NP2 / NP5 QUICK GUIDE V. 1.7

Warranty

NP2/NP5 has a 24 month warranty on the electronic parts, running from the date of purchase. The warranty will not be valid in case of tampering with the device or in case personnel not authorised by the manufacturer or by the authorised dealer should carry out work on it.
N.B. responsibility of the purchaser: in case of operation under warranty, the device must be packaged so as to prevent damage during transport and shipped to the manufacturer together with all the accessories.

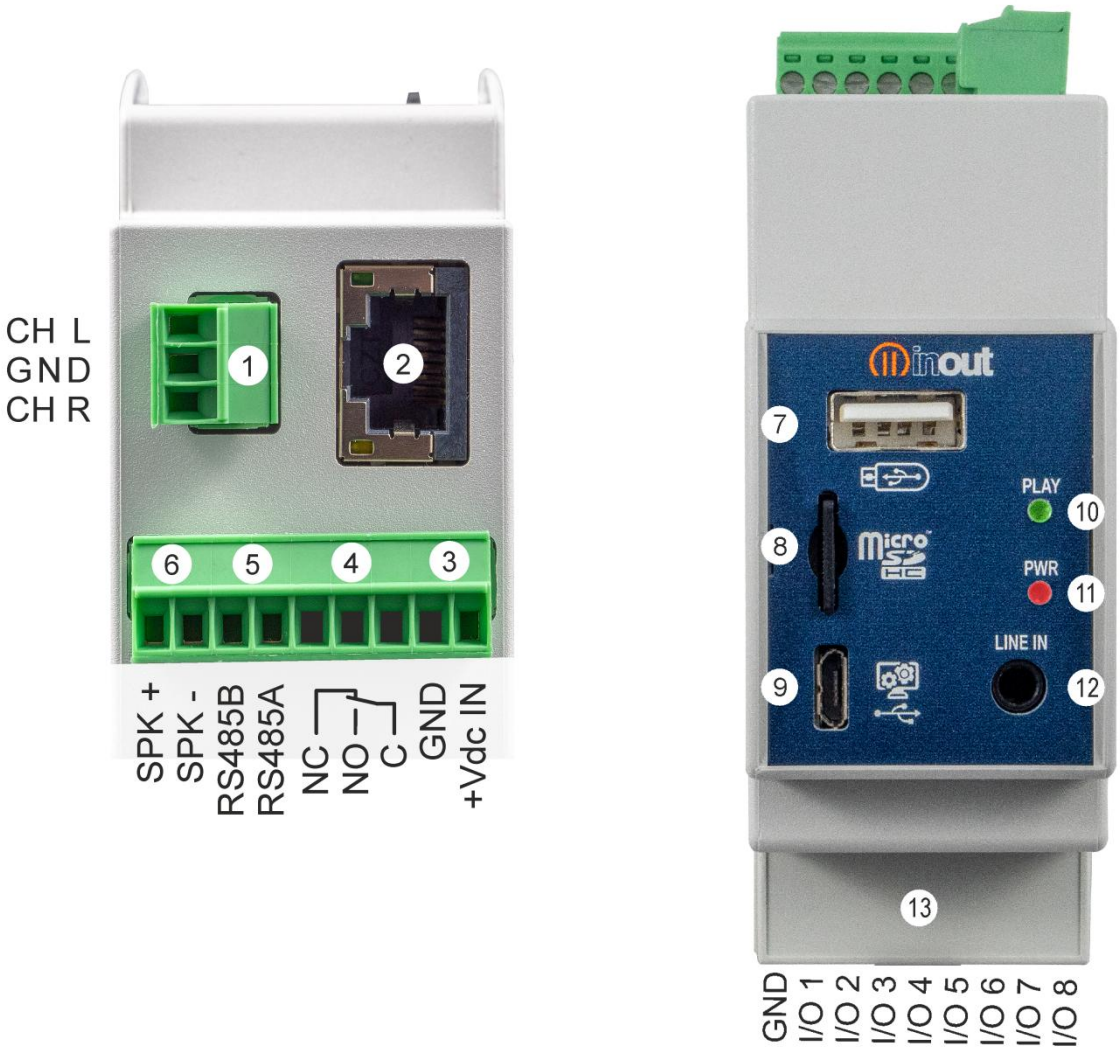
Warranty rules

1. In order to exercise his warranty rights, the purchaser must enclose with the device a copy of evidence of purchase duly stamped by the dealer (bill/invoice).
2. The warranty lasts for 24 months for the electronic parts. The warranty is granted at the point of sale or else directly requested from the manufacturer.
3. The warranty only covers damage to the product which makes it work badly.
4. Work under warranty will only mean repairing or replacing, free of charge, any parts acknowledged to be defective during manufacture or in their material, including labour costs.
5. The warranty does not apply to damage caused by negligence or failure to comply with the instructions, or damage caused by unauthorised people, with a special reference to the outside parts.
6. Also, the warranty does not apply to damage caused to the device by connection to unsuitable power sources.
7. The warranty does not cover parts subject to wear after use, or the container if the material is not defective.
8. The warranty does not include transport costs, which will be paid for by the purchaser in relation to the manner and time of transport.
9. The warranty will run out after 24 months have elapsed. In this case, service will be provided charging for the parts replaced, labour costs and transport according to the current rates.
10. Any dispute will be settled exclusively before the Court of Law of Venice.

Obsolete devices disposal :

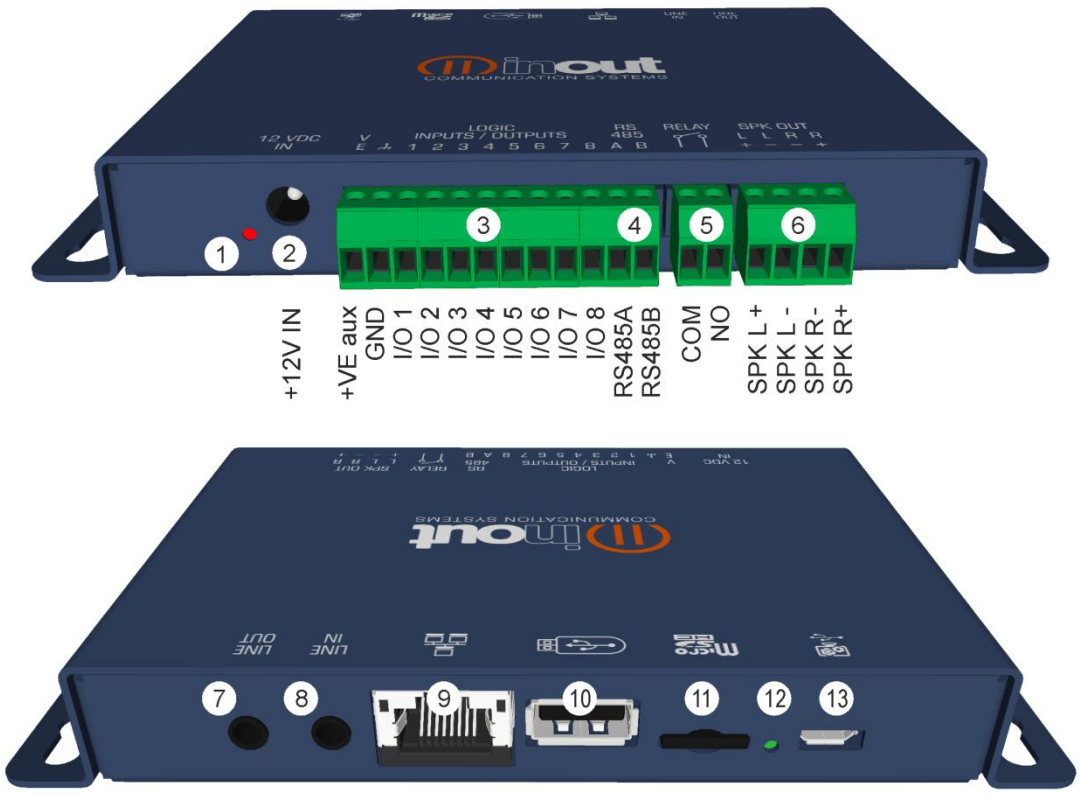
- When you find this picture on a device, it means that the device is compliant with European Directive 2012/19/EU.
- All electronic and electric devices should be disposed separately from normal garbage.
- The proper disposal of old devices, accessories, and of the batteries in particular, it contributes to prevent possible negative consequences for human health and for the environment.
- For more detailed information on the disposal of obsolete devices, contact the municipality, the garbage disposal service or the shop in which the product has been acquired.

NP2 installation and connection description



1. Pre-amplified audio output
2. LAN 10/100 Ethernet port
3. Input feed 12Vdc / GND
4. Relay contact output
5. RS485 serial communication port
6. Amplified 15W for speaker
7. USB port for pen drive
8. MicroSD card slot
9. Device USB port
10. Status LED lit= audio file playing
    blinking= pause/system check/error
11. Power LED lit= device is live
12. Stereo audio input for outside music source with mixer funtion
13. 8 logic on/off ports individually configurable as input or output
    GND auxiliary for input activation

NP5 installation and connection description



1. Power LED lit= device is live
2. Input feed 12Vdc / GND
3. VE auxiliary +12Vdc, available for output activation
   GND auxiliary for input activation
   8 logic on/off ports individually configurable as input or output
4. RS485 serial communication port
5. Relay contact output
6. Amplified 15+15W for speaker
7. Stereo audio output
8. Stereo audio input for outside music source with mixer funtion
9. LAN 10/100 Ethernet port
10. USB port for pen drive
11. MicroSD card slot
12. Status LED lit= audio file playing
    blinking= pause/system check/error
13. Device USB port

IMPORTANT NOTICES.

1. NP2/NP5 has been designed and made to work only with the following mains power supply: 12VDC.
2. The device must be serviced only by qualified staff.
3. Do not put objects inside the device through the openings, in order to prevent the risk of fire or shock.
4. Disconnect the device from the power socket before cleaning. Clean the device using a soft, dry cloth. Do not use liquids or spray which can contain flammable substances.

Content of the kit NP2

- n. 1 NP2 device;
- n. 1 quick guide;
- n. 1 DIN rail adaptor AC/DC 15W/12Vdc out
- n. 1 uSD flash memory.

Content of the kit NP5

- n. 1 NP5 device;
- n. 1 quick guide;
- n. 1 mains adaptor AC/DC 30W/12Vdc out
- n. 1 uSD flash memory.

How to start?

- Try out demo examples contained in the supplied microSD.
- At power-up, NP2/NP5 performs a system check signaling by flashing the green led, wait for the LED to turn off.
- To create folders into microSD, insert blank flash card into the player and power up NP2/NP5.

Folders	What they need
config	Folder for memory configurations
music	Folder for music files
playlist	Folder for playlists files
scheduler	Folder to save time schedule
spot	Folder for spot files
system	System Folder and Help Messages

IMPORTANT:

If the microSD is not inserted, NP2/NP5 does not work and the green LED remains blinking

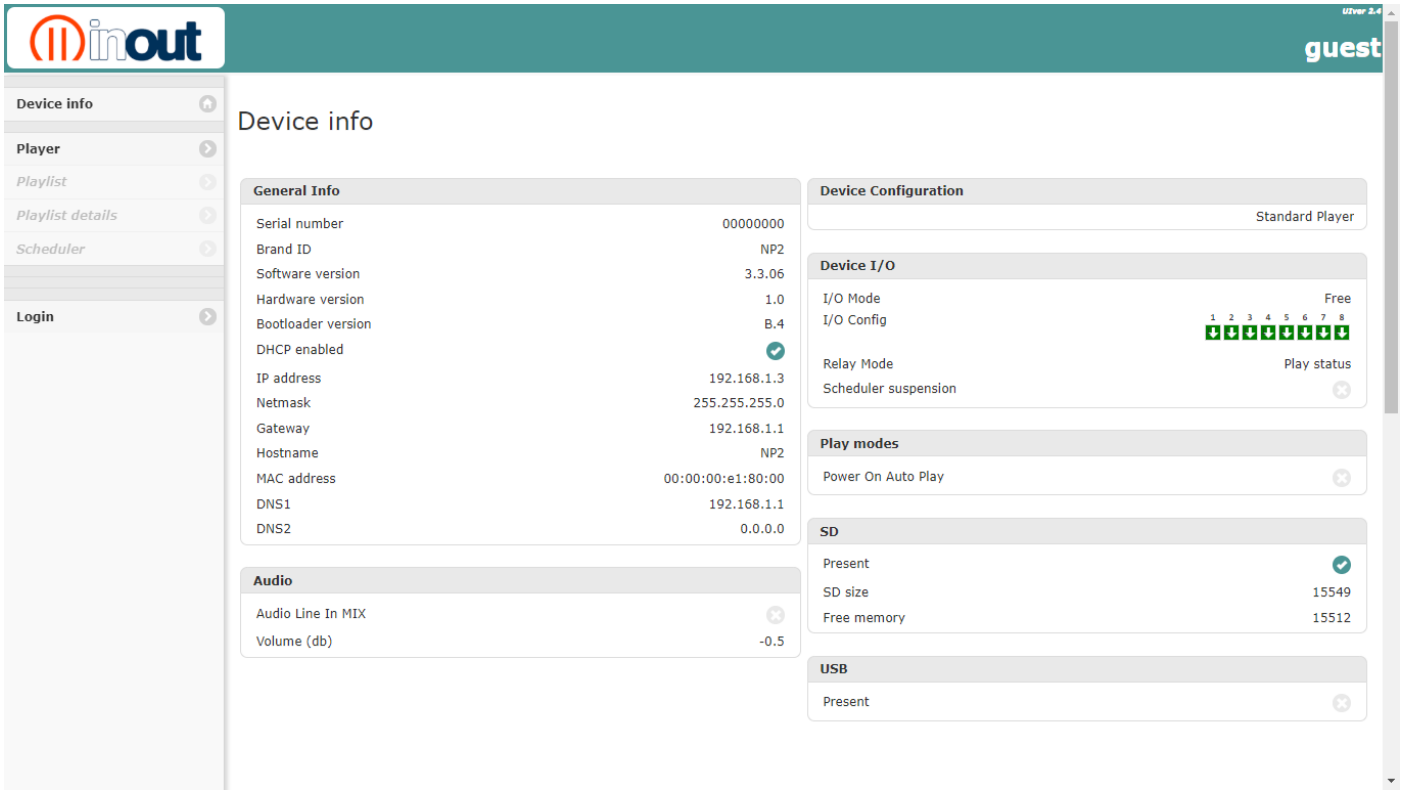
IMPORTANT:

NP2/NP5 is compatible with the following browsers.

- Chrome 7+
- MozillaFirefox 4+
- Internet Explorer 10+ / Windows 10 Edge
- Safari 6+ for MAC

Please connect the NP2/NP5 to your router before executing the following steps.

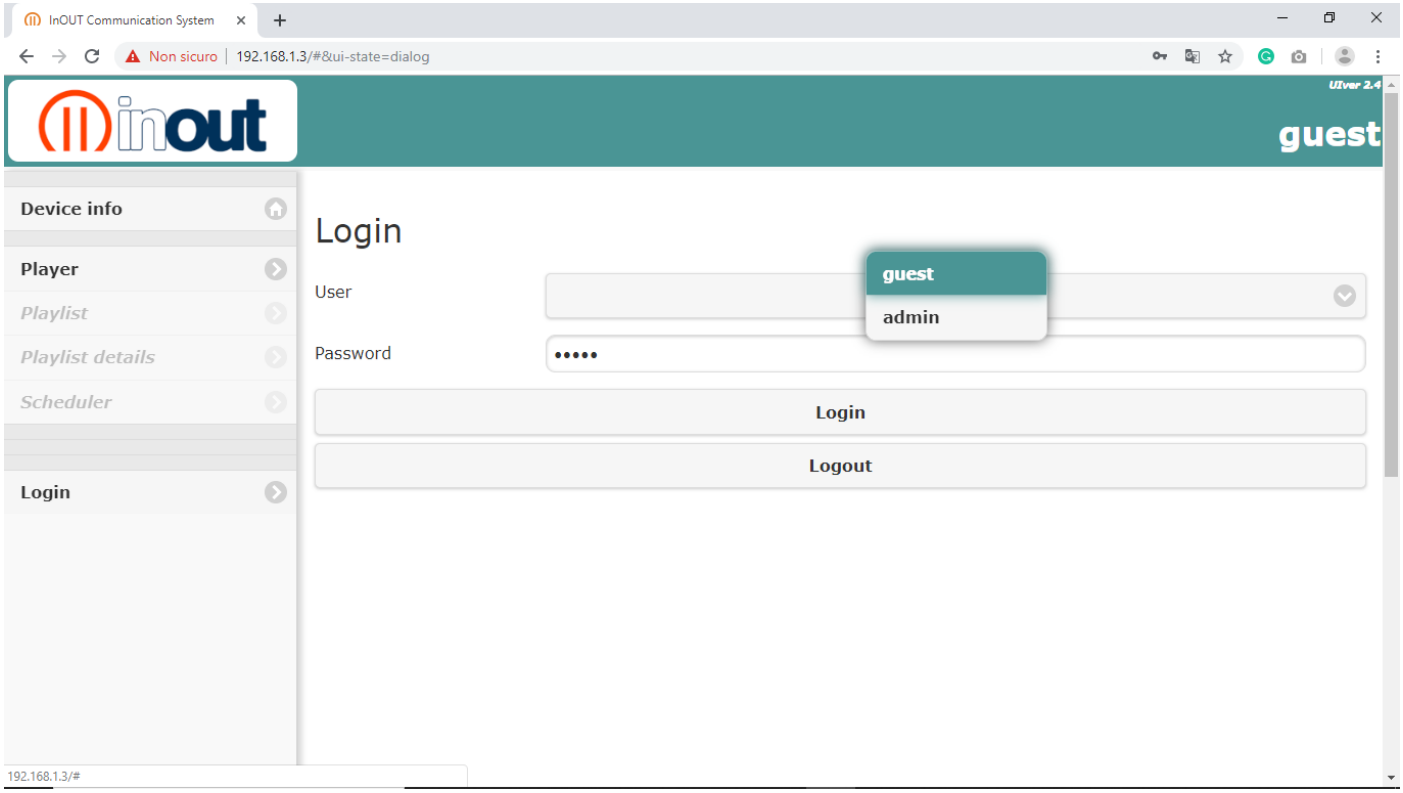
- open your Web browser on your PC (such as CHROME)
- on the Address field, type the following address http://192.168.1.1 or IP address of the router.
- you will get a window asking for the username and password of the router.
- enter the username and the password to log on to the router administrative page.
- Check the router's DHCP clients table by checking the attached device list.



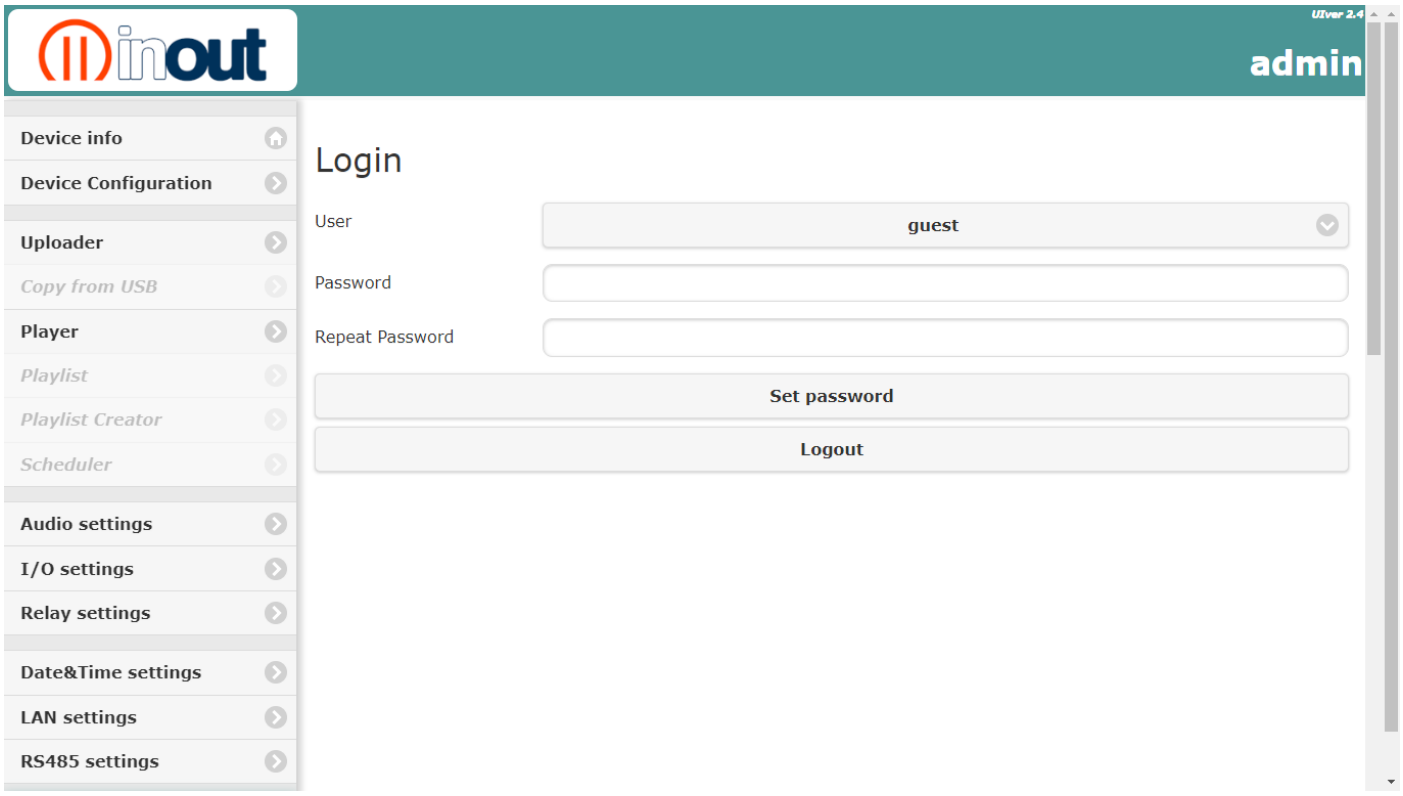
Press Login menù, select User Admin.

Default value:	User	Password
Guest	guest	guest
Administrator	admin	admin

IMPORTANT: timeout login 10min.



