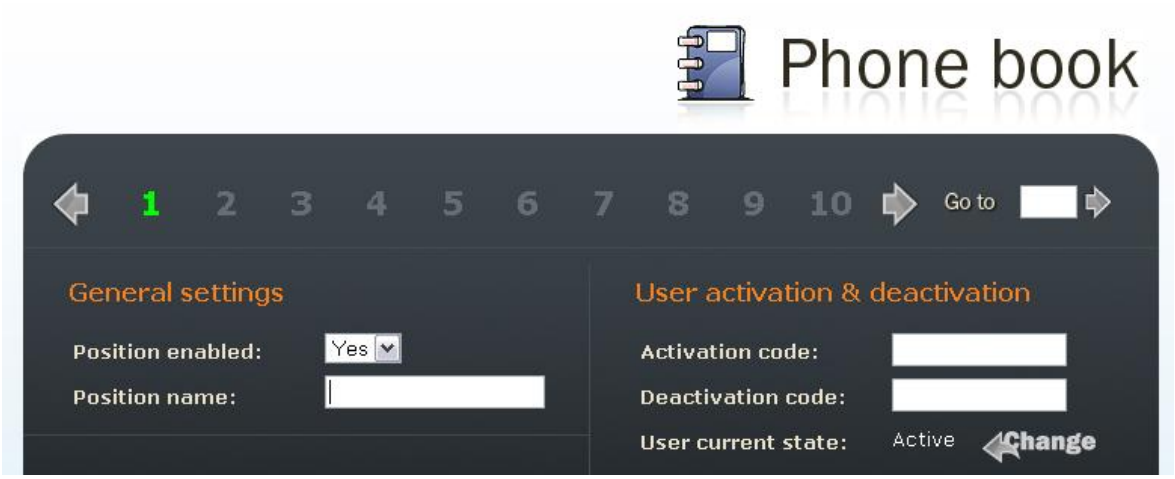


Figure 2.1 Telephone Directory Navigation Bar

Position enable

The **Position enable** switch defines whether the particular position is enabled or disabled. You have to enable a position to dial its telephone number. To select a position status, either push a quick dialling button (for positions 1–54) or enter the position number using the 2N® Helios IP numeric keypad.

Position name

Here enter a personal name for the selected telephone directory position. This parameter is optional and facilitates the telephone directory search.

Telephone numbers

Enter up to three telephone numbers for a selected telephone directory position. These numbers are called sequentially, one after another.

Number 1, 2 and 3:

Enter the station telephone number to which the call station number included in Number 1 fails to answer, automatically to Number 2, and so on. For the call forwarding timeout refer to the Audio Loop Test

2N® Helios IP allows you to perform periodical loudspeaker and microphone tests. For this purpose, the in-built loudspeaker generates one or more short tones, which are captured by the integrated microphone. If the tones are detected correct, the test is successful. The test time is approximately 4s. If the test fails (due to some extreme surrounding noise, e.g.), the test procedure is repeated in ten minutes. Follow the

most recent test results via your confirmation interface or with the aid of 2N® Helios IP Automation.

Figure 2.31 Audio loop test

Audio Loop Test Settings

Test enabled

Enable/disable the automatic loop test.

Test time

Set the test time in the HH:MM format. You are recommended to test the equipment when the intercom traffic is low.

Test period

Set the test period to launch the test automatically once a day or once a week.

Test Result

Test time

Displays the time of last performed test.

Test result

Displays the result of the last performed test.

Test status

Displays the test status.

Miscellaneous subsection.

It is unnecessary to define the remaining parameters for a quick configuration. For details on the parameters necessary for a detailed configuration, refer to the subsections below.

Switch Setting

To set the switch 1 codes use the *Basic settings* –> *Switch 1* menu.

Switch setting

Set whether and for how long the switch should be active after the correct code has been entered.

Switch codes

Enter the switch 1 activating codes for 2N® Helios IP. If a code matches another code entered earlier in 2N® Helios IP, press ✖. The symbol will appear next to the code.

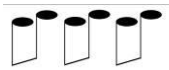
Having completed the configuration, restart 2N® Helios IP, refer to the appropriate subsection. From now on, 2N® Helios IP is ready to make calls.

2.3 Configuration

2N® Helios IP is configured through an integrated administration web server. Connect 2N® Helios IP to the IP network and make sure that 2N® Helios IP is powered.

IP Address Obtaining from DHCP

By default, obtaining the IP address from the DHCP server is selected in 2N®Helios IP. After power up, 2N® Helios IP automatically receives the IP address from the DHCP server. If you do not have access to the DHCP server, you can find the IP address received with the 2N® Helios IP Network Scanner program, which is available on www.2n.cz. If 2N® Helios IP is switched to the static IP address mode, switch it to the DHCP IP address obtaining mode as follows:

1. Power on 2N® Helios IP.
2. Wait until 2N® Helios IP completes the booting process. The end is signalled by a sequence of tones  .
3. Push the buttons as described in the Device configuration subsection of 2N® Helios IP Installation Manual within 30 seconds.
4. Switching to the DHCP IP address obtaining mode is signalled by the sequence of tones  .
5. Wait until the device is restarted.

Manual IP Address Setting

If the DHCP server is unavailable, you can set a default static IP address in your 2N® Helios IP. Proceed as follows:

1. Power on 2N® Helios IP.
2. Wait until 2N® Helios IP completes the booting process. The end is signalled by a sequence of tones  .
3. Push the buttons as described in the Device configuration subsection of 2N® Helios IP Installation Manual within 30 seconds.
4. Switching to the default static IP address mode is signalled by the sequence of tones  .
5. Wait until the device is restarted.
6. Now, 2N® Helios IP has the following network parameters:

IP address:	192.168.1.100
Network mask:	255.255.255.0
Default gateway:	192.168.1.1

Description of 2N® Helios IP Network Scanner

The purpose of this application is to find the dynamic IP address of 2N® Helios IP in the local IP network. The application is available on www.2n.cz, which is part of the 2N® Helios IP package. Microsoft NET Framework 2.0 is required for installation.

1. Run the 2N® Helios IP Toolkit installer.
2. The installation wizard will guide you through the installation.

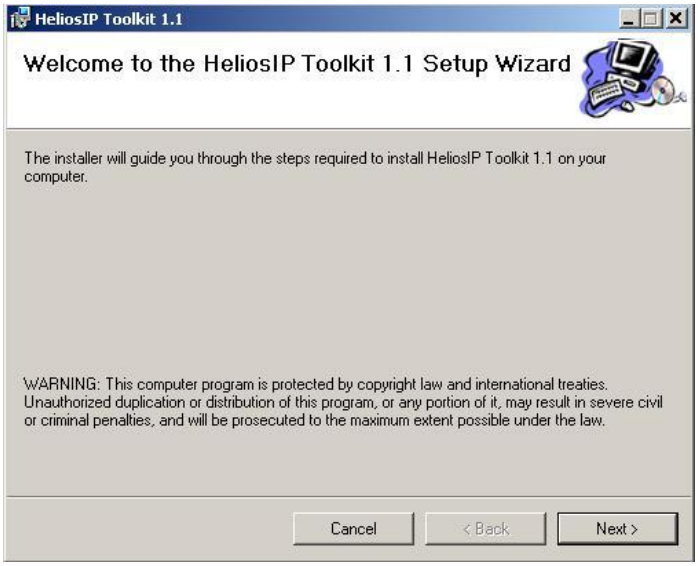


Figure 2.2 2N® Helios IP Network Scanner Installation Wizard

3. After installing the 2N® Helios IP Network Scanner application, run the application using the *Start* menu of the Microsoft Windows operating system.
4. Upon launch, the application starts searching the LAN automatically for all 2N® Helios IP intercoms with an assigned or statically set IP address. The intercoms are then listed in a table.

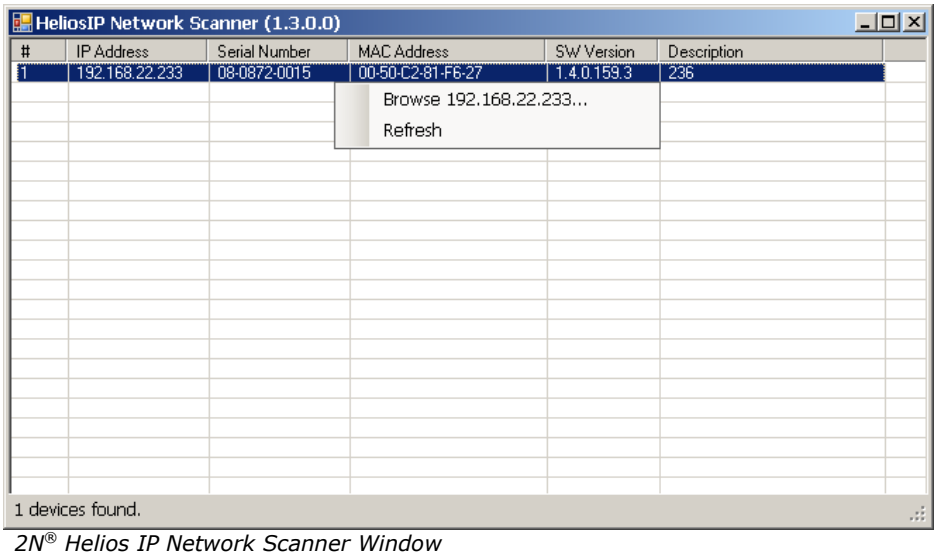


Figure 2.3 2N® Helios IP Network Scanner Window

5. Select the 2N® Helios IP intercom to be configured. Click on it with the right-hand mouse button and select **Browse...** to open the web browser window, log in to 2N® Helios IP and start configuring as described in the Login subsection below.

Login

In the web browser enter the IP address of 2N® Helios IP. Subsequently, a login screen will be displayed. The default login username and password are as follows:

Username: Admin

Password: 2n

If the login screen does not appear, an incorrect IP address was entered into the web browser or the 2N® Helios IP administration web server was turned off. If you are not sure of the IP address of 2N® Helios IP, use the 2N® Helios IP Network Scanner application as described in the Description of 2N® Helios IP Network Scanner subsection.

Language Selection

You can select the language using the tag menu in the right-hand upper corner as shown in Figure 3.13.

Figure 2.4 Language Selection

Information

In this subsection find the basic information on the respective 2N® Helios IP system.

Figure 2.5 Basic Information

Software version – the current 2N® Helios IP firmware version. For firmware update refer to the Auto Update subsection.

Product name – model name of this intercom.

Bootloader version – the bootloader version.

Hardware version – the 2N® Helios IP hardware version.

Serial number – the product serial number.

MAC address – the Ethernet interface address.

Uptime – the period of time since the last restart.

Registration status – the current 2N® Helios IP-to-SIP proxy registration status

SIP number – registered SIP number

Registration at – the IP address or domain name of SIP proxy to which 2N® Helios IP is registered.

Registration time – registration date and time.

DHCP status – displays whether the obtaining of the IP address from the DHCP server is on.

IP address – the current IP address of 2N® Helios IP.

Net mask – the current subnet mask.

Default gateway – the current default network gateway.

Primary DNS – the current primary Domain Name Server.

Secondary DNS – the current secondary Domain Name Server.

Camera – displays whether or not the intercom is equipped with a camera.

Display – informs whether or not the intercom is equipped with a display.

Card reader – informs whether or not the intercom is equipped with a card reader.

Number of buttons – specifies the number of buttons on the intercom basic unit.

Numeric keypad – informs whether or not the intercom is equipped with a numeric keypad.

Telephone Directory

Use the *Basic settings –> Telephone directory* tag to set the telephone directory. The telephone directory includes 999 records – positions. Typically, one position corresponds to one user. You can assign up to three phone numbers to each position/user.

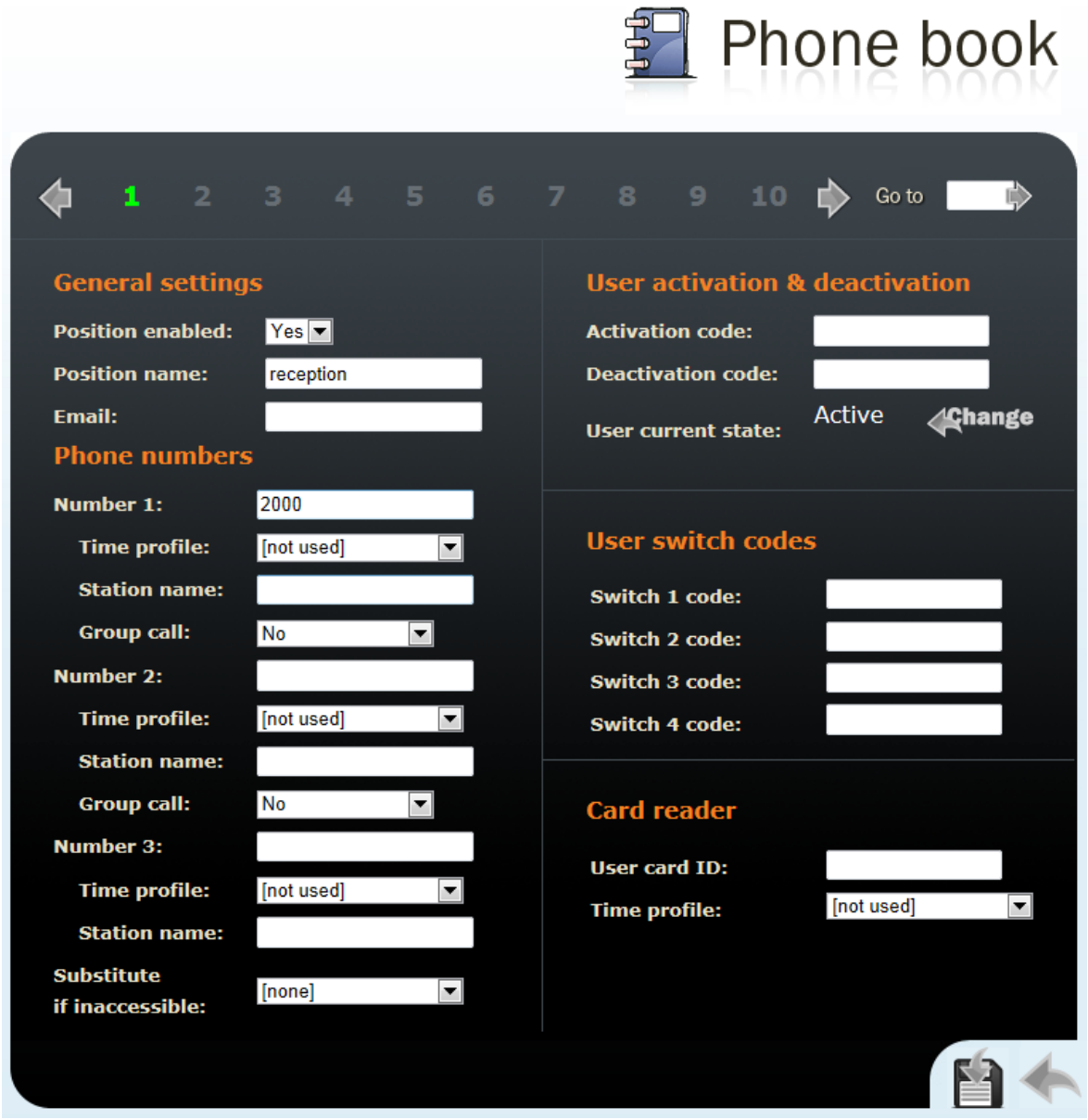


Figure 2.6 Telephone Directory

To move between the positions either use the arrow buttons, or enter the position number and push the **Move to** button in the right-hand upper corner.

The first 54 positions (depending on the model type; refer to the Model and Licence Overview above) are the same as the quick dialling buttons on 2N® Helios IP and

buttons on the extending. For the other positions use the numeric keypad if available in your 2N® Helios IP.

General Settings

Position enabled

Here select whether the selected telephone directory position shall be enabled or disabled. Remember to enable a position to call to its number.

Position name

Enter the name of the person to be assigned to a selected telephone directory position. This parameter is optional and helps you search the telephone directory more easily.

E-mail

Enter the e-mail address of the user to which information on missed calls should be sent. Refer to the E-Mail subsection for details.

Telephone Numbers

Here define up to three telephone numbers to be called one after another when a quick dialling button or keypad is used.

Numbers 1,2 and 3

Enter the telephone number to which the call is to be routed. If the call is not answered by the station with the telephone number specified under Number 1, it will be forwarded automatically to the telephone number specified under Number 2 and so on.
2N® Helios IP also allows for direct calling in the format sip:user_id@domain:port, e.g.: sip:200@192.168.22.15:5062 or sip:name@yourcompany.

Time profile

Assign a time profile to a telephone number for validity management. Refer to the Profiles subsection for details on time profile settings.

Station name

Set the address of the PC to which a special UDP message on the current call to the user telephone number shall be sent. This message is used by the 2N® Helios Eye application for retrieving the camera image window, which is helpful to the users that are not equipped with a display video telephone. Enter the following: ip_address[:port1][:port2]. The **port1** and **port2** parameters are optional and are used when there is Network Address Translation (NAT) between the PC and 2N® Helios IP and the addresses have to be set in accordance with the router or another NAT providing device. The **port1** parameter (default value 8002) sets the destination port for the UDP messages sent to 2N® Helios Eye. The **port2** parameter (default value 80) sets the destination port for HTTP communication between 2N® Helios Eye and 2N® Helios IP. This function is only available in camera-equipped 2N® Helios IP models.

Group call

A group call means a call to multiple telephone numbers at the same time. Set a group call for the first two / last two / three user numbers. When one of the calls is answered, the other calls will be terminated automatically.

Substitute if inaccessible

Enter the person to whom the call will be routed if the original person is not reached. This function is supported by selected 2N® Helios IP models only (refer to the Model and Licence Overview subsection).

User Activation and Deactivation

Here set the user activation and deactivation codes. The user may activate or deactivate 2N® Helios IP using the user telephone or numeric keypad. If just one code is set, or both the codes are the same, the current user status will be switched after code entering. You can verify the selected status by a sound signalling. Together with the time profile settings, the user activation and deactivation define whether a call will be established for the given telephone number. This function is supported by the camera-equipped 2N® Helios IP models only.

User Switch Codes

Write the user codes for activating of 2N® Helios IP switches. Each user may be assigned two unique codes for switch 1 to 4. If the codes are identical with other codes already entered in 2N® Helios IP, the following mark will appear with the respective codes: ✖. This function is supported by selected 2N® Helios IP models only (refer to the Model and Licence Overview subsection).

Card reader

User card ID

Identification of the RFID card assigned to the user.

Time profile

Assign a time profile to each card to control its validity. Refer to the Profiles subs. for details.

Profiles

The time profiles helps you set conditioned calling to user numbers. In case a user is not present, 2N® Helios IP need not set up a call to his or her telephone number but can automatically call other telephone numbers in the directory or the substitute number. Each user number can be assigned a profile. Up to 20 profiles can be created altogether (depending on the model type; refer to the Model and Licence Overview subsection).There are two possible ways of profile validity condition setting: time setting in the Time schedule, or manual setting of the profile activation and deactivation codes. For you to use both the functions at the same time, the two conditions must be met at the same time.