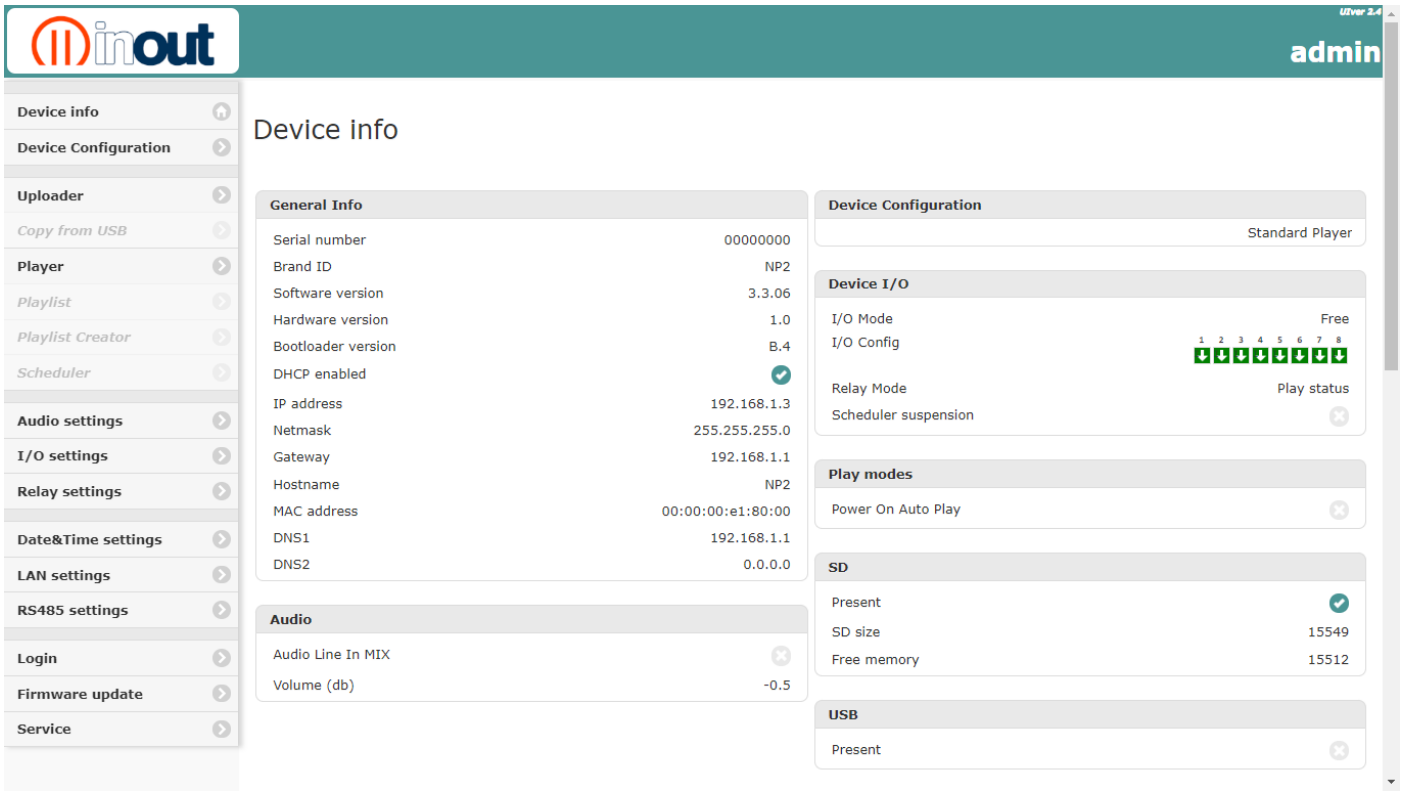
If you change login, insert password and confirm with Set password button.



Device Info

Web page displaying all the parameters set in the NP2/NP5 device.

To change settings, select the menu on the left side of the web page



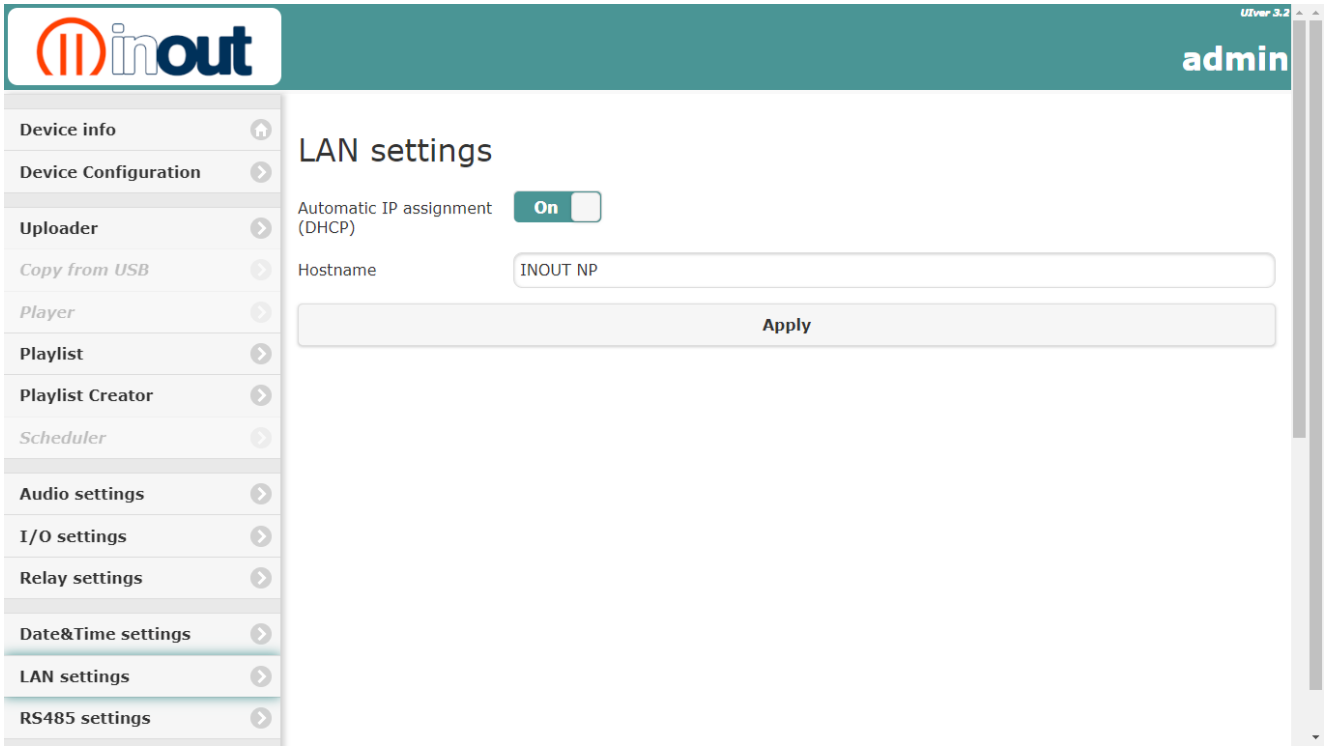
IMPORTANT:

always save the settings with the save/apply button

LAN settings

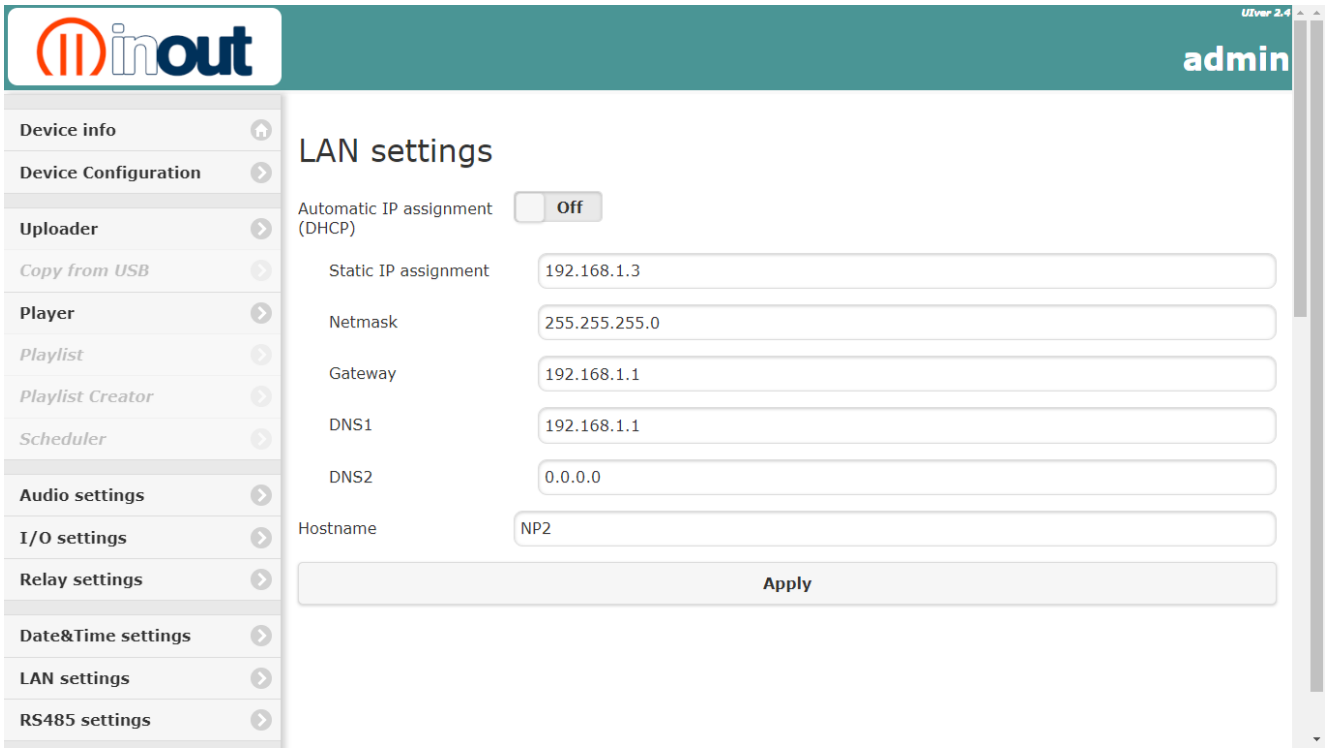
DHCP Automatic IP assignment

Set DHCP ON, enter your prefer Hostname and save with Apply.

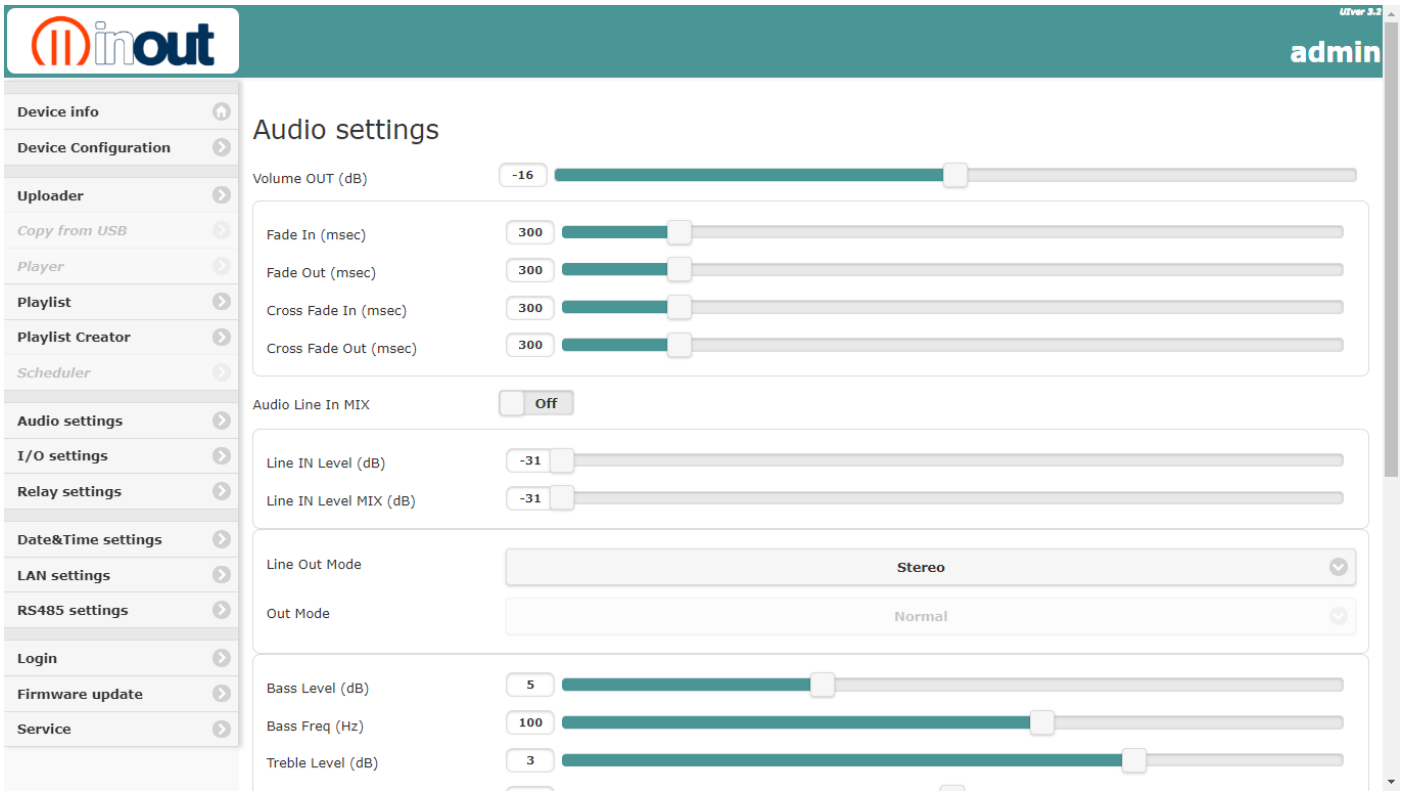


Static IP assignment

Set DHCP OFF, enter the IP address, Subnet Mask, Default Gateway and DNS server.
Enter your prefer Hostname and save with Apply.

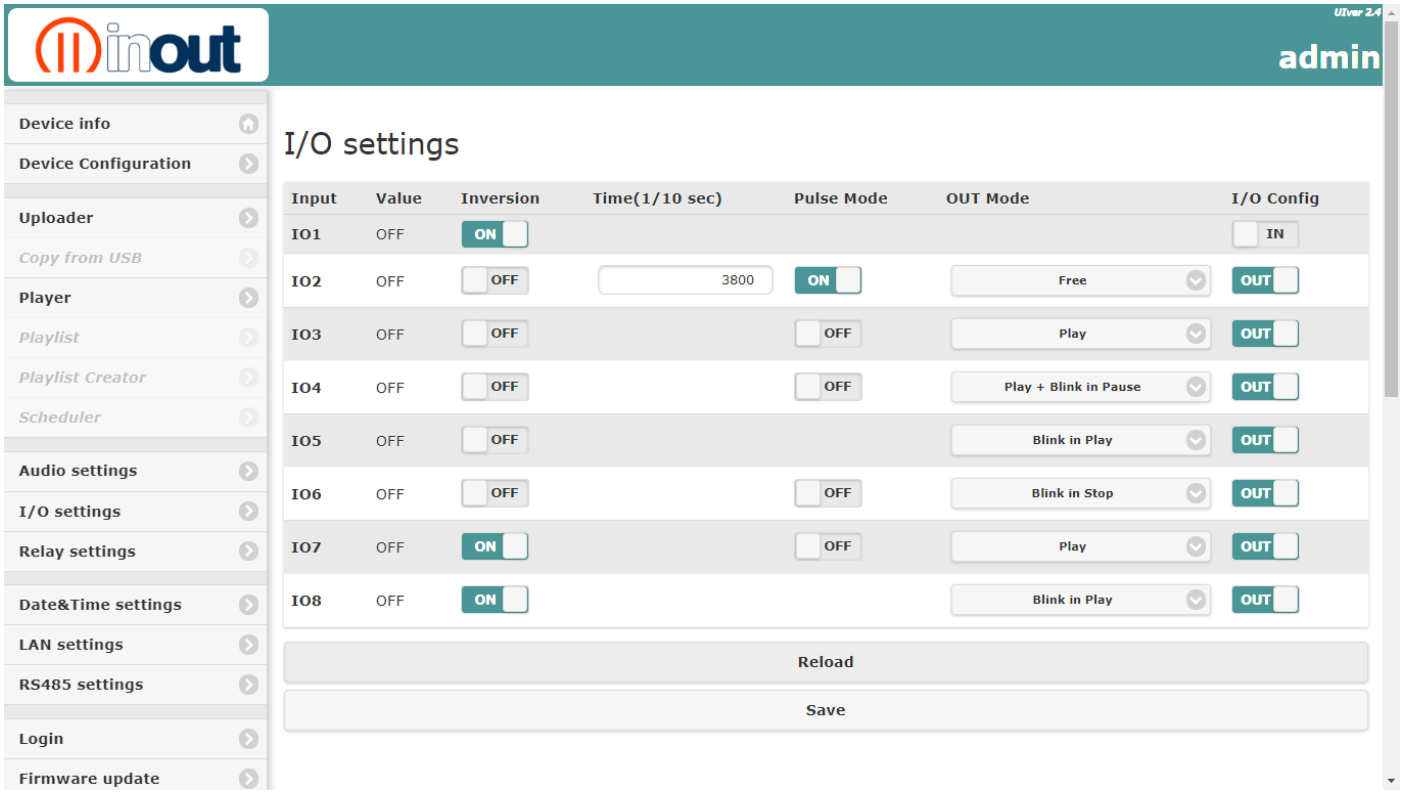


Audio settings



Volume out:	level preamplified and amplified audio output
Fade In:	setting the initial fading time of playing the audio file
Fade Out:	setting the finaly fading time of playing the audio file
Cross Fade In:	setting the fading time of the Line In before playing the audio file.
Cross Fade Out:	setting the fading time of the Line In after playing audio file
Audio line in mix:	switch on/off audio Line In
Line In Level:	setting level Line In when player in stand by
Line In Level Mix:	setting level Line In of the background during the playing of the audio file.
Line Out Mode:	setting Line Out mode Stereo / Mono
Bass Level:	setting Low tone level control
Bass Freq:	setting Lower limit frequency
Treble Level:	setting High tone level control
Treble Freq:	setting High limit frequency

I/O settings



I/O Config: Setting logic port input or output

Out Mode: Output logic port setting:

Free: remote enabled output with serial or TCP / IP command

Play: active output during playback

For illuminated buttons:

Play+Blink in pause: output active during playback and blink when paused

Blink in Play: output in blink during playback

Blink in Stop: output in blink when stopped

Pulse Mode: Setting the output logic port in pulse mode, set the pulse duration time in tenths of a second.

IMPORTANT: at the end of the track/file the output is deactivated

Inversion: Setting the mode of input/output active high or active low.

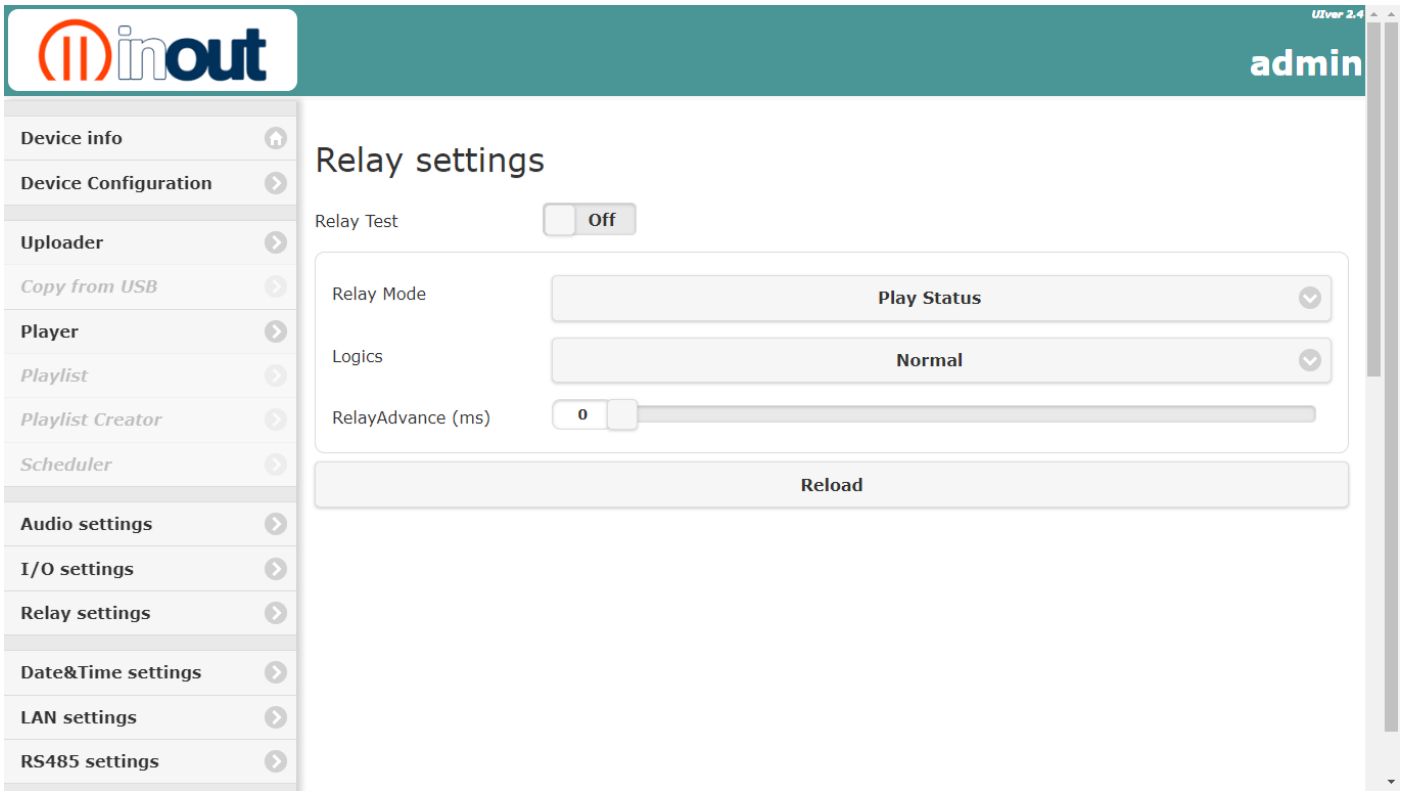
OFF: active-low input mode; the functioning of the input is connected to the ground/GND of the device.

ON : active-high input mode; the functioning of the input is applied with a positive voltage between 5 and 12Vdc.

Value: Test function Output logic port

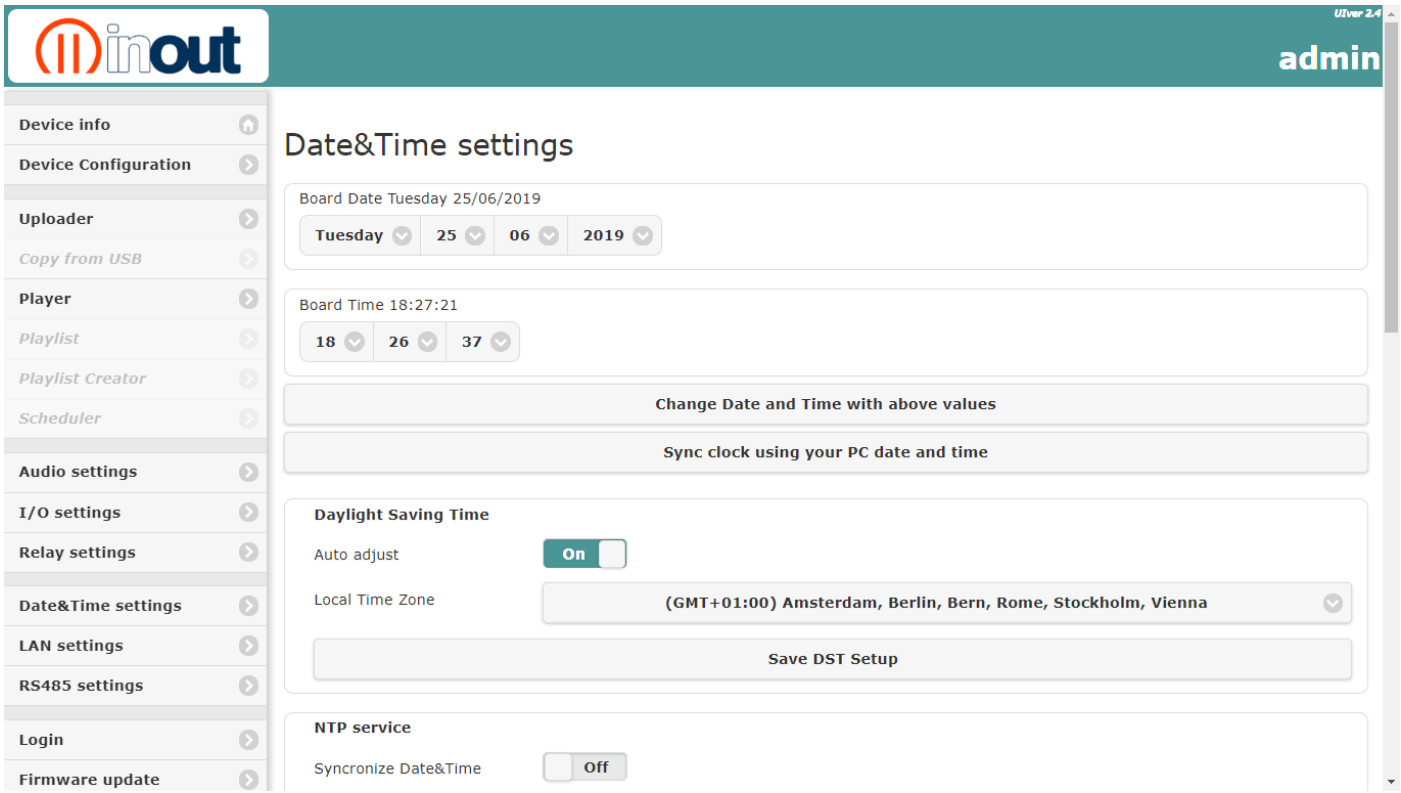
IMPORTANT: save the settings with the button apply/save

Relay settings



Relay Test:	Only for Test function relay on/off.
Relay Mode:	- Free to remote control or scheduler function - Play status, relay is active when device is playing
Logics:	setting normal or inverted
Relay Advance:	setting delay time of the play audio file from the activation Relay.