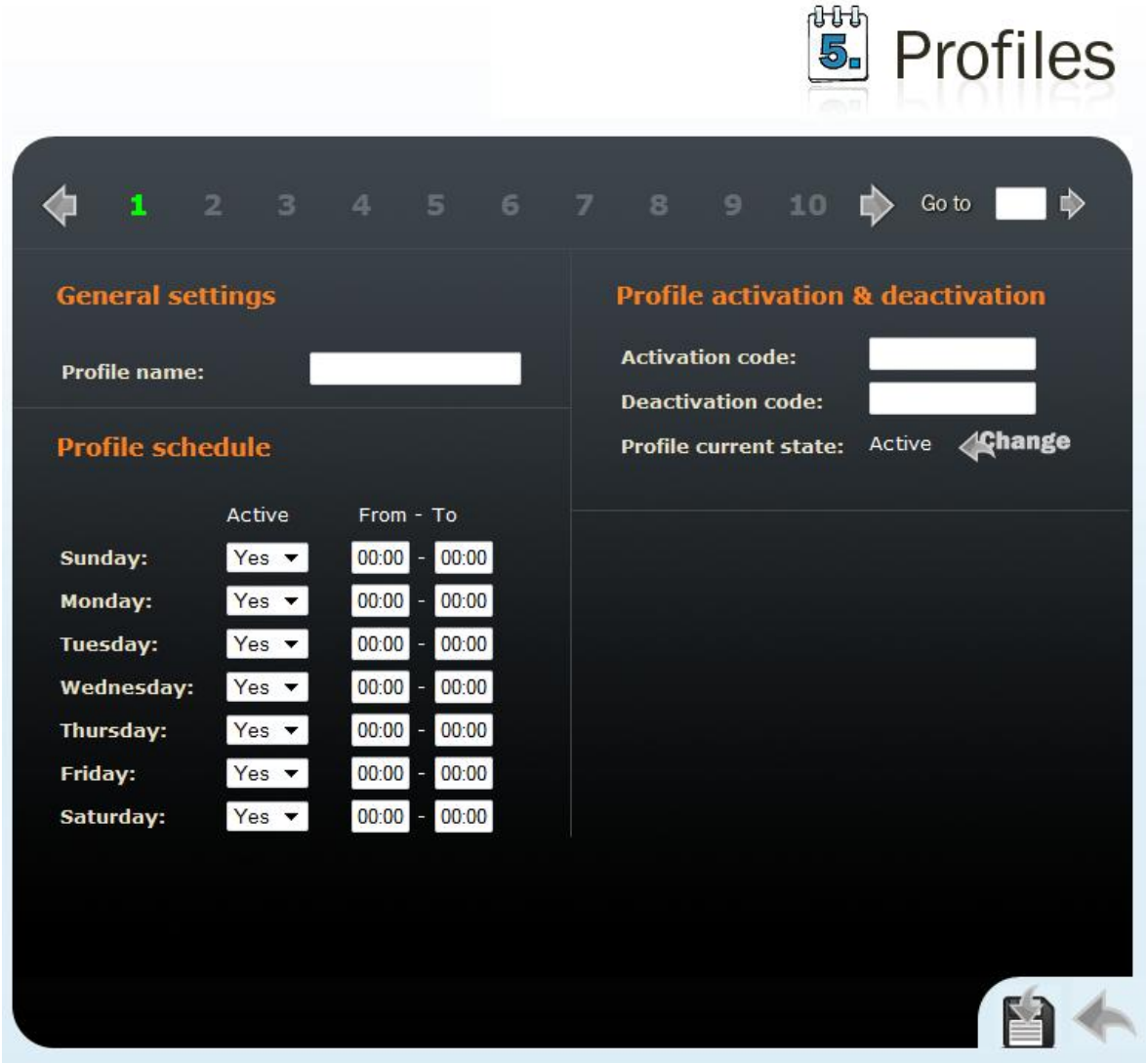


Figure 2.7 Profile Set-up

General Settings

Profile name

This parameter is optional and helps you search the list of profiles more easily.

Profile Time Schedule

Set the presence of a user in a week period. A profile is active if the current time matches the set parameters. To use this function properly, make sure that the current time data have been set properly on the device (see the Date and Time subsection).

Profile Activation and Deactivation

Set the manual user activation and deactivation codes. Use the DTMF code from the user telephone or the 2N® Helios IP numeric keypad to activate or deactivate a profile. If just one code is set, or both the codes are the same, the current user status will be switched over after code entering. You can verify the selected status by a sound signalling. If no code is set, the function is inactive and the profile status depends on the time schedule.

Switches

This menu helps you set the switch codes and control options (depending on the model type; refer to the Model and Licence Overview subsection) for up to 4 switches connected to
2N® Helios IP.

Figure 2.8 Switch Settings

Switch Settings

Switch enabled

Enable or disable switch control globally. If disabled, the switch cannot be activated with any of the codes entered (including the user switch codes) or activated by a call or speed dialling button.

Time profile

Assign a time profile to the switch for global management. If the assigned time profile is not active, the switch cannot be activated with a code or activated by a

call or speed dialling button. Refer to the Profiles subsection for details on time profile settings.

Switch mode

Select either the **mono-stable** or **bi-stable** switch mode. The switch is automatically switched off after a predefined switch-on time in the mono-stable mode. The first activation opens and the second activation closes the switch in the bi-stable mode.

Switch-on duration

Set the switch-on time in the mono-stable mode. The time interval set here is not applied to the bi-stable mode.

Sound signalling

Set the sound signalling type during switch-on status. Select one of the following: **Short tone**, **Long tone** (during the whole switch-on time), or a **User sound**; refer to the User Sounds subsection.

Display info

Enable or disable displaying of switch-on signalling on 2N® Helios IP display.

Output relay

This option helps you assign a switching relay to the switch: **Basic relay** or **Additional relay**, and/or a reader switch: **Reader relay #1**, **Reader relay #2** if the RFID card reader is installed.

Output type

Set the type of the lock to be connected. **Normal** means a standard door lock and **Security** means a security relay. With the Security type, the relay is in the inverse mode and the connected Secure relay opens the door using a specific pulse sequence.
For 2N® Helios IP Vario, remember to set internal power supply and switching relay on the configuration connector. For 2N® Helios IP Force, connect the Secure relay to the DOOR + and - terminals.

Synchronise with

Enable switch synchronisation for automatic switch activation after a predefined time interval after another switch activation. Use the **Synchronisation delay** parameter to set the timeout value.

Synchronisation delay

Set the time interval for synchronised activation of switches. The parameter is not applied if the **Synchronise with** function (above) is not enabled.

Activate by call

Enable switch activation by an incoming/outgoing call. The switch is active during the whole call in the bi-stable switch mode. The switch is activated by the call start and deactivated after a predefined switch-on time in the mono-stable mode.

Quick dial button

Assign one of the speed (quick) dial buttons to the switch. Push this speed dial button to activate the switch. Once assigned to a switch, this button cannot be used for dialling.

External Command

Switch-on command

Set the command to be sent to an external device (WEB relay, e.g.) via the HTTP protocol (GET request) whenever the switch is activated. The required format is http://ip_address/path. Example: http://192.168.1.50/relay1=on.

Switch-off command

Set the command to be sent to an external device (WEB relay, e.g.) via the HTTP protocol (GET request) whenever the switch is deactivated. The required format is http://ip_address/path. Example: http://192.168.1.50/relay1=off.

Switch Codes

A list of the universal switch codes to be entered using a telephone set or the 2N® Helios IP keypad. The count of universal switch codes is determined by the 2N® Helios IP model type; refer to the Model and Licence Overview subsection.

Access

Disable code entering from the user numeric keypad or telephone set.

Time profile

Assign a time profile to the switch code for validity management. Refer to the Profiles subsection for details on time profile settings.

Switch Code Options

Enable ON/OFF mode

You are recommended to enable different activation/deactivation codes while setting the bi-stable switch mode. Use this parameter to set a mode where odd codes (1, 3, 5, etc.) are used for switch activation and even codes (2, 4, 6, etc.) for switch deactivation. If this mode is OFF (default setting), then you can use any code to turn the switch into the opposite state (ON/OFF). This does not apply to the mono-stable switch mode where the activation time is prolonged.

Network

This menu is used for setting the 2N® Helios IP network parameters. A change of any of these parameters will not show until the next 2N® Helios IP restart.

By default, obtaining the IP address from the DHCP server is switched on in 2N® Helios IP (DHCP client enabled). To find the IP address of your 2N® Helios IP, use the 2N® Helios IP Network Scanner program included on www.2n.cz. If, in your LAN, the DHCP server is not used or properly configured for your 2N® Helios IP, you can push the appropriate quick dialling button sequence to switch 2N® Helios IP into the fixed IP address mode (see the Device configuration subsection of 2N® Helios IP Installation Manual).

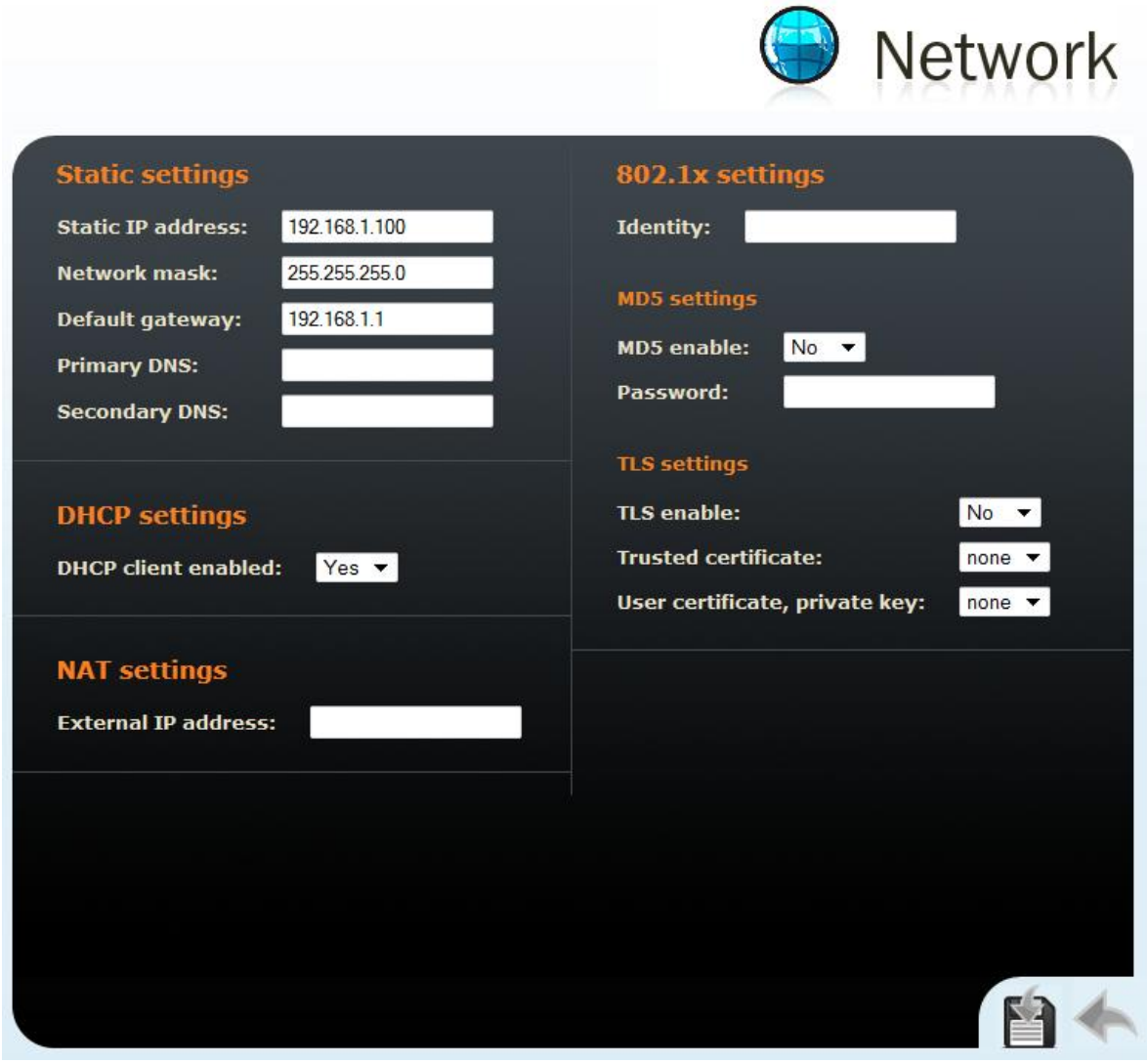


Figure 2.9 Network Parameter Setting

DHCP Settings

DHCP client enabled

Switch on the function of obtaining the IP address from the DHCP server.

Static Settings

For Windows OS users: find the network parameters by entering *ipconfig –all* in the command line.

Static IP address
Set the static IP address assigned by your local network administrator.

Network mask
Set the network mask.

Default gateway
Set the default network gateway.

Primary DNS
Set the IP address of the primary Domain Name Server used in your LAN.

Secondary DNS
Set the IP address of the secondary Domain Name Server used in your LAN.

NAT Settings

These settings are applicable only if 2N® Helios IP is operated in a LAN and assigned no public IP address.

External IP address
Set the public IP address for your router to which 2N® Helios IP is connected. If 2N® Helios IP's IP address is public, leave this field blank.

802.1x Settings

2N® Helios IP supports authentication of a LAN-connected device based on the 802.1x (EAP-MD5 or EAP-TLS) protocols. Make sure that all the network elements of your LAN are connected properly before using this mechanism. This function is supported by selected 2N® Helios IP models only; refer to the Model and Licence Overview subsection.

Identity
Enter the user name for the EAP-MD5 or EAP-TLS authentication method to identify your 2N® Helios IP unit in the LAN.

MD5 enable
Enable the use of authentication of a LAN-connected device based on 802.1x EAP-MD5. In case your LAN does not support 802.1X, do not enable this function. If you do so, the device will become unavailable.

Password
Set the access password for the EAP-MD5 authentication method.

TLS enable

Enable the use of authentication of a LAN-connected device based on 802.1x EAP-TLS. In case your LAN does not support 802.1X, do not enable this function. If you do so, the device will become unavailable.

Trusted certificate

Specify the set of certificates from certification authorities to be used for verification of the RADIUS server public certificate validity. Select one of the three available sets; refer to the Certificates subsection for details. If no certificate from a certification authority is specified, the public certificate of the RADIUS server will not be verified.

User certificate, private key

Specify the user certificate and private key to be used for verification of 2N® Helios IP authorisation to communicate via the 802.1x-secured network element port within the LAN. Choose one of the three user certificate and private key sets available; refer to the Certificates subsection for details.

Date and Time

This menu helps you set the time zone and time synchronisation using the NTP server. For manual data and time setting refer to the Tools subsection.

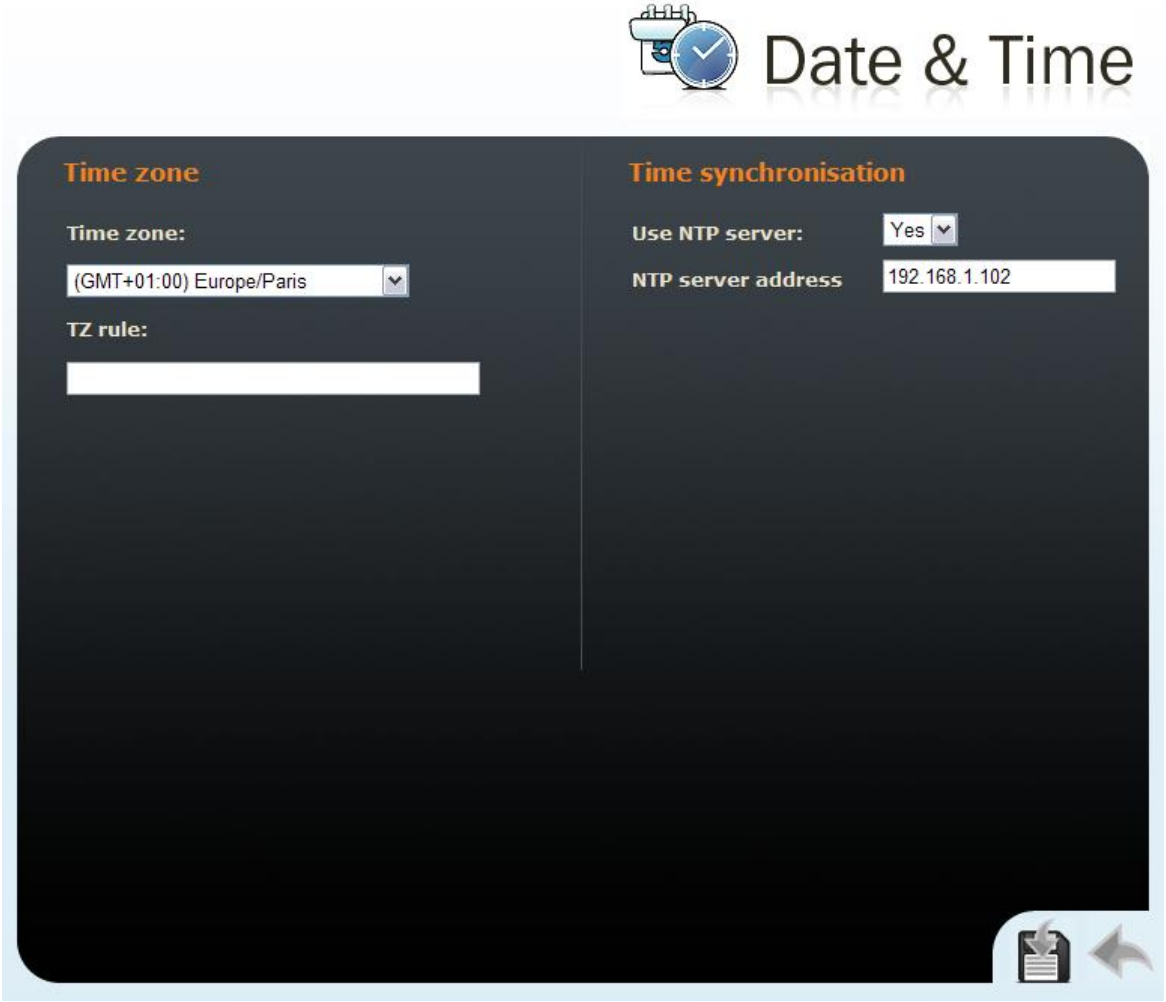


Figure 2.10 Date and Time Settings

Time Zone

Time zone

Set the time offset at the place of installation relative to the GMT – Greenwich Mean Time. This setting is intended for switching on/off the daylight saving time in spring and autumn.

TZ rule

If 2N® Helios IP is installed in a location not included in the Time zone parameter, specify the time shift offset and daylight saving time switch on/off manually here. Remember to set the Time zone to the Use TZ rule below function.

Time Synchronisation

Use NTP server

Enable or disable the 2N® Helios IP synchronisation using the NTP (Network Time Protocol) server.

NTP server address

Set the IP address of the NTP server for 2N® Helios IP time synchronisation.

SIP Settings

In order to set up calls from 2N® Helios IP, define your VoIP network parameters. To do this use the *Advanced settings –> SIP settings* menu.

Remember to restart 2N® Helios IP after setting the SIP parameters.

Figure 2.11 SIP Settings

User Settings

Display name
Set the name to be displayed to the called party. The name will also be displayed in the right-hand upper corner of the web interface and used for 2N® Helios IP identification in the 2N® Helios IP Network Scanner application.

User ID
Set the user ID for registration.

Domain
Enter the domain name or IP address of the server to be used for calling.

Use authorisation ID
Set whether 2N® Helios IP should use the authorisation ID or user ID only for authorisation.

Auth ID
Enter the authorisation ID to be used for authorisation if the Use authorisation ID parameter is set to Yes.

Password
Enter the password to be used for authorisation during registration and calling.

Other Settings

Protocol
Set the protocol to be used for SIP communication. Select UDP (default value), TCP or TLS.

Local SIP port
Set the communication port to be used for SIP signalling by 2N® Helios IP. The change of this parameter will not show until the next 2N® Helios IP restart. The default value is 5060.

Send KeepAlive packets
Set whether or not 2N® Helios IP should periodically query about the state of the called station using the SIP OPTIONS requests during a call. Use this option to detect a disconnected or defective station.

Initial RTP port
Set the initial port for the range of 60 RTP ports to be used for audio and video transfers. The default value is 5000 (i.e. the range of 5060-5059).

RTP Timeout
Set the time limit for receiving audio stream RTP packets during a call. When the limit is exceeded, the call is terminated by 2N® Helios IP. Set 0 to disable this limitation.

QoS DSCP for SIP
Set the priority of SIP packets in the network. The value is copied into the ToS (Type of Service) field in the IP packet header.

IP filter for SIP
Use this function to block receiving of SIP packets from addresses other than the SIP Proxy and SIP Registrar ones. The main purpose of the function is to enhance communication security and bar unauthorised telephone calls in 2N© Helios IP.

SIP Proxy Settings

Proxy address
Set the IP address of the SIP proxy used by 2N® Helios IP for calling.

Proxy port
Set the SIP signalling port to the SIP proxy.

SIP Proxy Registration

Register 2N® Helios IP
Set whether 2N® Helios IP should register with the SIP proxy.

Registration expires
Set the minimum time for 2N® Helios IP registration attempts.

Registrar address
Set the registrar IP address.

Registrar port
Set the registrar communication port.

SIPS Settings
These settings are applied only if the Protocol parameter is set to TLS.

Trusted certificate
Specify the set of certificates from certification authorities to be used for verification of the proxy server public certificate validity. Select one of the three available sets; refer to the Certificates subsection for details. If no certificate from a certification authority is specified, the public certificate of the proxy server will not be verified.

User certificate, private key
Specify the user certificate and private key to be used for verification of 2N® Helios IP authorisation to communicate with proxy server. Choose one of the three user certificate and private key sets available; refer to the Certificates subsection for details.

Administration Web Server

This menu helps you configure the administration web server.

Figure 2.12 Web Server Configuration

Web Server Settings

Web server port

Set the web server communication port. The change of this parameter will not show until the next 2N® Helios IP restart.

Web server language

Set the default language after login to the web server.

Admin password

Set the administrator password for 2N® Helios IP configuration through the administration web server. Enter the new password into both of the Admin password and Confirm password fields. The password must contain 8 characters at least, including one small letter, one capital letter and one digit at least.

Remote access enabled

Enable/disable remote access to the administration web server from IP addresses outside the LAN in which 2N® Helios IP is installed.

HTTP Settings

Port

Set the web server communication port for communication via unsecure HTTP protocol. The change of this parameter will not show until the next 2N® Helios IP restart.

HTTPS Settings

Port

Set the web server communication port for communication via secure HTTPS protocol. The change of this parameter will not show until the next 2N® Helios IP restart.

User certificate

Specify the user certificate and private key to be used for encryption of communication between the HTTP server in 2N® Helios IP and web browser on the user side. Choose one of the three user certificate and private key sets available; refer to the Certificates subsection for details. You can use SelfSigned option to use automatically generated self-signed certificate which is created on the first start-up of the device.

Mic & Speaker

This menu is used for the 2N® Helios IP audio settings.

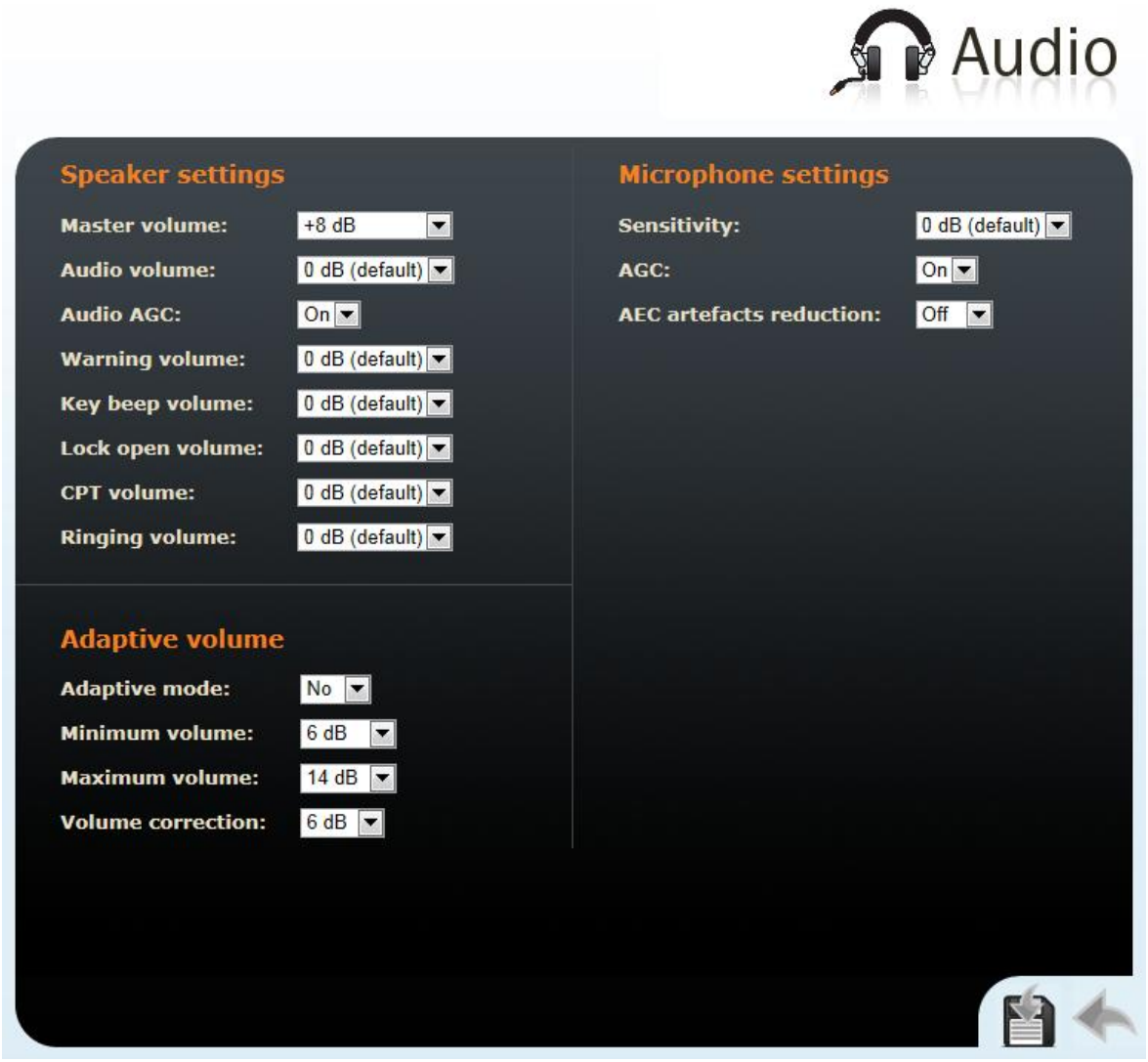


Figure 2.13 Audio Parameter Settings

Speaker Settings

Master volume

Set the global loudspeaker volume. This parameter controls the volume of the calls and all acoustic signalling.

Audio volume

Adjust the loudspeaker volume for a call.

Warning volume

Set the volume of the 2N® Helios IP signal tones that announce status changes.

Key beep volume

Set the volume of the tone generated whenever a key is pushed.

Lock open volume

Set the volume of the unlocking signalling tone.

Call tones

Set the volume of the dialling, ringing and busy tones if generated by 2N® Helios IP.

Ringing

Set the volume of the incoming call signalling tone – are signalled when the automatic incoming call receiving function is off, see the Audio Loop Test

2N® Helios IP allows you to perform periodical loudspeaker and microphone tests. For this purpose, the in-built loudspeaker generates one or more short tones, which are captured by the integrated microphone. If the tones are detected correct, the test is successful. The test time is approximately 4s. If the test fails (due to some extreme surrounding noise, e.g.), the test procedure is repeated in ten minutes. Follow the most recent test results via your confirmation interface or with the aid of 2N® Helios IP Automation.

Figure 2.31 Audio loop test

Audio Loop Test Settings

Test enabled

Enable/disable the automatic loop test.

Test time

Set the test time in the HH:MM format. You are recommended to test the equipment when the intercom traffic is low.

Test period

Set the test period to launch the test automatically once a day or once a week.

Test Result

Test time

Displays the time of last performed test.

Test result

Displays the result of the last performed test.

Test status

Displays the test status.

Miscellaneous subsection.

Microphone Settings

Sensitivity

Set the microphone sensitivity.

AGC (Automatic Gain Control)

Set whether the Automatic Gain Control function should be used.

AEC artefacts reduction

Set the mode in which disturbing noise (i.e. artefacts caused by the cancellation of local acoustic bonds on the intercom installation site) is reduced; see Details on Audio Parameters Function.

Adaptive Volume

Adaptive mode

Enable the adaptive volume control mode where the loudspeaker volume is adjusted automatically according to the current ambient noise.

Minimum volume

Set the minimum volume value in the adaptive mode to avoid drop below the defined limit.

Maximum volume

Set the maximum volume value in the adaptive mode to avoid increase above the defined limit.

Volume correction

Turn up/down the loudspeaker in the adaptive mode in case the default adaptive mode settings fail to meet the local conditions.

Details on Audio Parameters Function

Use the **Master Volume**, **Audio Volume** and **Microphone Sensitivity** parameters to adjust the intercom loudspeaker volume and microphone sensitivity. Refer to the table below for the value ranges for each 2N® Helios IP model.

Model	Master volume	Audio volume	Microphone sensitivity
Vario	-6db .. +6dB (150mW)	-6dB .. +18dB	-6dB .. +6dB
Force/Safety 1W	-20dB .. +16dB (1W)	-6dB .. +18dB	-6 dB .. +12dB
Force/Safety 10W	-20dB .. +20dB (10W)	-6dB .. +18dB	-6dB .. +12dB
Uni	-20dB .. +16dB (1W)	-6dB .. +18dB	-6dB .. +12dB

Master volume – controls the overall loudness of the equipment and adjusts the level for calls, signalling tones, etc. Set this parameter according to the intercom

surrounding noise level. It is supposed that people naturally talk louder in noisy environments than in silent places and so it holds true in general that the louder the environment, the lower the microphone sensitivity level and vice versa.

Audio volume – controls the gain of the reproduced signal of the telephone call. Increase the parameter value if the call volume value is too low for the current environment. Values higher than +6dB, however, may lead to a slight signal distortion, which does not affect the comprehensibility of your speech substantially.

Microphone sensitivity – controls the gain of the signal of the integrated microphone and affects the audibility of the intercom user. The microphone sensitivity values are relative to the automatic microphone sensitivity setting in the **Master volume** parameter.

Tip

- If the sum of the Audio volume a Microphone Sensitivity values exceed +12dB, the signal audio quality in the intercom – telephone direction may get deteriorated in some situations. Such deterioration is caused by the acoustic feedback between the microphone and loudspeaker and depends on the specific intercom installation site conditions (installation method, intercom position, environment quality, surrounding noise, etc.). If you hear interference in your earphone during communication with the intercom, set the **AEC artefacts reduction** to **Low** or **High** as necessary.

Keyboard

You can connect up to 16 buttons to the accessible terminals in the 2N® Helios IP Audio Kit and Video Kit models. Set the button functions as necessary using the Keyboard menu.

Button Functions

Row x column

The buttons are connected in a 4x4 matrix. One function can be assigned to each matrix position: a numerical keypad button (0 to 9, *, #) or one of the speed dialling buttons for calling to a telephone directory position.

Video

This menu is used to set the video camera. To set the codec properties use the *Advanced Settings –> Video codecs* menu; see the Video Codecs subsection.

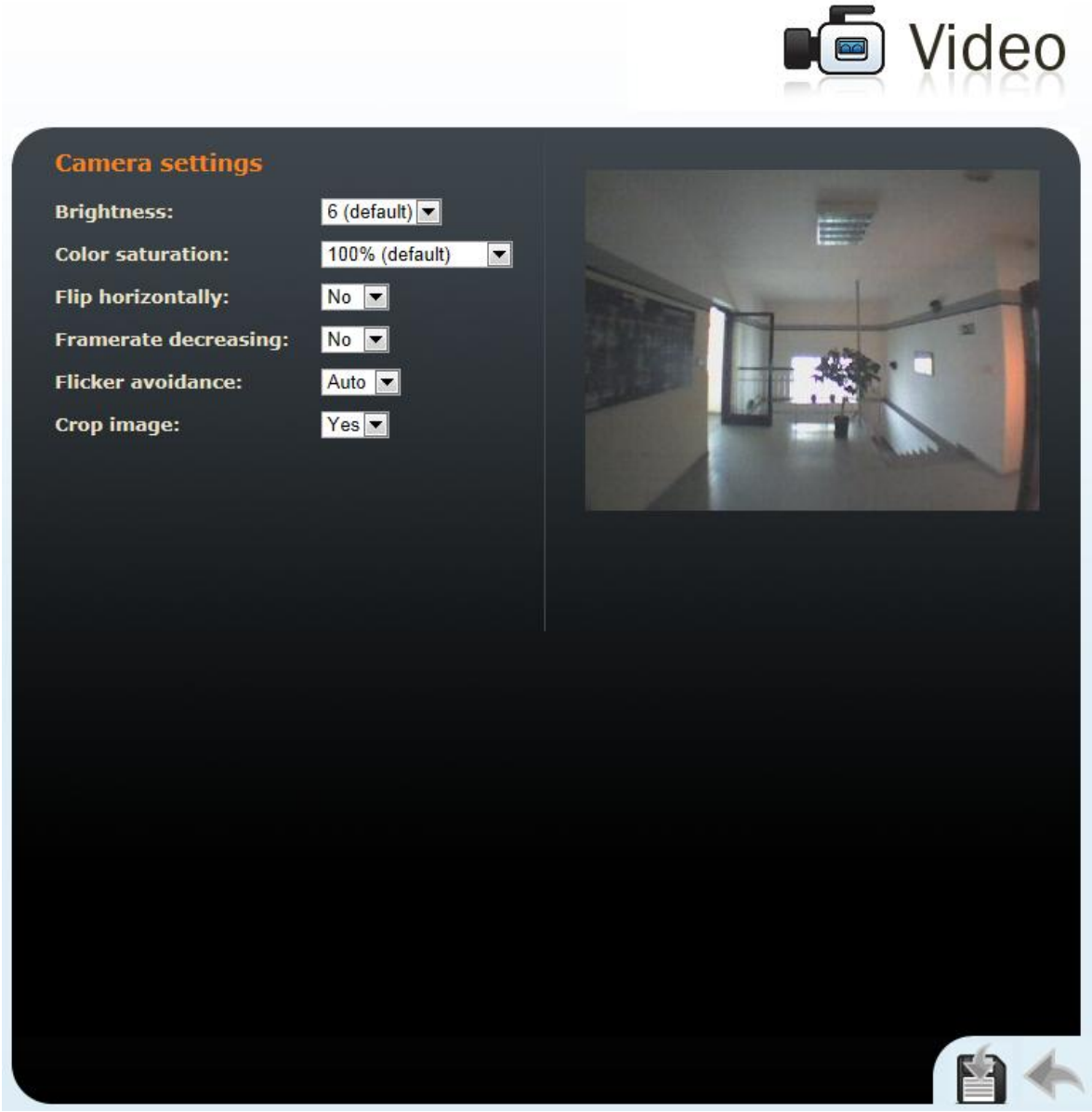


Figure 2.14 Video Parameter Settings

Camera Settings

Brightness
Set the intensity of the video camera stream.

Colour saturation
Set the colour saturation of the video camera stream.

Flip horizontally
Set whether the picture is to be flipped horizontally.

Frame rate decreasing
Enable an automatic decreasing of the frame rate under poor light conditions, which improves the video quality to the detriment of the frame rate.

Flicker avoidance
Here you can eliminate flicker caused by artificial sources of light such as fluorescent lamps. The flicker frequency depends on the light source power supply frequency.

Crop image
The view angle of the 2N® Helios IP Force camera is set to cover the largest area possible. Use this parameter to enable automatic camera image cropping to avoid distracting image of the device frame within the view angle. Set this parameter to **No** to get the maximum view angle.

External Camera
2N® Helios IP allows you to download RTSP video streams from a standard external IP video camera. The IP camera must support the RTSP stream with 640x480 resolution in the MJPEG format.

Enabled
Enable/disable RTSP stream downloading from an IP video camera.

Address
Set the IP camera RTSP stream address in the following format: **RTSP://ip_camera_address/parameters**. The parameters depend on the IP camera model connected.

Username
Enter the authentication username for the external IP camera connection. The parameter is obligatory only if the external IP camera requires authentication.

Password
Enter the authentication password for the external IP camera connection. The parameter is obligatory only if the external IP camera requires authentication.

Camera Source

Set the video signal source for further processing (calls, RTSP streaming, etc.). Select an internal or external IP video camera.

Audio Codecs

This tag is used for configuration of priorities of the use of audio codecs.