Date&Time settings



Select date and time and press “Change Date and Time with above values” button.

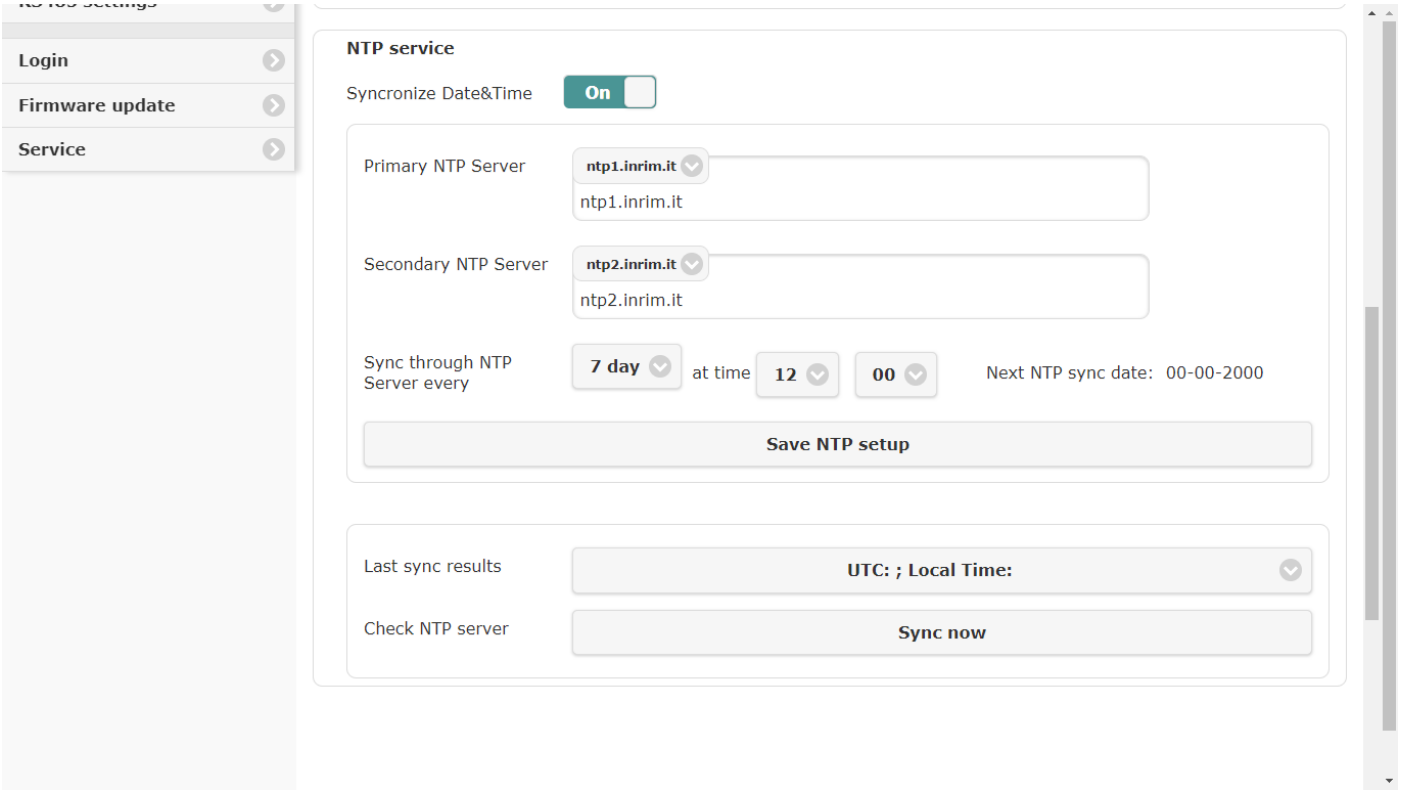
Option set:
Fast setting “ Sync clock using your PC date and time” button.

Daylight Saving Time (DST) is the practice of setting the clocks forward 1 hour from standard time during the summer months, and back again in the fall, in order to make better use of natural daylight.

Local Time Zone
The system clock must be on time. Select your country to get the correct time and date

IMPORTANT: save the settings with the button Save DST Setup.

NTP service



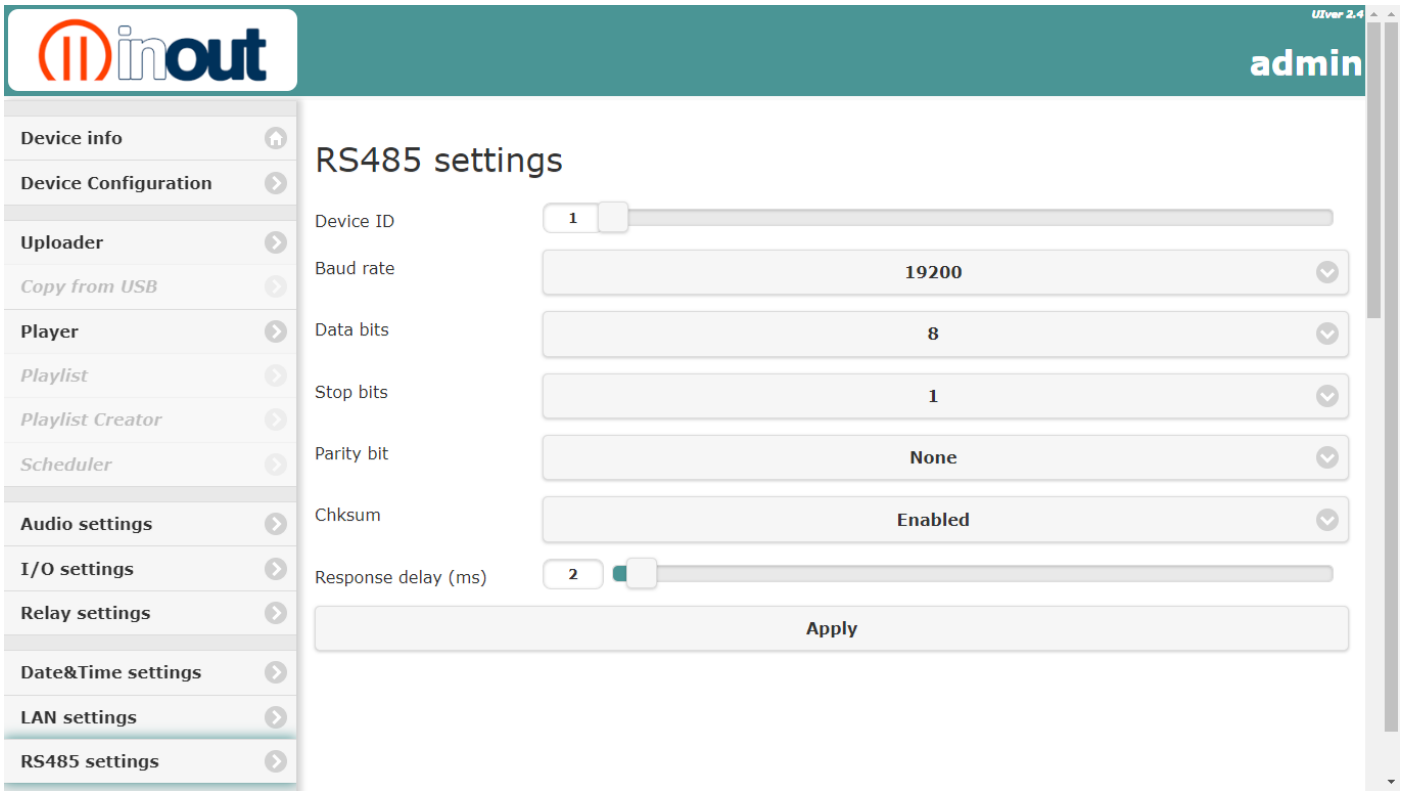
A NTP service (Network Time Protocol) can be used to synchronize the time on devices across a network. A NTP time server is used to obtain the correct time from a time source and adjust the local time in each connecting device.

INRIM provides a synchronization service for informatics system connected to the Internet, based on two primary NTP (Network Time Protocol) servers installed at the Time and Frequency Laboratory.

The INRIM NTP servers can be reached by means of the following addresses:
ntp1.inrim.it (193.204.114.232)
ntp2.inrim.it (193.204.114.233)

IMPORTANT: save the settings with the button Save NTP Setup.

RS485 settings



Device ID : Address NP2/NP5 in the 485 bus. This address **MUST** be univocal, two devices with the same address can not co-exist on the same bus.

Response delay: Minimum delay between end of reception of the pack and delivery of the reply.

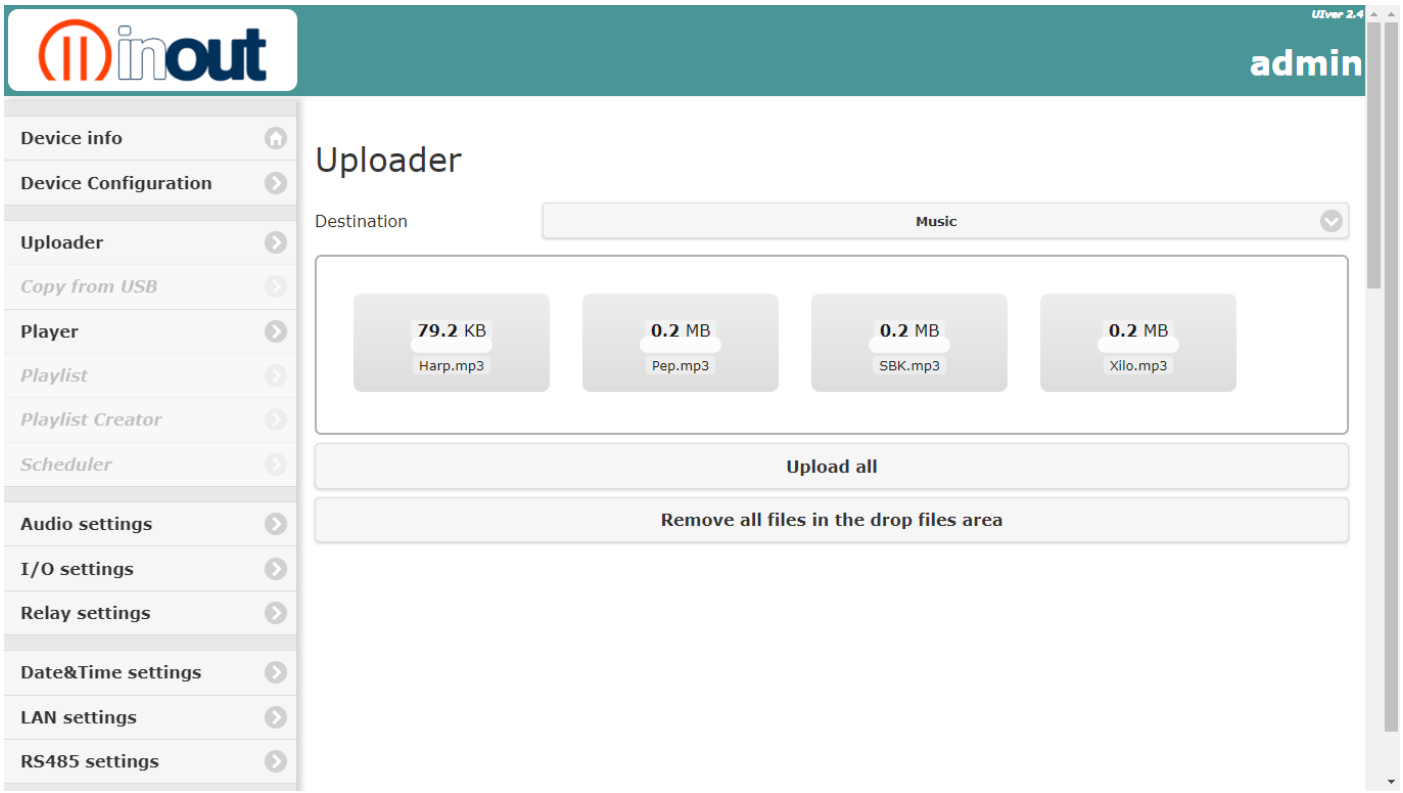
NP2/NP5 can be connected to an RS485 communication bus through a serial port, which is controlled from a master system or by a computer.
Due to interference from outside the serial line, one may find anomalous behaviour from part of the master system which could cause possible damage to NP2/NP5. To avoid this mishap one must take the following precautions:

1. Do not let the serial cables transit in the same conduits as power cables or cables with elevated voltage. Maintain a safety distance of at least 10 cm. between these cables.
2. Connect serial cable screen to the ground the on one of the two sides (do not connect the screen from both sides); in addition, the ground connection of the screen must not be made in the same point in which piloted circuits of elevated tension are connected.
3. Cut the voltage of the entire system before beginning the wiring of the serial lines: even dispersed or parasite currents could damage the modules.

IMPORTANT:

- The internal electronics of NP2/NP5 are not galvanically insulated from the RS485 line; in case of short circuit or discharge to ground, it is possible to damage not only the NP2/NP5, but even the master system to which it is connected!
- For the RS485 connection, one must remember to ignore the transmission echo from the master that is returning through the serial line.

Uploader



To upload files into NP2/NP5, select the audio files on your computer/device, select dir/folder destination and press Upload all to copy into microSD storage.

Press Reset to abort Upload.

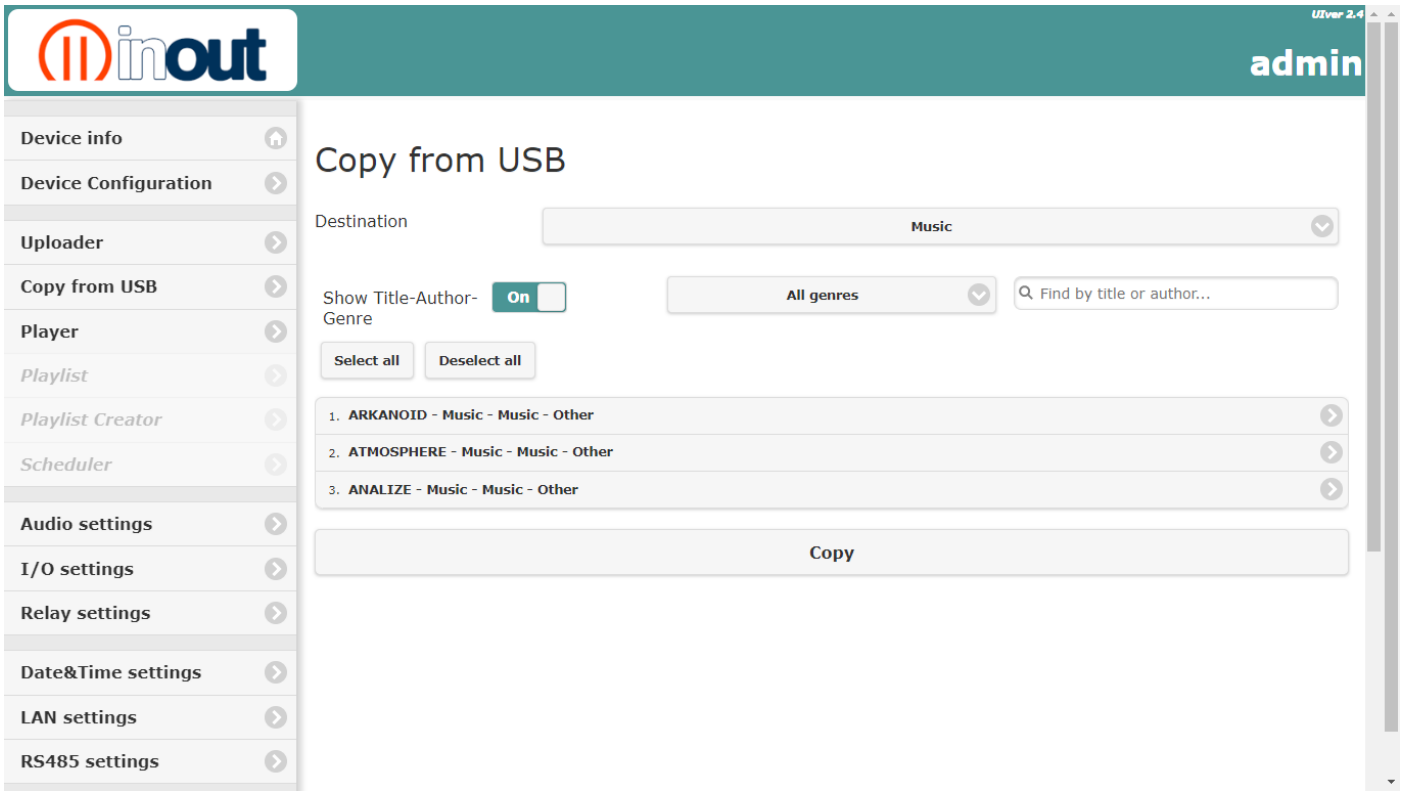
IMPORTANT:

- Before you start Upload, close all other web pages. During the Upload function, do not navigate to other NP2/NP5 features and do not open other browser web pages.

- Do not start Upload while running a scheduler

- We recommend uploading when the NP2/NP5 is in standby mode.

Copy from USB



To copy files into NP2/NP5, insert USB pen drive, select the audio files, select dir/folder destination and press Copy to transfer files into microSD storage.

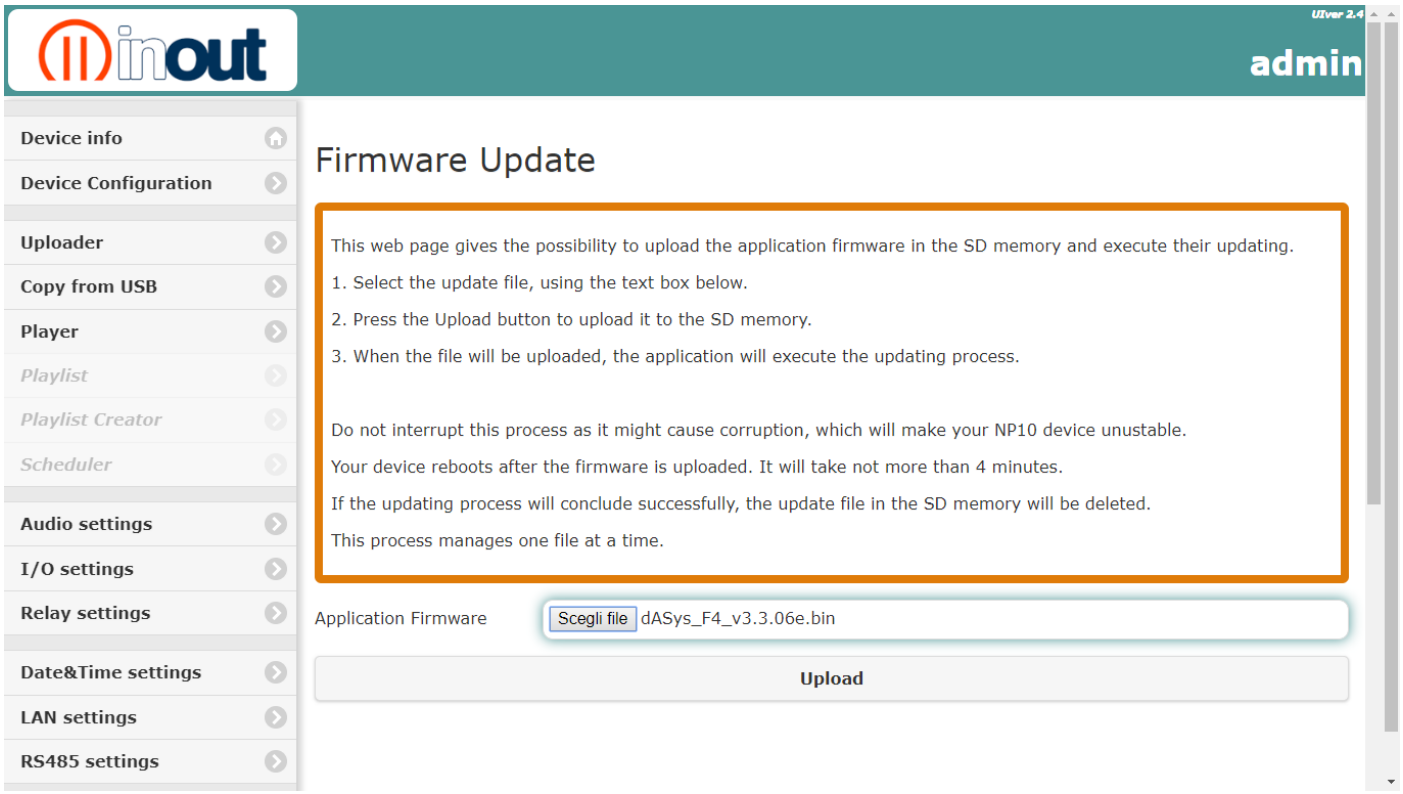
If the Copy from USB menu does not appear, refresh the web page.

IMPORTANT:

- The files to be transferred must be in the root directory of the USB pen drive
- Do not start Copy while running a scheduler
- We recommend Copy from USB when the NP2/NP5 is in standby mode

How to update the Bootloader (BL) or Application (App) Firmware?

If you have an NP2/NP5 device with the BL firmware version equal or less to the version "A.3", and the App with version equal or less to the version "3.0.2", it is necessary to follow the below instructions.
To update the newest firmware versions is it possible to use this web page for both: Bootloader and Application.



The process uploads the file in the SD card memory, inside the directory "updates", check the file integrity using the CRC info and then decrypt the data and write them in the Flash area.
Instead, in the App, after the integrity check will recall a sw reset, in order to execute the bootloader that will find the file in the "updates" directory.
For both process, at the end, in case of success, the update file will be deleted.