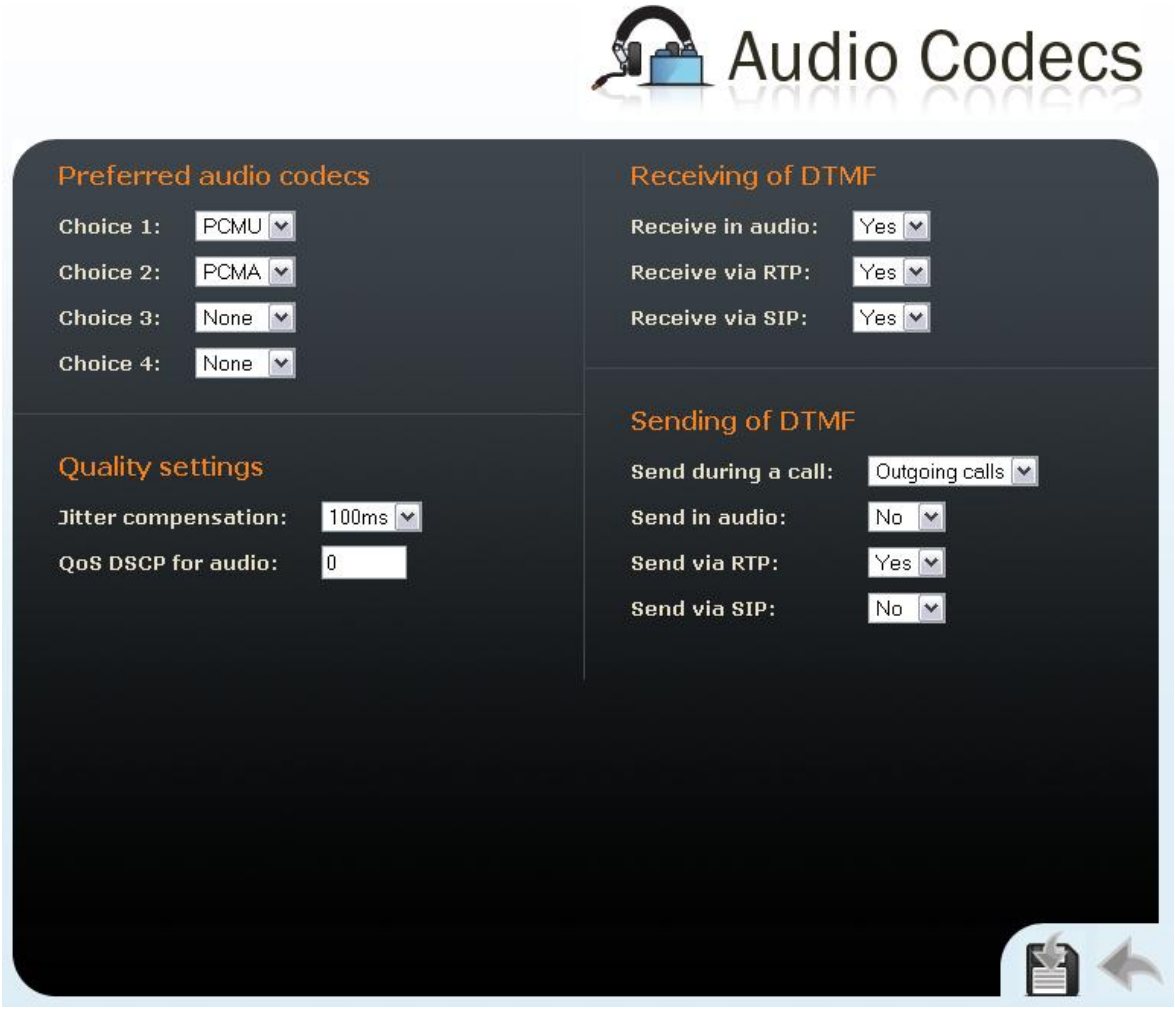


Figure 2.15 Audio Codec Settings

Preferred Audio Codecs

Set the audio codecs for 2N® Helios IP telephone call set-ups. Select G.711 (PCMA or PCMU), L16 or G.729. Audio codec priorities are determined by the sequence: the first codec in the sequence has the highest priority. Codec G.729 is supported by selected 2N® Helios IP models only (refer to the Model and Licence Overview subsection).

Transmission Quality Settings

Jitter compensation

Set the buffer length to compensate jitter caused by variable delays between incoming RTP packets. A longer buffer mans a better transmission quality yet a higher transmission delay.

QoS DSCP for audio

Set the priority of the audio transmitting packets in the network. The value is copied into the ToS (Type of Service) field in the IP packet header.

Caution

- Wrong settings may deteriorate the transfer quality. Do not change this parameter if you are not sure. The change in transfer quality will show only in case the network components support this service.

DTMF Receiving and Sending

Defines how DTMF signalling should be received and sent. Check the opponent's parameters for correct settings.

1. Receive as audio / Send as tones – transmits the DTMF signals in the audio channel. This setting is unsuitable for cases where the audio channel is comprised using high-compression codecs such as GSM codecs.
2. Receive as RTP / Send as RTP – transmits DTMF signalling as special RTP packets according to the RFC2833 recommendation.
3. Receive as SIP INFO / Send as SIP INFO – transmits DTMF signalling using the SIP INFO packets as recommended in RFC2976.

   To send DTMF signalling during a call use the 0 to 9, * and # keys. You can also disable this function, enable for outgoing calls only, or enable for incoming and outgoing calls by setting the Send during call parameter.

Video Codecs

2N® Helios IP supports video codec H.263, H.263+ or H.264. You can set their parameters in such a manner that the video transmitted conforms to the needs of the opponent.

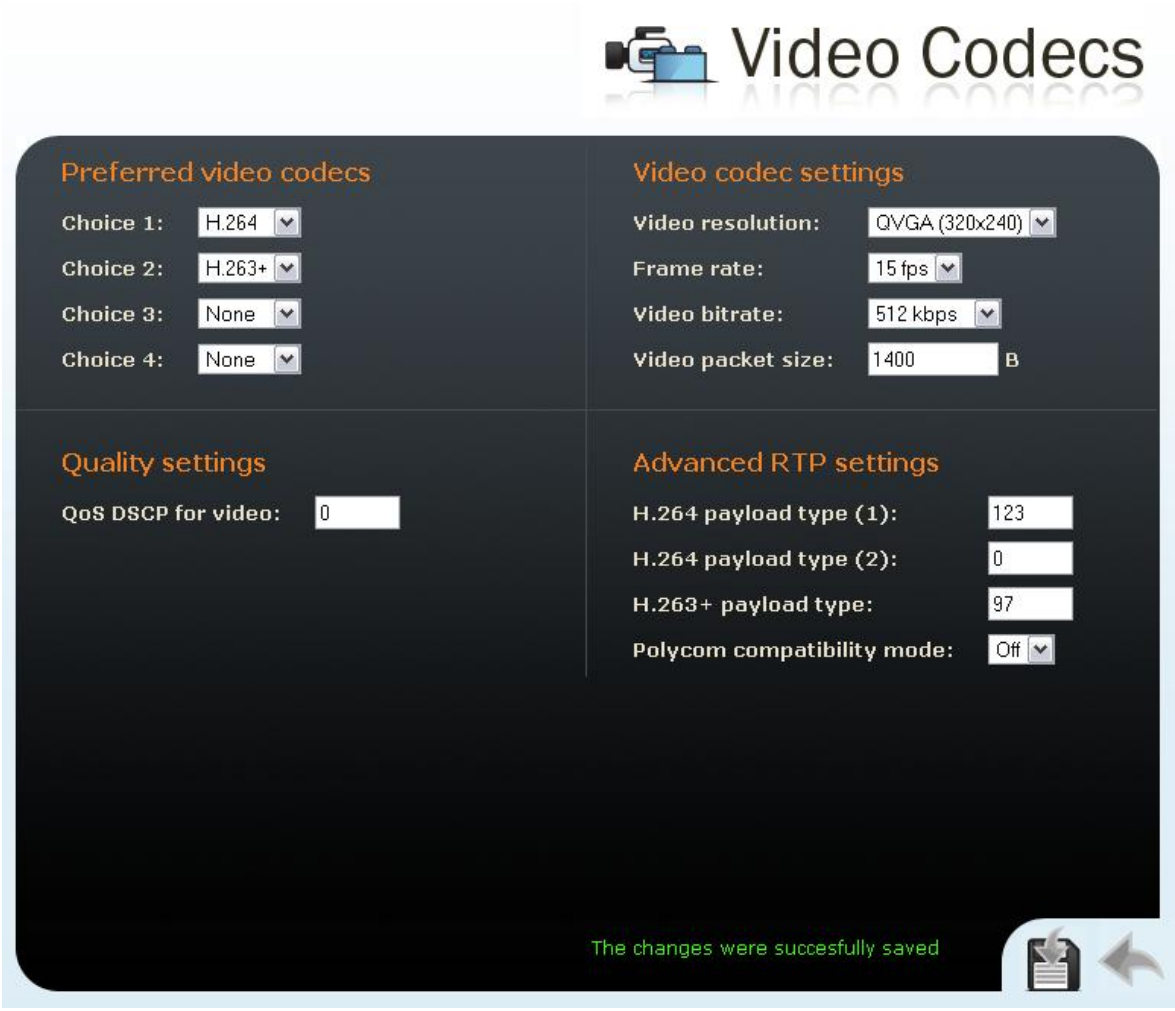


Figure 2.16 Video Codec Settings

Preferred Video Codecs

Set the priority of video codecs for call set-ups.

Video Codec Settings

Video resolution

Set the picture formats of the video transmitted. The resolution values range from QCIF (176x144) to VGA (640×480).

Frame rate

Set the frame rate for frames to be sent by 2N® Helios IP to the VoIP network.

Video bit rate

Set the transmission rate for video transmission from 2N® Helios IP. The lower the bit rate the greater picture compression is necessary. This results in a lower picture quality on the receiving end. A high bit rate does not have to mean significant improvement of transmission as a whole because the network may get overloaded, resulting in a greater packet loss rate or delay.

Video packet size

Set how large the video transmitting packet should be.

Quality Settings

QoS DSCP for video

Set the priority of the video transmitting packets in the network. The value is copied into the ToS (Type of Service) field in the IP packet header.

Caution

- Wrong settings may deteriorate the transfer quality. Do not change this parameter if you are not sure. The change in the transfer quality will show only in case the network components support this service.

Advanced RTP Settings

RTP payload type

Set the Media Format value of the Media attribute (a) in the SPD part of the INVITE message. Some SIP proxies require this value for a successful video call set-up. If 0 is selected, the given RTP payload type is not used. It is necessary to disable one RTP payload type in some SIP proxies, e.g. the Cisco Call Manager.

Caution

- Wrong settings may result in a loss of network compatibility. Do not change this parameter if you are not sure. Losing network compatibility may cause video transmission errors.

Polycom phone compatibility

Set compatibility of SDP messages with some Polycom and Cisco phones. With this mode on, 2N® Helios IP does not include the sendonly flag in the codec specification for video streams.

Streaming

This menu allows the user to enable audio and video streaming into your LAN without affecting the other functions of 2N® Helios IP. This function is supported by selected 2N® Helios IP models only; refer to the Model and Licence Overview subsection. This function may be used for security purposes. An RTSP supporting receiver is required for acceptance of audio and video streaming. For this purpose, it is possible to download the VLC Media player software free of charge. For the VLC media player configuration see below.

Figure 2.17 Video Streaming Setting

RTSP Server

RTP server
Enable and disable audio and video streaming.

Allow IP address
Specify up to 4 IP addresses of the stream receiving user (RTSP client). If none of the fields is completed, stream can be requested from any IP address.

Enable audio stream
Set whether the audio channel is part of the stream transmitted.

Enable video stream
Set whether the video channel is part of the stream transmitted.

Enable UDP unicast
Enable the RTP/UDP audio and video stream data transmission mode. With this mode disabled, the audio a video stream data are transmitted by the RTP/RTSP/TCP only.

Quality Settings

QoS DSCP for video
Set the priority of the video transmitting packages in the network. The value is a decimal number and defines individual bits in the ToS (Type of Service) field in the IP packet header (bits 8–16).

Caution

- Wrong settings may deteriorate the transfer quality. Do not change this parameter if you are not sure. The change in transfer quality will show only in case the network components support this service.

Video Codec Settings

Video codec

Set one of the following codec modes for video streaming: H.264/MPEG4-AVC, MPEG4 Part2 or MJPEG.

Video resolution

Set the individual picture formats for the video transmitted. The resolution values range from QCIF (176x144) to VGA (640×480).

Frame rate

Set the frame rate for frames to be transmitted.

Video bit rate

Set the bit rate for video transmission. The parameter affects the compression ratio and thus the video transmission quality.

Video packet size

Set the size limits for the video transmitting RTP packet.

VLC Set-Up for Streaming Video from 2N® Helios IP

1. Install the VLC Media player application (version 0.9.4 in this manual).
2. After installation and start, the window will be displayed as shown in the figure below.

Figure 2.18 VLC Media Player Main Window

3. In the main menu select the source for playing the video, *Media->Open Network.*

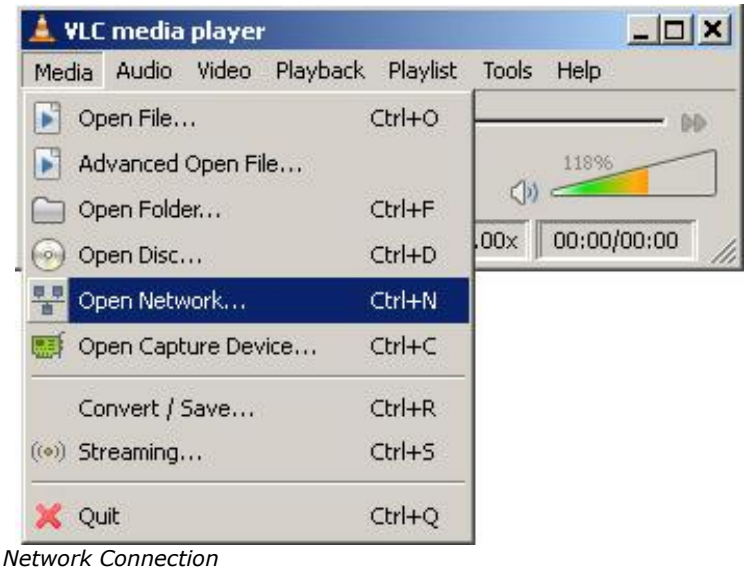


Figure 2.19 Open Network Connection

4. In the network card select the RTSP protocol and insert the IP address of the 2N® Helios IP device that is sending the video streaming (192.168.3.175 in this case).

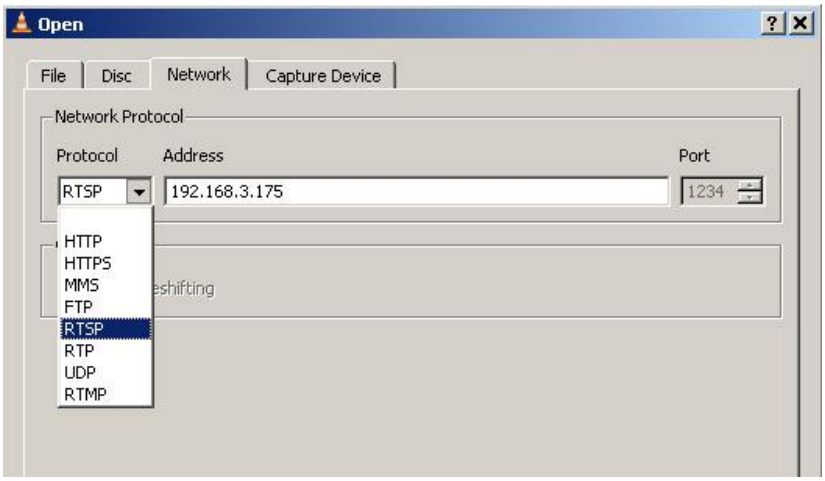


Figure 2.20 RTSP Stream IP Address Setting

5. After the **OK** button is pushed, the video player window will appear.

Figure 2.21 Streaming Video Receiving

6. Push the **STOP** button to stop receiving the video signal.
7. Open a window of the playlist, *Playlist –> Show playlist.*

Figure 2.22 Show Playlist

8. The playlist window will display the list of played records, in this case the RTSP stream from 2N® Helios IP (IP address 192.168.3.175).

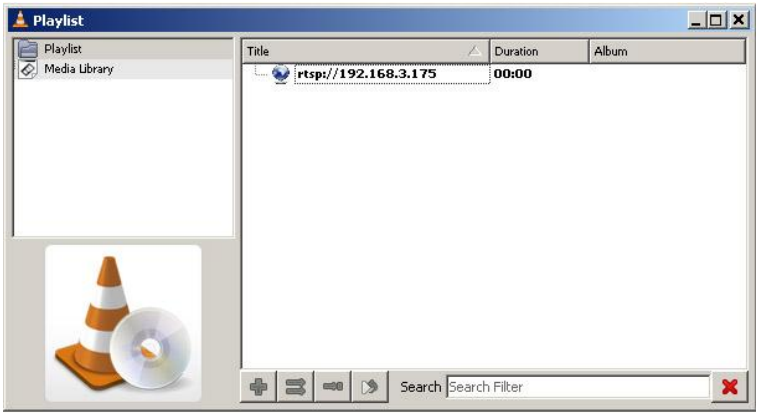


Figure 2.23 Playlist Window

9. Save the playlist using the *Playlist –> Save playlist to file...* menu.

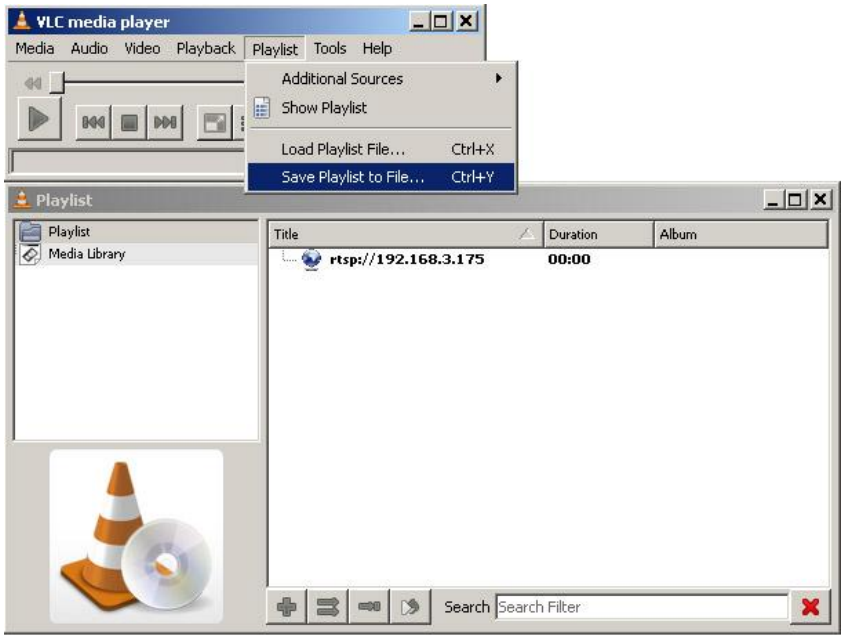


Figure 2.24 Save Playlist

10. From now on, whenever opened, the playlist will immediately display video streaming from the selected 2N® Helios IP device.

Figure 2.25 Streaming Video Receiving

JPEG Video Setting

Anonymous access

You can download a JPEG video from any IP address without authentication. Otherwise, the video is only accessible after login or during a call if the Call activation is enabled.

Call activation

Set whether the JPEG video is available to the terminal upon the call beginning. The function must be supported by the terminal (Snom 820/870, e.g.).

Frame rate

Set the transmission rate to be offered to the end terminal.

JPEG quality

Set the JPEG image quality. The recommended value is 85. The parameter affects the image size and quality.

JPEG Video Use

- The JPEG video can be used for any application that is capable of downloading JPEG images from 2N® Helios IP web interface.
- To load an image from a camera enter any of the links below in your web browser:

  http://helios_ip_address/enu/camera160x120.jpg

  http://helios_ip_address/enu/camera320x240.jpg

  http://helios_ip_address/enu/camera352x272.jpg

http://helios_ip_address/enu/camera352x288.jpg

http://helios_ip_address/enu/camera640x480.jpg

Be sure to enable the Anonymous access to the JPEG video (see above) for this function.