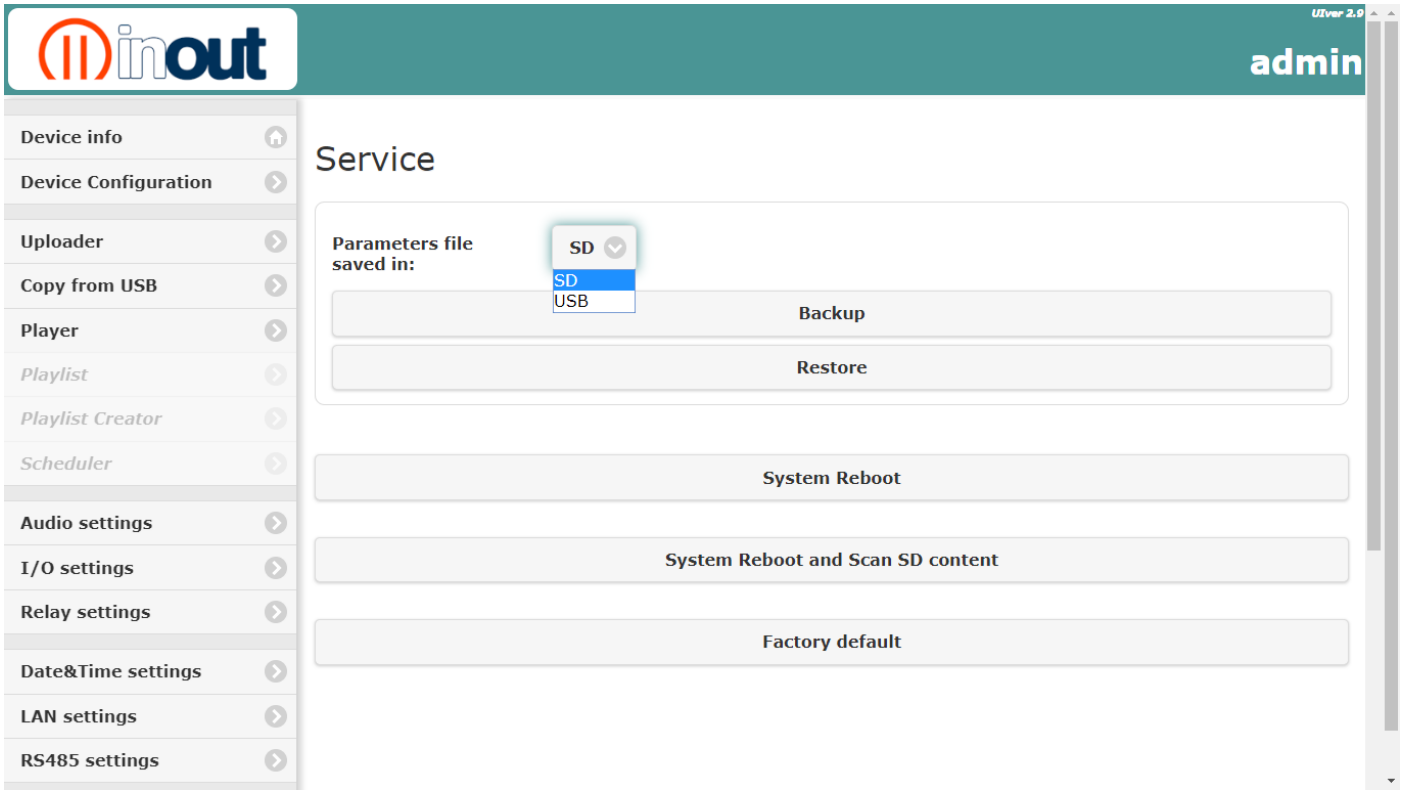
IMPORTANT:

To update firmware wait 4 minutes, after it is recommended to switch off and on NP2/NP5 device.

USB Firmware Update (optional)

1. Update the App firmware using the well know USB method, saving in the USB Flash root the file "dASys_F4_v3.x.xx.bin".
2. Plug the USB Flash memory to the NP2/NP5 device.
3. Power on the NP2/NP5 device and wait 4 minute.

Service



Backup : Save your player configuration into uSD or USB Key.

Restore : Restore your player configuration saved in the uSD or USB Key

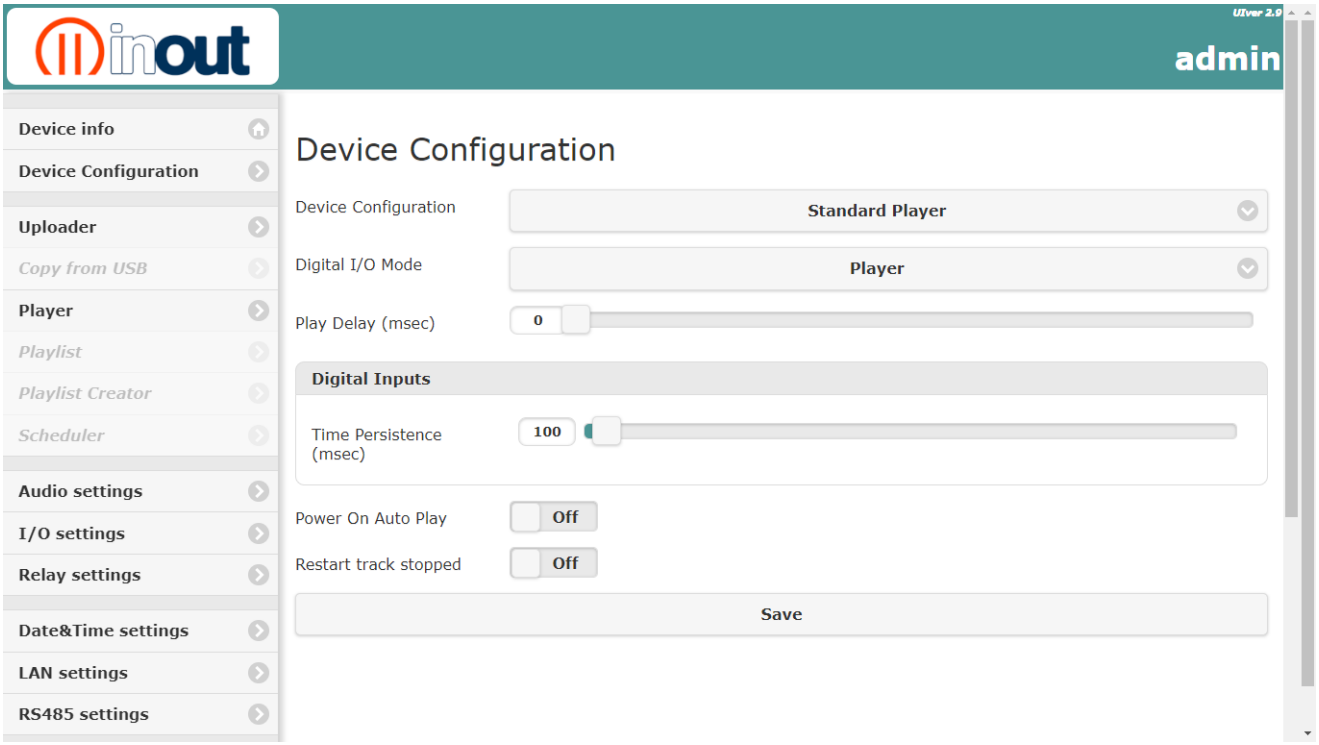
System Reboot: remotely reboot the player

System Reboot: and scan uSD restart the player remotely and scan the files contained in the SD memory

Factory default: restore the factory parameters

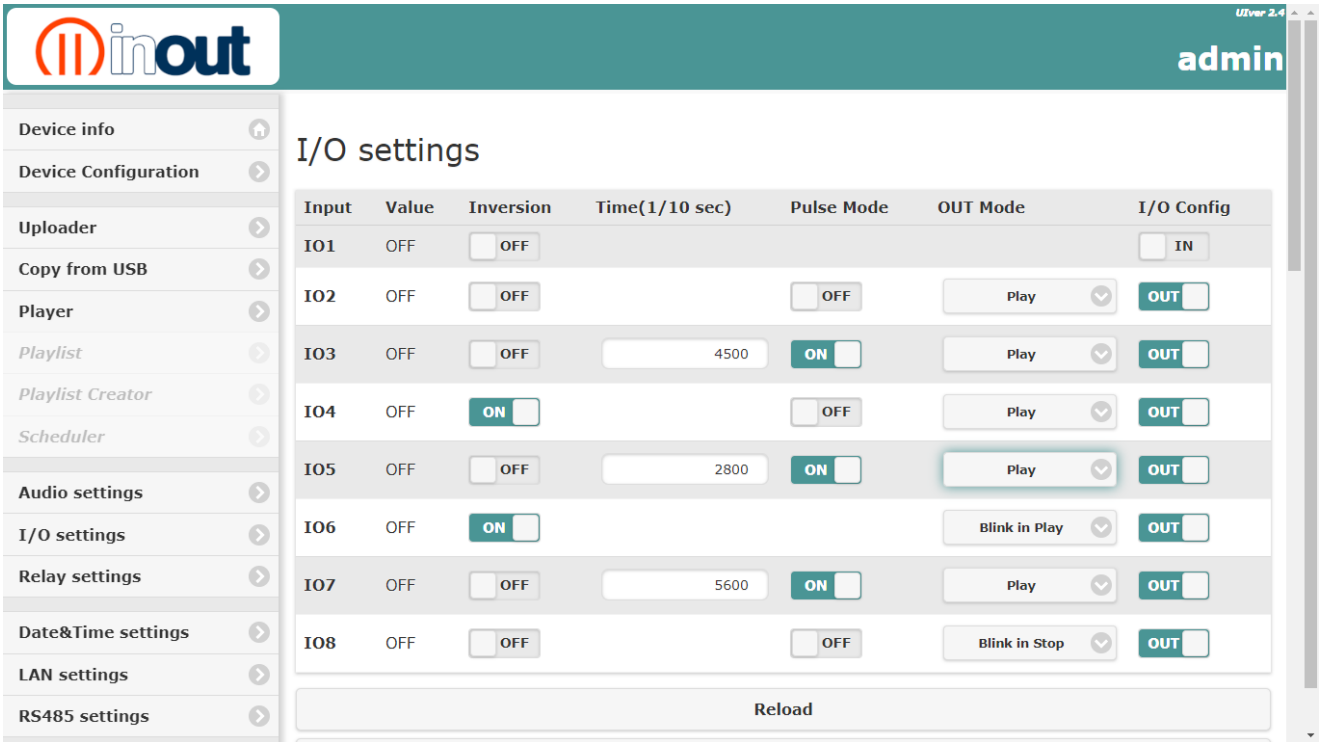
Standard Player configuration

NP2/NP5 works just like a standard player in this mode and does not require any specific programming or playlist file. The tracks will be played in the sequence in which they are memorised in the flash memory; if a block of data is transferred then the written sequence in the flash memory will depend on the operating system used.



Digital I/O Mode > Free

Logic ports are freely configurable as I/O settings webpage.



Digital I/O Mode > Player

The logical inputs can be used for player control (see example application at the end of guide).

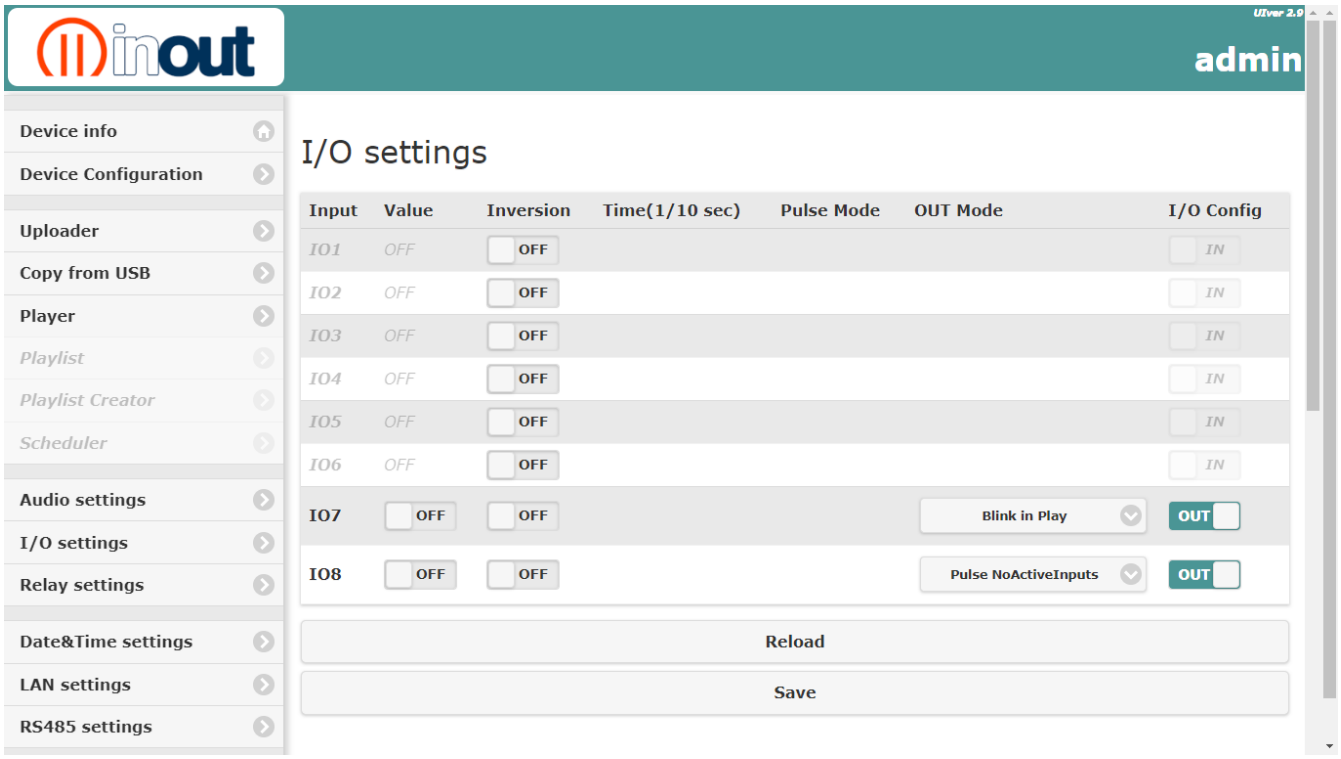
IO1	⏮	previous file
IO2	⏹	Stop file reproduction.
IO3	⏯	Play/Pause file
IO4	⏭	next file
IO5	🔉	reduce output volume
IO6	🔊	increase output volume
IO7		logic ports are freely configurable as I/O settings webpage.
IO8		logic ports are freely configurable as I/O settings webpage.

Time Persistence: set the persistence time of the input command (time to wait before NP2/NP5 is able to interpret the input command)

Power On Auto Play: In this mode, NP2/NP5 will automatically start to play the audio file when the device is power on.

Restart Track Stopped: ON = If the track is interrupted, the next playback restarts from the beginning of the track.
OFF = playback restarts from the next track

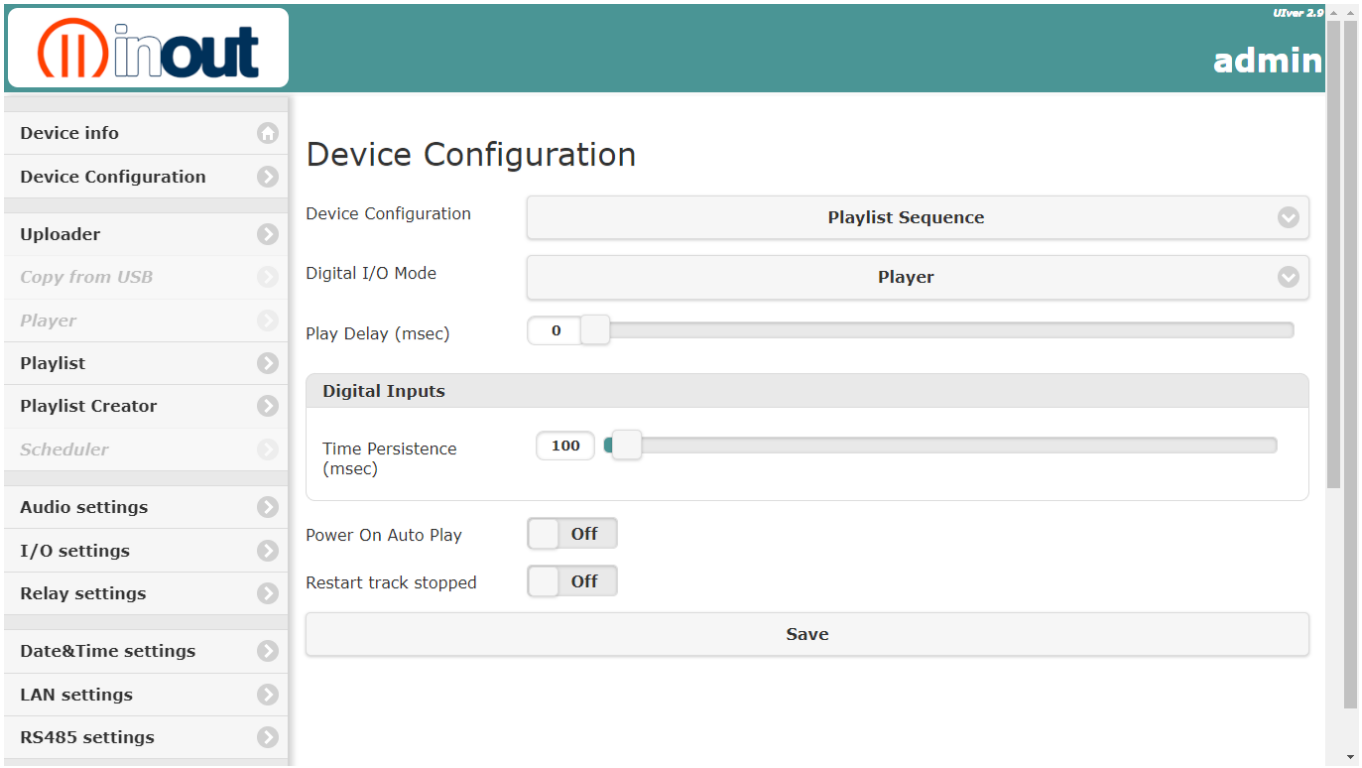
IMPORTANT: save the settings with the button apply/save



Pulse No Active Inputs: It allows the continuous reproduction of tracks with the play contact. When you disable the play contact, an output pulse commands the stop.
NB. Only for Standard Player and Playlist Sequence Configuration.

Playlist Sequence Configuration

This sequentially performs all the playlists memorised, starting first playlist.



Digital I/O Mode > Player

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IO7		free - logic ports are freely configurable as I/O settings webpage.
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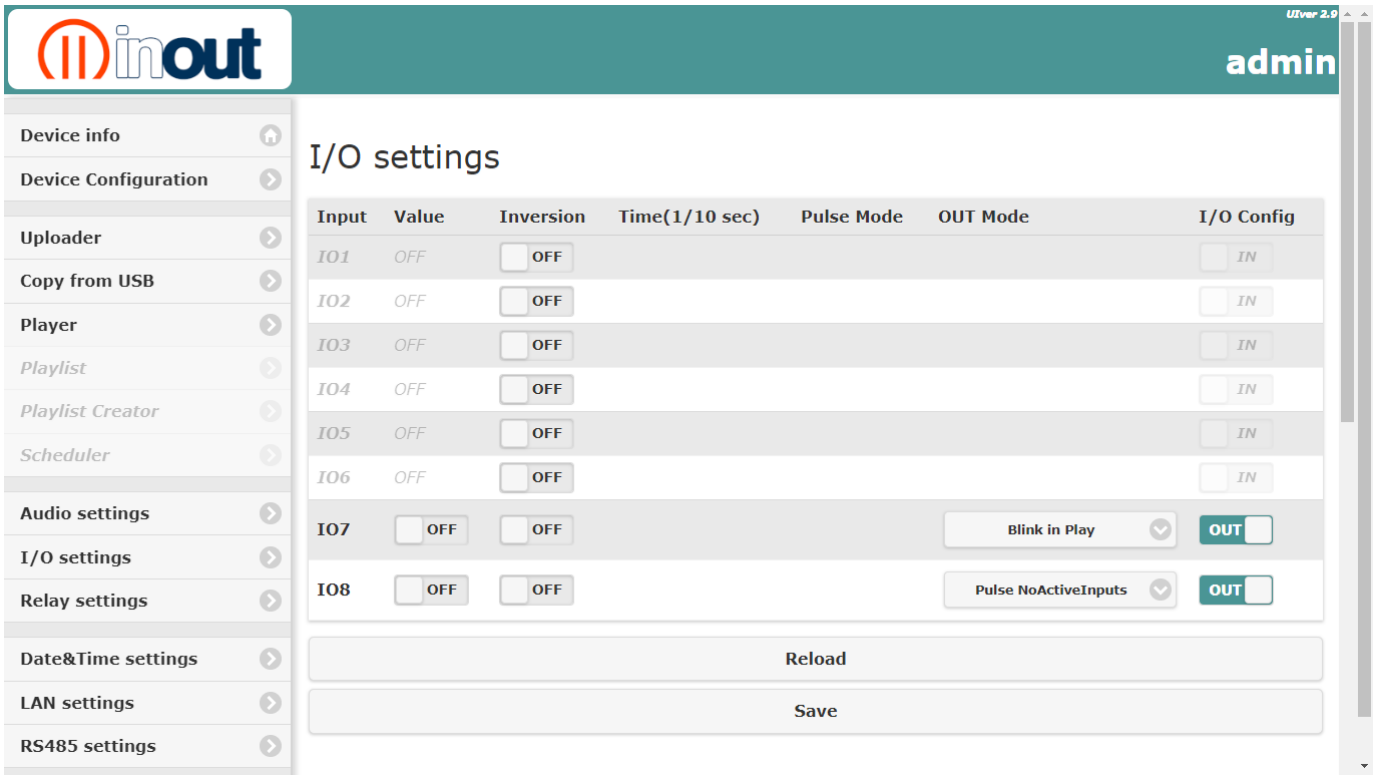
Restart Track Stopped: ON = If the track is interrupted, the next playback restarts from the beginning of the track.
OFF = playback restarts from the next track

IMPORTANT: - save the settings with the button apply/save
- set continuous play ON for playlist loop