- You can assign displaying JPEG images to a Snom 820/870 terminal button. To do this, set the Action URL function and enter one of the commands below as the parameter:

  http://helios_ip_address/enu/snom820-video.xml or

  http://helios_ip_address/enu/snom870-video.xml.

ONVIF

The integrated IP camera in 2N® Helios IP is compatible with the ONVIF 2.1 (Profile S) specification. Video or audio streams from the intercom can be recorded or otherwise processed via ONVIF supporting professional systems of third parties.

Warning

- Make sure that the following **Streaming** parameters are set properly for full compatibility with the third parties' equipment:

  RTSP server: On

  Enable video stream: Yes

  Enable UDP unicast: Yes

  Anonymous access: Yes

Settings

Discovery mode

Enable/disable the WS-Discovery function, which helps the other ONVIF clients retrieve an ONVIF compatible device in the LAN. Set this parameter to **Discoverable** to make your 2N® Helios IP work as an ONVIF compatible system.

Scopes

Display the list of Scopes, i.e. supported parts of the ONVIF specification.

Users

Display the list of created users and their access rights. The users are administered using dedicated tools via the ONVIF protocol.

Auto Update

2N® Helios IP allows both for manual and automatic updates of configuration and firmware. The automatic update is done through a TFTP or HTTP server. This function is supported by selected 2N® Helios IP models only; refer to the Model and Licence Overview subsection.

Figure 2.26 Firmware Update

Firmware/Configuration

Use Auto Update
Enable/disable automatic firmware or device configuration update.

Server address
Set the IP address of the server where the firmware and configuration are located that are to be automatically uploaded to 2N® Helios IP. Enter the TFTP server, or HTTP / HTTPS server address (tftp://server_ip_address, http://server_ip_address, or https://server_ip_address).

Use address
Set whether to use a manually entered address, or the address obtained automatically from the DHCP server with the Option 66 parameter for server communication.

Path
Specify the directory or prefix for the firmware or configuration file saved on the server. 2N® Helios IP expects files XhipY_firmware.bin file, XhipY-common.xml or XhipY-MACADDR.xml where X is the prefix set herein and Y specifies the intercom model (see below).

At boot time
Enable/disable automatic update upon power up.

Update period
Set the time interval after which 2N® Helios IP gets connected to the server for configuration file downloading.

Update time
Set the optimum time for automatic firmware/configuration update attempts to eliminate 2N® Helios IP errors due to necessary restarts in peak traffic periods. If the Update period is shorter than one day, the Update time parameter will not be applied.

2N® Helios IP expects the following files on TFTP:

hipY-firmware.bin – intercom firmware

hipY-common.xml – common intercom configuration for a given model

hipY-MACADDR.xml – specific intercom configuration for a given Mac address

Y specifies the intercom model in the file name:

v - 2N® Helios IP Vario

f - 2N® Helios IP Force

sf - 2N® Helios IP Safety

u - 2N® Helios IP Uni

ak - 2N® Helios IP Audio Kit

vk - 2N® Helios IP Video Kit

MACADDR is in the 00-00-00-00-00-00 format.

Example: Suppose that 2N Helios IP Vario with MAC address 00-87-12-AA-00-11 shall download the following files from the TFTP server:

hipv-firmware.bin

hipv-common.xml

hipv-00-87-12-aa-00-11.xml

Display

The 9137160KDE and 9137160CKDE 2N® Helios IP models are equipped with a colour TFT display, which shows variable information such as digital name tags, telephone directories, 2N® Helios IP statuses and/or user-defined images. You can set the basic display parameters in this menu. For the display data uploading to 2N® Helios IP refer to the **Chyba! Nenalezen zdroj odkazů.**.

Figure 2.27 Display

Display Settings

Display enable

Enable or disable the display use.

Maximum idle timeout (ads)

Set the maximum display idle time (i.e. when the user does not control the device using the buttons or numeric keypad), after which the advertisement or user-defined image displaying mode is switched on automatically.

Maximum idle timeout (name tags)

Set the maximum display idle time (i.e. when the user does not control the device using the buttons or numeric keypad), after which the structured telephone directory mode is switched into the name tag displaying mode.

Search mode

Set the mode of searching users in the telephone directory displayed. Either use the initial name characters (prefixes) or every occurrence of the set characters in the name (any occurrence).

System Log

This menu is used for configuration of system and log message sending. This service is useful for solving 2N® Helios IP errors if any and contacting the 2N TELEKOMUNIKACE a.s. Technical Support. Normally, it is not necessary to configure this menu. To receive syslog messages, a syslog server has to be installed in your PC.

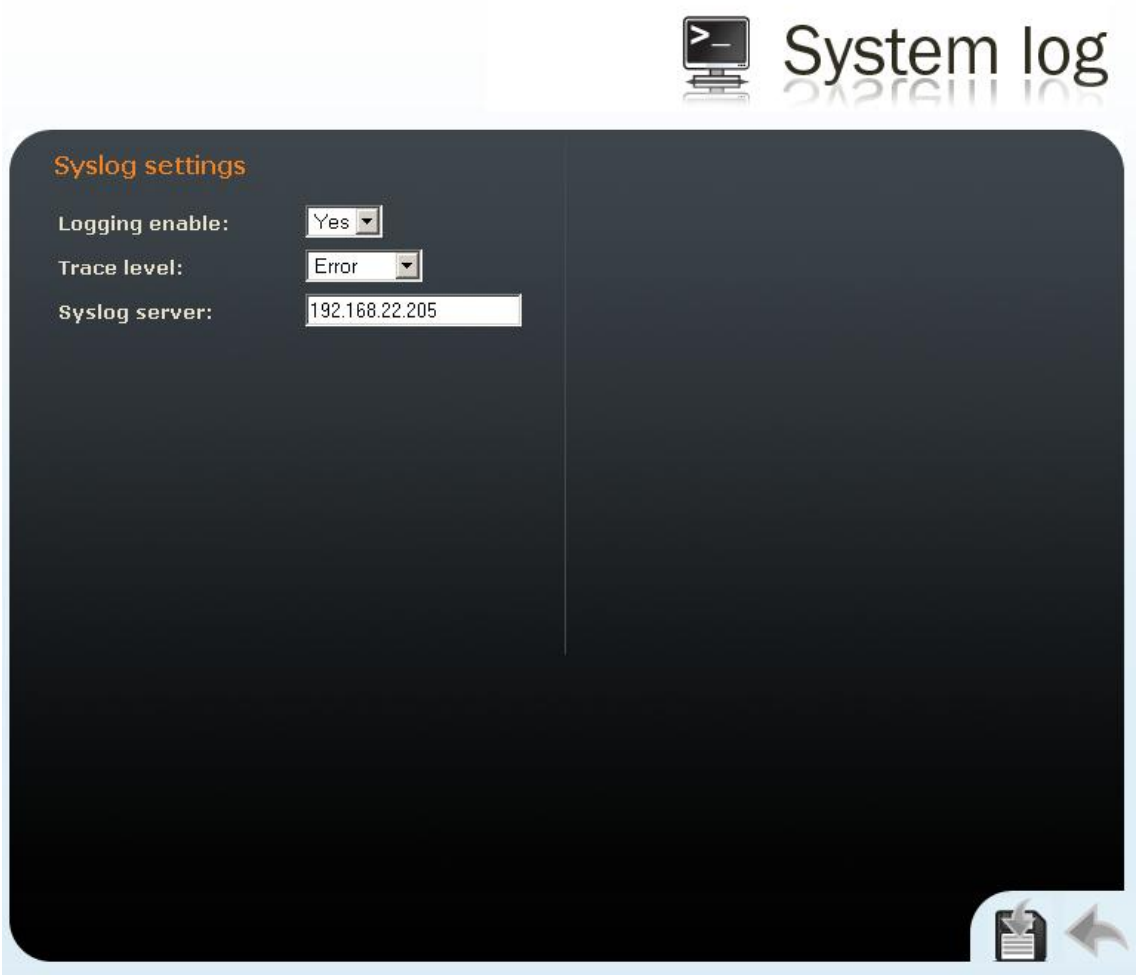


Figure 2.28 System Log

Logging enable

Enable or disable sending of system and log reports and storing them on the syslog server.

Trace level

Set the level of detail of the reports.

Syslog server

The IP address of the server on which the system log application is running.

E-Mail

2N® Helios IP can, in case the called user is unavailable, send an e-mail message including basic information on the missed call. If 2N® Helios IP is equipped with a camera, a preset count of pictures on the call course can be sent. This function is supported by selected 2N® Helios IP models only; refer to the Model and Licence Overview subsection.

Figure 2.29 E-Mail

SMTP Server Settings

Service enabled

Enable/disable e-mail sending from 2N® Helios IP.

Server name
Set the server address to which e-mails shall be sent.

Server port
Set the SMTP server port. The default value is 25. Modifications are possible for other values than the default one.

Login
Enter the user name for SMTP login. If authorisation is required, this field must include a valid name. If not, this field may be blank.

Password
Enter the password for SMTP server login authorisation.

User certificate
Specify the user certificate and private key to be used for encryption of communication between the HTTP server in 2N® Helios IP and web browser on the user side. Choose one of the three user certificate and private key sets available; refer to the Certificates subsection for details. You can use SelfSigned option to use automatically generated self-signed certificate which is created on the first start-up of the device.

E-Mail Settings

Sender's e-mail
Enter the sender's e-mail address to be included in the messages sent by 2N® Helios IP.

Default e-mail
In the case of a missed call, 2N® Helios IP sends a message to the user e-mail address included in the telephone directory. If the telephone directory field is blank, the message is sent to the default address included here. If this field is blank too, no e-mail is sent.

Deliver in
Set how long 2N® Helios IP should try to deliver an e-mail to an inaccessible SMTP server.

Send email on
Enable e-mail sending in the event of no response or every call.

E-Mail Content Settings

Attach pictures
Set whether the 2N® Helios IP camera pictures shall be attached to the e-mail message.

Number of pictures
Set the count of pictures to be taken during ringing and sent enclosed to the missed call message.

Picture resolution

Set resolution for the pictures to be sent.

Subject

Specify the subject of the e-mail message to be sent.

Body

Enter the content of the e-mail message to be sent using any HTML formatting tags. You can also insert special pre-defined symbols for certain data, such as user name, date, time, identification and/or called number. These symbols are replaced with real values before sending. Refer to the table below:

$User$	*Called user name*
$DateTime$	*Current date and time*
$DialNumber$	*Called number*
$HeliosId$	*2N® Helios IP identifier*

Multicast

2N® Helios IP is able to send and receive the audio stream in the RTP / UDP format using codec G.711 (PCMU) on the background. Sending and receiving is realized on the set multicast IP address and port.

Figure 2.30 Multicast

Multicast Receiver Settings

Receiver enabled

Enable/disable receiving the audio stream on multicast address. The received audio stream is played even during an active call where the two sound sources are mixed together.

Address

Multicast IP address from which 2N® Helios IP receives the audio stream.

Port
Port via which the audio stream is received.

Volume
Volume of the audio stream received.

Multicast Sender Settings

Sender enabled
Enable/disable sending the audio stream on multicast address.

Address
Multicast IP address to which 2N® Helios IP sends the audio stream.

Port
Port via which the audio stream is sent.

Automation

2N® Helios IP provides flexible setting options depending on the user's requirements. If the standard setting options (switch or call settings, e.g.) are insufficient for the intended use, apply a special programmable interface - 2N® Helios IP Automation. Typically, 2N® Helios IP Automation is helpful for applications that require rather complex interconnection with the third parties' systems.

Refer to the 2N® Helios IP Automation Configuration Manual for the 2N® Helios IP Automation function and configuration details.

Audio Loop Test

2N® Helios IP allows you to perform periodical loudspeaker and microphone tests. For this purpose, the in-built loudspeaker generates one or more short tones, which are captured by the integrated microphone. If the tones are detected correct, the test is successful. The test time is approximately 4s. If the test fails (due to some extreme surrounding noise, e.g.), the test procedure is repeated in ten minutes. Follow the most recent test results via your confirmation interface or with the aid of 2N® Helios IP Automation.

Figure 2.31 Audio loop test

Audio Loop Test Settings

Test enabled
Enable/disable the automatic loop test.

Test time
Set the test time in the HH:MM format. You are recommended to test the equipment when the intercom traffic is low.

Test period
Set the test period to launch the test automatically once a day or once a week.

Test Result

Test time
Displays the time of last performed test.

Test result
Displays the result of the last performed test.

Test status
Displays the test status.

Miscellaneous

Here set the additional parameters of 2N® Helios IP that were not included in the above-described menus.

Figure 2.32 Miscellaneous Settings

Outgoing Calls

Ring time limit

Set the call set-up and ringing time limits for outgoing calls. If the calls are routed through the GSM gateways of Part Nos. 505004, 505214 or 505612 to the GSM network, it is advisable to set a time value longer than 20 s.

Call time limit

Set the maximum call duration. When the call end is approaching, 2N® Helios IP starts generating tones signalling the end of the call. The call will automatically be terminated 10s after this signal. To prolong the call, send a DTMF code (push #, e.g.) on your phone.

Dial cycles limit

Set the maximum count of telephone directory searching attempts. The function is useful whenever the substitute is defined and in the case of deadlock.

Incoming Calls

Automatic answer

Defines how 2N® Helios IP should behave when a call is coming. If the Automatic answer is disabled, 2N® Helios IP signals an incoming calls by ringing and the external subscriber can answer or reject the call by pushing * or # respectively. If the Automatic answer is enabled, 2N® Helios IP receives the call automatically and processes as selected in the Activation mode and Activation code parameters.

Activation mode

If the Automatic answer is enabled, incoming calls are received automatically by 2N® Helios IP. 2N® Helios IP enables you to receive up to 3 incoming calls at the same time. You can control 2N® Helios IP through incoming calls using tone dialling from your telephone keypad (activate or deactivate users or profiles, e.g.). A single incoming call may only be connected with the 2N® Helios IP microphone, loudspeaker and camera. Use the Activation mode parameter to define whether the incoming call should be connected automatically, or the activation code should be required for connection (see below).

Activation code

Set the activation code necessary for interconnecting the incoming call audio and video if the Automatic answer is enabled and the Activation code is set to Manual.

Beep on connect

Use this parameter to enable/disable 2N® Helios IP connection signalling by a beep during an incoming call.

Keyboard Settings

Hang up by # button

Enable call termination with the # key.

Same button function

Assign a function to the call-establishing quick dialling button when re-pushed.

None *– re-pushing the quick dialling button does not affect the set up or active call.*

Hang-up *– re-pushing the quick dialling button ends the set-up or active call.*

Dial next *– re-pushing the quick dialling button allows you to skip an attempt to set up a call and proceed to the next telephone number in the directory for another set-up.*

Flash *– re-pushing the quick dialling button sends the FLASH signal into the active call.*

Quick dialling using digits

Enable user calling from the telephone directory by dialling the user number (two or three digits) and confirmation with *.

Keystroke timeout

Set the delay between two digits when entering a code or telephone number using the 2N® Helios IP keypad.

Enable telephone mode

Enable to set up calls directly to the telephone numbers entered from the 2N® Helios IP numeric keypad using the *telephone_number* key sequence.

Dial digits limit

Define the maximum number of digits of a telephone number in the Telephone mode. When the defined count is reached, the telephone number is dialled automatically without the need to push * subsequently.

Legacy switch code

Set whether the first code in the switch 1 and switch 2 list may be entered from a VoIP phone valid without an * confirmation.

Other Settings

Backlight level

Set the level of the keypad backlight.

Red LED control

Set the card reader input that activates the red LED located under the 2N® Helios IP Vario name plates. The red LED can indicate the secured / unsecured state, for example. This function is available in 2N® Helios IP Vario models without display, Part. Nos. 91371…U.

DHCP on/off by buttons

Set whether a quick dialling button combination may switch to obtaining the IP address from the DHCP server upon the 2N® Helios IP restart as described in the Device configuration subsection of 2N® Helios IP Installation Manual.

Enable switch control by HTTP

Enable switch control by HTTP requests sent to 2N® Helios IP. Select ON, OFF or change over upon the following HTTP (GET) request:

http://helios_ip_address/enu/lockstate.xml.p?lock**X**state=**Y**&answer=**Z**

Value **X** is the switch number (1-4) and value **Y** is 0 for switch off, 1 for switch on and 2 for change over.

HTTP response contains XML data with current state of all switches:

```
<?xml version="1.0" encoding="UTF-8"?>
<result>
   <lock1state>0</lock1state>
   <lock2state>0</lock2state>
   <lock3state>0</lock3state>
   <lock4state>0</lock4state>
</result>
```

If answer parameter in the HTTP request is included, response contains text **Z** instead of XML data.

RFID Card Reader

2N® Helios IP Vario (Part Nos. 91371…U) and 2N® Helios IP Force (Part Nos. 9151102...) can be equipped with an internal multifunction module including an RFID card reader (Part No. 9137430E or 9151011). This module enhances the 2N® Helios IP functions with an EM41XX and HID Proximity RFID card reader, two relays for external load switching, two logical inputs and RS-485 and Wiegand interfaces.

RFID Card Reader Function

2N® Helios IP enables you to assign one RFID card to each user in the telephone directory. Set the user card identification code in the **ID card** parameter in the **Telephone directory** menu. Refer to the Telephone directory subs. for details. When a valid card is applied, the switch assigned to the card reader gets activated. Assign the switch in the card reader module setting menu (in RFID Card Reader - Module Settings).

We recommend you to use an external RFID card reader (Part No. 9137420E or 9151011), which can be connected to your PC (refer to the Configuration with External RFID Card Reader subs.) and facilitate your setting of the user card identification codes.

Use of Plus and Minus Cards

The so-called plus and minus cards help you add and remove cards easily without using the 2N® Helios IP configuration menu. The function works as follows:

Select two RFID cards marking them with **+** and **-**. Use the plus card to add items to and the minus card to remove items from the 2N® Helios IP list of valid cards. Enter the identification codes of these two cards into the Plus card ID and Minus card ID fields respectively in the card reader module setting menu.

To add a card to the list of valid cards, apply the **plus card** to 2N® Helios and then, no later than 3 seconds, the card to be added. The card will be added to the first free line in the list of available valid cards. If there is no more free space in the list, the card will not be installed. Installation or rejection will be signalled acoustically.

To remove a card from the list of valid cards, apply the **minus card** to 2N® Helios IP and then, no later than 3 seconds, the card to be removed.

You can manage up to 10 cards in this way. Use the Installed cards menu (RFID Card Reader - Installed Cards) to modify the list of available cards.

Keep the plus and minus cards on a safe place to avoid misuse.

RFID Card ID

An identification code is a unique RFID card number consisting of two asterisk-separated sections. It is a number in hexadecimal format, length 6 – 16 characters, or 24 – 64 bit. Examples:

120001	24-bit UID
00A087AB56	40-bit UID

Configuration with External RFID Card Reader

To facilitate entering card ID codes into 2N® Helios IP, we recommend you to order an external RFID card reader (Part No. 9137420E or 9151011), which can be connected to your PC via a USB interface. This card reader can be only used together with configuration sotware 2N® Helios IP Manager, which is available on www.2n.cz

Configuration without External RFID Card Reader

No external card reader is needed in some simple 2N® Helios IP installations for few users. To add an ID code, just apply the new card to 2N® Helios IP and copy its ID displayed in the Access Log (RFID Card Reader – Access Log) into the respective field. Make sure that you have installed the right card.

Use of RFID Card Reader Module Relay

The card reader module is equipped with two relays for various purposes such as switching of other electronic locks, lighting, etc. Set these relays to **Reader switch #1** or **Reader switch #2** in the Switches section of the Switch setting menu.

RFID Card Reader – Module Settings

See below for the basic card reader settings.

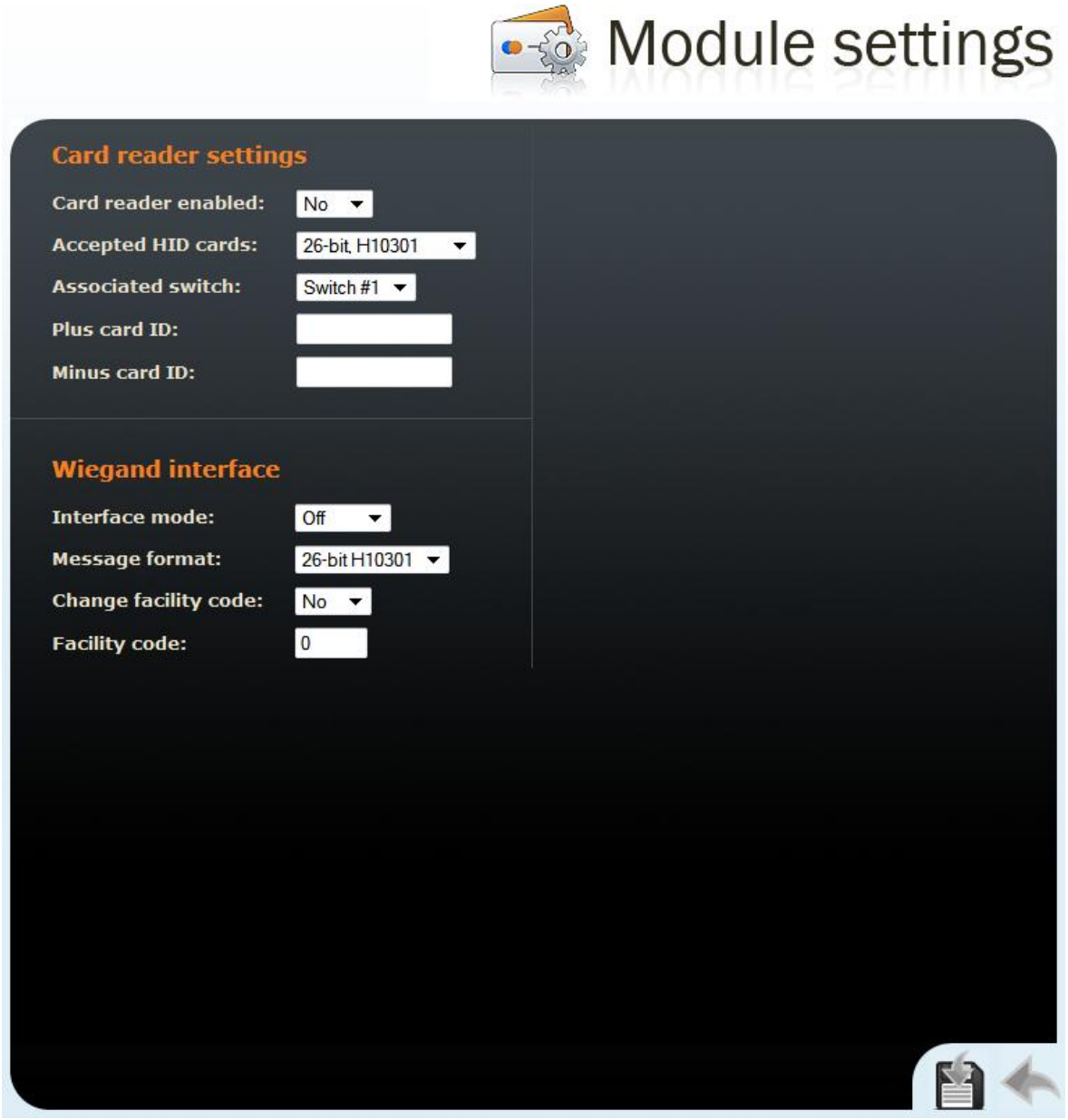


Figure 2.33 Card Reader – Module Settings

Card Reader Settings

Card reader enabled

Enable or disable the card reader function temporarily.

Accepted HID cards

Select the HID card standard to be accepted.

Associated switch
Set the switch to be activated by a valid card.

Plus card ID
Enter the ID of the plus card to be used for adding items into the list of valid cards (RFID Card Reader - Installed Cards). If you leave this parameter blank, the plus/minus card function cannot be applied.

Minus card ID
Enter the ID of the minus card to be used for removing items from the list of valid cards (RFID Card Reader - Installed Cards). If you leave this parameter blank, the plus/minus card function cannot be applied.

Wiegand Interface
If equipped with a RFID card reader, 2N® Helios IP offers the Wiegand interface for connection of third party devices: an additional card reader, fingerprint reader or access control/security system, for example.

Interface mode
Set the information transmission direction for the Wiegand interface of the internal card reader. In the **Input** mode, 2N® Helios IP receives data sent along the bus and compares them with the internal database of card identifiers. This mode is used, e.g., for a biometric data reader. In the **Output** mode, 2N® Helios IP sends identifiers of the read cards to the interface. This mode is used, e.g., for connection of an access control system.

Message format
Set wiegand message format. Select either 26-bit (default value) or 32-bit message format.

Change facility code
Enable a mode in which the facility code in the card identifier sent by the Wiegand interface will be replaced with the code specified in the Facility code parameter.

Facility code
Facility code. Refer to the Change facility code parameter above.

RFID Card Reader – Installed Cards

The table includes the list of cards installed in 2N® Helios IP using the plus and minus cards. The valid cards can be installed manually too.

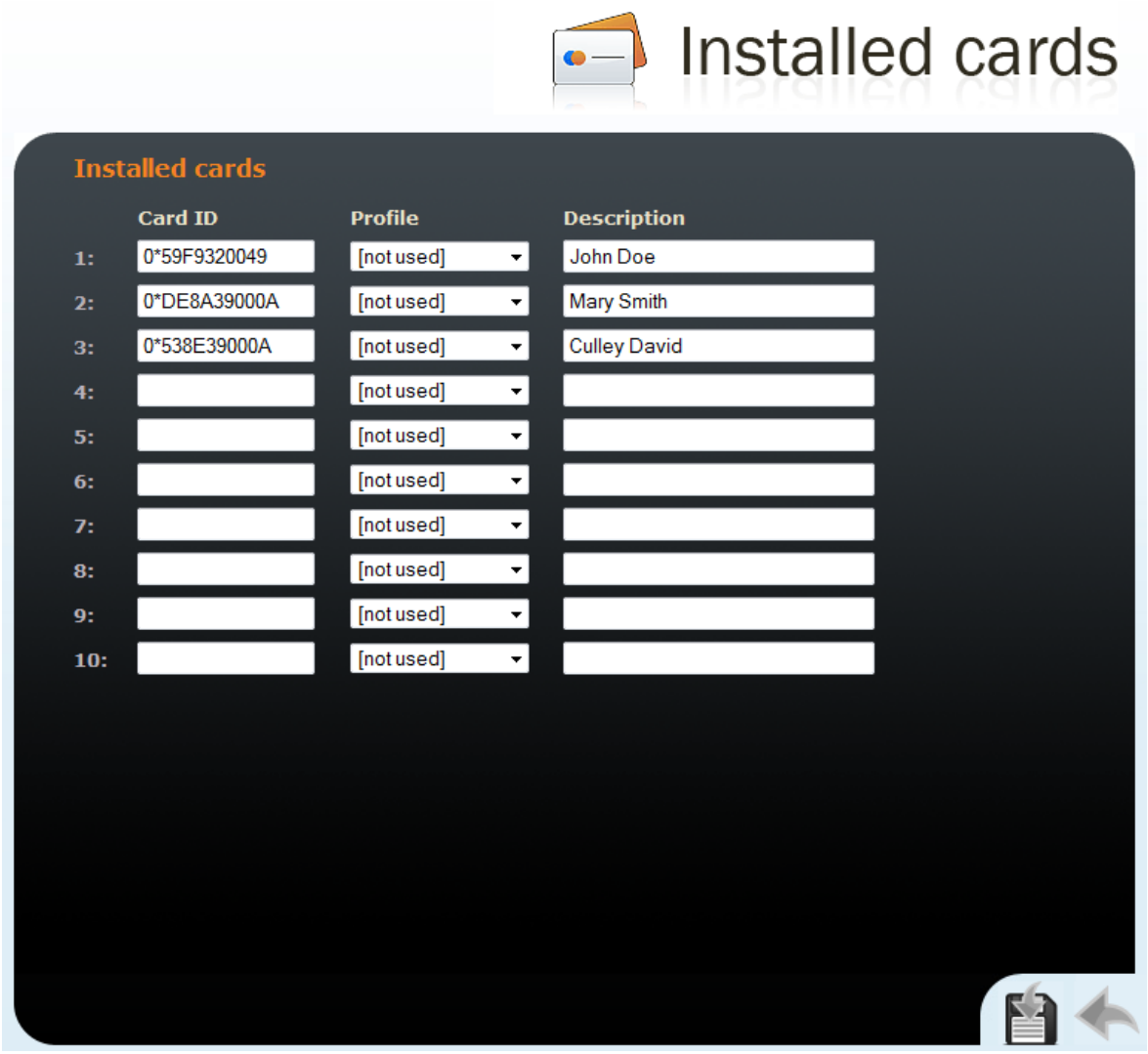


Figure 2.34 Card Reader – Installed Cards

Installed Cards

Card ID

Enter the RFID card ID.

Profile

Assign a time profile to each card to control its validity. Refer to the Profiles subs. for details.

Description

Fill in any information concerning the card, e.g. the card owner. 2N® Helios IP does not use this field.

RFID Card Reader – Access Log

This table provides information on the last ten cards applied to the 2N® Helios IP card reader.

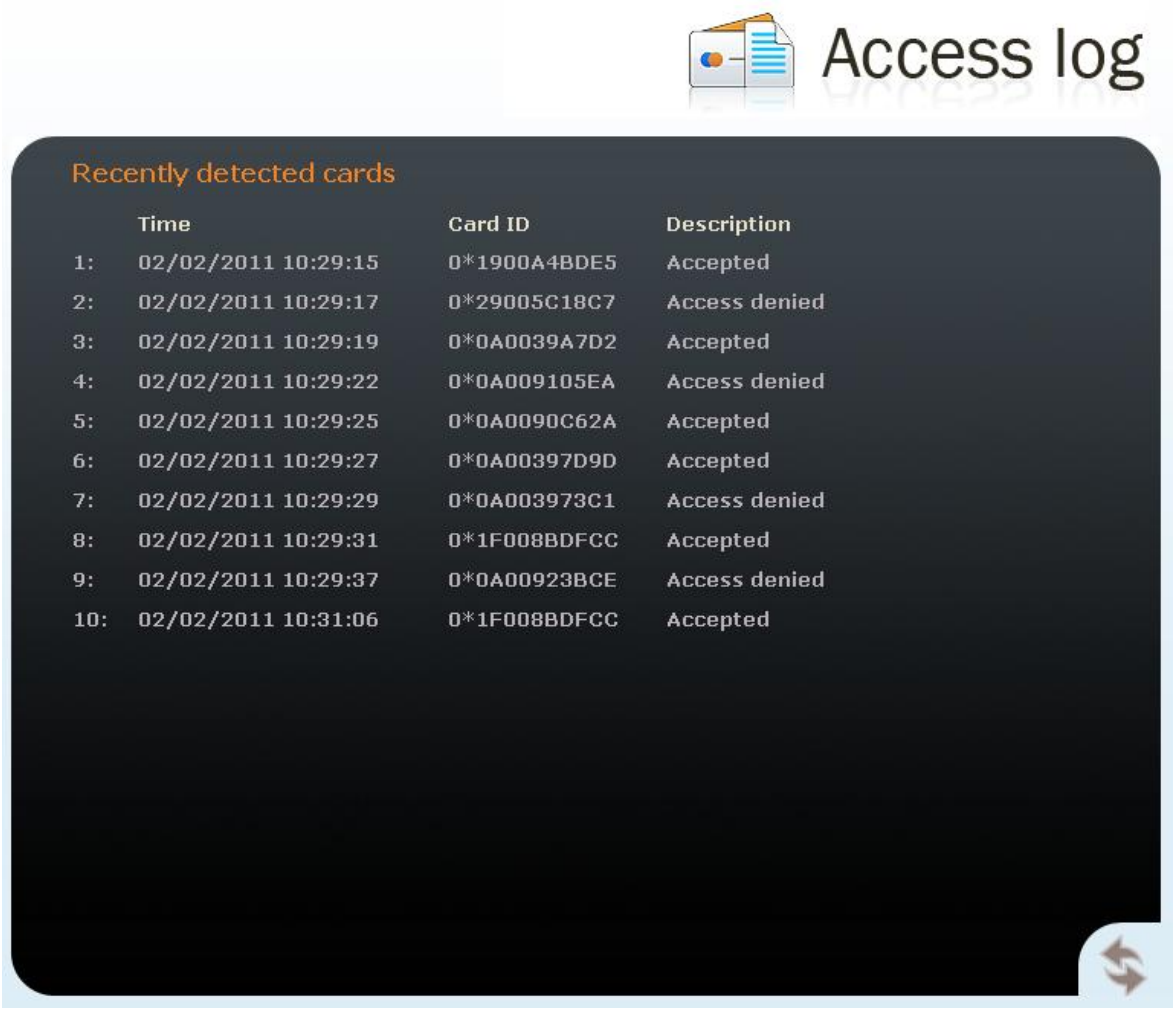


Figure 2.35 Card Reader – Access Log

Recently Detected Cards

Time

Card detection date and time.

Card ID

Card ID code.

Description

Additional information on the card applied, i.e. valid/invalid, assigned user, etc.

Tools

This menu helps you set the 2N® Helios IP date and time manually and reboot the device.

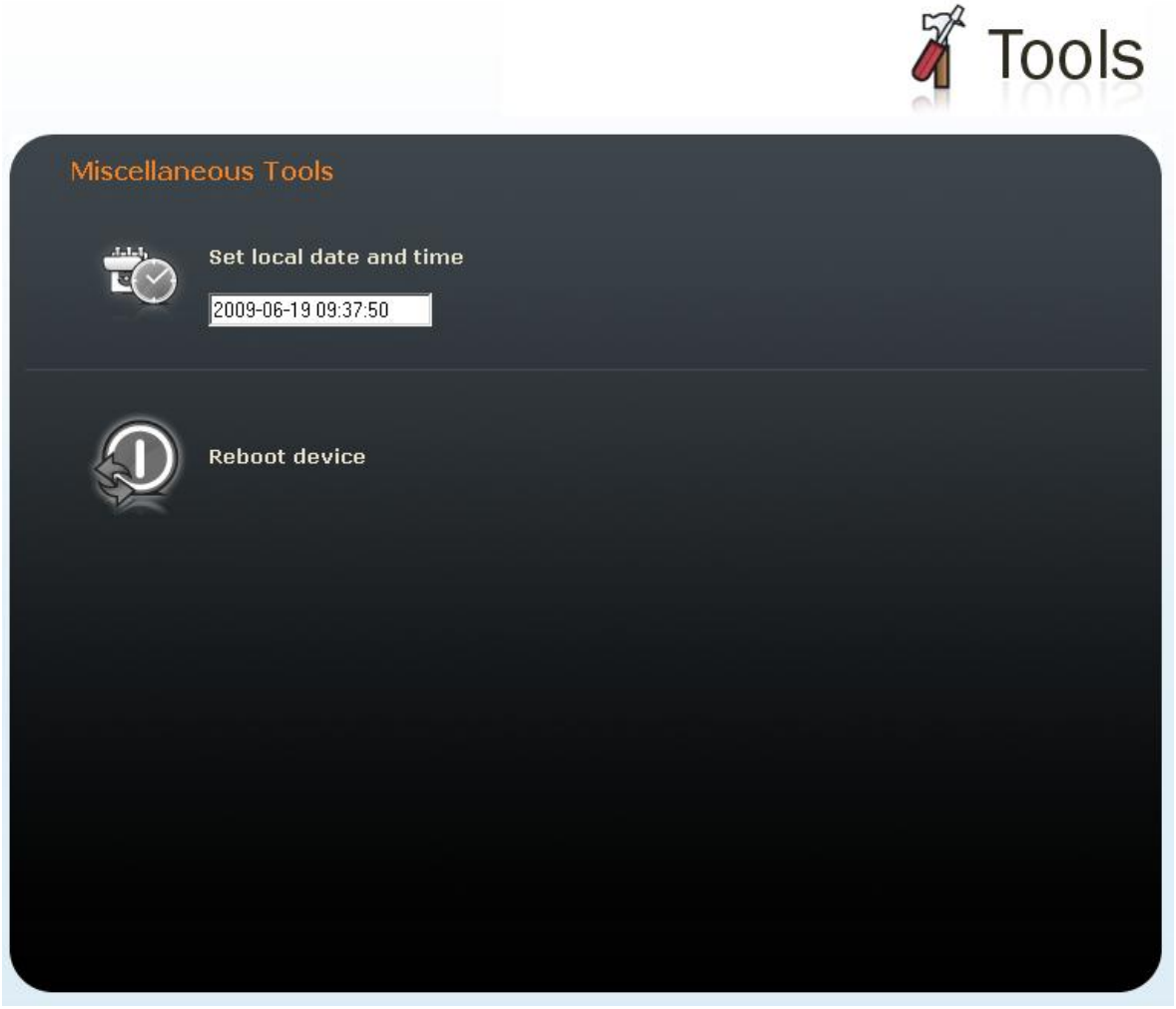


Figure 2.36 Tools

Local Date and Time Setting

Used for date and time setting in case the NTP synchronisation is disabled (see the Date and Time subsection). Push the button to synchronise the 2N® Helios IP time with your PC time.

Reboot device

Used for device restarting in case of changes of some configuration parameters, namely network settings, administration web interface settings and some SIP configuration parameters.

Configuration

This menu is used for configuration downloading, uploading and resetting.