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Digital I/O Mode > Free

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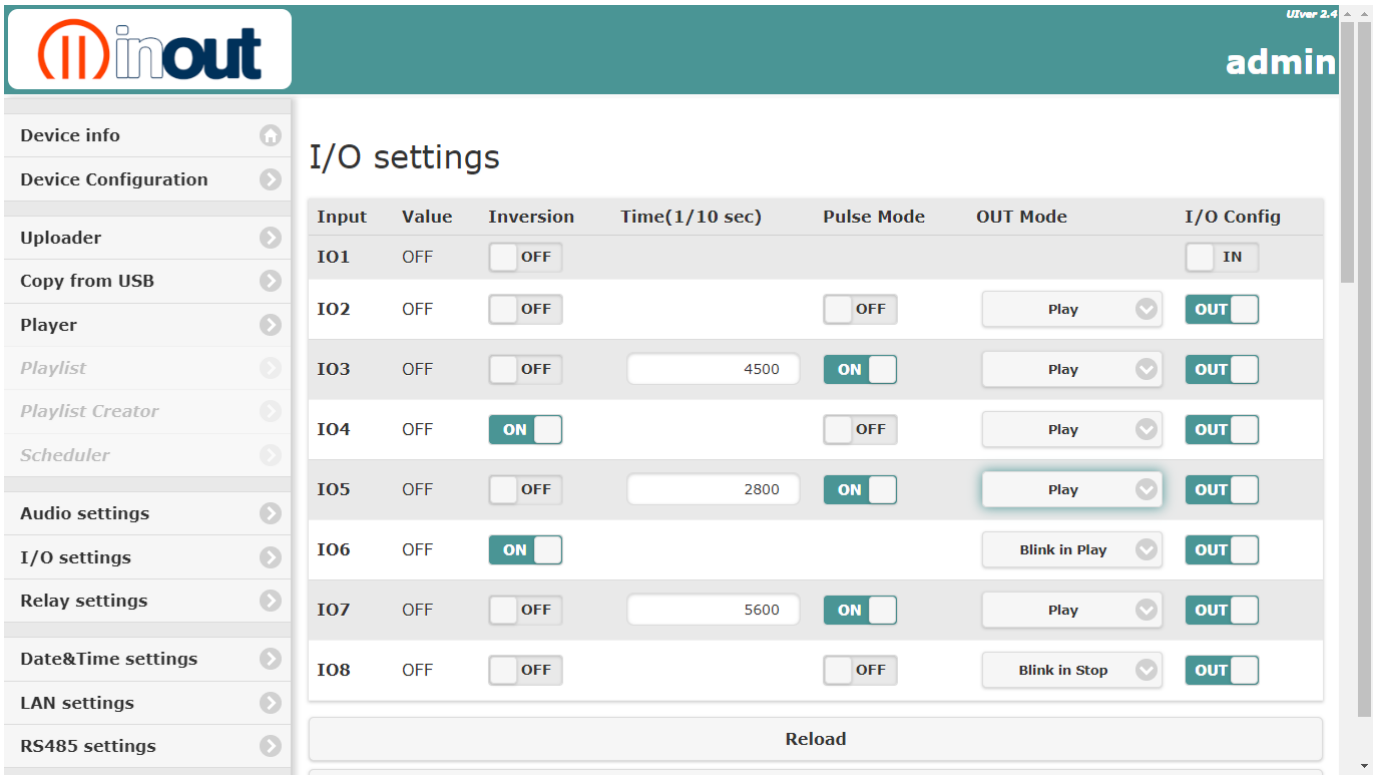
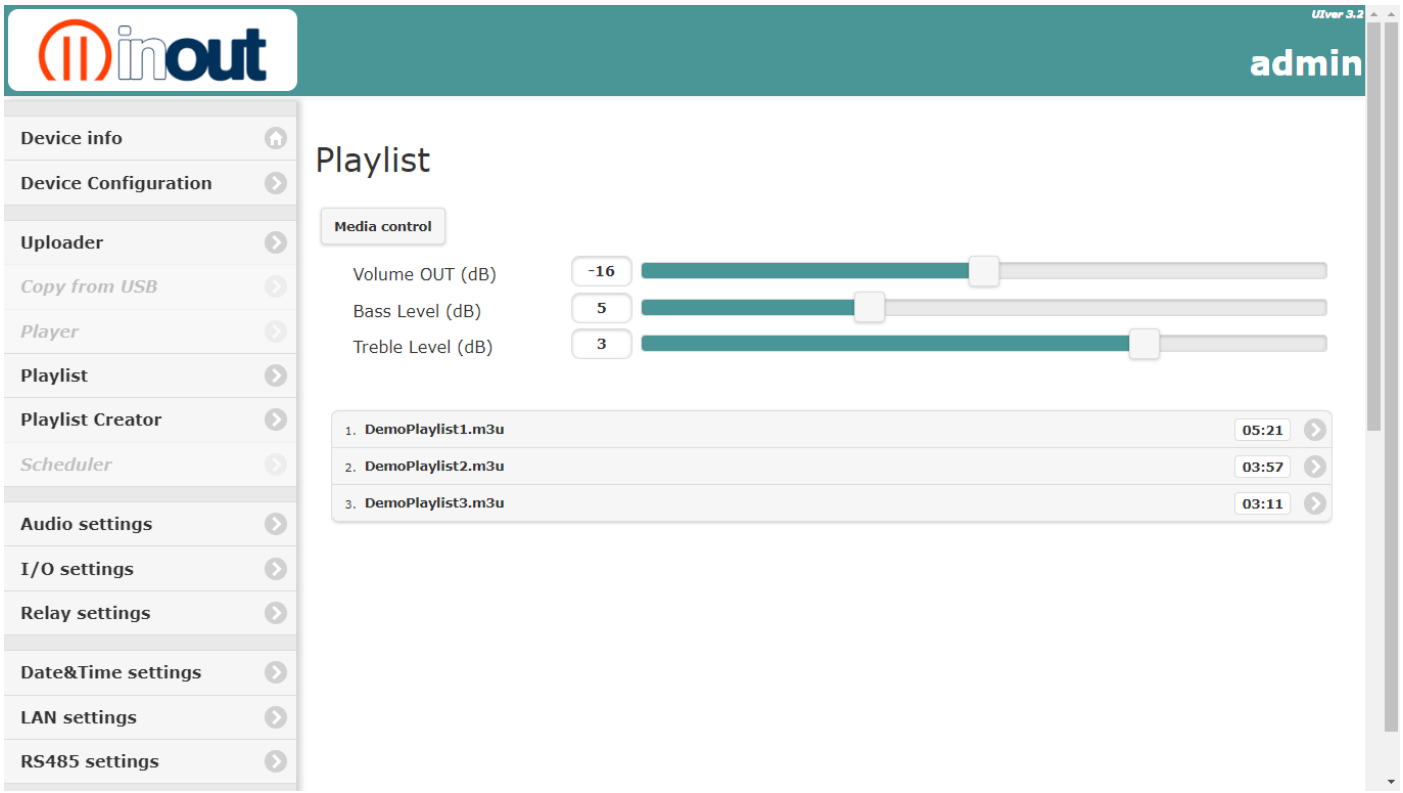
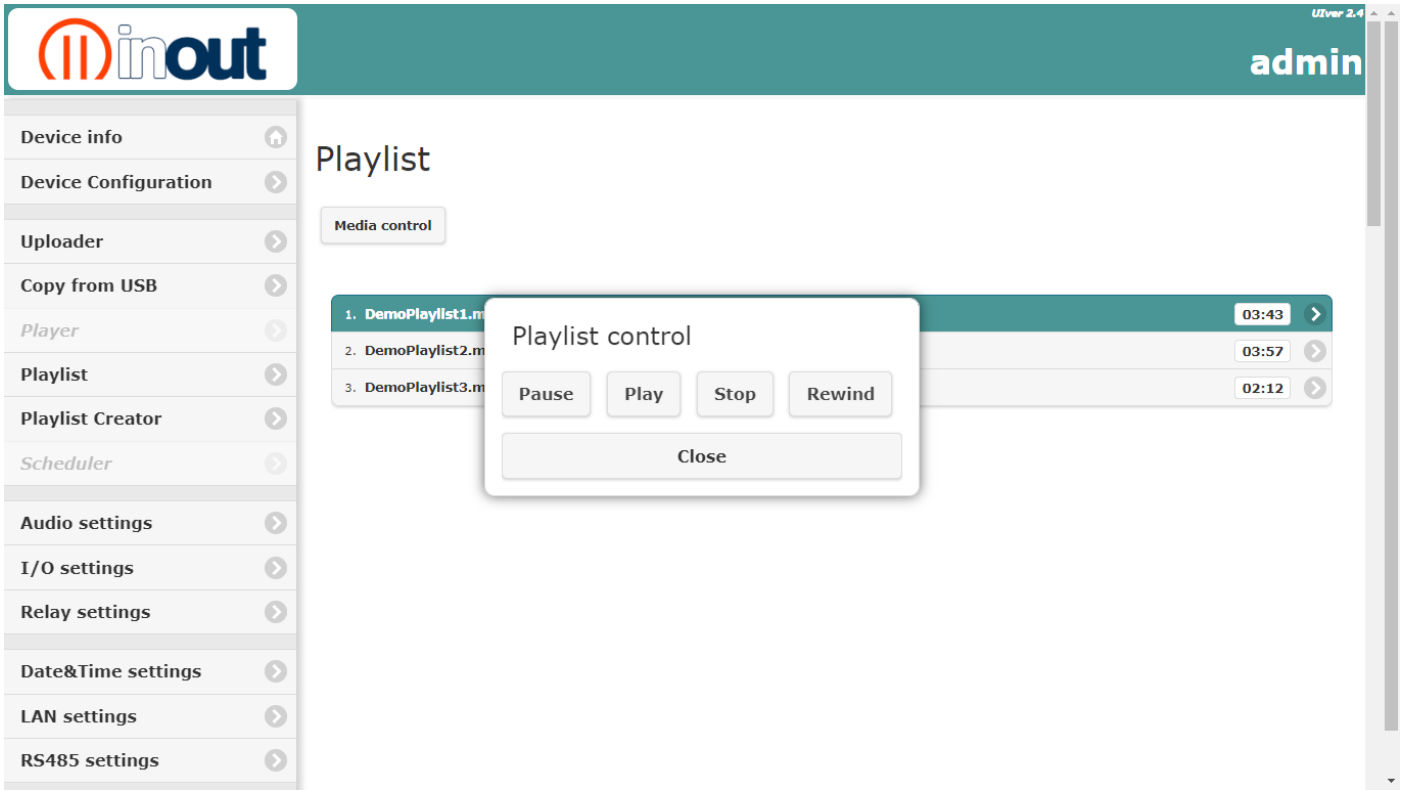


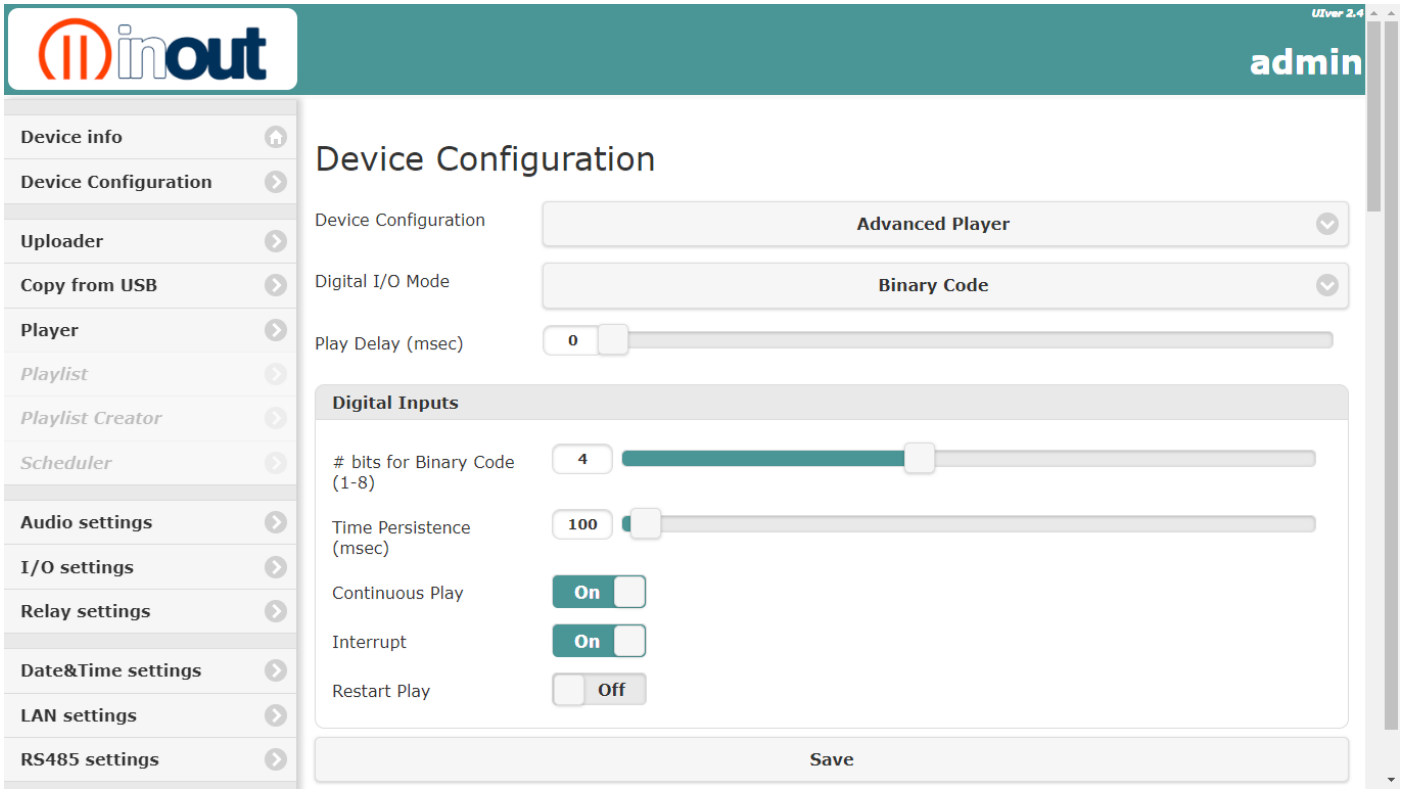
Select a playlist from the “Playlist” web page.



Click on the selected playlist to start the Playlist Control pop-up



Advanced Player Configuration



Digital I/O Mode > Binary Code

Activating the inputs in binary combination, one can launch the playing of a maximum of 255 file, naming the audio files es. 1.mp3, 2.mp3, 3.mp3.....255.mp3

Digital I/O Mode > Keypad (12-key telephone keypad)

Dedicated operation for telephone keypad connection 12 keys. All I/O ports are dedicated to this function (see example application at the end of guide).
Naming the audio files es. 1.mp3, 2.mp3, 3.mp3.....999.mp3

Digital I/O Mode > Museum Mode

Activating the inputs in binary combination, one can launch the playing of a maximum of 63 file, naming the audio files es. 1.mp3, 2.mp3, 3.mp3.....63.mp3.

I/O7 and I/O8 reserved:

IO7 reduce output volume

IO8 increase output volume

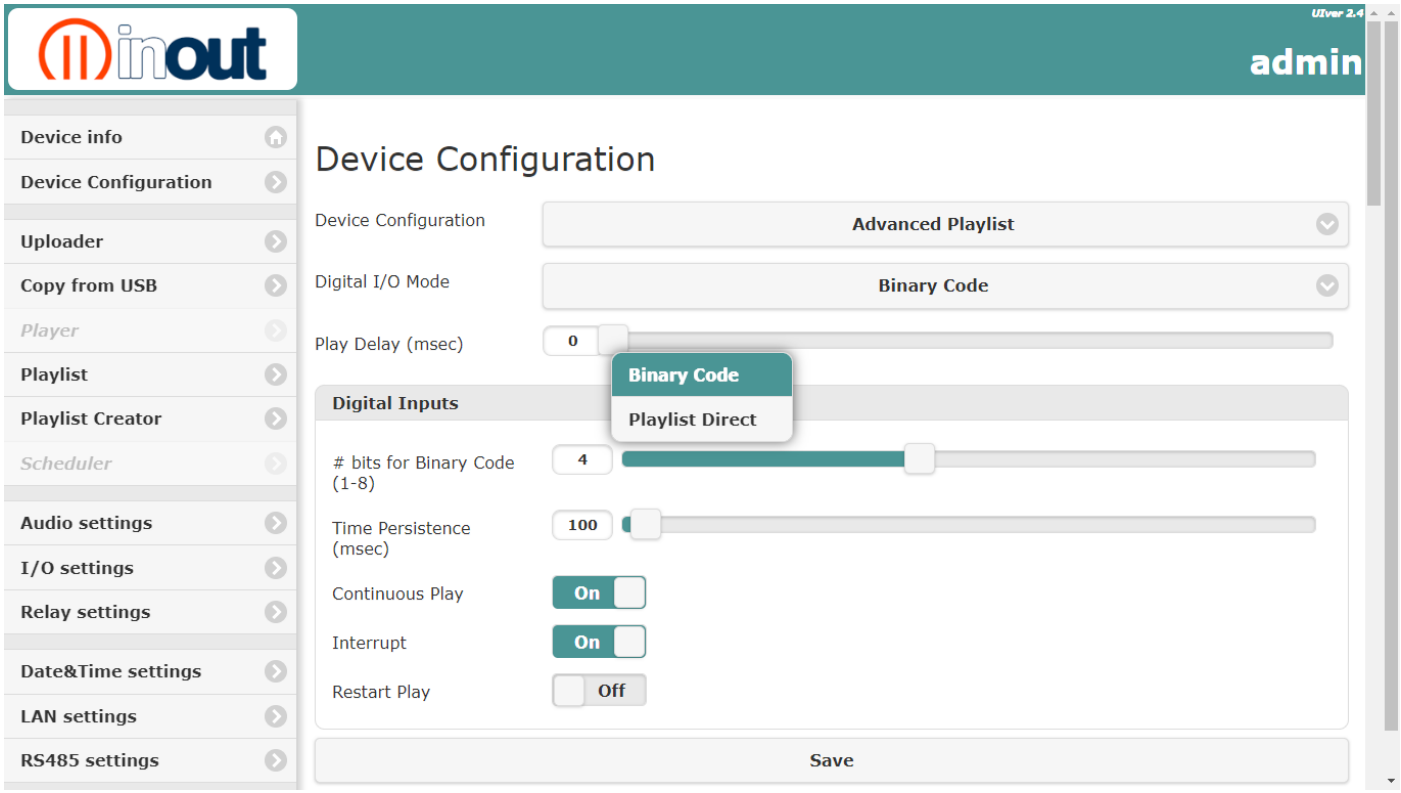
IMPORTANT: save the settings with the button apply/save

Digital Inputs Set

Digital Inputs # bits for	Dedicated inputs for Playlist Direct or Binary Code, the remaining ones can be configured as outputs
Time Persistence:	Set the persistence time of the input command (time to wait before NP2/NP5 is able to interpret the input command).
Continuos Play:	- OFF: Having terminated the playing of the codified file, requested from the input code, NP2/NP5 goes in standby. - ON: The requested codified file is continuously played until the relevant input code is inserted.
Interrupt:	- OFF: Repeated activations or deactivations of the same input or of other inputs does not influence the playing of the file. - ON: The activation of a different code can block the playing underway and activate the playing of the new requested file
Restart Play: (if Interrupt is ON)	In the moment in which an input code is enabled the playing of the of the relevant file from its beginning takes place, even if it is already in play.

IMPORTANT: save the settings with the button apply/save

Advanced Playlist Configuration



Digital I/O Mode > Playlist Direct

The 8 available playlists, activated by the logical inputs IN1-IN8, can be played with different modes, depending upon the varying needs.

Digital I/O Mode > Binary Code

Activating the inputs in binary combination, one can launch the playing of a maximum of 255 playlists.

To combine playlists with their inputs, rename playlist names as follows (use clone button with playlist creator web page):

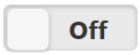
Playlist Direct		Binary Code Playlist	
Input	Name playlist	**Input**	Name playlist
IN1	1_*nameplaylist.m3u*	IN1+IN2	3_*nameplaylist.m3u*
IN2	2_*nameplaylist.m3u*	IN1+IN4	9_*nameplaylist.m3u*
IN3	3_*nameplaylist.m3u*	IN5	16_*nameplaylist.m3u*
IN4	4_*nameplaylist.m3u*	IN2+IN4+IN5	26_*nameplaylist.m3u*
IN5	5_*nameplaylist.m3u*	IN6	32_*nameplaylist.m3u*
IN6	6_*nameplaylist.m3u*	IN2+IN5+IN6	50_*nameplaylist.m3u*
IN7	7_*nameplaylist.m3u*	IN1+IN4+IN5+IN6	57_*nameplaylist.m3u*
IN8	8_*nameplaylist.m3u*	IN3+IN4+IN5+IN6	60_*nameplaylist.m3u*

Digital Inputs Set

Digital Inputs # bits for:
Dedicated inputs for Playlist Direct or Binary Code, the remaining ones can be configured as outputs

Time Persistence:
Set the persistence time of the input command (time to wait before NP2/NP5 is able to interpret the input command).

Continuos Play:



- Activated the input, the relative item in the Playlist is played: at the end of it, NP2/NP5 goes in standby, awaiting a further activation.

- The position of the last item played is stored in memory, in order to start out again always by the next one in case of restart.

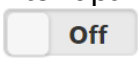
Continuos Play:

- Activated the input, the relative item in the Playlist is played: at the end of it, NP2/NP5 goes in standby, awaiting a further activation.
Activating the input once again or if the activation remains, the successive file is played.

- The playlist is activated in loop, as long as the activation of the relative logical input remains activated.

- The position of the last item played is stored in memory, in order to start out again always by the next one in case of restart.

Interrupt:



Repeated activations or deactivations of the same input or of other inputs does not influence the playing of the file.

Interrupt:

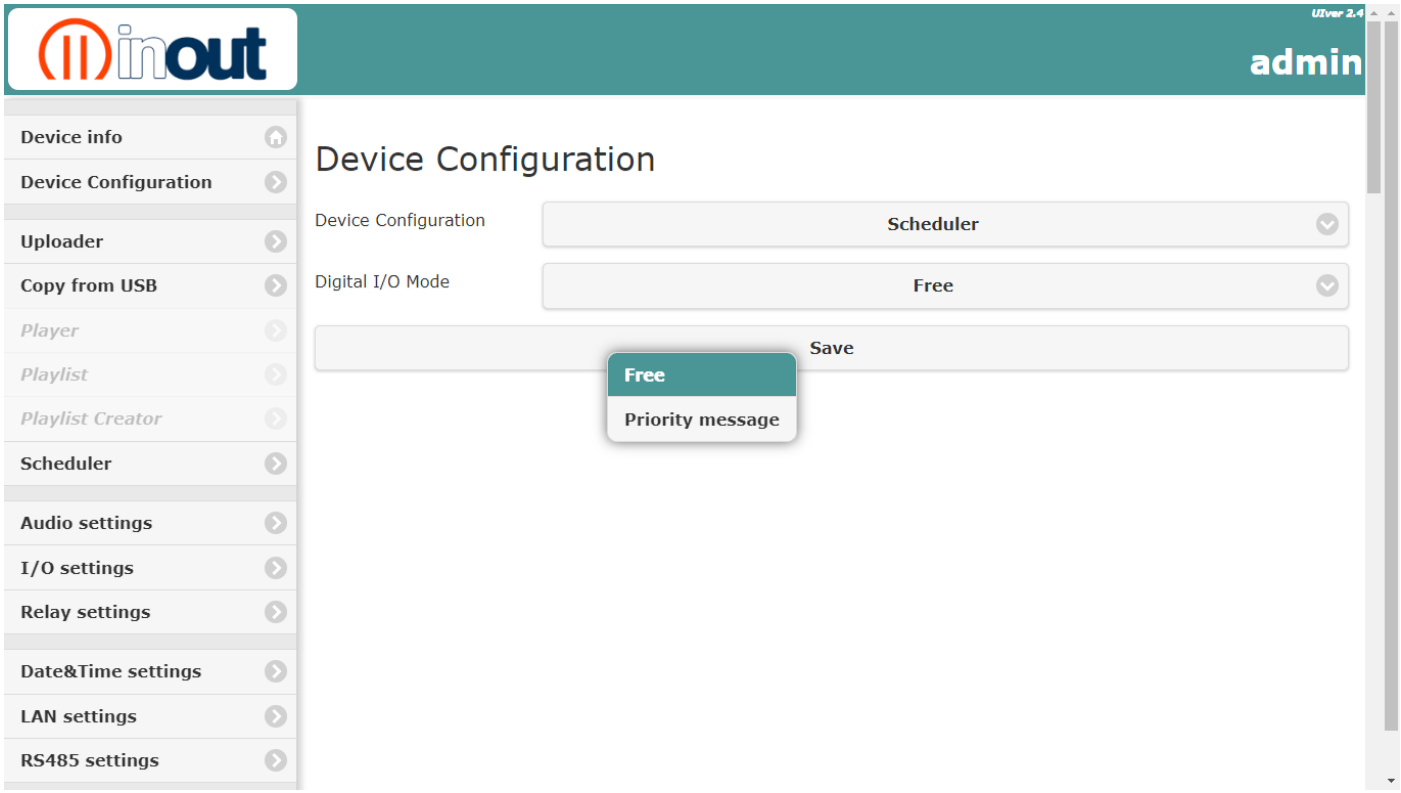
Repeated activations or deactivations of the same logical input does not influence the playing of the file; only the activation of a different input blocks the playing underway and activates the relative playlist.

Restart Play:

From the moment that the same logical input is reactivated, the restart of the file is commanded, even if it is playing. The activation of a different input blocks the playing underway and activates the relative playlist.

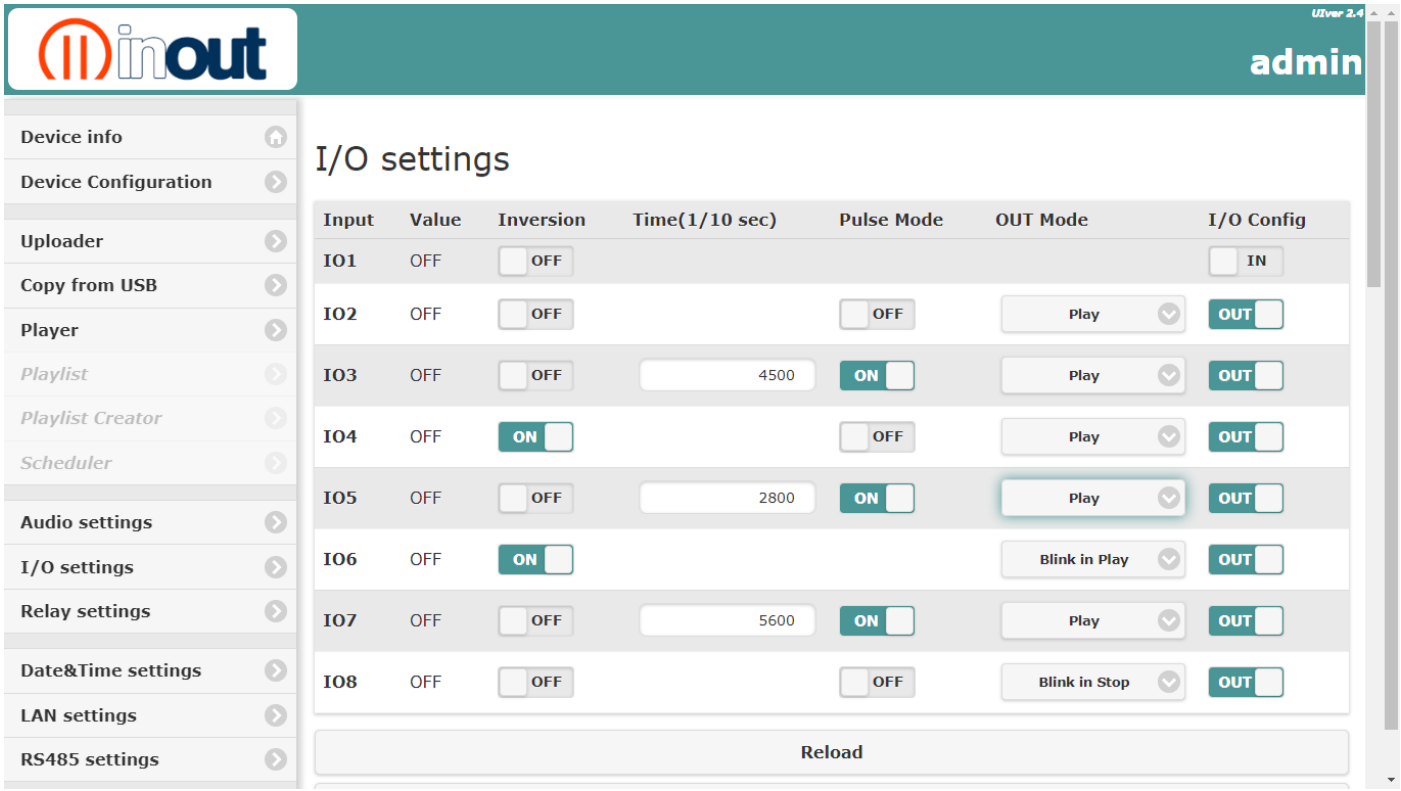
IMPORTANT: save the settings with the button apply/save

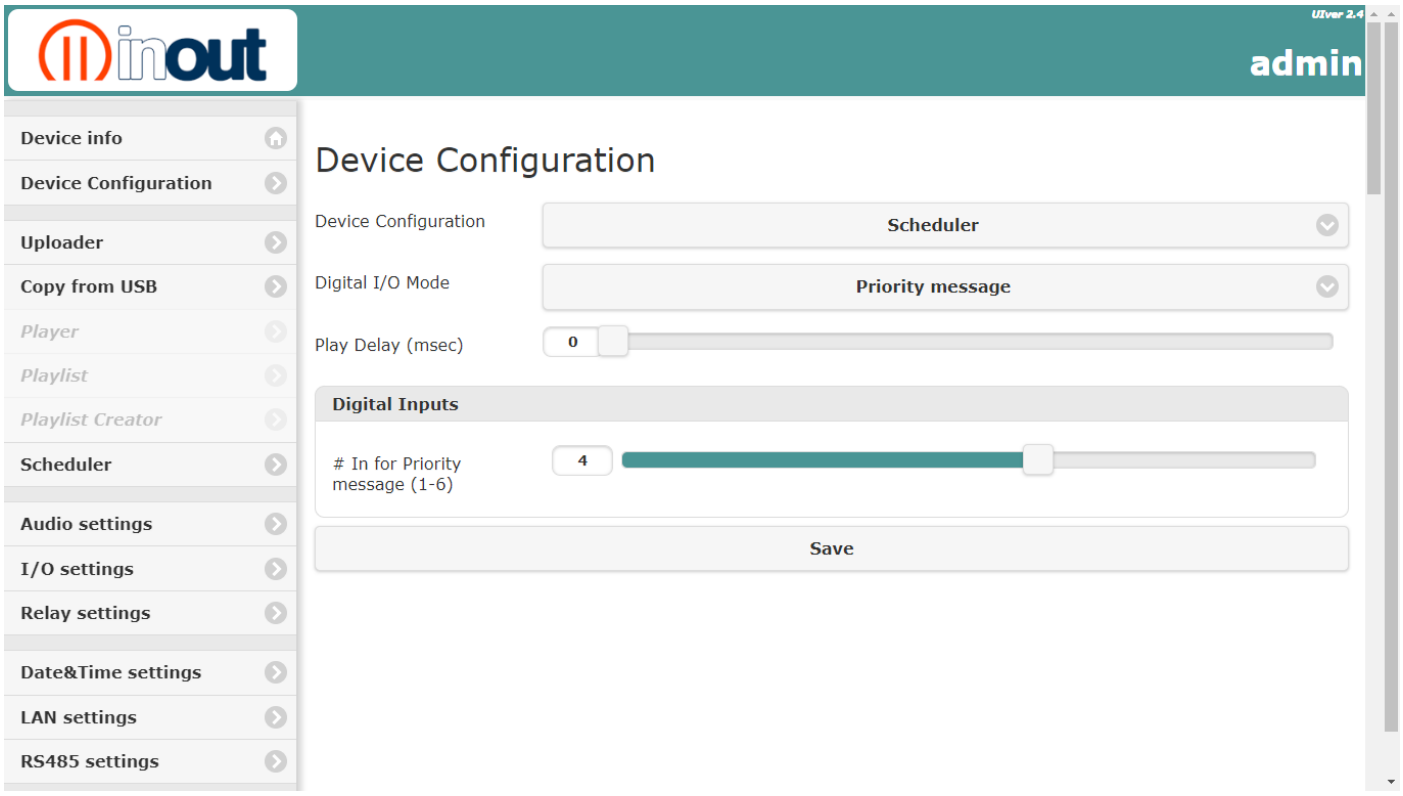
Scheduler Configuration



Digital I/O Mode > Free

Logic ports are freely configurable as I/O settings webpage.





Digital I/O Mode > Priority message

Activating the inputs in binary combination, one can launch the playing of a maximum of 63 priority message, naming the audio files es. 1.mp3, 2.mp3, 3.mp3.....63.mp3
The remaining logic ports can be configured as outputs

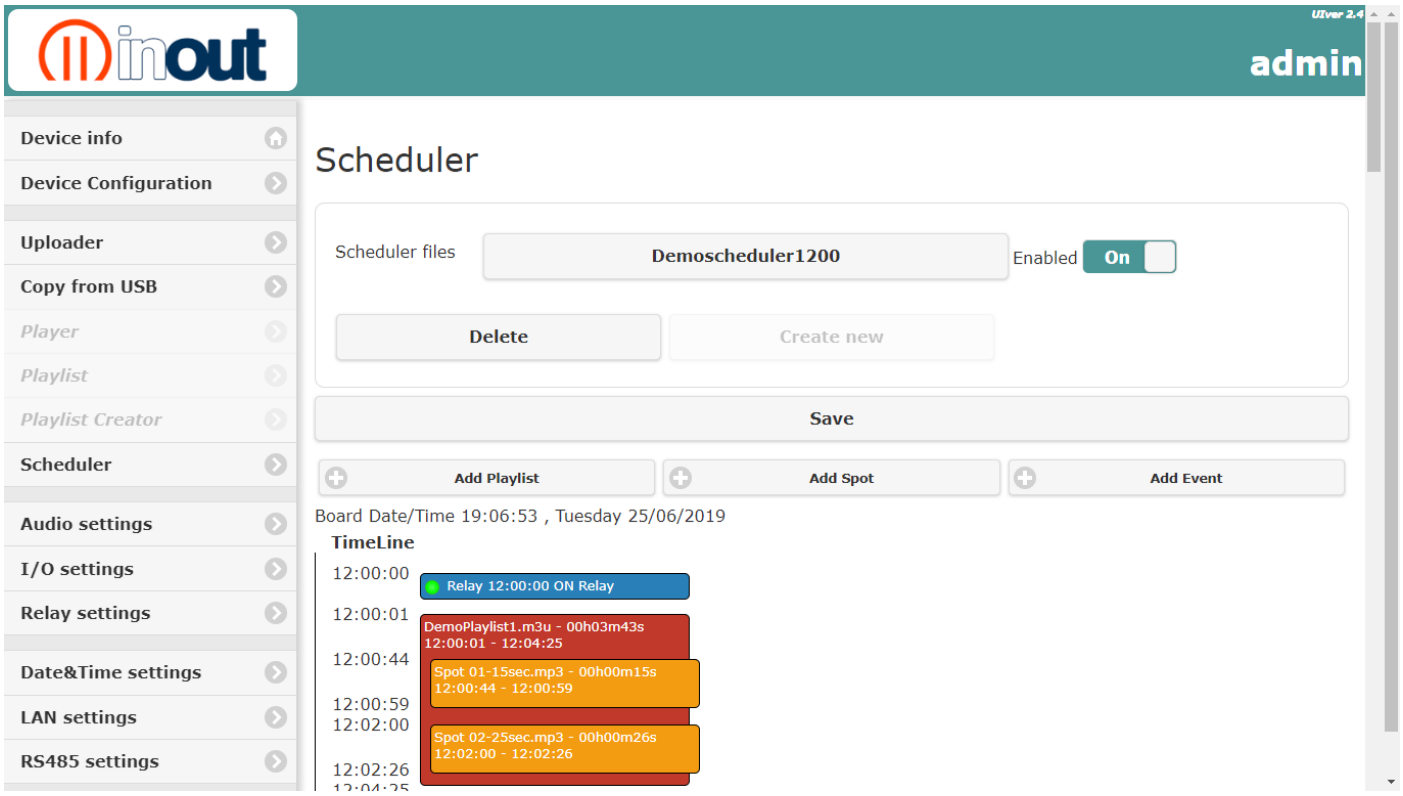
I/O7 and I/O8 reserved:

IO7: If active input, the line in is enabled and mixes in the background during the playback program's audio file.
When disabled, the audio line in is turned off.

IO8: If enable, suspends the program scheduler and playback of audio files.
When disabled, resumes the audio playback of the scheduler from the point established of the time line program

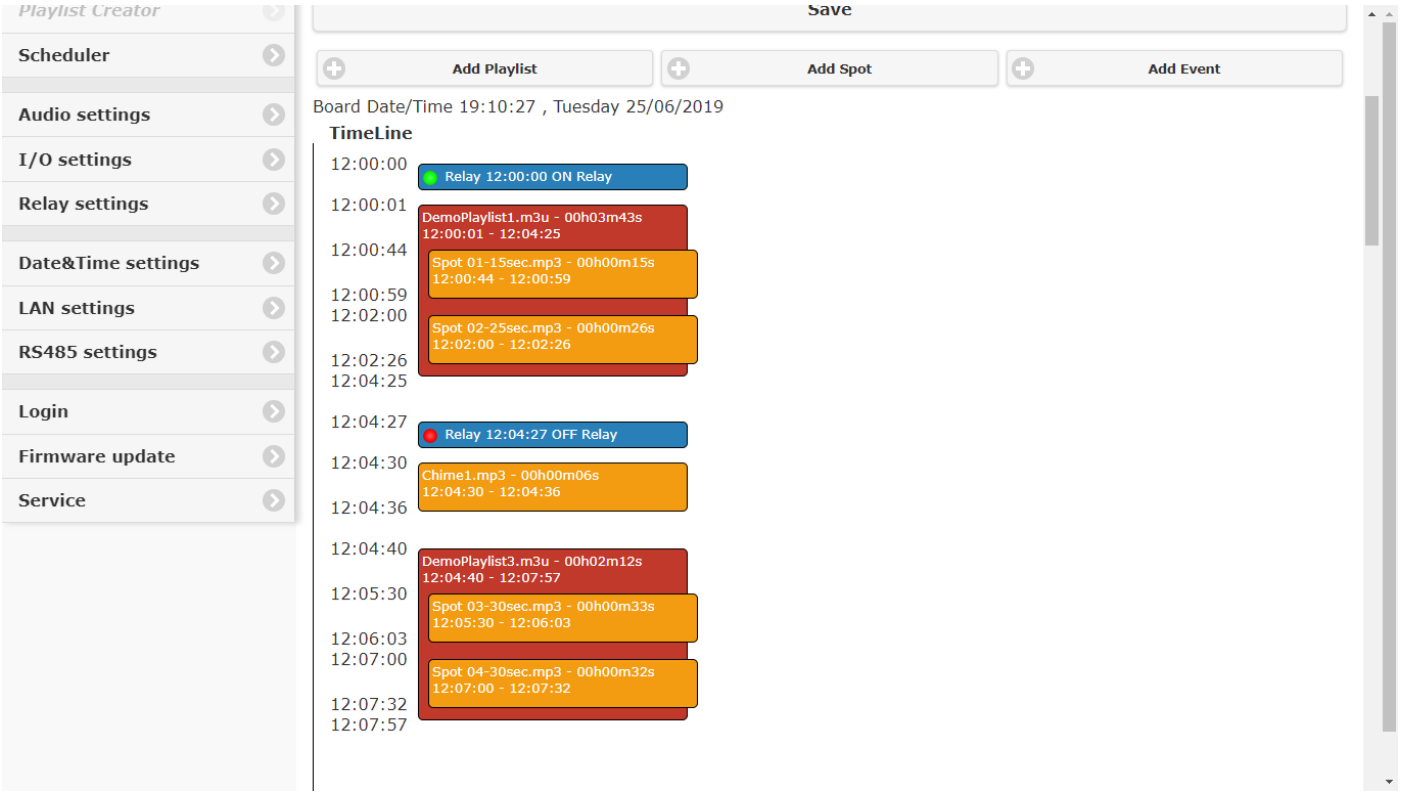
Play Delay: Setting the delay time of the playback audio file from the activation of the inputs

IMPORTANT: save the settings with the button apply/save



Scheduler files:	Name of the every day scheduler program
Enable:	If active, enable the scheduler. If switched off, the program is suspended.
Create new:	to create a new scheduler an save name
Delete:	to clear the scheduler program
Add Playlist:	to insert playlists or generate with playlist creator. Press set to enter
Add Spot:	to insert a single spot or an auto repeat for n times and a range between them. Press set to enter
Add Event:	to insert a time event: Relay, logic output and audio line in. Press set to enter Enter title, choose output type, value output if ON / OFF, intervention time. Press set for insertion. ON = green ball OFF= red ball

IMPORTANT: to display output ID, configure logic ports as outputs in I/O settings page



IMPORTANT.

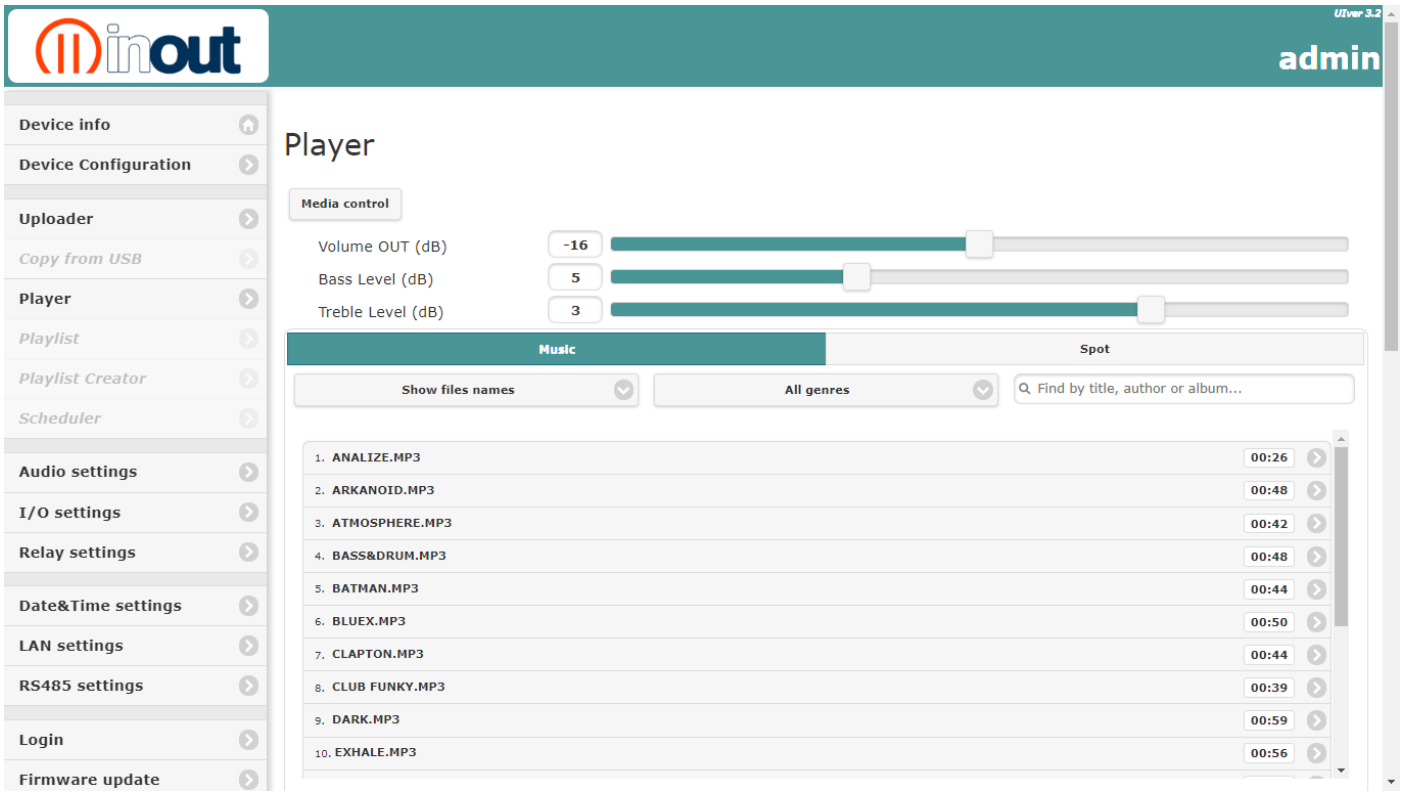
Pay attention to following advice:

We recommend you to create a new scheduler instead of editing and deleting a scheduler file in memory.

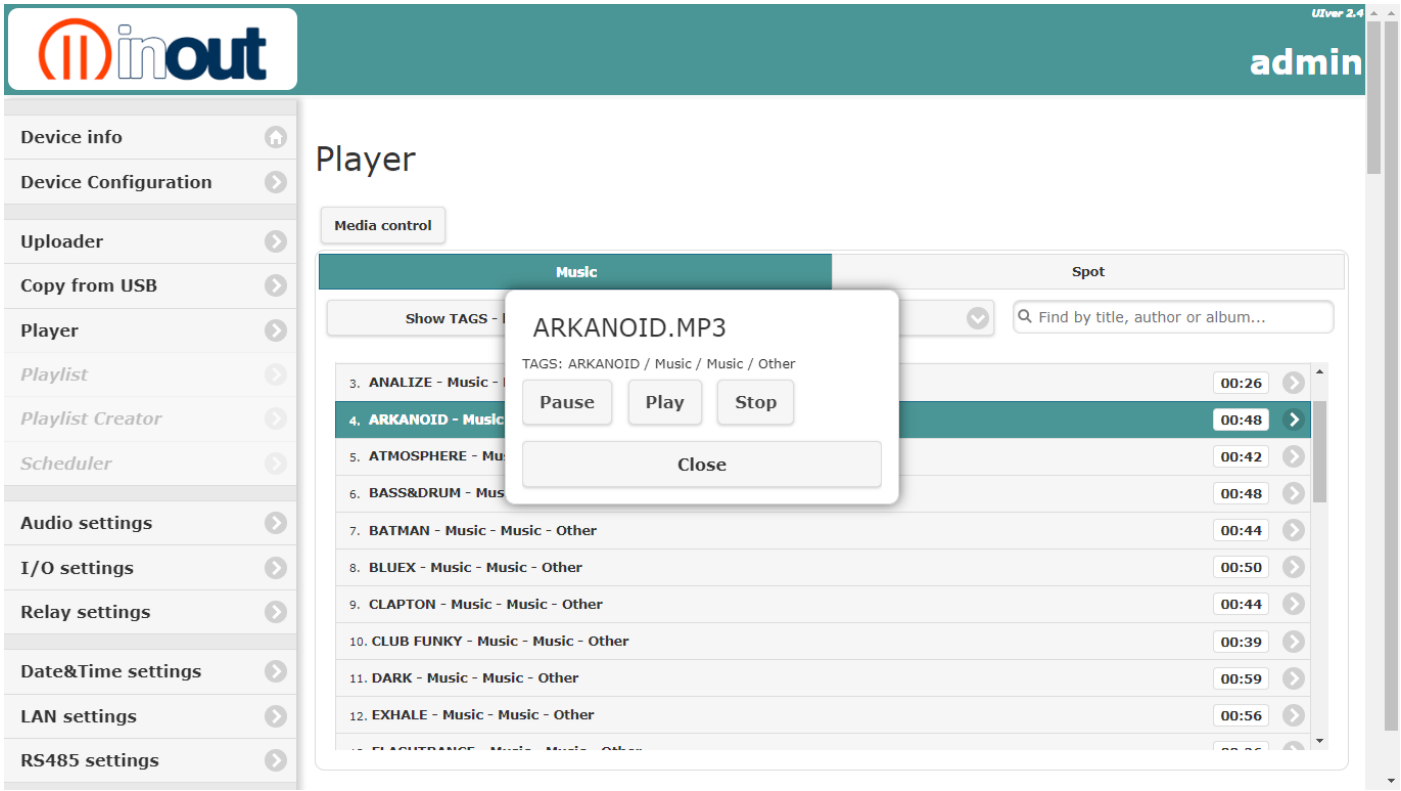
In case of incorrect webpage views, refresh the page by clicking on the InOut logo

Be careful about programming, overlapping schedules can generate errors.