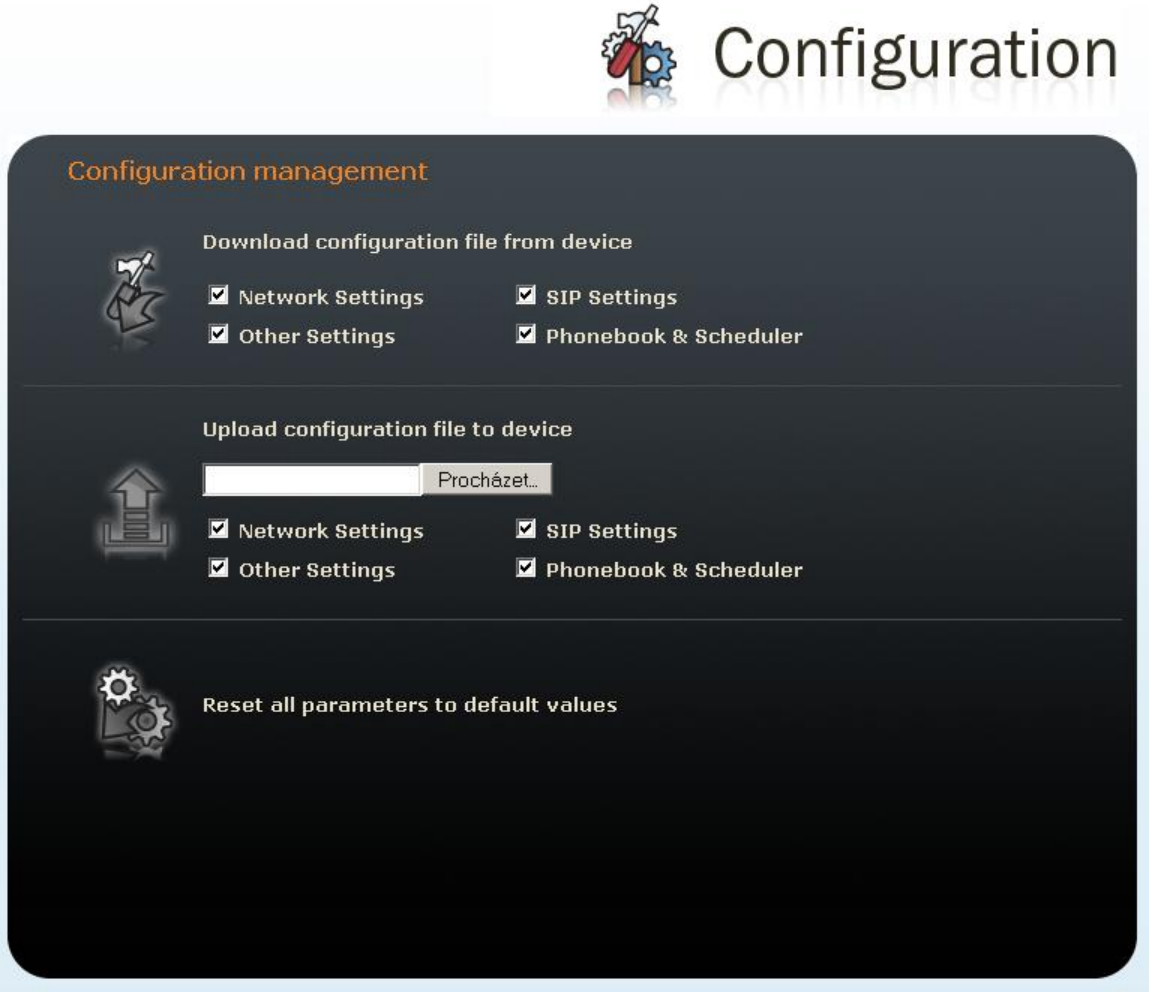


Figure 2.37 Configuration Setting

Download configuration file from device

Used for downloading configuration from 2N® Helios IP. To save the configuration, push . Use the checkboxes to select the configuration parts to be downloaded.

Upload configuration file to device

Used for uploading configuration to 2N® Helios IP. Use the **Browse** button to select the configuration file and push to upload it to 2N® Helios IP. Use the checkboxes to select the configuration parts to be uploaded. For copying the configuration file from another 2N® Helios IP device, disable the network and SIP setting downloading to avoid network collision and use of one and the same SIP configuration. For automatic configuration update refer to the Auto Update subsection.

Reset all parameters to default values

Reset all the 2N® Helios IP parameters to default values.

Caution

- This selection does not apply to the network settings to avoid network collision and disabling the option to configure using the administration web server.

Firmware

This menu is used for manual firmware updating.

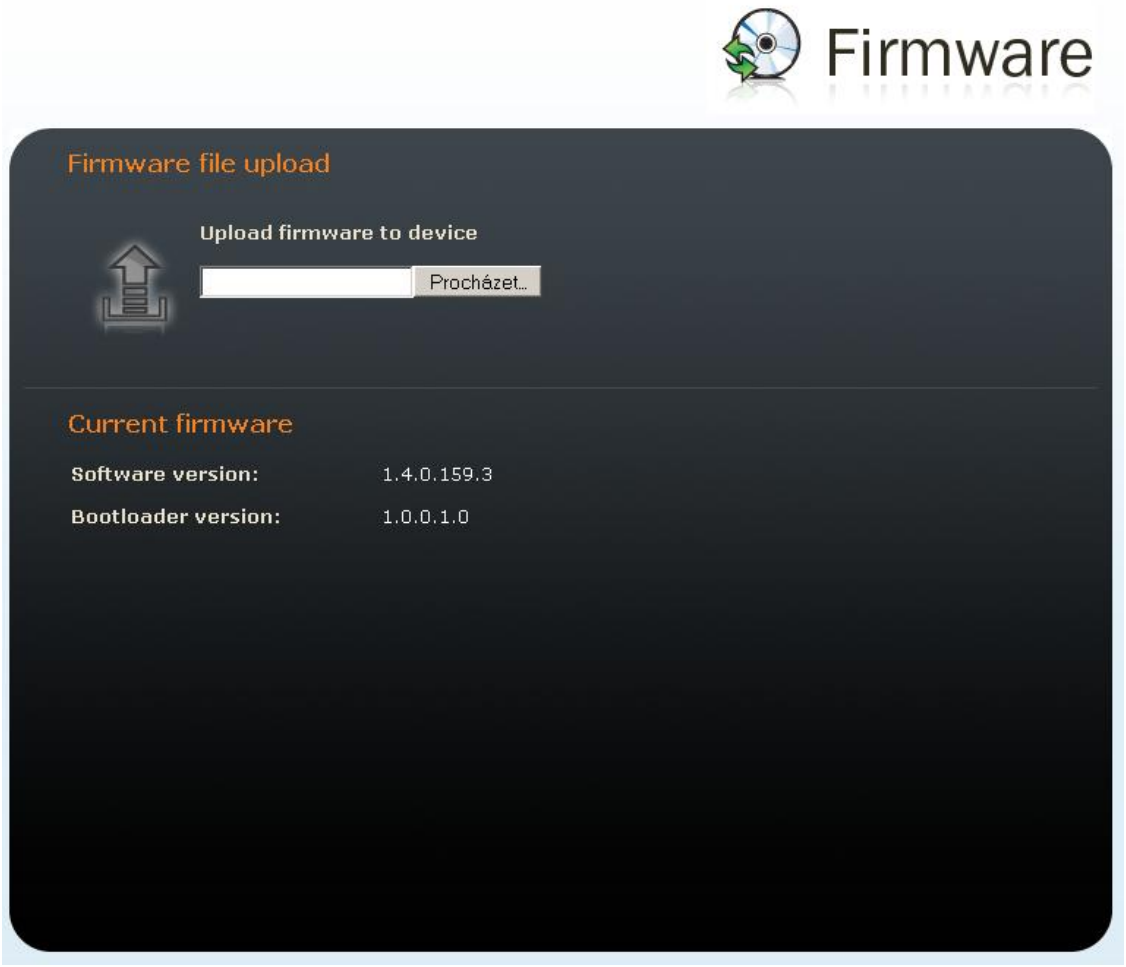


Figure 2.38 Firmware

Manual Firmware Update

Used for manual firmware updating using the configuration web interface. Use the **Browse** button to select the new firmware file and push  to upload it to 2N® Helios IP. For automatic update refer to the Auto Update subsection.

User Sounds

This menu helps create customised signalling of 2N® Helios IP states by replacing the default tone signalling with user sound files. Configuration is divided into two pages – User sounds upload and Sound mapping

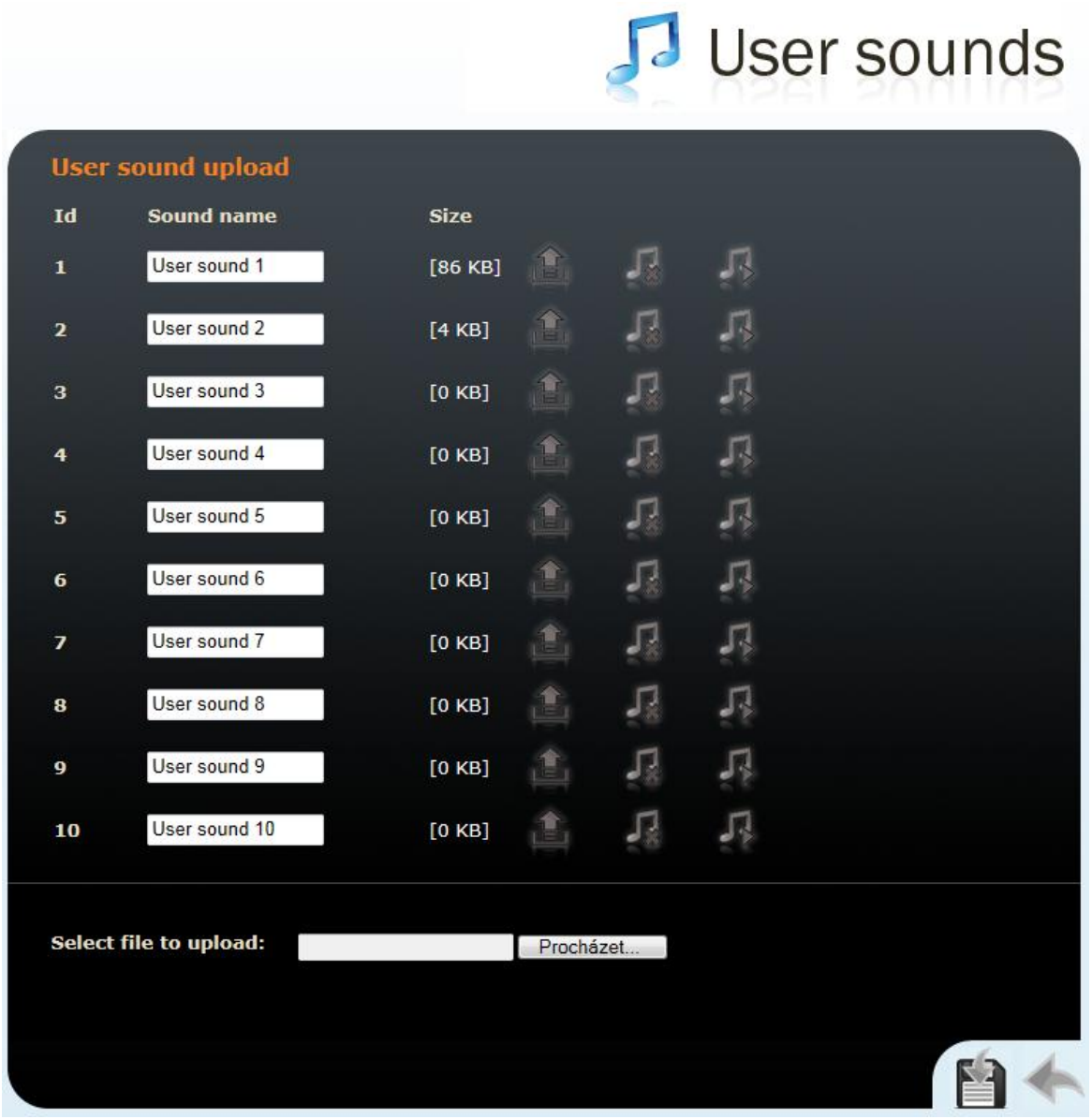
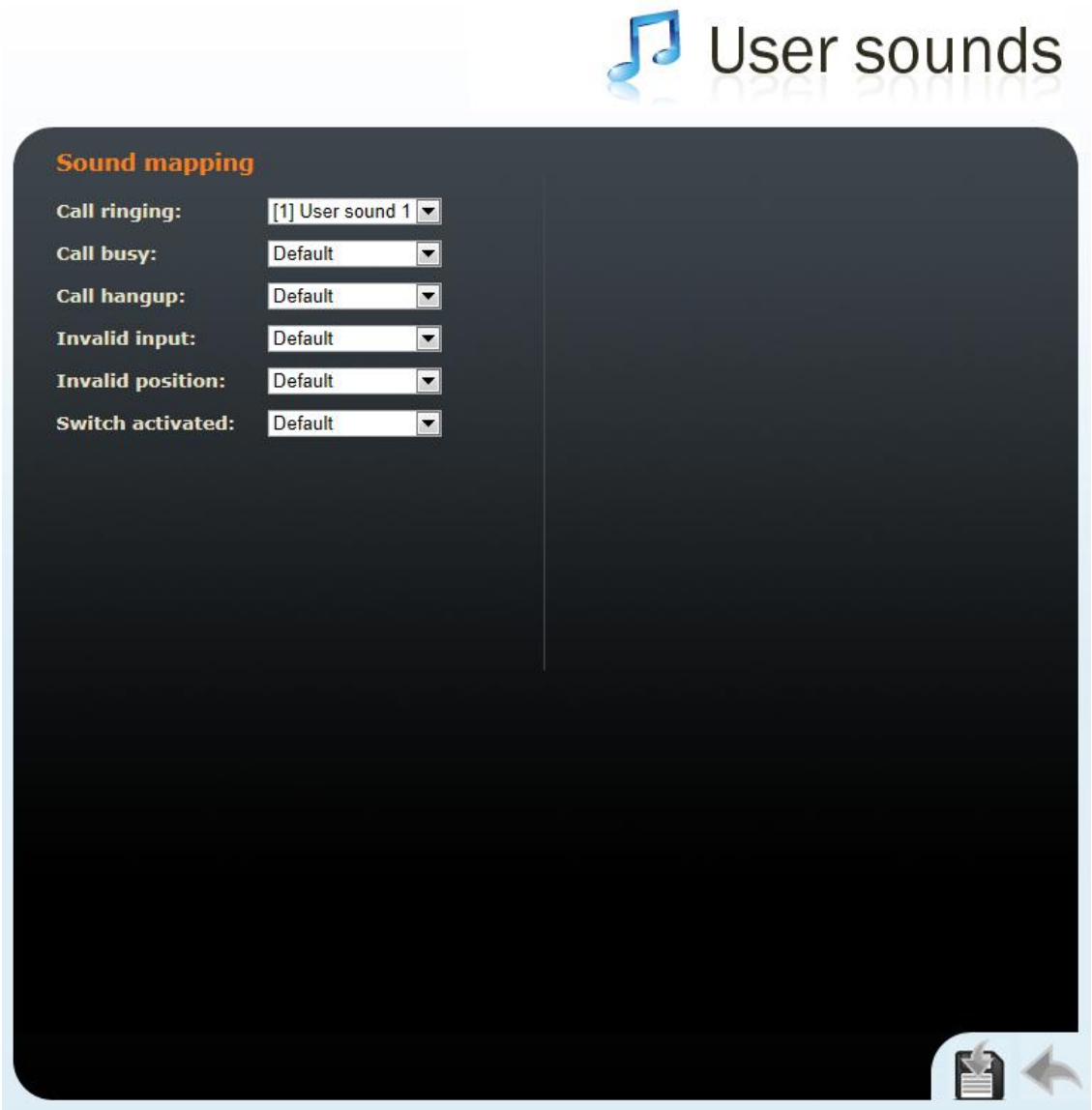


Figure 2.39 User Sounds

User Sounds

Used for handling user sound files within 2N® Helios IP. Push the **Browse** button to select a sound file and then push to upload the file into 2N® Helios IP. The user sound format is an 8bit or 16bit .WAV file with 8kHz sampling frequency. The size of

the user sound file cannot exceed 128KB. Push to remove the file uploaded. Push to play and verify the recorded sound on your PC.



Sound Mapping

Used for configuring the 2N® Helios IP signalling. Using these settings, you can assign user uploaded sounds or silence to events and statutes.

Call Ringing **– replace the standard incoming ringing**
Automatic call answering function is off, refer to the
Audio Loop Test

2N® Helios IP allows you to perform periodical loudspeaker and microphone tests. For this purpose, the in-built loudspeaker generates one or more short tones, which are

captured by the integrated microphone. If the tones are detected correct, the test is successful. The test time is approximately 4s. If the test fails (due to some extreme surrounding noise, e.g.), the test procedure is repeated in ten minutes. Follow the most recent test results via your confirmation interface or with the aid of 2N® Helios IP Automation.

Figure 2.31 Audio loop test

Audio Loop Test Settings

Test enabled

Enable/disable the automatic loop test.

Test time

Set the test time in the HH:MM format. You are recommended to test the equipment when the intercom traffic is low.

Test period

Set the test period to launch the test automatically once a day or once a week.

Test Result

Test time

Displays the time of last performed test.

Test result

Displays the result of the last performed test.

Test status

Displays the test status.

Miscellaneous subsection.

***Call Busy**– replace the standard busy tone.*

***Call Hang-up** – here replace the disconnect tone signalling that the called station has hung up.*

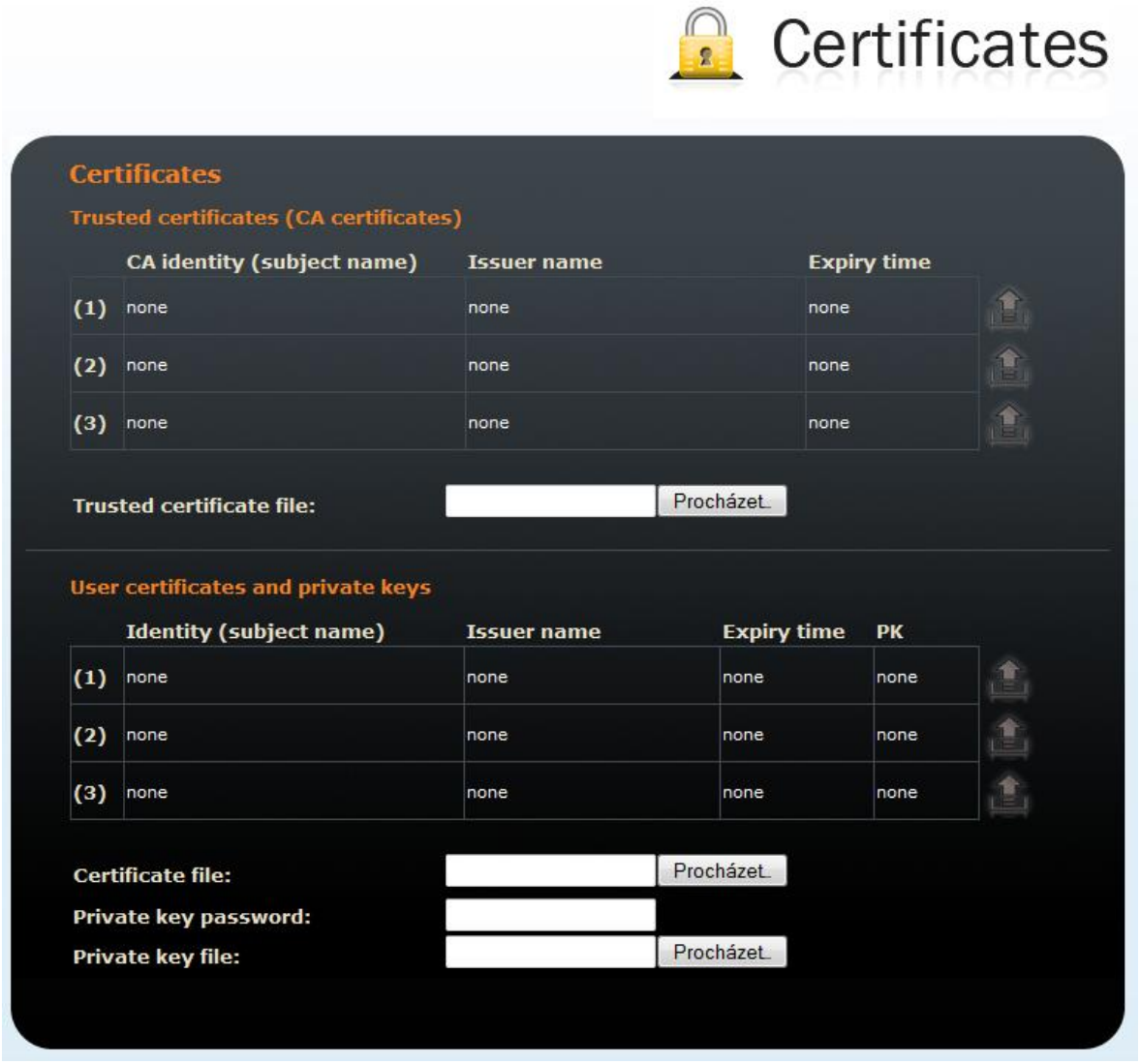
***Invalid input** – replace the invalid switch code sound.*

***Invalid position** – replace the speed dial button sound signalling a non-programmed telephone directory position.*

***Switch activated** – replace the switch activation sound.*

Certificates

The Certificates menu helps you set certificates and private keys for the 2N® Helios IP functions that use the TLS protocol for communication with the counterparty. The purpose of the certificates is to verify the authorisation of devices to communicate.