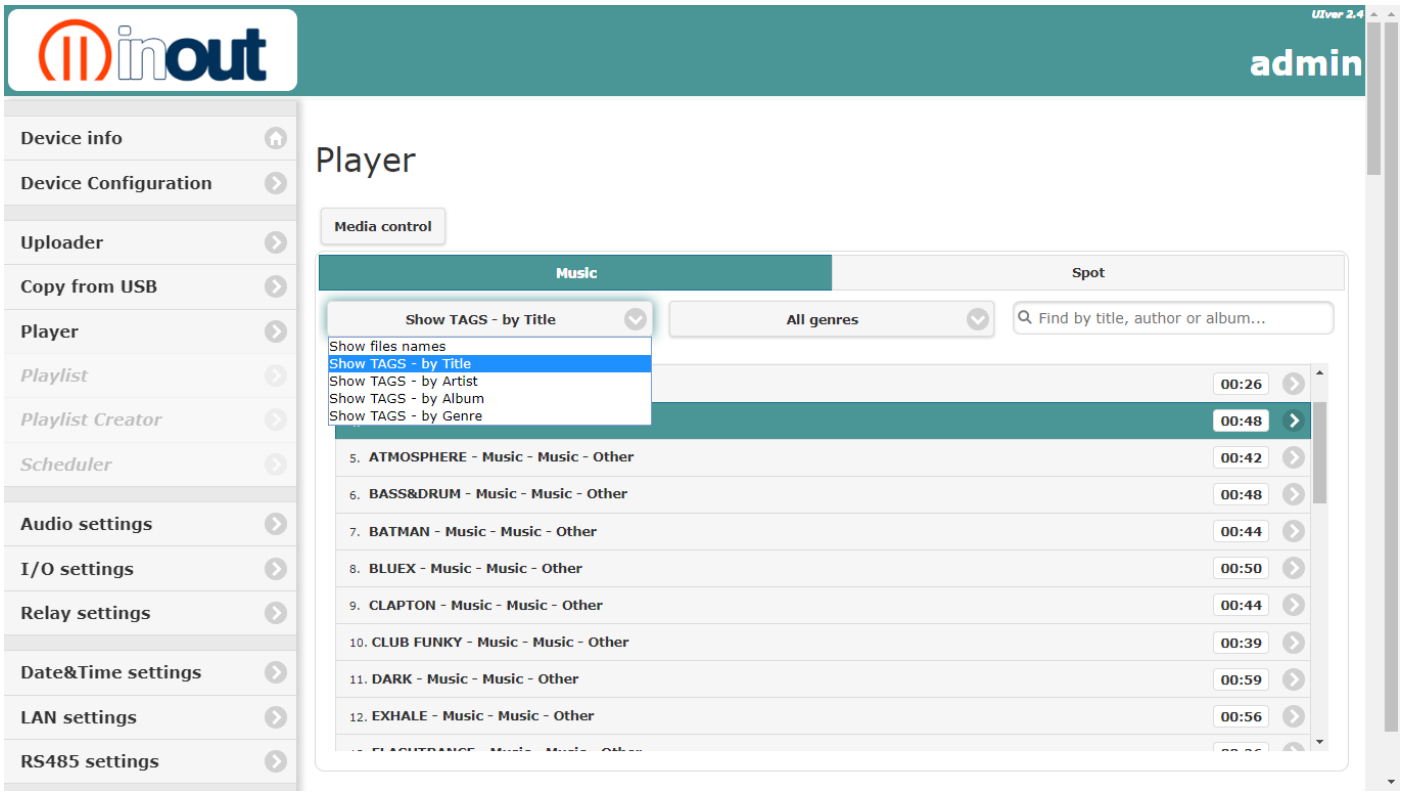
Player - listening to audio files



To listen to the stored files in the uSD, select the Music and Spot folders, click on the file name to view pop up with the commands.
Press the media control button, further commands and level adjustments are available.



View and search file/song

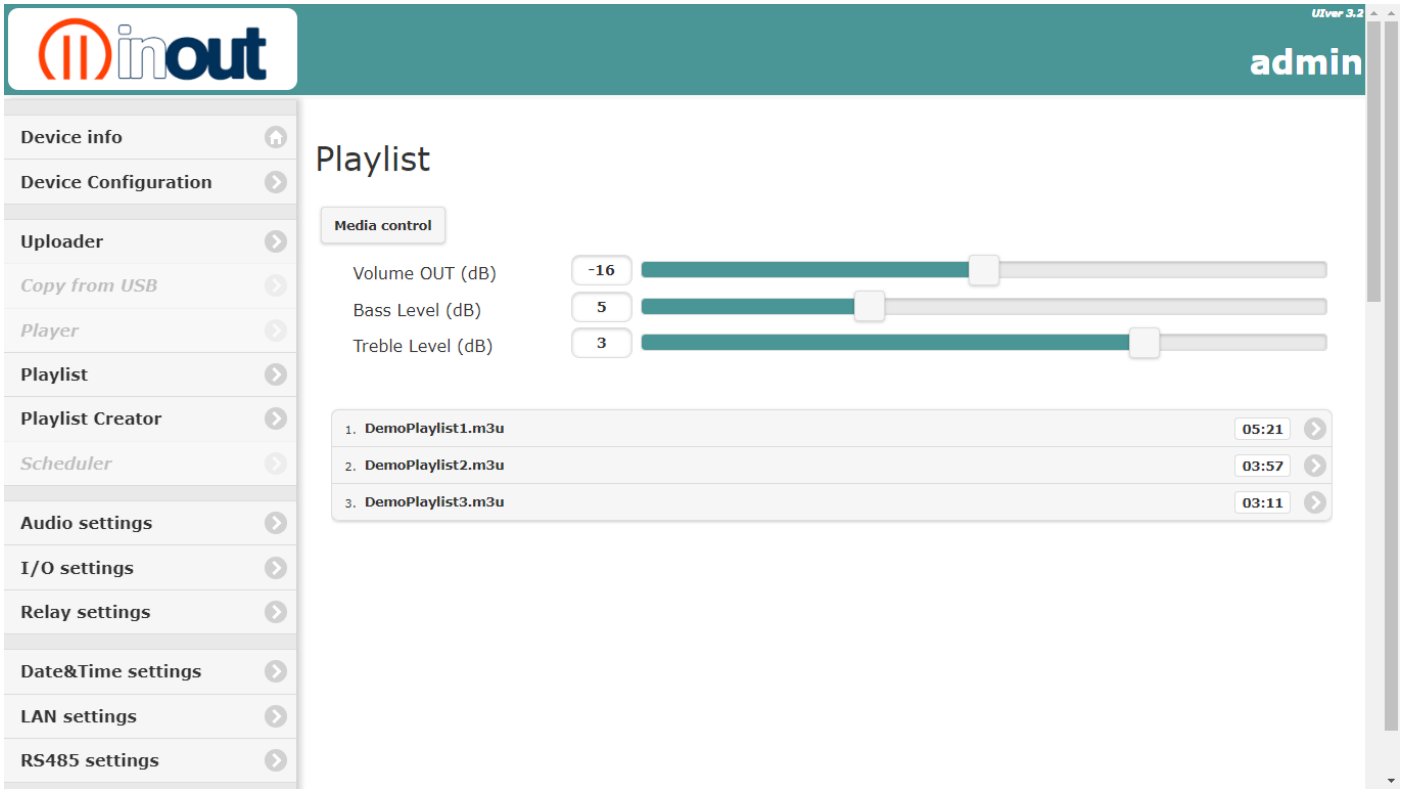


Press Show files name button to see ID3 TAG of audio file:
- Show files name
- Show TAGS by Title
- Show TAGS by Artist
- Show TAGS by Album
- Show TAGS by Genre

You can view tracks for genre music by pressing the appropriate button

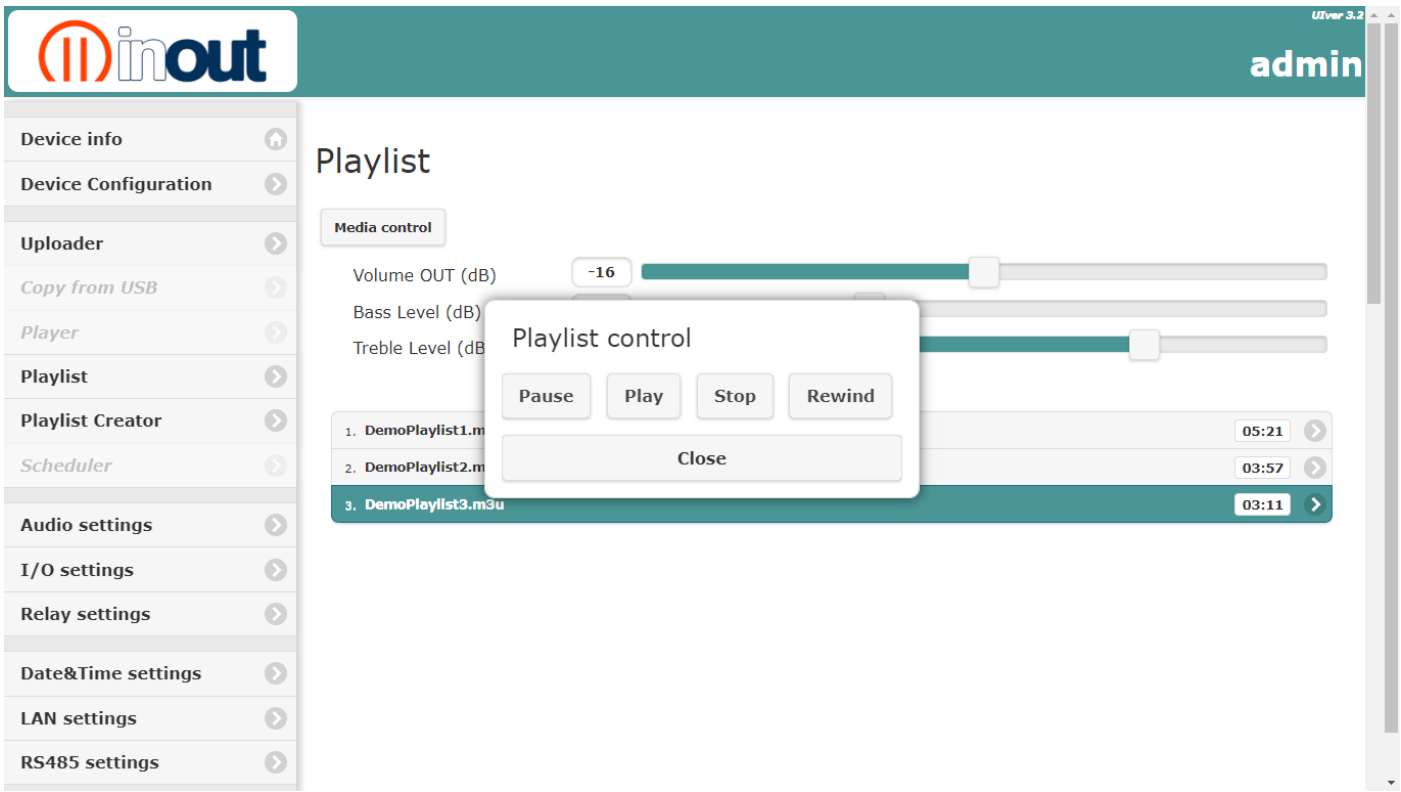
In the box, you can search song by title, author and album

Listening playlist

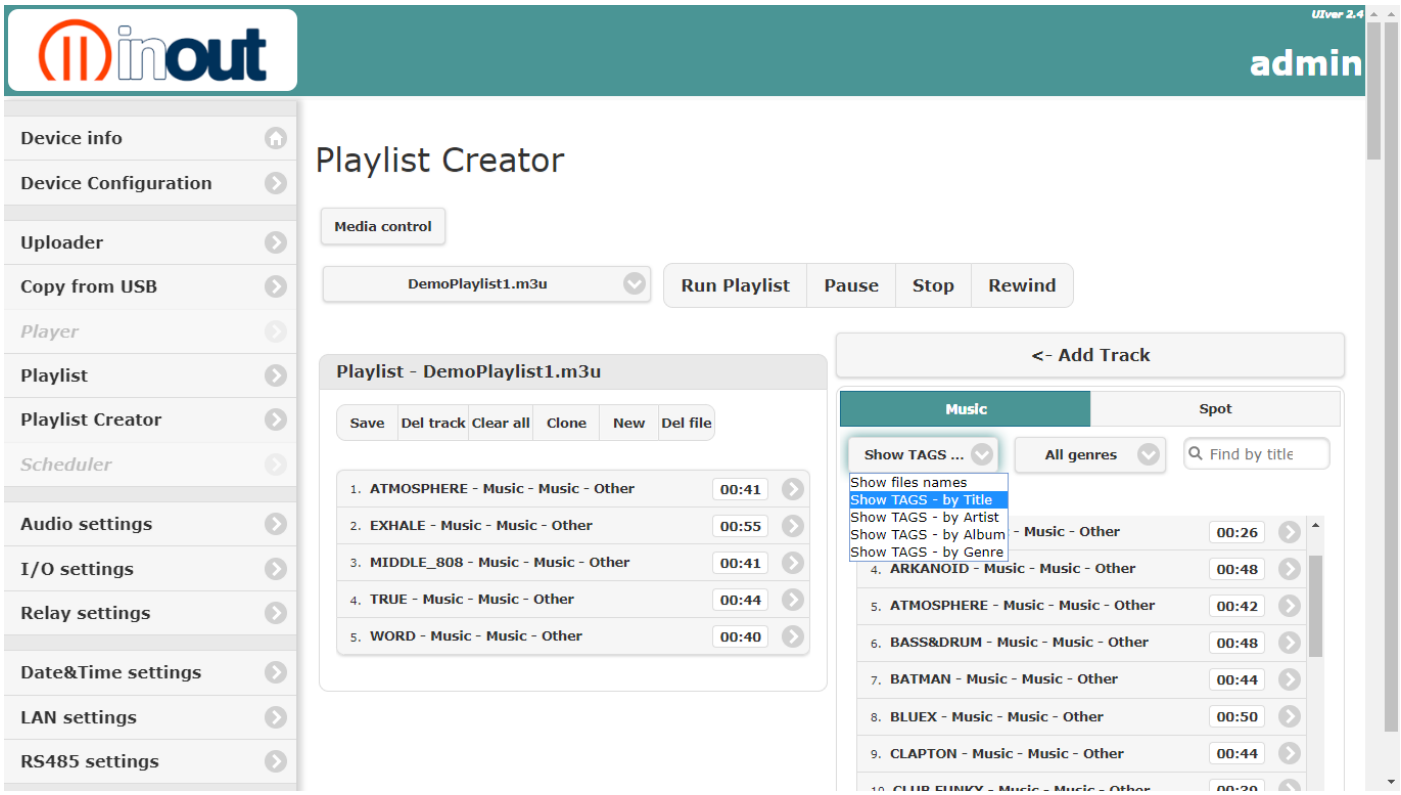


To listen to the stored playlists, click on the playlist name to display the pop-up with the commands.
Press the media control button, further commands and level adjustments are available.

IMPORTANT: set continuous play ON for playlist loop



Playlist Creator (to create a new playlist)



Right list is the files stored in the uSD in Music and Spot folders.

New: To create a new playlist, enter a name and press save

<-Add Track: To insert audio files into the playlist, press Add Track
To change the order of the files, drag the file to the desired location.

Del track: To delete the audio file from the playlist, select and press del track

Clear all: To delete all files into playlist

Del file: To delete the playlist

Clone: To copy the same playlist and give it a different name

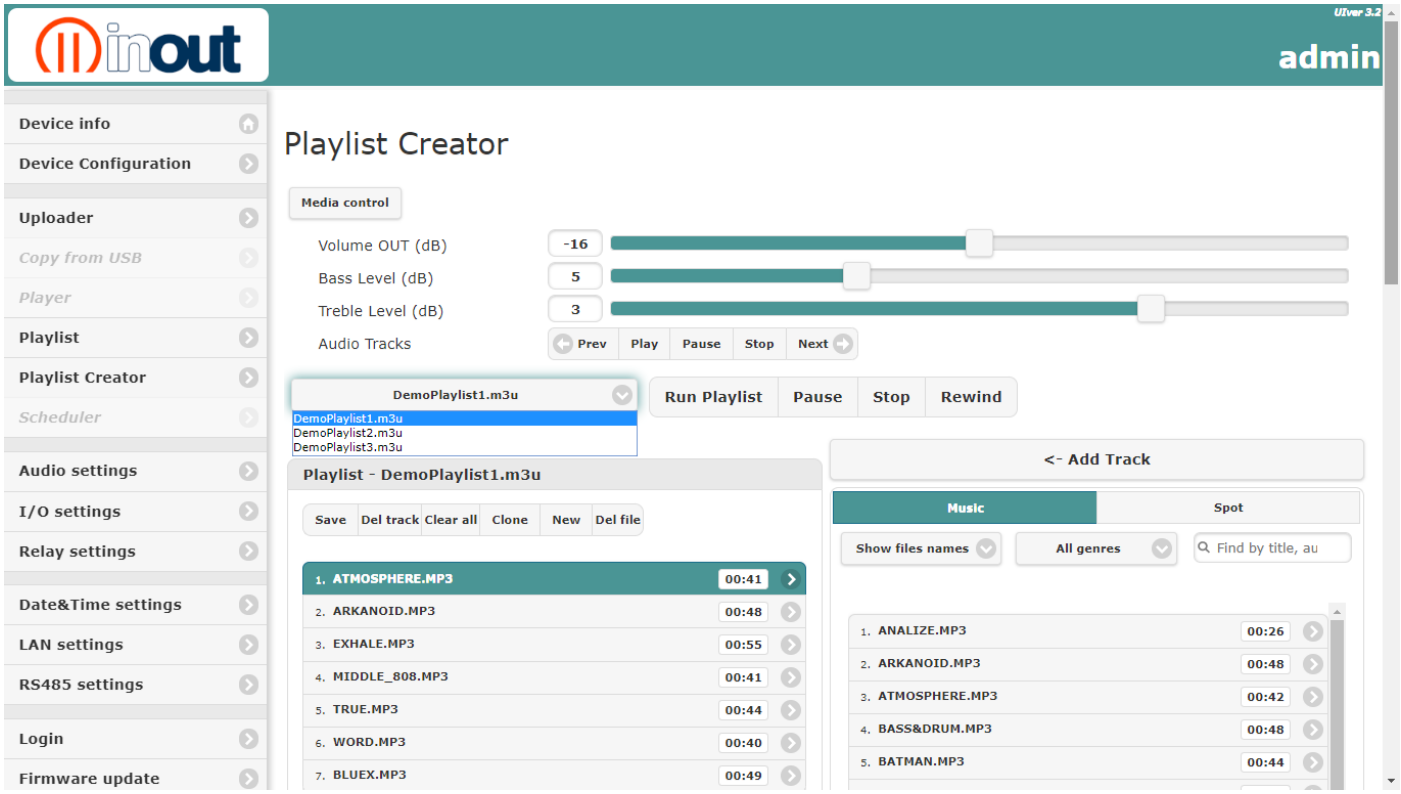
Save: When the playlist is complete, press the Save button

Press Show files name button to see ID3 TAG of audio file:
- Show files name
- Show TAGS by Title
- Show TAGS by Artist
- Show TAGS by Album
- Show TAGS by Genre

You can view tracks for genre music by pressing the appropriate button

In the box, you can search song by title, author and album

To listen a new playlist:



Run Playlist: to listen a playlists in memory, select playlist name and press Run playlist button.

Rewind: to listen the playlist from the beginning, press Rewind button.

Pause/Stop: Pause / Stop playlist

Media control To scroll through the tracks quickly, additional commands are available by pressing the media control button

Prev previous file

Play Play file

Pause Pause file

Stop Stop file reproduction.

Next next file

NP2 Technical features

Power supply……	: 12VDC / 15W
Consumption in standby ……	: 0,5 W
Protection ……	: inside fuse, 4A delayed.
Capacity of extractable memory	: microSD from 4GB to 32GB (FAT/FAT32).
Input absorption……..……	: 5 mA
Relay contact Max.voltage……..	: 1 A 30Vdc
Formats accepted ……	: MPEG1 layer 3 (file MP3 from 64 to 360 Kbps)
Response in frequency ……..	: 20 ~ 20.000 Hz (±3dB)
Signal/noise ratio …….....	: > 90dB.
Harmonic distortion …….....	: < 0,1%
Output power…….…….....	: 15W (8 Ω) THD+N= 5%
Classification……..……...	: IP 30 on the basis of liquid and dust penetration.
Size/weight ……..	: 90x62x36 mm. / 90gr. DIN Rail (EN 60715) mounting, 2 modules according to DIN 43880.
Packing (size and weight)…….....	: 230x180x80mm. / 415gr.
Operating temperature.…..……	: 0 to +60°C.
Storage temperature.…….....	: -20 to +60°C.

Manufactured by: inout Noventa di Piave (VE) - ITALY

CE Product compliant with the safeguard regulations CE about safety and electromagnetic compatibility.