Certificates

Trusted certificates (CA certificates)

Set the certificates from certification authorities to be used for verification of the 2N® Helios IP counterparty's certificate. Specify up to three sets of certificates marked (1), (2) and (3). 2N® Helios IP accepts the following certificate formats: DER (ASN1) and PEM.

User certificates and private keys

Set the certificates and private keys to be used for verification of the 2N® Helios IP authorisation to communicate with the counterparty. Specify up to

three sets of public certificates and private keys marked (1), (2) and (3). 2N® Helios IP accepts the following certificate formats: DER (ASN1) and PEM.

The three sets of certificates help you set different certificates for different network protocols for successful 2N® Helios IP communication. Select the certificate set(s) for the following functions:

- **HTTPS** for secure access to the 2N® Helios IP configuration requires a user certificate and private key. Assign the certificate in the web server setting menu; refer to the Administration Web Server subsection.
- **SMTP** for e-mail transmission requires a user certificate, private key and, optionally, a certification authority certificate. Assign the certificates in the SMTP client setting menu; refer to the E-Mail subsection.
- **802.1x EAP-TLS** requires a user certificate, private key and, optionally, a certification authority certificate. Assign the certificates in the network setting menu; refer to the Network subsection.

Network Trace

This menu helps capture incoming and outgoing packets on the 2N® Helios IP network interface. The file with the captured data can be downloaded and analysed, using, e.g., Wireshark (www.wireshark.org). Push the **Start** button to launch capturing and the **Stop** button to terminate capturing.

The captured packets are stored in the ring buffer of the size of 4MB. Whenever the buffer is filled up, the oldest packets are deleted automatically. You are recommended to reduce the video stream transmission speed for packet capturing below 512kbps.

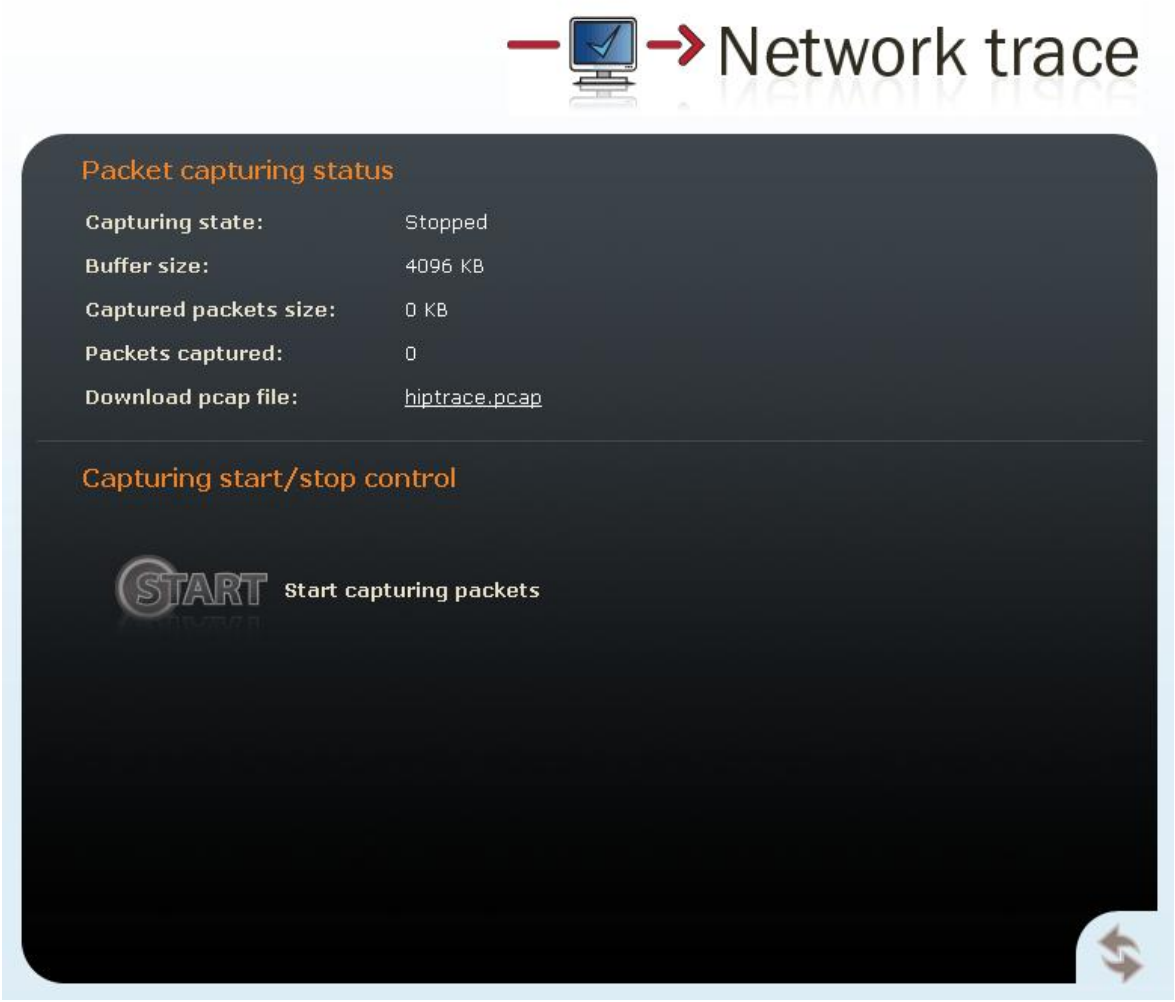


Figure 2.40 Network Trace

Licence

This menu is used for entering licence keys, Part Nos. 9137901 and 9137902. Licence keys upgrade the 2N® Helios IP functionality (see the Model and Licence Overview subsection). Contact your local distributor for the licence key to your 2N® Helios IP.

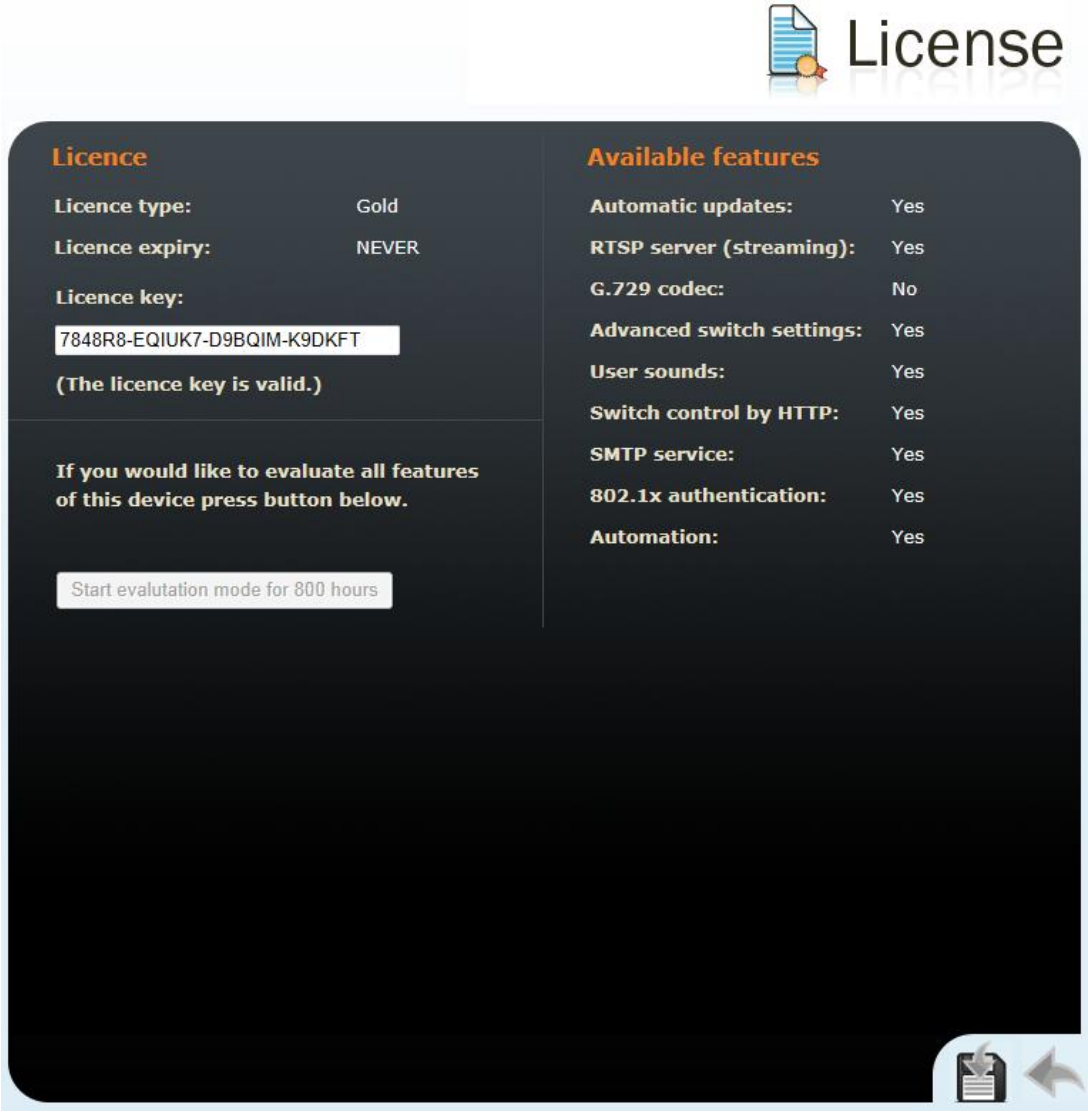


Figure 2.41 Licence

Licence

Licence type

Displays the type of licence currently saved in 2N® Helios IP. The available features of your licence are displayed in the *Available features* subsection.

Licence expiry

Nearly all models and variants of 2N® Helios IP are available with the Basic licence. Models 9137160KDU and 9137160CKDU are available with automatically activated Professional/Gold licence. You can activate the Professional/Gold licence

for a limited operating time (800 hours) to test all the system capacities. Click on the **Start evaluation mode for 800 hours** to enable the Professional licence. The licence will expire in 800 hours and can only be run once. Your Basic functions will be restored after its expiry. Note: Each restart shortens the temporary licence validity by one hour.

Licence key

Enter the licence key received from your distributor in this field.

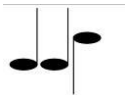
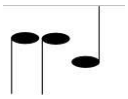
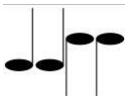
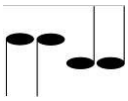
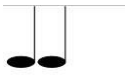
Available Features

Provides details on the 2N® Helios IP features following from the applicable licence.

Signalling of Operational Statuses

2N® Helios IP generates sounds to signal operational mode switching and changes.

There are different types of acoustic signals for each type of status change. The list of operational status signals is included in Table 3.1.

Tones	Meaning
	**User activated** after entering the user activation code. The activation code is used for activating a user (a telephone directory position). For activation code setting refer to the Telephone Directory subsection
	**User deactivated** after entering the user deactivation code. The deactivation code is used for deactivating a user (a telephone directory position). A deactivated user may not be called but the call may, if necessary, be forwarded to a substitute if defined. For deactivation code setting refer to the Telephone Directory subsection.
	**Profile activated** used for profile activation. It can be used, for example, to enable alerting of a user group of users in an office. Refer to the Profiles subsection for activation code setting.
	**Profile deactivated** used for profile deactivation. It can be used, for example, to disable alerting a user group in an office and forward the call to a selected telephone number, or the reception or a cellular phone. Refer to the Profiles subsection for deactivation code setting.
	**ll prolongation confirmation signalling** **naximum call duration is set for** **e the Audio Loop Test** 2N® Helios IP allows you to perform periodical loudspeaker and microphone tests. For this purpose, the in-built loudspeaker generates one or more short tones, which are captured by the integrated microphone. If the tones are detected correct, the test is successful. The test time is approximately 4s. If the test fails (due to some extreme surrounding noise, e.g.), the test procedure is repeated in ten minutes. Follow the most recent test results via your confirmation interface or with the aid of 2N® Helios IP Automation.

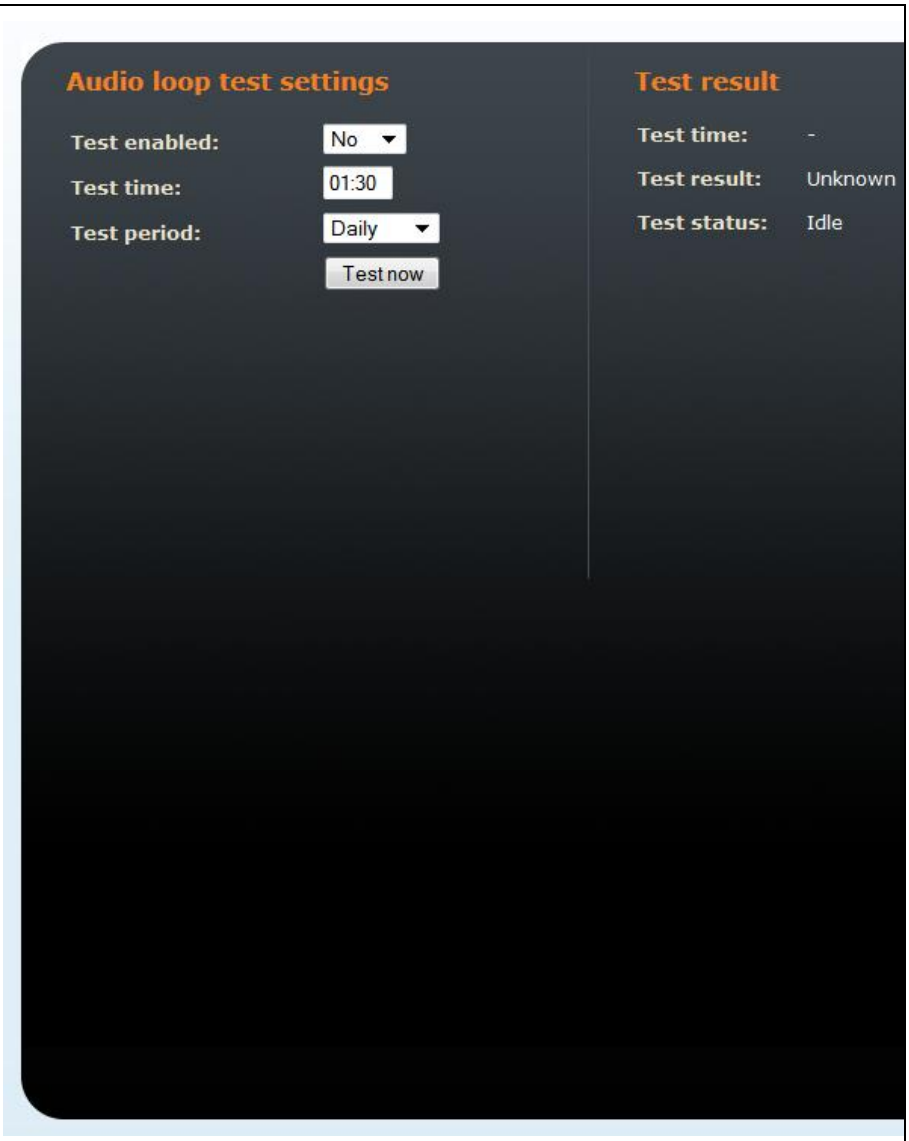


Figure 2.31 Audio loop test

Audio Loop Test Settings

Test enabled

Enable/disable the automatic loop test.

Test time

Set the test time in the HH:MM format. You are recommended to test the equipment when the intercom traffic is low.

Test period

Set the test period to launch the test automatically once a day or once a week.

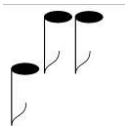
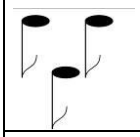
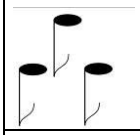
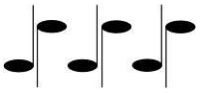
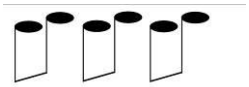
	Test Result **Test time** Displays the time of last performed test. **Test result** Displays the result of the last performed test. **Test status** Displays the test status. Miscellaneous subsection.
	**Internal application launched** after turning on or restarting of 2N® Helios IP, the internal application of 2N® Helios IP is launched. A successful launch is signalled by this tone combination.
	**Connected to LAN, IP address received** after the launch of the internal application 2N® Helios IP logs into the LAN. A successful login is signalled by this tone combination.
	**Disconnected from LAN, IP address lost** whenever the UTP cable is disconnected from 2N® Helios IP, this status is signalled by this tone combination.
	**Invalid telephone number or invalid switch code** you can dial an extension telephone number or enter the door-opening code using the keypad. An invalid code is signalled by this tone sequence.
	**Switching to default network parameters** after power up, a 30-second timeout is set for entering the resetting code. For switching to default network parameters refer to the Device configuration subsection of 2N® Helios IP Installation Manual.
	Call end signalling a time limit can be set after which your call will be terminated. To prolong a call, push a VoIP telephone key. The time limit is set due to protection against call blocking.
	**Connected call for VoIP phone-to-2N® Helios IP calling** a short tone is played to signal call connection.

Table 2.3 List of Operational Status Signals

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