NP5 Technical features

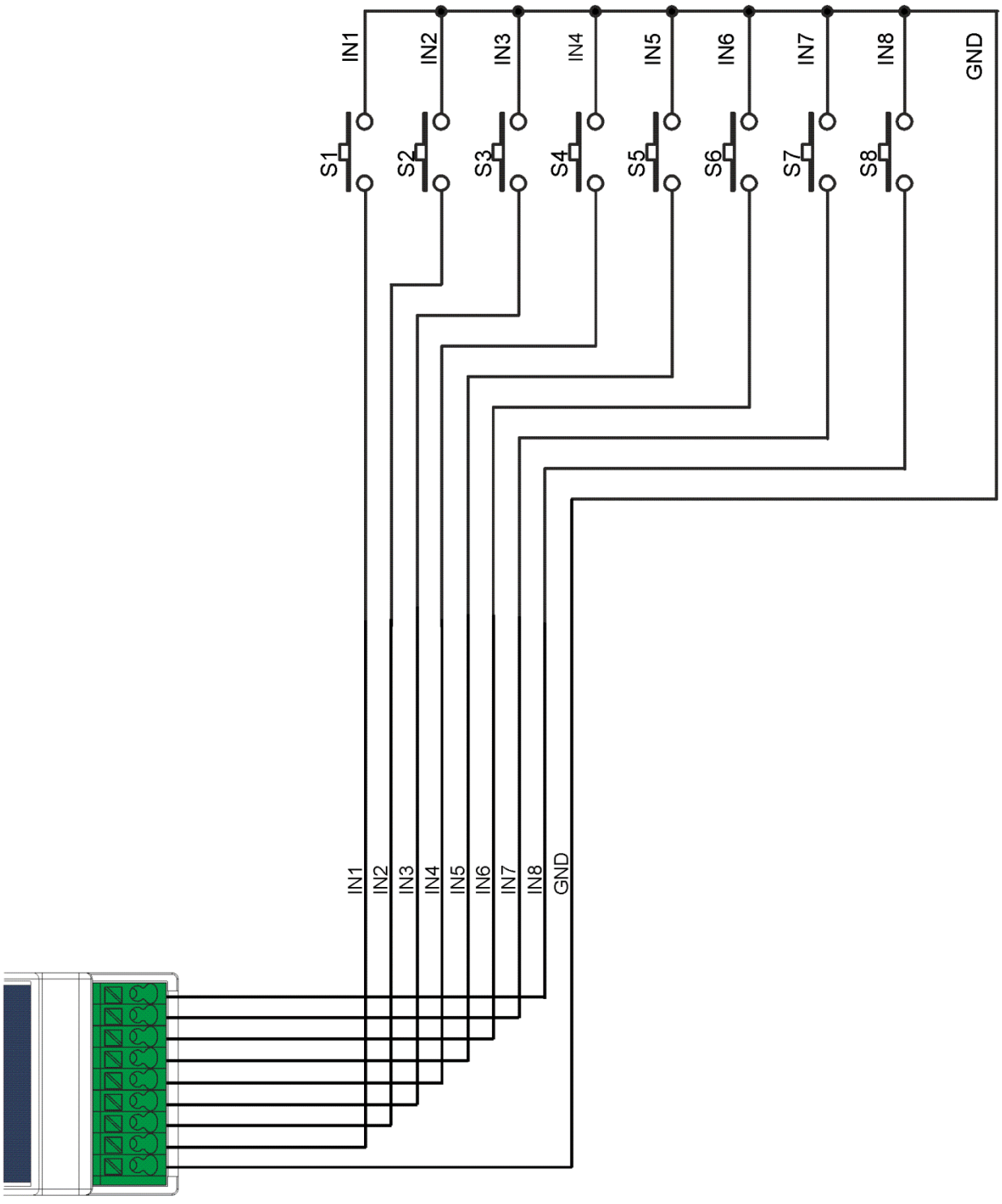
Power supply……..…..… : 12VDC / 30W
Consumption in standby …… : 0,5 W
Protection …….. : inside fuse, 4A delayed.
Capacity of extractable memory : microSD from 4GB to 32GB (FAT/FAT32).
Input absorption……..……: 5 mA
Relay contact Max.voltage……..: 1 A 30Vdc
Formats accepted ……: MPEG1 layer 3 (file MP3 from 64 to 360 Kbps)
Response in frequency …….. : 20 ~ 20.000 Hz (±3dB)
Signal/noise ratio ……..... : > 90dB.
Harmonic distortion ……..... : < 0,1%
Output power……..…. : 15+15W (8 Ω) THD+N= 5%
Classification……..……...: IP 30 on the basis of liquid and dust penetration.
Size/weight…… : 147x84x19mm. / 280gr.
Packing (size and weight)…….. : 230x180x80mm. / 750gr.
Operating temperature.…..…… : 0 to +60°C.
Storage temperature.……..... : -20 to +60°C.

Manufactured by: inout Noventa di Piave (VE) - ITALY

CE Product compliant with the safeguard regulations CE about safety and electromagnetic compatibility.

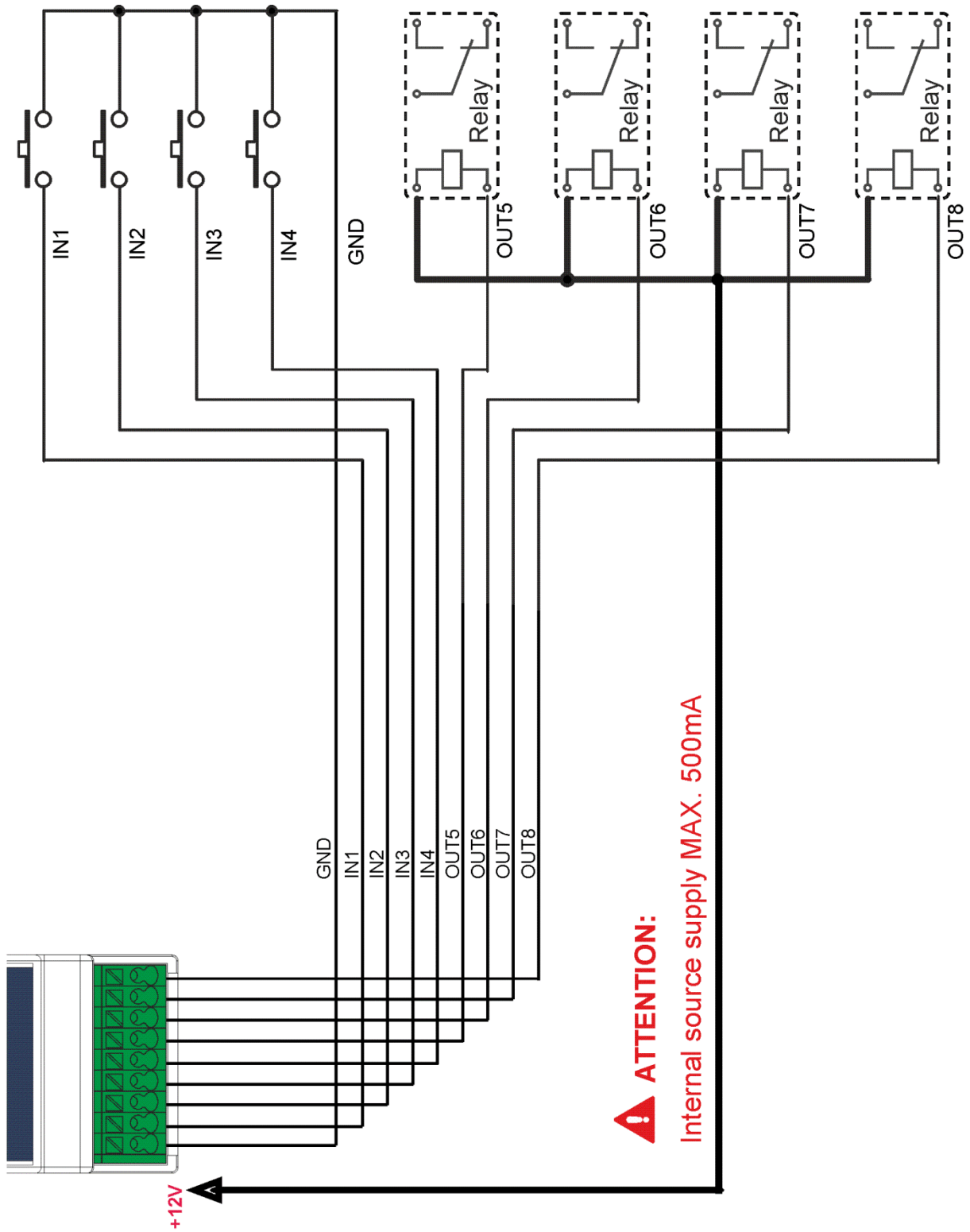
NP2 application example:

Advance Player with 8 input Binary code



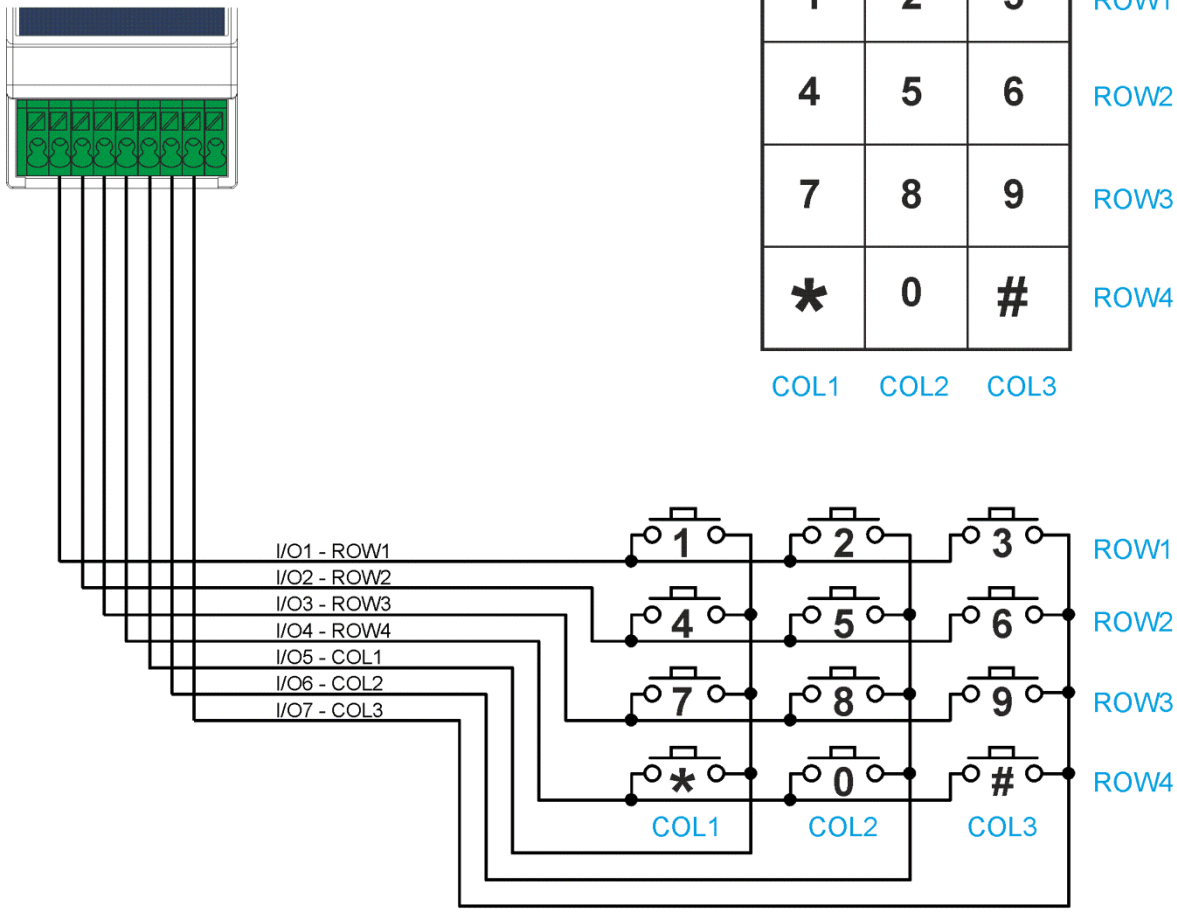
NP2 application example:

Advance Player with 4 input and 4 output external Relay 12Vdc



NP2 application example:

Telephone keypad connection 12 keys



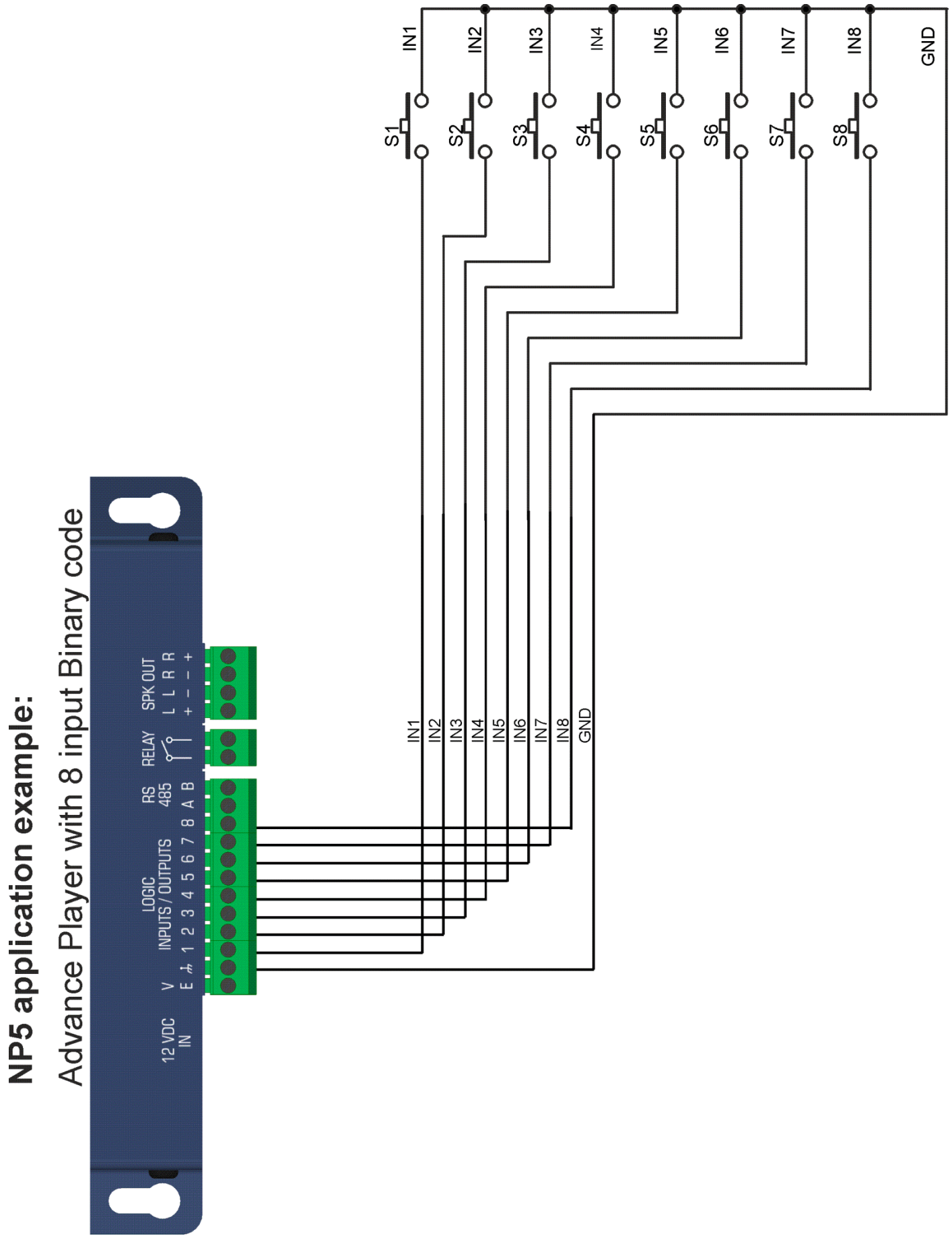
Enter the number and press # to play audio file

Press # to stop audio file

If you've pressed a wrong number, press * to reset

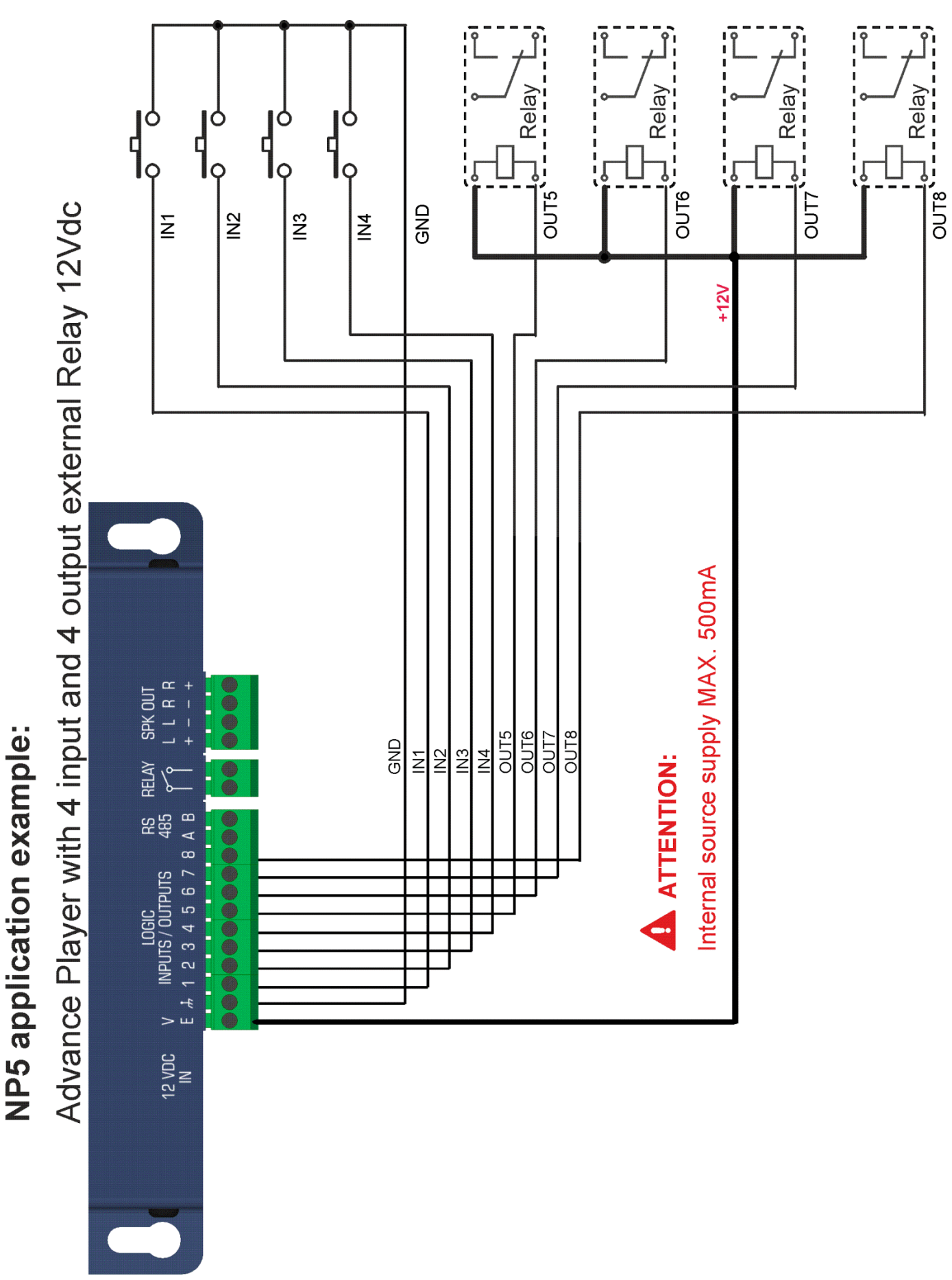
NP5 application example:

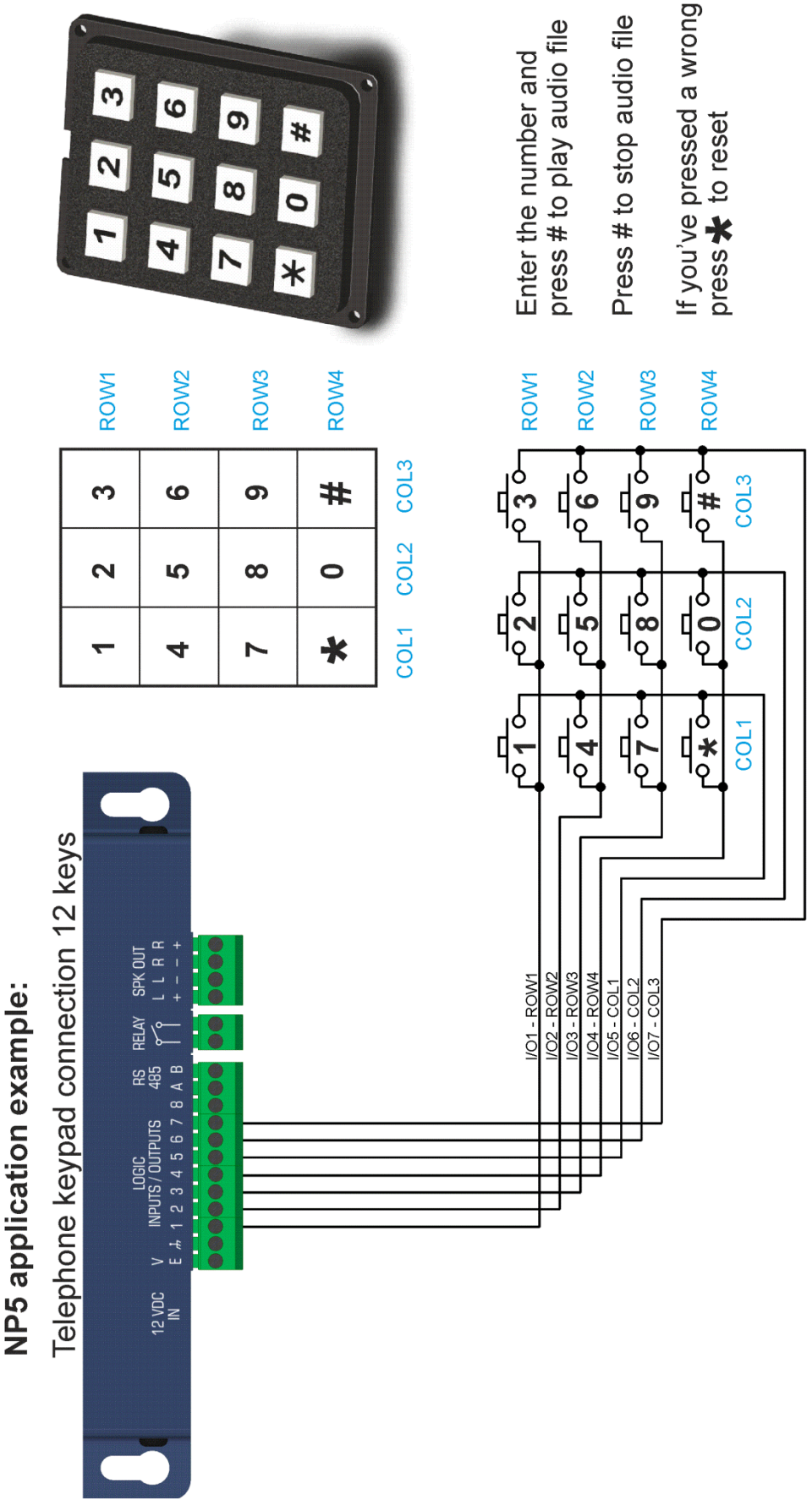
Advance Player with 8 input Binary code



NP5 application example:

Advance Player with 4 input and 4 output external Relay 12Vdc




NP5 application example:
Telephone keypad connection 12 keys
12 VDC IN
V
E # 1 2 3 4 5 6 7 8
LOGIC INPUTS / OUTPUTS
RS 485
A B
RELAY
SPK OUT
L L R R
+ – – +
I/O1 - ROW1
I/O2 - ROW2
I/O3 - ROW3
I/O4 - ROW4
I/O5 - COL1
I/O6 - COL2
I/O7 - COL3
ROW1
ROW2
ROW3
ROW4
COL1
COL2
COL3
1 2 3
4 5 6
7 8 9
* 0 #
Enter the number and press # to play audio file
Press # to stop audio file
If you've pressed a wrong number, press * to reset